Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions in "Comprehensive Development Area" Zone at Lots 1124 RP, 1125 RP and 1126 in D.D. 92 and Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories

Consolidated Planning Statement

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Report : 4.0

EXECUTIVE SUMMARY

(In case of discrepancy between English and Chinese versions, English shall prevail)

This application is submitted on behalf of *Fonnie Holdings Limited* ("**the Applicant**") to the Town Planning Board ("**the Board**") under Section 16 of the Town Planning Ordinance for proposed comprehensive development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)("**RCHE**")' and 'Shop & Services' uses) with minor relaxation of plot ratio ("**PR**") and building height ("**BH**") restrictions ("**the Proposed Development**") at Lots 1124 RP, 1125 RP and 1126 in D.D. 92 and Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories ("**the Application Site**").

The Application Site covers an area of about 17,990.9m^2 and falls within the Area (a) of the "Comprehensive Development Area" ("**CDA**") zone on the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22 ("**the OZP**"). The subject Area (a) is subject to a BH restriction of 41mPD with a maximum domestic PR of 1.23 and a non-domestic PR of 0.18 (equivalent to a total PR of 1.41).

In this application, the Applicant seeks permission from the Board for the proposed comprehensive development with minor relaxation of the PR restriction from 1.41 to 1.692 and the BH restriction from 41mPD to 45.25mPD. The Proposed Development comprises a total of seven blocks, including four 9-10-storey residential towers, one 1-storey retail block, one 4-storey RCHE and one 3-storey carpark cum clubhouse block.

Upon completion, the Proposed Development will provide 334 residential flats, a 100-bed RCHE, and retail services for local residents, resulting in a total gross floor area of approximately 30,440m^2.

The Proposed Development is fully justified by, but not limited to, the following reasons:

- Contributing to the Provision of Housing Supply in Hong Kong;
- Addressing the Rising Need for RCHE Provision in Hong Kong;
- Maximising Synergies with Kwu Tung North New Development Area;
- Conforming to the Planning Intentions of the "CDA" Zone;
- Compatibility with the Surrounding Development Intensity
- Planning Gains and Design Merits Brought by the Proposed Development;
- Relaxation in BHR is Considered Reasonable and Justifiable; and
- No Adverse Impacts on Technical Aspects.

On the basis of the above justifications, we respectfully request the Board to consider this application favourably.

內容摘要

(如內文與其英文版本有差異，則以英文版本為準)

本規劃申請謹代表方利集團有限公司（下稱「**申請人**」），根據《城市規劃條例》第16條，就位於新界古洞南坑頭大布丈量約份第92約地段第1124號餘段、第1125號餘段、第1126號、丈量約份第94約地段第343號餘段、第344A號1分段餘段（部分）、第402號A分段餘段、第404號餘段、第407號A分段餘段、第407號A分段第1小分段餘段、第408號A分段餘段、第408號C分段第2小分段餘段、第408號D分段第1小分段、第408號D分段餘段及第408號餘段和毗連政府土地（下稱「**申請地點**」）申請擬議綜合發展（「分層住宅」、「社會福利設施（安老院）」及「商店及服務行業」用途），並略為放寬地積比率及建築物高度限制（下稱「**擬議發展**」）。

申請地點面積約為17,990.9平方米，並於《古洞南分區計劃大綱核准圖編號S/NE-KTS/22》（下稱「**大綱圖**」）上被劃作「綜合發展區」地帶。申請地點位於該「綜合發展區」地帶的區(a)，建築物高度限制為主水平基準以上41米、住用部分地積比率限制為1.23，以及非住用部分的地積比率限制為0.18（相等於總地積比率為1.41）。

擬議發展包括七棟建築物，包括四棟9至10層高的住宅大樓、一棟1層樓高的商店、一棟4層高的安老院及一座三層高的停車場兼會所。總建築面積約30,440平方米。擬議發展落成後將為當區居民提供334個住宅單位、一個設有100個床位的安老院以及零售服務。

擬議發展具備充分的理據，包括並不止於：

- 擬議發展可增加香港房屋供應；
- 擬議發展能滿足香港對安老院舍日益增長的需求；
- 擬議發展能與古洞北新發展區發揮協力效應；
- 擬議發展符合「綜合發展區」地帶的規劃意向；
- 擬議發展與周邊的發展密度屬相兼容；
- 擬議發展能帶來規劃裨益和設計優點；
- 擬議放寬建築物高度限制是合理且具備理據的；及
- 擬議發展不會在各技術層面上造成負面影響。

基於以上擬議發展的規劃理據，我們懇請城規會批准是次規劃申請。

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1 INTRODUCTION

1.1 Purpose of the Application

1.1.1 On behalf of *Fonnie Holdings Limited* ("**the Applicant**"), this planning application serves to seek permission from the Town Planning Board ("**the Board**") under Section 16 of the Town Planning Ordinance ("**the Ordinance**") for the proposed comprehensive development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly) ("**RCHE**")', 'Shop and Services' uses) with minor relaxation of plot ratio ("**PR**") and building height ("**BH**") restrictions ("**the Proposed Development**") at Lots 1124 RP, 1125 RP and 1126 in D.D. 92 and Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories ("**the Application Site**").

1.1.2 The Application Site is the subject of a previous Section 12A application (No. Y/NE-KTS/13), which was agreed by the Town Planning Board on 10.12.2021 (hereafter referred to as "**the approved Section 12A application**"). The approved Section 12A application was to divide the "Comprehensive Development Area" ("**CDA**") zone into Area (a) and Area (b) for phased development while relaxing the respective maximum PR, BH and site coverage ("**SC**") restrictions to allow for a higher development intensity, including domestic flats and non-domestic uses for retail facilities and a RCHE.

1.1.3 The Applicant intends to initiate the development of Area (a) under the current application to facilitate the implementation of the "CDA" site. The Application Site covers an area of about 17,990.9m^2 and falls within Area (a) of the "CDA" zone on the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22 ("**the OZP**"). According to the Notes of the OZP for the "CDA" zone, the proposed 'Flat', 'Social Welfare Facility' and 'Shop and Services' are Column 2 uses which require permission from the Board. As stipulated on the OZP, Area (a) is subject to a maximum BH restriction of 41mPD, a maximum domestic PR of 1.23 and a maximum non-domestic PR of 0.18 (equivalent to a total PR of 1.41).

1.1.4 Considering the evolving context of the Kwu Tung area and the upcoming operation of the Kwu Tung MTR Station, the Applicant aims to capitalise on this opportunity by implementing the "CDA" zone as soon as possible. With minor relaxation of PR to 1.692 and BH to 45.25mPD, this initiative will not only contribute to the housing supply but also provide more spacious and high-quality flats in Kwu Tung South, ultimately benefiting future residents.

1.2 Structure of the Planning Statement

1.2.1 In support of this planning application, this Planning Statement is structured into six chapters for the consideration of the Board. **Chapter 1** introduces the purpose of the current application and provides background information of the application. **Chapter 2** details the current land use characteristics and the surrounding developments of the Application Site. **Chapter 3** provides an overview of the planning context for the Application Site. **Chapter 4** discusses the development proposal, including the design and technical considerations. Justifications for approval to the application are provided in **Chapter 5** and a summary of the submission is provided in **Chapter 6**.

2 THE APPLICATION SITE AND SURROUNDINGS

2.1 The Application Site

2.1.1 The Application Site is located at a corner site abutting Hang Tau Road to its north and east in Hang Tau Tai Po. The Application Site covers a total area of about 17,990.9m^2, comprising private lots owned by the Applicant, including Lots 1124 RP, 1125 RP and 1126 in D.D. 92 and Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 (about 17,701.2m^2) and adjoining Government Land of about 289.7m^2, as shown in **Figure 2.1** below.

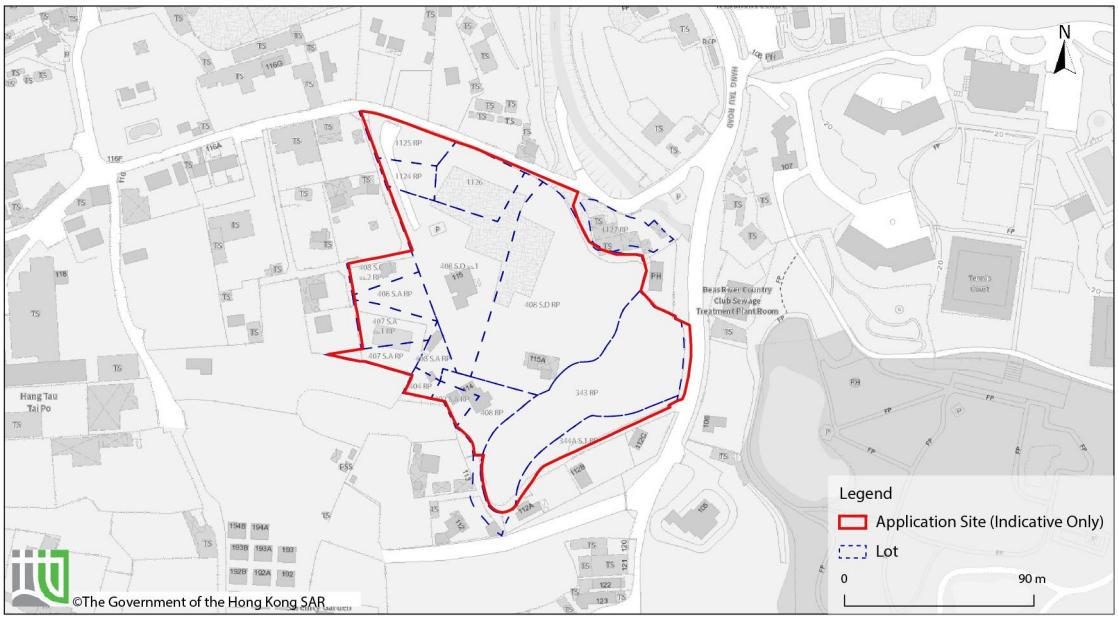


Figure 2.1 Location Plan (*Source: GeoInfo Map*)

2.2 Site Surroundings

2.2.1 The Application Site is mainly rural in nature and is surrounded by diverse types of developments and uses, predominantly residential developments, open storage and agricultural land. **Figure 2.2** below shows the location and surroundings of the Application Site.

2.2.2 To the immediate east of the Application Site is the Drainage Services Department Hang Tau Sewage Pumping Station, which is zoned as "Government, Institution or Community" ("**G/IC**"). To the further east of the Application Site across the Hang Tau Road is Hong Kong Jockey Club Beas River Country Club which is a private clubhouse without any covering OZPs.

2.2.3 To the south of the Application Site is a group of residential dwellings zoned "Residential (Group D)" ("**R(D)**") and "R(D)1" with a maximum PR of 0.4 and maximum BH of 3 storeys (9m). To the further south are clusters of houses falling within "Village Type Development" ("**V**") zone with a BH restriction of 3 storeys (8.23m) or the existing BH.

2.2.4 To the immediate west of the Application Site is a cluster of residential dwellings, open storage yards and carparks, which are zoned "R(D)" and subject to a maximum PR of 0.4 and maximum BH of 3 storeys (9m). In a wider context, agricultural land zoned as "Agriculture" ("**AGR**") and "Green Belt" ("**GB**") are located to the further southwest and west of the Application Site.

2.2.5 Similarly, to the north of the Application Site is a cluster of residential dwellings, open storage yards and carparks zoned "AGR".

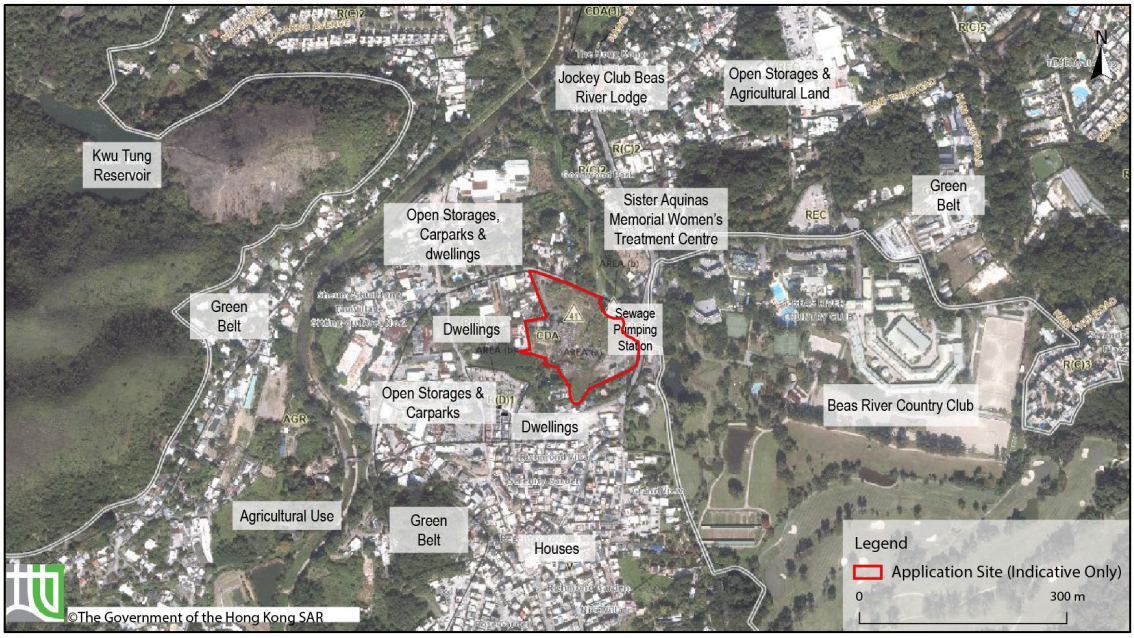


Figure 2.2 Surroundings of the Application Site (*Source: GeoInfo Map*)

2.3 Existing Accessibility of the Application Site

2.3.1 The Application Site is mainly served by Hang Tau Road, which provides existing access to both parcels of private land, branches off from Kam Hang Road and Kwu Tung Road, then to Castle Peak Road (Kwu Tung Section) and Fanling Highway (**Figure 2.3** refers).

2.3.2 Castle Peak Road (Kwu Tung Section) to San Tin is the local distributor providing east-west connection between Kwu Tung and Sheung Shui areas. Kwu Tung Road is a single two-lane local distributor providing local connection between Kwu Tung and San Tin areas. Its eastern end connects with Castle Peak Road (Kwu Tung Section), whilst its western end connects with Castle Peak Road (San Tin Section).

2.3.3 Hang Tau Road is a single two-lane local distributor widened from a single track access road. It connects Kam Hang Road and Kwu Tung Road at the northern end and provides the vehicular access to and from the Application Site and the Kwu Tung South area. The local access roads branched-off from Hang Tau Road in the south are currently serving the accesses of the scattered low-rise village houses in the Hang Tau Tai Po area.

2.4 Existing Public Transport Services

2.4.1 The Application Site is situated about 4 km away from Sheung Shui MTR Station. The planned Kwu Tung MTR Station along the Northern Link, which is located about 2.5km away from the Application Site, will come into operation in around 2027 to provide infrastructural support to the Kwu Tung North New Development Area ("**NDA**") (**Figure 2.3** refers).

2.4.2 The area in the vicinity of the Application Site is only served by a Green Minibus ("**GMB**") service i.e. route no. 50K, providing service along Hang Tau Road from Sheung Shui MTR Station.

2.4.3 Other than the GMB route no. 50K, there is also a GMB service route no. 50A and a franchised bus route no. 76K providing services for Kwu Tung area. However, the walking distance from the Application Site to the nearest 50A GMB stop and bus stop is about 1 km (**Figure 2.4** refers).

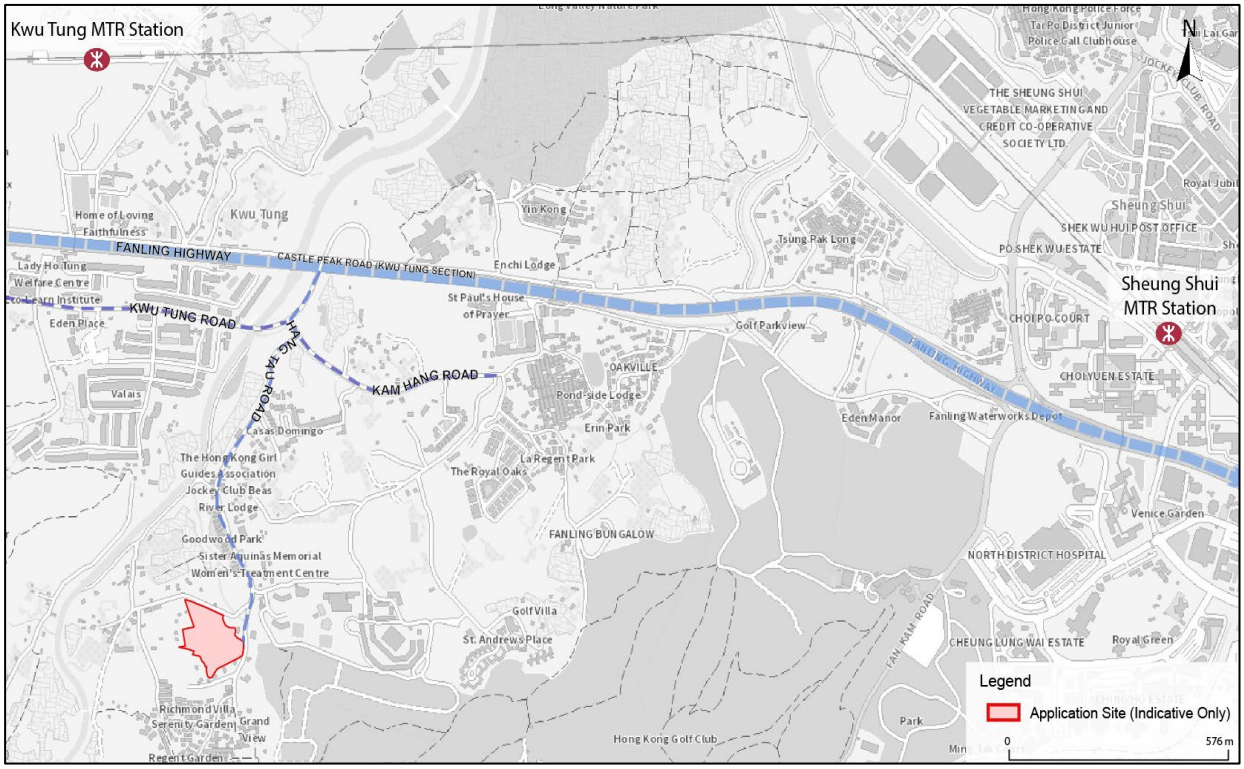


Figure 2.3 Existing Accessibility of the Application Site (*Source: GeoInfo Map*)

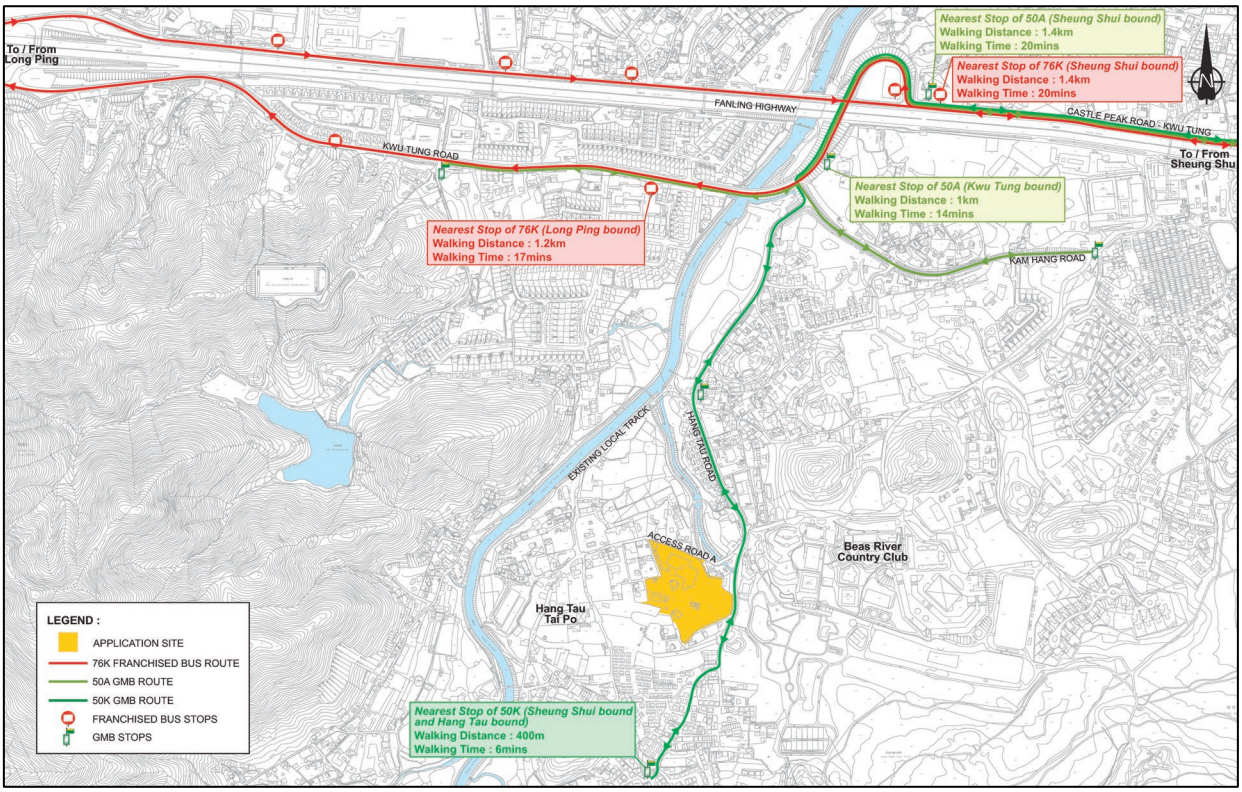


Figure 2.4 Existing Public Transport Services (*Source: Drawing 3.2 of Appendix 2 TIA*)

3 PLANNING CONTEXT

3.1 Statutory Planning Context

3.1.1 The Application Site falls within Area (a) of "CDA" zone on the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22 ("**the OZP**") (**Figure 3.1** refers). The planning intention of the subject "CDA" zone is for comprehensive development/redevelopment of the area for residential uses with the provision of open space and other supporting facilities. This zoning is to facilitate appropriate planning control over the development mix, scale, design and layout of development, taking account of various environmental, traffic, infrastructure and other constraints.

3.1.2 According to the Notes of the OZP for the "CDA" zone, the proposed 'Flat', 'Social Welfare Facility (RCHE)' and 'Shop and Services' are Column 2 uses which require permission from the Board.

3.1.3 The subject "CDA" zone is divided into two parts, i.e. Area (a) and Area (b), with different development restrictions. As stipulated on the OZP, Area (a) is subject to a BH restriction of 41mPD with a maximum domestic PR of 1.23 and a non-domestic PR of 0.18 (equivalent to a total PR of 1.41). According to the Remarks of the "CDA" zone, it is stated that based on the individual merits of a development proposal, minor relaxation of the PR and/ or BH restrictions may be considered by the Board on application under Section 16 of the Ordinance.

3.1.4 Hence, this application is submitted under Section 16 of the Ordinance to seek permission for a proposed comprehensive development with minor relaxation of PR restriction from 1.41 to 1.692 and BH restriction from 41mPD to 45.25mPD at the Application Site.

3.1.5 In addition, as stated in paragraphs 9.1.9 and 9.1.10 of the Explanatory Statement ("**ES**") of the OZP, 'future developments in the Application site should be set back to make allowance for future widening of Hang Tau Road, such as provision of standard footpaths and 7.3m wide single two-way carriageway in accordance with the requirements of Hong Kong Planning Standards and Guidelines ("**HKPSG**")'.

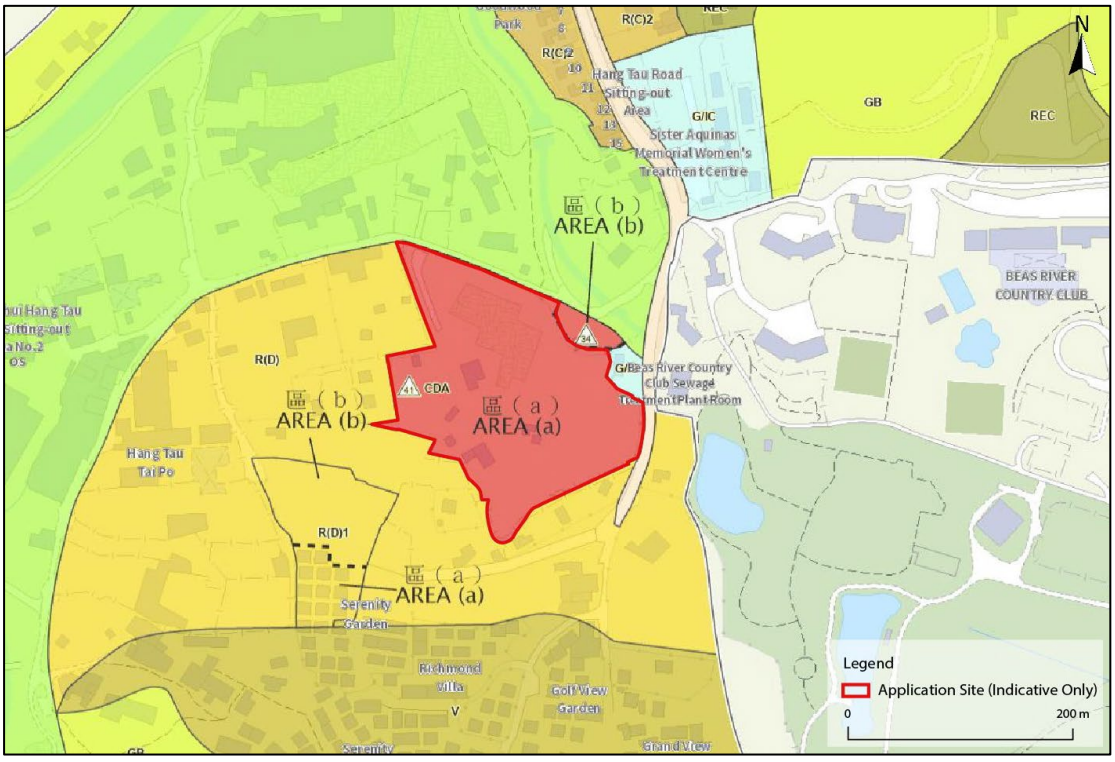


Figure 3.1 **Extract of the OZP** (*Source: Statutory Planning Portal 3*)

3.2 Previous Application at the Application Site

3.2.1 The Application Site is covered by two previous Section 12A applications (No. Y/NE-KTS/5 and No. Y/NE-KTS/13) and a previous Section 16 application (No. A/NE-KTS/465).

3.2.2 The latest Section 12A application No. Y/NE-KTS/13 was to divide the "CDA" zone into Area (a) and Area (b) for phased development while relaxing the respective maximum PR, BH, and SC restrictions to allow for a higher development intensity, including domestic flats and non-domestic uses such as retail facilities and a RCHE. This Section 12A application was agreed by the Rural and New Town Planning Committee ("**RNTPC**") of the Board on 10.12.2021, with the subsequent statutory amendment to the OZP to reflect the new development restrictions as proposed by the same Applicant.

Application No.	Location	Applied Uses	Parameters	Decision Date
Y/NE-KTS/13	Lots 1124 RP, 1125 RP, 1126 and 1127 RP (Part) in D.D. 92, Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories	To amend the Notes for the "CDA" zone on the draft Kwu Tung South Outline Zoning Plan No. S/NE-KTS/17	Do-PR: 1.23 Non-do PR: 0.18 BH: not more than +40.3mPD	Agreed (10/12/2021)
A/NE-KTS/465	Lots 1124 RP, 1125 RP, 1126 and 1127 RP (Part) in D.D. 92, Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories	Proposed House Development and Minor Relaxation of PR and SC Restrictions	Do-PR: 0.48 Do BH: not exceeding 11.5 m SC: 22%	Approved with conditions (19/07/2019)
Y/NE-KTS/5	Lots 1124RP, 1125RP and 1126 in D.D.92 and Lots 343RP, 344AS.1RP(Part), 402 S.ARP, 404RP, 407S.ARP, 407S.Ass.1RP, 408S.ARP, 408S.Css.2RP, 408S.Dss.1, 408RP and 408S.DRP in D.D.94, Hang Tau Tai Po, Sheung Shui, New Territories	Rezoning from "REC" to "CDA"	PR: 0.4 SC: 20% BH: 3 Storeys	Agreed (07/12/2012)

3.3 Similar Applications

3.3.1 There is a similar application (No. A/NE-KTS/506) at Lot 2579 in D.D.92, Kwu Tung South, Sheung Shui, New Territories, which is located within "CDA(1)" zone on the same OZP. It was for a proposed comprehensive development with minor relaxation of PR from 3 to 3.059 (+0.059 or +1.97%) and BH restriction from 75mPD to 81.5mPD (+6.5m or +8.67%). Approval with condition(s) from the Board was granted on 26.8.2022.

4 DEVELOPMENT PROPOSAL

4.1 Traffic Arrangement under the Approved Section 12A Application

4.1.1 Under the approved Section 12A Application No. Y/NE-KTS/13, the eastern boundary of Area (a) along Hang Tau Road was proposed to be set back for the widening of Hang Tau Road with provision of footpath, roundabout and pedestrian crossing, whereas a GMB layby was proposed to the north of the Application Site along Hang Tau Road (**Figure 4.1** below refers). The Applicant would hand over the setback area to the Government upon request by the Government.

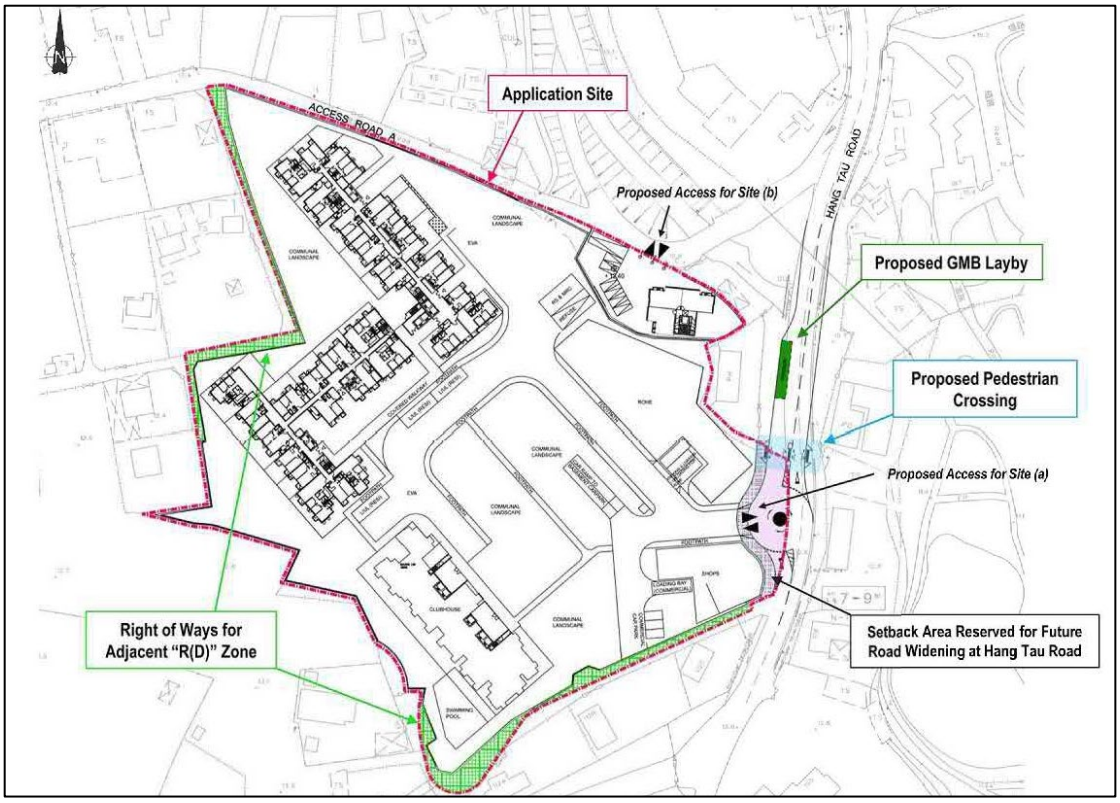


Figure 4.1 Proposed Traffic Arrangement under Previous Section 12A Application
(*Source: Drawing Z-3 from RNTPC Paper No. Y/NE-KTS/13C*)

4.1.2 Prior to the submission of this application, the Applicant submitted a preliminary development scheme that adopted the same traffic arrangements as agreed and committed under the approved Section 12A application for the review of government departments. The Transport Department ("**TD**") subsequently requested that, in view of traffic-safety concerns, the proposed access to the Proposed Development should be modified to a priority T-junction, and that both the turnaround facility and the GMB layby be relocated within the Application Site.

4.2 Revised Traffic Arrangement under Current Application

4.2.1 The traffic arrangement under the current Application has been revised, taking into account the request from the TD. As compared to the development scheme under the approved Section 12A Application, while the site area of the Application Site remains unchanged, the intersection of the access to the Proposed Development and existing Hang Tau Road is converted from a mini-roundabout into a priority T-junction, as shown in **Figure 4.2** below. Besides, a further setback of the Application Site is proposed for the relocation of the GMB layby and vehicle turnaround facility from Hang Tau Road within the Application Site. A passenger shelter will also be provided at the proposed GMB layby for public benefit. The passenger shelter will be handed over to the Government as part of the public transport facility upon completion of construction.

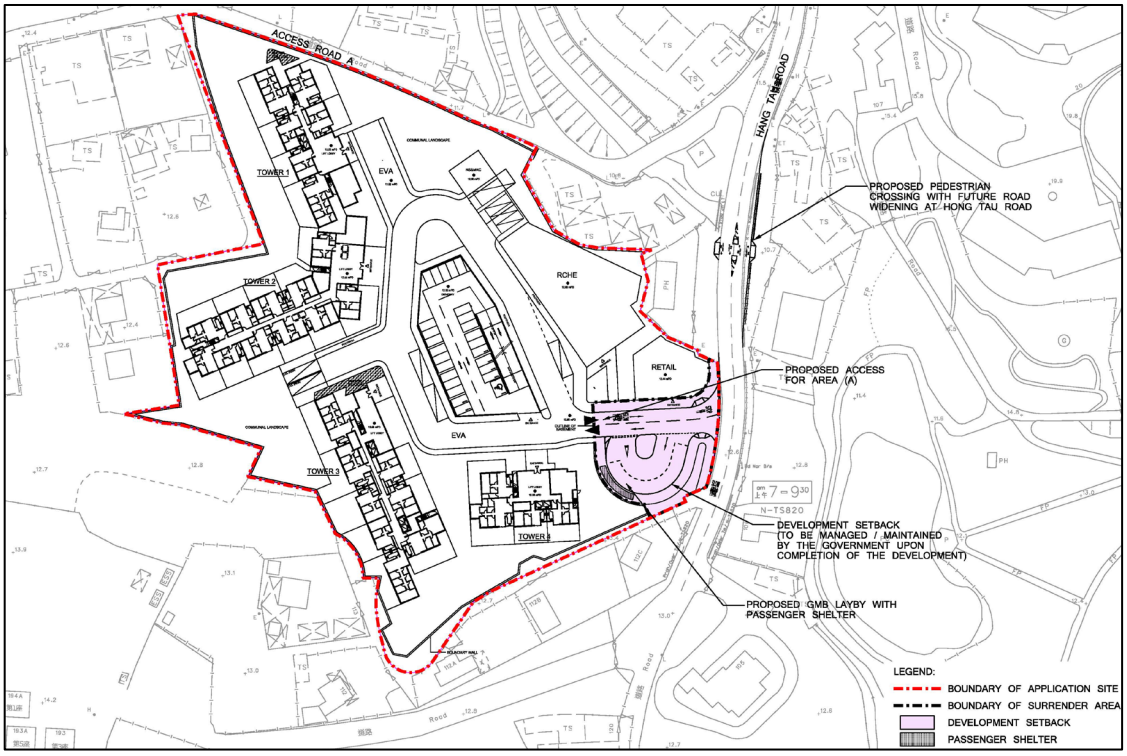


Figure 4.2 Proposed Traffic Arrangement under the Current Application
(*Source: Figure 2.1 of Appendix 2 TIA*)

4.3 Major Development Parameters of Current Application

4.3.1 The Application Site covers an area of about 17,990.9m^2 (including about 289.7m^2 of government land). Taking into account the revised scheme due to the request from the TD as discussed in Section 4.1, the setback area of about 1,076m^2 will be surrendered to the government upon completion of the land administration process at a later stage after planning approval.

4.3.2 With an overall PR of about 1.692, the Proposed Development comprises a domestic GFA of 26,554m^2 and a non-domestic GFA of 3,886m^2 in total for the retail and RCHE facilities. The Proposed Development consists of four blocks of residential towers ranging from 9 to 10 storeys, with a maximum BH (at main roof level) of 45.25mPD. With an average unit size of about 79.5m^2, the Proposed Development would provide a total of 334 units. Based on a Person-Per-Flat ratio of 2.8, it is estimated that the Proposed Development would accommodate a population of about 936 persons.

4.3.3 Taking into account the needs of future residents and the wider community, one block of 4-storey RCHE serving 100 bed places and one block of retail shop would be provided within the Proposed Development.

4.3.4 In addition, the composite block of clubhouse and car park, consisting of a 2-storey above-ground car park and a basement car park, is located in the centre courtyard of the Proposed Development. The GFA of the clubhouse and the two-storey above-ground car park is exempt from the GFA calculations[1]. A total of 198 nos. of parking spaces and loading/unloading bays will be provided for the Proposed Development in accordance with the HKPSG requirement and the ancillary requirement for RCHE of the Social Welfare Department, as adopted in the previous Section 12A Application.

4.3.5 The major development parameters of the Proposed Development are detailed in **Table 4.1** below. The proposed use of each block is summarised in **Table 4.2**. Architectural drawings, including Master Layout Plan ("**MLP**") and Section Plans are enclosed in **Appendix 1**.

Table 4.1 Major Development Parameters

Proposed Development	
Site Area^	About 17,990.9m^2 - including government land of about 289.7m^2
	Area to be surrendered: about 1,076m^2
PR*	About 1.692 - Domestic PR: 1.476 - Non-domestic PR: 0.216
GFA*	About 30,440m^2 - Domestic GFA: 26,554m^2 - Non-domestic GFA for retail: 319m^2 - Non-domestic GFA for RCHE (100 bed places): 3,567m^2 - Non-domestic GFA for Clubhouse: 1,044m^2 (Exempted)
Maximum BH	45.25mPD
BH of Each Block	- Residential Tower 1: 42.10mPD - Residential Tower 2: 45.25mPD - Residential Tower 3: 45.25mPD - Residential Tower 4: 42.10mPD - Ancillary Clubhouse with Carpark: 26.55mPD - Retail Block: 17.55mPD - RCHE: 28.55mPD
No. of Storeys#	- Residential Tower 1: 9 - Residential Tower 2: 10 - Residential Tower 3: 10 - Residential Tower 4: 9 - Ancillary Clubhouse with Carpark: 3 - Retail Block: 1 - RCHE: 4

[1] According to the 'GFA Exemption Arrangement for Aboveground Parking Spaces in Private Development' promulgated in September 2025, not more than two aboveground carparking floors may be 100% disregarded from GFA calculation. https://www.landsd.gov.hk/doc/en/practice-note/lpn/PN%209_2025.pdf

No. of Blocks	Total 7 - Residential Towers: 4 - Ancillary Clubhouse with Carpark: 1 - Retail: 1 - RCHE: 1
Site Coverage ("SC")	Overall not more than 40% - Domestic SC: no more than 23% - Non-domestic SC: not more than 17%
No. of Flats	334
Average Flat Size	79.5m^2
Design Population@	936 persons
Open Space Provision	About 1,340m^2
Site Coverage of Greenery	Not less than 25%
Parking Space Provision	Residential Use - Residents: 160 - Visitors: 20 (including 3 accessible) - Motorcycle: 3 - Loading/Unloading&: 4
	Retail Use - Private Car: 2 - Loading/Unloading: 1
	RCHE - Private Car: 5 (including 1 accessible) - Private Light Buses: 2 - Loading/Unloading: 1

^ Including about 1,076m^2 to be surrendered for the proposed GMB Layby.
* The ancillary residential clubhouse and aboveground carpark are excluded from PR and GFA calculations.
# Excluding the basement carpark.
@ Design population is based on a Person-Per-Flat ratio of 2.8.
& Not including one for Refuse Collection Vehicle.

Table 4.2 Proposed Use of Each Block

Nature of Blocks	Proposed Use
Residential Towers 1 – 4	Residential Use
RCHE Block	Social Welfare Facility Use (RCHE)
Retail Block	Shop and Services Use
Composite Block	B1/F – Car Park G/F – Car Park 1/F – Car Park & Club House 2/F – Club House

4.4 Design Considerations

4.4.1 With full consideration of site-specific characteristics, the Proposed Development incorporates various responsive designs to ensure the creation of a quality and harmonious development to respect the surrounding environment.

Building Separation

4.4.2 The building separation of the Proposed Development will comply with the requirements of PNAP APP-152 for Sustainable Building Design Guidelines ("**SBDG**") to improve air ventilation and enhance the environmental quality.

4.4.3 In order to improve air ventilation within the Application Site and the surrounding neighbourhood, an approximately 17m building separation is proposed between residential Tower 2 and Tower 3, enhancing airflow and promoting a more comfortable local environment for residents.

Setback for Future Widening of Hang Tau Road

4.4.4 In response to the Explanatory Statement of the OZP, the Proposed Development has adopted a sufficient setback from the eastern site boundary for the future road widening of Hang Tau Road to fulfil the provision of 3m footpath and 7.3m wide single two-way carriageway in accordance with the requirements of HKPSG (**Figure 4.3** below refers).

Stepping Building Profile

4.4.5 The domestic blocks of the Proposed Development adopt a stepping profile, minimising their monolithic appearance through graduated height reductions. This approach effectively reduces the visual impact of the structures and mitigates the 'wall effect' associated with large development.

4.4.6 By breaking down the building massing, the stepping design allows the Proposed Development to blend harmoniously with the surrounding neighbourhood, promoting a cohesive and integrated urban landscape environment.

Building Footprint of RCHE

4.4.7 In formulating the MLP, careful consideration was given to the building deposition and interface treatment for the RCHE block. Considering the potential noise generated from Hang Tau Road and the operation of the sewage pumping station for Hang Tau Village, which is located to the immediate east of the Application Site, the footprint of the RCHE block has been reduced compared with the approved Section 12A application. This is to ensure sufficient distance from Hang Tai Road and the sewage pumping station to minimise noise disturbance on the RCHE. The reduced footprint of the RCHE has also dedicated a more welcoming open space on the ground level.

Increased Number of Flats and Average Flat Size

4.4.8 The Applicant is committed to providing high-quality and spacious flats for the Kwu Tung area. With the minor relaxation of PR and BH restrictions, the Proposed Development can offer an additional 32 flats compared to the approved Section 12A application. The average flat size has also increased from a previous 73.14m² to the current proposed 79.5m², reflecting a focus on more generous living spaces that cater to the needs of families and individuals in the community.

4.5 Traffic and Transport Considerations

4.5.1 A Traffic Impact Assessment ("**TIA**") (**Appendix 2**) has been conducted to assess the potential traffic impacts associated with the Proposed Development. With the following improvement proposals, the TIA concluded that no adverse traffic impact will be brought by the Proposed

Development to the surrounding road network and is considered acceptable from the traffic engineering point of view.

Junction Capacity

4.5.2 According to the junction assessment of the TIA, together with the Kam Hang Road improvement scheme as proposed in the approved rezoning application nos. Y/NE-KTS/12 and Y/NE-KTS/14, all identified junctions and road links could operate within adequate capacities during both morning and evening peak periods in the Design Scenario of year 2034.

Improvement for Pedestrian Crossing

4.5.3 Currently, there are no proper pedestrian crossing facilities along Hang Tau Road near the Application Site. To enhance pedestrian accessibility and safety, an improvement scheme with the provision of a proper pedestrian crossing at Hang Tau Road was proposed in the previous scheme of the approved Section 12A application. Such pedestrian improvement measure has been included in the current application, as shown in **Figure 4.3** below.

Proposed Public Transport Facility

4.5.4 As previously discussed in Sections 4.1 and 4.2, traffic arrangements have been further revised as compared to the previously approved Section 12A application in response to the request of the TD.

4.5.5 Given that the current public transport service for the Hang Tau Tai Po area is limited to one GMB route no. 50K only, and there is absent of proper layby along Hang Tau Road, the proposed layby under the revised road widening scheme would serve future enhancement of public transport service (i.e. increase of GMB route) for the existing and future residents in the area. Meanwhile, the proposed vehicle turnaround facility by setting back the development would facilitate a proper turnaround facility to allow GMB turns around without the need of passing through the narrow roads in Hang Tau Village.

4.5.6 In response to the comments from the Commissioner for Transport on the approved Section 12A application, the road widening scheme has been further reviewed and amended under the current application to fulfil the requirement that GMB layby should be 26m long to accommodate 3 GMBs (as shown in **Figure 4.3** below). A passenger shelter will also be provided at the proposed GMB layby for public benefit. The passenger shelter will be handed over to the Government as part of the public transport facility upon completion of construction.

4.5.7 Notwithstanding the above changes, road widening of Hang Tau Road section abutting the Application Site for a 7.3m carriageway with a 3m footpath alongside remains in the revised scheme.

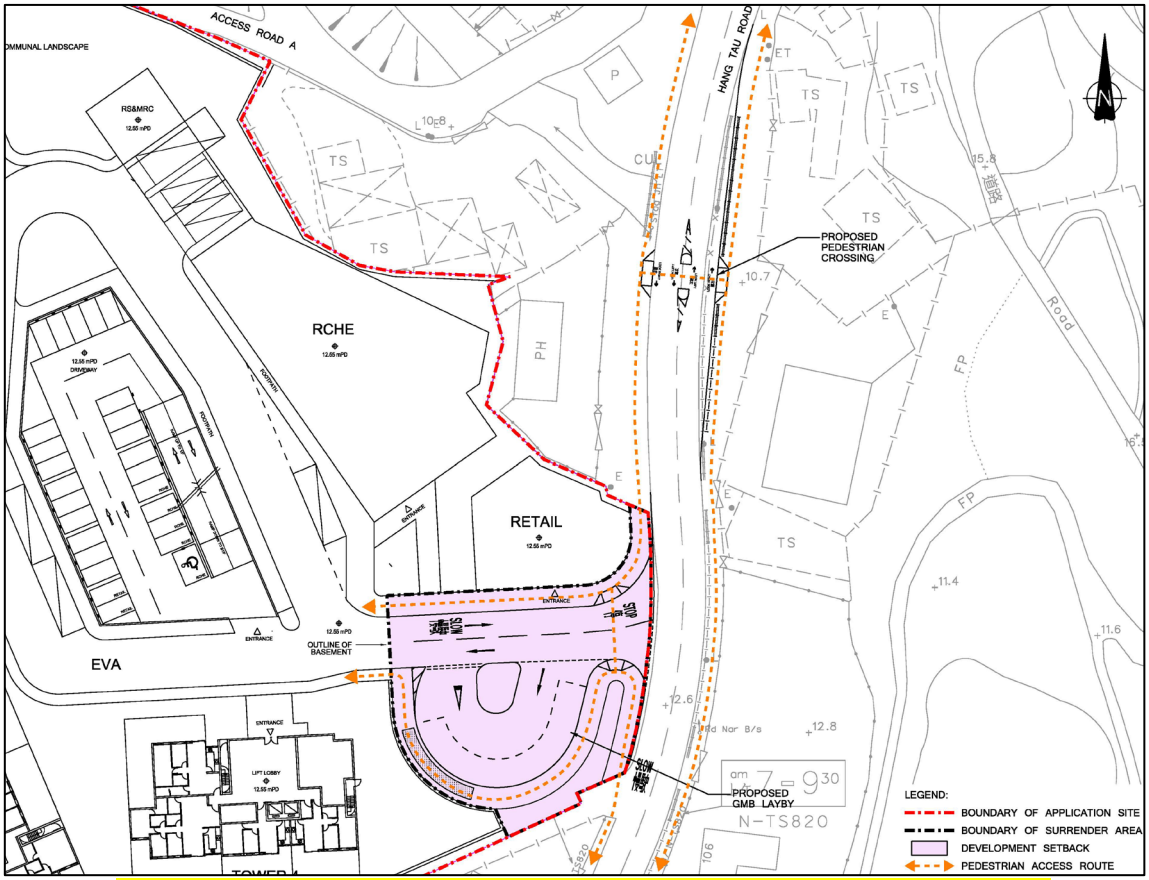


Figure 4.3 Proposed Pedestrian Crossing and Setback for Road Widening
(*Source: Drawing 2.3 of Appendix 2 TIA*)

4.6 Environmental Considerations

4.6.1 An Environmental Assessment ("**EA**") has been prepared to identify the potential environmental impacts arising from and upon the proposed development and propose possible mitigation measures, as necessary to demonstrate the environmental acceptability of the Proposed Development at the Application Site (**Appendix 3** refers).

Noise

4.6.2 Traffic noise impact has been assessed based on the projected peak hour flows for the worst year within 15 years from the day of occupancy. The assessment results concluded that the predicted traffic noise levels at all noise sensitive receivers ("**NSRs**") would comply with the HKPSG standard of 70dB(A). Hence, no adverse road traffic noise impact is anticipated.

4.6.3 As for the fixed noise arising from the operation of the sewage pumping station for Hang Tau Village and an open storage area of construction equipment, the assessment results demonstrated that no adverse noise impact associated with the fixed noise source of sewage pumping station and open storage area of construction equipment upon the Proposed Development is anticipated.

4.6.4 If necessary, fixed glazing will be applied to the façade facing the concerned fix noise source or noise barrier will be proposed between the concerned fix noise source and the RCHE along the site boundary in order to comply with the noise criteria stipulated in the Noise Control Ordinance.

Air Quality

4.6.5 With the implementation of these good practice and measures, no adverse air quality impact arising from the construction activities, transportation of dusty materials, as well as the emission of the construction plant is anticipated.

4.6.6 With the appropriate positioning of the openable window and fresh air intake and the proper design of the carpark, no adverse air quality impact due to vehicular emissions on the Proposed Development is anticipated. Moreover, as no chimney was observed during the site visits and no chimney and potential emission source will be contained within the Proposed Development, no adverse air quality impact due to industrial emissions is anticipated.

4.6.7 In terms of potential odour impacts, the sewage pumping station for Hang Tau Village is fully enclosed and equipped with odour control facilities. The licensed livestock farm located approximately 400 m north of the Application Site was not in operation, and the sewage treatment plant at the Beas River Country Club was suspended. No noticeable odour was identified during the odour patrols. As such, no adverse odour impact on the Proposed Development is anticipated.

Water Quality

4.6.8 With proper implementation of proposed mitigation measures, no adverse water quality impact is anticipated during the construction stage.

4.6.9 In term of the operational stage, no adverse impact associated with non-point source is anticipated, given that the good drainage system and best management practice will be provided. In addition, the sewerage effluent from the Proposed Development would be properly discharged to the public sewer during the operational stage. Upon the completion of the proposed upgrading works of the sewer mains, except for any section already covered by the upgrading works committed under other planned developments, there is no adverse water quality impact anticipated.

Land Contamination

4.6.10 Based on the site observation and the information obtained from historical aerial photographs and the relevant government department, no land contamination issue arising from the Application Site is anticipated.

Waste Management

4.6.11 The potential impacts of waste arising from the construction and operational stages of the Proposed Development have been assessed. With the recommended procedures/ measures in place, the construction and operational wastes generated/ disposed of as part of the Proposed Development is not expected to cause adverse environmental impacts.

4.7 Drainage Considerations

4.7.1 A Drainage Impact Assessment ("**DIA**") has been conducted to evaluate the possible impacts to the local drainage system brought by the Proposed Development (**Appendix 4** refers). It is concluded that the public drainage pipe T1/A1 to A7 are proposed to be upgraded to 750mm. (Figure 3.1 of **Appendix 4**). The assessment findings demonstrated and confirmed that the proposed drainage pipes are sufficient to cater for the estimated surface runoff from the Proposed Development. Therefore, no adverse drainage impact is anticipated from the Proposed Development.

4.7.2 The detailed arrangement of the proposed drainage system will be further investigated at the detailed design stage of the project. The detailed drainage proposal shall be submitted to the Drainage Services Department for further approval.

4.8 Sewerage Considerations

4.8.1 A Sewerage Impact Assessment ("**SIA**") has been conducted to evaluate the possible impacts on the public sewerage network due to the operation of the Proposed Development (**Appendix 5** refers). The assessment findings demonstrated that four existing sewers are incapable due to the Proposed Development. Therefore, upgrading work for the concerned pipe is required for the Proposed Development (Figures 4.1a and 4.1b of **Appendix 5**). It is concluded that the sewerage impact arising from the Proposed Development should be acceptable after the proposed upgrading of sewer works.

4.9 Landscape and Open Space Considerations

4.9.1 In formulating the landscape design of the Proposed Development, the following key landscape objectives have been considered and adopted:

- To create a distinctive landscape which responds to the existing context, the architectural scheme proposals and the future resident and visitor needs;
- To integrate the Proposed Development from a landscape and visual perspective with the existing and planned landscape context;
- To provide visual integration in views of the proposed building mass from the surroundings and provide vegetation screening and softening of the built-form in closer low-level views;
- To provide a quality, sustainable and accessible living environment for the enjoyment of the residents and visitors;
- To provide recreation spaces for the future residents; and
- To maximise opportunities for greening measures utilising tree and shrub planting and lawn and climbing plants within the new landscape.

4.9.2 The Landscape Master Plan ("**LMP**") (**Appendix 6** refers) is summarised as follows.

Tree Preservation

4.9.3 A total of 4 tree groups containing 37 nos. of existing trees were identified within the Application Site. Most of the trees were found along the periphery of the Application Site. There are no trees surveyed which meet the requirements for a potential Old and Valuable Tree ("**OVT**"). According to the Tree Preservation and Removal Proposal, 37 nos. of existing trees within the Application Site are unavoidably in conflict with the Proposed Development and are therefore proposed to be felled.

4.9.4 In compensation for the felling of trees, a total of 106 nos. of new trees will be provided within the Application Site, which is the same number of new trees as committed under the approved Section 12A application. This considerably exceeds the typically required 1:1 compensatory ratio for the 37 nos. trees to be felled.

Provision of Open Space

4.9.5 The Proposed Development has sought to provide adequate open space in accordance with the requirements of the HKPSG (i.e. 1m^2 per person based on the predicted future population). The design of the open space is based on the objective of providing high-quality active and passive recreational facilities and features that will satisfy the needs of future residents.

4.9.6 There would be a total of approximately 1,340m^2 open space provided (which consists of 1,120m^2 of passive uses and 220m^2 for active uses) for the use of future residents of the Proposed Development. Based on the design population of 936 persons, the proposed open space provision adequately satisfies the requirements for 1m^2 per person as required under the HKPSG.

Greenery Coverage

4.9.7 The landscape design aims to maximise the green area and tree planting opportunities and seeks to create an attractive external area to the Proposed Development, coordinating paving and planting design for residential entrances and open spaces with internal streetscape design to provide a unified appearance within the immediate landscape surroundings. The design also aims to create a vibrant internal landscape area with communal spaces offering a range of leisure activities for residents.

4.9.8 Given the future functional requirements of the Proposed Development scheme, particularly with requirements for traffic and pedestrian circulation and Emergency Vehicular Access at ground level, it is considered that the greening proposal has maximised the utilisation of the available greening opportunities. Overall, the Proposed Development will provide a greenery coverage of not less than 25%, which exceeds the minimum requirement of 20% as required under PNAP APP-152 for SBDG.

4.10 Visual Considerations

4.10.1 To assess the potential visual impact of the Proposed Development on the overall visual quality of the surroundings, a Visual Impact Assessment ("**VIA**") has been conducted (**Appendix 7** refers)**.**

Visual Assessment of Vantage Points

4.10.2 A total of 13 vantage points ("**VPs**") have been identified from key strategic and popular local vantage points, as well as the village area adjacent to the Application Site, in order to assess the visual impact of the Proposed Development against the Baseline Development Scheme (i.e. the approved Section 12A application). The VPs comprise public views of different ranges of sight. Some of these VPs are over a relatively short distance from the Application Site and represent visual impacts in the immediate surroundings. More distant VPs from popular areas are also illustrated to help define the nature of impacts on the wider visual context of the Application Site.

4.10.3 As demonstrated in the photomontages, there are few locations from where the Proposed Development can be seen in its entirety. In the majority of locations views of the Proposed Development are largely obscured by intervening landform, mature vegetation and built structures. In the few locations where there will be views of the Proposed Development, these are largely partial or glimpsed with a small part of the scheme being visible.

4.10.4 For most of the selected VPs, the predicted visual impacts represent negligible change as compared to the baseline condition. However, the relative assessed impacts from three VPs, which are in close proximity to the Application Site (VP6, VP7 and VP13) are considered to have a slightly adverse impact, in comparative terms.

4.10.5 As compared with the approved Section 12A application scheme, the VIA concluded that the minor increase in PR and BH will continue to respect the existing locality, and the Proposed Development is considered to be visually compatible with the surroundings.

Visual Mitigation Measures

4.10.6 Various sensitive architectural designs have been adopted in the Proposed Development to help mitigate the potential visual impacts, primarily including the deposition of residential blocks to maximise the provision of setback distance from existing road frontage along Hang Tau Road; the

stepped building height principle and the visual corridor in north-south direction to create a more subtle transition between the existing landscape and the Proposed Development; and the design of building orientation and massing to create building separations between blocks to breakdown visual scale of the Proposed Development, and avoid the creation of wall effects.

4.10.7 As detailed in Section 4.9 above, the proposed landscape measures, particularly the tree planting at the edge of the Application Site, create a landscape buffer which serves to screen views of the Proposed Development as far as possible while softening the visible portion of the Proposed Development. It also serves to enhance the sense of visual and landscape integration with its immediate context. Other measures, including the use of colour and finishes for the building facades to minimise the prominence of the Proposed Development, will be further explored at the detailed design stage

5 PLANNING JUSTIFICATIONS

5.1 Contributing to the Provision of Housing Supply in Hong Kong

5.1.1 Expedition of housing supply is always one of top priorities of Government's policy. According to the Long Term Housing Strategy, the Government aims to achieve a private housing supply target of 132,000 units for the next 10-year period from 2025-26 to 2034-35.

5.1.2 The current Proposed Development utilises the valuable land resources for a comprehensive development with a provision of 334 flats and ancillary facilities. With the minor relaxation of PR and BH restrictions, the Proposed Development contributes to the private housing supply in Hong Kong with more sizeable and quality flats, which aligns with the Government's intention on promoting quality housing supply and alleviating housing problems in Hong Kong.

5.1.3 The Proposed Development not only enhances the overall housing supply but also significantly improves the living conditions for future residents in Hong Kong. The increased average flat size reflects a focus on more generous living spaces that cater to the diverse needs of families and individuals in the community. The Proposed Development aims to enhance the overall quality of life for residents while contributing positively to the living environment.

5.2 Addressing the Rising Need for RCHE Provision in Hong Kong

5.2.1 According to the Census and Statistics Department ("**C&SD**"), 20% of the total population in Hong Kong is aged 65 years or above by the end of 2022[2]. The elderly population is estimated to increase to about 28% and 32% in 2032 and 2042 respectively.

5.2.2 The urgent demand for residential care service ("**RCS**") for the elderly is also fully reflected on the Central Waiting List for various types of subsidised residential care services for the elderly ("**the List**"). As of 31 May 2024, there are a total of 16,567 applicants being waitlisted in the List. The average waiting time is about 9 months for care and attention places and nursing home places[3].

5.2.3 In respect of the Kwu Tung South area, according to the RNTPC Paper No. 3/24 dated 10.5.2024, it is expected that there will be shortfalls in several social welfare facilities, in the Kwu Tung South area, which include elderly care facilities. According to the requirement of the HKPSG, there will be a shortfall of 146 beds for the RCHE facility.

5.2.4 The Proposed Development will provide a RCHE with 100 bed places in recognition of the demand to increase the supply of RCHEs to relieve the pressure on service demand and shorten the waiting for the much-needed care services, especially in the Kwu Tung South area, which in turn could ease the burdens on the society and the residents' family.

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[2] Census and Statistics Department, *Table 1A: Population by Sex and Age Group*, https://www.censtatd.gov.hk/en/web_table.html?id=1A

[3] Social Welfare Department, Statistics on 'Waiting list for subsidised residential care services for the elderly', 'Waiting time for residential care services' and 'Turn for placement offer for cases applying for residential care services', https://www.swd.gov.hk/storage/asset/section/1022/en/CWL/LTC%20statistics_HP-EN(202405).pdf

5.3 Maximising Synergies with Kwu Tung North NDA

5.3.1 The Northern Metropolis ("**NM**") is envisioned to be one of the main sources of future housing supply, integrating quality life, leisure, and promoting a better home-job balance and green living, etc. Located to the south of Kwu Tung North NDA, which was positioned as a 'Mixed Development Node' with a mix of residential, commercial, leisure and community facilities, the Proposed Development is strategically located to leverage these goals of the Kwu Tung area.

5.3.2 With a view to uplifting development density in the NDAs, new developments in Kwu Tung North have recently sought an increase in PR and BH restrictions for public and private housing developments, of which reaching a maximum intensity for a PR of 7.8 and BH of +180mPD. The current application, seeking to increase development intensity through minor relaxation of PR and BH restrictions for increasing housing supply, is considered in line with the long-term vision of NM in expediting housing supply and optimising the use of land resources.

5.3.3 The Proposed Development not only offers residential flats but also incorporates social welfare and retail facilities, creating an inclusive local community. By aligning with the planning visions of the NM, it maximises synergy with the Kwu Tung North NDA by offering quality residential, commercial, and social elements, ultimately enhancing the overall living experience in Kwu Tung area.

5.4 Conforming to the Planning Intentions of the "CDA" Zone

5.4.1 The planning intention of "CDA" zone is for residential uses with the provision of open space and other supporting facilities. The zoning is to facilitate appropriate planning control over the development mix, scale, design and layout of development, taking account of various environmental, traffic, infrastructure and other constraints. Through providing 334 nos. of residential flats with open space and commercial and social welfare facilities, the Proposed Development would achieve to align with the planning intention of the concerned "CDA" zone. In addition, the master layout plan and other technical assessments have demonstrated that the Proposed Development would fulfil the planning controls as stipulated on the OZP.

5.5 Compatibility with the Surrounding Development Intensity

5.5.1 The Application Site is situated in a mix of built-up and rural context, which comprises low-to-medium-rise residential developments, open storage yards and agricultural land. To the immediate south and west of the Application Site, there are clusters of dwellings and village houses with a BH restriction of 3 storeys and PR of 0.4. To the further north of the Application Site, there are three sites of "CDA" zones (i.e. "CDA(1)", "CDA(2)" and "CDA(3)") with respective development restrictions. Among the three "CDA" sites, the maximum PR and BH restrictions range from 2 to 3 and from 70mPD to 75mPD, respectively. Recently, a similar application (No. A/NE-KTS/506) was approved by the Board for minor relaxation of PR and BH restrictions to 3.059 and 81.5mPD, respectively. This approved application implies the potential of intensifying the development of the Kwu Tung South area.

5.5.2 The Proposed Development, which is located in between the higher density developments in the north and low-density village houses in the south, demonstrates a gradual transition from the north to the south of Kwu Tung South area, allowing for thoughtful integration into the surrounding environment. The Proposed Development not only respects the low-rise residential development and village houses in the south, but also does not compromise the development potential of the Application Site.

5.5.3 Moreover, as discussed and demonstrated in the VIA in **Appendix 7**, the Proposed Development will unlikely induce significant adverse effects on the visual character of the surroundings with the incorporation of mitigation measures such as building setbacks and landscape treatments. Hence, the minor increase in PR and BH of the Proposed Development should be considered compatible with its surrounding developments, and it will not set an undesirable precedent in the area.

5.6 Planning Gains and Design Merits Brought by the Proposed Development

5.6.1 The Proposed Development continues to retain the design merits proposed under the approved Section 12A application. To further enhance the living environment, the Proposed Development will also bring forth the following planning and design merits.

Traffic Improvements to Hang Tau Tai Po Area

5.6.2 Given that there is currently only one GMB route serving the Hang Tau Tai Po area, and there is absent of proper layby along Hang Tau Road, the proposed layby within the Application Site would serve future enhancement of public transport service (i.e. increase of GMB route) for the existing and future residents in the area. A passenger shelter will also be provided at the proposed GMB layby for public benefit.

5.6.3 Additionally, since there is no proper pedestrian crossing facility along Hang Tau Road, the Proposed Development has taken the opportunity to improve pedestrian accessibility by providing a pedestrian crossing near the entrance of the Application Site. This will not only improve the overall pedestrian walkability and safety of the residents but also benefit the general public of the local neighbourhood.

Air Ventilation and Visual Permeability

5.6.4 Considering the surrounding neighbourhood of low-to-medium-rise buildings, the deposition of the building blocks of the Proposed Development emphasises enhancing air ventilation and visual permeability within the Application Site to the surroundings. An approximately 17m wide building separation is proposed between residential Tower 2 and Tower 3, which allows a better southwest-to-northeast airflow direction.

5.6.5 A visual corridor in a north-south direction, along with the stepped building height design, is preserved within the Application Site for the sake of breaking down the visual scale of the Proposed Development and allowing a better visual permeability between the Proposed Development and the low-rise surroundings.

Enhancement of Open Space Provision and Landscape Treatments

5.6.6 In terms of landscape design, the Proposed Development has explored opportunities to improve the landscape and local open space for the enjoyment of residents and visitors. The provision of open space not only fulfils the requirement under the HKPSG, the design also aims to provide high-quality active and passive recreational facilities and features. Features such as seating areas, groundcover, and greenery will create a welcoming environment that encourages outdoor activities and community engagement.

5.6.7 The comprehensive landscape treatment and greening opportunities will be provided within the Proposed Development. Among which, the landscape design at the Application Site boundary intends to help integrate the Proposed Development with the surrounding context, which is characterised by a mix of low-to-medium rise buildings and agricultural land settings.

Adoption of Sustainable Building Designs

5.6.8 The Proposed Development has taken into consideration the requirements under the PNAP APP-152 for SBDG to achieve a quality and sustainable built environment. As discussed in Chapter 4, the Proposed Development adopts sufficient building setbacks from the eastern Application Site boundary to allow road widening of Hang Tau Road, and that no part of any building of the Proposed Development will be built within 7.5m from the centreline of Hang Tau Road. An approximately 17m wide building separation is proposed to allow air ventilation and visual permeability within the Application Site to the surrounding area. Furthermore, the site coverage of greenery of not less than 25% would be provided to reduce the heat absorption of the building and hence improve the micro-climate of the neighbourhood.

5.7 Relaxation in BHR is Considered Reasonable and Justifiable

Compensation for the reduction in developable site area

5.7.1 As discussed in Sections 4.1 and 4.2, the revised traffic arrangements in response to the TD's requirements reduce the net developable area available for the Proposed Development. The proposed minor relaxation in the BHR for the Proposed Development is considered an unavoidable consequence of the Transport Department's requirement to relocate the roundabout and the GMB layby within the Application Site, thus necessitating compensation through vertical development to achieve the intended GFA and functional mix. The Proposed Development has incorporated design measures that will mitigate visual and environmental impacts and to ensure the increased BH integrates sensitively with the surrounding context.

Accommodation of the above-ground car park

5.7.2 As set out in the 2025 Policy Address, the Government allows full GFA exemption for no more than two levels of aboveground carparks in private developments, while doing away with the prerequisite of constructing some of the carparks underground. As a direct response to this policy initiative, the proposed minor relaxation of BHR is justified as it would reduce the need for extensive excavation and complex basement works, resulting in shorter construction programmes and expediting the completion of the Proposed Development.

5.8 No Adverse Impacts on Technical Aspects

5.8.1 Various technical assessments have been prepared and demonstrated that the Proposed Development is technically feasible and would not generate insurmountable impacts on the following aspects.

Traffic

5.8.2 As concluded in the TIA (**Appendix 2**), the future traffic induced by the Proposed Development can all be absorbed by the surrounding road network with the road improvement scheme which was already proposed by others.

5.8.3 Besides, the arrangements of vehicular access as well as provisions of internal transport facilities are justified for the Proposed Development, while the proposed improvement for pedestrian crossing at Hang Tau Road and the provision of GMB layby (within the Application Site) as enabled by the proposed MLP are considered beneficial to the general public.

Environmental

5.8.4 Various environmental assessments, including EA (**Appendix 3**), DIA (**Appendix 4**) and SIA (**Appendix 5**), concluded that the Proposed Development is technically acceptable and will not be susceptible to generate adverse impacts to the surroundings in terms of noise level, air quality, water quality, land contamination, waste management, drainage and sewerage perspectives.

Landscape

5.8.5 As demonstrated in the LMP (**Appendix 6**), the Proposed Development will provide a total of 106 nos. of new trees, significantly exceeding the required 1:1 compensatory ratio for the 37 nos. of trees to be felled, therefore minimising the potential landscape impact. Various landscape treatments, including at-grade shrub planting, vertical greening at boundary walls, and open space provision, are also proposed to ensure the Proposed Development would be incorporated harmoniously with the surrounding environment.

Visual

5.8.6 The VIA (**Appendix 7**) concluded that the Proposed Development will largely be screened off from most of the VPs. With the adoption of responsive mitigation measures such as provision of building setbacks and landscape measures, the Proposed Development would not significantly detract from the existing landscape and visual amenity of the local area; hence, it is considered visually acceptable and compatible with the surrounding context.

6 CONCLUSION

6.1.1 This Planning Statement is submitted to the Board in support of the proposed comprehensive development ('Flat', 'Social Welfare Facility (RCHE)' and 'Shop & Services' uses) with minor relaxation of PR and BH restrictions in the Area (a) of the "CDA" zone on the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22 at Lots 1124 RP, 1125 RP and 1126 in D.D. 92 and Lots 343 RP, 344A S.1 RP (Part), 402 S.A RP, 404 RP, 407 S.A RP, 407 S.A ss.1 RP, 408 S.A RP, 408 S.C ss.2 RP, 408 S.D ss.1, 408 S.D RP and 408 RP in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories.

6.1.2 The Proposed Development comprises a total of seven blocks, including four 9-10-storey residential towers, one 1-storey retail block, one 4-storey RCHE and one 3-storey carpark cum clubhouse block. With the minor relaxation of PR restriction from 1.41 to 1.692 and BH restriction from 41mPD to 45.25mPD, the Proposed Development would have a total gross floor area of about 30,440m^2. Upon completion, the Proposed Development will provide a total of 334 nos. of residential flats, an RCHE of 100 bed places, and a retail shop serving the local residents.

6.1.3 The Proposed Development is well justified on the following grounds:

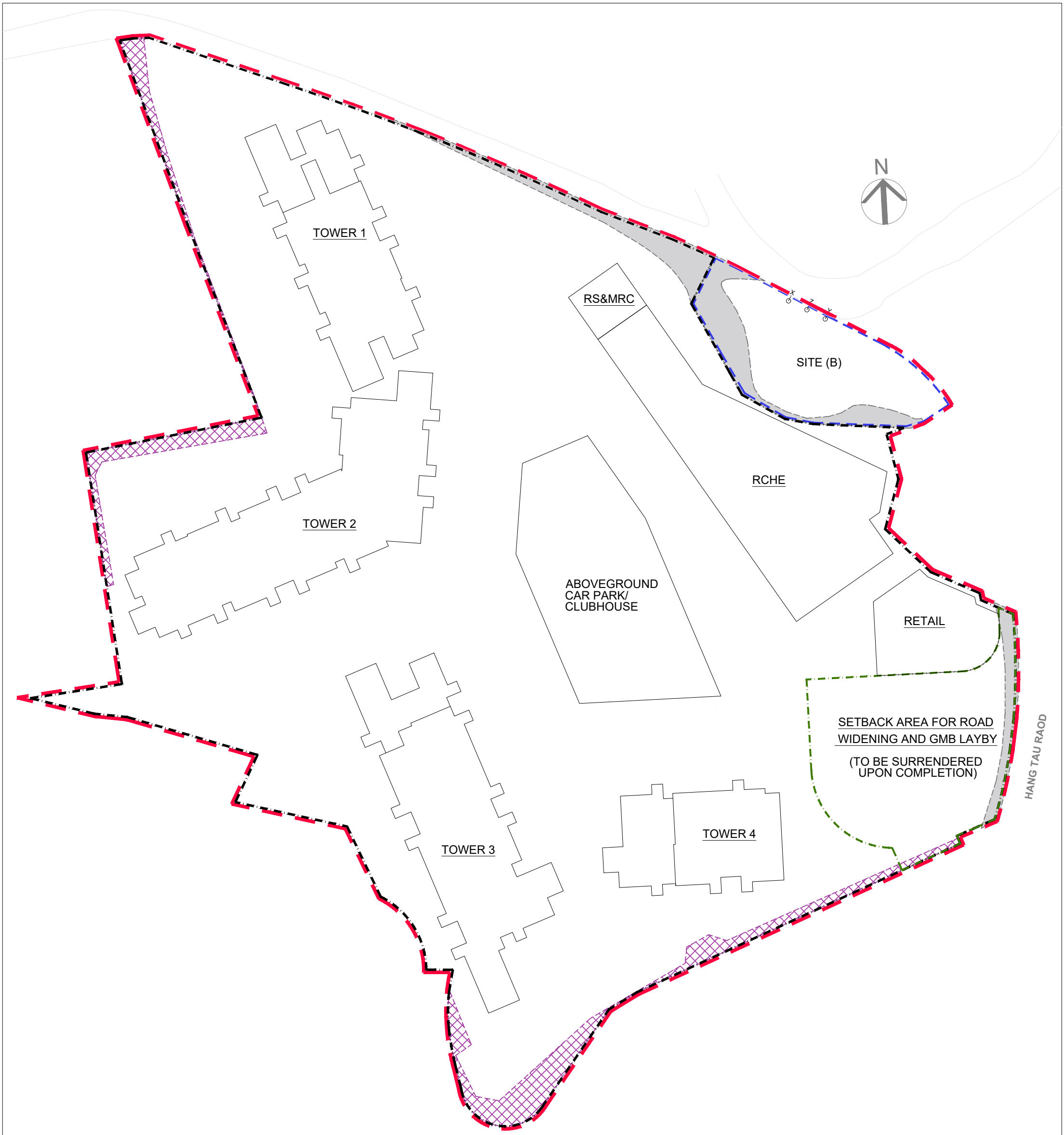
- Contributing to the Provision of Housing Supply in Hong Kong;
- Addressing the Rising Need for RCHE Provision in Hong Kong;
- Maximising Synergies with Kwu Tung North NDA;
- Conforming to the Planning Intentions of the "CDA" Zone;
- Compatibility with the Surrounding Development Intensity;
- Planning Gains and Design Merits Brought by the Proposed Development;
- Relaxation in BHR is Considered Reasonable and Justifiable; and
- No Adverse Impacts on Technical Aspects.

6.1.4 In view of the above and the planning justifications in this Planning Statement, we respectfully request the Board to consider this planning application favourably.

November 2026
PlanPlus Consultancy Limited

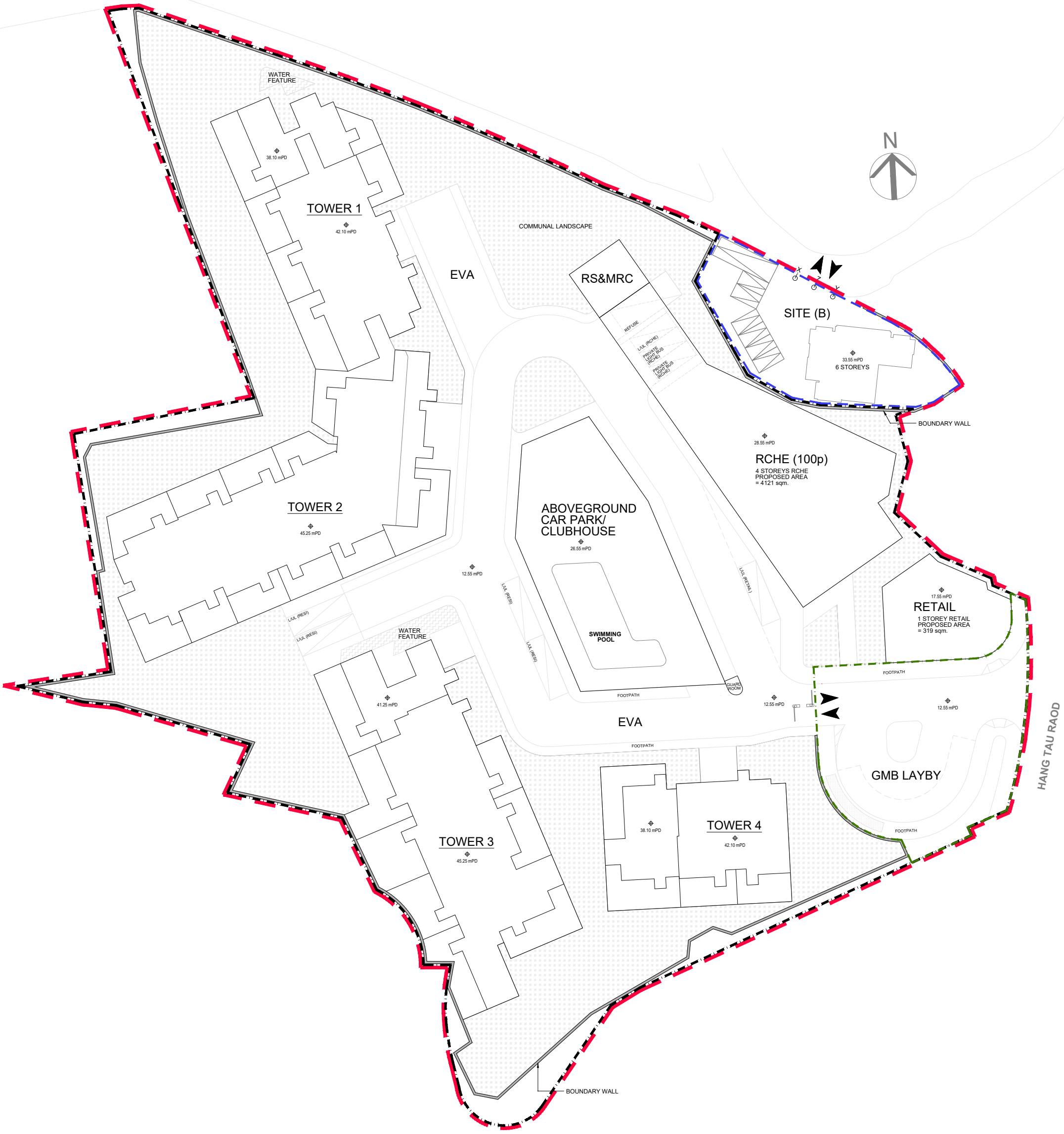
Appendix 1

Master Layout Plan



LOT PLAN

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

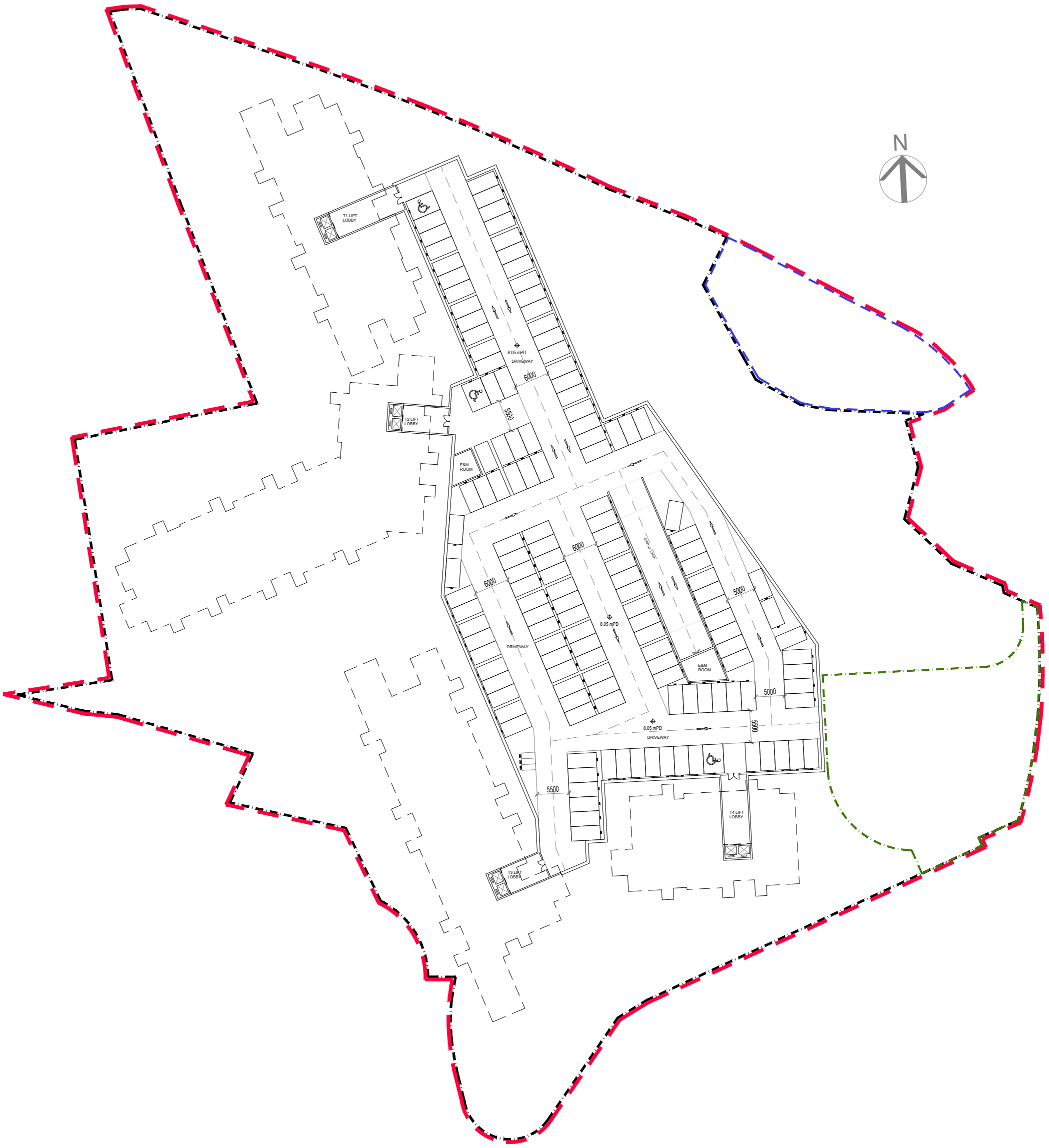


MASTER LAYOUT PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories



B1/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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FIRST FLOOR PART PLAN

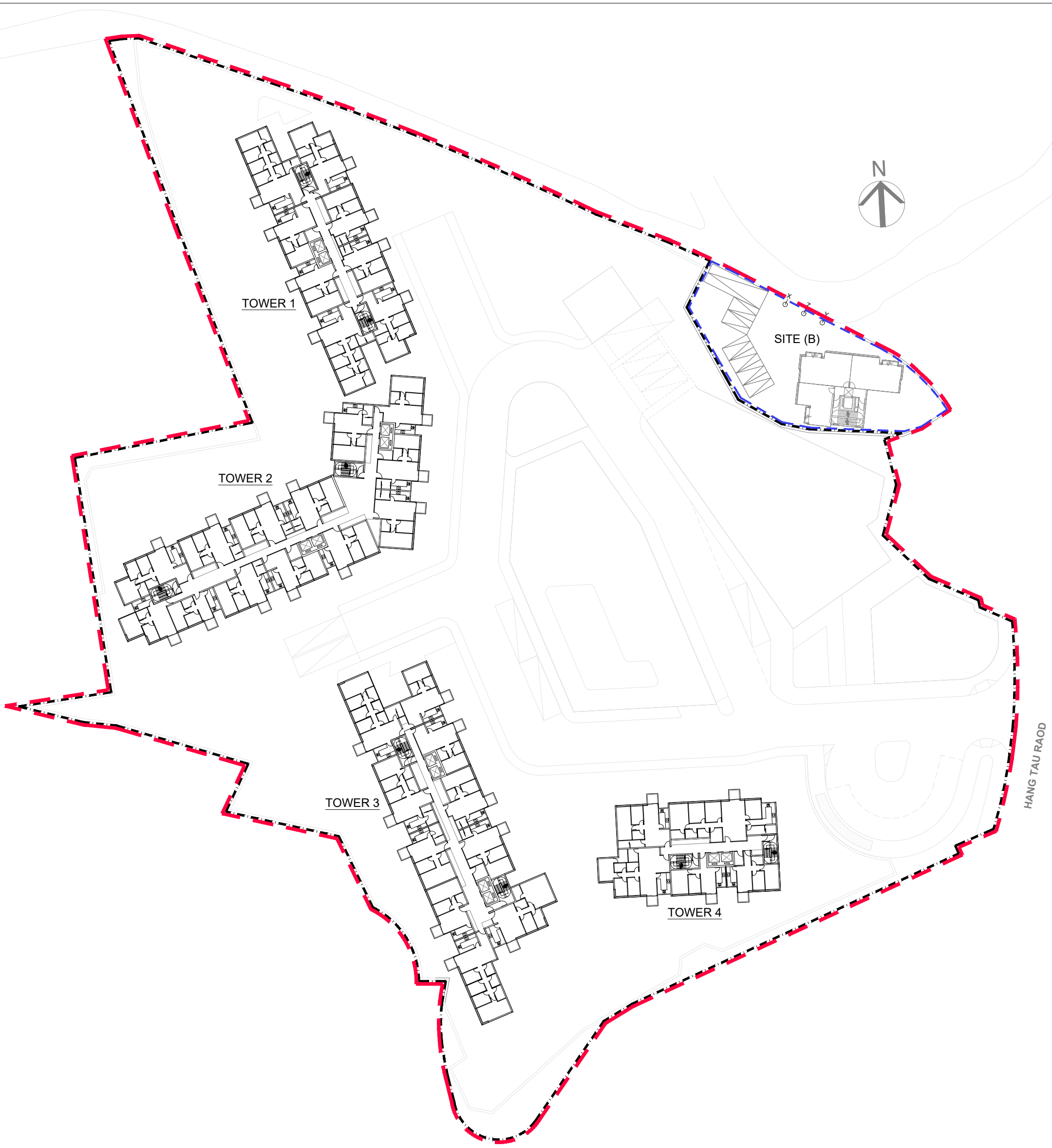
GROUND FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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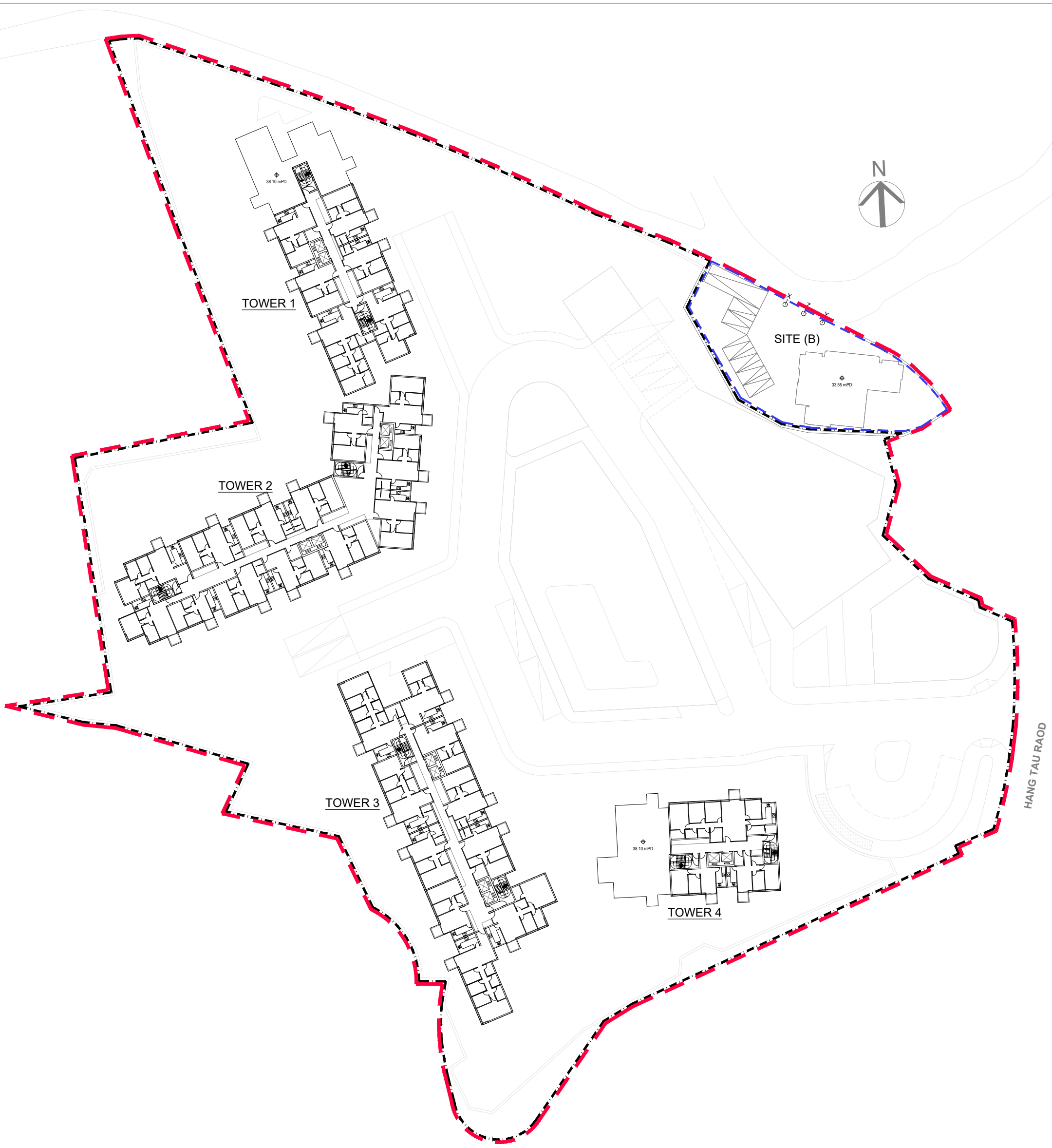
TYPICAL FLOOR PLAN (1/F to 7/F)

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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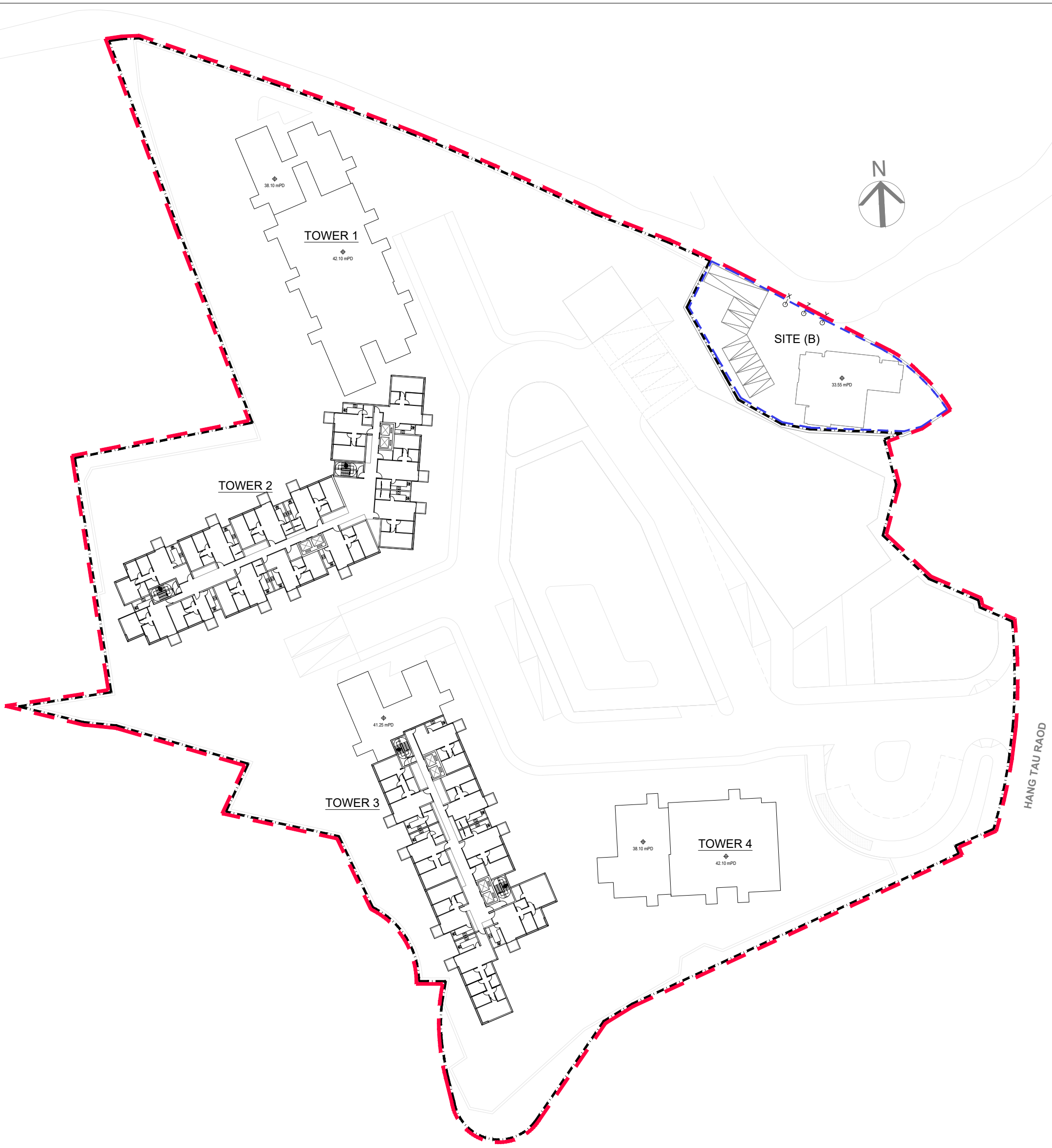
8/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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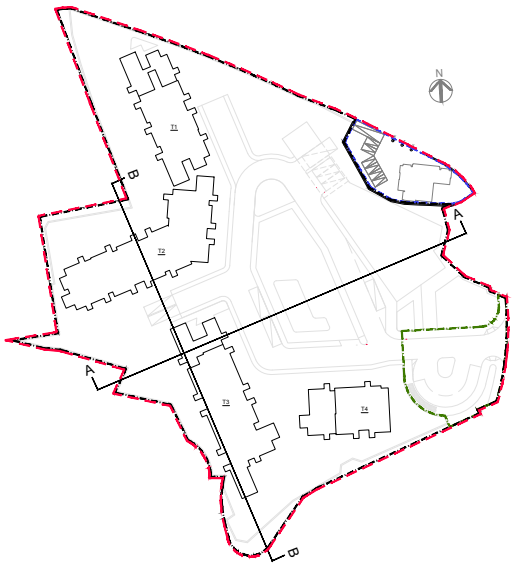
9/F FLOOR PLAN

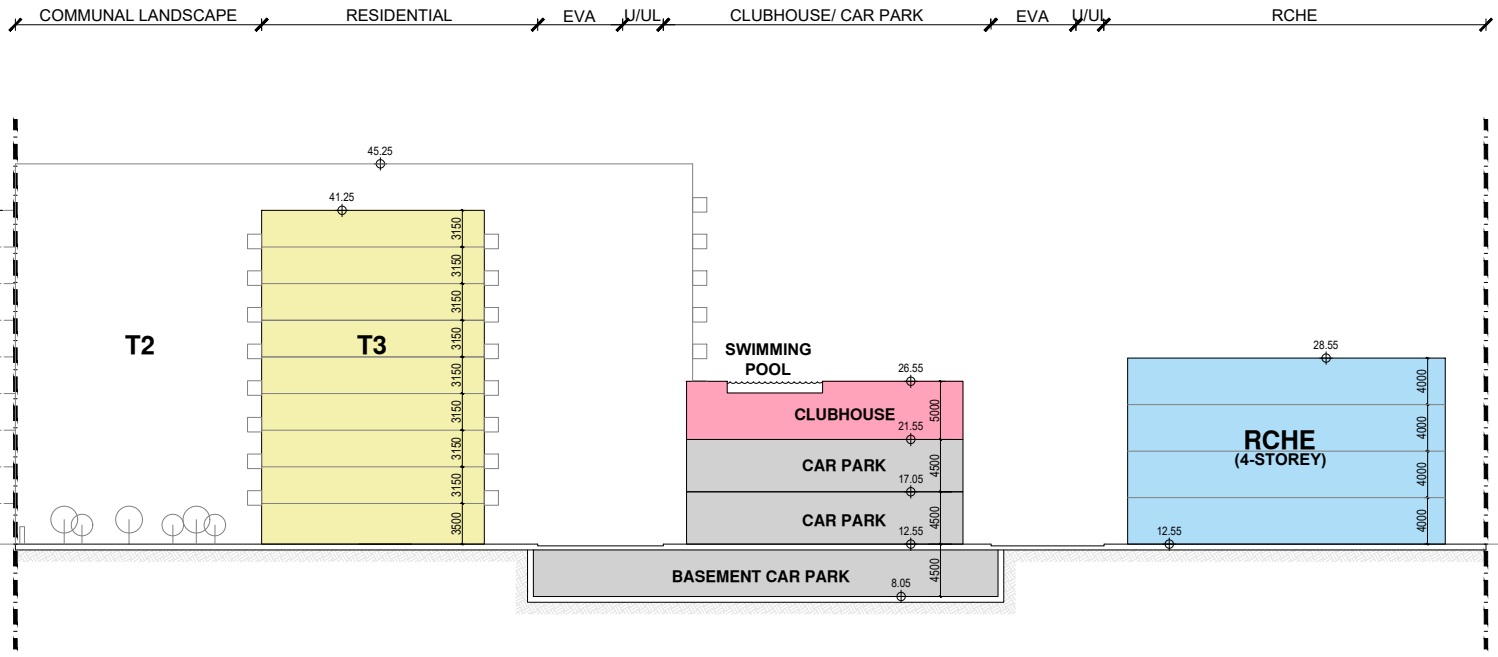
LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

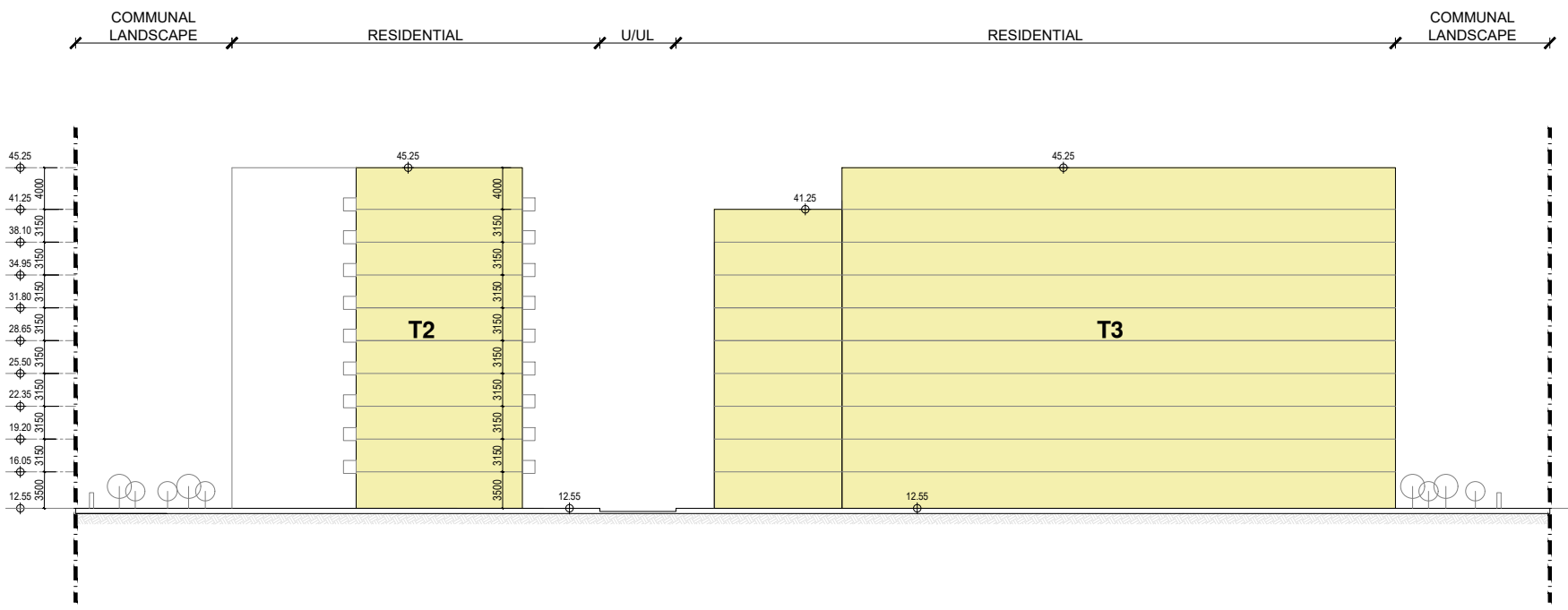
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION A



SCHEMATIC SECTION B

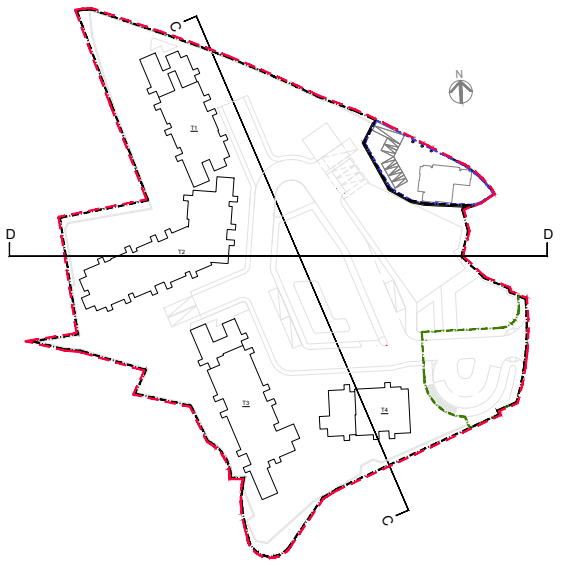
LEGEND

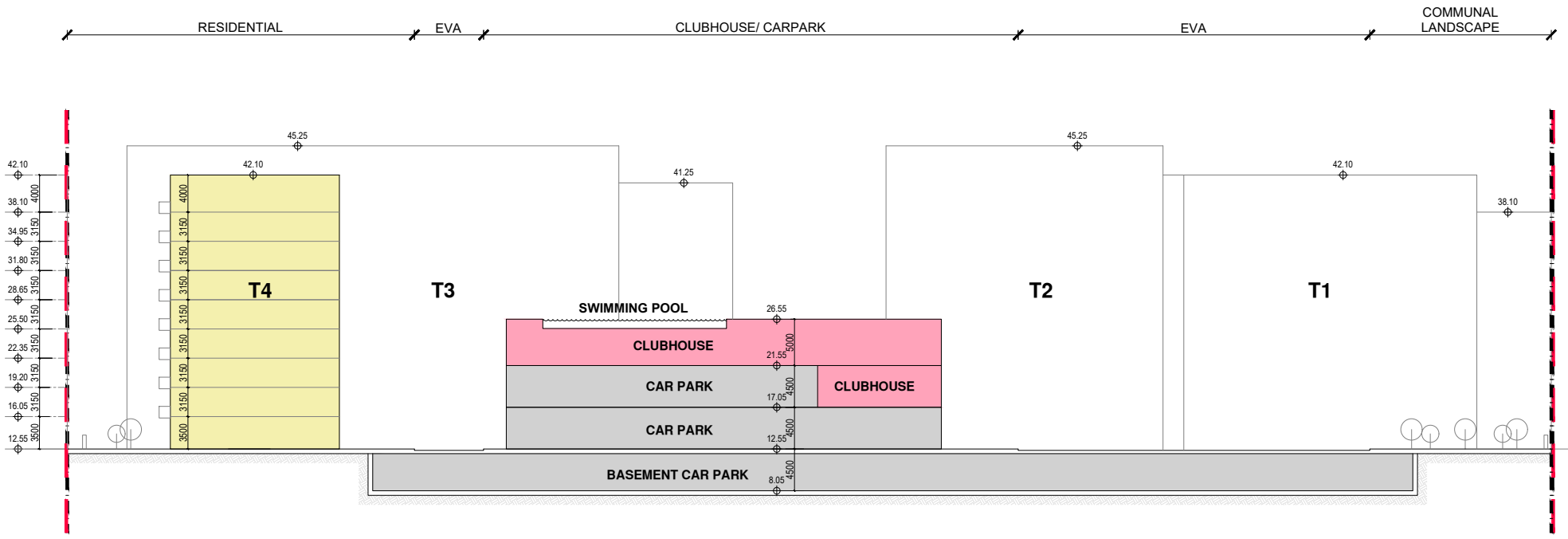
CDA Zone Boundary

Application Site Boundary

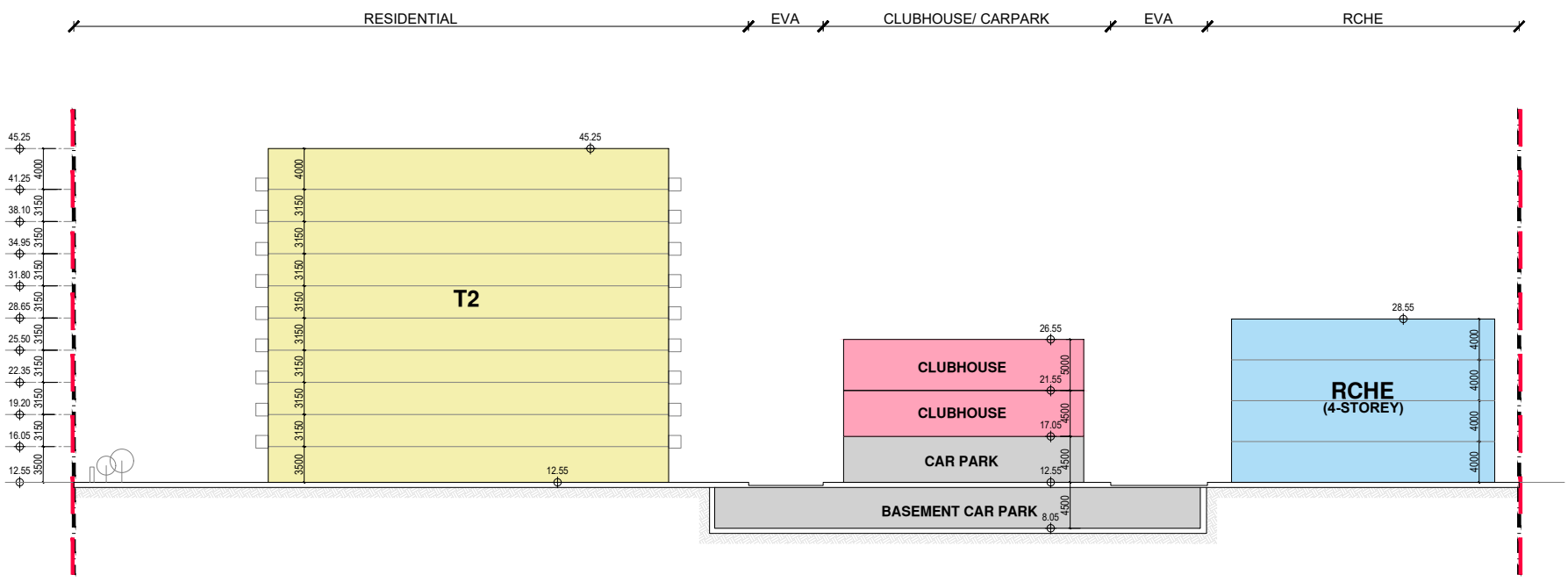
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION C



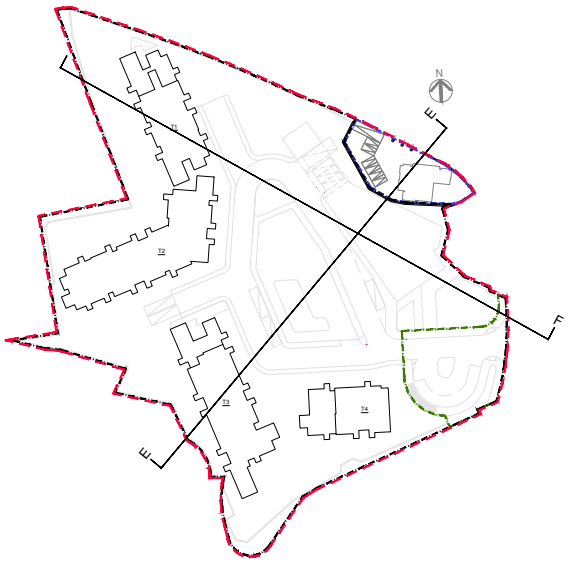
SCHEMATIC SECTION D

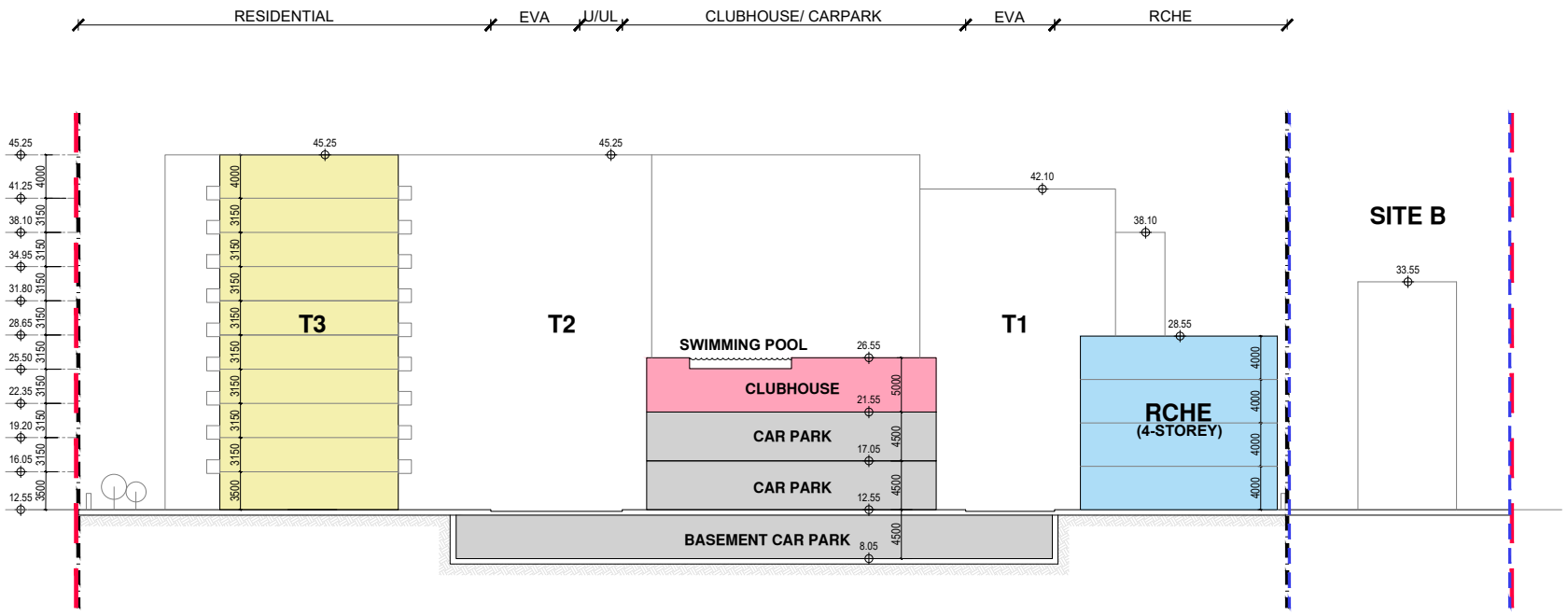
LEGEND

- CDA Zone Boundary
- Application Site Boundary

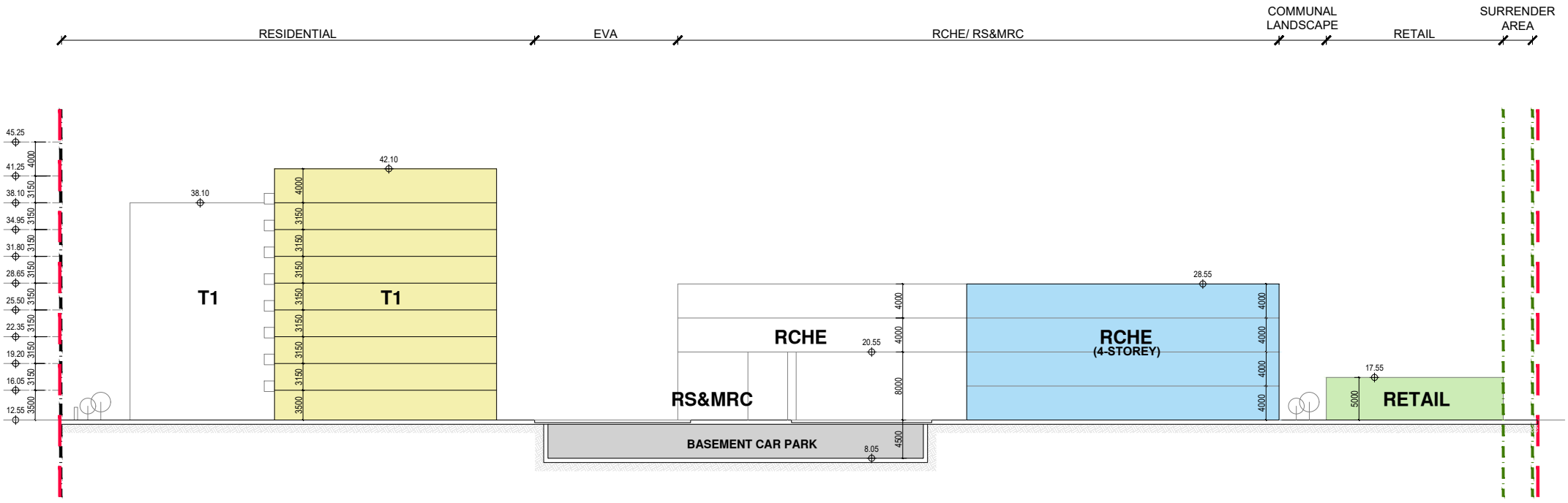
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION E



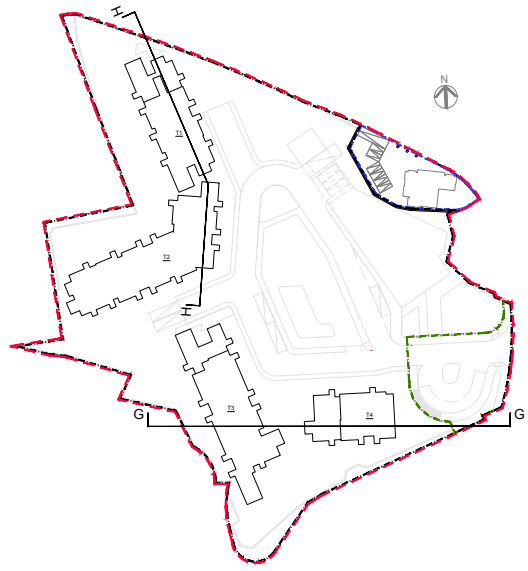
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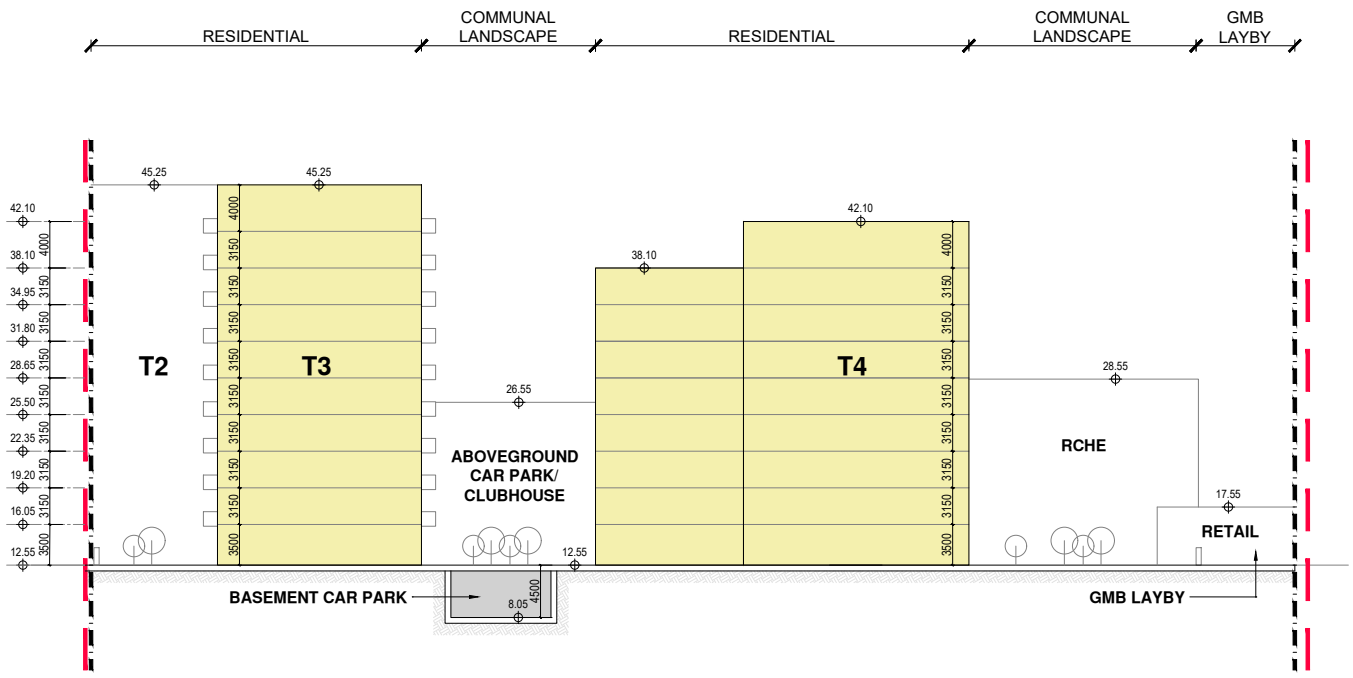
LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

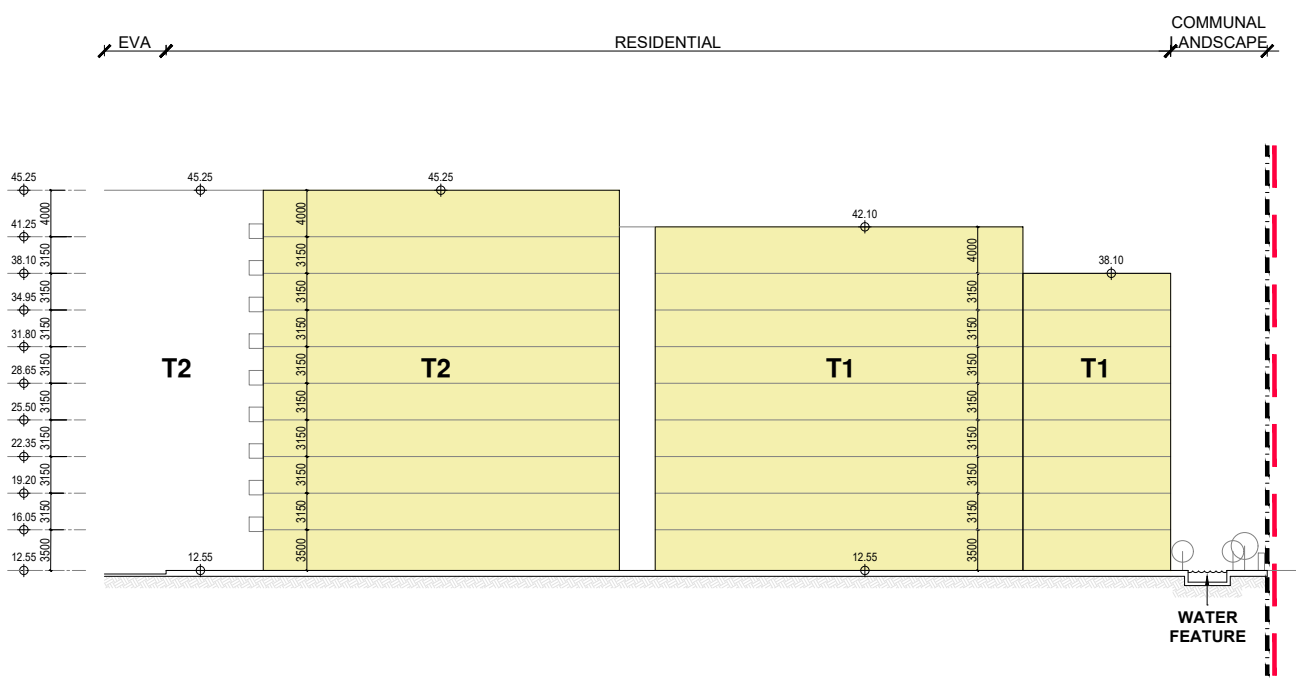
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION G



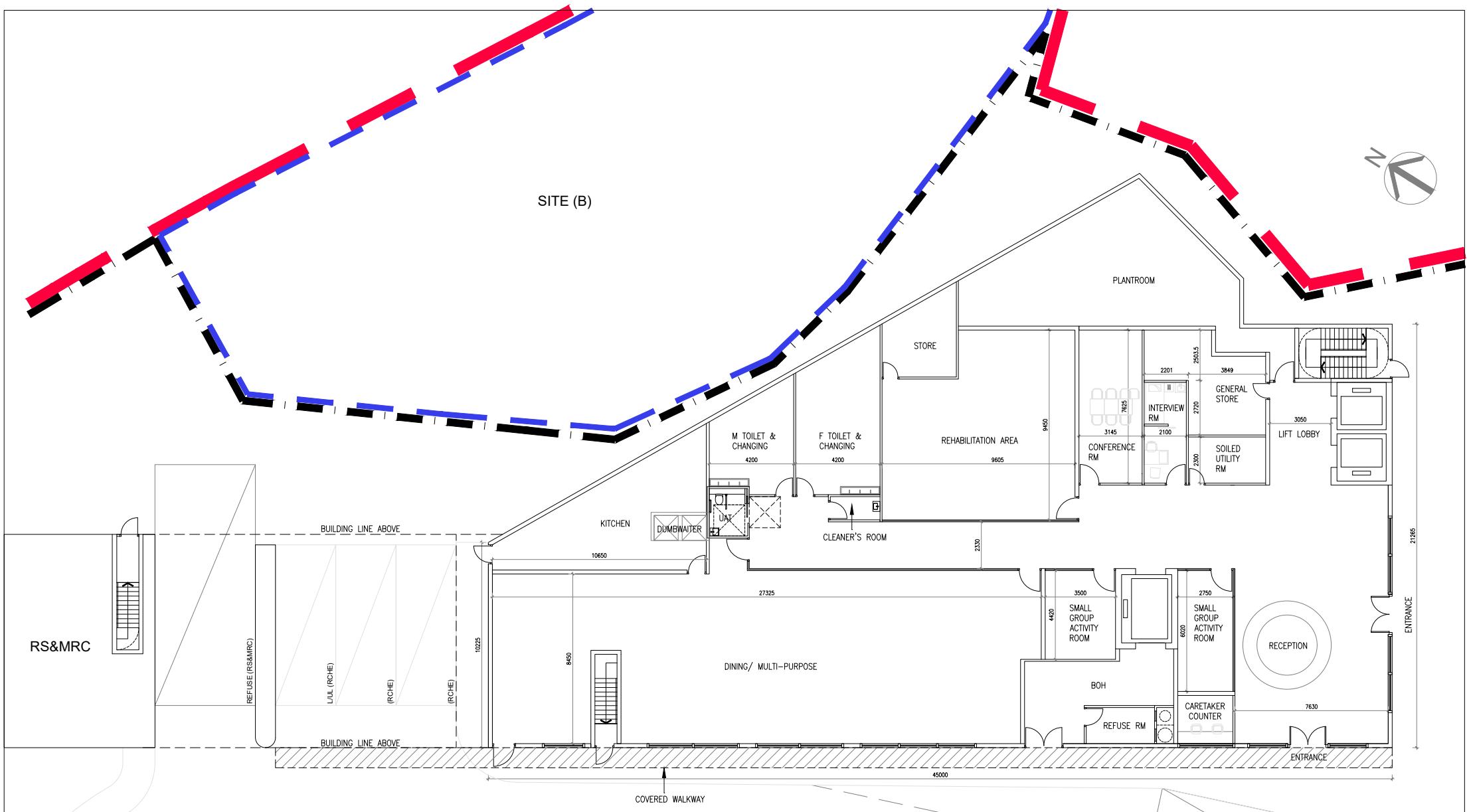
SCHEMATIC SECTION H

LEGEND

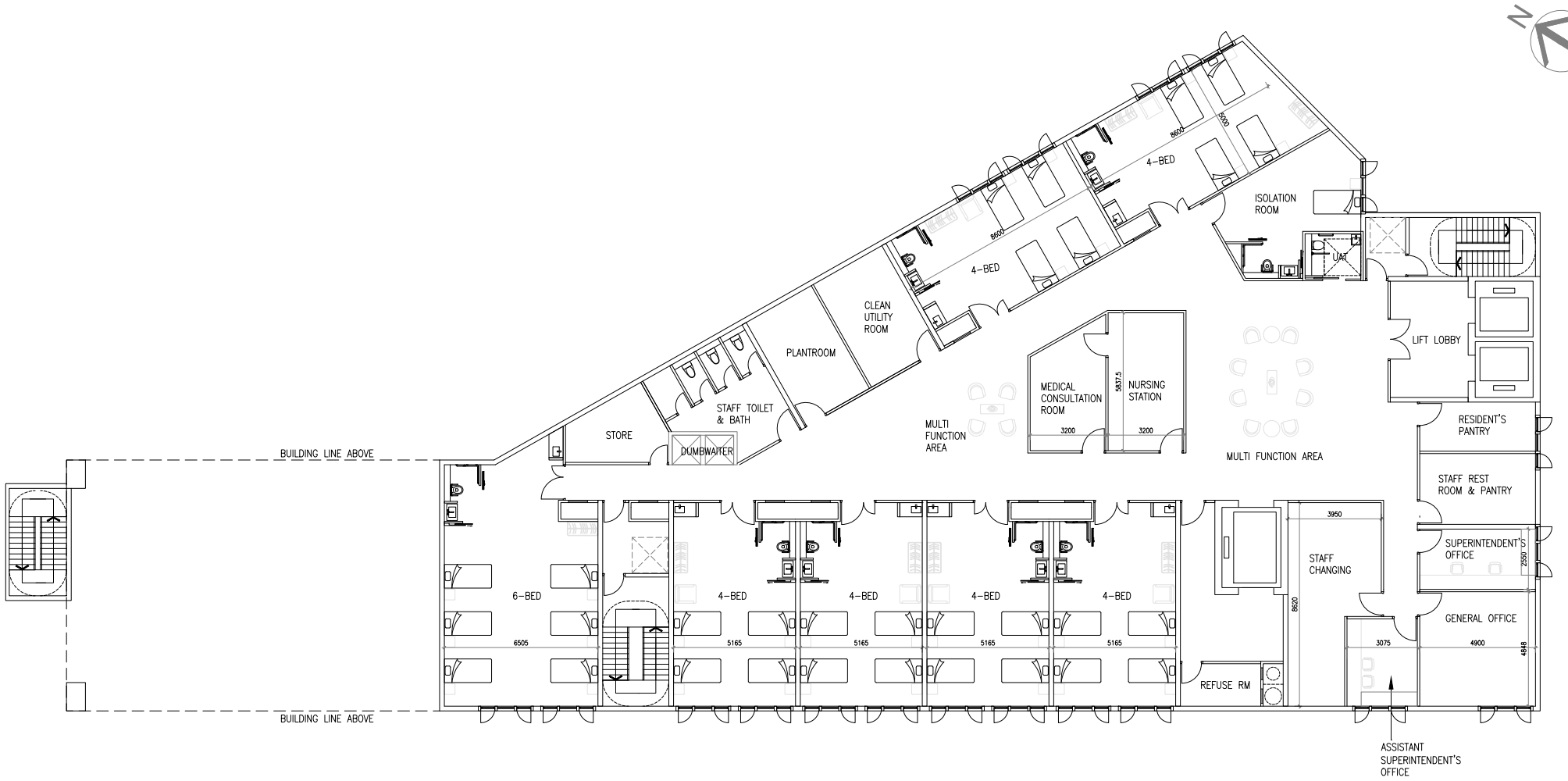
- CDA Zone Boundary
- Application Site Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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RCHE GROUND FLOOR PLAN



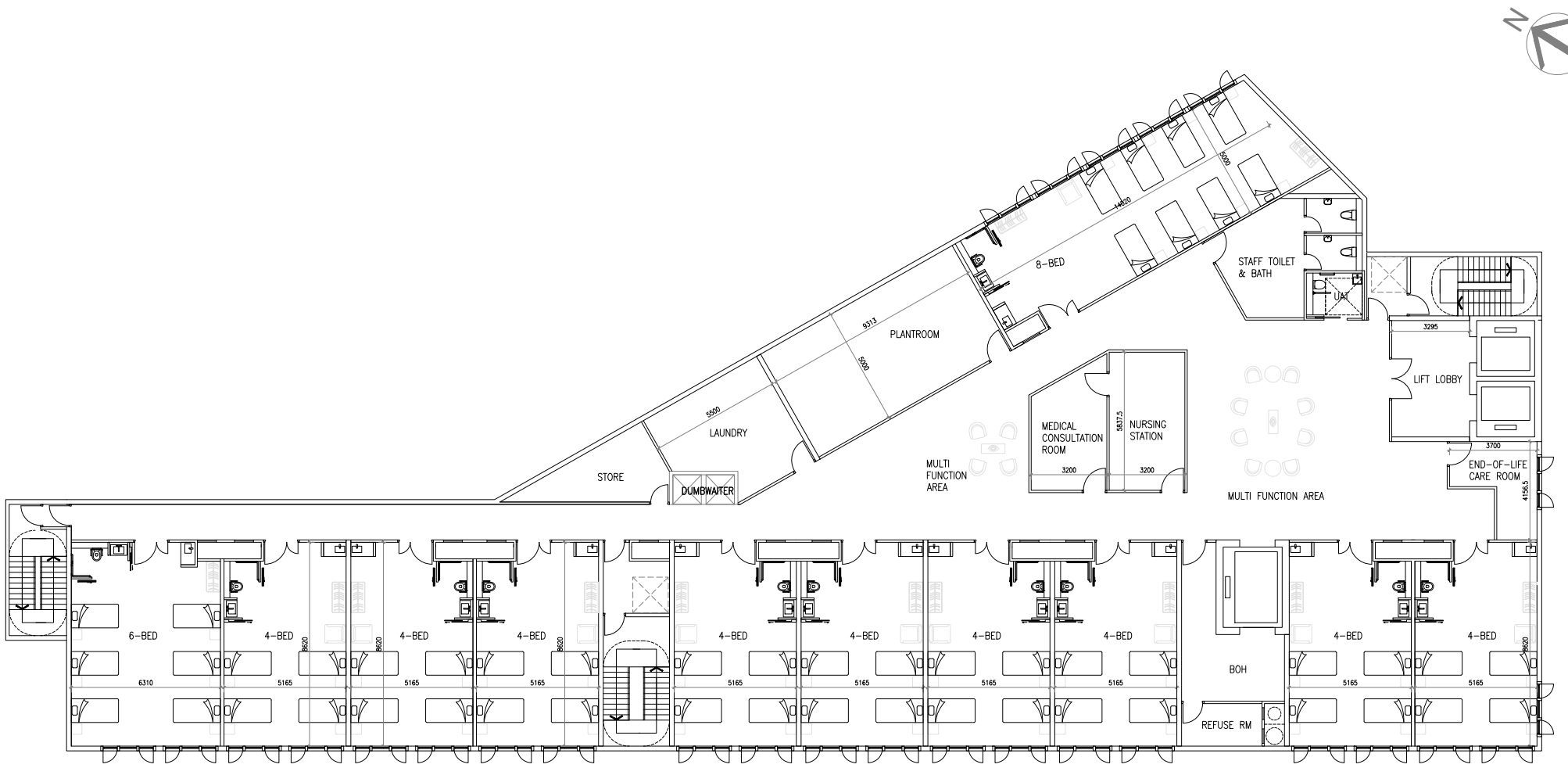
RCHE FIRST FLOOR PLAN

NUMBER OF BEDS: 30

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

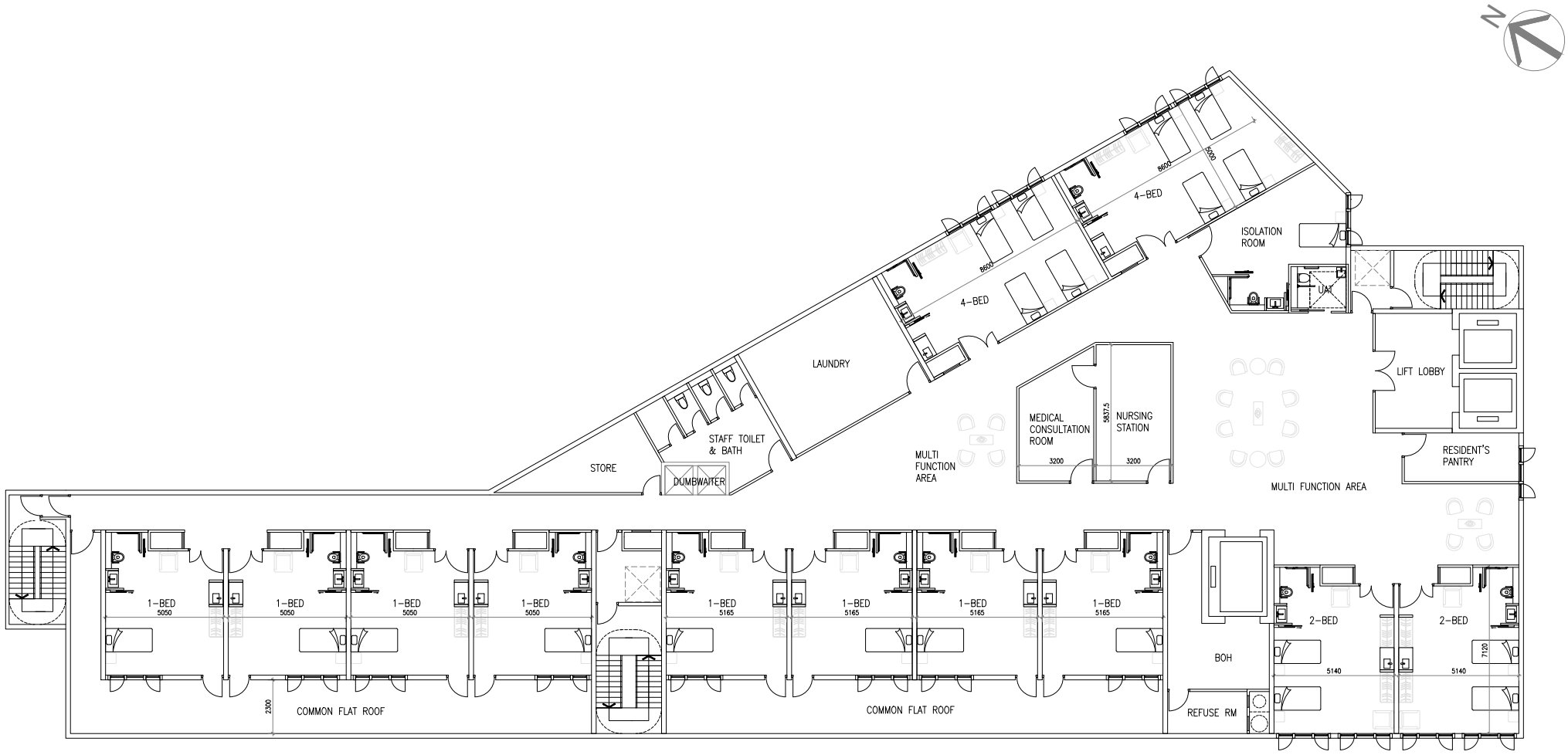
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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NUMBER OF BEDS: 50

RCHE SECOND FLOOR PLAN



NUMBER OF BEDS: 20

RCHE THIRD FLOOR PLAN

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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Appendix 2

Traffic Impact Assessment

02/10/2026

Reference number CHK50808310/CHC/L2601657/yyl

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

TRAFFIC IMPACT ASSESSMENT

Final Report

SYSTRA MVA

IDENTIFICATION TABLE	
Project	Section 16 Planning Application for Proposed Minor Relaxation of Plot Ratio and Building Height Restriction for Comprehensive Development in Hang Tau Tai Po, Kwu Tung South
Study	Traffic Impact Assessment
Type of document	Final Report
Date	02/10/2026
File name	HTTP S16 Rev TIA Report (L2601657)_20261002.docx
Reference number	CHK50808310/CHC/L2601657/yyl

MVA Hong Kong Limited
22/F Genesis • 33-35 Wong Chuk Hang Road • Hong Kong

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1. INTRODUCTION

1.1 Background

1.1.1 The Application Site located at Hang Tau Road consists of various lots in D.D. 92 and D.D.94 and the adjoining government land at Hang Tau Tai Po, Kwu Tung South in Sheung Shui, with site area of about 17,990.9m^2. The site location is shown in **Drawing No. 1.1**.

1.1.2 A Section 12A (S12A application) planning application (application no. Y/NE-KTS/13) for dividing a "Comprehensive Development Area (CDA)" site into two areas and relaxing their plot ratio, building height and site coverage restrictions was approved by Town Planning Board (TPB) in December 2021. Such amendments to the CDA site have been reflected in the prevailing Kwu Tung South Outline Zoning Plan (OZP) as gazetted on 31 May 2024.

1.1.3 Under the proposed scheme (the previous scheme) in the approved S12A application in 2021, Area (a) of the CDA site consists of the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a residential care home for elderly (RCHE) with the plot ratio (PR) of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. Whilst, Area (b) of the CDA site was proposed in the scheme for a potential residential tower with 18 residential units at the domestic PR of 1.23. The master layout plan of previous scheme under the approved S12A application is attached in **Appendix A** for reference.

1.1.4 To well utilize the development potential, the MLP for Area (a) of the CDA site, i.e. the Application Site, with proposed minor relaxation of PR from 1.41 to 1.692 (the Proposed MLP) is developed by the Applicant. To enable the Proposed MLP, a Section 16 planning application (S16 application) is required in order to obtain permission from TPB.

1.1.5 MVA Hong Kong Limited was commissioned by the Applicant as a traffic consultant to carry out a traffic impact assessment in support of the S16 application for the Proposed MLP with minor relaxation of PR.

1.1.6 The purpose of this study is to review the traffic conditions and assess the potential traffic impact on the adjacent local road network caused by the Proposed MLP in the design year.

1.2 Study Objectives

1.2.1 The main objectives of this study are:

- To present the details on the Proposed MLP such as the proposed development parameters, access arrangement, internal transport provision, the set back for road widening as per the requirement in OZP as well as the proposed public transport facilities;
- To determine the existing traffic conditions in the vicinity of the Application Site by undertaking manual classified count traffic surveys;
- To study and assess the existing travel patterns, road and junction capacities in the local area adjacent to the application site;
- To identify the traffic generation from the Application Site under the Proposed MLP and carry out distribution and assignment of the generated traffic;
- To estimate the future traffic flows for the design year on the surrounding local road network;

- To assess the traffic impact due to the Proposed MLP on the surrounding local road network and junctions for the design year;
- To recommend traffic improvement measures to alleviate the foreseeable traffic problems on the surrounding local road networks, if necessary;
- To derive long term traffic forecast for Noise Impact Assessment (NIA) study purpose.

1.3 Structure of the Report

1.3.1 Following this introductory chapter, there are six further chapters.

1.3.2 **Chapter 2** – *The Proposed Master Layout Plan*, which presents the development schedule for the Proposed MLP in the subject S16 application. The proposed vehicular access arrangements, car parking, loading/unloading and layby provisions, set back for road widening, and the road widening scheme for improvement of pedestrian crossing will also be discussed.

1.3.3 **Chapter 3** – *Existing Traffic Conditions*, which describes the existing road network and public transport facilities in the vicinity of the application site, presents the summary of traffic count survey and assesses the existing traffic conditions.

1.3.4 **Chapter 4** – *Traffic Forecast*, which discusses the design year and the future scenarios for assessment in this study, anticipates the potential traffic generation and attraction of the application site under the Proposed MLP, summarises the methodology for future traffic forecasts, and presents the traffic forecast for the design year.

1.3.5 **Chapter 5** – *Traffic Impact Assessment*, which presents the findings of the traffic impact assessment in the future design year and recommends improvement measures if necessary.

1.3.6 **Chapter 6** – *Long Term Traffic Forecast for Noise Impact Assessment (NIA)*, which describes the forecasting methodology and presents the results of long term traffic forecast for NIA.

1.3.7 **Chapter 7** – *Summary and Conclusion*, which summarises the findings of the study and presents the conclusions regarding the traffic issues associated with the Proposed MLP.

2. THE PROPOSED MASTER LAYOUT PLAN

2.1 Site Location

2.1.1 The Application Site is located at Hang Tau Road in Hang Tau Tai Po, and it is situated to the west of Hang Tau Road and surrounded by low-rise village-type houses and temporary structures.

2.1.2 The Application Site together with the adjoining private lot and government land were rezoned to a CDA site in year 2018. Subsequently, an 12A application for dividing the Application Site into an area (namely Area (a)) separated with the adjoining private lot and the government land (namely Area (b)) was approved by TPB in December 2021.

2.2 Proposed Development Schedule

2.2.1 Under the previous scheme in the approved S12A application, the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a RCHE with the PR of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. The details of the previous scheme in the approved S12A application are summarized in **Table 2.1**.

2.2.2 To well utilize the development potential, a MLP for the development at the Application Site (the Proposed Development) with minor increase of PR by 20% from 1.41 to 1.692 is developed. The details of development schedule as proposed in this S16 application are presented in **Table 2.1**, and the Proposed MLP is presented in **Drawing No. 2.1**.

Table 2.1 Development Schedules

Development Schedule for Development at the Application Site			**Previous Scheme (Approved S12A in 2021)**	**Proposed MLP**
Site Area			17,990.9 m^2	
GFA	Domestic		22,087 m^2	26,554 m^2
	Non-domestic	Retail	406 m^2	319 m^2
		RCHE	2,777 m^2 (for 100 places in total)	3,567 m^2 (for 100 places in total)
		Total	3,183 m^2	3,886 m^2
	Overall	Overall	25,270 m^2	30,440 m^2
Plot Ratio	Domestic	Domestic	1.23	1.476
	Non-domestic	Non-domestic	0.18	0.216
	Overall	Overall	1.4	1.692
Total no. of Residential Blocks			3	4
Total no. of Flats			302	334
Average Unit Size (m^2)			73.14 m^2	79.50 m^2

2.2.4 The Proposed Development at the Application Site is tentatively scheduled to be completed by year 2031.

2.3 Access Arrangement

2.3.1 The current access points to the Application Site are located at Hang Tau Road and the single track access road to the north (namely Access Road A). Taking into consideration of accessibility, the future vehicular access point for the Proposed Development is proposed at Hang Tau Road where is at the same similar location of access for the site as proposed in the previous scheme of the approved S12A application. While, the existing access point on Access Road A will be no longer provided for the Application Site. The proposed access arrangement for the Proposed Development at the Application Site is shown in **Drawing No. 2.1.**

2.3.2 The swept path analysis for the ingress and egress of the Proposed Development are demonstrated in **Appendix B**.

2.4 Internal Transport Provision

2.4.1 The provision of internal transport facilities, i.e. car parking spaces and loading/unloading bays, for the Proposed Development are reviewed and proposed with reference to the guidelines stipulated in the latest Hong Kong Planning Standards & Guidelines (HKPSG).

2.4.2 Since the provision requirements for RCHE are not specified in HKPSG, the provision of parking spaces for private light buses and loading/unloading area are proposed with following the Social Welfare Department (SWD)'s ancillary requirements for RCHE as adopted in the previous approved S12A application, while the provision of car parking spaces are proposed with reference to the parking ratios of several previously approved planning applications with similar social welfare developments as listed in **Table 2.2**.

Table 2.2 Review on Car Parking Provision in the Similar Applications with RCHE

Application No.	Application Site Location	No. of Places / Beds	No. of Car Parking Spaces	Derived Parking Ratio
Y/NE-KTS/16	Kam Hang Road, Kwu Tung South	150	4	1 space per 38 places
A/FSS/288	Tin Ping Road, Sheung Shui	210	4	1 space per 53 places
A/YL-NSW/349	Nam Sang Wai, Yuen Long	240	11	1 space per 22 places
A/YL-TYST/870	Tai Tao Tsuen, Yuen Long	248	3	1 space per 83 places
A/YL/263	Ex-Hang Heung Bakery Factory, Yuen Long	380	8	1 space per 48 places
A/YL/276	Ma Tin Pok, Shap Pat Heung Road, Yuen Long	197	4	1 space per 49 places
A/YL/302	Tai Tong Road, Yuen Long	241	2	1 space per 121 places
A/YL-NSW/292	Pun Uk, Yuen Long	531	6	1 space per 89 places
A/SK-SKT/30	2 Hong Ting Road, Sai Kung	160	3	1 space per 53 places
A/SK-SKT/31	6 Hong Ting Road, Sai Kung	337	6	1 space per 56 places
A/SK-SKT/32	7 Hong Ting Road, Sai Kung	205	4	1 space per 51 places
A/SK-TMT/74	Tsam Chuk Wan, Sai Kung	110	2	1 space per 55 places

2.4.3 As shown in the **Table 2.2**, the ratios of car parking provision in the similar applications are ranged from 1 space per 22 places to 121 places, and therefore 5 nos. of car parking spaces for the proposed RCHE (i.e. a ratio of 1 space per 20 places) is considered reasonable. The proposed internal transport facilities are summarized in **Table 2.3**.

Table 2.3 Provision of Internal Transport Facilities

Transport Facilities		HKPSG Requirement	Flat Size in m^2 (FS)	Adjustment Factors			No. of Flat	Required Provision	Proposed Provision
				R1	R2	R3			
Residential	Residential Car Parking Spaces	Global Parking Standard of 1 space per 4-7 flats x Adjustment Factors (R1) x (R2) x (R3)	40 < FS ≤ 70	1.2	1[(1)]	1.1[(2)]	228	43-75	**160**
			70 < FS ≤ 100	2.4			73	28-48	
			100 < FS ≤ 130	4.1			33	21-37	
			Total				**334**	**92-160**	
	Visitor Car Parking Spaces	5 spaces per block	4 Blocks					20	20
	Motorcycle Parking Spaces	1 space per 100 – 150 flats	334 flats					2 - 3	3
	Loading/ unloading bays	1 bay per block	4 Blocks					4	4
Retail Shops (319m^2 GFA)	Car Parking Spaces	1 space per 150 – 300 m^2 GFA						1-2	2
	Loading/ unloading bays	1 loading/unloading bay for every 800 to 1200 m^2, or part thereof GFA						1	1
RCHE (100-p in total)	Car Parking Spaces	(Not specified in HKPSG)						-	5[(6)]
	Parking Spaces for private light buses [(3)]							2[(7)]	2
	Shared loading/ Unloading area [(4)(5)]							1[(7)]	1

Notes:
(1) R2 = 1 as the site is outside 500m-radius of rail station.
(2) R3 = 1.1 for the Proposed Development with plot ratio 1.692 (i.e. 1 < PR ≤ 2).
(3) Parking space measuring 8m x 3m with minimum headroom of 3.3m as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13)
(4) A shared loading / unloading area for private light buses and ambulance/other vehicles as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13).
(5) Loading/unloading area measuring 9m x 3m with minimum headroom of 4.7m as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13).
(6) Including 1 no. of accessible car parking space.
(7) Since no change in total places provided at the RCHE, the provisions as adopted in the previous approved S12A application (no. Y/NE-KTS/13) are followed.
(8) 3 nos. of accessible car parking spaces will be reserved for total number of parking spaces in the development ranged 151-250 nos. in accordance with Buildings Department's Design Manual: *Barrier Free Access 2008 (2024 Edition).*
(9) In addition to the proposed provisions in **Table 2.3**, one space for refuse collection will be provided in the Proposed Development.

2.5 Development Set Back and Road Widening Scheme at Hang Tau Road

Road Widening Scheme in Approved S12A Application

2.5.1 In the Explanatory Statement in the OZP, it is remarked that the future development in the subject CDA zone should be set back to make allowance for future widening of Hang Tau Road, such as provision of standard footpaths and 7.3m wide single two-way carriageway in accordance with requirement of HKPSG.

2.5.2 For fulfilment of the set back requirement, development set back was taken into account in the previous scheme of the approved S12A application.

2.5.3 Besides, the previous road widening scheme, as exhibited in **Appendix A**, also included the provisions of a proper pedestrian crossing facility, an on-street layby for Green Mini-bus (GMB) and a vehicle turnaround facility in a form of mini-roundabout at Hang Tau Road for enhancement of pedestrian accessibility as well as the public transport facility.

Revised Road Widening Scheme

2.5.4 Having had further discussion with Transport Department subsequent to the approval of the previous S12A application, the road widening scheme is further reviewed and revised for further enhancement.

2.5.5 In the latest road widening scheme as proposed under this application, the intersection of the access to the development and existing Hang Tau Road is converted from a mini-roundabout into a priority T-junction. Besides, further set back of the site is also proposed for the relocation of the GMB layby and vehicle turnaround facility from Hang Tau Road, as shown in **Drawing No. 2.2**.

2.5.6 Notwithstanding the above changes, road widening of Hang Tau Road section abutting the Application Site for 7.3m carriageway with 3m footpath alongside remain in the revised scheme. Meanwhile, a pedestrian crossing facility at Hang Tau Road has also incorporated.

2.5.7 The revised road widening scheme will be implemented by this project, and managed and maintained by the relevant government departments upon completion of widening work.

Enhancement of Public Transport Facility

2.5.8 Given that the current public transport service for the Hang Tau Tai Po area is limited with one GMB route no. 50K only and there is absent of proper layby along Hang Tau Road, the proposed layby under the revised road widening scheme would serve future enhancement of public transport service (i.e. increase of GMB route) for the existing and future residents in the area. Meanwhile, the proposed vehicle turnaround facility in the scheme would facilitate a proper turnaround facility to allow GMB turns around without the need of passing through the narrow roads in Hang Tau Village.

2.5.9 Together with the proposed pedestrian crossing at Hang Tau Road, the proposed road widening scheme would offer a more accessible and safer public transport facility to serve the residents in the Hang Tau Tai Po area as demonstrated in **Drawing No. 2.3**.

2.5.10 According to the RNTPC Paper of the approved S12A application (paper no. Y/NE-KTS/13C), it is noted that the Commissioner for Transport (C for T) had a comment on the proposed GMB layby in the road improvement scheme that the GMB layby should be 26m long to accommodate 3 GMBs. In response to the previous comment on the GMB layby from C for T, the revised road widening scheme proposed in this S16 application has incorporated such requirement, as shown in **Drawing No. 2.2**.

2.5.11 To improve the waiting environment for passengers, a proper passenger shelter will also be provided at the GMB layby, as indicated in **Drawing No. 2.2**.

2.5.12 With the proposed new public transport facilities (i.e. the 26m long GMB layby and vehicle turnaround facility), provision of short working departures of the GMB route no. 50K to/from MTR Sheung Shui station with the existing intermediate stops would be possible by utilizing the proposed GMB layby as the terminus of the route, as illustrated in **Drawing No. 2.4**.

2.5.13 Similar to the road widening scheme, the public transport facility including the passenger shelter will be implemented by this project, and managed and maintained by the government upon completion.

2.5.14 The swept path analysis for the proposed GMB layby are demonstrated in **Appendix B**.

3. EXISTING TRAFFIC CONDITIONS

3.1 Existing Road Network

3.1.1 The existing local road network is shown in **Drawing No. 3.1**.

3.1.2 The Application Site is mainly served by the local distributors Kwu Tung Road, Kam Hang Road and Hang Tau Road.

3.1.3 Kwu Tung Road is a single two-lane local distributor providing local connection between Kwu Tung and San Tin areas. Its eastern end connects with Castle Peak Road – Kwu Tung, while its western end connects with Castle Peak Road – San Tin.

3.1.4 Kam Hang Road is a single two-lane local distributor branch off from Kwu Tung Road. It provides local access for residents at Casas Domingo and Ascot Park, and it connects Kam Tsin Road at the eastern end.

3.1.5 Hang Tau Road is a single two-lane local distributor widened from a single track access road. It connects Kam Hang Road at the northern end and provides the vehicular access to and from the Application Site and the Kwu Tung South area. The local access roads branched-off from Hang Tau Road in the south are currently serving the accesses of the scattered low-rise village housing in the Hang Tau Tai Po area.

3.2 Existing Public Transport Services

3.2.1 The Application Site is located in rural area remote from railway station, and the travel distance between the application site and the MTR Sheung Shui Station is about 4km. The area in the vicinity of the Application Site is only served by one Green Minibus (GMB) service i.e. route no. 50K, providing service along Hang Tau Road.

3.2.2 Other than the GMB route no. 50K, there are also a GMB service route no. 50A (Kwu Tung South - MTR Sheung Shui Station) and a franchised bus route no. 76K (Sheung Shui Ching Ho Estate Bus Terminus – Yuen Long Long Ping Estate) providing services for Kwu Tung area. However, the walking distance from the Application Site to the nearest GMB stop and bus stop is about 1 km.

3.2.3 The details of the abovementioned public transport services are listed in **Table 3.1** and indicated in **Drawing No. 3.2**.

Table 3.1 Existing Public Transport Services

Route No.	Origin – Destination	Bound	Operation Hours	Headway (minutes) (1)	Average Occupancy Rates(1)
GMB Route					
50A	Kwu Tung South – MTR Sheung Shui Station	Kwu Tung South	05:40-23:00	10 – 15 [10 – 15]	90%(2) [80%]
		Sheung Shui Station	05:40-23:00	10 – 12 [10 – 15]	95%(3) [60%]
50K	Hang Tau – MTR Sheung Shui Station	Hang Tau	04:45-00:30	3 – 12 [5 – 25]	95%(2) [65%]
		Sheung Shui Station	04:55-00:45	3 – 12 [5 – 25]	95%(3) [35%]
Franchised Bus Route (KMB)					
76K	Ching Ho Estate Bus Terminus – Long Ping Estate	Ching Ho Estate	05:45-23:20	25 – 30 [20 – 30]	50%(2) [15%]
		Long Ping Estate	06:00-23:30	20 – 30 [20 – 30]	50%(3) [40%]

Notes : (1) Numbers in bracket [ ] refer to non-peak hours (time periods from 9:30 to 17:00)
(2) Critical peak period was observed in PM during the period of 17:00 – 19:00
(3) Critical peak period was observed in AM during the period of 7:30 – 9:30

3.2.4 Although the GMB route no. 50A and the franchised bus route no. 76K are providing services for the Kwu Tung area, their stops' locations are relatively remote from the Application Site and its adjacent village housing at Hang Tau Tai Po as shown in **Drawing No. 3.2**. In contrast, the GMB route no. 50K provides stops along Hang Tau Road with terminus at Hang Tau Village which is considered the main public transport service (except for taxi) for the local residents in the Hang Tau and Hang Tau Tai Po areas.

3.2.5 From site observations, it is noted that the existing passenger outbound demand at the terminus of GMB route no. 50K in Hang Tau Village has already occupied over 90% capacity of the GMB route. To allow future enhancement of GMB services for the Proposed Development as well as the other local residents in the Hang Tau Tai Po area, a provision of GMB layby has been included in the proposed road widening scheme, as discussed in the previous **Section 2.5**.

3.3 Identified Junctions for Assessment

3.3.1 Traffic count surveys were carried out to examine 4 junctions along the ingress and egress traffic routes of the Application Site. The surveys were undertaken between the hours of 7:30am to 9:30am and 5:00pm to 7:00pm on a typical weekday in May 2024. The locations of these junctions are identified in **Drawing No. 3.1** and **Table 3.2** below.

Table 3.2 Surveyed Key Junctions for Assessment

Junction No.	Junction	Method of Control	Drawing No.
J1	Kwu Tung Road / Kam Hang Road	Priority	3.3
J2	Kam Hang Road / Hang Tau Road	Priority	
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	3.4
J4	Hang Tau Road / Access Road A	Priority	3.5

3.3.2 Observed traffic data indicates that the AM peak hour and PM peak hour are from 7:45am to 8:45am and 5:15pm to 6:15pm respectively and the surveyed traffic flows are shown in **Drawing No. 3.6**. The existing layouts of the junctions to be assessed are shown in **Drawing Nos. 3.3 to 3.5**.

3.3.3 To evaluate the existing traffic condition in the vicinity of the Application Site, the operational performance of the identified junctions were assessed based on the observed traffic flows and their existing junction layouts and control method. The results are summarised in **Table 3.3**.

Table 3.3 Existing Junction Performance

Junction No.	Junction	Method of Control	2024 DFC(1)	
			AM Peak	PM Peak
J1	Kwu Tung Road / Kam Hang Road	Priority	0.59	0.39
J2	Kam Hang Road / Hang Tau Road	Priority	0.30	0.24
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	0.08	0.09
J4	Hang Tau Road / Access Road A	Priority	0.06	0.08

Note: (1) DFC = Design flow / capacity ratio for a priority junction

3.3.4 The results presented in **Table 3.3** indicate that all assessed junctions are currently operating with adequate capacities during the both morning peak and evening peak. The details of junction assessments are attached in **Appendix C**.

4. TRAFFIC FORECAST

4.1 Design Year and Future Scenarios to be Assessed

Design Year

4.1.1 It is anticipated that the Proposed Development would be completed by year 2031. In order to assess the impact of the Proposed Development related traffic on the local road network, year 2034 (i.e. anticipated completion year 2031 + 3 years) is adopted as the design year for traffic impact assessment study.

Future Scenario to be Assessed

4.1.2 To evaluate the effect to the surrounding road junctions due to the Proposed Development under the Proposed MLP with minor relaxation of PR, the below future scenarios will be assessed:

- **Reference Scenario in Year 2034** – Future scenario in year 2034 with the previous scheme for the Application Site in the approved S12A application (i.e. without the proposed relaxation of GFA); and
- **Design Scenario in Year 2034** – Future scenario in year 2034 with the Proposed MLP for the Application Site (i.e. with the proposed relaxation of GFA).

4.2 Traffic Forecasts for Reference Scenario

Background Traffic Growth

4.2.1 To derive the year 2034 reference traffic flows, the background growth in traffic should be reviewed and identified for the area, which are made reference to the historical growth trend and the population and employment projections.

4.2.2 Castle Peak Road – Kwu Tung and Kwu Tung Road are the two nearest traffic count stations to the Application Site in Transport Department's latest Annual Traffic Census (ATC). The average annual daily traffic (A.A.D.T) data from year 2013 to 2024 as reported in the latest ATC are summarized in **Table 4.1**.

Table 4.1 Average Annual Daily Traffic (A.A.D.T.) Data of ATC Station no. 6602 & 6606

ATC Stn. No.	Road	AADT (Vehicle/Day)												Derived Growth Rate (% p.a.)
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2024/ 2013
6602	Castle Peak Rd - Kwu Tung	10,670	11,120	10,560	10,690	11,540	10,800	10,660	11,000	11,000	10,480	10,060	9,900	-0.68%
6606	Kwu Tung Rd	2,980	3,290	3,670	4,070	4,450	4,630	4,610	4,050	4,290	4,280	4,480	4,060	2.85%
Total		**13,650**	**14,410**	**14,230**	**14,760**	**15,990**	**15,430**	**15,270**	**15,050**	**15,290**	**14,760**	**14,540**	**13,960**	**+0.20%**

Source: The Annual Traffic Census 2013 – 2024 as available on TD's website

4.2.3 The A.A.D.T. flows in **Table 4.1** show that the overall average traffic growth on the road sections in the vicinity of the Application Site decreased at the rate of +0.2% per annum for year 2013 to 2024.

4.2.4 Other than the historical trend, the population and employment estimates from Territorial Population and Employment Data Matrix (TPEDM) as available on Planning Department's website are also reviewed. The population and employment estimates for North District in year 2021, 2026 and 2031 are presented in **Table 4.2**.

Table 4.2 Population and Employment Estimates from TPEDM

North District	Estimates from TPEDM			Growth Rate (% p.a.)	
	2021	2026	2031	2026/2021	2031/2026
Population	309,650	352,000	435,550	+2.6%	+4.4%
Employment	84,150	104,050	144,850	+4.3%	+6.8%
Total	**393,800**	**456,050**	**580,400**	**+3.0%**	**+4.9%**

Source: 2021 - based Territorial Population and Employment Data Matrix as available on Planning Department's website

4.2.5 As presented in **Table 4.2**, the growth rates as derived from the TPEDM estimates for North District from year 2021 to 2031 are ranged from +3% to +4.9% p.a.

4.2.6 By considering the extensive coverage by North District in TPEDM, it can be seen that the increment in population and employment between 2021-2031 have been accounted by the intake of Kwu Tung North New Development Area (KTN NDA) and Fanling North New Development Area (FLN NDA).

4.2.7 Whilst the application site is situated near the southern fringe of Kwu Tung South, the major access routes and road network for the application site would be substantially different from those by the development traffic of KTN NDA and FLN NDA.

4.2.8 Therefore, the TPEDM growth rate may not be representative to reflect the background traffic growth for the local road network in the vicinity of the Kwu Tung South area.

4.2.9 In view of the above, a traffic growth rate of +1% per annum as referred to the rounded growth rate from ATC is adopted for this study to reflect the background traffic growth in the area from year 2024 to 2034.

Development Traffic of the Application Site in Reference Scenario

4.2.10 In the reference scenario, it is assumed that the Application Site would be developed in accordance with the previous scheme in the approved S12A application, i.e. the development schedule without the proposed minor relaxation of GFA as presented in **Table 2.1**. The estimated potential traffic generation and attraction of the Application Site in Reference Scenario are summarized in **Table 4.3**.

Table 4.3 Estimated Traffic Generation and Attraction of the Application Site in Reference Scenario of 2034

Development at Application Site In Reference Scenario (Approved S12A in 2021)	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Residential - 302 flats				
Adopted Trip Rates[(1)] (pcu/hr/flat)	0.0888	0.0515	0.0356	0.0480
Estimated Trips (pcu/hr)	27	16	11	14
Retail - 406 m² GFA				
Adopted Trip Rates[(2)] (pcu/hr/100m² GFA)	0.2296	0.2434	0.3100	0.3563
Estimated Trips (pcu/hr)	1	1	1	1
RCHE – 100 places in total				
Adopted Trip Rates[(3)] (pcu/hr/place)	0.0385	0.0346	0.0308	0.0308
Estimated Trips (pcu/hr)	4	3	3	3
Total Trips (pcu/hr)	**32**	**20**	**15**	**18**

Notes: (1) TPDM mean trip rates for Private Housing: High-Density /R(A) with Ave. Flat Size of 70m²
(2) TPDM mean trip rates for retail / Shopping Complex
(3) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted.

4.2.11 Apart from the development traffic of the Application Site, the potential increases in GMB traffic due to the proposed provision of GMB layby under the approved S12A application are also taken into account.

4.2.12 Taking into account there is only one GMB route no.50K currently serving the areas, it was anticipated in the approved S12A application that a GMB route in addition to the existing service would be provided upon availability of the proposed GMB layby at Hang Tau Road. With the assumption on an additional GMB route will be operated in 3mins headway during the peak hours which is similar to the peak headway of the existing route No.50K, it was anticipated that additional GMB traffic of about 30 pcu/hr (i.e. [60mins/3mins headway] x 1.5 pcu factor) would be generated on Hang Tau Road.

Other Planned/Potential Future Developments

Planned/Potential Future Developments in the Vicinity

4.2.13 It is noted that there are future residential developments planned in the vicinity of the Application Site including the adjoining Area (b) of the same CDA site. The locations of these future residential developments are indicated in **Drawing No. 4.1,** and the adjacent future developments of the Application Site are also indicated in **Drawing No. 4.2.** Their details are summarised in **Table 4.4**.

Table 4.4 Planned / Potential Future Developments in the Vicinity

Site	Planned / Potential Future Developments in the Vicinity [(1)]	Details[(2)]
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)	• Domestic plot ratio 1.23 • A total GFA of about 900m² with 18 Flats
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)	• Plot ratio not more than 0.48 • A total GFA of 5,808m² with 42 Flats
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)	• Plot ratio not more than 0.4 • A total GFA of not more than 518.32m² with 2 Houses
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)	• Plot ratio 0.48 • A total GFA of about 2,700m² with 19 Flats

Site	Planned / Potential Future Developments in the Vicinity (1)	Details(2)
E	Residential Care Home for the Elderly at Lot No. 953 RP (Part) in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/16)	• Plot ratio about 2.94 • A total GFA of about 5,025m^2
F	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/17)	• Plot ratio about 2.4 • A total GFA of about 23,732m^2 with 360 Flats
G	Private Residential Development at Various Lots in D.D. 92 and Adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/14) – Partially Approved Site A	• Plot ratio not more than 3 • A total GFA of about 62,529m^2 with 971 Flats
H	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kwu Tung South (A/NE-KTS/565)	• Plot ratio about 2.012 • Domestic GFA about 39,400m^2 with 1,062 Flats
I	Comprehensive Residential Development with Commercial and Social Welfare Facilities at Lot 2579 in D.D. 92, Kwu Tung South (A/NE-KTS/506)	• Plot ratio about 3 • Domestic GFA not more than 112,680m^2 with 2,589 Flats

Notes: (1) Locations are indicated in **Drawing Nos. 4.1** and **4.2.**
(2) Refer to information as available from the Statutory Planning Portal 3 by Town Planning Board.

4.2.14 According to the available information from TPB's website, it is noted that the planned/ potential future residential developments as listed in **Table 4.4** would be completed in or before year 2032, and therefore the traffic induced by these planned future developments will be taken into account in the traffic forecast.

4.2.15 To evaluate the potential traffic induced by the planned future residential developments in in the vicinity, the traffic trip rates for the residential development as stipulated in Transport Planning & Design Manual (TPDM) and the consultant's in-house trip rates are referred. The adopted trip rates and the estimated potential traffic generation and attraction of these planned future development are presented and summarized in **Table 4.5**.

Table 4.5 Adopted Trip Rates and Estimated Trips for the Planned / Potential Future Developments in the Vicinity

		AM Peak Hour		PM Peak Hour	
		Generation	Attraction	Generation	Attraction
Site A – 18 Flats at avg. size of 50m²					
Adopted Trip Rates (pcu/hr/flat)(1)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**1**	**1**	**1**	**1**
Site B – 42 Houses at avg. size of 138.3m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**13**	**9**	**9**	**9**
Site C – 2 Houses at avg. size of 259.2m²					
Adopted Trip Rates (pcu/hr/flat)(3)		0.3524	0.2837	0.2842	0.3948
Estimated Trips (pcu/hr)		**1**	**1**	**1**	**1**
Site D – 19 House at avg. size of 142.1m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**6**	**4**	**4**	**4**
Site E – Proposed Residential Care Home for the Elderly with 150 beds					
Elderly Home 150 places	Adopted Trip Rates (pcu/hr/place)(4)	0.0385	0.0346	0.0308	0.0308
	Estimated Trips (pcu/hr)	6	5	5	5
Site F – 360 Flats at avg. size of 65.9m²					
Residential Portion 360 Flats	Adopted Trip Rates (pcu/hr/flat)(5)	0.0888	0.0515	0.0356	0.0480
	Estimated Trips (pcu/hr)	32	19	13	17
Site G - 971 Flats at avg. size of 64.4m²					
Adopted Trip Rates (pcu/hr/flat)(5)		0.0888	0.0515	0.0356	0.0480
Estimated Trips (pcu/hr)		**86**	**50**	**35**	**47**
Site H – 1,062 Flats at avg. size of 37.1m²					
Estimated Trips (pcu/hr)(6)		65	45	30	40
Site I – 2,589 Flats at avg. size of 43.5m²					
Residential Portion 2,589 Flats	Adopted Trip Rates (pcu/hr/flat)(1)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	186	110	74	96
Enhancement of Public Transport Services for Sites E, F, H and I					
Public Transport Service for Site E & F	Adopted Trip Rates	-	-	-	-
	Estimated Trips (pcu/hr)(7)	39	39	39	39
Public Transport Service for Site I & H	Adopted Trip Rates	-	-	-	-
	Estimated Trips (pcu/hr)(8)	39	39	39	39

Notes:
(1) TPDM mean trip rates for private housing with average flat size of 60m² adopted for house development
(2) TPDM upper trip rates for private housing with average flat size of 140m² adopted for house development
(3) TPDM upper trip rates for private housing with average flat size of 240m² adopted for house development
(4) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted
(5) TPDM mean trip rates for private housing with average flat size of 70m² adopted for medium rise residential development
(6) Refer to the development trips adopted in the TIA of the latest approved application no. A/NE-KTS/565 from the Town Planning Board
(7) Refer to information on the approved application no. Y/NE-KTS/16 and Y/NE-KTS/17 as inspected from the Town Planning Board
(8) Refer to information on the approved application no. Y/NE-KTS/15 and A/NE-KTS/506 as inspected from the Town Planning Board

Other Planned/Potential Future Developments in North District

4.2.16 Other than the planned/potential developments in the vicinity of the Application Site as listed in the above **Table 4.4**, it is also noted that there are also various planned/potential future developments in the North District including the developments at Queen's Hill, FLN NDA and KTN NDA.

4.2.17 As mentioned in **paragraph 3.1.2 in Section 3.1**, the Application Site is mainly served by the local distributors Kwu Tung Road, Kam Hang Road and Hang Tau Road, which the major access routes would be substantially different from the development traffic of the other planned/potential future developments in North District. Thus, the future traffic of these

other planned/potential future developments on the local distributors in the vicinity of the Application Site should be insignificant.

4.2.18 Nevertheless, traffic flows of the other planned/potential future developments in North District have also been revised and taken into consideration into the Reference Scenario for a conservative approach. The details and the estimated traffic of the other planned/potential future developments in North District are presented in **Tables 4.6** and **4.7** respectively.

Table 4.6 Other Planned / Potential Future Developments in North District

Site	Planned Future Developments in North District [1]	Details
Planned/Potential Private Developments		
J	Private Residential Development at Lots 684 RP, 705 RP, 706 RP, 709 RP (Part), 711 RP (Part), 712, 713 RP, 714 RP, 715, 716, 717 RP (Part), 718 RP (Part), 719, 721 RP (Part) and 2158 RP (Part) in D.D. 92 and adjoining Government Land, Kwu Tung North (Y/KTN/2)	Southern Portion • Domestic plot ratio 3 • Domestic GFA of 20,271 m^2 with 478 Flats[2] Northern Portion • Domestic plot ratio 1.1 • Domestic GFA of 9,517.2 m^2 with 49 Houses[2]
K	Private Residential Development at Lot No. 4076 RP in DD91, 663 Fan Kam Road, Fanling	765 Flats[3]
L	Private Residential Development at Sheung Shui Lot 2 RP and adjoining Government land, New Territories (Y/FSS/19)	• Domestic plot ratio of about 4.3 • Domestic GFA of 128,401.87 m^2 with 969 Flats and 100 beds in RCHE[2]
M	Private Residential Development at Fanling Area 40 (Y/FSS/13)	• Domestic plot ratio 5.46 • Domestic GFA of 19,750 m^2 with 300 Flats[2]
N	Private Residential Development at Various Lots in D.D. 51 and Adjoining Government Land, Fanling, New Territories (Y/FSS/18)	• Domestic plot ratio of not more than 5 • Domestic GFA of about 66,155 m^2 with 1,638 Flats and 120 beds in RCHE[2]
O	Private Residential Development at Fanling Area 17 (Fan Garden) Sites B1 & B2	• Domestic plot ratio of not more than 6 • 1,600 Flats[4]
Other Planned Public Housing Developments		
P1 & P2	Kwu Tung North New Development Area & Fanling Nort New Development Area	• Public Housing: 57,500 Flats • Private Housing: 28,700 Flats • Commercial GFA of 554,000 m^2[5]
P3	Planned Public Housing at Po Shek Wu Road, Sheung Shui, FSS Area 4	• 1,850 Flats • Commercial GFA of 3,000 m^2[6]
P4	Planned Public Housing Development in Sheung Shui Areas 4 and 30 (Site 1 & 2)	Site 1 • 2,088 Flats • Retail GFA of 400 m^2[7] Site 2 • 1,556 Flats • Retail GFA of 700 m^2[7]
P5	Planned Public Housing Development at Fanling Area 36 Phase 4 (Ching Ho Extension)	• 772 Flats • Retail GFA of 2,600 m^2[8]
P6	Planned Public Housing Development at Ching Hiu Road, Sheung Shui (Site B in OZP no. S/FSS/25)	620 Flats[9]
P7	Planned Public Housing Development at Tai Tau Leng, Sheung Hui (Site C1 in OZP no. S/FSS/25)	3,100 Flats[10]

Table 4.6 Other Planned / Potential Future Developments in North District (Cont'd)

Site	Planned Future Developments in North District[1]	Details
P8	Planned Public Housing Development at Choi Whun Street, Sheung Shui (Site D1 & 2 in OZP no. S/FSS/25)	2,330 Flat[11]
P9	Planned Public Housing Development near Queen's Hill	4,030 Flats[12]
P10	Planned Subsidised Housing Site at Jockey Club Road, FSS Area 11	640 Flats[13]
P11	Planned Public Housing Development at Fanling Area 17 (Fan Garden) Site A	8,300 Flat[14]
P12	Planned Public Housing Development at Fanling Area 48	4,200 Flat[15]
P13	Planned Public Housing Development at San Wan Road, Fanling	450 Flats[16]

Notes:
(1) Locations are indicated in **Drawing No. 4.1**
(2) Refer to information as available from the Statutory Planning Portal 3 by Town Planning Board.
(3) Refer to information on Particulars of Applications for Presale Consent and Consent To Assign Pending Approval as at 30/04/2024 by Lands Department.
(4) Refer to information on Discussion Papers No. 45/2021 as available on North District Council of HKSAR's website
(5) Refer to information on LC Paper No. CB(1)341/2024(03) as discussed by the Panel on Development of Legislative Council on 26 March 2024.
(6) Refer to information on Planning Brief (May 2019) from Hong Kong Housing Authority
(7) Refer to information on Addendum to the Approved Planning Brief (July 2021) from Hong Kong Housing Authority
(8) Refer to information on Addendum to the Approved Planning Brief (November 2019) from Hong Kong Housing Authority
(9) Refer to information on Discussion Paper No. 5/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(10) Refer to information on Discussion Paper No. 9/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(11) Refer to information on Planning Brief (December 2022) from Hong Kong Housing Authority
(12) Refer to information on Planning Brief (May 2023) from Hong Kong Housing Authority
(13) Refer to information on Discussion Paper No. 19/2021 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(14) Refer to information on Discussion Paper No. 2/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(15) Refer to information on Discussion Paper No. 3/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(16) Refer to information on Planning Brief (January 2022) from Hong Kong Housing Authority

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District

		AM Peak Hour		PM Peak Hour	
		Generation	Attraction	Generation	Attraction
Planned/Potential Private Developments					
Site J - 478 Flats at avg. size of 42.4m2 and 49 Houses at avg. size of 194.2m²					
Southern Portion 478 Flats	Adopted Trip Rates (pcu/hr/flat)(2)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	34	20	14	18
Northern Portion 49 Houses	Adopted Trip Rates (pcu/hr/flat)(5)	0.3524	0.2837	0.2842	0.3948
	Estimated Trips (pcu/hr)	17	14	14	19
Estimated Total Trips (pcu/hr)		**51**	**34**	**28**	**37**
Site K – 765 Flats at avg. size of 34.5m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**55**	**33**	**22**	**28**
Site L – 969 Flats at avg. size of 132.5m²					
Adopted Trip Rates (pcu/hr/flat)(6)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**293**	**216**	**219**	**216**
Site M – 300 Flats at avg. size of 65.8m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**22**	**13**	**9**	**11**
Site N – 1,638 Flats at avg. size of 40.4m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**118**	**70**	**47**	**61**
Site O – 1,600 Flats					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**115**	**68**	**46**	**59**
Other Planned Public Housing Developments					
Sites P1 & P2 – 86,200 Flats and Commercial Facilities					
Public Housing 57,500 Flats	Adopted Trip Rates (pcu/hr/flat)(9)	0.0432	0.0326	0.0237	0.0301
	Estimated Trips (pcu/hr)	2,484	1,875	1,363	1,731
Private Residential Portion 287,00 Flats	Adopted Trip Rates (pcu/hr/flat)(9)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	2,061	1,220	821	1,062
Commercial 554,000m²	Adopted Trip Rates (pcu/hr/100m²)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	1,272	1,348	1,717	1,974
Estimated Total Trips (pcu/hr)		**5,817**	**4,443**	**3,901**	**4,767**
Site P3 – 1,850 Flats, Retail and Kindergarten					
Residential Portion 1,850 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	115	79	55	74
Retail Portion 3,000m²	Adopted Trip Rates (pcu/hr/100m²)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	7	7	9	11
Kindergarten 6 classrooms	Adopted Trip Rates (pcu/hr/classroom)(12)	2.4444	2.6667	1.1111	1.3333
	Estimated Trips (pcu/hr)	15	16	7	8
Estimated Total Trips (pcu/hr)		**137**	**102**	**71**	**93**

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District (Cont'd)

		AM Peak Hour		PM Peak Hour	
		Generation	**Attraction**	**Generation**	**Attraction**
Site P4 – 3,644 Flats, Retail and Kindergarten					
Site 1 – Residential Portion 2,088 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	130	89	62	84
Site 1 – Retail Portion 400m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	1	1	1	1
Site 1 – Kindergarten 6 classrooms	Adopted Trip Rates (pcu/hr/classroom)(12)	2.4444	2.6667	1.1111	1.3333
	Estimated Trips (pcu/hr)	15	16	7	8
Site 2 – Residential Portion 1,556 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	97	66	46	62
Site 2 – Retail Portion 700m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	2	2	2	2
Estimated Total Trips (pcu/hr)		**245**	**174**	**118**	**157**
Site P5 – 772 Flats with Retail					
Residential Portion 772 Flats	Adopted Trip Rates (pcu/hr/flat) (9)	0.0432	0.0326	0.0237	0.0301
	Estimated Trips (pcu/hr)	33	25	18	23
Retail Portion 2,600m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	6	6	8	9
Estimated Total Trips (pcu/hr)		**39**	**31**	**26**	**32**
Site P6 – 620 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**39**	**26**	**18**	**25**
Site P7 – 3,100 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**193**	**132**	**92**	**124**
Site P8 – 2,330 Flats with Public Vehicle Park					
Residential Portion 2,330 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	145	99	69	93
Public Vehicle Park 70 spaces	Adopted Trip Rates (pcu/hr/space) (13)	0.0929	0.5897	0.4619	0.1500
	Estimated Trips (pcu/hr)	7	41	32	11
Estimated Total Trips (pcu/hr)		**152**	**140**	**101**	**104**
Site P9 – 4,030 Flats					
Adopted Trip Rates (pcu/hr/flat)(9)		0.0432	0.0326	0.0237	0.0301
Estimated Trips (pcu/hr)		**174**	**131**	**96**	**121**
Site P10 – 640 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**40**	**27**	**19**	**26**
Site P11 – 8,300 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**516**	**354**	**247**	**333**

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District (Cont'd)

	AM Peak Hour		PM Peak Hour	
	Generation	**Attraction**	**Generation**	**Attraction**
Site P12 – 4,200 Flats				
Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)	**261**	**179**	**125**	**168**
Site P13 – 450 Flats				
Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)	**28**	**19**	**13**	**18**

Notes:
(1) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home are adopted
(2) TPDM mean trip rates for private housing with average flat size of 60m² adopted for medium rise residential development
(3) TPDM mean trip rates for private housing with average flat size of 70m² adopted for medium rise residential development
(4) TPDM mean trip rates for Retail / Shopping Complex
(5) TPDM upper trip rates for private housing with average flat size of 240m² adopted for house development
(6) TPDM upper trip rates for private housing with average flat size of 140m² adopted for house development
(7) Proposed public transport services under Planning Applications Y/NE-KTS/15 and A/NE KTS-506
(8) Proposed public transport services under Planning Applications Y/NE-KTS/16 and A/NE KTS-17
(9) TPDM mean trip rates for public housing with average flat size of 40m² adopted for subsidised housing: public rental
(10) TPDM mean trip rates for Retail / Shopping Complex
(11) TPDM mean trip rates for public housing with average flat size of 50m² adopted for subsidised housing: HOS/PSPS
(12) Consultant's in-house trip rate as surveyed at Precious Blood Kindergarten are adopted
(13) Trip rates derived from the consultant's surveyed trip rates from ex-Murray Road Multi-storey Car Park

Year 2034 Reference Traffic Flows

4.2.19 The 2034 reference traffic flows are derived by:

(i) Applying a growth rate of 1% p.a. on the 2024 observed flows upto the design year 2034; and

(ii) Superimposing the potential traffic as induced by the Application Site in accordance with the previous scheme of the approved S12A in **Table 4.3** and the additional GMB traffic as discussed in **Paragraph 4.1.11** onto the traffic flows in (i).

(iii) Superimposing the potential traffic as induced by the planned/potential future developments in the vicinity of the Application Site (**Table 4.5**) and other planned/potential future developments in North District (**Table 4.7**) onto the traffic flows in (ii);

4.2.20 The year 2034 reference traffic flows are presented in **Drawing No. 4.3**.

4.3 Traffic Forecasts for Design Scenario

Development Traffic of the Application Site in Design Scenario of Year 2034

4.3.1 In the design scenario of year 2034, it is adopted that the Application Site will be developed in accordance with the latest development schedule of the Proposed MLP with minor relaxation of PR as listed in **Table 2.1**.

4.3.2 The estimated potential traffic generation and attraction of the Application Site in the Design Scenario of 2034 are shown in **Table 4.8**.

Table 4.8 Estimated Traffic Generation and Attraction of the Application Site in Design Scenario of 2034

Development at Application Site In Design Scenario (Proposed MLP with Minor Relaxation of Plot Ratio)	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Residential - 334 flats				
Adopted Trip Rates(1) (pcu/hr/flat)	0.1058	0.0605	0.0426	0.0590
Estimated Trips (pcu/hr)	35	20	14	20
Retail - 319 m² GFA				
Adopted Trip Rates(2) (pcu/hr/100m² GFA)	0.2296	0.2434	0.3100	0.3563
Estimated Trips (pcu/hr)	1	1	1	1
RCHE – 100 places in total				
Adopted Trip Rates(3) (pcu/hr/place)	0.0385	0.0346	0.0308	0.0308
Estimated Trips (pcu/hr)	4	3	3	3
Total Trips (pcu/hr)	**40**	**24**	**18**	**24**

Notes: (1) TPDM mean trip rates for Private Housing: High-Density /R(A) with Ave. Flat Size of 80m²
(2) TPDM mean trip rates for retail / Shopping Complex
(3) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted.

4.3.3 As compared with the previous scheme in the approved S12A, the Proposed MLP with minor relaxation of PR would only induce minimal additional 2-way traffic of 12 pcu/hr in the morning peak hour and 9 pcu/hr in the evening peak hour. The comparison of development traffic of the Application Site in Reference and Design Scenarios are shown in **Table 4.9**.

Table 4.9 Comparison of Development Traffic in Reference and Design Scenarios

Future Scenario	Total Development Traffic of the Application Site (pcu/hr)			
	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Reference Scenario – Previous Scheme in Approved S12A	32	20	15	18
Design Scenario – Proposed MLP with Minor Relaxation of Plot Ratio	40	24	18	24
Net Increase	**+8**	**+4**	**+3**	**+6**

Year 2034 Design Traffic Flows

4.3.4 The year 2034 design flows are derived by superimposing the net increases in development traffic of the Application Site due to the Proposed MLP with minor relaxation of PR as presented in **Table 4.9** onto the year 2034 reference traffic flows (**Drawing No. 4.3**).

4.3.5 The year 2034 design traffic flows are presented in **Drawing No. 4.4**.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Assessments for Year 2034 Reference and Design Scenarios

5.1.1 The operational performances of the junctions identified in **Section 3.3** are assessed with the derived 2034 reference and design traffic flows under the existing layouts and method of control. Apart from the existing junctions, the junction of Hang Tau Road and the access of the Proposed Development (i.e. Junction J5) is also assessed.

5.1.2 The assessment results for reference and design year of 2034 are summarised in **Table 5.1**, and the details of junction assessments are attached in **Appendix C**.

Table 5.1 Year 2034 Operational Performance of the Identified Key Junctions

Junction No.	Location	Method of Control	Year 2034 DFC(1)			
			Reference Scenario		Design Scenario	
			AM	PM	AM	PM
J1	Kwu Tung Road / Kam Hang Road	Priority	**1.99**	**1.19**	**2.01**	**1.20**
J2	Kam Hang Road / Hang Tau Road	Priority	0.74	0.52	0.75	0.52
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	0.12	0.13	0.12	0.14
J4	Hang Tau Road / Access Road A	Priority	0.10	0.12	0.10	0.12
J5	Hang Tau Road / Proposed Development Access	Roundabout	0.21	0.15	N/A	
		Priority	N/A		0.11	0.09

Note: (1) DFC = Design flow / capacity ratio for a priority junction and roundabout

5.1.3 The assessment results in **Table 5.1** show that the Proposed MLP with minor relaxation of PR will have inapparent effect on the junction performance, and all identified junctions will still be operating within their capacities during both morning and evening peak hours in the Design Scenario of year 2034 except for Junction J1. It is assessed that Junction J1 will be overloaded during both the morning and evening peak hours in the future year 2034 even though the application site to be developed in accordance with the scheme in the approved S12A without the proposed minor relaxation in the Reference Scenario.

5.2 Road Improvement Scheme for Kam Hang Road as Proposed in Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14

5.2.1 Rezoning applications for the CDA(1) site (Application No. Y/NE-KTS/12) and the CDA(2) site (Application No. Y/NE-KTS/14) at Kam Hang Road with the proposed increase of plot ratio to 3.0 (i.e. Sites I and G as in listed in **Table 4.4** of **Section 4.2** respectively) were approved and partially approved by TPB in September 2019 and December 2020 respectively. The rezoning of these CDA (1) and CDA(2) sites have been amended in the prevailing OZP, and they have been taken into account in deriving the traffic forecast for this study as discussed in **Section 4.2**.

5.2.2 In accordance with the available information on the rezoning applications as inspected from TPB, it is noted that a road improvement scheme for Kam Hang Road (the Kam Hang Road improvement scheme) was proposed in the approved Application Nos. Y/NE-KTS/12 for improving the road capacity along Kam Hang Road including the junction of Kwu Tung Road / Kam Hang Road (J1) in order to serve for the rezoning proposal. Subsequently, further junction modification works at Junction J1 were proposed under the approved Application No. Y/NE-KTS/14 as shown in **Drawing No. 5.1**.

5.2.3 With the future implementation of the Kam Hang Road improvement scheme proposed in Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14, it is assessed that Junction J1 will be able to cater for the future traffic in the Design Scenario of year 2034 with ample capacity, as shown in **Table 5.2**. The details of the junction assessments are included in **Appendix C**.

Table 5.2 Year 2034 Operational Performance of Junction J1 under Kam Hang Road Improvement Scheme

Junction No.	Location	Layout & Method of Control	Year 2034 DFC(1)			
			Reference Scenario		Design Scenario	
			AM	PM	AM	PM
J1	Kwu Tung Road / Kam Hang Road	Priority – with junction modification proposed under Application Nos. Y/NE-KTS/12 & Y/NE-KTS/14	0.83	0.44	0.84	0.45

Note: (1) DFC = Design flow/ capacity ratio for a priority junction

5.3 Road Link Assessments for Year 2034 Reference and Design Scenarios

5.3.1 To review the potential impact on the road link capacity due to the Proposed MLP with minor relaxation of PR, road link capacity assessments are also conducted to assess the flow/capacity ratio (i.e. V/C ratio) of the key road links in the vicinity of the Application Site in design year 2034. The assessment results are summarized in **Table 5.3**.

Table 5.3 Design Year 2034 V/C ratio of Key Road Links

Road Link(1)	Direction	Link Capacity(4) (pcu/hr)	Year 2034 Reference Scenario				Year 2034 Design Scenario			
			Peak Hour Flows(5) (pcu/hr)		Flow/Capacity Ratio (V/C Ratio)		Peak Hour Flows(6) (pcu/hr)		Flow/Capacity Ratio (V/C Ratio)	
			AM	PM	AM	PM	AM	PM	AM	PM
Link L1 - Kwu Tung Road (North of Kam Hang Road)	Northbound	980	410	305	0.42	0.31	415	305	0.42	0.31
	Southbound	980	480	480	0.49	0.49	485	485	0.49	0.49
Link L2 - Kwu Tung Road (South of Kam Hang Road)	Northbound	980	270	295	0.28	0.30	270	295	0.28	0.30
	Southbound	980	605	365	0.62	0.37	610	370	0.62	0.38
Link L3 - Kam Hang Road(2) (West of Hang Tau Road)	Eastbound	1,140	605	595	0.53	0.52	610	600	0.54	0.53
	Westbound	2,300	870	490	0.38	0.21	880	495	0.38	0.22
Link L4 - Kam Hang Road (East of Hang Tau Road)	Eastbound	715	300	275	0.42	0.38	300	275	0.42	0.38
	Westbound	715	425	235	0.59	0.33	425	235	0.59	0.33
Link L5 - Hang Tau Road (South of Kam Hang Road)	Northbound	740	460	280	0.62	0.38	470	285	0.64	0.39
	Southbound	740	320	345	0.43	0.47	325	350	0.44	0.47
Link L6 - Hang Tau Road (North of Access Road A)	Northbound	740	325	190	0.44	0.26	330	195	0.45	0.26
	Southbound	740	215	240	0.29	0.32	215	245	0.29	0.33
Link L7 - Hang Tau Road(3) (South of Access Road A)	Northbound	980	275	165	0.28	0.17	285	170	0.29	0.17
	Southbound	980	165	210	0.17	0.21	170	215	0.17	0.22

Notes:
(1) Refer to **Drawing No. 3.1**.
(2) With junction modification works proposed under the approved Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14 as shown in **Drawing No. 5.1**.
(3) With proposed road widening scheme at Hang Tau Road as shown in **Drawing No. 2.3**.

(4) The road link capacities are derived with reference to Table 2.4.1.1 in TPDM Volume 2 Chapter 2 by applying an observed average pcu factor of 1.15 and taking into account the narrowest widths of the road sections.
(5) Refer to the year 2034 reference traffic flows in **Drawing No. 4.3**.
(6) Refer to the year 2034 design traffic flows in **Drawing No. 4.4**.

5.3.2 The assessment results in **Table 5.3** show that the Proposed MLP with minor relaxation of PR will have inapparent effect on the road link capacities, and all assessed road links will operate with adequate capacities during peak hours in both Reference and Design Scenario of year 2034.

5.4 Review on Public Transport

5.4.1 Apart from the junction operational performance and road link capacity, the future public transport demand with the Proposed Development at the Application Site is also reviewed.

5.4.2 To review the future public transport demand at the Hang Tau Tai Po area, the potential public transport demands induced by the Application Site as well as the adjacent planned/potential future developments in the area are estimated as shown in **Table 5.4**.

Table 5.4 Derivation of Future Public Transport Demand of the Proposed Development

Parameters	Formula	Adjacent Planned/Potential Future Developments in Hang Tau Tai Po Area[(1)(2)] (Application Nos. Y/NE-KTS/13, A/NE-KTS/525, A/NE-KTS/460 and Y/NE-KTS/466)	Application Site in Design Scenario with Proposed MLP[(3)]
Residential Units	-	18 + 42 + 2 + 19 = 81	334
Estimated Population[(4)]	(a)	227	936
Average daily mechanised trips per person[(5)]	(b)	1.83	
Peak hour factor (AM/PM) to daily total[(6)]	(c)	12%	
Estimated mechanised trips per hour (AM/PM Peak) per person	(d) = (b) x (c) x 0.9[(7)]	0.1976	
Estimated mechanised trips per hour (AM/PM Peak)	(e) = (a) x (d)	45	185
Mode share of public transport (excluding private cars and taxi)[(8)]	(f)	70%	
Estimated public transport demand per hour (AM/PM peak)	(g) = (e) x (f)	32	130
	Total	**162**	

Notes: (1) Details refer to Sites A, B, C and D as listed in **Table 4.4**.
(2) Site locations refer to **Drawing Nos. 4.1** and **4.2.**
(3) Details refer to **Table 2.1**
(4) The average domestic household size of 2.8 adopted.
(5) The average daily mechanised trips per person as derived by the information from Travel Characteristics Survey 2011 as available on TD's website.
(6) The peak hour factor as derived by the information from Travel Characteristics Survey 2011 as available on TD's website.

(7) It is assumed that 90% of mechanised trips are the outbound trips during the AM Peak or the inbound trips during the PM Peak.
(8) Since the Application Site is located at a considerable distance from the railway station, and there is no franchised bus service available in the Hang Tau Tai Po area, it is anticipated that the GMB service will be the only available mode of public transport. Therefore, the mode share of 70% for public transport for the area is adopted with reference to the distributions of boardings by rail 30%, by franchised bus 27% and by public light bus 13% for all purposes as detailed in Table 3.6 of the Travel Characteristics Survey 2011.

5.4.3 As shown in **Table 5.4**, it is estimated that the total public transport demand induced by the Application Site as well as the adjacent planned/potential future developments in Hang Tau Tai Po area would be about 162 passengers during the peak hour.

5.4.4 Given that there is only one GMB route (no. 50K) currently serving the area, and the existing passenger outbound demand at the terminus of the route in Hang Tau Village has already occupied over 90% capacity of the current service, an off-street GMB layby together with a vehicle turnaround facility have been proposed at the Proposed Development to allow future enhancement of GMB services as discussed in **Section 2.5**.

5.4.5 Subject to the detailed review in later design stage, the proposed route would serve as a special short working route of GMB No. 50K travelling between the subject Development and Sheung Shui Station with the existing intermediate stops.

5.4.6 With the assumption of a new short working GMB route of 50K to be operated at 3 mins headway which is similar to its existing scheduled headway, an additional capacity of up to about 380 passengers per hour (i.e. [60mins/3mins headway] x 19 passengers per GMB) can be provided. Since the future additional demand of 162 passengers per hour will only take approximately 43% of the capacity, it is considered the proposal would be well sufficient to cater for the future demand in the Hand Tau Tai Po area.

5.4.7 Since the alighting passengers will leave the GMB layby immediately, the queuing area will be reviewed with the boarding passengers only, and the assessment is summarized in **Table 5.5**.

Table 5.5 Estimated Passenger Queue Length at the Proposed GMB Layby

Peak Estimated Passenger Demand		Headway of GMB Services (min)	Estimated Passenger Queue	
Persons / hour	Persons / minute		In person	In length (1)
162	3	3	9	5.4m

Note: (1) Assumed each passenger will occupy a length of 0.6m

5.4.8 As presented in **Table 5.5**, the estimated passenger queue will be about 5.4m in length. Since the proposed footpath adjacent to the proposed 26m GMB layby is about 36m in length and 3m in width as shown in **Drawing No. 5.2**, it is sufficient to serve the passenger queue and to provide a passenger shelter as per TPDM's requirement.

5.5 Review on Construction Traffic Impact

5.5.1 Taking into account of the site area of the Application Site as well as the development scale, it is preliminarily estimated by the project team that the peak hourly construction traffic demand related to the Application Site would be 5 vehicles/hour for both ingress and egress directions, i.e. about 10 pcu/hour for both directions.

5.5.2 As compared the construction traffic with the estimated future traffic generation and attraction of the Proposed Development in the previous scheme in the approved S12A (Reference Scenario) and the Proposed MLP (Design Scenario), **Table 5.6** shows that the construction traffic would not be more that the future operation traffic in both Reference and

Design Scenarios. Therefore, it will cause no adverse traffic impact to the surrounding road junctions and road links based on the results as revealed in **Sections 5.1 to 5.3**.

Table 5.6 Comparison of Anticipated Construction Traffic and Estimated Traffic in Reference and Design Scenarios

	Estimated Traffic Flows (pcu/hr)			
	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Reference Scenario	32	20	15	18
2-way Traffic Flows	**52**		**33**	
Design Scenario	40	24	18	24
2-way Traffic Flows	**64**		**42**	
Construction Traffic of the Application Site	10	10	10	10
2-way Traffic Flows	**20**		**20**	

Note: (1) Refer to **Table 4.9**.

5.5.3 The details of construction time periods and necessary temporary traffic management scheme would be further reviewed and submitted for the relevant authorities' approval at the detailed design stage prior to the commencement of construction works.

6. LONG TERM TRAFFIC FORECAST FOR NOISE IMPACT ASSESSMENT (NIA)

6.1 Design Year for NIA Study

6.1.1 Taking into consideration that the Proposed Development are tentatively scheduled to be completed by year 2031, design year of 2046 (completion year of the Proposed Development + 15 years) have been adopted for NIA study. The year 2046 peak hour traffic forecasts (solely used for NIA study of this project) together with the vehicle composition breakdown are summarized in **Drawing No. 6.1**.

6.2 Methodology of Traffic Forecast for NIA Study

6.2.1 To derive the year 2046 long term traffic forecast data for the NIA study, a set of year 2034 design peak hour traffic flows is firstly derived by the observed traffic flows of the road network with adopting the same traffic forecast methodology and the same estimated trip generation of the planned/committed future developments as discussed in **Chapter 4**.

6.2.2 For the long-term traffic growth from year 2034 to 2046, reference was made to (i) the population projections from "Hong Kong Population Projections 2022 – 2046" as published by Census and Statistics Department; and (ii) the rounded growth rate of 1% p.a. as derived from ATC in **Table 4.1** of **Section 4.2**.

6.2.3 Based on the population projections as presented in **Table 6.1**, it is derived that the annual growth rate of population from year 2034 to 2046 is +0.25% p.a.

Table 6.1 Population Projections from "Hong Kong Population Projections 2022 – 2046"

Projected Population (thousand persons)		Growth Rate (% p.a.)
2034	**2046**	**2034/2046**
7,945.1	8190.4	0.25%

6.2.4 Since the growth rate of 0.25% p.a. as derived from population projections is much lower than the growth rate of 1% p.a. as from ATC, the latter is adopted for background traffic growth from year 2034 to 2046 for conservative assessment.

6.2.5 The 2046 long term traffic forecasted flows are derived by applying a growth rate of 1% p.a. onto the year 2034 design traffic flows upto the design year 2046.

6.3 Vehicle Class

6.3.1 The types of vehicles in the traffic forecast were firstly sectored into 12-class according to surveyed vehicle distribution.

6.3.2 For NIA purpose, it is understood that vehicles with an unladen weight of 1,525kg should be categorized as heavy vehicles (HV). Therefore, HV percentage including the category of goods vehicle (GV) (comprise with light goods vehicle (LGV), medium/heavy goods vehicle (MGV/HGV) and container trucks) and the category of public transport (PT) (comprise with public light bus (PLB), non-franchised buses (SPB) and franchised buses (FB)) are adopted in accordance with the traffic noise impact assessment requirement.

7. SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The Application Site located at Hang Tau Road consists of various lots in D.D. 92 and D.D.94 and the adjoining government land at Hang Tau Tai Po, Kwu Tung South in Sheung Shui, with site area of about 17,990.9m^2.

7.1.2 A S12A application (application no. Y/NE-KTS/13) for dividing a CDA site into two areas and relaxing their plot ratio, building height and site coverage restrictions was approved by TPB in December 2021. Such amendments to the CDA site have been reflected in the prevailing OZP as gazetted on 31 May 2024.

7.1.3 Under the previous scheme in the approved S12A application in 2021, Area (a) of the CDA site consists of the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a RCHE with the PR of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. Whilst, Area (b) of the CDA site was proposed in the scheme for a potential residential tower with 18 residential units at the domestic PR of 1.23.

7.1.4 To well utilize the development potential, the MLP for Area (a) of the CDA site, i.e. the Application Site, with proposed minor relaxation of PR from 1.41 to 1.692 was developed by the Applicant. To enable the Proposed MLP, a S16 application is required in order to obtain permission from TPB.

7.1.5 MVA Hong Kong Limited was commissioned by the Applicant as a traffic consultant to carry out a traffic impact assessment in support of the S16 application for the Proposed MLP with minor relaxation of PR.

7.1.6 Taking into consideration of accessibility, the future vehicular access point for the Proposed Development was proposed at Hang Tau Road where is at the same similar location of access for the site as proposed in the previous scheme of the approved S12A application.

7.1.7 For further enhancement of the road widening scheme, the intersection of the access to the development and existing Hang Tau Road is converted from a mini-roundabout into a priority T-junction. Besides, further set back of the Proposed Development is proposed for provision of an off-street GMB layby together with a vehicle turnaround facility.

7.1.8 To fulfil the set back requirement as remarked in OZP, the future road widening of Hang Tau Road with 7.3m wide carriageway and 3m footpath has also been taken into account in the revised road widening scheme.

7.1.9 For the sake of enhancing pedestrian accessibility and improving pedestrian safety, a scheme of provision of a proper pedestrian crossing at Hang Tau Road was proposed.

7.1.10 The provisions of internal transport facilities for the Proposed Development under the development schedule of the Proposed MLP were reviewed and proposed with reference to HKPSG and by following the SWD's ancillary requirements for RCHE as adopted in the approved S12A application.

7.1.11 To review the existing traffic condition, traffic count surveys have been carried out at the identified key access junctions on a typical weekday in May 2024. Based on the observed traffic flows, the junction operational assessment results revealed that all identified junctions are currently operating with reserve capacities.

7.1.12 Taking into consideration the Proposed Development at the Application Site was targeted to be completed by 2031, year 2034 was adopted as the design year for assessment in this study.

7.1.13 Traffic forecasts for Design Scenario, i.e. the future scenario with the Proposed MLP and minor relaxation of PR for the Application Site in the design year 2034, are formulated by taking into consideration (i) the background traffic growth as derived from AADT; (ii) the future traffic induced by the planned/potential developments in the vicinity of the Application Site and the other planned/potential future developments in North District; (iii) the potential increases in GMB traffic due to the proposed provision of GMB layby at Proposed Development; and (iv) the net increase of traffic generation and attraction due to the Proposed MLP with minor relaxation of PR for the Application Site.

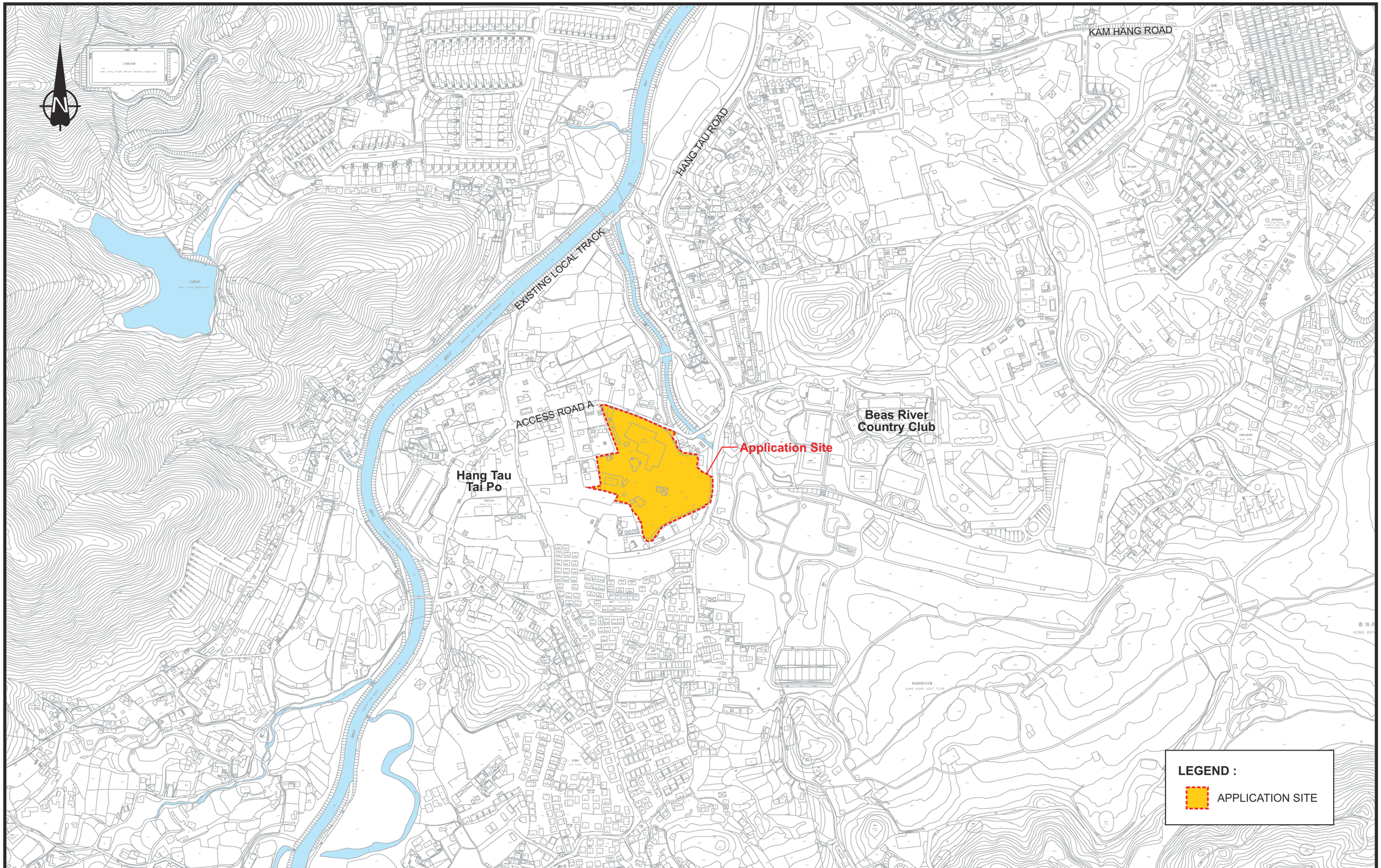
7.1.14 Operational performance of the identified junctions and key road links are assessed with the derived future traffic flows in the design year 2034. The results of junction operational assessment indicated that all assessed junctions will be operated with adequate capacities in the Design Scenario of year 2034 by taking into account the Kam Hang Road improvement scheme as proposed in the approved rezoning application Nos. Y/NE-KTS/12 and Y/NE-KTS/14. The results of road link capacity assessment also showed that all assessed key road links in the vicinity will be still operated with adequate capacities in the Design Scenarios of year 2034.

7.2 Conclusion

7.2.1 The traffic impact assessment has demonstrated that the future traffic induced by developments in the application site under the Proposed MLP with the proposed minor relaxation of PR as well as the planned future developments in the vicinity can all be absorbed by the surrounding road network with the road improvement scheme which was already proposed by others.

7.2.2 The arrangements of vehicular access, as well as provisions of internal transport facilities and public transport facility are justified for the Proposed Development, while the revised road widening scheme by further set back of the Proposed Development as enabled by the Proposed MLP are also considered beneficial to the general public.

7.2.3 In conclusion, the subject S16 application for the Proposed MLP with the proposed minor relaxation of PR is supported from a traffic engineering viewpoint.



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

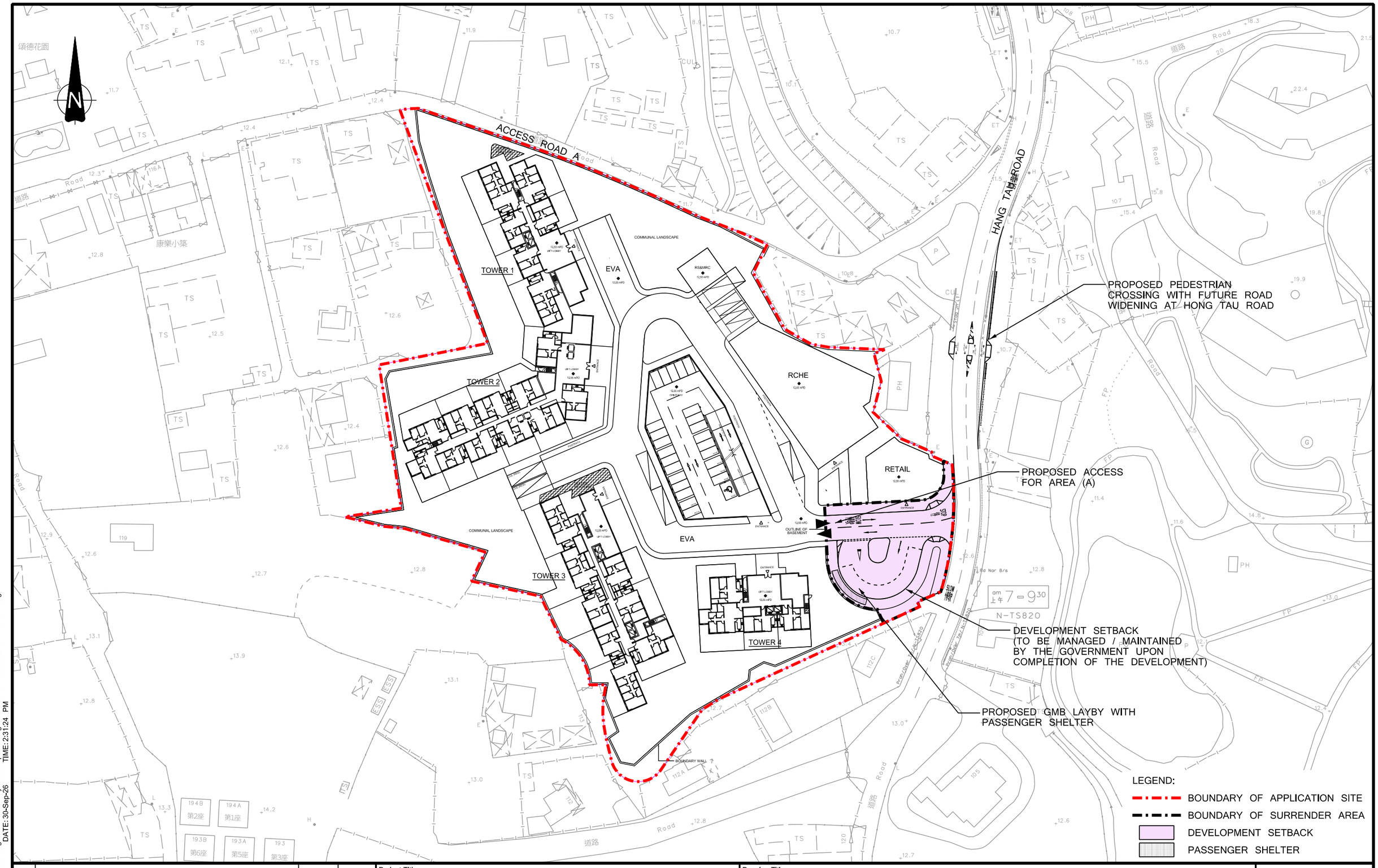
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A	MINOR AMENDMENT	CHC	30SEP26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

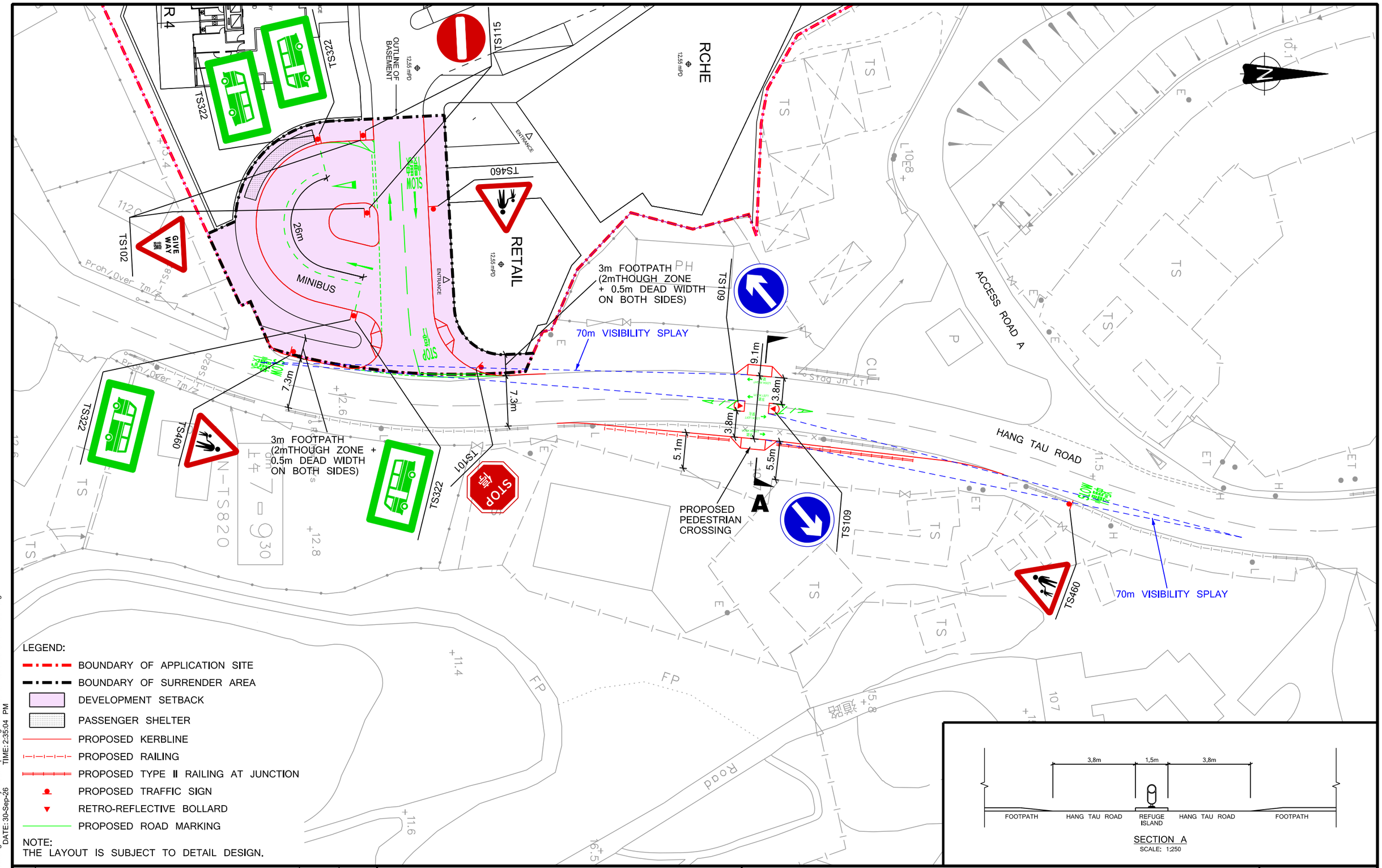
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PROPOSED MASTER LAYOUT PLAN AND ACCESS ARRANGEMENT

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LEGEND:

- BOUNDARY OF APPLICATION SITE
- BOUNDARY OF SURRENDER AREA
- DEVELOPMENT SETBACK
- PASSENGER SHELTER
- PROPOSED KERBLINE
- PROPOSED RAILING
- PROPOSED TYPE II RAILING AT JUNCTION
- PROPOSED TRAFFIC SIGN
- RETRO-REFLECTIVE BOLLARD
- PROPOSED ROAD MARKING

NOTE:
THE LAYOUT IS SUBJECT TO DETAIL DESIGN.

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A	MINOR AMENDMENT	CHC	30SEP26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

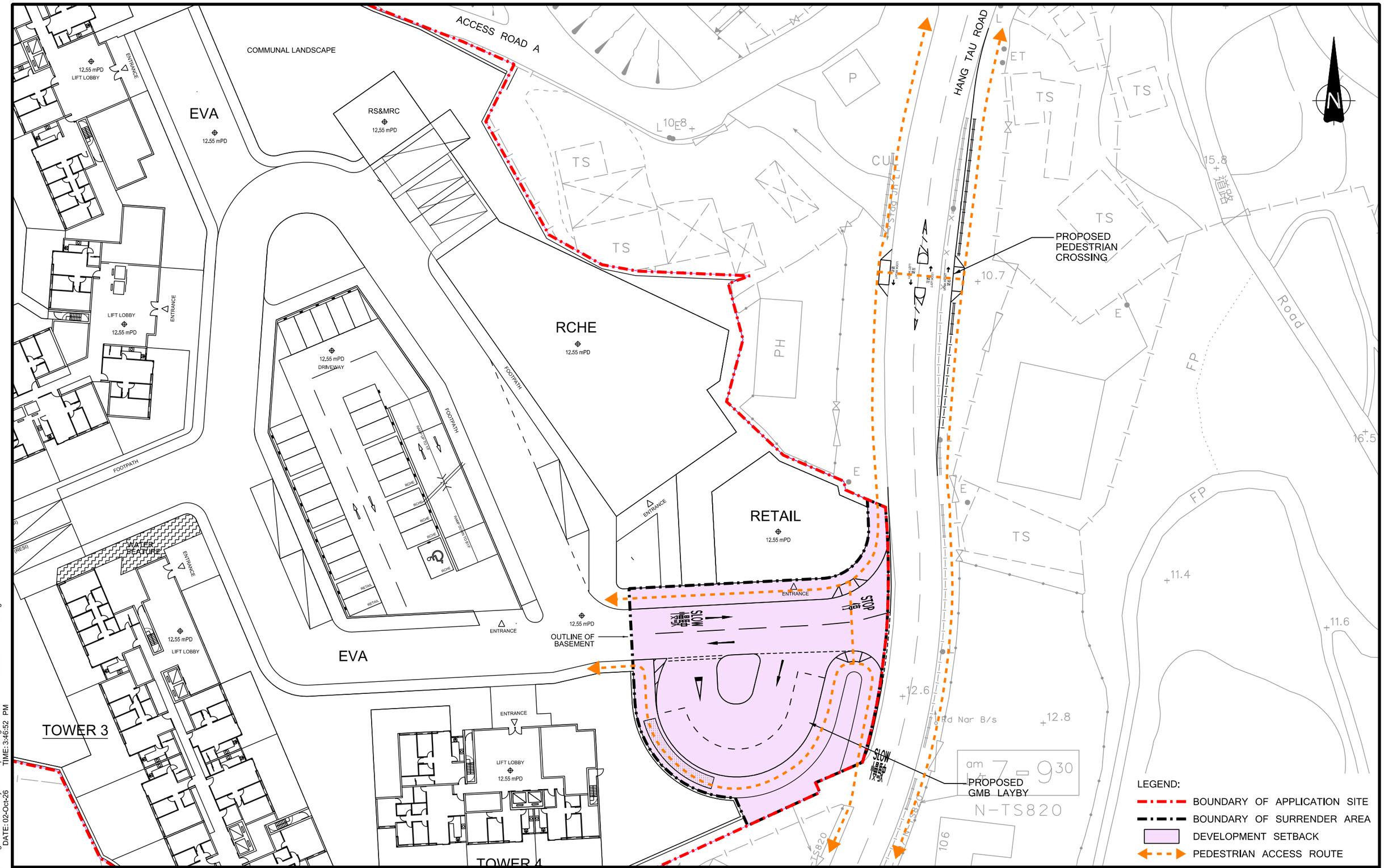
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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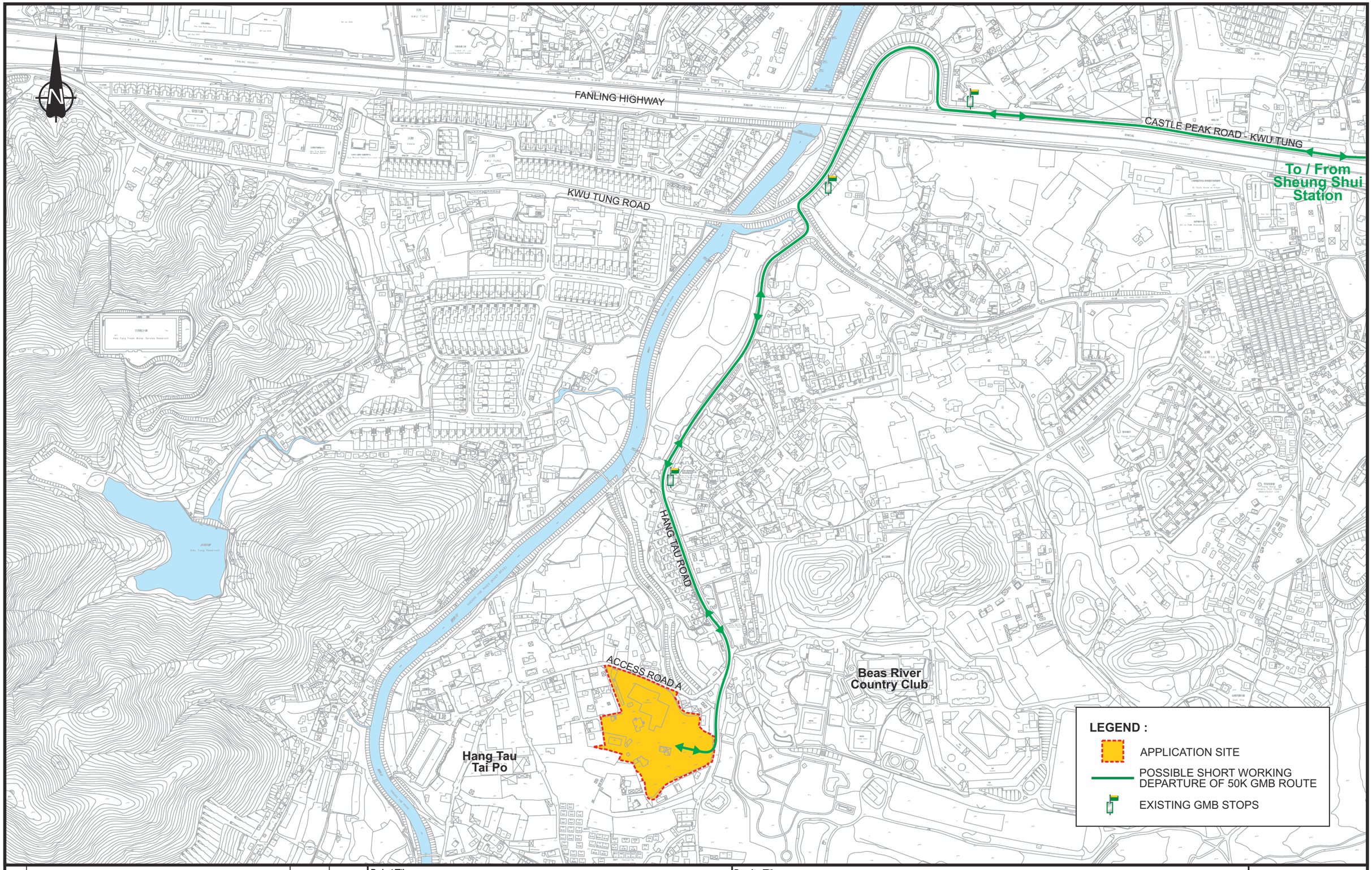
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Project Title

SECTION 16 PLANNING APPLICATION FOR
PROPOSED MINOR RELAXATION OF PLOT RATIO
AND BUILDING HEIGHT RESTRICTION FOR
COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO,
KWU TUNG SOUTH

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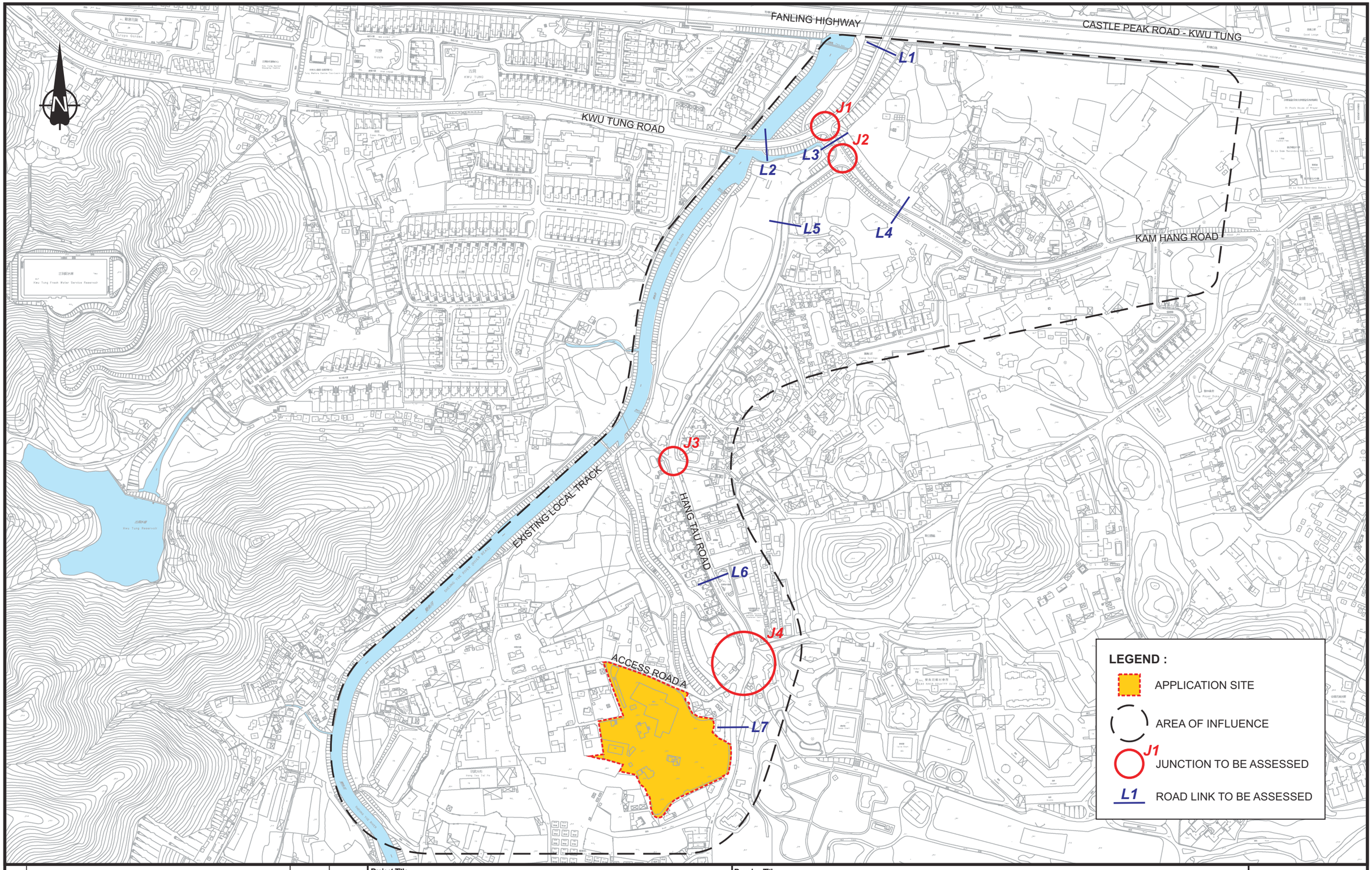
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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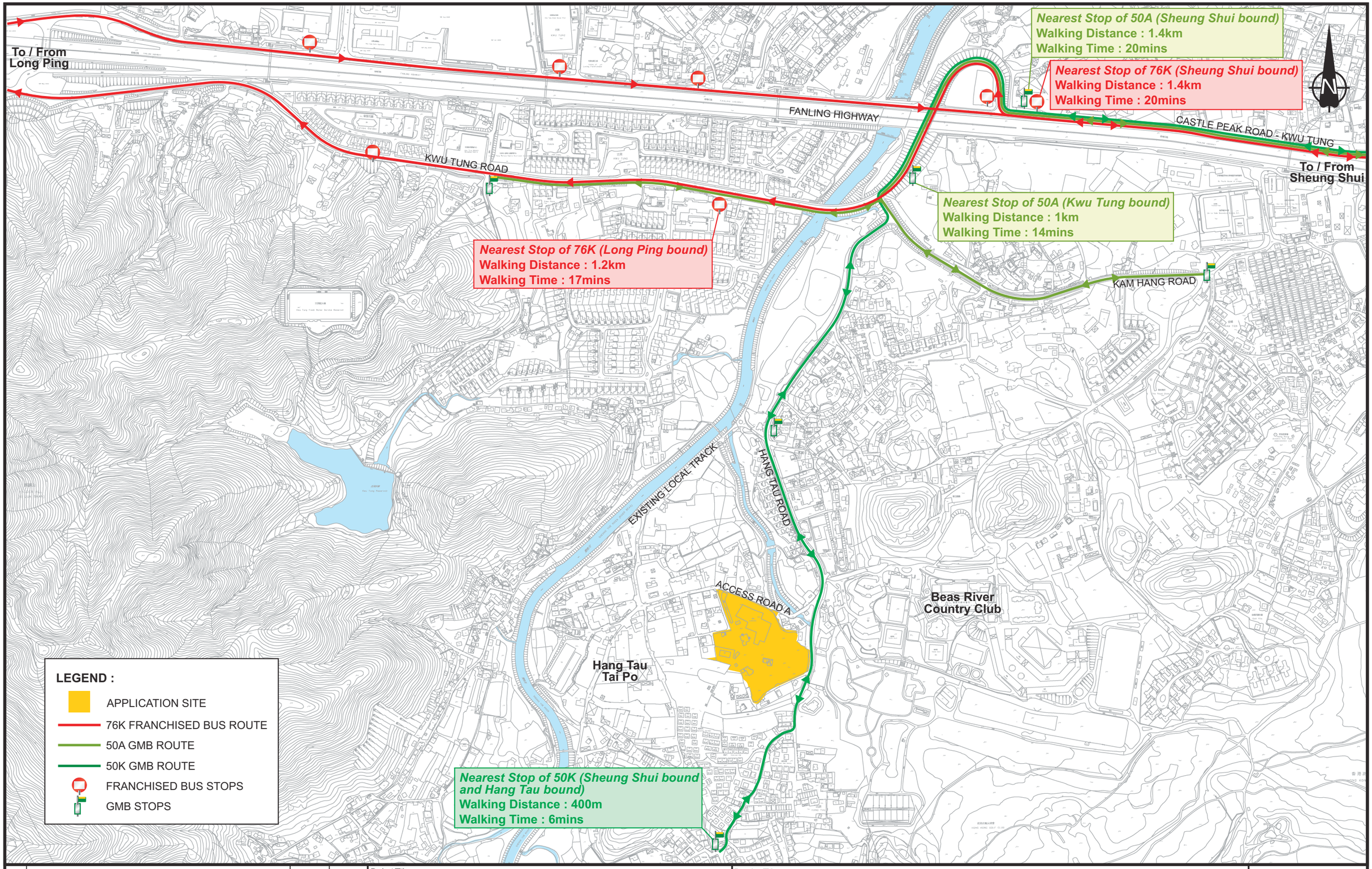
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

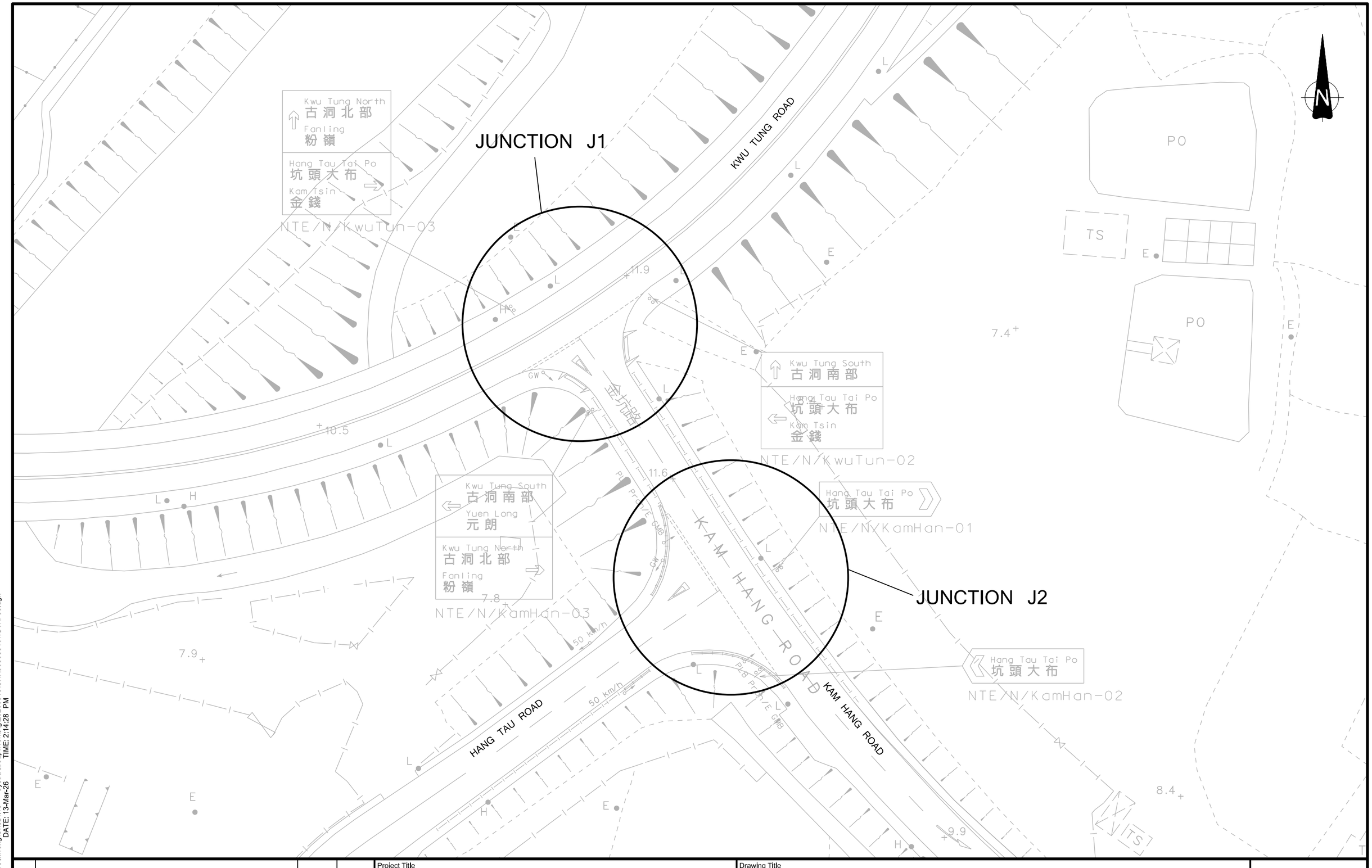
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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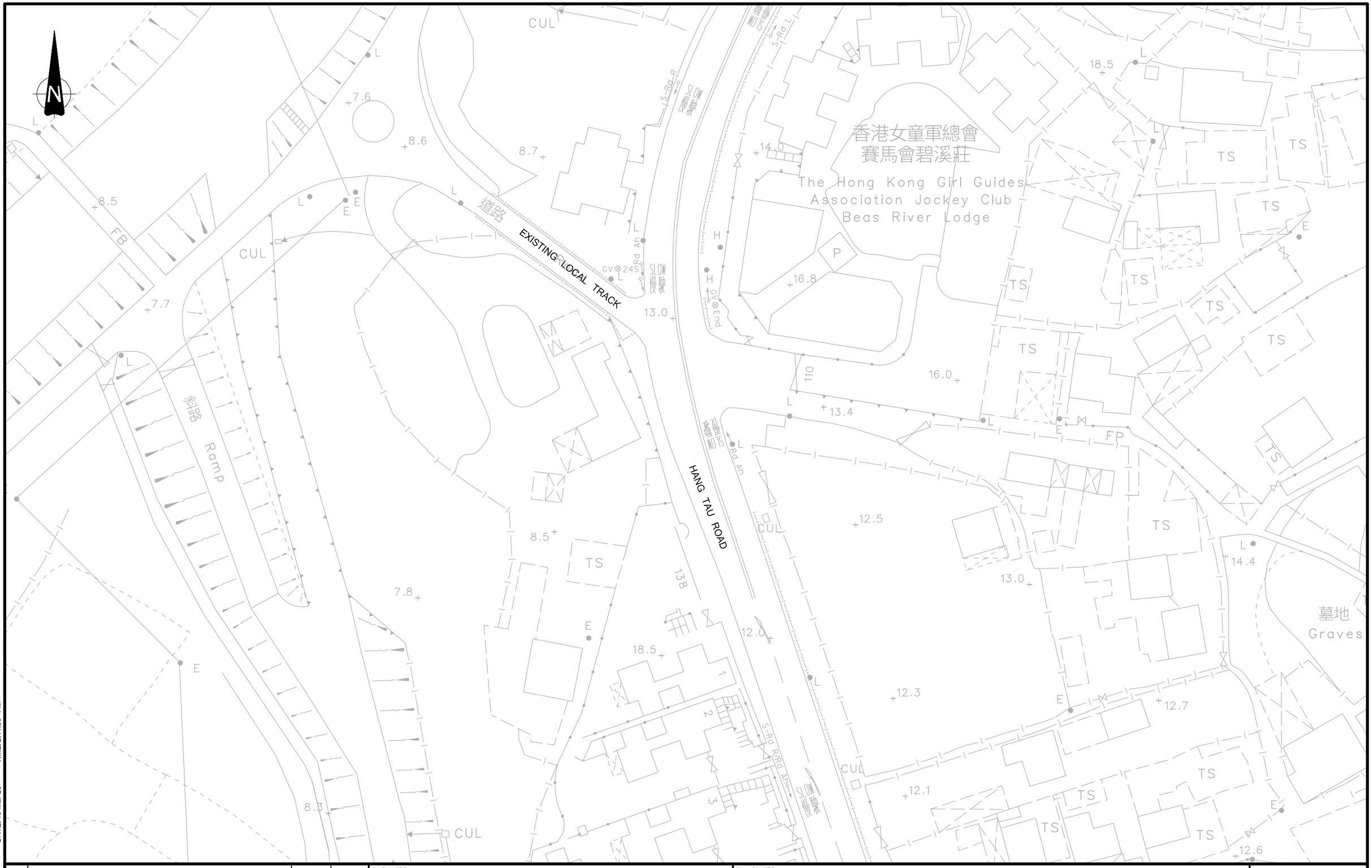
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED
MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT
RESTRICTION FOR COMPREHENSIVE DEVELOPMENT
IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

EXISTING JUNCTION LAYOUT OF HANG TAU ROAD / LOCAL TRACK TO SHEUNG YUE RIVER / ACCESS OF JOCKEY CLUB RIVER BEAS LODGE (J3)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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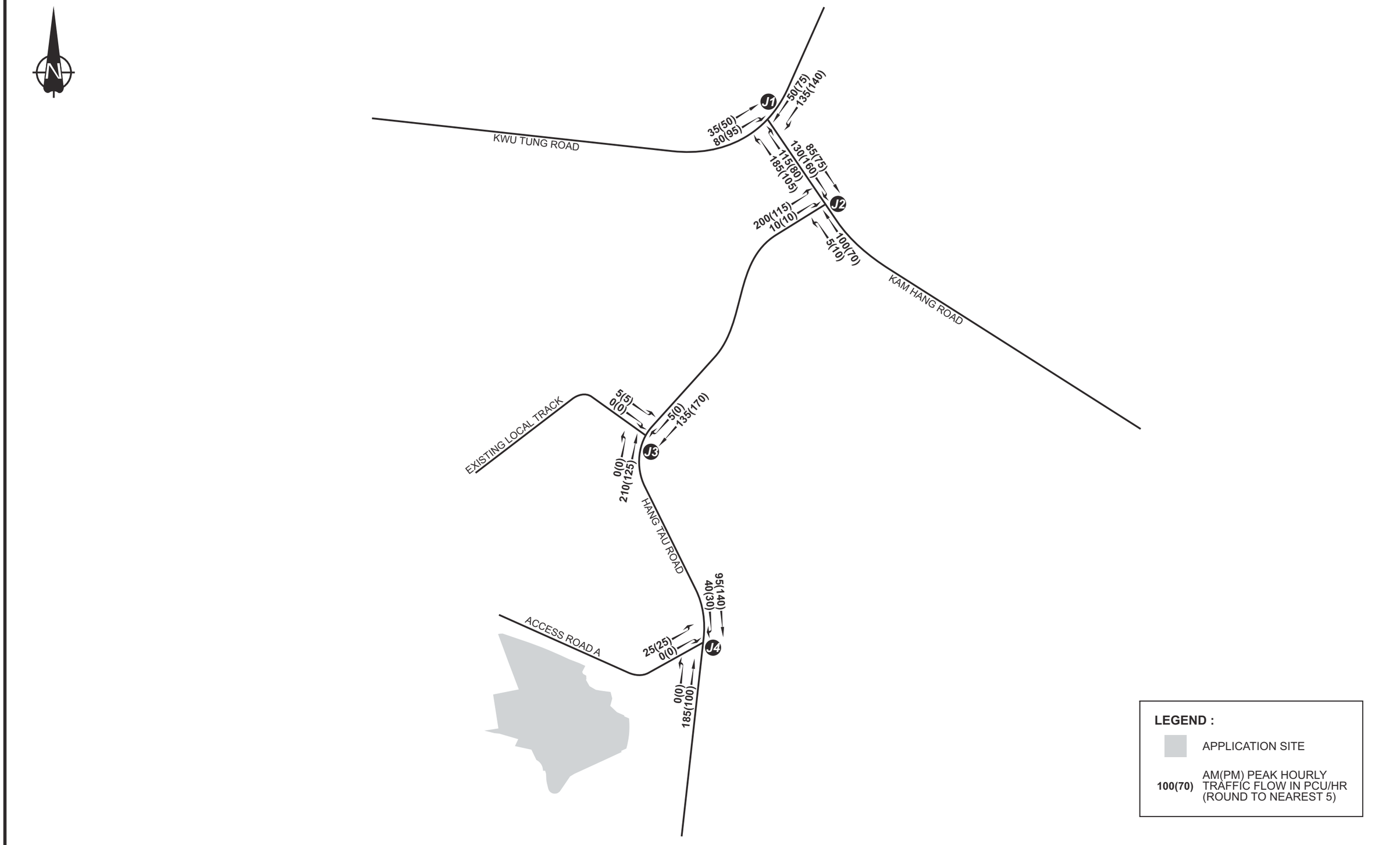
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LEGEND :

APPLICATION SITE

100(70) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

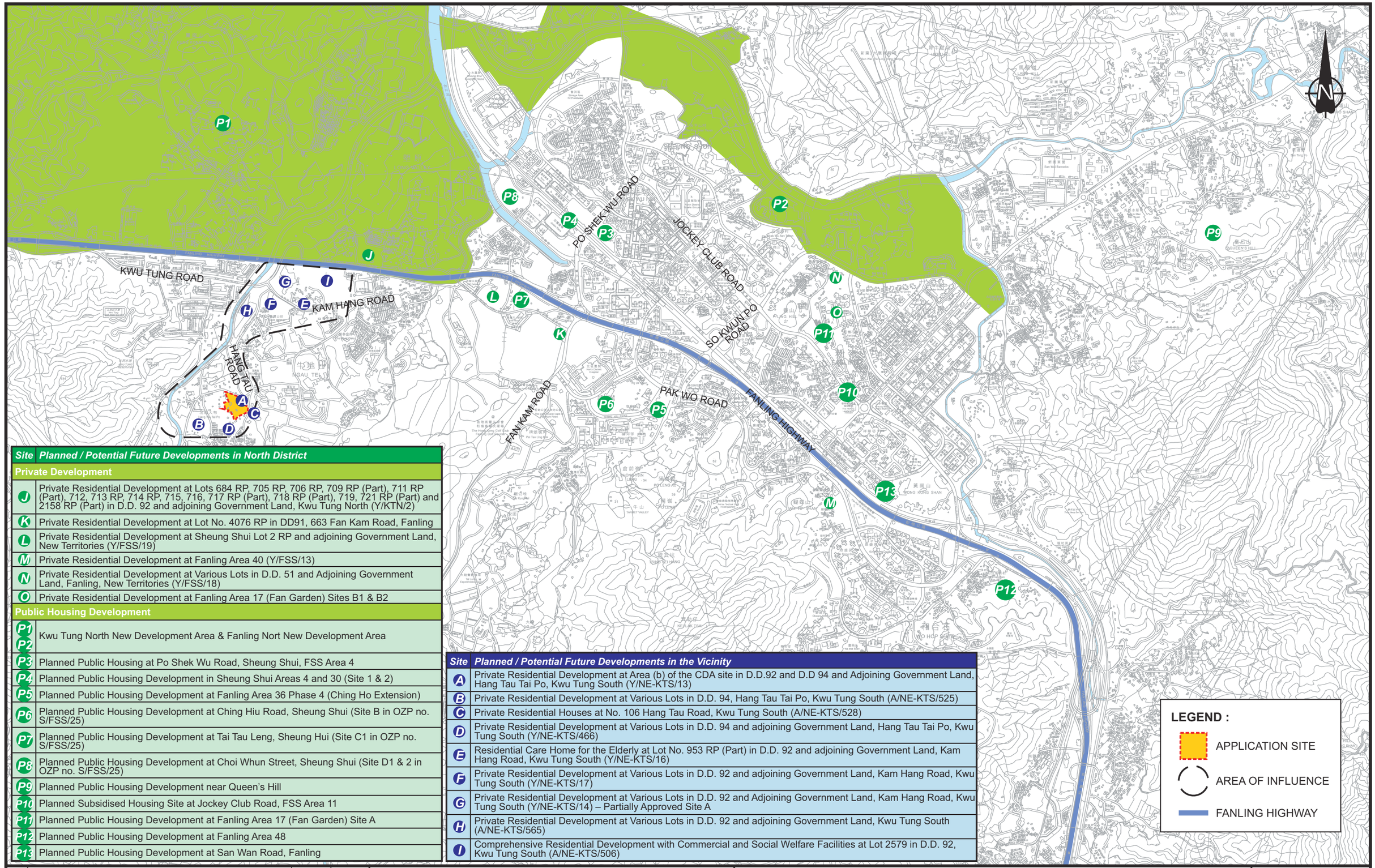
YEAR 2024 OBSERVED TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	3.6	-

SYSTRA MVA

CHK50808310/TIA1/F36.CDR/LLH/13MAR26

Original Size : A3



Site	Planned / Potential Future Developments in North District
Private Development	
J	Private Residential Development at Lots 684 RP, 705 RP, 706 RP, 709 RP (Part), 711 RP (Part), 712, 713 RP, 714 RP, 715, 716, 717 RP (Part), 718 RP (Part), 719, 721 RP (Part) and 2158 RP (Part) in D.D. 92 and adjoining Government Land, Kwu Tung North (Y/KTN/2)
K	Private Residential Development at Lot No. 4076 RP in DD91, 663 Fan Kam Road, Fanling
L	Private Residential Development at Sheung Shui Lot 2 RP and adjoining Government Land, New Territories (Y/FSS/19)
M	Private Residential Development at Fanling Area 40 (Y/FSS/13)
N	Private Residential Development at Various Lots in D.D. 51 and Adjoining Government Land, Fanling, New Territories (Y/FSS/18)
O	Private Residential Development at Fanling Area 17 (Fan Garden) Sites B1 & B2
Public Housing Development	
P1 P2	Kwu Tung North New Development Area & Fanling Nort New Development Area
P3	Planned Public Housing at Po Shek Wu Road, Sheung Shui, FSS Area 4
P4	Planned Public Housing Development in Sheung Shui Areas 4 and 30 (Site 1 & 2)
P5	Planned Public Housing Development at Fanling Area 36 Phase 4 (Ching Ho Extension)
P6	Planned Public Housing Development at Ching Hiu Road, Sheung Shui (Site B in OZP no. S/FSS/25)
P7	Planned Public Housing Development at Tai Tau Leng, Sheung Hui (Site C1 in OZP no. S/FSS/25)
P8	Planned Public Housing Development at Choi Whun Street, Sheung Shui (Site D1 & 2 in OZP no. S/FSS/25)
P9	Planned Public Housing Development near Queen's Hill
P10	Planned Subsidised Housing Site at Jockey Club Road, FSS Area 11
P11	Planned Public Housing Development at Fanling Area 17 (Fan Garden) Site A
P12	Planned Public Housing Development at Fanling Area 48
P13	Planned Public Housing Development at San Wan Road, Fanling

Site	Planned / Potential Future Developments in the Vicinity
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)
E	Residential Care Home for the Elderly at Lot No. 953 RP (Part) in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/16)
F	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/17)
G	Private Residential Development at Various Lots in D.D. 92 and Adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/14) – Partially Approved Site A
H	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kwu Tung South (A/NE-KTS/565)
I	Comprehensive Residential Development with Commercial and Social Welfare Facilities at Lot 2579 in D.D. 92, Kwu Tung South (A/NE-KTS/506)

Rev.	Description	Checked	Date
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

PLANNED / POTENTIAL FUTURE KEY DEVELOPMENTS IN THE VICINITY AND NORTH DISTRICT (1 OF 2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	4.1	-

SYSTRA MVA

CHK50808310/TIA1/F41.CDR/LLH/16MAR26

Original Size : A3

Site	Planned / Potential Future Developments in the Hang Tau Area	Estimated Population Intake
	Application Site	936
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)	50
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)	118
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)	6
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)	53

N

EXISTING LOCAL TRACK

SHEUNG YUE RIVER (RIVER BEAS)

ACCESS ROAD A

HANG TAU ROAD

Beas River Country Club

Hang Tau Tai Po

SHEUNG YUE RIVER

A

B

C

D

LEGEND :

APPLICATION SITE

Rev.	Description	Checked	Date
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

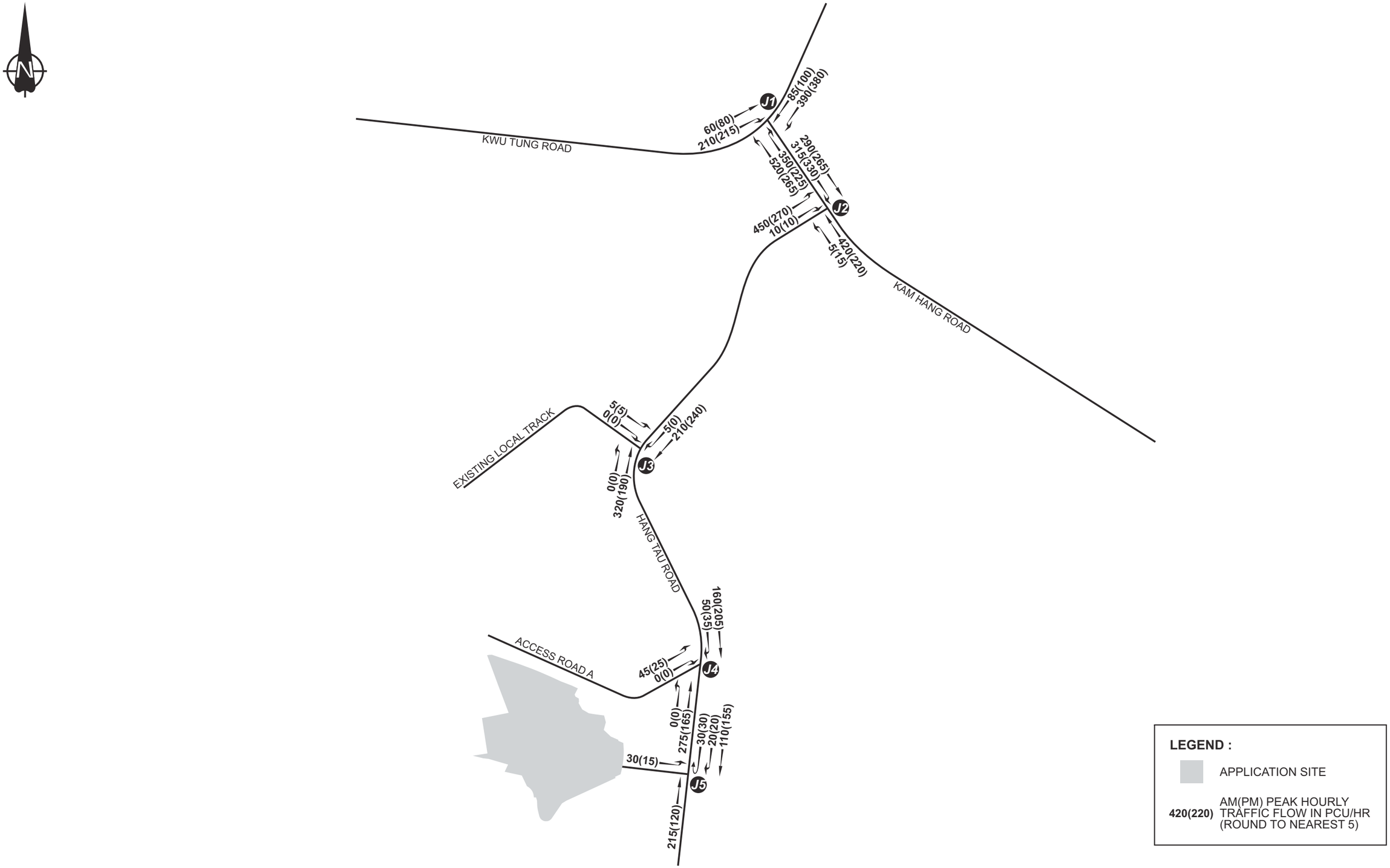
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Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	4.2	-

SYSTRA MVA

CHK50808310/TIA1/F42.CDR/LLH/16MAR26

Original Size : A3



LEGEND :

APPLICATION SITE

420(220) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

Rev.	Description	Checked	Date
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

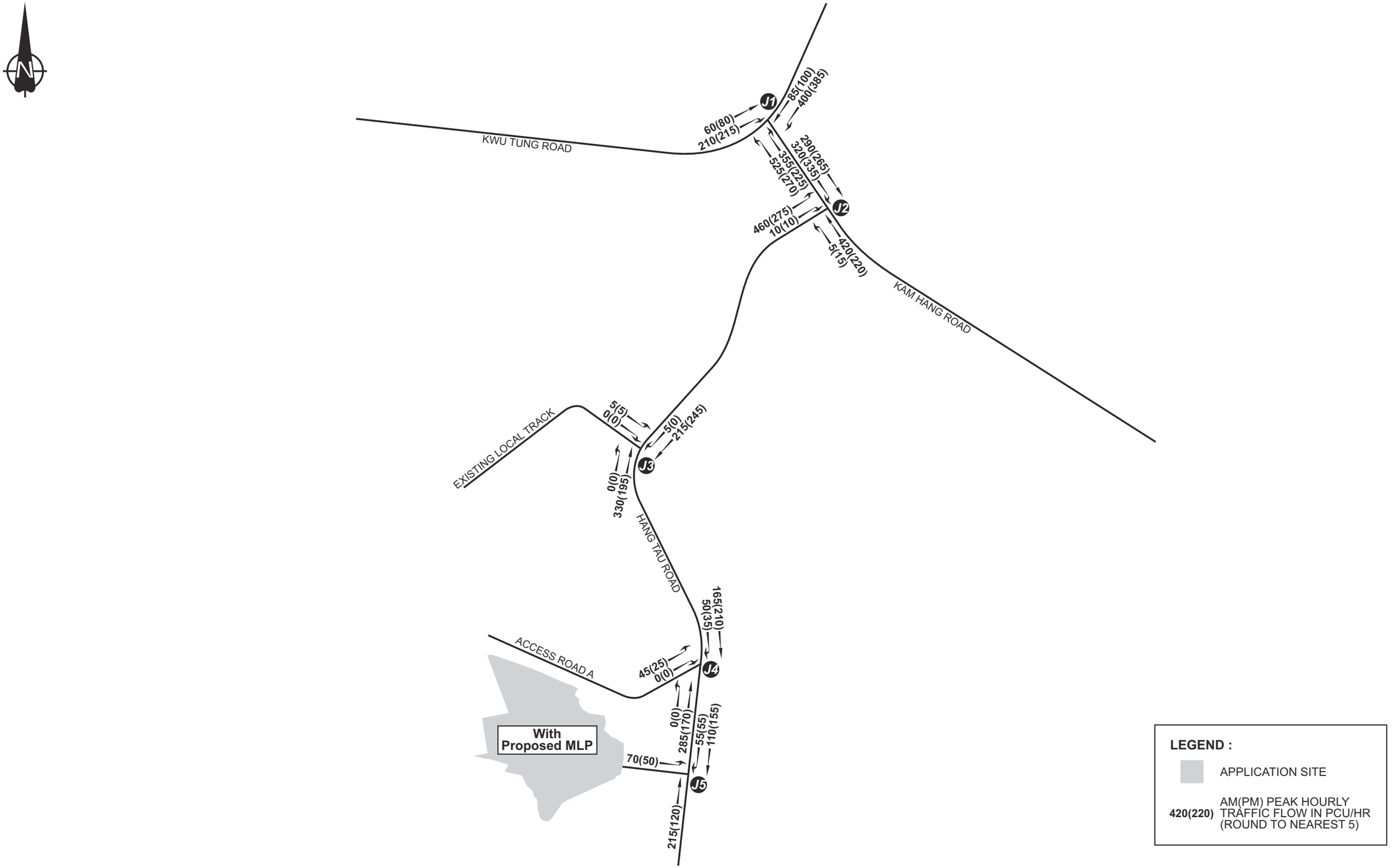
YEAR 2034 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	4.3	-

SYSTRA MVA

CHK50808310/TIA1/F43.CDR/LLH/13MAR26

Original Size : A3



LEGEND :

APPLICATION SITE

420(220) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

Rev.	Description	Checked	Date
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

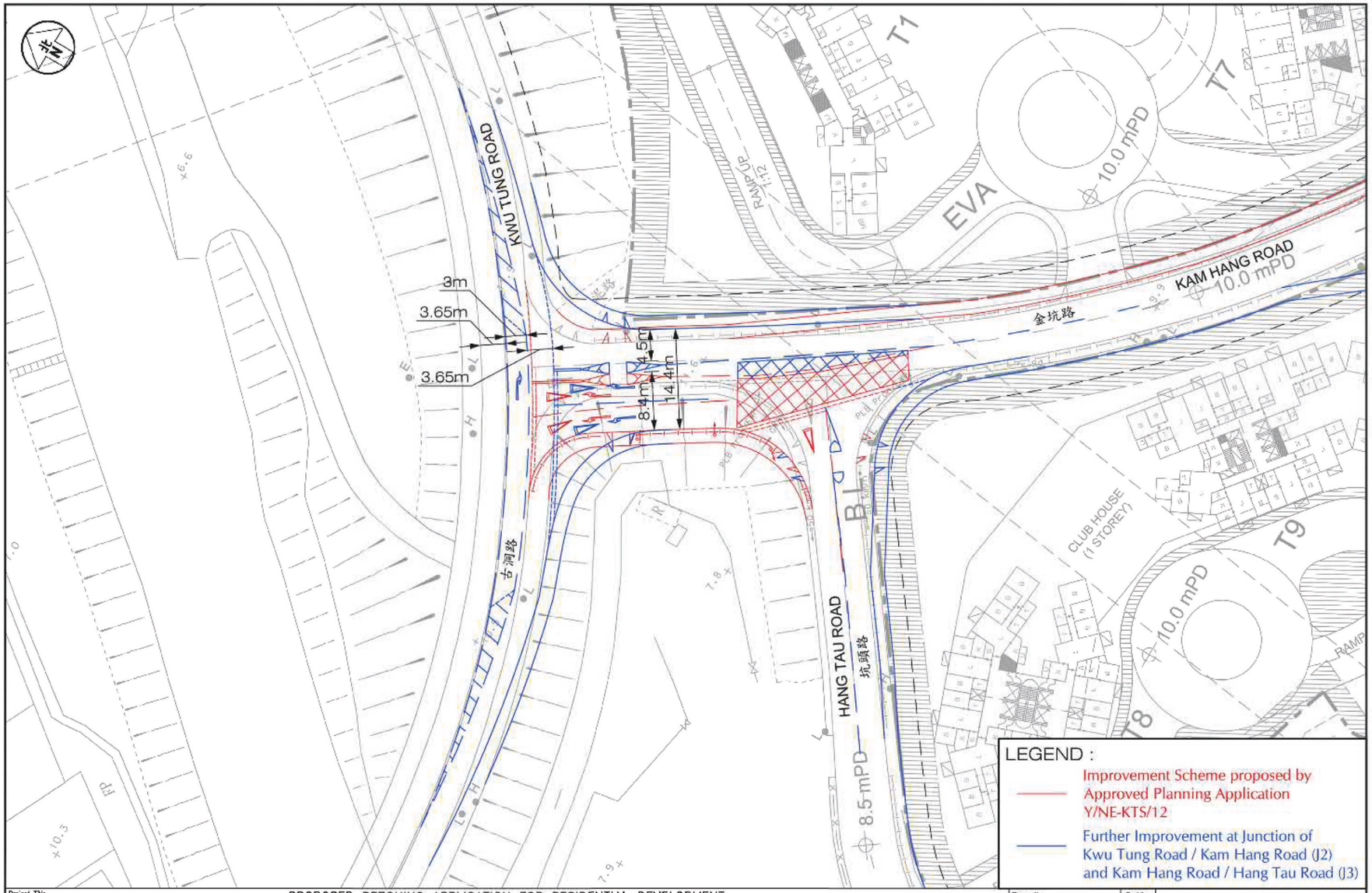
YEAR 2034 DESIGN TRAFFIC FLOWS

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SYSTRA MVA

CHK50808310/TIA1/F44.CDR/LLH/13MAR26

Original Size : A3



Project Title: PROPOSED REZONING APPLICATION FOR RESIDENTIAL DEVELOPMENT AT KAM HANG ROAD AND HANG TAU ROAD, KWU TUNG SOUTH

J6921

Figure Title: FURTHER IMPROVEMENT AT JUNCTION OF KWU TUNG ROAD / KAM HANG ROAD (J2) AND KAM HANG ROAD / HANG TAU ROAD (J3)

Figure No.	Revision
1	A

Designed by	Drawn by	Checked by
L K W	W S W	K C

Scale in A3: ~~1 : 500~~ | Date: 12 NOV 2020

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

（資料來源：申請人於 16. 11. 2020 呈交的資料）
(Source : Applicant's Submission of 16.11.2020)

參考編號 REFERENCE No.	繪圖 DRAWING
Y/NE-KTS/14	Z-10

Rev.	Description	Checked	Date
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Project Title: SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

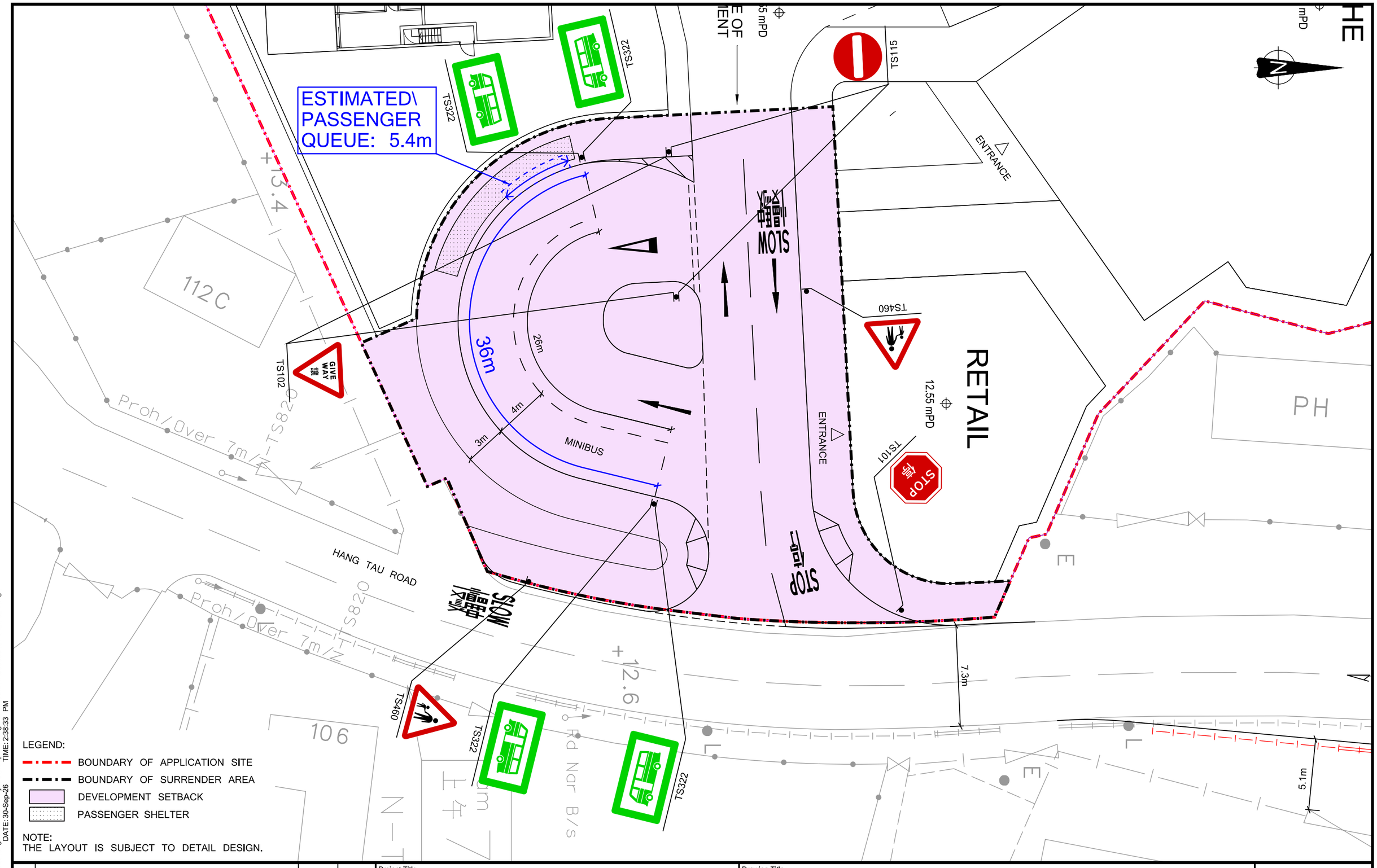
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CNM	CHC	NTS	MAR 2026	5.1	-

SYSTRA MVA

CHK50808310/TIA1/F51.CDR/LLH/134MAR26

Original Size : A3



Rev.	Description	Checked	Date
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A	MINOR AMENDMENT	CHC	30SEP26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

ESTIMATED MAXIMUM PASSENGER QUEUING AT PROPOSED GMB LAYBY

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:250(A3)	JUN 2026	5.2	A

SYSTRA MVA

Original Size : A3

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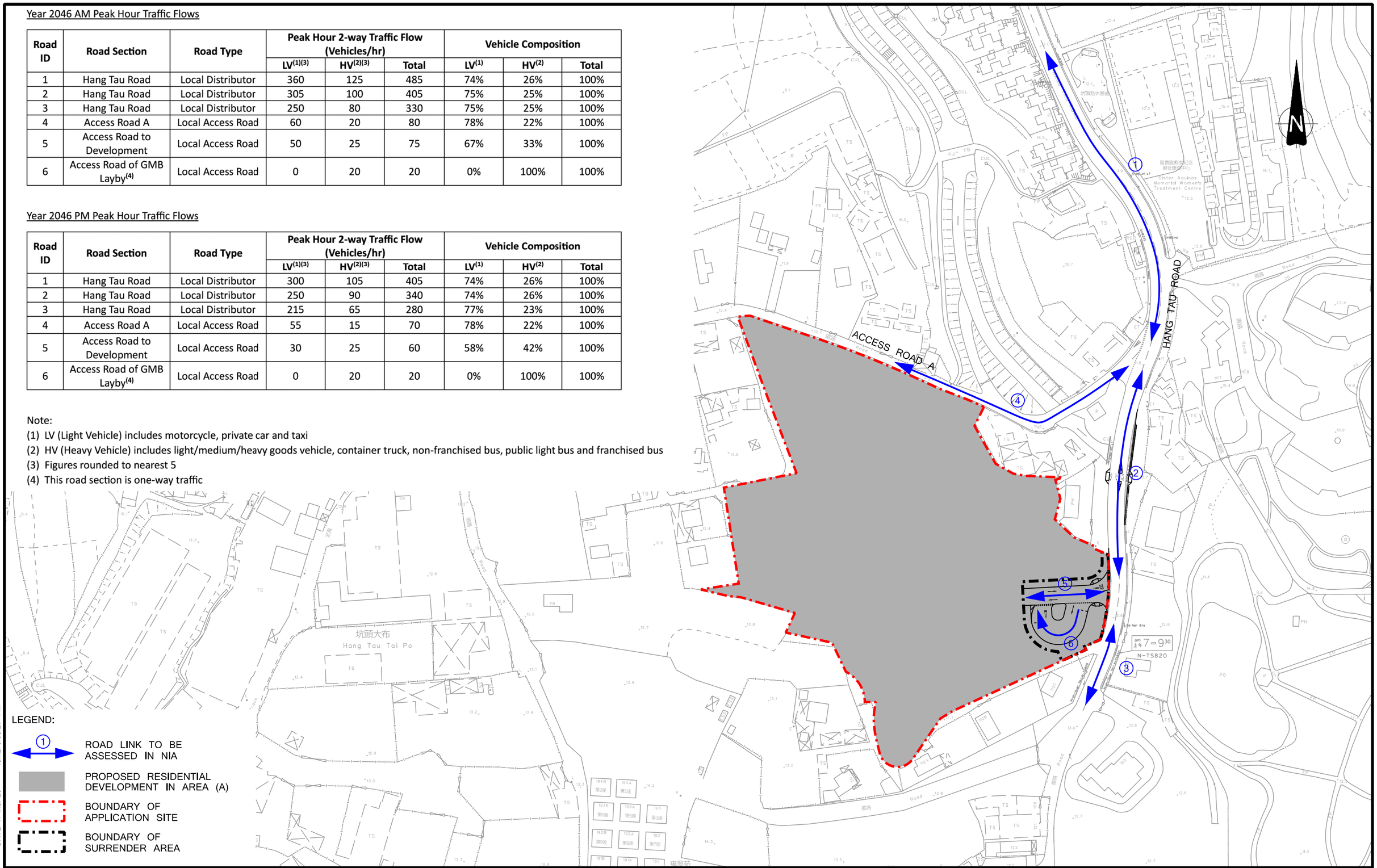
Year 2046 AM Peak Hour Traffic Flows

Road ID	Road Section	Road Type	Peak Hour 2-way Traffic Flow (Vehicles/hr)			Vehicle Composition		
			LV[(1)(3)]	HV[(2)(3)]	Total	LV[(1)]	HV[(2)]	Total
1	Hang Tau Road	Local Distributor	360	125	485	74%	26%	100%
2	Hang Tau Road	Local Distributor	305	100	405	75%	25%	100%
3	Hang Tau Road	Local Distributor	250	80	330	75%	25%	100%
4	Access Road A	Local Access Road	60	20	80	78%	22%	100%
5	Access Road to Development	Local Access Road	50	25	75	67%	33%	100%
6	Access Road of GMB Layby[(4)]	Local Access Road	0	20	20	0%	100%	100%

Year 2046 PM Peak Hour Traffic Flows

Road ID	Road Section	Road Type	Peak Hour 2-way Traffic Flow (Vehicles/hr)			Vehicle Composition		
			LV[(1)(3)]	HV[(2)(3)]	Total	LV[(1)]	HV[(2)]	Total
1	Hang Tau Road	Local Distributor	300	105	405	74%	26%	100%
2	Hang Tau Road	Local Distributor	250	90	340	74%	26%	100%
3	Hang Tau Road	Local Distributor	215	65	280	77%	23%	100%
4	Access Road A	Local Access Road	55	15	70	78%	22%	100%
5	Access Road to Development	Local Access Road	30	25	60	58%	42%	100%
6	Access Road of GMB Layby[(4)]	Local Access Road	0	20	20	0%	100%	100%

Note:
(1) LV (Light Vehicle) includes motorcycle, private car and taxi
(2) HV (Heavy Vehicle) includes light/medium/heavy goods vehicle, container truck, non-franchised bus, public light bus and franchised bus
(3) Figures rounded to nearest 5
(4) This road section is one-way traffic



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

YEAR 2046 PEAK HOURS TRAFFIC FORECAST AND VEHICLE COMPOSITION

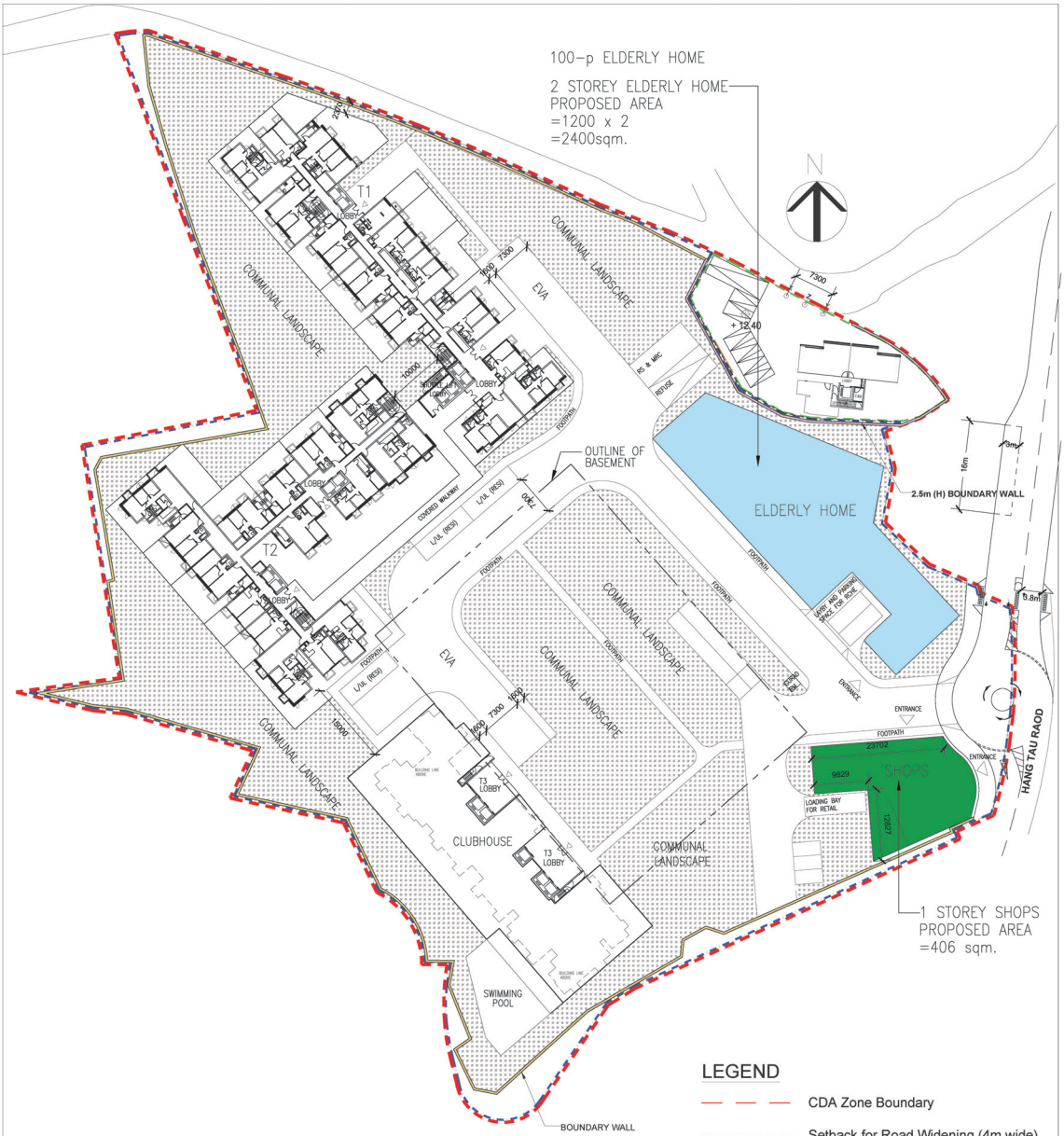
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CNM	CHC	N.T.S.	MAR 2026	6.1	-

SYSTRA MVA

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TIME: 5:03:27 PM

APPENDIX A – MASTER LAYOUT PLAN UNDER PREVIOUS SCHEME OF THE APPROVED S12A APPLICATIONS



GROUND FLOOR PLAN
(Site A)

申請編號 Application No. : Y / NE-KTS / 13
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

lwk&partners architects

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Project Title: SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

MASTER LAYOUT PLAN OF PREVIOUS SCHEME UNDER THE APPROVED S12A APPLICATION

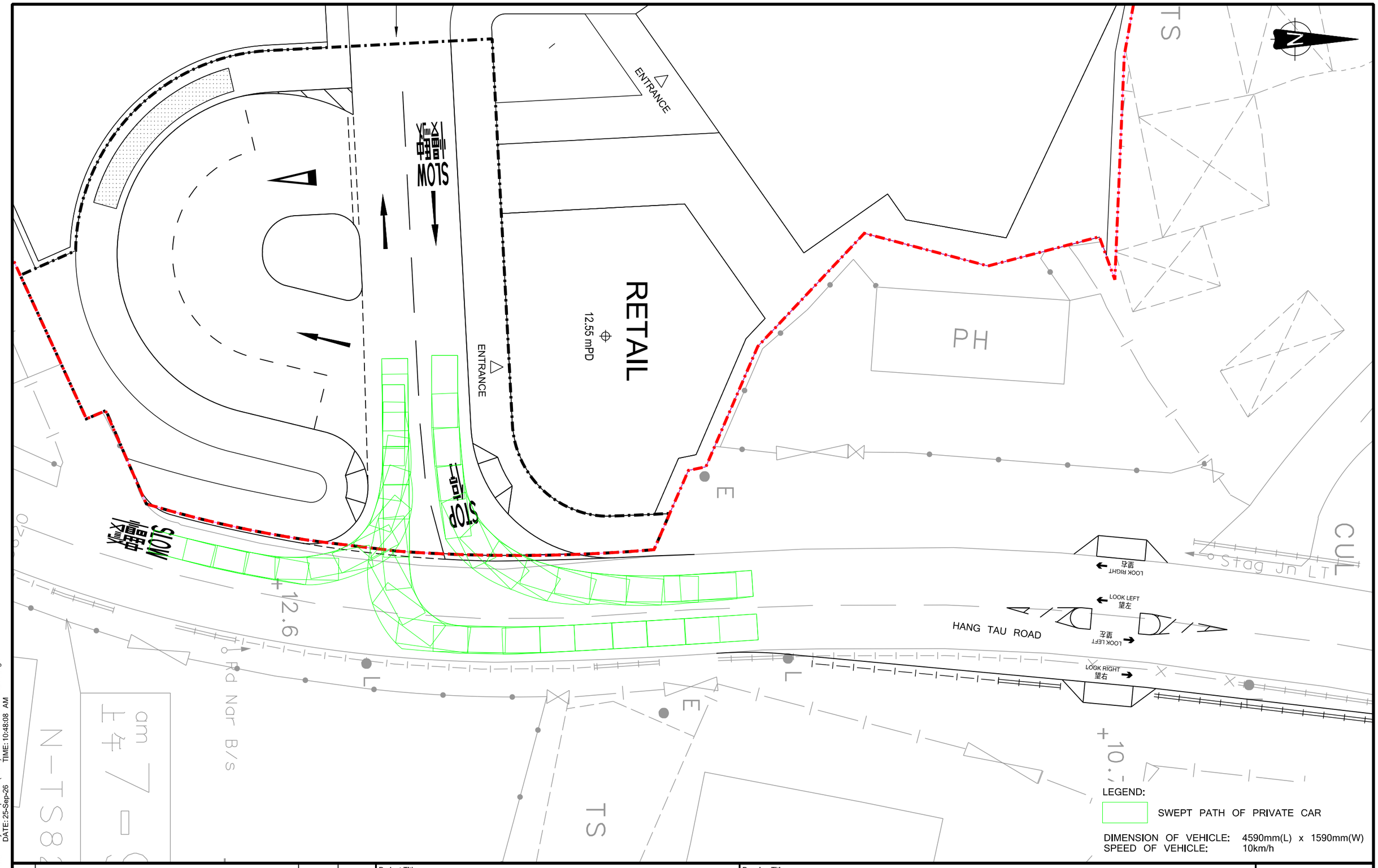
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SYSTRA MVA

CHK50808310/TIA1/A1.CDR/LLH/13MAR26

Original Size : A4

APPENDIX B – SWEPT PATH ANALYSES



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A	MINOR AMENDMENT	CHC	25SEP26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

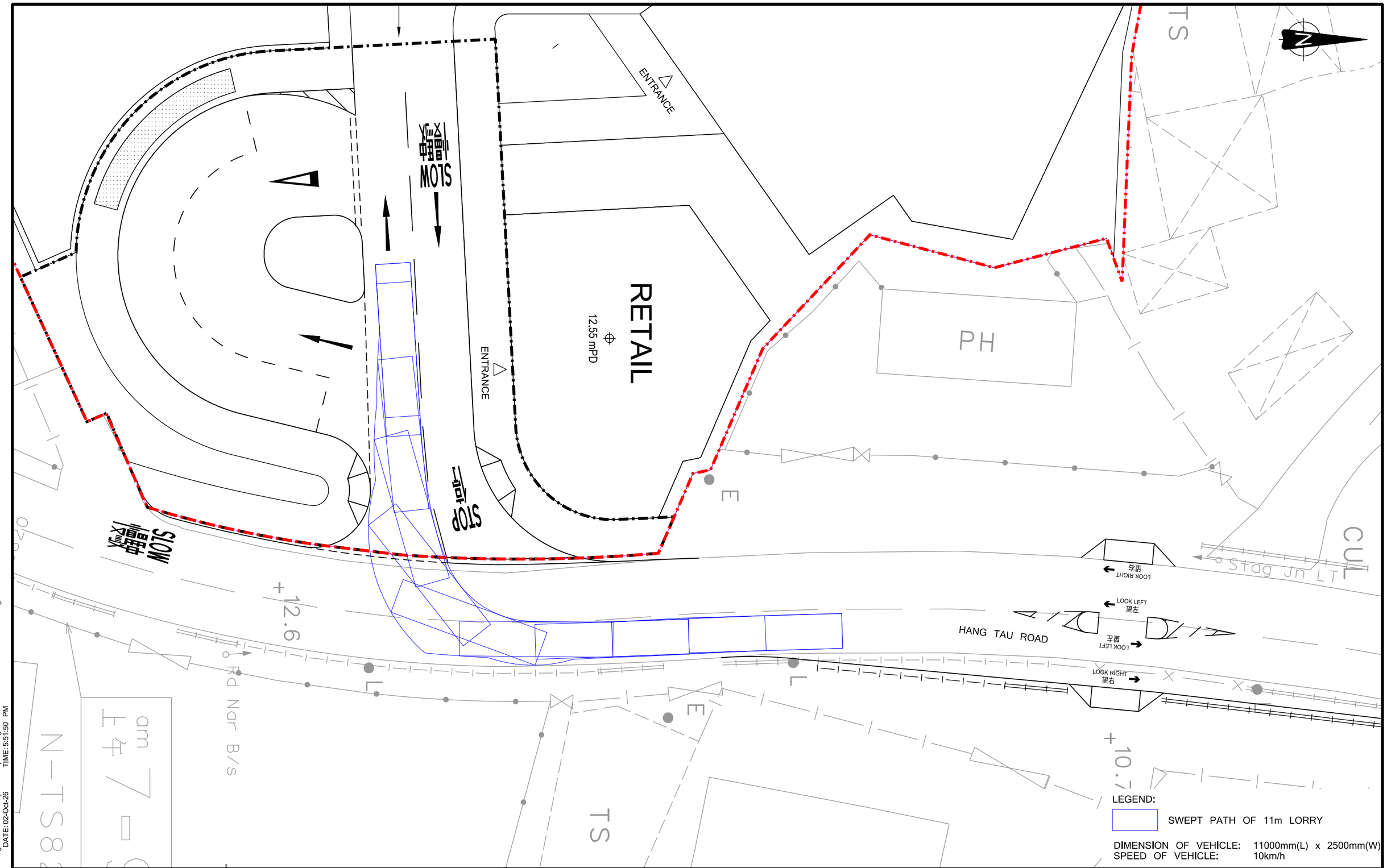
SWEPT PATH OF PRIVATE CAR IN / OUT

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:250(A3)	JUN 2026	**B1**	A

SYSTRA MVA

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A	MINOR AMENDMENT	CHC	02OCT26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

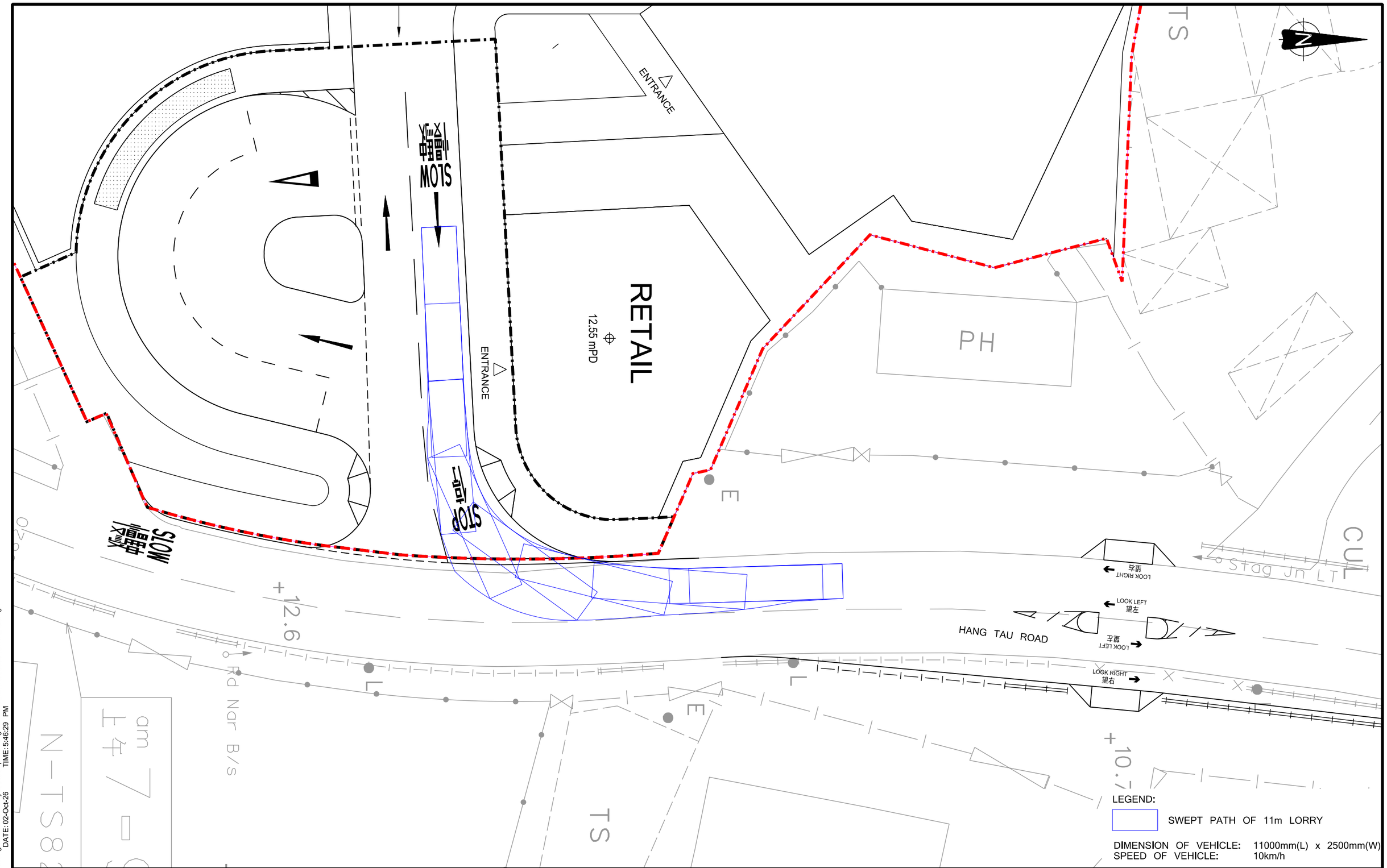
Drawing Title

SWEPT PATH OF 11m LORRY (INGRESS)

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CNM	CHC	1:250(A3)	JUN 2026	B2	A

SYSTRA MVA

Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

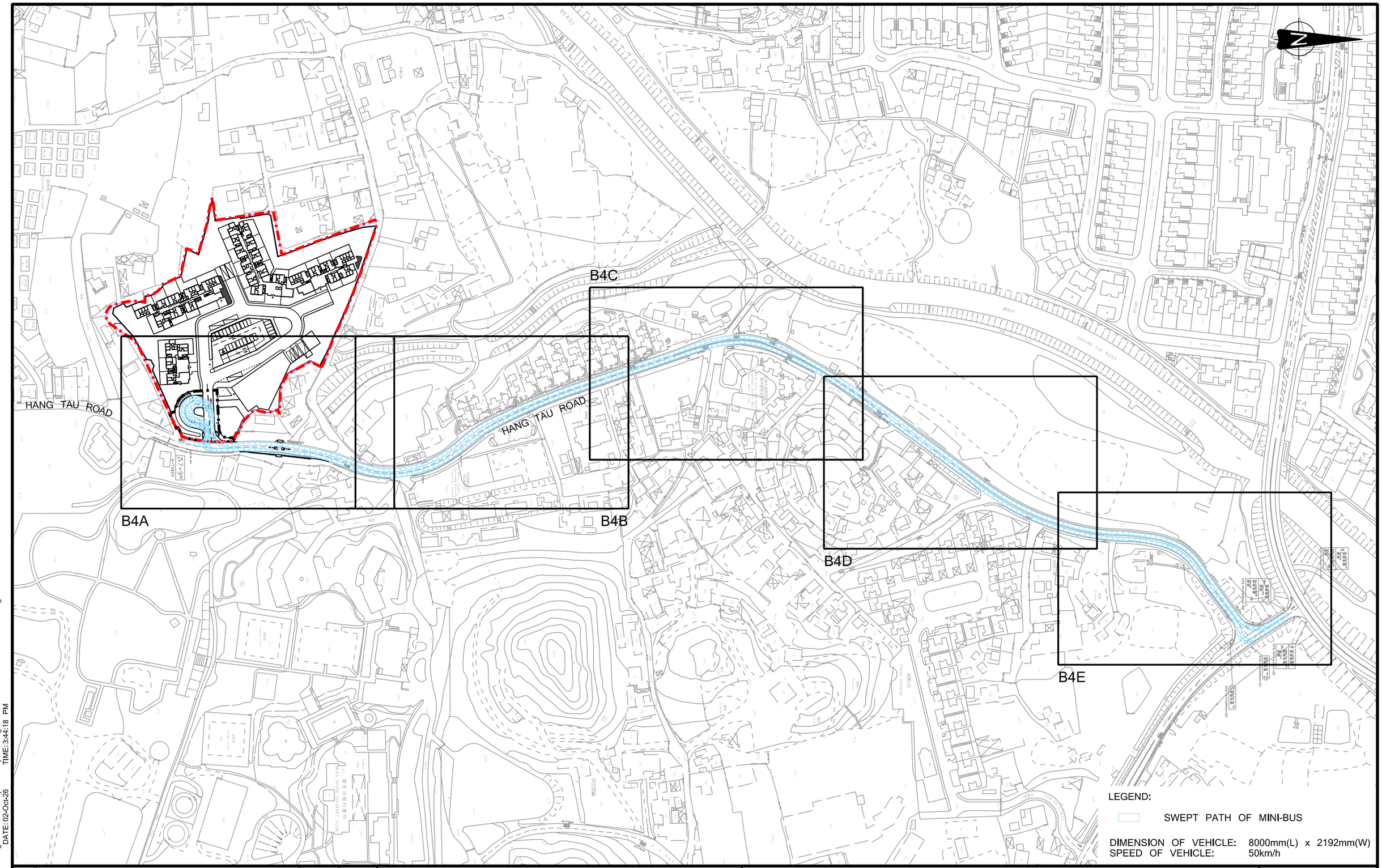
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SWEPT PATH OF 11m LORRY (EGRESS)

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CNM	CHC	1:250(A3)	JUN 2026	B3	-

SYSTRA MVA

Original Size : A3



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A	MINOR AMENDMENT	CHC	25SEP26

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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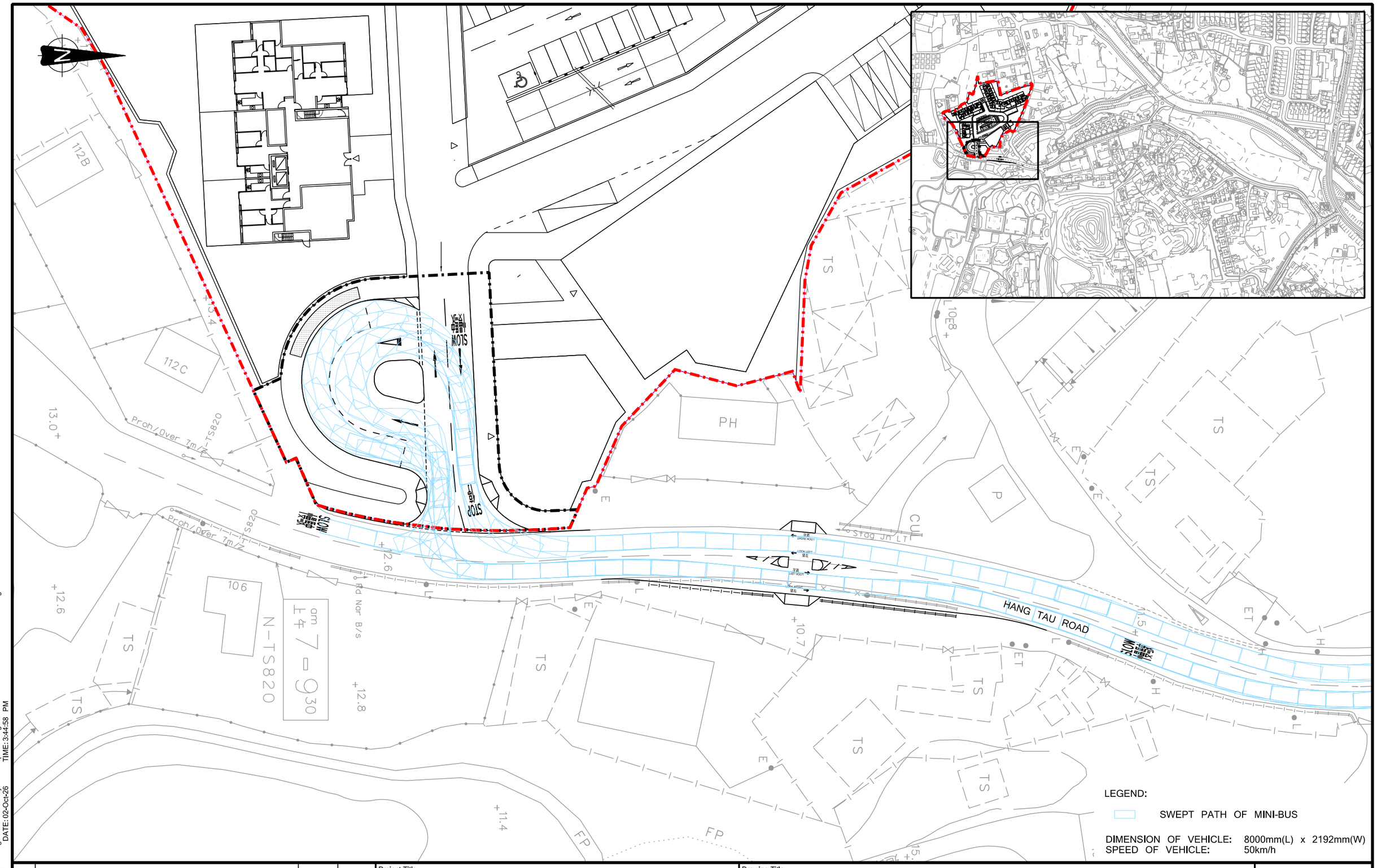
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (KEYPLAN)

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SYSTRA MVA

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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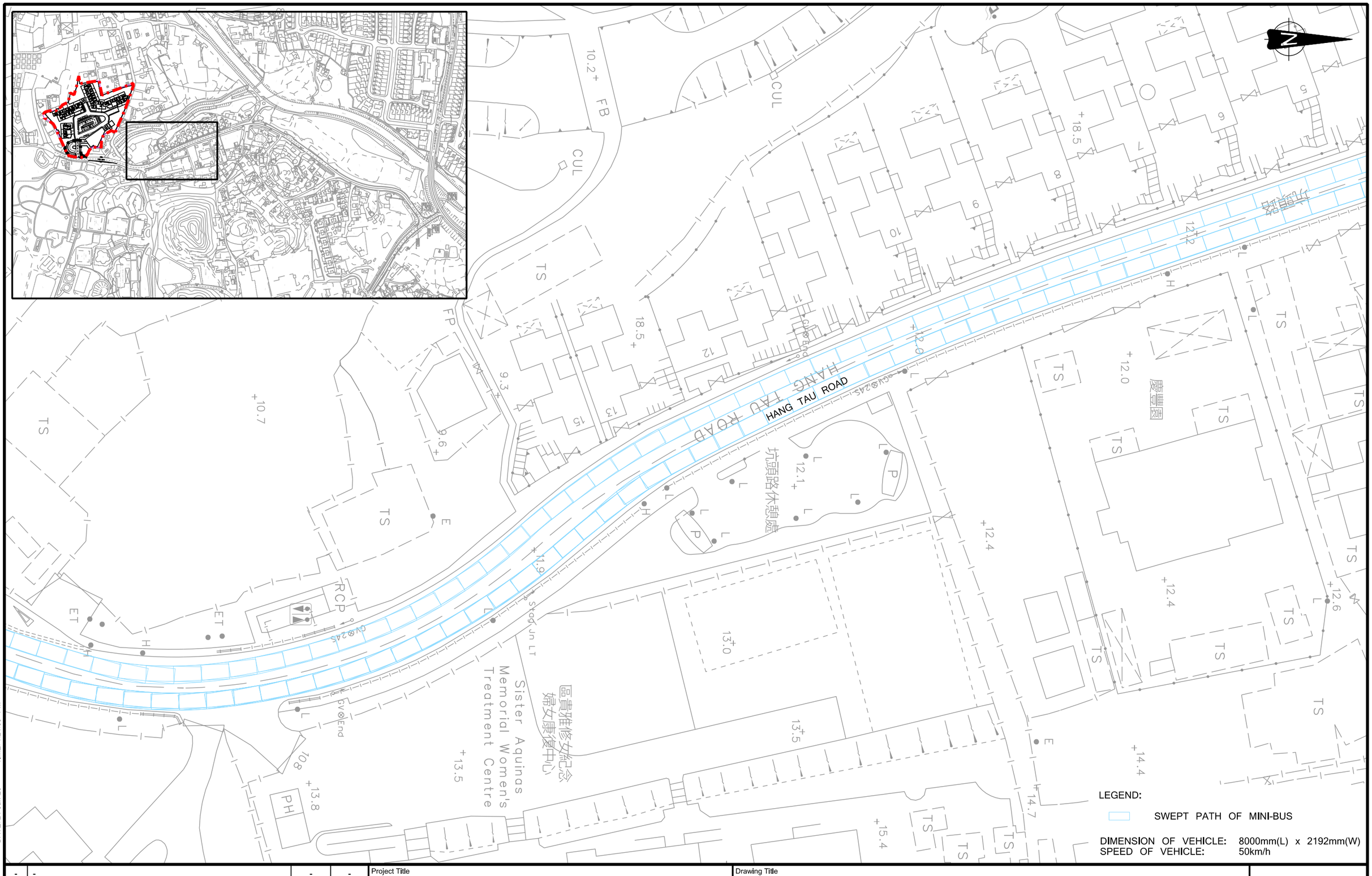
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 1 OF 5)

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SYSTRA MVA

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

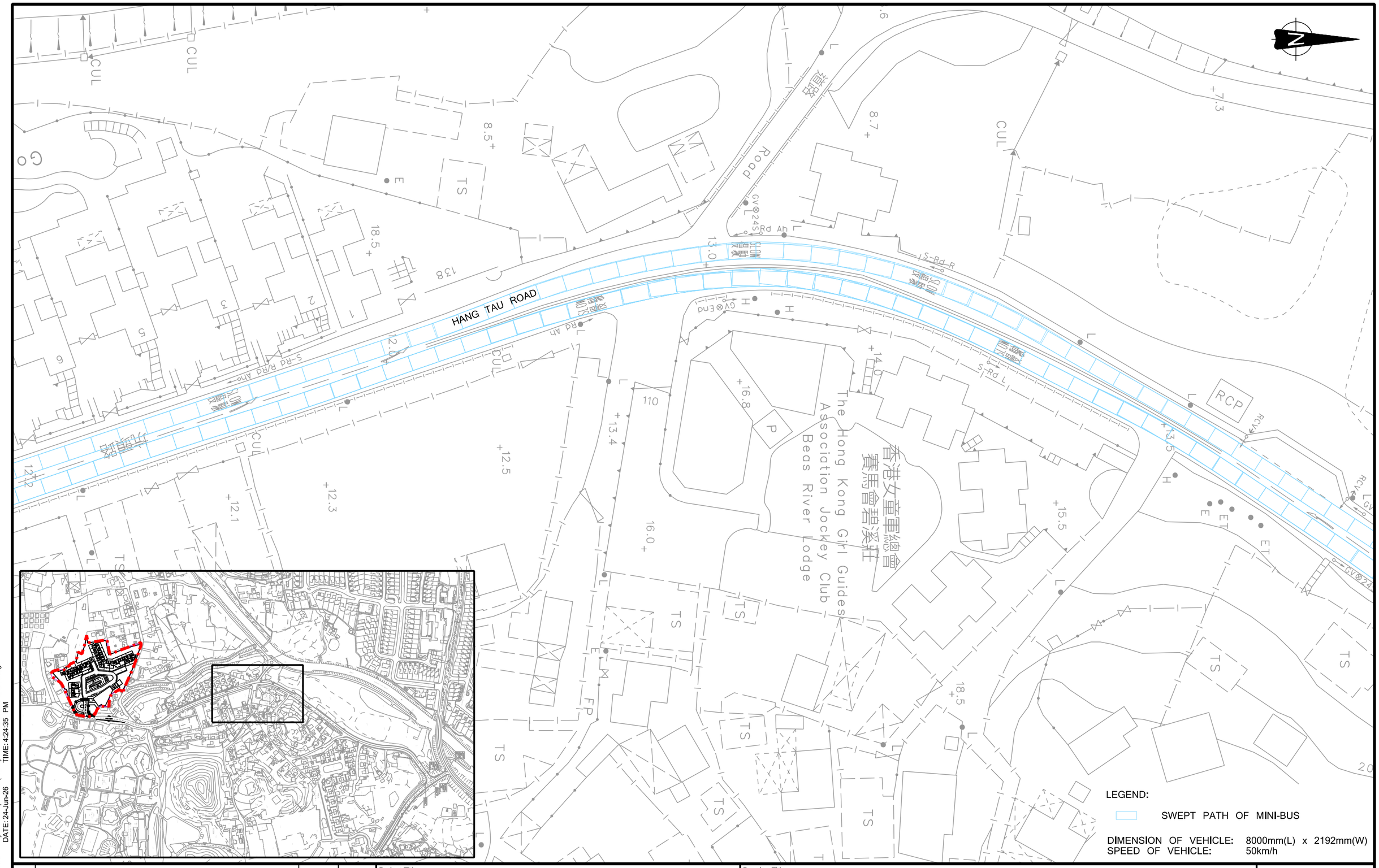
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

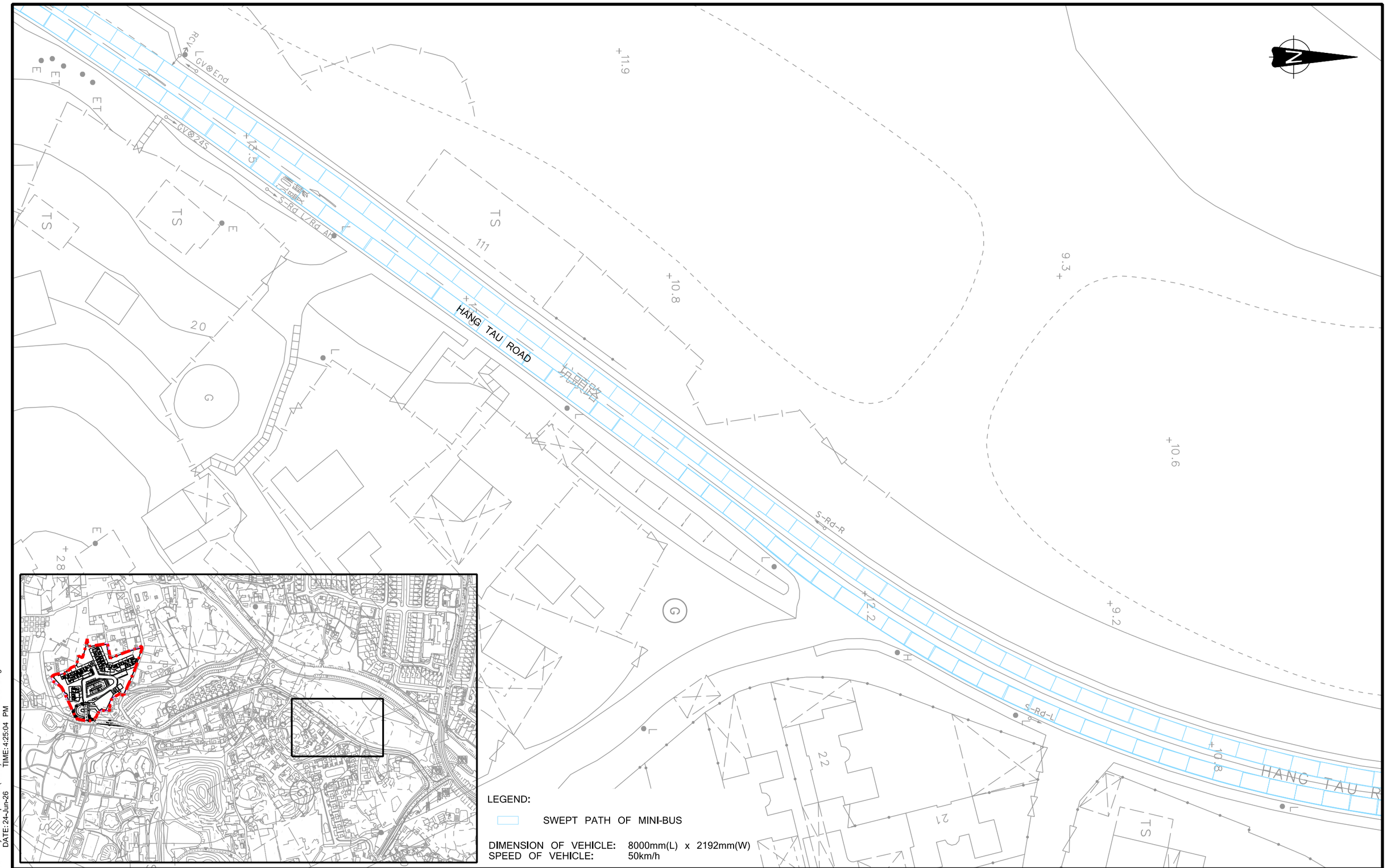
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 3 OF 5)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2026	**B4C**	-

SYSTRA MVA

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

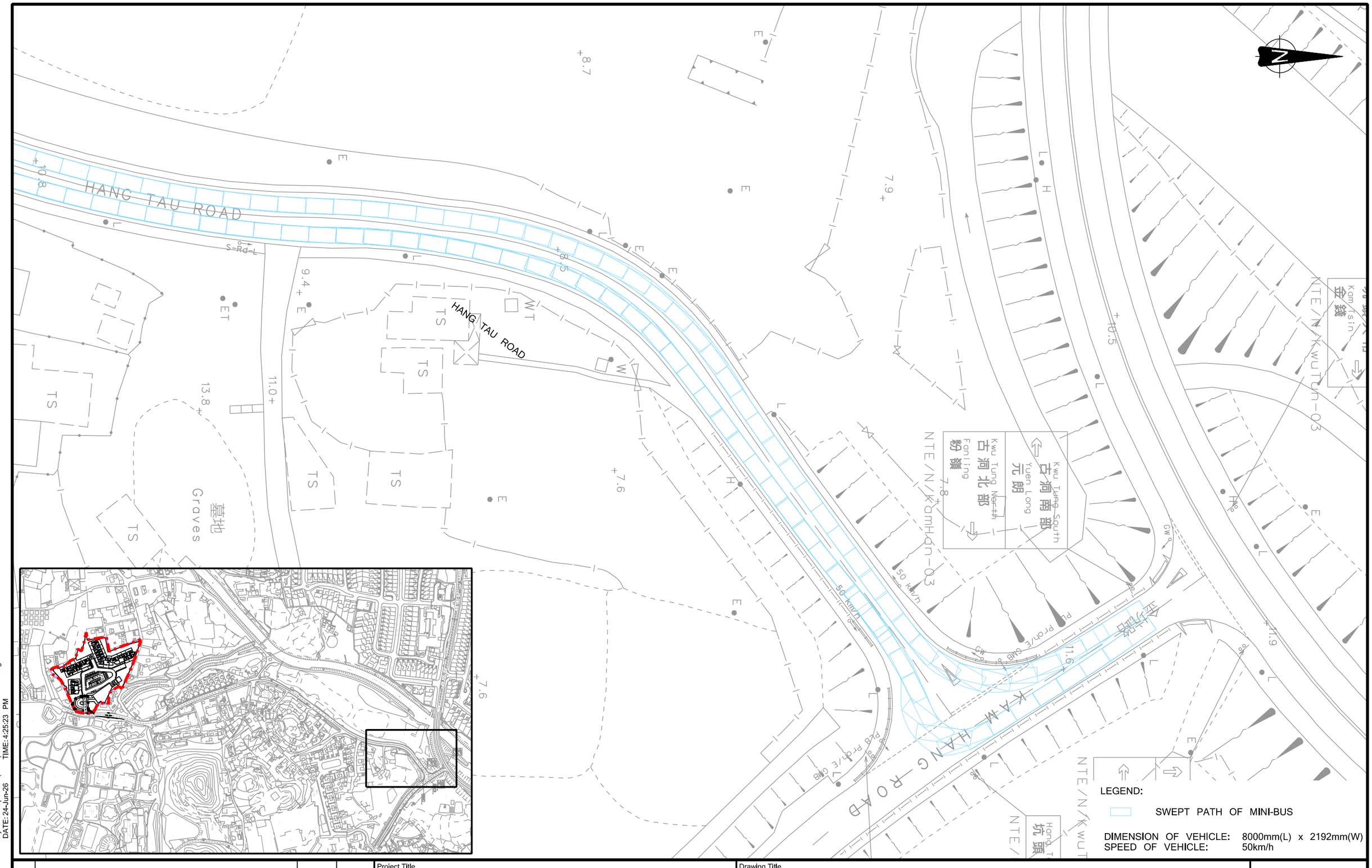
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Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

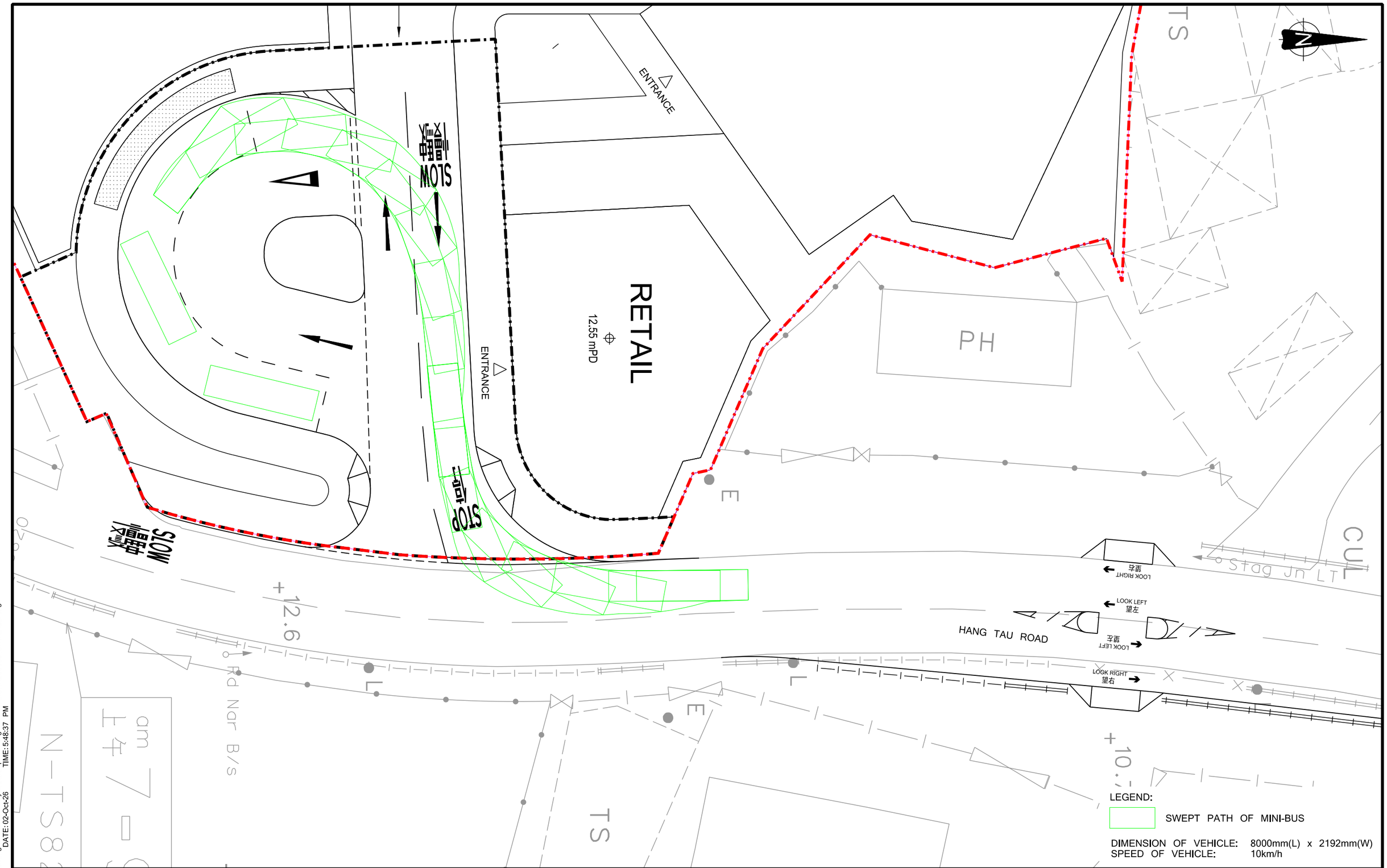
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

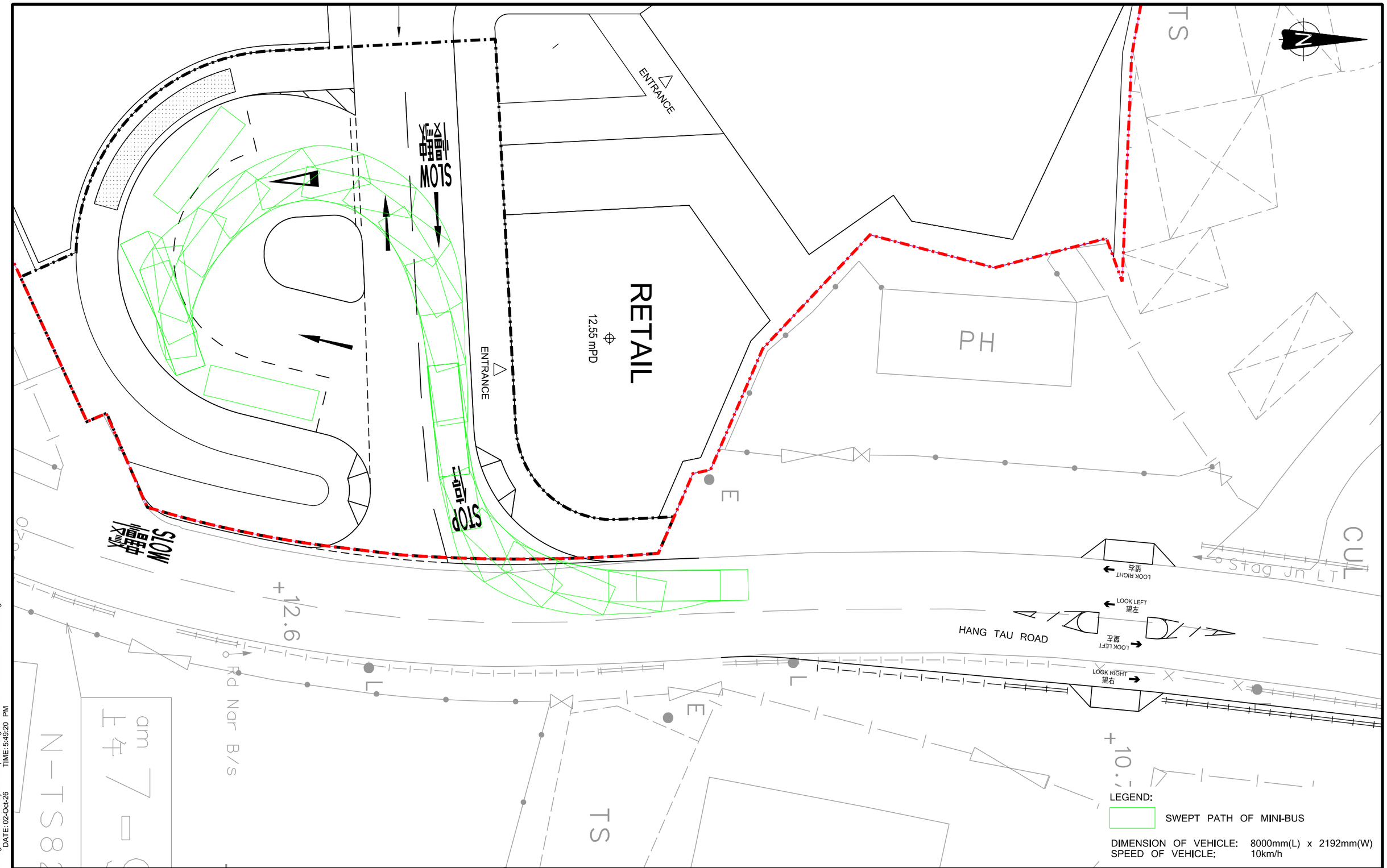
SWEPT PATH OF MINI-BUS AT PROPOSED LAYBY (SHEET 1 OF 3)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

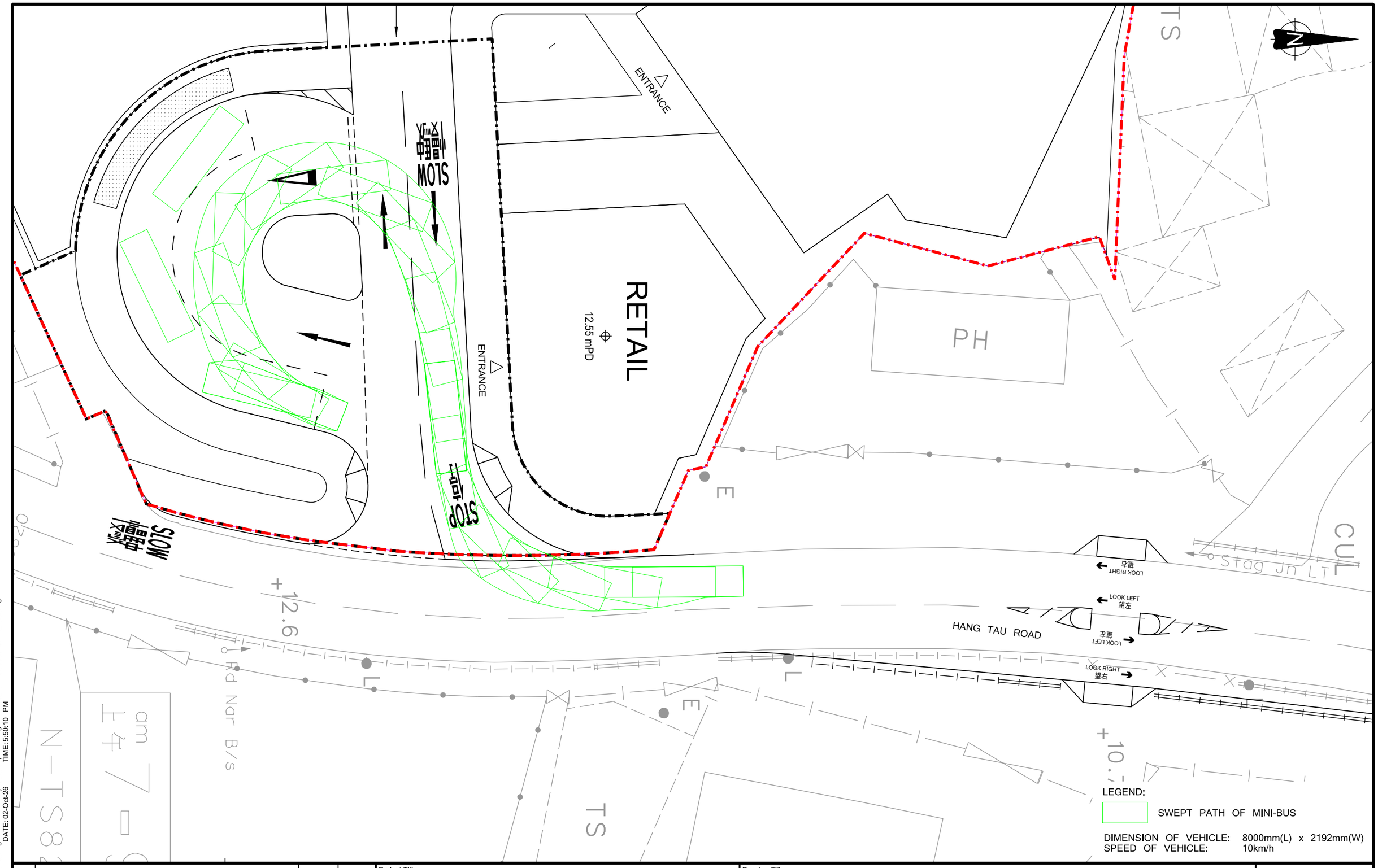
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

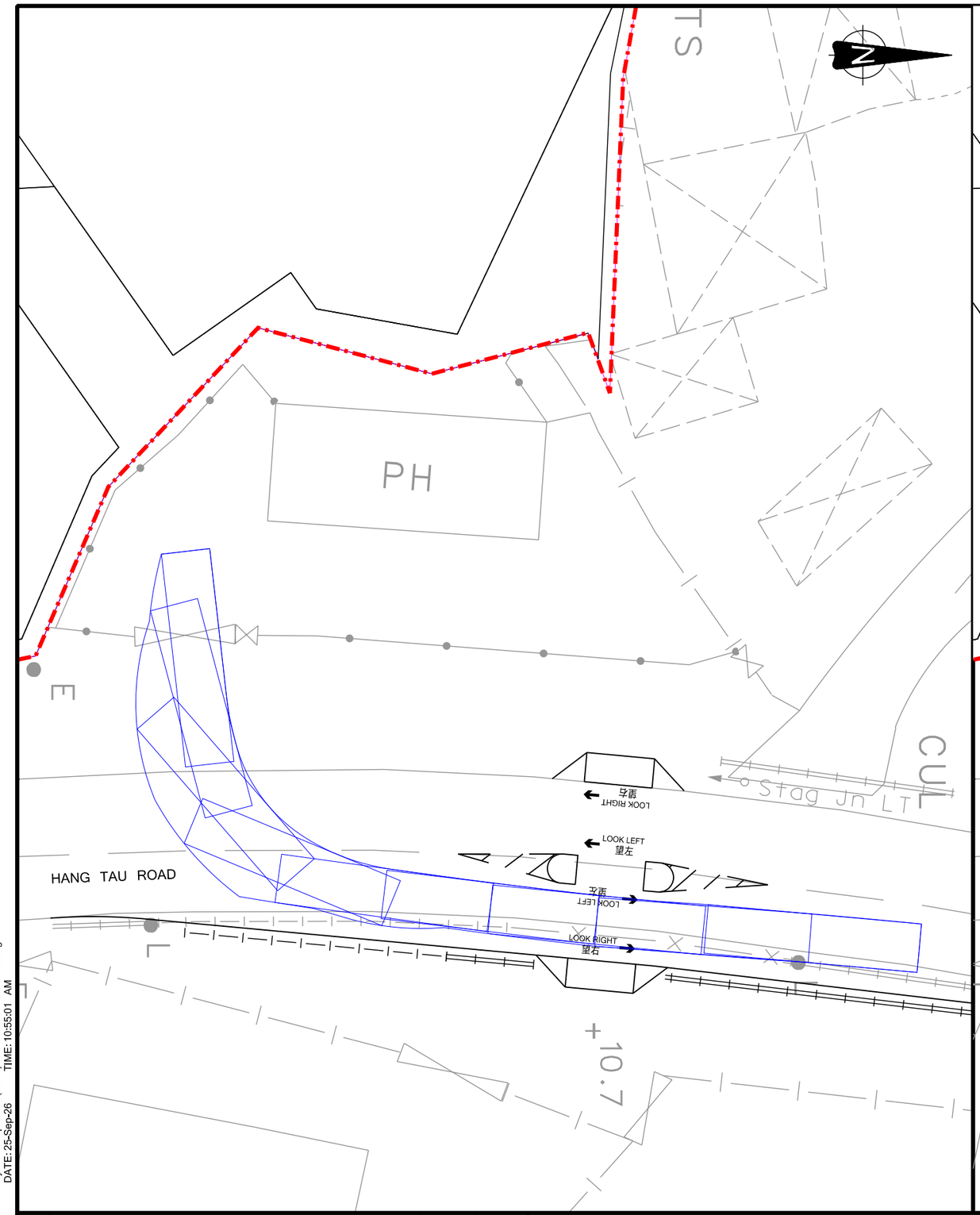
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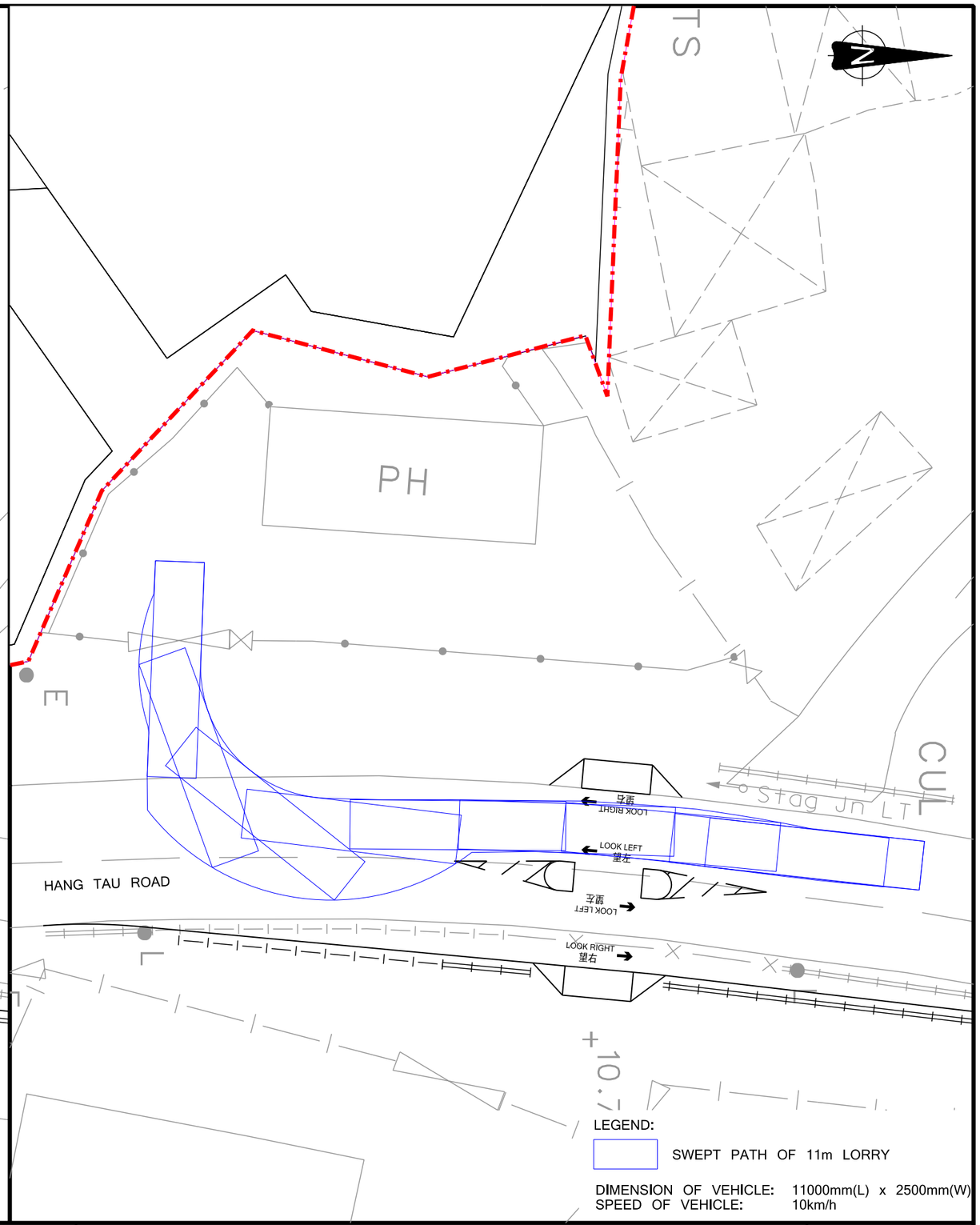
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

SWEPT PATH OF 11m LORRY (INGRESS AND EGRESS)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

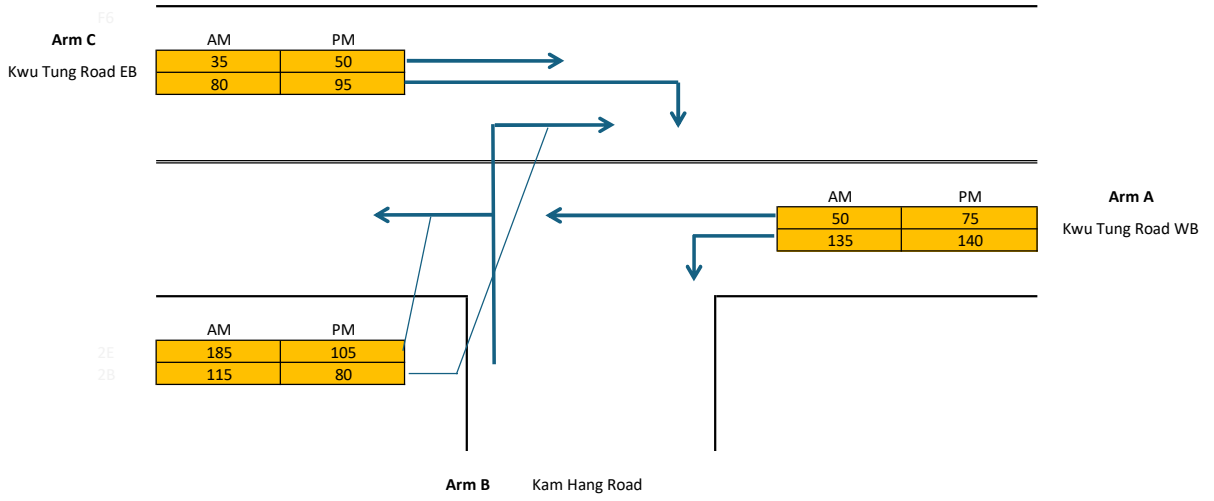
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APPENDIX C – DETAILS OF JUNCTION ASSESSMENTS

2024 Observed

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Existing			Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6141
	Vl(b-a)	70	Parameters	E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

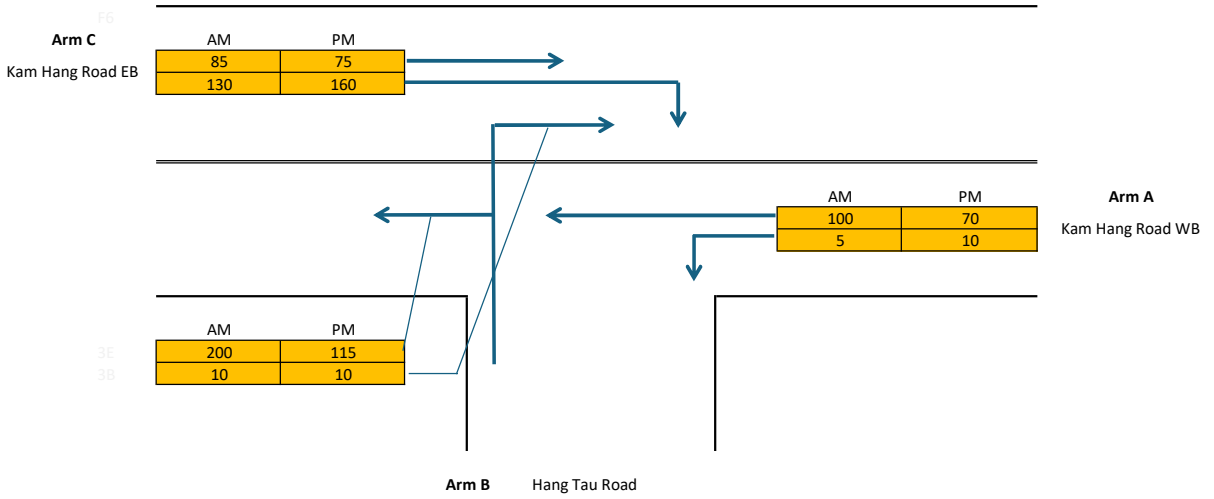
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	35	50
	q(c-b)	80	95
	q(a-b)	135	140
	q(a-c)	50	75
	q(b-a)	115	80
	q(b-c)	185	105
	f	0.62	0.57
CAPACITIES (pcu/hr)	Q(b-ac)	505.277	476.92
	Q(c-a)	1581.9	1537.9
	Q(c-b)	660.244	652.48
RFC's	c-a	0.02	0.03
	c-b	0.12	0.15
	b-ac	0.59	0.39
RFC		**0.59**	**0.39**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Observed	Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6044
	Vl(b-a)	45	Parameters	E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	85	75
	q(c-b)	130	160
	q(a-b)	5	10
	q(a-c)	100	70
	q(b-a)	10	10
	q(b-c)	200	115
	f	0.95	0.92
CAPACITIES (pcu/hr)	Q(b-ac)	705.063	683.16
	Q(c-a)	1452.44	1376.4
	Q(c-b)	673.261	679.87
RFC's	c-a	0.06	0.05
	c-b	0.19	0.24
	b-ac	0.30	0.18
RFC		**0.30**	**0.24**

Where Vl and Vr are visibility distances to the left or right of the respective streams

D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))

E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))

F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

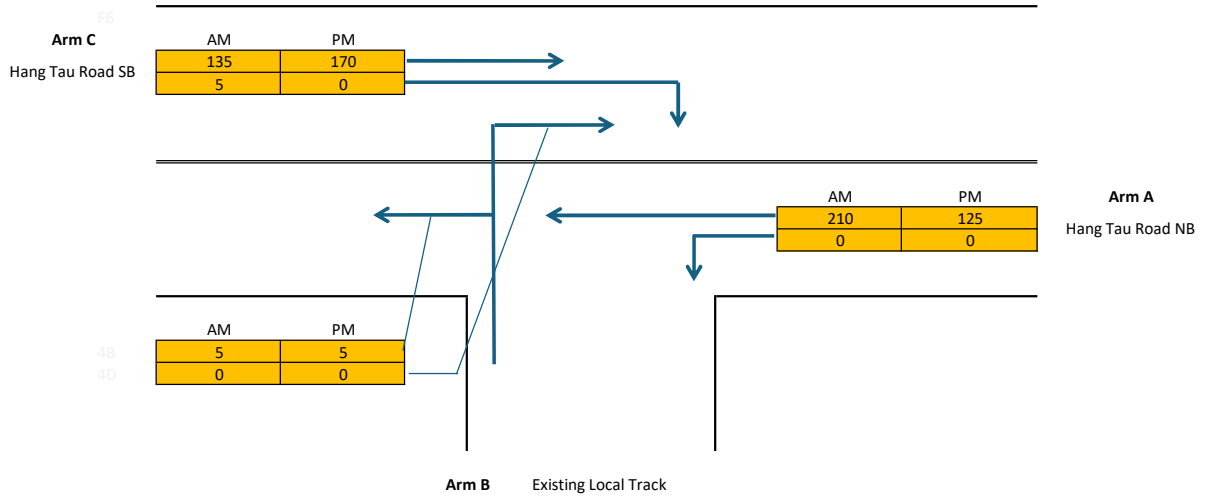
f = proportion of minor traffic turning left

Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge			Designed by:	TCW
Scheme:	Observed			Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Hang Tau Road NB				
Arm B:	Existing Local Track				
Arm C:	Hang Tau Road SB				



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

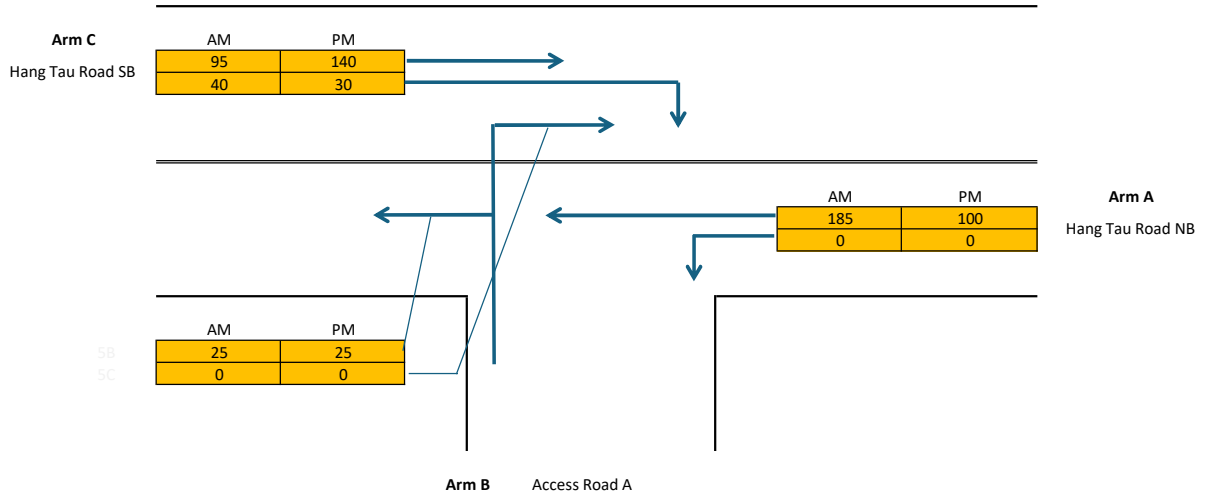
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	135	170
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	210	125
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	667.184	689.08
	Q(c-a)	1786.76	1800
	Q(c-b)	679.933	702.25
RFC's	c-a	0.08	0.09
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.08**	**0.09**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J4) Hang Tau Road / Access Road A	Designed by:	TCW
Scheme:	Observed	Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Access Road A		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	4.50		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	95	140
	q(c-b)	40	30
	q(a-b)	0	0
	q(a-c)	185	100
	q(b-a)	0	0
	q(b-c)	25	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	616.734	637.59
	Q(c-a)	1683.26	1715.3
	Q(c-b)	616.734	637.59
RFC's	c-a	0.06	0.08
	c-b	0.06	0.05
	b-ac	0.04	0.04
RFC		**0.06**	**0.08**

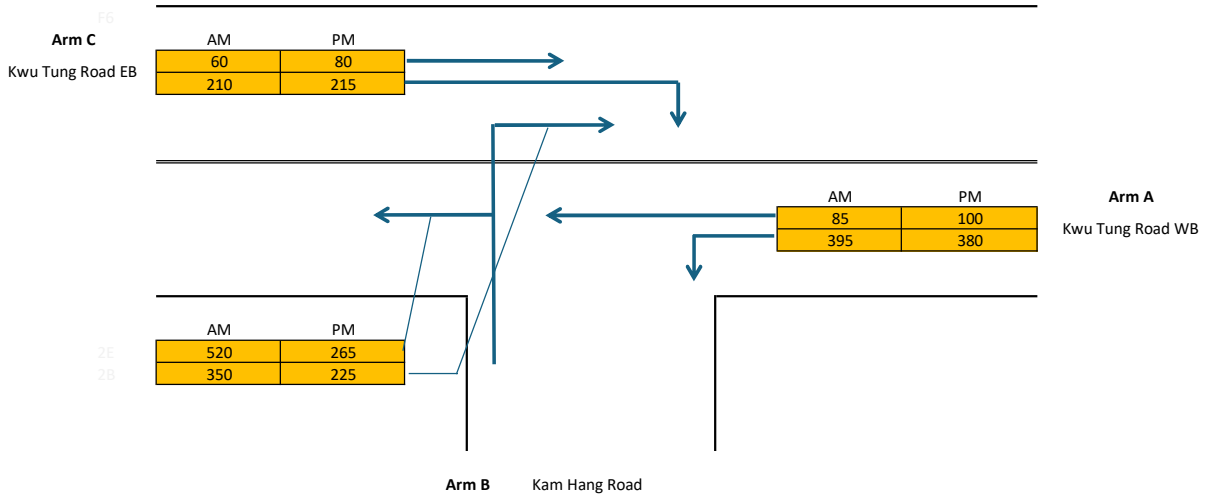
Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

2034 Reference

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J1) Kwu Tung Road / Kam Hang Road	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kwu Tung Road WB		
Arm B:	Kam Hang Road		
Arm C:	Kwu Tung Road EB		



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6141
	Vl(b-a)	70	Parameters	E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	395	380
	q(a-c)	85	100
	q(b-a)	350	225
	q(b-c)	520	265
	f	0.60	0.54
CAPACITIES (pcu/hr)	Q(b-ac)	437.925	412.14
	Q(c-a)	1152.61	1137.2
	Q(c-b)	583.883	583.88
RFC's	c-a	0.05	0.07
	c-b	0.36	0.37
	b-ac	1.99	1.19
RFC		**1.99**	**1.19**

Where Vl and Vr are visibility distances to the left or right of the respective streams

D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))

E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))

F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

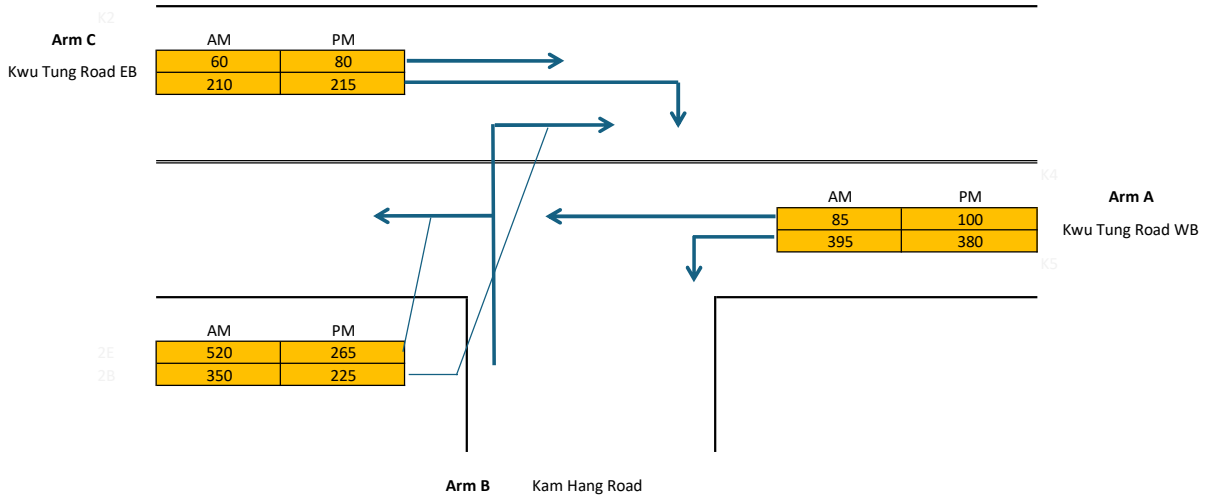
f = proportion of minor traffic turning left

Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Reference (with Improvement scheme under Y/NE-KTS/14)			Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	4.70
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.70
Blockage of major road right turn	Y/N?	N		w(c-b)	3.00
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	135	Calculated	D	1.0968
	Vl(b-a)	125	Parameters	E	1.1135
	Vr(b-c)	135		F	0.922
	Vr(c-b)	100		Y	0.7482

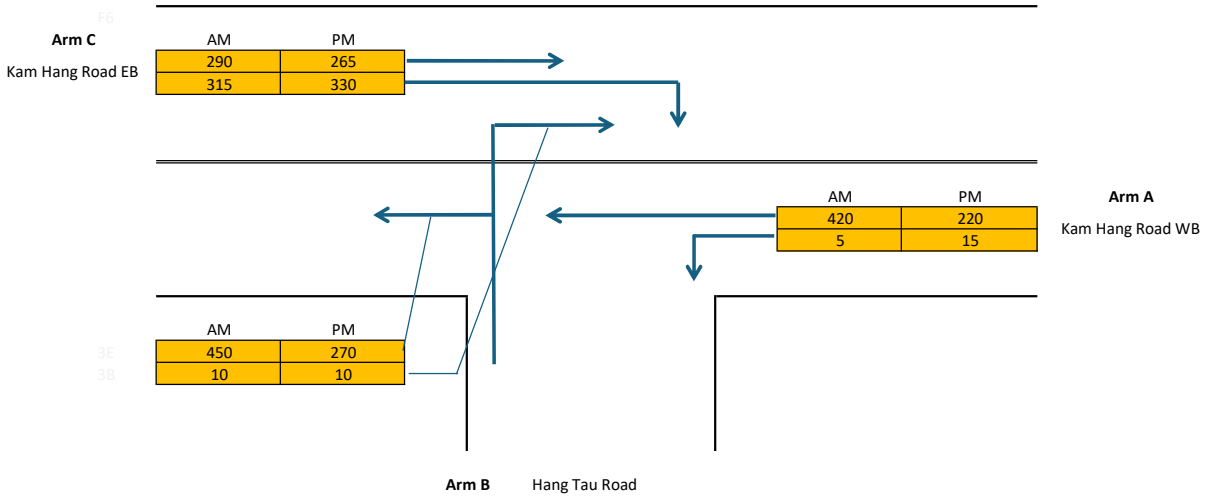
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	395	380
	q(a-c)	85	100
	q(b-a)	350	225
	q(b-c)	520	265
	f	0.60	0.54
CAPACITIES (pcu/hr)	Q(b-a)	514.764	506.16
	Q(b-c)	756.42	753.67
	Q(b-c)(0)	627.843	669.92
	Q(c-b)	566.369	566.37
RFC's	c-b	0.37	0.38
	b-a	0.68	0.44
	b-c b-c(0)	0.69 0.83	0.35 0.40
RFC		**0.83**	**0.44**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated Parameters	D	0.6044
	Vl(b-a)	45		E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

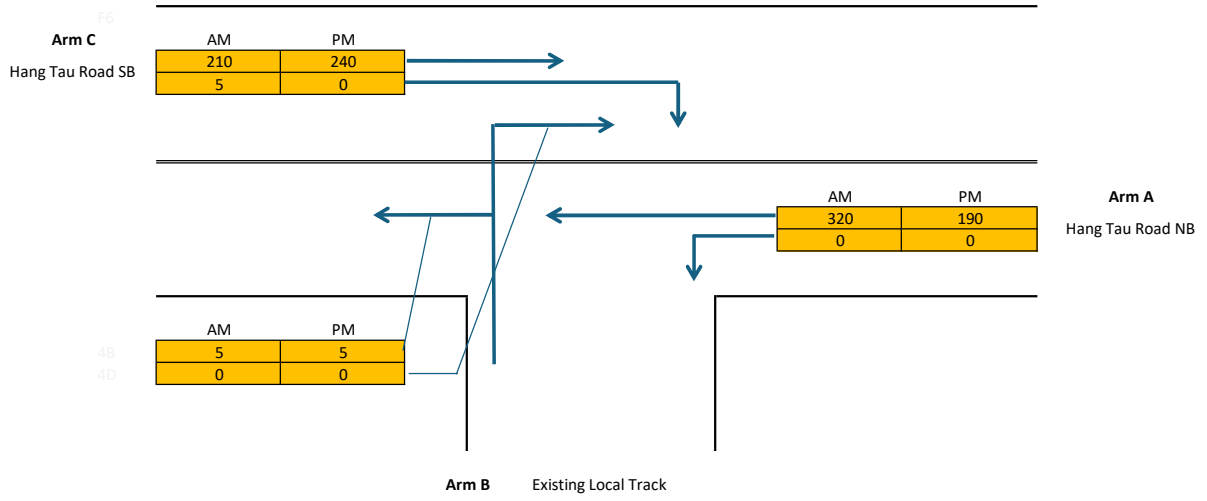
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	290	265
	q(c-b)	315	330
	q(a-b)	5	15
	q(a-c)	420	220
	q(b-a)	10	10
	q(b-c)	450	270
	f	0.98	0.96
CAPACITIES (pcu/hr)	Q(b-ac)	624.757	664.26
	Q(c-a)	836.717	870.24
	Q(c-b)	588.612	638.87
RFC's	c-a	0.35	0.30
	c-b	0.54	0.52
	b-ac	0.74	0.42
RFC		**0.74**	**0.52**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge			Designed by:	TCW
Scheme:	Reference			Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Hang Tau Road NB				
Arm B:	Existing Local Track				
Arm C:	Hang Tau Road SB				



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

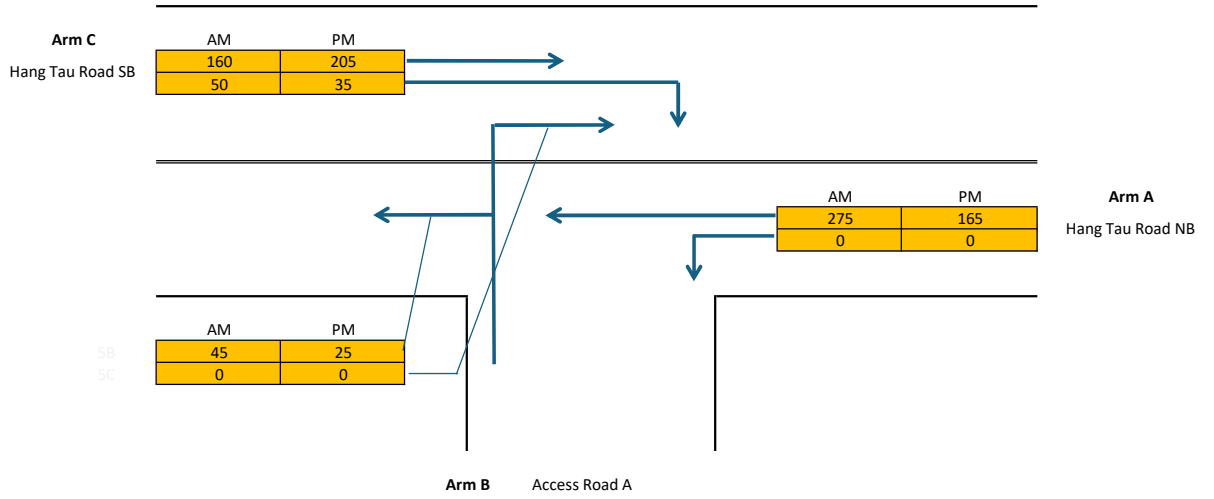
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	210	240
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	320	190
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	638.851	672.34
	Q(c-a)	1786.18	1800
	Q(c-b)	651.058	685.18
RFC's	c-a	0.12	0.13
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.12**	**0.13**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J4) Hang Tau Road / Access Road A	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Access Road A		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	4.50		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

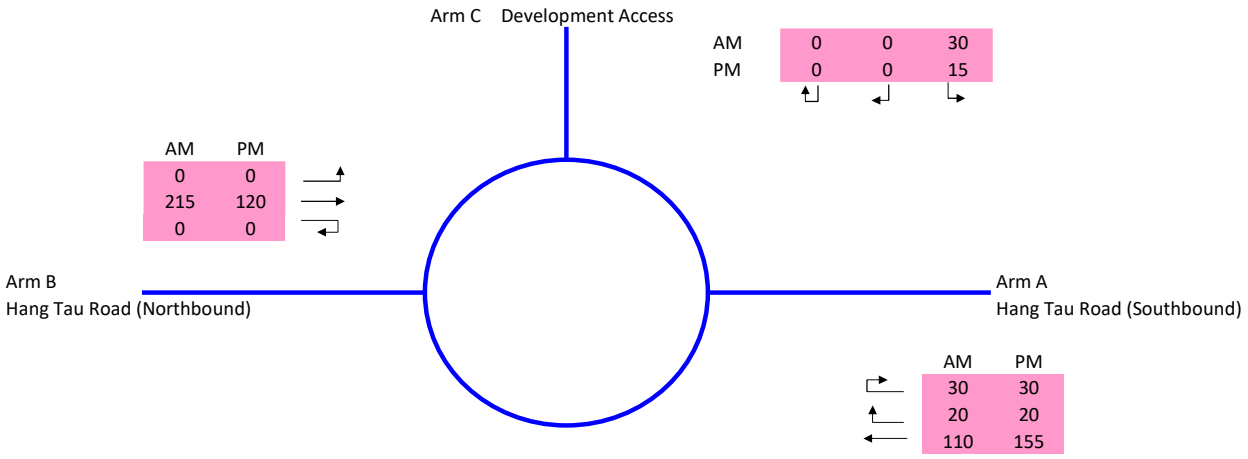
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	160	205
	q(c-b)	50	35
	q(a-b)	0	0
	q(a-c)	275	165
	q(b-a)	0	0
	q(b-c)	45	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	594.65	621.64
	Q(c-a)	1648.65	1698.7
	Q(c-b)	594.65	621.64
RFC's	c-a	0.10	0.12
	c-b	0.08	0.06
	b-ac	0.08	0.04
RFC		**0.10**	**0.12**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Roundabout Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang		
Junction:	(J5) Hang Tau Road / Proposed Development Access	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034 Job No.: CHK50808310	Date:	MAR, 2026
Arm A	Hang Tau Road (Southbound)		
Arm B	Hang Tau Road (Northbound)		
Arm C	Development Access		



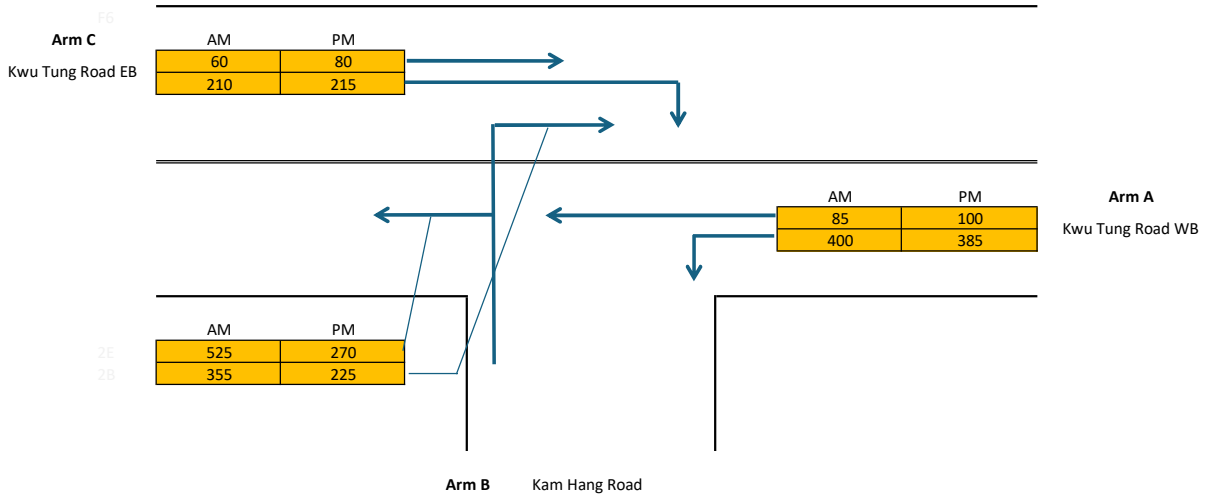
				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				3.90	3.65	3.65	
E	Entry Width (m)				4.50	4.50	4.00	
L	Effective Length of Flare (m)				3.00	2.00	2.00	
R	Entry Radius (m)				40.00	15.00	18.00	
D	Inscribed Circle Diameter (m)				18.00	18.00	18.00	
A	Entry Angle (degree)				25.00	60.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.32	0.68	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.04	0.88	0.98	
X2	= V + ((E-V) / (1+2S))				4.27	4.01	3.87	
M	= EXP ((D-60) /10)				0.01	0.01	0.01	
F	= 303 * X2				1293	1215	1174	
Td	= 1 + (0.5 / (1+M))				1.49	1.49	1.49	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.56	0.56	
AM RESULT								
Q	Entry Flow (pcu/hour)				160	215	30	
Qc	Circulating Flow Across Entry (pcu/hour)				0	50	245	
Qe	= K (F - Fc*Qc)				1347	1044	1014	
DFC	= Q / Qe	Design Flow / Capacity	0.21		0.12	**0.21**	0.03	
		Total Entry Flows	405					
PM RESULT								
Q	Entry Flow (pcu/hour)				205	120	15	
Qc	Circulating Flow Across Entry (pcu/hour)				0	50	150	
Qe	= K (F - Fc*Qc)				1347	1044	1066	
DFC	= Q / Qe	Design Flow / Capacity	0.15		**0.15**	0.11	0.01	
		Total Entry Flows	340					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

2034 Design

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J1) Kwu Tung Road / Kam Hang Road	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kwu Tung Road WB		
Arm B:	Kam Hang Road		
Arm C:	Kwu Tung Road EB		



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated Parameters	D	0.6141
	Vl(b-a)	70		E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

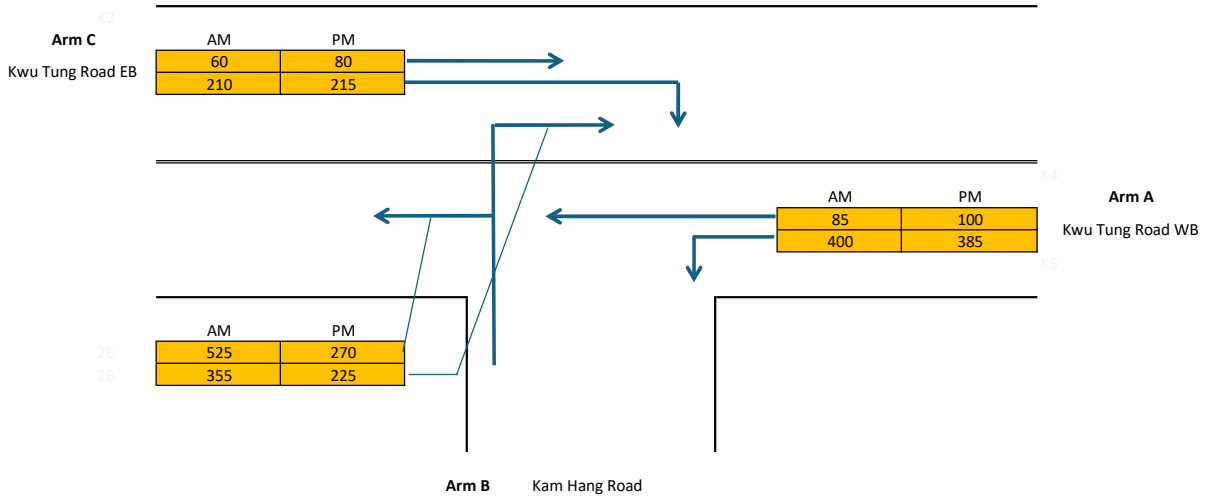
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	400	385
	q(a-c)	85	100
	q(b-a)	355	225
	q(b-c)	525	270
	f	0.60	0.55
CAPACITIES (pcu/hr)	Q(b-ac)	437.061	413.32
	Q(c-a)	1151.17	1135.7
	Q(c-b)	582.589	582.59
RFC's	c-a	0.05	0.07
	c-b	0.36	0.37
	b-ac	2.01	1.20
RFC		**2.01**	**1.20**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Design (with Improvement scheme under Y/NE-KTS/14)			Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	4.70
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.70
Blockage of major road right turn	Y/N?	N		w(c-b)	3.00
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	135	Calculated	D	1.0968
	Vl(b-a)	125	Parameters	E	1.1135
	Vr(b-c)	135		F	0.922
	Vr(c-b)	100		Y	0.7482

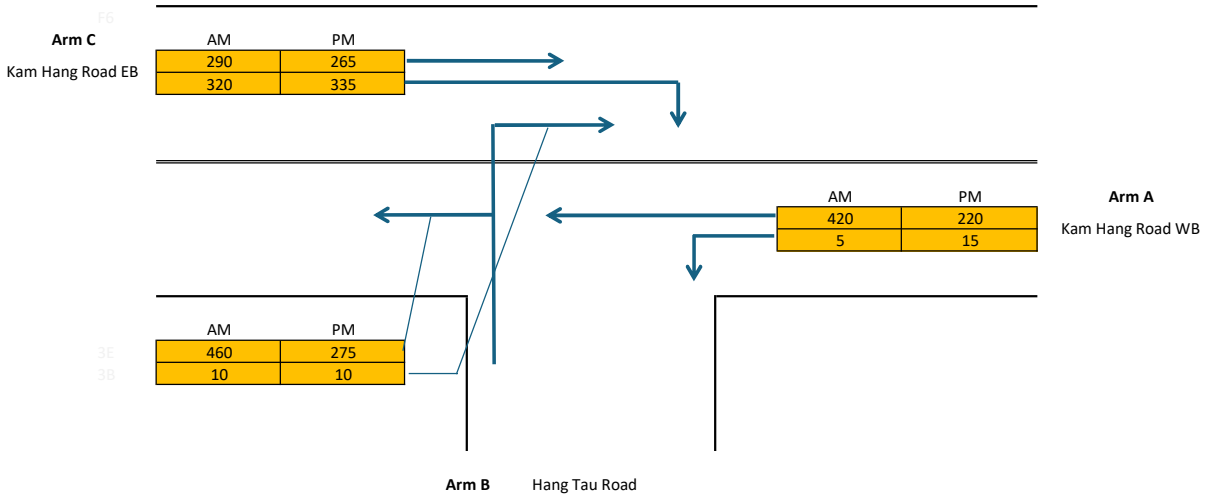
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	400	385
	q(a-c)	85	100
	q(b-a)	355	225
	q(b-c)	525	270
	f	0.60	0.55
CAPACITIES (pcu/hr)	Q(b-a)	514.173	505.57
	Q(b-c)	755.82	753.07
	Q(b-c)(0)	625.36	669.28
	Q(c-b)	565.114	565.11
RFC's	c-b	0.37	0.38
	b-a	0.69	0.45
	b-c b-c(0)	0.69 0.84	0.36 0.40
RFC		**0.84**	**0.45**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated Parameters	D	0.6044
	Vl(b-a)	45		E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

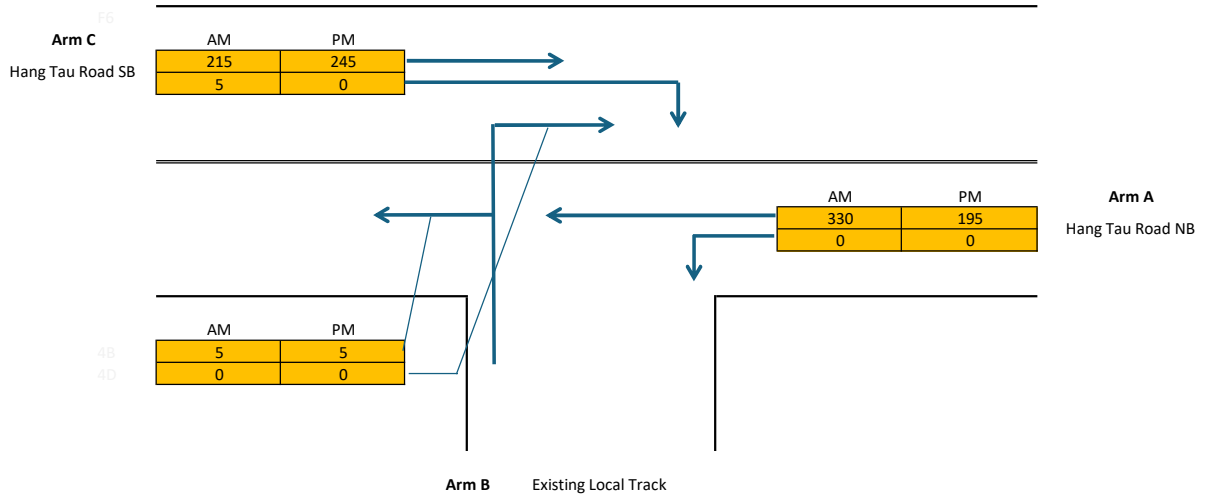
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	290	265
	q(c-b)	320	335
	q(a-b)	5	15
	q(a-c)	420	220
	q(b-a)	10	10
	q(b-c)	460	275
	f	0.98	0.96
CAPACITIES (pcu/hr)	Q(b-ac)	625.131	664.71
	Q(c-a)	821.426	856.15
	Q(c-b)	588.612	638.87
RFC's	c-a	0.35	0.31
	c-b	0.54	0.52
	b-ac	0.75	0.43
RFC		**0.75**	**0.52**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South			
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge		Designed by:	TCW
Scheme:	Design		Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date:	Mar-26
Arm A:	Hang Tau Road NB			
Arm B:	Existing Local Track			
Arm C:	Hang Tau Road SB			



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

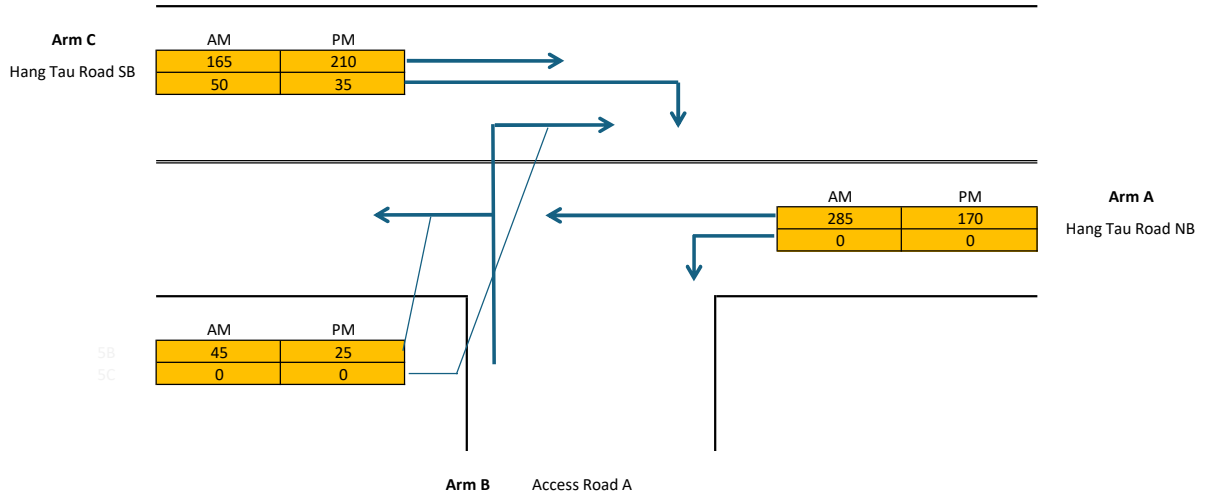
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	215	245
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	330	195
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	636.275	671.05
	Q(c-a)	1786.12	1800
	Q(c-b)	648.433	683.87
RFC's	c-a	0.12	0.14
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.12**	**0.14**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South			
Junction:	(J4) Hang Tau Road / Access Road A		Designed by:	TCW
Scheme:	Design		Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date:	Mar-26
Arm A:	Hang Tau Road NB			
Arm B:	Access Road A			
Arm C:	Hang Tau Road SB			



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

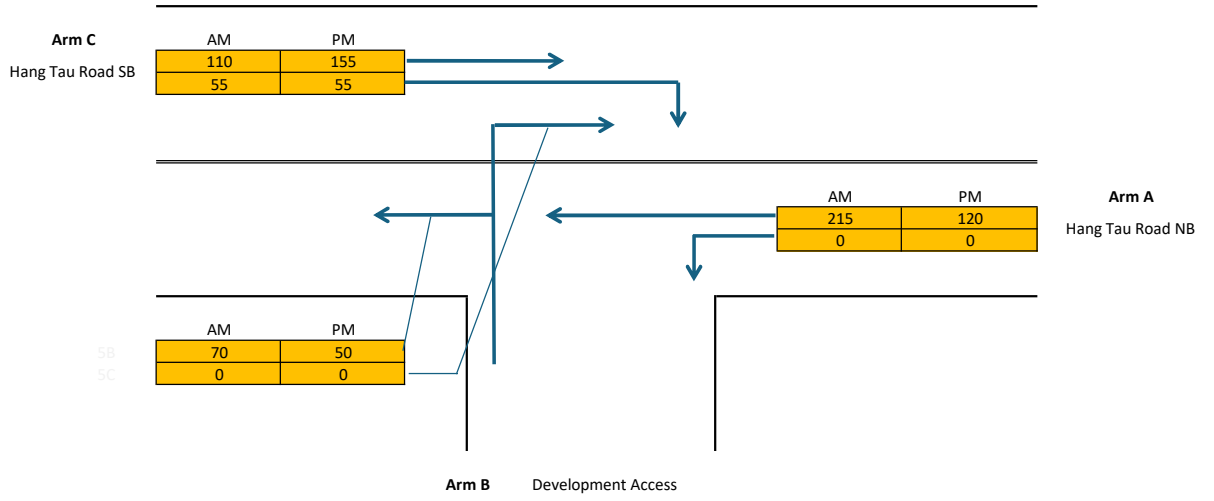
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	165	210
	q(c-b)	50	35
	q(a-b)	0	0
	q(a-c)	285	170
	q(b-a)	0	0
	q(b-c)	45	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	592.196	620.41
	Q(c-a)	1648.02	1698.5
	Q(c-b)	592.196	620.41
RFC's	c-a	0.10	0.12
	c-b	0.08	0.06
	b-ac	0.08	0.04
RFC		**0.10**	**0.12**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South			
Junction:	(J5) Hang Tau Road / Proposed Development Access		Designed by:	TCW
Scheme:	Design		Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date:	Oct-26
Arm A:	Hang Tau Road NB			
Arm B:	Development Access			
Arm C:	Hang Tau Road SB			



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.65
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	55	Calculated	D	0.5999
	Vl(b-a)	100	Parameters	E	0.9415
	Vr(b-c)	55		F	0.9318
	Vr(c-b)	90		Y	0.7482

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	110	155
	q(c-b)	55	55
	q(a-b)	0	0
	q(a-c)	215	120
	q(b-a)	0	0
	q(b-c)	70	50
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	646.292	670.65
	Q(c-a)	1645.23	1650.9
	Q(c-b)	639.663	663.77
RFC's	c-a	0.07	0.09
	c-b	0.09	0.08
	b-ac	0.11	0.07
RFC		**0.11**	**0.09**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Appendix 3

Environmental Assessment

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Environmental Assessment Report

October 2026

Submitted to

Fonnie Holding Limited

Prepared By

Meinhardt Infrastructure and Environment Ltd

Date	Revision	Prepared By	Checked By	Approved By	Signature
May 2025	0	Various	Adi LEE	Adi LEE	
March 2026	1	Various	Adi LEE	Adi LEE	
July 2026	2	Various	Adi LEE	Adi LEE	
October 2026	3	Various	Adi LEE	Adi LEE	

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1. INTRODUCTION

1.1 Background

1.1.1.1 The Applicant, Fonnie Holdings Limited intends to develop the residential development cum Resident Care Home for the Elderly and Shop and Services (hereafter as "the Proposed Development") in D.D.92, D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South (hereafter as "the Application Site").

1.1.1.2 The Application Site is the subject of a previous Section 12A application (No. Y/NE-KTS/13), which was agreed by the Town Planning Board on December 2021 (hereafter referred to as "the Approved Section 12A Application"). The Approved Section 12A Application was to divide the Comprehensive Development Area ("CDA") Zone into Area (a) and Area (b) for phased development, while relaxing the respective maximum Plot ratio, building height and site coverage restrictions to allow for a higher development intensity, including domestic flats and non-domestic uses for retail facilities and a RCHE.

1.1.1.3 This planning application is submitted under Section 16 of the Town Planning Ordinance ("the Ordinance") to facilitate the implementation of the CDA site. Under the current application, the minor relaxation of the plot ratio and building height restrictions is proposed for the Application Site corresponds to Area (a) of the "CDA" zone on the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22 ("the OZP") .

1.1.1.4 Meinhardt Infrastructure and Environment Limited (MIEL) was commissioned by the Applicant to conduct an Environment Assessment (EA) to support the Section 16 Planning Application of the Proposed Development, and to assess the environmental impact due to / upon the Proposed Development.

1.2 Objectives of the EA

1.2.1.1 This EA is prepared to identify the potential environmental impacts arising from and upon the Proposed Development and propose possible mitigation measures, as necessary to demonstrate the environmental acceptability of the Proposed Development on the Application Site.

1.2.1.2 This EA covers the following aspects:

- Assess and evaluate the environmental impacts from the surrounding environment upon the operation of Site;
- Assess and evaluate the potential environmental impacts due to the Application Site upon the nearby sensitive areas; and
- Propose mitigation measures, where necessary, to reduce the environmental impacts to an acceptable level.

1.3 Report Structure

1.3.1.1 The remaining chapters of this report are shown below:

Chapter 2 – Site Context

Chapter 3 – Air Quality Impact

Chapter 4 – Noise Impact

Chapter 5 – Water Quality Impact

Chapter 6 – Waste Management and Land Contamination

Chapter 7 – Conclusion

2. SITE CONTEXT

2.1 Site Location and Its Environs

2.1.1.1 The Proposed Development will be located at the various lots in D.D.92, D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South.

2.1.1.2 The Application Site is currently occupied by unused structures including a 2-story house, a pavilion, swimming pool and landscape garden. The Proposed Development is located in "Comprehensive Development Area" Zone bounded by "Agriculture" (AGR) Zone, "Residential (Group D)" (R(D)) Zone and "Government Institution or Community" (G/IC) Zone according to the Draft Kwu Tung South Outline Zoning Plan (OZP) (OZP No.: S/NE-KTS/21). Existing land uses in the surroundings include low-rise village type development and temporary structures.

2.1.1.3 **Figure 2.1** shows the Application Site location and its environs.

2.2 Proposed Development

2.2.1.1 The Proposed Development consists of includes 4 nos. of residential towers, a clubhouse and aboveground carpark, a retail and a Residential Care Home for the Elderly (RCHE) with total site area of about 17,990.9 m^2. The development schedule of the Proposed Development is tabulated in **Table 2.1**. The layout plans of the Proposed Development are shown in **Appendix A**.

Table 2.1 - Development Schedule

Development Items		Design Parameter
Site (a)	No. of Tower	4
	No. of Flat Unit	334
	No. of Clubhouse and Aboveground Carpark	1
	No. of Swimming Pool	1
	No. of RCHE	1
	No. of Retail	1
	Site Area	17,990.9 m^2

2.2.1.2 According to the latest programme, construction is expected to commence in 2029, while occupation of the Proposed Development is anticipated in 2031.

3. AIR QUALITY

3.1 Introduction

3.1.1.1 This section aims to assess the air quality impact upon the Proposed Development during operational stage.

3.2 Criteria and Guidelines

3.2.1 Background

3.2.1.1 This Proposed Development is not a Designated Project under the EIAO. However, the Technical Memorandum on EIA Process (EIAO-TM) (Annex 4) has been referenced. The following guidelines and legislations have also been referenced for the air quality impact assessment criteria of this EA:

- Hong Kong Planning Standards and Guidelines (HKPSG);
- Air Pollution Control Ordinance (APCO) (Cap 311);
- Air Pollution Control (Fuel Restriction) Regulations (Cap311I);
- Air Pollution Control (Construction Dust) Regulation (Cap 311R);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap 311Z);
- Recommended Pollution Control Clauses for Construction Contracts;
- Meeting 5 odour units (OUs) based on an averaging time of 5 seconds for odour impact assessment.

3.2.2 Hong Kong Planning Standards and Guidelines (HKPSG)

3.2.2.1 The Hong Kong Planning Standards and Guidelines (HKPSG) is a Government manual of criteria for determining the scale, location and site requirements of various land uses and facilities. The purpose of the HKPSG is to provide general guidelines to ensure that, during the planning process, the Government will reserve adequate land to facilitate social and economic development and provide appropriate public facilities to meet the needs of the public.

3.2.2.2 The HKPSG is also a tool that helps to regulate development by providing guidance on the scale, intensity and site requirements of various developments as well as the supporting facilities required.

3.2.2.3 Apart from development purposes, the HKPSG also provides guidelines on environmental planning, conservation of our natural landscape and habitats, and conservation of our cultural heritage and townscape.

3.2.2.4 The HKPSG specify buffer distances between sources of pollution and sensitive land uses to ensure acceptable air quality at the sensitive land uses. Examples of recommended buffer distances extracted from the HKPSG for relevant source and sensitive land use combinations are given in **Table 3.1.**

Table 3.1 HKPSG – Recommended Buffer Distance

Polluting Uses	Sensitive Uses	Buffer Distance
Odour sources	Sensitive uses	200m
Dusty uses	Sensitive uses	100m

3.2.2.5 Under Chapter 9 of HKPSG, Section 3 Air Quality provides guidelines on buffer distances from different pollution sources. Such buffer distances as shown in **Table 3.2** below are also considered in this EA.

Table 3.2 HKPSG – Recommended Minimum Buffer Distance from Roads and Industrial Chimneys

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	Type of Road		
	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
	Local Distributor	> 5m	Active and passive recreational uses
		< 5m	Passive recreational uses
	Under Flyover	-	Passive recreational uses
Industrial Areas	Difference in Height between Industrial Chimney Exit and the Site		
	<20m	> 200m	Active and passive recreational uses
		5 – 200m	Passive recreational uses
	20m – 30m	> 100m	Active and passive recreational uses
		5 – 100m	Passive recreational uses
	30m – 40m	> 50m	Active and passive recreational uses
		5 – 50m	Passive recreational uses
	>40m	> 10m	Active and passive recreational uses

Note:
1. 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.
2. 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.
3. 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 Environmental Protection Department (EPD) when planning open space sites close to such establishments.
4. Amenity Areas are permitted in any situation.

3.2.2.6 Applicable buffer distance requirements are summarized in **Table 3.3**.

Table 3.3 Required Buffer Distance between the Surrounding Roads and the ASRs of the Proposed Development

Road	Type of Road	Required Buffer Distance (m)
Hang Tau Road	Local Distributor	> 5 m
Access Road	Local Distributor	> 5 m

Note:
1. As there is no specified buffer distance requirement of Access Road, buffer distance requirement for Local Road is adopted under worst-case condition.

3.2.3 Air Pollution Control Ordinance

3.2.3.1 The Air Pollution Control Ordinance provides the statutory authority for controlling air pollutants from a variety of sources. The Hong Kong Air Quality Objectives (AQOs), which stipulate the maximum allowable concentrations over specific periods for typical pollutants, should be met. The prevailing AQOs are implemented in April 2025 have been adopted as the assessment criteria, as shown in**Table 3.4**.

Table 3.4 Hong Kong Air Quality Objectives

Pollutant	Averaging Time	Concentration Limit[i] (μg/m^3)	Number of Exceedances Allowed
Sulphur dioxide (SO_2)	10-minute	500	3
	24-hour	40	3
Respirable suspended particulates (RSP/ PM_{10}) [ii]	24-hour	75	9
	Annual	30	Not applicable
Fine suspended particulates (FSP/ $PM_{2.5}$) [iii]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen dioxide (NO_2)	1-hour	200	18
	24-hour	120	9
	Annual	40	Not applicable
Ozone (O_3)	8-hour	160	9
	Peak season	100	Not applicable
Carbon monoxide (CO)	1-hour	30,000	0

Pollutant	Averaging Time	Concentration Limit[i] ($\mu g/m^3$)	Number of Exceedances Allowed
	8-hour	10,000	0
	24-hour	4,000	0
Lead (Pb)	Annual	0.5	Not applicable

Remark:

(i) All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin (19.85°C) and a reference pressure of 101.325 kilopascal (one atmosphere).
(ii) Respirable suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 10 μm or less.
(iii) Fine suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 2.5 μm or less.

3.2.4 Air Pollution Control (Fuel Restriction) Regulations (Cap311I)

3.2.4.1 The Air Pollution Control (Fuel Restriction) Regulations was enacted in 1990 and amended in 2024. The regulation imposes legal control on the type of fuels allowed for use and their sulphur contents in commercial and industrial processes. Gaseous fuel, conventional solid fuel with a sulphur content not exceeding 1% by weight or liquid fuel with a sulphur content of not more than 0.001% by weight and a viscosity not more than 6 centistokes at 40°C, such as Ultra Low Sulphur Diesel (ULSD) are permitted to be used in commercial and industrial processes.

3.2.5 Air Pollution Control (Construction Dust) Regulation (Cap 311R)

3.2.5.1 The Air Pollution Control (Construction Dust) Regulation specifies processes that require special dust control. The Contractors are required to inform EPD and adopt proper dust suppression measures while carrying out "Notifiable Works" (which requires prior notification by the regulation) and "Regulatory Works" to meet the requirements as defined under the regulation.

3.2.6 Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap 311Z)

3.2.6.1 The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation came into effect on 1 June 2015. Under the Regulation, Non-road mobile machinery (NRMMs), except those exempted, are required to comply with the prescribed emission standards. From 1 September 2015, all regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Starting from 1 December 2015, only approved or exempted NRMMs with a proper label are allowed to be used in specified activities and locations including construction sites. The Contractor is required to ensure the adopted machines or non-road vehicle under the Project could meet the prescribed emission standards and requirement.

3.3 Existing Environment

3.3.1.1 The nearest EPD air quality monitoring station (AQMS) is the North AQMS located at Po Wing Road Sports Centre, 19 Pak Wo Road, Sheung Shui, New Territories. The latest 6 year air quality data from this station (i.e. 2020 to 2026) and, are summarized in **Table 3.5** to show the trend in air quality.

Table 3.5 Air Quality Monitoring Data at North AQMS, 2020-2025

Pollutant	Averaging Time	AQO	Pollutant Concentration (μg/m^3)					
			2020	2021	2022	2023	2024	2025
RSP/PM_{10}	10th Highest 24-hour	75 (9)	55	62	50	57	56	62
	Annual	30	-	25	23	27	25	28
FSP/$PM_{2.5}$	19th Highest 24-hour	37.5 (18)	29	29	28	28	29	29
	Annual	15	-	15	14	**15**	**16**	**16**
NO_2	19th Highest 1-hour	200 (18)	112	135	115	116	114	131
	10th Highest 24-hour	120 (9)	54	70	58	58	56	64
	Annual	40	-	36	31	30	29	31
SO_2	4th Highest 10-Min	500 (3)	19	18	27	27	18	39
	4th Highest 24-hour	40 (3)	8	7	7	7	7	5
O_3	10th Highest 8-hour	160 (9)	**166**	**187**	**197**	**164**	**169**	156
	Peak season	100	N.A.	97	98	95	**101**	99
CO	1st Highest 1-hour	30000 (0)	1830	2150	1710	2390	1710	1700
	1st Highest 8-hour	10000 (0)	1238	1550	1304	1231	1311	1200
	1st Highest 24-hour	4000 (0)	1022	1213	994	1001	988	1000

Note:
1. Numbers in brackets () denote the number of exceedances allowed.
2. Conversion factors were referenced from the "EPD's Guidelines on the Estimation of 10-minute Average SO_2 Concentration for Air Quality in Hong Kong" to convert the 1-hr average concentration of SO_2.
3. Exceedance of relevant AQOs is shown as bold and underlined characters.

3.3.1.2 As shown in **Table 3.5**, concentrations of all concerned pollutants except $PM_{2.5}$ (Annual), O_3 (8-hour), O_3(peak season) in the past 6 years (2020 to 2025) were complied with the respective AQOs. For $PM_{2.5}$ (Annual), the corresponding AQO was exceeded in 2023, 2024 and 2025 but was in compliance in 2021 and 2022. No available data for $PM_{2.5}$(Annual) in 2020. In terms of O_3 (8-hour), the corresponding AQO was exceeded in 2020, 2021, 2022, 2023 and 2024 but was in compliance in 2025. O_3 (peak season) was exceeded in 2024, but was in compliance in 2021,2022,2023 and 2025. No available data for O_3(Peak) in 2020.

3.3.1.3 In order to predict the future background air quality within the assessment area, hourly background air pollutant concentrations of RSP, FSP, NO_2, SO_2, O3 and CO have been extracted from the EPD's Pollutants in the Atmosphere and their Transport over Hong Kong (PATH v3.0). The 500m assessment area covers PATH grids (32,53), (33,53), (32,52) and (33,52), which are shown in **Figure 3.1**. Based on the best available data in PATH v3.0,

the projected background air quality of Year 2029 (i.e. the commencing year of construction of the Project) and Year 2030 (i.e. the nearest year available to the commencing year of the occupancy of the Project) will be adopted in the construction and operational phase air quality impact assessments, respectively. **Table 3.6** and **Table 3.7** summarized the background levels from the PATH against the prevailing AQOs.

Table 3.6 Future Background Air Quality from PATH3.0 for Year 2029

Pollutant	Averaging Time	AQO	Data Summary	PATH v3.0 Grid in Year 2029			
				32,53	33,53	32,52	33,52
RSP/PM_{10}	24-hour	75 (9)	10th	61	62	61	62
			Exceedance	3	2	1	3
	Annual	30	-	23	23	23	23
$FSP/PM_{2.5}$	24-hour	37.5 (18)	19th	**38**	**38**	37	**38**
			Exceedance	**19**	**20**	17	**20**
	Annual	15	-	15	15	15	15
NO_2	1-hour	200 (18)	19th	73	74	62	61
			Exceedance	0	0	0	0
	24-hour	120 (9)	10th	25	25	22	22
			Exceedance	0	0	0	0
	Annual	40	-	15	15	13	13
SO_2	10-Min	500 (3)	4th	29	29	28	29
			Exceedance	0	0	0	0
	24-hour	40 (3)	4th	8	8	8	8
			Exceedance	0	0	0	0
O_3	8-Hour	160 (9)	10th	**178**	**176**	**178**	**176**
			Exceedance	**29**	**24**	**26**	**24**
	Peak Season	100	-	**122**	**122**	**123**	**123**
CO	1-Hour	30000 (0)	1st	624	625	622	622
			Exceedance	0	0	0	0
	8-Hour	10000 (0)	1st	593	592	591	589
			Exceedance	0	0	0	0
	24-Hour	4000 (0)	1st	540	540	537	537
			Exceedance	0	0	0	0

Note:
1. Numbers in brackets () denote the number of exceedances allowed.
2. Conversion factors were referenced from the "EPD's Guidelines on the Estimation of 10-minute Average SO_2 Concentration for Air Quality in Hong Kong" to convert the 1-hr average concentration of SO_2.
3. Exceedance of relevant AQOs is shown as bold and underlined characters.

Table 3.7 Future Background Air Quality from PATH3.0 for Year 2030

Pollutant	Averaging Time	AQO	Data Summary	PATH v3.0 Grid in Year 2030			
				32,53	33,53	32,52	33,52
RSP/PM_{10}	24-hour	75 (9)	10th	55	56	55	56
			Exceedance	0	0	0	0
	Annual	30	-	21	21	21	21
FSP/$PM_{2.5}$	24-hour	37.5 (18)	19th	33	34	32	34
			Exceedance	10	11	8	11
	Annual	15	-	14	14	13	14
NO2	1-hour	200 (18)	19th	69	70	59	58
			Exceedance	0	0	0	0
	24-hour	120 (9)	10th	23	24	20	21
			Exceedance	0	0	0	0
	Annual	40	-	15	15	12	12
SO2	10-Min	500 (3)	4th	26	26	25	26
			Exceedance	0	0	0	0
	24-hour	40 (3)	4th	7	7	7	7
			Exceedance	0	0	0	0
O3	8-Hour	160 (9)	10th	**175**	**172**	**174**	**173**
			Exceedance	**22**	**19**	**22**	**20**
	Peak Season	100	-	**119**	**118**	**119**	**119**
CO	1-Hour	30000 (0)	1st	524	525	522	523
			Exceedance	0	0	0	0
	8-Hour	10000 (0)	1st	495	494	493	492
			Exceedance	0	0	0	0
	24-Hour	4000 (0)	1st	461	461	458	458
			Exceedance	0	0	0	0

Note:
1. Numbers in brackets ()denote the number of exceedances allowed.
2. Conversion factors were referenced from the "EPD's Guidelines on the Estimation of 10-minute Average SO_2 Concentration for Air Quality in Hong Kong" to convert the 1-hr average concentration of SO_2.
3. Exceedance of relevant AQOs is shown as bold and underlined characters.

3.4 Air Sensitive Receivers

3.4.1.1 A number of existing and planned residential, recreational, institution and community use located within 500m assessment area of the Proposed Development are Air Sensitive Receivers (ASR). The ASRs closest to the Application Site are anticipated to be the most affected during the construction stage. These first-tier ASRs have therefore been selected as the most representative for the worst-case scenario air quality impact assessment. ASRs located further away from these first-tier receivers are expected to experience lesser impacts. The representative ASRs are summarized in **Table 3.8** and shown in **Figure 3.2**.

3.4.1.2 During the construction stage, the existing residential, recreational, institution and

community uses at the first tier, and the planned residential developments under A/NE-KTS/528 and A/NE-KTS/466 with the anticipated completion years prior to Q4 2031 (i.e. the completion year of construction and commencement year of occupancy) are considered as representative ASRs.

3.4.1.3 For the operational stage, the existing residential, recreational, institution and community use and all planned residential developments at the first tier (i.e. A/NE-KTS/528, A/NE-KTS/466 and A/NE-KTS/541) are also considered as representative ASRs.

3.4.1.4 According to Appendix 3.2 of HKPSG Chapter 9, all residential areas, residential care homes for the elderly and the active recreational activities are considered as Air Sensitive Use. Accordingly, the 4 residential towers, RCHE and the Club house of the Proposed Development are classified as representative ASRs during operational stage as well.

Table 3.8 Representative Air Sensitive Receivers for Air Quality Impact Assessment

ASR ID	Description	Use	Approximate Distance, m	Construction (C) / Operational (O) Stage
Existing ASRs				
ASR1	Beas River Country Club	Recreational	30	C,O
ASR2	Sister Aquinas Memorial Women's Treatment Centre	Government	140	C,O
ASR 3	Hang Tau Road Sitting out Area	Recreational	120	C,O
ASR4	Goodwood Park No. 13	Residential	110	C,O
ASR 5	Fu Hin Kui	Residential	50	C,O
ASR 6	Hang Tau Village House (1)	Residential	<5	C,O
ASR 7	Hang Tau Village House (2)	Residential	6	C,O
ASR 8	Hang Tau Village House (3)	Residential	<5	C,O
ASR 9	Hang Tau Village House (4)	Residential	15	C,O
ASR 10	Hang Tau Village House (5)	Residential	15	C,O
ASR 11	Hang Tau Tsuen Playground Basketball Court	Recreational	<5	C,O
ASR 12	Hang Tau Village House (6)	Residential	15	C,O

ASR ID	Description	Use	Approximate Distance, m	Construction (C) / Operational (O) Stage
ASR 13	Hang Tau Village House (7)	Residential	15	C,O
ASR 14	Hang Tau Village House (8)	Residential	<5	C,O
ASR 15	Hang Tau Village House (9)	Residential	15	C,O
ASR 16	Lotus Garden	Recreational	8	C,O
ASR 17	Tang Ming Temple	Institution	50	C,O
Planned ASRs				
PA1	Proposed Development	Residential, Recreation	-	C,O
PA2	Planned Residential Development (A/NE-KTS/528)[1, 2]	Residential	10	C,O
PA3	Planned Residential Development (A/NE-KTS/541) [1,2]	Residential	60	O
PA4	Planned Residential Development (A/NE-KTS/466) [1,2]	Residential	10	C,O

Remarks:

1. These planned residential developments are the subject of the corresponding approved Section 16 planning applications. The shortest distances from the Application Site boundary of the Proposed Development to these developments have been taken into account in the table above.
2. Anticipated completion years are as follows:
   - A/NE-KTS/528: Unknown (assumed completed before construction stage of the Proposed Development as a worst-case scenario; consider as ASR for both construction and operational stages)
   - A/NE-KTS/541: 2032
   - A/NE-KTS/466: 2022

(Source: Available SIA reports of other planned developments from the Planning Department (Planning Enquiry Counters)

3.5 Air Quality Impact during Construction Phase

3.5.1.1 The construction activities, including site clearance and demolitions, site formation, foundations and excavation for basement and underground utilities, superstructure works, stockpiling and transferring or handling of dusty materials, are the potential sources of air

quality impacts during construction phase. Throughout the construction phase, the total quantity of 32,832m^3 of inert C&D materials and 609 m^3 of non-inert C&D waste are estimated to be generated. Among that, approximate 7,000m^3 of inert C&D materials will be reused on-site as backfilling materials, while about 25,832 m^3 will be delivered of public fill reception facilities. All the dusty materials will be covered or wetted on-site. The construction period will last for approximately 24 working months, from 4th quarter of 2029 to 4th quarter of 2031, and 26 working days for each working month are assumed for this Project. Accordingly, the amount of inert C&D materials to be handled per day is about 52.6 m^3, which is small amount of inert C&D materials. Given the relatively small amount of inert C&D materials to be handled, the fugitive dust impact arising from the construction activities are expected to be minimal.

3.5.1.2 To minimize potential air quality impact arising from the transportation of the inert C&D materials, the duration and the travelling distance of the dump trucks will be minimized while the use of highways would be maximized. In addition, the transportation routes will be selected away from ASRs as far as practicable and the dump trucks will be covered by clean impervious sheeting to minimize dust nuisance to the nearby ASRs. Therefore, the fugitive dust impact arising from the transportation of dusty materials is expected to be minimal.

3.5.1.3 Fuel combustion from the use of Powered Mechanical Equipment (PME) during construction works could be a source of NO_2, SO_2 and CO. Given the construction work is localized, a limited number of NRMM will be expected to be operated at any one time. In order to improve air quality and protect public health, EPD has introduced the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, which came in operation on 1 June 2015, to regulate emissions from machines and non-road vehicles. Starting from 1 December 2015, only approved or exempted non-road mobile machinery are allowed to be used in construction sites. According to the requirement stipulated in the Air Pollution Control (Fuel Restriction) Regulations, liquid fuel with a sulphur content of not more than 0.001% by weight should be adopted to minimise SO_2 emission from NRMM. Furthermore, good site practices stated in **Section 3.6** are recommended to further control and reduce the emission from the use of non-road mobile machinery from the Project. Hence, the emissions from NRMM are considered minimal.

3.5.1.4 In summary, with the implementation of sufficient dust suppression and air quality control measures as stipulated under the APCO, Air Pollution Control (Construction Dust) Regulation (Cap 311R), Air Pollution Control (Fuel Restriction) Regulations (Cap311I), Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap 311Z) and good site practices as detailed in **Section 3.6** below, no adverse air quality impact arising from the construction activities, transportation of dusty materials, as well as the emission of the construction plant is anticipated.

3.6 Mitigation Measures during Construction Phase

3.6.1.1 The implementation of sufficient dust suppression measures as stipulated under the Air Pollution Control (Construction Dust) Regulation, and good site practices should be carried out to further minimise the construction dust generated.

- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;
- Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;

- A stockpile of dusty material should not extend beyond the pedestrian barriers, fencing or traffic cones;
- The load of dusty materials on vehicles leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- Where practicable, vehicles washing facilities including a high-pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;
- The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;
- Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation take place should be sprayed with water or a dust suppression chemical continuously;
- Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;
- For any wall of the building to be demolished that abuts or fronts upon a street, service lane or other open area accessible to the public, impervious dust screens or sheeting shall be used to enclose the whole wall to a height of at least 1 m higher than the highest level of the structure being demolished;
- Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;
- Any skip hoist for material transport should be totally enclosed by impervious sheeting;
- Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the three sides;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels;
- Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high-level alarm which is interlocked with the material filling line and no overfilling is allowed; and
- Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.
- Connecting construction plant and equipment to mains electricity supply should be considered and use of diesel generators and diesel-powered equipment should be avoided as far as possible.

3.6.1.2 Fuel combustion from the use of PME during construction works would be a source of air

emission. Ultra-low sulphur diesel (ULSD) with a sulphur content of not more than 0.001% by weight and a viscosity of not more than 6 centistokes at 40oC will be used to minimise SO_2 emissions in accordance with Air Pollution Control (Fuel Restriction) Regulations. Under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, NRMMs, except those exempted, are required to comply with the prescribed emission standards. All regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Only approved or exempted NRMMs with a proper label are allowed to be used in specified activities and locations including construction sites.

3.6.1.3 To further control and reduce the emission from the use of NRMM from the Project, the following good site practices are recommended:

- Regulated machines shall be used and exempted NRMMs should be avoided where practicable;
- Use cleaner fuel such as ultra-low sulphur diesel in diesel-operated construction plant to reduce sulphur dioxide emission;
- Zero emission or clean fuels shall be considered as far as practicable for transportation activities;
- Use of electric PMEs where practicable;
- Connect construction plant and equipment to main electricity supply and avoid use of diesel generators and diesel-powered equipment as far as practicable;
- Switch off the engine of PMEs when idling;
- Implement regular and proper maintenance for plant and equipment; and • Employ plant and equipment of adequate size and power output and avoid overloading of the plant.

3.6.1.4 Furthermore, guidelines stipulated in EPD's Recommended Pollution Control Clauses for Construction Contracts should also be incorporated in the contract documents to abate dust impacts. The clauses include:

- The Contractor shall observe and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly the Air Pollution Control (Open Burning) Regulation, Air Pollution Control (Construction Dust) Regulation, Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, Air Pollution Control (Fuel Restriction) Regulations and Air Pollution Control (Smoke) Regulation;
- In addition to the statutory requirements of the Regulations, the Contractor of the public works contracts shall also observe the requirements as set out in the government circulars, including DEVB's TC No, 13/2020 (Timely Application of Temporary Electricity and Water Supply for Public Works Contracts and Wider Use of Electric Vehicles in Public Works Contracts) and DEVB's TC No. 1/2015 (Emissions Control of NRMM in Capital Works Contracts of Public Works);
- The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of his activities, and minimise the emission of air pollutants from construction plant and equipment;
- The Contractor shall ensure that there will be adequate water supply/storage for dust suppression;
- The Contractor shall devise, arrange methods of working and carrying out the works in such a manner so as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented;

- For better smoke control, the Contractor shall not use diesel hammer for percussive piling; and
- Before the commencement of any work, the Engineer may require the methods of working, plant, equipment and air pollution control system to be used on the site to be made available for inspection and approval to ensure that they are suitable for the project.

3.6.1.5 With the implementation of these good practice and measures, adverse construction dust impacts on the ASRs are not anticipated..

3.7 Air Quality Impact during Operational Stage

3.7.1 Potential Vehicular Emission Impact

3.7.1.1 The Proposed Development is bounded by Hang Tau Road to the east and the access road to the north. Vehicular emission from the open roads may pose potential air quality impact upon the Proposed Development during operational stage.

3.7.1.2 No openable window or fresh air intakes will be located within 5m buffer zone,as stated in **Table 3.3.** The air sensitive uses on the northern side of Tower 1, which fall into the 5m buffer zone, are designed with the appropriated positioned openable windows and fresh air intakes located outside the 5m buffer zone to mitigate the potential vehicular emission impacts from surrounding roads. The 5m buffer zone and the proposed positioning of openable windows and fresh air intakes of these air sensitive uses are illustrated in **Figure 3.3**.

3.7.1.3 In addition, no intended use or any facilities (e.g benches) are proposed outside Tower 1 within 5m buffer zone that would attract the population stay the area. Furthermore, no fresh air intakes or open space for recreational use will be located within the 5m buffer zone. With the appropriated positioning of openable window of the concerned air sensitive uses and the proper design, the air quality impact from the vehicular emission from the surrounding roads on the Proposed Development is not considered significant.

3.7.1.4 The carpark of the Proposed Development will be located in the basement, on the ground floor and first floor of the carpark/ clubhouse building. The design of the carpark will comply with the requirements, including design, maintenance and operation of the ventilation systems, stipulated in the ProPECC PN2/96 – Control of Air Pollution in Car Park. As the detailed design of the carpark (i.e. the ventilation system) is not yet available at this early planning stage, only a tentative location can be provided at present. The exhaust outlet of the ventilation system will be located as far as possible from nearby air sensitive uses to avoid causing an air pollutant nuisance. Tentatively, the exhaust outlet is proposed on the southern façade facing the Green minibus layby. With the implementation of the requirement stipulated in the ProPECC PN2/96, the air quality impact from the proposed carpark on the Proposed Development and the nearby ASRs is not considered significant.

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

3.7.2 Potential Industrial Emission Impact

3.7.2.1 Three site visits were conducted in 11 March 2025, 27 August 2025 and 28 October 2025. Based on the site visits, it was found that the land uses of the surrounding areas are mainly residential and recreational uses, and there was no chimney identified within 500 m from the boundary of the Application Site. In addition, there will be no chimneys or other emission sources within the Proposed Development during the operation phase. No adverse air quality impact on the Proposed Development and the surrounding ASRs is anticipated due

to industrial emission.

3.7.3 Potential Odour Impact

3.7.3.1 Three odour patrols were conducted during the site visits on 11 March 2025, 27 August 2025 and 28 October 2025. The identified potential odour sources within 200m buffer distance are the Sewage Pumping Station (SPS) for Hang Tau Village, a licensed livestock farm and the sewage treatment plant (STP) at Beas River Country Club. The detailed weather conditions for these dates, including temperature, wind direction and wind speed, are presented in **Table 3.7.** The route of odour patrols and the 200m odour buffer zone are shown in **Figure 3.4.**

Table 3.7 Detailed Weather Conditions for the Dates of Odour Patrol

Date	Temperature(℃)	Wind Direction	Wind Speed (km/h)
11 March 2025	22	SE	5-10
27 August 2025	29	E-SE	5-10
28 October 2025	22	E-NE	5-10

3.7.3.2 Enquires on the odour-related complaints against the SPS and the STP has been made to EPD on 7 July 2026, and their reply were received on 9 July 2026. The correspondence reply from EPD is shown in **Appendix G**.

3.7.3.3 A SPS for Hang Tau Village was identified in the immediate northeast of the Application Site. As advised by Drainage Services Department (DSD), the SPS for Hang Tau Village is fully enclosed and equipped with odour control facilities. In addition, no noticeable odour was identified near the Hang Tau Village SPS, within and surround the Application Site during the odour patrols and, according to the reply from EPD, no complaint related to this SPS was received during 2023 to 2026. Therefore, no significant odour impact from the SPS on the Proposed Development is expected.

3.7.3.4 The suspended operation of STP at the Beas River Country Club was verbally confirmed by Beas River Country Club. In addition, no noticeable odor was identified near the STP, within and surround the Application Site during the odour patrols, and according to the reply from EPD, during years from 2020 to 2026, no complaint related to this sewage treatment plant was received during 2023 to 2026. No significant odour impact from the sewage treatment plan at the Beas River Country Club is anticipated.

3.7.3.5 According to Agriculture, Fisheries and Conservation Department (AFCD)'s records, a licensed livestock farm was previously located approximately 400m north of the Application Site. During the odour patrols, the livestock farm was no longer in operation and no noticeable odour was identified near to the licensed livestock farm. The concerned site area was used for storing miscellaneous items. No odour impact on the Proposed Development is expected from the livestock farm.

3.7.3.6 As such, no adverse odour impact is anticipated upon the Proposed Development.

3.8 Conclusion

3.8.1.1 With the implementation of these good practice and measures, no adverse air quality impact arising from the construction activities, transportation of dusty materials, as well as the emission of the construction plant is anticipated.

3.8.1.2 With the appropriated positioning of the openable window and fresh air intake and the proper design of the carpark, no adverse air quality impact due to vehicular emissions on the Proposed Development is anticipated. Moreover, as no chimney was observed during the site visits and no chimney and potential emission source will be contained within the Proposed Development, no adverse air quality impact due to industrial emissions is anticipated.

3.8.1.3 In terms of potential odour impacts, the SPS for Hang Tau Village is fully enclosed and equipped with odour control facilities. The licensed livestock farm located approximately 400 m north of the Application Site was not in operation, and the STP at the Beas River Country Club was suspended. No noticeable odour was identified during the odour patrols. As such, no adverse odour impact on the Proposed Development is anticipated.

4. NOISE

4.1 Introduction

4.1.1.1 The Proposed Development is noise sensitive and subject to road traffic noise impact as well as fixed source noise impact from the SPS. Apart from the noise impact upon the Proposed Development, the Proposed Development might induce noise impact associated with fixed noise source upon the surrounding noise sensitive uses.

4.2 Criteria and Guidelines

4.2.1 Road Traffic Noise

4.2.1.1 Noise standards are stipulated in Chapter 9 of the Hong Kong Planning Standard and Guideline (HKPSG) for planning against possible noise impact from road traffic, railway and aircrafts etc. According to the HKPSG, the road traffic noise criteria for domestic premises which rely on opened windows for ventilation is L10(1-hour) 70 dB(A).

4.2.2 Fixed Source Noise

4.2.2.1 The main piece of legislation controlling environmental noise nuisance is the Noise Control Ordinance (NCO). Under NCO, noise criteria for fixed noise sources are stipulated in the Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM).

4.2.2.2 Given the Application Site is in rural setting and surrounded by village type development, the type of area for the subject site is classified as "Type (i) Rural area" and it will be not affected by any Influencing Factor (IF). The Area Sensitivity Rating of the noise sensitive uses within the subject site area is defined as "A". The determined ASR is for assessment purpose only and should not prejudice the Authority's discretion on the enforcement based on the contemporary conditions. The Acceptable Noise Levels (ANLs) for the fixed noise source is tabulated in **Table 4.1** below.

Table 4.1 Noise Standards for Fixed Source Noise Impact

Time Period	ANL in IND-TM (ASR of "A")
Day and Evening (0700 – 2300 hour)	60
Night (2300 – 0700 hour)	50

4.3 Noise Sensitive Receivers

4.3.1.1 According to Table 4.1 of HKPSG Chapter 9, all domestic premises including temporary housing accommodation that rely on opened windows for ventilation should be classified as noise sensitive receiver (NSR). Thus, 4 residential towers and a RCHE of the Proposed Development are classified as NSR for this noise impact assessment.

4.4 Road Traffic Noise

4.4.1.1 The nature of use of the Proposed Development is noise sensitive. Noise sensitive rooms such as bedrooms and living/dining rooms will be subject to road traffic noise impact mainly from Hang Tau Road to the east and access road to the north.

4.4.2 Assessment Locations

4.4.2.1 Locations of all assessment points are shown in **Figure 4.1a-n**.

Residential towers

4.4.2.2 All noise sensitive uses were assigned with assessment points, which are located at 1 m away from the façade of bedrooms and living/dining rooms with the assessment height of 1.2 m above floor level.

RCHE

4.4.2.3 All noise sensitive uses were assigned with assessment points, which are located at 1 m away from the façade of bedrooms with the assessment height of 1.2 m above floor level. Besides the bedrooms, no other rooms, including the function room, activity room, canteen and dining area, conference room, and offices, rely on openable windows for ventilation. In addition, no rooms relying on openable window for ventilation will be used as diagnostic rooms and wards.

4.4.3 Assessment Assumption and Methodology

4.4.3.1 All public roads within 300 m of the Application Site, including the public road located within the surrender area, were identified and assessed for road traffic noise impact.

4.4.3.2 The road traffic noise levels were predicted based on the projected peak hour flows for the worst year within 15 years from the day of occupancy (i.e. Year 2031 + 15 years = Year 2046. The traffic forecast in Year 2046 was obtained from the Traffic Consultant. The traffic forecasts/data for this assessment were derived by adopting the traffic forecast methodology as elaborated in the submitted Traffic Impact Assessment (TIA) report for the subject planning application. Traffic forecast for AM and PM peak hours of the public road fall into the Surrender Area in the Application Site and that within 300m from the Application Site are provided and summarized in **Appendix B**. To present the worse-case scenario, the AM peak hour traffic flow data for Year 2046 is adopted in this assessment.

4.4.3.3 The traffic speeds in the road traffic noise models for the road sections are presented in **Table 4.2**.

Table 4.2 Traffic Speeds of the Roads in Noise Model

Roads	Traffic Speed (km/hr)
Hang Tau Road	50
Access Road	50
Access Road to Proposed Development	50
Access Road of GMB Layby	50

4.4.3.4 The road traffic noise impact at the NSRs were predicted using the computer model "roadNoise" which implements the calculation method as prescribed in the Calculation of Road Traffic Noise (CRTN) developed by *UK Department of Transport, Welsh Office* in 1988. The predicted noise levels are then compared against the HKPSG noise criterion for evaluating the impact.

4.4.4 Assessment Results

4.4.4.1 The predicted road traffic noise levels at assessment points are summarized in **Appendix C**.

4.4.4.2 According to the results, the predicted road traffic noise levels at the assessment points range from 49 to 69 dB(A). It is anticipated that all the noise sensitive rooms at 4 residential towers and RCHE will comply with the road traffic noise standard of L10(1-hour) 70 dB(A) in the HKPSG. No adverse road traffic noise impact is anticipated at all noise sensitive rooms.

4.5 Fixed Source Noise from Surroundings

4.5.1.1 Fixed source noise arising from the operation of SPS for Hang Tau Village (horizontal distance 10m from the site boundary), an open storage area of construction equipment (horizontal distance approx. 100m from the site boundary) and open storage area of K&S Aluminum & Steel Works Limited (horizontal distance approx.140m from the site boundary) might pose potential noise impact upon the sensitive uses of Proposed Development. The locations of these potential fixed noise sources are shown in **Figure 4.2**.

4.5.1.2 Three rounds of site visits were conducted to the open storage area of construction equipment, open storage area of K&S Aluminum & Steel Works Limited in August 2025, October 2025 and June 2026. Each round covered daytime (both morning and afternoon), evening time and night-time period.

<u>SPS for Hang Tau Village</u>

4.5.1.3 As advised by the responsible officer of DSD, the operation of the SPS for Hang Tau Village is round-the-clock (24 hours), while the E&M systems starts/stops automatically depending on the flow conditions.

<u>Open storage area of construction equipment</u>

4.5.1.4 During the daytime site visit in August 2025, only one truck crane was observed in operation for less than 5 minutes. No other construction equipment or generators were in use. No activities, construction equipment, or generators use were observed during the evening or night-time periods.During the site visits in October 2025 and June 2026, which covering daytime (both morning and afternoon), evening time and night-time period, no operational activities, construction equipment or generators were observed.

4.5.1.5 Based on the observations from both site visits, lifting activities involving the truck crane are infrequent and occur only during the daytime hour. No equipment operation or other activities take place during evening or night-time periods. Therefore, the fixed noise impacts arising from open storage area of construction equipment are considered as insignificant.

Open storage area of K&S Aluminum & Steel Works Limited

4.5.1.6 No construction equipment, generator or other fixed noise sources were found within the open storage area of K&S Aluminum & Steel Works Limited during the site visits in August 2025, October 2025 and June 2026. No equipment operation or other activities take places during the site visits as well.

4.6 On-site Noise Measurement

4.6.1.1 An on-site noise measures was conducted in August 2025. The on-site noise measurement location and the relevant photo records are shown in **Figure 4.2**. The noise measurement result and the relevant noise criteria are summarized in **Table 4.3**.

Table 4.3 Noise Measurement Results and the Relevant Noise Criter

Time Periods [(i)]	Measured Noise Level, dB(A)	ANL/ Noise Criteria, dB(A)[(ii)]
Day 0700 – 1900	48	60
Evening 1900 – 2300	50	60
Night 2300 – 0700	54	50

Notes:
(i) Noise measurement was conducted on 28 August 2025
(ii) The ANL/ Noise Criteria is determined according to the Area Sensitivity Rating of the noise sensitive uses within the subject site, which is identified as "A".

4.6.1.2 Daytime (i.e. 48 dB(A)) and evening (i.e. 50 dB(A)) noise levels at the nearest NSR facing the SPS louver were below the 60 dB(A) criterion, with compliance margins of 12 dB(A) and 10 dB(A), respectively. Noise from the open storage area of construction equipment was insignificant and would not cause non-compliance. No adverse fixed noise impact on the Proposed Development is anticipated.

4.6.1.3 Although the measured night-time noise level was 54 dB(A), exceeding the relevant noise criteria of 50dB(A), night-time noise levels were dominated by natural insect sounds. Based on the site visit, the operation of SPS for Hang Tau Village at night was consistent with daytime operation. In addition, the noise from open storage area of construction equipment is insignificant since there was no night-time activity operation/ construction equipment in use. It allowing the daytime noise level of 48 dB(A) to represent the night time noise level. This level was lower than the night time noise criteria of 50dB(A). Therefore, no adverse noise impact associated with the fixed noise sources upon the Proposed Development is anticipated at night.

4.6.1.4 If necessary, fixed glazing will be applied to the façade facing the concerned fix noise source or noise barrier will be proposed between the concerned fix noise source and the RCHE

along the site boundary in order to comply the noise criteria stipulated in the NCO.

4.7 Fixed Source Noise from the Proposed Development

4.7.1.1 The planned fixed noise source (i.e. outdoor units of E&M equipment) of the clubhouse of Proposed Development will be positioned in plant rooms, whose ventilation opening will be facing Hang Tau Road (eastward direction, with no NSRs).

4.7.1.2 Furthermore, all ventilation openings should be installed with acoustic louvres/silencers, if necessary, to comply the noise criteria stipulated in the HKPSG and NCO.

4.7.1.3 With implementation of the proper noise control measures, no adverse noise impact associated with the fixed noise source of the Proposed Development upon the surrounding sensitive uses is anticipated.

4.8 Conclusion

4.8.1.1 The Proposed Development is noise sensitive and subject to road traffic noise impact as well as fixed source noise impact from the SPS for Hang Tau Village. As the fixed noise source of the Proposed Development will be positioned in plant room whose opening will be facing Hang Tau Road (eastward direction, with no NSRs), no adverse fixed source noise impact is anticipated upon the surrounding NSRs. Based on the results of the road traffic noise impact assessment, all the noise sensitive rooms within the Proposed Development will comply with the HKPSG road traffic noise standard. As the measured noise levels on NSR of the Proposed Development are equal or lower than the relevant noise criteria, the fixed source noise impact arising from the SPS upon the Proposed Development is thus considered to be minimal. Therefore, no adverse noise impact upon or arising from the Proposed Development is anticipated.

5. WATER QUALITY

5.1 Introduction

5.1.1.1 This section focuses on a water quality impact assessment for the Proposed Development, including sewage and identifying the water quality issues, assessing he potential impacts and recommending mitigation measures where required.

5.2 Criteria and Guidelines for Water Quality

5.2.1 General

- The assessment refers to Water Pollution Control Ordinance, its TM and Annexes 6 and 14 of the EIAO-TM for the relevant criteria for evaluating the water quality impacts, as listed below:
- Environmental Impact Assessment Ordinance (Cap 499);
- Water Pollution Control Ordinance (Cap 358);
- Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS);and
- ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/ rivers from adverse impacts arising from construction works;

5.2.1.1 Other relevant guidelines include:

- Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN 2/24);
- Practice Note for the Professional Persons on Drainage Plans subject to Comment by the Environmental Protection Department – Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (ProPECC PN 1/23);
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
- Sewerage Manual (SM) and the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF); and
- Hong Kong Planning Standards and Guidelines (HKPSG)

5.2.2 Water Pollution Control Ordinance

5.2.2.1 The Water Pollution Control Ordinance (WPCO) (Cap 358) enacted in 1980 is the principal legislation to protect the water quality in Hong Kong. Under the WPCO, the Hong Kong waters are classified into 10 Water Control Zones (WCZs), within which the Water Quality Objectives (WQOs) are specified. WQOs establish limits for different parameters to be achieved in order to maintain the water quality inside the WCZs. The Project Site is located within the Deep Bay WCZ and the relevant WQOs are summarised in **5.1**.

Table 5.1 Summary of WQOs for Deep Bay WCZ

Parameters	WQOs	Sub-Zone
Aesthetic Appearance	Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole zone

Parameters	WQOs	Sub-Zone
	Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substance should be absent.	Whole zone
	Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole zone
	There should be no recognizable sewage-derived debris.	Whole zone
	Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole zone
	Waste discharges shall not cause the water to Whole Zone contain substances which settle to form objectionable deposits.	Whole zone
Bacteria	The level of Escherichia coli should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzone and Fish Culture Subzones
	The level of Escherichia coli should be zero per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	The level of Escherichia coli should not exceed 1 000 per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
	The level of Escherichia coli should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Yung Long Bathing Beach Subzone

Parameters	WQOs	Sub-Zone
Colour	Waste discharges shall not cause the colour of water to exceed 30 Hazen units.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Dissolved oxygen (DO)	Waste discharges shall not cause the level of dissolved oxygen to fall below 4 milligrams per litre for 90% of the sampling occasions during the year; values should be taken at 1 metre below surface.	Inner Marine Subzone excepting Mariculture Subzone
	Waste discharges shall not cause the level of dissolved oxygen to fall below 4 milligrams per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 2 measurements at 1 metre below surface and 1 metre above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 milligrams per litre within 2 metres of the seabed for 90% of the sampling occasions during the year.	Outer Marine Subzone excepting Mariculture Subzone
	The dissolved oxygen level should not be less than 5 milligrams per litre for 90% of the sampling occasions during the year; values should be taken at 1 metre below surface.	Mariculture Subzone
	Waste discharges shall not cause the level of dissolved oxygen to be less than 4 milligrams per litre.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Indus Subzone, Ganges Subzone, Water Gathering Ground Subzones and other inland waters of the Zone

Parameters	WQOs	Sub-Zone
pH	The pH of the water should be within the range of 6.5-8.5 units. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.2 units.	Marine waters excepting Yung Long Bathing Beach Subzone
	Waste discharges shall not cause the pH of the water to exceed the range of 6.5–8.5 units.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	The pH of the water should be within the range of 6.0–9.0 units.	Other inland waters
	The pH of the water should be within the range of 6.0–9.0 units for 95% of samples. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.5 units.	Yung Long Bathing Beach Subzone
Temperature	Waste discharges shall not cause the natural daily temperature range to change by more than 2.0℃.	Whole zone
Salinity	Waste discharges shall not cause the natural ambient salinity level to change by more than 10%.	Whole zone
Suspended Solids	Waste discharges shall neither cause the natural ambient level to be raised by 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters

Parameters	WQOs	Sub-Zone
	Waste discharges shall not cause the annual median of suspended solids to exceed 20 milligrams per litre.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Ganges Subzone, Indus Subzone, Water Gathering Ground Subzones and other inland waters
Ammonia	The un-ionized ammoniacal nitrogen level should not be more than 0.021 milligram per litre, calculated as the annual average (arithmetic mean).	Whole zone
Nutrients	Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Inner and Outer Marine Subzones
	Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.7 milligram per litre, expressed as annual mean.	Inner Marine Subzone
	Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.5 milligram per litre, expressed as annual water column average (arithmetic mean of at least 2 measurements at 1 metre below surface and 1 metre above seabed).	Outer Marine Subzone
5-Day Biochemical Oxygen Demand	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 3 milligrams per litre.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 milligrams per litre.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters

Parameters	WQOs	Sub-Zone
Chemical Oxygen Demand	Waste discharges shall not cause the chemical oxygen demand to exceed 15 milligrams per litre.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Waste discharges shall not cause the chemical oxygen demand to exceed 30 milligrams per litre.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Toxins	Waste discharges shall not cause the toxins in water to attain such levels as to produce significant toxic carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole zone
	Waste discharges shall not cause a risk to any beneficial uses of the aquatic environment.	Whole zone
Phenol	Phenols shall not be present in such quantities as to produce a specific odour, or in concentration greater than 0.05 milligrams per litre as C_6H_5OH.	Yung Long Bathing Beach Subzone
Turbidity	Waste discharges shall not reduce light transmission substantially from the normal level.	Yung Long Bathing Beach Subzone

5.2.3 Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters

5.2.3.1 Besides setting the WQOs, the WPCO controls effluent discharge into the WCZs through a licensing system. The guidance on permissible effluent discharges based on the type of receiving waters (foul sewers, inland/coastal/inshore/marine waters) is provided in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. The limits were given in this Technical Memorandum cover the physical, chemical and microbial quality of effluents. Any effluent discharge during the construction and operation phases should comply with the standards for effluents discharged into foul sewers or inland/inshore/marine waters of the Deep Bay WCZ.

5.2.4 ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/ rivers from adverse impacts arising from construction works

5.2.4.1 ETWB Technical Circular (Works) No. 5/2005 provides an administrative framework to better protect all natural streams/ rivers from the impacts of construction works. The procedures promulgated under this Circular aim to clarify and strengthen existing measures for protection of natural streams/rivers from government projects and private developments. The guidelines and precautionary mitigation measures given in the ETWB TC (Works) No. 5/2005 should be followed as far as possible to protect the inland watercourses at or near the Project area during the construction phase.

5.2.5 Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN 2/24)

5.2.5.1 The Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN 2/24) was issued by the EPD to provide environmental guidelines for handling and disposal of construction site discharges. It provides good practice guidelines for dealing with various types of discharge from a construction site. Practices as outlined in the ProPECC PN 2/24 should be followed during the construction phase in order to minimize the water quality impact due to construction site drainage.

5.2.6 Practice Note for the Professional Persons on Drainage Plans subject to Comment by the Environmental Protection Department – Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (ProPECC PN 1/23)

5.2.6.1 ProPECC PN 1/23 Drainage Plan provide surface water drainage guideline should be followed to minimize the environmental impact during operation phase. ProPECC PN 1/23 provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers during the operation phase.

5.2.7 Hong Kong Planning Standards and Guidelines (HKPSG)

5.2.7.1 Chapter 9 of the HKPSG outlines the environmental requirements that need to be considered during land use planning. The recommended guidelines, standards and guidance cover the selection of suitable locations for the developments and sensitive uses, provision of environmental facilities, and design, layout, phasing and operational controls to minimize adverse environmental impacts. It also lists out environmental factors influencing land use planning and recommends buffer distances for land uses.

5.3 Baseline Condition

5.3.1 Marine Water

5.3.1.1 The Proposed Development is located within Deep Bay WCZ. According to the Marine Water Quality in Hong Kong in 2024, the overall WQO compliance rate for the Deep Bay WCZ was 67%, as compared with a ten-year average of 47% in 2009-2018. Overall, with the measures taken progressively by the governments of Hong Kong and Shenzhen under the Deep Bay Water Pollution Control Joint Implementation Programme, there have been significant water quality improvements in Deep Bay. In particular, the NH3-N WQO has been fully met in the past ten years. Although Deep Bay, as compared with other WCZs, shows higher nutrient levels with annual depth-averaged TIN levels exceeding the respective TIN WQOs, a noticeable long-term decrease in TIN levels since mid-2000s has been seen. Details of marine water quality monitoring data recorded at the nearest

Monitoring Station DM1 Are presented in **Table 5.2** Below.

Table 5.2 Summary of EPD's Routine Marine Water Quality Data for Deep Bay Water Control Zone in Year 2024

Parameter		Deep Bay WCZ
		DM1
Temperature		24.9 (16.8 - 31.3)
Salinity		16.1 (6.4 - 24.9)
Dissolved Oxygen (mg/L)	Depth Averaged	7.7 (5.0 - 9.9)
	Bottom	#N/A
Dissolved Oxygen (%Saturation)	Depth Averaged	101 (65 - 123)
	Bottom	#N/A
pH		7.6 (7.1 - 8.0)
Secchi Disc Depth (m)		1.1 (0.7 - 1.4)
Turbidity (NTU)		24.8 (2.9 - 38.2)
Suspended Solids (mg/L)		22.2 (5.6 - 61.0)
5-day Biochemical Oxygen Demand (mg/L)		1.2 (0.3 - 2.6)
Ammonia Nitrogen (mg/L)		0.374 (0.082 - 0.620)
Unionised Ammonia (mg/L)		0.007 (0.004 - 0.014)
Nitrite Nitrogen (mg/L)		0.118 (0.068 - 0.280)
Nitrate Nitrogen (mg/L)		1.210 (0.560 - 1.700)
Total Inorganic Nitrogen (mg/L)		1.70 (0.75 - 2.34)
Total Kjeldahl Nitrogen (mg/L)		0.80 (0.54 - 1.20)
Total Nitrogen (mg/L)		2.13 (1.20 - 2.92)
Orthophosphate Phosphorus *mg/L)		0.138 (0.094 - 0.180)
Total Phosphorus (mg/L)		0.26 (0.14 - 0.38)
Silica (as SiO_2) (mg/L)		5.70 (0.17 - 11.00)
Chlorophyll-a (μ g/L)		5.4 (1.4 - 18.0)

E.coli (count/100mL)	200 (14 - 1200)
Faecal Coliforms (count/ 100mL)	480 (30 - 2900)

Note:

1. The table above is extracted from the Annual Report of Marine Water Quality in Hong Kong in 2024.
2. Unless otherwise specified, data presented are depth-average (A) values calculated by taking the means of three depths: Surface (S), Mid-depth (M), Bottom (B).
3. Data presented are annual arithmetic means of the depth-averaged results except for *E.coli* and faecal coliforms, which are annual geometric means.
4. Data in brackets indicate the ranges.

5.4 Representative Water Sensitive Receivers

5.4.1 Assessment Area

5.4.1.1 The assessment area for water quality impact is delineated within 500m from the Application Site as illustrated in **Figure 5.1**.

5.4.2 Representative Water Sensitive Receivers

5.4.2.1 Representative Water Sensitive Receivers (WSRs) identified within the assessment area are summarized in **Table 5.3**, and their locations are shown in **Figure 5.1**.

Table 5.3 Representative Water Sensitive Receivers

WSR ID	Description	Nearest Distance from Site Boundary (m)
WSR1	Channelized Sheung Yue River	~20
WSR2	Channelized river adjacent to the SPS for Hang Tau Village	~200
WSR3	Pond within Beas River Country Club	~50
WSR4	Pond within Beas River Country Club	~200
WSR5	Pond and a channelized watercourse within Beas River Country Club	~400
WSR6	Channelized watercourse within Beas River Country Club	~320

5.5 Identification and Evaluation of Water Quality Impact during Construction Stage

5.5.1 Construction Site Runoff and General Construction Activities

5.5.1.1 Construction site runoff may cause physical, biological and chemical effects. The physical effects include potential blockage of drainage channels and increase of SS levels. Local flooding may also occur in heavy rainfall situations. The chemical and biological effects caused by the construction runoff are highly dependent upon its SS levels and pH values. Runoff containing significant amounts of concrete and cement-derived material may cause primary chemical effects e.g. increasing turbidity and discoloration, elevation in pH, and accretion of solids. A number of secondary effects may also result in toxic effects to water biota due to elevated pH values, and reduced decay rates of faecal micro-organisms and photosynthetic rate due to the decreased light penetration. Construction site runoff comprises:

- Surface run-off may be contaminated and turbid water may enter adjacent stormwater drainage system and marine area as excavated material is delivered to ground surface;
- Runoff and erosion from site surfaces, drainage channels, earth working areas and stockpiles, release of concrete washing with construction runoff and stormwater. Effluent discharge from temporary site facilities should be controlled to prevent direct discharge to the neighboring drainage system, marine water and storm drains. Such wastewater may include wastewater resulting from dust suppression sprays and wheel washing of site vehicles at site entrances; and
- Fuel, oil, solvents and lubricants from maintenance of construction machinery and equipment: The use of engine oil and lubricants, and their storage as waste materials has the potential to create impacts on the water quality of adjacent inland water bodies if spillage occurs and enters inland water bodies. Waste oil may infiltrate into the surface soil layer, or run-off into local water courses, increasing hydrocarbon levels.
- Wastewater discharge may arise from the use of wheel washing facilities and watering for dust suppression purpose. These wastewater sources will be contained within the construction site and discharged via silt removal facilities. In addition, perimeter cut-off drains will be provided to avoid untreated site runoff entering the stormwater drainage system or the inland water body.
- During rainstorms, site run-off would carry soil from exposed surfaces. If the site run-off is not treated, the discharged water could affect the nearby water environment by increasing the SS and turbidity level.

5.5.1.2 With the adoption of the relevant guidelines and good site practice for the construction runoff, as listed in **Section 5.6**, potential water quality impacts will be minimized during the construction stage of the Proposed Development and adverse water quality impacts would not be anticipated.

5.5.2 Sewage from Construction Workforce

5.5.2.1 Domestic sewage would be generated from the workforce during the construction stage. Suitable sanitary facilities such as portable toilets will be provided onsite. These portable toilets would be regularly maintained, cleaned and emptied by licensed contractor for off-site disposal to avoid any environmental nuisance. No adverse water quality impact is anticipated due to the sewage generated from the construction site provided that sewage is not discharged directly to the stormwater drainage system or the inland water body, and portable toilets are used and properly maintained.

5.5.3 Accidental Spillage of Chemicals

5.5.3.1 On-site general construction activities may cause potential water pollution due to any possible, unexpected and accidental spillages of chemicals and/or liquids possibly stored on-site for the construction works, e.g. fuel, lubricant oil and solvents, which could result in water quality impacts if they enter the nearby stormwater drainage channels or the inland water body.

5.5.3.2 Implementation of good construction and site management practices would ensure that litter, fuels and solvents do not enter the surrounding stormwater drains or the inland water body. As such, adverse water quality impacts due to accidental spillage of chemicals are not anticipated.

5.6 Mitigation Measures during Construction stage

5.6.1 Construction Site Run-off and General Construction Activities

5.6.1.1 In accordance with the Technical Memorandum standards for effluents discharge into drainage and sewerage systems, inland and coastal waters (TM-DSS) and Practice Note for Professional Persons on Construction Site Drainage, ETWB Technical Circular (Works) No. 5/2005; Environmental Protection Department, 2024 (ProPECC PN 2/24), the mitigation measures during construction stage would include the following:

5.6.1.2 At the establishment of work site, perimeter cut-off drains to direct off-site water around the construction site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes), earth bunds or sand bag barriers should be provided to divert the stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction;

- Dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff pass-through sediment trap and discharge into an appropriate drainage system;
- The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 2/24, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The sizes may vary depending upon the flow rate, but for a flow rate of 0.1m^3/s, a sedimentation basin of 30m^3 would be required and for a flow rate of 0.5m^3/s, the basin would be 150m^3. The detailed design of the sand/silt traps should be undertaken by the Contractor prior to the commencement of construction;
- The construction works should be programmed to minimise surface excavation works during rainy seasons (April to September, as far as practicable). All exposed earth areas should be covered as soon as possible after the earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means;
- The overall slope of works sites should be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads should be protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during the prolonged periods of inclement weather and the reduction of surface sheet flows;

- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure their proper and efficient operation at all times particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;
- Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet season is inevitable, they should be dug and backfilled in short sections wherever practicable. And if pumped out the groundwater, etc. for the lowering of ground water level in basement or foundation construction, the water should be discharged into storm drains after the removal of silt in silt removal facilities and wastewater treatment facilities;
- All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of 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 being washed into the drainage system and storm runoff being directed into foul sewers;
- Precautions to be taken at any time of the year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted and during or after rainstorms, are summarised in Appendix A2 of ProPECC PN 2/24. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes;
- All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at the exit of every construction site where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-washing bay to public roads should be paved with sufficient backfill toward the wheel-washing bay to prevent vehicle tracking of soil and silty water to public roads and drains;
- Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. Oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for oil interceptors to prevent flushing during heavy rain;
- The construction solid waste, debris and rubbish on-site should be collected, handled and disposed of properly to avoid causing any water quality impacts. The requirements for solid waste management are detailed in **Section 6** Waste Management Implication of this report. All chemical storage area should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching the nearby WSRs; and
- By adopting the above mitigation measures with best management practices, it is anticipated that no adverse water quality impact is anticipated due to construction site runoff.

5.6.1.3 The Contractor shall apply to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. The appropriate mitigation measures for protecting natural stream/ rivers near the construction site listed in Appendix D of ETWB TCW No.5/2005 shall be carried out in an environmentally responsibility manner and to minimize

any adverse impacts so caused. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction stage of the Project, the monitoring should be carried out in accordance with the WPCO license.

5.6.2 Sewage from Construction Workforce

5.6.2.1 Sewage effluents will be arisen from the sanitary facilities provided for the on-site construction workforce. The Contractor should provide sufficient portable toilet to handle the sewage generated from construction workforce. Sewage from portable toilets will be collected and emptied by licensed contractors and thus no sewage effluent would be discharged during construction stage. With the use of portable toilets in which sewage generated by construction workforce will be properly collected and handled, no adverse water quality impact is anticipated.

5.6.3 Accidental Spillage of Chemicals

5.6.3.1 The Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.

5.6.3.2 Any service shop and maintenance facilities should be located on hard standing within a bunded area and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.

5.7 Identification and Evaluation of Water Quality Impact during Operational Stage

5.7.1 Non-point Source Pollution

5.7.1.1 Non-point source pollution (NPS), unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into nearby drains, streams, or coastal waters.

5.7.2 Sewage Effluent from the Proposed Development

5.7.2.1 The sewage effluent from the Proposed Development includes wastewater collected from kitchens and canteen that from basins, sinks and floor drains, and swimming pool. This sewage effluent would potentially overload the public sewerage system and ultimately affect receiving waters (e.g., Deep Bay Water Control Zone or other nearby water bodies.

5.8 Mitigation Measures during Operational Stage

5.8.1 Non-point Source Pollution

5.8.1.1 With the proper design of drainage system for the Project, all surface runoff from open paved and developed areas will be diverted to the public drains. A Drainage Impact

Assessment (DIA) has been conducted to assess the potential drainage impacts arising from the change in drainage generation due to the Proposed Development. As mentioned in DIA Report (dated July 2026), upgrading the public drainage pipe T1/A1 to A7 to 750mm should be capable of receiving the runoff.

5.8.1.2 Devices designed to control pollution in a drainage system, e.g. minimization of directly-connected impervious areas, provision of silt traps, detention facilities, and petrol interceptor could be installed if necessary. Best management practices, such as elimination of expedient connections, prevention of illegal dumping of wastes, coverage of chemical storage areas, prevention and containment of spills, minimization of chemical applications, catch basin cleaning, erosion control, and land use control, should be adopted. The final design of the pollution control and management practices will be carried out by the contractor in the later stage in order to minimise the NPS pollution.

5.8.1.3 Hence, the impact associated with non-point source pollution due to road runoff would be minimal given that good drainage system and best management practices would be provided.

5.8.2 Sewage Effluent from the Proposed Development

5.8.2.1 Sewage from the Proposed Development (e.g. from kitchens, canteen and the backwash of swimming pool) is subject to the control of WPCO, and the effluent discharge must comply with the TM-DSS and WPCO discharge license conditions. ProPECC PN 1/23 "Drainage Plans subject to Comments by Environmental Protection Department" provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers. The design of site drainage and disposal of various site effluents generated within the site boundary should follow the relevant guidelines and practices given in the ProPECC PN 1/23.

5.8.2.2 Sewage generated from the Proposed Development will be discharged to nearby public sewer with sufficient capacity. An adequate drainage system will be provided to collect the surface runoff. Drainage record plans and as-built drawings of the concerned channel were obtained from the DSD to gather the background information on sewerage infrastructure in the vicinity of the Site. According to the drainage record plans, sewage from the Proposed Development is discharged into the Government manhole FMH1029683, located to the east of the Application Site and close to Hang Tau Road.

5.8.2.3 A Sewerage Impact Assessment (dated July 2026) was conducted to evaluate the potential impacts on the public sewerage network resulting from the operation of the Proposed Development. Based on the sewerage assessment and the information obtained from DSD, PlanD and EPD, four existing sewers are inadequate to accommodate the Proposed Developments. It is recommended that the sizes of these four sewer mains be upgraded as follow:

- Sewer between manholes FMH1028569 and FMH1028568: From 400mm to 500mm
- Sewer between manholes FMH1021544 and FMH1021543: From 500mm to 600mm
- Sewer between manholes FMH1021546 and FMH1021547: From 600mm to 650mm
- Sewer between manholes FMH1021560 and FMH1021561: From 750mm to 800mm (If the 750 mm upgrade under A/NE-KTS/506 has been completed, the Applicant will implement the remaining upgrade from 750 mm to 800 mm)

5.8.2.4 Alternatively, twin pipes would be provided for the conveyed sewers as a mitigation measure to enhance conveyance capacity.

5.8.2.5 The proposed upgrading works will be undertaken by the Applicant prior to the occupation, except for any section already covered by the upgrading works committed under other planned developments, to ensure that the public sewerage system has sufficient capacity to accommodate the sewage generated.

5.8.2.6 The responsibility for the proposed upgrading works is allocated as follows. The upgrades at FMH1028569 and FMH1028568, FMH1021544 and FMH1021543, and FMH1021546 and FMH1021547 shall be undertaken by the Applicant. The FMH1021560 and FMH1021561 section is to be upgraded to 750 mm under A/NE-KTS/506; if that upgrade has not commenced, the Applicant will implement the full upgrade to the ultimate 800 mm, otherwise only the remaining 750 mm to 800 mm.

5.8.2.7 Upon completion of the proposed upgrading works, no adverse water quality impact is anticipated.

5.9 Conclusion

5.9.1.1 With the proper implementation of proposed mitigation measures, no adverse water quality impact is anticipated during the construction stage.

5.9.1.2 In term of the operational stage, no adverse impact associated with non-point source is anticipated, given that the good drainage system and best management practice will be provided. In addition, the sewerage effluent from the Proposed Development would be properly discharged to the public sewer during the operational stage. Upon the completion of the proposed upgrading works of the sewer mains , except for any section already covered by the upgrading works committed under other planned developments, there is no adverse water quality impact anticipated.

6. WASTE MANAGEMENT AND LAND CONTAMINATION

6.1 Criteria and Guidelines

6.1.1.1 The Waste Disposal Ordinance (WDO) prohibits the unauthorised 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 Chemical Waste) Regulation (Cap. 354J);
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N);
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites;
- Development Bureau (Works) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness;
- Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (ADV - 19)
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste;
- A Guide to the Chemical Waste Control Scheme; and
- Development Bureau (DEVB) Technical Circular (Works) (TC(W)) No. 6/2010 – Trip Ticket System for Disposal of C&D Materials.

6.1.1.2 Guidelines for carrying out the land contamination assessment are provided in the following:

- Guidance Note for Contaminated Land Assessment and Remediation;
- Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management; and
- Practice Guide for Investigation and Remediation of Contaminated Land.

6.2 Potential Land Contamination

6.2.1.1 In order to identify and evaluate the potential land contamination impacts associated with the Application Site, a desktop study has been undertaken to review the historical and current land uses. The following sources of information have been collected and reviewed:

- Historical aerial photographs from Survey and Mapping Office, Lands Department (LandsD); and
- Information of the potential land contamination from FSD.

6.2.1.2 The historical aerial photographs have been reviewed to identify potential land contamination areas associated with previous land uses within the Application Site. A list

of aerial photographs in **Table 6.1** has been reviewed. Copies of representative aerial photographs are given in **Appendix D**.

Table 6.1 - Summary of Historical Aerial Photograph Review

Year	Ref. No.	Observation
1963	1963-0137	The Application Site was mainly occupied by vegetation. A pond and some scattered building structures were found inside the Site.
1972	02645	The land use of the Application Site was the same as in 1963.
1990	A21881	A swimming pool was found within Application Site. The pond was reclaimed for storage of construction materials. The land use of other parts of the Application Site was the same as 1972.
1991	A26190	Majority of the vegetation in the north portion of the Application Site was eliminated. The remaining part of land use of the Site was the same as in 1990.
2017	E016363C	Farmland was observed in the north portion of the Application Site, while the remaining part of land use of the Application Site was the same as 1991.

6.2.1.3 Based on the aerial photographs, the Application Site was occupied by vegetation, building structures and a pond since 1963. In 1972, the land use of the Application Site remained as the same compared to 1963. In 1990, a swimming pool was observed within the Application Site, and the pond was reclaimed for storage of construction materials. The land use of other parts of the Application Site was the same as 1972. In 1991, majority of the vegetation in the north portion of the Application Site was eliminated. In 2017, farmland was observed in the north portion of the Application Site. The remaining part of land use of the Application Site in both 1991 and 2017 were the same as 1990.

6.2.1.4 Inquiries to FSD was made to obtain the relevant historical information about the Application Site related to potential land contamination. Referring to the reply from FSD **(Appendix E)**, there was no record of dangerous goods license, fire incidents and incident of spillage / leakage of dangerous goods at the Application Site. Furthermore, the Applicant (i.e. land owner) is confirmed that there is no registered chemical waste producer for the Application Site. No record on registered chemical waste producer/spillage records from EPD was found.

6.2.1.5 A site visit was conducted on March 2025, and the peripheral inspection (i.e., from the entrance and/ or boundary of the Application Site) was conducted. According to the inspection, the Application Site was mainly covered by vegetation and partial land surface was paved by concrete / brick / tile. Vacant houses were observed. Part of the Application

Site was used as open storage for construction materials. No sign of potential land contamination was observed during the site visit . The site photos during the site visit are provided in **Appendix F**.

6.2.1.6 In summary, no land contamination issue arising from the Application Site is anticipated.

6.3 Waste During Construction Stage

6.3.1 Construction Waste

6.3.1.1 Activities to be conducted during construction stage include demolition, site formation and superstructure construction. The demolition work involves 5 existing houses, a swimming pool and a few of ruins within the construction site. Site formation involves basement construction and excavation for building sub-structure. For superstructure construction, 4 residential towers , a retail, an RCHE and a clubhouse would be constructed by pre-cast construction.

6.3.1.2 The following types of wastes are anticipated during the construction of the Proposed Development:

- Construction and Demolition (C&D) materials;
- Chemical waste; and
- General refuse.

6.3.1.3 The estimated quantity of each type of waste during construction stage is presented in **Table 6.2.**

Table 6.2 - Summary of Waste Generation during Construction Stage

Material Type	Source(s)	Handling	Disposal / Treatment	Estimated Quantity
C&D Materials	Demolition (5,397m^3), Site formation (25,000m^3) and Superstructure (3,044m^3).	Sort on-site into inert C&D materials (public fill) and non-inert C&D materials	Inert C&D materials reused as backfilling materials on-site	7,000 m^3
			Inert C&D materials to be disposed to public fill reception facilities for other beneficial uses	25,832 m^3

Material Type	Source(s)	Handling	Disposal / Treatment	Estimated Quantity
		Sort on-site into inert C&D materials (public fill) and non-inert C&D materials	Non-inert C&D materials (e.g. timber, paper, plastics, etc.) reused or disposed of at landfill as the last resort	609 m^3
Chemical Waste	Cleansing fluids, solvent, lubrication oil and fuel from construction plant and equipment	Collected regularly and safely stored at a dedicated location and collected by a licensed chemical waste collector	To Chemical Waste Treatment Facility or other licensed facility for treatment	70 Litres per month
General Refuse	Waste paper, discarded containers, etc. generated from workforce	To be stored in designated area prior to collection and disposal	To separate recyclable materials (e.g., paper, tin-cans, etc.) for collection by outside recyclers or disposal to landfill as the last resort	~100.75 kg/day

6.3.2 Construction and Demolition (C&D) Materials

6.3.2.1 C&D materials are expected be generated from demolition, excavation and construction activities during the course of the works. Soil and rock would be generated from piling works, and wood from formworks. Concrete debris and packaging material would also be produced.

6.3.2.2 All C&D materials generated shall be sorted into inert and non-inert C&D materials. Where practicable, inert C&D material generated on-site shall be encouraged to be reused on-site to minimise 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. Landfill disposal should be considered as the last resort for non-inert C&D materials handling.

6.3.2.3 The Land (Miscellaneous Provisions) Ordinance requires that individuals or companies, who deliver inert C&D materials to the public fill reception facilities, must obtain Dumping Licences. The licences are issued by CEDD under delegated authority from the Director of Lands.

6.3.2.4 Disposal of C&D materials from the construction site to the public fill reception facilities and designated landfill shall be controlled under the trip-ticket system under the Development Bureau Technical Circular (Works) No. 6/2010.

6.3.3 Chemical Wastes

6.3.3.1 The maintenance and servicing of construction plant and equipment may generate a small amount of chemical wastes during construction works, such as cleaning fluids, solvents, lubrication oil and fuel. The exact amount of chemical waste arising from the construction activities dependent on the contractor's on-site maintenance activities and the quantity and / or types of plant and equipment utilized. With respect to the scale of the construction activities, it is anticipated that the quantity of chemical waste to be generated will be relatively small.

6.3.3.2 Chemical wastes arising during the construction stage may pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

- Toxic effects to workers;
- Adverse impacts on water quality from spills; and
- Fire hazards.

6.3.3.3 Materials classified as chemical wastes will require special handling and storage arrangements 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.

6.3.3.4 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 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.

6.3.3.5 Under the Waste Disposal (Chemical Waste) (General) Regulation, the contractor shall register as a chemical waste producer if chemical wastes such as spent lubricants, paints, etc. are generated onsite. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated onsite. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by the EPD.

6.3.3.6 Provided the waste is properly handled, stored and disposed of, no unacceptable impacts are expected.

6.3.4 General Refuse

6.3.4.1 The workforce is expected to generate refuse comprising food scraps, paper waste, empty containers, etc. It is estimated that about 155 management staff and construction workers will be working on site at any one time. With a general refuse generation rate of 0.65kg/ worker/day, the estimated quantity of general refuse is approximately 100.75 kg/day (i.e. 155workers x 0.65 kg/worker/day = 100.75 kg/day).

6.3.4.2 Such refuse will be properly stored in designated area prior to collection and disposal. Disposal of refuse at Site other than approved waste transfer or disposal facilities will be prohibited. Effective collection of site wastes will prevent waste materials being blown around by wind, or creating an odour nuisance or pest and vermin problem. Waste storage areas will be well maintained and cleaned regularly.

6.3.4.3 With the implementation of good waste management practices at the construction site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of workforce wastes.

6.4 Waste Management During Operational Stage

6.4.1 General Refuse

6.4.1.1 General refuse is anticipated during the operation of the Proposed Development. General refuse will arise from the daily activities of residents, employees and visitors of the Proposed Development and is expected to include food waste, paper waste and domestic waste. The estimated quantity is presented in **Table 6.3**. The storage of general refuse on site has the potential to give rise to odour and visual impact and may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly.

6.4.1.2 General refuse generated during the operational stage will be collected at the refuse collection point provided within the Application Site for further collection. The waste management practice will comply with the statutory requirements including Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation .

6.4.1.3 With the implementation of good waste management practices at the Application Site , the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal.

Table 6.3 - Summary of Waste Generation during Operational Stage

Material Type	Source(s)	Handling	Disposal / Treatment	Estimated Quantity
General Refuse	Waste paper, discarded containers, etc. generated from residents	To be stored in designated area prior to collection and disposal	To separate recyclable materials (e.g., paper, tin-cans, etc.) for collection by outside recyclers or disposal to landfill as the last resort	~1023 kg/day

6.5 Recommended Waste Management Mitigation Measures

6.5.1.1 In line with the Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling shall be adopted as far as practicable.

6.5.1.2 Proper planning for waste reduction shall be carried out at planning and design phase. It can be achieved by identify key waste types, set out waste reduction programmes and targets and also arrange on-site sorting and proper waste disposal.

6.5.1.3 The mitigation measures for construction stage are recommended as followings:

Construction Stage

- Soil generated from the piling activities shall be properly handled to avoid leakage or improper storage (i.e. onto bare ground instead of into tanks), which may cause contamination to surface waters and any exposed ground areas;
- The reuse/ recycling of all materials on-site shall be investigated prior to treatment/ disposal off-site;
- Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;
- All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);
- The Contractor shall be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of at landfill whilst any inert C&D materials shall be reused on-site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to Public Fill Reception Facilities after obtaining the appropriate license. The storage, handling, transportation and disposal of C&D materials shall be conducted in accordance with the ETWB TCW No. 19/2005, Environmental Management on Construction Sites. The Contractor shall also prepare and implement an Environmental Management Plan (EMP), which includes the Waste Management Plan (WMP) to ensure that measures would be taken during the construction stage to reduce C&D materials. The WMP shall cover the information as recommended in Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (ADV - 19). The WMP as part of the EMP shall be submitted to the Project Proponent/ Representatives for approval.
- A sufficient number of covered bins shall be provided on-site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works;
- Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling;
- Where the construction site has more than one exit point for vehicles leaving the construction site , a wheel washing system covering all exit points shall be provided to remove the dust and soil on the wheel;

- All dump trucks which enter or exit the construction site shall be equipped with real-time monitoring device for monitoring the transportation of C&D materials, and provided with mechanical covers which are well-maintained in good operating condition;
- Dusty materials shall be properly contained or covered by tarpaulin or other appropriate means under inclement weather;
- All necessary dykes, ditches, pipes and fittings of sufficient capacity shall be provided to collect surface run-off and wastewater from all locations of the construction site to appropriate treatment facility;

7. **The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of construction.**

7.1.1.1 While potentially significant waste management impacts are not envisaged, given the potential for secondary impacts (e.g., dust, noise, water quality and visual impacts) mitigation measures are required to ensure proper waste handling, storage, transportation and disposal during the operational stage.

Operational Stage

- General refuse generated from the Proposed Development shall be stored in enclosed bins or compaction units. A licensed waste collector shall be employed to remove general refuse from the Proposed Development on regular basis to minimise odour, pest and litter impacts.

7.2 Conclusion

7.2.1.1 Based on the site observation and the information obtained from historical aerial photographs and relevant government department, no land contamination issue arising from the Application Site is anticipated.

7.2.1.2 The potential impacts of wastes arising from operation of the Proposed Development have been assessed. With the recommended procedures/measures in place, waste generated/ disposed should not lead to any adverse impacts.

8. CONCLUSION

8.1.1.1 This Environmental Assessment (EA) Report has been prepared to identify all potential environmental impacts and relevant environmental requirements during the operational stage of the Proposed Development at Hang Tau Tai Po in Kwu Tung.

8.1.1.2 With the required buffer distances away from the surrounding roads, no adverse air quality impact due to vehicular emission upon the Proposed Development is anticipated. Moreover, since no chimney was found during the site survey, no adverse air quality impacts due to industrial emissions is anticipated. Since no odour nuisance was identified arising from the sewage treatment works and the SPS for Hang Tau Village is fully enclosed and equipped with odour control facilities, no adverse odour impact upon the Proposed Development is anticipated.

8.1.1.3 The Proposed Development is noise sensitive and subject to road traffic noise impact as well as fixed source noise impact from the SPS. As the fixed noise source of the Proposed Development will be positioned in plant room whose opening will be facing Hang Tau Road (eastward direction, with no NSRs), no adverse fixed source noise impact is anticipated upon the surrounding NSRs. Based on the results of the road traffic noise impact assessment, all the noise sensitive rooms within the Proposed Development will comply with the HKPSG road traffic noise standard. As the measured noise levels on NSR of the Proposed Development are equal or lower than the relevant noise criteria, the fixed source noise impact arising from the SPS upon the Proposed Development is thus considered to be minimal. Therefore, no adverse noise impact upon or arising from the Proposed Development is anticipated.

8.1.1.4 With the proper implementation of proposed mitigation measures, no adverse water quality impact is anticipated during the construction stage.

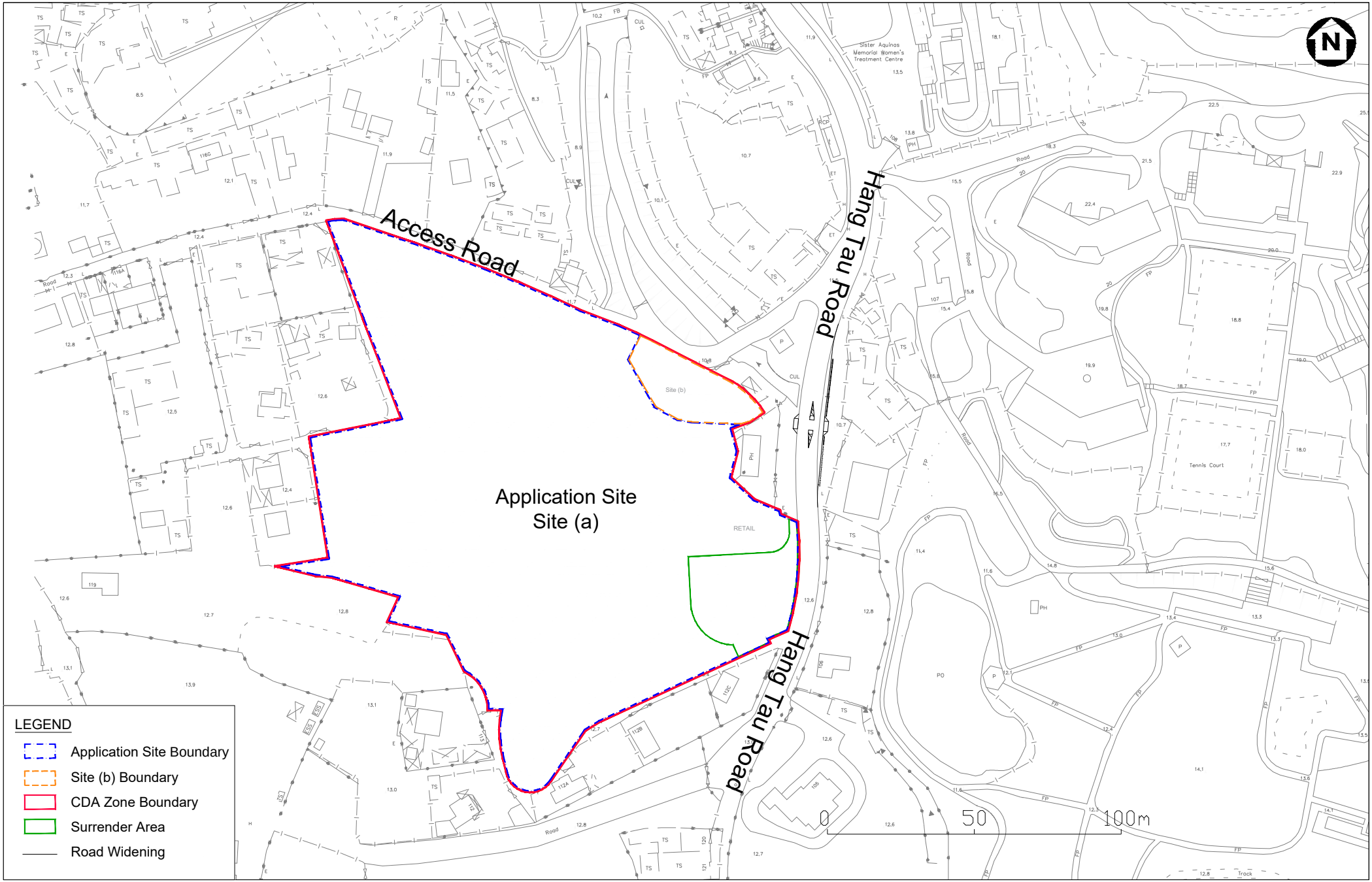
8.1.1.5 In term of the operational stage, no adverse impact associated with non-point source is anticipated, given that the good drainage system and best management practice will be provided. In addition, the sewerage effluent from the Proposed Development would be properly discharged to the public sewer during the operational stage. Upon the completion of the committed upgrading works of the proposed sewer mains, there is no adverse water quality impact anticipated.

8.1.1.6 Based on the site observation and the information obtained from historical aerial photographs and relevant government department, no land contamination issue arising from the Application Site is anticipated.

8.1.1.7 The potential impacts of waste arising from operation of the Proposed Development have been assessed. With the recommended procedures/measures in place, waste generated/ disposed should not lead to any adverse impacts.

8.1.1.8 Summarizing the above, the environmental impact associated with the Proposed Development is considered acceptable.

FIGURES

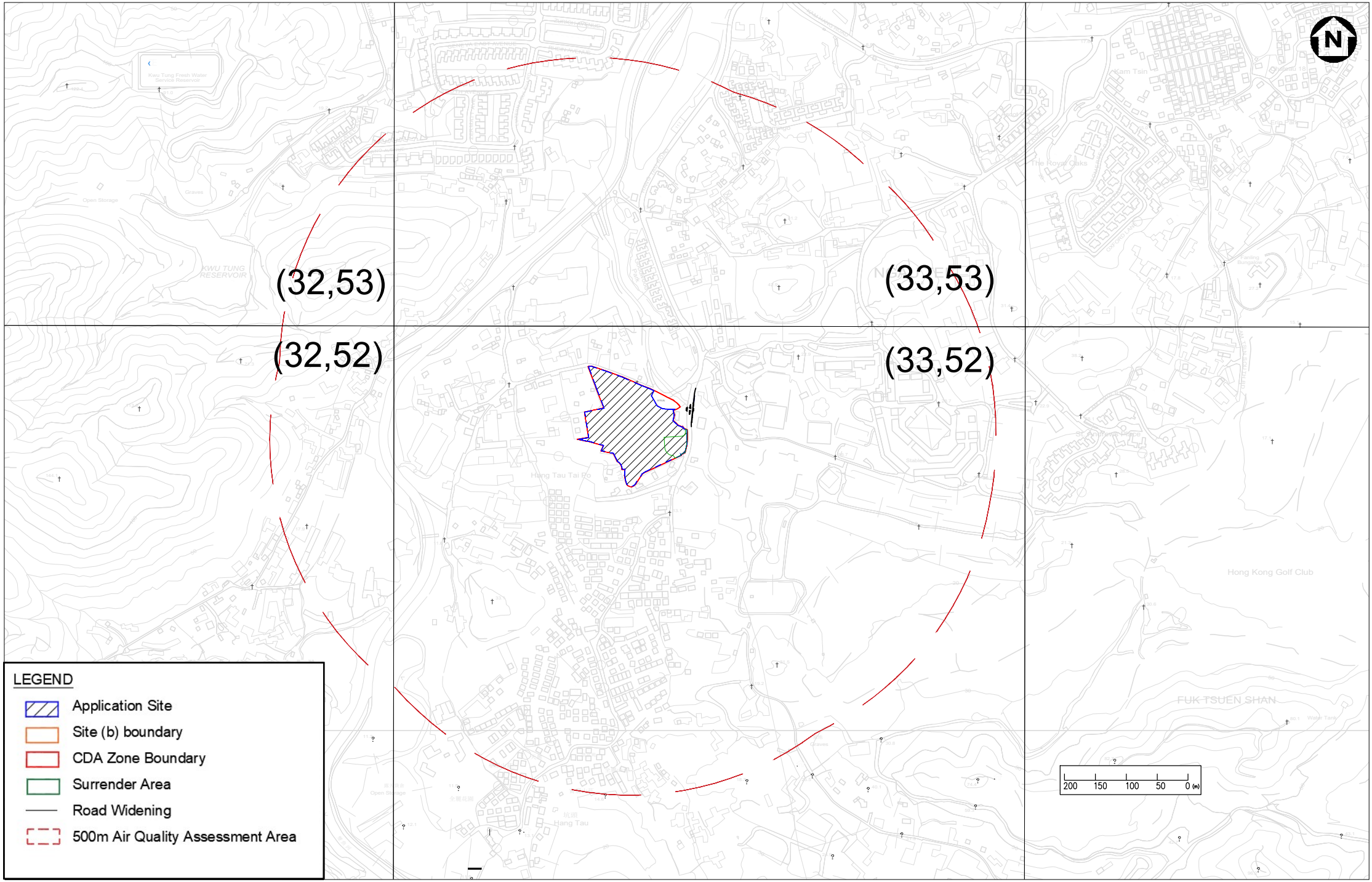


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Required Buffer Distance from Surrounding Roads

Figure 2.1

Scale As Shown

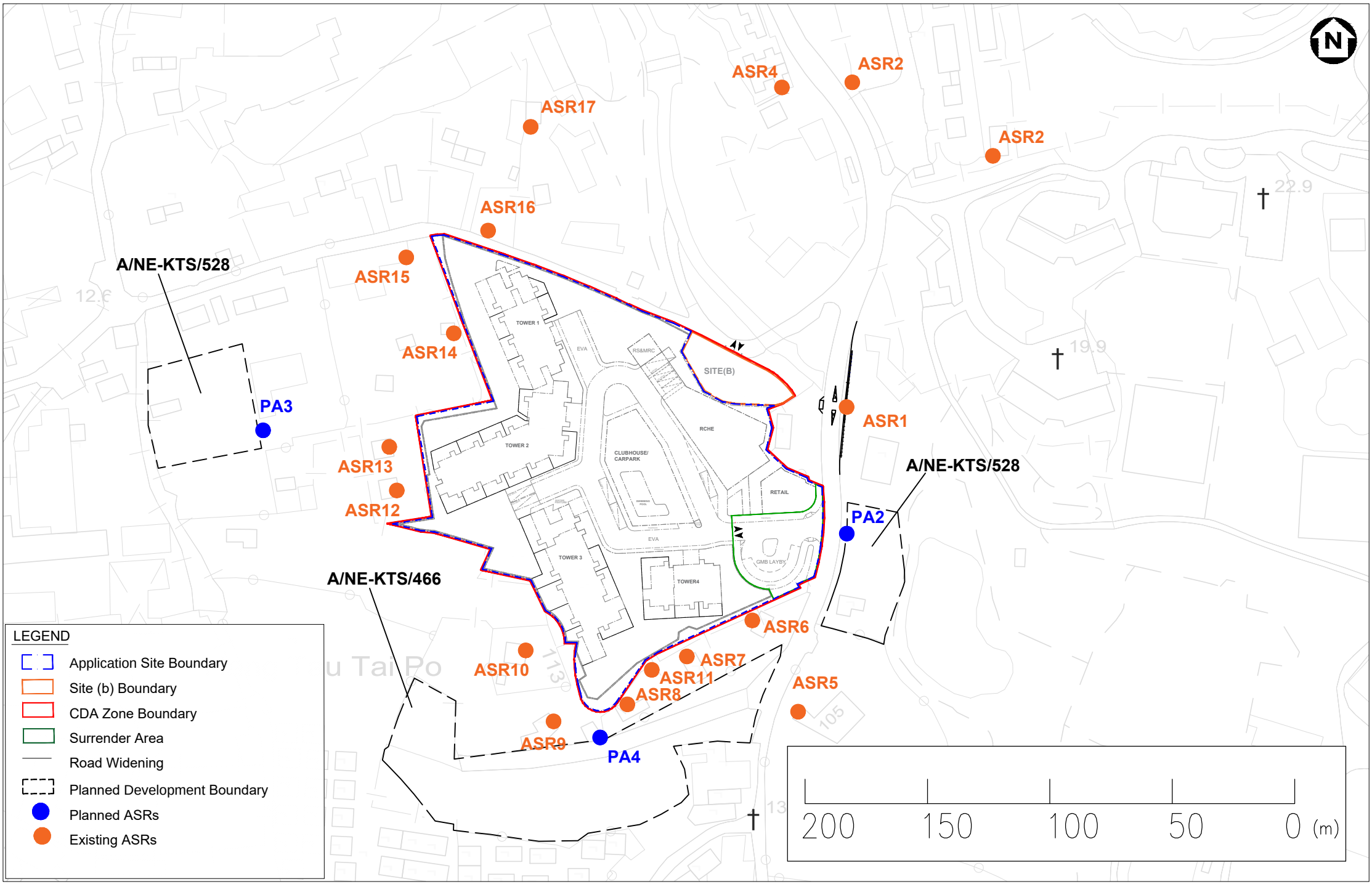


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500m Air Quality Assessment Area and the corresponding PATH Grids

Figure 3.1

Scale As Shown



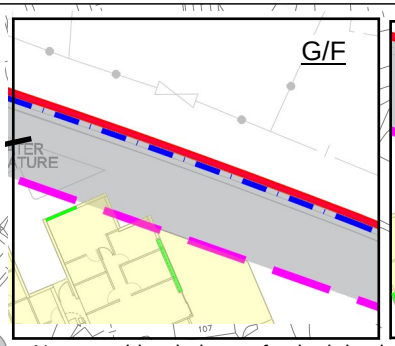
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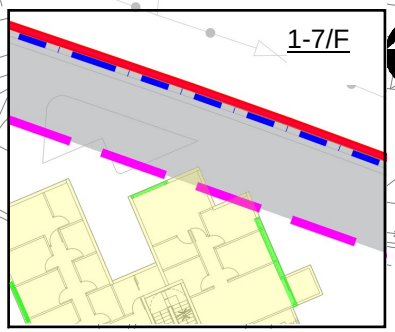
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Locations of the Representative Air Sensitive Receivers

Figure 3.2

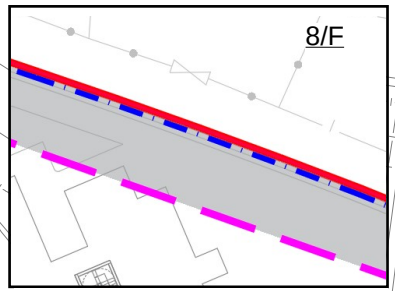
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Remark:
1. No openable window or fresh air intakes will be located within the 5m buffer zone.
2. No intended use or any facilities (e.g. benches) are proposed in the area outside Tower 1 G/F within 5m buffer zone that would attract the population stay the area.
3. No fresh air intakes and open space for recreational use will be located within the 5m buffer zone.





No openable window or fresh air intake are located within 5m buffer zone.
Openable window or fresh air intake for the Air Sensitive Uses at G/F & 1-7/F of Tower 1 are proposed to be positioned outside the 5m buffer zone fall into 5m buffer zone.



No Air Sensitive Uses at 8/F of Tower 1 fall into 5m buffer zone.

5m

LEGEND
- Openable window / fresh air intake
- Application Site Boundary
- Site (b) Boundary
- CDA Zone Boundary
- Surrender Area
- 5m Buffer Distance
- 5m Buffer Zone
- Air Sensitive Use
- Road Widening

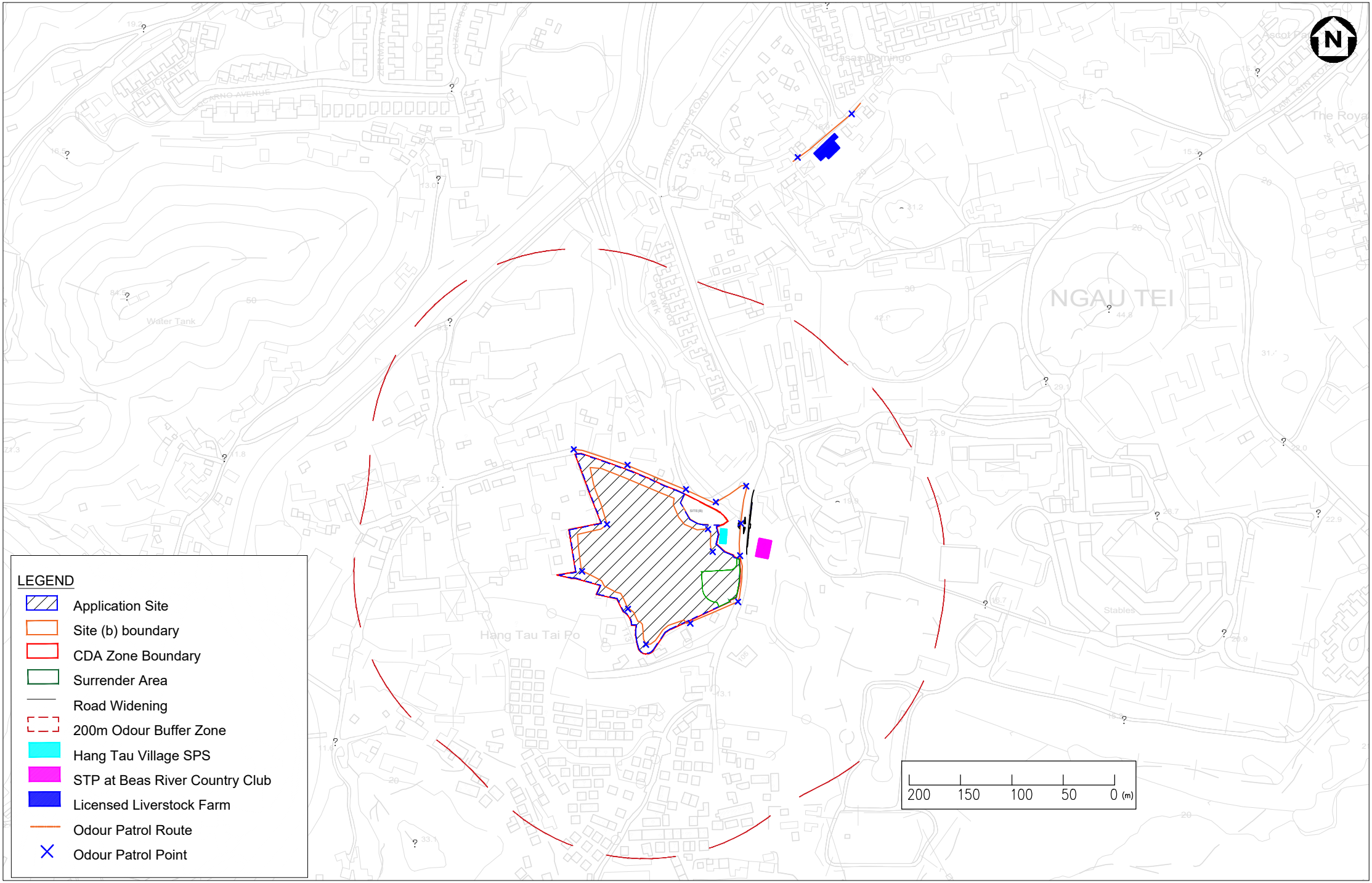
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Required Buffer Distance from Surrounding Roads

Figure 3.3

Scale As Shown



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Odour Patrol Route

Figure 3.4

Scale As Shown

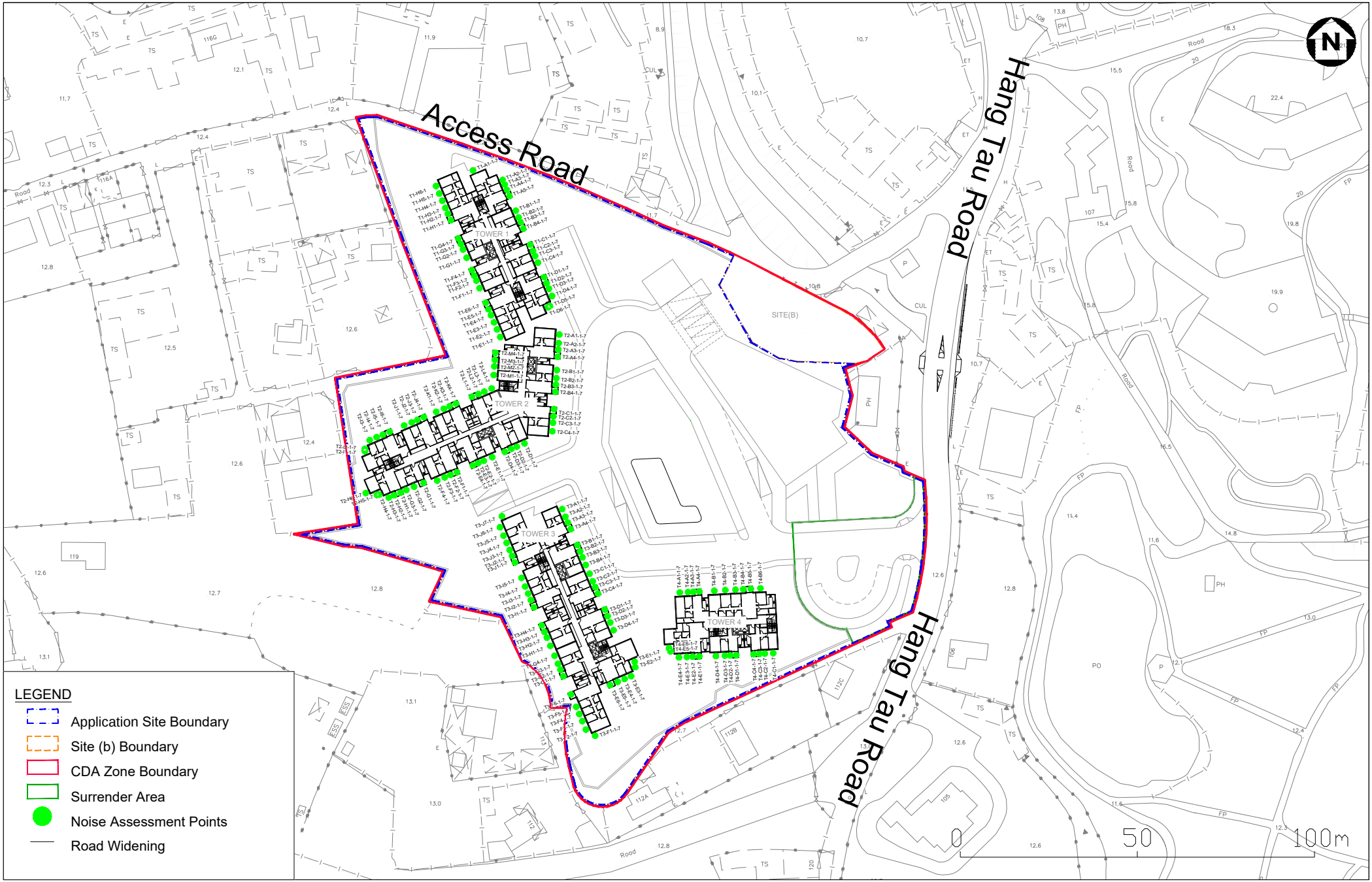


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Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (G/F)

Figure 4.1a

Scale As Shown



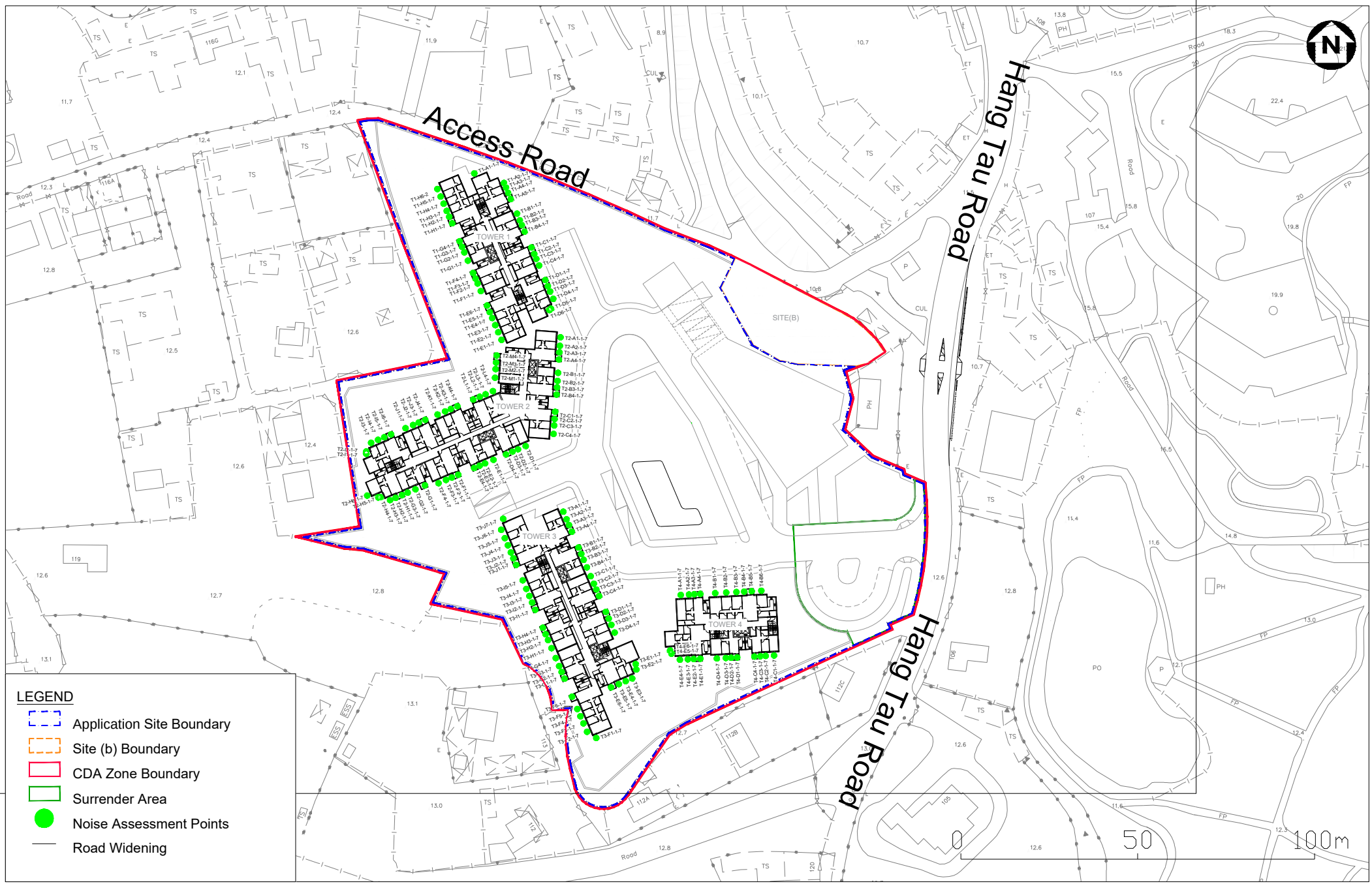
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Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (1/F)

Figure 4.1b

Scale As Shown



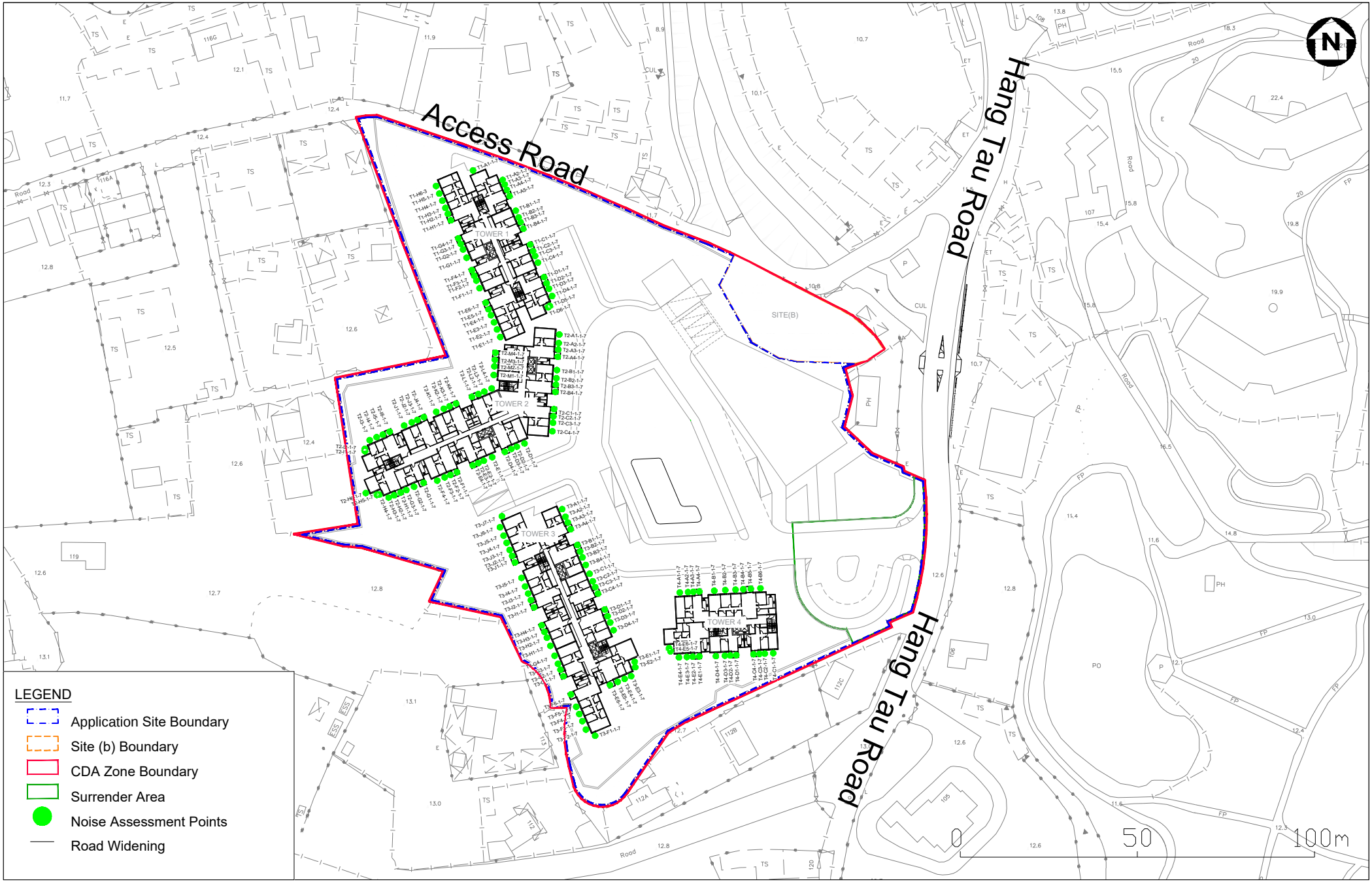
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Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (2/F)

Figure 4.1c

Scale As Shown



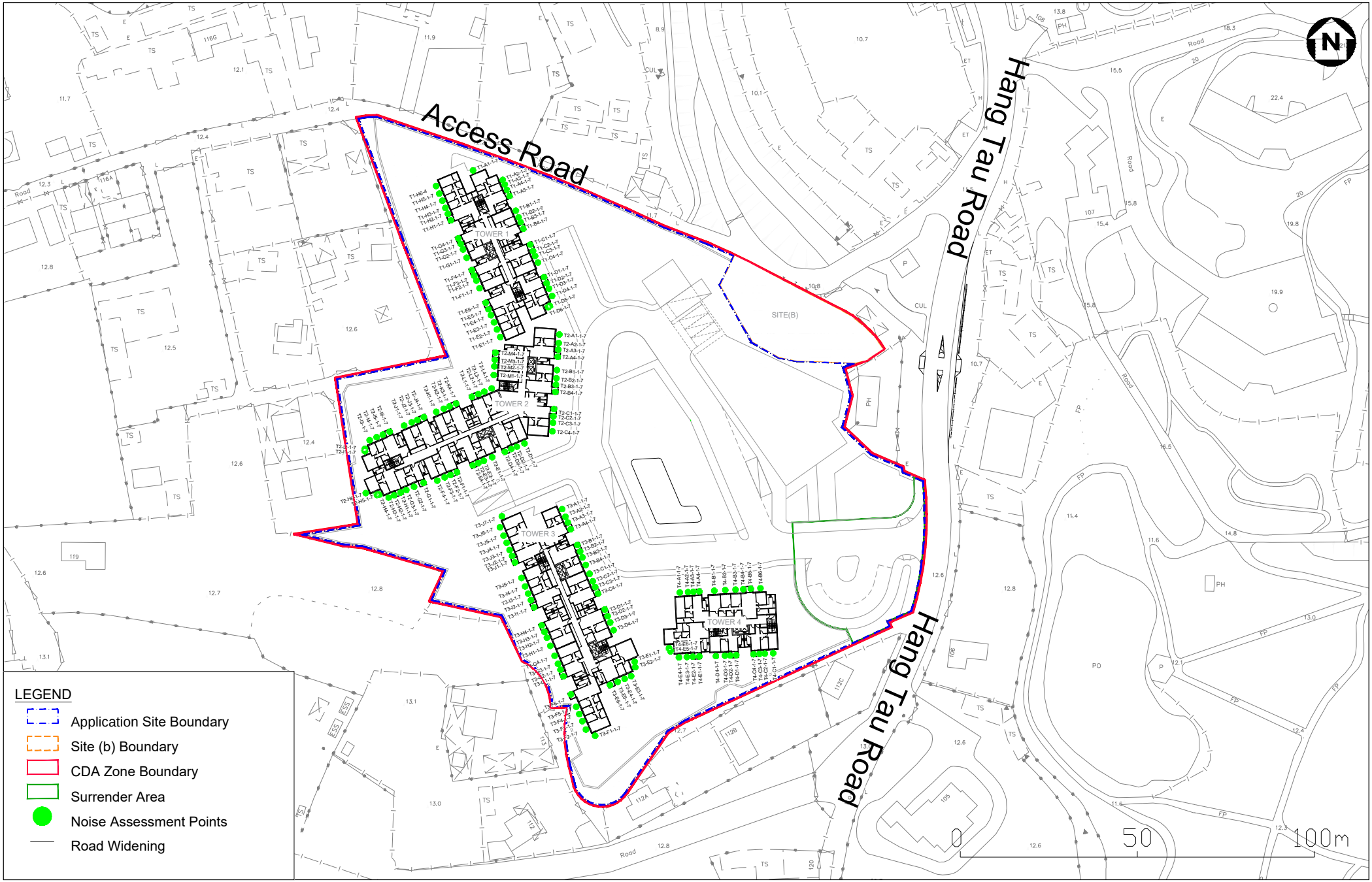
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (3/F)

Figure 4.1d

Scale As Shown



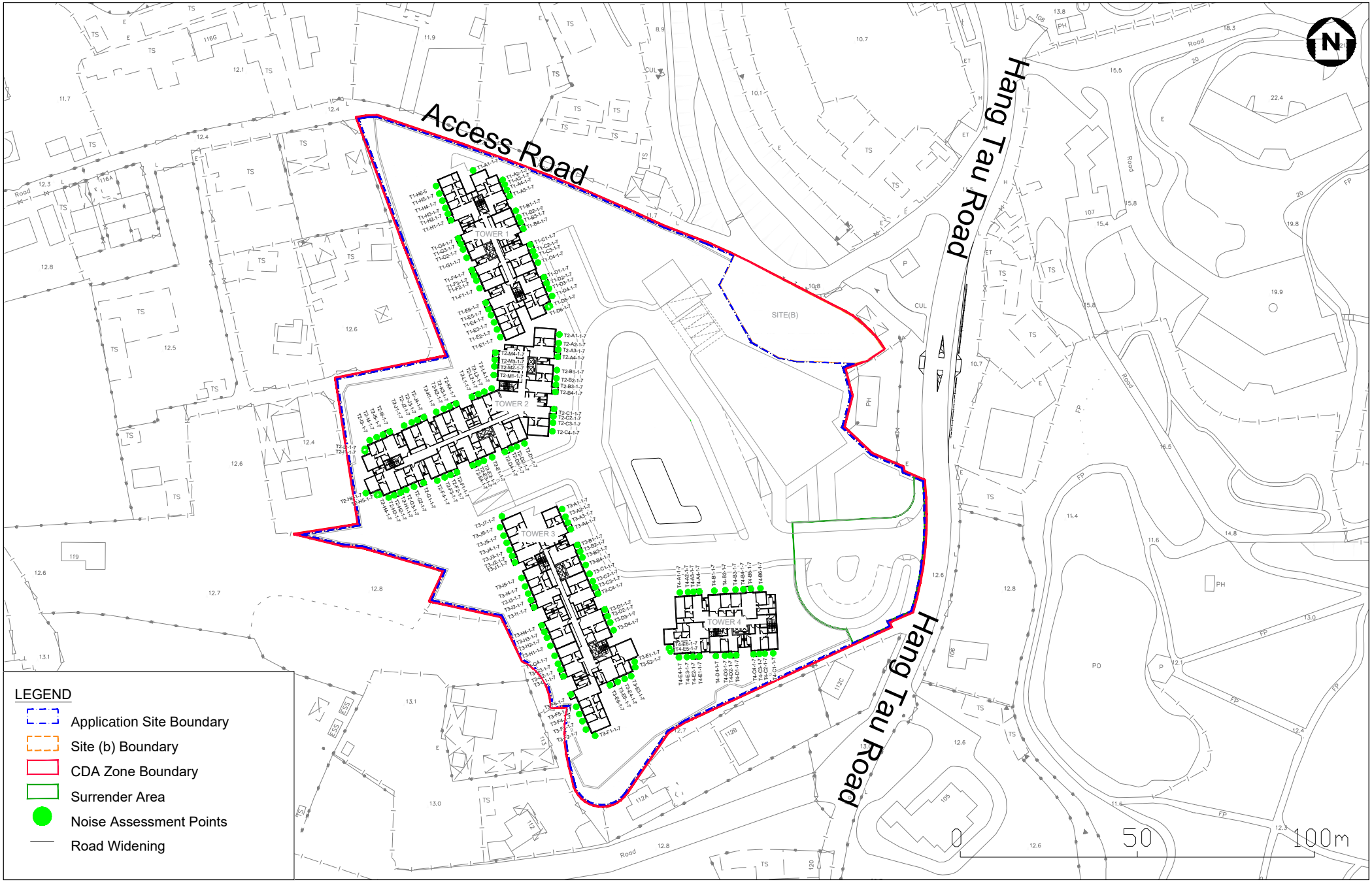
Meinhardt Infrastructure and Environment Limited
通過基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (4/F)

Figure 4.1e

Scale As Shown



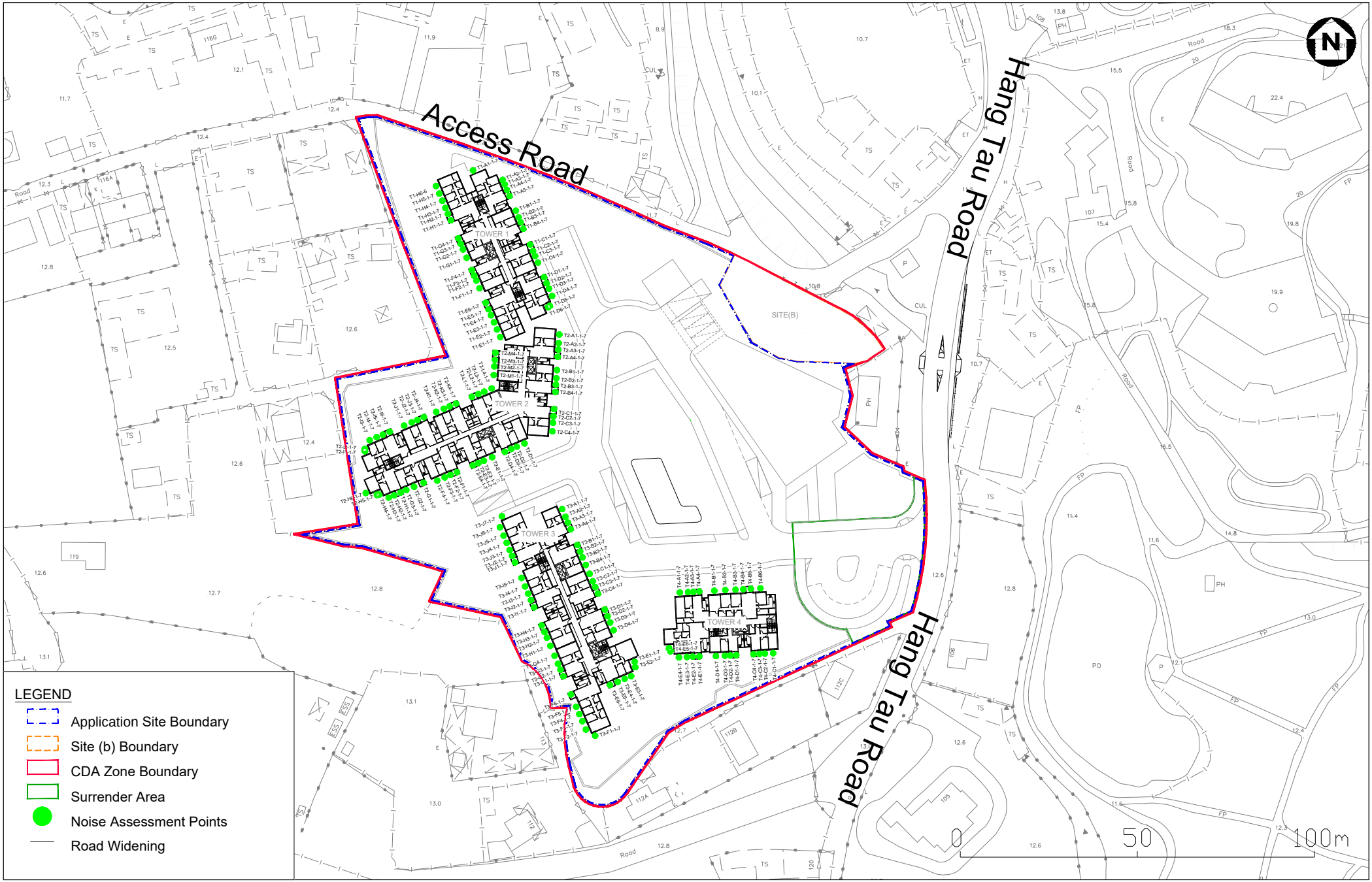
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (5/F)

Figure 4.1f

Scale As Shown



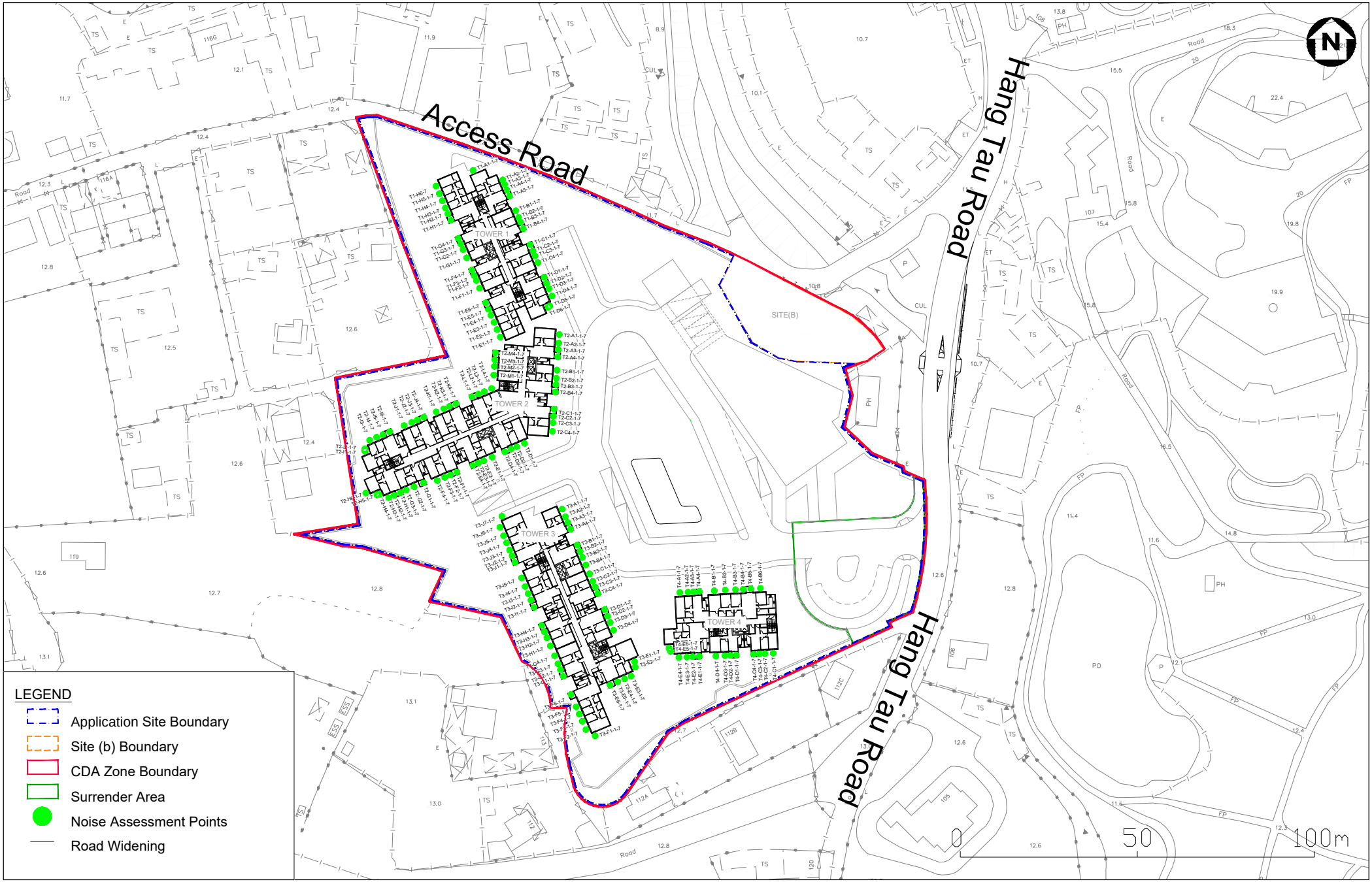
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (6/F)

Figure 4.1g

Scale As Shown



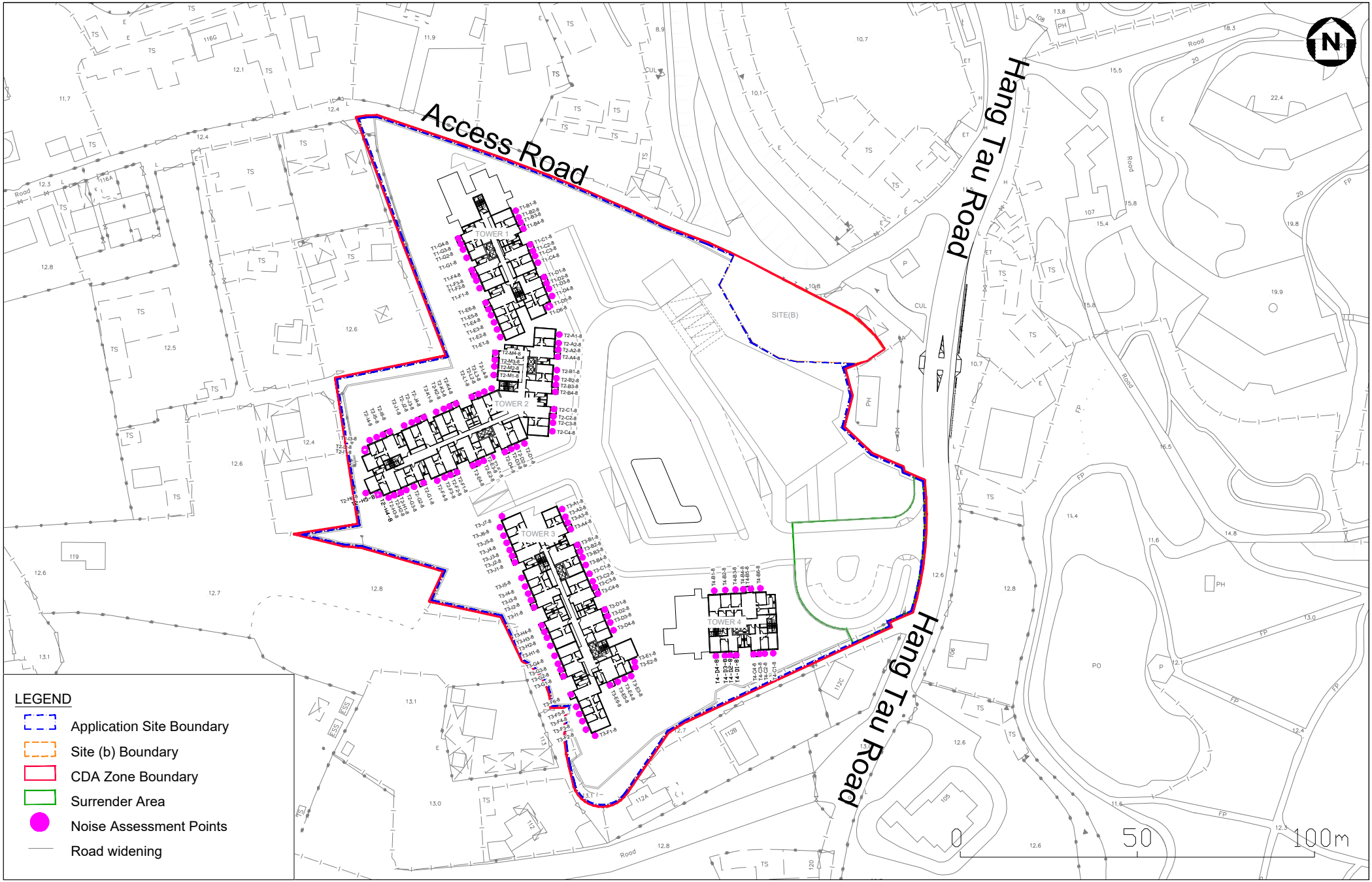
Meinhardt Infrastructure and Environment Limited
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (7/F)

Figure 4.1h

Scale As Shown



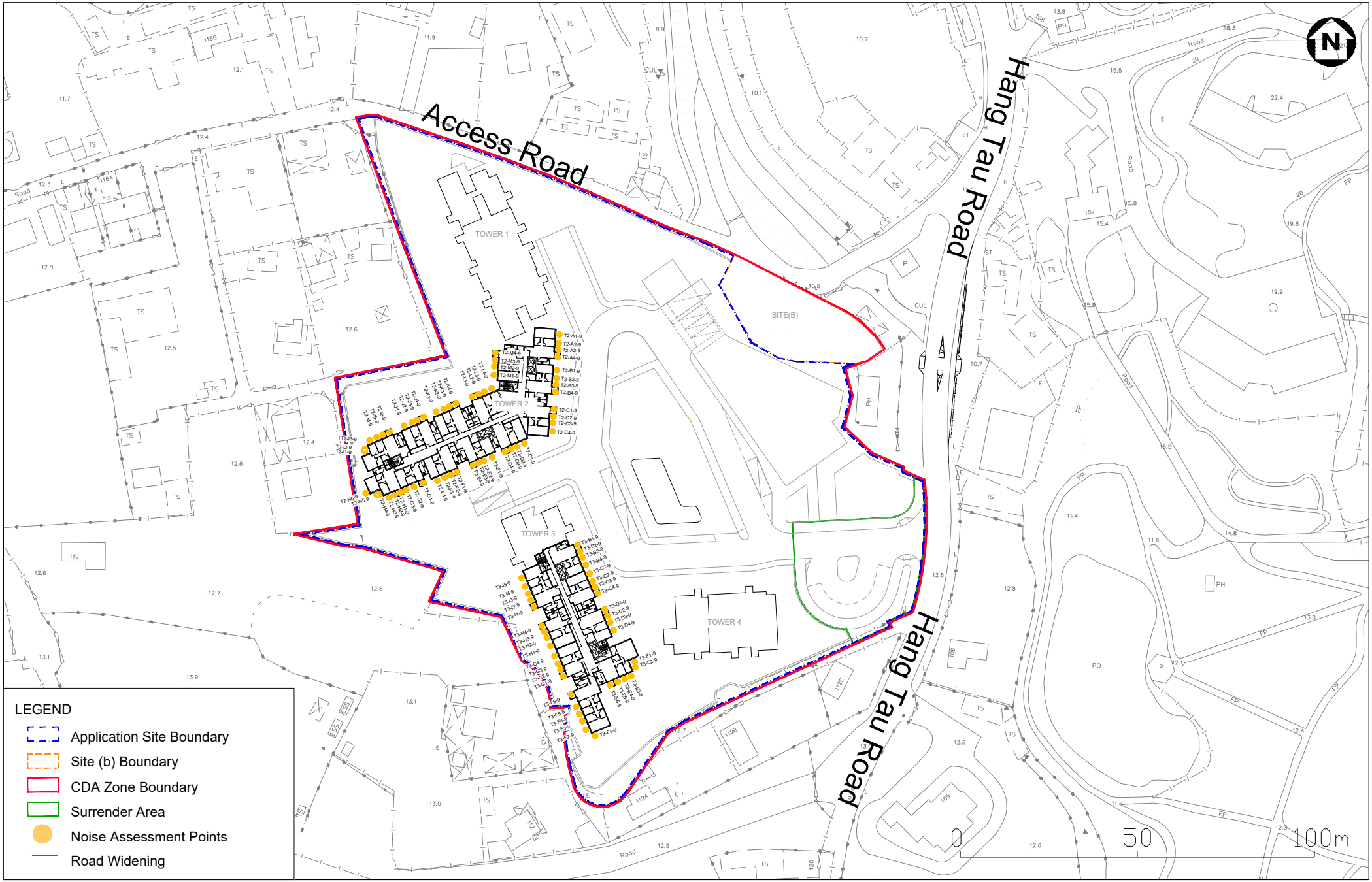
Meinhardt Infrastructure and Environment Limited
邁進基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (8/F)

Figure 4.1i

Scale As Shown



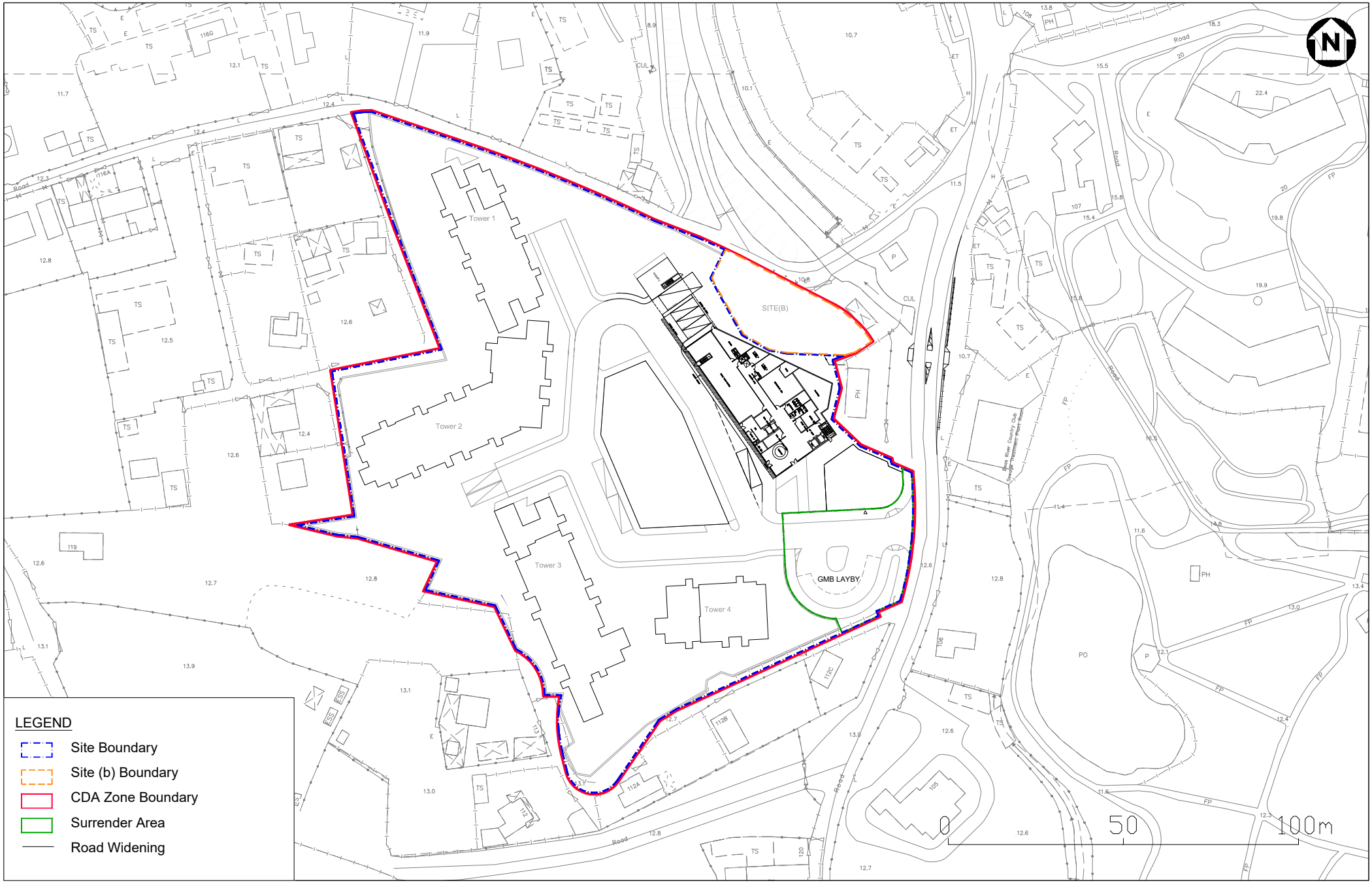
Meinhardt Infrastructure and Environment Limited
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Locations of Noise Assessment Points Selected for Road Traffic Noise Impact Assessment (9/F)

Figure 4.1j

Scale As Shown

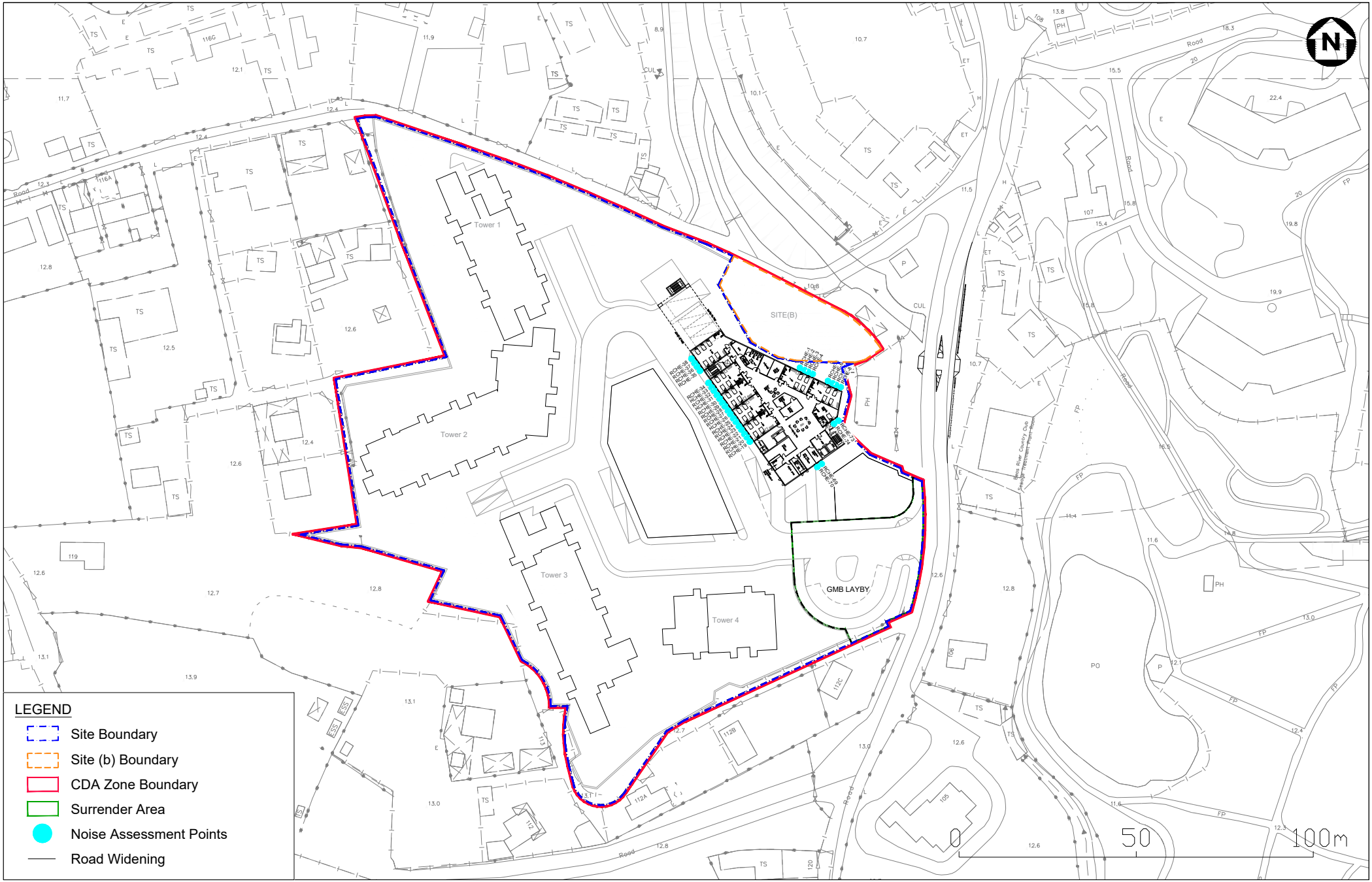


Meinhardt Infrastructure and Environment Limited
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South
Locations of Representative NSRs Selected for Road Traffic Noise Impact Assessment (RCHE - G/F)

Figure 4.1k

Scale As Shown



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通過基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South
Locations of Representative NSRs Selected for Road Traffic Noise Impact Assessment (RCHE - 1/F)

Figure 4.1I

Scale As Shown



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美滿基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South
Locations of Representative NSRs Selected for Road Traffic Noise Impact Assessment (RCHE - 2/F)

Figure 4.1m

Scale As Shown



Meinhardt Infrastructure and Environment Limited
建通基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South
Locations of Representative NSRs Selected for Road Traffic Noise Impact Assessment (RCHE - 3/F)

Figure 4.1n

Scale As Shown



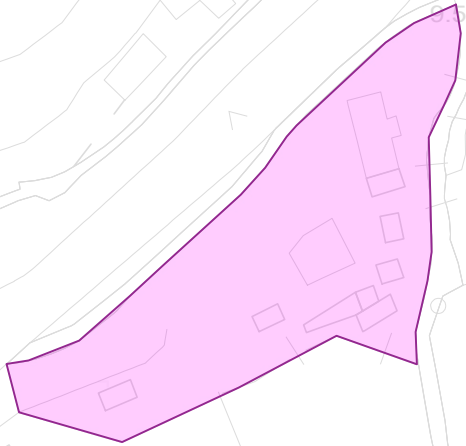
Photo record of on-site noise measurement at day time.

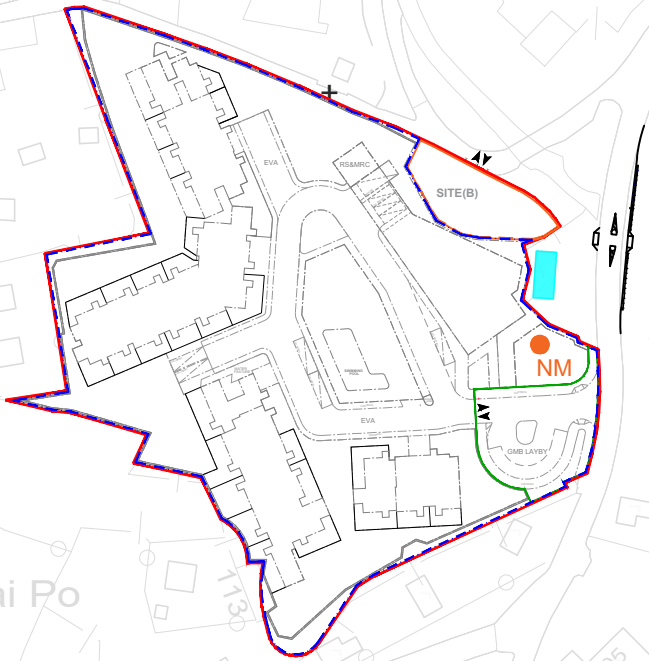


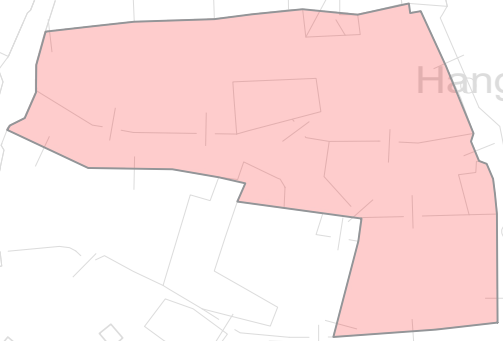
Photo record of on-site noise measurement at evening time.



Photo record of on-site noise measurement at night time.







Hang Tau Tai Po

LEGEND

- Application Site boundary
- Site (b) boundary
- CDA Zone Boundary
- Surrender Area
- Road Widening
- Hang Tau Village SPS
- Open Stoage of Construction Equiplment
- Open Storage of K& S Aluminum & Steel Works Limited
- Location of Noise Measurement

200 150 100 50 0 (m)

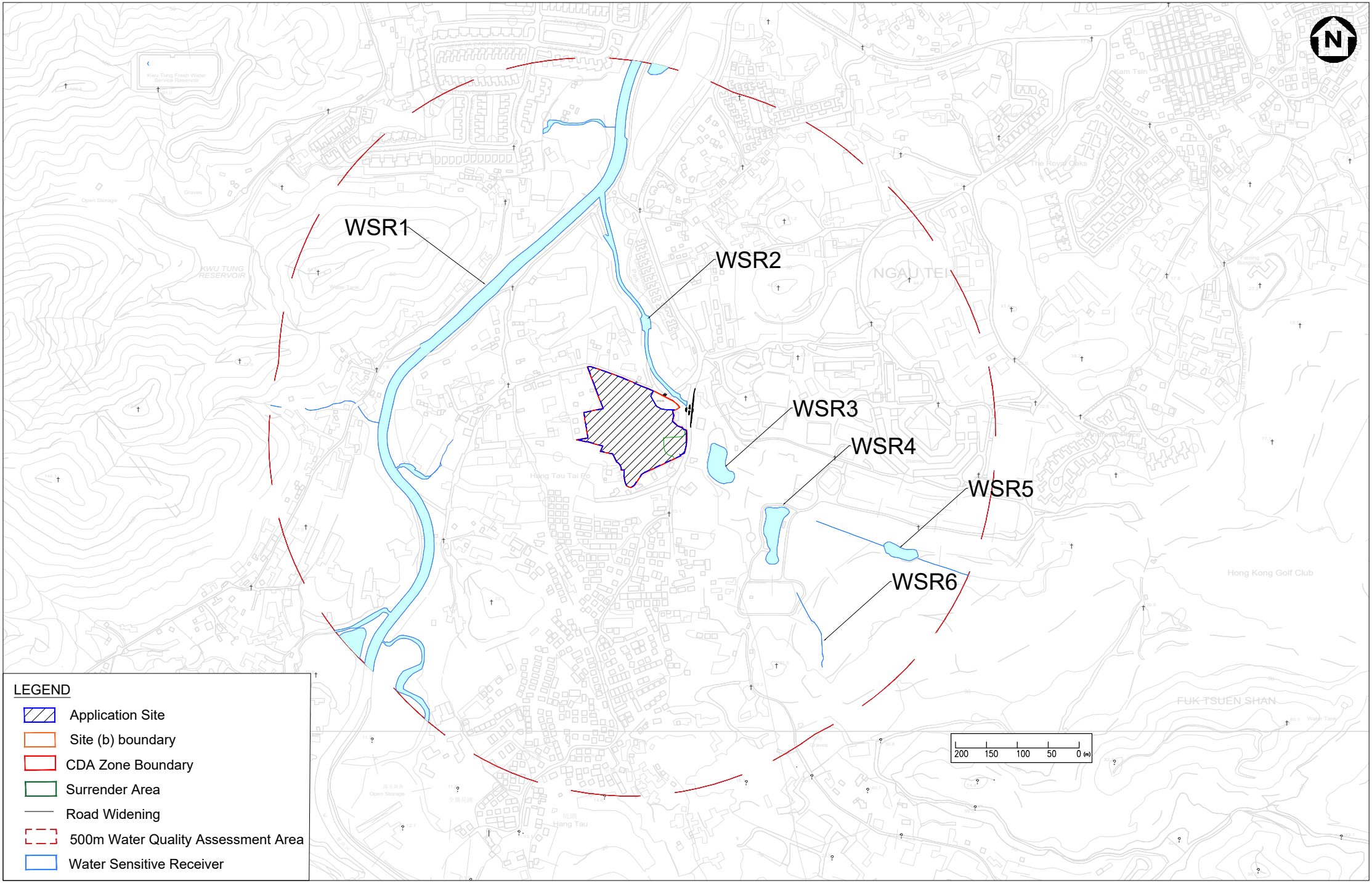
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Location of the On-site Noise Measurment and the Potential Fixed Noise Sources

Figure 4.2

Scale As Shown



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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South
Water Sensitive Receivers and 500m Water Quality Assessment Area

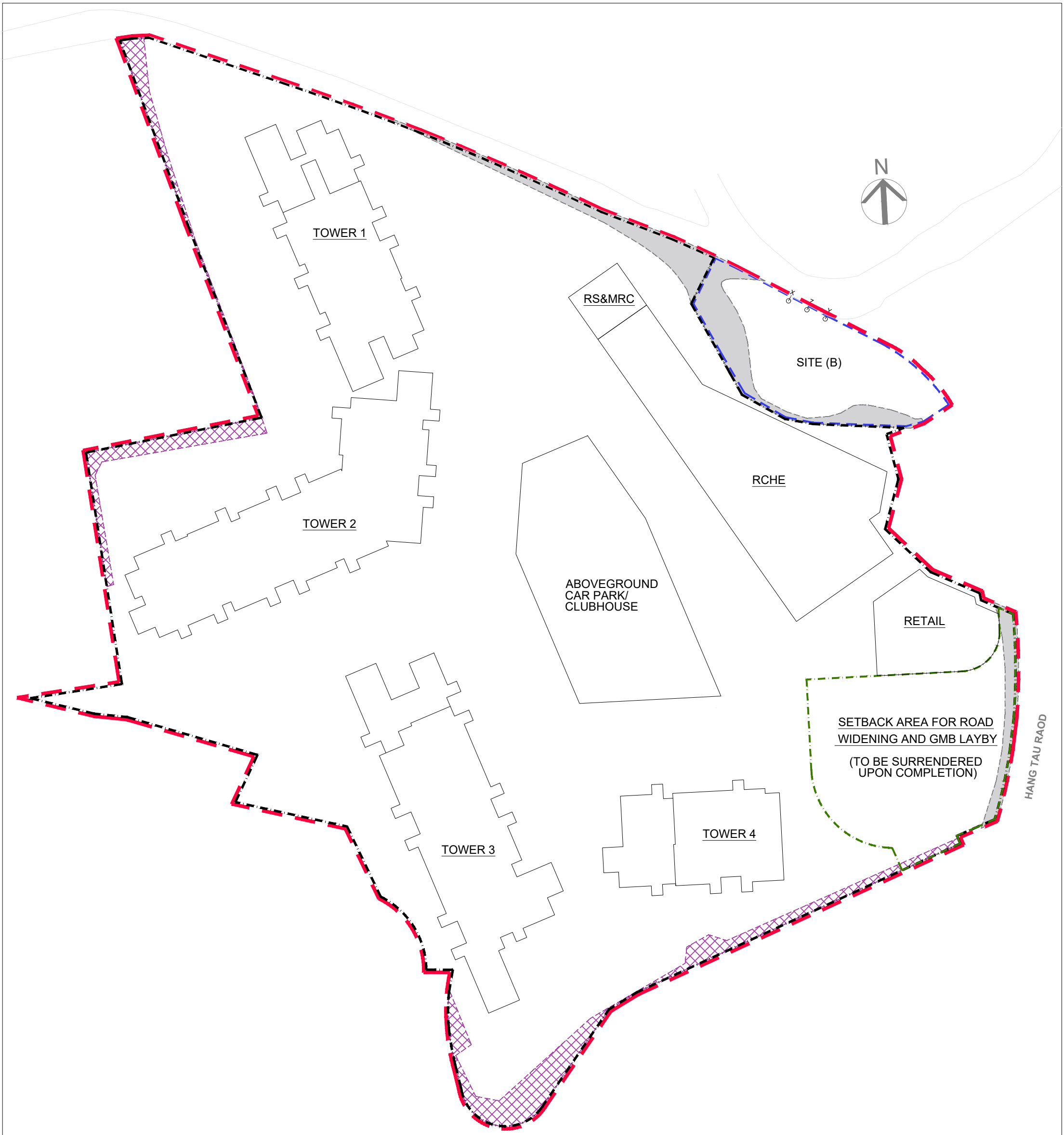
Figure 5.1

Scale As Shown

APPENDICES

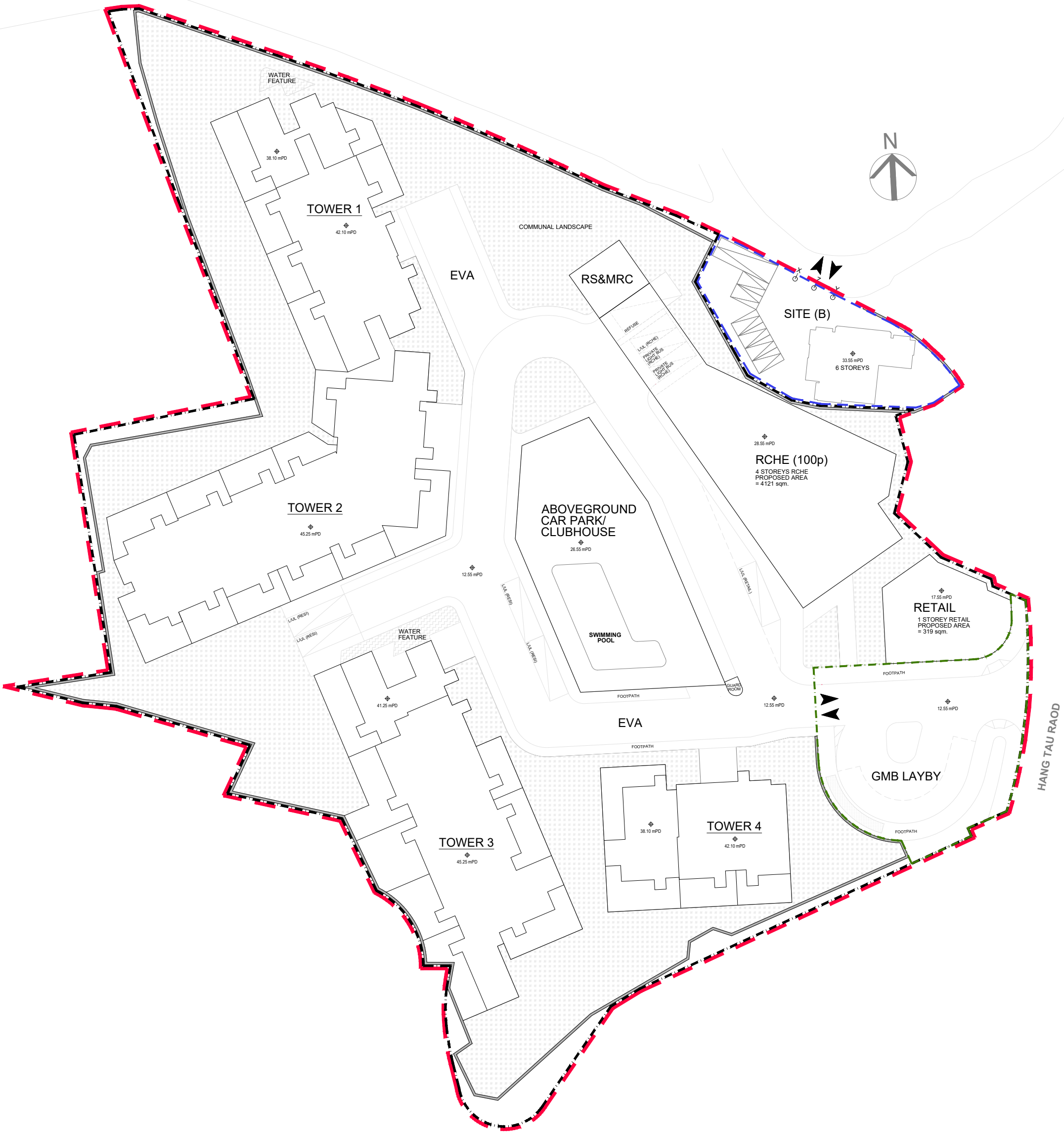
APPENDIX A

General Layout Plans of the Development



LOT PLAN

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

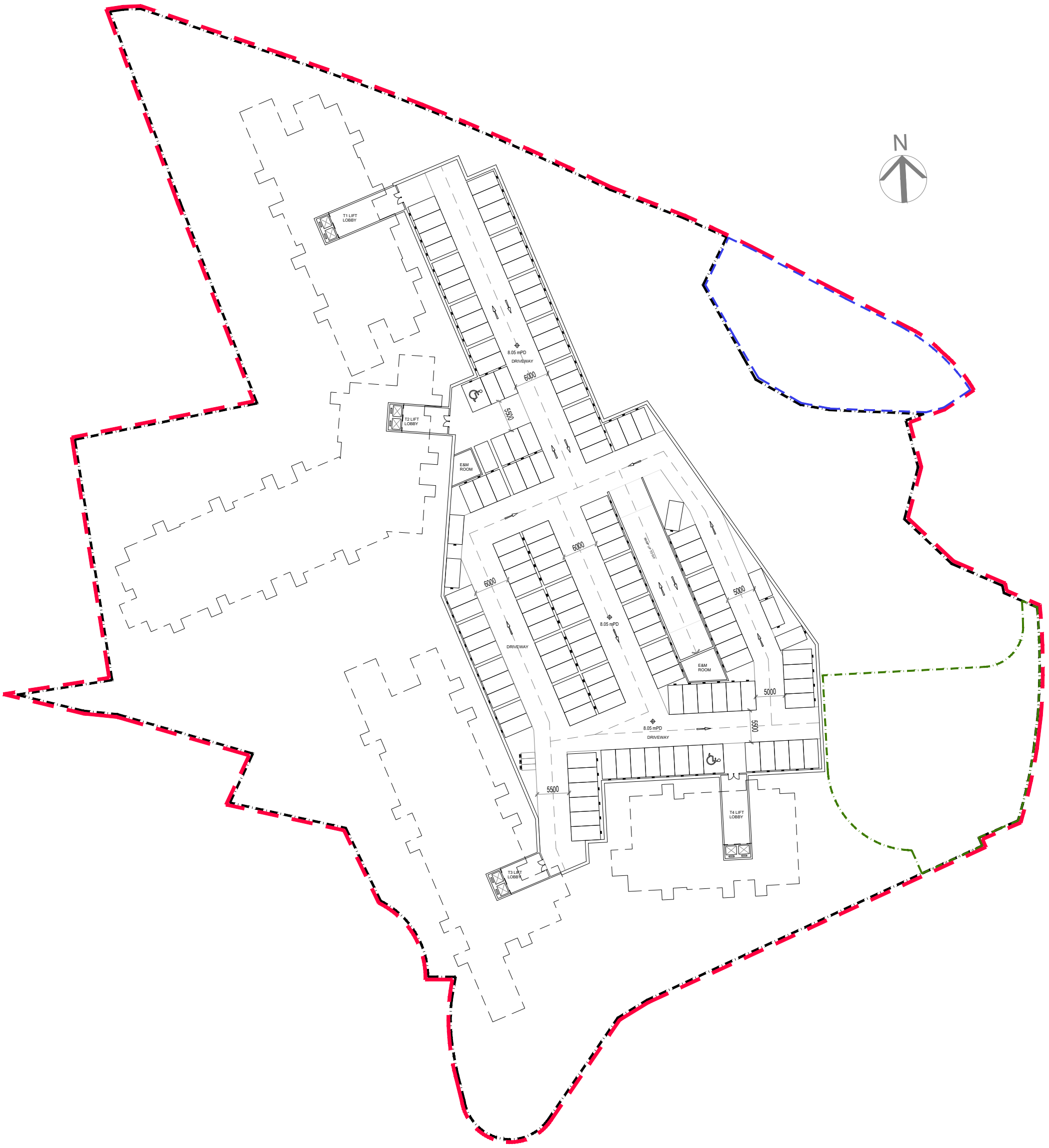


MASTER LAYOUT PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories



B1/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK +PARTNERS



FIRST FLOOR PART PLAN

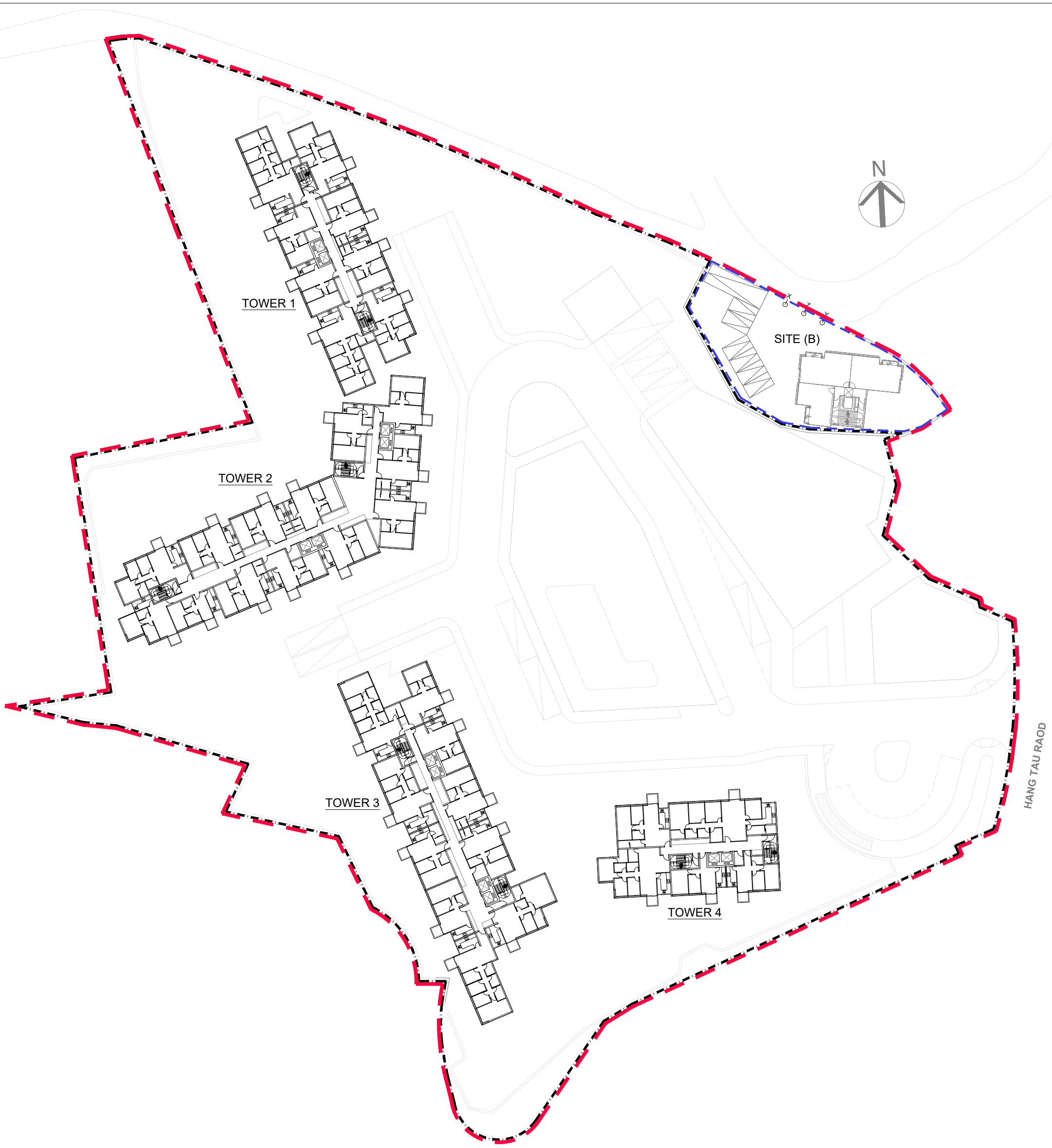
GROUND FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



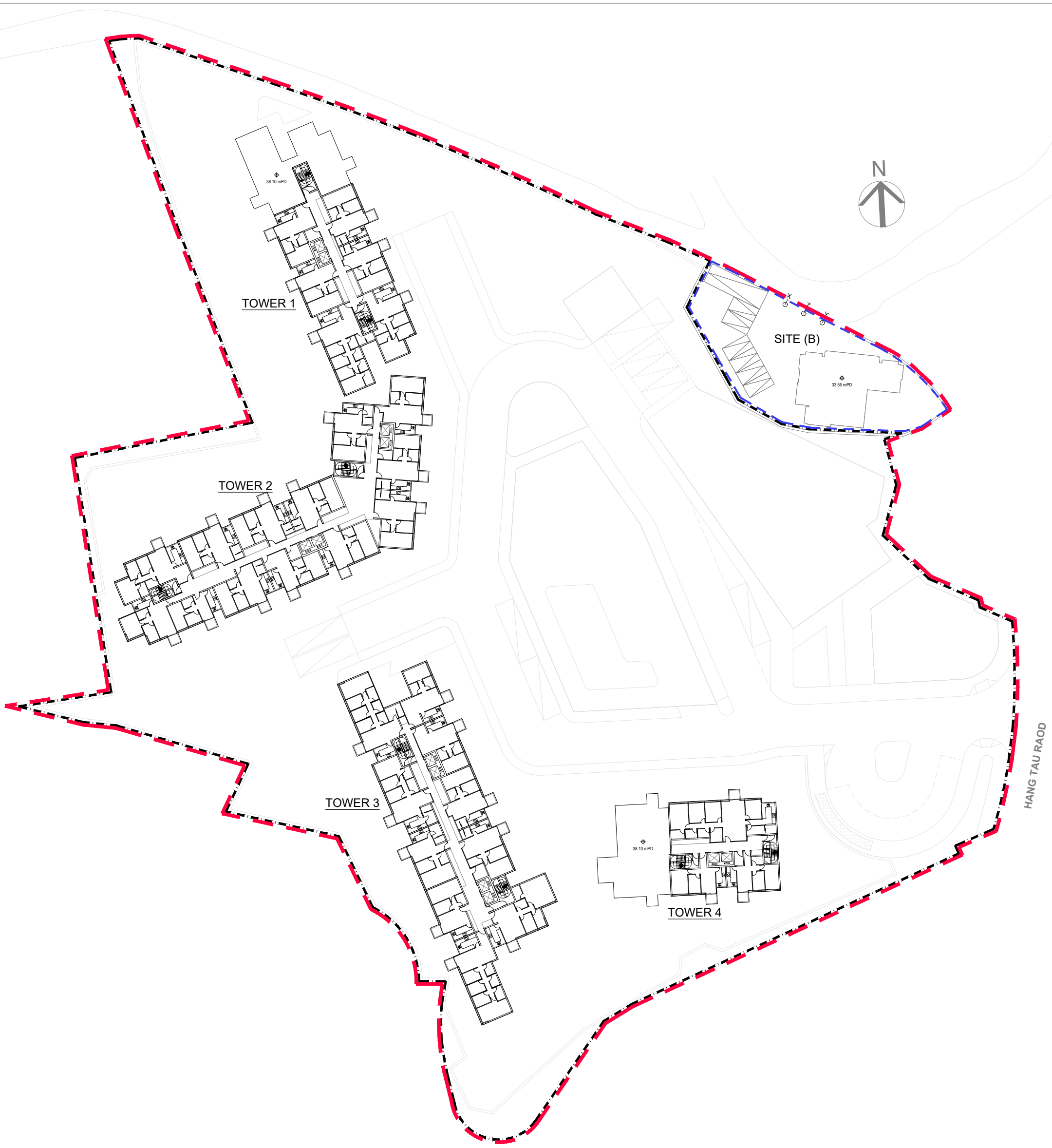
TYPICAL FLOOR PLAN (1/F to 7/F)

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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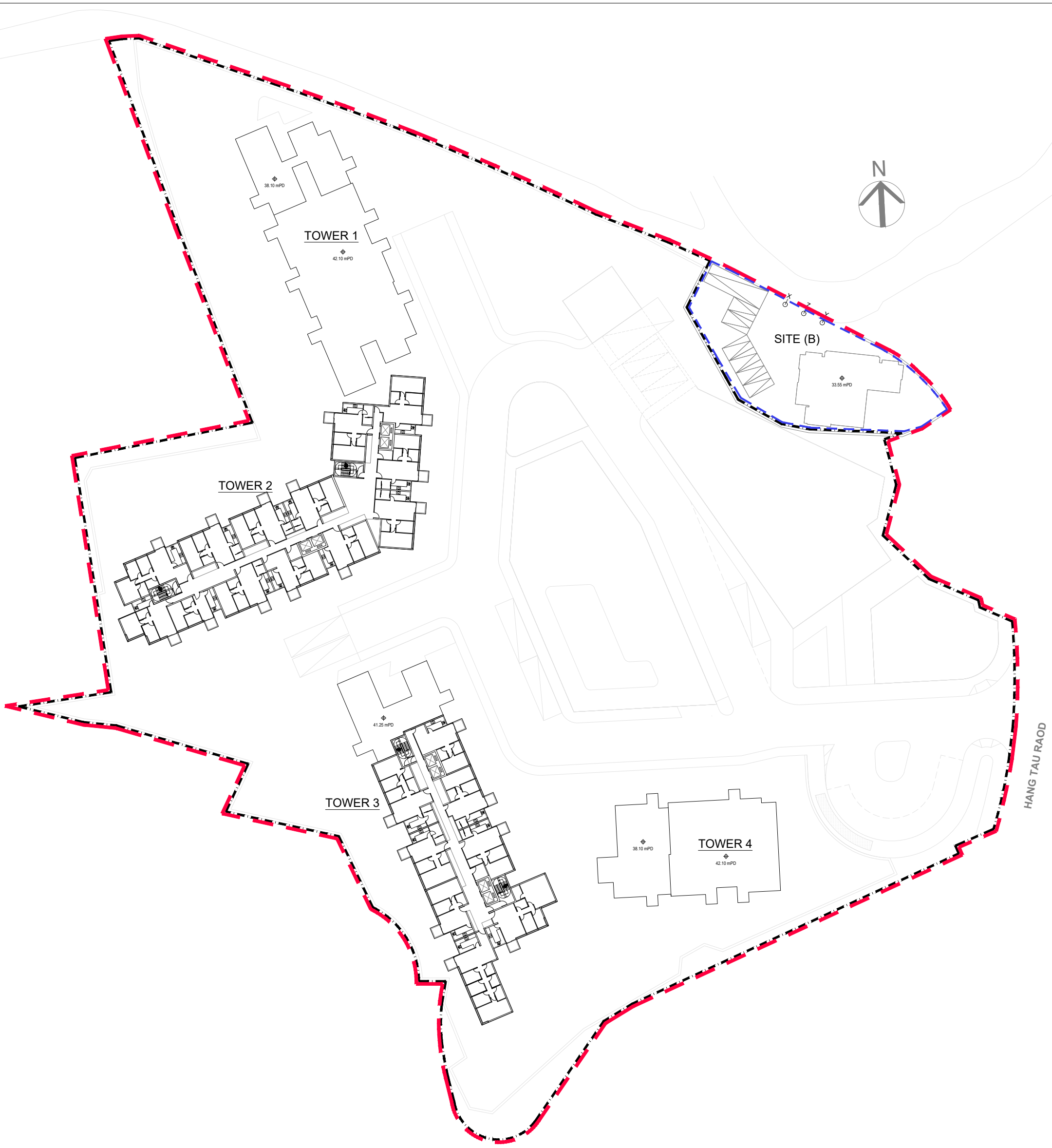
8/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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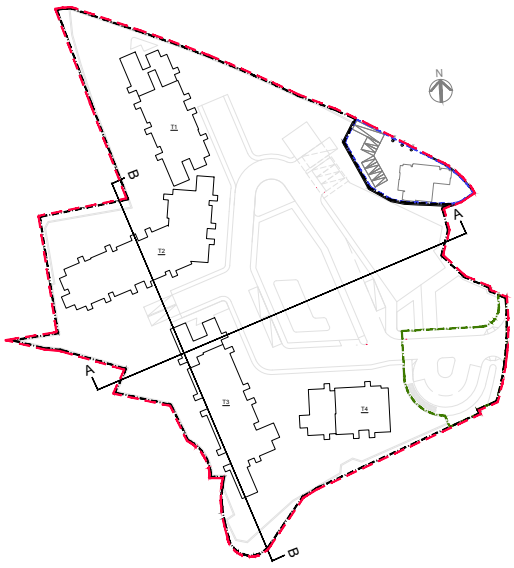
9/F FLOOR PLAN

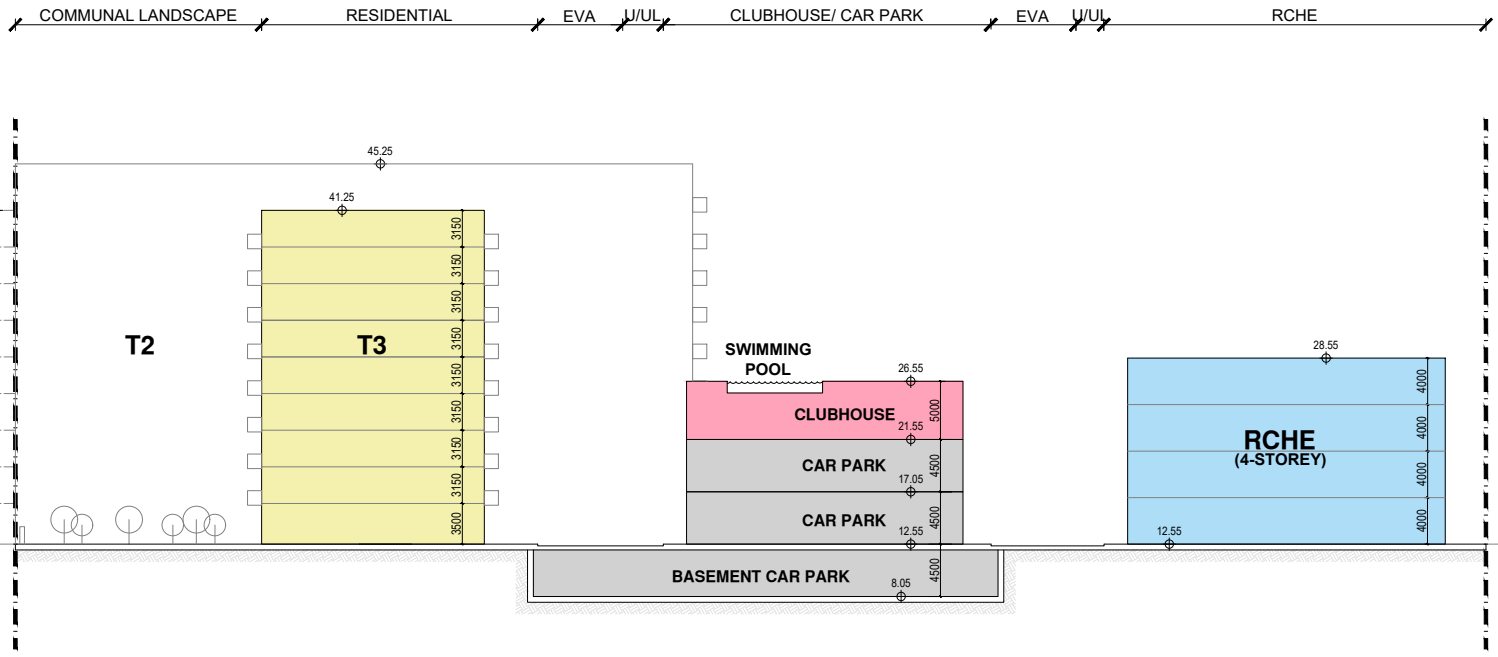
LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

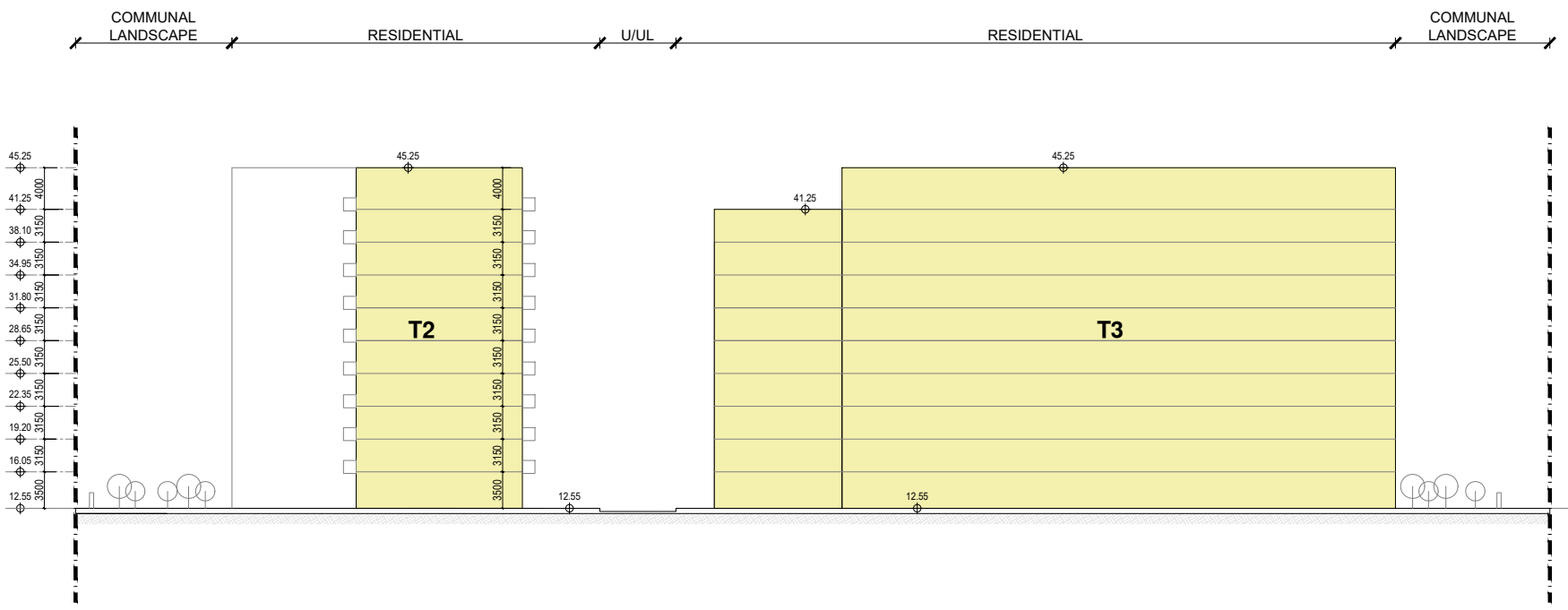
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION A



SCHEMATIC SECTION B

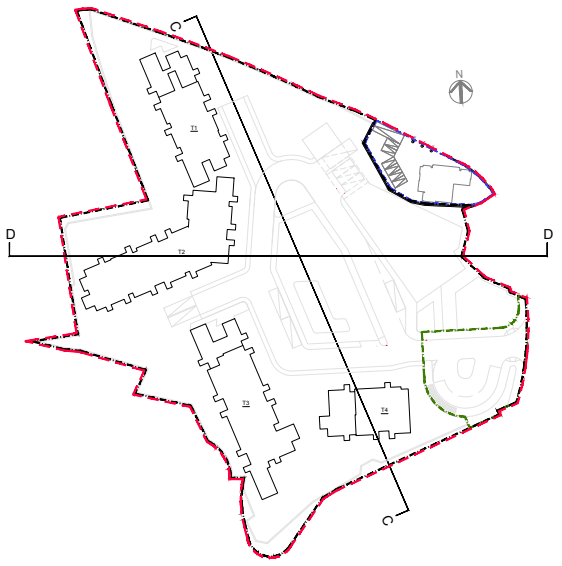
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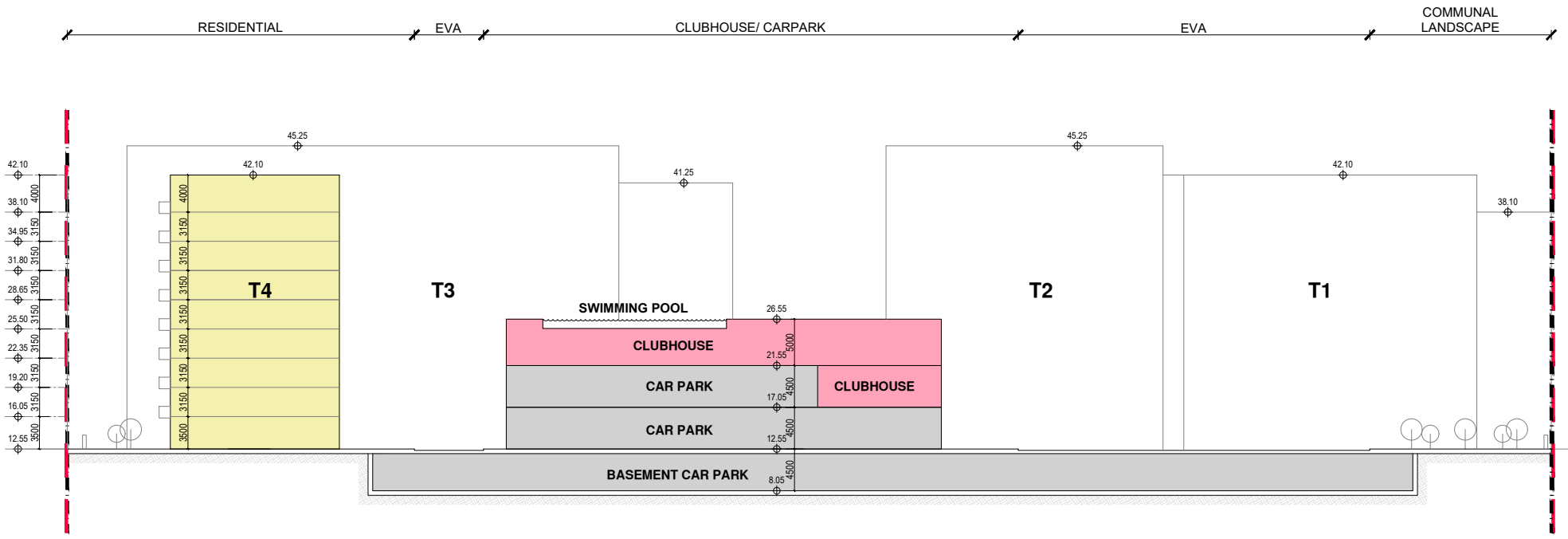
CDA Zone Boundary

Application Site Boundary

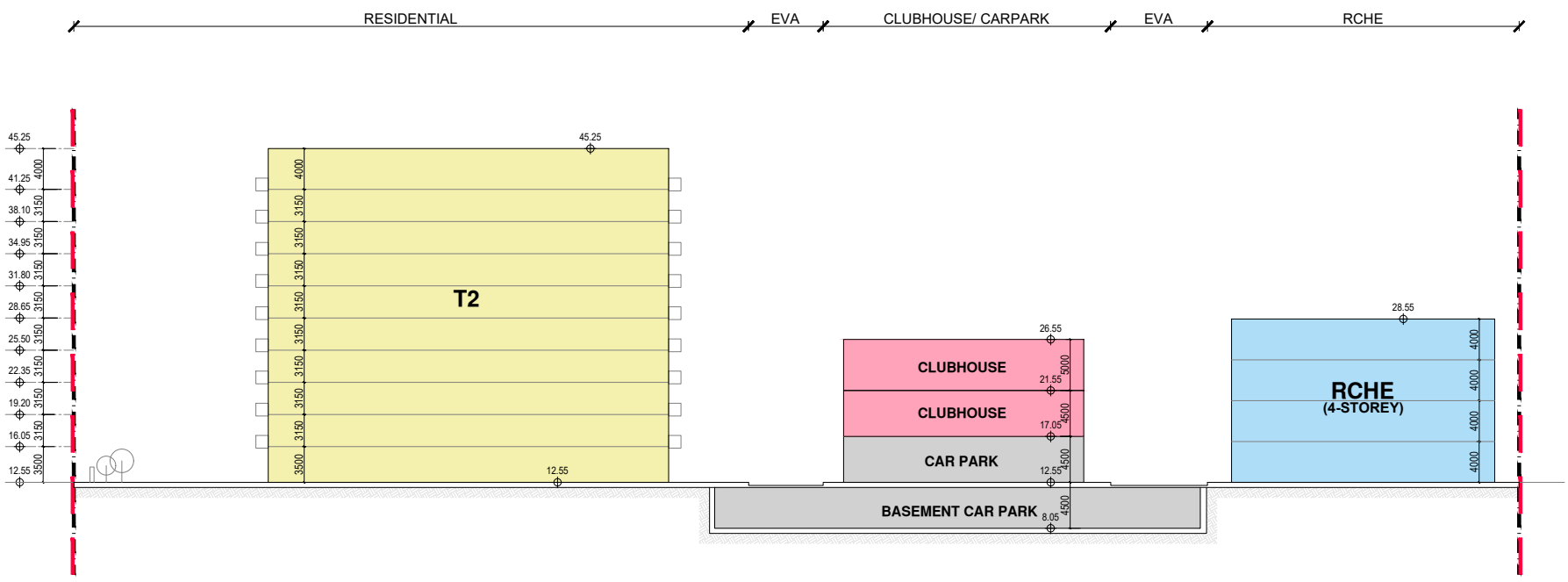
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION C



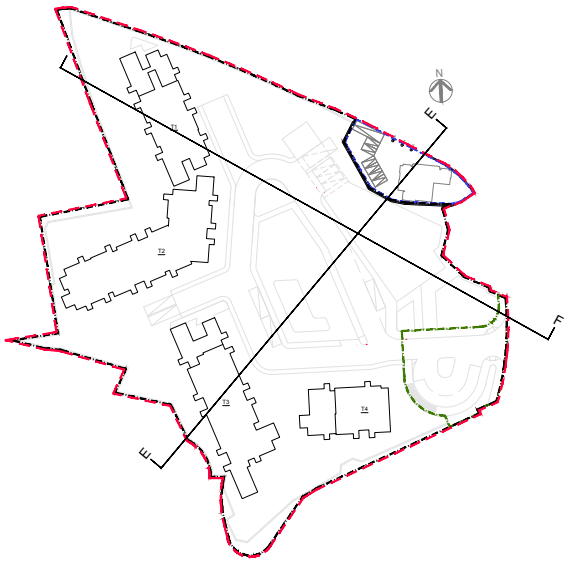
SCHEMATIC SECTION D

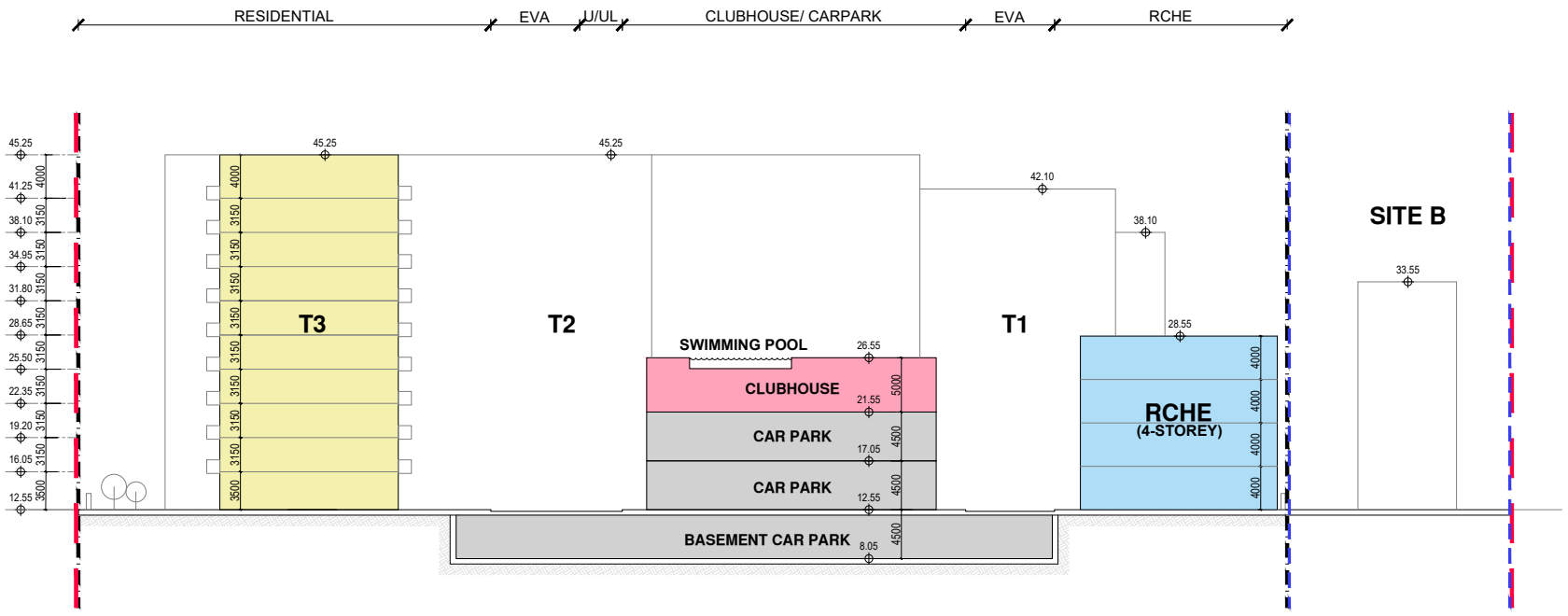
LEGEND

- CDA Zone Boundary
- Application Site Boundary

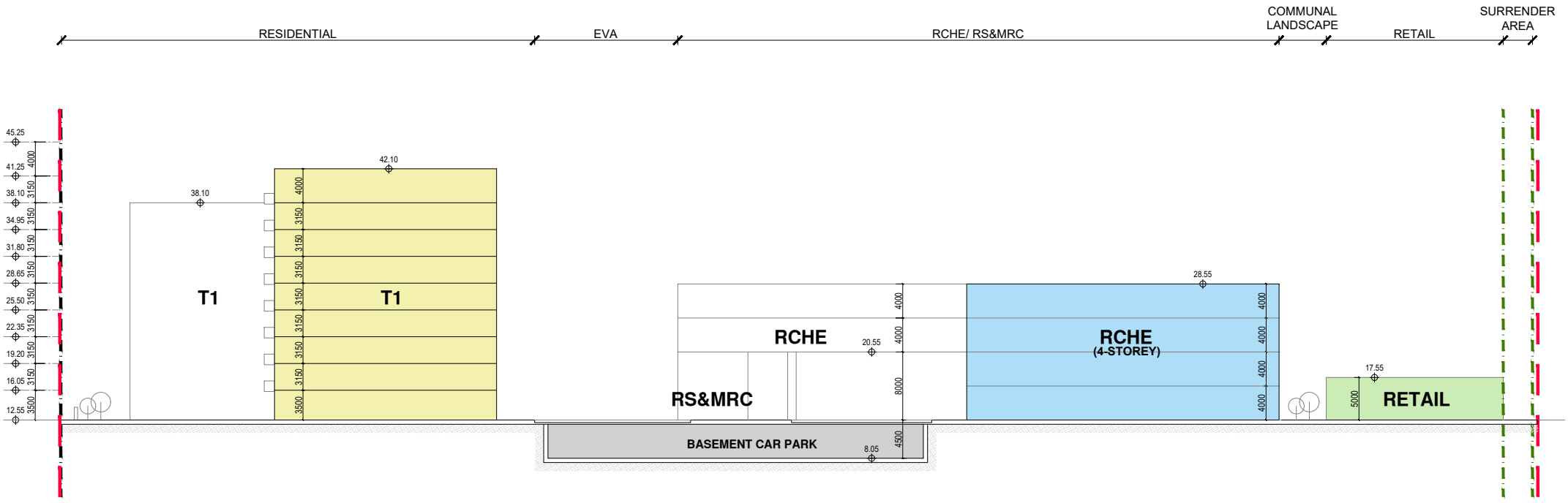
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION E



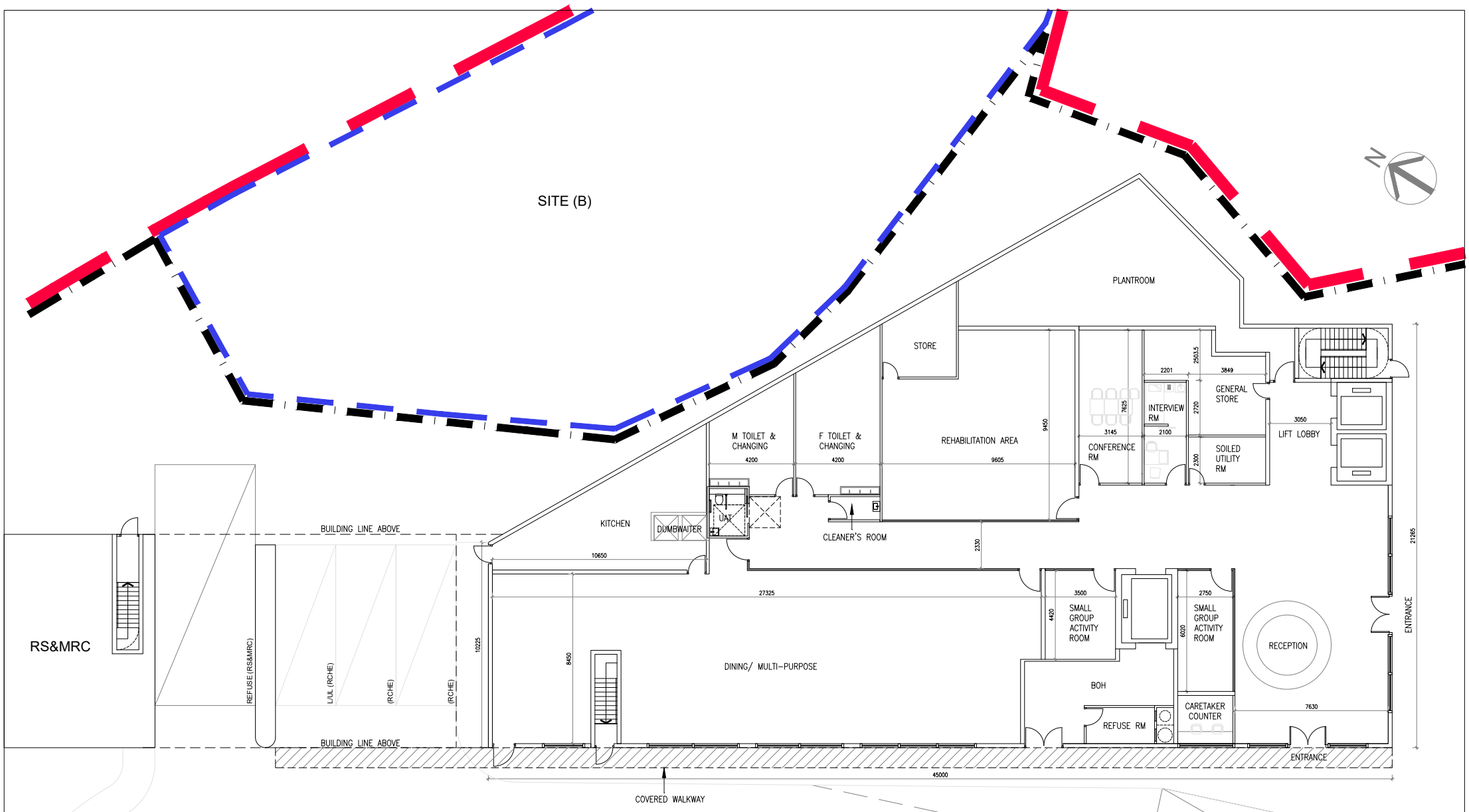
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LEGEND

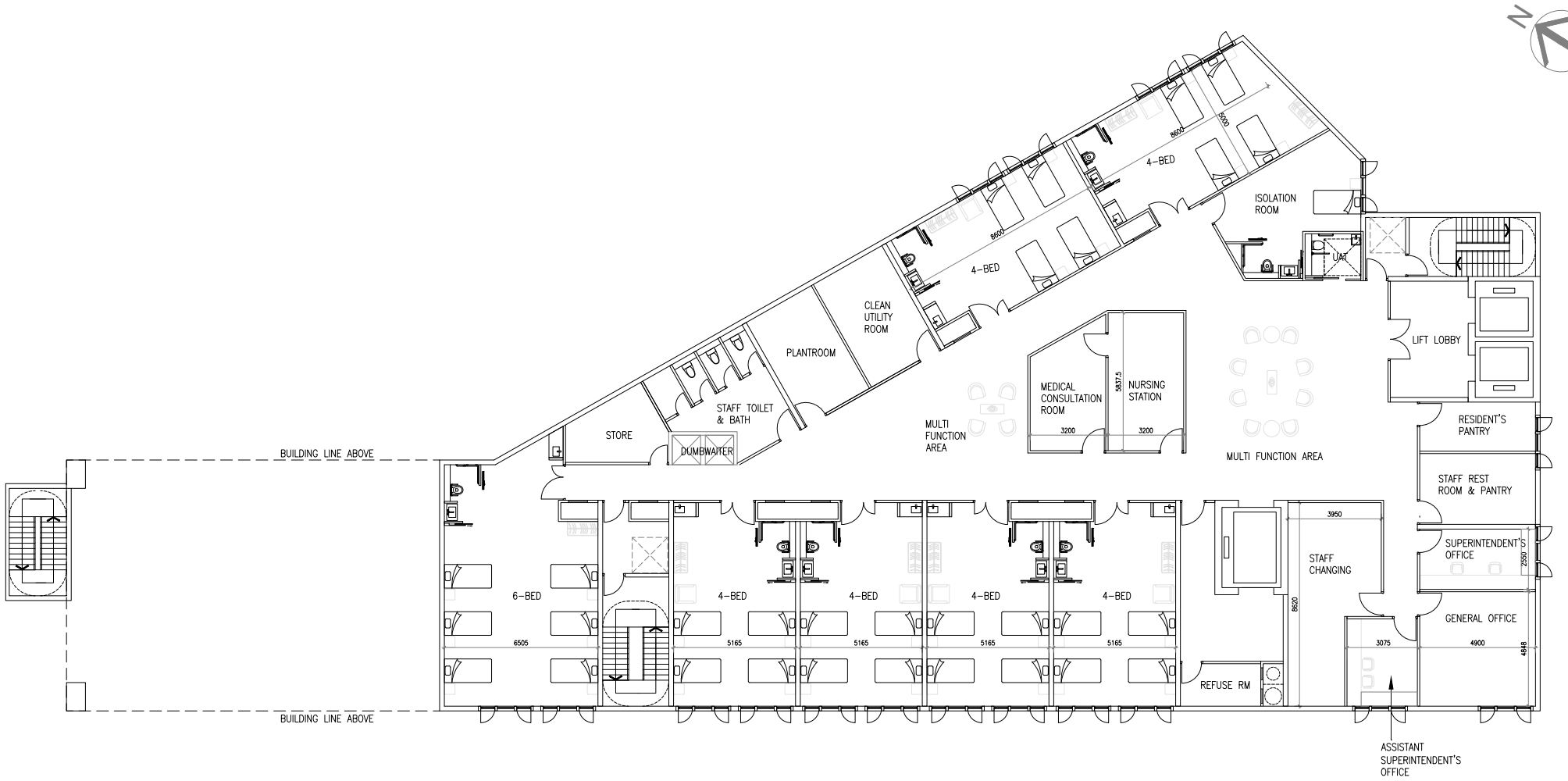
- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



RCHE GROUND FLOOR PLAN



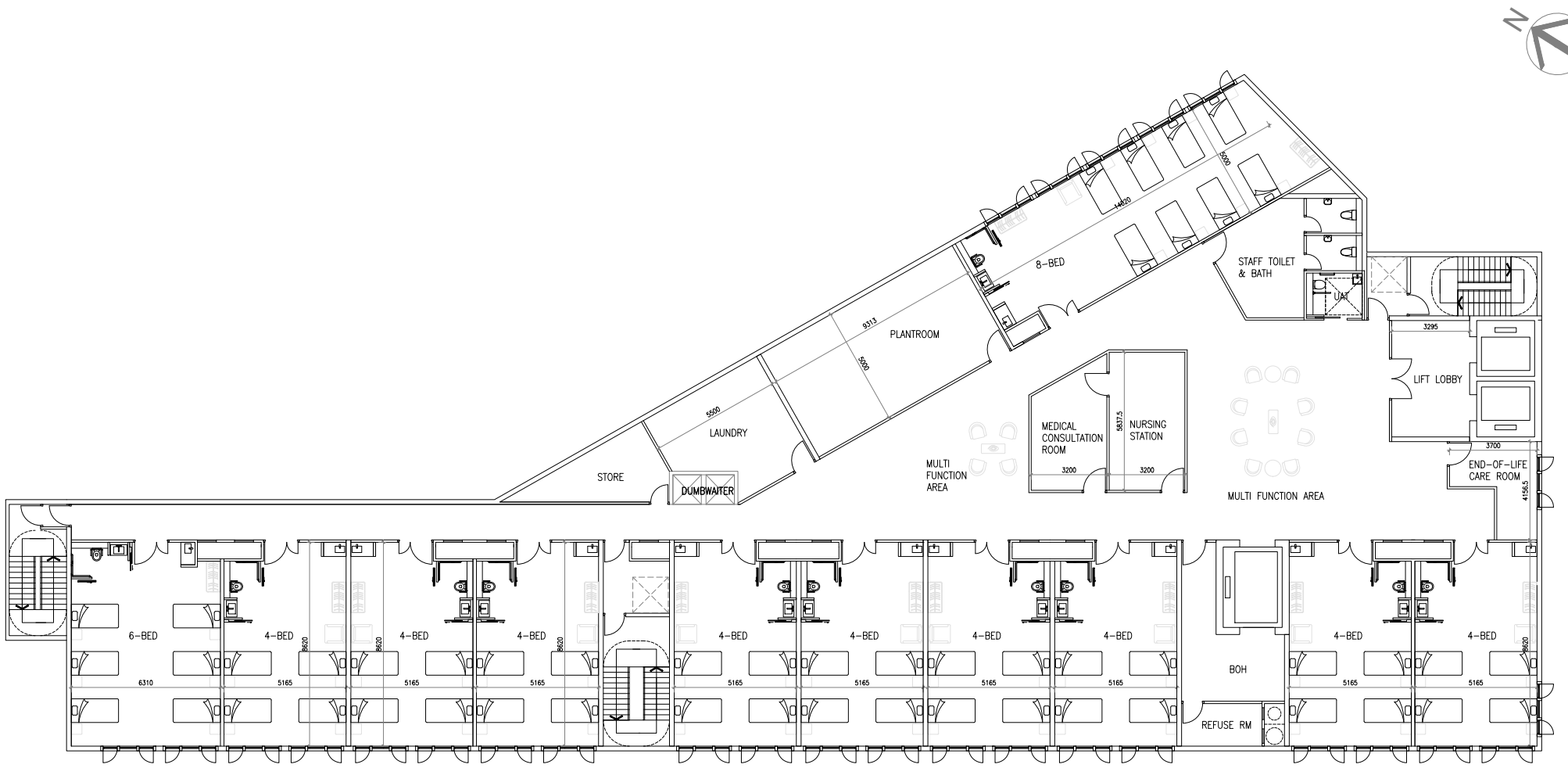
RCHE FIRST FLOOR PLAN

NUMBER OF BEDS: 30

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

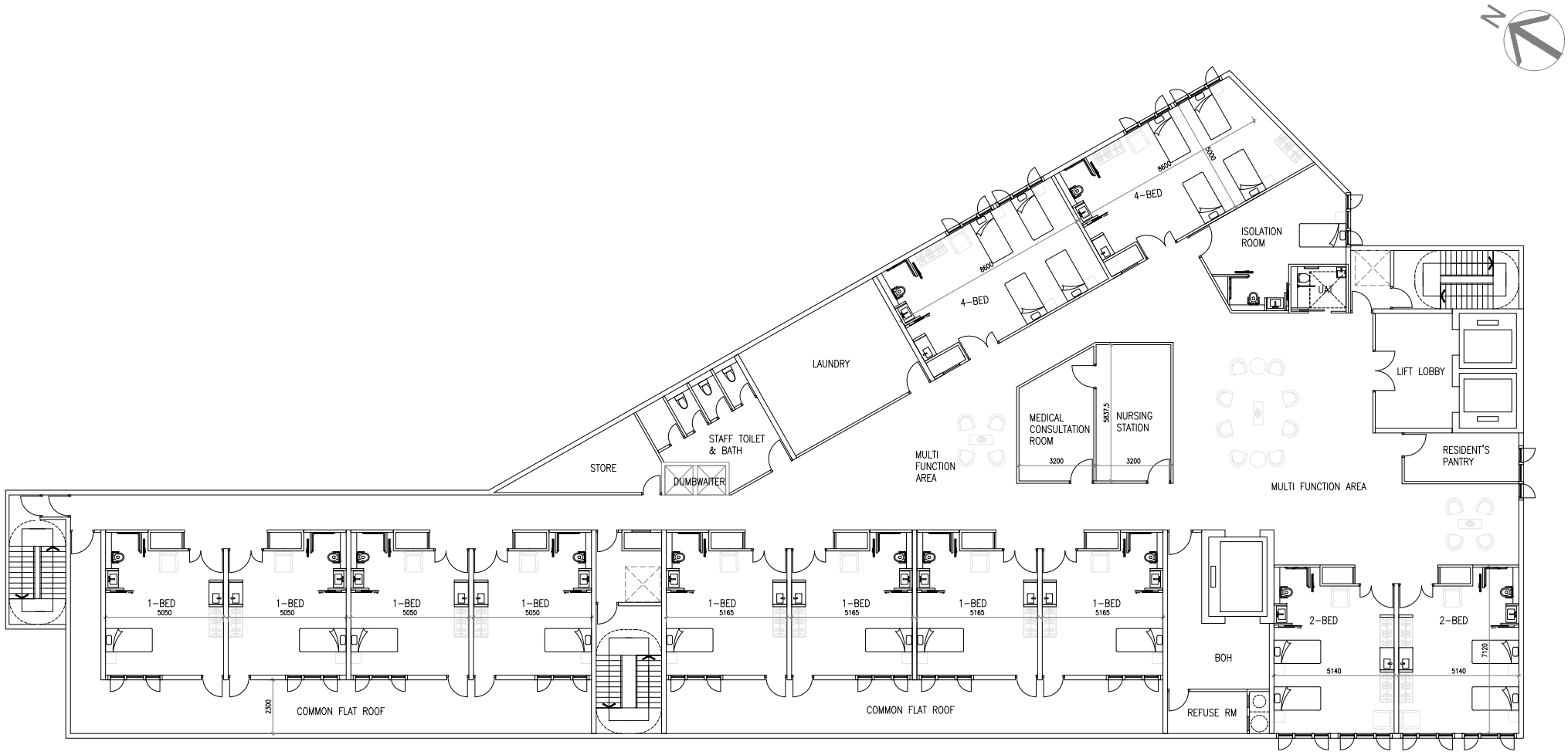
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



NUMBER OF BEDS: 50

RCHE SECOND FLOOR PLAN



NUMBER OF BEDS: 20

RCHE THIRD FLOOR PLAN

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS

APPENDIX B

Traffic Forecast

25/06/2026

Reference number CHK50808310/CHC/L2601018/sys

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

TRAFFIC IMPACT ASSESSMENT

Final Report

SYSTRA MVA

IDENTIFICATION TABLE	
Project	Section 16 Planning Application for Proposed Minor Relaxation of Plot Ratio and Building Height Restriction for Comprehensive Development in Hang Tau Tai Po, Kwu Tung South
Study	Traffic Impact Assessment
Type of document	Final Report
Date	25/06/2026
File name	HTTP S16 Rev TIA Report (L2601018)_20260625.docx
Reference number	CHK50808310/CHC/L2601018/sys

MVA Hong Kong Limited
22/F Genesis • 33-35 Wong Chuk Hang Road • Hong Kong
[redacted]

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1. INTRODUCTION

1.1 Background

1.1.1 The Application Site located at Hang Tau Road consists of various lots in D.D. 92 and D.D.94 and the adjoining government land at Hang Tau Tai Po, Kwu Tung South in Sheung Shui, with site area of about 17,990.9m^2. The site location is shown in **Drawing No. 1.1**.

1.1.2 A Section 12A (S12A application) planning application (application no. Y/NE-KTS/13) for dividing a "Comprehensive Development Area (CDA)" site into two areas and relaxing their plot ratio, building height and site coverage restrictions was approved by Town Planning Board (TPB) in December 2021. Such amendments to the CDA site have been reflected in the prevailing Kwu Tung South Outline Zoning Plan (OZP) as gazetted on 31 May 2024.

1.1.3 Under the proposed scheme (the previous scheme) in the approved S12A application in 2021, Area (a) of the CDA site consists of the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a residential care home for elderly (RCHE) with the plot ratio (PR) of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. Whilst, Area (b) of the CDA site was proposed in the scheme for a potential residential tower with 18 residential units at the domestic PR of 1.23. The master layout plan of previous scheme under the approved S12A application is attached in **Appendix A** for reference.

1.1.4 To well utilize the development potential, the MLP for Area (a) of the CDA site, i.e. the Application Site, with proposed minor relaxation of PR from 1.41 to 1.692 (the Proposed MLP) is developed by the Applicant. To enable the Proposed MLP, a Section 16 planning application (S16 application) is required in order to obtain permission from TPB.

1.1.5 MVA Hong Kong Limited was commissioned by the Applicant as a traffic consultant to carry out a traffic impact assessment in support of the S16 application for the Proposed MLP with minor relaxation of PR.

1.1.6 The purpose of this study is to review the traffic conditions and assess the potential traffic impact on the adjacent local road network caused by the Proposed MLP in the design year.

1.2 Study Objectives

1.2.1 The main objectives of this study are:

- To present the details on the Proposed MLP such as the proposed development parameters, access arrangement, internal transport provision, the set back for road widening as per the requirement in OZP as well as the proposed public transport facilities;
- To determine the existing traffic conditions in the vicinity of the Application Site by undertaking manual classified count traffic surveys;
- To study and assess the existing travel patterns, road and junction capacities in the local area adjacent to the application site;
- To identify the traffic generation from the Application Site under the Proposed MLP and carry out distribution and assignment of the generated traffic;
- To estimate the future traffic flows for the design year on the surrounding local road network;

- To assess the traffic impact due to the Proposed MLP on the surrounding local road network and junctions for the design year;
- To recommend traffic improvement measures to alleviate the foreseeable traffic problems on the surrounding local road networks, if necessary;
- To derive long term traffic forecast for Noise Impact Assessment (NIA) study purpose.

1.3 Structure of the Report

1.3.1 Following this introductory chapter, there are six further chapters.

1.3.2 **Chapter 2** – *The Proposed Master Layout Plan*, which presents the development schedule for the Proposed MLP in the subject S16 application. The proposed vehicular access arrangements, car parking, loading/unloading and layby provisions, set back for road widening, and the road widening scheme for improvement of pedestrian crossing will also be discussed.

1.3.3 **Chapter 3** – *Existing Traffic Conditions*, which describes the existing road network and public transport facilities in the vicinity of the application site, presents the summary of traffic count survey and assesses the existing traffic conditions.

1.3.4 **Chapter 4** – *Traffic Forecast*, which discusses the design year and the future scenarios for assessment in this study, anticipates the potential traffic generation and attraction of the application site under the Proposed MLP, summarises the methodology for future traffic forecasts, and presents the traffic forecast for the design year.

1.3.5 **Chapter 5** – *Traffic Impact Assessment*, which presents the findings of the traffic impact assessment in the future design year and recommends improvement measures if necessary.

1.3.6 **Chapter 6** – *Long Term Traffic Forecast for Noise Impact Assessment (NIA)*, which describes the forecasting methodology and presents the results of long term traffic forecast for NIA.

1.3.7 **Chapter 7** – *Summary and Conclusion*, which summarises the findings of the study and presents the conclusions regarding the traffic issues associated with the Proposed MLP.

2. THE PROPOSED MASTER LAYOUT PLAN

2.1 Site Location

2.1.1 The Application Site is located at Hang Tau Road in Hang Tau Tai Po, and it is situated to the west of Hang Tau Road and surrounded by low-rise village-type houses and temporary structures.

2.1.2 The Application Site together with the adjoining private lot and government land were rezoned to a CDA site in year 2018. Subsequently, an 12A application for dividing the Application Site into an area (namely Area (a)) separated with the adjoining private lot and the government land (namely Area (b)) was approved by TPB in December 2021.

2.2 Proposed Development Schedule

2.2.1 Under the previous scheme in the approved S12A application, the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a RCHE with the PR of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. The details of the previous scheme in the approved S12A application are summarized in **Table 2.1**.

2.2.2 To well utilize the development potential, a MLP for the development at the Application Site (the Proposed Development) with minor increase of PR by 20% from 1.41 to 1.692 is developed. The details of development schedule as proposed in this S16 application are presented in **Table 2.1**, and the Proposed MLP is presented in **Drawing No. 2.1**.

Table 2.1 Development Schedules

Development Schedule for Development at the Application Site			**Previous Scheme (Approved S12A in 2021)**	**Proposed MLP**
Site Area			17,990.9 m^2	
GFA	Domestic		22,087 m^2	26,554 m^2
	Non-domestic	Retail	406 m^2	319 m^2
		RCHE	2,777 m^2 (for 100 places in total)	3,567 m^2 (for 100 places in total)
		Total	3,183 m^2	3,886 m^2
	Overall	Overall	25,270 m^2	30,440 m^2
Plot Ratio	Domestic	Domestic	1.23	1.476
	Non-domestic	Non-domestic	0.18	0.216
	Overall	Overall	1.4	1.692
Total no. of Residential Blocks			3	4
Total no. of Flats			302	334
Average Unit Size (m^2)			73.14 m^2	79.50 m^2

2.2.4 The Proposed Development at the Application Site is tentatively scheduled to be completed by year 2031.

2.3 Access Arrangement

2.3.1 The current access points to the Application Site are located at Hang Tau Road and the single track access road to the north (namely Access Road A). Taking into consideration of accessibility, the future vehicular access point for the Proposed Development is proposed at Hang Tau Road where is at the same similar location of access for the site as proposed in the previous scheme of the approved S12A application. While, the existing access point on Access Road A will be no longer provided for the Application Site. The proposed access arrangement for the Proposed Development at the Application Site is shown in **Drawing No. 2.1.**

2.3.2 The swept path analysis for the ingress and egress of the Proposed Development are demonstrated in **Appendix B**.

2.4 Internal Transport Provision

2.4.1 The provision of internal transport facilities, i.e. car parking spaces and loading/unloading bays, for the Proposed Development are reviewed and proposed with reference to the guidelines stipulated in the latest Hong Kong Planning Standards & Guidelines (HKPSG).

2.4.2 Since the provision requirements for RCHE are not specified in HKPSG, the provision of parking spaces for private light buses and loading/unloading area are proposed with following the Social Welfare Department (SWD)'s ancillary requirements for RCHE as adopted in the previous approved S12A application, while the provision of car parking spaces are proposed with reference to the parking ratios of several previously approved planning applications with similar social welfare developments as listed in **Table 2.2**.

Table 2.2 Review on Car Parking Provision in the Similar Applications with RCHE

Application No.	Application Site Location	No. of Places / Beds	No. of Car Parking Spaces	Derived Parking Ratio
Y/NE-KTS/16	Kam Hang Road, Kwu Tung South	150	4	1 space per 38 places
A/FSS/288	Tin Ping Road, Sheung Shui	210	4	1 space per 53 places
A/YL-NSW/349	Nam Sang Wai, Yuen Long	240	11	1 space per 22 places
A/YL-TYST/870	Tai Tao Tsuen, Yuen Long	248	3	1 space per 83 places
A/YL/263	Ex-Hang Heung Bakery Factory, Yuen Long	380	8	1 space per 48 places
A/YL/276	Ma Tin Pok, Shap Pat Heung Road, Yuen Long	197	4	1 space per 49 places
A/YL/302	Tai Tong Road, Yuen Long	241	2	1 space per 121 places
A/YL-NSW/292	Pun Uk, Yuen Long	531	6	1 space per 89 places
A/SK-SKT/30	2 Hong Ting Road, Sai Kung	160	3	1 space per 53 places
A/SK-SKT/31	6 Hong Ting Road, Sai Kung	337	6	1 space per 56 places
A/SK-SKT/32	7 Hong Ting Road, Sai Kung	205	4	1 space per 51 places
A/SK-TMT/74	Tsam Chuk Wan, Sai Kung	110	2	1 space per 55 places

2.4.3 As shown in the **Table 2.2**, the ratios of car parking provision in the similar applications are ranged from 1 space per 22 places to 121 places, and therefore 5 nos. of car parking spaces for the proposed RCHE (i.e. a ratio of 1 space per 20 places) is considered reasonable. The proposed internal transport facilities are summarized in **Table 2.3**.

Table 2.3 Provision of Internal Transport Facilities

Transport Facilities		HKPSG Requirement	Flat Size in m^2 (FS)	Adjustment Factors			No. of Flat	Required Provision	Proposed Provision
				R1	R2	R3			
Residential	Residential Car Parking Spaces	Global Parking Standard of 1 space per 4-7 flats x Adjustment Factors (R1) x (R2) x (R3)	40 < FS ≤ 70	1.2	1[(1)]	1.1[(2)]	228	43-75	**160**
			70 < FS ≤ 100	2.4			73	28-48	
			100 < FS ≤ 130	4.1			33	21-37	
			Total				**334**	**92-160**	
	Visitor Car Parking Spaces	5 spaces per block	4 Blocks					20	20
	Motorcycle Parking Spaces	1 space per 100 – 150 flats	334 flats					2 - 3	3
	Loading/ unloading bays	1 bay per block	4 Blocks					4	4
Retail Shops (319m^2 GFA)	Car Parking Spaces	1 space per 150 – 300 m^2 GFA						1-2	2
	Loading/ unloading bays	1 loading/unloading bay for every 800 to 1200 m^2, or part thereof GFA						1	1
RCHE (100-p in total)	Car Parking Spaces	(Not specified in HKPSG)						-	5[(6)]
	Parking Spaces for private light buses [(3)]							2[(7)]	2
	Shared loading/ Unloading area [(4)(5)]							1[(7)]	1

Notes:
(1) R2 = 1 as the site is outside 500m-radius of rail station.
(2) R3 = 1.1 for the Proposed Development with plot ratio 1.692 (i.e. 1 < PR ≤ 2).
(3) Parking space measuring 8m x 3m with minimum headroom of 3.3m as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13)
(4) A shared loading / unloading area for private light buses and ambulance/other vehicles as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13).
(5) Loading/unloading area measuring 9m x 3m with minimum headroom of 4.7m as per SWD's requirements in the previous approved S12A application (no. Y/NE-KTS/13).
(6) Including 1 no. of accessible car parking space.
(7) Since no change in total places provided at the RCHE, the provisions as adopted in the previous approved S12A application (no. Y/NE-KTS/13) are followed.
(8) 3 nos. of accessible car parking spaces will be reserved for total number of parking spaces in the development ranged 151-250 nos. in accordance with Buildings Department's Design Manual: *Barrier Free Access 2008 (2024 Edition).*
(9) In addition to the proposed provisions in **Table 2.3**, one space for refuse collection will be provided in the Proposed Development.

2.5 Development Set Back and Road Widening Scheme at Hang Tau Road

Road Widening Scheme in Approved S12A Application

2.5.1 In the Explanatory Statement in the OZP, it is remarked that the future development in the subject CDA zone should be set back to make allowance for future widening of Hang Tau Road, such as provision of standard footpaths and 7.3m wide single two-way carriageway in accordance with requirement of HKPSG.

2.5.2 For fulfilment of the set back requirement, development set back was taken into account in the previous scheme of the approved S12A application.

2.5.3 Besides, the previous road widening scheme, as exhibited in **Appendix A**, also included the provisions of a proper pedestrian crossing facility, an on-street layby for Green Mini-bus (GMB) and a vehicle turnaround facility in a form of mini-roundabout at Hang Tau Road for enhancement of pedestrian accessibility as well as the public transport facility.

Revised Road Widening Scheme

2.5.4 Having had further discussion with Transport Department subsequent to the approval of the previous S12A application, the road widening scheme is further reviewed and revised for further enhancement.

2.5.5 In the latest road widening scheme as proposed under this application, the intersection of the access to the development and existing Hang Tau Road is converted from a mini-roundabout into a priority T-junction. Besides, further set back of the site is also proposed for the relocation of the GMB layby and vehicle turnaround facility from Hang Tau Road, as shown in **Drawing No. 2.2**.

2.5.6 Notwithstanding the above changes, road widening of Hang Tau Road section abutting the Application Site for 7.3m carriageway with 3m footpath alongside remain in the revised scheme. Meanwhile, a pedestrian crossing facility at Hang Tau Road has also incorporated.

2.5.7 The revised road widening scheme will be implemented by this project, and managed and maintained by the relevant government departments upon completion of widening work.

Enhancement of Public Transport Facility

2.5.8 Given that the current public transport service for the Hang Tau Tai Po area is limited with one GMB route no. 50K only and there is absent of proper layby along Hang Tau Road, the proposed layby under the revised road widening scheme would serve future enhancement of public transport service (i.e. increase of GMB route) for the existing and future residents in the area. Meanwhile, the proposed vehicle turnaround facility in the scheme would facilitate a proper turnaround facility to allow GMB turns around without the need of passing through the narrow roads in Hang Tau Village.

2.5.9 Together with the proposed pedestrian crossing at Hang Tau Road, the proposed road widening scheme would offer a more accessible and safer public transport facility to serve the residents in the Hang Tau Tai Po area as demonstrated in **Drawing No. 2.3**.

2.5.10 According to the RNTPC Paper of the approved S12A application (paper no. Y/NE-KTS/13C), it is noted that the Commissioner for Transport (C for T) had a comment on the proposed GMB layby in the road improvement scheme that the GMB layby should be 26m long to accommodate 3 GMBs. In response to the previous comment on the GMB layby from C for T, the revised road widening scheme proposed in this S16 application has incorporated such requirement, as shown in **Drawing No. 2.2**.

2.5.11 With the proposed new public transport facilities (i.e. the 26m long GMB layby and vehicle turnaround facility), provision of short working departures of the GMB route no. 50K to/from MTR Sheung Shui station with the existing intermediate stops would be possible by utilizing the proposed GMB layby as the terminus of the route, as illustrated in **Drawing No. 2.4**.

2.5.12 Similar to the road widening scheme, the public transport facility will be implemented by this project, and managed and maintained by the government upon completion.

2.5.13 The swept path analysis for the proposed GMB layby are demonstrated in **Appendix B**.

3. EXISTING TRAFFIC CONDITIONS

3.1 Existing Road Network

3.1.1 The existing local road network is shown in **Drawing No. 3.1**.

3.1.2 The Application Site is mainly served by the local distributors Kwu Tung Road, Kam Hang Road and Hang Tau Road.

3.1.3 Kwu Tung Road is a single two-lane local distributor providing local connection between Kwu Tung and San Tin areas. Its eastern end connects with Castle Peak Road – Kwu Tung, while its western end connects with Castle Peak Road – San Tin.

3.1.4 Kam Hang Road is a single two-lane local distributor branch off from Kwu Tung Road. It provides local access for residents at Casas Domingo and Ascot Park, and it connects Kam Tsin Road at the eastern end.

3.1.5 Hang Tau Road is a single two-lane local distributor widened from a single track access road. It connects Kam Hang Road at the northern end and provides the vehicular access to and from the Application Site and the Kwu Tung South area. The local access roads branched-off from Hang Tau Road in the south are currently serving the accesses of the scattered low-rise village housing in the Hang Tau Tai Po area.

3.2 Existing Public Transport Services

3.2.1 The Application Site is located in rural area remote from railway station, and the travel distance between the application site and the MTR Sheung Shui Station is about 4km. The area in the vicinity of the Application Site is only served by one Green Minibus (GMB) service i.e. route no. 50K, providing service along Hang Tau Road.

3.2.2 Other than the GMB route no. 50K, there are also a GMB service route no. 50A (Kwu Tung South - MTR Sheung Shui Station) and a franchised bus route no. 76K (Sheung Shui Ching Ho Estate Bus Terminus – Yuen Long Long Ping Estate) providing services for Kwu Tung area. However, the walking distance from the Application Site to the nearest GMB stop and bus stop is about 1 km.

3.2.3 The details of the abovementioned public transport services are listed in **Table 3.1** and indicated in **Drawing No. 3.2**.

Table 3.1 Existing Public Transport Services

Route No.	Origin – Destination	Bound	Operation Hours	Headway (minutes) [1]	Average Occupancy Rates[1]
GMB Route					
50A	Kwu Tung South – MTR Sheung Shui Station	Kwu Tung South	05:40-23:00	10 – 15 [10 – 15]	90%[2] [80%]
		Sheung Shui Station	05:40-23:00	10 – 12 [10 – 15]	95%[3] [60%]
50K	Hang Tau – MTR Sheung Shui Station	Hang Tau	04:45-00:30	3 – 12 [5 – 25]	95%[2] [65%]
		Sheung Shui Station	04:55-00:45	3 – 12 [5 – 25]	95%[3] [35%]
Franchised Bus Route (KMB)					
76K	Ching Ho Estate Bus Terminus – Long Ping Estate	Ching Ho Estate	05:45-23:20	25 – 30 [20 – 30]	50%[2] [15%]
		Long Ping Estate	06:00-23:30	20 – 30 [20 – 30]	50%[3] [40%]

Notes : (1) Numbers in bracket [ ] refer to non-peak hours (time periods from 9:30 to 17:00)
(2) Critical peak period was observed in PM during the period of 17:00 – 19:00
(3) Critical peak period was observed in AM during the period of 7:30 – 9:30

3.2.4 Although the GMB route no. 50A and the franchised bus route no. 76K are providing services for the Kwu Tung area, their stops' locations are relatively remote from the Application Site and its adjacent village housing at Hang Tau Tai Po as shown in **Drawing No. 3.2**. In contrast, the GMB route no. 50K provides stops along Hang Tau Road with terminus at Hang Tau Village which is considered the main public transport service (except for taxi) for the local residents in the Hang Tau and Hang Tau Tai Po areas.

3.2.5 From site observations, it is noted that the existing passenger outbound demand at the terminus of GMB route no. 50K in Hang Tau Village has already occupied over 90% capacity of the GMB route. To allow future enhancement of GMB services for the Proposed Development as well as the other local residents in the Hang Tau Tai Po area, a provision of GMB layby has been included in the proposed road widening scheme, as discussed in the previous **Section 2.5**.

3.3 Identified Junctions for Assessment

3.3.1 Traffic count surveys were carried out to examine 4 junctions along the ingress and egress traffic routes of the Application Site. The surveys were undertaken between the hours of 7:30am to 9:30am and 5:00pm to 7:00pm on a typical weekday in May 2024. The locations of these junctions are identified in **Drawing No. 3.1** and **Table 3.2** below.

Table 3.2 Surveyed Key Junctions for Assessment

Junction No.	Junction	Method of Control	Drawing No.
J1	Kwu Tung Road / Kam Hang Road	Priority	3.3
J2	Kam Hang Road / Hang Tau Road	Priority	
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	3.4
J4	Hang Tau Road / Access Road A	Priority	3.5

3.3.2 Observed traffic data indicates that the AM peak hour and PM peak hour are from 7:45am to 8:45am and 5:15pm to 6:15pm respectively and the surveyed traffic flows are shown in **Drawing No. 3.6**. The existing layouts of the junctions to be assessed are shown in **Drawing Nos. 3.3 to 3.5**.

3.3.3 To evaluate the existing traffic condition in the vicinity of the Application Site, the operational performance of the identified junctions were assessed based on the observed traffic flows and their existing junction layouts and control method. The results are summarised in **Table 3.3**.

Table 3.3 Existing Junction Performance

Junction No.	Junction	Method of Control	2024 DFC(1)	
			AM Peak	PM Peak
J1	Kwu Tung Road / Kam Hang Road	Priority	0.59	0.39
J2	Kam Hang Road / Hang Tau Road	Priority	0.30	0.24
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	0.08	0.09
J4	Hang Tau Road / Access Road A	Priority	0.06	0.08

Note: (1) DFC = Design flow / capacity ratio for a priority junction

3.3.4 The results presented in **Table 3.3** indicate that all assessed junctions are currently operating with adequate capacities during the both morning peak and evening peak. The details of junction assessments are attached in **Appendix C**.

4. TRAFFIC FORECAST

4.1 Design Year and Future Scenarios to be Assessed

Design Year

4.1.1 It is anticipated that the Proposed Development would be completed by year 2031. In order to assess the impact of the Proposed Development related traffic on the local road network, year 2034 (i.e. anticipated completion year 2031 + 3 years) is adopted as the design year for traffic impact assessment study.

Future Scenario to be Assessed

4.1.2 To evaluate the effect to the surrounding road junctions due to the Proposed Development under the Proposed MLP with minor relaxation of PR, the below future scenarios will be assessed:

- **Reference Scenario in Year 2034** – Future scenario in year 2034 with the previous scheme for the Application Site in the approved S12A application (i.e. without the proposed relaxation of GFA); and
- **Design Scenario in Year 2034** – Future scenario in year 2034 with the Proposed MLP for the Application Site (i.e. with the proposed relaxation of GFA).

4.2 Traffic Forecasts for Reference Scenario

Background Traffic Growth

4.2.1 To derive the year 2034 reference traffic flows, the background growth in traffic should be reviewed and identified for the area, which are made reference to the historical growth trend and the population and employment projections.

4.2.2 Castle Peak Road – Kwu Tung and Kwu Tung Road are the two nearest traffic count stations to the Application Site in Transport Department's latest Annual Traffic Census (ATC). The average annual daily traffic (A.A.D.T) data from year 2013 to 2024 as reported in the latest ATC are summarized in **Table 4.1**.

Table 4.1 Average Annual Daily Traffic (A.A.D.T.) Data of ATC Station no. 6602 & 6606

ATC Stn. No.	Road	AADT (Vehicle/Day)												Derived Growth Rate (% p.a.)
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2024/ 2013
6602	Castle Peak Rd - Kwu Tung	10,670	11,120	10,560	10,690	11,540	10,800	10,660	11,000	11,000	10,480	10,060	9,900	-0.68%
6606	Kwu Tung Rd	2,980	3,290	3,670	4,070	4,450	4,630	4,610	4,050	4,290	4,280	4,480	4,060	2.85%
Total		**13,650**	**14,410**	**14,230**	**14,760**	**15,990**	**15,430**	**15,270**	**15,050**	**15,290**	**14,760**	**14,540**	**13,960**	**+0.20%**

Source: The Annual Traffic Census 2013 – 2024 as available on TD's website

4.2.3 The A.A.D.T. flows in **Table 4.1** show that the overall average traffic growth on the road sections in the vicinity of the Application Site decreased at the rate of +0.2% per annum for year 2013 to 2024.

4.2.4 Other than the historical trend, the population and employment estimates from Territorial Population and Employment Data Matrix (TPEDM) as available on Planning Department's website are also reviewed. The population and employment estimates for North District in year 2021, 2026 and 2031 are presented in **Table 4.2**.

Table 4.2 Population and Employment Estimates from TPEDM

North District	Estimates from TPEDM			Growth Rate (% p.a.)	
	2021	2026	2031	2026/2021	2031/2026
Population	309,650	352,000	435,550	+2.6%	+4.4%
Employment	84,150	104,050	144,850	+4.3%	+6.8%
Total	**393,800**	**456,050**	**580,400**	**+3.0%**	**+4.9%**

Source: 2021 - based Territorial Population and Employment Data Matrix as available on Planning Department's website

4.2.5 As presented in **Table 4.2**, the growth rates as derived from the TPEDM estimates for North District from year 2021 to 2031 are ranged from +3% to +4.9% p.a.

4.2.6 By considering the extensive coverage by North District in TPEDM, it can be seen that the increment in population and employment between 2021-2031 have been accounted by the intake of Kwu Tung North New Development Area (KTN NDA) and Fanling North New Development Area (FLN NDA).

4.2.7 Whilst the application site is situated near the southern fringe of Kwu Tung South, the major access routes and road network for the application site would be substantially different from those by the development traffic of KTN NDA and FLN NDA.

4.2.8 Therefore, the TPEDM growth rate may not be representative to reflect the background traffic growth for the local road network in the vicinity of the Kwu Tung South area.

4.2.9 In view of the above, a traffic growth rate of +1% per annum as referred to the rounded growth rate from ATC is adopted for this study to reflect the background traffic growth in the area from year 2024 to 2034.

Development Traffic of the Application Site in Reference Scenario

4.2.10 In the reference scenario, it is assumed that the Application Site would be developed in accordance with the previous scheme in the approved S12A application, i.e. the development schedule without the proposed minor relaxation of GFA as presented in **Table 2.1**. The estimated potential traffic generation and attraction of the Application Site in Reference Scenario are summarized in **Table 4.3**.

Table 4.3 Estimated Traffic Generation and Attraction of the Application Site in Reference Scenario of 2034

Development at Application Site In Reference Scenario (Approved S12A in 2021)	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Residential - 302 flats				
Adopted Trip Rates(1) (pcu/hr/flat)	0.0888	0.0515	0.0356	0.0480
Estimated Trips (pcu/hr)	27	16	11	14
Retail - 406 m² GFA				
Adopted Trip Rates(2) (pcu/hr/100m² GFA)	0.2296	0.2434	0.3100	0.3563
Estimated Trips (pcu/hr)	1	1	1	1
RCHE – 100 places in total				
Adopted Trip Rates(3) (pcu/hr/place)	0.0385	0.0346	0.0308	0.0308
Estimated Trips (pcu/hr)	4	3	3	3
Total Trips (pcu/hr)	**32**	**20**	**15**	**18**

Notes: (1) TPDM mean trip rates for Private Housing: High-Density /R(A) with Ave. Flat Size of 70m²
(2) TPDM mean trip rates for retail / Shopping Complex

(3) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted.

4.2.11 Apart from the development traffic of the Application Site, the potential increases in GMB traffic due to the proposed provision of GMB layby under the approved S12A application are also taken into account.

4.2.12 Taking into account there is only one GMB route no.50K currently serving the areas, it was anticipated in the approved S12A application that a GMB route in addition to the existing service would be provided upon availability of the proposed GMB layby at Hang Tau Road. With the assumption on an additional GMB route will be operated in 3mins headway during the peak hours which is similar to the peak headway of the existing route No.50K, it was anticipated that additional GMB traffic of about 30 pcu/hr (i.e. [60mins/3mins headway] x 1.5 pcu factor) would be generated on Hang Tau Road.

Other Planned/Potential Future Developments

Planned/Potential Future Developments in the Vicinity

4.2.13 It is noted that there are future residential developments planned in the vicinity of the Application Site including the adjoining Area (b) of the same CDA site. The locations of these future residential developments are indicated in **Drawing No. 4.1,** and the adjacent future developments of the Application Site are also indicated in **Drawing No. 4.2.** Their details are summarised in **Table 4.4**.

Table 4.4 Planned / Potential Future Developments in the Vicinity

Site	Planned / Potential Future Developments in the Vicinity (1)	Details(2)
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)	• Domestic plot ratio 1.23 • A total GFA of about 900m^2 with 18 Flats
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)	• Plot ratio not more than 0.48 • A total GFA of 5,808m^2 with 42 Flats
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)	• Plot ratio not more than 0.4 • A total GFA of not more than 518.32m^2 with 2 Houses
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)	• Plot ratio 0.48 • A total GFA of about 2,700m^2 with 19 Flats
E	Residential Care Home for the Elderly at Lot No. 953 RP (Part) in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/16)	• Plot ratio about 2.94 • A total GFA of about 5,025m^2
F	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/17)	• Plot ratio about 2.4 • A total GFA of about 23,732m^2 with 360 Flats
G	Private Residential Development at Various Lots in D.D. 92 and Adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/14) – Partially Approved Site A	• Plot ratio not more than 3 • A total GFA of about 62,529m^2 with 971 Flats
H	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kwu Tung South (A/NE-KTS/565)	• Plot ratio about 2.012 • Domestic GFA about 39,400m^2 with 1,062 Flats
I	Comprehensive Residential Development with Commercial and Social Welfare Facilities at Lot 2579 in D.D. 92, Kwu Tung South (A/NE-KTS/506)	• Plot ratio about 3 • Domestic GFA not more than 112,680m^2 with 2,589 Flats

Notes: (1) Locations are indicated in **Drawing Nos. 4.1** and **4.2.**
(2) Refer to information as available from the Statutory Planning Portal 3 by Town Planning Board.

4.2.14 According to the available information from TPB's website, it is noted that the planned/potential future residential developments as listed in **Table 4.4** would be completed in or before year 2032, and therefore the traffic induced by these planned future developments will be taken into account in the traffic forecast.

4.2.15 To evaluate the potential traffic induced by the planned future residential developments in in the vicinity, the traffic trip rates for the residential development as stipulated in Transport Planning & Design Manual (TPDM) and the consultant's in-house trip rates are referred. The adopted trip rates and the estimated potential traffic generation and attraction of these planned future development are presented and summarized in **Table 4.5**.

Table 4.5 Adopted Trip Rates and Estimated Trips for the Planned / Potential Future Developments in the Vicinity

		AM Peak Hour		PM Peak Hour	
		Generation	**Attraction**	**Generation**	**Attraction**
Site A – 18 Flats at avg. size of 50m²					
Adopted Trip Rates (pcu/hr/flat)(1)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**1**	**1**	**1**	**1**
Site B – 42 Houses at avg. size of 138.3m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**13**	**9**	**9**	**9**
Site C – 2 Houses at avg. size of 259.2m²					
Adopted Trip Rates (pcu/hr/flat)(3)		0.3524	0.2837	0.2842	0.3948
Estimated Trips (pcu/hr)		**1**	**1**	**1**	**1**
Site D – 19 House at avg. size of 142.1m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**6**	**4**	**4**	**4**
Site E – Proposed Residential Care Home for the Elderly with 150 beds					
Elderly Home 150 places	Adopted Trip Rates (pcu/hr/place)(4)	0.0385	0.0346	0.0308	0.0308
	Estimated Trips (pcu/hr)	6	5	5	5
Site F – 360 Flats at avg. size of 65.9m²					
Residential Portion 360 Flats	Adopted Trip Rates (pcu/hr/flat)(5)	0.0888	0.0515	0.0356	0.0480
	Estimated Trips (pcu/hr)	32	19	13	17
Site G - 971 Flats at avg. size of 64.4m²					
Adopted Trip Rates (pcu/hr/flat)(5)		0.0888	0.0515	0.0356	0.0480
Estimated Trips (pcu/hr)		**86**	**50**	**35**	**47**
Site H – 1,062 Flats at avg. size of 37.1m²					
Estimated Trips (pcu/hr)(6)		65	45	30	40
Site I – 2,589 Flats at avg. size of 43.5m²					
Residential Portion 2,589 Flats	Adopted Trip Rates (pcu/hr/flat)(1)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	186	110	74	96
Enhancement of Public Transport Services for Sites E, F, H and I					
Public Transport Service for Site E & F	Adopted Trip Rates	-	-	-	-
	Estimated Trips (pcu/hr)(7)	39	39	39	39
Public Transport Service for Site I & H	Adopted Trip Rates	-	-	-	-
	Estimated Trips (pcu/hr)(8)	39	39	39	39

Notes:
(1) TPDM mean trip rates for private housing with average flat size of 60m² adopted for house development
(2) TPDM upper trip rates for private housing with average flat size of 140m² adopted for house development
(3) TPDM upper trip rates for private housing with average flat size of 240m² adopted for house development
(4) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted
(5) TPDM mean trip rates for private housing with average flat size of 70m² adopted for medium rise residential development
(6) Refer to the development trips adopted in the TIA of the latest approved application no. A/NE-KTS/565 from the Town Planning Board
(7) Refer to information on the approved application no. Y/NE-KTS/16 and Y/NE-KTS/17 as inspected from the Town Planning Board
(8) Refer to information on the approved application no. Y/NE-KTS/15 and A/NE-KTS/506 as inspected from the Town Planning Board

Other Planned/Potential Future Developments in North District

4.2.16 Other than the planned/potential developments in the vicinity of the Application Site as listed in the above **Table 4.4**, it is also noted that there are also various planned/potential future developments in the North District including the developments at Queen's Hill, FLN NDA and KTN NDA.

4.2.17 As mentioned in **paragraph 3.1.2 in Section 3.1**, the Application Site is mainly served by the local distributors Kwu Tung Road, Kam Hang Road and Hang Tau Road, which the major access routes would be substantially different from the development traffic of the other planned/potential future developments in North District. Thus, the future traffic of these other planned/potential future developments on the local distributors in the vicinity of the Application Site should be insignificant.

4.2.18 Nevertheless, traffic flows of the other planned/potential future developments in North District have also been revised and taken into consideration into the Reference Scenario for a conservative approach. The details and the estimated traffic of the other planned/potential future developments in North District are presented in **Tables 4.6** and **4.7** respectively.

Table 4.6 Other Planned / Potential Future Developments in North District

Site	Planned Future Developments in North District [1]	Details
Planned/Potential Private Developments		
J	Private Residential Development at Lots 684 RP, 705 RP, 706 RP, 709 RP (Part), 711 RP (Part), 712, 713 RP, 714 RP, 715, 716, 717 RP (Part), 718 RP (Part), 719, 721 RP (Part) and 2158 RP (Part) in D.D. 92 and adjoining Government Land, Kwu Tung North (Y/KTN/2)	Southern Portion • Domestic plot ratio 3 • Domestic GFA of 20,271 m^2 with 478 Flats[2] Northern Portion • Domestic plot ratio 1.1 • Domestic GFA of 9,517.2 m^2 with 49 Houses[2]
K	Private Residential Development at Lot No. 4076 RP in DD91, 663 Fan Kam Road, Fanling	765 Flats[3]
L	Private Residential Development at Sheung Shui Lot 2 RP and adjoining Government land, New Territories (Y/FSS/19)	• Domestic plot ratio of about 4.3 • Domestic GFA of 128,401.87 m^2 with 969 Flats and 100 beds in RCHE[2]
M	Private Residential Development at Fanling Area 40 (Y/FSS/13)	• Domestic plot ratio 5.46 • Domestic GFA of 19,750 m^2 with 300 Flats[2]
N	Private Residential Development at Various Lots in D.D. 51 and Adjoining Government Land, Fanling, New Territories (Y/FSS/18)	• Domestic plot ratio of not more than 5 • Domestic GFA of about 66,155 m^2 with 1,638 Flats and 120 beds in RCHE[2]
O	Private Residential Development at Fanling Area 17 (Fan Garden) Sites B1 & B2	• Domestic plot ratio of not more than 6 • 1,600 Flats[4]
Other Planned Public Housing Developments		
P1 & P2	Kwu Tung North New Development Area & Fanling Nort New Development Area	• Public Housing: 57,500 Flats • Private Housing: 28,700 Flats • Commercial GFA of 554,000 m^2[5]
P3	Planned Public Housing at Po Shek Wu Road, Sheung Shui, FSS Area 4	• 1,850 Flats • Commercial GFA of 3,000 m^2[6]

Table 4.6 Other Planned / Potential Future Developments in North District (Cont'd)

Site	Planned Future Developments in North District[1]	Details
P4	Planned Public Housing Development in Sheung Shui Areas 4 and 30 (Site 1 & 2)	Site 1 • 2,088 Flats • Retail GFA of 400 m^2[7] Site 2 • 1,556 Flats • Retail GFA of 700 m^2[7]
P5	Planned Public Housing Development at Fanling Area 36 Phase 4 (Ching Ho Extension)	• 772 Flats • Retail GFA of 2,600 m^2[8]
P6	Planned Public Housing Development at Ching Hiu Road, Sheung Shui (Site B in OZP no. S/FSS/25)	620 Flats[9]
P7	Planned Public Housing Development at Tai Tau Leng, Sheung Hui (Site C1 in OZP no. S/FSS/25)	3,100 Flats[10]
P8	Planned Public Housing Development at Choi Whun Street, Sheung Shui (Site D1 & 2 in OZP no. S/FSS/25)	2,330 Flat[11]
P9	Planned Public Housing Development near Queen's Hill	4,030 Flats[12]
P10	Planned Subsidised Housing Site at Jockey Club Road, FSS Area 11	640 Flats[13]
P11	Planned Public Housing Development at Fanling Area 17 (Fan Garden) Site A	8,300 Flat[14]
P12	Planned Public Housing Development at Fanling Area 48	4,200 Flat[15]
P13	Planned Public Housing Development at San Wan Road, Fanling	450 Flats[16]

Notes:
(1) Locations are indicated in **Drawing No. 4.1**
(2) Refer to information as available from the Statutory Planning Portal 3 by Town Planning Board.
(3) Refer to information on Particulars of Applications for Presale Consent and Consent To Assign Pending Approval as at 30/04/2024 by Lands Department.
(4) Refer to information on Discussion Papers No. 45/2021 as available on North District Council of HKSAR's website
(5) Refer to information on LC Paper No. CB(1)341/2024(03) as discussed by the Panel on Development of Legislative Council on 26 March 2024.
(6) Refer to information on Planning Brief (May 2019) from Hong Kong Housing Authority
(7) Refer to information on Addendum to the Approved Planning Brief (July 2021) from Hong Kong Housing Authority
(8) Refer to information on Addendum to the Approved Planning Brief (November 2019) from Hong Kong Housing Authority
(9) Refer to information on Discussion Paper No. 5/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(10) Refer to information on Discussion Paper No. 9/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(11) Refer to information on Planning Brief (December 2022) from Hong Kong Housing Authority
(12) Refer to information on Planning Brief (May 2023) from Hong Kong Housing Authority
(13) Refer to information on Discussion Paper No. 19/2021 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(14) Refer to information on Discussion Paper No. 2/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(15) Refer to information on Discussion Paper No. 3/2023 of Committee on Land Development, Housing and Works as available on North District Council of HKSAR's website
(16) Refer to information on Planning Brief (January 2022) from Hong Kong Housing Authority

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District

		AM Peak Hour		PM Peak Hour	
		Generation	Attraction	Generation	Attraction
Planned/Potential Private Developments					
Site J - 478 Flats at avg. size of 42.4m2 and 49 Houses at avg. size of 194.2m²					
Southern Portion 478 Flats	Adopted Trip Rates (pcu/hr/flat)(2)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	34	20	14	18
Northern Portion 49 Houses	Adopted Trip Rates (pcu/hr/flat)(5)	0.3524	0.2837	0.2842	0.3948
	Estimated Trips (pcu/hr)	17	14	14	19
Estimated Total Trips (pcu/hr)		**51**	**34**	**28**	**37**
Site K – 765 Flats at avg. size of 34.5m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**55**	**33**	**22**	**28**
Site L – 969 Flats at avg. size of 132.5m²					
Adopted Trip Rates (pcu/hr/flat)(6)		0.3021	0.2234	0.2258	0.2226
Estimated Trips (pcu/hr)		**293**	**216**	**219**	**216**
Site M – 300 Flats at avg. size of 65.8m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**22**	**13**	**9**	**11**
Site N – 1,638 Flats at avg. size of 40.4m²					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**118**	**70**	**47**	**61**
Site O – 1,600 Flats					
Adopted Trip Rates (pcu/hr/flat)(2)		0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)		**115**	**68**	**46**	**59**
Other Planned Public Housing Developments					
Sites P1 & P2 – 86,200 Flats and Commercial Facilities					
Public Housing 57,500 Flats	Adopted Trip Rates (pcu/hr/flat)(9)	0.0432	0.0326	0.0237	0.0301
	Estimated Trips (pcu/hr)	2,484	1,875	1,363	1,731
Private Residential Portion 287,00 Flats	Adopted Trip Rates (pcu/hr/flat)(9)	0.0718	0.0425	0.0286	0.0370
	Estimated Trips (pcu/hr)	2,061	1,220	821	1,062
Commercial 554,000m²	Adopted Trip Rates (pcu/hr/100m²)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	1,272	1,348	1,717	1,974
Estimated Total Trips (pcu/hr)		**5,817**	**4,443**	**3,901**	**4,767**
Site P3 – 1,850 Flats, Retail and Kindergarten					
Residential Portion 1,850 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	115	79	55	74
Retail Portion 3,000m²	Adopted Trip Rates (pcu/hr/100m²)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	7	7	9	11
Kindergarten 6 classrooms	Adopted Trip Rates (pcu/hr/classroom)(12)	2.4444	2.6667	1.1111	1.3333
	Estimated Trips (pcu/hr)	15	16	7	8
Estimated Total Trips (pcu/hr)		**137**	**102**	**71**	**93**

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District (Cont'd)

		AM Peak Hour		PM Peak Hour	
		Generation	**Attraction**	**Generation**	**Attraction**
Site P4 – 3,644 Flats, Retail and Kindergarten					
Site 1 – Residential Portion 2,088 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	130	89	62	84
Site 1 – Retail Portion 400m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	1	1	1	1
Site 1 – Kindergarten 6 classrooms	Adopted Trip Rates (pcu/hr/classroom)(12)	2.4444	2.6667	1.1111	1.3333
	Estimated Trips (pcu/hr)	15	16	7	8
Site 2 – Residential Portion 1,556 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	97	66	46	62
Site 2 – Retail Portion 700m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	2	2	2	2
Estimated Total Trips (pcu/hr)		**245**	**174**	**118**	**157**
Site P5 – 772 Flats with Retail					
Residential Portion 772 Flats	Adopted Trip Rates (pcu/hr/flat) (9)	0.0432	0.0326	0.0237	0.0301
	Estimated Trips (pcu/hr)	33	25	18	23
Retail Portion 2,600m^2	Adopted Trip Rates (pcu/hr/100m^2)(10)	0.2296	0.2434	0.3100	0.3563
	Estimated Trips (pcu/hr)	6	6	8	9
Estimated Total Trips (pcu/hr)		**39**	**31**	**26**	**32**
Site P6 – 620 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**39**	**26**	**18**	**25**
Site P7 – 3,100 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**193**	**132**	**92**	**124**
Site P8 – 2,330 Flats with Public Vehicle Park					
Residential Portion 2,330 Flats	Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
	Estimated Trips (pcu/hr)	145	99	69	93
Public Vehicle Park 70 spaces	Adopted Trip Rates (pcu/hr/space) (13)	0.0929	0.5897	0.4619	0.1500
	Estimated Trips (pcu/hr)	7	41	32	11
Estimated Total Trips (pcu/hr)		**152**	**140**	**101**	**104**
Site P9 – 4,030 Flats					
Adopted Trip Rates (pcu/hr/flat)(9)		0.0432	0.0326	0.0237	0.0301
Estimated Trips (pcu/hr)		**174**	**131**	**96**	**121**
Site P10 – 640 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**40**	**27**	**19**	**26**
Site P11 – 8,300 Flats					
Adopted Trip Rates (pcu/hr/flat)(11)		0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)		**516**	**354**	**247**	**333**

Table 4.7 Adopted Trip Rates and Estimated Trips for Other Planned / Potential Future Developments in North District (Cont'd)

	AM Peak Hour		PM Peak Hour	
	Generation	**Attraction**	**Generation**	**Attraction**
Site P12 – 4,200 Flats				
Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)	**261**	**179**	**125**	**168**
Site P13 – 450 Flats				
Adopted Trip Rates (pcu/hr/flat)(11)	0.0622	0.0426	0.0297	0.0401
Estimated Trips (pcu/hr)	**28**	**19**	**13**	**18**

Notes:
(1) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home are adopted
(2) TPDM mean trip rates for private housing with average flat size of 60m^2 adopted for medium rise residential development
(3) TPDM mean trip rates for private housing with average flat size of 70m^2 adopted for medium rise residential development
(4) TPDM mean trip rates for Retail / Shopping Complex
(5) TPDM upper trip rates for private housing with average flat size of 240m^2 adopted for house development
(6) TPDM upper trip rates for private housing with average flat size of 140m^2 adopted for house development
(7) Proposed public transport services under Planning Applications Y/NE-KTS/15 and A/NE KTS-506
(8) Proposed public transport services under Planning Applications Y/NE-KTS/16 and A/NE KTS-17
(9) TPDM mean trip rates for public housing with average flat size of 40m^2 adopted for subsidised housing: public rental
(10) TPDM mean trip rates for Retail / Shopping Complex
(11) TPDM mean trip rates for public housing with average flat size of 50m^2 adopted for subsidised housing: HOS/PSPS
(12) Consultant's in-house trip rate as surveyed at Precious Blood Kindergarten are adopted
(13) Trip rates derived from the consultant's surveyed trip rates from ex-Murray Road Multi-storey Car Park

Year 2034 Reference Traffic Flows

4.2.19 The 2034 reference traffic flows are derived by:

(i) Applying a growth rate of 1% p.a. on the 2024 observed flows upto the design year 2034; and

(ii) Superimposing the potential traffic as induced by the Application Site in accordance with the previous scheme of the approved S12A in **Table 4.3** and the additional GMB traffic as discussed in **Paragraph 4.1.11** onto the traffic flows in (i).

(iii) Superimposing the potential traffic as induced by the planned/potential future developments in the vicinity of the Application Site (**Table 4.5**) and other planned/potential future developments in North District (**Table 4.7**) onto the traffic flows in (ii);

4.2.20 The year 2034 reference traffic flows are presented in **Drawing No. 4.3**.

4.3 Traffic Forecasts for Design Scenario

Development Traffic of the Application Site in Design Scenario of Year 2034

4.3.1 In the design scenario of year 2034, it is adopted that the Application Site will be developed in accordance with the latest development schedule of the Proposed MLP with minor relaxation of PR as listed in **Table 2.1**.

4.3.2 The estimated potential traffic generation and attraction of the Application Site in the Design Scenario of 2034 are shown in **Table 4.8**.

Table 4.8 Estimated Traffic Generation and Attraction of the Application Site in Design Scenario of 2034

Development at Application Site In Design Scenario (Proposed MLP with Minor Relaxation of Plot Ratio)	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Residential - 334 flats				
Adopted Trip Rates(1) (pcu/hr/flat)	0.1058	0.0605	0.0426	0.0590
Estimated Trips (pcu/hr)	35	20	14	20
Retail - 319 m² GFA				
Adopted Trip Rates(2) (pcu/hr/100m² GFA)	0.2296	0.2434	0.3100	0.3563
Estimated Trips (pcu/hr)	1	1	1	1
RCHE – 100 places in total				
Adopted Trip Rates(3) (pcu/hr/place)	0.0385	0.0346	0.0308	0.0308
Estimated Trips (pcu/hr)	4	3	3	3
Total Trips (pcu/hr)	**40**	**24**	**18**	**24**

Notes: (1) TPDM mean trip rates for Private Housing: High-Density /R(A) with Ave. Flat Size of 80m²
(2) TPDM mean trip rates for retail / Shopping Complex
(3) Consultant's in-house trip rate as surveyed at Caritas Li Ka Shing C&A Home adopted.

4.3.3 As compared with the previous scheme in the approved S12A, the Proposed MLP with minor relaxation of PR would only induce minimal additional 2-way traffic of 12 pcu/hr in the morning peak hour and 9 pcu/hr in the evening peak hour. The comparison of development traffic of the Application Site in Reference and Design Scenarios are shown in **Table 4.9**.

Table 4.9 Comparison of Development Traffic in Reference and Design Scenarios

Future Scenario	Total Development Traffic of the Application Site (pcu/hr)			
	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Reference Scenario – Previous Scheme in Approved S12A	32	20	15	18
Design Scenario – Proposed MLP with Minor Relaxation of Plot Ratio	40	24	18	24
Net Increase	**+8**	**+4**	**+3**	**+6**

Year 2034 Design Traffic Flows

4.3.4 The year 2034 design flows are derived by superimposing the net increases in development traffic of the Application Site due to the Proposed MLP with minor relaxation of PR as presented in **Table 4.9** onto the year 2034 reference traffic flows (**Drawing No. 4.3**).

4.3.5 The year 2034 design traffic flows are presented in **Drawing No. 4.4**.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Assessments for Year 2034 Reference and Design Scenarios

5.1.1 The operational performances of the junctions identified in **Section 3.3** are assessed with the derived 2034 reference and design traffic flows under the existing layouts and method of control. Apart from the existing junctions, the junction of Hang Tau Road and the access of the Proposed Development (i.e. Junction J5) is also assessed.

5.1.2 The assessment results for reference and design year of 2034 are summarised in **Table 5.1**, and the details of junction assessments are attached in **Appendix C**.

Table 5.1 Year 2034 Operational Performance of the Identified Key Junctions

Junction No.	Location	Method of Control	Year 2034 DFC(1)			
			Reference Scenario		Design Scenario	
			AM	PM	AM	PM
J1	Kwu Tung Road / Kam Hang Road	Priority	**1.99**	**1.19**	**2.01**	**1.20**
J2	Kam Hang Road / Hang Tau Road	Priority	0.74	0.52	0.75	0.52
J3	Hang Tau Road / Local Track to Sheung Yue River /Access of Jockey Club River Beas Lodge	Priority	0.12	0.13	0.12	0.14
J4	Hang Tau Road / Access Road A	Priority	0.10	0.12	0.10	0.12
J5	Hang Tau Road / Proposed Development Access	Roundabout	0.21	0.15	N/A	
		Priority	N/A		0.11	0.09

Note: (1) DFC = Design flow / capacity ratio for a priority junction and roundabout

5.1.3 The assessment results in **Table 5.1** show that the Proposed MLP with minor relaxation of PR will have inapparent effect on the junction performance, and all identified junctions will still be operating within their capacities during both morning and evening peak hours in the Design Scenario of year 2034 except for Junction J1. It is assessed that Junction J1 will be overloaded during both the morning and evening peak hours in the future year 2034 even though the application site to be developed in accordance with the scheme in the approved S12A without the proposed minor relaxation in the Reference Scenario.

5.2 Road Improvement Scheme for Kam Hang Road as Proposed in Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14

5.2.1 Rezoning applications for the CDA(1) site (Application No. Y/NE-KTS/12) and the CDA(2) site (Application No. Y/NE-KTS/14) at Kam Hang Road with the proposed increase of plot ratio to 3.0 (i.e. Sites I and G as in listed in **Table 4.4** of **Section 4.2** respectively) were approved and partially approved by TPB in September 2019 and December 2020 respectively. The rezoning of these CDA (1) and CDA(2) sites have been amended in the prevailing OZP, and they have been taken into account in deriving the traffic forecast for this study as discussed in **Section 4.2**.

5.2.2 In accordance with the available information on the rezoning applications as inspected from TPB, it is noted that a road improvement scheme for Kam Hang Road (the Kam Hang Road improvement scheme) was proposed in the approved Application Nos. Y/NE-KTS/12 for improving the road capacity along Kam Hang Road including the junction of Kwu Tung Road / Kam Hang Road (J1) in order to serve for the rezoning proposal. Subsequently, further junction modification works at Junction J1 were proposed under the approved Application No. Y/NE-KTS/14 as shown in **Drawing No. 5.1**.

5.2.3 With the future implementation of the Kam Hang Road improvement scheme proposed in Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14, it is assessed that Junction J1 will be able to cater for the future traffic in the Design Scenario of year 2034 with ample capacity, as shown in **Table 5.2**. The details of the junction assessments are included in **Appendix C**.

Table 5.2 Year 2034 Operational Performance of Junction J1 under Kam Hang Road Improvement Scheme

Junction No.	Location	Layout & Method of Control	Year 2034 DFC(1)			
			Reference Scenario		Design Scenario	
			AM	PM	AM	PM
J1	Kwu Tung Road / Kam Hang Road	Priority – with junction modification proposed under Application Nos. Y/NE-KTS/12 & Y/NE-KTS/14	0.83	0.44	0.84	0.45

Note: (1) DFC = Design flow/ capacity ratio for a priority junction

5.3 Road Link Assessments for Year 2034 Reference and Design Scenarios

5.3.1 To review the potential impact on the road link capacity due to the Proposed MLP with minor relaxation of PR, road link capacity assessments are also conducted to assess the flow/capacity ratio (i.e. V/C ratio) of the key road links in the vicinity of the Application Site in design year 2034. The assessment results are summarized in **Table 5.3**.

Table 5.3 Design Year 2034 V/C ratio of Key Road Links

Road Link(1)	Direction	Link Capacity(4) (pcu/hr)	Year 2034 Reference Scenario				Year 2034 Design Scenario			
			Peak Hour Flows(5) (pcu/hr)		Flow/Capacity Ratio (V/C Ratio)		Peak Hour Flows(6) (pcu/hr)		Flow/Capacity Ratio (V/C Ratio)	
			AM	PM	AM	PM	AM	PM	AM	PM
Link L1 - Kwu Tung Road (North of Kam Hang Road)	Northbound	980	410	305	0.42	0.31	415	305	0.42	0.31
	Southbound	980	480	480	0.49	0.49	485	485	0.49	0.49
Link L2 - Kwu Tung Road (South of Kam Hang Road)	Northbound	980	270	295	0.28	0.30	270	295	0.28	0.30
	Southbound	980	605	365	0.62	0.37	610	370	0.62	0.38
Link L3 - Kam Hang Road(2) (West of Hang Tau Road)	Eastbound	1,140	605	595	0.53	0.52	610	600	0.54	0.53
	Westbound	2,300	870	490	0.38	0.21	880	495	0.38	0.22
Link L4 - Kam Hang Road (East of Hang Tau Road)	Eastbound	715	300	275	0.42	0.38	300	275	0.42	0.38
	Westbound	715	425	235	0.59	0.33	425	235	0.59	0.33
Link L5 - Hang Tau Road (South of Kam Hang Road)	Northbound	740	460	280	0.62	0.38	470	285	0.64	0.39
	Southbound	740	320	345	0.43	0.47	325	350	0.44	0.47
Link L6 - Hang Tau Road (North of Access Road A)	Northbound	740	325	190	0.44	0.26	330	195	0.45	0.26
	Southbound	740	215	240	0.29	0.32	215	245	0.29	0.33
Link L7 - Hang Tau Road(3) (South of Access Road A)	Northbound	980	275	165	0.28	0.17	285	170	0.29	0.17
	Southbound	980	165	210	0.17	0.21	170	215	0.17	0.22

Notes:
(1) Refer to **Drawing No. 3.1**.
(2) With junction modification works proposed under the approved Application Nos. Y/NE-KTS/12 and Y/NE-KTS/14 as shown in **Drawing No. 5.1**.
(3) With proposed road widening scheme at Hang Tau Road as shown in **Drawing No. 2.3**.

(4) The road link capacities are derived with reference to Table 2.4.1.1 in TPDM Volume 2 Chapter 2 by applying an observed average pcu factor of 1.15 and taking into account the narrowest widths of the road sections.
(5) Refer to the year 2034 reference traffic flows in **Drawing No. 4.3**.
(6) Refer to the year 2034 design traffic flows in **Drawing No. 4.4**.

5.3.2 The assessment results in **Table 5.3** show that the Proposed MLP with minor relaxation of PR will have inapparent effect on the road link capacities, and all assessed road links will operate with adequate capacities during peak hours in both Reference and Design Scenario of year 2034.

5.4 Review on Public Transport

5.4.1 Apart from the junction operational performance and road link capacity, the future public transport demand with the Proposed Development at the Application Site is also reviewed.

5.4.2 To review the future public transport demand at the Hang Tau Tai Po area, the potential public transport demands induced by the Application Site as well as the adjacent planned/potential future developments in the area are estimated as shown in **Table 5.4**.

Table 5.4 Derivation of Future Public Transport Demand of the Proposed Development

Parameters	Formula	Adjacent Planned/Potential Future Developments in Hang Tau Tai Po Area[(1)(2)] (Application Nos. Y/NE-KTS/13, A/NE-KTS/525, A/NE-KTS/460 and Y/NE-KTS/466)	Application Site in Design Scenario with Proposed MLP[(3)]
Residential Units	-	18 + 42 + 2 + 19 = 81	334
Estimated Population[(4)]	(a)	227	936
Average daily mechanised trips per person[(5)]	(b)	1.83	
Peak hour factor (AM/PM) to daily total[(6)]	(c)	12%	
Estimated mechanised trips per hour (AM/PM Peak) per person	(d) = (b) x (c) x 0.9[(7)]	0.1976	
Estimated mechanised trips per hour (AM/PM Peak)	(e) = (a) x (d)	45	185
Mode share of public transport (excluding private cars and taxi)[(8)]	(f)	70%	
Estimated public transport demand per hour (AM/PM peak)	(g) = (e) x (f)	32	130
	Total	**162**	

Notes: (1) Details refer to Sites A, B, C and D as listed in **Table 4.4**.
(2) Site locations refer to **Drawing Nos. 4.1** and **4.2.**
(3) Details refer to **Table 2.1**
(4) The average domestic household size of 2.8 adopted.
(5) The average daily mechanised trips per person as derived by the information from Travel Characteristics Survey 2011 as available on TD's website.
(6) The peak hour factor as derived by the information from Travel Characteristics Survey 2011 as available on TD's website.

(7) It is assumed that 90% of mechanised trips are the outbound trips during the AM Peak or the inbound trips during the PM Peak.
(8) Since the Application Site is located at a considerable distance from the railway station, and there is no franchised bus service available in the Hang Tau Tai Po area, it is anticipated that the GMB service will be the only available mode of public transport. Therefore, the mode share of 70% for public transport for the area is adopted with reference to the distributions of boardings by rail 30%, by franchised bus 27% and by public light bus 13% for all purposes as detailed in Table 3.6 of the Travel Characteristics Survey 2011.

5.4.3 As shown in **Table 5.4**, it is estimated that the total public transport demand induced by the Application Site as well as the adjacent planned/potential future developments in Hang Tau Tai Po area would be about 162 passengers during the peak hour.

5.4.4 Given that there is only one GMB route (no. 50K) currently serving the area, and the existing passenger outbound demand at the terminus of the route in Hang Tau Village has already occupied over 90% capacity of the current service, an off-street GMB layby together with a vehicle turnaround facility have been proposed at the Proposed Development to allow future enhancement of GMB services as discussed in **Section 2.5**.

5.4.5 Subject to the detailed review in later design stage, the proposed route would serve as a special short working route of GMB No. 50K travelling between the subject Development and Sheung Shui Station with the existing intermediate stops.

5.4.6 With the assumption of a new short working GMB route of 50K to be operated at 3 mins headway which is similar to its existing scheduled headway, an additional capacity of up to about 380 passengers per hour (i.e. [60mins/3mins headway] x 19 passengers per GMB) can be provided. Since the future additional demand of 162 passengers per hour will only take approximately 43% of the capacity, it is considered the proposal would be well sufficient to cater for the future demand in the Hand Tau Tai Po area.

5.4.7 Since the alighting passengers will leave the GMB layby immediately, the queuing area will be reviewed with the boarding passengers only, and the assessment is summarized in **Table 5.5**.

Table 5.5 Estimated Passenger Queue Length at the Proposed GMB Layby

Peak Estimated Passenger Demand		Headway of GMB Services (min)	Estimated Passenger Queue	
Persons / hour	Persons / minute		In person	In length (1)
162	3	3	9	5.4m

Note: (1) Assumed each passenger will occupy a length of 0.6m

5.4.8 As presented in **Table 5.5**, the estimated passenger queue will be about 5.4m in length. Since the proposed footpath adjacent to the proposed 26m GMB layby is about 36m in length and 3m in width as shown in **Drawing No. 5.2**, it is sufficient to serve the passenger queue and to provide a passenger shelter as per TPDM's requirement.

5.5 Review on Construction Traffic Impact

5.5.1 Taking into account of the site area of the Application Site as well as the development scale, it is preliminarily estimated by the project team that the peak hourly construction traffic demand related to the Application Site would be 5 vehicles/hour for both ingress and egress directions, i.e. about 10 pcu/hour for both directions.

5.5.2 As compared the construction traffic with the estimated future traffic generation and attraction of the Proposed Development in the previous scheme in the approved S12A (Reference Scenario) and the Proposed MLP (Design Scenario), **Table 5.6** shows that the construction traffic would not be more that the future operation traffic in both Reference and

Design Scenarios. Therefore, it will cause no adverse traffic impact to the surrounding road junctions and road links based on the results as revealed in **Sections 5.1 to 5.3**.

Table 5.6 Comparison of Anticipated Construction Traffic and Estimated Traffic in Reference and Design Scenarios

	Estimated Traffic Flows (pcu/hr)			
	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Reference Scenario	32	20	15	18
2-way Traffic Flows	**52**		**33**	
Design Scenario	40	24	18	24
2-way Traffic Flows	**64**		**42**	
Construction Traffic of the Application Site	10	10	10	10
2-way Traffic Flows	**20**		**20**	

Note: (1) Refer to **Table 4.9**.

5.5.3 The details of construction time periods and necessary temporary traffic management scheme would be further reviewed and submitted for the relevant authorities' approval at the detailed design stage prior to the commencement of construction works.

6. LONG TERM TRAFFIC FORECAST FOR NOISE IMPACT ASSESSMENT (NIA)

6.1 Design Year for NIA Study

6.1.1 Taking into consideration that the Proposed Development are tentatively scheduled to be completed by year 2031, design year of 2046 (completion year of the Proposed Development + 15 years) have been adopted for NIA study. The year 2046 peak hour traffic forecasts (solely used for NIA study of this project) together with the vehicle composition breakdown are summarized in **Drawing No. 6.1**.

6.2 Methodology of Traffic Forecast for NIA Study

6.2.1 To derive the year 2046 long term traffic forecast data for the NIA study, a set of year 2034 design peak hour traffic flows is firstly derived by the observed traffic flows of the road network with adopting the same traffic forecast methodology and the same estimated trip generation of the planned/committed future developments as discussed in **Chapter 4**.

6.2.2 For the long-term traffic growth from year 2034 to 2046, reference was made to (i) the population projections from "Hong Kong Population Projections 2022 – 2046" as published by Census and Statistics Department; and (ii) the rounded growth rate of 1% p.a. as derived from ATC in **Table 4.1** of **Section 4.2**.

6.2.3 Based on the population projections as presented in **Table 6.1**, it is derived that the annual growth rate of population from year 2034 to 2046 is +0.25% p.a.

Table 6.1 Population Projections from "Hong Kong Population Projections 2022 – 2046"

Projected Population (thousand persons)		Growth Rate (% p.a.)
2034	**2046**	**2034/2046**
7,945.1	8190.4	0.25%

6.2.4 Since the growth rate of 0.25% p.a. as derived from population projections is much lower than the growth rate of 1% p.a. as from ATC, the latter is adopted for background traffic growth from year 2034 to 2046 for conservative assessment.

6.2.5 The 2046 long term traffic forecasted flows are derived by applying a growth rate of 1% p.a. onto the year 2034 design traffic flows upto the design year 2046.

6.3 Vehicle Class

6.3.1 The types of vehicles in the traffic forecast were firstly sectored into 12-class according to surveyed vehicle distribution.

6.3.2 For NIA purpose, it is understood that vehicles with an unladen weight of 1,525kg should be categorized as heavy vehicles (HV). Therefore, HV percentage including the category of goods vehicle (GV) (comprise with light goods vehicle (LGV), medium/heavy goods vehicle (MGV/HGV) and container trucks) and the category of public transport (PT) (comprise with public light bus (PLB), non-franchised buses (SPB) and franchised buses (FB)) are adopted in accordance with the traffic noise impact assessment requirement.

7. SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The Application Site located at Hang Tau Road consists of various lots in D.D. 92 and D.D.94 and the adjoining government land at Hang Tau Tai Po, Kwu Tung South in Sheung Shui, with site area of about 17,990.9m^2.

7.1.2 A S12A application (application no. Y/NE-KTS/13) for dividing a CDA site into two areas and relaxing their plot ratio, building height and site coverage restrictions was approved by TPB in December 2021. Such amendments to the CDA site have been reflected in the prevailing OZP as gazetted on 31 May 2024.

7.1.3 Under the previous scheme in the approved S12A application in 2021, Area (a) of the CDA site consists of the Application Site was proposed to be redeveloped for 302 residential flats together with provisions of retail facilities and a RCHE with the PR of 1.41 including domestic PR of 1.23 and non-domestic PR of 0.18. Whilst, Area (b) of the CDA site was proposed in the scheme for a potential residential tower with 18 residential units at the domestic PR of 1.23.

7.1.4 To well utilize the development potential, the MLP for Area (a) of the CDA site, i.e. the Application Site, with proposed minor relaxation of PR from 1.41 to 1.692 was developed by the Applicant. To enable the Proposed MLP, a S16 application is required in order to obtain permission from TPB.

7.1.5 MVA Hong Kong Limited was commissioned by the Applicant as a traffic consultant to carry out a traffic impact assessment in support of the S16 application for the Proposed MLP with minor relaxation of PR.

7.1.6 Taking into consideration of accessibility, the future vehicular access point for the Proposed Development was proposed at Hang Tau Road where is at the same similar location of access for the site as proposed in the previous scheme of the approved S12A application.

7.1.7 For further enhancement of the road widening scheme, the intersection of the access to the development and existing Hang Tau Road is converted from a mini-roundabout into a priority T-junction. Besides, further set back of the Proposed Development is proposed for provision of an off-street GMB layby together with a vehicle turnaround facility.

7.1.8 To fulfil the set back requirement as remarked in OZP, the future road widening of Hang Tau Road with 7.3m wide carriageway and 3m footpath has also been taken into account in the revised road widening scheme.

7.1.9 For the sake of enhancing pedestrian accessibility and improving pedestrian safety, a scheme of provision of a proper pedestrian crossing at Hang Tau Road was proposed.

7.1.10 The provisions of internal transport facilities for the Proposed Development under the development schedule of the Proposed MLP were reviewed and proposed with reference to HKPSG and by following the SWD's ancillary requirements for RCHE as adopted in the approved S12A application.

7.1.11 To review the existing traffic condition, traffic count surveys have been carried out at the identified key access junctions on a typical weekday in May 2024. Based on the observed traffic flows, the junction operational assessment results revealed that all identified junctions are currently operating with reserve capacities.

7.1.12 Taking into consideration the Proposed Development at the Application Site was targeted to be completed by 2031, year 2034 was adopted as the design year for assessment in this study.

7.1.13 Traffic forecasts for Design Scenario, i.e. the future scenario with the Proposed MLP and minor relaxation of PR for the Application Site in the design year 2034, are formulated by taking into consideration (i) the background traffic growth as derived from AADT; (ii) the future traffic induced by the planned/potential developments in the vicinity of the Application Site and the other planned/potential future developments in North District; (iii) the potential increases in GMB traffic due to the proposed provision of GMB layby at Proposed Development; and (iv) the net increase of traffic generation and attraction due to the Proposed MLP with minor relaxation of PR for the Application Site.

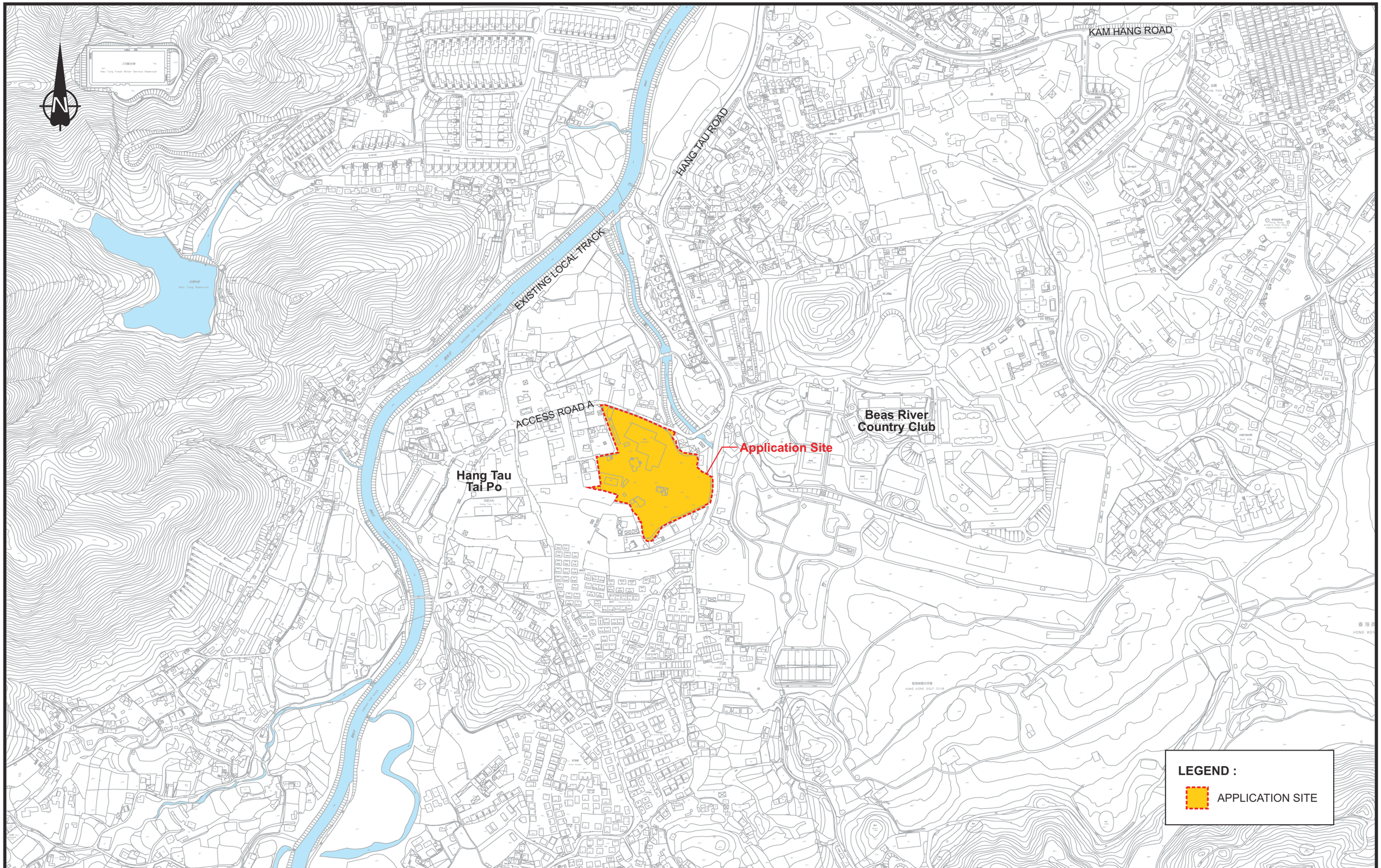
7.1.14 Operational performance of the identified junctions and key road links are assessed with the derived future traffic flows in the design year 2034. The results of junction operational assessment indicated that all assessed junctions will be operated with adequate capacities in the Design Scenario of year 2034 by taking into account the Kam Hang Road improvement scheme as proposed in the approved rezoning application Nos. Y/NE-KTS/12 and Y/NE-KTS/14. The results of road link capacity assessment also showed that all assessed key road links in the vicinity will be still operated with adequate capacities in the Design Scenarios of year 2034.

7.2 Conclusion

7.2.1 The traffic impact assessment has demonstrated that the future traffic induced by developments in the application site under the Proposed MLP with the proposed minor relaxation of PR as well as the planned future developments in the vicinity can all be absorbed by the surrounding road network with the road improvement scheme which was already proposed by others.

7.2.2 The arrangements of vehicular access, as well as provisions of internal transport facilities and public transport facility are justified for the Proposed Development, while the revised road widening scheme by further set back of the Proposed Development as enabled by the Proposed MLP are also considered beneficial to the general public.

7.2.3 In conclusion, the subject S16 application for the Proposed MLP with the proposed minor relaxation of PR is supported from a traffic engineering viewpoint.



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

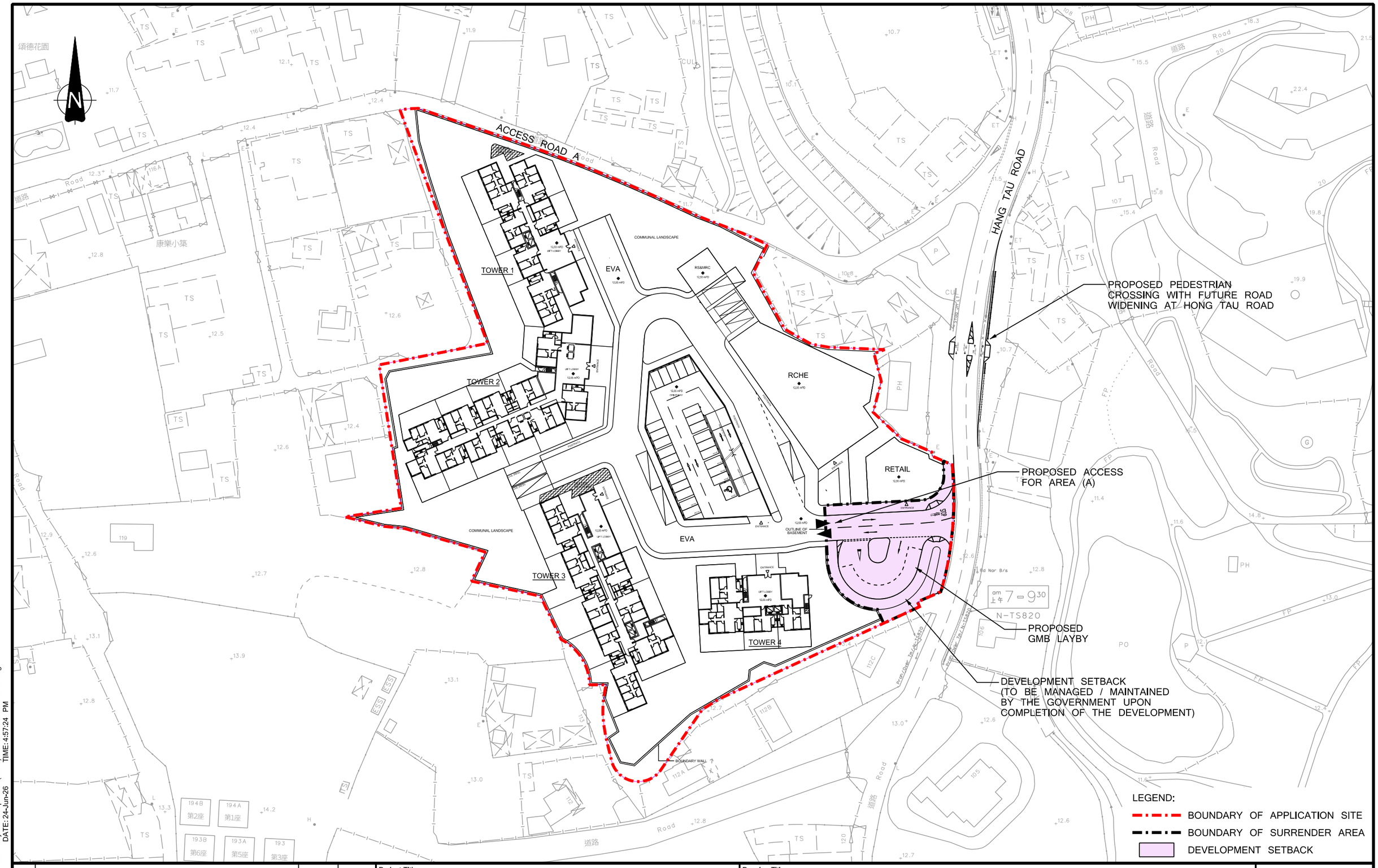
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SYSTRA MVA

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

PROPOSED MASTER LAYOUT PLAN AND ACCESS ARRANGEMENT

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RETAIL

RCHE

OUTLINE OF BASEMENT

ENTRANCE

26m

MINIBUS

3m FOOTPATH (2mTHOUGH ZONE + 0.5m DEAD WIDTH ON BOTH SIDES)

3m FOOTPATH (2mTHOUGH ZONE + 0.5m DEAD WIDTH ON BOTH SIDES)

70m VISIBILITY SPLAY

7.3m

8.8m

3.8m

3.5m

5.4m

5.8m

PROPOSED PEDESTRIAN CROSSING

A

ACCESS ROAD A

HANG TAU ROAD

70m VISIBILITY SPLAY

TS322

TS102

TS115

TS101

TS109

TS460

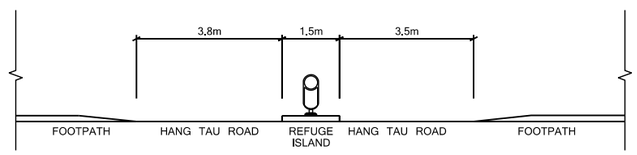
GIVE WAY

STOP

LEGEND:

- BOUNDARY OF APPLICATION SITE
- BOUNDARY OF SURRENDER AREA
- DEVELOPMENT SETBACK
- PROPOSED KERBLINE
- PROPOSED RAILING
- PROPOSED TYPE II RAILING AT JUNCTION
- PROPOSED TRAFFIC SIGN
- RETRO-REFLECTIVE BOLLARD
- PROPOSED ROAD MARKING

NOTE:
THE LAYOUT IS SUBJECT TO DETAIL DESIGN.



SECTION A
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

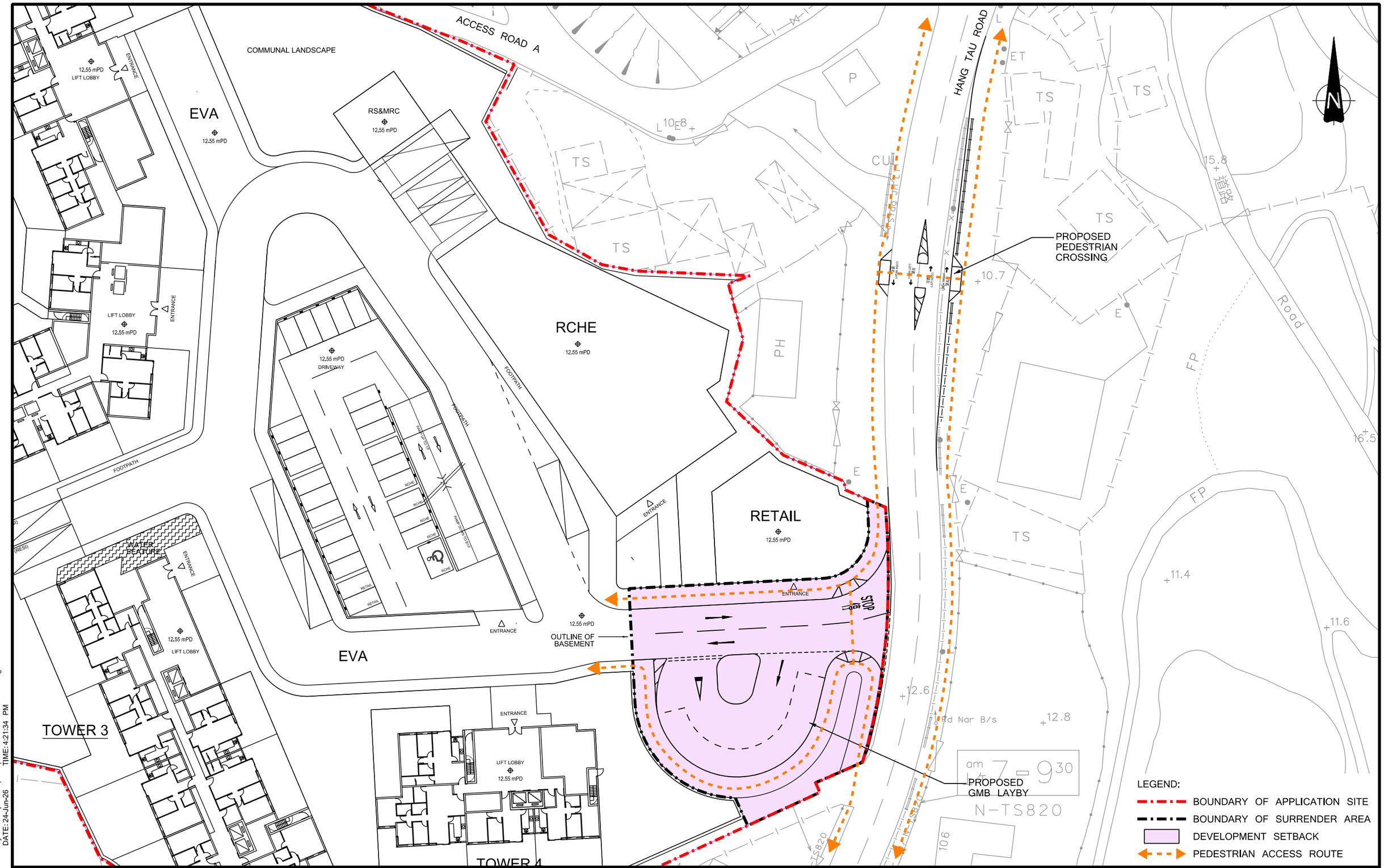
PROPOSED ROAD WIDENING SCHEME AT HANG TAU ROAD

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

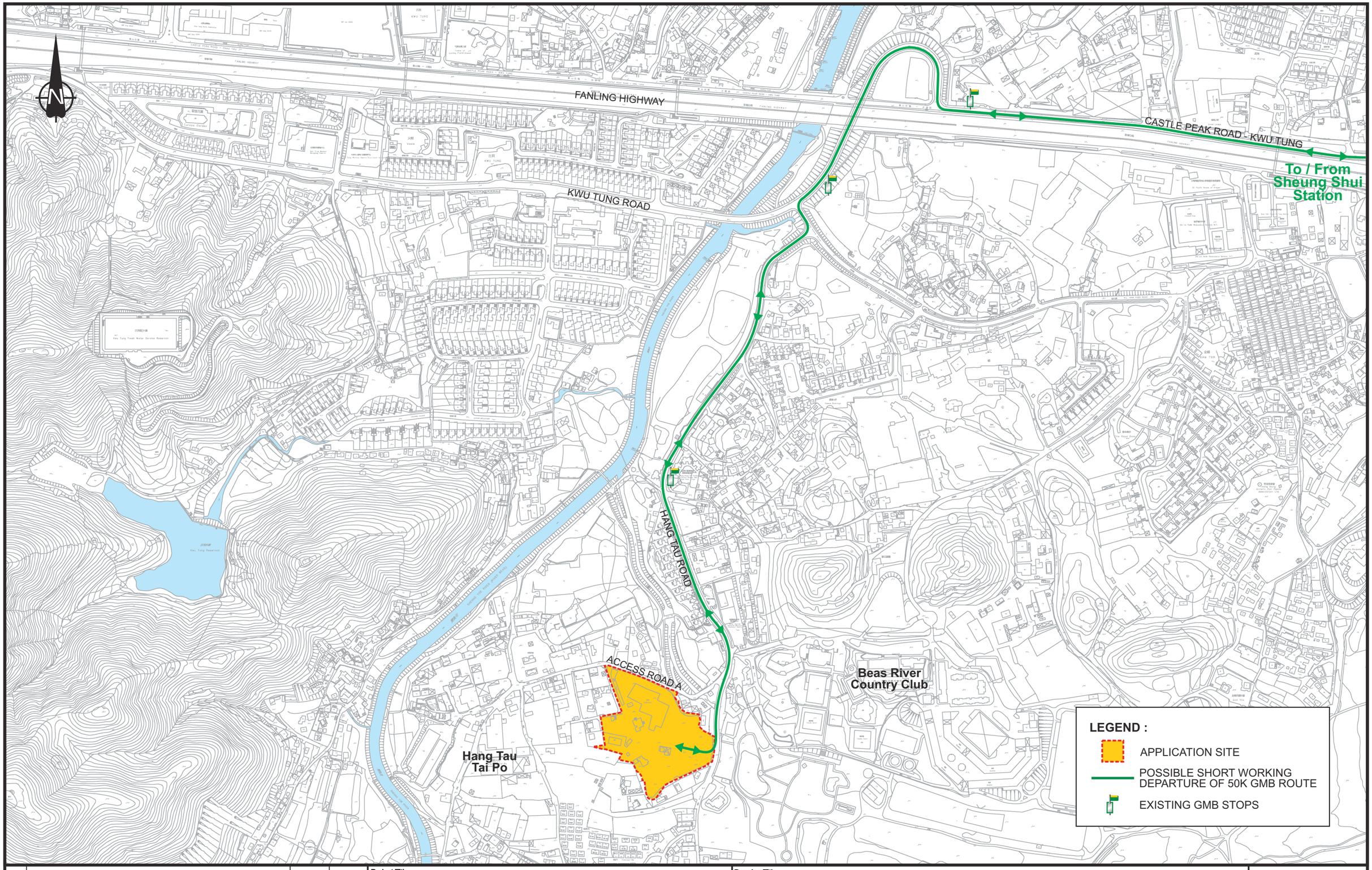
PROPOSED TRAFFIC AND PEDESTRIAN ARRANGEMENT

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Project Title

SECTION 16 PLANNING APPLICATION FOR
PROPOSED MINOR RELAXATION OF PLOT RATIO
AND BUILDING HEIGHT RESTRICTION FOR
COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO,
KWU TUNG SOUTH

Drawing Title

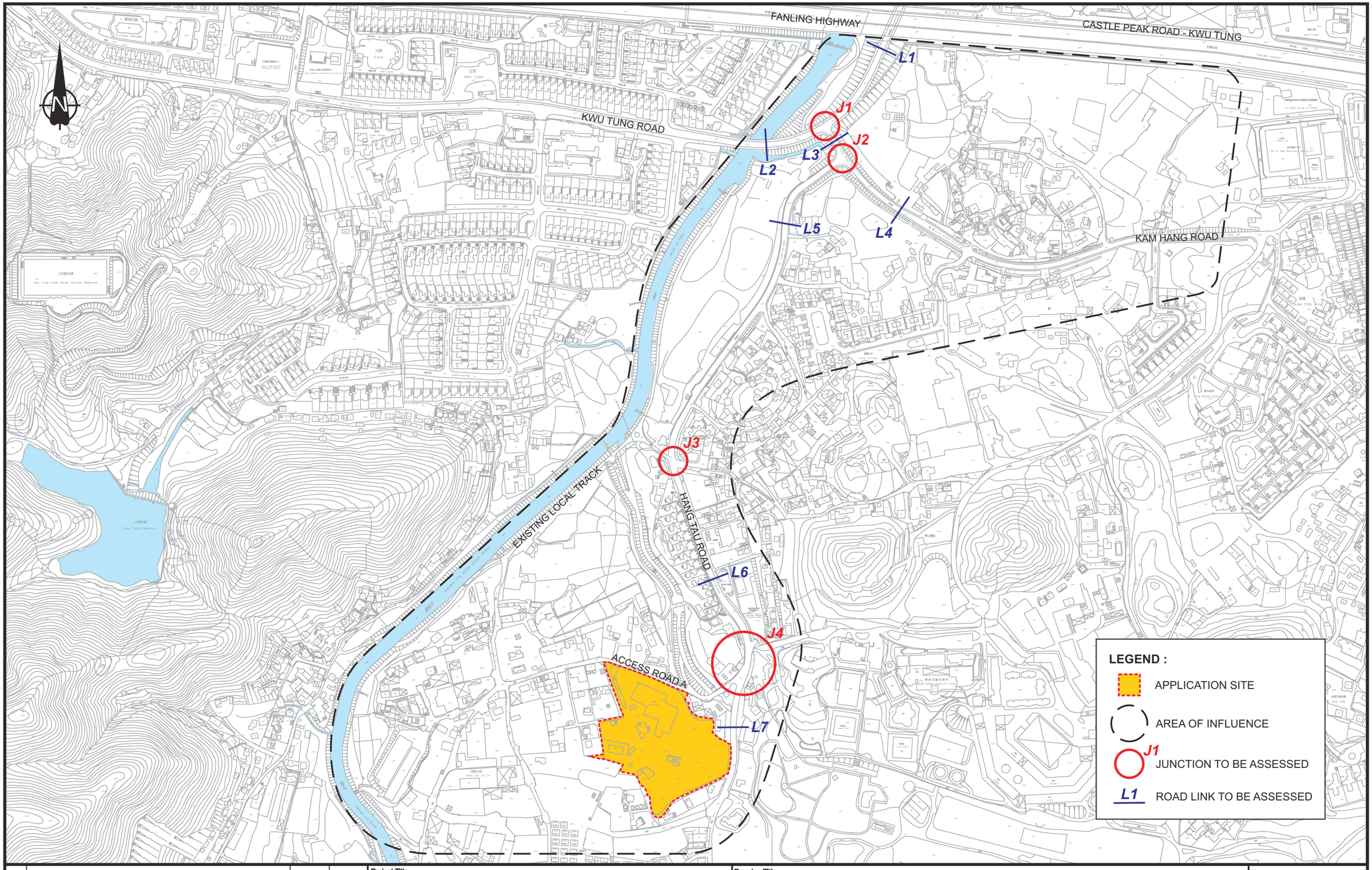
POSSIBLE GMB SERVICE ENHANCEMENT

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2026	2.4	-

SYSTRA MVA

CHK50808310/TIA2/F24.CDR/LLH/25JUN26

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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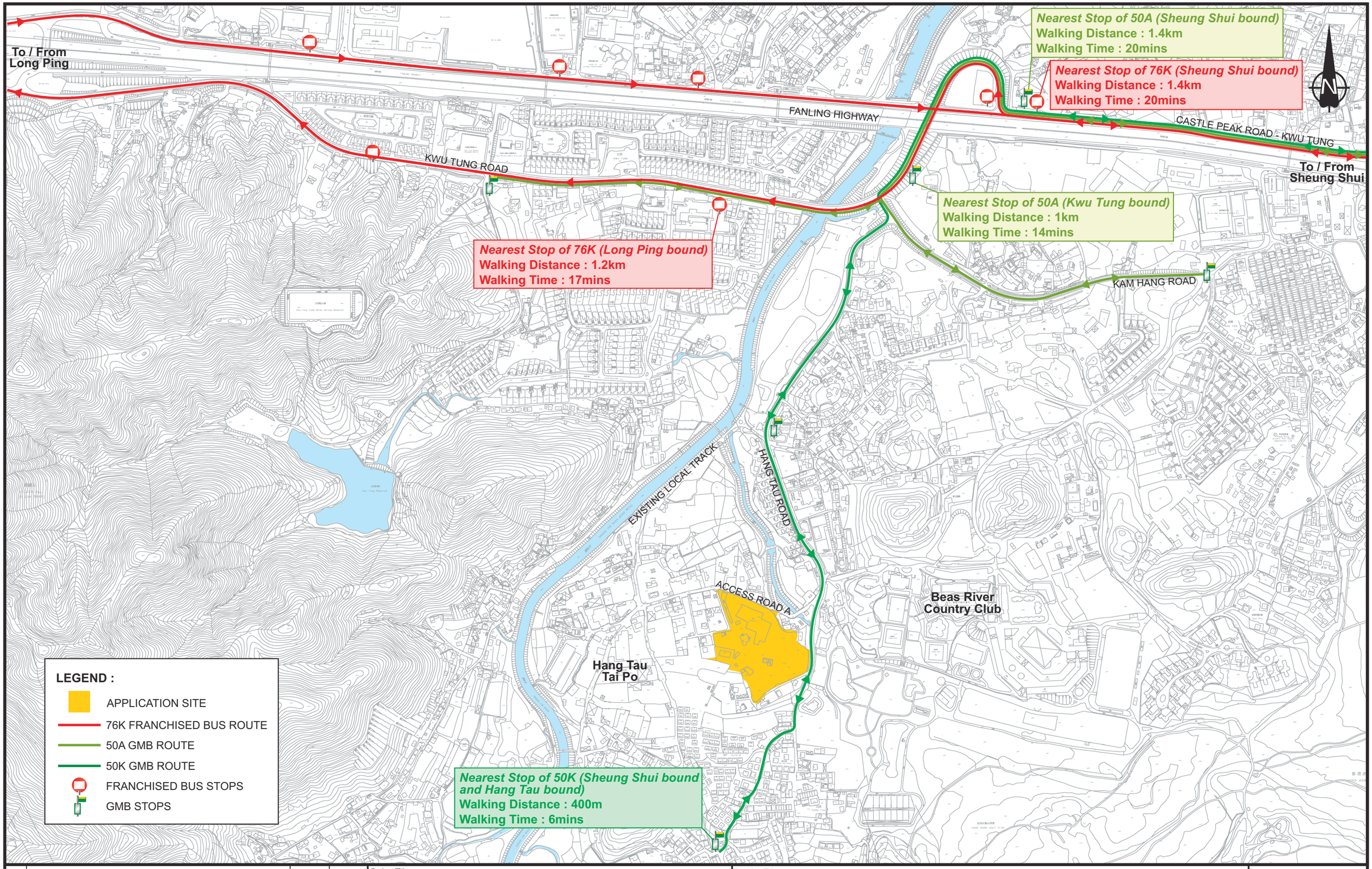
EXISTING ROAD NETWORK AND JUNCTIONS TO BE ASSESSED

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	3.1	-

SYSTRA MVA

CHK50808310/TIA1/F31.CDR/LLH/16MAR26

Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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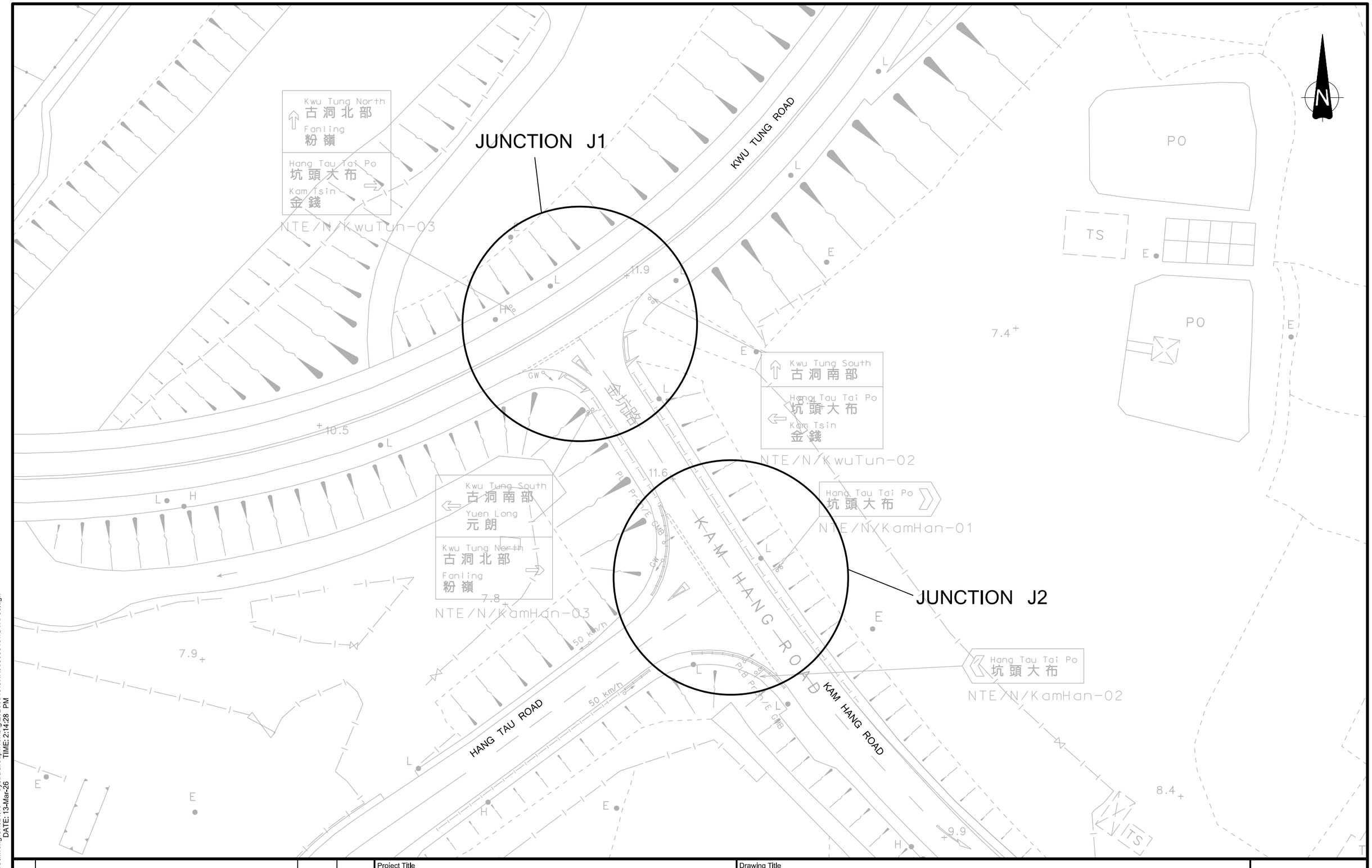
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CNM	CHC	NTS	MAR 2026	3.2	-

SYSTRA MVA

CHK50808310/TIA1/F32.CDR/LLH/11MAR26

Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

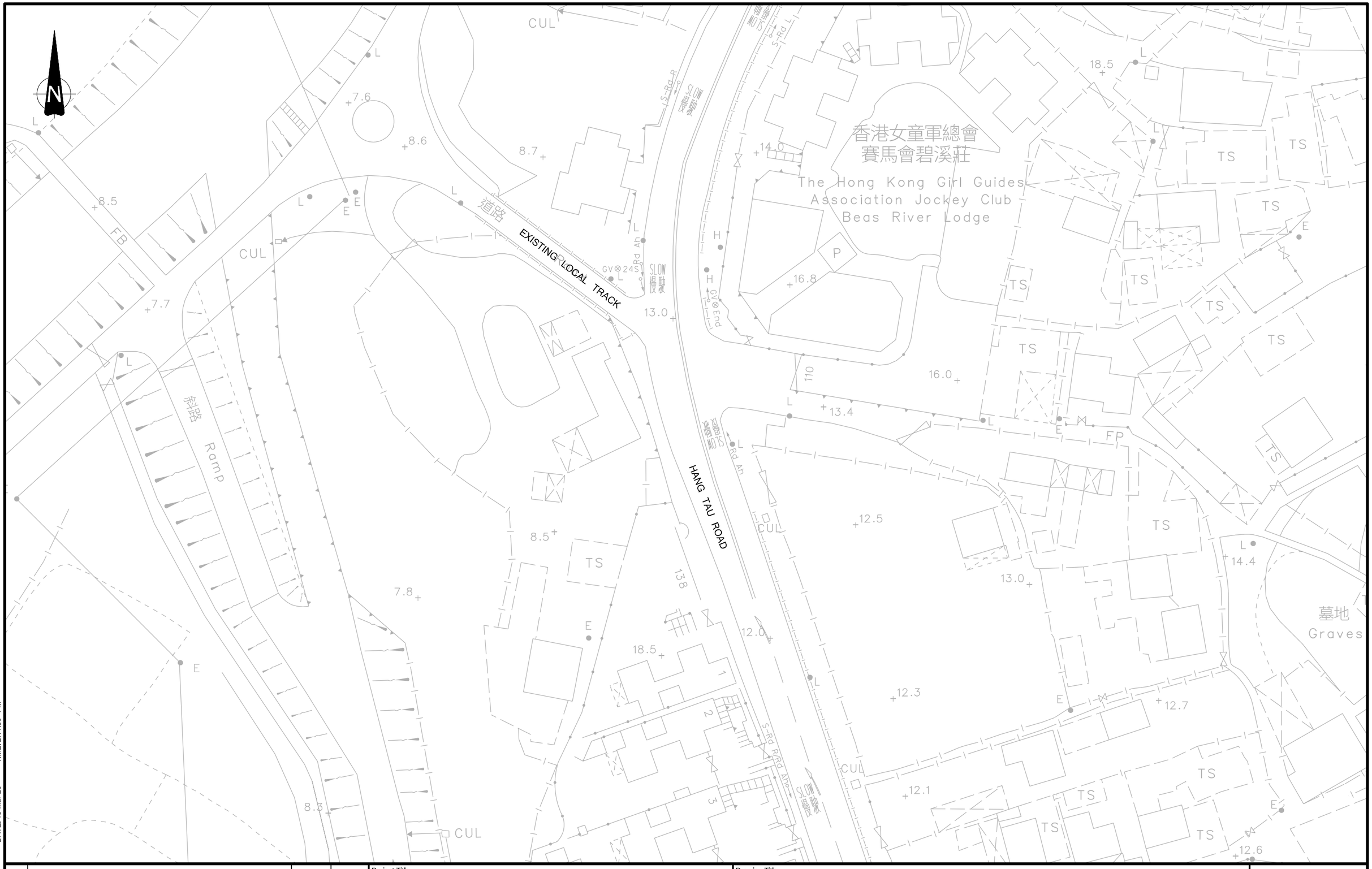
EXISTING JUNCTION LAYOUT OF KWU TUNG ROAD / KAM HANG ROAD (J1) AND KAM HANG ROAD / HANG TAU ROAD (J2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	MAR 2026	**3.3**	-

SYSTRA MVA

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED
MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT
RESTRICTION FOR COMPREHENSIVE DEVELOPMENT
IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

EXISTING JUNCTION LAYOUT OF HANG TAU ROAD / LOCAL TRACK TO SHEUNG YUE RIVER / ACCESS OF JOCKEY CLUB RIVER BEAS LODGE (J3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	MAR 2026	3.4	-

SYSTRA MVA

Original Size : A3

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

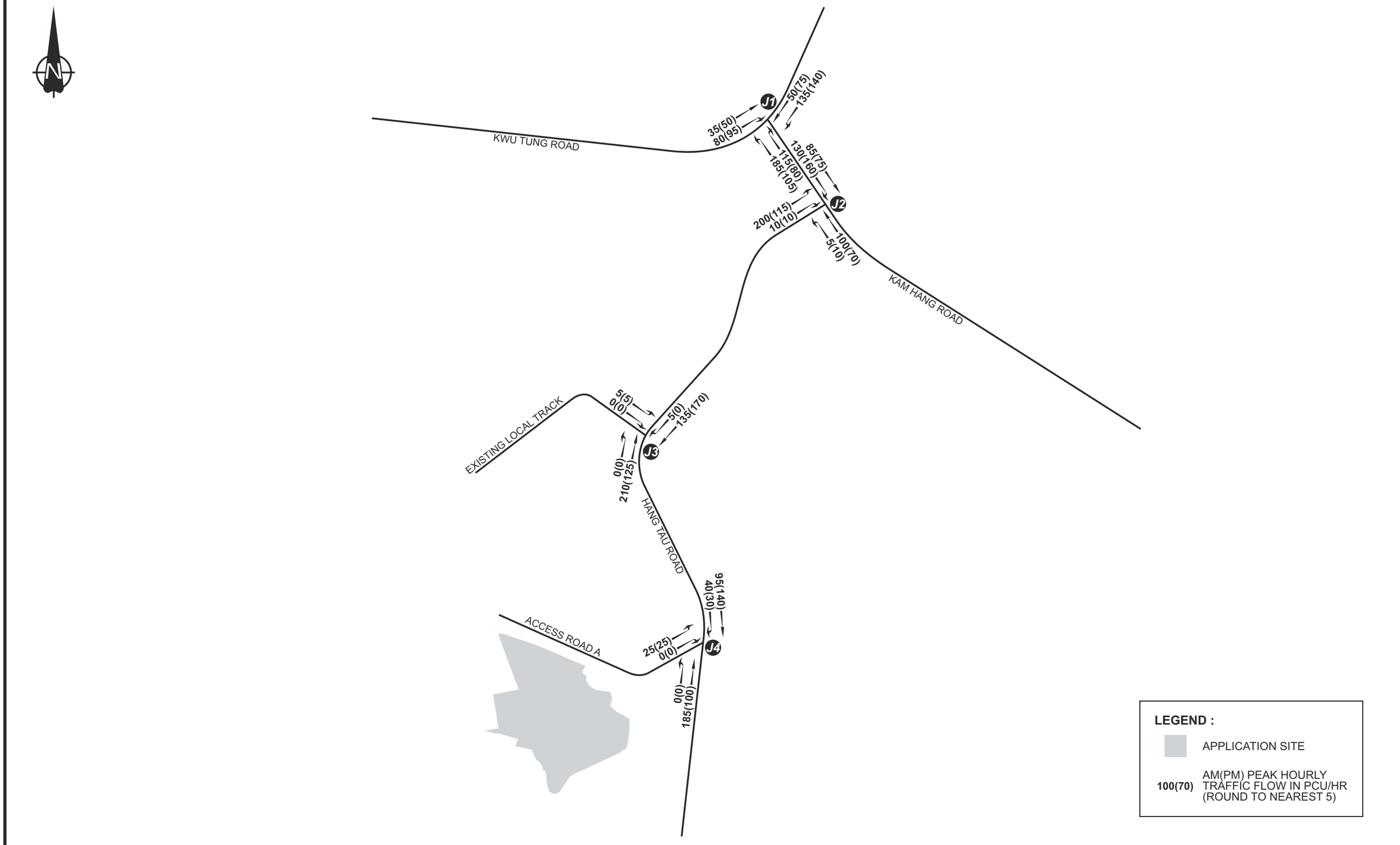
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Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	MAR 2026	3.5	-

SYSTRA MVA

Original Size : A3

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APPLICATION SITE

100(70) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

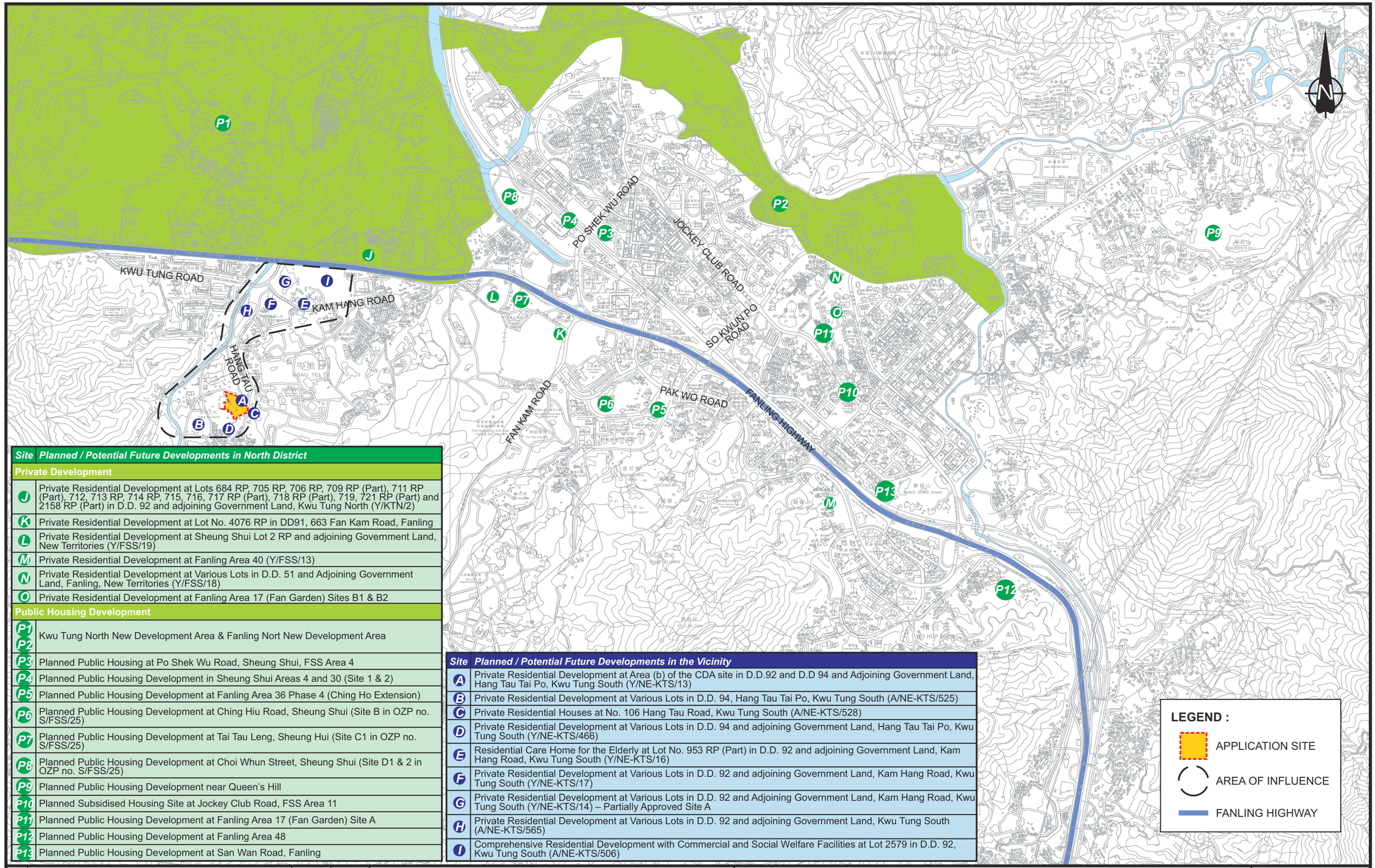
YEAR 2024 OBSERVED TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	3.6	-

SYSTRA MVA

CHK50808310/TIA1/F36.CDR/LLH/13MAR26

Original Size : A3



Site	Planned / Potential Future Developments in North District
Private Development	
J	Private Residential Development at Lots 684 RP, 705 RP, 706 RP, 709 RP (Part), 711 RP (Part), 712, 713 RP, 714 RP, 715, 716, 717 RP (Part), 718 RP (Part), 719, 721 RP (Part) and 2158 RP (Part) in D.D. 92 and adjoining Government Land, Kwu Tung North (Y/KTN/2)
K	Private Residential Development at Lot No. 4076 RP in DD91, 663 Fan Kam Road, Fanling
L	Private Residential Development at Sheung Shui Lot 2 RP and adjoining Government Land, New Territories (Y/FSS/19)
M	Private Residential Development at Fanling Area 40 (Y/FSS/13)
N	Private Residential Development at Various Lots in D.D. 51 and Adjoining Government Land, Fanling, New Territories (Y/FSS/18)
O	Private Residential Development at Fanling Area 17 (Fan Garden) Sites B1 & B2
Public Housing Development	
P1 P2	Kwu Tung North New Development Area & Fanling Nort New Development Area
P3	Planned Public Housing at Po Shek Wu Road, Sheung Shui, FSS Area 4
P4	Planned Public Housing Development in Sheung Shui Areas 4 and 30 (Site 1 & 2)
P5	Planned Public Housing Development at Fanling Area 36 Phase 4 (Ching Ho Extension)
P6	Planned Public Housing Development at Ching Hiu Road, Sheung Shui (Site B in OZP no. S/FSS/25)
P7	Planned Public Housing Development at Tai Tau Leng, Sheung Hui (Site C1 in OZP no. S/FSS/25)
P8	Planned Public Housing Development at Choi Whun Street, Sheung Shui (Site D1 & 2 in OZP no. S/FSS/25)
P9	Planned Public Housing Development near Queen's Hill
P10	Planned Subsidised Housing Site at Jockey Club Road, FSS Area 11
P11	Planned Public Housing Development at Fanling Area 17 (Fan Garden) Site A
P12	Planned Public Housing Development at Fanling Area 48
P13	Planned Public Housing Development at San Wan Road, Fanling

Site	Planned / Potential Future Developments in the Vicinity
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)
E	Residential Care Home for the Elderly at Lot No. 953 RP (Part) in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/16)
F	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/17)
G	Private Residential Development at Various Lots in D.D. 92 and Adjoining Government Land, Kam Hang Road, Kwu Tung South (Y/NE-KTS/14) – Partially Approved Site A
H	Private Residential Development at Various Lots in D.D. 92 and adjoining Government Land, Kwu Tung South (A/NE-KTS/565)
I	Comprehensive Residential Development with Commercial and Social Welfare Facilities at Lot 2579 in D.D. 92, Kwu Tung South (A/NE-KTS/506)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

PLANNED / POTENTIAL FUTURE KEY DEVELOPMENTS IN THE VICINITY AND NORTH DISTRICT (1 OF 2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	NTS	MAR 2026	4.1	-

SYSTRA MVA

CHK50808310/TIA1/F41.CDR/LLH/16MAR26

Original Size : A3

Site	Planned / Potential Future Developments in the Hang Tau Area	Estimated Population Intake
	Application Site	936
A	Private Residential Development at Area (b) of the CDA site in D.D.92 and D.D 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/13)	50
B	Private Residential Development at Various Lots in D.D. 94, Hang Tau Tai Po, Kwu Tung South (A/NE-KTS/525)	118
C	Private Residential Houses at No. 106 Hang Tau Road, Kwu Tung South (A/NE-KTS/528)	6
D	Private Residential Development at Various Lots in D.D. 94 and adjoining Government Land, Hang Tau Tai Po, Kwu Tung South (Y/NE-KTS/466)	53

N

EXISTING LOCAL TRACK

SHEUNG YUE RIVER (RIVER BEAS)

ACCESS ROAD A

HANG TAU ROAD

Beas River Country Club

Hang Tau Tai Po

SHEUNG YUE RIVER

A

B

C

D

LEGEND :

APPLICATION SITE

Rev.	Description	Checked	Date
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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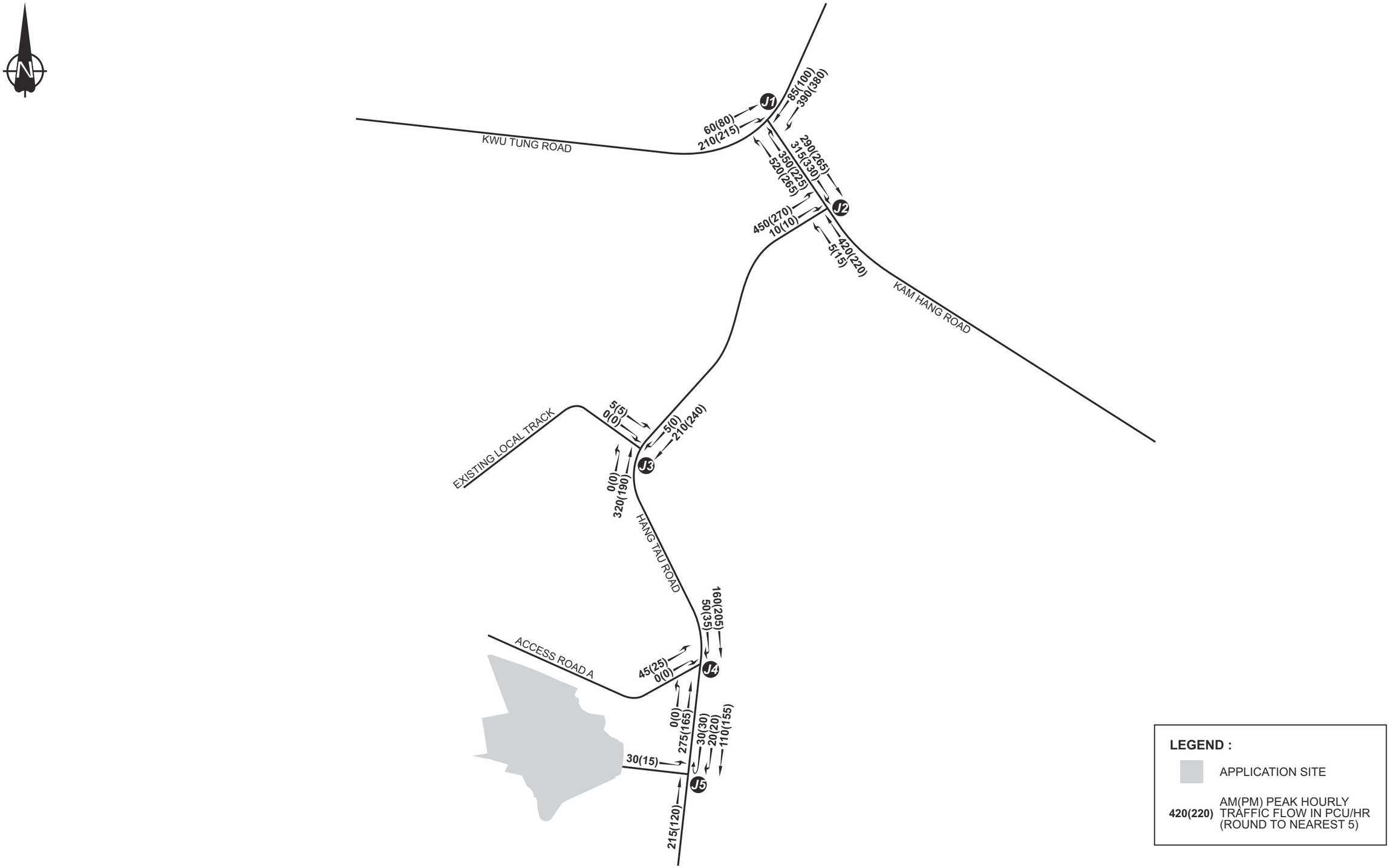
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Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

CHK50808310/TIA1/F42.CDR/LLH/16MAR26

Original Size : A3



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APPLICATION SITE

420(220) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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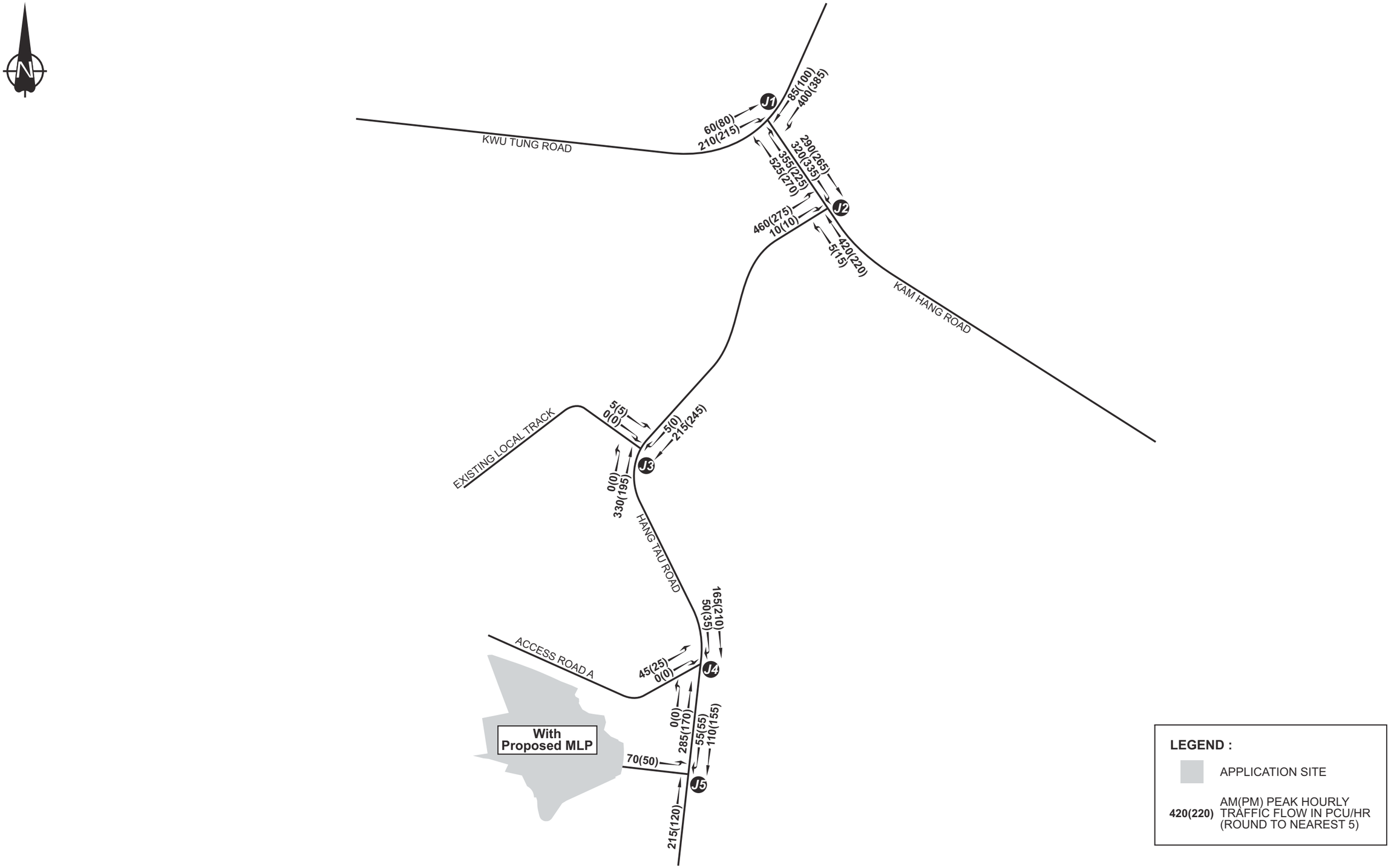
YEAR 2034 REFERENCE TRAFFIC FLOWS

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SYSTRA MVA

CHK50808310/TIA1/F43.CDR/LLH/13MAR26

Original Size : A3



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APPLICATION SITE

420(220) AM(PM) PEAK HOURLY TRAFFIC FLOW IN PCU/HR (ROUND TO NEAREST 5)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

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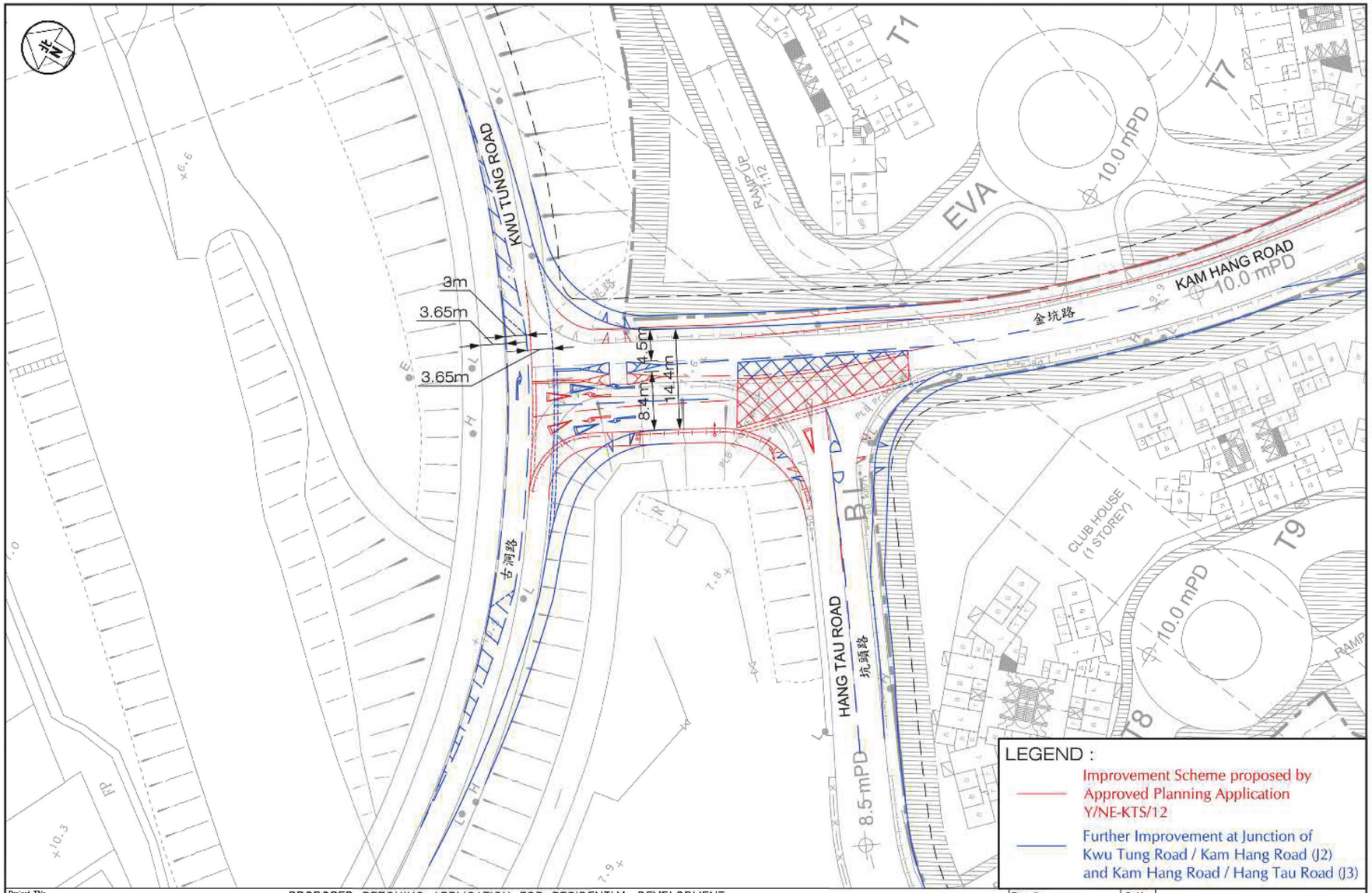
YEAR 2034 DESIGN TRAFFIC FLOWS

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SYSTRA MVA

CHK50808310/TIA1/F44.CDR/LLH/13MAR26

Original Size : A3



Project Title: PROPOSED REZONING APPLICATION FOR RESIDENTIAL DEVELOPMENT AT KAM HANG ROAD AND HANG TAU ROAD, KWU TUNG SOUTH — J6921

Figure Title: FURTHER IMPROVEMENT AT JUNCTION OF KWU TUNG ROAD / KAM HANG ROAD (J2) AND KAM HANG ROAD / HANG TAU ROAD (J3)

Figure No.	Revision
1	A

Designed by	Drawn by	Checked by
L K W	W S W	K C

Scale in A3: ~~1 : 500~~ — Date: 12 NOV 2020

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

（資料來源：申請人於 16. 11. 2020 呈交的資料）
(Source : Applicant's Submission of 16.11.2020)

參考編號 REFERENCE No.	繪圖 DRAWING
Y/NE-KTS/14	Z-10

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Project Title: SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

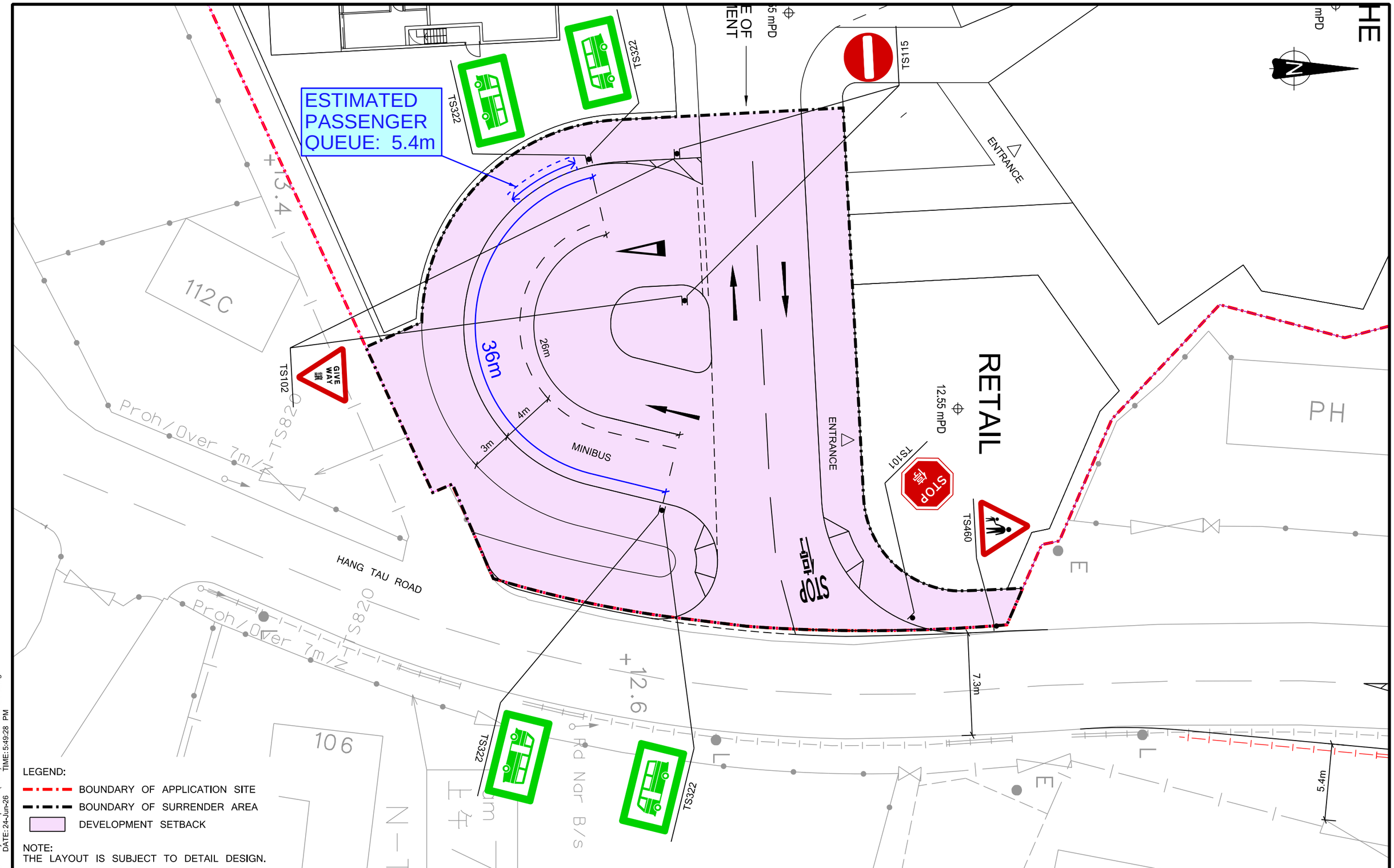
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Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

ESTIMATED MAXIMUM PASSENGER QUEUING AT PROPOSED GMB LAYBY

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:250(A3)	JUN 2026	**5.2**	-

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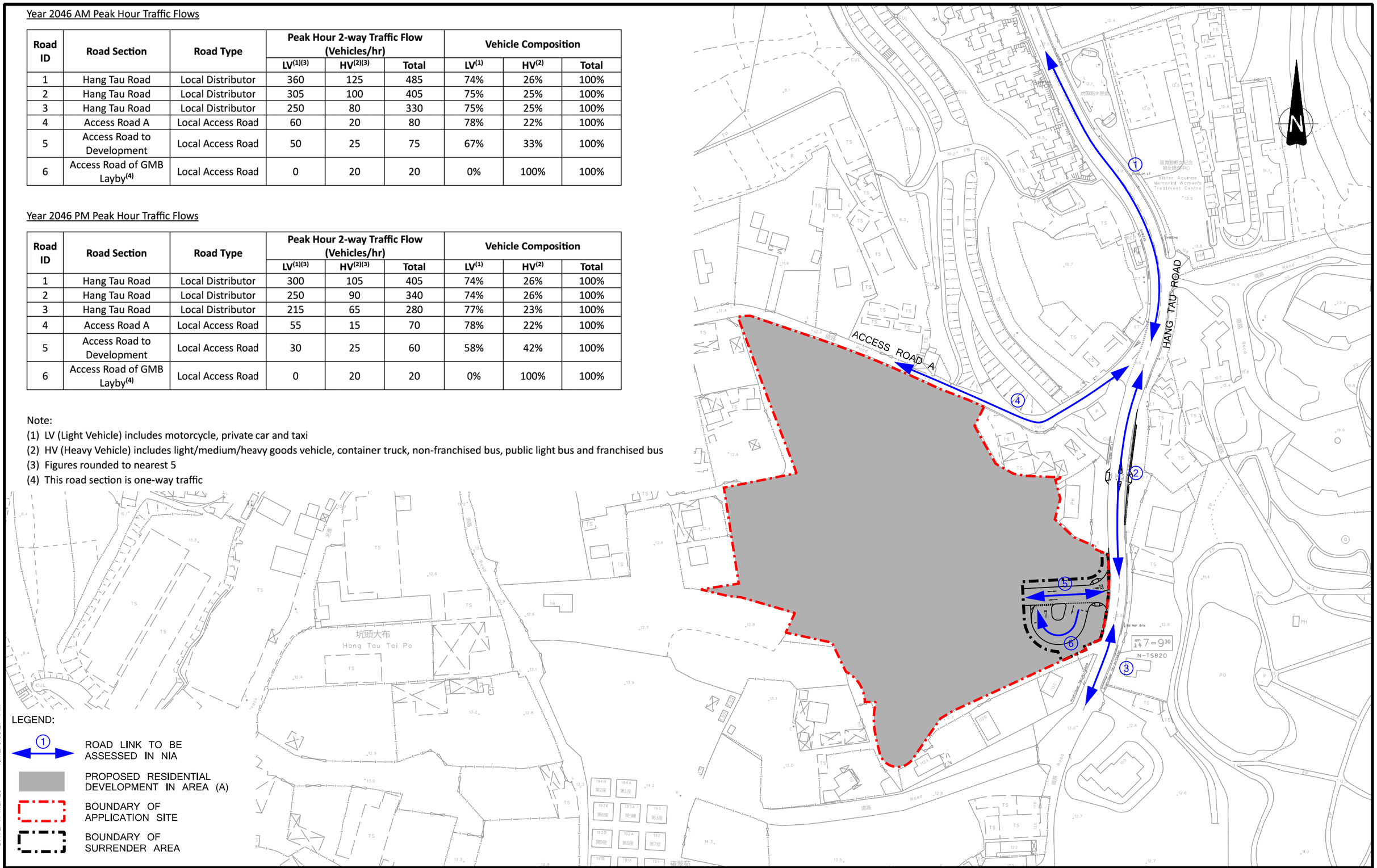
Year 2046 AM Peak Hour Traffic Flows

Road ID	Road Section	Road Type	Peak Hour 2-way Traffic Flow (Vehicles/hr)			Vehicle Composition		
			LV[(1)(3)]	HV[(2)(3)]	Total	LV[(1)]	HV[(2)]	Total
1	Hang Tau Road	Local Distributor	360	125	485	74%	26%	100%
2	Hang Tau Road	Local Distributor	305	100	405	75%	25%	100%
3	Hang Tau Road	Local Distributor	250	80	330	75%	25%	100%
4	Access Road A	Local Access Road	60	20	80	78%	22%	100%
5	Access Road to Development	Local Access Road	50	25	75	67%	33%	100%
6	Access Road of GMB Layby[(4)]	Local Access Road	0	20	20	0%	100%	100%

Year 2046 PM Peak Hour Traffic Flows

Road ID	Road Section	Road Type	Peak Hour 2-way Traffic Flow (Vehicles/hr)			Vehicle Composition		
			LV[(1)(3)]	HV[(2)(3)]	Total	LV[(1)]	HV[(2)]	Total
1	Hang Tau Road	Local Distributor	300	105	405	74%	26%	100%
2	Hang Tau Road	Local Distributor	250	90	340	74%	26%	100%
3	Hang Tau Road	Local Distributor	215	65	280	77%	23%	100%
4	Access Road A	Local Access Road	55	15	70	78%	22%	100%
5	Access Road to Development	Local Access Road	30	25	60	58%	42%	100%
6	Access Road of GMB Layby[(4)]	Local Access Road	0	20	20	0%	100%	100%

Note:
(1) LV (Light Vehicle) includes motorcycle, private car and taxi
(2) HV (Heavy Vehicle) includes light/medium/heavy goods vehicle, container truck, non-franchised bus, public light bus and franchised bus
(3) Figures rounded to nearest 5
(4) This road section is one-way traffic



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

YEAR 2046 PEAK HOURS TRAFFIC FORECAST AND VEHICLE COMPOSITION

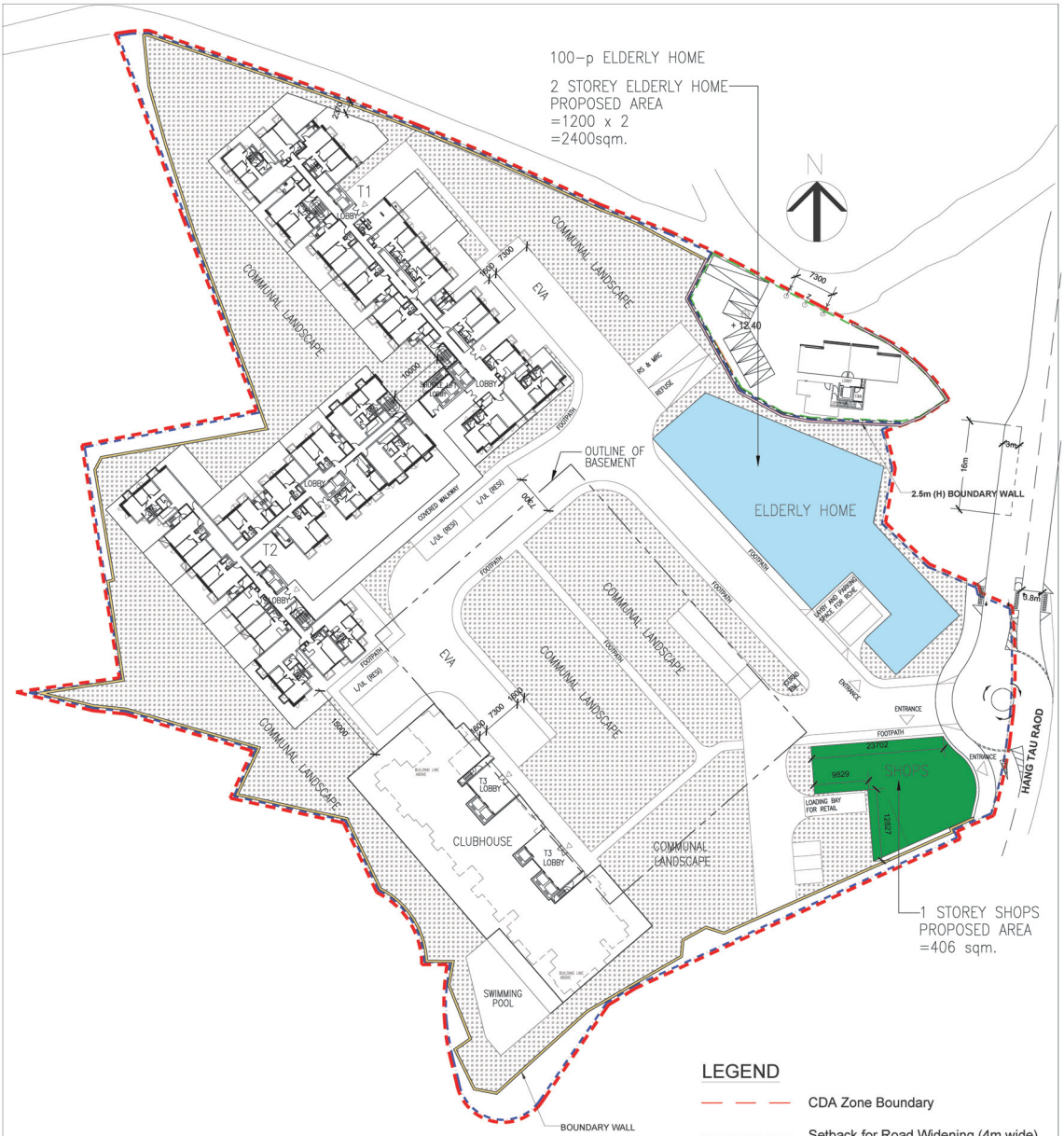
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APPENDIX A – MASTER LAYOUT PLAN UNDER PREVIOUS SCHEME OF THE APPROVED S12A APPLICATIONS



GROUND FLOOR PLAN
(Site A)

申請編號 Application No. : Y / NE-KTS / 13
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

lwk&partners architects

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Project Title: SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

MASTER LAYOUT PLAN OF PREVIOUS SCHEME UNDER THE APPROVED S12A APPLICATION

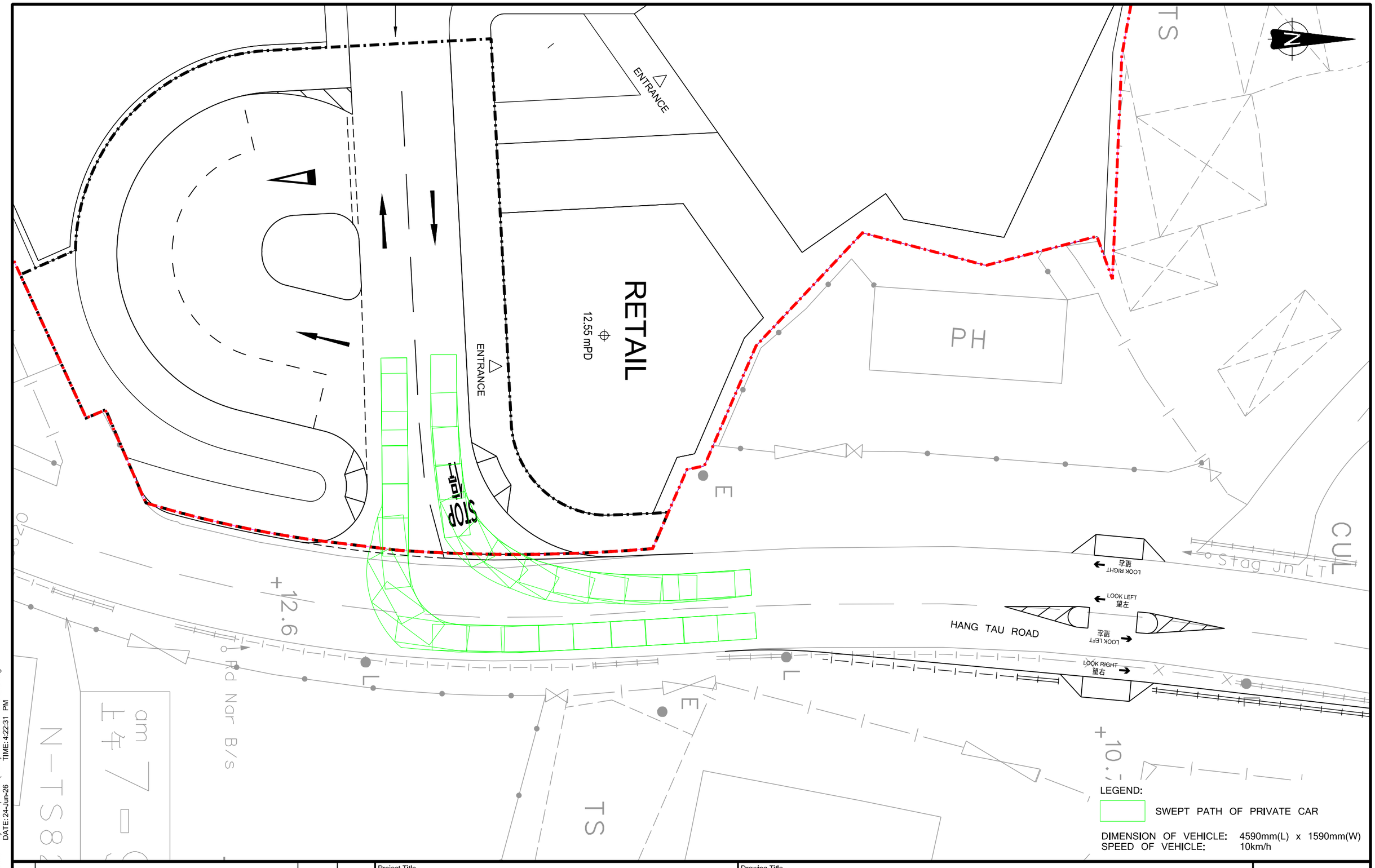
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SYSTRA MVA

CHK50808310/TIA1/A1.CDR/LLH/13MAR26

Original Size : A4

APPENDIX B – SWEPT PATH ANALYSES



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

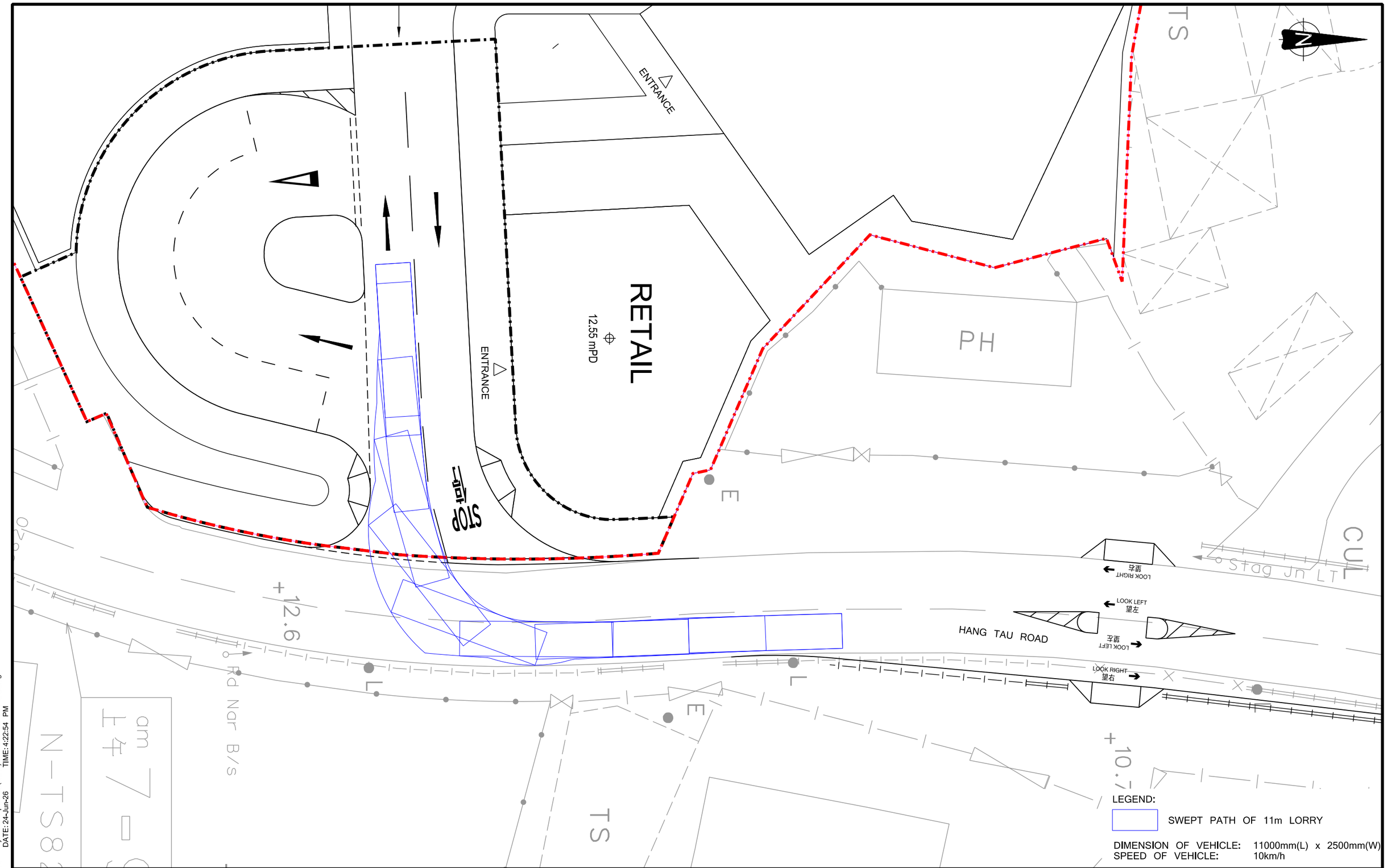
SWEPT PATH OF PRIVATE CAR IN / OUT

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

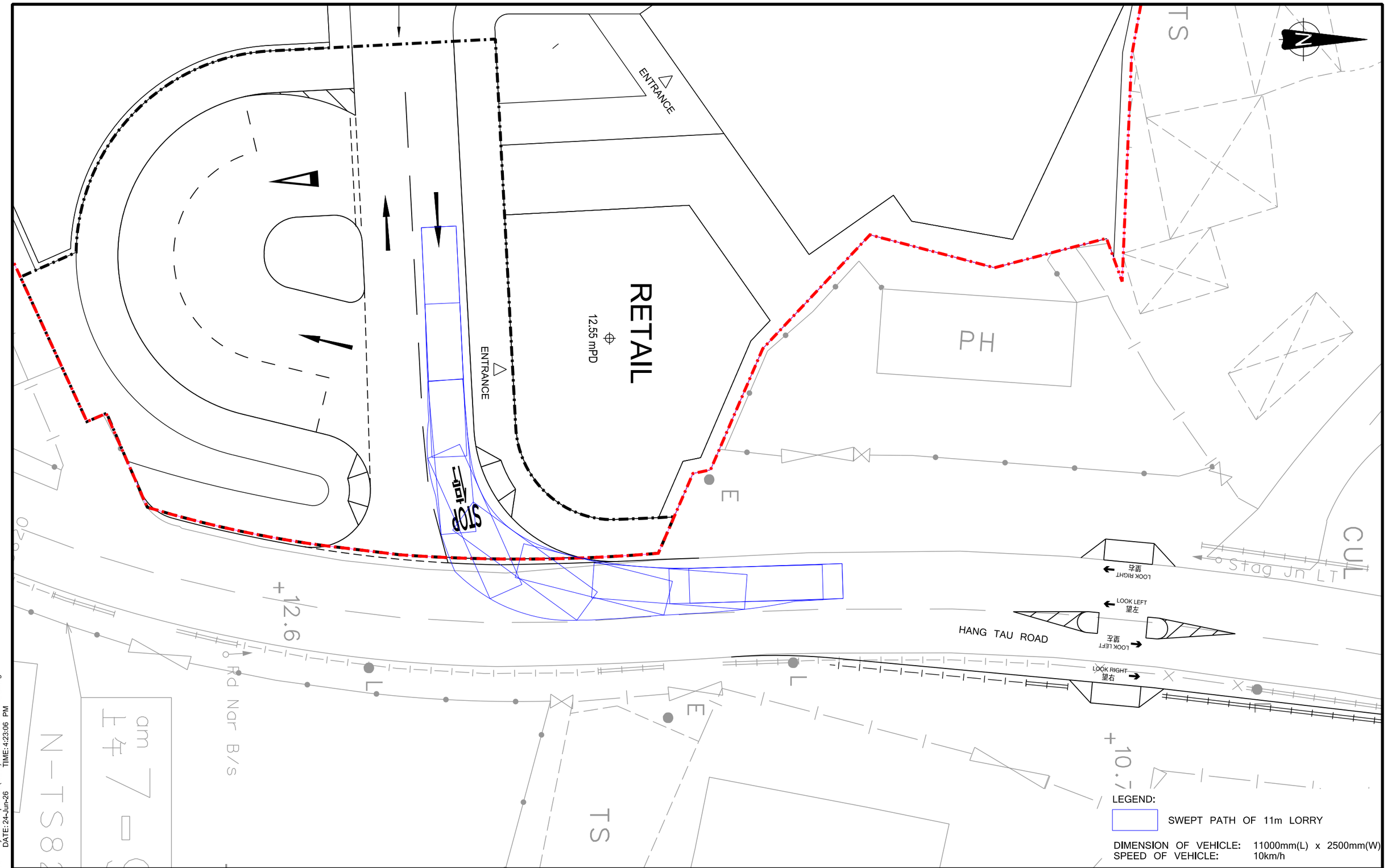
Drawing Title

SWEPT PATH OF 11m LORRY (INGRESS)

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SYSTRA MVA

Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

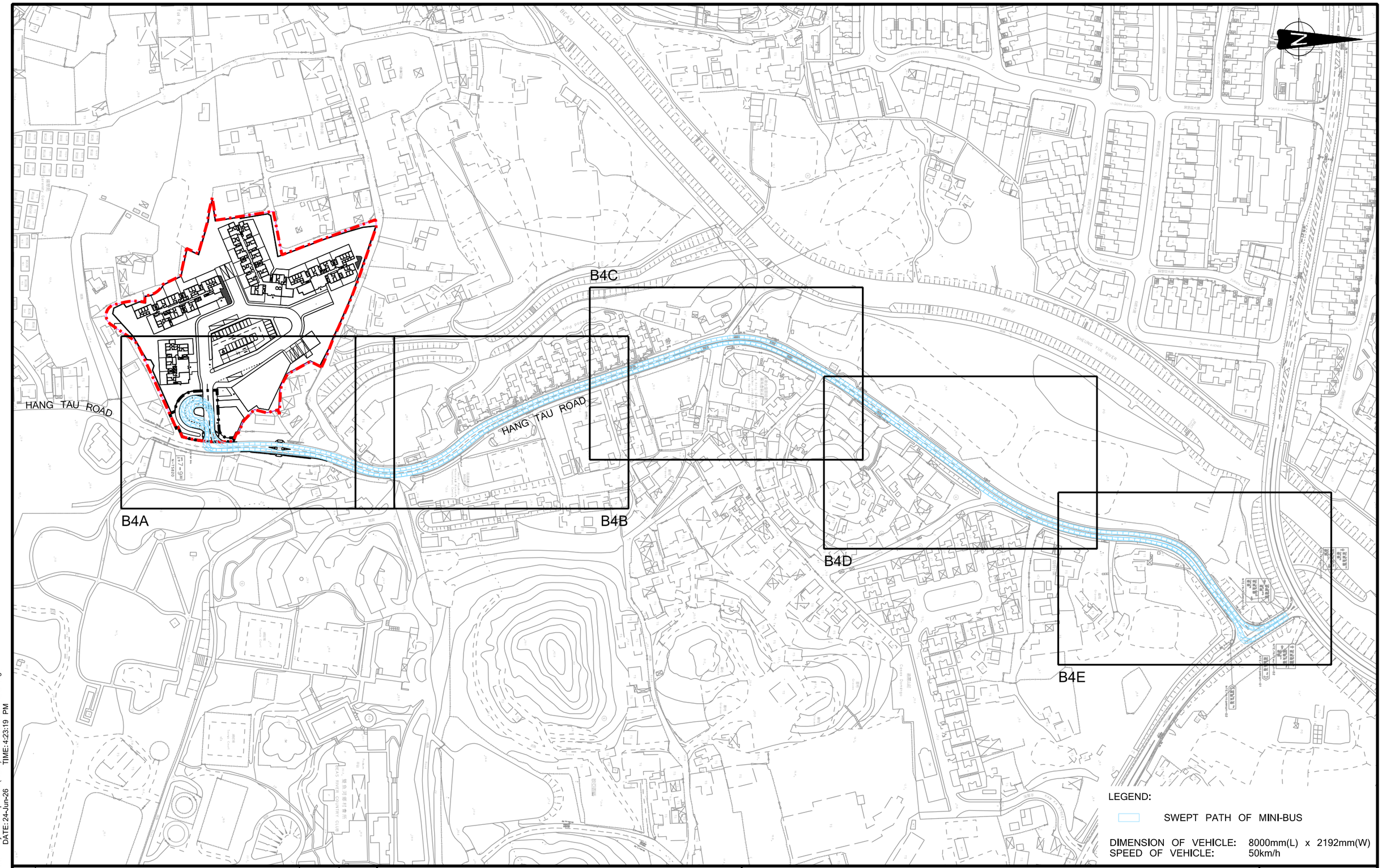
Drawing Title

SWEPT PATH OF 11m LORRY (EGRESS)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Original Size : A3



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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

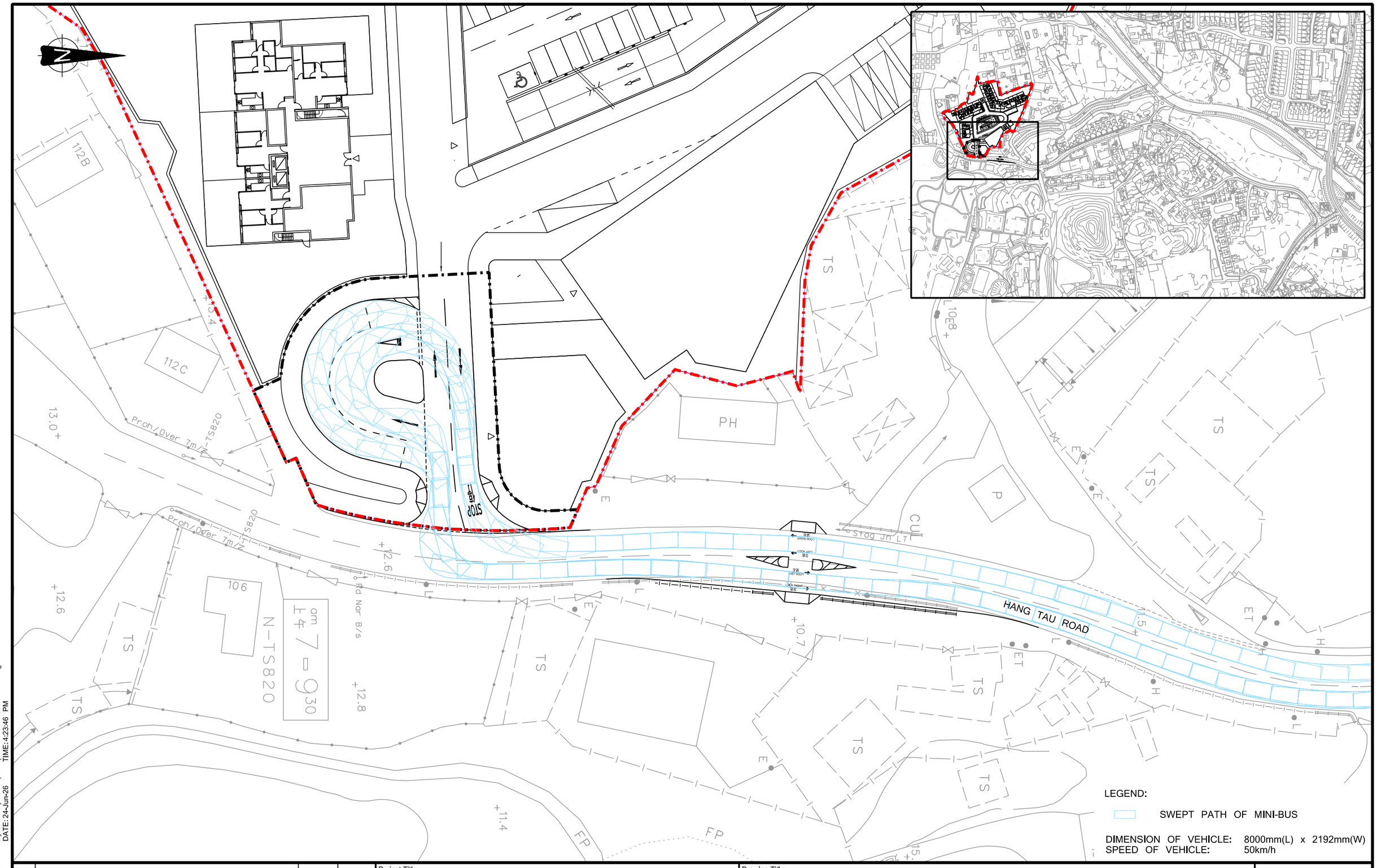
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (KEYPLAN)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

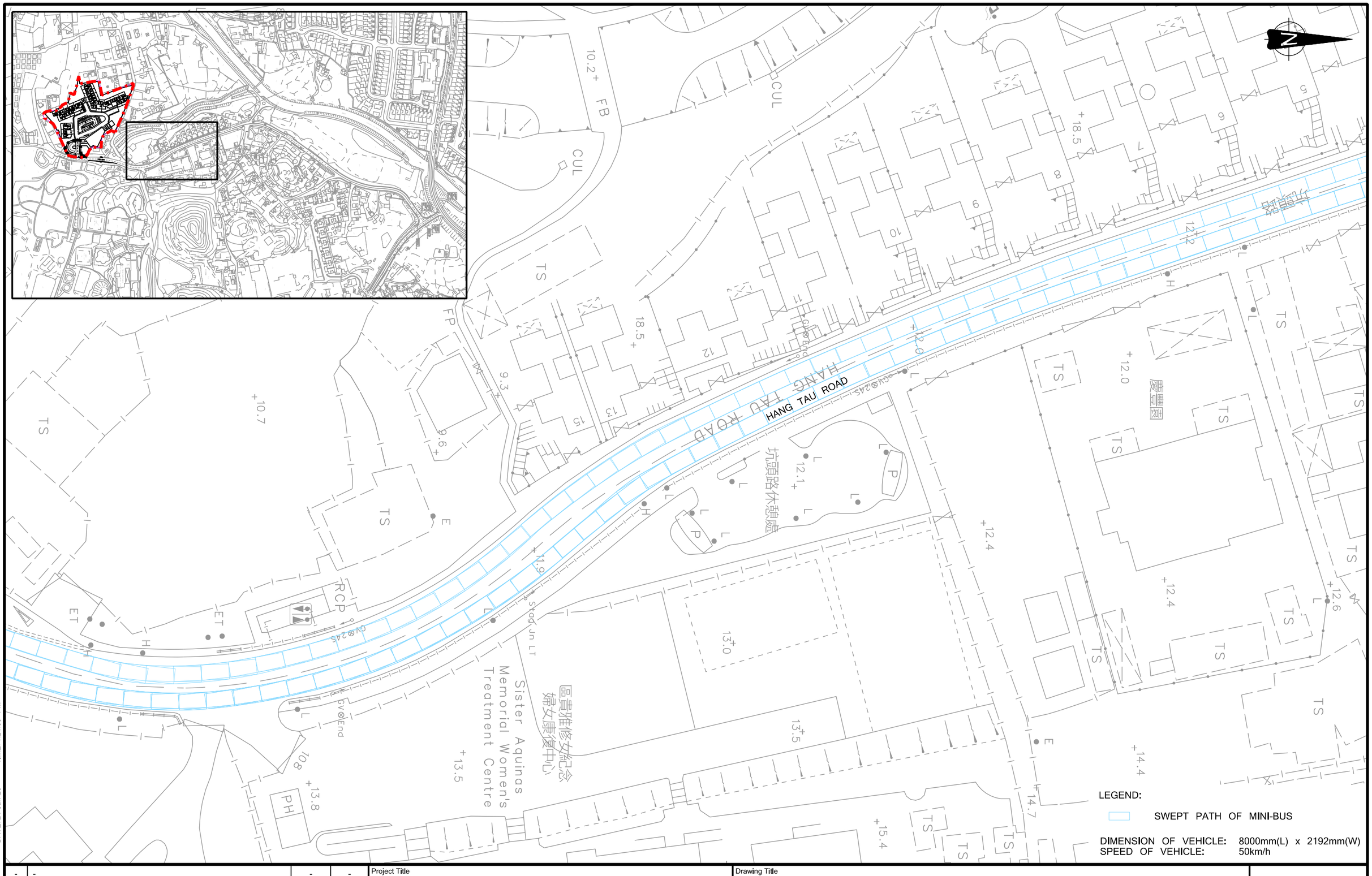
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 1 OF 5)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

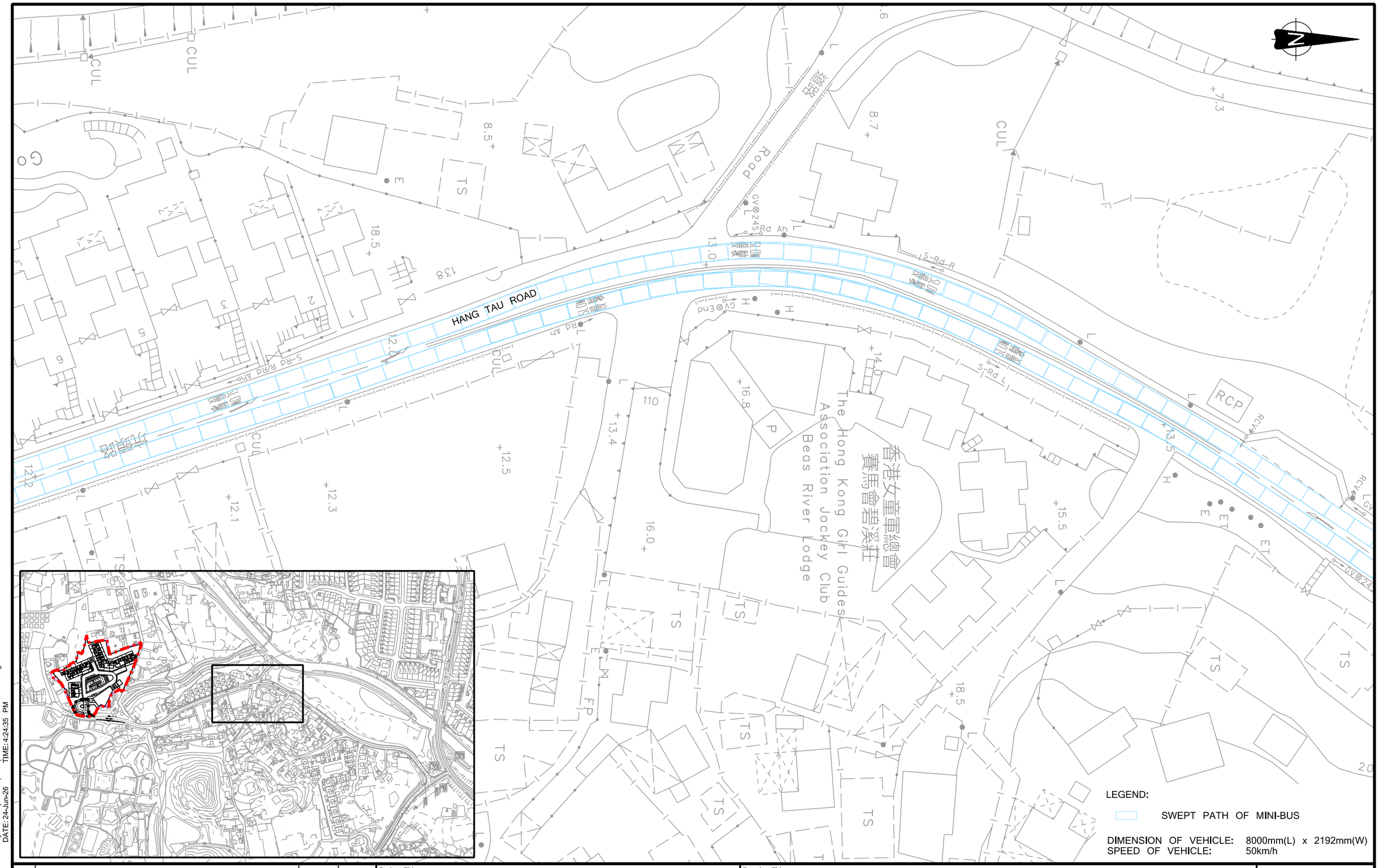
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 2 OF 5)

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

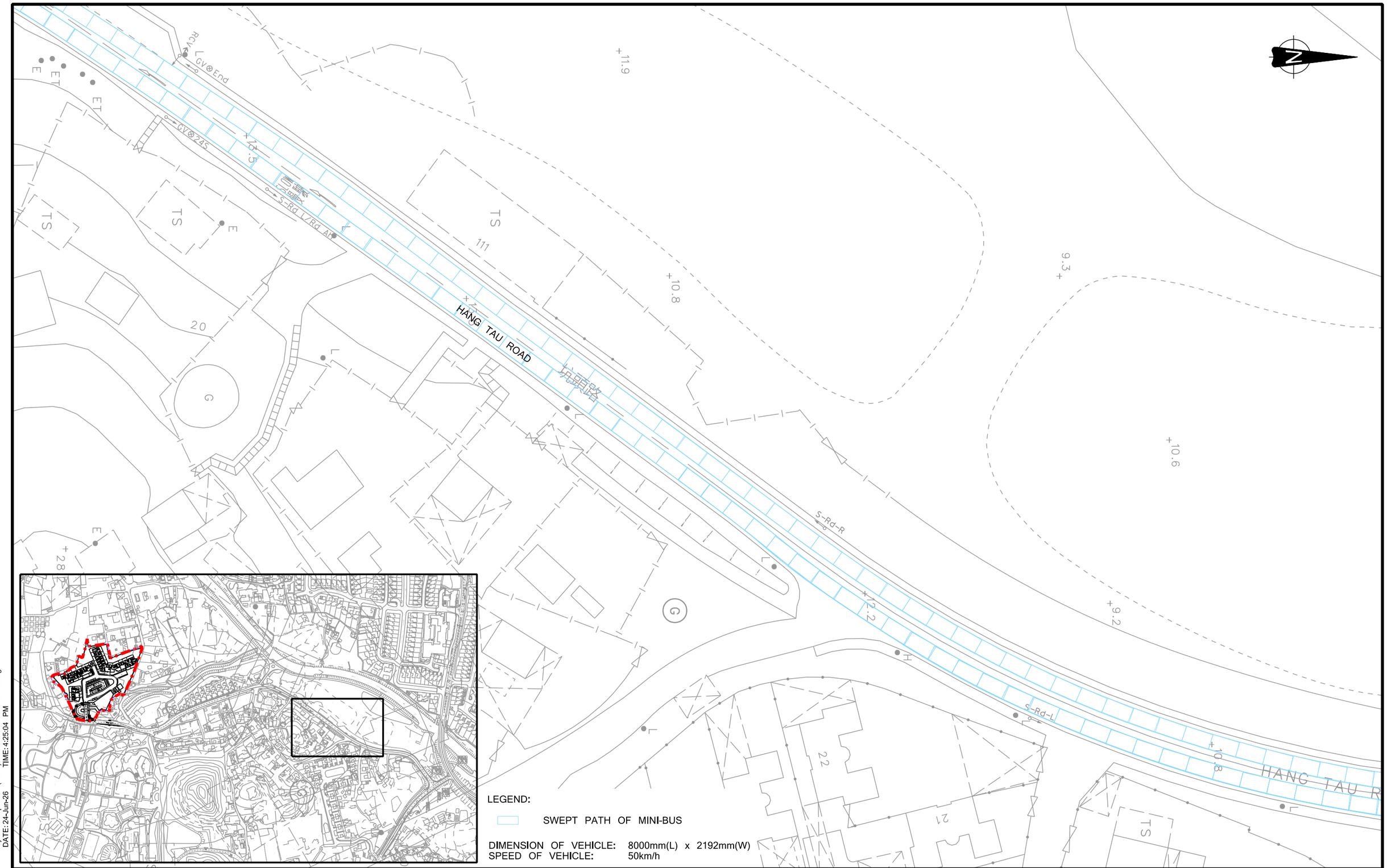
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 3 OF 5)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

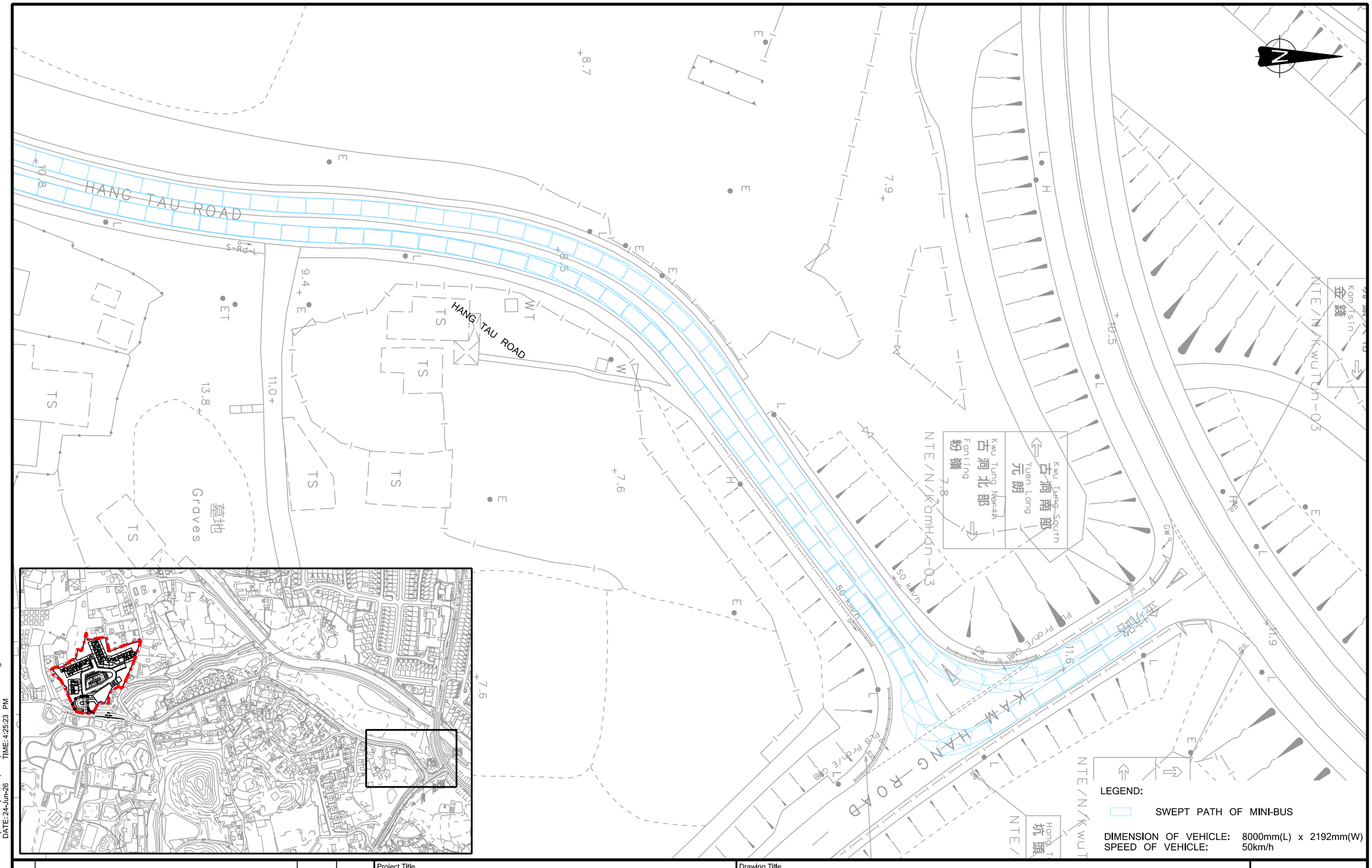
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 4 OF 5)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

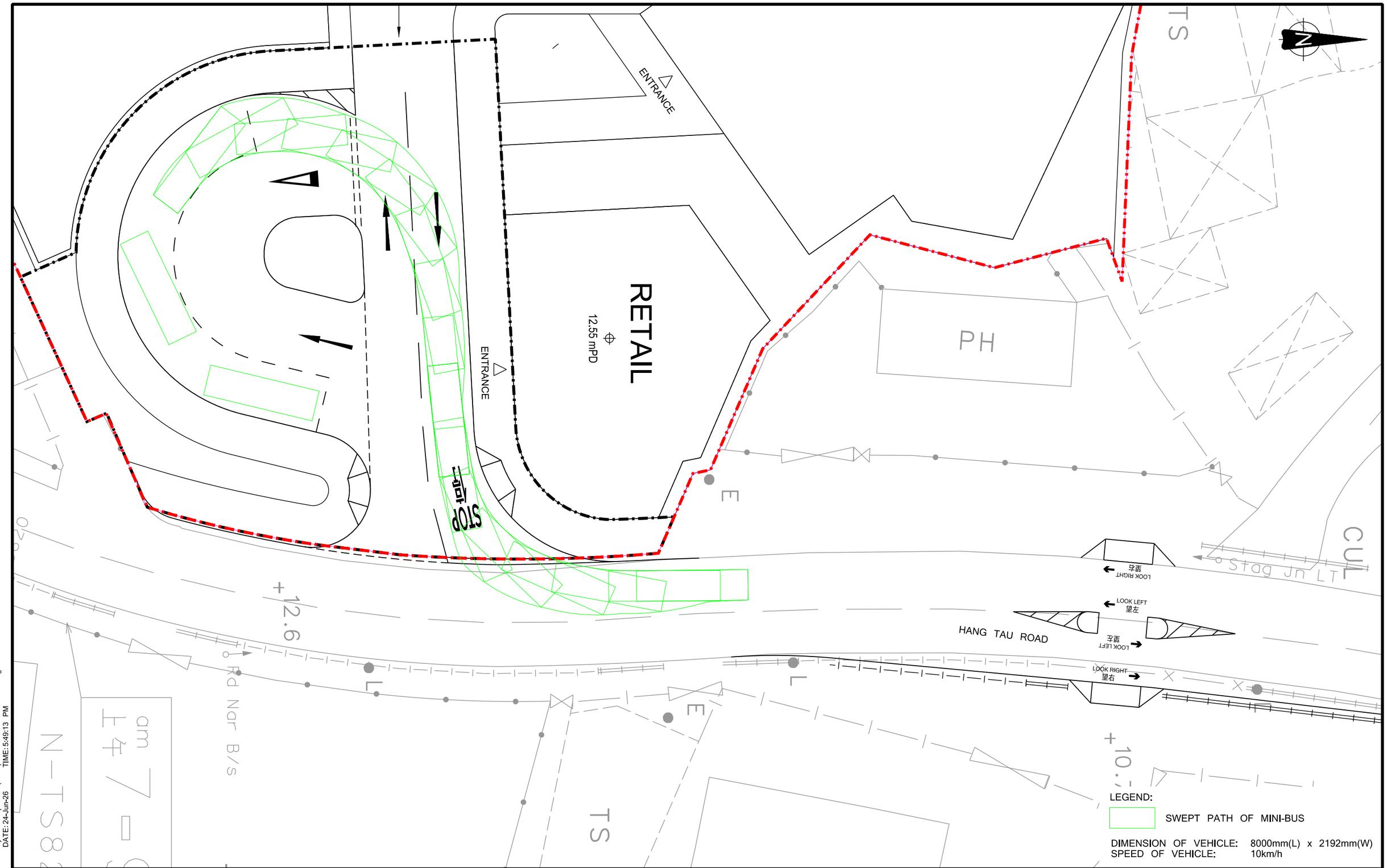
SWEPT PATH OF MINI-BUS ALONG HANG TAU ROAD (SHEET 5 OF 5)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

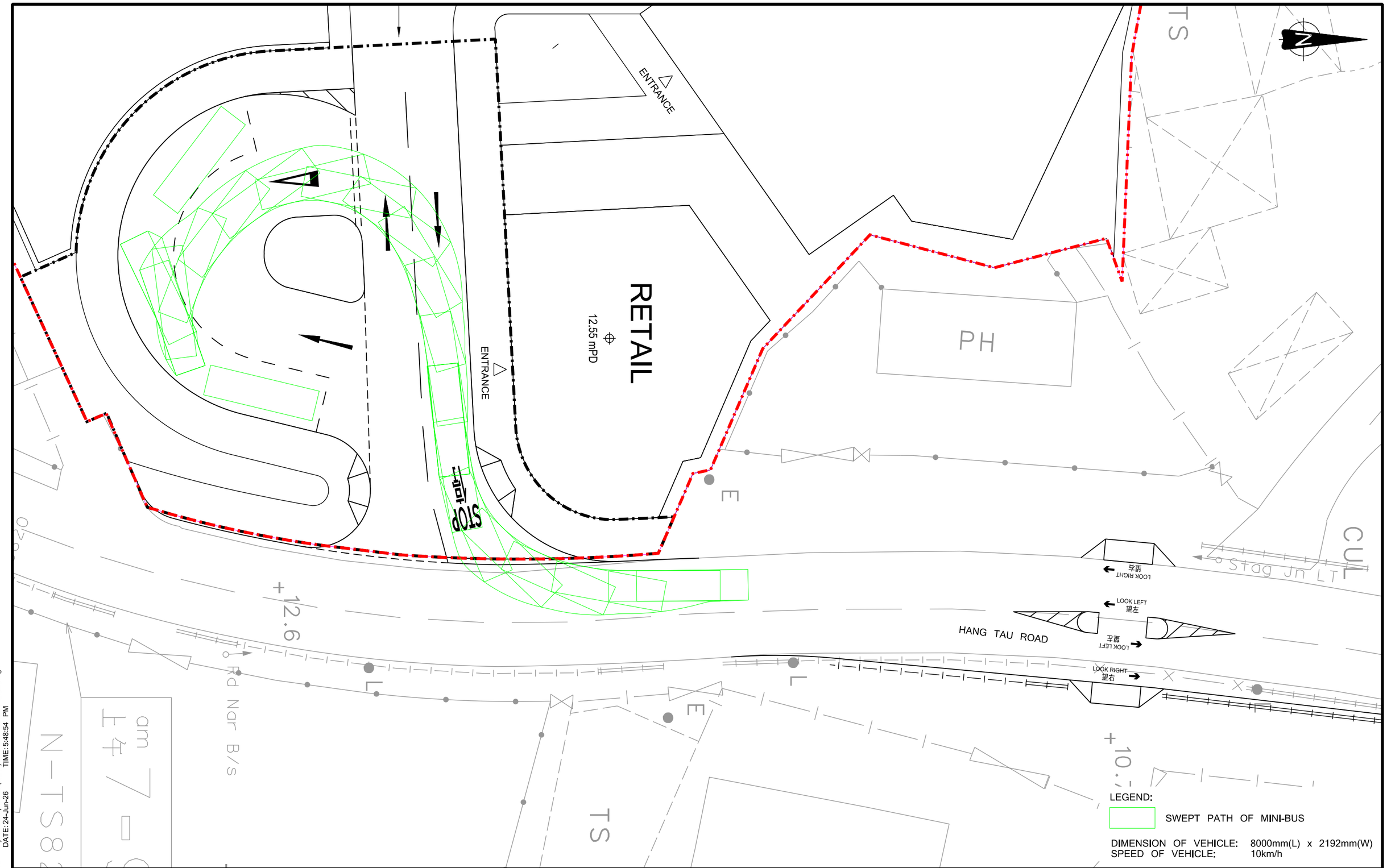
SWEPT PATH OF MINI-BUS AT PROPOSED LAYBY (SHEET 1 OF 3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:250(A3)	JUN 2026	**B5A**	-

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

SWEPT PATH OF MINI-BUS AT PROPOSED LAYBY (SHEET 2 OF 3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:250(A3)	JUN 2026	**B5B**	-

FILENAME: D:\OneDrive - SystraGroup\JOBS(NEW)\CHK50808310\TIA2\B5B.dgn
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DATE: 24-Jun-26
TIME: 5:48:54 PM

Original Size : A3

ENTRANCE

ENTRANCE

RETAIL

12.55 mPD

PH

STOP 停

+12.6

Rd Nar B/s

HANG TAU ROAD

LOOK RIGHT 望右

LOOK LEFT 望左

LOOK LEFT 望左

LOOK RIGHT 望右

Stag Jn LT

LEGEND:

SWEPT PATH OF MINI-BUS

DIMENSION OF VEHICLE: 8000mm(L) x 2192mm(W)
SPEED OF VEHICLE: 10km/h

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Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTION FOR COMPREHENSIVE DEVELOPMENT IN HANG TAU TAI PO, KWU TUNG SOUTH

Drawing Title

SWEPT PATH OF MINI-BUS AT PROPOSED LAYBY (SHEET 3 OF 3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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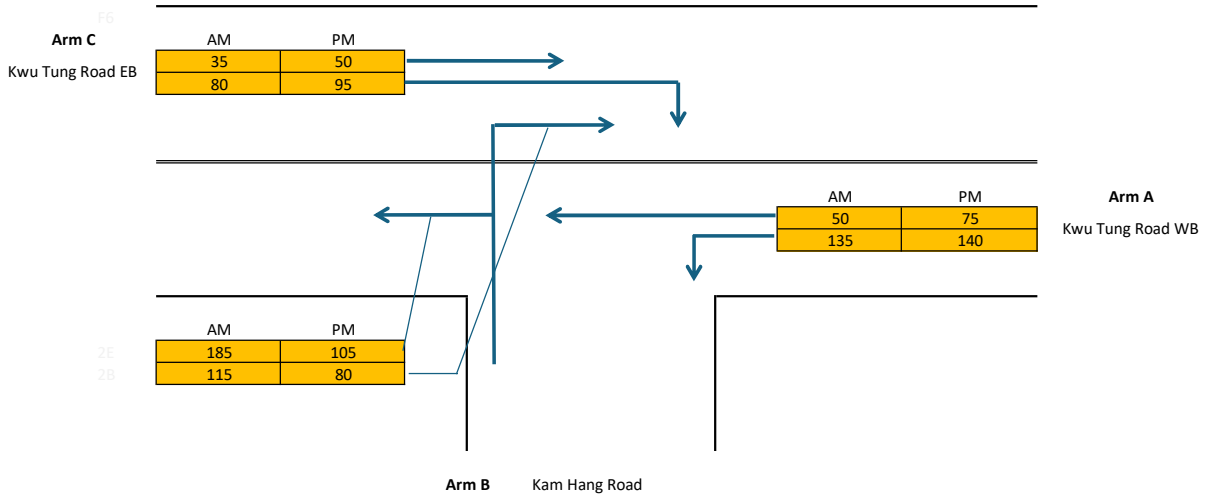
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APPENDIX C – DETAILS OF JUNCTION ASSESSMENTS

2024 Observed

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Existing			Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6141
	Vl(b-a)	70	Parameters	E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

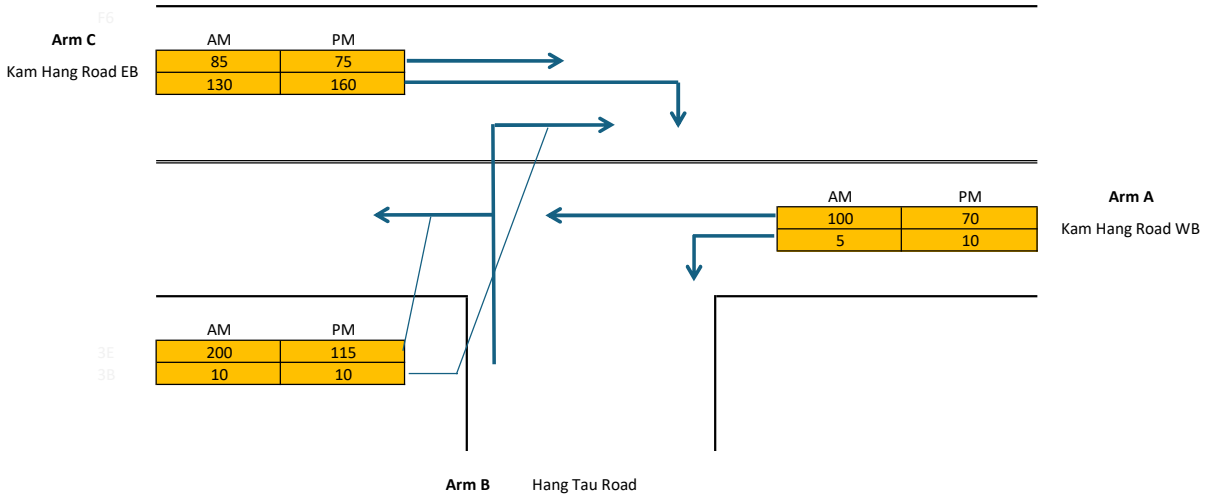
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	35	50
	q(c-b)	80	95
	q(a-b)	135	140
	q(a-c)	50	75
	q(b-a)	115	80
	q(b-c)	185	105
	f	0.62	0.57
CAPACITIES (pcu/hr)	Q(b-ac)	505.277	476.92
	Q(c-a)	1581.9	1537.9
	Q(c-b)	660.244	652.48
RFC's	c-a	0.02	0.03
	c-b	0.12	0.15
	b-ac	0.59	0.39
RFC		**0.59**	**0.39**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Observed	Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6044
	Vl(b-a)	45	Parameters	E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

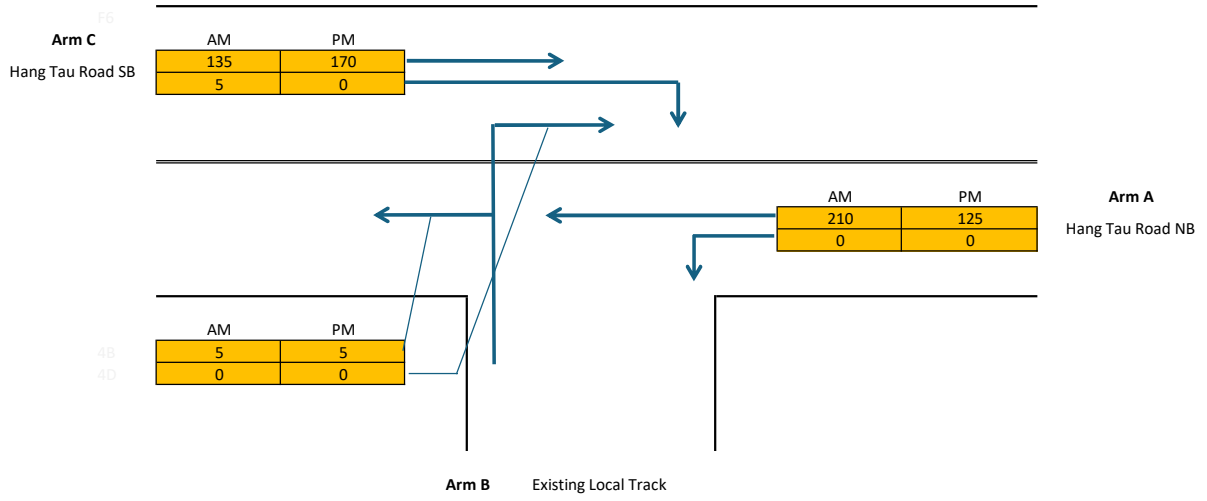
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	85	75
	q(c-b)	130	160
	q(a-b)	5	10
	q(a-c)	100	70
	q(b-a)	10	10
	q(b-c)	200	115
	f	0.95	0.92
CAPACITIES (pcu/hr)	Q(b-ac)	705.063	683.16
	Q(c-a)	1452.44	1376.4
	Q(c-b)	673.261	679.87
RFC's	c-a	0.06	0.05
	c-b	0.19	0.24
	b-ac	0.30	0.18
RFC		**0.30**	**0.24**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge			Designed by:	TCW
Scheme:	Observed			Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Hang Tau Road NB				
Arm B:	Existing Local Track				
Arm C:	Hang Tau Road SB				



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

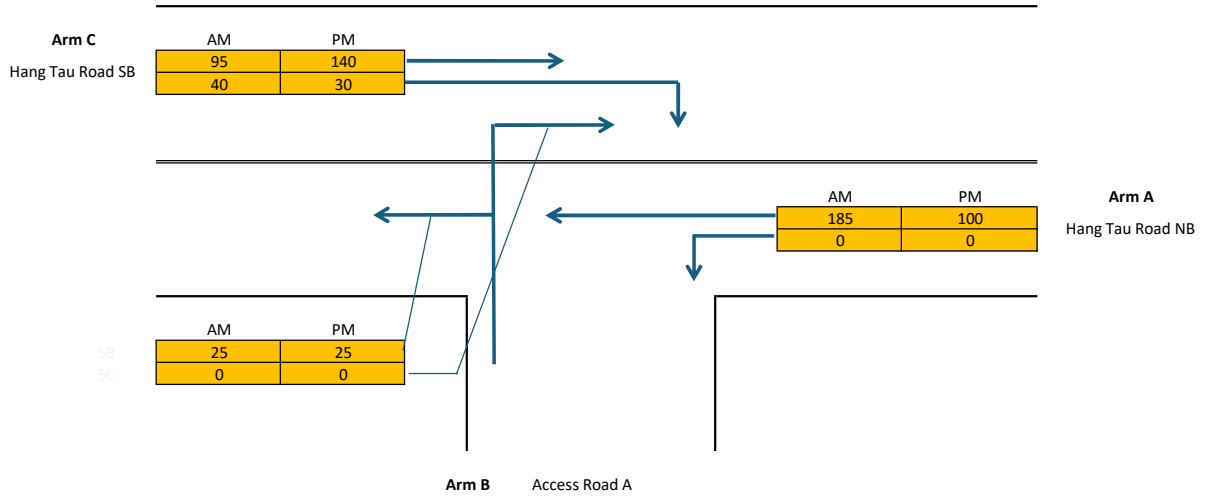
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	135	170
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	210	125
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	667.184	689.08
	Q(c-a)	1786.76	1800
	Q(c-b)	679.933	702.25
RFC's	c-a	0.08	0.09
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.08**	**0.09**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J4) Hang Tau Road / Access Road A	Designed by:	TCW
Scheme:	Observed	Checked by:	CHC
Design Year:	2024	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Access Road A		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	4.50		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	95	140
	q(c-b)	40	30
	q(a-b)	0	0
	q(a-c)	185	100
	q(b-a)	0	0
	q(b-c)	25	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	616.734	637.59
	Q(c-a)	1683.26	1715.3
	Q(c-b)	616.734	637.59
RFC's	c-a	0.06	0.08
	c-b	0.06	0.05
	b-ac	0.04	0.04
RFC		**0.06**	**0.08**

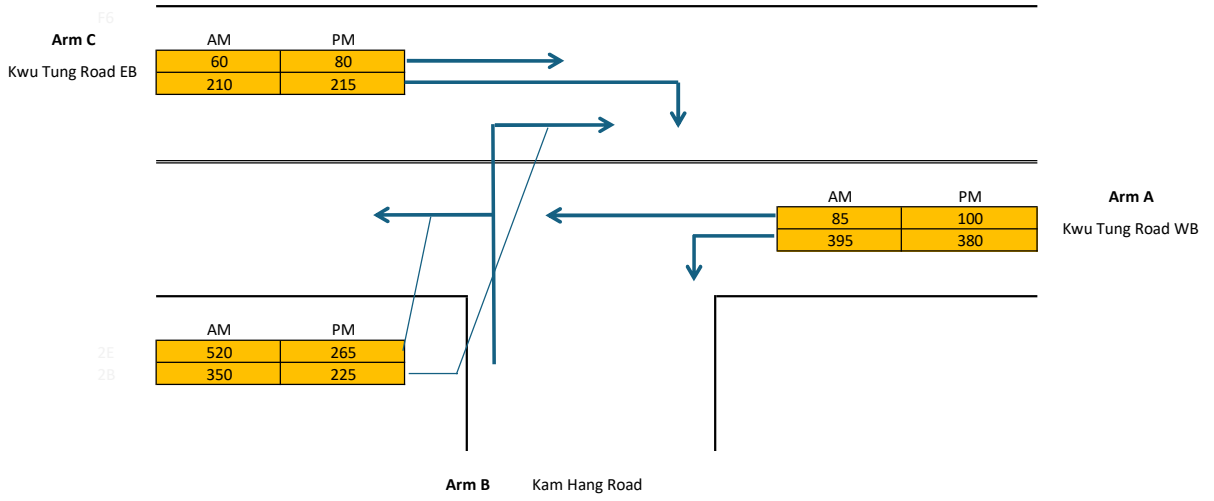
Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

2034 Reference

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J1) Kwu Tung Road / Kam Hang Road	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kwu Tung Road WB		
Arm B:	Kam Hang Road		
Arm C:	Kwu Tung Road EB		



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6141
	Vl(b-a)	70	Parameters	E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

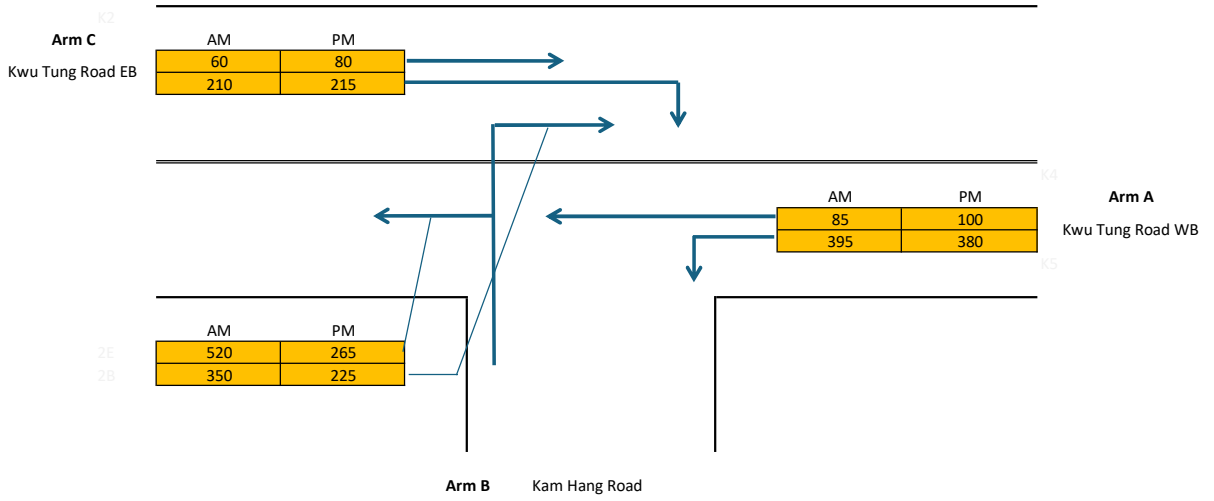
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	395	380
	q(a-c)	85	100
	q(b-a)	350	225
	q(b-c)	520	265
	f	0.60	0.54
CAPACITIES (pcu/hr)	Q(b-ac)	437.925	412.14
	Q(c-a)	1152.61	1137.2
	Q(c-b)	583.883	583.88
RFC's	c-a	0.05	0.07
	c-b	0.36	0.37
	b-ac	1.99	1.19
RFC		**1.99**	**1.19**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Reference (with Improvement scheme under Y/NE-KTS/14)			Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	4.70
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.70
Blockage of major road right turn	Y/N?	N		w(c-b)	3.00
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	135	Calculated	D	1.0968
	Vl(b-a)	125	Parameters	E	1.1135
	Vr(b-c)	135		F	0.922
	Vr(c-b)	100		Y	0.7482

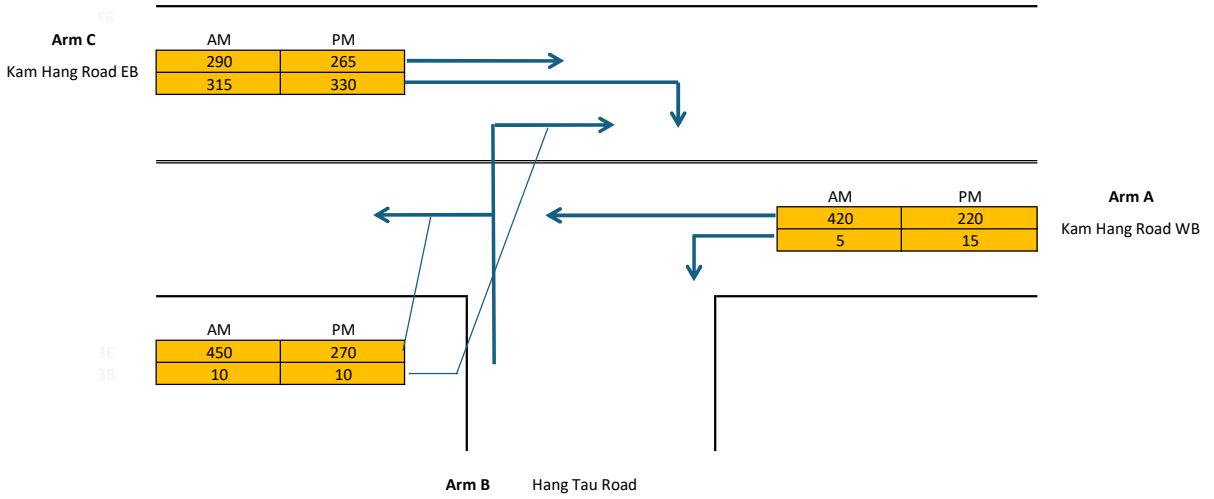
ANALYSIS		**AM PEAK**		**PM PEAK**	
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60		80	
	q(c-b)	210		215	
	q(a-b)	395		380	
	q(a-c)	85		100	
	q(b-a)	350		225	
	q(b-c)	520		265	
	f	0.60		0.54	
CAPACITIES (pcu/hr)	Q(b-a)	514.764		506.16	
	Q(b-c)	756.42		753.67	
	Q(b-c)(0)	627.843		669.92	
	Q(c-b)	566.369		566.37	
RFC's	c-b	0.37		0.38	
	b-a	0.68		0.44	
	b-c b-c(0)	0.69	0.83	0.35	0.40
RFC		**0.83**		**0.44**	

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6044
	Vl(b-a)	45	Parameters	E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

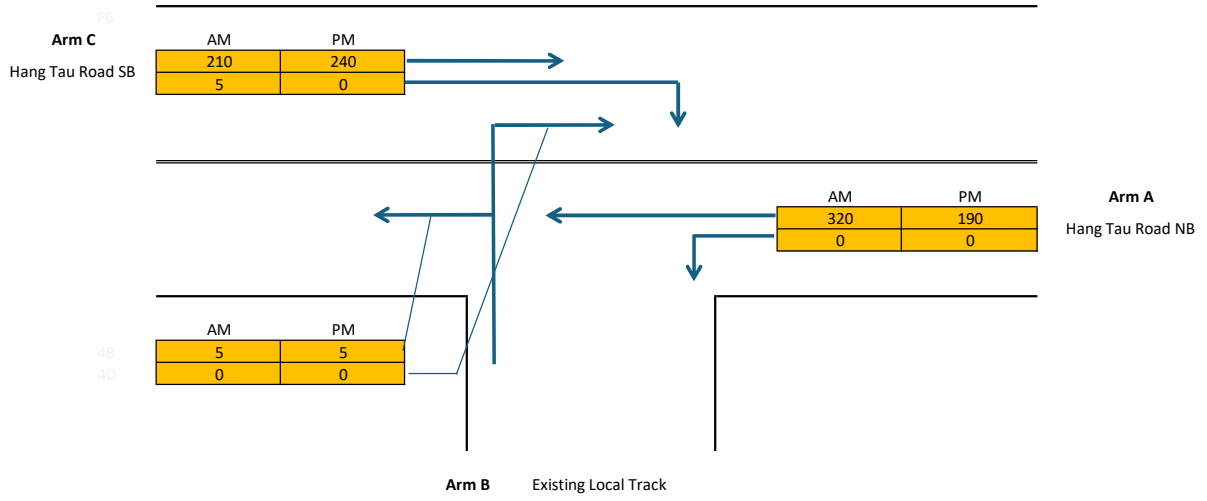
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	290	265
	q(c-b)	315	330
	q(a-b)	5	15
	q(a-c)	420	220
	q(b-a)	10	10
	q(b-c)	450	270
	f	0.98	0.96
CAPACITIES (pcu/hr)	Q(b-ac)	624.757	664.26
	Q(c-a)	836.717	870.24
	Q(c-b)	588.612	638.87
RFC's	c-a	0.35	0.30
	c-b	0.54	0.52
	b-ac	0.74	0.42
RFC		**0.74**	**0.52**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South			
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge		Designed by:	TCW
Scheme:	Reference		Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date:	Mar-26
Arm A:	Hang Tau Road NB			
Arm B:	Existing Local Track			
Arm C:	Hang Tau Road SB			



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

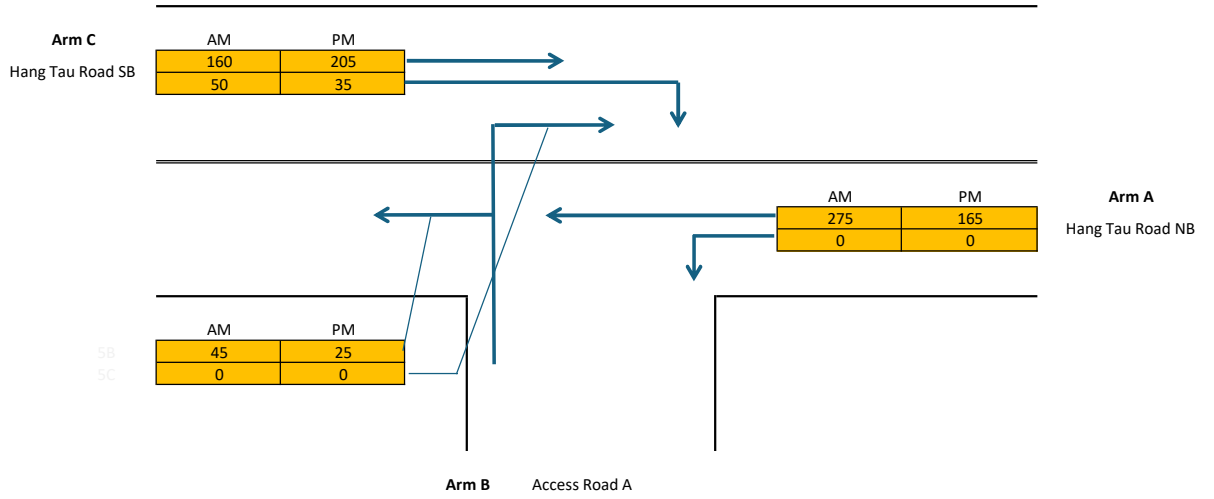
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	210	240
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	320	190
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	638.851	672.34
	Q(c-a)	1786.18	1800
	Q(c-b)	651.058	685.18
RFC's	c-a	0.12	0.13
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.12**	**0.13**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J4) Hang Tau Road / Access Road A	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Access Road A		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	4.50		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

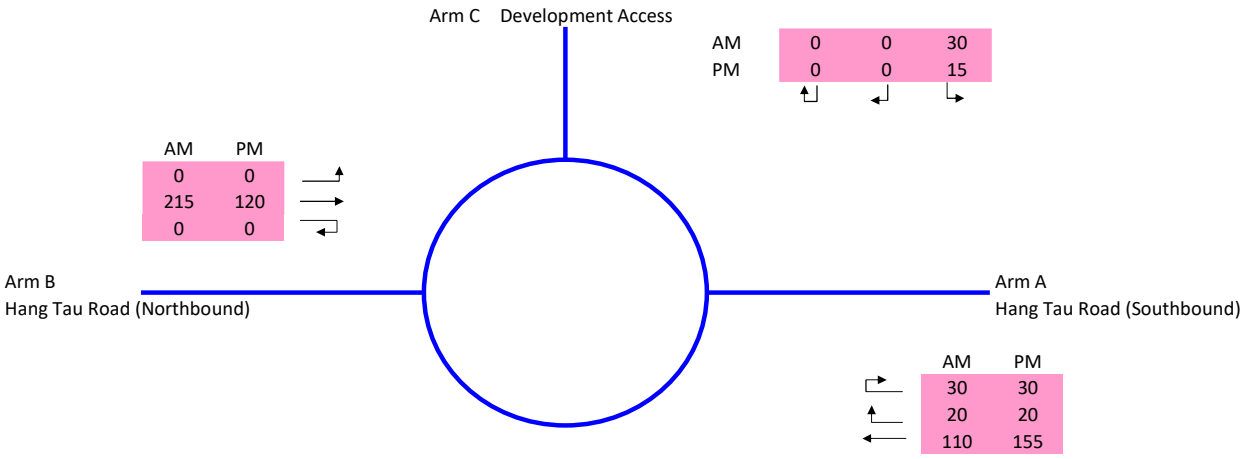
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	160	205
	q(c-b)	50	35
	q(a-b)	0	0
	q(a-c)	275	165
	q(b-a)	0	0
	q(b-c)	45	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	594.65	621.64
	Q(c-a)	1648.65	1698.7
	Q(c-b)	594.65	621.64
RFC's	c-a	0.10	0.12
	c-b	0.08	0.06
	b-ac	0.08	0.04
RFC		**0.10**	**0.12**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Roundabout Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang		
Junction:	(J5) Hang Tau Road / Proposed Development Access	Designed by:	TCW
Scheme:	Reference	Checked by:	CHC
Design Year:	2034 Job No.: CHK50808310	Date:	MAR, 2026
Arm A	Hang Tau Road (Southbound)		
Arm B	Hang Tau Road (Northbound)		
Arm C	Development Access		



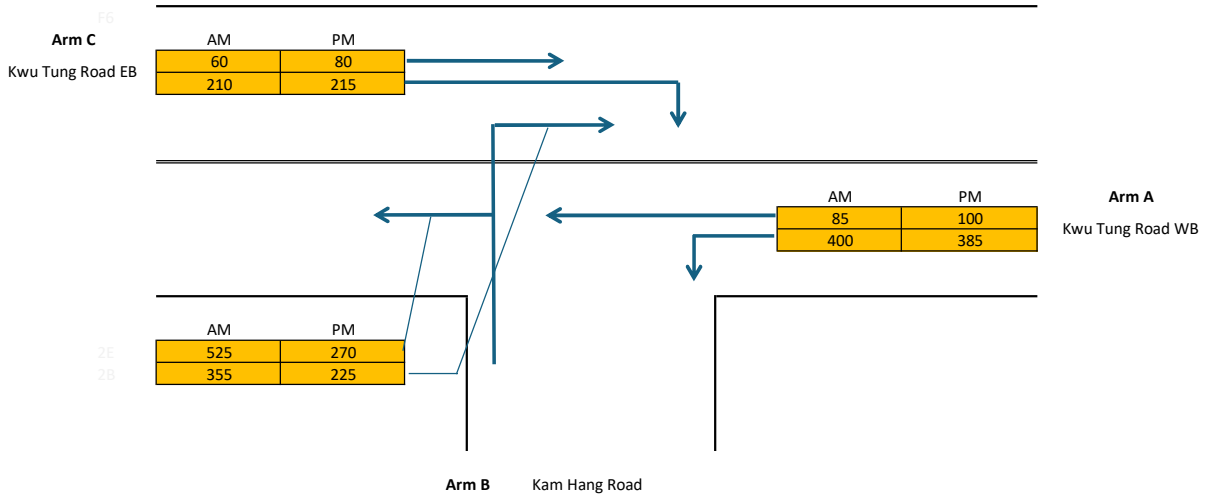
				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				3.90	3.65	3.65	
E	Entry Width (m)				4.50	4.50	4.00	
L	Effective Length of Flare (m)				3.00	2.00	2.00	
R	Entry Radius (m)				40.00	15.00	18.00	
D	Inscribed Circle Diameter (m)				18.00	18.00	18.00	
A	Entry Angle (degree)				25.00	60.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.32	0.68	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.04	0.88	0.98	
X2	= V + ((E-V) / (1+2S))				4.27	4.01	3.87	
M	= EXP ((D-60) /10)				0.01	0.01	0.01	
F	= 303 * X2				1293	1215	1174	
Td	= 1 + (0.5 / (1+M))				1.49	1.49	1.49	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.56	0.56	
AM RESULT								
Q	Entry Flow (pcu/hour)				160	215	30	
Qc	Circulating Flow Across Entry (pcu/hour)				0	50	245	
Qe	= K (F - Fc*Qc)				1347	1044	1014	
DFC	= Q / Qe	Design Flow / Capacity	0.21		0.12	**0.21**	0.03	
		Total Entry Flows	405					
PM RESULT								
Q	Entry Flow (pcu/hour)				205	120	15	
Qc	Circulating Flow Across Entry (pcu/hour)				0	50	150	
Qe	= K (F - Fc*Qc)				1347	1044	1066	
DFC	= Q / Qe	Design Flow / Capacity	0.15		**0.15**	0.11	0.01	
		Total Entry Flows	340					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

2034 Design

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J1) Kwu Tung Road / Kam Hang Road	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kwu Tung Road WB		
Arm B:	Kam Hang Road		
Arm C:	Kwu Tung Road EB		



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.75
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.60
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated Parameters	D	0.6141
	Vl(b-a)	70		E	0.9912
	Vr(b-c)	100		F	0.9505
	Vr(c-b)	70		Y	0.7482

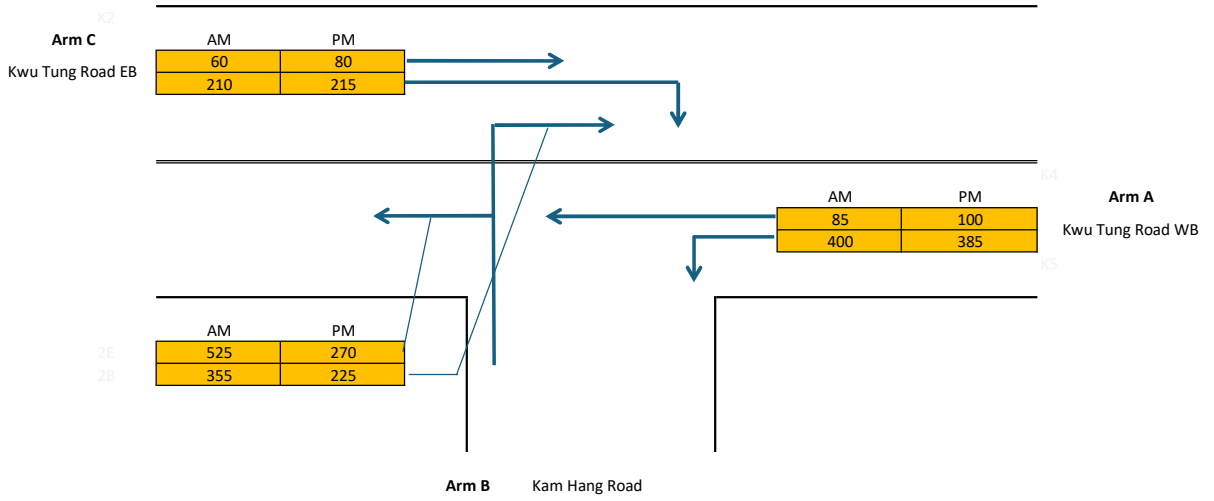
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	400	385
	q(a-c)	85	100
	q(b-a)	355	225
	q(b-c)	525	270
	f	0.60	0.55
CAPACITIES (pcu/hr)	Q(b-ac)	437.061	413.32
	Q(c-a)	1151.17	1135.7
	Q(c-b)	582.589	582.59
RFC's	c-a	0.05	0.07
	c-b	0.36	0.37
	b-ac	2.01	1.20
RFC		**2.01**	**1.20**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South				
Junction:	(J1) Kwu Tung Road / Kam Hang Road			Designed by:	TCW
Scheme:	Design (with Improvement scheme under Y/NE-KTS/14)			Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310		Date:	Mar-26
Arm A:	Kwu Tung Road WB				
Arm B:	Kam Hang Road				
Arm C:	Kwu Tung Road EB				



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	4.70
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.70
Blockage of major road right turn	Y/N?	N		w(c-b)	3.00
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	135	Calculated	D	1.0968
	Vl(b-a)	125	Parameters	E	1.1135
	Vr(b-c)	135		F	0.922
	Vr(c-b)	100		Y	0.7482

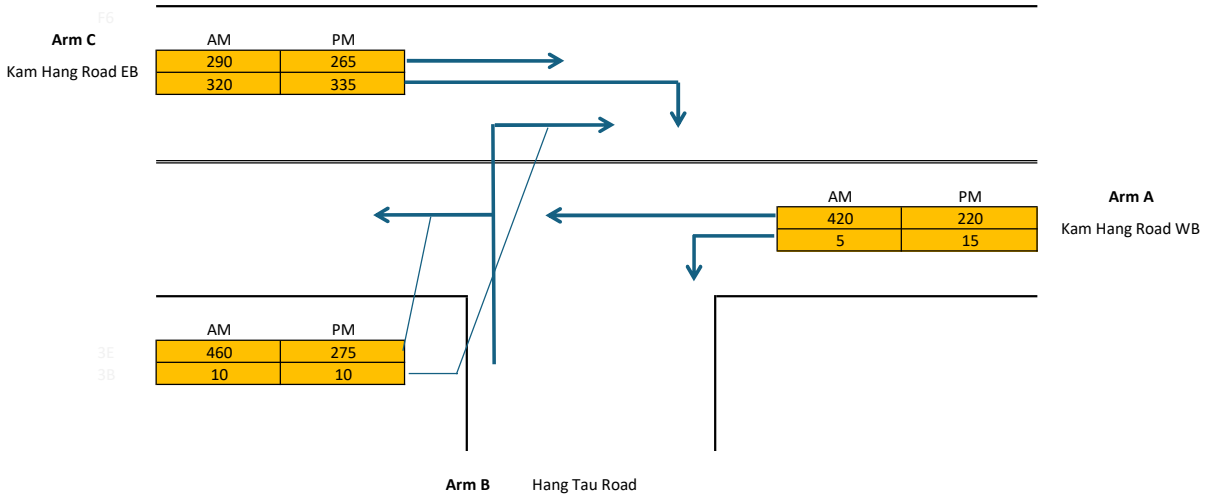
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	60	80
	q(c-b)	210	215
	q(a-b)	400	385
	q(a-c)	85	100
	q(b-a)	355	225
	q(b-c)	525	270
	f	0.60	0.55
CAPACITIES (pcu/hr)	Q(b-a)	514.173	505.57
	Q(b-c)	755.82	753.07
	Q(b-c)(0)	625.36	669.28
	Q(c-b)	565.114	565.11
RFC's	c-b	0.37	0.38
	b-a	0.69	0.45
	b-c b-c(0)	0.69 0.84	0.36 0.40
RFC		**0.84**	**0.45**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J2) Kam Hang Road / Hang Tau Road	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Kam Hang Road WB		
Arm B:	Hang Tau Road		
Arm C:	Kam Hang Road EB		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.25
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated Parameters	D	0.6044
	Vl(b-a)	45		E	1.0469
	Vr(b-c)	110		F	0.941
	Vr(c-b)	90		Y	0.7723

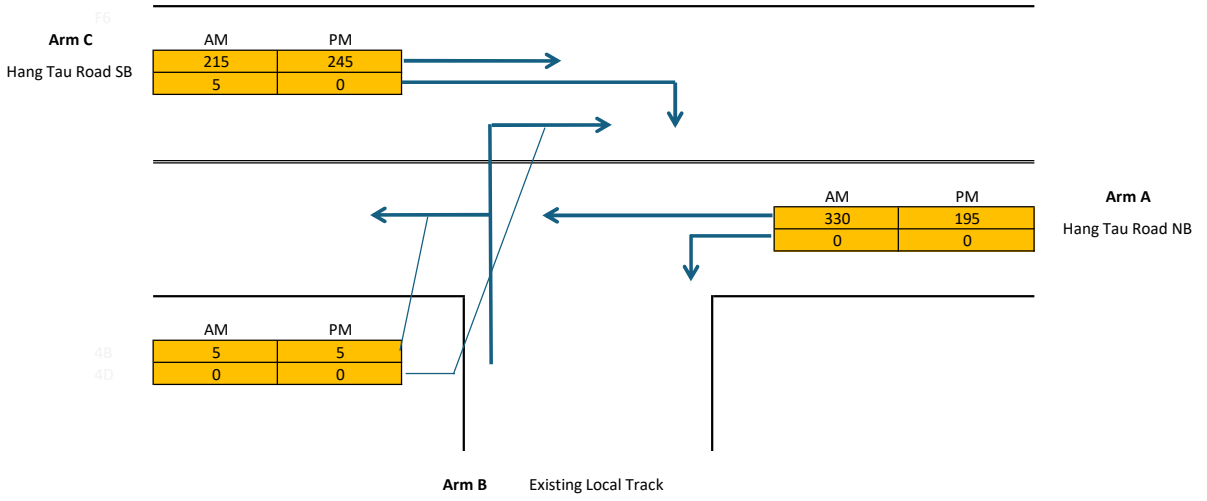
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	290	265
	q(c-b)	320	335
	q(a-b)	5	15
	q(a-c)	420	220
	q(b-a)	10	10
	q(b-c)	460	275
	f	0.98	0.96
CAPACITIES (pcu/hr)	Q(b-ac)	625.131	664.71
	Q(c-a)	821.426	856.15
	Q(c-b)	588.612	638.87
RFC's	c-a	0.35	0.31
	c-b	0.54	0.52
	b-ac	0.75	0.43
RFC		**0.75**	**0.52**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J3) Hang Tau Road / Local Track to Sheung Yue River / Access of Jockey Club River Beas Lodge	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Existing Local Track		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.80	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.50
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.90
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	100	Calculated	D	0.6257
	Vl(b-a)	100	Parameters	E	0.9682
	Vr(b-c)	100		F	0.9867
	Vr(c-b)	80		Y	0.7309

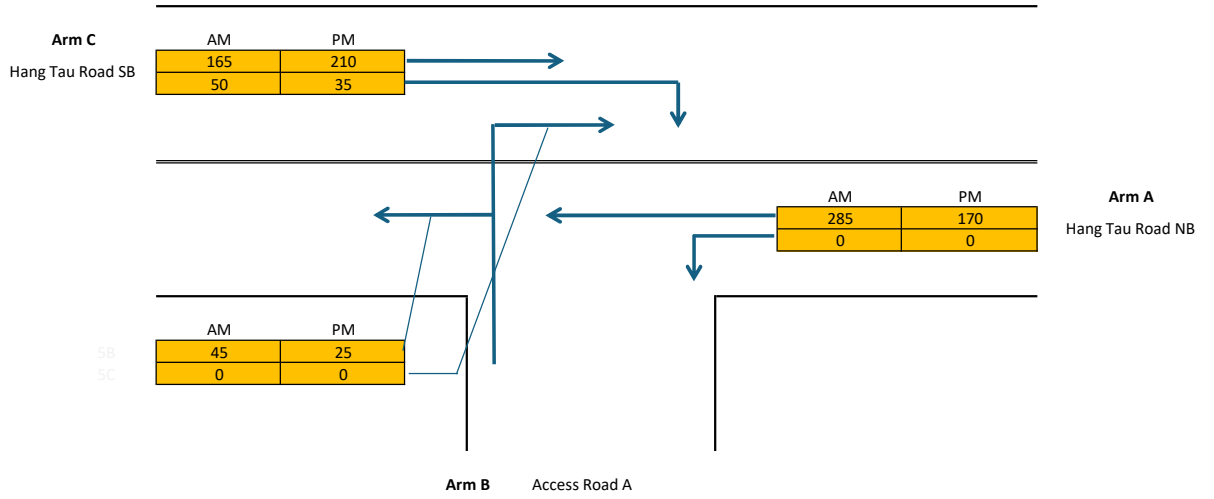
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	215	245
	q(c-b)	5	0
	q(a-b)	0	0
	q(a-c)	330	195
	q(b-a)	0	0
	q(b-c)	5	5
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	636.275	671.05
	Q(c-a)	1786.12	1800
	Q(c-b)	648.433	683.87
RFC's	c-a	0.12	0.14
	c-b	0.01	0.00
	b-ac	0.01	0.01
RFC		**0.12**	**0.14**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South			
Junction:	(J4) Hang Tau Road / Access Road A		Designed by:	TCW
Scheme:	Design		Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date:	Mar-26
Arm A:	Hang Tau Road NB			
Arm B:	Access Road A			
Arm C:	Hang Tau Road SB			



GEOMETRY

Major Road Width (m)	W	7.00	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.30
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.30
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.5573
	Vl(b-a)	22		E	0.8888
	Vr(b-c)	30		F	0.8888
	Vr(c-b)	30		Y	0.7585

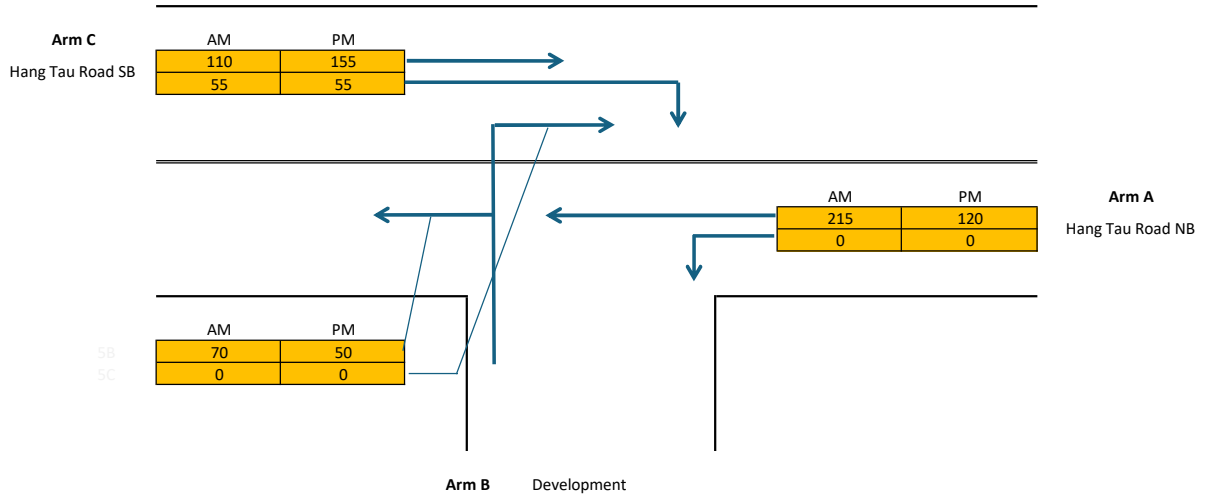
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	165	210
	q(c-b)	50	35
	q(a-b)	0	0
	q(a-c)	285	170
	q(b-a)	0	0
	q(b-c)	45	25
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	592.196	620.41
	Q(c-a)	1648.02	1698.5
	Q(c-b)	592.196	620.41
RFC's	c-a	0.10	0.12
	c-b	0.08	0.06
	b-ac	0.08	0.04
RFC		**0.10**	**0.12**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Section 16 Planning Application For Proposed Minor Relaxation of Plot Ratio and Building Height Restriction For Comprehensive Development in Hang Tau Tai Po, Kwu Tung South		
Junction:	(J4) Hang Tau Road / Access Road A	Designed by:	TCW
Scheme:	Design	Checked by:	CHC
Design Year:	2034	Job No.: CHK50808310	Date: Mar-26
Arm A:	Hang Tau Road NB		
Arm B:	Development		
Arm C:	Hang Tau Road SB		



GEOMETRY

Major Road Width (m)	W	7.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.65
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	55	Calculated Parameters	D	0.5999
	Vl(b-a)	100		E	0.9415
	Vr(b-c)	55		F	0.9318
	Vr(c-b)	90		Y	0.7482

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	110	155
	q(c-b)	55	55
	q(a-b)	0	0
	q(a-c)	215	120
	q(b-a)	0	0
	q(b-c)	70	50
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	646.292	670.65
	Q(c-a)	1645.23	1650.9
	Q(c-b)	639.663	663.77
RFC's	c-a	0.07	0.09
	c-b	0.09	0.08
	b-ac	0.11	0.07
RFC		**0.11**	**0.09**

Where Vl and Vr are visibility distances to the left or right of the respective streams
D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))
E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))
F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))
Y = 1-0.0345W
f = proportion of minor traffic turning left
Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

APPENDIX C

Predicted Road Traffic Noise Levels

AM Peak Hour - Predicted Road Traffic Noise Level, L10 (1hour)dB(A)

Project Site	NAP ID	Floor	NAP ID	Floor (n)							NAP ID	Floor	NAP ID	Floor
		G		1	2	3	4	5	6	7		8		9
T1	T1-A1-G	66	T1-A1-n	66	66	65	65	64	64	64				
	T1-A2-G	67	T1-A2-n	67	66	66	65	65	65	65				
	T1-A3-G	66	T1-A3-n	66	66	66	65	65	65	65				
	T1-A4-G	66	T1-A4-n	66	66	65	65	65	65	64				
	T1-A5-G	66	T1-A5-n	66	65	65	65	65	64	64				
	T1-B1-G	65	T1-B1-n	65	65	65	65	64	64	64	T1-B1-8	64		
	T1-B2-G	65	T1-B2-n	65	65	65	65	64	64	64	T1-B2-8	64		
	T1-B3-G	65	T1-B3-n	65	65	65	64	64	64	64	T1-B3-8	64		
	T1-B4-G	65	T1-B4-n	65	65	64	64	64	64	64	T1-B4-8	64		
			T1-C1-n	64	64	64	64	64	64	64	T1-C1-8	64		
			T1-C2-n	64	64	64	64	64	64	64	T1-C2-8	64		
			T1-C3-n	64	64	64	64	64	64	64	T1-C3-8	64		
			T1-C4-n	64	64	64	64	64	64	63	T1-C4-8	63		
			T1-D1-n	64	64	64	64	63	63	63	T1-D1-8	63		
			T1-D2-n	64	64	63	63	63	63	63	T1-D2-8	63		
			T1-D3-n	63	63	63	63	63	63	63	T1-D3-8	63		
			T1-D4-n	63	63	63	63	63	63	63	T1-D4-8	63		
			T1-D5-n	62	62	62	62	62	62	62	T1-D5-8	62		
			T1-D6-n	61	61	61	61	61	61	61	T1-D6-8	62		
	T1-E1-G	54	T1-E1-n	54	54	54	54	54	54	54	T1-E1-8	56		
	T1-E2-G	54	T1-E2-n	54	54	54	54	54	54	55	T1-E2-8	56		
	T1-E3-G	55	T1-E3-n	55	55	55	55	54	55	55	T1-E3-8	56		
	T1-E4-G	55	T1-E4-n	55	55	55	55	55	55	55	T1-E4-8	56		
	T1-E5-G	55	T1-E5-n	55	55	55	55	55	55	55	T1-E5-8	56		
	T1-E6-G	55	T1-E6-n	55	55	55	55	55	55	55	T1-E6-8	56		
	T1-F1-G	55	T1-F1-n	55	55	55	55	55	55	55	T1-F1-8	56		
	T1-F2-G	56	T1-F2-n	56	56	56	55	55	55	56	T1-F2-8	56		
	T1-F3-G	56	T1-F3-n	56	56	56	56	56	56	56	T1-F3-8	56		
	T1-F4-G	56	T1-F4-n	56	56	56	56	56	56	56	T1-F4-8	57		
	T1-G1-G	56	T1-G1-n	56	56	56	56	56	56	56	T1-G1-8	57		
	T1-G2-G	57	T1-G2-n	57	56	56	56	56	56	56	T1-G2-8	57		
	T1-G3-G	57	T1-G3-n	57	57	57	57	56	56	56	T1-G3-8	57		
	T1-G4-G	57	T1-G4-n	57	57	57	57	57	57	57	T1-G4-8	57		
	T1-H1-G	58	T1-H1-n	58	58	57	57	57	57	57				
	T1-H2-G	58	T1-H2-n	58	58	58	58	58	57	57				
	T1-H3-G	58	T1-H3-n	58	58	58	58	58	58	58				
	T1-H4-G	59	T1-H4-n	59	59	59	58	58	58	58				
	T1-H5-G	60	T1-H5-n	59	59	59	59	59	59	59				
	T1-H6-G	61	T1-H6-n	61	61	61	60	60	60	60				
T2			T2-A1-n	62	62	62	62	62	62	62	T2-A1-8	62	T2-A1-9	62
			T2-A2-n	62	62	62	62	62	62	62	T2-A2-8	62	T2-A2-9	62
			T2-A3-n	61	61	61	61	61	61	61	T2-A3-8	62	T2-A3-9	62
			T2-A4-n	61	61	61	61	61	61	61	T2-A4-8	62	T2-A4-9	62
			T2-B1-n	61	61	61	61	61	61	61	T2-B1-8	61	T2-B1-9	62
			T2-B2-n	61	61	61	61	61	61	61	T2-B2-8	61	T2-B2-9	62
			T2-B3-n	61	61	61	61	61	61	61	T2-B3-8	61	T2-B3-9	61
			T2-B4-n	60	60	60	60	60	60	61	T2-B4-8	61	T2-B4-9	61
	T2-C1-G	60	T2-C1-n	60	60	60	60	60	60	60	T2-C1-8	61	T2-C1-9	61
	T2-C2-G	60	T2-C2-n	60	60	60	60	60	60	60	T2-C2-8	61	T2-C2-9	61
	T2-C3-G	60	T2-C3-n	60	60	60	60	60	60	60	T2-C3-8	60	T2-C3-9	61
	T2-C4-G	60	T2-C4-n	60	60	60	60	60	60	60	T2-C4-8	60	T2-C4-9	61
	T2-D1-G	56	T2-D1-n	56	56	56	56	56	56	56	T2-D1-8	56	T2-D1-9	56
	T2-D2-G	56	T2-D2-n	56	56	56	56	55	55	55	T2-D2-8	55	T2-D2-9	56
	T2-D3-G	55	T2-D3-n	55	55	55	55	55	55	55	T2-D3-8	55	T2-D3-9	55
	T2-D4-G	55	T2-D4-n	55	55	55	55	55	55	55	T2-D4-8	55	T2-D4-9	55
	T2-E1-G	56	T2-E1-n	56	56	56	56	56	56	56	T2-E1-8	56	T2-E1-9	56
	T2-E2-G	57	T2-E2-n	57	57	57	57	57	57	57	T2-E2-8	57	T2-E2-9	57
	T2-E3-G	57	T2-E3-n	57	57	57	57	57	57	57	T2-E3-8	57	T2-E3-9	57
	T2-E4-G	57	T2-E4-n	57	57	57	57	57	57	57	T2-E4-8	57	T2-E4-9	57
	T2-F1-G	57	T2-F1-n	57	57	57	57	57	57	57	T2-F1-8	57	T2-F1-9	57
	T2-F2-G	57	T2-F2-n	57	57	57	57	57	56	56	T2-F2-8	56	T2-F2-9	57
	T2-F3-G	56	T2-F3-n	56	56	56	56	56	56	56	T2-F3-8	56	T2-F3-9	56
	T2-F4-G	56	T2-F4-n	56	56	56	56	56	56	56	T2-F4-8	56	T2-F4-9	56
	T2-G1-G	56	T2-G1-n	56	56	56	56	56	56	56	T2-G1-8	56	T2-G1-9	56
	T2-G2-G	56	T2-G2-n	56	56	56	56	56	56	56	T2-G2-8	56	T2-G2-9	56
	T2-G3-G	56	T2-G3-n	56	56	56	56	56	56	56	T2-G3-8	56	T2-G3-9	56
	T2-H1-G	56	T2-H1-n	56	56	56	56	56	56	56	T2-H1-8	56	T2-H1-9	56
	T2-H2-G	56	T2-H2-n	56	56	56	56	56	56	56	T2-H2-8	56	T2-H2-9	56
	T2-H3-G	56	T2-H3-n	56	56	56	56	56	56	56	T2-H3-8	56	T2-H3-9	56
	T2-H4-G	55	T2-H4-n	55	55	55	55	55	55	55	T2-H4-8	55	T2-H4-9	55
	T2-H5-G	56	T2-H5-n	56	56	56	56	56	56	56	T2-H5-8	56	T2-H5-9	56
	T2-H6-G	57	T2-H6-n	57	57	57	57	57	57	57	T2-H6-8	57	T2-H6-9	57
	T2-I1-G	55	T2-I1-n	55	55	55	55	55	55	55	T2-I1-8	55	T2-I1-9	55
	T2-I2-G	55	T2-I2-n	55	55	55	55	55	55	55	T2-I2-8	55	T2-I2-9	55
	T2-I3-G	55	T2-I3-n	55	55	55	55	55	55	55	T2-I3-8	55	T2-I3-9	55
	T2-I4-G	55	T2-I4-n	55	55	55	55	55	55	55	T2-I4-8	55	T2-I4-9	55
	T2-I5-G	55	T2-I5-n	55	55	55	55	55	55	55	T2-I5-8	55	T2-I5-9	55
	T2-I6-G	55	T2-I6-n	55	55	55	55	55	55	55	T2-I6-8	55	T2-I6-9	55

Project Site	NAP ID	Floor	NAP ID	Floor (n)							NAP ID	Floor	NAP ID	Floor
		G		1	2	3	4	5	6	7		8		9
	T2-J1-G	54	T2-J1-n	54	54	54	54	54	54	55	T2-J1-8	55	T2-J1-9	55
	T2-J2-G	54	T2-J2-n	54	54	54	54	54	54	54	T2-J2-8	55	T2-J2-9	55
	T2-J3-G	54	T2-J3-n	54	54	54	54	54	54	54	T2-J3-8	55	T2-J3-9	55
	T2-J4-G	54	T2-J4-n	54	54	54	54	54	54	54	T2-J4-8	54	T2-J4-9	55
	T2-K1-G	54	T2-K1-n	54	54	54	54	54	54	54	T2-K1-8	54	T2-K1-9	55
	T2-K2-G	54	T2-K2-n	54	54	54	54	54	54	54	T2-K2-8	54	T2-K2-9	55
	T2-K3-G	54	T2-K3-n	54	54	54	54	54	54	54	T2-K3-8	54	T2-K3-9	55
	T2-K4-G	54	T2-K4-n	54	54	54	54	54	54	54	T2-K4-8	54	T2-K4-9	55
	T2-L1-G	54	T2-L1-n	54	54	54	54	54	54	54	T2-L1-8	54	T2-L1-9	55
	T2-L2-G	54	T2-L2-n	54	54	54	54	54	54	54	T2-L2-8	54	T2-L2-9	55
	T2-L3-G	54	T2-L3-n	54	54	54	54	54	54	54	T2-L3-8	54	T2-L3-9	54
	T2-L4-G	54	T2-L4-n	54	54	54	54	54	54	54	T2-L4-8	54	T2-L4-9	54
	T2-M1-G	54	T2-M1-n	54	54	54	54	54	54	54	T2-M1-8	54	T2-M1-9	54
	T2-M2-G	54	T2-M2-n	54	54	54	54	54	54	54	T2-M2-8	54	T2-M2-9	55
	T2-M3-G	54	T2-M3-n	54	54	54	54	54	54	54	T2-M3-8	54	T2-M3-9	55
	T2-M4-G	54	T2-M4-n	54	54	54	54	54	54	54	T2-M4-8	55	T2-M4-9	57
T3			T3-A1-n	59	59	59	59	59	59	60	T3-A1-8	60		
			T3-A2-n	59	59	59	59	59	59	59	T3-A2-8	60		
			T3-A3-n	59	59	59	59	59	59	59	T3-A3-8	60		
			T3-A4-n	59	59	59	59	59	59	59	T3-A4-8	60		
			T3-B1-n	59	59	59	59	59	59	60	T3-B1-8	60	T3-B1-9	60
			T3-B2-n	59	59	59	59	59	59	60	T3-B2-8	60	T3-B2-9	60
			T3-B3-n	59	59	59	59	59	60	60	T3-B3-8	60	T3-B3-9	60
			T3-B4-n	60	60	60	60	60	60	60	T3-B4-8	60	T3-B4-9	60
	T3-C1-G	60	T3-C1-n	60	60	60	60	60	60	60	T3-C1-8	60	T3-C1-9	60
	T3-C2-G	60	T3-C2-n	60	60	60	60	60	60	60	T3-C2-8	60	T3-C2-9	60
	T3-C3-G	60	T3-C3-n	60	60	60	59	60	60	60	T3-C3-8	60	T3-C3-9	60
	T3-C4-G	60	T3-C4-n	60	60	60	60	60	60	60	T3-C4-8	60	T3-C4-9	60
	T3-D1-G	59	T3-D1-n	59	59	59	59	59	59	59	T3-D1-8	59	T3-D1-9	60
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	T3-D3-G	57	T3-D3-n	57	57	57	57	57	57	57	T3-D3-8	58	T3-D3-9	59
	T3-D4-G	55	T3-D4-n	55	55	55	55	55	55	56	T3-D4-8	56	T3-D4-9	57
	T3-E1-G	62	T3-E1-n	62	62	62	62	62	62	62	T3-E1-8	62	T3-E1-9	62
	T3-E2-G	62	T3-E2-n	62	62	62	62	62	62	62	T3-E2-8	62	T3-E2-9	62
	T3-E3-G	63	T3-E3-n	63	63	62	62	62	62	62	T3-E3-8	62	T3-E3-9	62
	T3-E4-G	62	T3-E4-n	62	62	62	62	62	62	62	T3-E4-8	62	T3-E4-9	62
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	T3-E6-G	62	T3-E6-n	62	62	62	62	62	62	62	T3-E6-8	62	T3-E6-9	62
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	T3-F5-G	58	T3-F5-n	58	58	58	58	58	58	58	T3-F5-8	58	T3-F5-9	58
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	T3-I3-G	56	T3-I3-n	56	56	56	56	56	56	56	T3-I3-8	56	T3-I3-9	56
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	T3-J1-G	56	T3-J1-n	56	56	55	55	55	55	55	T3-J1-8	56		
	T3-J2-G	55	T3-J2-n	55	55	55	55	55	55	55	T3-J2-8	55		
	T3-J3-G	55	T3-J3-n	55	55	55	55	55	55	55	T3-J3-8	55		
	T3-J4-G	55	T3-J4-n	55	55	55	55	55	55	55	T3-J4-8	55		
	T3-J5-G	55	T3-J5-n	55	55	55	55	55	55	55	T3-J5-8	55		
	T3-J6-G	55	T3-J6-n	55	55	55	55	55	55	55	T3-J6-8	55		
	T3-J7-G	51	T3-J7-n	51	51	51	51	51	51	52	T3-J7-8	53		
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	T4-A3-G	61	T4-A3-n	61	61	61	61	61	61	61				
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			T4-B2-n	63	63	63	62	62	62	63	T4-B2-8	63		
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			T4-B4-n	64	64	64	64	63	63	64	T4-B4-8	64		
			T4-B5-n	65	64	64	64	64	64	64	T4-B5-8	64		
			T4-B6-n	65	65	65	65	65	65	65	T4-B6-8	65		
	T4-C1-G	66	T4-C1-n	66	66	66	66	66	66	66	T4-C1-8	66		
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	T4-D1-G	64	T4-D1-n	64	64	64	64	64	64	64	T4-D1-8	64		
	T4-D2-G	64	T4-D2-n	64	64	64	64	64	64	64	T4-D2-8	63		

Project Site	NAP ID	Floor	NAP ID	Floor (n)							NAP ID	Floor	NAP ID	Floor
		G		1	2	3	4	5	6	7		8		9
	T4-D3-G	64	T4-D3-n	64	64	64	64	64	64	63	T4-D3-8	63		
	T4-D4-G	64	T4-D4-n	64	64	64	64	64	63	63	T4-D4-8	63		
	T4-E1-G	63	T4-E1-n	63	63	63	63	63	63	63				
	T4-E2-G	63	T4-E2-n	63	63	63	63	63	63	63				
	T4-E3-G	63	T4-E3-n	63	63	63	63	63	63	63				
	T4-E4-G	63	T4-E4-n	63	63	63	63	63	63	63				
	T4-E5-G	61	T4-E5-n	61	61	61	60	60	60	60				
	T4-E6-G	60	T4-E6-n	60	60	60	59	59	59	59				

AM Peak Hour - Predicted Road Traffic Noise Level, L10 (1hour)dB(A)

Project Site	NAP ID	Floor			
		G	1	2	3
RCHE	RCHE-1		67	67	67
	RCHE-2		67	67	67
	RCHE-3		67	67	67
	RCHE-4		68	67	67
	RCHE-5		68	68	68
	RCHE-6		68	68	68
	RCHE-7		69	69	68
	RCHE-8		69	69	69
	RCHE-9			67	
	RCHE-10			67	
	RCHE-11			65	65
	RCHE-12			63	63
	RCHE-13			62	62
	RCHE-14			62	62
	RCHE-15			61	61
	RCHE-16			61	61
	RCHE-17			61	61
	RCHE-18			61	60
	RCHE-19		60	60	
	RCHE-20		59	59	
	RCHE-21		59	59	
	RCHE-22		59	59	
	RCHE-23		59	58	
	RCHE-24		58	58	
	RCHE-25		58	58	
	RCHE-26		58	58	
	RCHE-27		58	58	
	RCHE-28		58	58	
	RCHE-29		57	57	
	RCHE-30		57	57	
	RCHE-31		57	57	
	RCHE-32		57	57	
	RCHE-33		57	57	
	RCHE-34		57	57	
	RCHE-35		57	57	
	RCHE-36		57	57	
	RCHE-37		57	57	
	RCHE-38		57	57	
	RCHE-39			56	
	RCHE-40			56	
	RCHE-41			56	
	RCHE-42			56	
	RCHE-43			56	
	RCHE-44			57	
	RCHE-45			57	
	RCHE-46			57	

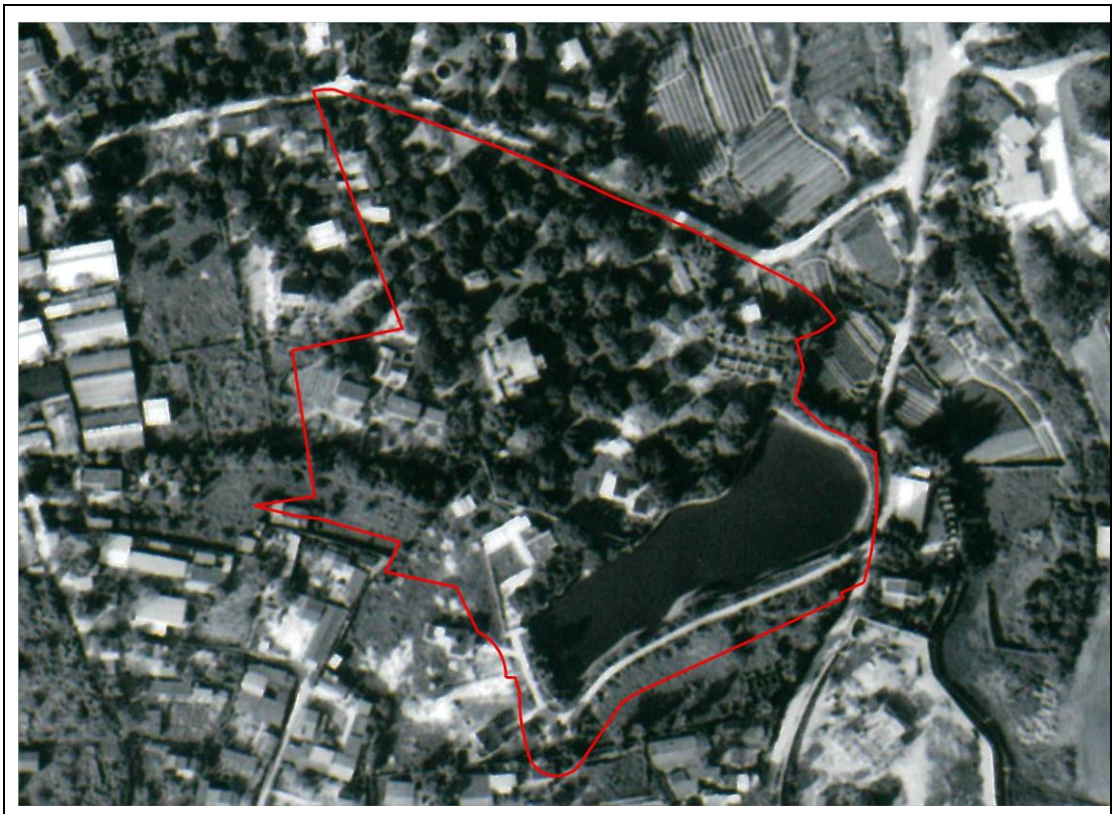
Project Site	NAP ID	Floor			
		G	1	2	3
RCHE	RCHE-47			57	
	RCHE-48			57	
	RCHE-49			57	
	RCHE-50			58	
	RCHE-51				49
	RCHE-52				49
	RCHE-53				49
	RCHE-54				49
	RCHE-55				49
	RCHE-56				49
	RCHE-57				49
	RCHE-58				49
	RCHE-59				49
	RCHE-60				49
	RCHE-61				49
	RCHE-62				49
	RCHE-63				49
	RCHE-64				49
	RCHE-65				49
	RCHE-66				49
	RCHE-67				69
	RCHE-68				68
	RCHE-69		68		
	RCHE-70		68		
	RCHE-71			68	
	RCHE-72			68	
	RCHE-73			69	
	RCHE-74			68	

APPENDIX D

Historical Aerial Photographs



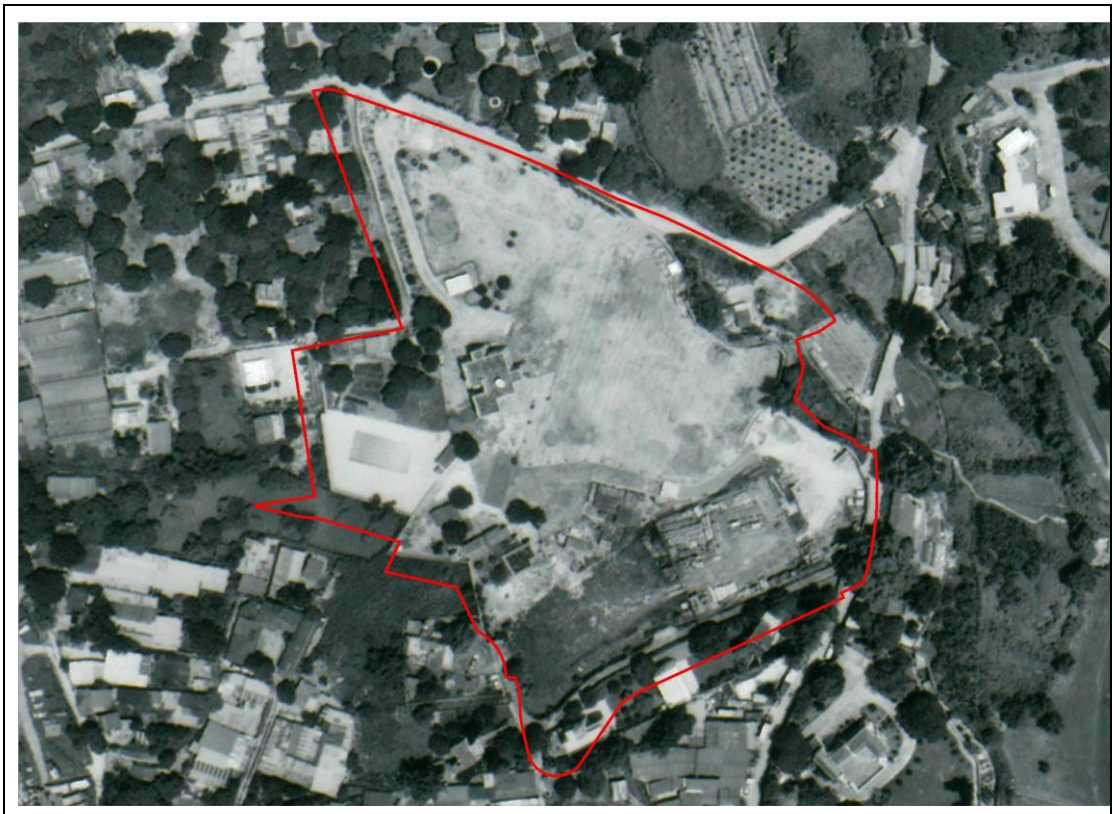
Year	Ref. No.	Observation
1963	1963-0137	The Site was mainly occupied by vegetation. A pond was observed on the south of the Site. Some scattered building structures were also found inside the Site.



Year	Ref. No.	Observation
1972	02645	The land use of the Site was the same as in 1963.



Year	Ref. No.	Observation
1990	A21881	A swimming pool was found on the west of the Site. In addition, the pond was reclaimed for storage of construction materials. The land use of other parts of the Site was the same as in 1972.



Year	Ref. No.	Observation
1991	A26190	Majority of the vegetation in the north portion of the Site was eliminated. The remaining part of land use of the Site was the same as in 1990.



Year	Ref. No.	Observation
2017	E016363C	Farmland was observed in the north portion of the Site, while the remaining part of land use of the Site was the same as 1991.

APPENDIX E

Correspondence Letter with FSD

Dorothy Tse, Uen Yung

From: [redacted]
Sent: 2025年3月26日星期三 15:22
To: Dorothy Tse, Uen Yung
Cc: OE8 CS/FSD; SSO LEA CS/FSD
Subject: Re: Fw: Enquiry on Information about Dangerous Goods Store and Incidents Records - S16 Planning application for Section 16 Planning Application for Proposed Minor Relaxation of

Our reference: (120) in FSD GR 6-5/4 R Pt. 57
Your reference: CL/DT/66052/91994/mw

Dear Ms. TSE,

Section 16 Planning Application for Proposed Minor Relaxation of Plot Ration and Building Height Restrictions for Comprehensive Development in Hang Tau Tai Po, Kwu Tung Souths
Request for Information of Dangerous Goods & Incident Records

I refer to your email of 4.3.2025 regarding the captioned request and reply below in response to your questions:-

Please be advised that neither records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.

If you have further questions, please feel free to contact the undersigned.

Best regards,

CHOW Yin-hei
Assistant Divisional Officer (Legal Affairs)
Corporate Services Division
Fire Services Department

Tel.: [redacted]

Disclaimer:
*Fire Services Department uses its best endeavor to ensure the accuracy and reliability of the information provided, but cannot guarantee its accuracy and reliability and accepts no liability of any nature for any loss or damage arising from any inaccuracies or omissions that may from the information provided.

From: ADO SD LAD [redacted]

Sent: Monday, March 10, 2025 11:25
To: [redacted]
Cc: SSO SD LAD/FSD; OE8 CS/FSD
Subject: Fw: Enquiry on Information about Dangerous Goods Store and Incidents Records - S16 Planning application for Section 16 Planning Application for Proposed Minor Relaxation of

Our reference: (66) in FSD GR 6-5/4 R Pt. 57

Your reference: CL/DT/66052/91994/mw

Dear Ms. TSE,

Section 16 Planning Application for Proposed Minor Relaxation of Plot Ration and Building Height Restrictions for Comprehensive Development in Hang Tau Tai Po, Kwu Tung South

Request for Information of Dangerous Goods & Incident Records

I refer to your email of 4.3.2025 regarding the captioned subject.

Your case is being handled, and a reply will be furnished to you as soon as possible. Please be advised that due to time lapse, this Department can only provide the following information for your requested information:

(i) Dangerous Goods Licence Record: from the year of 1990 to present moment.

(ii) Incident Record: Past three years of fire and special services incidents.

Should you have further questions, please feel free to contact the undersigned.

Best regards,

CHOW Yin-hei
Assistant Divisional Officer (Legal Affairs and Discipline) Special Duty
Corporate Services Division
Fire Services Department

Tel.: [redacted]

----- Forwarded by AccessIO/FSD/HKSARG on 04/03/2025 15:59 -----

From: "Dorothy Tse, Uen Yung" [redacted]
To: [redacted]
Date: 04/03/2025 15:58
Subject: Enquiry on Information about Dangerous Goods Store and Incidents Records - S16 Planning application for Section 16 Planning Application for Proposed Minor Relaxation of

---

Dear Sir/ Madam,

We are the environmental consultants representing our client, Fonnie Holdings Limited, to conduct an environmental assessment related to land contamination for the captioned project. A letter requesting the following records was issued on February 3, 2025 (please see the attached letter). We would like to follow up on the status of this request.

1) Issued Dangerous Goods Licenses, if any;

2) Other information related to the use and/or storage of dangerous goods, if any, and;

3) Past and present incident, spillage and fire records, if any.

We would be much appreciated if you could provide the requested information by this week (4 March 2025).

Thank you.

Dorothy Tse

Environmental Consultant

[IMAGE]

www.meinhardt-china.com

www.meinhardtgroup.com

[IMAGE]

Meinhardt Consulting Engineers
10/F Genesis, 33-35 Wong Chuk Hang Road, Hong Kong

Direct: [redacted]

[IMAGE] [IMAGE] 

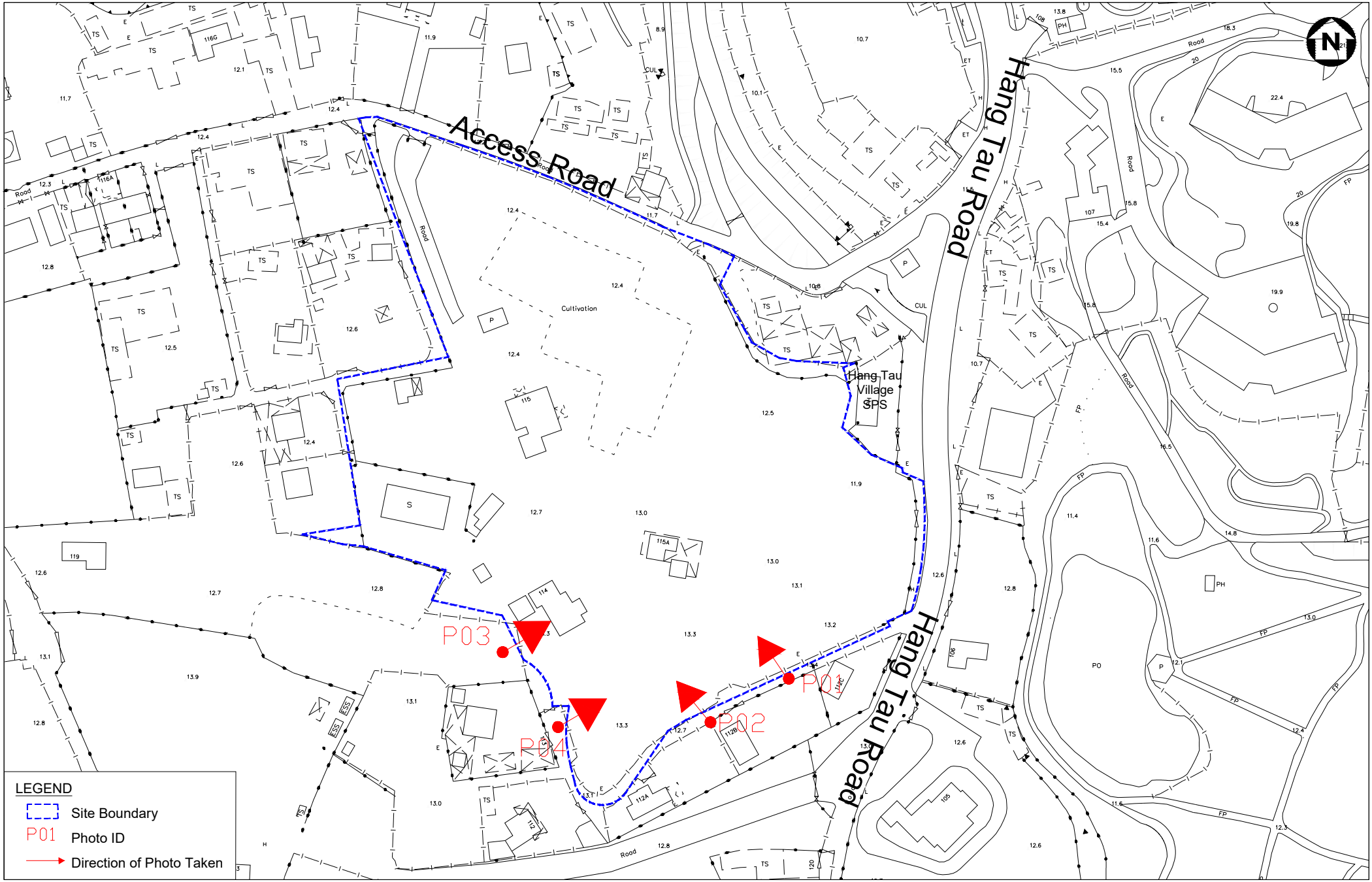
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[attachment "CL.DT.66052.91994 (Enquiry to FSD).pdf" deleted by yin_hei CHOW/FSD/HKSARG] [attachment "ATT00001.png" deleted by yin_hei CHOW/FSD/HKSARG] [attachment "ATT00002.png" deleted by yin_hei CHOW/FSD/HKSARG] [attachment "ATT00003.png" deleted by yin_hei CHOW/FSD/HKSARG] [attachment "ATT00004.png" deleted by yin_hei CHOW/FSD/HKSARG]

APPENDIX F

Photo Records of the site visit



Meinhardt Infrastructure and Environment Limited
美道基建環保工程顧問有限公司

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

PHOTO INDEX PLAN

Scale As Shown

	
Photo ID: P01 Site observation: Land surface was covered by vegetation. Vacant houses and storage of construction materials were observed.	Photo ID: P02 Site observation: Land surface was covered by vegetation. Vacant houses were observed.
	
Photo ID: P03 Site observation: Land surface was covered by vegetation and paved by concrete. Vacant houses were observed.	Photo ID: P04 Site observation: Land surface was paved by covered by vegetation. Storage of construction materials were observed.

APPENDIX G

Correspondence Reply from EPD

Dorothy Tse, Uen Yung

From: Fion WH WONG/EPD <[redacted]>
Sent: 2026年7月7日星期二 15:05
To: Dorothy Tse, Uen Yung
Cc: EPD_Enquiry/EPD; Kelvin WK YEUNG/EPD
Subject: Re: *Restricted: E(26/5683) Request for Odour Complaint Records – Hang Tau Village SPS and Beas River Country Club STP

To: Ms. TSE, Environmental Consultant, Meinhardt Consulting Engineers

Dear Ms. TSE,

Re: Request for Odour Complaint Records – Hang Tau Village SPS and Beas River Country Club STP

I refer to your captioned enquiry in your preceding email dated 7 Jul 2026. Please be advised that no odour complaint has been received by this Office related to (1) Hang Tau Village Sewage Pumping Station (SPS); and (2) Sewage Treatment Plant at Beas River Country Club in the past 3 years.

Should you have any enquiry, please contact our Senior Environmental Protection Inspector, Mr. Kelvin YEUNG, at 2158 5774.

Regards,
WONG Wing-huen, Fion
Environmental Protection Officer (Regional N) 31
Environmental Protection Department
[redacted]

From: Dorothy Tse, Uen Yung <[redacted]>
Sent: Tuesday, July 7, 2026 10:01 AM
To: EPD_Enquiry/EPD <[redacted]>
Subject: Request for Odour Complaint Records – Hang Tau Village SPS and Beas River Country Club STP

REF: 91994

Dear Sir/ Madam,

We are the environmental consultants appointed by Fonnie Holdings Limited (please refer to the appointment letter attached) to undertake an environmental assessment for the following project:
"Pre-submission for Section 16 Application for Proposed Comprehensive Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land, Hang Tau, Tai Po, Kwu Tung South"

As per the comments issued by EA division of EPD (See below), we would like to check whether there are any odour complaint records related to (1)Hang Tau Village Sewage Pumping Station (SPS); and (2)Sewage Treatment Plant at Beas River Country Club.

14. Section 3.7.3.3:

    1. Please provide a figure identifying the Sewage Pumping Station and ASRs, clearly indicating horizontal dis justification.
    2. Please check with our regional office on whether there were odour complaint records related to those Sewa

Your assistance and prompt reply by 9 July would be greatly appreciated, as we are working towards a tight submission schedule.

Thank you for your kind support. Please feel free to contact me if you require any further information regarding this request.

Dorothy Tse
Environmental Consultant

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www.meinhardtgroup.com

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Meinhardt Consulting Engineers
10/F Genesis, 33-35 Wong Chuk Hang Road, Hong Kong

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Hong Kong
香港黃竹坑道33-35號
創協坊10樓

[redacted]

mail@meinhardt.com.hk
www.meinhardt-china.com
www.meinhardtgroup.com

Appendix 4

Drainage Impact Assessment

Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South.

Drainage Impact Assessment

October 2026

Submitted to

Fonnie Holdings Limited

Prepared By

Meinhardt Infrastructure and Environment Ltd

Date	Revision	Prepared By	Checked By	Approved By
06 May 2025	0	Sylar TSUI	Adi LEE	Adi LEE
27 March 2026	1	Sylar TSUI	Adi LEE	Adi LEE
10 July 2026	2	Sylar TSUI	Adi LEE	Adi LEE
20 October 2026	3	Sylar TSUI	Adi LEE	TC LAM

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1 INTRODUCTION

1.1 Project Background

1.1.1.1 The Applicant, Fonnie Holdings Limited intends to develop the residential development cum Resident Care Home for the Elderly and Shop and Services (hereafter as "the proposed development") in D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South (hereafter as "the Application Site").

1.1.1.2 This planning application is submitted under Section 16 of the Town Planning Ordinance ("the Ordinance") for the proposed development with minor relaxation of plot ratio and building height restrictions in the Approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22.

1.1.1.3 Meinhardt Infrastructure and Environment Limited (MIEL) was commissioned by the Applicant to conduct an Drainage Impact Assessment (DIA) to support the Section 16 Planning Application of the proposed development, and to assess the environmental impact due to / upon the proposed development.

1.2 Objective of the Report

1.2.1.1 The objectives of this DIA are to assess the potential drainage impacts arising from the proposed development and recommend the mitigation measures, if necessary, to alleviate the impacts.

1.3 Report Structure

1.3.1.1 The remaining chapters of this report are shown below:

- Chapter 2 – Site Description
- Chapter 3 – Drainage Analysis
- Chapter 4 – Conclusion

2 SITE DESCRIPTION

2.1 Site Location and Its Environs

2.1.1.1 The proposed development will be located at the various lots in D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South.

2.1.1.2 The Application Site is currently occupied by unused structures including a 2-story house, a pavilion, swimming pool and landscape garden. The proposed development is located in the "Comprehensive Development Area" Zone bounded by "Agriculture" (AGR) Zone, "Residential (Group D)" (R(D)) Zone and "Government Institution or Community" (G/IC) Zone according to the Draft Kwu Tung South Outline Zoning Plan (OZP) (OZP No.: S/NE-KTS/21). Existing land uses in the surroundings include low-rise village type development and temporary structures.

2.1.1.3 **Figure 2.1** shows the Application Site location and its environs.

2.2 Proposed Development

2.2.1.1 The proposed development consists of 4 nos. of residential towers, a clubhouse, a retail and a Residential Care Home for the Elderly (RCHE) with total site area of approximately 17,990.9 m^2. The development schedule of the proposed development is tabulated in **Table 2.1**. The layout plans of the proposed development are shown in **Appendix 2.1**.

Table 2.1 Development Schedule

Development Items	Design Parameter
No. of Tower	4
No. of Flat Unit	334
No. Clubhouse	1
No. of Swimming Pool	1
No. of RCHE	1
No. of Retail	1
Site Area	17,990.9m^2

2.2.1.2 According to the latest programme, the year of occupancy of the proposed development is expected to be Year 2031.

2.3 Existing Drainage Condition

2.3.1.1 The latest drainage record plans including 2-SE-15A, 2-SE-14B, 2-SE-9D, 2-SE-10C, 2-SE-10D, 2-SE-15B, 2-SE-14D, 2-SE-15C, 2-SE-15D, were obtained and reviewed to gather the background information on drainage infrastructure in the vicinity of the Application Site.

2.3.1.2 According to the drainage record plans, the Application Site is currently served by the public drainage facilities located along Hang Tau Road, to the east of the Application Site. Collected surface runoff is ultimately discharged to an existing open channel (KTS08) situated to the north. Relevant drainage parameters extracted from the drainage record plans are presented in **Figure 2.2** for reference.

2.3.1.3 One on-site catchments (Catchment A) and 9 off-site catchments (Catchments E to M) were identified based on the geographical characteristics of the Application Site and its nearby areas as shown in **Figure 2.2**.

2.3.1.4 Surface runoff from Catchment A discharges to the existing open channel (KTS08), located to the north of the Application Site, via public drainage pipes A1 to A7. Meanwhile, surface runoff from Catchments E to M also ultimately discharges to the same existing channel (KTS08). As such, Catchments A and E to M are included in the channel capacity assessment. The existing drainage system is shown in **Figure 2.2**.

2.3.1.5 Site photos of the existing channels (KTS08) and the box culverts, with aerial photos of the site, are shown in **Appendix 2.2**.

2.4 Paving Conditions

2.4.1.1 The Application Site is currently occupied by unused structures, it is generally unpaved with amount of 80% vegetation area of the Application Site, the paved area about 20% to the existing Site. The paving condition of the proposed development, 75% of the area would be paved with concrete and 25% of the area would be unpaved. Paving conditions is summarized in **Table 2.2**.

Table 2.2 Paving Conditions of the Catchment

Paving Conditions	Pre-development	Post-development
Paved Area	20%	75%
Unpaved Area	80%	25%

3 EVAULATION OF DRAINAGE IMPACT

3.1 Assessment Methodology and Assessment

3.1.1.1 The Rational Method has been adopted for runoff estimation in accordance with the Stormwater Drainage Manual (SDM) (DSD, 2018) and Corrigendum No. 1/2022:

$$Q_p = 0.278\, i \sum C_j A_j$$

where
Q_p *is peak runoff (m^3/s);*
i *is rainfall intensity (mm/hr);*
A_j *is the j^{th} catchment (km^2);*
C_j *is the runoff coefficient of the j^{th} catchment (dimensionless)*

3.1.1.2 The details of the Rational Method can be referred to the *Stormwater Drainage Manual* (SDM) (DSD, 2018).

3.1.1.3 Based on the required flood protection standard and the calculated time of concentration (t_c), the corresponding design rainfall intensities (i) are determined via linear interpolation of the relevant intensity-duration-frequency (IDF) tables.

3.2 Design Parameters

3.2.1.1 The paving conditions are discussed in **Section 2.4**. For hydraulic analysis, runoff coefficient of 0.95 was adopted to represent a concrete-paved area, and runoff coefficient

of 0.25 and 0.35 were adopted to represent flatted grassland (heavysoil) and steep grassland (heavysoil) respectively. The Manning's roughness coefficient of 0.015 (fair condition for concrete-lined circular pipes) and 0.016 (fair condition for U-channel) as stated in Table 13 of SDM were assumed for the capacity calculation as referred in the SDM.

3.2.1.2 The capacity of the existing channel has been estimated and compared with the total runoff generated from the identified catchments (i.e. Catchment A, E to M). The value of Manning's roughness coefficient used for estimating the channel capacity by using Manning's Equation was assumed to be 0.035 for the channel [fair condition for canals and ditches (canals with rough stony beds, weeds on earth banks)] and 0.016 for box culvert [fair condition for concrete-lined channels].

3.2.1.3 The proposed drainage design incorporates climate change adaptation and design allowances in accordance with DSD SDM Corrigendum No. 1/2022. A projected 16.0% rainfall increase due to climate change for the End of 21st Century (Table 28 of SDM), together with an additional 12.1% design allowance (Table 31 of SDM), has been adopted. Consequently, a cumulative total of 28.1% rainfall increase has been incorporated into the peak runoff calculations to evaluate hydraulic capacity.

3.2.1.4 The assumptions of this DIA are summarised below:

- Flood protection - Design return period for Main Rural Catchment Drainage Channels – 1 in 50 years
- Flood protection - Design return period for Embanked Channels – 1 in 200 years
- Runoff coefficient for concrete-paved area – 0.95
- Runoff coefficient for flatted grassland (heavysoil) – 0.25
- Runoff coefficient for steep grassland (heavysoil) – 0.35
- Manning's roughness coefficient for the existing / proposed circular pipe – 0.015
- Manning's roughness coefficient for the proposed U-channels – 0.016
- Manning's roughness coefficient for the channel – 0.035
- Manning's roughness coefficient for the box culvert in the channel – 0.016

3.3 Results for Existing Drainage Facilities

3.3.1.1 Relevant public drainage pipe capacities with existing drainage facilities as shown in **Figure 2.2** were calculated and detailed in **Appendix 3.1.** The relevant runoffs and capacities of the existing drainage pipes were estimated and tabulated in **Table 3.1**.

Table 3.1 Comparison of the Estimated Pipe Capacities and Runoffs after Proposed Development

Drainage Pipe Segment	Diameter, m	Slope	Catchment ID (Runoff, m^3/s)	Capacity Flow, m^3/s	% of Capacity Flow
50-Year Return Period					
C1-A2	0.300	0.022	A (0.40)	0.104	390%
A2-A3	0.300	0.074	A (0.40)	0.191	211%
A3-A4	0.300	0.017	A (0.40)	0.090	446%
A4-A5	0.450	0.024	A and E (0.44)	0.324	137%
A5-A6	0.450	0.018	A and E (0.44)	0.279	159%
A6-A7	0.450	0.024	A and E (0.44)	0.319	139%
Channel (Ch. 67)	Note [1]	0.003	A, E to K (24.66)	24.660	100%

Drainage Pipe Segment	Diameter, m	Slope	Catchment ID (Runoff, m^3/s)	Capacity Flow, m^3/s	% of Capacity Flow
Channel (Ch. 212)	Note [1]	0.008	A, E to M (28.59)	68.914	41%
Box Culvert	Note [1]	0.008	A, E to M (28.59)	46.755	61%
200-Year Return Period					
Channel (Ch. 67)	Note [1]	0.003	A, E to K (27.77)	24.660	113%
Channel (Ch. 212)	Note [1]	0.008	A, E to M (32.32)	70.044	46%
Box Culvert	Note [1]	0.008	A, E to M (32.32)	46.755	69%

Note:
*[1] Dimensions of the concerned Channel and Box Culvert have been presented in **Appendix 3.3**.*
[2] Exceedance of flow capacity is shown as underlined characters.

3.3.1.2 As demonstrated in the **Table 3.1**, the existing drainage system is inadequate under the 50-year return period scenarios for pipe segments (i.e. C1 to A7) and 200-year return period scenarios for the upstream of the channel (at Ch 67). Channel at Ch. 67 is heavily loaded, operating at 100% capacity under the 50-year return period and exceeding capacity at 113% under the 200-year return period. Consequently, directing additional site runoff into Channel at Ch. 67 is unfeasible.

3.4 Preliminary Proposed Drainage Facilities

3.4.1.1 To eliminate surcharging risks and ensure full compliance with the SDM guidelines, the following new drainage facilities are proposed.

3.4.1.2 To address these deficiencies without burdening upstream of the channel, a dedicated drainage bypass scheme is proposed via a new upgraded drainage system. Runoff from the catchment (i.e. Catchment A) is conveyed along proposed manholes PT1, P2, P3, P4, P5, and P6 utilizing 750mm pipe network. The proposed upgraded drainage line continues northwestward, making a direct outfall connection into downstream of the channel.

3.4.1.3 There is no change in the size and flow path of all concerned catchments between pre-development and post-development conditions, with the exception of Catchment A.

3.4.1.4 When the proposed drainage facilities are adopted, the existing redundant drainage facilities (catchpit SCH1023122 and pipe SWD1054900) will be abandoned.

3.4.1.5 The internal drainage arrangements within the Application Site will be further investigated and finalized at the detailed design stage of the project, with the detailed drainage proposal subject to future approval by the DSD.

3.5 Results for Proposed Drainage Facilities

3.5.1.1 The estimated drainage pipe capacities and runoffs following the proposed drainage facilities are summarized in **Table 3.2** and detailed in **Appendix 3.2**.

Table 3.2 Comparison of the Estimated Proposed Pipe Capacities and Runoffs after Proposed Development

Drainage Pipe Segment	Diameter, m	Slope	Catchment ID (Runoff, m^3/s)	Capacity Flow, m^3/s	% of Capacity Flow
50-Year Return Period					
PT1 – P2	0.750	0.020	A (0.80)	1.136	71%
P2 - P3	0.750	0.020	A (0.80)	1.138	70%
P3 - P4	0.750	0.021	A (0.80)	1.167	69%
P4 - P5	0.750	0.022	A (0.80)	1.189	67%
P5 - P6	0.750	0.021	A (0.80)	1.176	68%
P6 - P7	0.750	0.021	A (0.80)	1.161	69%
P6 - P7 (U-Channel)	0.750	0.024	A (0.80)	1.171	69%
Channel (Ch. 212)	Note [1]	0.008	A, E to M (28.99)	70.044	41%
Box Culvert	Note [1]	0.008	A, E to M (28.99)	46.755	62%
200-Year Return Period					
Channel (Ch. 212)	Note [1]	0.008	A, E to M (32.77)	70.044	47%
Box Culvert	Note [1]	0.008	A, E to M (32.77)	46.755	70%

Note:
*[1] Dimensions of the concerned Channel and Box Culvert have been presented in **Appendix 3.3**.*

3.5.1.2 The water levels and flow of the channel and the box culvert for 200-year return period are shown in **Table 3.3**. The calculated freeboards for both the channel and the box culvert remain satisfactory under the design flow conditions and no mitigation measure is required.

Table 3.3 Water Levels and Flow of Channel and Box Culvert

Parameter	Channel (CH 212)		The Box Culvert	
	Pre-development	Post-development	Pre-development	Post-development
Runoff, m^3/s	32.32	32.77	32.32	32.77
Cross Section Area, m^2	22.140		11.822	
Water Levels, m	1.55	1.57	1.08	1.09
Freeboard, m	0.90	0.88	0.92	0.91

3.5.1.3 Capacities of all the proposed pipes are sufficient to cater the peak storm water flow. Also, no flooding blackspot was identified within or near the site according to DSD flooding blackspots records. This indicates that the project is unlikely to contribute to flooding issues in the surrounding area. Therefore, adverse drainage impact arising from the proposed development is not anticipated.

3.6 Implementation, Management, and Maintenance Responsibilities

3.6.1.1 All proposed new drainage facilities will be implemented and constructed by the Applicant at their own cost and to the satisfaction of the DSD.

3.6.1.2 Regarding ongoing operation and stewardship, the management and maintenance of the drainage facilities located within the Application Site will be the responsibility of the Applicant, whereas the proposed drainage facilities situated within public areas will be maintained by DSD.

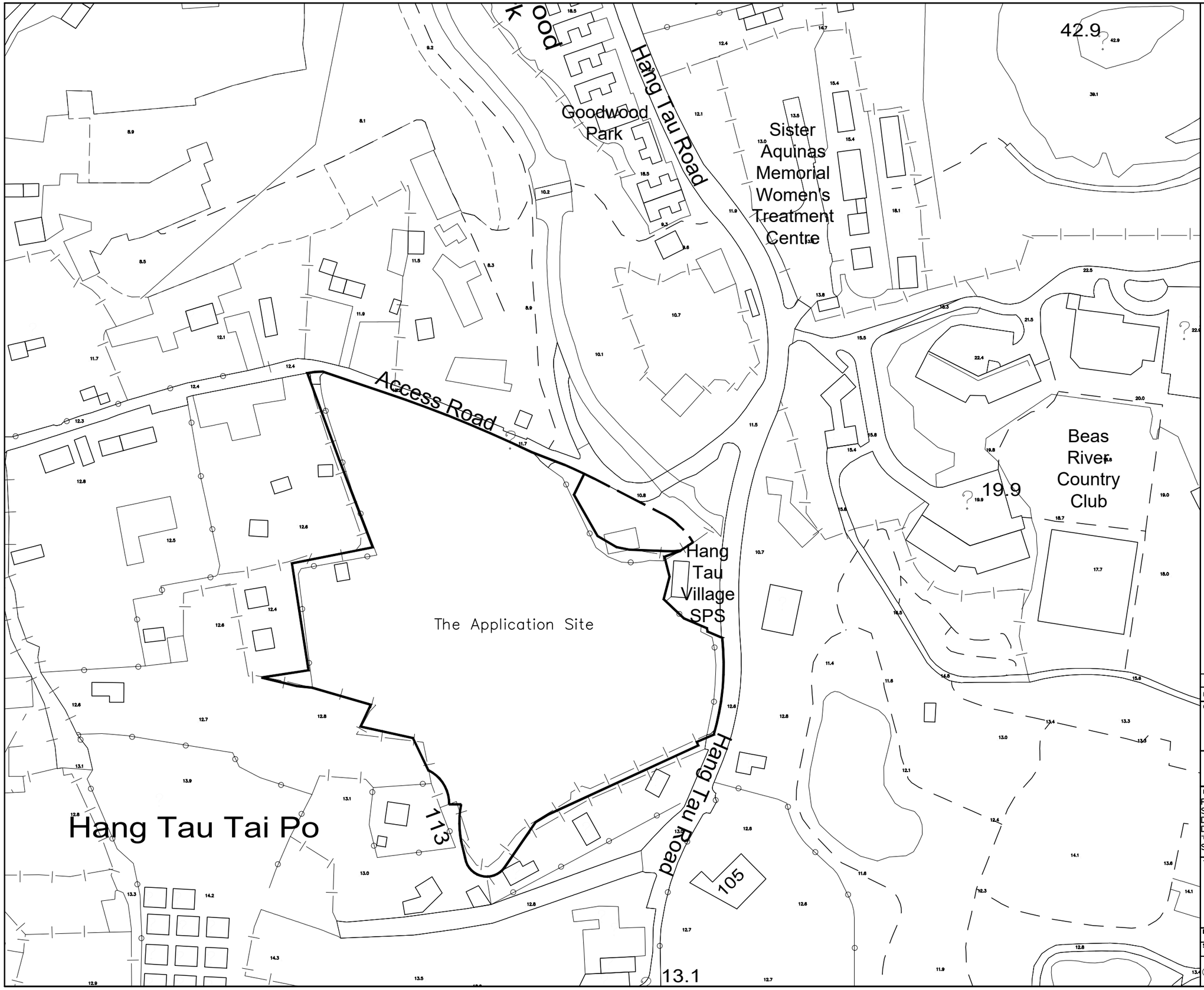
4 Conclusion

4.1.1.1 A Drainage Impact Assessment has been conducted for the proposed development. A new drainage facilities PT1 to P6, 750mm are proposed and direct discharge to the downstream of the channel.

4.1.1.2 The peak surface runoff was calculated based on a 50 and 200-year return period. The assessment findings have demonstrated and confirmed that the proposed drainage pipes are sufficient to cater with the estimated surface runoff from proposed development. No adverse drainage impact arising from the proposed development is anticipated.

4.1.1.3 The detailed arrangement of the proposed drainage system and the internal drainage arrangements within the Application Site will be further investigated at the detailed design stage of the project. The detailed drainage proposal shall be submitted to DSD for further approval.

Figures



LEGEND

The Application Site

CDA Zone Boundary

Rev	Amendment	By	Chk.	App.	Date

Client

MEINHARDT
Meinhardt Infrastructure and Environment Limited
邁進基建環保工程顧問有限公司

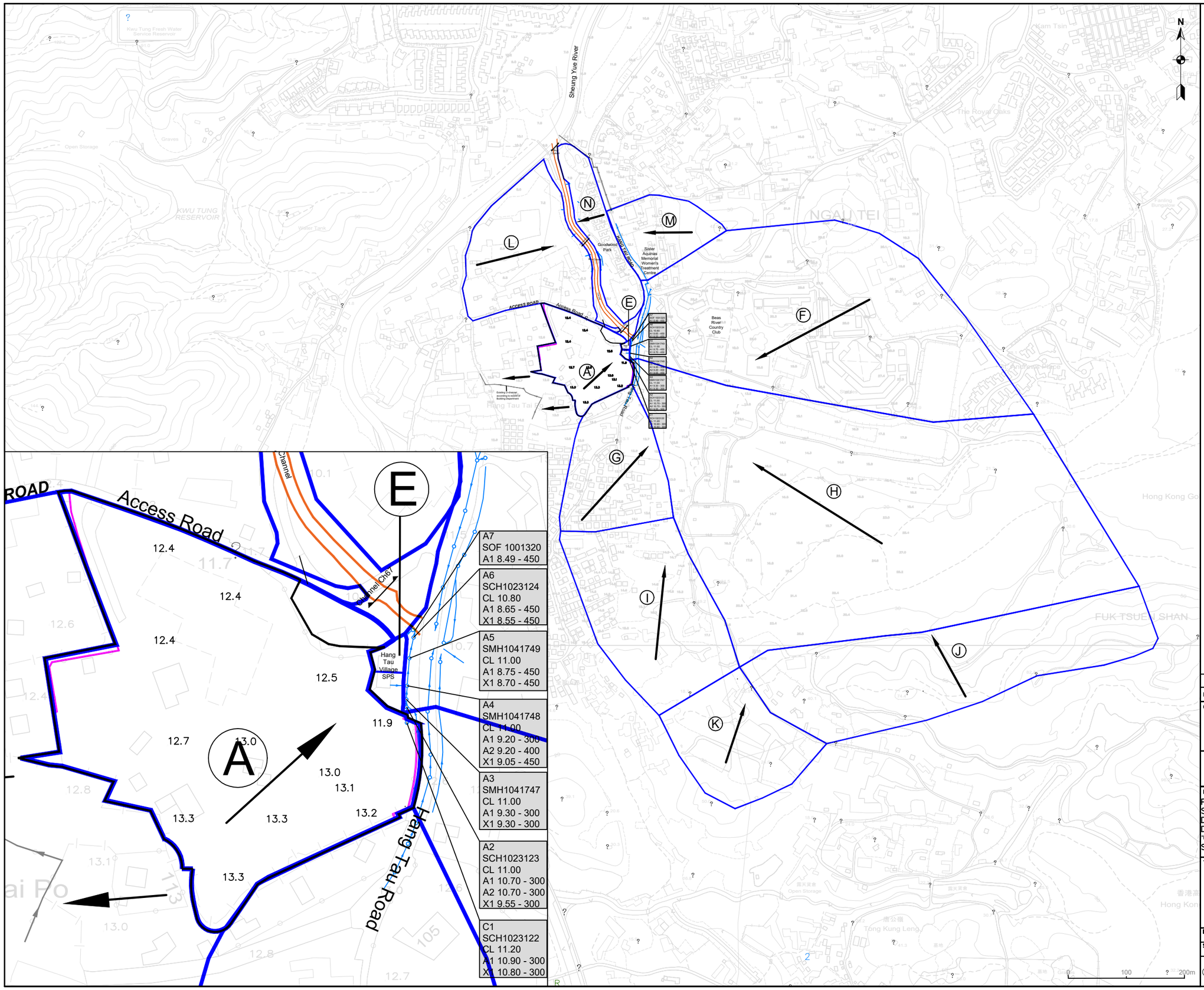
Project

Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Title

Site Location and its Environs

Drawn	Checked	Approved
Scale	CAD File No. $FILEA$	First Issued
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LEGEND

- The Application Site
- Catchment Area
- Ⓐ Catchment ID
- Direction of Flow Path
- Involved Existing Drainage System
- Channel and Box Culvert
- Existing Boundary Wall

Rev	Amendment	By	Chk.	App.	Date

Client

MEINHARDT
Meinhardt Infrastructure and Environment Limited
迈进基础设施工程顾问有限公司

Project

Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Title

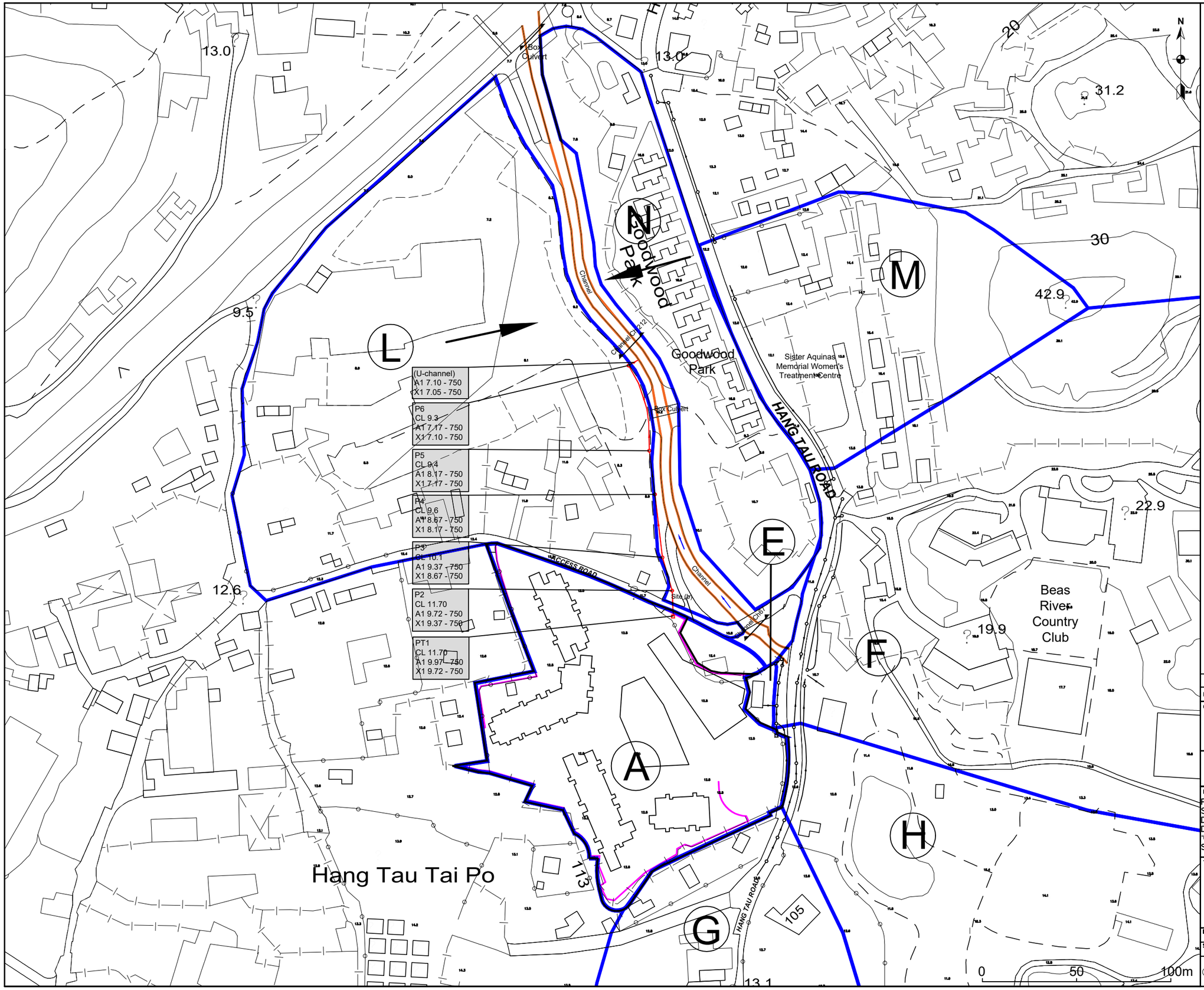
Catchment of the Existing Drainage System along Hang Tau Road

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Drawing No. Figure 2.2

Rev.



Rev	Amendment	By	Chk.	App.	Date

Client

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Project
Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Title
Proposed Upgrading Drainage System along Hang Tau Road

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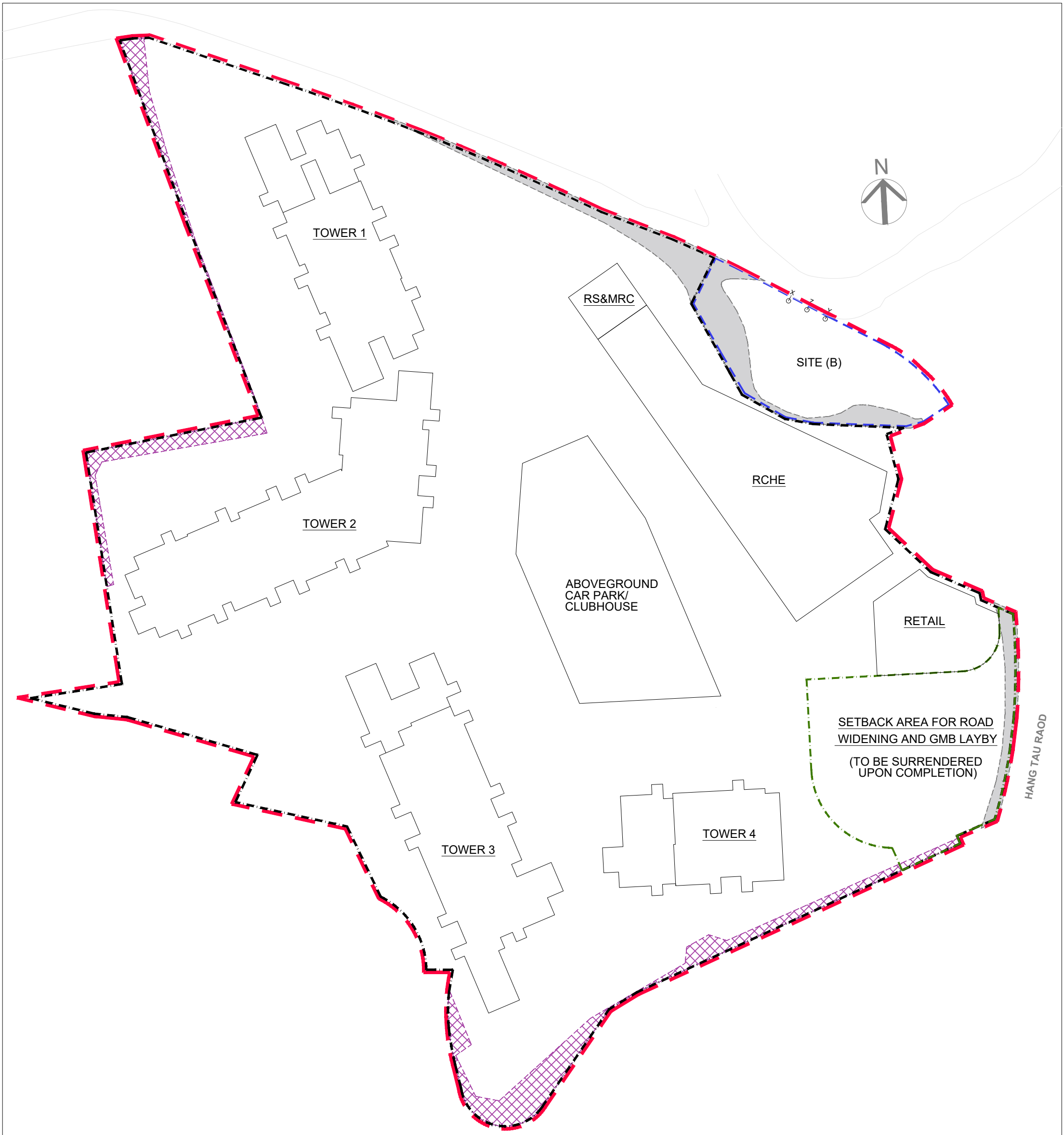
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Rev.

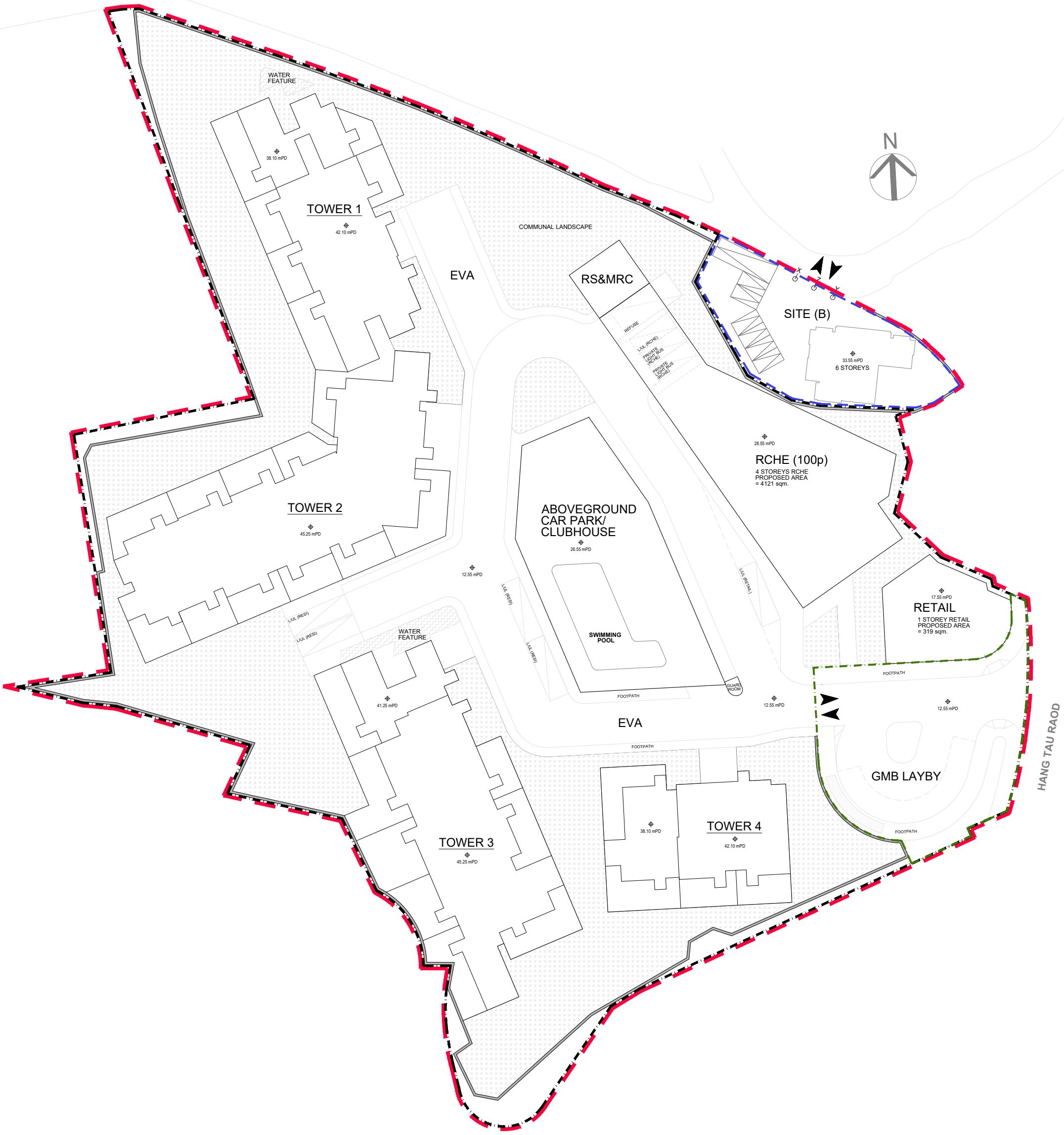
Appendix 2.1

Layout Plan of Proposed Development



LOT PLAN

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

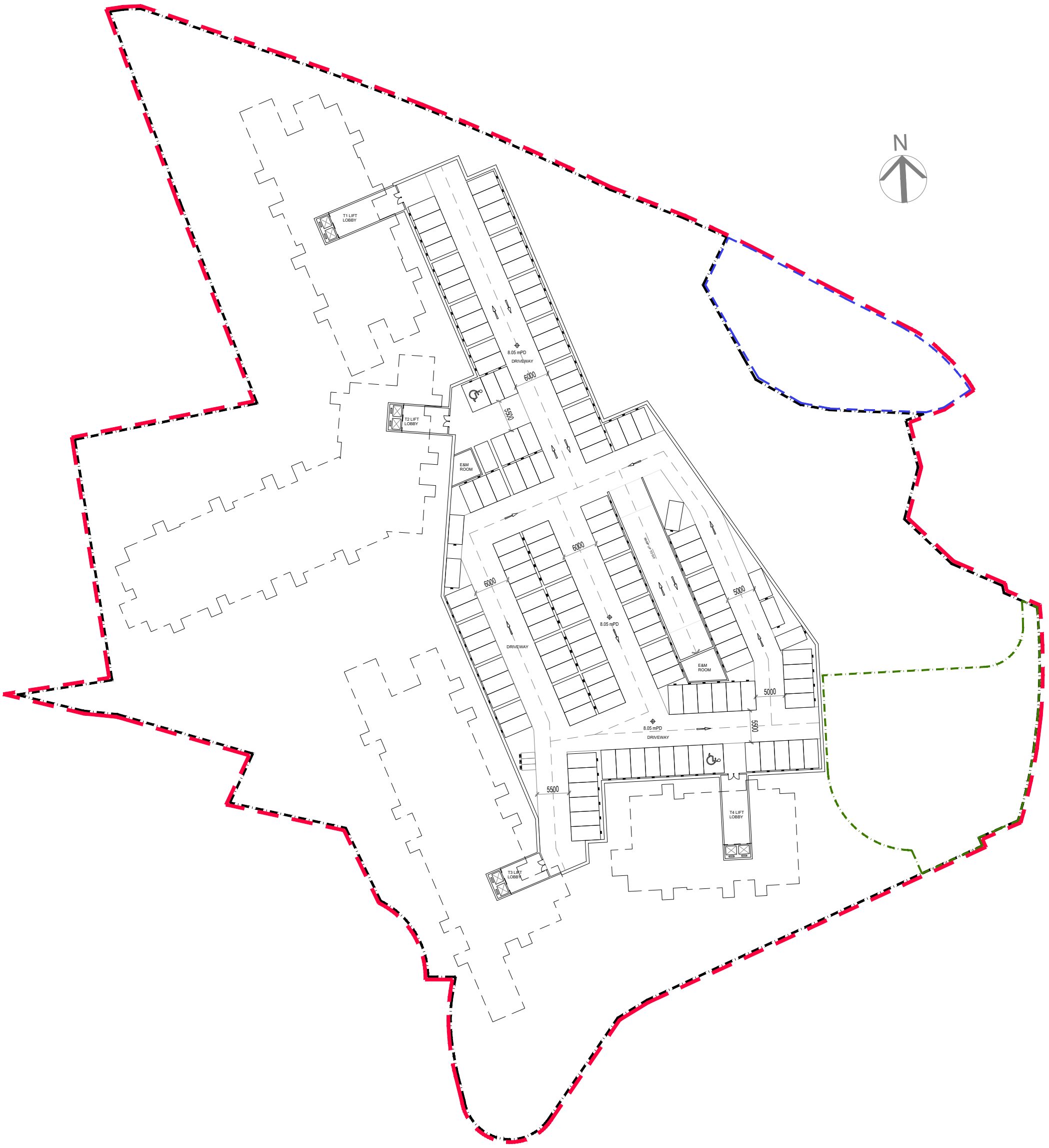


MASTER LAYOUT PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories



B1/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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FIRST FLOOR PART PLAN

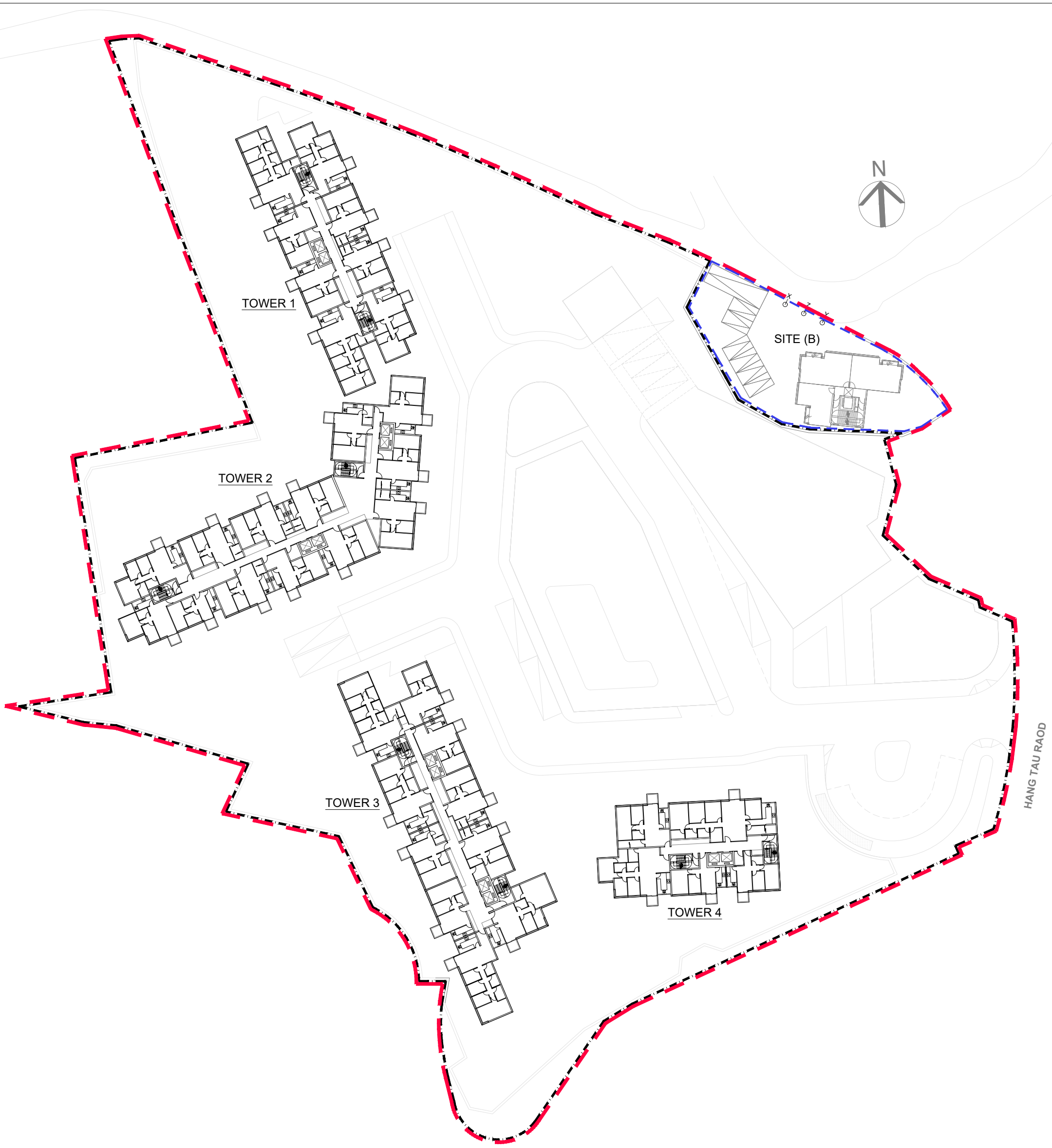
GROUND FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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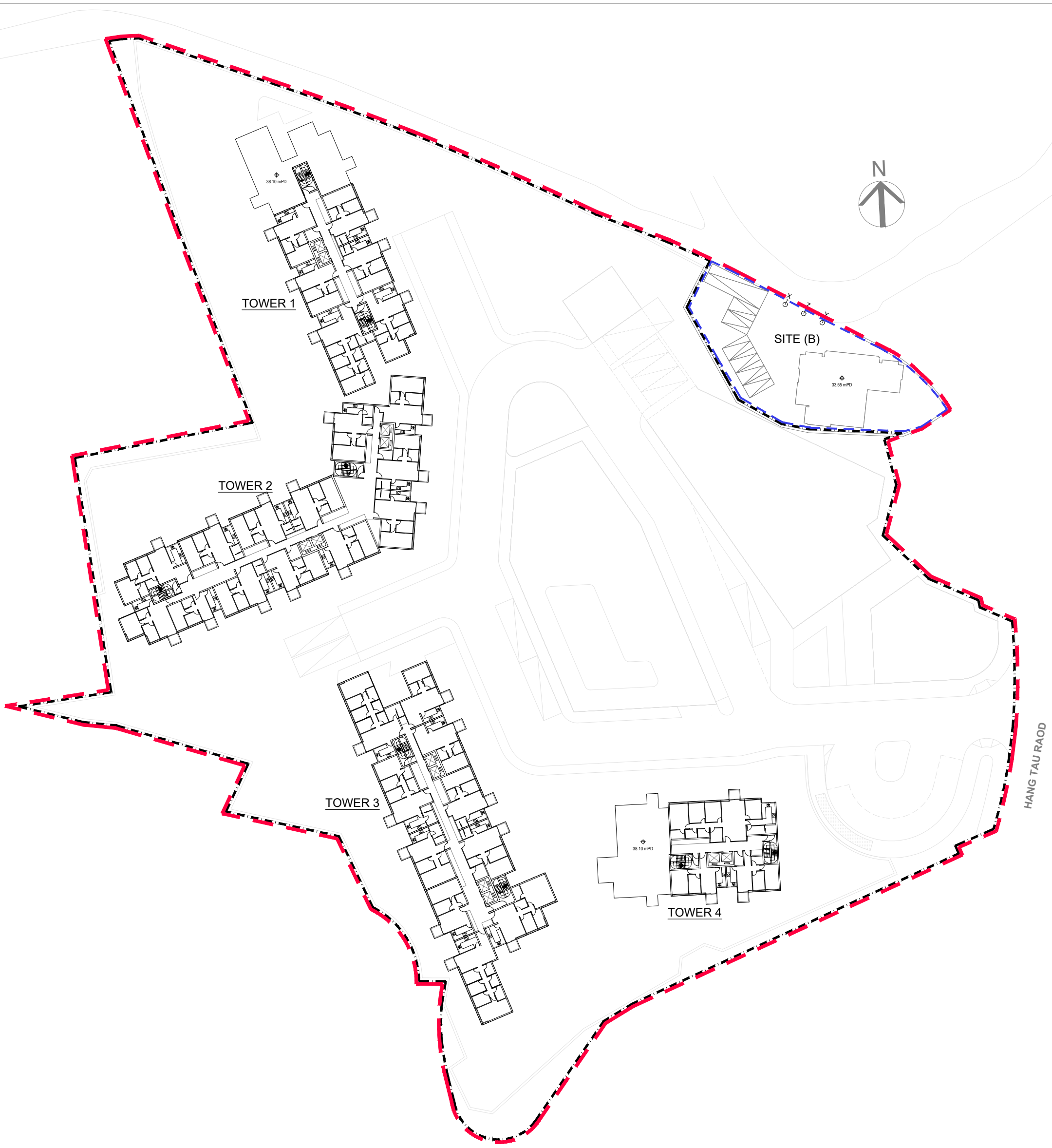
TYPICAL FLOOR PLAN (1/F to 7/F)

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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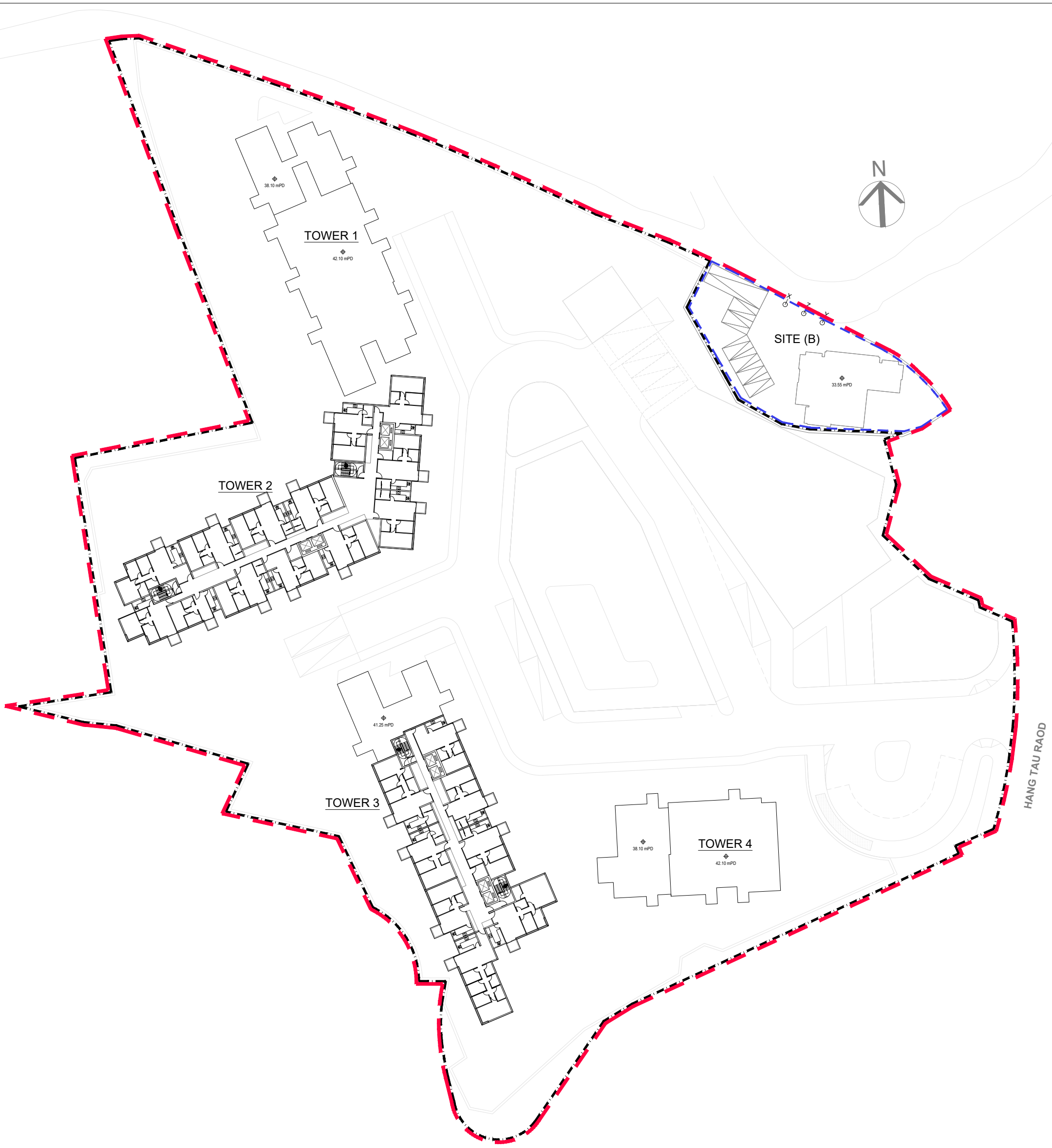
8/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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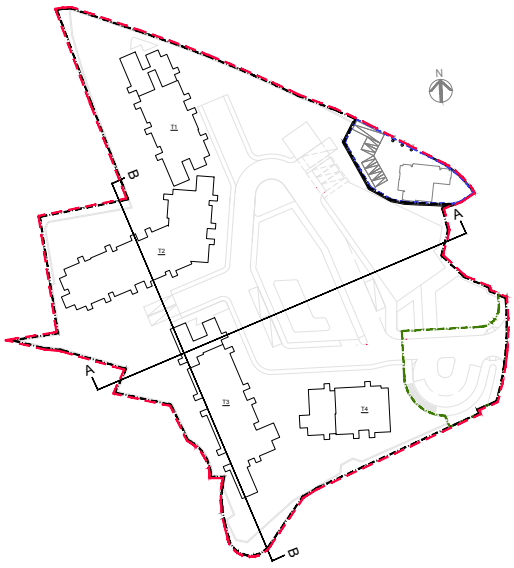
9/F FLOOR PLAN

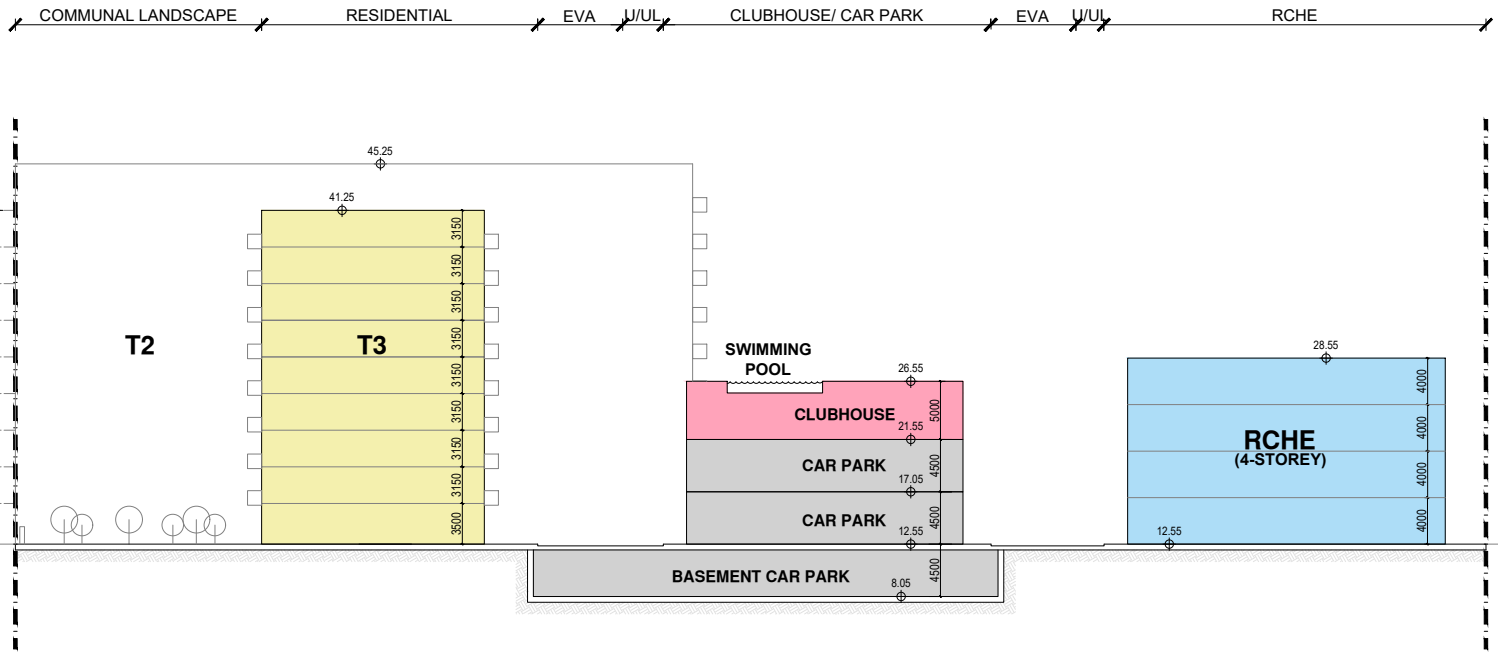
LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

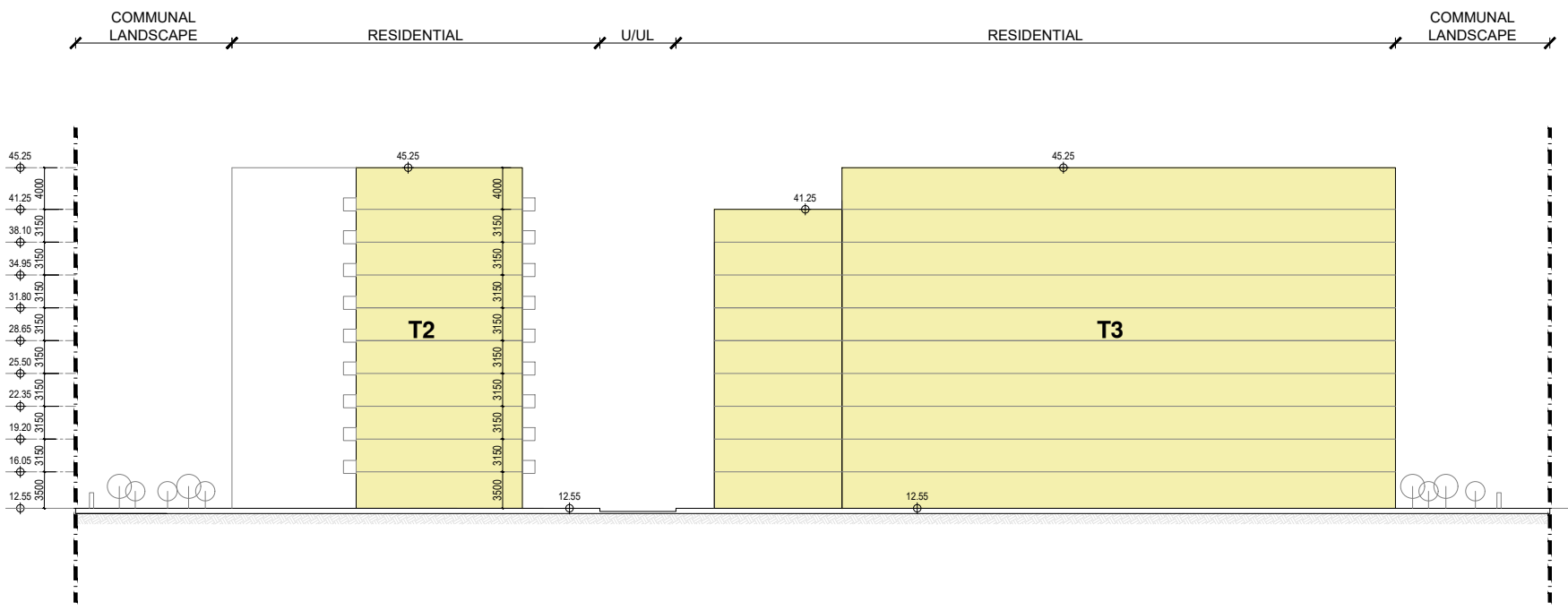
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION A



SCHEMATIC SECTION B

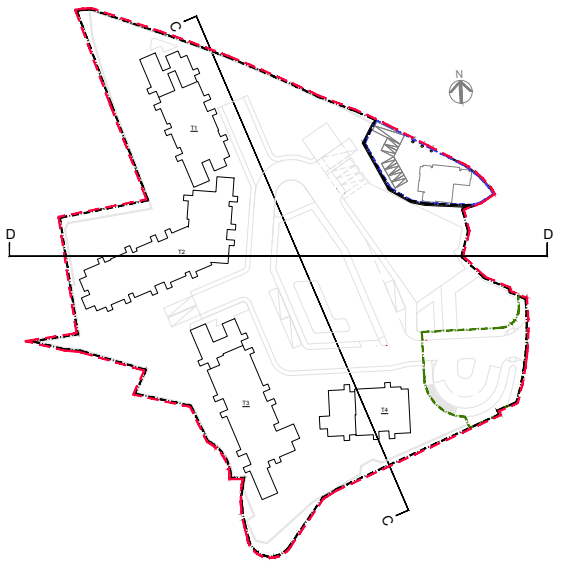
LEGEND

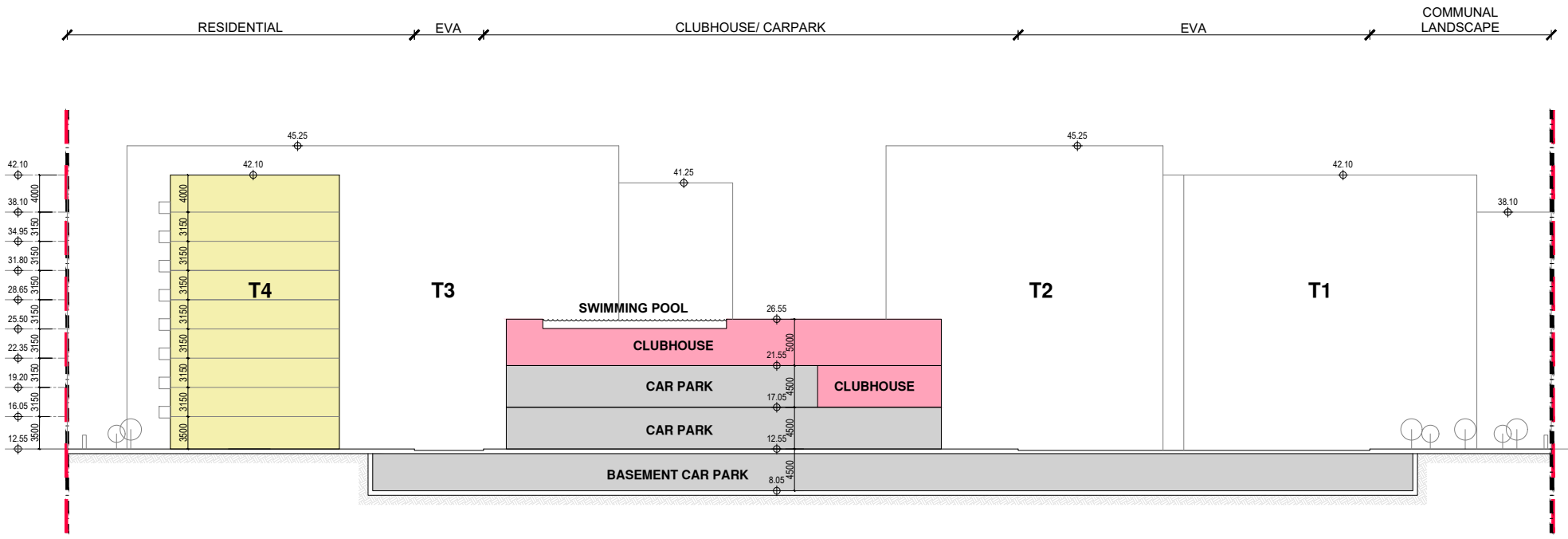
CDA Zone Boundary

Application Site Boundary

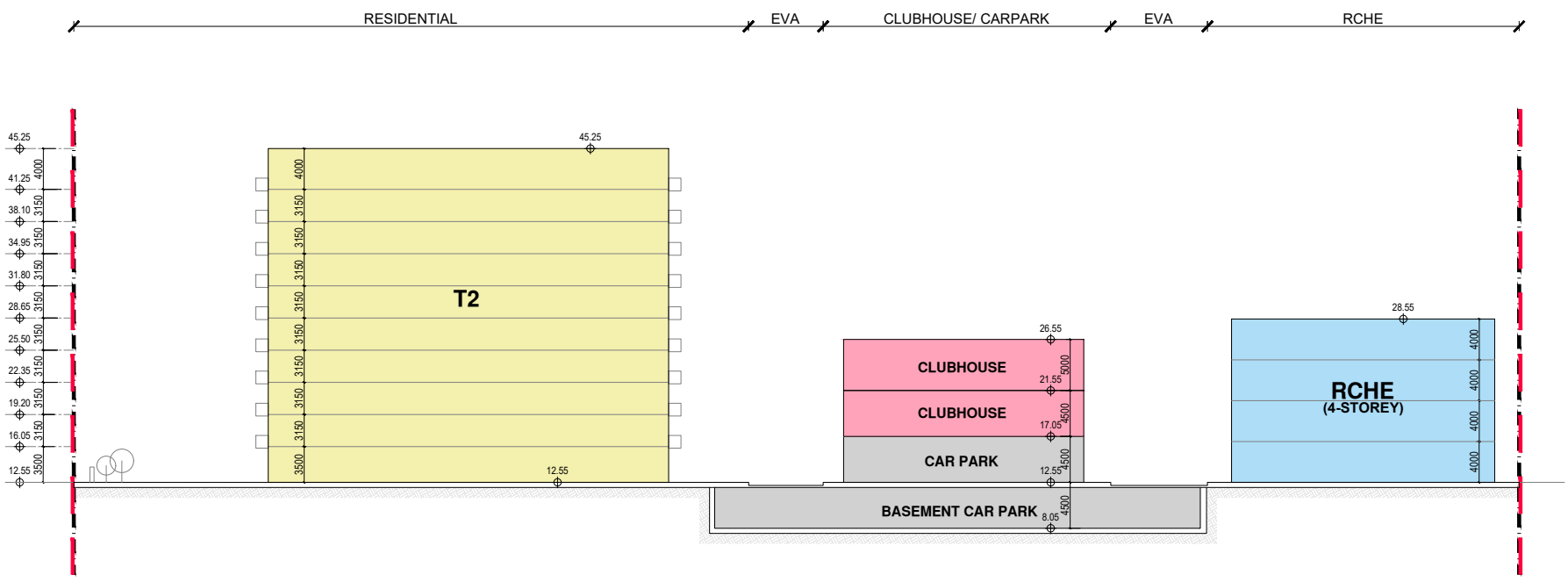
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION C



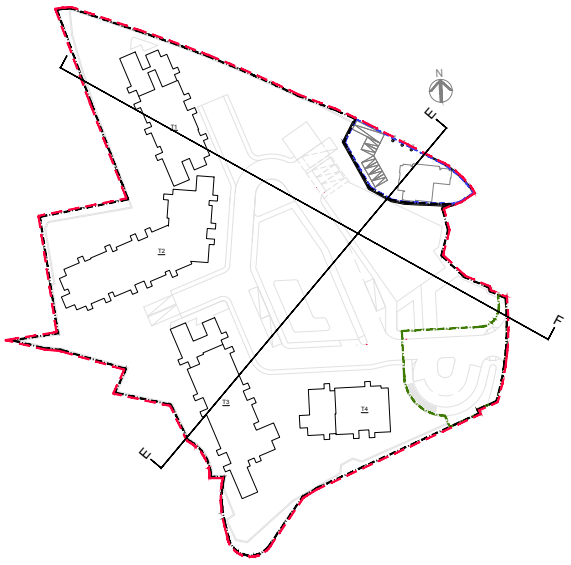
SCHEMATIC SECTION D

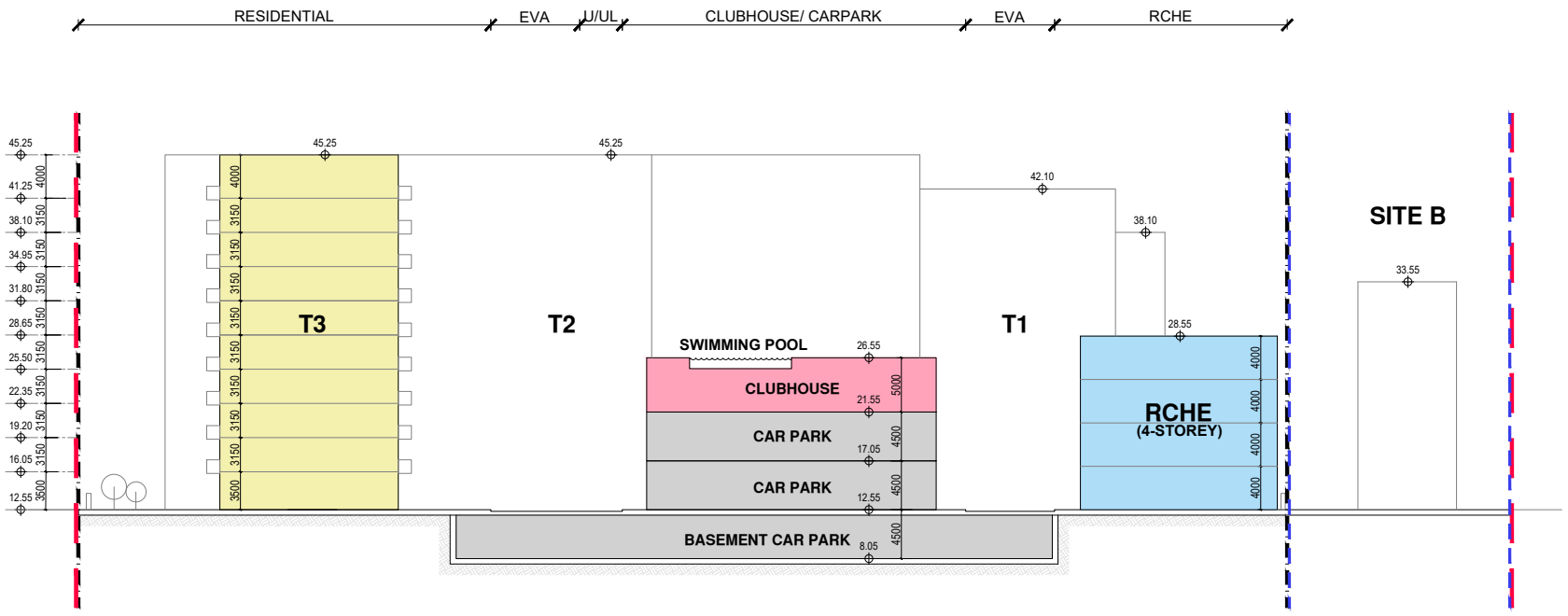
LEGEND

- CDA Zone Boundary
- Application Site Boundary

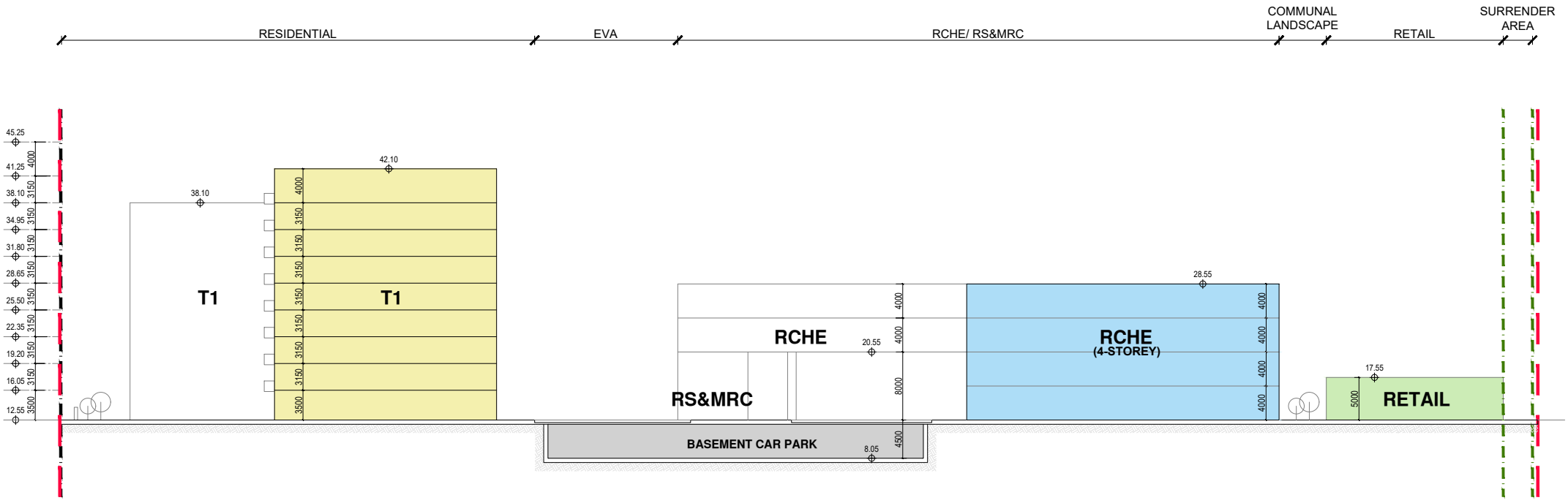
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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SCHEMATIC SECTION E



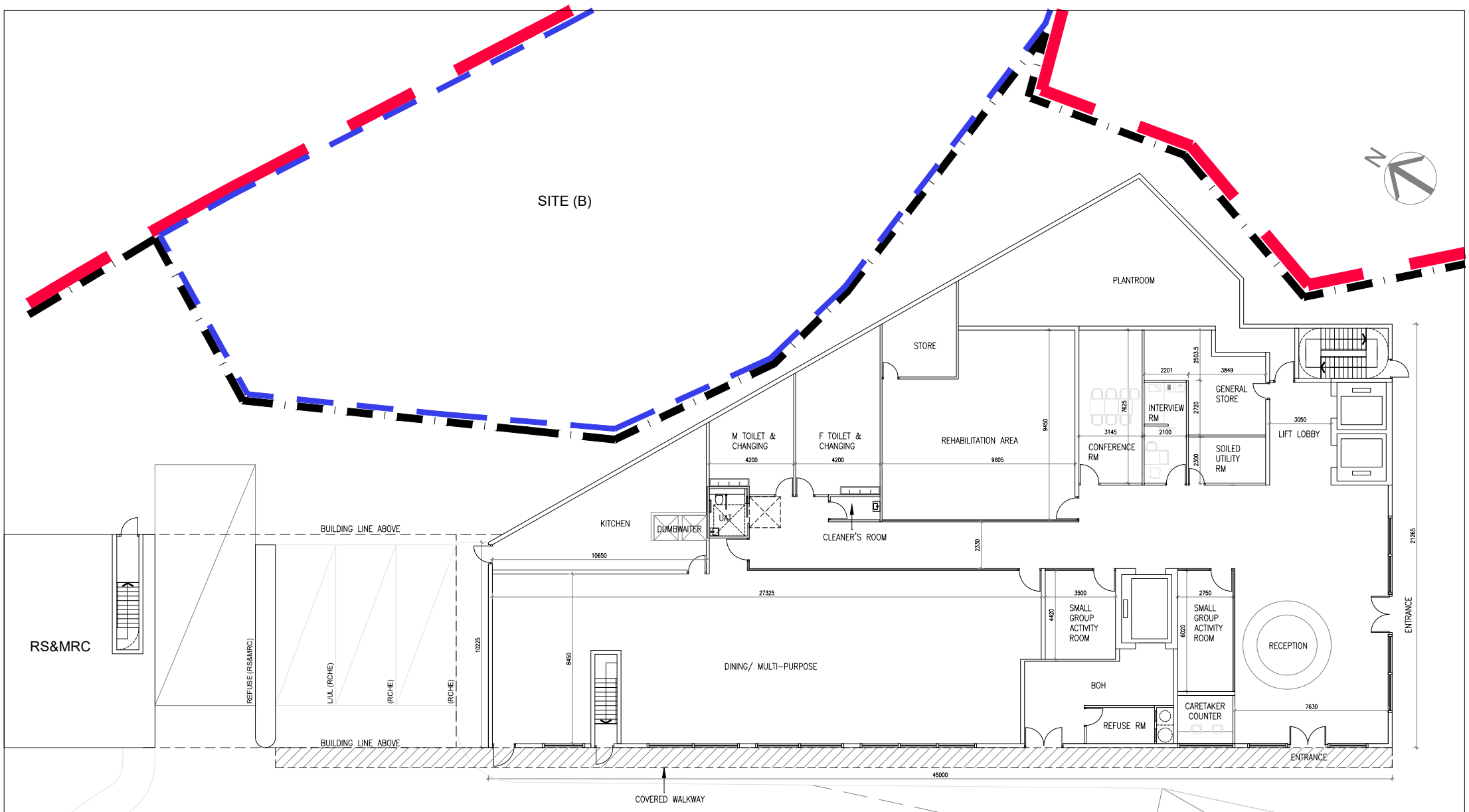
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LEGEND

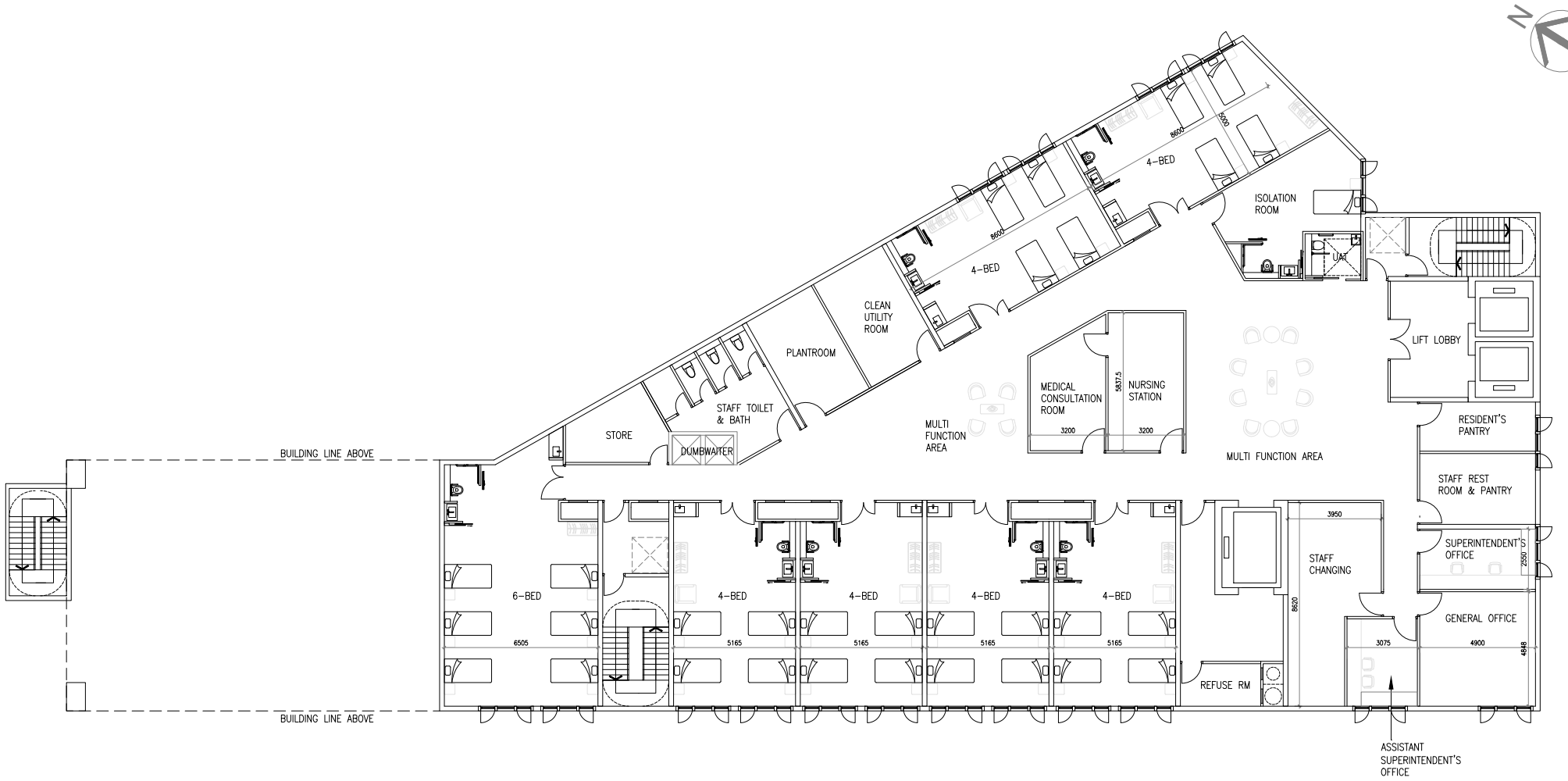
- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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RCHE GROUND FLOOR PLAN



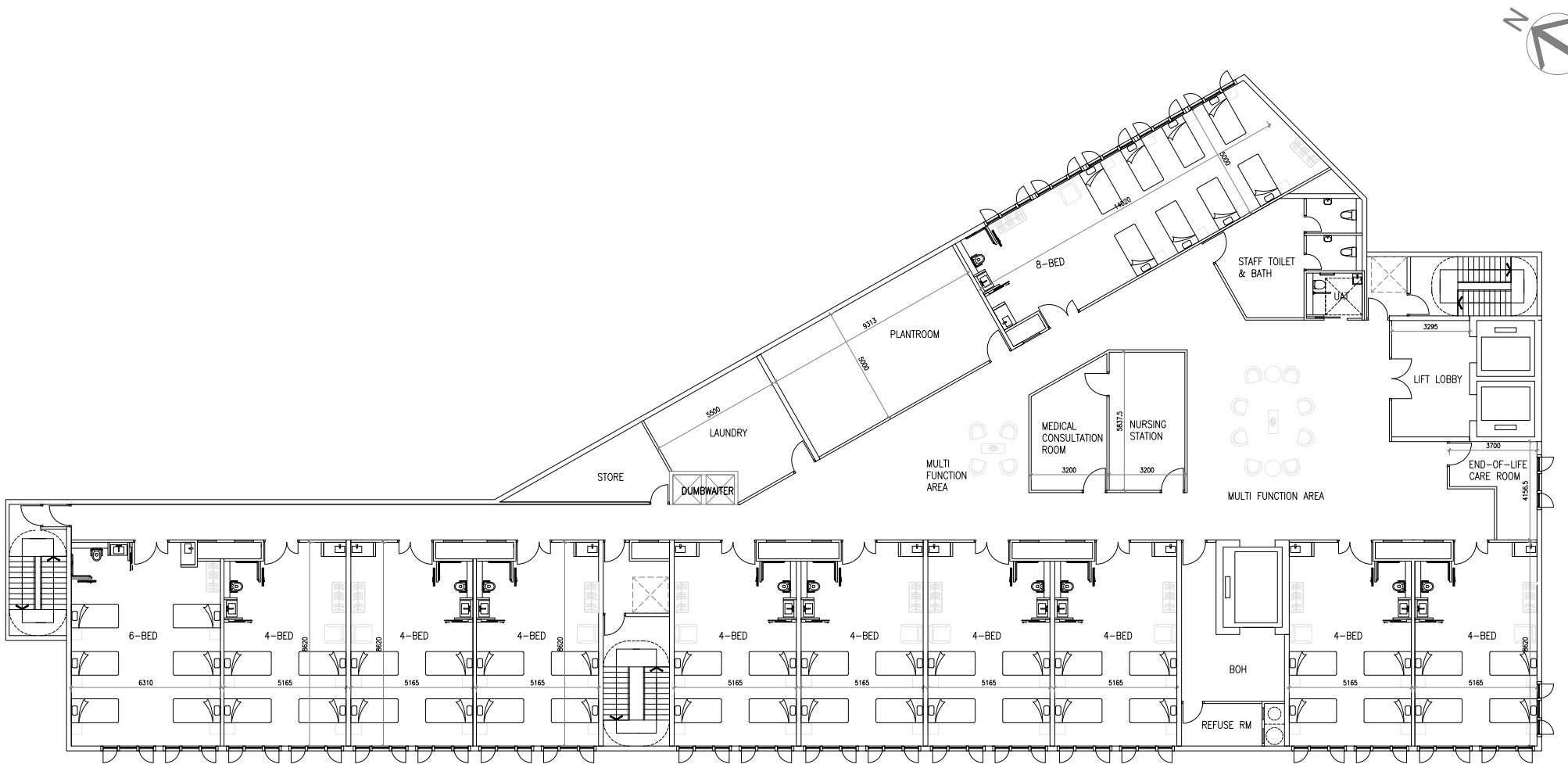
RCHE FIRST FLOOR PLAN

NUMBER OF BEDS: 30

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

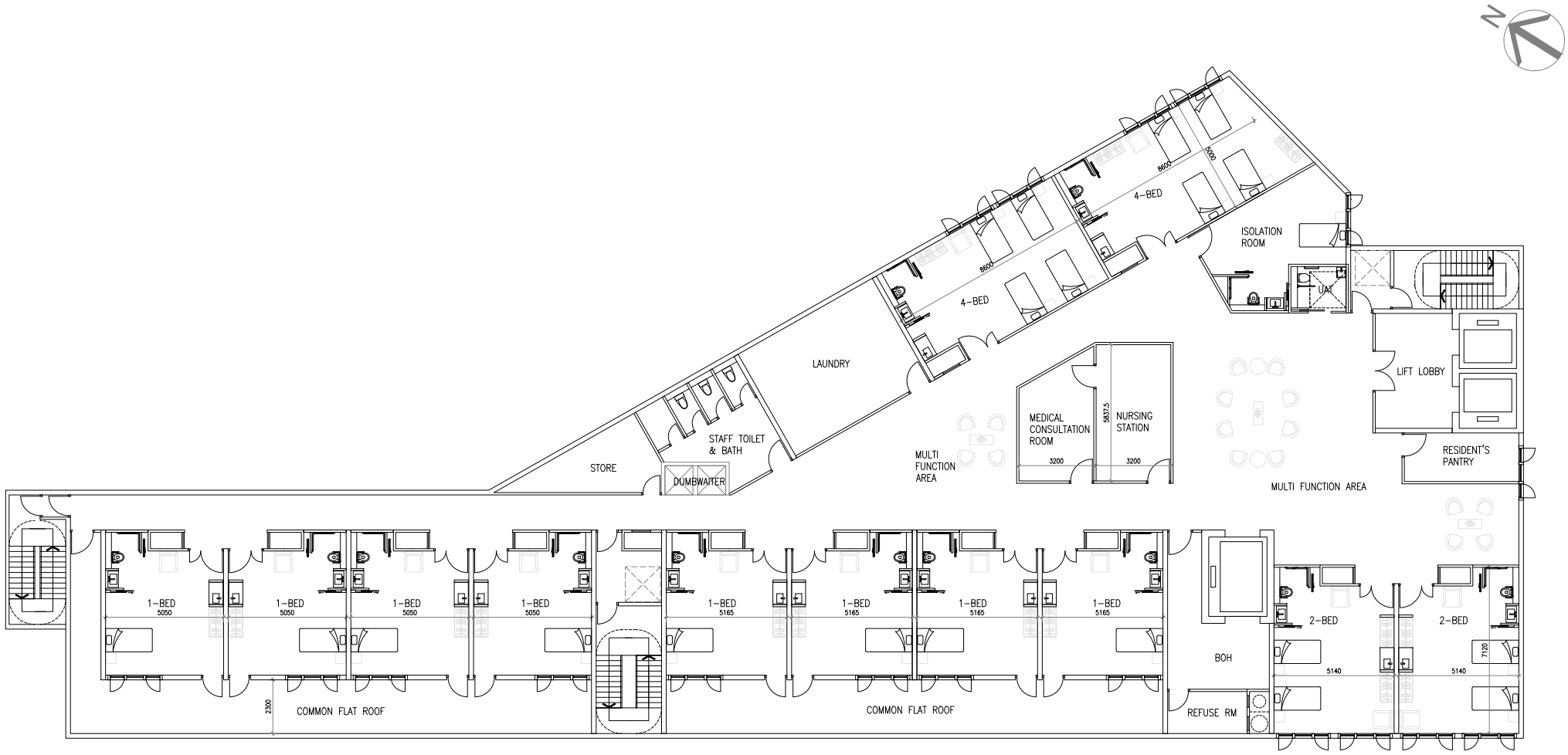
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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NUMBER OF BEDS: 50

RCHE SECOND FLOOR PLAN



NUMBER OF BEDS: 20

RCHE THIRD FLOOR PLAN

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

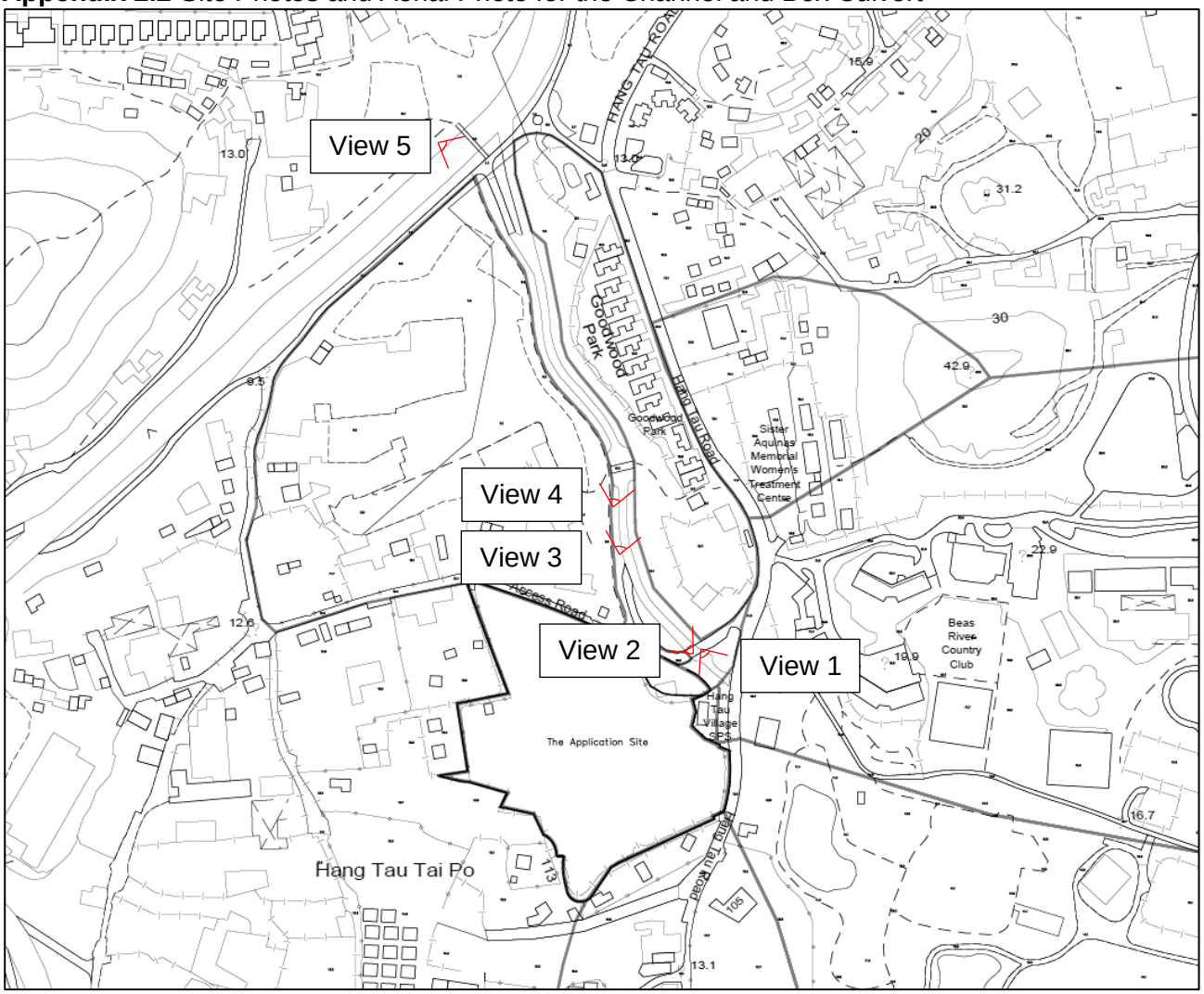
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

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Appendix 2.2

Site Photos and Aerial Photo for the Channel and Box Culvert

Appendix 2.2 Site Photos and Aerial Photo for the Channel and Box Culvert

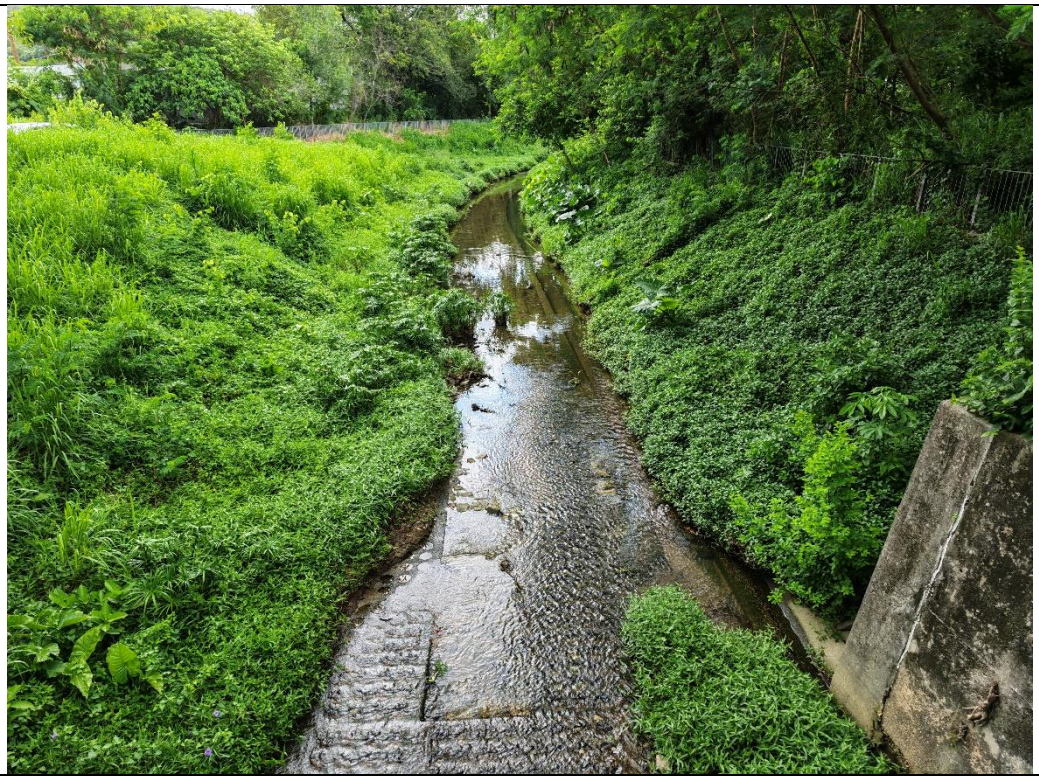


Appendix 2.2 Site Photos and Aerial Photo for the Channel and Box Culvert

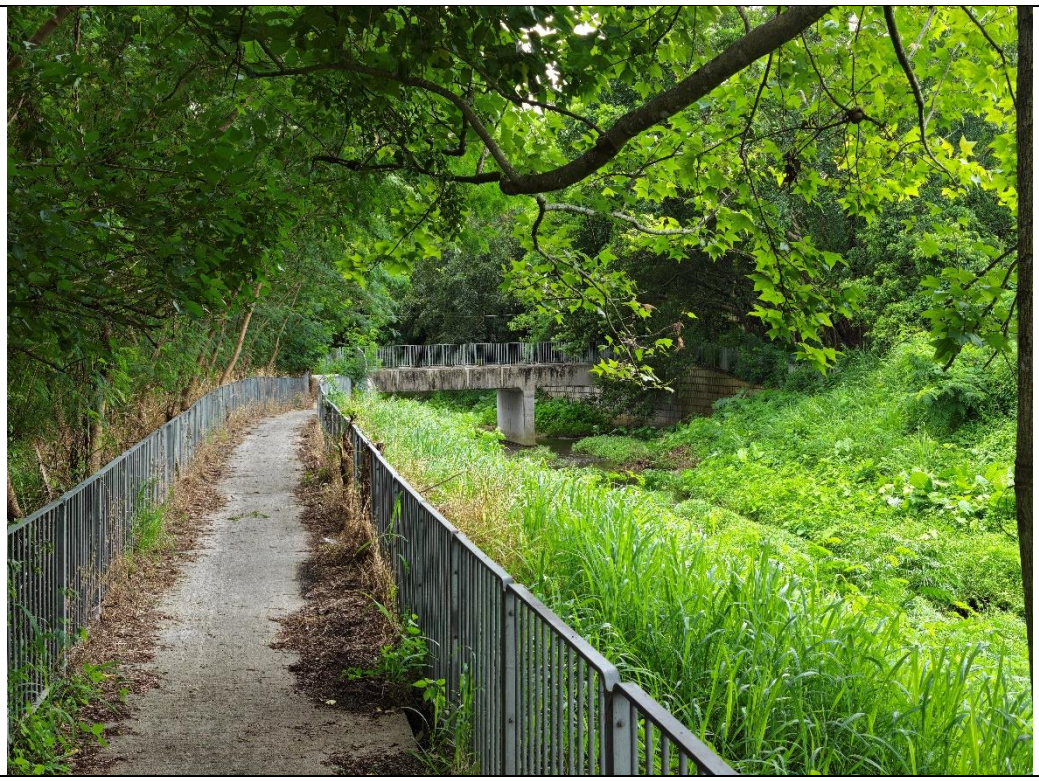
Site Photo:



View 1



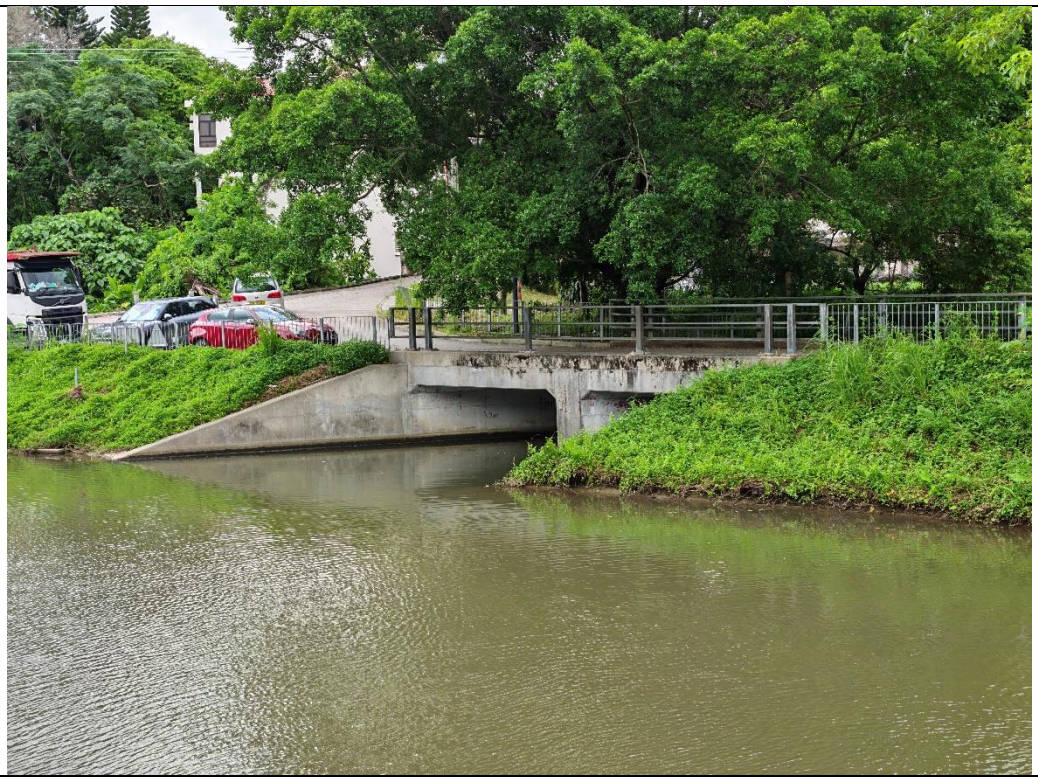
View 2



View 3



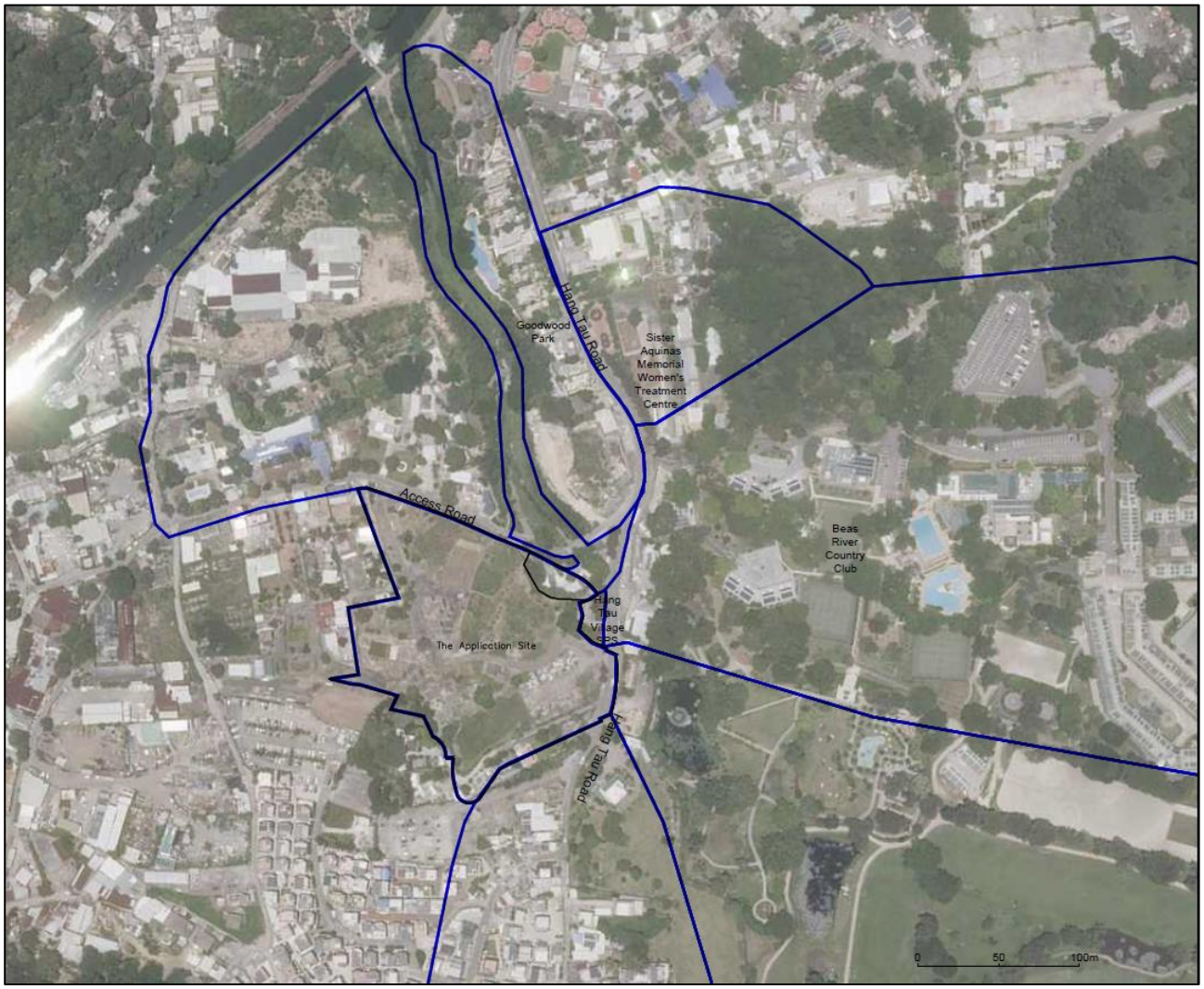
View 4



View 5

Appendix 2.2 Site Photos and Aerial Photo for the Channel and Box Culvert

Aerial Photo:



Appendix 3.1

Detailed Drainage Analysis for Per-development Scenario

A. Calculation of Runoff (50 years return period)

Catchment ID	Surface Type	Catchment Area (A), m^2	Catchment Area (A), km^2	Average slope (H), m/100m	Flow path length (L), m	Inlet time (t_0), min	Time of Concentration (t_c), min	Duration (t_d), min	a [1]	b [1]	c [1]	Rainfall Increase due to Climate Change & Design allowance [2]	Runoff intensity (i) mm/hr	Runoff coefficient (C)	C x A	Peak runoff (Q_p), m^3/s
Before Development																
A	80% Grassland (Heavy Soil), Flat + 20% concrete	18,724	0.0187	0.05	182.0	17.59	17.59	17.59	474.6	2.9	0.37	28.1%	199	0.39	0.0073	0.40
E	100% concrete	410	0.0004	3.72	14.2	0.86	0.86	0.86	474.6	2.9	0.37	28.1%	372	0.95	0.0004	0.04
F	10% Grassland (Heavy Soil), Steep + 90% concrete	157,117	0.1571	8.47	229.0	6.53	6.53	6.53	474.6	2.9	0.37	28.1%	265	0.89	0.1398	10.30
G	100% concrete	34,637	0.0346	0.94	115.1	5.92	5.92	5.92	474.6	2.9	0.37	28.1%	272	0.95	0.0329	2.49
H	96% Grassland (Heavy Soil), Flat + 4% concrete	276,309	0.2763	3.83	445.9	14.09	14.09	14.09	474.6	2.9	0.37	28.1%	213	0.28	0.0768	4.55
I	74% Grassland (Heavy Soil), Flat + 26% concrete	62,623	0.0626	5.11	172.1	5.95	5.95	5.95	474.6	2.9	0.37	28.1%	271	0.43	0.0271	2.04
J	89% Grassland (Heavy Soil), Steep + 11% concrete	94,014	0.0940	38.21	95.0	2.11	2.11	2.11	474.6	2.9	0.37	28.1%	335	0.42	0.0391	3.64
K	88% Grassland (Heavy Soil), Flat + 12% concrete	38,004	0.0380	20.09	118.1	3.27	3.27	3.27	474.6	2.9	0.37	28.1%	310	0.33	0.0127	1.09
L	60% Grassland (Heavy Soil), Flat + 40% concrete	40,988	0.0410	1.03	135.3	6.72	6.72	6.72	474.6	2.9	0.37	28.1%	263	0.53	0.0217	1.59
N	30% Grassland (Heavy Soil), Flat + 70% concrete	16,005	0.0160	1.75	34.3	1.69	1.69	1.69	474.6	2.9	0.37	28.1%	346	0.74	0.0118	1.14
M	26% Grassland (Heavy Soil), Steep + 74% concrete	18,118	0.0181	20.21	85.5	2.54	2.54	2.54	474.6	2.9	0.37	28.1%	325	0.79	0.0144	1.30

Note
Runoff is calculated in accordance with DSD's "*Stormwater Drainage Manual - Planning, Design and Managemen*t" (SDM), fifth edition, January 2018.
Rainfall Increase due to the climate change effects up to mid 21st Century has been adopted with reference to Table 28 of DSD's SDM, fifth edition, January 2018.
[1] Table 3d - Storm Constants for Different Return Periods of North District Area in the SDM Corrigendum No. 1/2024 (26 March 2024) has been adopted.
[2] Table 28 - Rainfall increase for mid of 21st Century in the SDM Corrigendum No. 1/2022 has been adopted, and Table 31 - Design allowance for rainfall increase in the SDM Corrigendum No. 1/2022 has been adopted.

Equations Used

$$t_0 = \frac{0.14465L}{H^{0.2}A^{0.1}} \qquad t_c = t_0 + t_f \qquad i = \frac{a}{(t_d + b)^c} \qquad Q_p = 0.278\,C\,i\,A$$

B. Estimated Pipe Capacity and Adequacy Check for the Proposed Upgrading Drainage System

Drainage Pipe	Diameter, m	Length, m	Level (out), mPD	Level (in), mPD	Slope	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)	Flow time (t_f), min
C1 - A2	**0.300**	6.9	10.80	10.65	0.022	0.015	0.064	0.942	0.07	1.63	0.104	A	0.40	**390%**	N	0.07
A2 - A3	**0.300**	3.4	9.55	9.30	0.074	0.015	0.064	0.942	0.07	3.01	0.191	A	0.40	**211%**	N	0.02
A3 - A4	**0.300**	6.0	9.30	9.20	0.017	0.015	0.064	0.942	0.07	1.42	0.090	A	0.40	**446%**	N	0.07
A4 - A5	**0.450**	12.3	9.05	8.75	0.024	0.015	0.143	1.414	0.10	2.27	0.324	A and E	0.44	**137%**	N	0.09
A5 - A6	**0.450**	9.4	8.75	8.58	0.018	0.015	0.143	1.414	0.10	1.95	0.279	A and E	0.44	**159%**	N	0.08
A6 - A7	**0.450**	3.4	8.58	8.50	0.024	0.015	0.143	1.414	0.10	2.23	0.319	A and E	0.44	**139%**	N	0.03

Stream	Width, m	Depth, m	Slope [4]	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)
Channel - CH. 67	Note [1]	Note [1]	0.003	0.035	14.030	11.486	1.22	1.76	24.660	A, E to K	24.56	100%	Y
Channel - Ch 212	Note [2]	Note [2]	0.008	0.035	22.140	16.470	1.34	3.11	68.914	A, E to M	28.59	41%	Y
Box Culvert	Note [3]	Note [3]	0.008	0.016	11.822	20.359	0.58	3.95	46.755	A, E to M	28.59	61%	Y

Note

[1] Dimension of Channel - CH.67 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section B - AT CH.67 in Drawing No. MCL-118CD-P-KTS08-D111).

[2] Dimension of Channel - CH.212 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section E - AT CH.212 in Drawing No. MCL-118CD-P-KTS08-D114).

[3] Dimension of Box Culvert was referred to the As-built Drawing of the Channel in Appendix 3.2 (Section B in Drawing No. MCL-118CD-P-KTS08-S407).

[4] Slope of Channel - CH.67 and Ch.212 and Box Culvert were referred to As-built Drawing of the Channel in Appendix 3.2 (Drawing No. MCL-118CD-P-KTS08-D101).

[5] A 5% reduction in flow area shall be applied if the gradient is greater than or equal to 1 in 25, and a 10% reduction in flow area shall be applied if the gradient is less than 1 in 25.

C. Calculation of Runoff (200 years return period)

Catchment ID	Surface Type	Catchment Area (A), m^2	Catchment Area (A), km^2	Average slope (H), m/100m	Flow path length (L), m	Inlet time (t_0), min	Time of Concentration (t_c), min	Duration (t_d), min	a [1]	b [1]	c [1]	Rainfall Increase due to Climate Change & Design allowance [2]	Runoff intensity (i) mm/hr	Runoff coefficient (C)	C x A	Peak runoff (Q_p), m^3/s
Before Development																
A	80% Grassland (Heavy Soil), Flat + 20% concrete	18,724	0.0187	0.05	182.0	17.59	17.59	17.59	501.4	2.45	0.348	28.1%	226	0.39	0.0073	0.46
E	100% concrete	410	0.0004	3.72	14.2	0.86	0.86	0.86	501.4	2.45	0.348	28.1%	423	0.95	0.0004	0.05
F	10% Grassland (Heavy Soil), Steep + 90% concrete	157,117	0.1571	8.47	229.0	6.53	6.53	6.53	501.4	2.45	0.348	28.1%	299	0.89	0.1398	11.63
G	100% concrete	34,637	0.0346	0.94	115.1	5.92	5.92	5.92	501.4	2.45	0.348	28.1%	307	0.95	0.0329	2.81
H	96% Grassland (Heavy Soil), Flat + 4% concrete	276,309	0.2763	3.83	445.9	14.09	14.09	14.09	501.4	2.45	0.348	28.1%	242	0.28	0.0768	5.17
I	74% Grassland (Heavy Soil), Flat + 26% concrete	62,623	0.0626	5.11	172.1	5.95	5.95	5.95	501.4	2.45	0.348	28.1%	306	0.43	0.0271	2.30
J	89% Grassland (Heavy Soil), Steep + 11% concrete	94,014	0.0940	38.21	95.0	2.11	2.11	2.11	501.4	2.45	0.348	28.1%	379	0.42	0.0391	4.12
K	88% Grassland (Heavy Soil), Flat + 12% concrete	38,004	0.0380	20.09	118.1	3.27	3.27	3.27	501.4	2.45	0.348	28.1%	350	0.33	0.0127	1.24
L	60% Grassland (Heavy Soil), Flat + 40% concrete	40,988	0.0410	1.03	135.3	6.72	6.72	6.72	501.4	2.45	0.348	28.1%	297	0.53	0.0217	1.79
N	30% Grassland (Heavy Soil), Flat + 70% concrete	16,005	0.0160	1.75	34.3	1.69	1.69	1.69	501.4	2.45	0.348	28.1%	392	0.74	0.0118	1.29
M	26% Grassland (Heavy Soil), Steep + 74% concrete	18,118	0.0181	20.21	85.5	2.54	2.54	2.54	501.4	2.45	0.348	28.1%	367	0.79	0.0144	1.47

Note
Runoff is calculated in accordance with DSD's "*Stormwater Drainage Manual - Planning, Design and Managemen*t" (SDM), fifth edition, January 2018.
Rainfall Increase due to the climate change effects up to mid 21st Century has been adopted with reference to Table 28 of DSD's SDM, fifth edition, January 2018.
[1] Table 3d - Storm Constants for Different Return Periods of North District Area in the SDM Corrigendum No. 1/2024 (26 March 2024) has been adopted.
[2] Table 28 - Rainfall increase for mid of 21st Century in the SDM Corrigendum No. 1/2022 has been adopted, and Table 31 - Design allowance for rainfall increase in the SDM Corrigendum No. 1/2022 has been adopted.

Equations Used

$$t_0 = \frac{0.14465L}{H^{0.2}A^{0.1}} \qquad t_c = t_0 + t_f \qquad i = \frac{a}{(t_d + b)^c} \qquad Q_p = 0.278\,C\,i\,A$$

D. Estimated Pipe Capacity and Adequacy Check for the Proposed Upgrading Drainage System

Drainage Pipe	Diameter, m	Length, m	Level (out), mPD	Level (in), mPD	Slope	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)	Flow time (t_f), min
C1 - A2	**0.300**	6.9	10.80	10.65	0.022	0.015	0.064	0.942	0.07	1.63	0.104	A	0.46	**444%**	N	0.07
A2 - A3	**0.300**	3.4	9.55	9.30	0.074	0.015	0.064	0.942	0.07	3.01	0.191	A	0.46	**240%**	N	0.02
A3 - A4	**0.300**	6.0	9.30	9.20	0.017	0.015	0.064	0.942	0.07	1.42	0.090	A	0.46	**508%**	N	0.07
A4 - A5	**0.450**	12.3	9.05	8.75	0.024	0.015	0.143	1.414	0.10	2.27	0.324	A and E	0.51	**156%**	N	0.09
A5 - A6	**0.450**	9.4	8.75	8.58	0.018	0.015	0.143	1.414	0.10	1.95	0.279	A and E	0.51	**181%**	N	0.08
A6 - A7	**0.450**	3.4	8.58	8.50	0.024	0.015	0.143	1.414	0.10	2.23	0.319	A and E	0.51	**159%**	N	0.03

Stream	Width, m	Depth, m	Slope [4]	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)
Channel - CH. 67	Note [1]	Note [1]	0.003	0.035	14.030	11.486	1.22	1.76	24.660	A, E to K	27.77	**113%**	N
Channel - Ch 212	Note [2]	Note [2]	0.008	0.035	22.140	16.470	1.34	3.16	70.044	A, E to M	32.32	46%	Y
Box Culvert	Note [3]	Note [3]	0.008	0.016	11.822	20.359	0.58	3.95	46.755	A, E to M	32.32	69%	Y

Note
[1] Dimension of Channel - CH.67 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section B - AT CH.67 in Drawing No. MCL-118CD-P-KTS08-D111).
[2] Dimension of Channel - CH.212 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section E - AT CH.212 in Drawing No. MCL-118CD-P-KTS08-D114).
[3] Dimension of Box Culvert was referred to the As-built Drawing of the Channel in Appendix 3.2 (Section B in Drawing No. MCL-118CD-P-KTS08-S407).
[4] Slope of Channel - CH.67 and Ch.212 and Box Culvert were referred to As-built Drawing of the Channel in Appendix 3.2 (Drawing No. MCL-118CD-P-KTS08-D101).
[5] A 5% reduction in flow area shall be applied if the gradient is greater than or equal to 1 in 25, and a 10% reduction in flow area shall be applied if the gradient is less than 1 in 25.

Appendix 3.2

Detailed Drainage Analysis for Post-development Scenario

A. Calculation of Runoff (50 years return period)

Catchment ID	Surface Type	Catchment Area (A), m^2	Catchment Area (A), km^2	Average slope (H), m/100m	Flow path length (L), m	Inlet time (t_0), min	Time of Concentration (t_c), min	Duration (t_d), min	a [1]	b [1]	c [1]	Rainfall Increase due to Climate Change & Design allowance [2]	Runoff intensity (i) mm/hr	Runoff coefficient (C)	C x A	Peak runoff (Q_p), m^3/s
After Development																
A	25% Grassland (Heavy Soil), Flat + 75% concrete	18,724	0.0187	0.05	182.0	17.59	17.59	17.59	474.6	2.9	0.37	28.1%	199	0.78	0.0145	0.80
E	100% concrete	410	0.0004	3.72	14.2	0.86	0.86	0.86	474.6	2.9	0.37	28.1%	372	0.95	0.0004	0.04
F	10% Grassland (Heavy Soil), Steep + 90% concrete	157,117	0.1571	8.47	229.0	6.53	6.53	6.53	474.6	2.9	0.37	28.1%	265	0.89	0.1398	10.30
G	100% concrete	34,637	0.0346	0.94	115.1	5.92	5.92	5.92	474.6	2.9	0.37	28.1%	272	0.95	0.0329	2.49
H	96% Grassland (Heavy Soil), Flat + 4% concrete	276,309	0.2763	3.83	445.9	14.09	14.09	14.09	474.6	2.9	0.37	28.1%	213	0.28	0.0768	4.55
I	74% Grassland (Heavy Soil), Flat + 26% concrete	62,623	0.0626	5.11	172.1	5.95	5.95	5.95	474.6	2.9	0.37	28.1%	271	0.43	0.0271	2.04
J	89% Grassland (Heavy Soil), Steep + 11% concrete	94,014	0.0940	38.21	95.0	2.11	2.11	2.11	474.6	2.9	0.37	28.1%	335	0.42	0.0391	3.64
K	88% Grassland (Heavy Soil), Flat + 12% concrete	38,004	0.0380	20.09	118.1	3.27	3.27	3.27	474.6	2.9	0.37	28.1%	310	0.33	0.0127	1.09
L	60% Grassland (Heavy Soil), Flat + 40% concrete	40,988	0.0410	1.03	135.3	6.72	6.72	6.72	474.6	2.9	0.37	28.1%	263	0.53	0.0217	1.59
N	30% Grassland (Heavy Soil), Flat + 70% concrete	16,005	0.0160	1.75	34.3	1.69	1.69	1.69	474.6	2.9	0.37	28.1%	346	0.74	0.0118	1.14
M	26% Grassland (Heavy Soil), Steep + 74% concrete	18,118	0.0181	20.21	85.5	2.54	2.54	2.54	474.6	2.9	0.37	28.1%	325	0.79	0.0144	1.30

Note

Runoff is calculated in accordance with DSD's "*Stormwater Drainage Manual - Planning, Design and Managemen*t" (SDM), fifth edition, January 2018.

Rainfall Increase due to the climate change effects up to mid 21st Century has been adopted with reference to Table 28 of DSD's SDM, fifth edition, January 2018.

[1] Table 3d - Storm Constants for Different Return Periods of North District Area in the SDM Corrigendum No. 1/2024 (26 March 2024) has been adopted.

[2] Table 28 - Rainfall increase for mid of 21st Century in the SDM Corrigendum No. 1/2022 has been adopted, and Table 31 - Design allowance for rainfall increase in the SDM Corrigendum No. 1/2022 has been adopted.

Equations Used

$$t_0 = \frac{0.14465L}{H^{0.2}A^{0.1}} \qquad t_c = t_0 + t_f \qquad i = \frac{a}{(t_d + b)^c} \qquad Q_p = 0.278\,C\,i\,A$$

B. Estimated Pipe Capacity and Adequacy Check for the Proposed Upgrading Drainage System (50 years return period)

Drainage Pipe	Diameter, m	Length, m	Level (out), mPD	Level (in), mPD	Slope	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s [4]	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)	Flow time (t_f), min
PT1 - P2	**0.750**	12.7	9.80	9.55	0.020	0.015	0.398	2.356	0.17	2.86	1.136	A	0.80	71%	Y	0.07
P2 - P3	**0.750**	17.7	9.55	9.20	0.020	0.015	0.398	2.356	0.17	2.86	1.138	A	0.80	70%	Y	0.10
P3 - P4	**0.750**	33.7	9.20	8.50	0.021	0.015	0.398	2.356	0.17	2.93	1.167	A	0.80	69%	Y	0.19
P4 - P5	**0.750**	23.2	8.50	8.00	0.022	0.015	0.398	2.356	0.17	2.99	1.189	A	0.80	67%	Y	0.13
P5 - P6	**0.750**	47.3	8.00	7.00	0.021	0.015	0.398	2.356	0.17	2.96	1.176	A	0.80	68%	Y	0.27
P6 - P7	**0.750**	3.4	7.00	6.93	0.021	0.015	0.398	2.356	0.17	2.92	1.161	A	0.80	69%	Y	0.02
P6 - P7 (U-Channel)	**0.750**	2.1	6.93	6.88	0.024	0.016	0.398	2.356	0.17	2.94	1.171	A	0.80	69%	Y	0.01

Stream	Width, m	Depth, m	Slope [4]	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)
Channel - CH. 212	Note [2]	Note [2]	0.008	0.035	22.140	16.470	1.34	3.16	70.044	A, E to M	28.99	41%	Y
Box Culvert	Note [3]	Note [3]	0.008	0.016	11.822	20.359	0.58	3.95	46.755	A, E to M	28.99	62%	Y

Note
[2] Dimension of Channel - CH.212 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section E - AT CH.212 in Drawing No. MCL-118CD-P-KTS08-D114).
[3] Dimension of Box Culvert was referred to the As-built Drawing of the Channel in Appendix 3.2 (Section B in Drawing No. MCL-118CD-P-KTS08-S407).
[4] Slope of Channel - CH.67 and Ch.212 and Box Culvert were referred to As-built Drawing of the Channel in Appendix 3.2 (Drawing No. MCL-118CD-P-KTS08-D101).
[5] A 5% reduction in flow area shall be applied if the gradient is greater than or equal to 1 in 25, and a 10% reduction in flow area shall be applied if the gradient is less than 1 in 25.

C. Calculation of Runoff (200 years return period)

Catchment ID	Surface Type	Catchment Area (A), m^2	Catchment Area (A), km^2	Average slope (H), m/100m	Flow path length (L), m	Inlet time (t_0), min	Time of Concentration (t_c), min	Duration (t_d), min	a [1]	b [1]	c [1]	Rainfall Increase due to Climate Change & Design allowance [2]	Runoff intensity (i) mm/hr	Runoff coefficient (C)	C x A	Peak runoff (Q_p), m^3/s
After Development																
A	25% Grassland (Heavy Soil), Flat + 75% concrete	18,724	0.0187	0.05	182.0	17.59	17.59	17.59	501.4	2.45	0.348	28.1%	226	0.78	0.0145	0.91
E	100% concrete	410	0.0004	3.72	14.2	0.86	0.86	0.86	501.4	2.45	0.348	28.1%	423	0.95	0.0004	0.05
F	10% Grassland (Heavy Soil), Steep + 90% concrete	157,117	0.1571	8.47	229.0	6.53	6.53	6.53	501.4	2.45	0.348	28.1%	299	0.89	0.1398	11.63
G	100% concrete	34,637	0.0346	0.94	115.1	5.92	5.92	5.92	501.4	2.45	0.348	28.1%	307	0.95	0.0329	2.81
H	96% Grassland (Heavy Soil), Flat + 4% concrete	276,309	0.2763	3.83	445.9	14.09	14.09	14.09	501.4	2.45	0.348	28.1%	242	0.28	0.0768	5.17
I	74% Grassland (Heavy Soil), Flat + 26% concrete	62,623	0.0626	5.11	172.1	5.95	5.95	5.95	501.4	2.45	0.348	28.1%	306	0.43	0.0271	2.30
J	89% Grassland (Heavy Soil), Steep + 11% concrete	94,014	0.0940	38.21	95.0	2.11	2.11	2.11	501.4	2.45	0.348	28.1%	379	0.42	0.0391	4.12
K	88% Grassland (Heavy Soil), Flat + 12% concrete	38,004	0.0380	20.09	118.1	3.27	3.27	3.27	501.4	2.45	0.348	28.1%	350	0.33	0.0127	1.24
L	60% Grassland (Heavy Soil), Flat + 40% concrete	40,988	0.0410	1.03	135.3	6.72	6.72	6.72	501.4	2.45	0.348	28.1%	297	0.53	0.0217	1.79
N	30% Grassland (Heavy Soil), Flat + 70% concrete	16,005	0.0160	1.75	34.3	1.69	1.69	1.69	501.4	2.45	0.348	28.1%	392	0.74	0.0118	1.29
M	26% Grassland (Heavy Soil), Steep + 74% concrete	18,118	0.0181	20.21	85.5	2.54	2.54	2.54	501.4	2.45	0.348	28.1%	367	0.79	0.0144	1.47

Note
Runoff is calculated in accordance with DSD's "*Stormwater Drainage Manual - Planning, Design and Managemen*t" (SDM), fifth edition, January 2018.
Rainfall Increase due to the climate change effects up to mid 21st Century has been adopted with reference to Table 28 of DSD's SDM, fifth edition, January 2018.
[1] Table 3d - Storm Constants for Different Return Periods of North District Area in the SDM Corrigendum No. 1/2024 (26 March 2024) has been adopted.
[2] Table 28 - Rainfall increase for mid of 21st Century in the SDM Corrigendum No. 1/2022 has been adopted, and Table 31 - Design allowance for rainfall increase in the SDM Corrigendum No. 1/2022 has been adopted.

Equations Used

$$t_0 = \frac{0.14465L}{H^{0.2}A^{0.1}} \qquad t_c = t_0 + t_f \qquad i = \frac{a}{(t_d + b)^c} \qquad Q_p = 0.278\,C\,i\,A$$

D. Estimated Pipe Capacity and Adequacy Check for the Proposed Upgrading Drainage System (200 years return period)

Drainage Pipe	Diameter, m	Length, m	Level (out), mPD	Level (in), mPD	Slope	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s [4]	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)	Flow time (t_f), min
PT1 - P2	**0.750**	12.7	9.80	9.55	0.020	0.015	0.398	2.356	0.17	2.86	1.136	A	0.91	80%	Y	0.07
P2 - P3	**0.750**	17.7	9.55	9.20	0.020	0.015	0.398	2.356	0.17	2.86	1.138	A	0.91	80%	Y	0.10
P3 - P4	**0.750**	33.7	9.20	8.50	0.021	0.015	0.398	2.356	0.17	2.93	1.167	A	0.91	78%	Y	0.19
P4 - P5	**0.750**	23.2	8.50	8.00	0.022	0.015	0.398	2.356	0.17	2.99	1.189	A	0.91	77%	Y	0.13
P5 - P6	**0.750**	47.3	8.00	7.00	0.021	0.015	0.398	2.356	0.17	2.96	1.176	A	0.91	78%	Y	0.27
P6 - P7	**0.750**	3.4	7.00	6.93	0.021	0.015	0.398	2.356	0.17	2.92	1.161	A	0.91	79%	Y	0.02
P6 - P7 (U-Channel)	**0.750**	2.1	6.93	6.88	0.024	0.016	0.398	2.356	0.17	2.94	1.171	A	0.91	78%	Y	0.01

Stream	Width, m	Depth, m	Slope [4]	Manning's roughness coefficient	Cross Section Area, m^2 [5]	Wetted perimeter, m	Hydraulic radius, m	Mean velocity, m/s	Capacity flow, m^3/s	Catchments Served	Runoff, m^3/s	% of capacity flow	Sufficient Capacity? (Y/N)
Channel - CH. 212	Note [2]	Note [2]	0.008	0.035	22.140	16.470	1.34	3.16	70.044	A, E to M	32.77	47%	Y
Box Culvert	Note [3]	Note [3]	0.008	0.016	11.822	20.359	0.58	3.95	46.755	A, E to M	32.77	70%	Y

Note

[2] Dimension of Channel - CH.212 was adopted and referred to the As-built Drawing of the Channel in Appendix 3.2(Section E - AT CH.212 in Drawing No. MCL-118CD-P-KTS08-D114).

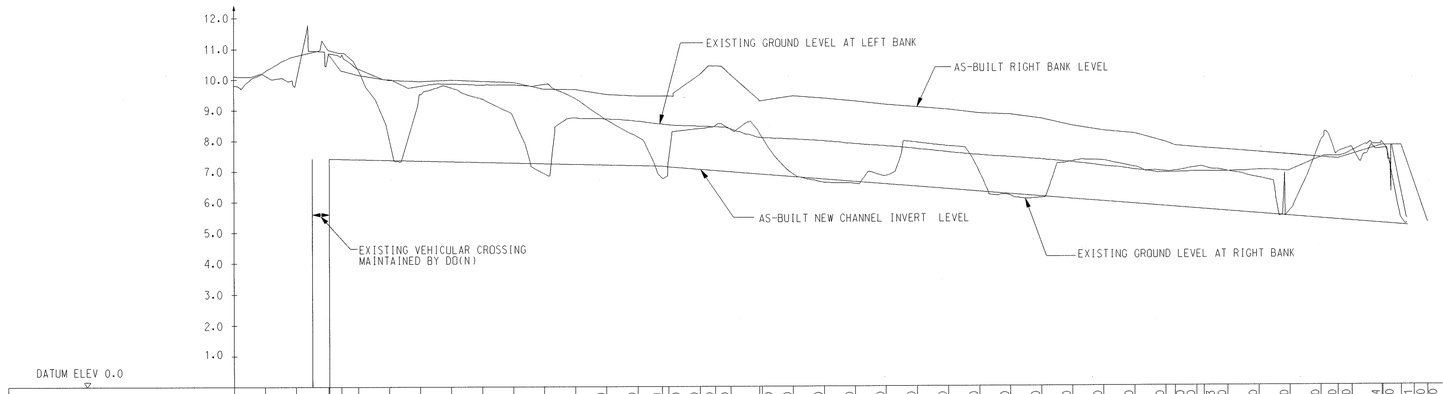
[3] Dimension of Box Culvert was referred to the As-built Drawing of the Channel in Appendix 3.2 (Section B in Drawing No. MCL-118CD-P-KTS08-S407).

[4] Slope of Channel - CH.67 and Ch.212 and Box Culvert were referred to As-built Drawing of the Channel in Appendix 3.2 (Drawing No. MCL-118CD-P-KTS08-D101).

[5] A 5% reduction in flow area shall be applied if the gradient is greater than or equal to 1 in 25, and a 10% reduction in flow area shall be applied if the gradient is less than 1 in 25.

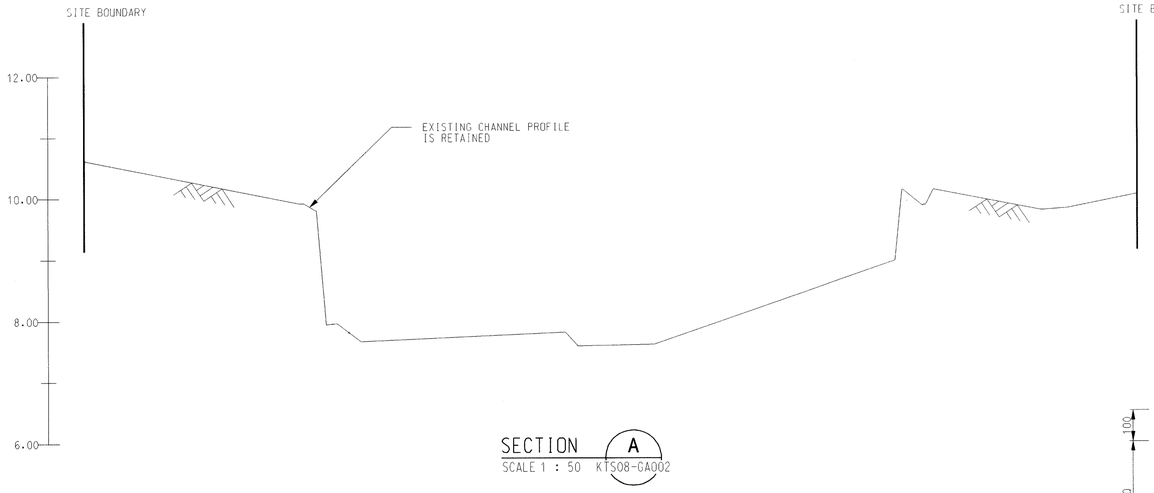
Appendix 3.3

As-built Drawing of the Channel and Box Culvert

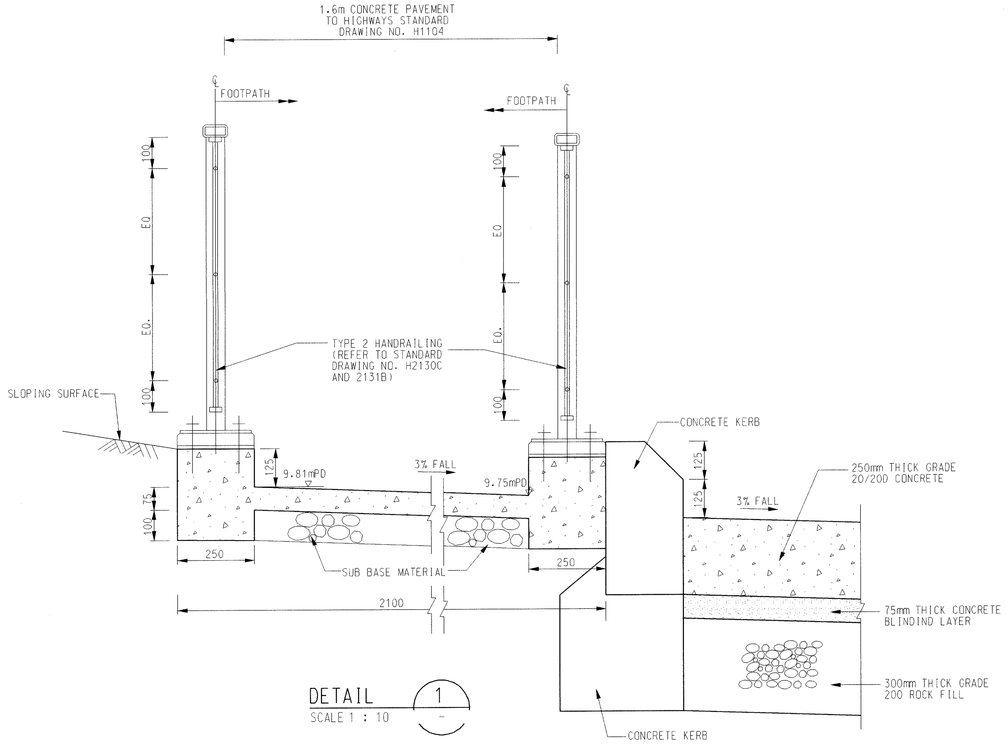


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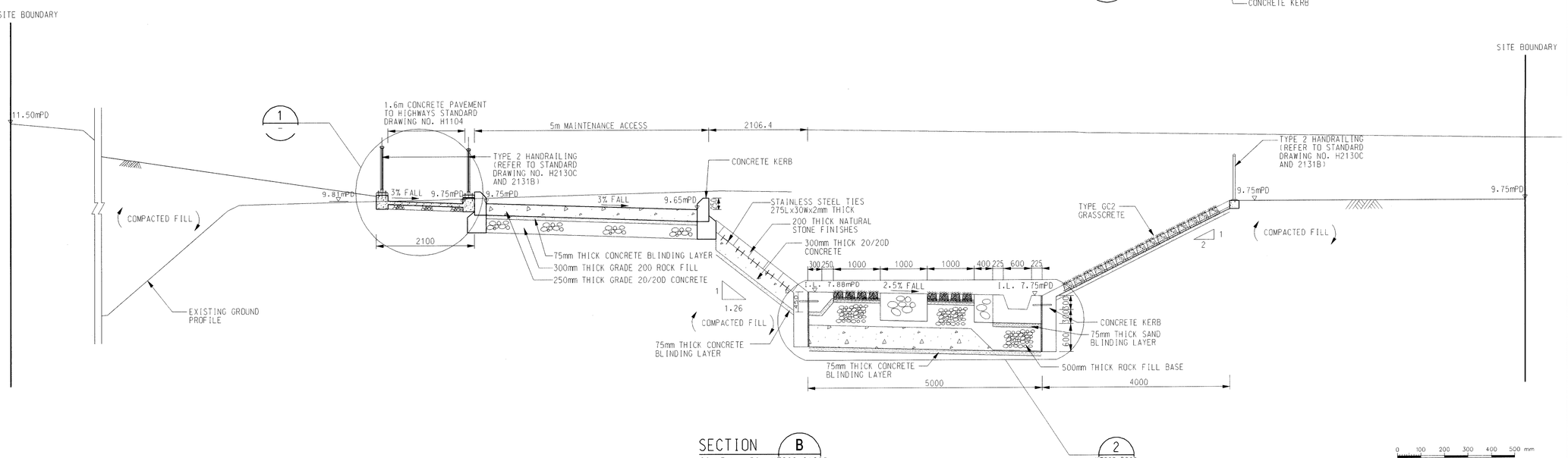
| | | |



SECTION A
SCALE 1 : 50 KTS08-GA002



DETAIL 1
SCALE 1 : 10



SECTION B
SCALE 1 : 50 KTS08-GA002

AT CH. 67

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0 500 1000 1500 2000 2500 mm
1:50 SCALE BAR

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2. FOR DETAILS OF CROSS SECTION REFER TO DRAWING No. MCL-118CD-P-KTS08-GA002.
3. FOR DETAILS OF FOOTPATH AND RAMP CONSTRUCTION REFER TO DRAWING No. MCL-118CD-P-KTS08-D201.

Key to symbols

Rev	Date	Drawn	Description	Ch'k'd	App'd
AB	JAN 11	CYC	AS-CONSTRUCTED DRAWING	SSC	JBK
A	JUL 06	CW	IDENTICAL TO TENDER DRAWING REVISION 01		

Client

DRAINAGE SERVICES DEPARTMENT
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Contract No. DC/2006/06

Contract

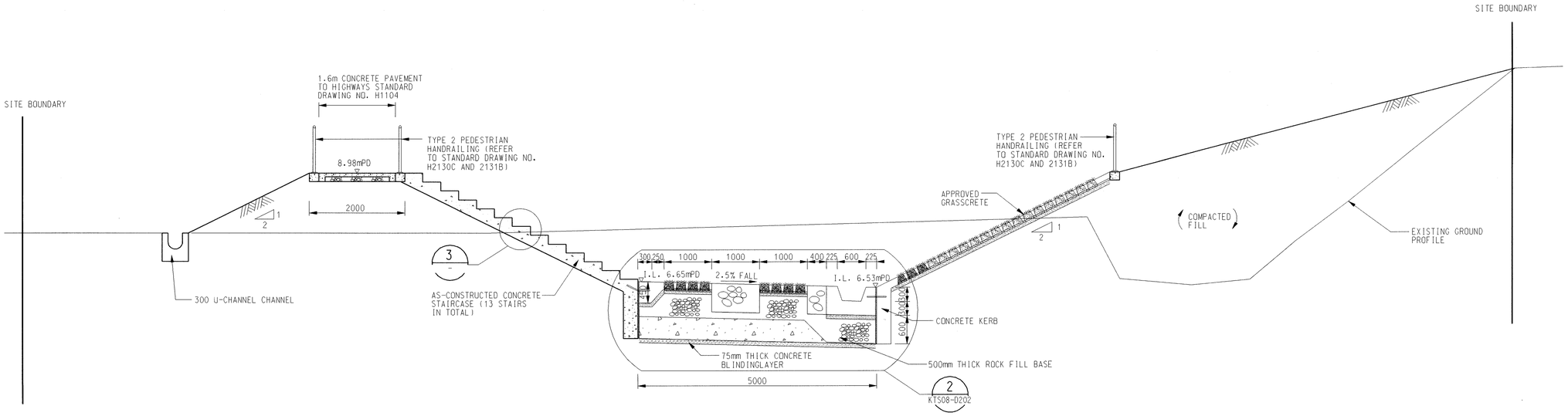
Drainage Improvement Works
in Kwu Tung South and Fu Tei Au, Sheung Shui

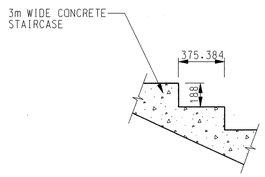
Drawing Title

CHANNEL KTS08
SECTIONS & DETAILS
(SHEET 1 OF 12)

Designed	AH		Eng.Chk.	TT	
Drawn	CW	CW	Approved	TMC	
Dwg.Chk.	TT		Scale	AS SHOWN@A1	

Project 204521
CAD file /DC_2006_06(PHASE 2)/As-built/KTS08/KTS08-D111-rev_AB.dgn
Status A
Drawing No. MCL-118CD-P-KTS08-D111
Rev AB





DETAIL 3 (-)
SCALE 1 : 25

SECTION E
SCALE 1 : 50 KTS08-GA003

AT CH. 212

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Notes:

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DRAINAGE SERVICES DEPARTMENT
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Contract No. DC/2006/06

Contract

Drainage Improvement Works
in Kwu Tung South and Fu Tei Au, Sheung Shui

Drawing Title

CHANNEL KTS08
SECTIONS & DETAILS
(SHEET 4 OF 12)

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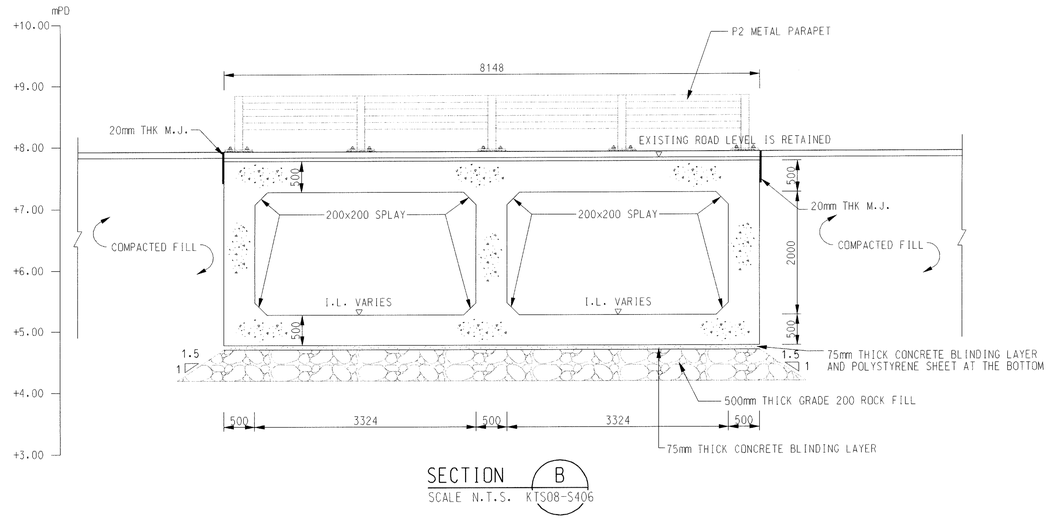
Project 204521 Status A

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Drawing No. MCL-118CD-P-KTS08-D114 Rev AB

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SECTION B
SCALE N.T.S. KTS08-S406

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2. FOR LOCATION OF CROSS SECTIONS REFER TO DRAWING No. MCL-118CD-P-KTS08-S406.

Key to symbols

SITE BOUNDARY

EXISTING GROUND PROFILE

Rev	Date	Drawn	Description	Ch'k'd	App'd
AB	JAN 11	CYC	AS-CONSTRUCTED DRAWING	SSC	JBK
B	MAR 07	RL	DESIGN MODIFICATION FOR CONSTRUCTION		
A	JUL 06	CW	IDENTICAL TO TENDER DRAWING REVISION 02	TT	TMC

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Hong Kong
[redacted]

Contract No. DC/2006/06

Contract

Drainage Improvement Works
in Kwu Tung South and Fu Tei Au, Sheung Shui

Drawing Title

CHANNEL KTS08
GENERAL LAYOUT & DETAILS OF
AS-CONSTRUCTED BOX CULVERT No. 2
(SHEET 2 OF 3)

Designed	AH		Eng.Chk.	TT	
Drawn	CW	CW	Approved	TMC	
Dwg.Chk.	GT		Scale	1:50@A1	

Project 204521

Status A

CAD file /DC_2006_06(PHASE 2)/As-built/KTS08/KTS08-S407-Rev_AB.dgn

Drawing No. MCL-118CD-P-KTS08-S407

Rev AB

0 500 1000 1500 2000 2500 mm
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Appendix 5

Sewerage Impact Assessment

S16 Planning Application for Proposed Residential Development cum Residential Care Home for the Elderly and Shop and Services

Sewerage Impact Assessment Report

October 2026

Submitted to

Fonnie Holdings Limited

Prepared By

Meinhardt Infrastructure and Environment Ltd

Date	Revision	Prepared By	Checked By	Approved By
04 March 2025	0	Parisa TSUI	Adi LEE	Adi LEE
20 March 2026	1	Parisa TSUI	Adi LEE	Adi LEE
13 July 2026	2	Parisa TSUI	Adi LEE	Adi LEE
16 October 2026	3	Echo HUNG	Adi LEE	Adi LEE

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Appendix E Extraction of SIA Reports of Sewer Upgrading Works from Other Planned Developments

1 INTRODUCTION

1.1 Project Background

1.1.1 The Applicant, Fonnie Holdings Limited intends to develop the residential development cum Resident Care Home for the Elderly and Shop and Services (hereafter as "the Proposed Development") in D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South (hereafter as "the Application Site").

1.1.2 This planning application is submitted under Section 16 of the Town Planning Ordinance ("the Ordinance") for the proposed development with minor relaxation of plot ratio and building height restrictions in the prevailing Draft Kwu Tung South Outline Zoning Plan No. S/NE-KTS/21.

1.1.3 Meinhardt Infrastructure and Environment Limited (MIEL) was commissioned by the Applicant to conduct a Sewerage Impact Assessment (SIA) to support the Section 16 Planning Application of the proposed development, and to assess the environmental impact due to / upon the proposed development.

1.2 Objective of the Report

1.2.1 The objectives of this SIA are to assess the potential sewerage impacts arising from the proposed development and recommend the mitigation measures, if necessary, to alleviate the impacts.

1.3 Report Structure

1.3.1 The remaining chapters of this report are shown below:

- Chapter 2 – Site Description
- Chapter 3 – Sewerage Impact Assessment
- Chapter 4 – Result and Discussion
- Chapter 5 – Conclusion

2 SITE DESCRIPTION

2.1 Site Location and Its Environs

2.1.1 The Proposed Development will be located at the various lots in D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung South.

2.1.2 The Proposed Development is currently occupied by unused structures including a 2-story house, a pavilion, swimming pool and landscape garden. The proposed development is located in the "Comprehensive Development Area" Zone bounded by "Agriculture" (AGR) Zone, "Residential (Group D)" (R(D)) Zone and "Government Institution or Community" (G/IC) Zone according to the Draft Kwu Tung South Outline Zoning Plan (OZP) (OZP No.: S/NE-KTS/21). Existing land uses in the surroundings include low-rise village type development and temporary structures.

2.1.3 **Figure 2.1** shows the Application Site location and its environs.

2.2 Proposed Development

2.2.1 The Proposed Development includes four residential towers, a retail, a residential care homes for the elderly, a clubhouse & aboveground carpark, and surrendered area, with a total site area of about 17,990.9 m^2. The development schedule of the Proposed Development is tabulated in **Table 2-1**. The layout plans of the Application Site are shown in **Appendix A**.

Table 2-1 Proposed Development Schedule

	Development Items	Design Parameter
The Proposed Development	No. of Tower	4
	No. of Flat Unit	334
	No. Clubhouse & Aboveground Carpark	1
	No. of Swimming Pool	1
	No. of RCHE	1
	No. of Retail	1
	Site Area (Including 1,076m^2 surrendered area)	17,990.9m^2

2.2.2 Based on the information provided by the Project Architect, the estimated maximum population of the Proposed Development is tabulated in **Table 2-2**.

Table 2-2 Estimated Population of the Proposed Development

Type of User	Estimated Population
Residents	936
Management Staff (Including Clubhouse & RCHE)	50
Employees (Retail/Shop)	14
RCHE Residents	100

2.2.3 According to the latest programme, the year of population intake of the Proposed Development is expected to be Year 2031.

2.3 Existing Sewerage Condition

2.3.1 The background information on the current sewerage infrastructure in vicinity of the Application Site obtained from the GeoInfo Map and provided by EPD have been reviewed. The Application Site and the nearest public sewer are shown in **Figure 2.1**.

2.3.2 The Application Site is currently served by the public sewerage facilities along Hang Tau Road (eastern side of the Application Site) to the existing Hang Tau Sewage Pumping Station (HTSPS) (Station no. XPS1001532) and further discharge to Tsung Pak Long Sewage Pumping Station (TPLSPS) through 200mm dia. Rising main; and 300mm dia. to 600mm dia. gravity sewers.

2.4 Existing Sewage Pumping Station

2.4.1 According to the information provided by DSD in **Appendix D**, the design dry weather flow of the HTSPS is 1,970m^3/day, maximum daily flow is 2,290m^3/day, and the average daily flow is around 300m^3/day, while the design dry weather flow of the TPLSPS is 21,070m^3/day, maximum daily flow is 4,007m^3/day, and the average daily flow is around 1041m^3/day.

2.4.2 The impacts on the capacities of the existing sewage pumping stations with the Proposed Development have been evaluated by comparing the average daily flow against the design dry weather flow of HTSPS and TPLSPS.

3 SEWERAGE IMPACT ASSESSMENT

3.1 Calculation Assumptions

3.1.1 Sewage flows from the population of the Proposed Development, as well as the existing, and planned development, have been adopted using the Unit Flow Factors (UFF) as recommended in the Guideline for Estimating Sewage Flows for Sewage Infrastructure Planning (hereafter as "GESF") published by EPD in 2005. The adopted UFF for the calculation are tabulated in **Table 3-1** below.

Table 3-1 Unit Flow Factors Adopted for the Assessment

Type of People	Unit Flow Factors (m^3/person/day)	Category
General Resident	0.37	Domestic (Private R3)
Resident of Existing Village House	0.27	Domestic (Modern Village)
Employees (Retail)	0.28	Commercial Employee + J4 (Wholesale & Retail)
Employees (Management, School, Clubhouse & RCHE Staff, and Participants)	0.28	Commercial Employee + J11 (Community, Social & Personal Services)
Student	0.04	School Student
Employees (Restaurants)	1.58	Commercial Employee + J10 (Restaurants & Hotels)
RCHE Residents	0.19	Special Class

3.1.2 According to currently available information from Outline Zoning Plan (OZP) and the available SIA reports of other planned developments from Planning Department (Planning Enquiry Counters), a total eleven planned developments are identified in the vicinity of the Application Site as listed in **Table 3-2**. In order to take into account for the cumulative impact from the planned development, only those planned developments with an anticipated completion time on or prior to the Proposed Development (i.e. on or before Year 2031), have been considered in the calculation. The anticipated completion time of the development proposal of planned developments were assumed to coincide with the population intake year. Details of anticipated completion year and sewage to be generated from the planned developments and the correspondence concerned manholes connected to these planned developments are tabulated in **Table 3-3**.

Table 3-2 Sewage Generation of the Planned Developments

Planned Development	Anticipated Completion Time of the Development Proposal	ADWF (m^3/day)	Swimming Pool Backwash (l/s)	Manhole*	Included in Calculation? (Yes/No)
A/NE-KTS/460	2021[3]	2.22[1]	-	FMH1029682	Yes
A/NE-KTS/466	2022[3]	49[2]	-	FMH1029681	Yes
A/NE-KTS/525 (local STP)	2028[3]	45.8[2]	-	FMH1029681	Yes
A/NE-KTS/538 (septic tank)	2027[3]	4.5[2]	-	FMH1029681	Yes
A/NE-KTS/541	2032[3]	2.22[1]	-	FMH1029681	Yes
Y/NE-KTS/15 (Formerly A/NE-KTS/484)	2024[3]	792[2]	8.3[2]	FMH1021544	Yes
A/NE-KTS/506 (Formerly Y/NE-KTS/12)	2028[3]	2166.4[2]	8.3[2]	FMH1021544	Yes
Y/NE-KTS/14 and Y/NE-KTS/17	2025 & 2027[3]	1074[2]	14.4[2]	FMH1021544	Yes
Y/KTN/2	2026[3]	492[2]	3.5[2]	FMH1021543	Yes
Y/FSS/19	2028[3]	798.9[2]	5.8[2]	FMH1021561	Yes
Tai Tau Leng Public Housing	2032[4]	3057[2]	-	FMH1021561	No

Note:
[*] The receiving manhole for the planned development's sewage discharge.
[1] Source of Information from Outline Zoning Plan.
[2] Source of Information: latest available SIAs of planning developments. The estimate may be subject to further adjustments based on specific designs of individual developments.
[3] Source of Information from available SIA reports of other planned developments from Planning Department (Planning Enquiry Counters)
[4] Source of information from https://www.districtcouncils.gov.hk/north/doc/2020_2023/en/committee_meetings_doc/ldhwc/22666/n_ldhwc_2023_009_ch.pdf

3.1.3 The sewage generated from the surrounding developments including existing developments, public toilet, planned developments anticipated completion time on or before 2031 (Population intake year of the Proposed Development, see **Section 2.2.3**), and the Proposed Development will be considered in the calculation. The details calculations of sewage generation have been provided in **Appendix B** for reference.

3.1.4 Sewer upgrading works proposed by other planned developments, including A/NE-KTS/506, A/NE-KTS/565 and Y/FSS/19, are derived from the respective Sewerage Impact Assessment (SIA) reports available at the Planning Department (Planning Enquiry Counters). These upgrading works from the SIA reports have been incorporated into the calculations, as summarized in **Table 3-3**.

Table 3-3 Proposed Sewerage Upgrading Works by Responsible Projects

Manhole		Pipe Length (m)	Existing Pipe Size (mm)	Upgraded Pipe Size (mm)	Responsible Planned Development[2]
FMH1021545	FMH1021546	44.9	600	750	A/NE-KTS/506
FMH1021551	FMH1021552	31.1	600	750	A/NE-KTS/506
FMH1021552	FMH1021553	37.6	600	750	A/NE-KTS/506
FMH1021553	FMH1021554	50.3	600	750	A/NE-KTS/506
FMH1021554	FMH1021555	32.5	600	750	A/NE-KTS/506
FMH1021555	FMH1021556	33	600	750	A/NE-KTS/506
FMH1021556	FMH1021557	17.6	600	750	A/NE-KTS/506
FMH1021557	FMH1021558	9.3	600	750	A/NE-KTS/506
FMH1021558	FMH1021559	13.7	600	675	A/NE-KTS/565
FMH1021559	FMH1021560	13	600	750	A/NE-KTS/506
FMH1021560	FMH1021561	11.3	600	750[1]	A/NE-KTS/506
FMH1021561	FMH1021562	13.3	600	800	A/NE-KTS/506
FMH1021562	FMH1021563	8.8	600	750	A/NE-KTS/506
FMH1021563	FMH1021564	13.4	600	750	A/NE-KTS/506
FMH1021564	FMH1021565	10.7	600	750	A/NE-KTS/506
FMH1021565	FMH1021566	7.3	600	900	Y/FSS/19

Note:
[1] For the sewer section between FMH1021560 and FMH1021561, the Planned Development A/NE-KTS/506 will be responsible for the upgrading of pipe size from 600 mm to 750 mm. A further upgrade of the pipe size from 750 mm to the ultimate pipe diameter of 800 mm is required under the Proposed Development, as discussed in **Section 4.1.5**.
[2] The extraction of SIA reports of sewer upgrading works from these planned developments are illustrated in **Appendix E**.

3.2 Sewerage Capacity

3.2.1 According to the "Sewerage Manual – Key Planning Issues and Gravity Collection System" (Sewerage Manual) published by DSD in 2013, the capacities of respective sewers have been calculated based on the Colebrook-White equation as below:

$$V = -\sqrt{(8gDs)}\log\left(\frac{ks}{3.7D} + \frac{2.5\,1v}{D\sqrt{(2gDs)}}\right)$$

where V = mean velocity (m/s)
g = gravitational acceleration (m/s^2)
D= pipe diameter (m)
ks = hydraulic pipeline roughness (m)
(ks = 3mm is adopted for the "poor" condition of claywareslimed sewers)
v = kinematic viscosity of fluid (m^2/s)
s= frictional slope (energy gradient due to frictional loss)

3.2.2 The sewerage impact on various segments of the sewer has been evaluated by comparing the estimated peak flow against the capacity of the respective sewer segments. The detailed calculations are provided in **Appendix C**.

3.3 Assessment of the Sewerage Capacity

3.3.1 Three scenarios as listed below are assessed in the estimation and the calculation are detailed in **Appendix C**. The categories of the three scenarios are summarized in **Table 3-4**.

Table 3-4 Different Scenario for Sewerage Impact Assessment

Scenario	Estimation Assumption
1	Existing development, and Planned developments anticipated intake year at 2031 (Upgraded Sewers by Responsible Planned Developments)*
2	Proposed development, Existing development, and planned developments anticipated intake year at 2031 (Upgraded Sewers by Responsible Planned Developments)*
3	Proposed development, Existing development, and planned developments anticipated intake year at 2031 (Upgraded Sewers by Responsible Planned Developments & Upgraded Sewers by Proposed Development)*

Note: [*] Proposed sewer upgrading works by (A/NE-KTS/506 and Y/FSS/19) are incorporate in the calculation.

4 RESULT AND DISCUSSION

4.1 Sewerage Capacity Check

4.1.1 All assessment scenarios have incorporated the sewer upgrading works proposed by A/NE-KTS/506, A/NE-KTS/565, and Y/FSS/19.

4.1.2 Under Scenario 1, the capacity of the sewers has adequate capacity to cater for all existing and planned development completion year on or before 2031.

4.1.3 Under Scenario 2, when the additional sewage flow from the Proposed Development is included in the assessment, four sewer sections are projected to exceed their hydraulic capacity, as detailed below:

- The section between manholes FMH1028569 and FMH1028568, with a capacity utilization of **126%**;
- The section between manholes FMH1021544 and FMH1021543, with a capacity utilization of **101%**;
- The section between manholes FMH1021546 and FMH1021547, with a capacity utilization of **101%**; and
- The section between manholes FMH1021560 and FMH1021561, with a capacity utilization of **100%**.

4.1.4 As these sections would operate beyond their design capacity, mitigation measures shall be provided. The capacity estimation is detailed in **Appendix D**. The location plan and catchment area of the concerned sewers is indicated in **Figure 4.1a** and **4.1b**.

4.1.5 Under Scenario 3, in order to mitigate the overloading identified in Scenario 2, the following upgrading of the existing sewer main is recommended:

- Sewer between manholes FMH1028569 and FMH1028568: **From 400mm to 500mm**
- Sewer between manholes FMH1021544 and FMH1021543: **From 500mm to 600mm**
- Sewer between manholes FMH1021546 and FMH1021547: **From 600mm to 650mm**
- Sewer between manholes FMH1021560 and FMH1021561: **From 600mm to 800mm** (If the 750 mm upgrade under A/NE-KTS/506 has been completed, the Applicant will implement the remaining upgrade from 750 mm to 800 mm)

4.1.6 Following implementation of the recommended upgrades listed in Section 4.1.5, the capacity utilization of the affected sewer sections under Scenario 3 will be reduced to the following levels:

- Sewer between manholes FMH1028569 and FMH1028568: **70%**
- Sewer between manholes FMH1021544 and FMH1021543: **62%**
- Sewer between manholes FMH1021546 and FMH1021547: **82%**
- Sewer between manholes FMH1021560 and FMH1021561: **85%**

4.1.7 Alternatively, twin pipes may be provided for the concerned sewers as mitigation measures to enhance capacity for sewage conveyance. Upon completion of the proposed upgrading works, there will be no adverse impacts on the sewerage system arising from the proposed development. Detail of the upgraded capacity estimation is detailed in **Appendix C**. The pipe location as shown in **Figure 4.1**. The proposed upgrading works will be undertaken by the Applicant, except for any section already covered by the upgrading works committed under other planned developments.

4.1.8 The responsibility for the proposed upgrading works is allocated as follows. The upgrades at FMH1028569 and FMH1028568, FMH1021544 and FMH1021543, and FMH1021546 and FMH1021547 shall be undertaken by the Applicant. The FMH1021560 and FMH1021561 section is to be upgraded to 750 mm under A/NE-KTS/506; if that upgrade has not commenced, the Applicant will implement the full upgrade to the ultimate 800 mm, otherwise only the remaining 750 mm to 800 mm. An updated SIA will be carried out in the detailed design stage to confirm the responsibility of proposed sewer upgrading works by the Applicant. If the proposed upgrading works under A/NE-KTS/506, A/NE-KTS/565, and Y/FSS/19 could not be completed before the population intake of the Proposed Development, the Applicant will be responsible for implementing the outstanding upgrading works. In such circumstances, the sewer upgrading works to be taken up by the Applicant are summarized in **Table 4-1**.

Table 4-1 Required Upgrading of Pipe Size by the Applicant if the Proposed Sewer Upgrading Works under Other Planned Developments Could not be Completed Before the Population Intake of the Proposed Development

Manhole		Pipe Length (m)	Existing Pipe Size (mm)	Upgraded Pipe Size (mm)
FMH1028569	FMH1028568	9.1	400	500
FMH1021544	FMH1021543	54.9	500	600
FMH1021545	FMH1021546	44.9	600	750
FMH1021546	FMH1021547	39	600	650
FMH1021551	FMH1021552	31.1	600	750
FMH1021552	FMH1021553	37.6	600	750
FMH1021553	FMH1021554	50.3	600	750
FMH1021554	FMH1021555	32.5	600	750
FMH1021555	FMH1021556	33	600	750
FMH1021556	FMH1021557	17.6	600	750
FMH1021557	FMH1021558	9.3	600	750
FMH1021558	FMH1021559	13.7	600	675
FMH1021559	FMH1021560	13	600	750
FMH1021560	FMH1021561	11.3	600	800
FMH1021561	FMH1021562	13.3	600	800
FMH1021562	FMH1021563	8.8	600	750
FMH1021563	FMH1021564	13.4	600	750
FMH1021564	FMH1021565	10.7	600	750
FMH1021565	FMH1021566	7.3	600	900

4.2 Construction and Maintenance of Sewerage System

4.2.1 The terminal manhole, the sewers connecting the property to the terminal manhole and the sewage upgrading works shall be constructed and maintained by the Applicant at its own

cost and to DSD's satisfaction, while the public sewers and the sewers linking the terminal manhole to the public sewer shall be constructed and maintained by DSD.

4.3 Capacity of Sewers from Proposed Development to Hang Tau Sewage Pumping Station

4.3.1 A new 225 mm diameter sewer pipe will be installed to connect the terminal manhole of the Proposed Development to the existing 300mm dia. sewer at manhole no. FMH1029683, as shown in **Figure 3.1**. The capacity of the existing sewers along Hang Tau Road and further downstream up to TPLSPS has been checked based on the estimation of existing sewage and future sewage from the Proposed Development and other planned development anticipated completion time on or before 2031 at upstream and downstream.

4.3.2 The estimated daily flow generated from the proposed development is approximately 383.2 m^3/day. The peak flow with the swimming pool backwash of the Proposed Development is approximately 6.37 l/s. The sewage from the Proposed Development will discharge to the existing manhole (FMH1029683). The utilization of the sewers from FMH1029683 to FMH1029680 is approximately 56%. Flow estimation and capacity checking are detailed in **Appendix B** and **Appendix C**, respectively.

4.3.3 The assessment results as presented in **Appendix C** indicates that sewer segment from FMH1029683 to FMH1029680 has enough sewage capacity to cater with the peak discharge flows from the Proposed Development and the surrounding existing and planned developments with population intake prior to the Proposed Development.

4.4 Capacity of Hang Tau Sewage Pumping Station and Tsung Pak Long Sewage Pumping Station

Hang Tau Sewage Pumping Station

4.4.1 Sewage generated from the Proposed Development and the surrounding existing and planned developments (including A/NE-KTS/460, A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/538 and A/NE-KTS/541) will be conveyed to HTSPS. In order to evaluate whether HTSPS has sufficient capacity to accommodate the additional sewage arising from the Proposed Development, the impact on HTSPS has been assessed against two criteria: (i) the total Average Dry Weather Flow (ADWF) against the design daily flow; and (ii) the estimated peak flow against the installed pump rate.

4.4.2 As shown in **Table 4-2**, the total ADWF reaching HTSPS is approximately 788.14 m³/day, representing about 40.0% of the design daily flow of 1,970 m³/day. Therefore, HTSPS retains approximately 60.0% spare daily capacity.

Table 4-2 Design Capacity against ADWF

Description	ADWF (m³/day)	
Average Daily HTSPS [1](A)	**300 (average daily flow)**	
ADWF from Planned Developments (B) [2]	A/NE-KTS/460	2.22
	A/NE-KTS/466	49
	A/NE-KTS/525	45.8
	A/NE-KTS/538	4.5
	A/NE-KTS/541	2.22
	ADWF from Proposed Development	383.24 + 1.15[3] = 384.4
Total Planned ADWF (A+B)	**788.14**	

Description	ADWF (m³/day)
Design Daily Flow of HTSPS [1] (C)	**1,970**
Utilization ((A)+(B) / (C))	**40.0%**

Note:
[1] The information is provided by DSD in Appendix D.
[2] Sewage flows from the planned surrounding developments are based on the available information from Outline Zoning Plan and latest available SIAs of planning developments.
[3] Swimming Pool (m^3/day), assuming a backwash duration of 3 minutes per day.

4.4.3 As shown in **Table 4-3** , the estimated peak flow reaching HTSPS is approximately 56.1 l/s, representing a utilization of approximately 82.0% of the installed pump rate of 68.4 l/s.

Table 4-3 Estimated Peak Flow to HTSPS against Installed Pump Rate of the HTSPS

Description	Items	
Installed Pump Rate of HTSPS (A)	**1970 x 3[3] = 68.4 l/s**	
Maximum Daily Flow [1] (B)	**2290 m³/day**	
Peak Flow from Planned Developments [2] (C1)	A/NE-KTS/460	2.22 x 4[3] = 8.9 m³/day
	A/NE-KTS/466	49 x 4[3] = 196 m³/day
	A/NE-KTS/525	45.8 x 4[3] = 183.2 m³/day
	A/NE-KTS/538	4.5 x 4[3] = 18 m³/day
	A/NE-KTS/541	2.22 x 4[3] = 8.9 m³/day
Peak Flow from Existing Development (C2)	Goodwood Park	13.69 x 4[3] = 54.8 m³/day
Peak Flow from Proposed Development (C3)	Proposed Development	383.24 x 4[3] = 1533.0 m³/day
Total Flow to HTSPS (D) = (B)+(C)	**4292.7 m³/day**	
Backwash (peak) from Swimming Pool (E)	**6.37 l/s**	
Total Peak Flow to HTSPS (F) = (D)+(E)	**56.1 l/s**	
Utilization (F) / (A)	**82.0%**	

Note:
[1] The information is provided by DSD in Appendix D.
[2] Sewage flows from the planned surrounding developments are based on the available information from Outline Zoning Plan and latest available SIAs of planning developments.
[3] Based on GESF, Table T-5: Peaking Factors, P, (b) Sewage Treatment Works, Preliminary Treatment Works and Pumping Stations, population range <10000 (P=4); 10,000 – 25,000 (P=3.5); 25,000 – 50,000 (P=3).

4.4.4 As both the daily flow and the peak flow remain within the available capacity of HTSPS, no adverse impact is anticipated arising from the Proposed Development. The velocity estimation of the raising main from HTSPS to FMH1028600 is assessed and is indicated in **Appendix C**.

Tsung Pak Long Sewage Pumping Station

4.4.5 The total sewage flow to TPLSPS is the sum of maximum daily flow, peak flow from the planned development (i.e. A/NE-KTS/460, A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/538, A/NE-KTS/541, Goodwood Park, La Regent Park, Y/NE-KTS/15 (formerly A/NE-KTS/484), A/NE-KTS/506 (formerly Y/NE-KTS/12), Y/NE-KTS/14 and Y/NE-KTS/17, Y/KTN/2, and Y/FSS/19) and the peak flow from our proposed development. The total sewage flow to TPLSPS is approximate 28,782.1 m^3/day, which contribute to approximately 45.5% of capacity of the TPLSPS. **Table 4-4** summarizes the sewage generation from the surrounding development and the Proposed Development.

4.4.6 According to **Table 4-4** , the TPLSPS will still have approximately 54.5% of its capacity to cater for future additional sewage. Hence, no adverse impact upon the TPLSPS is anticipated after receiving the sewage flow from the Proposed Development.

Table 4-4 Sewage Contribution on the TPLSPS

Items	Flow (m^3/day)	
Sewage Flow to Tsung Pak Long Sewage Pumping Station (TPLSPS)		
Maximum daily flow (A) [2]	4007	
Peak Flow from Planned Developments (B1) [1]	A/NE-KTS/460	2.22 x 8[4] = 17.8
	A/NE-KTS/466	49 x 8[4] = 392
	A/NE-KTS/525	45.8 x 8[4] = 366.4
	A/NE-KTS/538	4.5 x 8[4] = 36
	A/NE-KTS/541	2.22 x 8[4] = 17.8
	Y/NE-KTS/15 (formerly A/NE-KTS/484)	792 x 4[4] +1.49[3] = 3169.5
	A/NE-KTS/506 (formerly Y/NE-KTS/12)	2166.4 x 4[4] + 1.49[3] = 8667.1
	Y/NE-KTS/14 and Y/NE-KTS/17	1074 x 4[4] +2.59[3] = 4298.6
	Y/KTN/2	492 x 4[4] +0.63[3] = 1968.6
	Y/FSS/19	798.9 x 4[4] + 1.04[3] = 3196.6
Peak Flow from Existing Development (B2) [1]	Goodwood Park	13.69 x 6[4] = 82.1
	La Regent Park	43.66 x 6[4] = 262
Total Peak Flow (B) = (B1) + (B2)	Total (B)	22474.5
Peak Proposed Development (C)	383.24 x 6[4] + 1.15[3] = 2300.6	
Total Peak Flow to TPLSPS (D) = (A) + (B) + (C)	28,782.1	
Design Flow for TPLSPS	21,070	
Peak Wet Weather Flow (E)	21070 x 3[5] = 63210	
Used Capacity of TPLSPS (D/E)	**45.5%**	

Note:
[1] Sewage flow from planned surrounding developments is based on the available information from Outline Zoning Plan and latest available SIAs of planning developments.
[2] The design dry weather flow is provided by DSD. The advice from DSD is extracted from previous study report which is provided in **Appendix D**.
[3] Swimming Pool (m^3/day), assuming a backwash duration of 3 minutes per day.
[4] Based on GESF, Table T-5: Peaking Factors, P, (a) For sewers, population range <1,000 (P=8); 1,000-5,000 (P=6); 5,000-10,000 (P=4).
[5] Based on GESF, Table T-5: Peaking Factors, P, (b) Sewage Treatment Works, Preliminary Treatment Works and Pumping Stations, population range <10000 (P=4); 10,000 – 25,000 (P=3.5); 25,000 – 50,000 (P=3).

5 CONCLUSION

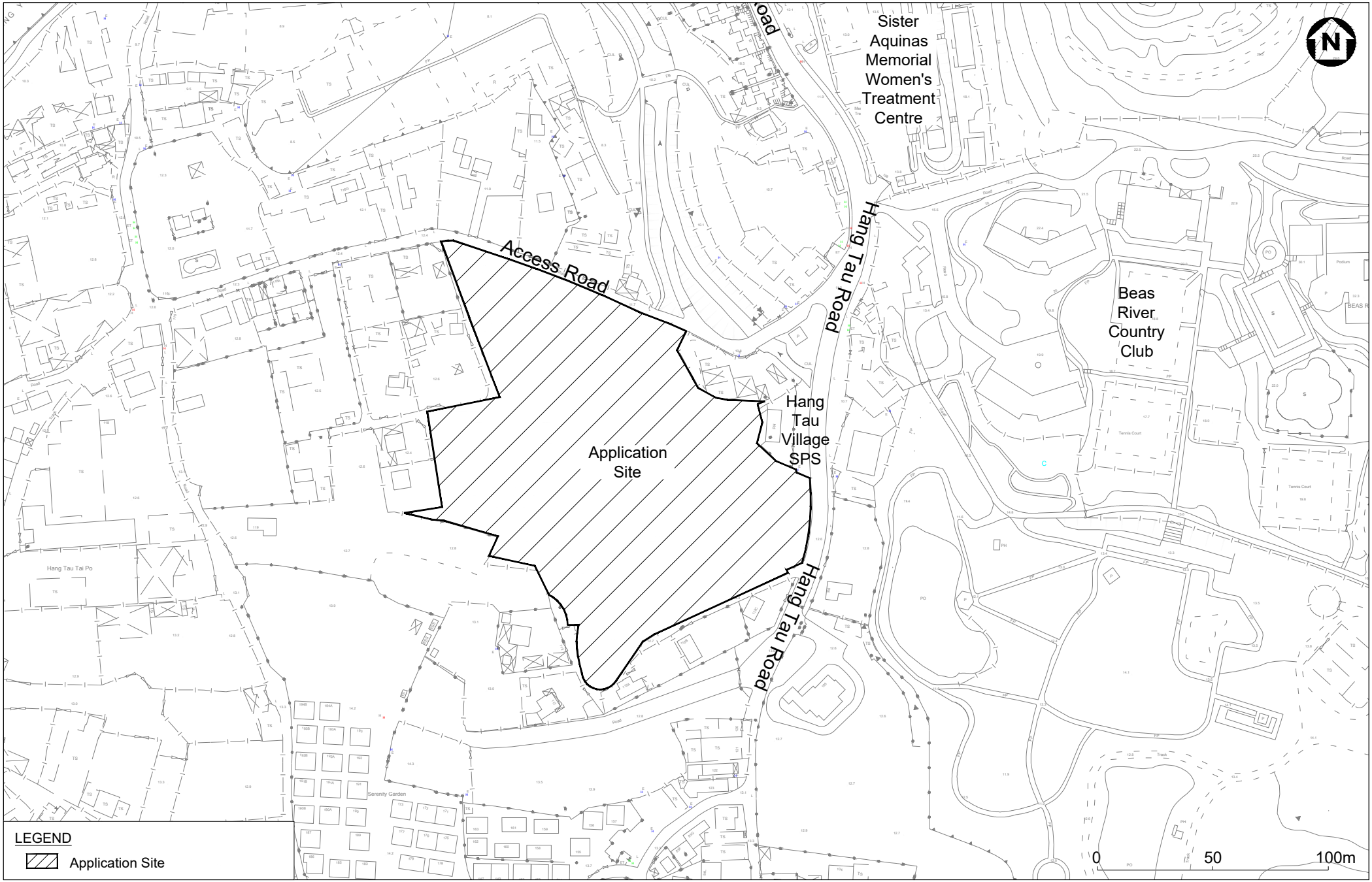
5.1.1 A Sewerage Impact Assessment (SIA) has been conducted to evaluate the possible impacts on the public sewerage network arising from the Proposed Development.

5.1.2 According to the sewerage assessment based on the information obtained from DSD and EPD, four existing sewers are incapable due to the Proposed Development. Therefore, upgrading work for the concerned pipe is required for the Proposed Development.

5.1.3 Both HTSPS and TPLSPS will still have spare capacity after receiving the additional sewage from the Proposed Development.

5.1.4 To sum up, it is concluded that the sewerage impact arising from the Proposed Development should be acceptable with the proposed upgrading works.

Figures



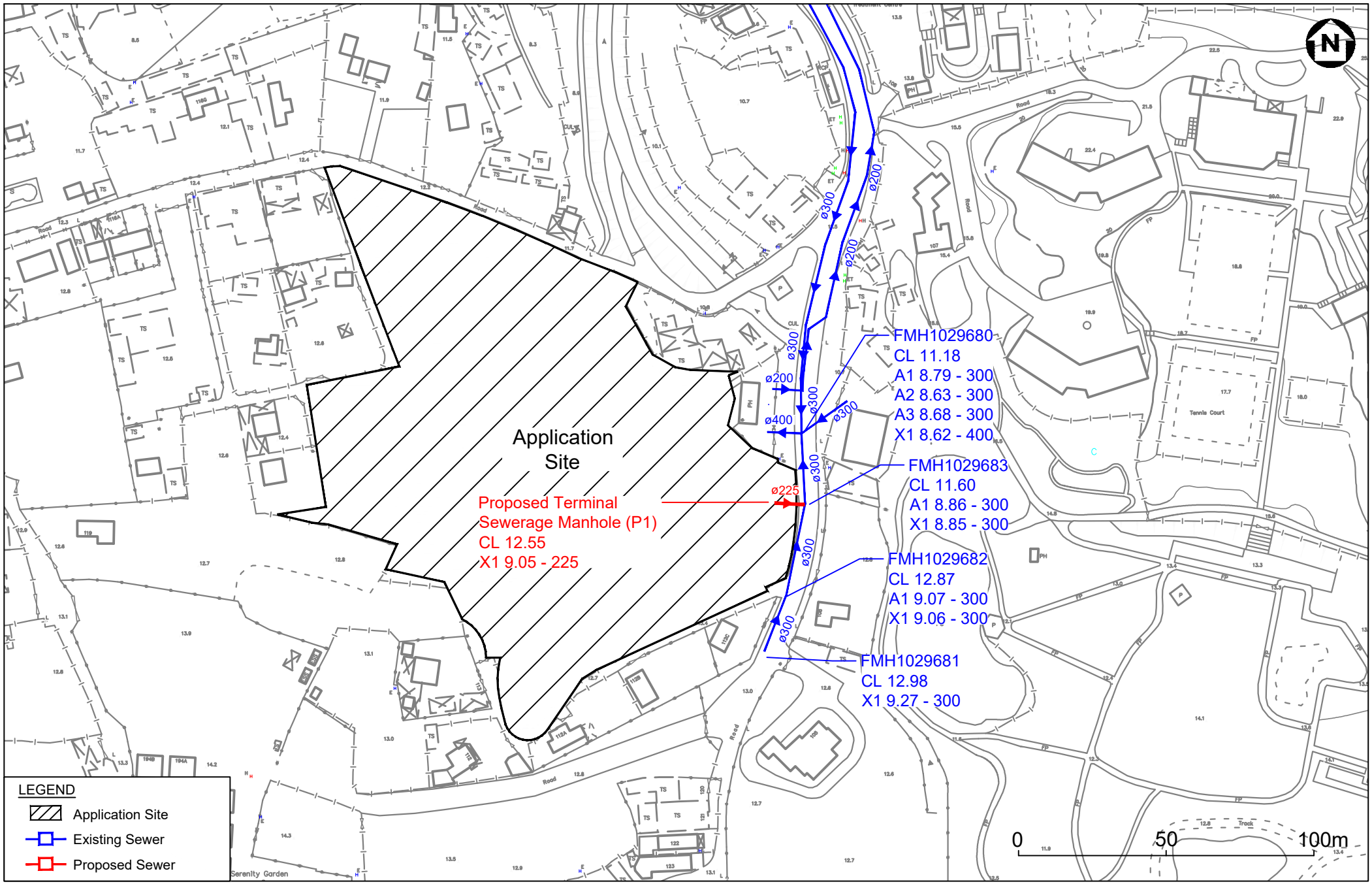
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

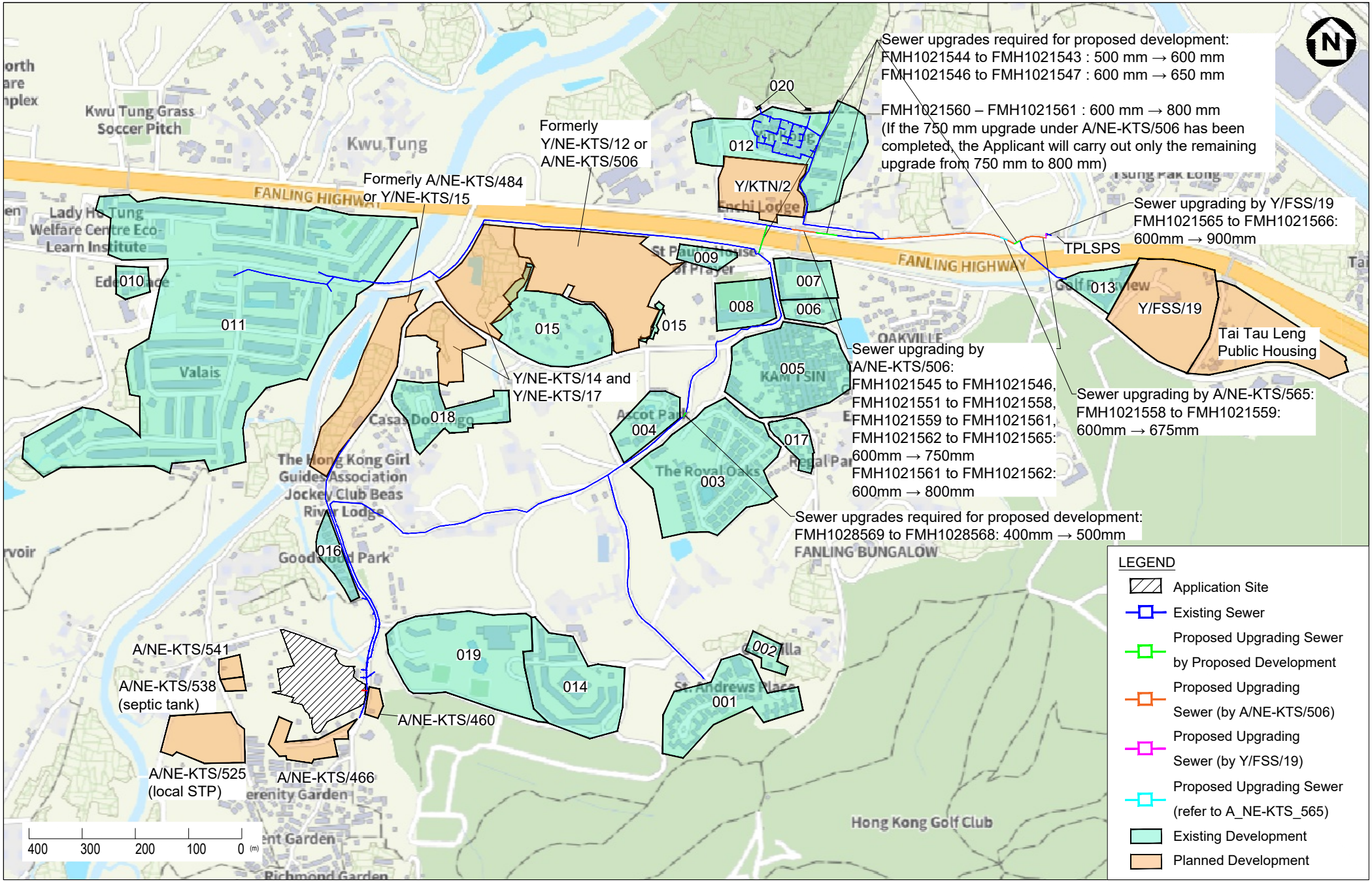
Site Location and its Environs

Figure 2.1

Scale As Shown



Meinhardt Infrastructure and Environment Limited 邁進基建環保工程顧問有限公司	Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South Existing Sewerage System along Hang Tau Road and Proposed Sewerage Pipeline	Figure 3.1 Scale As Shown



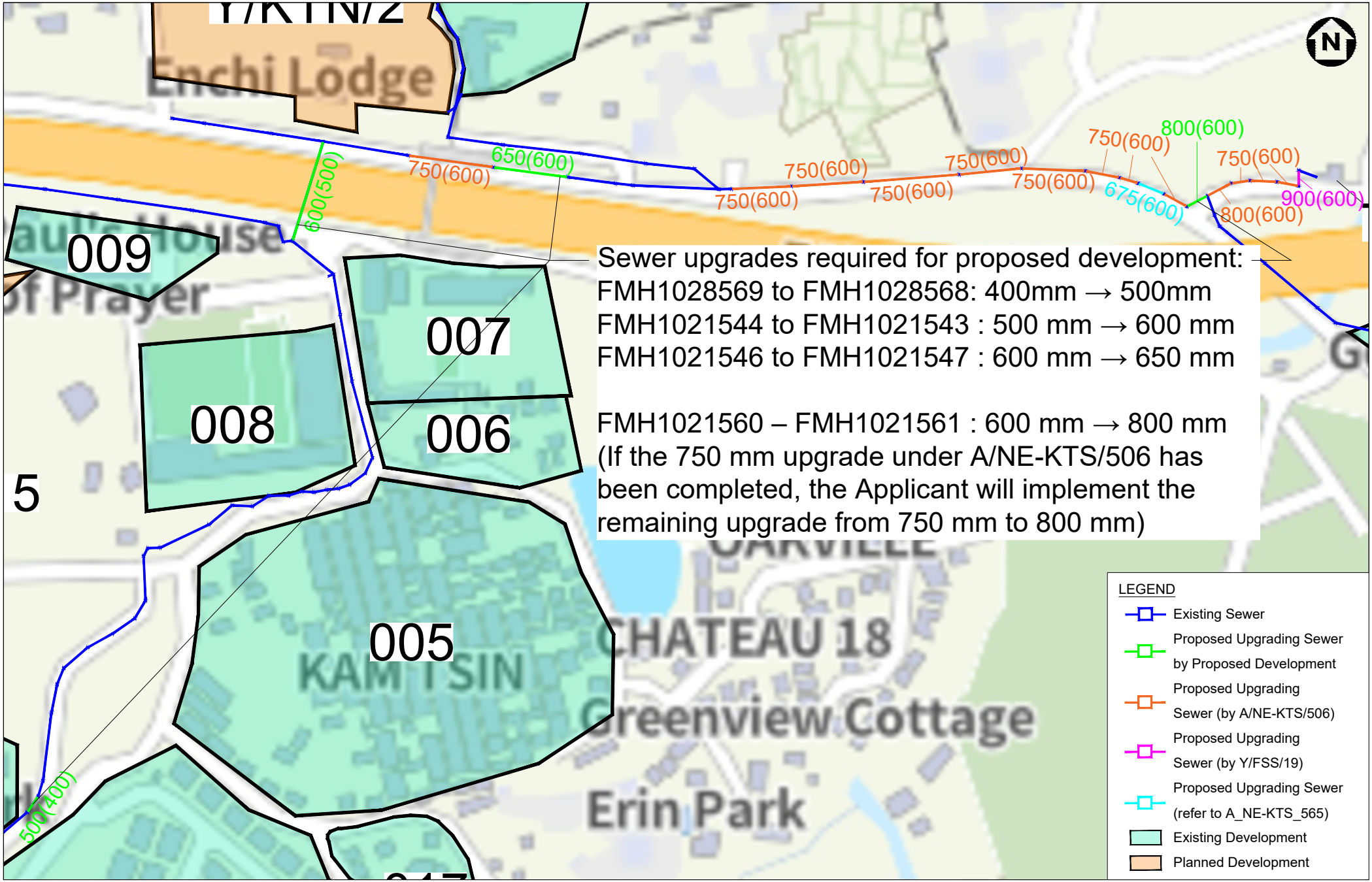
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Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Catchment Area and Proposed Upgrading Sewerage System

Figure 4.1a

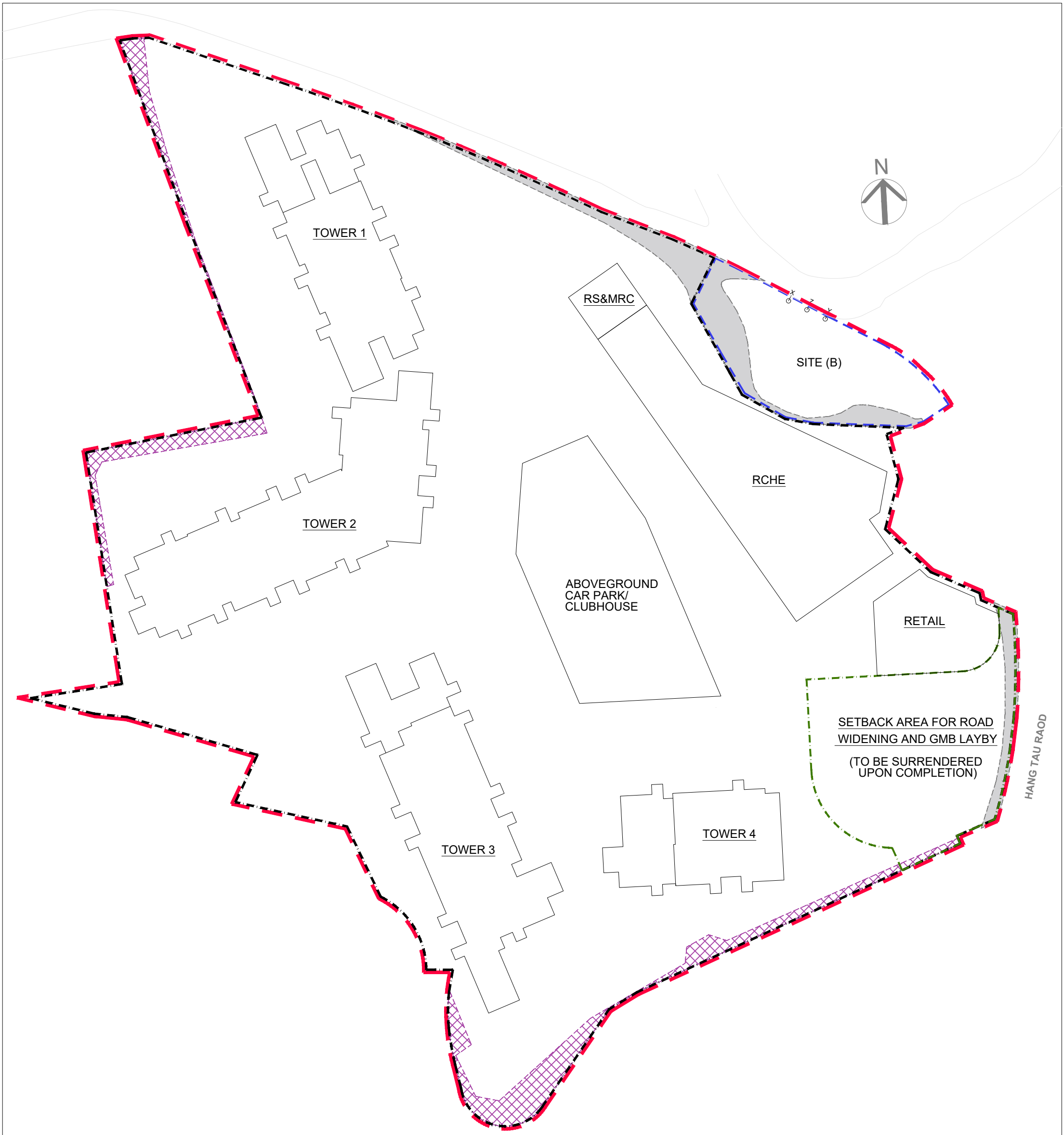
Scale As Shown



Meinhardt Infrastructure and Environment Limited 邁進基建環保工程顧問有限公司	Section 16 Planning Application for Proposed Comprehensive Development ('Flat', 'Social Welfare Facility (Residential Care Home for the Elderly)' and 'Shop and Services' Uses) with Minor Relaxation of Plot Ratio and Building Height Restrictions at Various Lots in D.D. 92 and 94 and the Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South Catchment Area and Proposed Upgrading Sewerage System	Figure 4.1b Scale As Shown

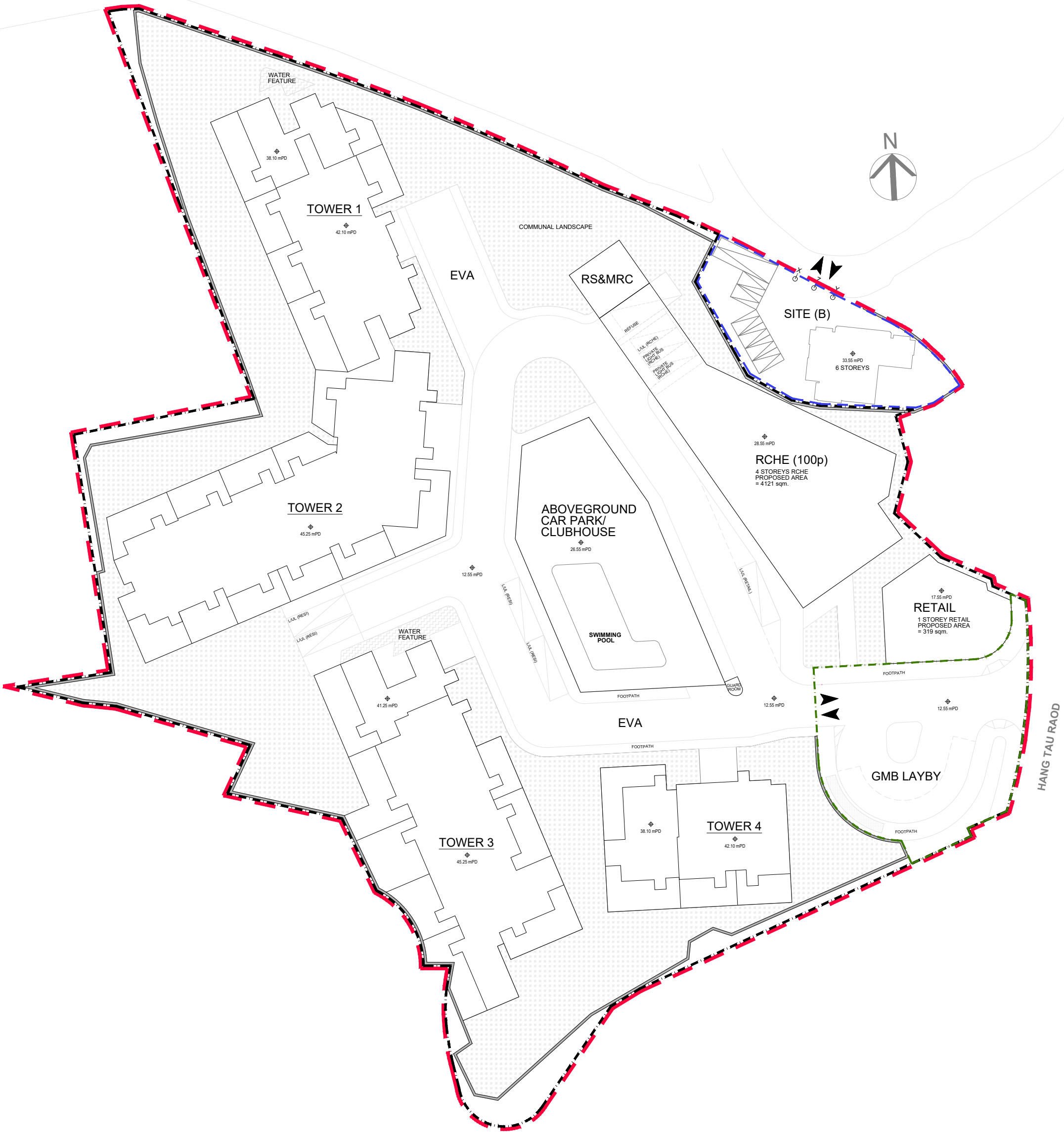
Appendix A

General Layout Plans of the Development



LOT PLAN

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

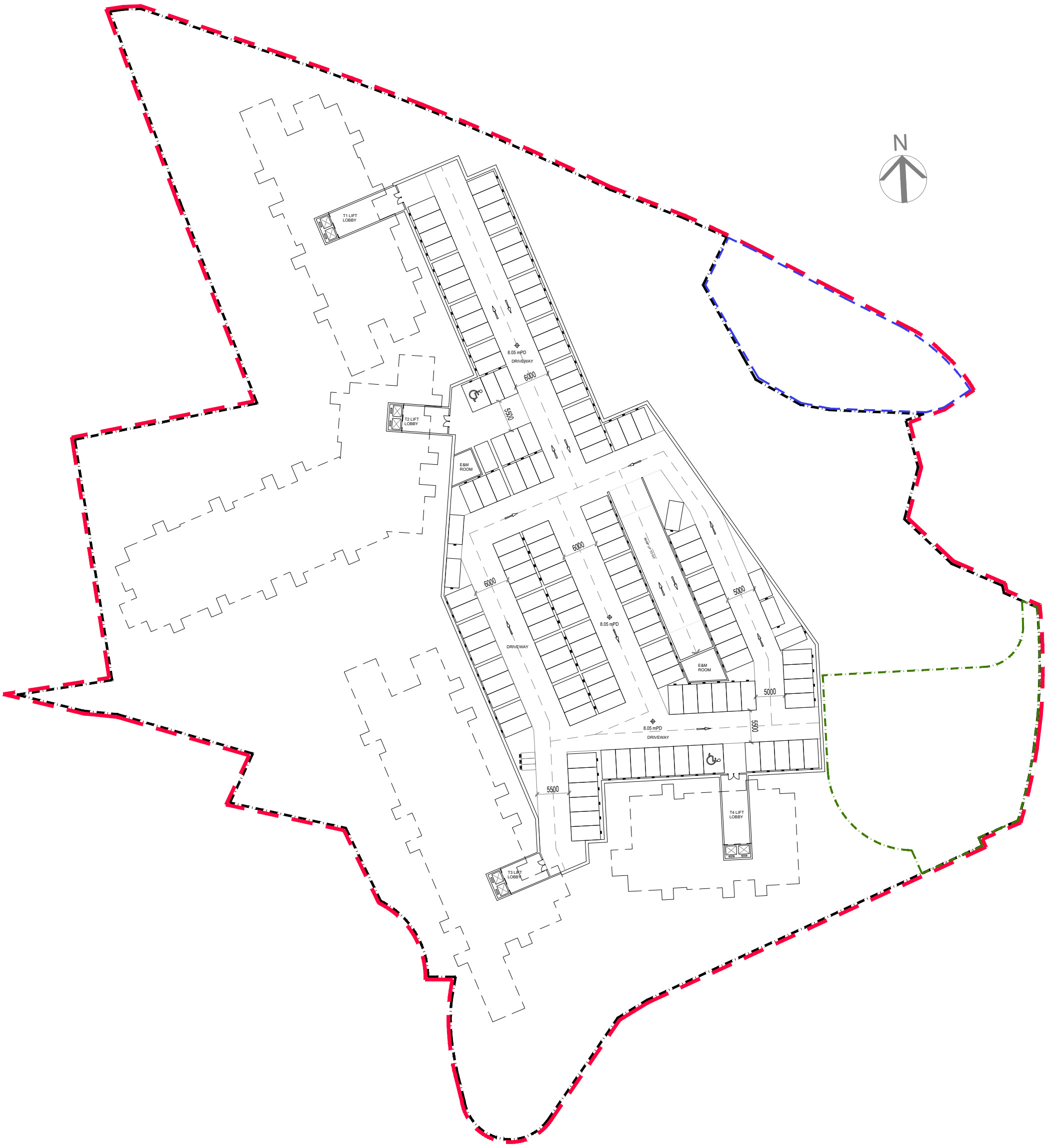


MASTER LAYOUT PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories



B1/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK +PARTNERS



FIRST FLOOR PART PLAN

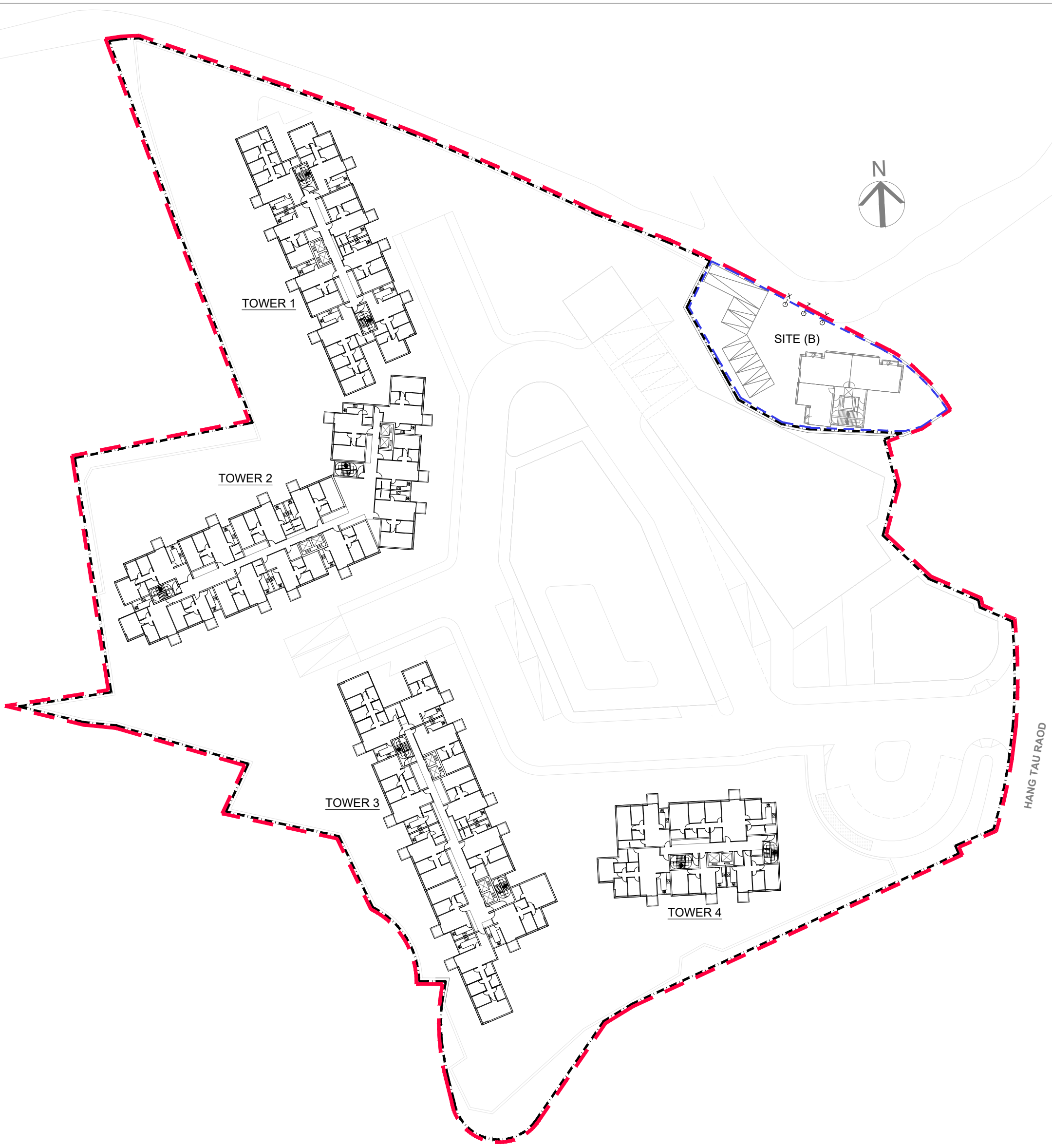
GROUND FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



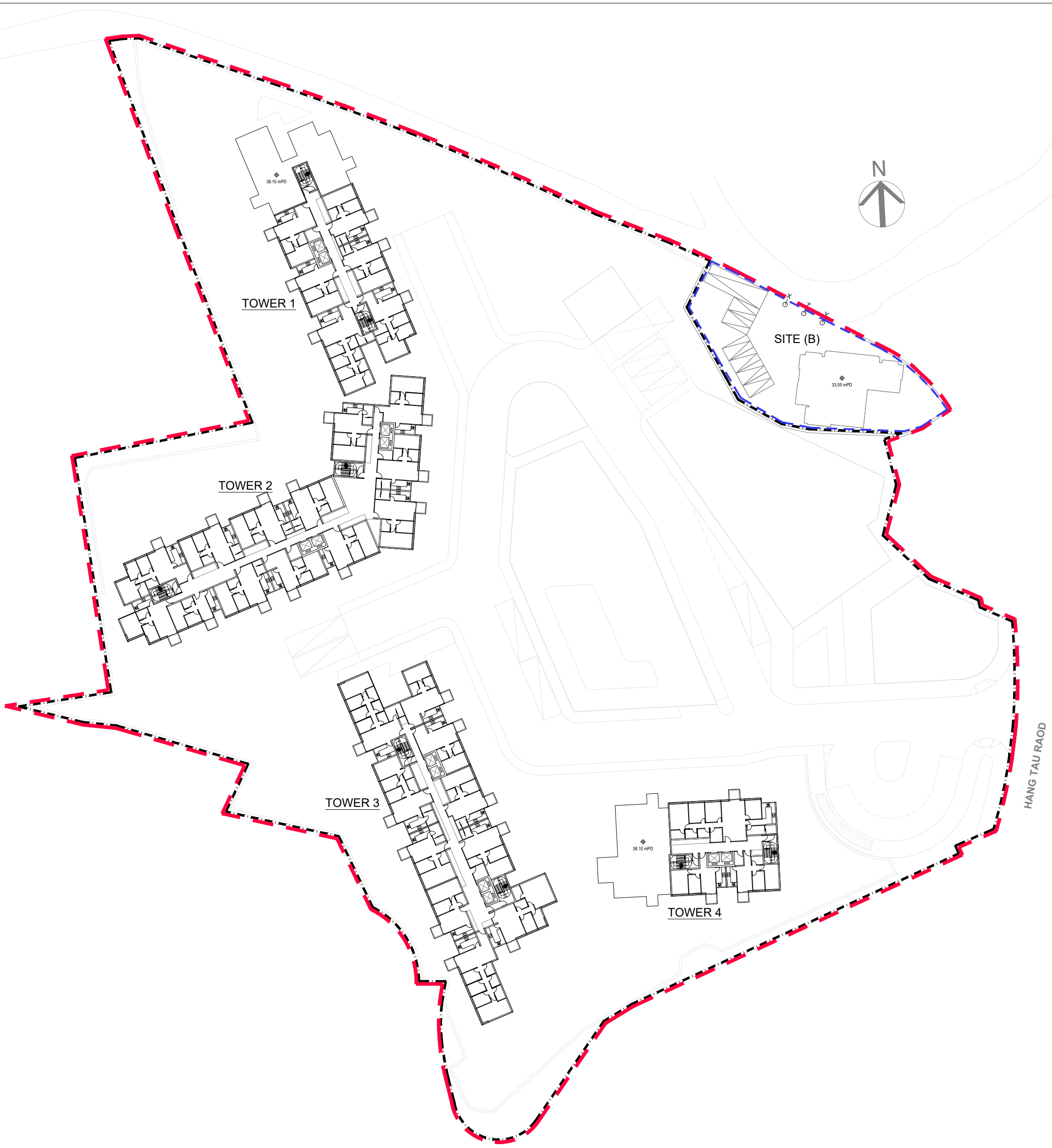
TYPICAL FLOOR PLAN (1/F to 7/F)

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



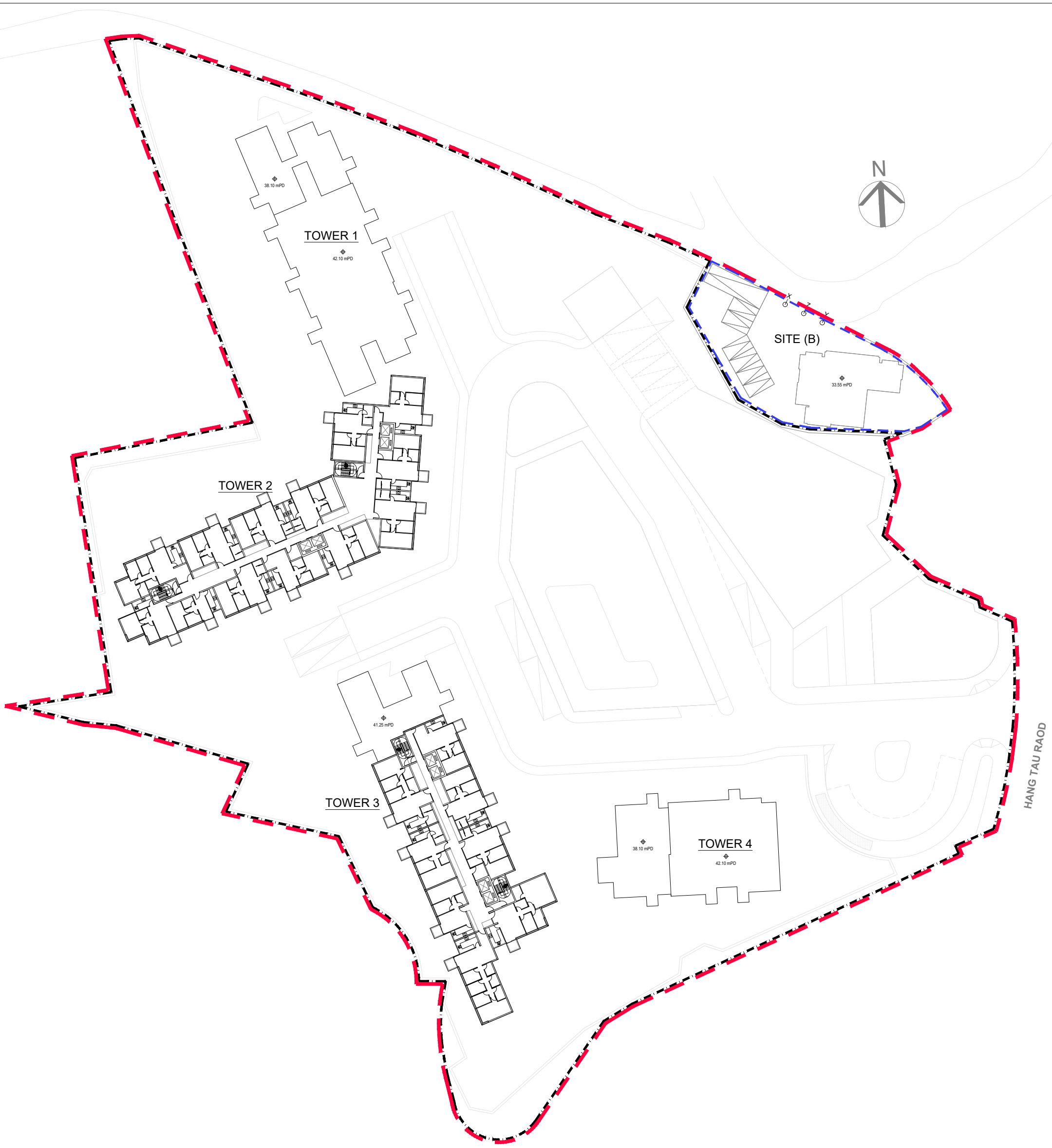
8/F FLOOR PLAN

LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



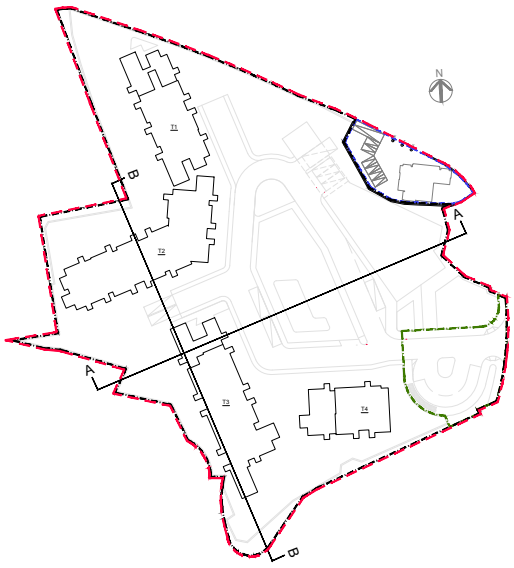
9/F FLOOR PLAN

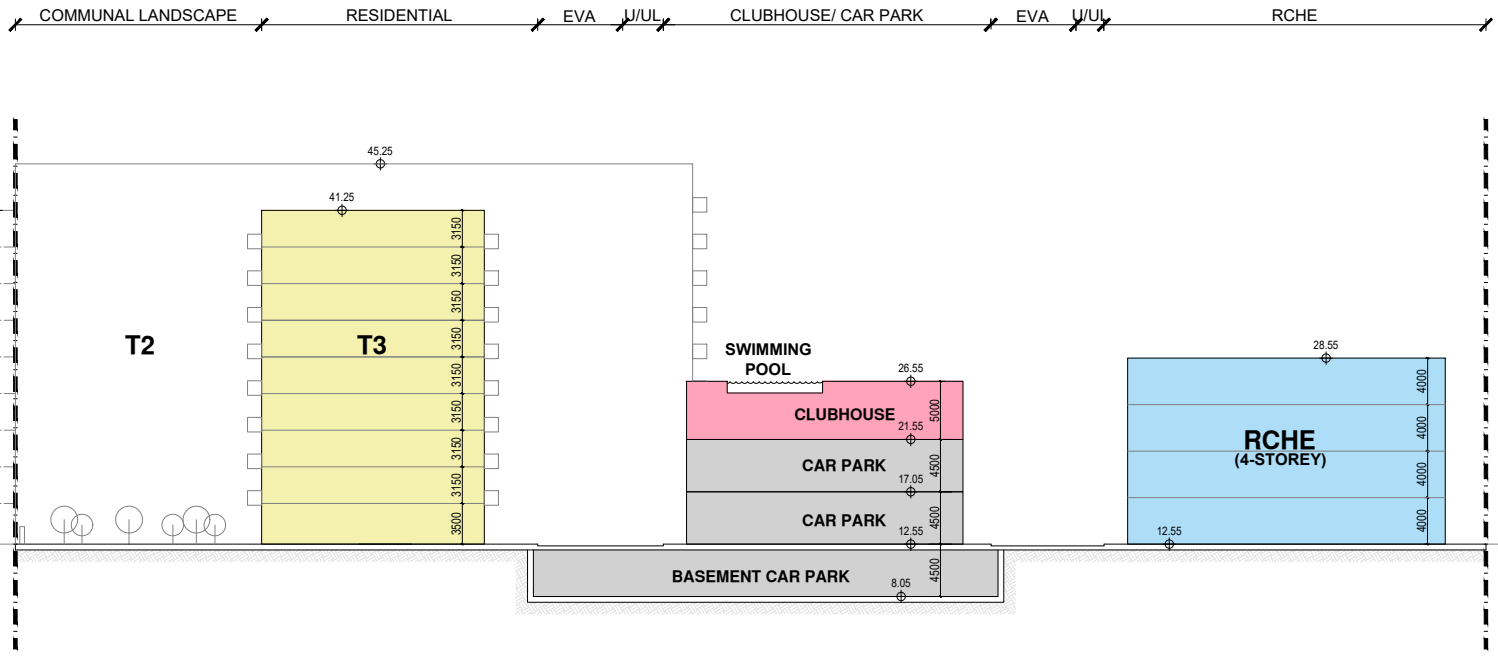
LEGEND

- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary

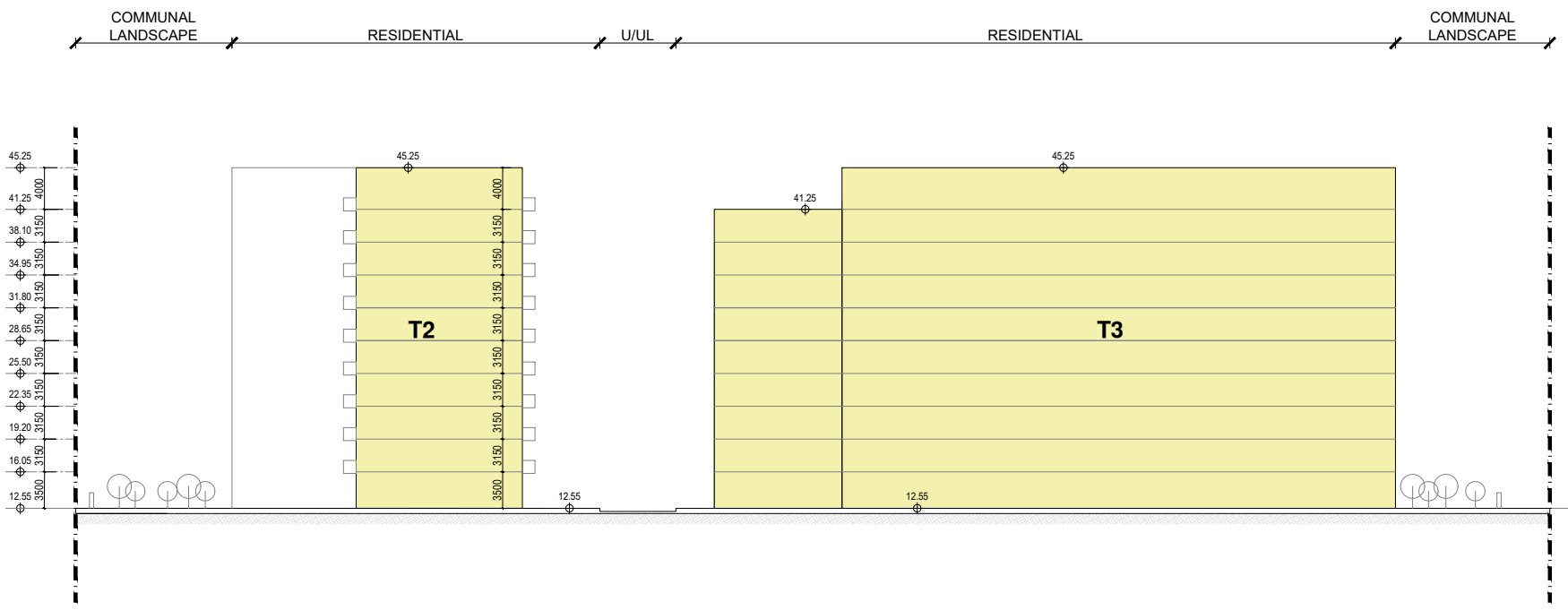
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS





SCHEMATIC SECTION A



SCHEMATIC SECTION B

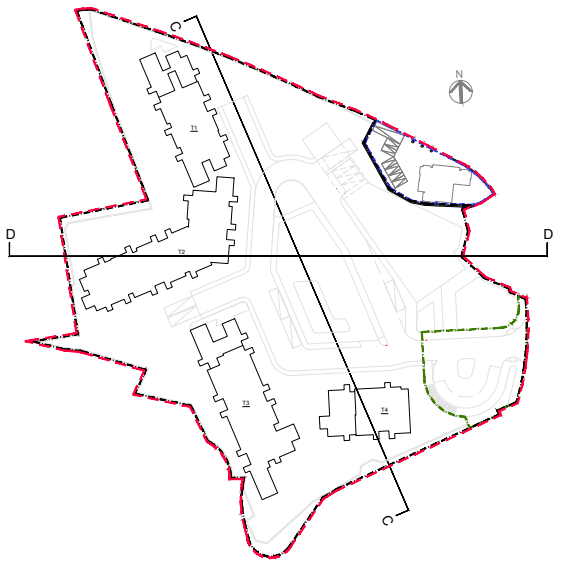
LEGEND

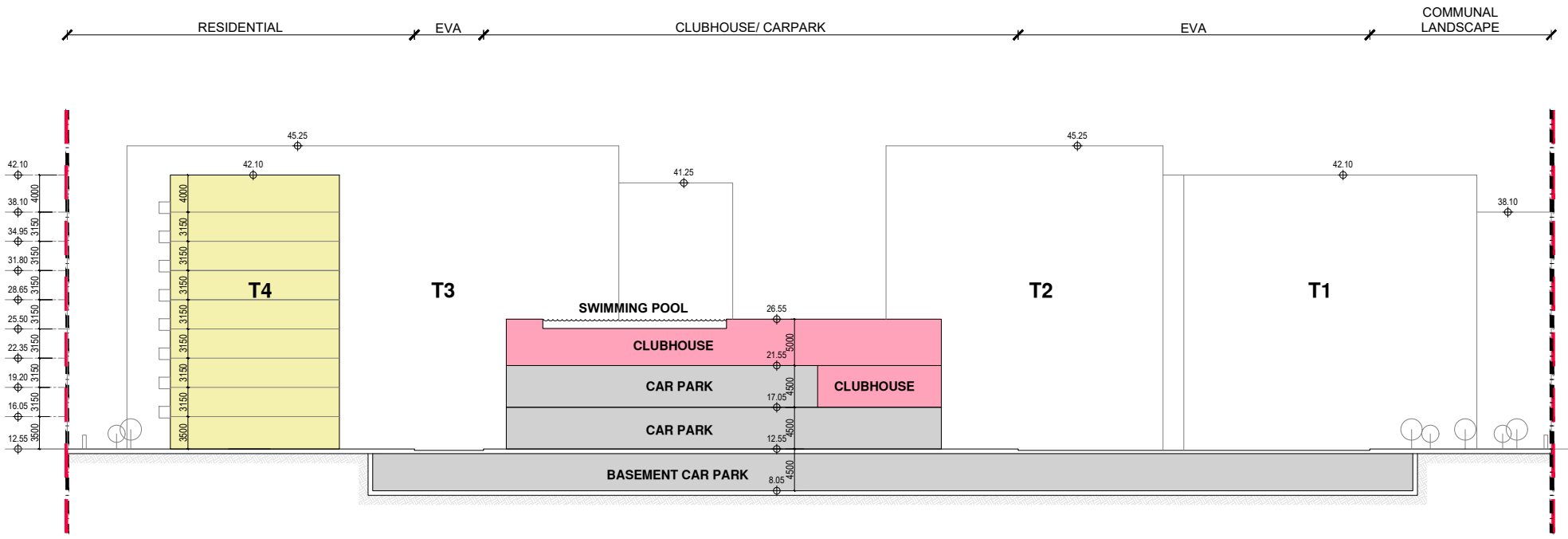
CDA Zone Boundary

Application Site Boundary

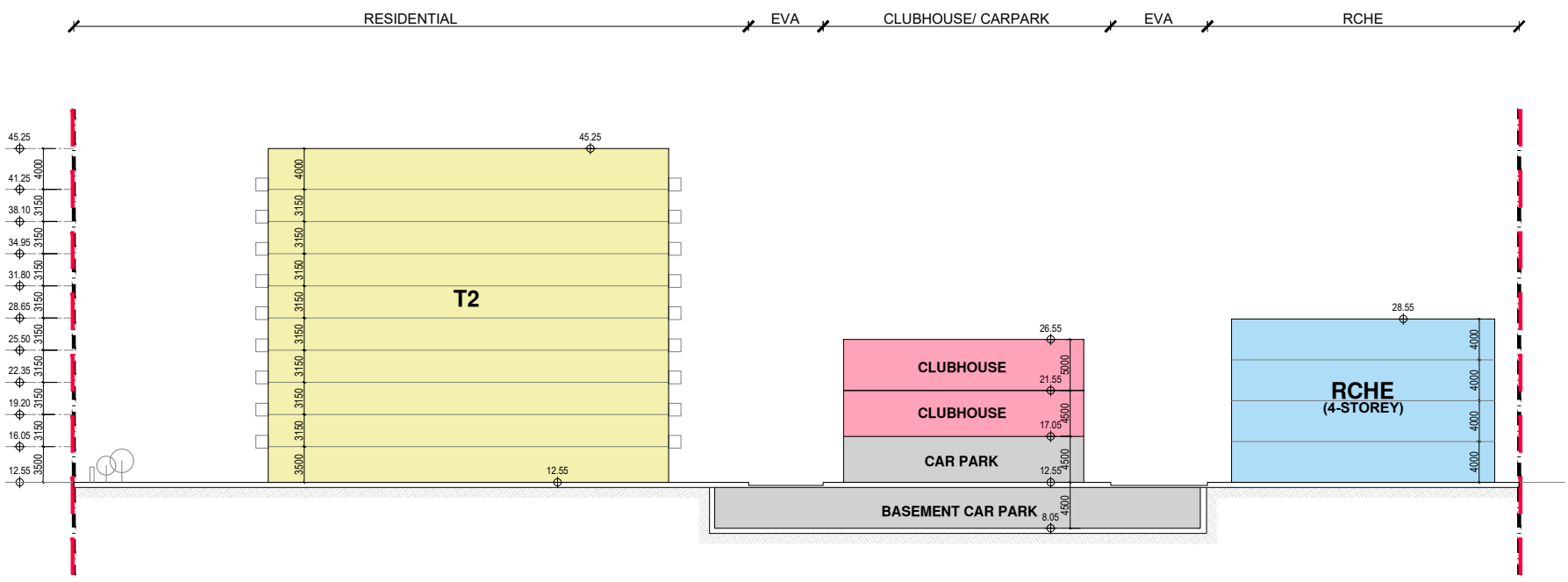
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS





SCHEMATIC SECTION C



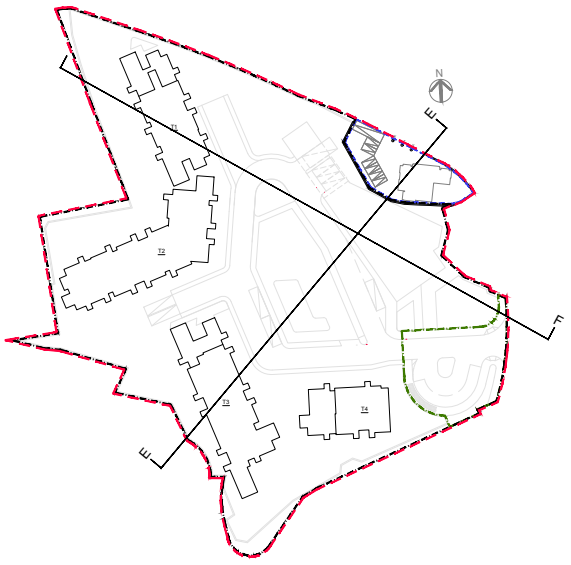
SCHEMATIC SECTION D

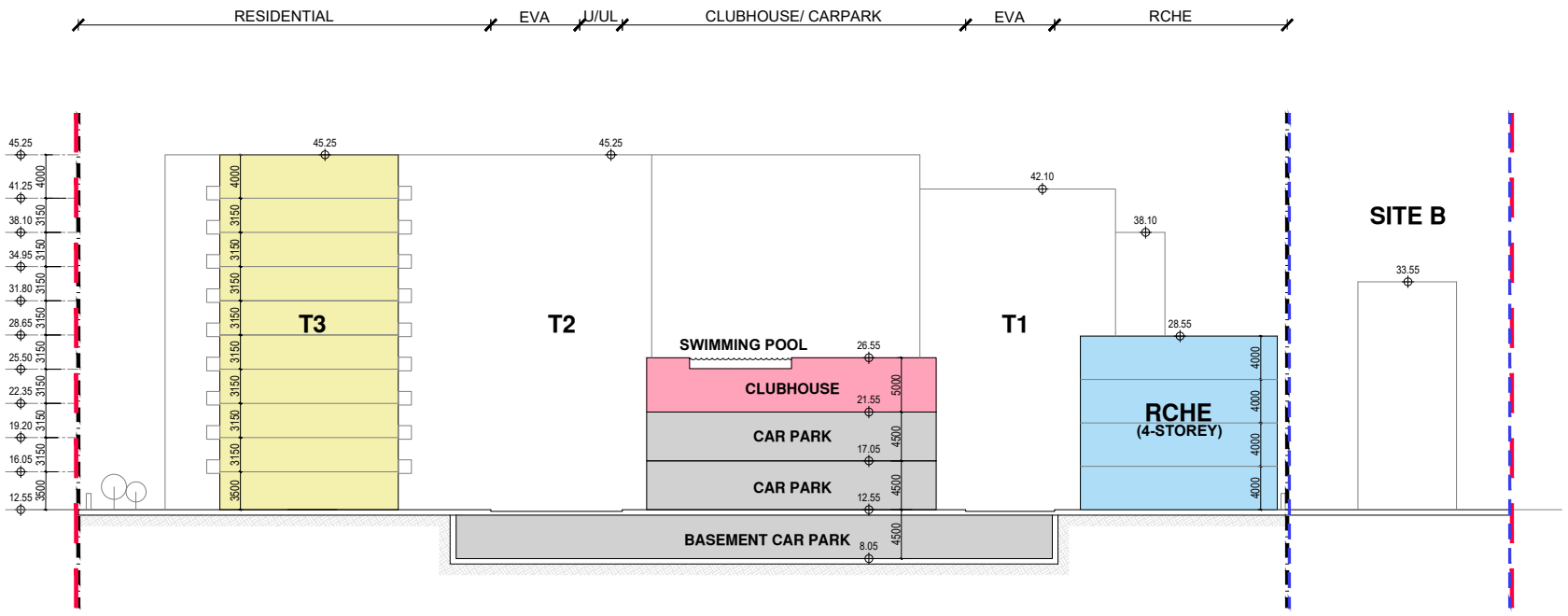
LEGEND

- CDA Zone Boundary
- Application Site Boundary

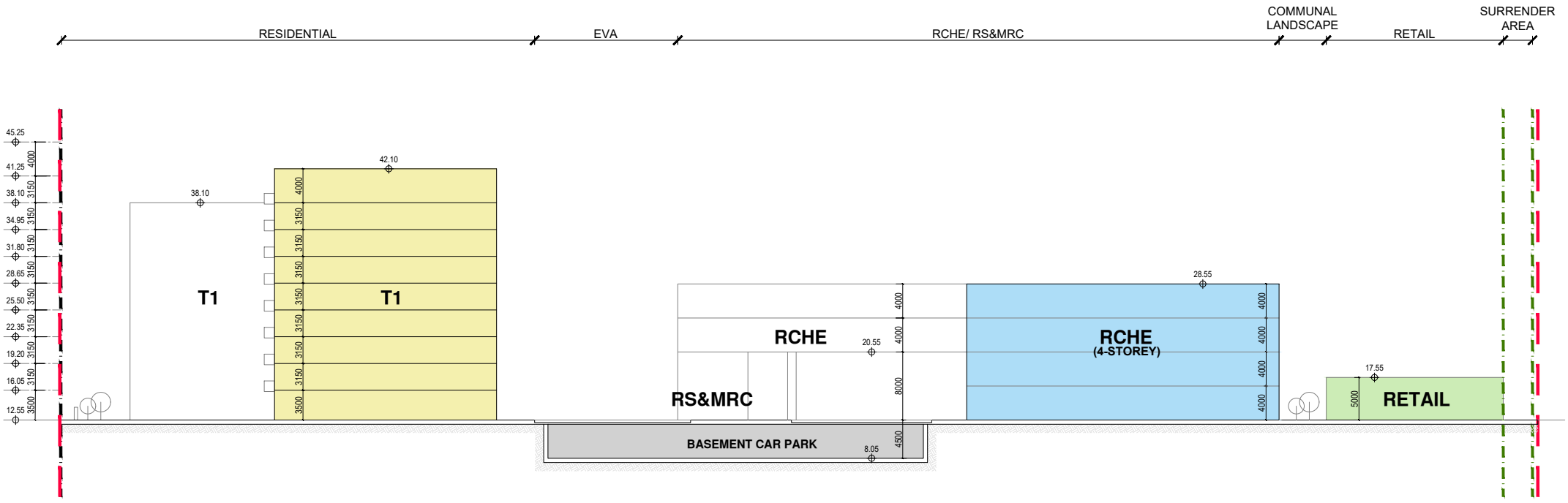
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS





SCHEMATIC SECTION E



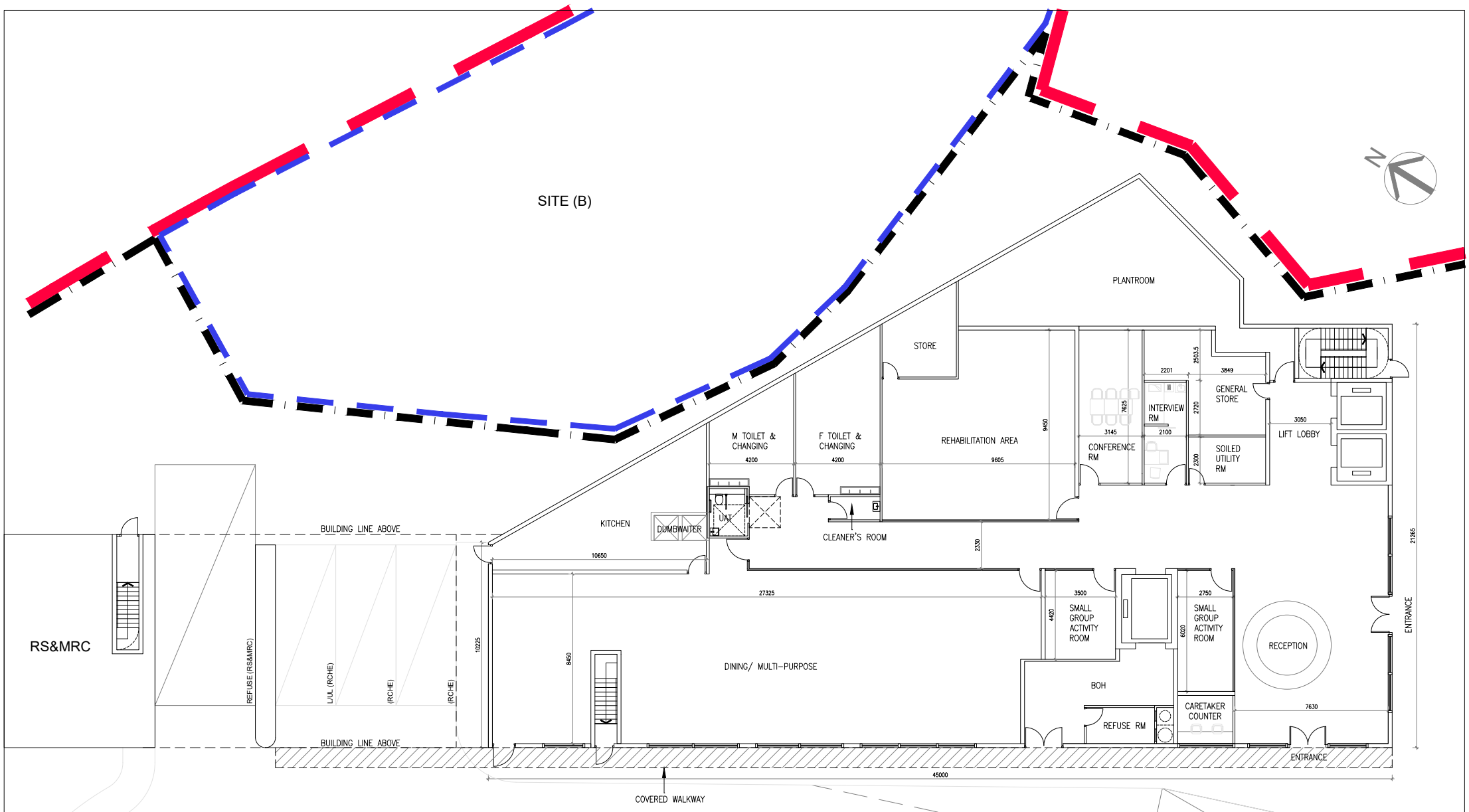
SCHEMATIC SECTION F

LEGEND

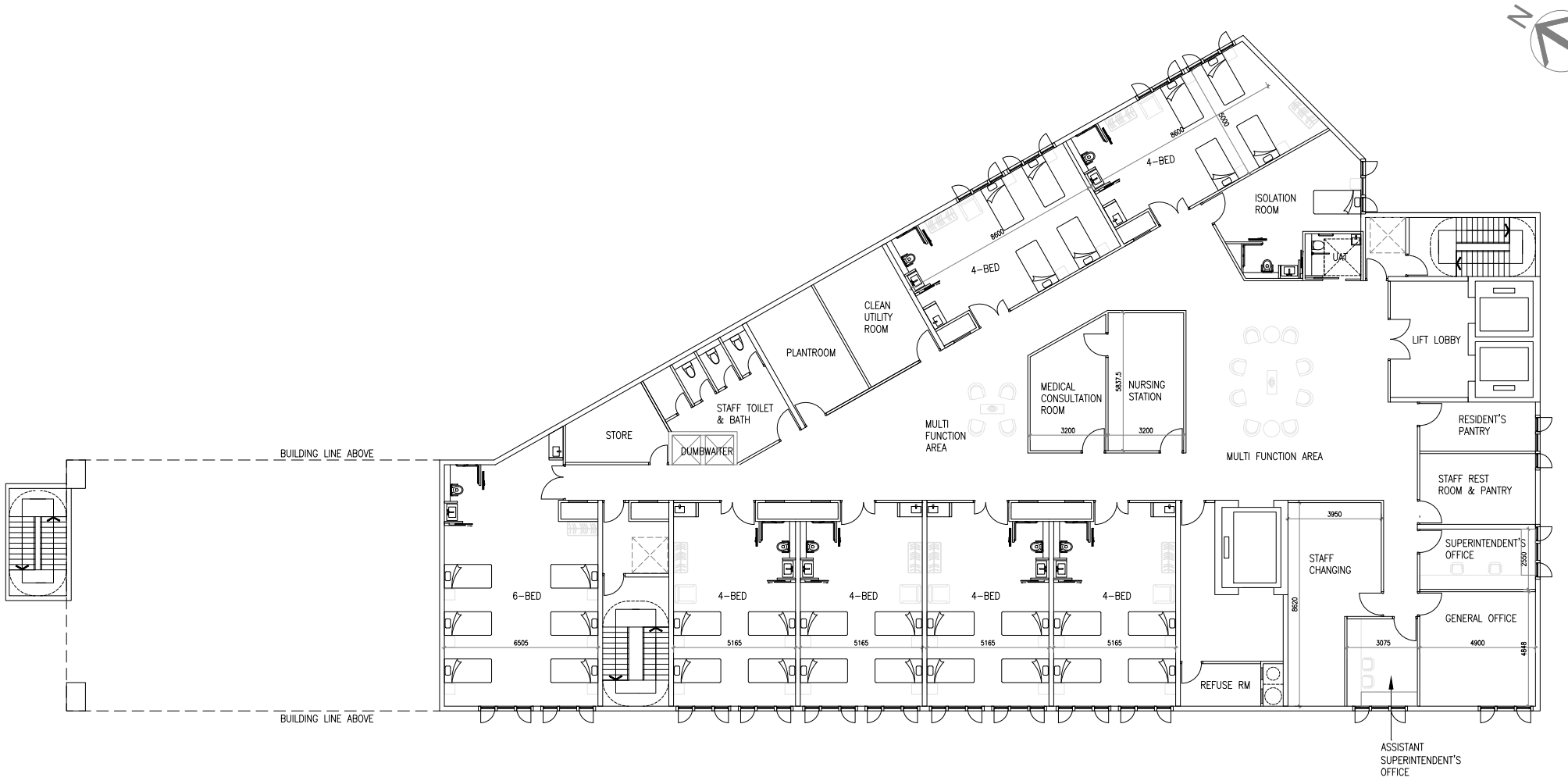
- CDA Zone Boundary
- Application Site Boundary
- Site (B) Boundary
- Surrender Area

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



RCHE GROUND FLOOR PLAN



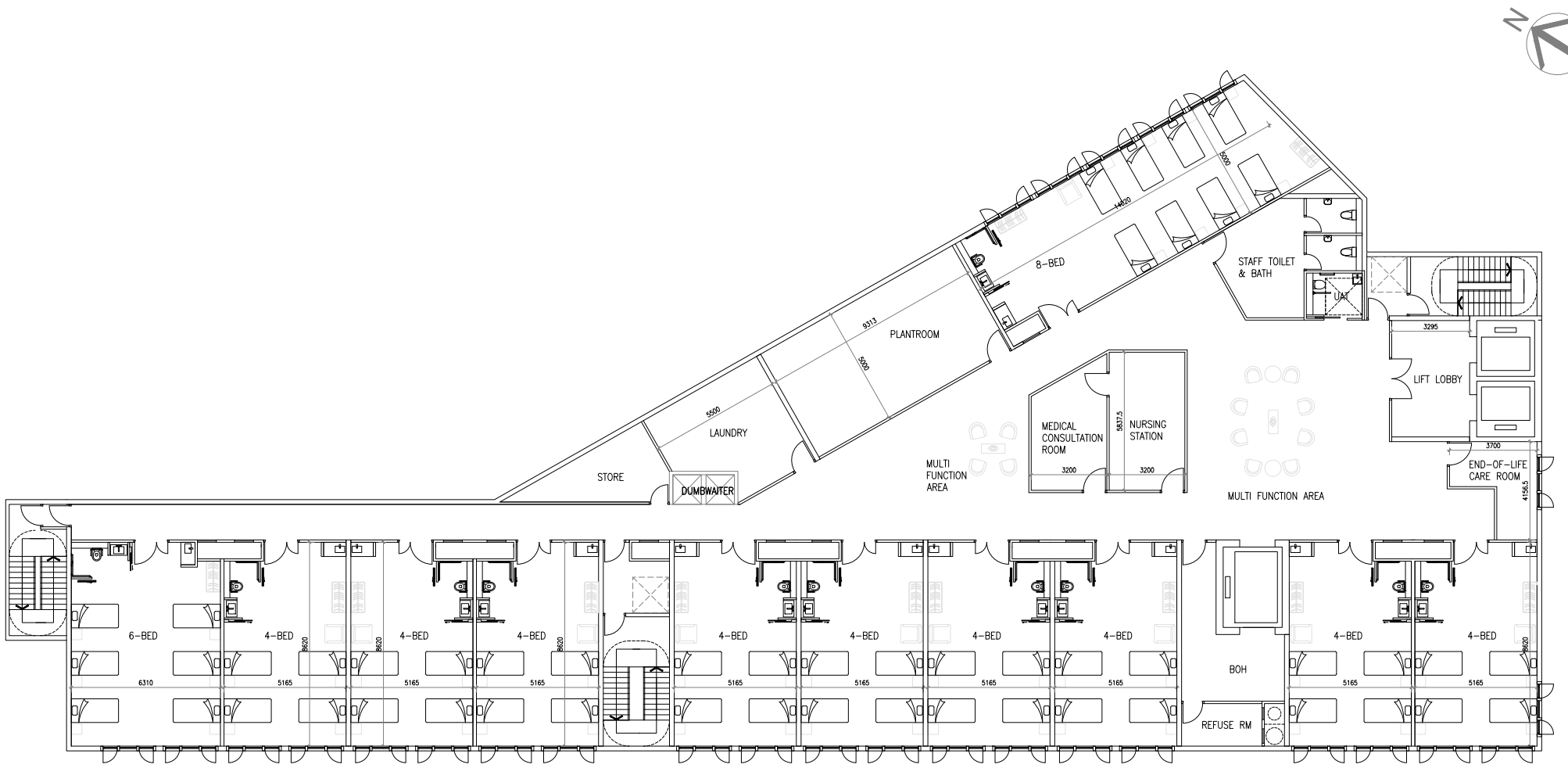
RCHE FIRST FLOOR PLAN

NUMBER OF BEDS: 30

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

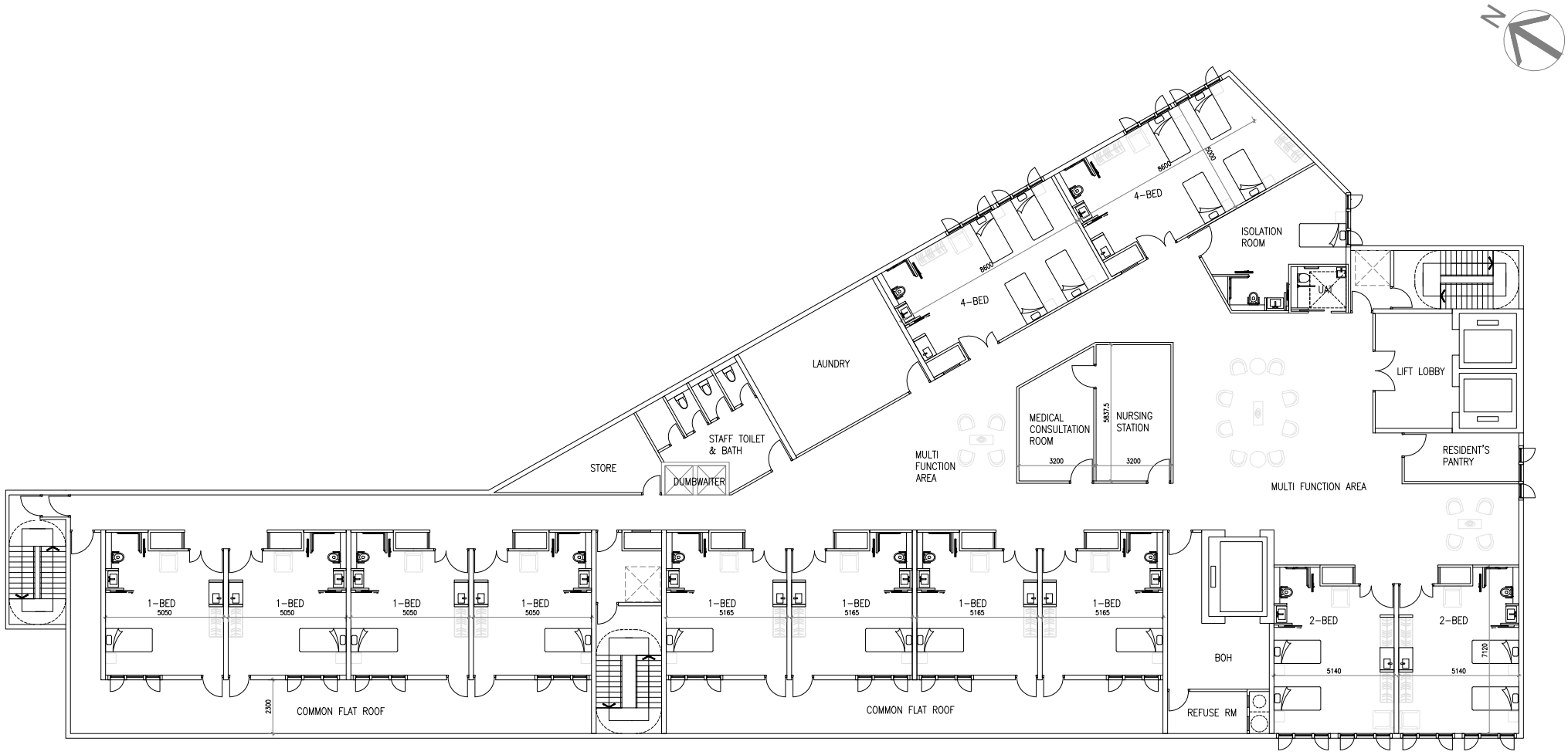
Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS



NUMBER OF BEDS: 50

RCHE SECOND FLOOR PLAN



NUMBER OF BEDS: 20

RCHE THIRD FLOOR PLAN

REMARK: THE LAYOUT IS FOR INDICATION ONLY AND IS SUBJECT TO DETAILED DESIGN.

Master Layout Plan for Residential Development at Various Lots
in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" zone
Hang Tau Tai Po, Kwu Tung South, New Territories

LWK + PARTNERS

Appendix B

Calculation of Peak Flow

Meinhardt Infrastructure & Environment Ltd. 10/F Genesis 33-35 Wong Chuk Hang Road Hong Kong	Contract: S16 Planning Application for Proposed Residential Development cum Residential Care Home for the Elderly and Shop and Services			Job Ref: -
	Subject: Sewerage Impact Assessment			Calc.Sheet No. 1
	Drawing Ref. -	Calculations by PT	Checked by ST	Date: 16-Oct-26

Ref.

Estimation of Sewage Flow

1.1 Proposed Development

Residential development and other ancillaries involving clubhouse, swimming pool and shops

1.2 Reference Document

1) Guidelines for Estimating Sewage Flows, published by EPD (GESF)
2) Sewerage Manual, published by DSD (SM)
3) Hong Kong Planning Standards and Guidelines (HKPSG), published by PlanD

1.3 Assumptions

1) The worker density of office and retail/ business is assumed below:-

Office	20	m^2/worker
Retail/ business	22.5	m^2/worker

2) The Gross Floor Area (GFA) is assumed as the floor area x no. of storey
3) 90% of GFA is assumed as Usable Floor Area (UFA)
4) The unit flow factors of visitor is assumed below:-

Visitor - Toilets & Ablution	0.025	m^3/head/day

1) Assume 30 students per classroom
1) According to Hong Kong 2021 Population By-census - Main Results, average household size was assumed as 2.8head/unit
2) For St Paul's House of Prayer, 15 staff was assumed for 100m^2/staff

1.4 Drawings

1) Catchment Area Plan refers to Drawing Nos.

Ref.

1.5 Estimation of Sewage Flow from Existing Development

001) St Andrews Place 雙魚河

No. of Unit	26	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	73	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	27.01	
ADWF (l/s)	0.31	

Be accounted to FMH1028584

002) Golf Villa 金錢花園別墅

No. of Unit	18	(Centaline Property)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	51	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	18.87	
ADWF (l/s)	0.22	

Be accounted to FMH1028584

003) The Royal Oak 御林皇府

No. of Unit	44	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	124	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	45.88	
ADWF (l/s)	0.53	

Discharged to FMH1028570

004) Ascot Park 翡翠園

No. of Unit	16	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	45	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	16.65	
ADWF (l/s)	0.19	

Discharged to FMH1028570

005) Kam Tsin Village 金錢村

ADWF (m^3/d)	1147	(CE 58/2020(DS) SIA Report (Arup) [Jun 2022])
ADWF (l/s)	13.28	

Discharged to FMH1028523

Ref.

006) Kam Tsin Village Ho Tung Kindergarten 金錢村何東幼稚園

No. of Student	64	(Schooland)
Category of unit flow factors	School student	
Unit flow factors (m^3/head/day)	0.04	(GESF)
No. of Staff	6	(Schooland)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	4.24	
ADWF (l/s)	0.05	

Discharged to FMH1028523

007) Kam Tsin Village Ho Tung School 金錢村何東學校

No. of classroom	10	(Schooland)
No. of student per classroom	30	
No. of Student	300	
Category of unit flow factors	School student	
Unit flow factors (m^3/head/day)	0.04	(GESF)
No. of Staff	26	(Schooland)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	19.28	
ADWF (l/s)	0.22	

Discharged to FMH1028522

008) De La Salle Secondary School NT 新界喇沙中學

No. of classroom	25	(Schooland)
No. of student per classroom	30	
No. of Student	750	
Category of unit flow factors	School student	
Unit flow factors (m^3/head/day)	0.04	(GESF)
No. of Staff	86	(School Website)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	54.08	
ADWF (l/s)	0.63	

Discharged to FMH1028520

009) St Paul's House of Prayer 沙爾德聖保祿女修會聖保祿樂靜院

No. of person (head)	50	(SRSPC)
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	18.5	
ADWF (l/s)	0.21	
Management Staff	15	
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	4.2	
ADWF (l/s)	0.05	
Total ADWF (m^3/d)	22.7	
Total ADWF (l/s)	0.26	

Discharged to FMH1021544

Ref.

010) Eden Place 桃苑

No. of Unit	8	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	23	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	8.51	
ADWF (l/s)	0.10	

Be accounted to FMH1021544

011) Valais 天巒

No. of Unit	330	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	924	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	341.88	
ADWF (l/s)	3.96	

Be accounted to FMH1021544

012) Yin Kong Village 燕崗村

No. of building	94	(Base Map)
No. of storey	3	
No. of Unit	282	
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	790	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	292.3	
ADWF (l/s)	3.38	

Be accounted to FMH1021550

013) Golf Parkview (高爾夫景園)

No. of Unit	48	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	135	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	49.95	
ADWF (l/s)	0.58	

Be accounted to FMH1021561

014) Beas River Equestrian (雙魚河馬術中心)

ADWF (m^3/d)	272	(Sewage Treatment Preliminary Proposal for Proposed Works at Beas River Equestrian Centre (M&P) [Jan 2026])
ADWF (l/s)	3.15	

Discharged to FMH1028584

Ref.

015) Village areas at north of Kam Hang Road at Kam Tsin

No. of building	84	(Base Map)
No. of storey	2	
No. of Unit	168	
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	471	
Category of unit flow factors	Modern Village	
Unit flow factors (m^3/head/day)	0.27	(GESF)
ADWF (m^3/d)	127.17	
ADWF (l/s)	1.47	

Be accounted to FMH1021544

016) Goodwood Park (高爾夫景園)

No. of Unit	13	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	37	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	13.69	
ADWF (l/s)	0.16	

Be accounted to FMH1029663

017) La Regent Park 匯駿山莊

No. of Unit	42	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	118	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	43.66	
ADWF (l/s)	0.51	

Be accounted to FMH1028548

018) Casas Domingo 嘉麗山莊

No. of Unit	44	(Midland Realty)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	124	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	45.88	
ADWF (l/s)	0.53	

Be accounted to FMH1029640

019) Beas River Country Park

Arena Room		
Total number of the people (participants)	120	(HKJC Website)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	33.6	
ADWF (l/s)	0.39	
Area (m^2)	275	(HKJC Website)
Floor area per staff (m^2)	31.25	(Table 8 of CIFSUS - Hotels and Boarding Houses)
Total number of staff	9	
Category of unit flow factors	J10	
Design flow for staff	1.58	(GESF)
ADWF (m^3/d)	13.9	
ADWF (l/s)	0.16	
Conference Suite		
Total number of the people (participants)	20	(HKJC Website)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	5.6	
ADWF (l/s)	0.06	
Area (m^2)	35	(HKJC Website)
Floor area per staff (m^2)	31.25	(Table 8 of CIFSUS - Hotels and Boarding Houses)
Total number of staff	1	
Category of unit flow factors	J10	
Design flow for staff	1.58	(GESF)
ADWF (m^3/d)	1.8	
ADWF (l/s)	0.02	
The Lawn		
Total number of the people (participants)	360	(HKJC Website)
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	100.8	
ADWF (l/s)	1.17	
Area (m^2)	805	(HKJC Website)
Floor area per staff (m^2)	31.25	(Table 8 of CIFSUS - Hotels and Boarding Houses)
Total number of staff	26	
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	8.8	
ADWF (l/s)	0.10	
Total ADWF (m^3/d)	164	
Total ADWF (l/s)	1.90	

Discharged to FMH1029680

020) Yin Kong Public Toilet

ADWF (l/s)	26.80	(Proposed Development at Lot 2579 in D.D. No. 92, Kwu Tung South - SIA Report (Binnies) [Mar 2025])

Discharged to FMH1021550

Ref.

1.6 Estimation of Sewage Flow from Planning Development

Project: A/NE-KTS/460

No. of Unit	2	(OZP)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	6	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	2.22	
ADWF (l/s)	0.03	

Be accounted to FMH1029682

Project: A/NE-KTS/466

ADWF (m^3/d)	49	(A/NE-KTS/466 SIA Report [May 2019])
ADWF (l/s)	0.57	

Be accounted to FMH1029681

Project: A/NE-KTS/525 (local STP)

ADWF (m^3/d)	45.8	(Provided by EPD)
ADWF (l/s)	0.53	

Be accounted to FMH1029681

Project: A/NE-KTS/538 (septic tank)

ADWF (m^3/d)	4.5	(Provided by EPD)
ADWF (l/s)	0.05	

Be accounted to FMH1029681

Project: Y/NE-KTS/15 (formerly A/NE-KTS/484)

ADWF (m^3/d)	792	(A/NE-KTS/565 SIA Report (Binnies)[Dec 2025])
Design flow for swimming pool backwashing (l/s)	8.3	
ADWF (l/s)	9.17	
ADWF (with Swimming Pool Backwashing) (l/s)	17.47	

Be accounted to FMH1021544

Project: A/NE-KTS/506 (formerly Y/NE-KTS/12)

ADWF (m^3/d)	2166.4	(Proposed Development at Lot No. 2579 in D.D. No. 92 SIA Report (Binnies) [Mar 2025])
Design flow for swimming pool backwashing (l/s)	8.3	
ADWF (l/s)	25.07	
ADWF (with Swimming Pool Backwashing) (l/s)	33.37	

Be accounted to FMH1021544

Project: A/NE-KTS/541

No. of Unit	2	(OZP)
Average household size (head/unit)	2.8	(Hong Kong 2021 Population By-census - Main Results)
No. of person (head)	6	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	2.22	(Provided by EPD)
ADWF (l/s)	0.03	

Be accounted to FMH1029681

Meinhardt Infrastructure & Environment Ltd. 10/F Genesis 33-35 Wong Chuk Hang Road Hong Kong	Contract: S16 Planning Application for Proposed Residential Development cum Residential Care Home for the Elderly and Shop and Services			Job Ref: -
	Subject: Sewerage Impact Assessment			Calc.Sheet No. 1
	Drawing Ref. -	Calculations by PT	Checked by ST	Date: 16-Oct-26

Ref.

Project: Y/NE-KTS/14 and Y/NE-KTS/17

ADWF (m^3/d)	1074	(Y/NE-KTS/14 SIA report (Ramboll) [Apr 2020] and Y/NE/KTS/17 SIA report (Ramboll) [Jan 2023])
Volume for swimming pool backwashing (l/s)	14.4	
ADWF (l/s)	12.43	
ADWF (with Swimming Pool Backwashing) (l/s)	26.83	

Be accounted to FMH1021544

Project: Y/KTN/2

ADWF (m^3/d)	492	(Y/KTN/2 SIA report(Ramboll) [Jun 2022])
Volume for swimming pool backwashing (l/s)	3.5	
ADWF (l/s)	5.69	
ADWF (with Swimming Pool Backwashing) (l/s)	9.19	

Be accounted to FMH1021543

Project: Y/FSS/19

ADWF (m^3/d)	798.9	(Y/FSS/19 SIA report(Ramboll) [Jul 2022])
Volume for swimming pool backwashing (l/s)	5.8	
ADWF (l/s)	9.25	
ADWF (with Swimming Pool Backwashing) (l/s)	15.05	

Be accounted to FMH1021561

Project: Tai Tau Leng Public Housing

ADWF (m^3/d)	3057	(CE78/2021 SIA report (Atkins) [Aug 2023])
ADWF (l/s)	35.38	

Be accounted to FMH1021561

Ref.

1.7 Estimation of Sewage Flow from Proposed Development

1) Residential Building

No. of person (head)	936	
Category of unit flow factors	R3	
Unit flow factors (m^3/head/day)	0.37	(GESF)
ADWF (m^3/d)	346.32	
ADWF (l/s)	4.01	

2) Management Staff (Including Clubhouse & RCHE)

No. of Staff	50	
Category of unit flow factors	J11	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	14	
ADWF (l/s)	0.16	

3) Shop

No. of Staff	14	
Category of unit flow factors	J4	
Unit flow factors (m^3/head/day)	0.28	(GESF)
ADWF (m^3/d)	3.92	
ADWF (l/s)	0.05	

4) Swimming Pool

Pool Volume (m^3)	220	
Turnover Rate (hr)	6	(Cap. 132CA - Open Air pool)
Flow factors (m^3/hr)	36.67	
Flow factors (l/s)	10.19	
Surface Loading Rate of Filter (m^3/m^2/hr)	48	
Filter Area Required (m^2)	0.76	
Backwash Duration (mins/day)	3	
Backwash flow rate (m^3/m^2/hr)	30	
Volume of Swimming Pool Backwashing (m^3/d)	1.15	
Volume of Swimming Pool Backwashing (l/s)	6.37	

5) RCHE Residents

No. of residents (beds)	100	
Category of unit flow factors	Special class	
Unit flow factors (m^3/head/day)	0.19	(GESF)
ADWF (m^3/d)	19.0	
ADWF (l/s)	0.22	

Ref.

1.8 Total Estimated Peak Flow from the Proposed Development

Residential Building ADWF (m^3/d)	346.32	
Management Staff ADWF (m^3/d)	14.00	
Shop ADWF (m^3/d)	3.92	
RCHE Residents ADWF (m^3/d)	19.00	
Total Estimated Daily Flow (m^3/d)	383.24	
Catchment Inflow Factors, PCIF	1.00	(GESF)
Total Estimated Daily Flow (m^3/d) (with catchment inflow factor)	383.24	
Population	1100	
Peaking Factor	6	(GESF)
Peak Flow (l/s) (with Peaking factor)	26.61	
Peak Flow (with Swimming Pool Backwashing) (l/s)	32.98	

Be accounted to FMH1029683

Appendix C

Calculation of Flow Capacity

Meinhardt Infrastructure & Environment Ltd.
10/F Genesis
33-35 Wong Chuk Hang Road
Hong Kong

Contract:
Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Job Ref: -

Subject: Sewerage Impact Assessment

Calc. Sheet No. -

Drawing Ref.	Calculations By	Checked By	Date
-	AL	AL	10/14/2026

Sewerage Impact Assessment (Appendix D)

Scenario 1: Existing development, and Planned developments anticipated intake year at 2031
(Upgraded Sewers by Responsible Planned Developments)

Foulwater Drains Capacity Design Check (By Colebrook White Equation)

By Colebrook White Equation

$$V = -\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

V = mean velocity (m/s)
g = gravitational acceleration (m/s²)
D = internal pipe diameter (m)
k_s = hydraulic pipeline roughness (m)
v = kinematic viscosity of fluid (m²/s)
s = hydraulic gradient (energy loss per unit length due to friction)

Planned Development	ADWF (m^3/d)	ADWF (L/s)	Manhole
A/NE-KTS/460	2.22	-	0.03 FMH1029682
A/NE-KTS/466	49	-	0.57 FMH1029681
A/NE-KTS/525 [1]	45.8	-	0.53 FMH1029681
A/NE-KTS/538 [1]	4.5	-	0.05 FMH1029681
Y/NE-KTS/15 (formerly A/NE-KTS/484)	792	8.3	9.17 FMH1021544
A/NE-KTS/506 (formerly Y/NE-KTS/12)	2166.4	8.3	25.07 FMH1021544
A/NE-KTS/541 [1]	2.22	-	0.03 FMH1029681
Y/NE-KTS/14 and Y/NE-KTS/17	1074	14.4	12.43 FMH1021544
Y/KTN/2	492	3.5	5.69 FMH1021543
Y/FSS/19	798.9	5.8	9.25 FMH1021561

	Existing Development		Manhole
1	St Andrews Place 聖	27.01	0.31 FMH1028584
2	Golf Villa 金錢花園(	18.87	0.22 FMH1028584
3	The Royal Oak 御林	45.88	0.53 FMH1028570
4	Ascot Park 翡翠園	16.65	0.19 FMH1028570
5	Kam Tsin Village 金	1147	13.28 FMH1028523
6	Kam Tsin Village H(	4.24	0.05 FMH1028520
7	Kam Tsin Village H(	19.28	0.22 FMH1028520
8	De La Salle Seconc	54.08	0.63 FMH1028520
9	St Paul's House of I	22.7	0.26 FMH1021544
10	Eden Place 桃苑	8.51	0.10 FMH1021544
11	Valais 天巒	341.88	3.96 FMH1021544
12	Yin Kong Village 燕	292.3	3.38 FMH1021550
13	Golf Parkview (高爾	49.95	0.58 FMH1021561
14	Beas River Equestr	272	3.15 FMH1028584
15	Village areas at nor	127.17	1.47 FMH1021544
16	Goodwood Park	13.69	0.16 FMH1029663
17	La Regent Park	43.66	0.51 FMH1028548
18	Casas Domingo	45.88	0.53 FMH1021544
19	Beas River Country	164	1.90 FMH1028584
20	Toilet	-	26.80 FMH1021550

Assumptions:

1. Pipe roughness, k_s [2]=	3	mm	(Refer to Sewerage Manual Part 1 - Table 5, assume "Clayware" under normal condition)
	0.3		
2. Gravitational acceleration, g =	9.81	m/s²	
3. Kinematic viscosity, v =	1.00E-06	m²/s	(Transitional flow and water at 15 degree celcius)
4. Catchment Inflow Factor, $P_{CIF=}$	1		(Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning -Table T4 - North District)

Pipe Information											Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/538, A/NE-KTS/541	FMH1029681	FMH1029682	300	22	12.980	9.270	12.870	9.070	110	1.18	1	**376**	8	9.40	9.40	83.8	1.19	11%	OK
A/NE-KTS/460	FMH1029682	FMH1029683	300	31	12.870	9.060	11.600	8.860	155	1.20	1	**384**	8	9.61	9.61	70.6	1.00	14%	OK
Goodwood Park	FMH1029683	FMH1029680	300	24	11.600	8.850	11.180	8.680	141	1.36	1	**435**	8	10.87	10.87	73.9	1.05	15%	OK
	FMH1028600	FMH1028601	300	22	24.840	23.470	22.920	21.620	12	1.36	1	**435**	8	10.87	10.87	254.1	3.59	4%	OK
	FMH1028601	FMH1028602	300	19	22.920	21.620	21.230	20.080	12	1.36	1	**435**	8	10.87	10.87	249.9	3.54	4%	OK
	FMH1028602	FMH1028603	300	38.8	21.230	20.070	19.240	17.640	16	1.36	1	**435**	8	10.87	10.87	220.2	3.12	5%	OK
	FMH1028603	FMH1028591	300	20.2	19.240	17.630	19.070	17.200	47	1.36	1	**435**	8	10.87	10.87	128.3	1.82	8%	OK
	FMH1028591	FMH1028590	300	18.2	19.070	17.190	18.580	16.610	31	1.36	1	**435**	8	10.87	10.87	157.1	2.22	7%	OK
	FMH1028590	FMH1028589	300	27.3	18.580	16.600	17.010	15.560	26	1.36	1	**435**	8	10.87	10.87	171.7	2.43	6%	OK
	FMH1028589	FMH1028588	300	29.1	17.010	15.540	16.170	14.720	35	1.36	1	**435**	8	10.87	10.87	147.7	2.09	7%	OK
	FMH1028588	FMH1028587	300	30.9	16.170	14.710	15.730	14.380	94	1.36	1	**435**	8	10.87	10.87	90.8	1.29	12%	OK

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From	To	Pipe **(d)**	Pipe **(m)**	Ground Level	Invert Level **(out)**	Ground Level	Invert Level **(in)**	Slope **(s)**	Culmulative Sewage Flow (Q_d)	Catchment Inflow Factor (P_{CIF}) [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow (Q_p)	Peak Flow with Swimming Pool and Public Toilet	Pipe Full Flow (Q_c)	Pipe Full Flow **(v)**	Utilization	Flow Capacity
	Manhole ID Upstream	Manhole ID Downstream	Diameter mm	Length m	(US) mPD	(US) mPD	(DS) mPD	(DS) mPD	Gradient 1 in	l/s				l/s	l/s	Capacity l/s	Velocity m/s	%	Check
	FMH1028587	FMH1028586	400	25.3	15.730	14.300	15.480	13.750	46	1.36	1	**435**	8	10.87	10.87	279.2	2.22	4%	OK
	FMH1028586	FMH1028585	400	24.9	15.480	13.750	15.440	13.670	311	1.36	1	**435**	8	10.87	10.87	107.1	0.85	10%	OK
	FMH1028585	FMH1028584	400	24.6	15.440	13.660	15.340	13.560	246	1.36	1	**435**	8	10.87	10.87	120.6	0.96	9%	OK
St Andrews Place, Golf Villa, Beas River Equestrian, Beas River Country Park	FMH1028584	FMH1028583	400	15.3	15.340	13.550	15.410	13.500	306	6.94	1	**2220**	6	41.62	41.62	108.1	0.86	39%	OK
	FMH1028583	FMH1028582	400	32.4	15.410	13.490	15.560	13.390	324	6.94	1	**2220**	6	41.62	41.62	105.0	0.84	40%	OK
	FMH1028582	FMH1028581	400	35.4	15.560	13.380	15.680	13.280	354	6.94	1	**2220**	6	41.62	41.62	100.4	0.80	41%	OK
	FMH1028581	FMH1028580	400	17.2	15.680	13.270	15.820	13.210	287	6.94	1	**2220**	6	41.62	41.62	111.7	0.89	37%	OK
	FMH1028580	FMH1028570	400	38.2	15.820	13.200	16.130	13.100	382	6.94	1	**2220**	6	41.62	41.62	96.7	0.77	43%	OK
The Royal Oak, Ascot Park	FMH1028570	FMH1028569	400	32.8	16.130	13.090	16.490	12.980	298	7.66	1	**2451**	6	45.96	45.96	109.5	0.87	42%	OK
	FMH1028569	FMH1028568	400	9.1	16.490	12.970	16.420	12.960	910	7.66	1	**2451**	6	45.96	45.96	62.5	0.50	74%	OK
	FMH1028568	FMH1028567	400	7.7	16.420	12.950	16.390	12.920	257	7.66	1	**2451**	6	45.96	45.96	118.0	0.94	39%	OK
	FMH1028567	FMH1028566	400	35.7	16.390	12.910	17.620	12.800	325	7.66	1	**2451**	6	45.96	45.96	104.9	0.83	44%	OK
	FMH1028566	FMH1028565	400	14.2	17.620	12.790	18.210	12.750	355	7.66	1	**2451**	6	45.96	45.96	100.3	0.80	46%	OK
	FMH1028565	FMH1028564	400	8.3	18.210	12.740	18.360	12.710	277	7.66	1	**2451**	6	45.96	45.96	113.7	0.90	40%	OK
	FMH1028564	FMH1028563	400	15.8	18.360	12.700	18.290	12.660	395	7.66	1	**2451**	6	45.96	45.96	95.1	0.76	48%	OK
	FMH1028563	FMH1028562	400	13.9	18.290	12.650	18.050	12.600	278	7.66	1	**2451**	6	45.96	45.96	113.4	0.90	41%	OK
	FMH1028562	FMH1028561	400	13.4	18.050	12.590	17.820	12.550	335	7.66	1	**2451**	6	45.96	45.96	103.3	0.82	45%	OK
	FMH1028561	FMH1028560	400	10	17.820	12.540	17.600	12.510	333	7.66	1	**2451**	6	45.96	45.96	103.5	0.82	44%	OK
La Regent Park	FMH1028560	FMH1028548	400	22.6	17.600	12.500	17.660	12.270	98	8.17	1	**2613**	6	48.99	48.99	191.0	1.52	26%	OK
	FMH1028548	FMH1028547	400	3.7	17.660	12.210	17.220	12.130	46	8.17	1	**2613**	6	48.99	48.99	278.5	2.22	18%	OK
	FMH1028547	FMH1028546	400	5.4	17.220	12.100	17.080	11.930	32	8.17	1	**2613**	6	48.99	48.99	336.1	2.67	15%	OK
	FMH1028546	FMH1028545	400	27.8	17.080	11.920	14.780	11.110	34	8.17	1	**2613**	6	48.99	48.99	323.3	2.57	15%	OK
	FMH1028545	FMH1028544	400	15	14.780	11.100	13.280	10.500	25	8.17	1	**2613**	6	48.99	48.99	378.9	3.02	13%	OK
	FMH1028544	FMH1028543	400	9.7	13.280	10.490	12.930	10.150	29	8.17	1	**2613**	6	48.99	48.99	354.7	2.82	14%	OK
	FMH1028543	FMH1028542	400	9.3	12.930	10.140	12.540	9.890	37	8.17	1	**2613**	6	48.99	48.99	310.6	2.47	16%	OK
	FMH1028542	FMH1028541	400	9.4	12.540	9.880	12.160	9.520	26	8.17	1	**2613**	6	48.99	48.99	370.7	2.95	13%	OK
	FMH1028541	FMH1028540	400	6.3	12.160	9.510	12.080	9.430	79	8.17	1	**2613**	6	48.99	48.99	213.3	1.70	23%	OK
	FMH1028540	FMH1028528	400	5.3	12.080	9.420	11.810	9.290	41	8.17	1	**2613**	6	48.99	48.99	296.6	2.36	17%	OK
	FMH1028528	FMH1028527	400	5.9	11.810	9.280	11.900	9.170	54	8.17	1	**2613**	6	48.99	48.99	258.6	2.06	19%	OK
	FMH1028527	FMH1028526	300	5.2	11.900	9.160	11.440	9.030	40	8.17	1	**2613**	6	48.99	48.99	278.2	1.97	18%	OK
	FMH1028526	FMH1028525	400	5.1	11.440	9.020	11.320	8.760	20	8.17	1	**2613**	6	48.99	48.99	427.8	3.40	11%	OK
	FMH1028525	FMH1028524	400	9.2	11.320	8.740	11.110	8.710	307	8.17	1	**2613**	6	48.99	48.99	107.9	0.86	45%	OK
Kam Tsin Village	FMH1028524	FMH1028523	400	8.1	11.110	8.700	10.830	8.630	116	21.44	1	**6861**	5	107.20	107.20	175.9	1.40	61%	OK
	FMH1028523	FMH1028522	500	41.3	10.830	8.620	10.230	8.250	112	21.44	1	**6861**	5	107.20	107.20	324.3	1.65	33%	OK
	FMH1028522	FMH1028521	500	35.2	10.230	8.240	9.790	7.930	114	21.44	1	**6861**	5	107.20	107.20	321.5	1.64	33%	OK
	FMH1028521	FMH1028520	500	20.8	9.790	7.920	9.640	7.620	69	21.44	1	**6861**	5	107.20	107.20	411.6	2.10	26%	OK
Kam Tsin Village Ho Tung Kindergarten, Kam Tsin Village Ho Tung School, De La Salle Secondary School NT	FMH1028520	FMH1021544	500	27.2	9.640	7.610	10.030	7.480	209	22.34	1	**7149**	5	111.70	111.70	236.7	1.21	47%	OK
Y/NE-KTS/15 (formerly A/NE-KTS/484), A/NE-KTS/506 (formerly Y/NE-KTS/12), Y/NE-KTS/14 and Y/NE-KTS/17, Eden Place, Valais, Village areas at north of Kam Hang Road at Kam Tsin, Casas Domingo, St Paul's House of Prayer	FMH1021544	FMH1021543	500	54.9	10.030	7.440	10.130	6.860	95	75.33	1	**24106**	4	301.33	332.33	352.2	1.79	94%	OK

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
Y/KTN/2	FMH1021543	FMH1021545	600	45.1	10.130	6.410	9.750	6.060	129	81.03	1	**25928**	4	324.10	358.60	489.7	1.73	73%	OK
[6]	FMH1021545	FMH1021546	750	44.9	9.750	5.960	9.230	5.870	499	81.03	1	**25928**	4	324.10	358.60	448.9	1.02	80%	OK
	FMH1021546	FMH1021547	600	39	9.230	5.850	8.790	5.670	217	81.03	1	**25928**	4	324.10	358.60	377.4	1.33	95%	OK
	FMH1021547	FMH1021548	600	24.8	8.790	5.670	8.420	5.020	38	81.03	1	**25928**	4	324.10	358.60	900.5	3.18	40%	OK
	FMH1021548	FMH1021549	600	8.1	8.420	5.000	8.330	4.830	48	81.03	1	**25928**	4	324.10	358.60	805.7	2.85	45%	OK
	FMH1021549	FMH1021550	600	44.9	8.330	4.830	8.110	4.480	128	81.03	1	**25928**	4	324.10	358.60	490.7	1.74	73%	OK
Yin Kong Village, Toilet	FMH1021550	FMH1021551	600	5.6	8.110	4.480[9]	8.080	4.480	- [10]	84.41	1	**27011**	4	337.64	398.94	- [10]	- [10]	- [10]	OK
[6]	FMH1021551	FMH1021552	750	31.1	8.080	4.470	7.930	4.370	311	84.41	1	**27011**	4	337.64	398.94	568.9	1.29	70%	OK
[6]	FMH1021552	FMH1021553	750	37.6	7.930	4.350	7.740	4.240	342	84.41	1	**27011**	4	337.64	398.94	542.6	1.23	74%	OK
[6]	FMH1021553	FMH1021554	750	50.3	7.740	4.230	7.450	4.060	296	84.41	1	**27011**	4	337.64	398.94	583.3	1.32	68%	OK
[6]	FMH1021554	FMH1021555	750	32.5	7.450	4.060	7.370	3.930	250	84.41	1	**27011**	4	337.64	398.94	634.7	1.44	63%	OK
[6]	FMH1021555	FMH1021556	750	33	7.370	3.930	7.340	3.840	367	84.41	1	**27011**	4	337.64	398.94	523.8	1.19	76%	OK
[6]	FMH1021556	FMH1021557	750	17.6	7.340	3.840	7.280	3.780	293	84.41	1	**27011**	4	337.64	398.94	585.8	1.33	68%	OK
[6]	FMH1021557	FMH1021558	750	9.3	7.280	3.780	7.190	3.750	310	84.41	1	**27011**	4	337.64	398.94	569.8	1.29	70%	OK
[7]	FMH1021558	FMH1021559	675	13.7	7.190	3.740	7.110	3.680	228	84.41	1	**27011**	4	337.64	398.94	502.4	1.40	79%	OK
[6]	FMH1021559	FMH1021560	750	13	7.110	3.680	7.030	3.650	433	84.41	1	**27011**	4	337.64	398.94	481.8	1.09	83%	OK
[6]	FMH1021560	FMH1021561	750	11.3	7.030	3.650	7.120	3.630	565	84.41	1	**27011**	4	337.64	398.94	421.8	0.95	95%	OK
Y/FSS/19, Golf Parkview [6]	FMH1021561	FMH1021562	800	13.3	7.120	3.630	7.340	3.600	443	94.23	1	**30155**	4	376.93	444.03	565.0	1.12	79%	OK
[6]	FMH1021562	FMH1021563	750	8.8	7.340	3.600	7.490	3.600	- [10]	94.23	1	**30155**	4	376.93	444.03	- [10]	- [10]	- [10]	OK
[6]	FMH1021563	FMH1021564	750	13.4	7.490	3.600	7.510	3.530	191	94.23	1	**30155**	4	376.93	444.03	725.4	1.64	61%	OK
[6]	FMH1021564	FMH1021565	750	10.7	7.510	3.530	7.370	3.480	214	94.23	1	**30155**	4	376.93	444.03	686.1	1.55	65%	OK
[8]	FMH1021565	FMH1021566	900	7.3	7.370	3.470	7.380	3.460	730	94.23	1	**30155**	4	377.93	445.03	600.9	0.94	74%	OK
	FMH1021566	XPS1000860	600	9.9	7.380	3.450	7.380	3.450	- [10]	94.23	1	**30155**	4	377.93	445.03	- [10]	- [10]	- [10]	OK

Note:

[1] A conservative approach has been adopted, assuming that sewage discharge from the development will be discharged into the public sewage system.

[2] ks = 3mm is adopted for the "poor" condition of concrete slimed sewers. (Refer to Sewerage Manual - Key Planning Issues and Gravity Collection System by DSD, Table 5 : Recommended Roughness Values ks)

[3] Catchment Inflow factors, PCIF = 1 for North District. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-4 : Catchment Inflow Factors, PCIF)

[4] Contribution Population= Calculation total average flow (m3/day)/0.27 (m3/person/day), where the calculated total average flow Qaverage = Qd x PCIF. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Section 12.1)

[5] The peaking factor of 8 is adopted, when population range is <1,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 6 is adopted, when population range is 1,000 - 5,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 5 is adopted, when population range is 5,000-10,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 4 is adopted, when population range is 10,000-50,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)

[6] Upgraded by A/NE-KTS/506

[7] Upgraded by others, refer to A/NE-KTS/565

[8] Upgraded by Y/FSS/19

[9] As there is no invert level of the outlet of FMH1021550, the invert level of the inlet and outlet are assumed to be the same level, i.e. inlet invert level of FMH1021550 and outlet invert level of FMH1021550 are at +4.480 mPD.

[10] Since the invert level (out) and the invert level (in) is the same for the pipe segments between manholes FMH1021550 and FMH1021551, FMH1021562 and FMH1021563, and FMH1021566 and XPS1000860 as referred to the DSD's drainage record pipes, zero slope is encountered, and the capacity, flow velocity and utilization for these segments cannot be determined and calculated. UU survey will be conducted at the detailed design stage for these pipe segments to review the actual invert levels of these concerned sewage pipes and determine the necessity of upgrading of these pipe segments in the future. An updated SIA will be submitted for DSD approval during the detailed design stage. Should any capacity shortfall be identified, the Project Proponent will propose and implement necessary upgrading works at their own cost to the DSD's satisfaction.

Meinhardt Infrastructure & Environment Ltd.
10/F Genesis
33-35 Wong Chuk Hang Road
Hong Kong

Contract:
Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Job Ref: -

Subject: Sewerage Impact Assessment

Calc. Sheet No. -

Drawing Ref.	Calculations By	Checked By	Date
-	AL	AL	10/14/2026

Sewerage Impact Assessment (Appendix D)

Scenario 2: Proposed development, Existing development, and planned developments anticipated intake year at 2031 (Upgraded Sewers by Responsible Planned Developments)

Foulwater Drains Capacity Design Check (By Colebrook White Equation)

By Colebrook White Equation

$$V = -\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

V = mean velocity (m/s)
g = gravitational acceleration (m/s²)
D = internal pipe diameter (m)
k_s = hydraulic pipeline roughness (m)
v = kinematic viscosity of fluid (m²/s)
s = hydraulic gradient (energy loss per unit length due to friction)

Planned Development	ADWF (m^3/d)	ADWF (L/s)		Manhole
A/NE-KTS/460	2.22	-	0.03	FMH1029682
A/NE-KTS/466	49	-	0.57	FMH1029681
A/NE-KTS/525 [1]	45.8	-	0.53	FMH1029681
A/NE-KTS/538 [1]	4.5	-	0.05	FMH1029681
Y/NE-KTS/15 (formerly A/NE-KTS/484)	792	8.3	9.17	FMH1021544
A/NE-KTS/506 (formerly Y/NE-KTS/12)	2166.4	8.3	25.07	FMH1021544
A/NE-KTS/541 [1]	2.22	-	0.03	FMH1029681
Y/NE-KTS/14 and Y/NE-KTS/17	1074	14.4	12.43	FMH1021544
Y/KTN/2	492	3.5	5.69	FMH1021543
Y/FSS/19	798.9	5.8	9.25	FMH1021561
Proposed development	383.24	6.37	4.44	FMH1029683

Existing Development		Manhole
1 St Andrews Place 聖	27.01	0.31 FMH1028584
2 Golf Villa 金錢花園別	18.87	0.22 FMH1028584
3 The Royal Oak 御林	45.88	0.53 FMH1028570
4 Ascot Park 翡翠園	16.65	0.19 FMH1028570
5 Kam Tsin Village 金	1147	13.28 FMH1028523
6 Kam Tsin Village He	4.24	0.05 FMH1028520
7 Kam Tsin Village He	19.28	0.22 FMH1028520
8 De La Salle Seconc	54.08	0.63 FMH1028520
9 St Paul's House of I	22.7	0.26 FMH1021544
10 Eden Place 桃苑	8.51	0.10 FMH1021544
11 Valais 天巒	341.88	3.96 FMH1021544
12 Yin Kong Village 燕	292.3	3.38 FMH1021550
13 Golf Parkview (高爾	49.95	0.58 FMH1021561
14 Beas River Equestr	272	3.15 FMH1028584
15 Village areas at nor	127.17	1.47 FMH1021544
16 Goodwood Park	13.69	0.16 FMH1029663
17 La Regent Park	43.66	0.51 FMH1028548
18 Casas Domingo	45.88	0.53 FMH1021544
19 Beas River Country	164	1.90 FMH1028584
20 Toilet	-	26.80 FMH1021550

Assumptions:

1. Pipe roughness, k_s [2]=	3	mm	(Refer to Sewerage Manual Part 1 - Table 5, assume "Clayware" under normal condition)
	0.3		
2. Gravitational acceleration, g =	9.81	m/s²	
3. Kinematic viscosity, v =	1.00E-06	m²/s	(Transitional flow and water at 15 degree celcius)
4. Catchment Inflow Factor, $P_{CIF=}$	1		(Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning -Table T4 - North District)

Pipe Information											Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/538, A/NE-KTS/541	FMH1029681	FMH1029682	300	22	12.980	9.270	12.870	9.070	110	1.18	1	**376**	8	9.40	9.40	83.8	1.19	11%	OK
A/NE-KTS/460	FMH1029682	FMH1029683	300	31	12.870	9.060	11.600	8.860	155	1.20	1	**384**	8	9.61	9.61	70.6	1.00	14%	OK
Proposed development	P1 [11]	FMH1029683	225	10.1	12.550	9.050	11.600	8.950	101	4.44	1	**1419**	6	26.61	32.98	40.5	1.02	81%	OK
Proposed development, Goodwood Park	FMH1029683	FMH1029680	300	24	11.600	8.850	11.180	8.680	141	5.79	1	**1854**	6	34.77	41.13	73.9	1.05	56%	OK
	FMH1028600	FMH1028601	300	22	24.840	23.470	22.920	21.620	12	5.79	1	**1854**	6	34.77	41.13	254.1	3.59	16%	OK
	FMH1028601	FMH1028602	300	19	22.920	21.620	21.230	20.080	12	5.79	1	**1854**	6	34.77	41.13	249.9	3.54	16%	OK
	FMH1028602	FMH1028603	300	38.8	21.230	20.070	19.240	17.640	16	5.79	1	**1854**	6	34.77	41.13	220.2	3.12	19%	OK
	FMH1028603	FMH1028591	300	20.2	19.240	17.630	19.070	17.200	47	5.79	1	**1854**	6	34.77	41.13	128.3	1.82	32%	OK
	FMH1028591	FMH1028590	300	18.2	19.070	17.190	18.580	16.610	31	5.79	1	**1854**	6	34.77	41.13	157.1	2.22	26%	OK
	FMH1028590	FMH1028589	300	27.3	18.580	16.600	17.010	15.560	26	5.79	1	**1854**	6	34.77	41.13	171.7	2.43	24%	OK
	FMH1028589	FMH1028588	300	29.1	17.010	15.540	16.170	14.720	35	5.79	1	**1854**	6	34.77	41.13	147.7	2.09	28%	OK

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From	To	Pipe **(d)**	Pipe **(m)**	Ground Level	Invert Level **(out)**	Ground Level	Invert Level **(in)**	Slope **(s)**	Culmulative Sewage Flow (Q_d)	Catchment Inflow Factor (P_{CIF}) [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow (Q_p)	Peak Flow with Swimming Pool and Public Toilet	Pipe Full Flow (Q_c)	Pipe Full Flow **(v)**	Utilization	Flow Capacity
	Manhole ID Upstream	Manhole ID Downstream	Diameter mm	Length m	(US) mPD	(US) mPD	(DS) mPD	(DS) mPD	Gradient 1 in	l/s				l/s	l/s	Capacity l/s	Velocity m/s	%	Check
	FMH1028588	FMH1028587	300	30.9	16.170	14.710	15.730	14.380	94	5.79	1	**1854**	6	34.77	41.13	90.8	1.29	45%	OK
	FMH1028587	FMH1028586	400	25.3	15.730	14.300	15.480	13.750	46	5.79	1	**1854**	6	34.77	41.13	279.2	2.22	15%	OK
	FMH1028586	FMH1028585	400	24.9	15.480	13.750	15.440	13.670	311	5.79	1	**1854**	6	34.77	41.13	107.1	0.85	38%	OK
	FMH1028585	FMH1028584	400	24.6	15.440	13.660	15.340	13.560	246	5.79	1	**1854**	6	34.77	41.13	120.6	0.96	34%	OK
St Andrews Place, Golf Villa, Beas River Equestrian, Beas River Country Park	FMH1028584	FMH1028583	400	15.3	15.340	13.550	15.410	13.500	306	11.37	1	**3639**	6	68.23	74.60	108.1	0.86	69%	OK
	FMH1028583	FMH1028582	400	32.4	15.410	13.490	15.560	13.390	324	11.37	1	**3639**	6	68.23	74.60	105.0	0.84	71%	OK
	FMH1028582	FMH1028581	400	35.4	15.560	13.380	15.680	13.280	354	11.37	1	**3639**	6	68.23	74.60	100.4	0.80	74%	OK
	FMH1028581	FMH1028580	400	17.2	15.680	13.270	15.820	13.210	287	11.37	1	**3639**	6	68.23	74.60	111.7	0.89	67%	OK
	FMH1028580	FMH1028570	400	38.2	15.820	13.200	16.130	13.100	382	11.37	1	**3639**	6	68.23	74.60	96.7	0.77	77%	OK
The Royal Oak, Ascot Park	FMH1028570	FMH1028569	400	32.8	16.130	13.090	16.490	12.980	298	12.10	1	**3871**	6	72.58	78.94	109.5	0.87	72%	OK
	FMH1028569	FMH1028568	400	9.1	16.490	12.970	16.420	12.960	910	12.10	1	**3871**	6	72.58	78.94	62.5	0.50	126%	Fail
	FMH1028568	FMH1028567	400	7.7	16.420	12.950	16.390	12.920	257	12.10	1	**3871**	6	72.58	78.94	118.0	0.94	67%	OK
	FMH1028567	FMH1028566	400	35.7	16.390	12.910	17.620	12.800	325	12.10	1	**3871**	6	72.58	78.94	104.9	0.83	75%	OK
	FMH1028566	FMH1028565	400	14.2	17.620	12.790	18.210	12.750	355	12.10	1	**3871**	6	72.58	78.94	100.3	0.80	79%	OK
	FMH1028565	FMH1028564	400	8.3	18.210	12.740	18.360	12.710	277	12.10	1	**3871**	6	72.58	78.94	113.7	0.90	69%	OK
	FMH1028564	FMH1028563	400	15.8	18.360	12.700	18.290	12.660	395	12.10	1	**3871**	6	72.58	78.94	95.1	0.76	83%	OK
	FMH1028563	FMH1028562	400	13.9	18.290	12.650	18.050	12.600	278	12.10	1	**3871**	6	72.58	78.94	113.4	0.90	70%	OK
	FMH1028562	FMH1028561	400	13.4	18.050	12.590	17.820	12.550	335	12.10	1	**3871**	6	72.58	78.94	103.3	0.82	76%	OK
	FMH1028561	FMH1028560	400	10	17.820	12.540	17.600	12.510	333	12.10	1	**3871**	6	72.58	78.94	103.5	0.82	76%	OK
La Regent Park	FMH1028560	FMH1028548	400	22.6	17.600	12.500	17.660	12.270	98	12.60	1	**4032**	6	75.61	81.97	191.0	1.52	43%	OK
	FMH1028548	FMH1028547	400	3.7	17.660	12.210	17.220	12.130	46	12.60	1	**4032**	6	75.61	81.97	278.5	2.22	29%	OK
	FMH1028547	FMH1028546	400	5.4	17.220	12.100	17.080	11.930	32	12.60	1	**4032**	6	75.61	81.97	336.1	2.67	24%	OK
	FMH1028546	FMH1028545	400	27.8	17.080	11.920	14.780	11.110	34	12.60	1	**4032**	6	75.61	81.97	323.3	2.57	25%	OK
	FMH1028545	FMH1028544	400	15	14.780	11.100	13.280	10.500	25	12.60	1	**4032**	6	75.61	81.97	378.9	3.02	22%	OK
	FMH1028544	FMH1028543	400	9.7	13.280	10.490	12.930	10.150	29	12.60	1	**4032**	6	75.61	81.97	354.7	2.82	23%	OK
	FMH1028543	FMH1028542	400	9.3	12.930	10.140	12.540	9.890	37	12.60	1	**4032**	6	75.61	81.97	310.6	2.47	26%	OK
	FMH1028542	FMH1028541	400	9.4	12.540	9.880	12.160	9.520	26	12.60	1	**4032**	6	75.61	81.97	370.7	2.95	22%	OK
	FMH1028541	FMH1028540	400	6.3	12.160	9.510	12.080	9.430	79	12.60	1	**4032**	6	75.61	81.97	213.3	1.70	38%	OK
	FMH1028540	FMH1028528	400	5.3	12.080	9.420	11.810	9.290	41	12.60	1	**4032**	6	75.61	81.97	296.6	2.36	28%	OK
	FMH1028528	FMH1028527	400	5.9	11.810	9.280	11.900	9.170	54	12.60	1	**4032**	6	75.61	81.97	258.6	2.06	32%	OK
	FMH1028527	FMH1028526	300	5.2	11.900	9.160	11.440	9.030	40	12.60	1	**4032**	6	75.61	81.97	278.2	1.97	29%	OK
	FMH1028526	FMH1028525	400	5.1	11.440	9.020	11.320	8.760	20	12.60	1	**4032**	6	75.61	81.97	427.8	3.40	19%	OK
	FMH1028525	FMH1028524	400	9.2	11.320	8.740	11.110	8.710	307	12.60	1	**4032**	6	75.61	81.97	107.9	0.86	76%	OK
Kam Tsin Village	FMH1028524	FMH1028523	400	8.1	11.110	8.700	10.830	8.630	116	25.88	1	**8281**	5	129.38	135.75	175.9	1.40	77%	OK
	FMH1028523	FMH1028522	500	41.3	10.830	8.620	10.230	8.250	112	25.88	1	**8281**	5	129.38	135.75	324.3	1.65	42%	OK
	FMH1028522	FMH1028521	500	35.2	10.230	8.240	9.790	7.930	114	25.88	1	**8281**	5	129.38	135.75	321.5	1.64	42%	OK
	FMH1028521	FMH1028520	500	20.8	9.790	7.920	9.640	7.620	69	25.88	1	**8281**	5	129.38	135.75	411.6	2.10	33%	OK
Kam Tsin Village Ho Tung Kindergarten, Kam Tsin Village Ho Tung School, De La Salle Secondary School NT	FMH1028520	FMH1021544	500	27.2	9.640	7.610	10.030	7.480	209	26.77	1	**8568**	5	133.87	140.24	236.7	1.21	59%	OK

Pipe Information											Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
Y/NE-KTS/15 (formerly A/NE-KTS/484), A/NE-KTS/506 (formerly Y/NE-KTS/12), Y/NE-KTS/14 and Y/NE-KTS/17, Eden Place, Valais, Village areas at north of Kam Hang Road at Kam Tsin, Casas Domingo, St Paul's House of Prayer	FMH1021544	FMH1021543	500	54.9	10.030	7.440	10.130	6.860	95	79.77	1	**25525**	4	319.07	356.43	352.2	1.79	101%	Fail
Y/KTN/2	FMH1021543	FMH1021545	600	45.1	10.130	6.410	9.750	6.060	129	85.46	1	**27348**	4	341.85	382.71	489.7	1.73	78%	OK
[6]	FMH1021545	FMH1021546	750	44.9	9.750	5.960	9.230	5.870	499	85.46	1	**27348**	4	341.85	382.71	448.9	1.02	85%	OK
	FMH1021546	FMH1021547	600	39	9.230	5.850	8.790	5.670	217	85.46	1	**27348**	4	341.85	382.71	377.4	1.33	101%	Fail
	FMH1021547	FMH1021548	600	24.8	8.790	5.670	8.420	5.020	38	85.46	1	**27348**	4	341.85	382.71	900.5	3.18	43%	OK
	FMH1021548	FMH1021549	600	8.1	8.420	5.000	8.330	4.830	48	85.46	1	**27348**	4	341.85	382.71	805.7	2.85	47%	OK
	FMH1021549	FMH1021550	600	44.9	8.330	4.830	8.110	4.480	128	85.46	1	**27348**	4	341.85	382.71	490.7	1.74	78%	OK
Yin Kong Village, Toilet	FMH1021550	FMH1021551	600	5.6	8.110	4.480[9]	8.080	4.480	- [10]	88.84	1	**28430**	4	355.38	423.04	- [10]	- [10]	- [10]	OK
[6]	FMH1021551	FMH1021552	750	31.1	8.080	4.470	7.930	4.370	311	88.84	1	**28430**	4	355.38	423.04	568.9	1.29	74%	OK
[6]	FMH1021552	FMH1021553	750	37.6	7.930	4.350	7.740	4.240	342	88.84	1	**28430**	4	355.38	423.04	542.6	1.23	78%	OK
[6]	FMH1021553	FMH1021554	750	50.3	7.740	4.230	7.450	4.060	296	88.84	1	**28430**	4	355.38	423.04	583.3	1.32	73%	OK
[6]	FMH1021554	FMH1021555	750	32.5	7.450	4.060	7.370	3.930	250	88.84	1	**28430**	4	355.38	423.04	634.7	1.44	67%	OK
[6]	FMH1021555	FMH1021556	750	33	7.370	3.930	7.340	3.840	367	88.84	1	**28430**	4	355.38	423.04	523.8	1.19	81%	OK
[6]	FMH1021556	FMH1021557	750	17.6	7.340	3.840	7.280	3.780	293	88.84	1	**28430**	4	355.38	423.04	585.8	1.33	72%	OK
[6]	FMH1021557	FMH1021558	750	9.3	7.280	3.780	7.190	3.750	310	88.84	1	**28430**	4	355.38	423.04	569.8	1.29	74%	OK
[7]	FMH1021558	FMH1021559	675	13.7	7.190	3.740	7.110	3.680	228	88.84	1	**28430**	4	355.38	423.04	502.4	1.40	84%	OK
[6]	FMH1021559	FMH1021560	750	13	7.110	3.680	7.030	3.650	433	88.84	1	**28430**	4	355.38	423.04	481.8	1.09	88%	OK
[6]	FMH1021560	FMH1021561	750	11.3	7.030	3.650	7.120	3.630	565	88.84	1	**28430**	4	355.38	423.04	421.8	0.95	100%	Fail
Y/FSS/19, Golf Parkview [6]	FMH1021561	FMH1021562	800	13.3	7.120	3.630	7.340	3.600	443	98.67	1	**31574**	4	394.68	468.14	565.0	1.12	83%	OK
[6]	FMH1021562	FMH1021563	750	8.8	7.340	3.600	7.490	3.600	- [10]	98.67	1	**31574**	4	394.68	468.14	- [10]	- [10]	- [10]	OK
[6]	FMH1021563	FMH1021564	750	13.4	7.490	3.600	7.510	3.530	191	98.67	1	**31574**	4	394.68	468.14	725.4	1.64	65%	OK
[6]	FMH1021564	FMH1021565	750	10.7	7.510	3.530	7.370	3.480	214	98.67	1	**31574**	4	394.68	468.14	686.1	1.55	68%	OK
[8]	FMH1021565	FMH1021566	900	7.3	7.370	3.470	7.380	3.460	730	98.67	1	**31574**	4	395.68	469.14	600.9	0.94	78%	OK
	FMH1021566	XPS1000860	600	9.9	7.380	3.450	7.380	3.450	- [10]	98.67	1	**31574**	4	395.68	469.14	- [10]	- [10]	- [10]	OK

Note:

[1] A conservative approach has been adopted, assuming that sewage discharge from the development will be discharged into the public sewage system.

[2] ks = 3mm is adopted for the "poor" condition of concrete slimed sewers. (Refer to Sewerage Manual - Key Planning Issues and Gravity Collection System by DSD, Table 5 : Recommended Roughness Values ks)

[3] Catchment Inflow factors, PCIF = 1 for North District. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-4 : Catchment Inflow Factors, PCIF)

[4] Contribution Population= Calculation total average flow (m3/day)/0.27 (m3/person/day), where the calculated total average flow Qaverage = Qd x PCIF. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Section 12.1)

[5] The peaking factor of 8 is adopted, when population range is <1,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 6 is adopted, when population range is 1,000 - 5,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 5 is adopted, when population range is 5,000-10,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 4 is adopted, when population range is 10,000-50,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)

[6] Upgraded by A/NE-KTS/506

[7] Upgraded by others, refer to A/NE-KTS/565

[8] Upgraded by Y/FSS/19

[9] As there is no invert level of the outlet of FMH1021550, the invert level of the inlet and outlet are assumed to be the same level, i.e. inlet invert level of FMH1021550 and outlet invert level of FMH1021550 are at +4.480 mPD.

[10] Since the invert level (out) and the invert level (in) is the same for the pipe segments between manholes FMH1021550 and FMH1021551, FMH1021562 and FMH1021563, and FMH1021566 and XPS1000860 as referred to the DSD's drainage record pipes, zero slope is encountered, and the capacity, flow velocity and utilization for these segments cannot be determined and calculated. UU survey will be conducted at the detailed design stage for these pipe segments to review the actual invert levels of these concerned sewage pipes and determine the necessity of upgrading of these pipe segments in the future. An updated SIA will be submitted for DSD approval during the detailed design stage. Should any capacity shortfall be identified, the Project Proponent will propose and implement necessary upgrading works at their own cost to the DSD's satisfaction.

[11] P1 refers to the proposed terminal sewer illustrated in Figure 3.1 of the SIA Report. A nominal sewer gradient of 1:100 has been adopted for the preliminary design. The final invert levels of the proposed manhole will be confirmed and may be adjusted during the detailed design stage.

Meinhardt Infrastructure & Environment Ltd. 10/F Genesis 33-35 Wong Chuk Hang Road Hong Kong	Contract: Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories		Job Ref: -
	Subject: Sewerage Impact Assessment		Calc. Sheet No. -
	Drawing Ref. -	Calculations By AL	Checked By AL	Date 10/14/2026

Sewerage Impact Assessment (Appendix D)

Scenario 3: Proposed development, Existing development, and planned developments anticipated intake year at 2031 (Upgraded Sewers by Responsible Planned Developments & Upgraded Sewers by Proposed Development)

Foulwater Drains Capacity Design Check (By Colebrook White Equation)

By Colebrook White Equation

$$V = -\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

V = mean velocity (m/s)
g = gravitational acceleration (m/s²)
D = internal pipe diameter (m)
k_s = hydraulic pipeline roughness (m)
v = kinematic viscosity of fluid (m²/s)
s = hydraulic gradient (energy loss per unit length due to friction)

Planned Development	ADWF (m^3/d)	ADWF (L/s)	Manhole
A/NE-KTS/460	2.22	-	0.03 FMH1029682
A/NE-KTS/466	49	-	0.57 FMH1029681
A/NE-KTS/525 [1]	45.8	-	0.53 FMH1029681
A/NE-KTS/538 [1]	4.5	-	0.05 FMH1029681
Y/NE-KTS/15 (formerly A/NE-KTS/484)	792	8.3	9.17 FMH1021544
A/NE-KTS/506 (formerly Y/NE-KTS/12)	2166.4	8.3	25.07 FMH1021544
A/NE-KTS/541 [1]	2.22	-	0.03 FMH1029681
Y/NE-KTS/14 and Y/NE-KTS/17	1074	14.4	12.43 FMH1021544
Y/KTN/2	492	3.5	5.69 FMH1021543
Y/FSS/19	798.9	5.8	9.25 FMH1021561
Proposed development	383.24	6.37	4.44 FMH1029683

Existing Development		Manhole
1 St Andrews Place 聖	27.01	0.31 FMH1028584
2 Golf Villa 金錢花園別	18.87	0.22 FMH1028584
3 The Royal Oak 御林	45.88	0.53 FMH1028570
4 Ascot Park 翡翠園	16.65	0.19 FMH1028570
5 Kam Tsin Village 金	1147	13.28 FMH1028523
6 Kam Tsin Village He	4.24	0.05 FMH1028520
7 Kam Tsin Village He	19.28	0.22 FMH1028520
8 De La Salle Seconc	54.08	0.63 FMH1028520
9 St Paul's House of I	22.7	0.26 FMH1021544
10 Eden Place 桃苑	8.51	0.10 FMH1021544
11 Valais 天巒	341.88	3.96 FMH1021544
12 Yin Kong Village 燕	292.3	3.38 FMH1021550
13 Golf Parkview (高爾	49.95	0.58 FMH1021561
14 Beas River Equestr	272	3.15 FMH1028584
15 Village areas at nor	127.17	1.47 FMH1021544
16 Goodwood Park	13.69	0.16 FMH1029663
17 La Regent Park	43.66	0.51 FMH1028548
18 Casas Domingo	45.88	0.53 FMH1021544
19 Beas River Country	164	1.90 FMH1028584
20 Toilet	-	26.80 FMH1021550

Assumptions:

1. Pipe roughness, k_s [2]=	3	mm	(Refer to Sewerage Manual Part 1 - Table 5, assume "Clayware" under normal condition)
	0.3		
2. Gravitational acceleration, g =	9.81	m/s²	
3. Kinematic viscosity, v =	1.00E-06	m²/s	(Transitional flow and water at 15 degree celcius)
4. Catchment Inflow Factor, $P_{CIF=}$	1		(Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning -Table T4 - North District)

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/538, A/NE-KTS/541	FMH1029681	FMH1029682	300	22	12.980	9.270	12.870	9.070	110	1.18	1	**376**	8	9.40	9.40	83.8	1.19	11%	OK
A/NE-KTS/460	FMH1029682	FMH1029683	300	31	12.870	9.060	11.600	8.860	155	1.20	1	**384**	8	9.61	9.61	70.6	1.00	14%	OK
Proposed development	P1 [11]	FMH1029683	225	10.1	12.550	9.050	11.600	8.950	101	4.44	1	**1419**	6	26.61	32.98	40.5	1.02	81%	OK
Goodwood Park	FMH1029683	FMH1029680	300	24	11.600	8.850	11.180	8.680	141	5.79	1	**1854**	6	34.77	34.77	73.9	1.05	47%	OK
	FMH1028600	FMH1028601	300	22	24.840	23.470	22.920	21.620	12	5.79	1	**1854**	6	34.77	41.13	254.1	3.59	16%	OK
	FMH1028601	FMH1028602	300	19	22.920	21.620	21.230	20.080	12	5.79	1	**1854**	6	34.77	41.13	249.9	3.54	16%	OK
	FMH1028602	FMH1028603	300	38.8	21.230	20.070	19.240	17.640	16	5.79	1	**1854**	6	34.77	41.13	220.2	3.12	19%	OK
	FMH1028603	FMH1028591	300	20.2	19.240	17.630	19.070	17.200	47	5.79	1	**1854**	6	34.77	41.13	128.3	1.82	32%	OK
	FMH1028591	FMH1028590	300	18.2	19.070	17.190	18.580	16.610	31	5.79	1	**1854**	6	34.77	41.13	157.1	2.22	26%	OK
	FMH1028590	FMH1028589	300	27.3	18.580	16.600	17.010	15.560	26	5.79	1	**1854**	6	34.77	41.13	171.7	2.43	24%	OK
	FMH1028589	FMH1028588	300	29.1	17.010	15.540	16.170	14.720	35	5.79	1	**1854**	6	34.77	41.13	147.7	2.09	28%	OK

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From	To	Pipe **(d)**	Pipe **(m)**	Ground Level	Invert Level **(out)**	Ground Level	Invert Level **(in)**	Slope **(s)**	Culmulative Sewage Flow (Q_d)	Catchment Inflow Factor (P_{CIF}) [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow (Q_p)	Peak Flow with Swimming Pool and Public Toilet	Pipe Full Flow (Q_c)	Pipe Full Flow **(v)**	Utilization	Flow Capacity
	Manhole ID Upstream	Manhole ID Downstream	Diameter mm	Length m	(US) mPD	(US) mPD	(DS) mPD	(DS) mPD	Gradient 1 in	l/s				l/s	l/s	Capacity l/s	Velocity m/s	%	Check
	FMH1028588	FMH1028587	300	30.9	16.170	14.710	15.730	14.380	94	5.79	1	**1854**	6	34.77	41.13	90.8	1.29	45%	OK
	FMH1028587	FMH1028586	400	25.3	15.730	14.300	15.480	13.750	46	5.79	1	**1854**	6	34.77	41.13	279.2	2.22	15%	OK
	FMH1028586	FMH1028585	400	24.9	15.480	13.750	15.440	13.670	311	5.79	1	**1854**	6	34.77	41.13	107.1	0.85	38%	OK
	FMH1028585	FMH1028584	400	24.6	15.440	13.660	15.340	13.560	246	5.79	1	**1854**	6	34.77	41.13	120.6	0.96	34%	OK
St Andrews Place, Golf Villa, Beas River Equestrian, Beas River Country Park	FMH1028584	FMH1028583	400	15.3	15.340	13.550	15.410	13.500	306	11.37	1	**3639**	6	68.23	74.60	108.1	0.86	69%	OK
	FMH1028583	FMH1028582	400	32.4	15.410	13.490	15.560	13.390	324	11.37	1	**3639**	6	68.23	74.60	105.0	0.84	71%	OK
	FMH1028582	FMH1028581	400	35.4	15.560	13.380	15.680	13.280	354	11.37	1	**3639**	6	68.23	74.60	100.4	0.80	74%	OK
	FMH1028581	FMH1028580	400	17.2	15.680	13.270	15.820	13.210	287	11.37	1	**3639**	6	68.23	74.60	111.7	0.89	67%	OK
	FMH1028580	FMH1028570	400	38.2	15.820	13.200	16.130	13.100	382	11.37	1	**3639**	6	68.23	74.60	96.7	0.77	77%	OK
The Royal Oak, Ascot Park	FMH1028570	FMH1028569	400	32.8	16.130	13.090	16.490	12.980	298	12.10	1	**3871**	6	72.58	78.94	109.5	0.87	72%	OK
	FMH1028569	FMH1028568	500	9.1	16.490	12.970	16.420	12.960	910	12.10	1	**3871**	6	72.58	78.94	113.2	0.58	70%	OK
	FMH1028568	FMH1028567	400	7.7	16.420	12.950	16.390	12.920	257	12.10	1	**3871**	6	72.58	78.94	118.0	0.94	67%	OK
	FMH1028567	FMH1028566	400	35.7	16.390	12.910	17.620	12.800	325	12.10	1	**3871**	6	72.58	78.94	104.9	0.83	75%	OK
	FMH1028566	FMH1028565	400	14.2	17.620	12.790	18.210	12.750	355	12.10	1	**3871**	6	72.58	78.94	100.3	0.80	79%	OK
	FMH1028565	FMH1028564	400	8.3	18.210	12.740	18.360	12.710	277	12.10	1	**3871**	6	72.58	78.94	113.7	0.90	69%	OK
	FMH1028564	FMH1028563	400	15.8	18.360	12.700	18.290	12.660	395	12.10	1	**3871**	6	72.58	78.94	95.1	0.76	83%	OK
	FMH1028563	FMH1028562	400	13.9	18.290	12.650	18.050	12.600	278	12.10	1	**3871**	6	72.58	78.94	113.4	0.90	70%	OK
	FMH1028562	FMH1028561	400	13.4	18.050	12.590	17.820	12.550	335	12.10	1	**3871**	6	72.58	78.94	103.3	0.82	76%	OK
	FMH1028561	FMH1028560	400	10	17.820	12.540	17.600	12.510	333	12.10	1	**3871**	6	72.58	78.94	103.5	0.82	76%	OK
La Regent Park	FMH1028560	FMH1028548	400	22.6	17.600	12.500	17.660	12.270	98	12.60	1	**4032**	6	75.61	81.97	191.0	1.52	43%	OK
	FMH1028548	FMH1028547	400	3.7	17.660	12.210	17.220	12.130	46	12.60	1	**4032**	6	75.61	81.97	278.5	2.22	29%	OK
	FMH1028547	FMH1028546	400	5.4	17.220	12.100	17.080	11.930	32	12.60	1	**4032**	6	75.61	81.97	336.1	2.67	24%	OK
	FMH1028546	FMH1028545	400	27.8	17.080	11.920	14.780	11.110	34	12.60	1	**4032**	6	75.61	81.97	323.3	2.57	25%	OK
	FMH1028545	FMH1028544	400	15	14.780	11.100	13.280	10.500	25	12.60	1	**4032**	6	75.61	81.97	378.9	3.02	22%	OK
	FMH1028544	FMH1028543	400	9.7	13.280	10.490	12.930	10.150	29	12.60	1	**4032**	6	75.61	81.97	354.7	2.82	23%	OK
	FMH1028543	FMH1028542	400	9.3	12.930	10.140	12.540	9.890	37	12.60	1	**4032**	6	75.61	81.97	310.6	2.47	26%	OK
	FMH1028542	FMH1028541	400	9.4	12.540	9.880	12.160	9.520	26	12.60	1	**4032**	6	75.61	81.97	370.7	2.95	22%	OK
	FMH1028541	FMH1028540	400	6.3	12.160	9.510	12.080	9.430	79	12.60	1	**4032**	6	75.61	81.97	213.3	1.70	38%	OK
	FMH1028540	FMH1028528	400	5.3	12.080	9.420	11.810	9.290	41	12.60	1	**4032**	6	75.61	81.97	296.6	2.36	28%	OK
	FMH1028528	FMH1028527	400	5.9	11.810	9.280	11.900	9.170	54	12.60	1	**4032**	6	75.61	81.97	258.6	2.06	32%	OK
	FMH1028527	FMH1028526	300	5.2	11.900	9.160	11.440	9.030	40	12.60	1	**4032**	6	75.61	81.97	278.2	1.97	29%	OK
	FMH1028526	FMH1028525	400	5.1	11.440	9.020	11.320	8.760	20	12.60	1	**4032**	6	75.61	81.97	427.8	3.40	19%	OK
	FMH1028525	FMH1028524	400	9.2	11.320	8.740	11.110	8.710	307	12.60	1	**4032**	6	75.61	81.97	107.9	0.86	76%	OK
Kam Tsin Village	FMH1028524	FMH1028523	400	8.1	11.110	8.700	10.830	8.630	116	25.88	1	**8281**	5	129.38	135.75	175.9	1.40	77%	OK
	FMH1028523	FMH1028522	500	41.3	10.830	8.620	10.230	8.250	112	25.88	1	**8281**	5	129.38	135.75	324.3	1.65	42%	OK
	FMH1028522	FMH1028521	500	35.2	10.230	8.240	9.790	7.930	114	25.88	1	**8281**	5	129.38	135.75	321.5	1.64	42%	OK
	FMH1028521	FMH1028520	500	20.8	9.790	7.920	9.640	7.620	69	25.88	1	**8281**	5	129.38	135.75	411.6	2.10	33%	OK
Kam Tsin Village Ho Tung Kindergarten, Kam Tsin Village Ho Tung School, De La Salle Secondary School NT	FMH1028520	FMH1021544	500	27.2	9.640	7.610	10.030	7.480	209	26.77	1	**8568**	5	133.87	140.24	236.7	1.21	59%	OK

Pipe Information										Capacity and Velocity Check									
Pipe Segment	From Manhole ID Upstream	To Manhole ID Downstream	Pipe **(d)** Diameter mm	Pipe **(m)** Length m	Ground Level (US) mPD	Invert Level **(out)** (US) mPD	Ground Level (DS) mPD	Invert Level **(in)** (DS) mPD	Slope **(s)** Gradient 1 in	Culmulative Sewage Flow **(Q_d)** l/s	Catchment Inflow Factor **(P_{CIF})** [3]	Population **(CP)** [4]	Peak Factor **(PF)** [5]	Culmulative Sewage Flow **(Q_p)** l/s	Peak Flow with Swimming Pool and Public Toilet l/s	Pipe Full Flow **(Q_c)** Capacity l/s	Pipe Full Flow **(v)** Velocity m/s	Utilization %	Flow Capacity Check
Y/NE-KTS/15 (formerly A/NE-KTS/484), A/NE-KTS/506 (formerly Y/NE-KTS/12), Y/NE-KTS/14 and Y/NE-KTS/17, Eden Place, Valais, Village areas at north of Kam Hang Road at Kam Tsin, Casas Domingo, St Paul's House of Prayer	FMH1021544	FMH1021543	600	54.9	10.030	7.440	10.130	6.860	95	79.77	1	**25525**	4	319.07	356.43	571.4	2.02	62%	OK
Y/KTN/2	FMH1021543	FMH1021545	600	45.1	10.130	6.410	9.750	6.060	129	85.46	1	**27348**	4	341.85	382.71	489.7	1.73	78%	OK
[6]	FMH1021545	FMH1021546	750	44.9	9.750	5.960	9.230	5.870	499	85.46	1	**27348**	4	341.85	382.71	448.9	1.02	85%	OK
	FMH1021546	FMH1021547	650	39	9.230	5.850	8.790	5.670	217	85.46	1	**27348**	4	341.85	382.71	466.7	1.41	82%	OK
	FMH1021547	FMH1021548	600	24.8	8.790	5.670	8.420	5.020	38	85.46	1	**27348**	4	341.85	382.71	900.5	3.18	43%	OK
	FMH1021548	FMH1021549	600	8.1	8.420	5.000	8.330	4.830	48	85.46	1	**27348**	4	341.85	382.71	805.7	2.85	47%	OK
	FMH1021549	FMH1021550	600	44.9	8.330	4.830	8.110	4.480	128	85.46	1	**27348**	4	341.85	382.71	490.7	1.74	78%	OK
Yin Kong Village, Toilet	FMH1021550	FMH1021551	600	5.6	8.110	4.480[9]	8.080	4.480	- [10]	88.84	1	**28430**	4	355.38	423.04	- [10]	- [10]	- [10]	OK
[6]	FMH1021551	FMH1021552	750	31.1	8.080	4.470	7.930	4.370	311	88.84	1	**28430**	4	355.38	423.04	568.9	1.29	74%	OK
[6]	FMH1021552	FMH1021553	750	37.6	7.930	4.350	7.740	4.240	342	88.84	1	**28430**	4	355.38	423.04	542.6	1.23	78%	OK
[6]	FMH1021553	FMH1021554	750	50.3	7.740	4.230	7.450	4.060	296	88.84	1	**28430**	4	355.38	423.04	583.3	1.32	73%	OK
[6]	FMH1021554	FMH1021555	750	32.5	7.450	4.060	7.370	3.930	250	88.84	1	**28430**	4	355.38	423.04	634.7	1.44	67%	OK
[6]	FMH1021555	FMH1021556	750	33	7.370	3.930	7.340	3.840	367	88.84	1	**28430**	4	355.38	423.04	523.8	1.19	81%	OK
[6]	FMH1021556	FMH1021557	750	17.6	7.340	3.840	7.280	3.780	293	88.84	1	**28430**	4	355.38	423.04	585.8	1.33	72%	OK
[6]	FMH1021557	FMH1021558	750	9.3	7.280	3.780	7.190	3.750	310	88.84	1	**28430**	4	355.38	423.04	569.8	1.29	74%	OK
[7]	FMH1021558	FMH1021559	675	13.7	7.190	3.740	7.110	3.680	228	88.84	1	**28430**	4	355.38	423.04	502.4	1.40	84%	OK
[6]	FMH1021559	FMH1021560	750	13	7.110	3.680	7.030	3.650	433	88.84	1	**28430**	4	355.38	423.04	481.8	1.09	88%	OK
[6]	FMH1021560	FMH1021561	800	11.3	7.030	3.650	7.120	3.630	565	88.84	1	**28430**	4	355.38	423.04	500.4	1.00	85%	OK
Y/FSS/19, Golf Parkview [6]	FMH1021561	FMH1021562	800	13.3	7.120	3.630	7.340	3.600	443	98.67	1	**31574**	4	394.68	468.14	565.0	1.12	83%	OK
[6]	FMH1021562	FMH1021563	750	8.8	7.340	3.600	7.490	3.600	- [10]	98.67	1	**31574**	4	394.68	468.14	- [10]	- [10]	- [10]	-
[6]	FMH1021563	FMH1021564	750	13.4	7.490	3.600	7.510	3.530	191	98.67	1	**31574**	4	394.68	468.14	725.4	1.64	65%	OK
[6]	FMH1021564	FMH1021565	750	10.7	7.510	3.530	7.370	3.480	214	98.67	1	**31574**	4	394.68	468.14	686.1	1.55	68%	OK
[8]	FMH1021565	FMH1021566	900	7.3	7.370	3.470	7.380	3.460	730	98.67	1	**31574**	4	395.68	469.14	600.9	0.94	78%	OK
	FMH1021566	XPS1000860	600	9.9	7.380	3.450	7.380	3.450	- [10]	98.67	1	**31574**	4	395.68	469.14	- [10]	- [10]	- [10]	OK

Note:

[1] A conservative approach has been adopted, assuming that sewage discharge from the development will be discharged into the public sewage system.

[2] ks = 3mm is adopted for the "poor" condition of concrete slimed sewers. (Refer to Sewerage Manual - Key Planning Issues and Gravity Collection System by DSD, Table 5 : Recommended Roughness Values ks)

[3] Catchment Inflow factors, PCIF = 1 for North District. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-4 : Catchment Inflow Factors, PCIF)

[4] Contribution Population= Calculation total average flow (m3/day)/0.27 (m3/person/day), where the calculated total average flow Qaverage = Qd x PCIF. (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Section 12.1)

[5] The peaking factor of 8 is adopted, when population range is <1,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 6 is adopted, when population range is 1,000 - 5,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 5 is adopted, when population range is 5,000-10,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)
The peaking factor of 4 is adopted, when population range is 10,000-50,000 (including stormwater allowance). (Refer to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning by EPD, Table T-5 : Peaking Factors, P)

[6] Upgraded by A/NE-KTS/506

[7] Upgraded by others, refer to A/NE-KTS/565

[8] Upgraded by Y/FSS/19

[9] As there is no invert level of the outlet of FMH1021550, the invert level of the inlet and outlet are assumed to be the same level, i.e. inlet invert level of FMH1021550 and outlet invert level of FMH1021550 are at +4.480 mPD.

[10] Since the invert level (out) and the invert level (in) is the same for the pipe segments between manholes FMH1021550 and FMH1021551, FMH1021562 and FMH1021563, and FMH1021566 and XPS1000860 as referred to the DSD's drainage record pipes, zero slope is encountered, and the capacity, flow velocity and utilization for these segments cannot be determined and calculated. UU survey will be conducted at the detailed design stage for these pipe segments to review the actual invert levels of these concerned sewage pipes and determine the necessity of upgrading of these pipe segments in the future. An updated SIA will be submitted for DSD approval during the detailed design stage. Should any capacity shortfall be identified, the Project Proponent will propose and implement necessary upgrading works at their own cost to the DSD's satisfaction.

[11] P1 refers to the proposed terminal sewer illustrated in Figure 3.1 of the SIA Report. A nominal sewer gradient of 1:100 has been adopted for the preliminary design. The final invert levels of the proposed manhole will be confirmed and may be adjusted during the detailed design stage.

Meinhardt Infrastructure & Environment Ltd. 10/F Genesis 33-35 Wong Chuk Hang Road Hong Kong	Contract: Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories	Job Ref: -
	Subject: Sewerage Impact Assessment	Calc. Sheet No. -
	Drawing Ref. - / Calculations By AL	Date 10/14/2026

Sewerage Impact Assessment
Raising Main

Sewers Velocity Check

$$V = 4Q/\pi D^2$$

V = velocity (m/s)
Q = Flow(m3/s)
D = internal pipe diameter (m)

Assumption:

Proposed development	383.24	m^3/d	4.44	L/s
A/NE-KTS/460	2.22	m^3/d	0.03	L/s
A/NE-KTS/466	49	m^3/d	0.57	L/s
A/NE-KTS/525	45.8	m^3/d	0.53	L/s
A/NE-KTS/538	4.5	m^3/d	0.05	L/s
A/NE-KTS/541	2.22	m^3/d	0.03	L/s
HTVSPS Average Daily Fl	300	m^3/d	3.47	L/s
Sum	786.98	m^3/d	9.11	L/s

Q = Proposed + Planned Development + Existing daily flow

According to DSD Sewerage Manual, self cleansing for small diameter sewers of diameter less than 300mm can generally be achieved by ensuring either that a velocity of at least 0.7m/s. For sewers of diameter up to 900mm, it should be designed to achieve a self-cleansing velocity of 1.0m/s in full pipe condition.

Pipe Segment	Pipe	Sewage Flow	Velocity	Full Flow Velocity
	Diameter			If >0.7, OK
	mm	l/s	m/s	Check
FRD1002660	200	9.11	2.90	OK
FRD1005420	200	9.11	2.90	OK
FRD1005421	200	9.11	2.90	OK
FRD1005422	200	9.11	2.90	OK
FRD1002661	200	9.11	2.90	OK
FRD1002661	200	9.11	2.90	OK
FRD1005441	200	9.11	2.90	OK
FRD1005460	200	9.11	2.90	OK
FRD1005461	200	9.11	2.90	OK
FRD1005480	200	9.11	2.90	OK
FRD1002662	200	9.11	2.90	OK
FRD1002600	200	9.11	2.90	OK
FRD1002601	200	9.11	2.90	OK
FRD1002603	200	9.11	2.90	OK
FRD1002605	200	9.11	2.90	OK
FRD1002606	200	9.11	2.90	OK
FRD1002609	200	9.11	2.90	OK
FRD1002610	200	9.11	2.90	OK
FRD1002611	200	9.11	2.90	OK
FRD1002612	200	9.11	2.90	OK
FRD1002614	200	9.11	2.90	OK

Appendix D

Advice from DSD

Parisa Tsui, Ching Ching

From: Keith Qi LIU/MND/DSD <[redacted]>
Sent: Thursday, July 9, 2026 4:00 PM
To: Parisa Tsui, Ching Ching
Cc: Dorothy Tse, Uen Yung
Subject: Re: Enquiry on Installed Pump Rate – Hang Tau Sewage Pumping Station (Project Ref: A/NE-KTS/465-1)

Dear Parisa,

Please find the below information for your necessary reference.

The daily capacity of Hang Tau Sewage Pumping Station is **1970m3/day.**

Regards,
Keith LIU
E/N1
DSD
[redacted]

From: Parisa Tsui, Ching Ching <[redacted]>
Sent: Tuesday, July 7, 2026 11:31 AM
To: Keith Qi LIU/MND/DSD <[redacted]>
Cc: Dorothy Tse, Uen Yung <[redacted]>
Subject: [Internet]Enquiry on Installed Pump Rate – Hang Tau Sewage Pumping Station (Project Ref: A/NE-KTS/465-1)

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Dear Mr. Liu,

Thank you for your comment on the Sewerage Impact Assessment for our captioned project (A/NE-KTS/465-1).

In order to follow up on your comment, could you kindly provide the installed pump rate of the Hang Tau Sewage Pumping Station (HTSPS)?

We would appreciate your reply by 15 July 2025.

Should you require any further information, please feel free to contact me at [redacted] or Ms. Dorothy Tse at [redacted].

Best Regards,

Parisa Tsui
Environmental Consultant

MEINHARDT
www.meinhardt-china.com

www.meinhardtgroup.com

Meinhardt Infrastructure and Environment Ltd
10/F Genesis, 33-35 Wong Chuk Hang Road, Hong Kong

[redacted]



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Parisa Tsui, Ching Ching

From: David Tsz Wai LAW/ST1/DSD <[redacted]>
Sent: Monday, October 6, 2025 2:55 PM
To: Parisa Tsui, Ching Ching
Cc: Adi Lee, Yuk Ming; Dorothy Tse, Uen Yung; Sylar Tsui, Siu Wai
Subject: Re: [Internet]RE: Request for Information on Tsung Pak Long Sewage Pumping Station

Dear Parisa

Please find the below information:

Tsung Pak Long SPS
Design daily flow = 21,070 m^3
Average daily flow = 1,041 m^3
Maximum daily flow = 4,007 m^3

Thanks
Best Regards
David LAW

From: Parisa Tsui, Ching Ching <[redacted]>
Sent: Thursday, September 11, 2025 5:31 PM
To: David Tsz Wai LAW/ST1/DSD <[redacted]>
Cc: Adi Lee, Yuk Ming <[redacted]>; Dorothy Tse, Uen Yung <[redacted]>; Sylar Tsui, Siu Wai <[redacted]>
Subject: [Internet]RE: [Internet]RE: Request for Information on Tsung Pak Long Sewage Pumping Station

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forged.
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Dear Mr. Law,

Further to our phone conversation, we would like to request information on the Tsung Pak Long Sewage Pumping Station to address the EPD's comments on the Sewerage Impact Assessment report. Thank you.

Following are the details we would like to request:
1. Average daily flow (m^3)
2. Design daily flow (m^3)
3. Maximum daily flow (m^3)
4. Peak wet weather flow (m^3)

For your reference, the EPD's comments on the Sewerage Impact Assessment Report are as follows:
Table 4-2:
- Please update the flows for the existing and planned developments and revise SPS used capacity.

We would greatly appreciate your support in providing the above information. Please feel free to let us know if any further clarification is required.

Best Regards,
Parisa Tsui

From: David Tsz Wai LAW [redacted]
Sent: Wednesday, February 12, 2025 3:56 PM
To: Parisa Tsui, Ching Ching [redacted]
Subject: Re: [Internet]RE: Request for the Design Flow & Average Daily Flow for Hang Tau Sewage Pumping Station (no. XPS1001532)

Dear Ms. Tsui

Design flow remain unchanged. average daily flow is around 300m3.

From: "Parisa Tsui_Chin_Chin_" [redacted]
To: [redacted]
Cc: "Adi Lee, Yuk Ming" <[redacted]>, "Sylar Tsui, Siu Wai" <[redacted]>
Date: 12/02/2025 15:41
Subject: [Internet]RE: Request for the Design Flow & Average Daily Flow for Hang Tau Sewage Pumping Station (no. XPS1001532)
Serial No.:

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Dear Mr. Law,

Since the original email of information obtain cannot be found, the attachment has been extracted from the Appendix E of SIA report (Application No. Y/NE-KTS/13, "Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in “CDA” Zone, Hang Tau Tai Po, Kwu Tung South, New Territories").

I apologize for the inconvenience caused by the missing original email.

If you have any further queries, please kindly contact the undersigned at 2859 5652. Thank you.

Best Regards,
Parisa Tsui
From: Parisa Tsui, Ching Ching
Sent: Wednesday, February 12, 2025 2:56 PM
To: [redacted]
Cc: Adi Lee, Yuk Ming <[redacted]>; Sylar Tsui, Siu Wai <[redacted]>
Subject: Request for the Design Flow & Average Daily Flow for Hang Tau Sewage Pumping Station (no. XPS1001532)

Dear Mr. Law,

We are the Environmental Consultant on behalf of Fonnie Holdings Limited, conducting the drainage and sewage impact assessment for Section 16 application of the Town Planning Ordinance for the at the various lots in D.D.92 and D.D.94 and the adjoining Government land in Hang Tau Tai Po, Kwu Tung.

Based on the SIA report (Application No. Y/NE-KTS/13, "Proposed Amendments to the Kwu Tung South Outline Zoning Plan for Residential Development at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in “CDA” Zone, Hang Tau Tai Po, Kwu Tung South, New Territories"), the Average Daily Water Flow (ADWF) for the Hang Tau Sewage Pumping Station (HTSPS) (no. XPS1001532) is 430m3 in 2020, and the Design daily flow is 1970m3, as provided by DSD. We would like to confirm whether these value are still current or if there have been any updates.

Attached please find the project location and the authorization letter.

If you have any further queries, please kindly contact the undersigned at [redacted]. Thank you.
Best Regards,

Parisa Tsui
Environmental Consultant

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Meinhardt Infrastructure and Environment Ltd
10/F Genesis, 33-35 Wong Chuk Hang Road, Hong Kong

[redacted]

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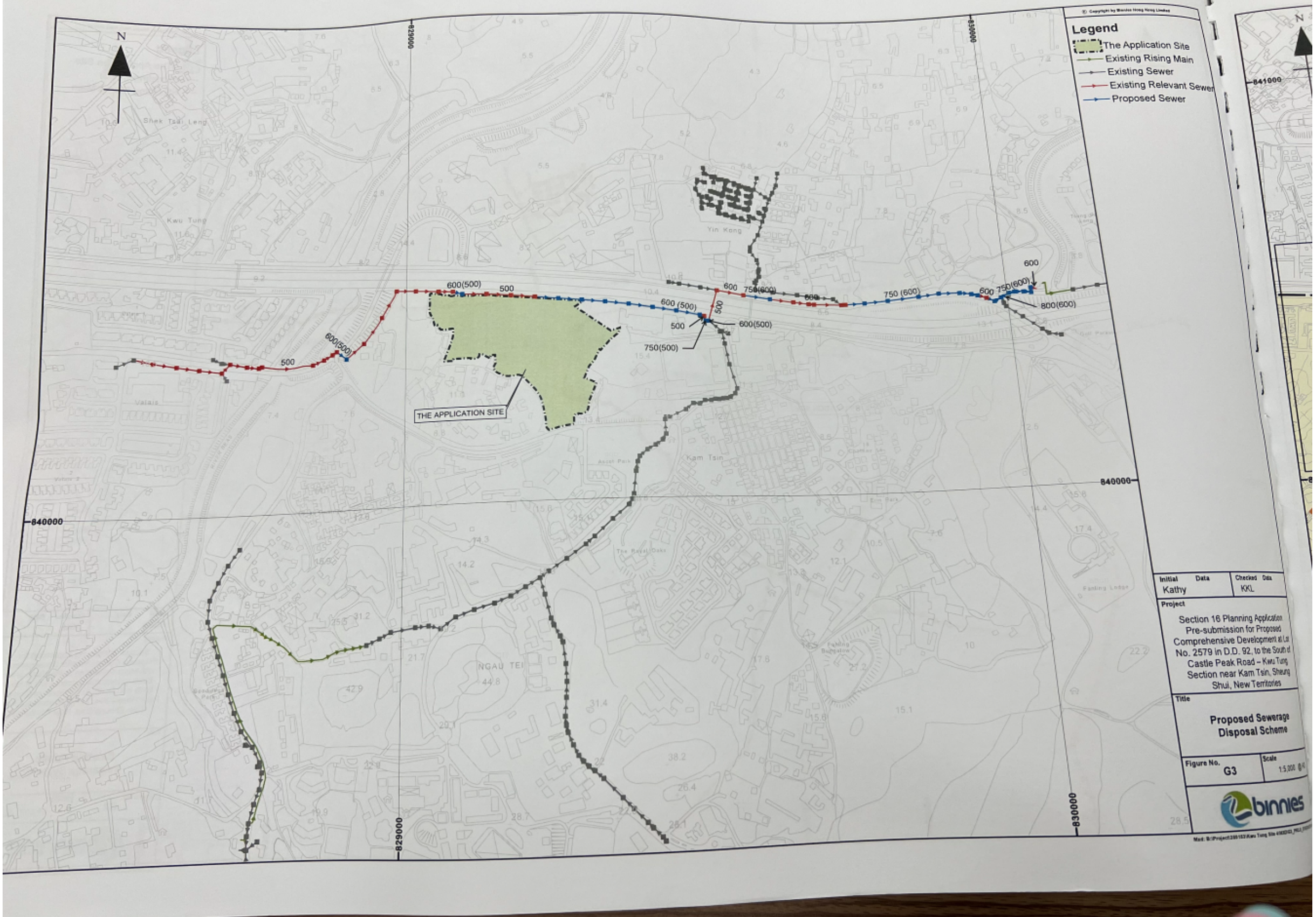
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Appendix E

Extraction of SIA Reports of Sewer Upgrading Works from Other Planned Developments

A/NE-KTS/506


N
Legend
The Application Site
Existing Rising Main
Existing Sewer
Existing Relevant Sewer
Proposed Sewer
THE APPLICATION SITE
600(500)
500
600 (500)
750(500)
600
750 (600)
800(600)
Shek Tsai Leng
Kwu Tung
Yin Kong
Valais
Ascot Park
Kam Tsin
The Royal Oaks
Fanling Bungalow
Golf Park
NGAU TEI
829000
830000
840000
841000
Initial Data
Kathy
Checked Data
KKL
Project
Section 16 Planning Application
Pre-submission for Proposed
Comprehensive Development at Lot
No. 2579 in D.D. 92, to the South of
Castle Peak Road – Kwu Tung
Section near Kam Tsin, Sheung
Shui, New Territories
Title
Proposed Sewerage
Disposal Scheme
Figure No.
G3
Scale
1:5,000 @ A
binnies

Annex G2 Design Checking of Existing Sewer at Proposed Sewage Disposal Scheme (With Proposed and Planned Development)

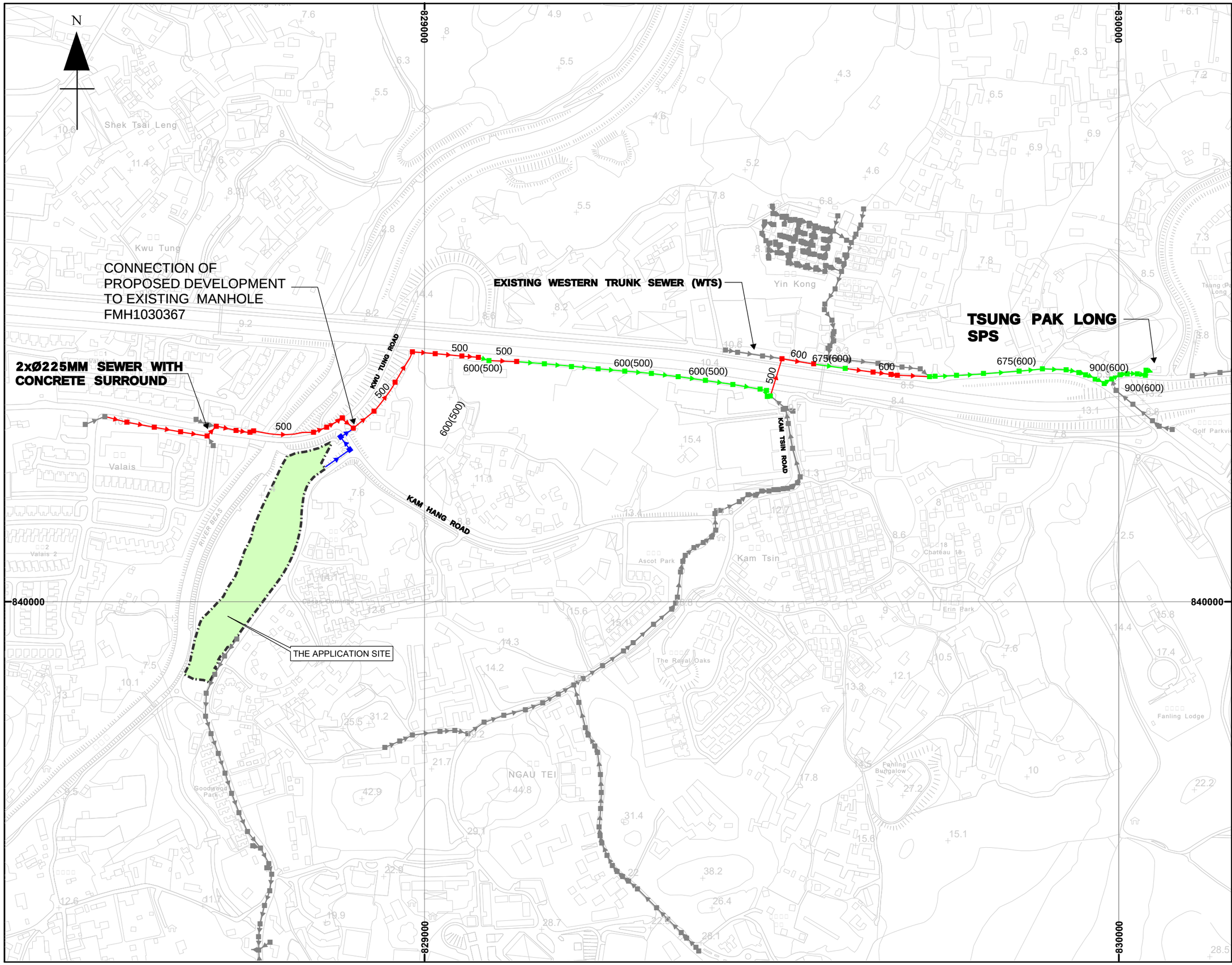
Note:

1) Colebrook-White's equation is adopted for full-bore pipe velocity calculation.
2) Backwash Flowrate generated by swimming pool from developments, if any, has been included in the Design Peak Flowrate.
3) Upgraded pipes are highlighted in yellow colour.

Pipe	Feature Number	Diameter (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Pipe Length (m)	Gradient (1 in)	Roughness (mm)	No. of Pipes	Catchment No.	ADWF (m^3/s)	Contributing Population	Peak Factor	Design Peak Flowrate (m^3/s)	Full Bore Velocity (m/s)	Full Bore Capacity (m^3/s)	Utilization (%)
FMH1030348 to FMH1030349	FWD1035235	500	9.82	9.74	31.073	388	3.00	1	1	0.0001	34	8	0.0009	0.884	0.174	0.5%
FMH1030349 to FMH1030350	FWD1035236	500	9.73	9.65	38.527	482	3.00	1	1	0.0001	34	8	0.0009	0.794	0.156	0.5%
FMH1030350 to FMH1030353	FWD1035239	500	9.64	9.56	36.929	462	3.00	1	1	0.0001	34	8	0.0009	0.811	0.159	0.5%
FMH1030353 to FMH1030355	FWD1035241	500	9.55	9.48	36.643	523	3.00	1	1	0.0001	34	8	0.0009	0.761	0.149	0.6%
FMH1030355 to FMH1030358	FMD1001500	225	9.47	9.37	20.261	203	3.00	2	1	0.0001	34	8	0.0009	0.719	0.057	1.5%
FMH1030358 to FMH1030359	FWD1035246	500	9.36	9.28	27.515	344	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.940	0.185	14.9%
FMH1030359 to FMH1030360	FWD1035247	500	9.27	9.24	18.546	618	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.700	0.137	19.9%
FMH1030360 to FMH1030361	FWD1035248	500	9.23	9.22	3.922	392	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.880	0.173	15.9%
FMH1030361 to FMH1030362	FWD1035250	500	9.21	9.02	85.318	449	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.822	0.161	17.0%
FMH1030362 to FMH1030363	FWD1035252	500	9.01	8.98	18.564	619	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.700	0.137	19.9%
FMH1030363 to FMH1030364	FWD1035253	500	8.97	8.94	14.778	493	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.785	0.154	17.8%
FMH1030364 to FMH1030366	FWD1035255	500	8.93	8.92	6.916	692	3.00	1	1, 2	0.0046	1,462	6	0.0274	0.662	0.130	58.9%
FMH1030366 to FMH1030367	FWD1035254	600 (500)	8.92	8.91	20.534	2053	3.00	1	1, 2, 3	0.0127	4,069	6	0.0765	0.432	0.122	62.6% *
FMH1030367 to FMH1030369	FWD1035256	500	8.90	8.82	36.527	457	3.00	1	1, 2, 3	0.0127	4,069	6	0.0765	0.815	0.160	81.5%
FMH1030369 to FMH1030371	FWD1035257	500	8.81	8.71	50.279	503	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.777	0.153	85.6%
FMH1030371 to FMH1030373	FWD1035260	500	8.70	8.60	48.777	488	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.789	0.155	84.3%
FMH1030373 to FMH1030374	FWD1035261	500	8.59	8.53	31.310	522	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.762	0.150	87.2%
FMH1030374 to FMH1030375	FWD1035262	500	8.52	8.44	37.021	463	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.810	0.159	82.1%
FMH1030375 to FMH1030380	FWD1035280	500	8.43	8.37	22.322	372	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.903	0.177	73.6%
FMH1030380 to FMH1030381	FWD1035281	600 (500)	8.36	8.34	14.130	707	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.738	0.209	62.5%
FMH1030381 to FMH1030382	FWD1035282	500	8.33	8.26	38.068	544	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.747	0.147	89.0%
FMH1030382 to FMH1030383	FWD1035283	500	8.25	8.18	38.457	549	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.743	0.146	89.5%
FMH1030383 to FMH1030384	FWD1035284	500	8.17	8.09	37.336	467	3.00	1	1, 2, 3, B	0.0261	8,339	5	0.1305	0.806	0.158	82.4%
FMH1030384 to FMH1030385	FWD1035285	600 (500)	8.08	8.01	37.173	531	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.852	0.241	85.6%
FMH1030385 to FMH1030386	FWD1035286	600 (500)	8.00	7.92	37.690	471	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.904	0.256	80.6%
FMH1030386 to FMH1030387	FWD1035287	600 (500)	7.91	7.84	37.538	536	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.848	0.240	86.0%
FMH1030387 to FMH1030388	FWD1035288	600 (500)	7.83	7.76	37.842	541	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.844	0.239	86.3%
FMH1030388 to FMH1030389	FWD1035289	600 (500)	7.75	7.67	38.940	487	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.890	0.252	81.9%
FMH1030389 to FMH1030390	FWD1035290	600 (500)	7.66	7.58	38.925	487	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.890	0.252	81.9%
FMH1030390 to FMH1030391	FWD1035291	600 (500)	7.57	7.49	38.958	487	3.00	1	1, 2, 3, B, F	0.0494	-	-	-	-	-	-
FMH1030391 to FMH1030392	FWD1035292	500	7.48	7.48	6.302	-	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.810	0.358	57.6%
FMH1030392 to FMH1030393	FWD1035293	750 (500)	7.47	7.46	7.846	785	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.967	0.273	75.4%
FMH1030393 to FMH1021544	FWD1035294	600 (500)	7.45	7.44	4.123	412	3.00	1	1, 2, 3, B, F	0.0494	15,807	4	0.2061	0.844	0.239	86.3%
FMH1021544 to FMH1021543	FWD1022560	500	7.44	6.86	54.856	95	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0757	24,211	4	0.3111	1.794	0.352	88.3%
FMH1021543 to FMH1021545	FWD1022564	600	6.41	6.06	45.093	129	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.732	0.490	69.1%
FMH1021545 to FMH1021546	FWD1022565	750 (600)	5.96	5.87	44.902	499	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.016	0.449	75.4%
FMH1021546 to FMH1021547	FWD1022566	600	5.85	5.67	39.000	217	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.335	0.377	89.7%
FMH1021547 to FMH1021548	FWD1022567	600	5.67	5.02	24.832	38	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	3.183	0.900	37.6%
FMH1021548 to FMH1021549	FWD1022568	600	5.00	4.83	8.088	48	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	2.852	0.806	42.0%
FMH1021549 to FMH1021550	FWD1022569	600	4.83	4.48	44.891	128	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.736	0.491	69.0%
FMH1021550 to FMH1021551	FWD1022570	600	0.00	4.48	5.633	-	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	-	-	-	-	-	-
FMH1021551 to FMH1021552	FWD1022571	750 (600)	4.47	4.37	31.087	311	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.288	0.569	59.5%
FMH1021552 to FMH1021553	FWD1022572	750 (600)	4.35	4.24	37.583	342	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.228	0.543	62.4%
FMH1021553 to FMH1021554	FWD1022573	750 (600)	4.23	4.06	50.307	296	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.320	0.583	58.0%
FMH1021554 to FMH1021555	FWD1022574	750 (600)	4.06	3.93	32.485	250	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.437	0.635	53.3%
FMH1021555 to FMH1021556	FWD1022575	750 (600)	3.93	3.84	32.982	366	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.186	0.524	64.6%
FMH1021556 to FMH1021557	FWD1022576	750 (600)	3.84	3.78	17.605	293	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.326	0.586	57.8%
FMH1021557 to FMH1021558	FWD1022577	750 (600)	3.78	3.75	9.245	308	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.294	0.572	59.2%
FMH1021558 to FMH1021559	FWD1022578	600	3.74	3.68	13.719	229	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.299	0.367	92.1%
FMH1021559 to FMH1021560	FWD1022579	750 (600)	3.68	3.65	12.954	432	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	1.092	0.483	70.1%
FMH1021560 to FMH1021561	FWD1022580	750 (600)	3.65	3.63	11.251	563	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	0.957	0.423	80.1%
FMH1021561 to FMH1021562	FWD1022581	800 (600)	3.63	3.60	13.323	444	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 9, 10, 11	0.0825	26,403	4	0.3385	0.957	0.423	80.1%
FMH1021562 to FMH1021563	FWD1022583	750 (600)	3.60	3.60	8.798	157	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1156	37,004	4	0.4711	1.123	0.565	83.4%
FMH1021563 to FMH1021564	FWD1022584	750 (600)	3.60	3.53	13.370	191	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1156	37,004	4	0.4711	1.812	0.800	58.9%
FMH1021564 to FMH1021565	FWD1022585	750 (600)	3.53	3.48	10.724	214	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1156	37,004	4	0.4711	1.644	0.726	64.9%
FMH1021565 to FMH1021566	FWD1022587	750 (600)	3.47	3.46	7.247	362	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1156	37,004	4	0.4711	1.551	0.685	68.7%
FMH1021566 to XPS1000860	FWD1022588	600	3.45	-	9.858	-	3.00	1	1, 2, 3, B, F, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1156	-	-	-	-	-	-

* The segment of sewer is located at the upstream of the Application Site. Thus, the proposed sewer upgrading works in this submission is for indicative purpose only and is to be implemented by developers of proposed developments in the upstream .

A/NE-KTS/565



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Legend

- The Application Site
- Existing Rising Main
- Existing Sewer
- Existing Sewer
- Proposed Sewer By Developer
- Proposed Sewer Upgrading By Others
- Proposed Manhole By Developer

Initial Data	Checked Data
Kathy	KKL

Project

Section 16 Planning Application for Proposed Residential Development with Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A, 1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP(Part), 1045, 1047, 2233 (Part), 2251 S.A RP,2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories

Title

Proposed Sewerage Disposal Scheme

Figure No.	Scale
KT3/SIA/003	1:5,000 @ A3

Plot date: 2021-10-27

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Annex B - Hydraulic Capacity Check of Existing Sewerage Pipe at Proposed Disposal Scheme (With Existing Development, Planned Development and Proposed Development)

Note:
1) Colebrook-White's equation is adopted for full-bore pipe velocity calculation.
2) Proposed upgrading pipes by others are highlighted in green colour.
3) Catchment No. F1 and F2 denoted as the two proposed sewage discharge points in Kwu Tung Site 4 respectively.
4) The existing pipes are Vitrified Clayware with a normal condition of slimed sewers. Roughness is assumed to be 1.5mm.

Pipe	Feature Number	Diameter (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Pipe Length (m)	Gradient (1 in)	Roughness (mm)	No. of Pipes	Catchment No.	ADWF (m^3/s)	Contributing Population	Peak Factor	Design Peak Flowrate (m^3/s)	Full Bore Velocity (m/s)	Full Bore Capacity (m^3/s)	Utilization (%)
FMH1030348 to FMH1030349	FWD1035235	500	9.82	9.74	31.073	388	1.50	1	1	0.0001	34	8	0.001	0.977	0.192	0.4%
FMH1030349 to FMH1030350	FWD1035236	500	9.73	9.65	38.527	482	1.50	1	1	0.0001	34	8	0.001	0.877	0.172	0.5%
FMH1030350 to FMH1030353	FWD1035239	500	9.64	9.56	36.929	462	1.50	1	1	0.0001	34	8	0.001	0.896	0.176	0.5%
FMH1030353 to FMH1030355	FWD1035241	500	9.55	9.48	36.643	523	1.50	1	1	0.0001	34	8	0.001	0.841	0.165	0.5%
FMH1030355 to FMH1030358	FMD1001500	225	9.47	9.37	20.261	203	1.50	2	1	0.0001	34	8	0.001	0.805	0.064	1.3%
FMH1030358 to FMH1030359	FWD1035246	500	9.36	9.28	27.515	344	1.50	1	1, 2	0.0046	1,462	6	0.027	1.039	0.204	13.4%
FMH1030359 to FMH1030360	FWD1035247	500	9.27	9.24	18.546	618	1.50	1	1, 2	0.0046	1,462	6	0.027	0.774	0.152	18.1%
FMH1030360 to FMH1030361	FWD1035248	500	9.23	9.22	3.922	392	1.50	1	1, 2	0.0046	1,462	6	0.027	0.973	0.191	14.4%
FMH1030361 to FMH1030362	FWD1035250	500	9.21	9.02	85.318	449	1.50	1	1, 2	0.0046	1,462	6	0.027	0.908	0.178	15.4%
FMH1030362 to FMH1030363	FWD1035252	500	9.01	8.98	18.564	619	1.50	1	1, 2	0.0046	1,462	6	0.027	0.773	0.152	18.1%
FMH1030363 to FMH1030364	FWD1035253	500	8.97	8.94	14.778	493	1.50	1	1, 2	0.0046	1,462	6	0.027	0.867	0.170	16.1%
FMH1030364 to FMH1030366	FWD1035255	500	8.93	8.93	6.916	-	1.50	1	1, 2	0.0046	-	-	-	-	-	-
FMH1030366 to FMH1030367	FWD1035254	500	8.92	8.91	20.534	2053	0.60	1	1, 2	0.0046	1,462	6	0.027	0.470	0.092	29.7%
FMH1030367 to FMH1030369	FWD1035256	500	8.90	8.82	36.527	457	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.901	0.177	81.2%
FMH1030369 to FMH1030371	FWD1035257	500	8.81	8.71	50.279	503	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.858	0.169	85.3%
FMH1030371 to FMH1030373	FWD1035260	500	8.70	8.60	48.777	488	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.871	0.171	84.0%
FMH1030373 to FMH1030374	FWD1035261	500	8.59	8.53	31.310	522	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.842	0.165	86.9%
FMH1030374 to FMH1030375	FWD1035262	500	8.52	8.44	37.021	463	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.895	0.176	81.8%
FMH1030375 to FMH1030380	FWD1035280	500	8.43	8.37	22.322	372	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.999	0.196	73.3%
FMH1030380 to FMH1030381	FWD1035281	600 (500)	8.36	8.34	14.130	707	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.813	0.230	62.5%
FMH1030381 to FMH1030382	FWD1035282	500	8.33	8.26	38.068	544	1.50	1	1, 2, B, 3	0.0271	8,666	5	0.144	0.825	0.162	88.7%
FMH1030382 to FMH1030383	FWD1035283	600 (500)	8.25	8.18	38.457	549	1.50	1	1, 2, F1, B, 3	0.0363	11,629	4	0.154	0.923	0.261	58.9%
FMH1030383 to FMH1030384	FWD1035284	600 (500)	8.17	8.09	37.336	467	1.50	1	1, 2, F1, B, 3	0.0363	11,629	4	0.154	1.002	0.283	54.3%
FMH1030384 to FMH1030385	FWD1035285	600 (500)	8.08	8.01	37.173	531	1.50	1	1, 2, F1, B, 3	0.0363	11,629	4	0.154	0.939	0.265	57.9%
FMH1030385 to FMH1030386	FWD1035286	600 (500)	8.00	7.92	37.690	471	1.50	1	1, 2, F1, B, 3	0.0363	11,629	4	0.154	0.997	0.282	54.5%
FMH1030386 to FMH1030387	FWD1035287	600 (500)	7.91	7.84	37.538	536	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.934	0.264	85.3%
FMH1030387 to FMH1030388	FWD1035288	600 (500)	7.83	7.76	37.842	541	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.930	0.263	85.6%
FMH1030388 to FMH1030389	FWD1035289	600 (500)	7.75	7.67	38.940	487	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.981	0.277	81.2%
FMH1030389 to FMH1030390	FWD1035290	600 (500)	7.66	7.58	38.925	487	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.981	0.277	81.2%
FMH1030390 to FMH1030391	FWD1035291	600 (500)	7.57	7.49	38.958	487	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.981	0.277	81.2%
FMH1030391 to FMH1030392	FWD1035292	600 (500)	7.48	7.48	6.302	-	1.50	1	1, 2, F1, F2, B, 3	0.0522	-	-	-	-	-	-
FMH1030392 to FMH1030393	FWD1035293	675 (500)	7.47	7.46	7.846	785	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	0.832	0.298	75.7%
FMH1030393 to FMH1021544	FWD1035294	600 (500)	7.45	7.44	4.123	412	1.50	1	1, 2, F1, F2, B, 3	0.0522	16,690	4	0.225	1.066	0.301	74.7%
FMH1021544 to FMH1021543	FWD1022560	500	7.44	6.86	54.856	95	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 9, 10, 11	0.0789	25,260	4	0.332	1.986	0.390	85.2%
FMH1021543 to FMH1021545	FWD1022564	600	6.41	6.06	45.093	129	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.911	0.540	66.6%
FMH1021545 to FMH1021546	FWD1022565	700 (600)	5.96	5.87	44.902	499	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.069	0.411	87.5%
FMH1021546 to FMH1021547	FWD1022566	600	5.85	5.67	39.000	217	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.473	0.416	86.4%
FMH1021547 to FMH1021548	FWD1022567	600	5.67	5.02	24.832	38	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	3.514	0.994	36.2%
FMH1021548 to FMH1021549	FWD1022568	600	5.00	4.83	8.088	48	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	3.149	0.890	40.4%
FMH1021549 to FMH1021550	FWD1022569	600	4.83	4.48	44.891	128	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.916	0.542	66.4%
FMH1021550 to FMH1021551	FWD1022570	675 (600)	0.00	4.48	5.633	-	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	-	-	-	-	-	-
FMH1021551 to FMH1021552	FWD1022571	675 (600)	4.47	4.37	31.087	311	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.325	0.474	75.9%
FMH1021552 to FMH1021553	FWD1022572	675 (600)	4.35	4.24	37.583	342	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.263	0.452	79.6%
FMH1021553 to FMH1021554	FWD1022573	675 (600)	4.23	4.06	50.307	296	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.358	0.486	74.0%
FMH1021554 to FMH1021555	FWD1022574	675 (600)	4.06	3.93	32.485	250	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.478	0.529	68.0%
FMH1021555 to FMH1021556	FWD1022575	675 (600)	3.93	3.84	32.982	366	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.219	0.436	82.4%
FMH1021556 to FMH1021557	FWD1022576	675 (600)	3.84	3.78	17.605	293	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.363	0.488	73.7%
FMH1021557 to FMH1021558	FWD1022577	675 (600)	3.78	3.75	9.245	308	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.330	0.476	75.6%
FMH1021558 to FMH1021559	FWD1022578	675 (600)	3.74	3.68	13.719	229	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.545	0.553	65.1%
FMH1021559 to FMH1021560	FWD1022579	900 (600)	3.68	3.65	12.954	432	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.348	0.858	41.9%
FMH1021560 to FMH1021561	FWD1022580	900 (600)	3.65	3.63	11.251	563	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 9, 10, 11	0.0858	27,452	4	0.360	1.180	0.751	47.9%
FMH1021561 to FMH1021562	FWD1022581	900 (600)	3.63	3.60	13.323	444	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	41,904	4	0.540	1.329	0.846	63.9%
FMH1021562 to FMH1021563	FWD1022583	900 (600)	3.60	3.60	8.798	-	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	-	-	-	-	-	-
FMH1021563 to FMH1021564	FWD1022584	900 (600)	3.60	3.53	13.370	191	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	41,904	4	0.540	2.030	1.291	41.9%
FMH1021564 to FMH1021565	FWD1022585	900 (600)	3.53	3.48	10.724	214	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	41,904	4	0.540	1.915	1.218	44.4%
FMH1021565 to FMH1021566	FWD1022587	900 (600)	3.48	3.46	7.247	362	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	41,904	4	0.540	1.472	0.937	57.7%
FMH1021566 to XPS1000860	FWD1022588	900 (600)	3.45	-	9.858	-	1.50	1	1, 2, F1, F2, B, 3, C, 5, 6, 7, E, 8, A, 9, 10, 11, 12	0.1310	-	-	-	-	-	-

Y/FSS/19

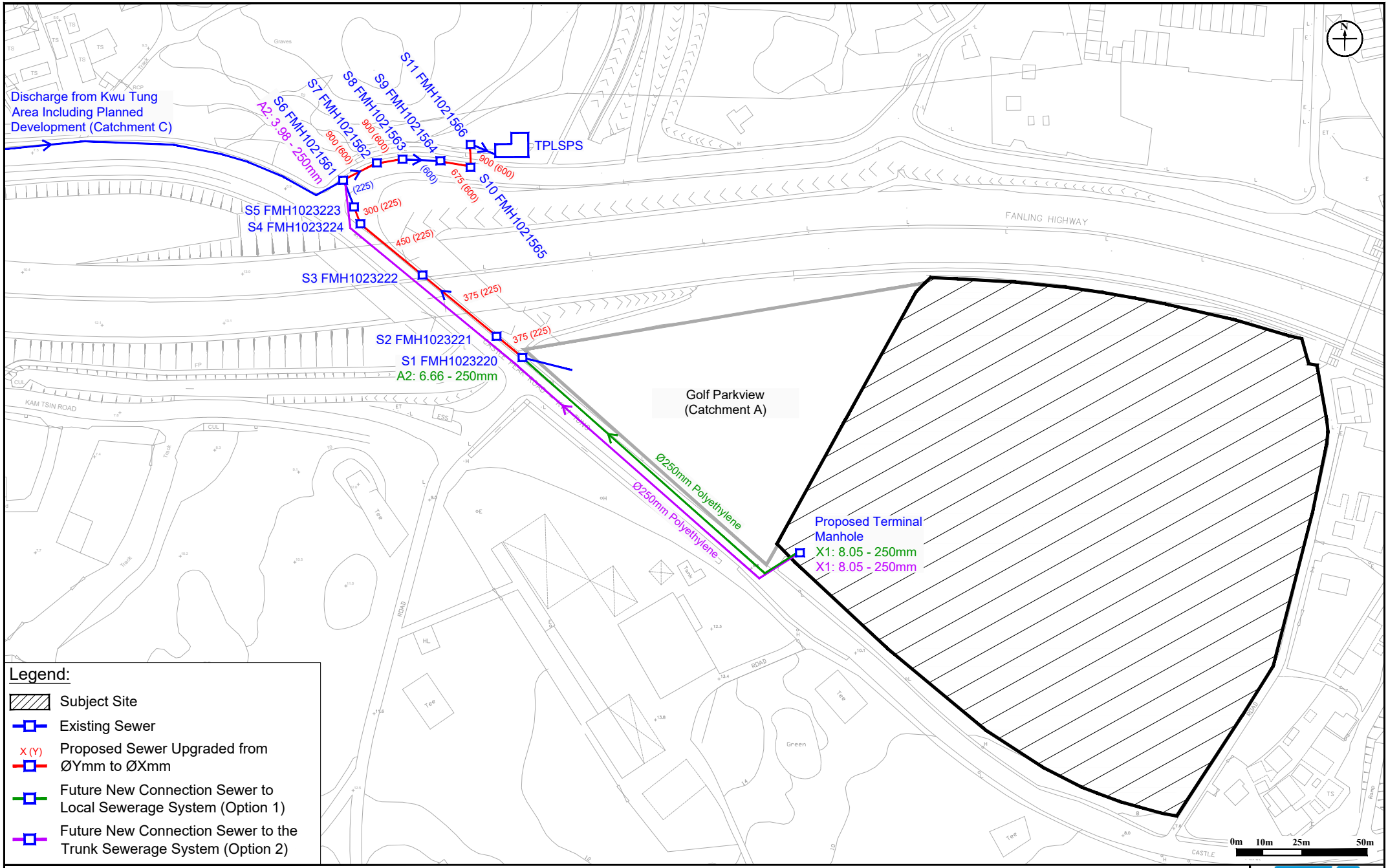


Figure: 2

Title: Existing and Future Sewerage Arrangement

Project: Proposed Residential Development at Tsung Pak Long at Lot SSL 2RP in DD92, Sheung Shui

RAMBOLL

Drawn by:	LC
Checked by:	CC
Rev.:	2.0
Date:	Dec 2021

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Table 2a Hydraulic Capacity of Existing Sewers at Castle Peak Road-Kwu Tung, Shueng Shui

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S1-S2	FMH1023220	FMH1023221	225	11.2	6.53	6.30	9.81	0.00060	0.020	0.000001	1.88	0.04	0.07	75
S2-S3	FMH1023221	FMH1023222	225	35.2	6.30	5.54	9.81	0.00060	0.022	0.000001	1.93	0.04	0.08	77
S3-S4	FMH1023222	FMH1023224	225	29.1	5.54	5.34	9.81	0.00220	0.007	0.000001	0.89	0.04	0.04	36
S4-S5	FMH1023224	FMH1023223	225	5.1	5.34	5.18	9.81	0.00060	0.031	0.000001	2.32	0.04	0.09	92
S5-S6	FMH1023223	FMH1021561	225	9.2	5.18	3.61	9.81	0.00060	0.170	0.000001	5.43	0.04	0.22	216
S6-S7	FMH1021561	FMH1021562	600	12.9	3.63	3.60	9.81	0.00300	0.001	0.000001	0.74	0.28	0.21	208
S7-S8	FMH1021562	FMH1021563	600	8.4	3.60	3.60	9.81	0.00300	0.001	0.000001	0.74	0.28	0.21	208
S8-S9	FMH1021563	FMH1021564	600	12.9	3.60	3.53	9.81	0.00060	0.005	0.000001	1.79	0.28	0.51	506
S9-S10	FMH1021564	FMH1021565	600	10.3	3.53	3.48	9.81	0.00060	0.005	0.000001	1.69	0.28	0.48	478
S10-S11	FMH1021565	FMH1021566	600	7.1	3.47	3.46	9.81	0.00300	0.001	0.000001	0.74	0.28	0.21	208

Table 2b Hydraulic Capacity of Existing Sewers at Castle Peak Road-Kwu Tung, Shueng Shui (After Upgrading)

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S1-S2	FMH1023220	FMH1023221	375	11.2	6.53	6.30	9.81	0.00060	0.020	0.000001	2.60	0.11	0.29	287
S2-S3	FMH1023221	FMH1023222	375	35.2	6.30	5.54	9.81	0.00060	0.022	0.000001	2.67	0.11	0.29	295
S3-S4	FMH1023222	FMH1023224	450	29.1	5.54	5.34	9.81	0.00060	0.007	0.000001	1.68	0.16	0.27	268
S4-S5	FMH1023224	FMH1023223	300	5.1	5.34	5.18	9.81	0.00060	0.031	0.000001	2.79	0.07	0.20	197
S5-S6	FMH1023223	FMH1021561	225	9.2	5.18	3.61	9.81	0.00060	0.170	0.000001	5.43	0.04	0.22	216
S6-S7	FMH1021561	FMH1021562	900	12.9	3.63	3.60	9.81	0.00140	0.001	0.000001	1.06	0.64	0.67	674
S7-S8	FMH1021562	FMH1021563	900	8.4	3.60	3.60	9.81	0.00140	0.001	0.000001	1.06	0.64	0.67	674
S8-S9	FMH1021563	FMH1021564	600	12.9	3.60	3.53	9.81	0.00060	0.005	0.000001	1.79	0.28	0.51	506
S9-S10	FMH1021564	FMH1021565	675	10.3	3.53	3.48	9.81	0.00060	0.005	0.000001	1.82	0.36	0.65	651
S10-S11	FMH1021565	FMH1021566	900	7.1	3.47	3.46	9.81	0.00140	0.001	0.000001	1.06	0.64	0.67	673

Table 2c Hydraulic Capacity of Proposed Sewers from the Terminal Manhole of the Proposed Development for Sewage generated from the Proposed Development (Option 1)

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
T1-S1	-	FMH1023220	250	135.1	8.05	6.66	9.81	0.00030	0.010	0.000001	1.54	0.05	0.08	76

Table 2d Hydraulic Capacity of Proposed Sewers from the Terminal Manhole of the Proposed Development for Sewage generated from the Proposed Development (Option 2)

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
T1-S6	-	FMH1021561	250	239.2	8.05	3.98	9.81	0.00030	0.017	0.000001	1.99	0.05	0.10	98

Notes: (1) T1 is the proposed terminal manhole as shown in Figure 2 of the SIA report. Nominal assumption of 1 in 100 gradient is applied for the proposed sewer. The exact invert levels of the proposed manhole is subject to change during detailed design stage.
(2) According to DSD Drainage Records, invert level 1 and 2 of S7-S8 are the same. Therefore, the gradient of S6-S8 is estimated by its overall gradient.

Remarks: (1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity
(2) Table 2a: The value of k_s = 3.0-0.6mm is used for the calculation of slimed clayware sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)
(3) Table 2c&d: The value of k_s = 1.5-0.3mm is used for the calculation of slimed polyethelyene for the proposed sewers, poor condition (based on Table 5: Recommended roughness values in Sewerag
(4) Table 2: The value of k_s is interpolated for pipe velocities between 0.75 m/s and 1.2 m/s.
(5) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)
(6) Equation used: $$V=-\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

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Appendix 6

Landscape Master Plan

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Landscape Master Plan

9th October 2026

Prepared By:

SCENIC Landscape Studio Limited

Project Title	S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South.
Report Title	**Landscape Master Plan**

Revision	Date	Complied by:	Checked by:	Approved by:	Description
-	20250528	Various	J Charters	Chris Foot	Draft to Client
A	20250617	Various	J Charters	Chris Foot	Draft to Client
B	20250901	Various	J Charters	Chris Foot	Draft to Client
C	20251022	Various	J Charters	Chris Foot	Draft to Client
D	20260126	Various	J Charters	Chris Foot	Final to Client
E	20260227	Various	J Charters	Chris Foot	Revision
F	20260303	Various	J Charters	Chris Foot	Revision
G	20260630	Various	J Charters	Chris Foot	Revision
H	20261009	Various	J Charters	Chris Foot	Revision

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1.0 Introduction

1.1 SCENIC Landscape Studio Limited have been commissioned to undertake the Landscape Master Plan for a S16 planning application for S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories (hereafter referred to as the Application Site).

1.2 A Section 12A planning application (Application No. Y/NE-KTS/13) for Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories was approved by Town Planning Board (TPB) at their meeting on 10th December 2021. The current application outlines development of this indicative scheme proposal, including a further relaxation of BH restrictions and increases to Plot Ratio and GFA of around 20%.

1.3 This report seeks to present the landscape design proposal. It will outline the landscape design objectives and landscape treatment for each component of the proposed Development Site. This report has been prepared in accordance with Buildings Department, Lands Department and Planning Department Joint Practice Note No. 3 concerning the Re-engineering of Approval Process for Land and Building Developments and adheres to the requirements of Buildings Department Practice Notes PNAP APP-152 Sustainable Building Design Guidelines for the calculation of the green coverage.

1.4 The Landscape Master Plan is presented as **Figures 5.1** and sections through the landscape as **Figures 5.2** to **5.3**.

2.0 Existing Site Description and Existing Trees

2.1 The site, with an area of 17,990.9 m^2, is located to the western side of Hang Tau Road, and to the north-west of the village of Hang Tau Tai Po. The site is an irregular shape, bounded by Hang Tau Road to the east, an existing access road to the north and existing low-density village and storage type uses along the other boundaries. The site is relatively level, sloping gently up from +12.4mPD in the north to +13.3mPD in the south and +12.20mPD on the eastern side adjacent to Hang Tau Road.

2.2 A total of 4 tree groups containing approx. 37 nos. existing trees were identified within the Application boundary. Most of the trees are growing around the edge of the site area. The trees generally comprise common fruit trees and amenity species, with some weed trees and native trees also present.

2.3 The Broad-brush Tree survey was undertaken in April 2025. **Appendix A** - Tree Treatment Schedule provides an identification of numbers of tree species within each group, an indication of their condition and recommendations for the treatment of the trees and **Appendix B** –Photographic Record of existing Tree Groups provides a visual reference of the surveyed trees.

2.4 There are no trees surveyed which meet the requirements for a potential Old and Valuable Trees (OVT) (Development Bureau Technical Circular (Works) No. 5/2020 Registration and Preservation of Old and Valuable Trees). No Champion Trees (identified in book 'Champion Trees in Urban Hong Kong') were found to exist on site.

3.0 Description of the Proposed Scheme

3.1 Under the current application, the proposed residential development consists of 4 nos. of residential towers, an ancillary and aboveground car park clubhouse at the central area of the site, a one-storey shop development at the eastern corner of the site and a four-storey RCHE facility at the north-eastern part of the site.

3.2 Within the) application site the proposed residential blocks are located towards the western boundary of the site, set back from Hang Tau Road at the eastern boundary. The four blocks are set out in a staggered formation with 9-10 -storey block heights. An aboveground carpark and clubhouse with roof top outdoor swimming pool is also proposed in the central area of the site, incorporating and contained by the residential towers to the south and west and the RCHE to the east. The proposals also include improvements to local infrastructure at Hang Tau Road, where local road widening and a new GMB bus lay-by are provided at a proposed Surrender Area at the eastern corner of the site. Land fronting Hang Tau Po Road is also set aside for a small supermarket / retail unit for the convenience of the local community.

3.3 The site is accessed from Hang Tau Road with an EVA cum driveway extending into the site as an internal route addressing the frontage to the proposed residential blocks. A single storey basement car park is proposed below the central area of the site with direct access to the residential tower and accessed via a ramp close to the site entrance at the eastern side of the site. Parking and loading and unloading areas for the proposed one-storey shop are also located in the eastern part of the site.

3.4 The architectural layout also includes setbacks of the residential blocks from the site boundary for the creation of a planting buffer around the perimeter of the development. The periphery of the site will be landscaped with tree and shrub planting to soften the visual mass of the buildings and enhance the sense of integration with the existing landscape context. Communal outdoor spaces will include external areas near the clubhouse with its associated hard and soft landscape proposals and several pocket spaces for resident's enjoyment among the boundary landscape areas.

4.0 Tree Preservation Proposal

4.1 The existing trees tend to be found along the site periphery, however the works that will be undertaken in those areas, including site formation, provision of the U channels and fence walls will impact the preservation potential of these existing trees. **Table 4.1** provides a summary of the recommendations for the treatment of the existing trees.

Table 4.1 Summary of Tree Recommendations

Recommendation	Number of Trees	% Trees
Trees within Application Site		
Trees to be retained	0	0%
Trees to be transplanted	0	0%
Trees to be felled	37	100%
Total number of Trees	**37**	**100%**

4.2 The recommendations for the treatment of each of the trees is contained within **Appendix A - Tree Treatment Schedule** and shown on **Appendix C – Tree Recommendation Plan.**

Preservation of Existing Trees

4.3 Owing to site formation requirements, the existing trees within the Site will not be retained, as these trees are unavoidably in conflict with the proposed works. As outlined in the tree assessment schedule and illustrated in the Tree Group Photographic Record, the trees within the four groups identified on site are a mixture of common species, many of which are shorter lived fruit trees and palm trees, many of which are not so well suited to the future use of the site as a residential landscape.

Transplantation of the Existing Trees

4.4 In terms of assessing the feasibility of tree transplantation several factors have been considered, including the following:

- **Species:** Previous experience and arboriculture knowledge points to some species having a higher tolerance to the effects of transplantation than others.
- **Condition of the tree:** Trees with a balanced form, which are in good health and robust in terms of their structural condition are considered suitable for transplanting.
- **Proximity of existing trees:** Some of the trees are growing in a narrow planting strip along the site boundary where they are competing for the same space and light above ground and sharing the same root space below ground. The root structures of these trees may be intertwined and so it is not possible to prepare a rootball for one tree without damaging the roots of the adjacent tree.
- **Contribution of the existing trees to the character and amenity of the future residential area**: The main tree species identified are fruit tree species which would not contribute significantly to the future amenity of the area, whilst their fruit bearing potential could become a maintenance issue. It is considered of greater benefit to plant new trees of an appropriate species and size, so that the future users can benefit from shade provided by newly planted broadleaf trees within the environment.

4.5 Given the factors described above it is considered that none of the existing trees would make suitable candidates for transplantation.

Tree Felling Proposal

4.6 For trees in direct conflict with the proposed works, where it is not feasible to be retained in-situ nor be transplanted to other permanent locations within the site, tree felling is recommended. To facilitate the development a total of 37 nos. of trees are proposed to be felled (**Table 4.1)**, The recommendations for tree retention, transplantation and felling are provided in **Appendix A - Tree Treatment Schedule** and their proposed status recorded on tree photographs presented as **Appendix B – Photographic Records of Existing Tree Groups.** The proposed treatment for each of the tree groups is illustrated at **Appendix C – Tree Recommendation Plan**.

New Tree Planting

4.7 As illustrated on the Landscape Master Plan (**Figure 5.1**) new tree planting is proposed within the future landscape. The proposed scheme will provide the same number of new trees as committed under the approved Application No. Y/NE-KTS/13, i.e. 106 Nos. New trees. This considerably exceeds the typically required 1: 1 compensatory ratio for the 37nos trees to be felled, however as illustrated on the LMP there is a generous landscape area and these new amenity trees will provide benefits to the future scheme. Further details on the proposed tree planting proposals are outlined in Section 8.0.

5.0 Landscape Design Proposal

5.1 The concept underpinning the Landscape Master Plan for the Scheme, presented as **Figures 5.1** is to integrate the proposals within their future landscape and visual context; provide a synthesis between the proposed architecture and its landscape setting and provide high quality open space in association with the development. The proposals have sought to create an attractive and convenient outdoor landscape and open spaces and provide legible external pedestrian access and circulation whilst also maximising the planting of trees and shrubs.

5.2 The landscape design proposal is described in terms of the main design objectives, followed by a description of the key landscape components, and finally the landscape elements including the proposed hard and soft landscape, which form the palette of materials.

5.3 The design objectives for the Master Landscape Plan are to:

- Create a distinctive landscape which responds to the existing context, the architectural scheme proposals and the future resident and visitor needs;
- Integrate the proposed development from a landscape and visual perspective with the existing and planned landscape context;
- Provide visual integration in views of the proposed building mass from the surroundings and provide vegetation screening and softening of the built-form in closer low-level views;
- Provide a quality, sustainable and accessible living environment for the enjoyment of the residents and visitors;
- Provide recreation spaces for the future residents; and
  Maximise opportunities for greening measures utilising tree and shrub planting and lawn and climbing plants within the new landscape.

6.0 Open Space Proposals

6.1 The proposed scheme has sought to provide adequate open space (1m^2 per person based on the predicted future population) in accordance with the requirements of the HKPSG. The design of the open space is based on the objective of providing high quality active and passive recreational facilities and features that will satisfy the needs of the future residents. The provision of open space for the use of future residents is summarised in the **Table 6.1** below and the extent of the open space proposals shown on **Figure 6.1**

Table 6.1: Open Space Provision

Type of Open Space	Location	Uncovered / Covered	Proposed Uses	Approx. Area
Private Open Space	External Area	Uncovered (Countable)	Passive Uses	1,120m^2
Private Open Space	External Area	Uncovered (Countable)	Active Uses	220m^2

6.2 There would be a total of approximately 1340m^2 open space provided for the use of the anticipated of residential development in Site and the proposals adequately satisfy the requirements for 1m^2 per person based on the predicted future population in accordance with the HKPSG.

6.3 All of the open space within the Development Site boundary would be constructed, managed and maintained by the developer up to the completion of the Defects Liability Period and Establishment Period.

7.0 Green Coverage

7.1 Upon full establishment of greening measures described in Section 8.0 the green coverage for the proposed development will not be less than 20% in accordance with Buildings Department Practice Notes PNAP APP-152 Sustainable Building Design Guidelines. However, as per the previously approved application the current proposal exceeds this minimum requirement and provides green coverage of no less than 25% of the Application Site area.

7.2 The proposals have sought to maximise the green area and tree planting opportunities. Given the future functional requirement of the Development scheme, particularly with requirements for traffic and pedestrian circulation and EVA access at ground level, it is considered that the proposal has maximized the utilisation of the available greening opportunities.

8.0 Landscape Design Components

8.1 The following description seeks to establish some general principles that are important in realising the landscape design as part of the general mitigation for the development and ensure its feasibility. As such the design of the landscape will evolve during the detailed design stage and this will be reflected in the Landscape Master Plan Submission. **Figure 5.1** shows the combined Landscape Master Plan for the Scheme:

8.2 The landscape seeks to create an attractive external area to the development, coordinating paving and planting design for residential entrances and open spaces with internal streetscape design to provide a unified appearance within the immediate landscape surroundings. The design also aims to create a vibrant internal landscape area with communal spaces offering a range of leisure activities for residents.

The Arrival Landscape

8.3 The landscape design for private residential projects should provide an enjoyable route home, which can be termed the Arrival Landscape. This is a sequence of experiences as one moves through composed moments in the landscape, which include the follow key areas:

Main Entrance
The access into the site defines the address of the development and would be designed to provide an attractive entry threshold experience for both vehicles and pedestrians, incorporating signage, feature walls and accent planting.

Streetscape Promenade
The Internal street areas are likely to be relatively lightly trafficked and as such can be considered as shared surfaces. The routes would be planted with street trees and animated with attractive lighting, incidental seating spaces and visual features in order to enhance the internal street experience as part of the overall landscape area for the site.

Lobby Entrance
Each lobby entrance which addresses the street is demarcated with feature paving and framed with planting to help highlight the interior / exterior threshold and help create a sense of arrival to individual towers.

The leisure Landscape:

8.4 The landscape should also function as a leisure experience for the residents, with things to see and do in the outdoor home environment that provide for social interaction and which bring people

closer to nature. The development proposal for the site provides opportunities for specific open space areas within the proposed landscape framework, centred around the clubhouse landscape and central landscape spaces. This includes the following

Swimming Pool Deck
The Clubhouse is a core feature of the leisure landscape provision within the private residential landscape. The clubhouse is provided with an outdoor swimming pool at Clubhouse R/F level which provide active recreation opportunities for residents.

Leisure gardens
The Leisure gardens are several areas of the site are generously planted with shrubs, groundcover and lawn. Incidental seating and gathering areas are also provided in order to encourage a lively, participatory atmosphere within the development.

The Boundary Landscape:

8.5 The landscape should function to help integrate the development with its surroundings and in particular the existing village and rural setting. In addition to the provision of a green buffer along the site boundary, the sensitive configuration of the development has allowed the retention of some existing trees in these boundary areas. Site formation requirements will result in localised requirements for boundary retaining walls, where these will be integrated with proposed site boundary walls and receive landscape treatments to provide an attractive external outlook for the project.

Communal Circuit Path
The various peripheral landscape areas around the site are connected by a footpath which allows for strolling through the green areas around the margins of the site and which also functions as a path for resident's leisure use connecting facilities such as a residents farm and a barbeque garden in the peripheries of the site.

9.0 Landscape Design Elements

Soft Landscape Design Approach

9.1 The basis for the proposed planting scheme would be to provide a green and comfortable environment for the future resident's recreational needs. Shade trees with a dense canopy and flowering shrubs in addition to the use of hard landscape treatments would be used to emphasise the character of each of the landscape spaces described above. The spaces will be characterised by the use of tree, shrub and groundcover species selected to provide a lush landscaped area whilst responding to the character of the architecture that embraces it.

9.2 These soft landscape measures will ensure that the hard lines of the built form are visually softened in views from without the proposed development and in elevated views from surrounding hillside areas. The tree planting is designed to create a sense of enclosure, provide a human scale and enhance thermal comfort. In order to achieve this objective at an early stage large sized trees will be used.

9.3 The planting design will contribute to the overall character of the proposed development providing colour throughout the year with seasonal variations providing an evolving tableau. This will be achieved through the selection of species with an interesting form, colour and texture of their foliage and through the use of flowering species to provide an architectural highlight. Vertical greening has been designed at the boundary walls by using vertical green wire system in order to soften the 2.5m high boundary wall and add some green for the overall site at the same time. Details are illustrated in **Figure 9.2**.

9.4 The species listed in **Table 9.1** will form the basis of the planting design proposals (planting list subject to the detailed landscape design proposals).

Table 9.1: Planting Species for Amenity Planting Areas

Botanical Name	Stock Size / Size (mm)	Spacing (mm)
Tree Species		
Bauhinia x *blakeana*	Heavy standard	As shown
Bischofia javanica	Heavy standard	As shown
Celtis sinensis	Heavy standard	As shown
Cinnamomum camphora	Heavy standard	As shown
Cinnamomum burmannii	Heavy standard	As shown
Crateva religiosa	Heavy standard	As shown
Elaeocarpus apiculatus	Heavy standard	As shown
Ficus benjamina	Heavy standard	As shown
Lagerstroemia speciosa	Heavy standard	As shown
Liquidambar formosana	Heavy standard	As shown
Magnolia grandiflora	Heavy standard	As shown
Michelia chapensis	Heavy standard	As shown
Plumeria rubra	Heavy standard	As shown
Sapium sebiferum	Heavy standard	As shown
Sterculia lanceolata	Heavy standard	As shown
Terminalia mantaly	Heavy standard	As shown
Xanthostemon chrysanthus	Heavy standard	As shown
Shrub Species		
Bougainvillea sp. 'Mary Palmer'	600 x 600	500
Cordyline terminalis	700 x 500	400
Duranta repens 'Golden Leaves'	300 x 300	250
Ficus microcarpa 'Golden Leaves'	500 x 500	400
Hibiscus rosa sinensis	500 x 500	400
Ixora coccinea 'Sunkist'	250 x 250	200
Pittosporum tobira	600 x 500	400
Rhaphis excelsa	600 x 500	400
Rhododendron mucronatum	300 x 300	200
Rhododendron pulchrum	300 x 300	200
Rhododendron simsii	300 x 300	200
Schefflera arboricola	600 x 600	500
Strelitzia reginae	600 x 600	500
Groundcover Species		
Asparagus densiflorus 'Sprengeri'	300 x 300	250
Cuphea hyssopifolia	250 x 300	250
Hymenocallis americana	300 x 500	400
Iris spp.	150 x 150	100
Lantana montevidensis	300 x 300	200

Botanical Name	Stock Size / Size (mm)	Spacing (mm)
Nephrolepis exaltata	250 x 400	250
Ophiopogon japonicus	250 x 300	200
Philodendron selloum	700 x 700	500
Phyllanthus myrtifolius	300 x 300	250
Scindapsus aureus	300 x 300	250
Spathiphyllum floribundum	400 x 400	300
Bamboo		
Bambusa textilis	2000-3000 Ht.	250
Pseudosasa japonica	1000-2000 Ht.	250
Lawn		
Axonopus compressus		
Climbing		
Ficus pumila	3 shoots per plant. Each shoot 1000mm long	
Parthenocissus tricuspidata		

Note: The plant species listed above provide an indication of the future character of the proposed landscape areas however the design will be subject to review during the detailed design stage of the project. These changes will be reflected in the Landscape Master Plan Submission.

Soil Depth for Planting Areas

9.5 In order to ensure that the planting proposals are feasible, it is proposed that an adequate planting medium be incorporated into the design of the soft landscape areas. All planting areas allow a minimum soil depth of 1200mm facilitating the planting of trees whilst shrub and lawn areas will incorporate a minimum soil depth of 600mm and 300mm respectively, as illustrated in **Figure 9.1**.

Irrigation and Drainage

9.6 The proposed irrigation system will utilise a manual system with lockable water points at 40m centres throughout the entire site. The proposed source of water supply will be subject to final approval from the Water Services Department. Sub-soil drainage shall be provided for all planting areas with a cellular drainage system such as “Mira-drain” or an approved equivalent.

Feature Paving

9.7 The paving will be an important element of the landscape design both in terms of its aesthetic appearance and in terms of producing a hardwearing landscape for usage by the future users. The design of the proposed paving will highlight entrance areas and major pedestrian routes through the site providing a hierarchy for pedestrian movement and help to define the spatial configuration of the landscape. It would be constructed of quality materials in feature patterns creating a distinct identity for each of the key landscape zones responding to the architectural design and function of each. Colour changes within the patterns would be used to break the linearity of the spaces and establish a theme across the development. Eco-friendly pavers where be used where applicable to minimise environmental impact.

9.8 Non-slip paving materials will be utilised throughout the site and the proposed finishes and materials are summarized below:

- Streetscape and EVA: Subtle shades of natural granite and concrete pavers designed to create visual continuity with the adjacent pedestrian pavement whilst also creating a distinct identity at the threshold of the development.

- Central Landscape Space: Combination of natural granite and concrete block paving with decorative patterns based on the design theme for the architectural and landscape schemes.

- Swimming Pool Deck: Homogeneous tile paving providing an attractive and non-slip surface.

9.9 The surrender area would adopt Highways Departrment Standard details, including the use of precast concrete block paving for proposed footpaths at the GMB Lay-by.

9.10 Wherever possible all landscape areas will cater for multiple use needs including people with impaired ability and access for the disabled in accordance with Buildings Department's Design Manual on 'Barrier Free Access, 2008'.

Lighting

9.11 The lighting design concept for the landscaped areas should be designed to contribute to the quality of the development in nocturnal views providing an aesthetically pleasing landscape through the highlighting of landscape elements. All of the landscape areas will be provided with sufficient illumination to meet the required lighting standards, particularly for the entrance areas and pedestrian access paths. The lighting concept will include three types of lighting which are as follows:

- Amenity lighting highlighting feature trees, walls, sculptures and planting through the use of spotlights and up-lighting;

- Area lighting involving the use of low-level lighting sources such as lighting bollards and recessed wall lights for sitting areas and main landscape spaces designed to avoid glare / light spillage to adjacent properties; and

- General safety lighting with the minimum lux level which will last between midnight and early morning.

10.0 Landscape Management and Maintenance

10.1 Upon completion of the construction works, a 12-months defect liability period will be implemented applying to both the hard and soft landscaping works. The specialist hard and soft landscape contractors will be responsible for the maintenance of planting during this first year. Ultimately the property owner will be responsible for arrangements to take care of all landscape areas including hard and soft landscape works as described below:

Hard Landscape Elements

A - Routine Maintenance (Daily – Weekly)

a. Rubbish and litter removal;
b. Sweeping and cleaning;
c. Water feature cleaning; and
d. Damage inspection, repair of site furniture and light bulb replacement.

B – Annual / Long-term Maintenance

a. Repainting;
b. Resurfacing of worn paving;
c. Replacing worn parts of site furniture, lighting fixtures and other facilities; and
d. Replacement of damaged landscape furniture.

Soft Landscape Elements

10.2 The softworks contractor will be responsible for a 12-month establishment period for the planting after practical completion. This allows a period of time for proper establishment of the plants and the replacement of any losses.

10.3 At the end of the 12-months establishment period, the property owner will be responsible for arrangements to take care of all landscape areas within the development.

Table 10.1 Landscape Maintenance Schedule

Item	Maintenance Operation	Frequency	J	F	M	A	M	J	J	A	S	O	N	D
1.1	Watering	280 days												
1.2	Litter Collection	Daily												
1.3	Weed Control	16/ year												
1.4	Pruning of Shrubs	As required												
1.5	Pruning of Trees	As required												
1.6	Fertiliser Application	Twice/year												
1.7	Top-up Mulch	Twice/year												
1.8	Pest Control	As required												
1.9	Replacement planting - Permanent planters	As required												
1.10	Tree Support Inspection/ Adjustment	Once/month												
1.11	Checking After Exceptional Weather	As required												
1.12	Grass Cutting	14 times / year												
1.13	Periodic Inspection by User and Horticultural Maintenance Contractor is recommended	Four/year												
1.14	Tree Risk Assessment in accordance with DEVB methodology	Once/year												

Landscape Figures



LEGEND

- CDA Zone Site Boundary
- Application Site Boundary
- Proposed Architectural Scheme
- xx.xx Existing Levels
- xx.xx Proposed Levels
- Proposed Tree Planting
- Proposed Shrub Planting
- Proposed Lawn
- Proposed Paving
- Proposed Paving (Entrance)
- Proposed Timber Deck
- Proposed Swimming Pool
- Proposed Water Feature
- Extent of Proposed Vertical Greening

The Arrival Landscape

1. Main Entrance
2. Streetscape Promenade
3. Tower Lobby Entrance

The Leisure Landscape

4. Swimming Pool Deck
5. Leisure Gardens
6. Children's Playground
7. BBQ Garden
8. Resident's Farm
9. Seating Deck
10. GMB Layby

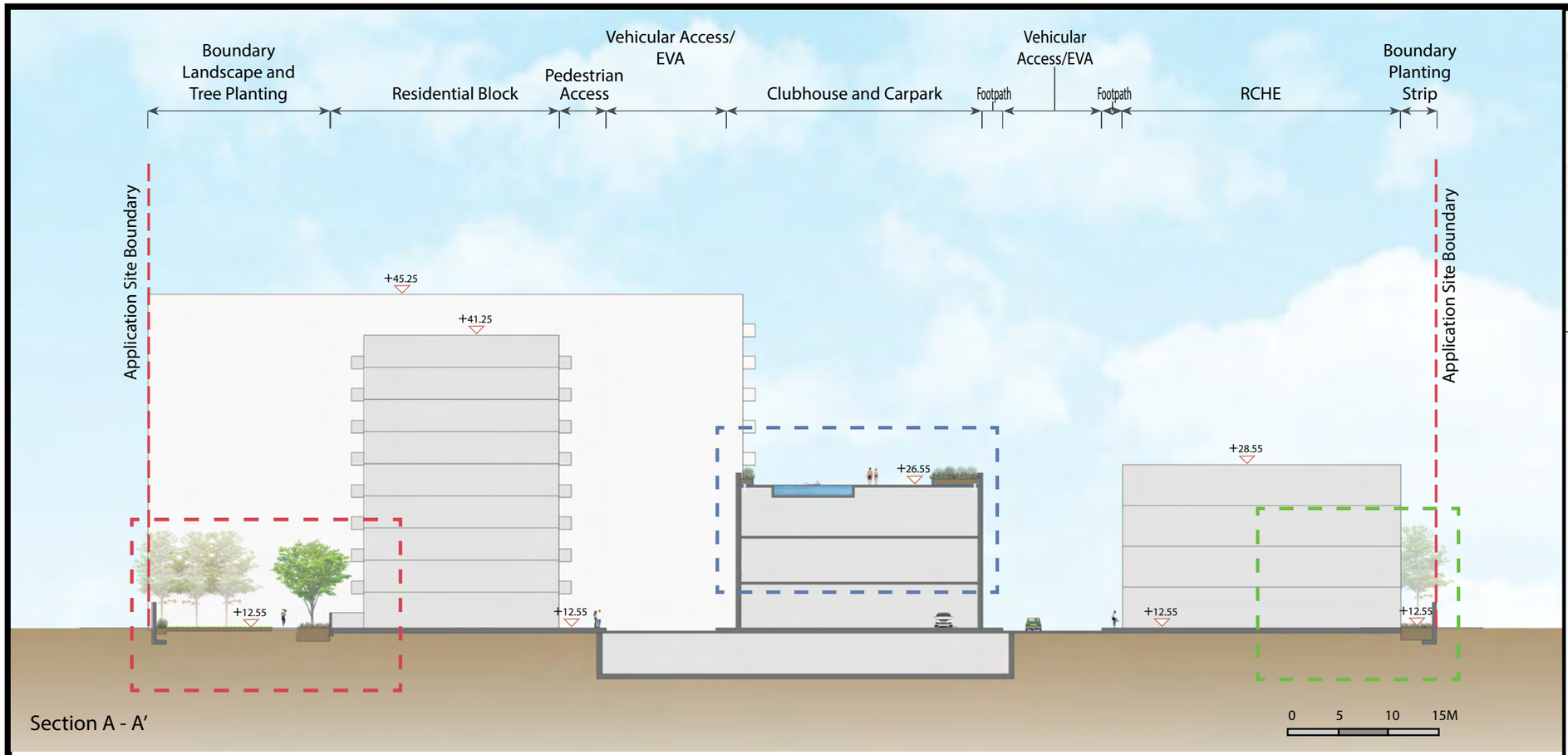
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Landscape Master Plan – All Levels

SCALE	N.T.S.	DATE	Nov 2026
CHECKED	CJF	DRAWN	DN
FIGURE NO.	Figure 4.1	REV	J

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[redacted]

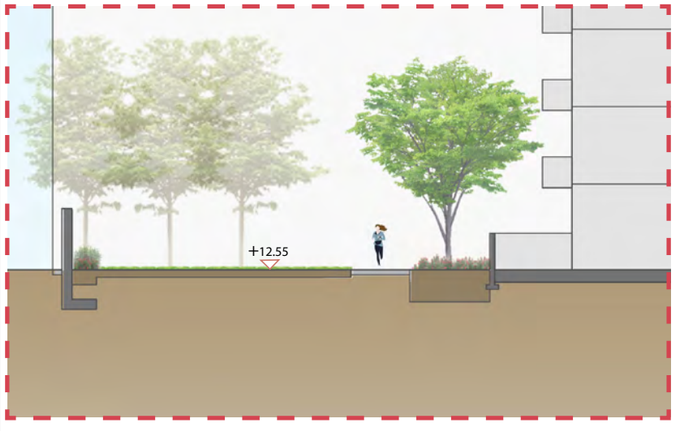


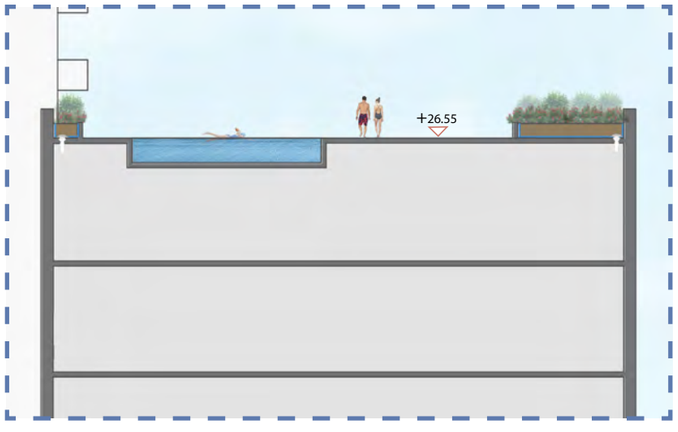
Section A - A'



LEGEND

- Section Line
- xx.xx — Typical Levels
- Proposed Architecture Scheme
- Proposed Tree Planting
- Proposed Shrub Planting
- Proposed Lawn Planting





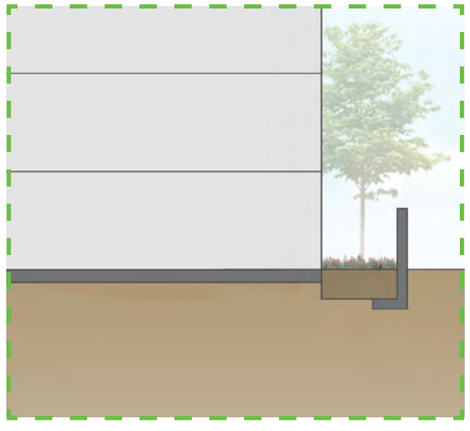


FIGURE TITLE

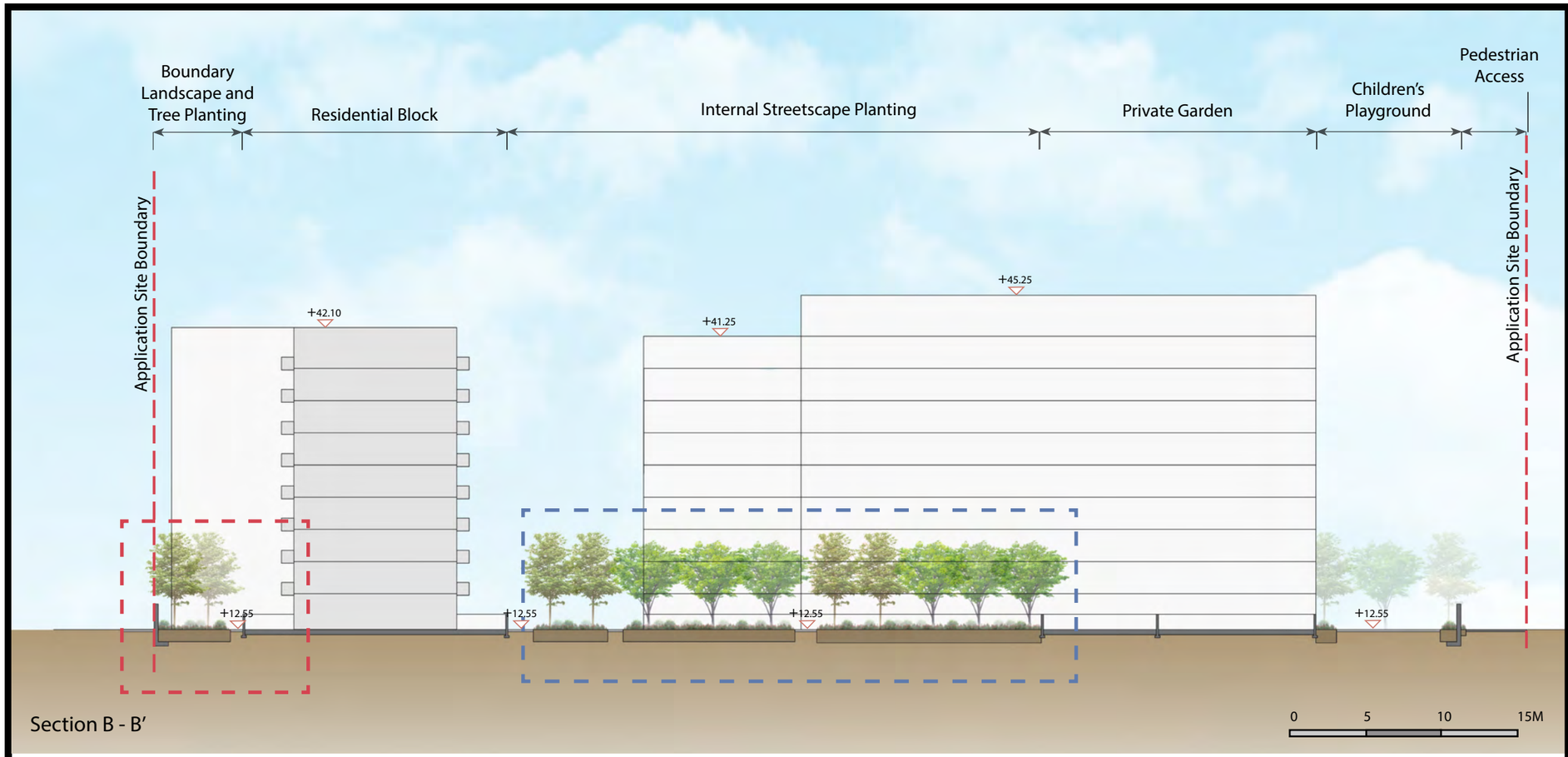
S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Landscape Section A-A'

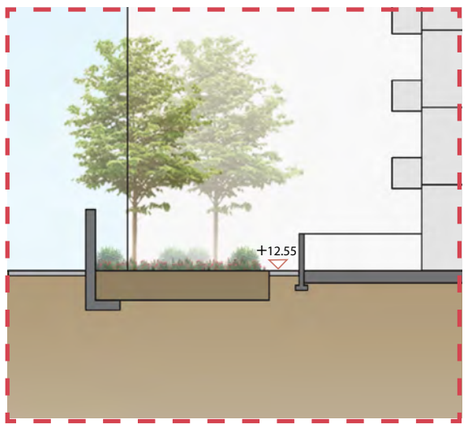
SCALE	N.T.S.	DATE	Oct 2026
CHECKED	CJF	DRAWN	DN

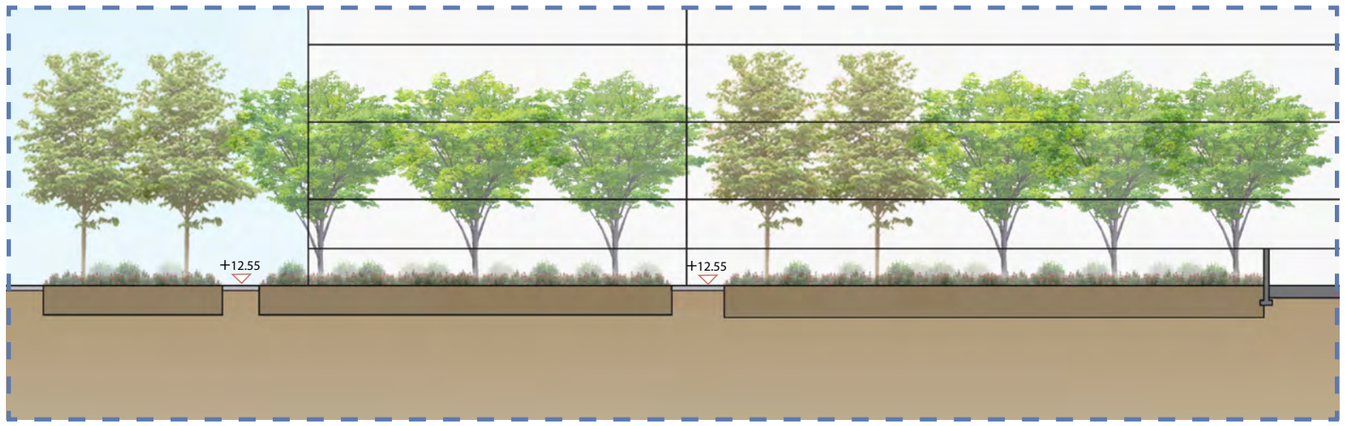
FIGURE NO. Figure 5.1 REV E

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Section B - B'







LEGEND

- Section Line
- xx.xx — Typical Levels
- Proposed Architecture Scheme
- Proposed Tree Planting
- Proposed Shrub Planting

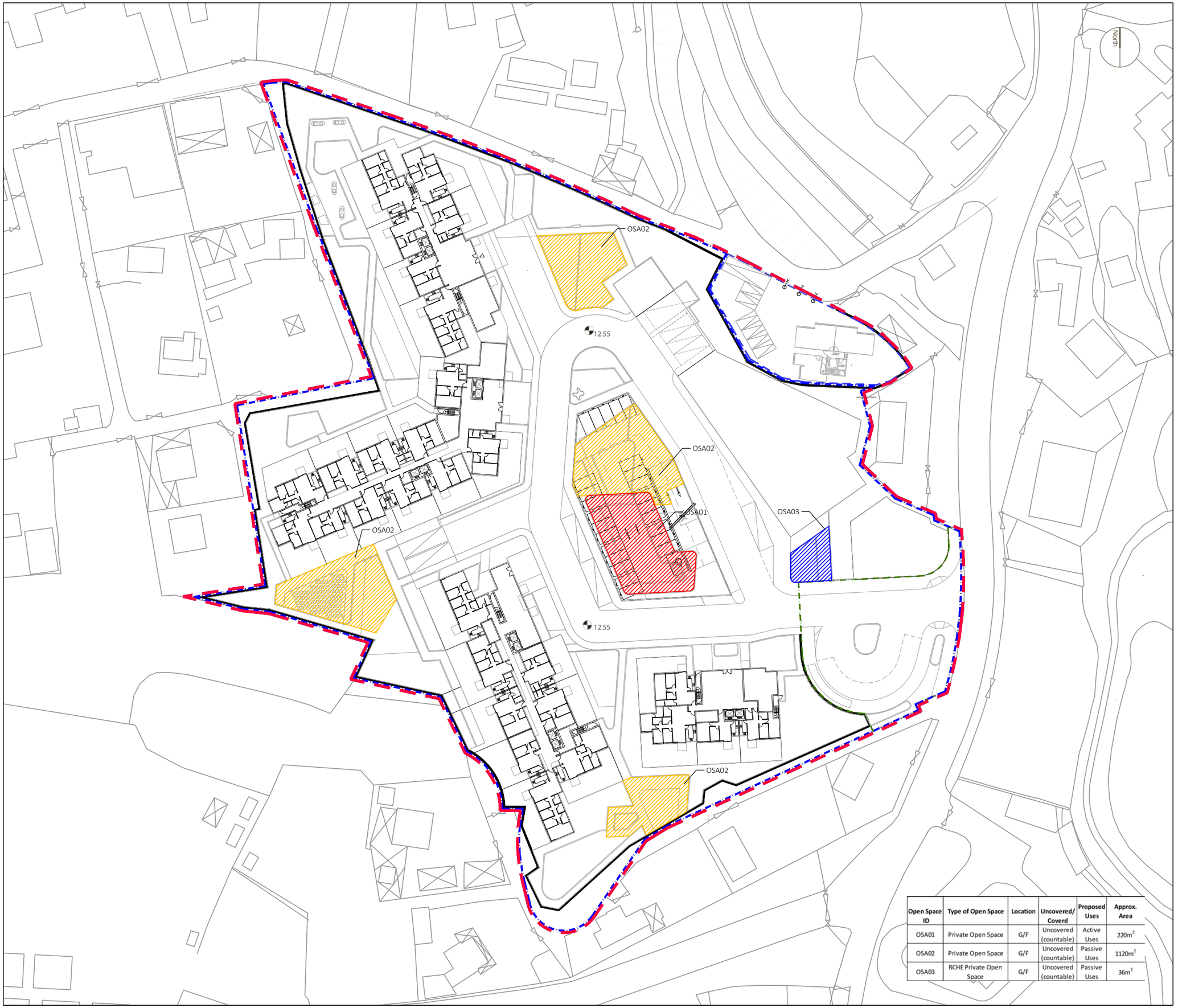
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Landscape Section B-B'

SCALE	N.T.S.	DATE	Oct 2026
CHECKED	CJF	DRAWN	DN
FIGURE NO.	Figure 5.2	REV	D

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[redacted]



Open Space ID	Type of Open Space	Location	Uncovered/ Coverd	Proposed Uses	Approx. Area
OSA01	Private Open Space	G/F	Uncovered (countable)	Active Uses	220m²
OSA02	Private Open Space	G/F	Uncovered (countable)	Passive Uses	1120m²
OSA03	RCHE Private Open Space	G/F	Uncovered (countable)	Passive Uses	36m²

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[redacted]

Legend

- CDA ZONE SITE BOUNDARY
- APPLICATION SITE BOUNDARY
- +3.40 EXISTING LEVEL
- 12.55 PROPOSED LEVEL
- PROPOSED SCHEME
- OSA01: PRIVATE OPEN SPACE(ACTIVE)
- OSA02: PRIVATE OPEN SPACE(PASSIVE)
- OSA03: RCHE PRIVATE OPEN SPACE(PASSIVE)

General notes

Rev.	Date	Description	Inital
G	08/10/2026	GENERAL REVISION	DN
F	30/06/2026	GENERAL REVISION	DN
E	02/03/2026	GENERAL REVISION	DN
D	22/01/2026	GENERAL REVISION	DN

Revision

	Name:	Signed:	Date:
Designed by:	CJF		
Drawn by:	DN		
Checked by:	CJF		
Approved by:	JBC		

Project Title:
S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung Sout

Drawing Title:
OPEN SPACE - ALL LEVELS - SITE(A)

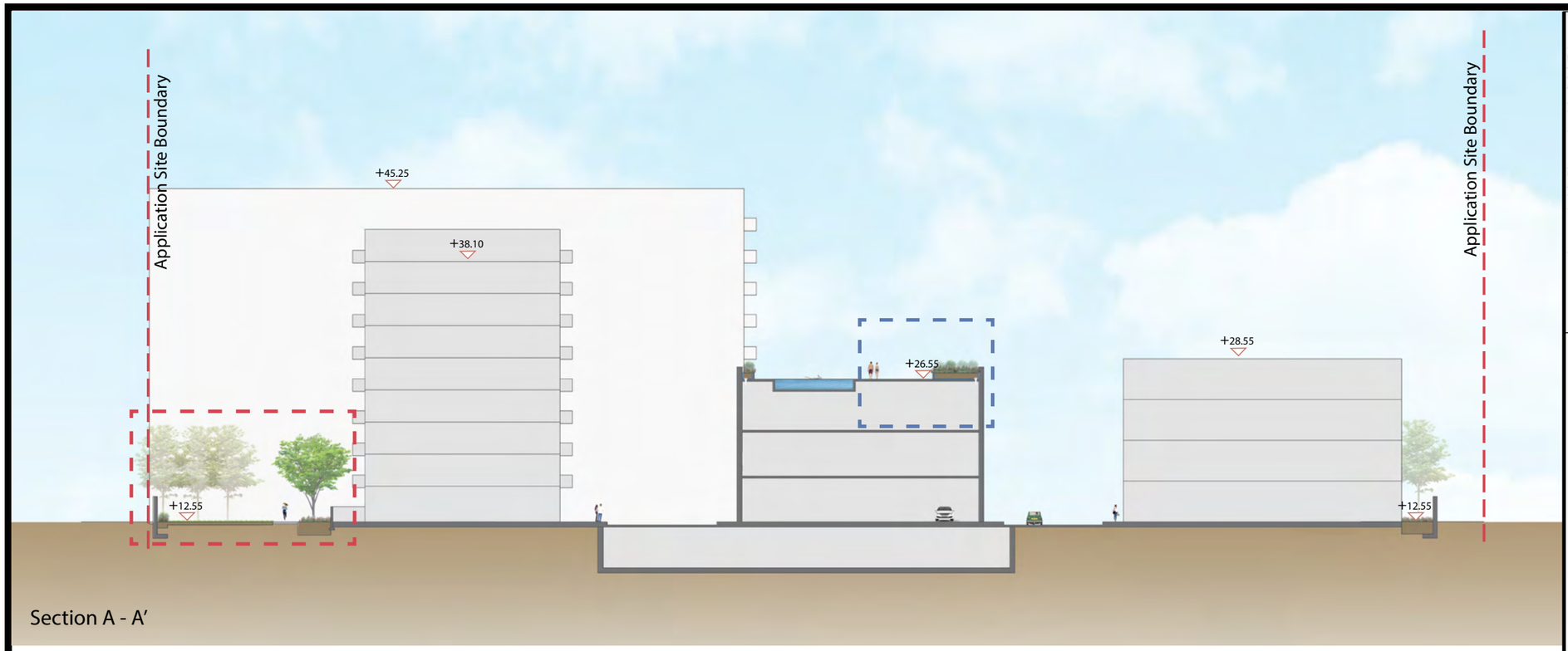
Drawing Number: FIGURE 6.1

Revision: G

Project Number: PPCP035

Scale: 1:800@A3

Date: 08/10/2026



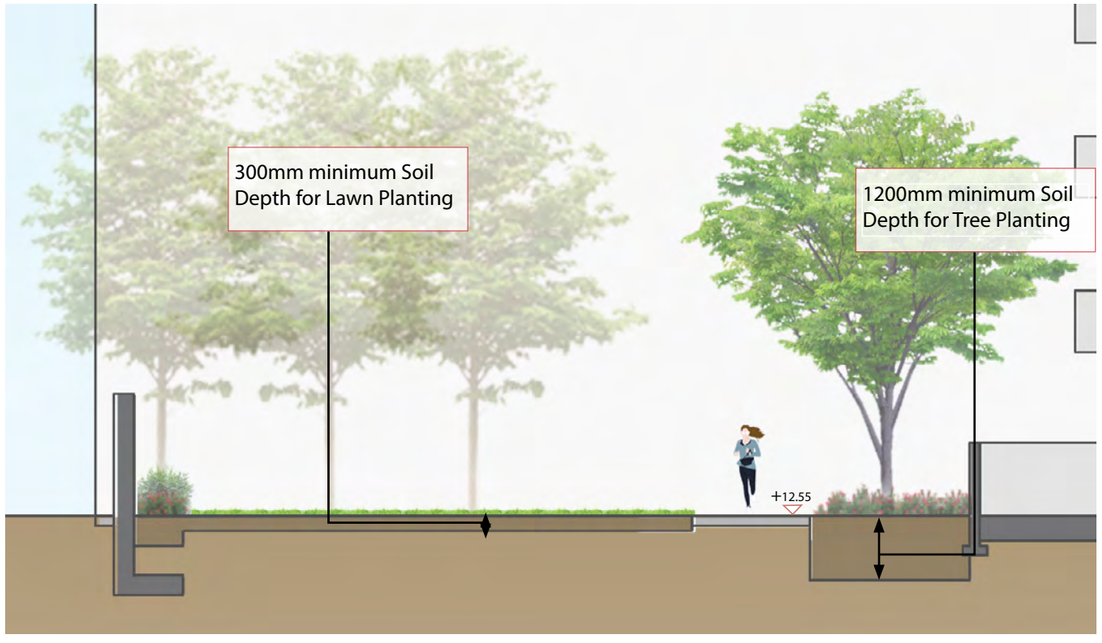
Section A - A'

0 5 10 15M

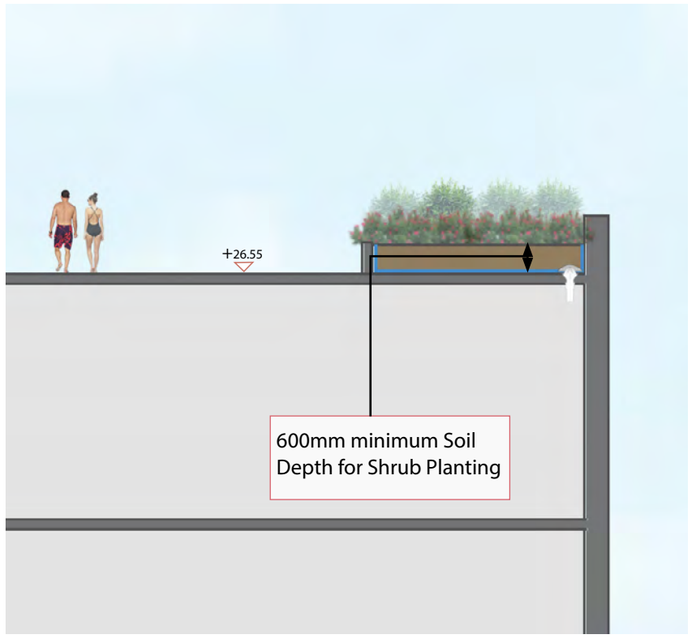


LEGEND

- Section Line
- xx.xx Typical Levels
- Soil Mix
- Planter Drainage Outlet to Engineering's Details
- Drainage Cell/ Screed Laid to Falls



0 1 2 3M



0 1 2 3M

Note:
- All soil depths stated exclude drainage layer.
-300mm minimum soil depth shall be provided for all lawn and groundcover areas

FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

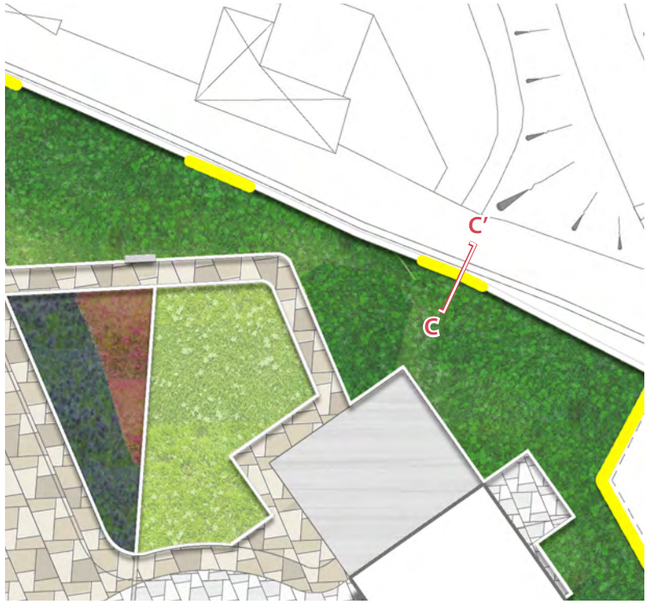
Typical Section showing Soil Depth

SCALE	N.T.S.	DATE	Oct 2026
CHECKED	CJF	DRAWN	DN
FIGURE NO.	Figure 9.1	REV	E

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Perspective

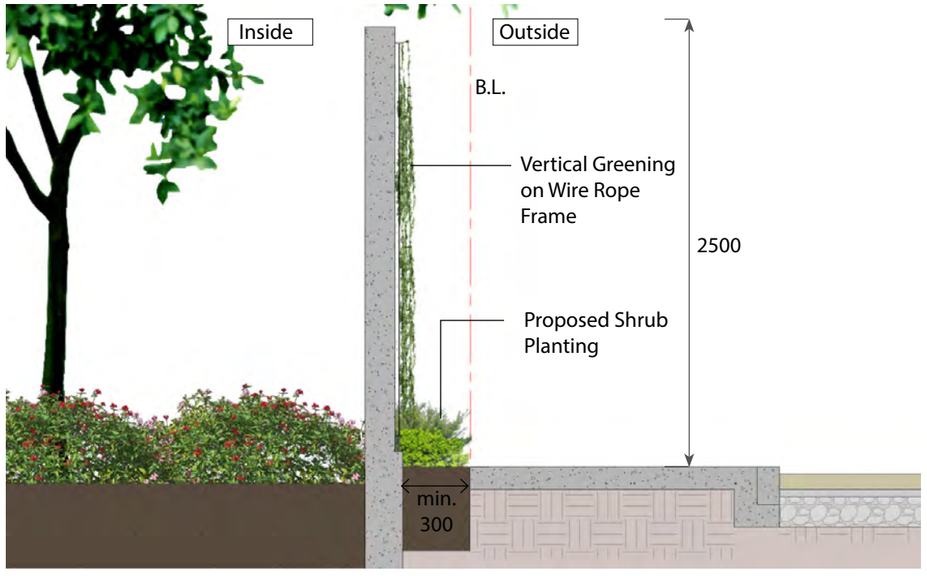


Blow-up Plan(Trees not shown)

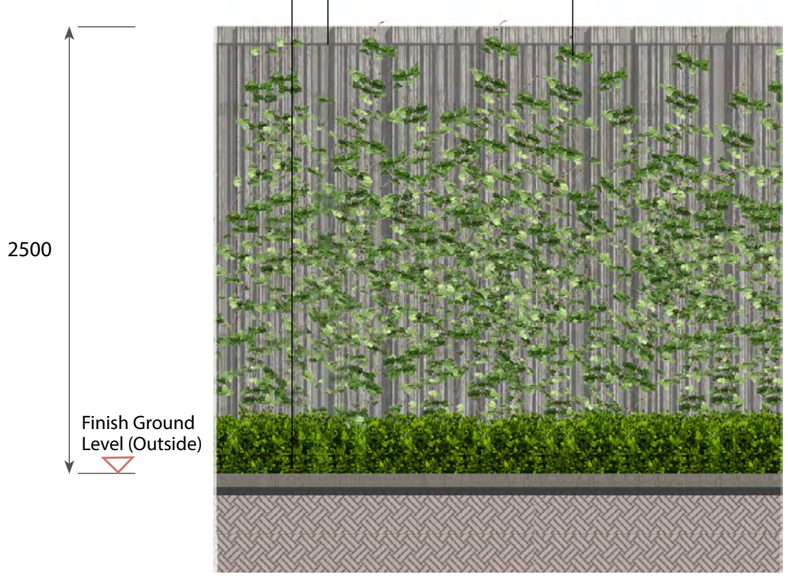


LEGEND

- Section Line
- xx.xx — Typical Levels
- VP — Viewpoint
- Soil Mix



Section C - C'



Elevation

Note:
- All soil depths stated exclude drainage layer.

FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Typical Section of Vertical Greening at Boundary Walls

SCALE	N.T.S.	DATE	Oct 2026
CHECKED	CJF	DRAWN	DN
FIGURE NO.	Figure 9.2	REV	D

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Appendix A: Tree Treatment Schedule

Tree Treatment Schedule

Address: Hang Tau Tai Po, Kwu Tung South, New Territories
Field survey conducted in January 2020 and September 2024 (by Certified Arborist)
To be read in conjunction with Drawing PPCP035-TR001

Tree Group No. / Tree Nos	Species Summary	Chinese Name	Estimated Numbers of Trees in Group	Size			Proposed Treatment			Justification	Remarks
				DBH (mm)	Height (m)	Spread (m)	Retain	Trans	Fell		
Tree Group TG01 (12 trees)											
TG01	*Artocarpus heterophyllus*	菠蘿蜜	1	110	4	3			1	A,D,I	Within Application Site. Common Fruit Tree Species. Asymmetric tree crown.
	Clausena lansium	黃皮	1	230	5	3			1	A,D,I	Within Application Site. Common Fruit Tree Species. Multiple trunks (dia: 140mm, 120mm, 150mm), cavities in trunk, cross branches.
	Dimocarpus longan	龍眼	1	250	5	4			1	A,D,G,I	Within Application Site. Common Species. Co-dominant trunks (dia: 180mm, 180mm), wound on trunk.
	Dypsis lutescens	散尾葵	2	140	5	3			2	A,D,I	Within Application Site. Common Species. Multiple trunks (dia: 50mm x 8).
	Litchi chinensis	荔枝	6	380-520	5-8	4-8			6	A,D,G,I	Within Application Site. Common Fruit Tree Species. Dead stub, co-dominant branches, wound on trunk, cavity in scaffold, pruning wound on branches, dead branches..
	Livistona chinensis	蒲葵	1	200	5	3			1	A,H,I	Within Application Site. Common Species. Dense dead fronts.
Tree Group TG02 (7 trees)											
TG02	*Cinnamomum burmannii*	陰香	1	110	4	2			1	A,D,I	Within Application Site. . Common Species. Asymmetric crown, root restricted by concrete
	Dimocarpus longan	龍眼	1	190	8	5			1	A,D,G,I	Within Application Site. Common Species. Topped , co-dominant branches.
	Litchi chinensis	荔枝	1	590	10	7			1	A,D,G,I	Within Application Site. Common Species. Co-dominant branches, cavity in trunk, dieback, dead branches.
	Macaranga tanarius var. tomentosa	血桐	1	140	4	5			1	A,D,I	Within Application Site. Common Species. Asymmetric crown.
	Psidium guajava	番石榴	2	130-190	6	3-4			2	A,D,G,I	Within Application Site. Common Species. On planter, asymmetric crown, branches embedded with chain-link fence, severe leaning, collapsed in the past, epicormics growing on trunk..
	Dead tree	死樹	1	200	3	1			1	A,D,F,G,I	Within Application Site. Dead Tree.
Tree Group TG03 (6 trees)											
TG03	*Dimocarpus longan*	龍眼	1	250	4	3			1	A,D,G,I	Within Application Site. Common Species. Dieback, sparse foliage, co-dominant branches, asymmetric tree .crown, cavity in branches
	Macaranga tanarius var. tomentosa	血桐	1	150	4	6			1	A,D,I	Within Application Site. Common Species. Asymmetric crown, codominant leaders.
	Michelia x alba	白蘭	1	290	6	4			1	A,D,G,I	Within Application Site. Cap 96. . Wound on trunk and exposed root, co-dominant branches, topped.
	Psidium guajava	番石榴	2	150-190	5-6	3-4			2	A,D,I	Within Application Site. Common Species. Wound on lower trunk, bending trunk.
	Sapium sebiferum	烏桕	1	140	4	1			1	A,D,G,I	Within Application Site. Common Species. Topped, less than 5% folaige.
Tree Group TG04 (12 trees)											
TG04	*Archontophoenix alexandrae*	假檳榔	3	150-160	7-12	3			3	A,B,I	Within Application Site. Common Species. Climber along the trunk.
	Bombax ceiba	木棉	1	130	8	3			1	A,D,G,I	Within Application Site. Common Species. Covered by dense climber, crown on the top was dead.
	Cinnamomum burmannii	陰香	6	100-190	3-7	3-5			6	A,D,G,I	Within Application Site. Common Species. Leaning, climber, wound on trunk, asymmetric crown, leaning trunk.
	Macaranga tanarius var. tomentosa	血桐	1	180	6	4			1	A,D,I	Within Application Site. Common Species. Co-dominant trunks (dia: 130mm, 130mm), wound on trunk, included bark between scaffolds, leaning, unbalanced tree form.
	Dead tree	死樹	1	130	5	6			1	A,D,F,G,I	Within Site. Dead Tree.
							Retain	**Trans**	**Fell**		
							0	**0**	**37**		**37**

Legend

Suitability for Transplantation

H High Survival Rate expected after transplantation
M Medium Survival Rate expected after transplantation
L Low Survival Rate expected after transplantation

Conservation Status

Conservation status (indicates rarity and protection status under relevant ordinances of a species in Hong Kong. References such as Rare and Precious Plants of Hong Kong, the IUCN Red List of Threatened Species and the Forests and Countryside Ordinance (Cap. 96) are used.) and ETWB TCW No. 29/2004 Registration of Old and Valuable Trees (OVT), and Guidelines for

Tree Trunk Diameter at Breast Height (DBH)

* Diameter of tree trunk measured at breast height (i.e. measured at 1.3m above ground level)
** Diameter at Breast Height (DBH) of multi-stem trees (i.e. trees with multi-stems were all measured seperately at 1m above ground level). The collective girth was then calculated using the methodology set out in Nature Conservation Practice Note No. 02/2003, Measurement of Diameter at Breast Height (DBH).

Justification for Tree Felling

A Tree is in direct conflict with the proposed works.
B Preparation of intact and sufficient-sized root ball not practical due to the topography (e.g. on rock, steep slope, shallow substratum, structures). Close proximity to other trees - roots intertwinned.
C Undesirable species, weedy species without special ecological significance or species creating maintenance problem.
D Tree with poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits).
E Lack of access for transplantation machinery or vehicle.
F Species with low survival rate after transplanting.
G Tree has structural problem and may create hazard to public during root ball preparation and/or after transplantation, while auxiliary suprootingport will not be sufficient / practical.
H Irrecoverable form after transplanting (e.g. if substantial crown and root pruning are necessary to facilitate the transplanting).
I Low amenity value.
J Tree with evidence of over-maturity and onset of senescence.
K Very large size (unless the feasibility to transplant has been considered financially reasonably and technically feasible).

Appendix B: Photographic Record of Existing Tree Groups

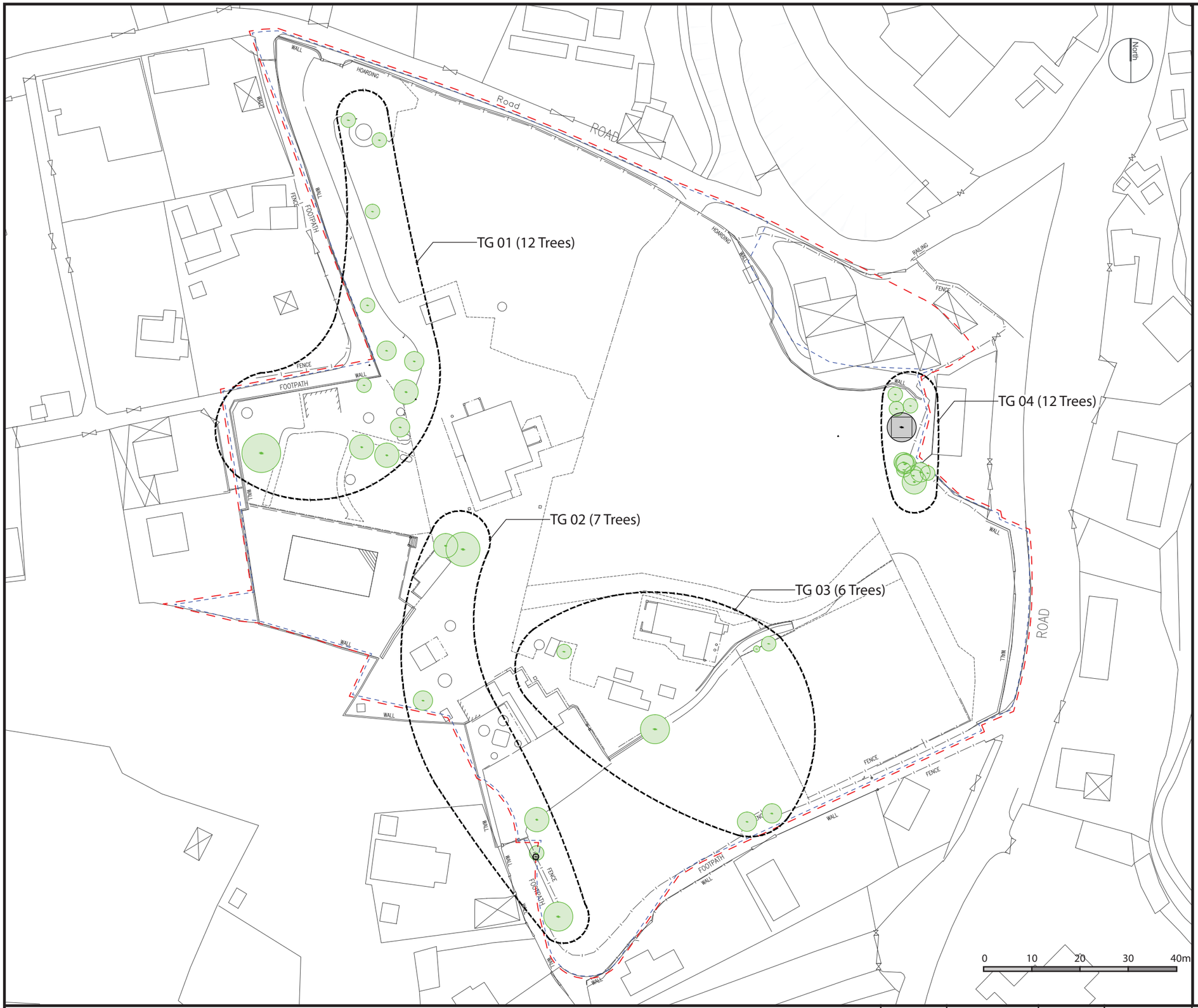


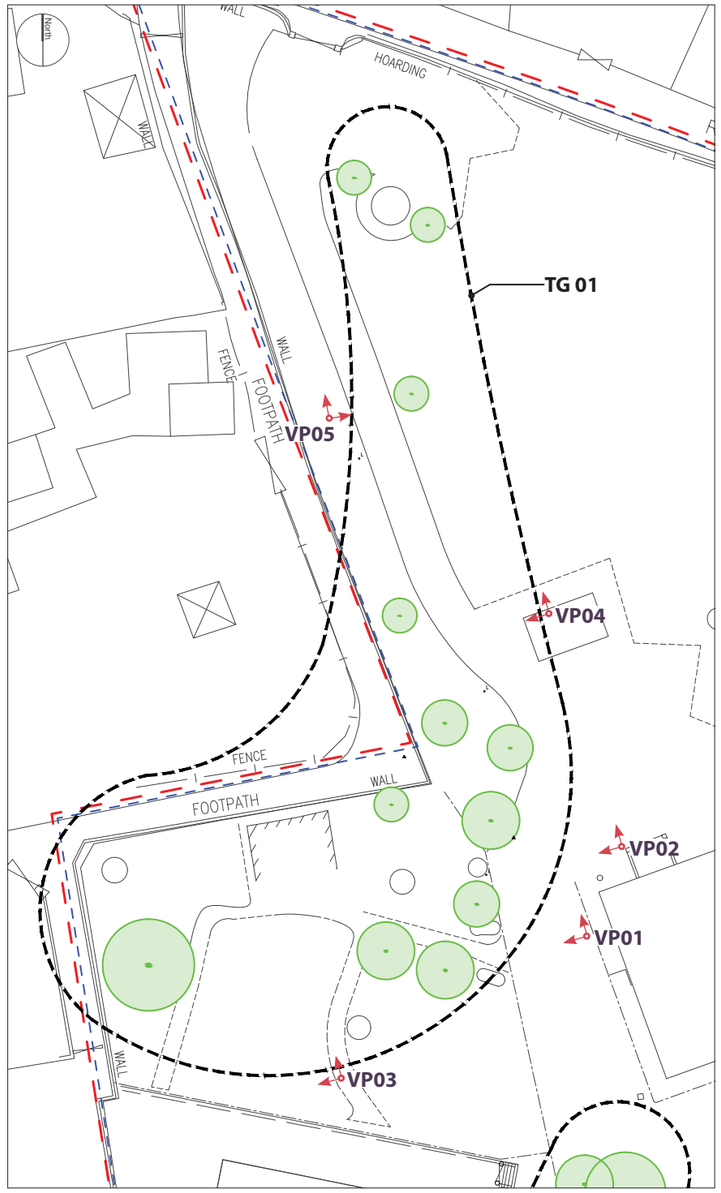
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Tree Group Location Plan

SCALE	N.T.S.	DATE	May 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	PPCP035 - T - TG	REV	-

SCENIC Landscape Studio Limited
LANDSCAPE ARCHITECTURE, LANDSCAPE PLANNING & ASSESSMENT
[redacted]



LEGEND

- Application Site Boundary
- CDA Zone Boundary
- Existing Tree Group
- Existing Tree
- VP — Location of Vantage Point



TG01 - VP01



TG01 - VP02



TG01 - VP03



TG01 - VP04



TG01 - VP05

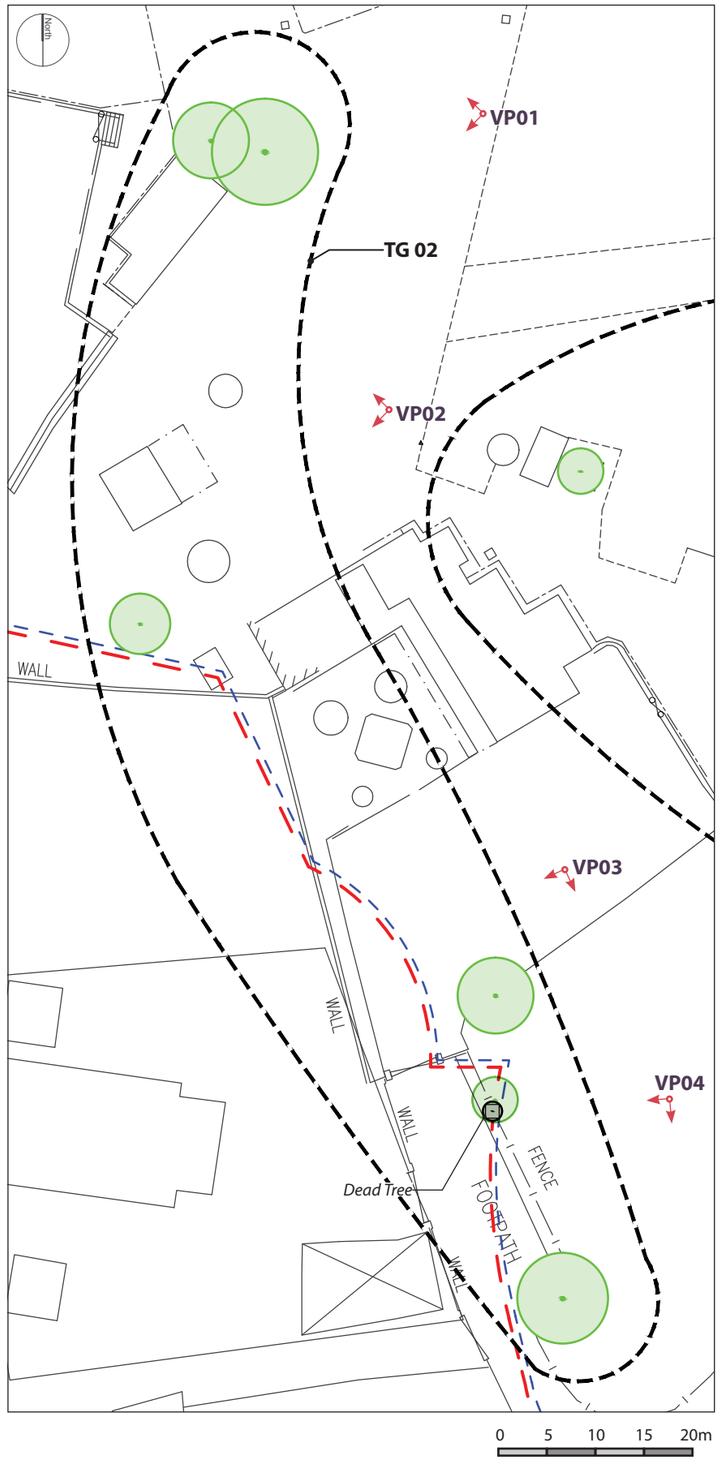
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Photographic Record of Existing Tree Groups

SCALE	N.T.S.	DATE	Sep 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	PPCP035 - TG01	REV	A

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TG02 - VP01



TG02 - VP02



TG02 - VP03



TG02 - VP04

LEGEND

- Application Site Boundary
- CDA Zone Boundary
- Existing Tree Group
- Existing Tree
- Existing Dead Tree
- VP — Location of Vantage Point

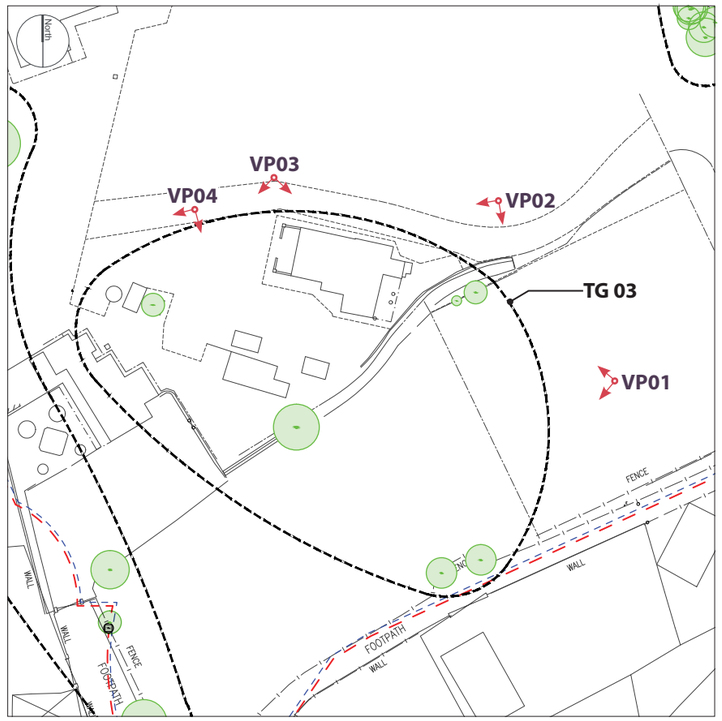
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Photographic Record of Existing Tree Groups

SCALE	N.T.S.	DATE	Sep 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	PPCP035 - TG02	REV	-

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[redacted]



LEGEND

- Application Site Boundary
- CDA Zone Boundary
- Existing Tree Group
- Existing Tree
- VP — Location of Vantage Point



TG03 - VP01



TG03 - VP02



TG03 - VP03



TG03 - VP04

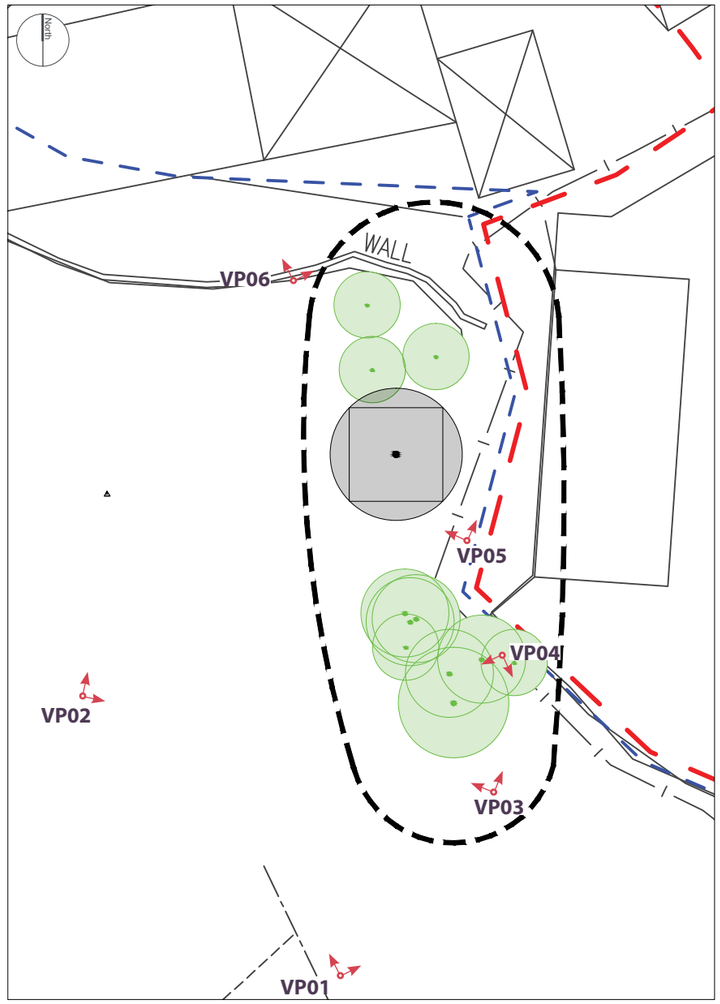
FIGURE TITLE

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Photographic Record of Existing Tree Groups

SCALE	N.T.S.	DATE	Sep 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	PPCP035 - TG03	REV	-

SCENIC Landscape Studio Limited
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[redacted]



LEGEND

- Application Site Boundary
- CDA Zone Boundary
- Existing Tree Group
- Existing Tree
- Existing Dead Tree
- VP — Location of Vantage Point



TG04 - VP01



TG04 - VP02



TG04 - VP03



TG04 - VP04



TG04 - VP05



TG04 - VP06

FIGURE TITLE

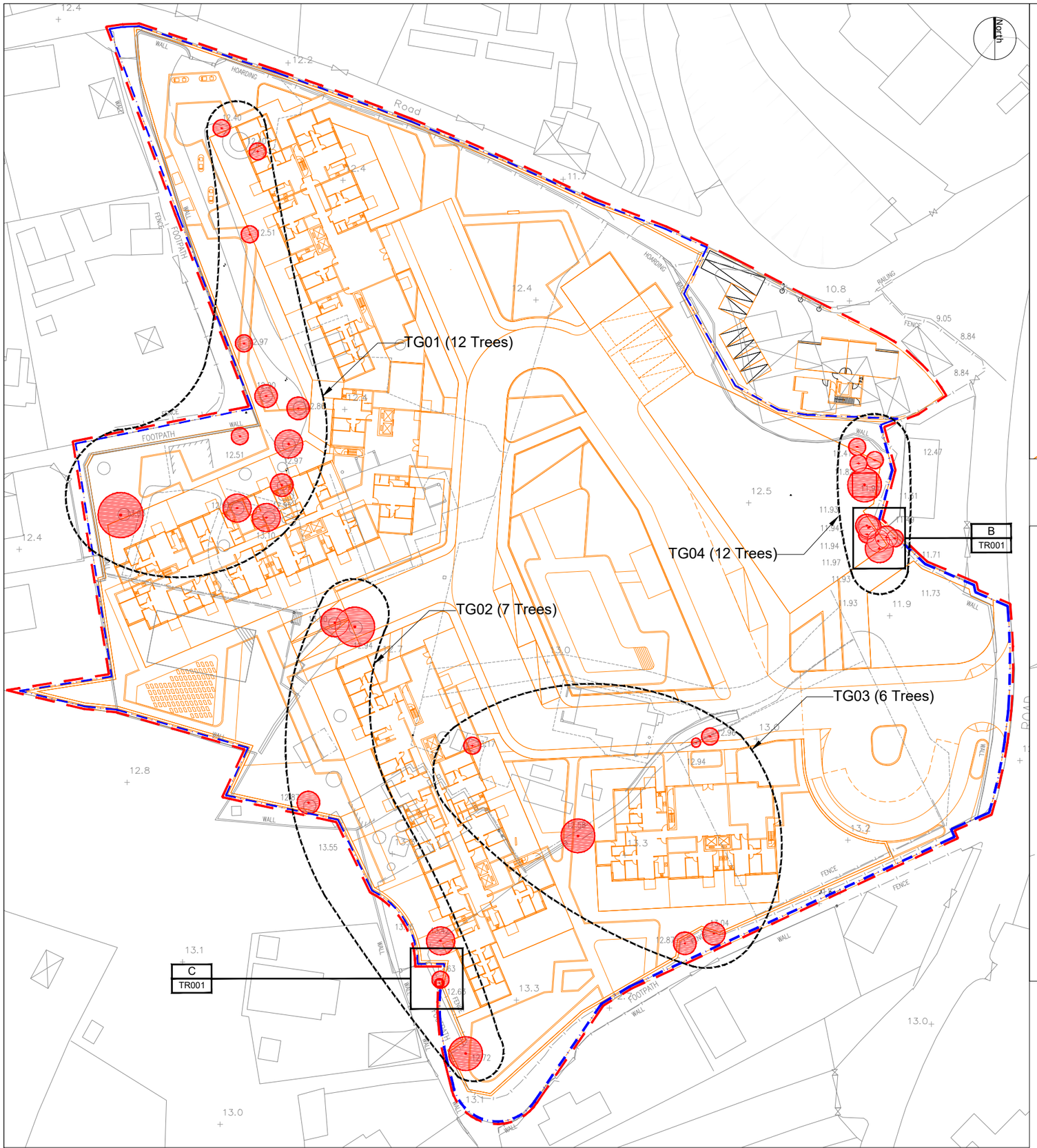
S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Photographic Record of Existing Tree Groups

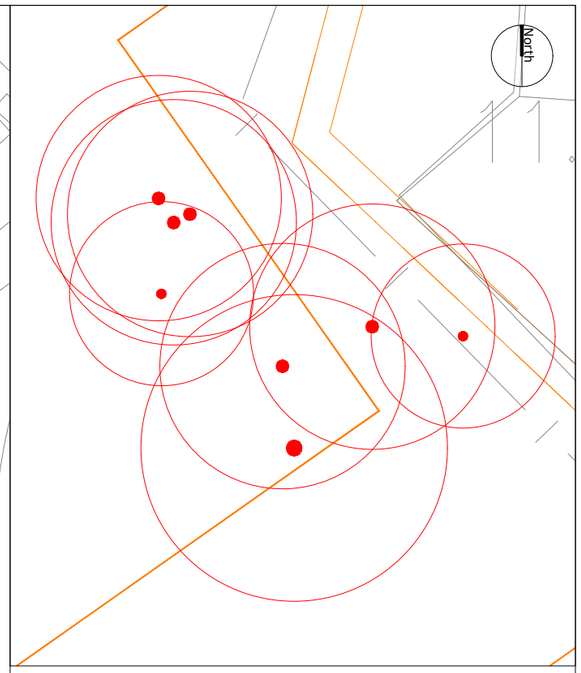
SCALE	N.T.S.	DATE	Sep 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	PPCP035 - TG04	REV	A

SCENIC Landscape Studio Limited
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[redacted]

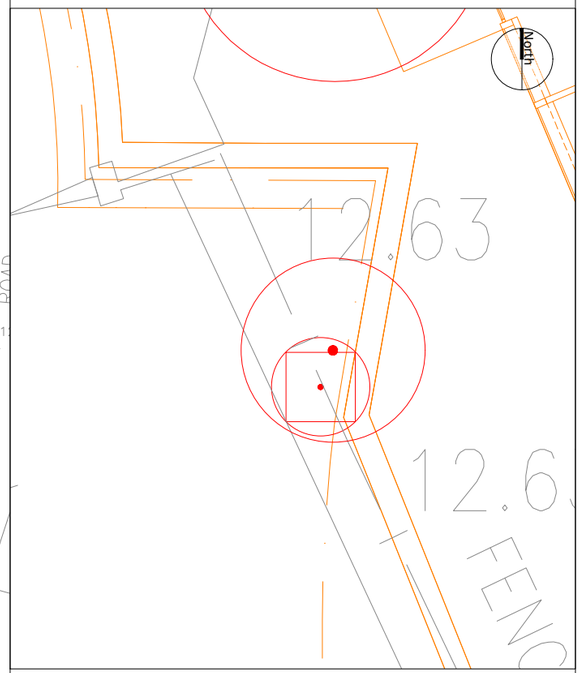
Appendix C: Tree Recommendation Plan



A TR001 — TREE RECOMMENDATION PLAN
SCALE 1:750



B TR001 — ENLARGEMENT PLAN TG04
SCALE 1:100



C TR001 — ENLARGEMENT PLAN TG02
SCALE 1:100

SCENIC landscape studio limited

[redacted]

Legend

- CDA ZONE BOUNDARY
- APPLICATION SITE BOUNDARY
- +3.40 EXISTING LEVEL
- TREE GROUP BOUNDARY
- EXISTING TREE PROPOSED TO BE REMOVED
- DEAD TREE PROPOSED TO BE REMOVED
- PROPOSED ARCHITECTURAL SCHEME

General notes

Rev.	Date	Description	Inital
G	09/10/2026	GENERAL REVISION	JH
F	30/06/2026	GENERAL REVISION	JH
E	02/03/2026	GENERAL REVISION	JH
D	23/01/2026	GENERAL REVISION	JH

Revision

	Name:	Signed:	Date:
Designed by:	CJF		
Drawn by:	JH		
Checked by:	CJF		
Approved by:	JBC		

Project Title:
S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Drawing Title:
Appendix C: Tree Recommendation Plan

Drawing Number:		Revision:
PPCP035-TR001		G
Project Number:	Scale:	Date:
PPCP035	A.S.@A3	09/10/2026

Appendix 7

Visual Impact Assessment

S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South

Visual Impact Assessment

23rd September 2026

Prepared By:

SCENIC Landscape Studio Limited

Project Title	S16 Planning Application for Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South.
Report Title	**Visual Impact Assessment**

Revision	Date	Complied by:	Checked by:	Approved by:	Description
-	20250528	Various	J Charters	Chris Foot	Draft to Client
A	20250529	Various	J Charters	Chris Foot	Final to Client
B	20251022	Various	J Charters	Chris Foot	Draft to Client
C	20260126	Various	J Charters	Chris Foot	Final to Client
D	20260227	Various	J Charters	Chris Foot	Revision
E	20260303	Various	J Charters	Chris Foot	Revision
F	20260612	Various	J Charters	Chris Foot	Revision
G	20260923	Various	J Charters	Chris Foot	Revision

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3.0 Description of the Proposed Scheme
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7.0 Appraisal of Visual Change
8.0 Conclusion

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Figure 4.4 – 4.5 Visual Envelope and Visually Sensitive Receivers

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1.0 Introduction

1.1 SCENIC Landscape Studio Limited have been commissioned to undertake a Visual Impact Assessment ("VIA") for a S16 planning application for a Proposed Residential Development cum RCHE and Shop and Services at various lots in D.D. 92 and 94 and Adjoining Government Land, Hang Tau Tai Po, Kwu Tung South, New Territories (hereafter referred to as the Application Site).

1.1 A Section 12A planning application (Application No. Y/NE-KTS/13) for Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories was approved by Town Planning Board (TPB) at their meeting on 10th December 2021. The current application outlines development of this indicative scheme proposal, including a further relaxation of BH restrictions and increases to Plot Ratio and GFA of around 20%.

1.3 The visual impact assessment (VIA) aims to assess the potential visual impacts of the proposed scheme under application. This report will demonstrate that the proposals can be accommodated within the existing landscape and visual context without generating significant adverse visual impacts on this part of the River Beas valley.

1.4 The VIA assesses the source and magnitude of the proposed development on the existing visual character and amenity within the context of the site and its environs. The baseline scheme for the assessment is the scheme approved under application Y/NE-KTS/13. The report concludes by making specific recommendations for alleviating any potential visual impact caused by the proposed development. The report is prepared in accordance with TPB PG-No. 41A 'Guidelines on submissions of Visual Impact Assessment for Planning Applications to the Town Planning Board'.

2.0 Existing Site Description

2.1 The site, with an area of 17,990.9 m^2, is located to the western side of Hang Tau Road, and to the north-west of the village of Hang Tau Tai Po. The site is an irregular shape, bounded by Hang Tau Road to the east, an existing access road to the north and existing low-density village and storage type uses along the other boundaries. The site is relatively level, sloping gently up from +12.4mPD in the north to +13.3mPD in the south and +12.20mPD on the eastern side adjacent to Hang Tau Road.

2.2 A total of 4 tree groups containing approx. 37 nos. existing trees were identified within the Application boundary, where most of the trees are growing around the edge of the site area. The trees generally comprise common fruit trees and amenity species, with some native trees also present.

3.0 Description of the Proposed Scheme

3.1 Under the current application, the proposed residential development consists of 4 nos. of residential towers, an ancillary clubhouse and aboveground car park at the central area of the site, a one-storey shop development at the eastern corner of the site and a four-storey RCHE facility at the north-eastern part of the site.

3.2 Within the application site the proposed residential blocks are located towards the western boundary of the site, set back from Hang Tau Road at the eastern boundary. The four blocks are set out in a staggered formation with 9-10 -storey block heights. An aboveground carpark and clubhouse with roof top outdoor swimming pool is also proposed in the central area of the site, incorporating and contained by the residential towers to the south and west and the RCHE to the east. The proposals also include improvements to local infrastructure at Hang Tau Road, where local road widening and a new GMB bus lay-by are provided at a proposed Surrender Area at the eastern

corner of the site. Land fronting Hang Tau Po Road is also set aside for a small supermarket / retail unit for the convenience of the local community.

3.3 The site is accessed from Hang Tau Road with an EVA cum driveway extending into the site as an internal route addressing the frontage to the proposed residential blocks. A single storey basement car park is proposed below the central area of the site with direct access to the residential tower and accessed via a ramp close to the site entrance at the eastern side of the site. Parking and loading and unloading areas for the proposed one-storey shop are also located in the eastern part of the site.

3.4 The disposition of the proposed tower blocks is designed to maximize the setback distance from Hang Tau Road, with Towers 1, 2 and Tower 3, set back around 107m, 100m and 70m respectively from this main public road frontage adjacent to the site. Whilst Tower 4, at the southern portion of the site is only set back around 35m from Hang Tau Road, the building is orientated to present its narrow end façade towards the road, thereby minimizing its impact. The building massing on the site also aims to enhance the landscape and visual integration of the proposals and create a more visually interesting built form by the adoption of different building footprints and block orientations for each of the towers. The proposed tower heights of 42.10mPD, is also stepped down at the corners of Towers 1 and 4 to 38.10mpd, and from 45.25mPD to 41.25mPD at Tower 3, in order to add visual interest and enhance visual compatibility with the lower-rise surroundings.

3.5 The site is accessed from Hang Tau Road with an EVA cum driveway extending into the site as an internal route addressing the frontage to the proposed residential blocks. A single storey basement car park is proposed below the central area of the site with direct access to the residential tower and accessed via a ramp close to the site entrance at the eastern side of the site. Parking and loading and unloading areas for the proposed one-storey shop are also located in the eastern part of the site.

3.6 The architectural layout also includes setbacks of the residential blocks from the site boundary allowing the creation of planting buffers around the perimeter of the development. The periphery of the site will be landscaped with tree and shrub planting to soften the visual mass of the buildings and enhance the sense of integration with the existing landscape context. Communal outdoor spaces will include external areas near the clubhouse with its associated hard and soft landscape proposals and several pocket spaces for resident's enjoyment among the boundary landscape areas.

3.7 The indicative 6 storey Residential Development for the adjacent site (Site (b), which formed part of the approved Application No. Y/NE-KTS/13, is adopted for the current analysis. This adjacent site forms part of the overall CDA zone, and this indicative scheme is included to facilitate direct comparison with the development scheme under the previously approved visual impact assessment at the rezoning stage.

3.8 The urban design considerations for the proposed scheme are shown on Figure 3.1.

4.0 Baseline Conditions

Visual Envelope

4.1 To identify the visual impacts of the Proposed Development, it is necessary to establish the existing baseline visual conditions of the surrounding environment. For these purposes, the project Study Area / assessment area is defined with reference to the project's Visual Envelope (VE). The Initial Assessment Area Boundary for the VIA is normally delineated according to TPB PG NO. 41A, as being around three times the overall BH of the Proposed Development Scheme. The overall VE is then determined with regard to the size of the proposed development, the distance of the development and its potential visibility from the selected viewing points, and the actual site and surrounding topographical conditions. The visual envelope covers the fields of views from all sensitive viewers in direct sight of the proposed development. The visual assessment area of the Project is identified through a combination of detailed field surveys, desktop study and review of aerial photographs.

4.2 The visual envelope (VE), the area from which the proposed development would be seen at this locality, is shaped primarily by a combination of the existing landform and the mature tree growth and the existing built development immediately adjacent to the Application Site. The extent of the VE is presented as **Figure 4.4** and **Figure 4.5** – Visual Envelope and Visually Sensitive Receivers. In addition to the requirements under TPB PG NO. 41A, Zones of Visual Influence (ZVI) have also been mapped, with the objective of illustrating the degree of visibility of the Proposed Scheme and the nature of views within the boundary of the visual envelope.

4.3 To the east the VE is contained initially by wooded knolls and existing development and vegetation growth along Hang Tau Road as well as outbuildings and tree planting within the compound of the Jockey Club Beas River Country Club which filter views further to the east across the Fanling Golf Course. Isolated views from elevated areas from the far east from the ridges of Kei Lak Tsai (+256 mPD) are also noted, although due to the distance the proposed development would comprise a small component of the view.

4.4 To the south the immediate VE is contained by the edges of Hang Tau Tai Po Village where intermittent vegetation and village type development filters views towards the site. Wooded knolls to the south of the village play an important role in limiting views from a southerly direction. Vegetation and development on the valley floor also filter these more distant views towards the site. Further south the VE extends to the uplands associated with the peaks of Kai Kung Leng (+572 mPD) and Pak Tai To Yan (+566 mPD) within Lam Tsuen Country Park. Owing to the distance and panoramic nature of these elevated views the proposed scheme would comprise a very small component of the view.

4.5 To the west and north-west the VE is formed by a combination of the existing landform and vegetation associated with the foothills of Hadden Hill (+222 mPD) and ridges surrounding Kwu Tung Reservoir which define the western extent of the River Beas Valley. The VE is contained by scattered development including warehouses and light industrial land uses to the immediate west of the Beas River Channel. This development in combination with vegetation along the edges of the channel also function to filter more distant views from low lying areas to the west of the river.

4.6 To the north views are contained by development on the valley sides, including low rise Private Residential developments including Goodwood Park to the immediate north of the site and the Royal Oaks, Casa Domingo and Valais developments further to the north and north-east. Views are also filtered by existing mature vegetation aligned to roads and the riverside areas that pass through the Beas River valley. The northerly extent of the VE is defined by the road corridor and slip roads of the Fanling Highway, with embankments and mature roadside planting screening more extensive views towards the site.

4.7 Within the VE (defined in accordance TPB PG NO. 41A), it is also considered instructive to further discern Zones of Visual Influence (ZVIs), which represent areas from which there are different degrees of visibility of the proposals. These are as follows:

- Primary Zone of Visual Influence – Area from which the majority of the development can be seen is largely contained within the Application Site boundary and the immediate margins of Hang Tau Road and village roads surrounding the site, owing to roadside boundary structures, mature tree growth and elements of built development.

- Secondary Zone of Visual Influence – Area with more limited visibility of the Proposed Scheme due to intervening obstacles including a combination of existing built development and vegetation. As such the visible part of the Proposed Scheme is largely limited to the central and upper portions of the residential blocks.

- Tertiary Zone of Visual Influence – For the most part views of the Proposed Scheme are obscured or screened by intervening visual obstacles including landform, mature tree growth and built development including industrial concerns and village houses. Any views are limited to glimpsed views of the upper portion of the residential blocks.

- Quaternary Zone of Visual Influence – Area with elevated, long distance, partial and glimpsed views of the Proposed Scheme, mainly from the uplands to the west and south. The visible part of the Proposed Scheme will range from being fragmentary views to being more widespread open views however from these locations the proposals form a small part of a large, panoramic view. The degree of visibility of the Proposed Scheme is determined by the elevation of the viewing position and the viewing angle.

4.8 The importance of identifying the ZVIs is that this provides a clearer picture of the actual visibility of the Proposed Scheme and demonstrates that given the nature of the existing landscape there are few locations where the whole development would be visible and for the most part views are limited to the upper sections and roofs of the proposed buildings. The extent of the VE and the ZVIs are presented as **Figures 4.4** to **4.5 – Visual Envelope and Visually Sensitive Receivers**.

Visual Elements

4.9 **Figures 4.1** to **4.3** show the visual elements which shape the visual outlook and amenity of the area. These include attractors such as the Beas River and its valley setting, the mature tree growth associated with wooded knolls within the valley and the grassy hill slopes and mountainous terrain to the west and south of the Application site. Recreational Landscapes such as the Fanling Golf Course and the Jockey Club Beas River Country Club are also noted.

4.10 Visually detracting elements include the scattered elements of small-scale industrial development on the fringes of village areas, particularly to the west of the Application Site. Other prominent built elements within the landscape include the Fanling Highway and high-rise development at Sheng Shui New Town.

4.11 An important consideration in determining the potential visual impacts is the degree of visibility and as has been described above this is largely controlled by visual obstacles within the valley and immediately adjacent to the Application Site boundary. Whilst the site occupies a portion of the open valley floor this area is punctuated by a number of wooded knolls which have an influence on the extent of the visual envelope of the proposed development. Low-level views from within the Beas River Valley are often obscured by the existing landform, mature vegetation and scattered development. There are several areas of low-rise development, including the village of Hang Tau, Tai Po to the south and large private residential estates such as the Valais development to the north where the close-nit nature of the housing screens views from within these built-up areas. Where

there are views from the adjacent villages, owing the density of the development these are often limited to the dwellings at the periphery of the settlement and interrupted by adjacent tree growth.

4.12 The ability of the local landscape to accommodate development and obscure views is an important consideration in assessing the potential impacts of the Proposed Scheme and its effect (if any) on the local landscape and visual context.

Other Planned and Committed Developments

Proposed Residential Developments

4.13 The future landscape and visual setting for the proposed Scheme will also include a number of planned and committed private residential developments in the River Beas valley to the south of the Fanling Highway. These including the following:

- Approved private housing development (Application No. A/NE-KTS/506) with maximum BH +75 mPD.
- Approved private housing development (Application No. Y/NE-KTS/14) with maximum BH +75 mPD.
- Approved private housing development (Application No. Y/NE-KTS/15) with maximum BH +70 mPD.

Other planned/committed low rise residential developments in the near vicinity include approved Application Nos. A/NE-KTS/466, A/NE-KTS/525, A/NE-KTS/528, A/NE-KTS/538 and A/NE-KTS/541. Although these are typically small housing lots for 2- 3 storey house development some of these are near to the application site, and despite their small scale they may have an impact on the assessment from selected viewing points.

Viewing Points

4.14 The Viewing Points (VPs) are identified as views from key strategic and popular local viewing points, as well as viewing locations from the village areas adjacent to the Application Site. For the purposes of this assessment and in accordance with current approaches the VPs are based on publicly accessible and popular locations. Priority is given during the selection to public viewpoints, open spaces and key pedestrian routes.

4.15 Based on the targeting of publicly accessible locations the representative VPs are listed below with a brief description of the existing view and their locations presented as **Figure 7.1 Location of Photomontage Viewing Points**.

- **Viewing Point 01**: View looking southwest from public open space at junction of Kam Tsin South Road and Kam Tsin Road (VSR 1);
- **Viewing Point 02**: View looking southeast from Kwu Tung Hang Village Rest Area (VSR 2);
- **Viewing Point 03:** View looking south from access road leading to riverside footpath and pedestrian bridge (VSR 3);
- **Viewing Point 04**: View looking northeast from pedestrian bridge and riverside footpath (VSR 4);
- **Viewing Point 05**: View looking southwest from entrance of HKJC Beas River Country Club (VSR 5);
- **Viewing Point 06**: View looking southwest from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets (VSR 6);
- **Viewing Point 07**: View looking north from minibus stop adjacent to Golf View Gardens (VSR 7);
- **Viewing Point 08**: View looking north from Hang Tau Tsuen Village Hall (VSR 8);
- **Viewing Point 09**: View looking southwest from access road to Fanling Lodge at Fanling Golf Course (VSR 9);
- **Viewing Point 10**: View looking east towards the site from Hadden Hill (VSR 10);
- **Viewing Point 11**: View looking north from Riverside footpath near Cheung Lek Village (VSR 11); and
- **Viewing Point 12**: View looking southeast from Kwu Tung South Road (VSR 12).
- **Viewing Point 13**: View looking southeast from Bridge over the Beas River (VSR 13).

4.16 Some of these locations are over a relatively short distance from the Application Site owing to the screening effect of the existing development, landform and mature vegetation in the immediate surroundings. More distant viewing points from popular public areas are also illustrated to help define the nature of impacts (if any) on the wider visual context of the site.

5.0 Visual Impact Assessment

Sources of Visual Impact

5.1 The primary source of visual impact will be due to the introduction of a new development within a relatively sub-urban location.

5.2 The key issues to be addressed by the visual impact assessment will include:

- The introduction of new development within a sub-urban landscape although the proposal will be bounded by existing village development.
- Development of a responsive architectural design and the associated mitigation measures to minimise potential visual impacts as far as possible which responds to both the existing context and the future planning context. This includes the creation of setbacks and buffer areas along key facades of the development and the adoption of stepped height profiles to respond to the visual context.
- Landscape and visual mitigation for the vehicular access from Hang Tau Road.
- Sensitive design of the site formation works particularly and design of structures along the site boundary.

5.3 The predicted visual impact for each of the VPs is described in section 7.0 together with the proposed mitigation measures in accordance with PG-No. 41A.

6.0 Visual Mitigation Measures

6.1 The proposed mitigation measures during the construction and operational phases of the project are described below and shown on **Figure 3.1 – Proposed Scheme: Urban Design Considerations**.

6.2 Landscape and visual mitigation measures include two key levels of approach, the primary and secondary mitigation. The primary mitigation measures are based on the design, disposition, orientation and overall form of the proposed development whilst the secondary mitigation measures look to how the proposed development can be treated to mitigate any potential impacts. It is the primary mitigation measures which shape the form of the architectural scheme and have the biggest effect on the mitigation of the potential visual impacts. The proposed mitigation measures include the following:

Primary Mitigation Measures

- Incorporation of sensitive architectural layout which seeks to maximise setbacks from existing road frontage along Hang Tau Road.
- Adoption of stepped height principle with a combination of stepping down of one storey at the ends of Towers 1, 2 and 4 to create a more subtle transition between the existing landscape and the development proposals.
- Building orientation and massing to create an offset / staggered building footprint arranged around the central courtyard with building separations between adjacent blocks to help breakdown the visual scale of the development and avoid creation of wall effects.
- Articulation of the residential blocks to create a smaller scale composition which also serves to create areas of light and shade on the building façade breaking up the visual mass of the development.
- Creation of a responsive development platform design which follows the existing site contours as closely as possible to create a more visually complex development form and ensure better integration with the immediate landscape and visual context. This approach also serves to reduce the scale of the proposed site formation works.

Secondary Mitigation Measures

- Other measures include the use of colour and finishes for the architectural façade for the structures to minimise the prominence of the scheme. This includes the use of colour blocking working with the massing and articulation of the structures.
- Landscaping including tree planting for the Application Site particularly at its periphery to create landscape buffers planted with trees and shrubs which serves to screen views of the proposals as far as possible while also serving soften the architectural form of the visible portions of the Proposed Scheme. The measures also serve to enhance the sense of visual and landscape integration with its immediate context.
- Adoption of greening measures together with landscape buffer planting to minimise the potential visual impact of the boundary wall structures.
- Utilisation of a combination of heavy standard trees and palms creating a more mature landscape with an immediate effect.
- Introduction of comprehensive urban design parameters as part of the detailed design stage of the project to establish the future character of the development from an architectural and landscape perspective. This includes the use of high quality hard and soft landscape measures including water features, sculpture, site furniture, lighting and seating.

6.3 It should be noted that the final architectural design and the appearance of the buildings is subject to detailed design stage of the project.

7.0 Appraisal of Visual Changes

7.1 The visual change is defined as the impact remaining after all practical methods of mitigation have been implemented. A series of computer-generated images or photomontages from the viewing points indicated on **Figure 7.1** are presented as **Figures 7.2** to **7.12**. The locations have been selected to demonstrate the range of viewing angles and viewing distances in relation to identified VPs, demonstrate the schemes 'fit' into the existing and future sub-urban context; and also demonstrate the degree of visibility from surrounding locations.

7.2 The photomontages show the existing situation, the baseline scheme (as per approved S12A) and the Proposed Scheme following the implementation of the proposed mitigation measures. Where the proposals are not visible, or views partially obscured a red dashed line is used to indicate their approximate location.

7.3 The text below provides a brief description of each of the views selected for the photomontages and provides an appraisal of visual changes (visual composition, visual obstruction, the effect on public viewers and the effect on visual resources) in accordance with TPB PG-No. 41A.

7.4 **Viewing Point 01: View looking south from public open space at junction of Kam Tsin South Road and Kam Tsin Road (VSR 1)** (**Figures 7.2** refers). This viewing point is at an elevation of approximately +17.0mPD and located at a distance of approximately 890m from the proposed development. The view is selected to illustrate that views from the north of proposed development at this distance are screened by existing low-rise development, landform and woodland vegetation bordering the site and illustrates that the proposed project would have no impact on public views from one of the few designed public open spaces in the vicinity. The existing view is in the direction of Kam Tsin Road and is framed by roadside vegetation and private residential developments such as Royal Oaks and Ascot Park set against a backdrop of mountain peaks including Kai Kung Leng (+584mPD).

7.5 *Sensitivity of Public Viewers: Medium*
This viewing point is available to local residents and public using the open space and travellers on the surrounding roads. Existing views along Kam Tsin Road are largely contained within the road corridor due to roadside vegetation and roadside development and this open space represents one of the few areas where a more expansive view is available. The sensitivity would therefore be considered medium.

7.6 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening low rise development, roadside tree planting and more distant landform and wooded knolls.

7.7 *Visual Obstruction*: None
The proposed development will not be visible from this location and therefore there will be no visual obstruction.

7.8 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development there will be no impact on public viewers.

7.9 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.10 *Overall visual Impact*: Negligible
Due to the screening effect of the existing landform and low-rise development there remains no impact on this view.

7.11 **Viewing Point 02: View looking south-east from Kwu Tung Hang Village Rest Area (VSR 2) (Figures 7.3 refers)** This viewing point, at an elevation of approximately +12.0mPD and located at a distance of approximately 230m, is available to residents and the public using the rest area facilities and travelers on the riverside access road on the western bank of the Beas River. The view is selected to illustrate that the proposed development would be largely screened by existing vegetation and development along the riverside and illustrates that the proposed project would have very limited visibility in public views along the attractive river corridor. The existing view is relatively enclosed by riverside vegetation, with glimpsed views of the backdrop of mountain peaks including Tai To Yan (+566mPD) and Kai Keng Leng (+584mPD) and the spurs and ridgelines associated with these upland formations.

7.12 *Sensitivity of Public Viewers:* Medium
This viewing point is available to residents and users of this riverside access road. The existing riverside setting with a mountain backdrop is an attractive composition. The degree of visibility towards the Application Site is partial / glimpsed and there are alternative views along the river channel to the north and south and as such the sensitivity would be considered medium.

7.13 *Visual Composition*: Not entirely apparent
Similar to the Base Scheme, the visual composition of the Proposed Scheme would not be entirely apparent from this location owing to the screening effect of the existing riverside tree belts on the eastern side of the Beas River. As with the base scheme, the top part of Tower 1 would be glimpsed through vegetation, however the other parts of the development would be screened by the existing riverside vegetation.

7.14 *Visual Obstruction*: Slight
Similar to the base scheme, only a small portion of Tower 1 is glimpsed through the riverside tree belt and obstructs a small part of the distant mountain backdrop.

7.15 *Effect on Public Viewers*: Negligible
The proposed development is largely screened from view, where the scene is dominated by the riverside and its greenery and largely unencumbered by views of development, with only glimpsed views through vegetation of development on the east side of the river such as the rooftops of the Goodwood Park development.

7.16 *Effect on Visual Resources*: Slight
As noted above, from this viewing point the proposed building obstructs glimpsed views to a distant mountain backdrop, with a very small loss of view of this visual resource within the context of the overall view.

7.17 *Overall Visual Impact*: Negligible
The overall visual impact at the viewing point was originally assessed as slight, since only a small portion of Tower 1 is glimpsed through the riverside tree belt where the scene is dominated by the riverside and its greenery and largely unencumbered by views of development. Whilst the view of Tower 1 in the proposed scheme is comparatively slightly taller than the approved scheme, the built form is more articulated in terms of roofline and facade. The change is therefore considered to have negligible impact in comparison to the base scheme.

7.18 **Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge (VSR 3)** (**Figures 7.4** refers). This viewing point, at an elevation of approximately +13.0mPD and located at a distance of approximately 280m, is available to residents and the public using the riverside access road on the eastern bank of the Beas River. The view is selected to illustrate that views from the north of proposed development at this distance are screened by existing vegetation and development in views along the floodplain from the north. The existing view is relatively enclosed by riverside vegetation to the west with glimpsed views of the backdrop of mountain peaks and to the east the roadside development along Hang Tau Road frames the edge of the view.

7.19 *Sensitivity of Public Viewers:* Medium
This viewing point is available to residents and users of this riverside access road. The existing riverside setting with a mountain backdrop is an attractive compositional although existing shacks and structures lower the quality of the view such that the sensitivity would be considered medium.

7.20 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured owing to the screening effect of the existing tree belts aligned to an existing drainage channel.

7.21 *Visual Obstruction*: None
The proposed development (both baseline and proposed scheme) will not be visible from this location and therefore there will be no visual obstruction.

7.22 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development (both baseline and proposed scheme) there will be no impact on public viewers.

7.23 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.24 *Overall visual Impact*: Negligible
Due to the screening effect of the existing vegetation and low-rise development there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.25 **Viewing Point 04: View looking north-east from pedestrian bridge and riverside footpath (VSR 4)** (**Figures 7.5** refers). This viewing point at an elevation of approximately +12mPD is located to the south-west of the site at a viewing distance of around 295m. The view is available to pedestrians crossing a bridge over the Beas River. The view is selected to illustrate that the proposed development would be screened by existing vegetation and development along the riverside and illustrates that the proposed project would have limited visibility in public views along the attractive river corridor. The existing view is a little enclosed by riverside vegetation, with framed views along the river channel to the backdrop of the foothills of Ki Lun Shan.

7.26 *Sensitivity of Public Viewers: Medium*
This viewing point is available to users of riverside footpaths. The existing riverside setting with a mountain backdrop is an attractive composition. The degree of visibility towards the Application Site is limited by intervening vegetation and built development and there are alternative views along the river channel to the north and south and as such the sensitivity would be considered medium.

7.27 *Visual Composition*: Not entirely apparent
The visual composition of the Proposed Scheme (both baseline and proposed scheme) would not be entirely apparent from this location owing to the screening effect of the existing riverside tree belts on the eastern side of the Beas River. The measures adopted for both the baseline and proposed scheme to minimize their impact, including stepped height profile, have an impact on their visibility as viewed from this viewing point. The more complex height profiles of both schemes are evident and help reduce the scale of the development relative to existing built structures visible in the view.

7.28 *Visual Obstruction*: Slight
Whilst the uppermost portion of all three Towers may be visible above the riverside tree belt, from this viewing point the proposed building obstructs views to the open sky rather than any part of the visible mountain backdrop.

7.29 *Effect on Public Viewers*: Negligible
Whilst the scene comprises several attractive elements including the riverside and its greenery and views to the foothills of Hadden Hill, there are also glimpsed views through the vegetation on the east side of the river towards some low-rise storage sheds and other riverside developments. Since only partially filtered views of the upper portions of the development would be visible the effect on public viewers is considered small.

7.30 *Effect on Visual Resources*: Slight
As noted above, from this viewing point the proposed building obstructs glimpsed views through vegetation of the open sky rather than any part of the visible mountain backdrop, with a small loss of open sky view within the context of the overall view.

7.31 *Overall Visual Impact*: Negligible
Whilst only the upper portions of the development would be glimpsed through vegetation the scene is dominated by the riverside and its greenery and largely unencumbered by views of existing development. Since there are alternative views along the river channel to the north and south the overall impact was originally assessed as Slight. Whilst the view of proposed development is comparatively slightly taller than the approved scheme, the built form is a little more articulated in terms of roofline and views are heavily filtered through vegetation. The change is therefore considered to have negligible impact in comparison to the base scheme.

7.32 **Viewing Point 05: View looking southwest from entrance of HKJC Beas River Country Club (VSR 5)** (**Figures 7.6** refers). This view looks southwest towards the site from the entrance to the Country Club at a distance of approximately 350m from the Application Site. The scheme is screened by intervening landform and tree planting belts and would not be visible from the publicly accessible roadside access to the Club.

7.33 *Sensitivity of Public Viewers: Medium*
This viewing point is available to members of the public accessing the club facilities. The sensitivity of public viewers in this location is considered to be medium. Whilst the view demonstrates an attractive wooded quality in the direction of the Application Site and provides a wooded backdrop to the club facilities, the development would be screened by intervening landform and vegetation and the carparks, roads and buildings in the foreground of the view reduce the sensitivity of the view to other forms of development.

7.34 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening tree planting and more distant landform and wooded knolls.

7.35 *Visual Obstruction*: None
The proposed development (both baseline and proposed scheme) will not be visible from this location and therefore there will be no visual obstruction.

7.36 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development (both baseline and proposed scheme) there will be no impact on public viewers.

7.37 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.38 *Overall visual Impact*: Negligible
Due to the screening effect of the existing landform and vegetation there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.39 **Viewing Point 06: View looking southwest from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets (VSR 6)** (**Figures 7.7** refers). This view looks south-west towards the site from Hang Tau Road at a distance of approximately 105m from the Application Site. In this view, from a close viewing point, the scheme is relatively prominent in the centre of the view. However, the view also demonstrates the effectiveness of the building setback from Hang Tau Road and the mitigating effect of the stepped height profile and building separations proposed for the development. For both the Proposed and Base schemes Tower 1 has a long length of visible façade, with the stepping down at the end of this block helping to reduce the building mass visible above the existing tree line. Tower 2 and Tower 3 are also visible in the background, with the proposed building separation between them partially apparent above the RCHE. The upper portions of the potential six storey development at Site(b) would also be visible in this view, functioning to screen part of the proposed development from view. Setting back the buildings from Hang Tau Road maintains a low-rise, small-scale setting to the road corridor for the Base scheme, however the lesser setback of Tower 4 in the Proposed Scheme does temper this effect.

7.40 *Sensitivity of Public Viewers:* Medium
This viewing point is available to residents and travellers along Hang Tau Road. The existing tree lined setting with a mountain backdrop is an attractive scene however existing roadside shacks and structures lower the quality of the view such that the sensitivity would be considered medium.

7.41 *Visual Composition*: Largely apparent
The visual composition of both the Base Scheme and the Proposed Scheme would be largely apparent from this location, with only the lower floors of the towers and RCHE screened by the existing foreground roadside development and tree clusters. As noted above, the measures adopted to minimize the impact of the scheme, including stepped height profile and building setback from Hang Tau Road have a beneficial impact on the visibility of the both schemes as viewed from this viewing point, although the positioning of Tower 4 and the RCHE under the Proposed Scheme does contribute to a sense of a larger scale development and a less visually open road corridor.

7.42 *Visual Obstruction*: Moderate
In this view the development schemes appear as two connected clusters which largely obstruct views to the mountain backdrop from this viewing point. The cluster to the southeastern side of the view is relatively larger in the Proposed Scheme as a result of the visibility of both Tower 4 and the RCHE block within the view. Both the Base and Proposed Scheme obstruct a wide extent of the overall ridge line and also obstruct views to areas of open sky for what is otherwise a relatively open panoramic view of the mountain backdrop and skyline. The degree of visual obstruction is therefore considered medium for both schemes.

7.43 *Effect on Public Viewers*: Moderate
Whilst much of the middle and upper portions of the development would be visible there are existing roadside developments which lower the quality of the view. Whilst the development is set back from the public road it would however represent a prominent new element on the skyline and its effect on public viewers is therefore considered Moderate for both the Base and Proposed Schemes.

7.44 *Effect on Visual Resources*: Moderate
As noted above, from this viewing point the proposed building obstructs views of open sky and portions of the visible mountain backdrop, with a moderate loss of these visual resources.

7.45 *Overall Visual Impact*: Slight
For both the Base and Proposed Schemes upper and middle portions of the development would be visible and would displace part of the visible skyline and mountain backdrop. Whilst the existing scene is well vegetated and offers views to distant mountain peaks there are also elements of development prominent within the view. The proposed primary mitigation measures help in lessening the impact of the scheme on the local landscape and the overall impact is therefore assessed as Moderate. Owing to

the increased height of the towers and extension of the RCHE to the north, the Proposed Scheme does have a slightly greater comparative impact than the Base Scheme, and therefore overall impact is assessed as Slight, relative to the previously approved scheme.

7.46 **Viewing Point 07: View looking north from minibus stop adjacent to Golf View Gardens (VSR 7)** (**Figures 7.8** refers). This VP represents the view available to north bound vehicle travellers and pedestrians on Hang Tau Road from the viewing point of an informal minibus stop within the village. The view at an elevation of approximately +15mPD and at a distance of 100m extends north towards the application site and is largely channelled through the village development along the road corridor. The view is also selected to demonstrate the effectiveness of the setback of the building blocks from Hang Tau Road and the mitigating effect of the stepped height profile of the buildings. Owing to this setback in both the base scheme and proposed scheme, Towers 1 and 2 do not impede the direct vista along this section of road but are partially screened by village development along the western side of the view. In the base case (with the approved scheme) the approved low-rise residential development under Application Nos. A/NE-KTS/466 screens much of the lower and middle parts of the proposed development from view.

7.47 *Sensitivity of Public Viewers: Low*
Whilst Hang Tau Road is the main transport artery through the village the nature of the view is highly developed and urban; with the view dominated by hard elements and only isolated views of trees and soft landscape elements. As such the visual sensitivity of this VP is considered to be low.

7.48 *Visual Composition*: Not entirely apparent
The visual composition of both the Base and Proposed Schemes would not be entirely apparent from this location owing to the screening effect of the existing foreground roadside development and the approved low-rise residential development under Application Nos. A/NE-KTS/466. However, as noted above, the measures adopted to minimize the impact of the scheme, including stepped height profile and building setback from Hang Tau Road have an impact on the visibility of the schemes as viewed from this viewing point. In comparing the base scheme and the proposed scheme there are, however, differences in the composition which are perceived from this viewing point. In particular the upper portions of Tower 4 now occupy the central portion of the view, whilst in the base scheme only the edge of Tower 3 was partially visible, towards the edge of the road corridor.

7.49 *Visual Obstruction*: Slight
In the base scheme, the uppermost and outer portions of Tower 3 are visible along the edge of the street, but the degree of obstruction was deemed slight, as the central vista of the view remained unobstructed. In the proposed scheme, although the height of Tower 3 is a little increased the tower is also further set back from the roadside, where it is obscured behind existing roadside furniture and future low-rise development. Tower 4 occupies the central portion of the view, with view corridors channeled to its sides. However, the lower and middle parts of tower 4 are screened by the approved low-rise residential development under Application Nos. A/NE-KTS/466. As such, for the proposed scheme, the degree of visual obstruction is deemed a Slight increase, relative to the Approved scheme.

7.50 *Effect on Public Viewers*: Slight
Whilst a greater portion of the development would be visible in the Proposed Scheme, as compared to the Base Scheme, it is also noted that owing to the greater distance from the viewing point the visible blocks appear as a similar height to the existing development lining the roadsides of this view. These existing roadside developments lower the quality of the view whilst increasing the capacity of the surroundings to absorb such change without significant effects. As such the effect on public viewers is considered slight.

7.51 *Effect on Visual Resources*: Moderate
From this viewing point the base scheme obstructed a small portion of the views to the open sky, where the effect on visual resources was judged as Slight. However, this blockage is more apparent

in the Proposed Scheme, as Tower 4 occupies a central part of the open sky view along the road corridor. Although Tower 3 is set back and partially screened behind existing foreground structures, the minor increase in height does nevertheless result in a small increase in the loss of open sky within the view. The distance of the scheme from this viewing point and the fact that the site sits at a slightly lower elevation means the towers present a blockage at the lower portion of the view, whilst views are also retained in corridors either side of Tower 4. Nevertheless, the degree of openness is more affected as compared to the Base Scheme and the effect of Visual Resources is therefore judged as Moderate.

7.52 *Overall Visual Impact*: Slight
The existing view is a low-rise urban scene and the additional visible development that the scheme represents is in keeping with the existing built character. The Base scheme was deemed to have limited impact on the overall scene. Tower 3 is a little taller however it is further setback from the road, where it is more effectively screened by existing and proposed foreground structures. Nevertheless, the overall impact of the Proposed Scheme is comparatively slightly greater, owing to the modified block arrangements and greater visibility of Tower 4, which occupies part of the previous footprint of Tower 3. Overall, owing to the developed nature of the existing scene and corresponding low sensitivity of the public views the overall impact remains deemed as Slight.

7.53 **Viewing Point 08: View looking north from Hang Tau Tsuen Village Hall (VSR 8)** (**Figures 7.9** refers). At an elevation of approximately +15mPD and at a distance of 270m this viewing point represents views from village areas to the south of the Application Site, with particular reference to the public facility of the Village Hall at the centre of the village of Hang Tau Tsuen. As described previously, owing to the density of the development, views from within such village areas are often limited to the dwellings at the periphery of the settlement. The view illustrates this point, where the dense housing development within the village channels views along access roads and the dense housing development beyond these access routes screens views to the proposed development beyond. In this view the tight cluster of three storey houses at the Regent Garden Development effectively screens views towards the Application site.

7.54 *Sensitivity of Public Viewers: Low*
Whilst Hang Tau Road is the main transport artery through the village and the Village Hall is an important public node within the settlement the nature of the view is highly developed and urban; with the view dominated by hard elements and only isolated views of trees and soft landscape elements. As such the visual sensitivity of this VP is considered to be low.

7.55 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening low rise roadside development.

7.56 *Visual Obstruction*: None
The proposed development (both baseline and proposed scheme) will not be visible from this location and therefore there will be no visual obstruction.

7.57 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development there will be no impact on public viewers.

7.58 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.59 *Overall visual Impact*: Negligible
Due to the screening effect of the existing low-rise development there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.60 **Viewing Point 09: View looking south-west from access road to Fanling Lodge at Fanling Golf Course (VSR 9)** (**Figures 7.10** refers). At an elevation of approximately +11mPD and at a distance of 1425m vehicle travellers and pedestrians accessing the lodge have views towards the Application Site screened by intervening landform and vegetation. The view is selected as one of the few public viewing points in the vicinity of the golf course with open views across the course towards the site. Whilst the more heavily trafficked Fan Kam Road traverses the golf course at a similar distance from the application site, the road margins are densely planted and offer no such open views. The view is characterized by glimpses of background hills Kai Kung Leng Hill (+584mPD) between the tree lined periphery and across the manicured fairways of the golf course.

7.61 *Sensitivity of Public Viewers: Medium*
This viewing point is available to a limited number of people who may need to access the Fanling Lodge, as the road is not a through road and therefore serves no other purpose. The sensitivity of public viewers in this location is considered to be medium. Whilst the view exhibits good landscape quality the view towards the Application Site is screened by intervening landform and vegetation and there are alternative views of a similar nature to the south and east, whilst the views are likely to be experienced by relatively few members of the public.

7.62 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening tree planting belts within the golf course, intervening low rise residential development and more distant landform and wooded knolls.

7.63 *Visual Obstruction*: None
The proposed development (both baseline and proposed scheme) will not be visible from this location and therefore there will be no visual obstruction.

7.64 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development there will be no impact on public viewers.

7.65 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.66 *Overall visual Impact*: Negligible
Due to the screening effect of the existing landform and vegetation there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.67 **Viewing Point 10: View looking east from Hadden Hill (VSR 10)** (**Figures 7.11** refers). At an elevation of approximately +180mPD and at a distance of 1250m hikers using a seasonal trail to summit of Hadden Hill enjoy panorama views over the Beas River and Long Valley towards Sheng Shui. Whilst this view is likely to be experienced by a limited number of members of the public, the elevated and panoramic view over this area provides a good overview of the development context of the current proposals. Whilst the Beas River Valley has moments of tranquil and natural quality the view of the valley from this elevated viewing point illustrates that this is a developed landscape in close proximity to the existing high rise urban centre of Sheng Shui. The future development of Kwu Tung North and the approved development under s12A Applications No.A/NE-KTS/506 (up to +81.5mPD), No.Y/NE-KTS/14 and No.Y/NE-KTS/15 (up to +75mPD) will add to this extent of high-rise development within the landscape. The current proposal is described as a middle rise development and the difference in scale between these development proposals of 8-9 storeys at the Application site and the approved development of between 19 and 16 storey blocks under the above-mentioned approved developments are evident in the photomontage. Approved private housing development (Application No. Y/NE-KTS/525) with maximum BH +22.5 mPD and other planned/committed low rise residential developments in the near vicinity including approved Application Nos. A/NE-KTS/466 and A/NE-KTS/538 would also be visible from this viewing point. The

proposed offset tower configurations and stepped building profiles help to reduce the scale of the proposed development (both base and proposed schemes) as viewed from this viewing point and better blend with the predominantly low-rise surroundings.

7.68 *Sensitivity of Public Viewers: Medium*
Whilst the surrounding mountain scenery is an attractive element of the view there is already significant development in the lowland areas. There would be small change in the visual character of the valley environment owing to the introduction of new middle rise development on the margins of existing lower rise settlements. There are alternative panoramic views to the south-east, and west. Given the availability to relatively few hikers the visual sensitivity of this VP is considered to be Medium.

7.69 *Visual Obstruction*: Small blockage of view
The panoramic view over the valley would be largely unaffected by the imposition of this development on the valley floor some distance away from the viewing point. The development proposal would obscure views of some roadside development and vegetation which would have a limited effect on the character of the view and the sense of openness of the view would not significantly change.

7.70 *Effect on Public Viewers*: Slight
There would be small change in the visual character of the valley environment owing to the introduction of new middle rise development on the margins of existing lower rise settlements. However, it should be noted that this elevated view from a remote hillside overlooking the valley would be experienced by relatively few public viewers.

7.71 *Effect on Visual Resources*: Slight
The implementation of both the Base Scheme and the Proposed Scheme would marginally increase the visible proportion of development, replacing a very small part of the view previously formed by the tree planting along the edge of Hang Tau Road. However, owing to the localized and small scale of potential impact the effect on existing visual resources is considered small.

7.72 *Overall Visual Impact*: Negligible
The visible portion of the scheme is a small component of the view and it is viewed against a backdrop of existing high-rise development at Sheng Shui. The development is also seen as being of smaller height and scale that the approved developments under Applications Nos. A/NE-KTS/506, Y/NE-KTS/14 and Y/NE-KTS/15 located to the northern side of the view at a similar distance from this viewing point. As such the impact of the base scheme was originally assessed as Slight. Whilst the view of proposed development is comparatively slightly taller than the approved scheme, at this far distance the change is barely perceived, whilst the massing and articulation of the two schemes appears similar. The change is therefore considered to have negligible impact in comparison to the base scheme and the overall impact relative to the Base situation would remain as Slight.

7.73 **Viewing Point 11: View looking north from Riverside footpath near Cheung Lek Village (VSR 11)** (**Figures 7.12** refers). This viewing point is at an elevation of approximately +16.0mPD and located at a distance of approximately 970m from the proposed development. The view is selected to illustrate that views of proposed development from the south down the Beas River Valley are screened at this distance by existing landform and woodland vegetation and illustrates that the proposed project would have no impact on public views from the riverside footpath. In particular the wooded knoll to the south of Hang Tau Village is effective in screening the development from view. The existing view looks north along the course of the Beas River with glimpsed views over agricultural filed to backdrop of mountain peaks including Hadden Hill / Ki Lung Shan (+222mPD).

7.74 *Sensitivity of Public Viewers: Medium*
This viewing point is available to local residents and public using the riverside footpath. The sensitivity of public viewers in this location is considered to be medium. Whilst the view

demonstrates an attractive natural quality the view towards the Application Site is screened by intervening landform and vegetation and there are alternative views to the south, west and east.

7.75 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening riverside tree planting and more distant landform and wooded knolls.

7.76 *Visual Obstruction*: None
The proposed development (both baseline and proposed scheme) will not be visible from this location and therefore there will be no visual obstruction.

7.77 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development there will be no impact on public viewers.

7.78 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.79 *Overall visual Impact*: Negligible
Due to the screening effect of the existing landform and vegetation there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.80 **Viewing Point 12: View looking southeast from Kwu Tung South Road (VSR 12)** (**Figures 7.13** refers). This viewing point is at an elevation of approximately +23.0mPD and located at a distance of approximately 600m from the proposed development. The view is selected to illustrate that views from the north-west of proposed development at this distance are screened by the close-knit nature of existing low-rise development, landform and woodland vegetation and illustrates that the proposed project would have no impact from this public road. The existing view is along the road corridor and is framed by roadside vegetation and low-rise structures associated with existing small holdings.

7.81 *Sensitivity of Public Viewers: Medium*
This viewing point is available to local residents and travellers on Kwu Tung South Road. Existing views along the road are largely contained within the road corridor due to roadside vegetation and roadside development. Whilst some of the roadside development is rather ramshackle the outlook is generally wooded and there are distant views towards the ridgeline of Pak Tai To Yan (+480mPD). The sensitivity would therefore be considered medium.

7.82 *Visual Composition*: Not apparent
Views of the proposed development (both baseline and proposed scheme) from this location will be obscured by intervening low rise roadside development and the wooded slopes of hills surrounding Kwu Tung Reservoir.

7.83 *Visual Obstruction*: None
The proposed development will not be visible from this location and therefore there will be no visual obstruction.

7.84 *Effect on Public Viewers*: Negligible
With the implementation of the proposed development (both baseline and proposed scheme) there will be no impact on public viewers.

7.85 *Effect on Visual Resources*: None
The visual resources apparent in this view will not be affected by the proposals.

7.86 *Overall visual Impact*: Negligible

Due to the screening effect of the existing landform and low-rise development there will be no impact on this view. There is therefore no change to the assessed visual impact when comparing the baseline and proposed scheme.

7.87 **Viewing Point 13: View looking south-east from Bridge over the Beas River (VSR 13) (Figures 7.14 refers)** This viewing point, at an elevation of approximately +9.5mPD and located at a distance of approximately 300m, is available to residents and the public crossing the Beas River by foot. The view is selected to illustrate that the proposed development would be partially screened by existing vegetation along the riverside and illustrates that the proposed project would have limited visibility in public views along the attractive river corridor. The existing view is relatively enclosed by riverside vegetation, with glimpsed views of the backdrop of mountain peaks. It is further noted that the riverside vegetation is relatively immature and we might therefore anticipate a taller and more effective vegetation screen in the future.

7.88 *Sensitivity of Public Viewers:* Medium
This viewing point is available to residents and users of this riverside access road. The existing riverside setting with a mountain backdrop is an attractive composition. The degree of visibility towards the Application Site is partial / glimpsed and there are alternative views along the river channel to the north and south and as such the sensitivity would be considered medium.

7.89 *Visual Composition*: Not entirely apparent
Similar to the Base Scheme, the visual composition of the Proposed Scheme would not be entirely apparent from this location owing to the screening effect of the existing riverside tree belts on the eastern side of the Beas River. Only the upper floors of Towers 1 and 2 would be apparent.

7.90 *Visual Obstruction*: Slight
Only the upper floors of Towers 1 and 2 would be visible above the riverside tree belt and obstruct a small part of the open sky view.

7.91 *Effect on Public Viewers*: Moderate
The proposed development is mostly screened from view, however the existing scene is dominated by the riverside and its greenery and largely unencumbered by views of development. The introduction of portions of visible development above the riverside trees is therefore considered to have a moderate impact on public viewers at this location.

7.92 *Effect on Visual Resources*: Slight
As noted above, from this viewing point the proposed building obstructs views to the open sky backdrop, with a small loss of view of this visual resource within the context of the overall view.

7.93 *Overall Visual Impact*: Slight
The overall visual impact at the viewing point was is assessed as slight for the base case, since only the upper portions of Towers 1 and 2 are glimpsed through the riverside tree belt and other parts of the proposed development largely screened from view. Whilst T1 and T2 appear taller in the proposed scheme, the built form is more articulated in terms of roofline and façade, with the stepping portion of Tower 1 helping to break down the visual mass. Nevertheless, the change is considered to have Slight impact in comparison to the base scheme.

8.0 Conclusion

8.1 In general, the existing landscape and visual amenity is characterised by a sub-urban context of the valley floor active and abandoned agricultural land, occasional wooded knolls, and light industrial uses bounded by 3-storey village development and some private residential developments. A detailed review of the Application Site and its immediate context have revealed that the visual envelope and the primary and secondary zones of visual influence are largely contained in close proximity to the Application Site. This is due to the low-lying nature of the valley floor, and a combination of the existing landform, the presence of wooded knolls and the density of the existing mature tree growth and the proximity of existing village development which serve to contain and, in some locations, obscure views.

8.2 The Proposed Scheme comprises some 4 nos. residential towers with building heights ranging from 9 to 10-storeys (38.1 to 45.25mPD) in height with a basement car-park level and a proposed clubhouse and above ground car park at the central area of the site. A four storey RCHE facility and a 1 storey shop development will be located to the southeast. The orientation and disposition of the blocks to form a staggered pattern is designed to create a more permeable development frontage and avoid potential wall effects. This includes a building separation between Towers 2 and 3 of approximately 17m. In addition to extensive internal landscaping the Application Site is surrounded by landscape buffers which will contain tree and shrub planting.

8.3 The disposition of the proposed residential blocks is designed to maximize setback distance and visibility from the Hang Tau Road to the west and the relatively more sensitive existing visually sensitive receivers from this direction. The selection of viewing points has been comprehensive covering all the potential viewing angles from publicly accessible locations. As is clearly demonstrated by the photomontages there are few locations from where the Proposed Scheme can be seen in its entirety. In the majority of locations views of the proposals are largely obscured by intervening landform, mature vegetation and built structures. In the few locations where there will be views of the proposals these are largely partial or glimpsed with a small part of the scheme being visible.

8.4 The photomontages show a scheme which although located within a sub-urban environment fits comfortably within its context. This 'comfortable fit' is in part due to the architectural enhancement measures designed into the Proposed Scheme which have been described above and partly due to its setting and the lack of visual access. It would be unrealistic to think that there would be no adverse impacts however this must also be considered in terms of the nature and extent of existing and future views.

8.5 The assessment makes a comparison with the approved development scheme for the site under Application No. Y/NE-KTS/13. For most of the selected viewing points the predicted visual impacts will represent negligible change as compared to this base case scheme. However, the relative assessed impacts from three nos. viewing points, in close proximity to the site, are considered to be slight, in comparative terms.

8.6 Given the factors described above together with the adoption of a responsive architectural design the implementation of the Proposed Scheme would not significantly detract from the existing landscape and visual amenity of the local area. Given the factors described above the proposals are considered to be visually compatible with their future context.

Visual Impact Assessment Figures

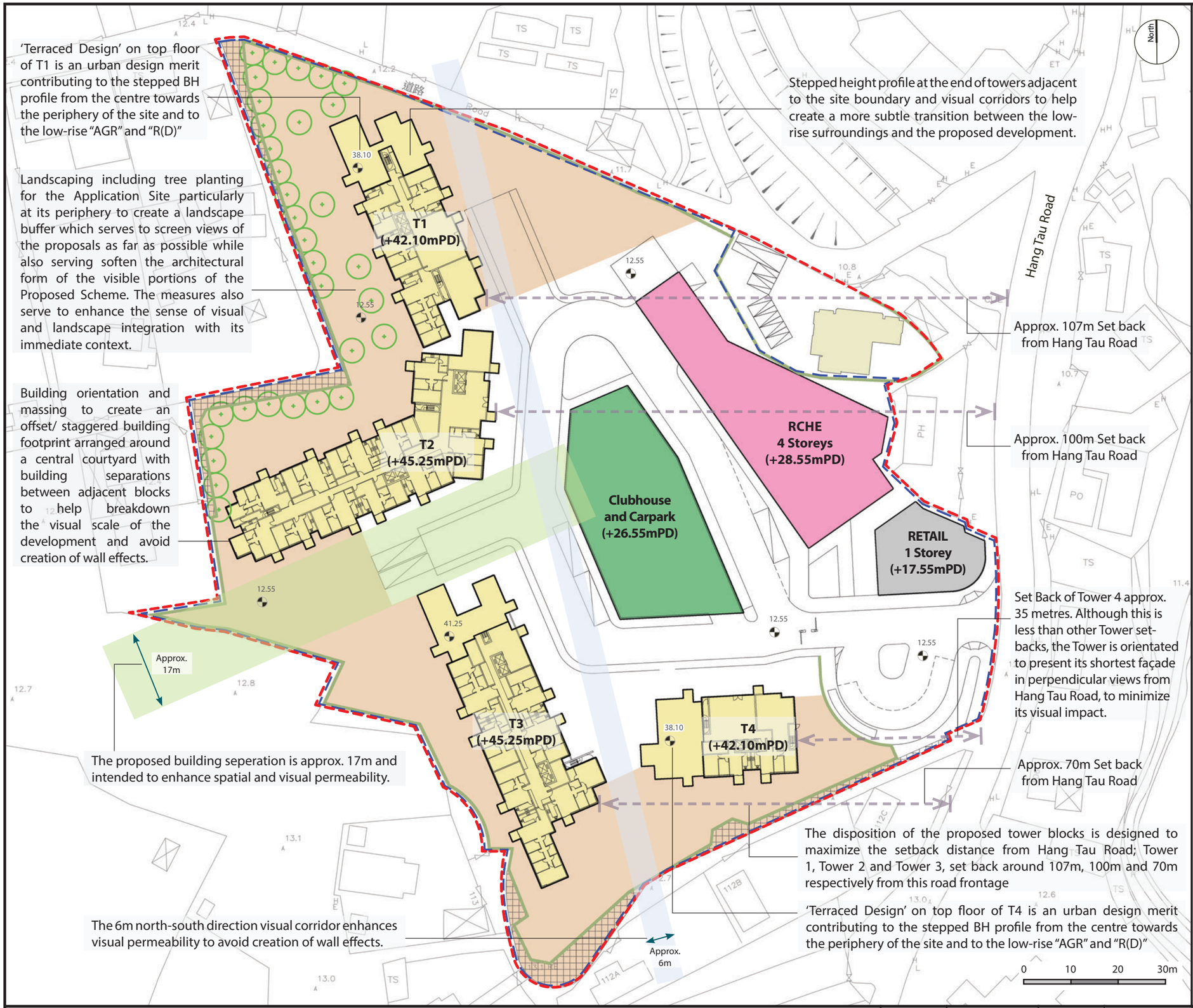


FIGURE TITLE Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Proposed Scheme: Urban Design Considerations

SCALE	A.S.	DATE	Nov 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 3.1	REV	F

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[redacted]

North

VP10 +178mPD
VP12 +23mPD
VP13 +9.5mPD
VP03 +13mPD
VP02 +12mPD
VP01 +17mPD
VP09 +11mPD
VP05 +30mPD
VP06 +13mPD
VP04 +12mPD
VP07 +15mPD
VP08 +15mPD
VP11 +16mPD

A B C D F G H I

0 40 80 120 160m

LEGEND

- Approximate Location of Application Site Boundary
- Proposed Scheme (Max building height +45.25mPD at R/F)
- Fields of View towards the Proposed Development
- VP — Key Public Viewing Points
- +5.4mPD — Height in mPD
- A — Location of photographs of Visual Elements
- Fanling Highway
- Village Type Development
- Private Residential Development
- Grassy Hillsides
- Valley floor Open Land Uses (Agricultural / Plantation)
- Riverside Plantation
- Hillside Secondary Woodland / Wooded Knolls
- Water Course / Water Body
- Recreational Landscapes
- Open Storage / Light Industrial Area

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Elements

SCALE	A.S.	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH

FIGURE NO. Figure 4.1

REV B

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A The Beas Valley is defined by grassy hillsides including the Peaks of Kai Kung Leng (+572 mPD) and Tai To Yan (+566 mPD) within Lam Tsuen Country Park to the south and closer to the site in the west Hadden Hill (+222 mPD) and associated ridges surrounding Kwu Tung Reservoir. Although distant from the site, High rise developments of Sheng Shui and the skyline of Shenzhen are visible in elevated views down the valley.



B Whilst the site occupies a portion of the open valley floor this area is punctuated by a number of wooded knolls which have an influence on the extent of the visual envelope of the proposed development. Low-level views from within the Beas River Valley are often obscured by the existing landform, mature vegetation and scattered development.



C Recreational Landscapes are a prominent feature of the landscape, including the manicured landscapes of Fanling Golf Course and the Jockey Club Beas River Country Club



D E The Beas River and its floodplain offer tranquil moments of waterscape to be enjoyed within the landscape. The Kwu Tung Reservoir is another water element within the landscape forming an attractive upland feature within the grassy hill slopes and mountainous terrain to the west and south of the Application site.



FIGURE TITLE Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Elements

SCALE	A.S.	DATE	Mar 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 4.2	REV	-

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F G There are several areas of low-rise development, including the village of Hang Tau, Tai Po to the south and large private residential estates including Goodwood Park to the immediate north of the site and The Royal Oaks, Casa Domingo and Valais developments further to the north and north east. Typically in these settlements the close-nit nature of the housing screens views from within these built up areas. Where there are views from the adjacent villages, owing the density of the development these are often limited to the dwellings at the periphery of the settlement.



H A prominent linear built element within the landscape is the Fanling Highway.



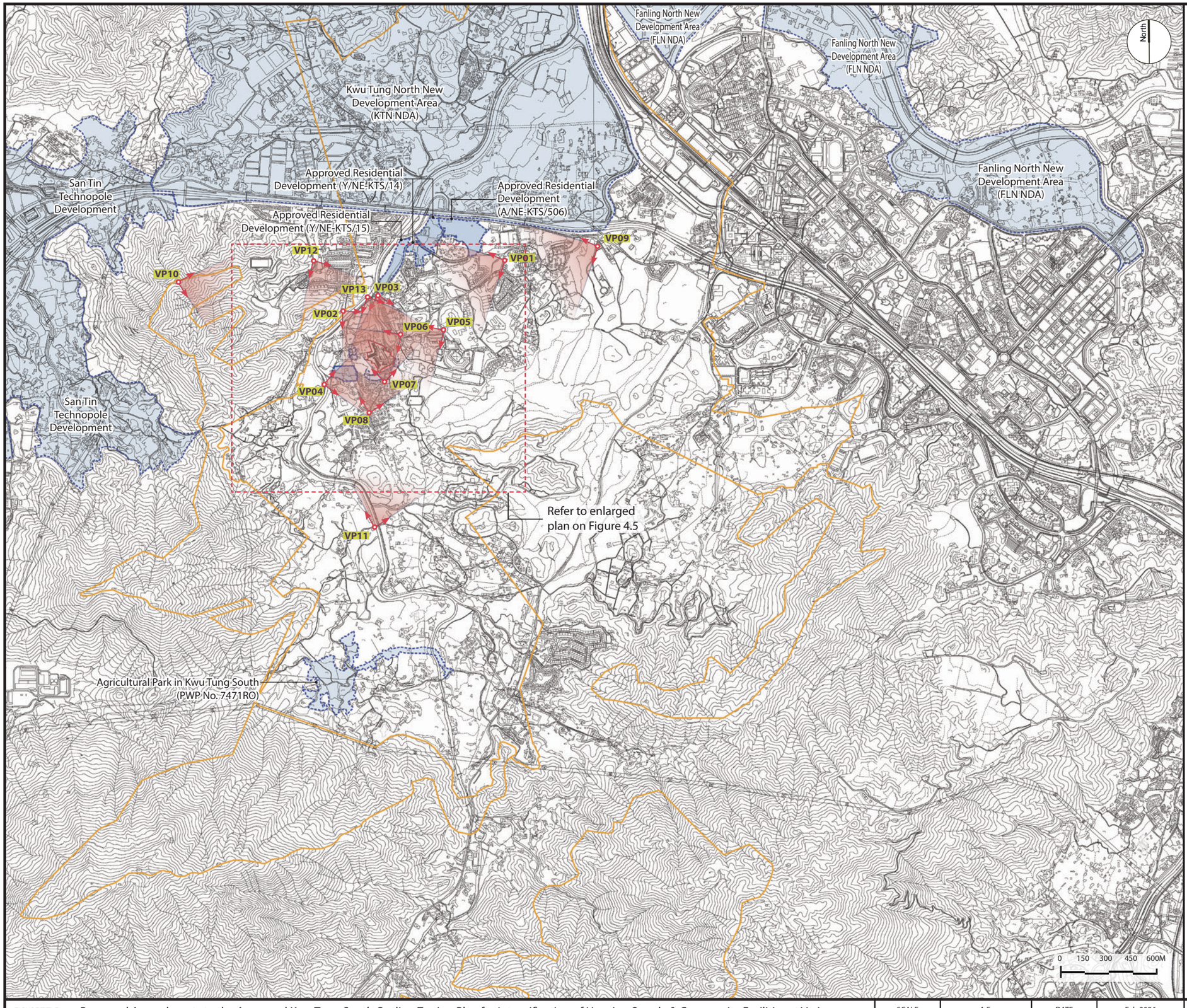
I Visually detracting elements include the scattered elements of small-scale industrial development on the fringes of village areas, particularly to the west of the Application Site.

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Elements

SCALE	A.S.	DATE	Mar 2025
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 4.3	REV	-

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[redacted]



LEGEND

- Application Site Boundary
- Visual Envelope (VE)
- VP — Representative viewing points (VPs) and angle of main view
- Approved Development (Yet to be developed)

Viewing Points

Viewing Point 01: View looking south west from public open space at junction of Kam Tsin South Road and Kam Tsin Road

Viewing Point 02: View looking south east from Kwu Tung Hang Village Rest Area

Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge

Viewing Point 04: View looking north east from pedestrian bridge and riverside footpath

Viewing Point 05: View looking south west from entrance of HKJC Beas River Country Club

Viewing Point 06: View looking south west from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets

Viewing Point 07: View looking north from minibus stop adjacent to Golf View Gardens

Viewing Point 08: View looking north from Hang Tau Tsuen Village Hall

Viewing Point 09: View looking south west from access road to Fanling Lodge at Fanling Golf Course

Viewing Point 10: View looking east towards the site from Hadden Hill

Viewing Point 11: View looking north from Riverside footpath near Cheung Lek Village

Viewing Point 12: View looking south east from Kwu Tung South Road

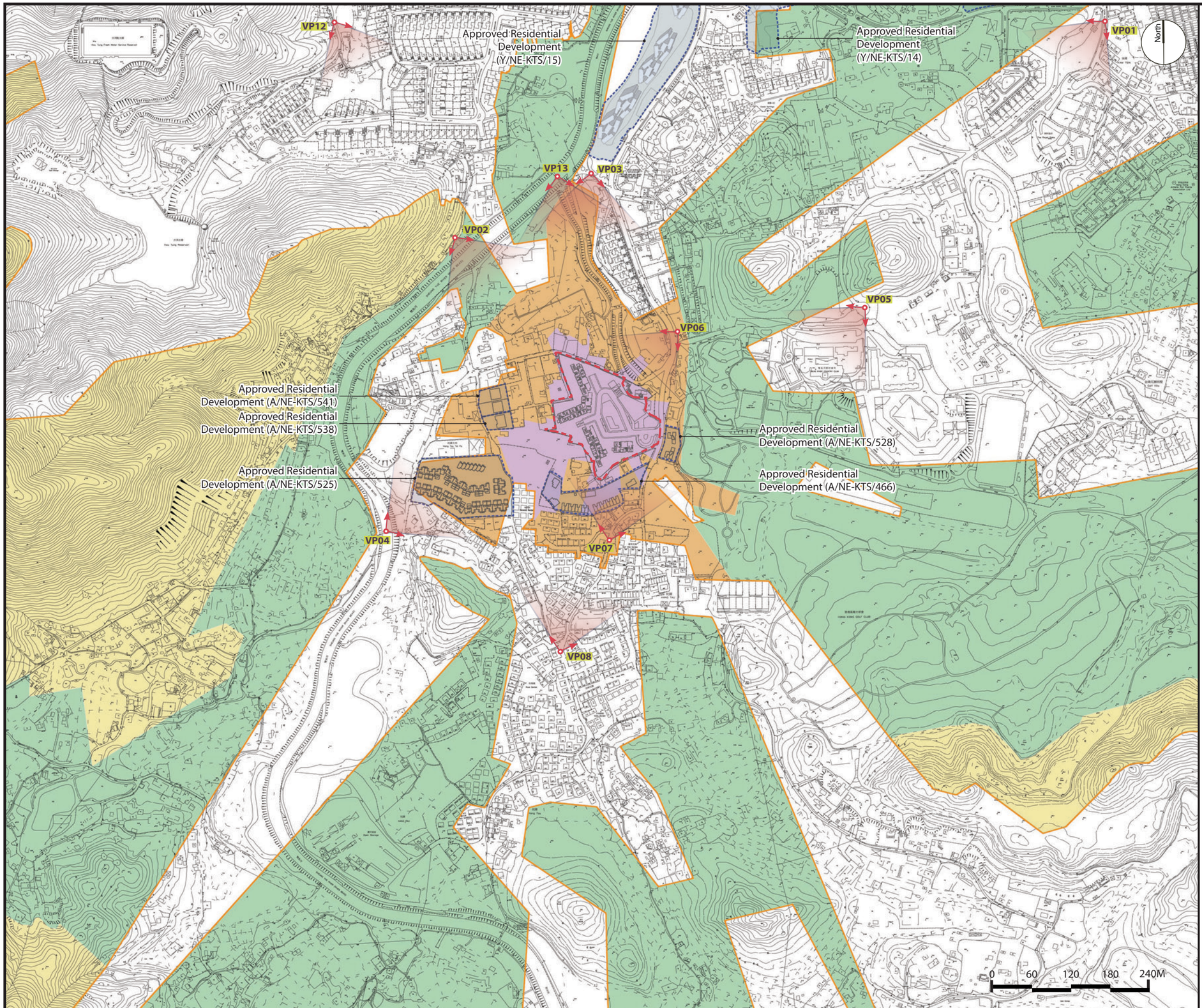
Viewing Point 13: View looking south-east from Bridge over the Beas River

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Envelope and Visually Sensitive Receivers

SCALE	A.S.	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 4.4	REV	B

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[redacted]



LEGEND

- Application Site Boundary
- Visual Envelope (VE)
- VP — Representative viewing points (VPs) and angle of main view
- Primary VE – Area from which the majority of the development can be seen is largely contained within the Application Site boundary and the immediate margins of Hang Tau Road and village roads surrounding the site, owing to roadside boundary structures, mature tree growth and elements of built development.
- Secondary VE – Area with more limited visibility of the Proposed Scheme due to intervening obstacles including a combination of existing built development and vegetation. As such the visible part of the Proposed Scheme is largely limited to the central and upper portions of the residential blocks.
- Tertiary VE – For the most part views of the Proposed Scheme are obscured or screened by intervening visual obstacles including landform, mature tree growth and built development including industrial concerns and village houses. Any views are limited to glimpsed views of the upper portion of the residential blocks.
- Quaternary VE – Area with elevated, long distance, partial and glimpsed views of the Proposed Scheme, mainly from the uplands to the west and south. The visible part of the Proposed Scheme will range from being fragmentary views to being more widespread open views however from these locations the proposals form a small part of a large, panoramic view. The degree of visibility of the Proposed Scheme is determined by the elevation of the viewing position and the viewing angle.

Viewing Points

Viewing Point 01: View looking south west from public open space at junction of Kam Tsin South Road and Kam Tsin Road
Viewing Point 02: View looking south east from Kwu Tung Hang Village Rest Area
Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge
Viewing Point 04: View looking north east from pedestrian bridge and riverside footpath
Viewing Point 05: View looking south west from entrance of HKJC Beas River Country Club
Viewing Point 06: View looking south west from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets
Viewing Point 07: View looking north from minibus stop adjacent to Golf View Gardens
Viewing Point 08: View looking north from Hang Tau Tsuen Village Hall
Viewing Point 09: View looking south west from access road to Fanling Lodge at Fanling Golf Course
Viewing Point 10: View looking east towards the site from Hadden Hill
Viewing Point 11: View looking north from Riverside footpath near Cheung Lek Village
Viewing Point 12: View looking south east from Kwu Tung South Road
Viewing Point 13: View looking south-east from Bridge over the Beas River

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Envelope and Visually Sensitive Receivers

SCALE	A.S.	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 4.5	REV	B

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[redacted]



LEGEND

- Application Site Boundary
- Visual Envelope (VE)
- VP — Representative viewing points (VPs) and angle of main view
- Proposed Scheme (Max building height +45.25mPD at R/F)

Viewing Points

Viewing Point 01: View looking south west from public open space at junction of Kam Tsin South Road and Kam Tsin Road
Viewing Point 02: View looking south east from Kwu Tung Hang Village Rest Area
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Viewing Point 13: View looking south-east from Bridge over the Beas River

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Location of Photomontage Viewing Points

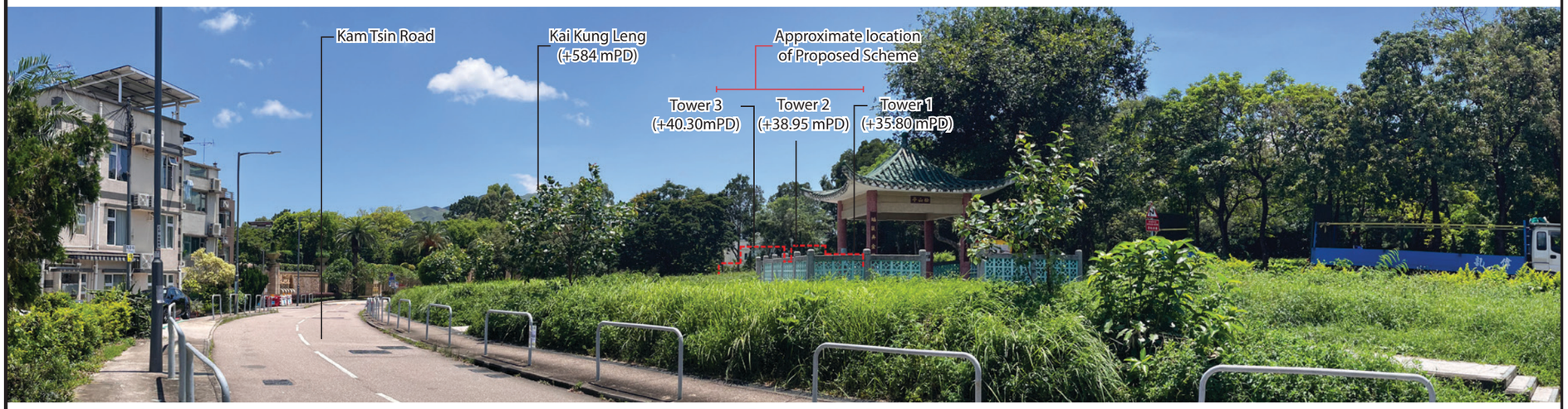
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FIGURE NO. Figure 7.1 — REV B

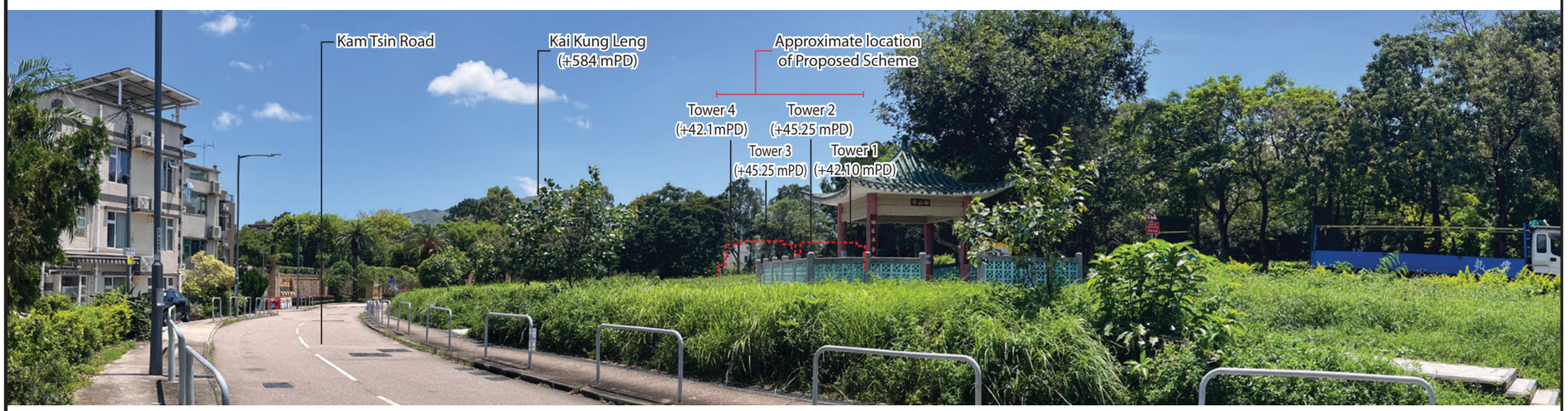
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Viewing Point 01: View looking south from public open space at junction of Kam Tsin South Road and Kam Tsin Road (Existing Situation)



Viewing Point 01: View looking south from public open space at junction of Kam Tsin South Road and Kam Tsin Road (Approved Scheme)



Viewing Point 01: View looking south from public open space at junction of Kam Tsin South Road and Kam Tsin Road (Proposed Scheme)



Viewing Point 01 (VP01)

Viewing point elevation: +17mPD
Viewing distance: 890m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.2	REV	A

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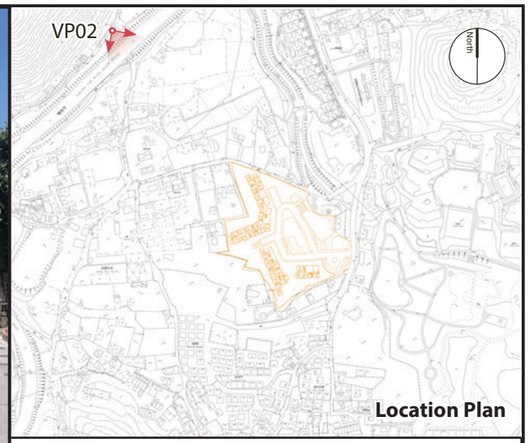
Viewing Point 02 : View looking south east from Kwu Tung Hang Village Rest Area (Existing Situation)



Viewing Point 02 : View looking south east from Kwu Tung Hang Village Rest Area (Approved Scheme)



Viewing Point 02 : View looking south east from Kwu Tung Hang Village Rest Area (Proposed Scheme)



Viewing Point 02 (VP02)

Viewing point elevation: +12mPD
Viewing distance: 230m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

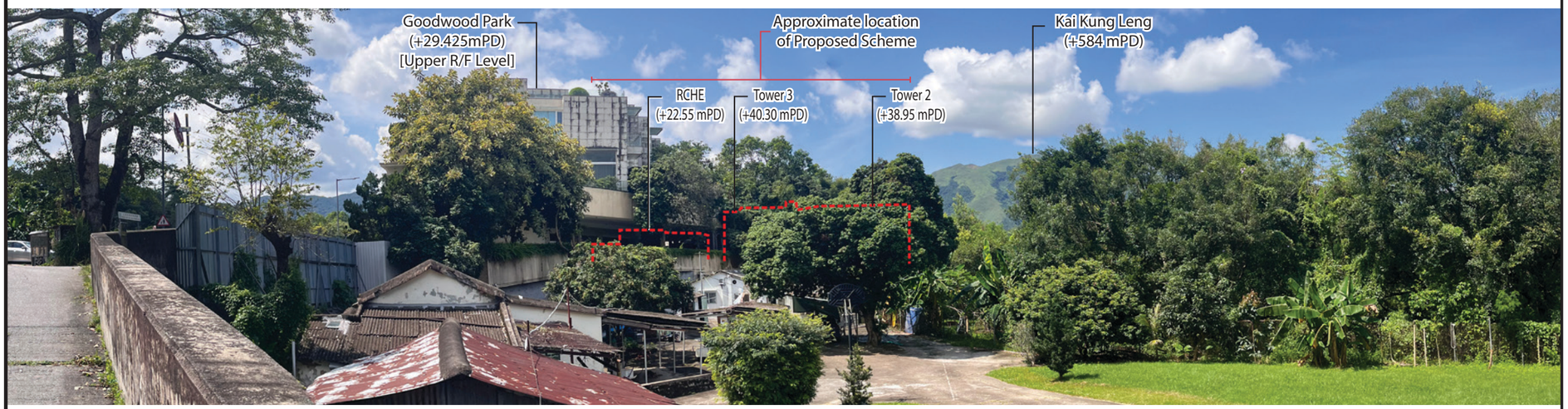
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
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FIGURE NO.	Figure 7.3	REV	A

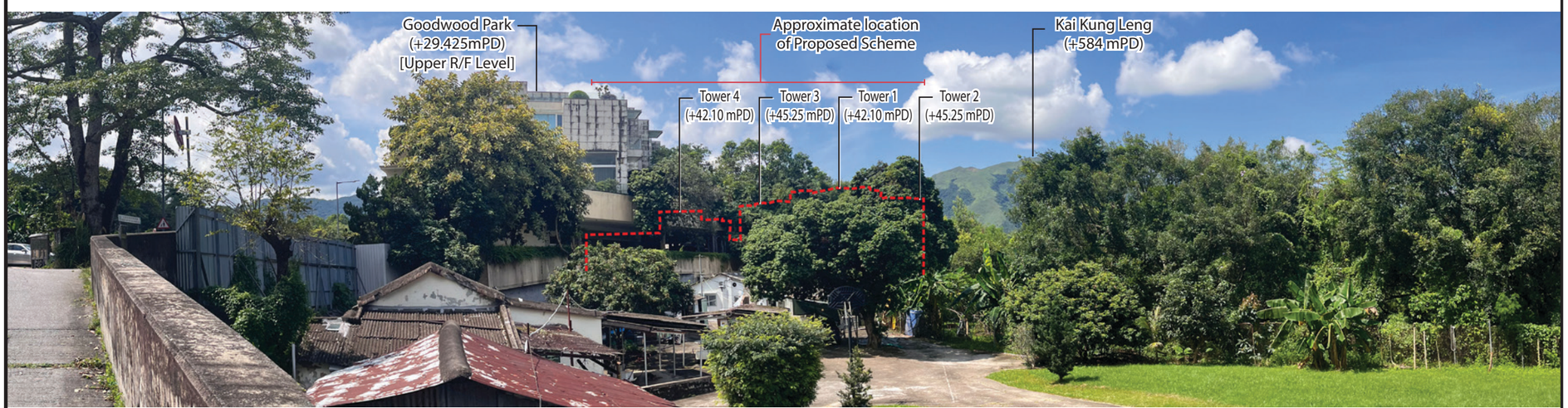
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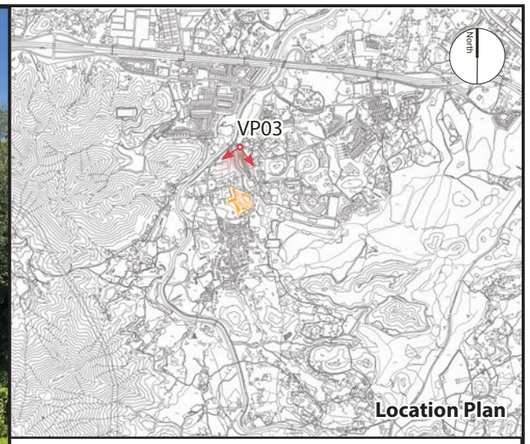
Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge (Existing Situation)



Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge (Approved Scheme)



Viewing Point 03: View looking south from access road leading to riverside footpath and pedestrian bridge (Proposed Scheme)



Viewing Point 03 (VP03)

Viewing point elevation: +13mPD
Viewing distance: 280m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

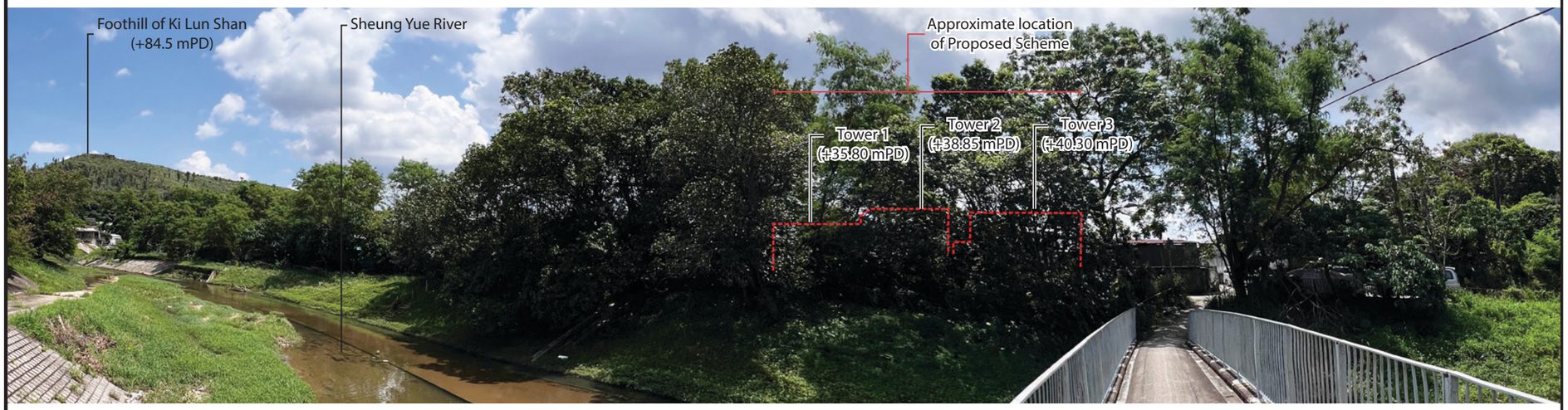
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
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FIGURE NO.	Figure 7.4	REV	A

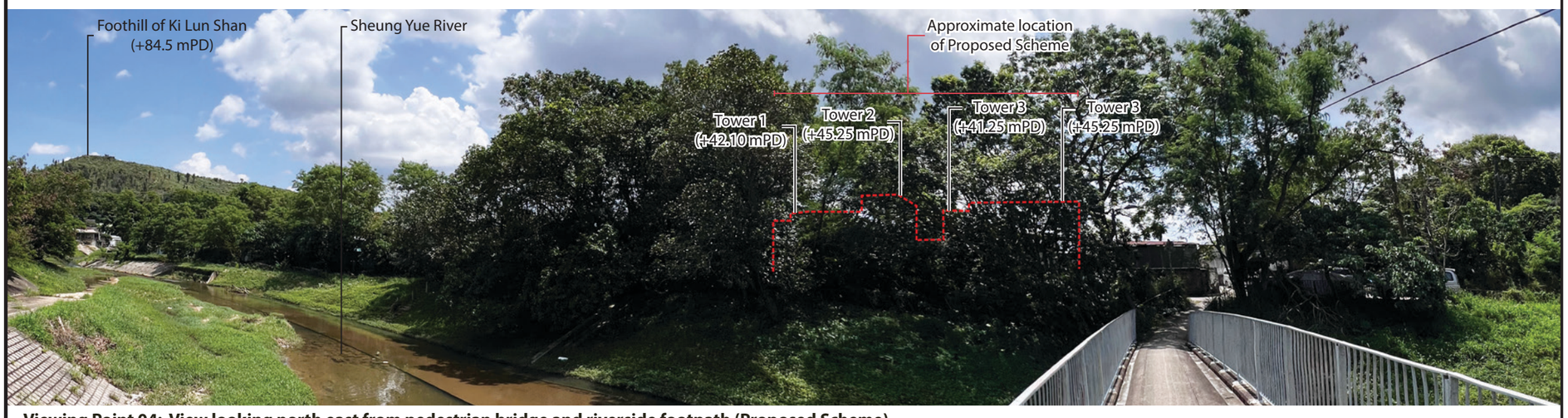
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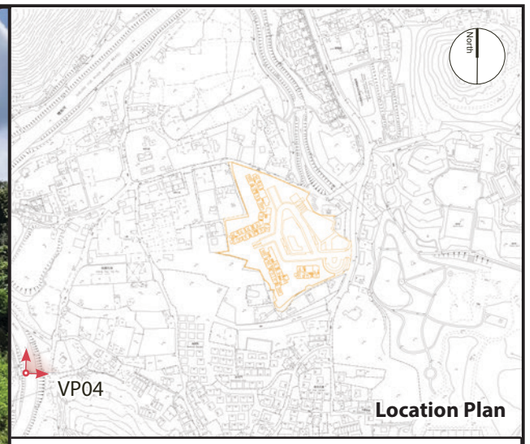
Viewing Point 04: View looking north east from pedestrian bridge and riverside footpath (Existing Situation)



Viewing Point 04: View looking north east from pedestrian bridge and riverside footpath (Approved Scheme)



Viewing Point 04: View looking north east from pedestrian bridge and riverside footpath (Proposed Scheme)



Viewing Point 04 (VP04)

Viewing point elevation: +12mPD
Viewing distance: 295m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

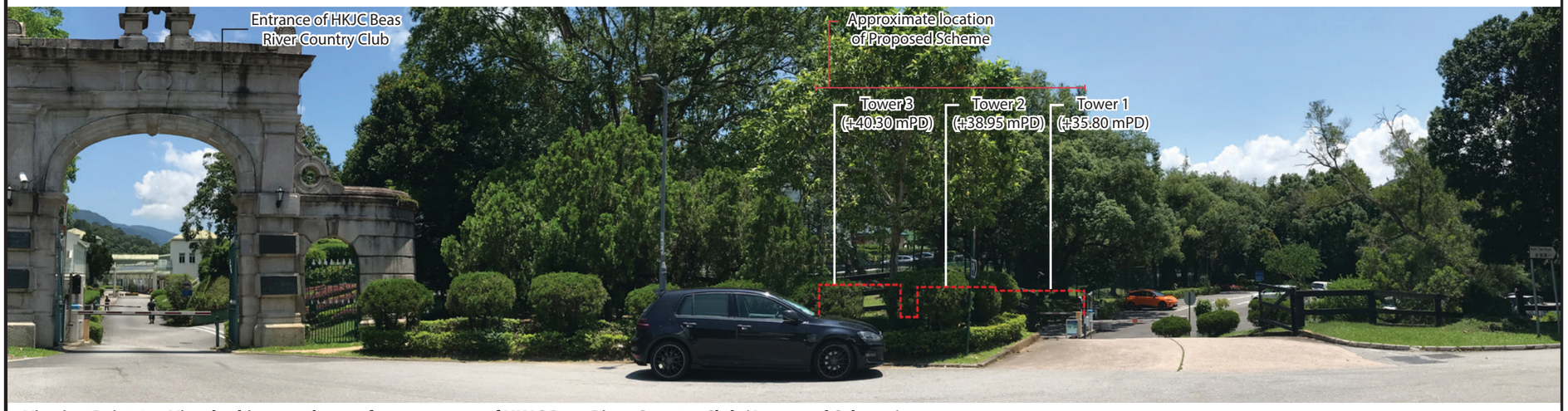
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.5	REV	A

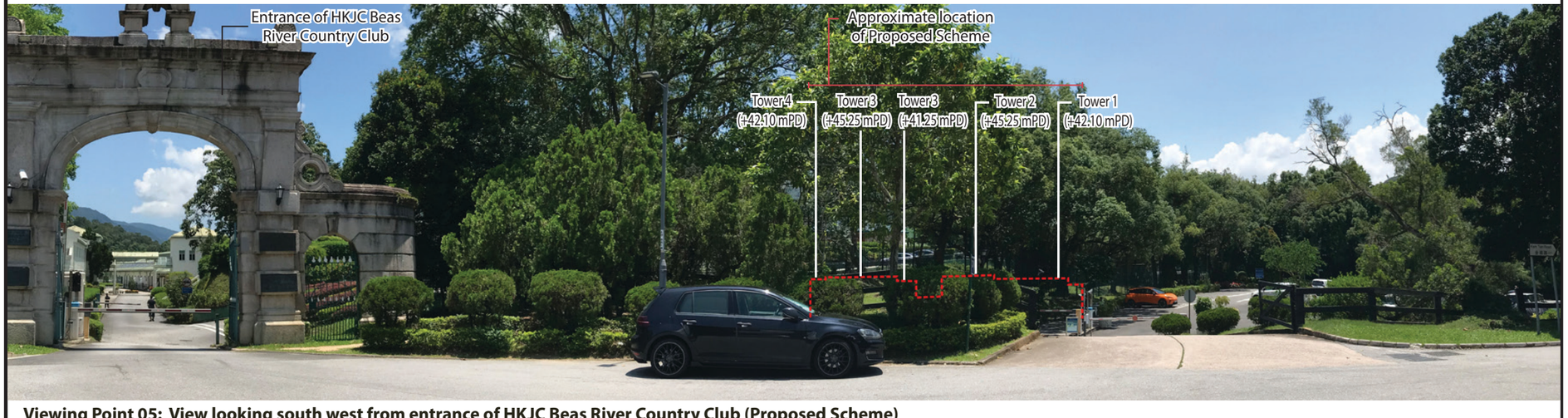
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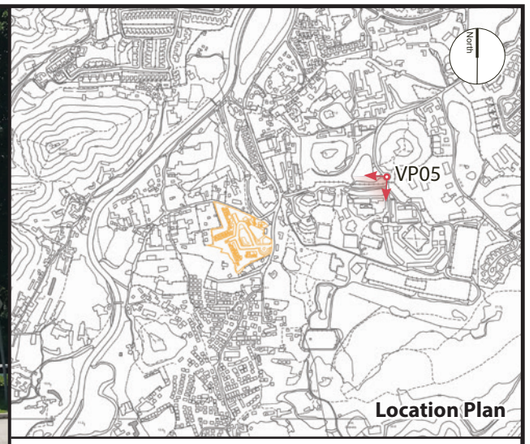
Viewing Point 05: View looking south west from entrance of HKJC Beas River Country Club (Existing Situation)



Viewing Point 05: View looking south west from entrance of HKJC Beas River Country Club (Approved Scheme)



Viewing Point 05: View looking south west from entrance of HKJC Beas River Country Club (Proposed Scheme)



Viewing Point 05 (VP05)

Viewing point elevation: +30mPD
Viewing distance: 350m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH

FIGURE NO. Figure 7.6 | REV A

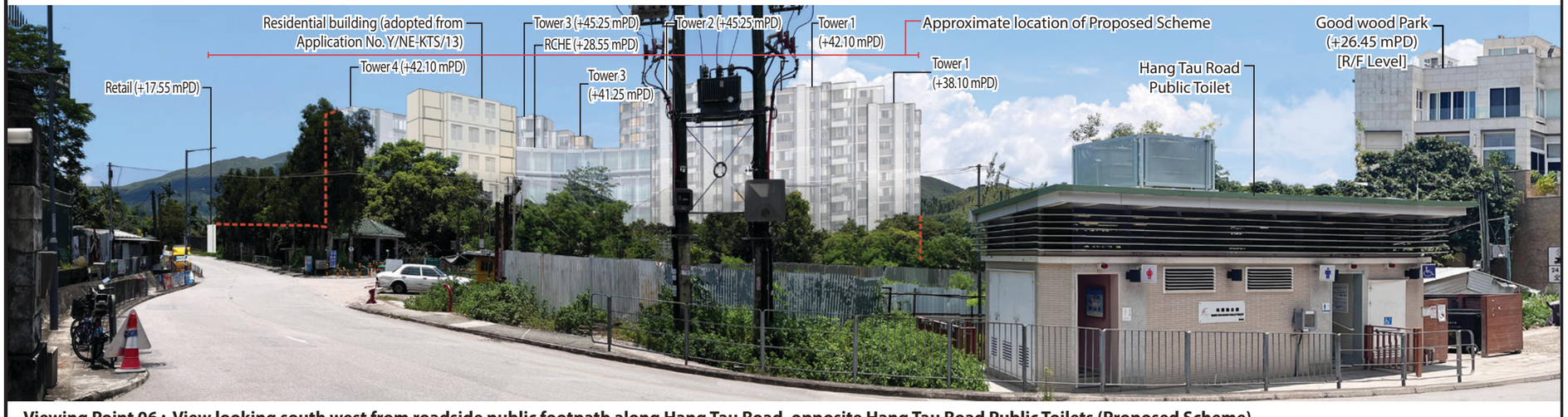
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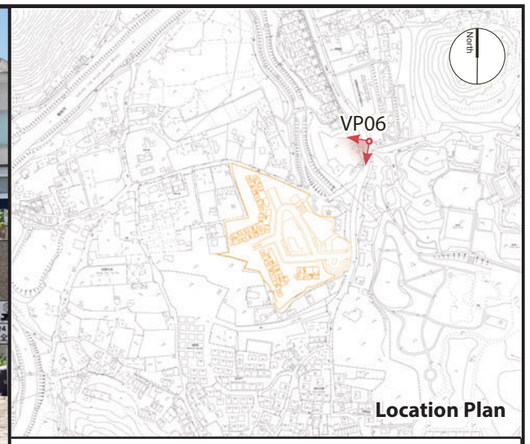
Viewing Point 06 : View looking south west from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets (Existing Situation)



Viewing Point 06 : View looking south west from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets Course (Approved Scheme)



Viewing Point 06 : View looking south west from roadside public footpath along Hang Tau Road, opposite Hang Tau Road Public Toilets (Proposed Scheme)



Viewing Point 06 (VP06)

Viewing point elevation: +13mPD
Viewing distance: 105m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

The facade of nearby future development is shown for context and indicative only.

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Jun 2026
CHECKED	JBC	DRAWN	JH

FIGURE NO. Figure 7.7 | REV B

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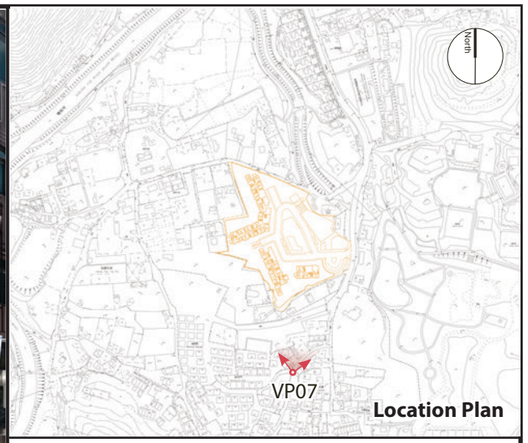
Viewing Point 07 : View looking north from minibus stop adjacent to Golf View Gardens (Existing Situation)



Viewing Point 07 : View looking north from minibus stop adjacent to Golf View Gardens (Approved Scheme)



Viewing Point 07 : View looking north from minibus stop adjacent to Golf View Gardens (Proposed Scheme)



Viewing Point 07 (VP07)

Viewing point elevation: +15mPD
Viewing distance: 100m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

The facade of the nearby future development is shown for context and indicative only.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

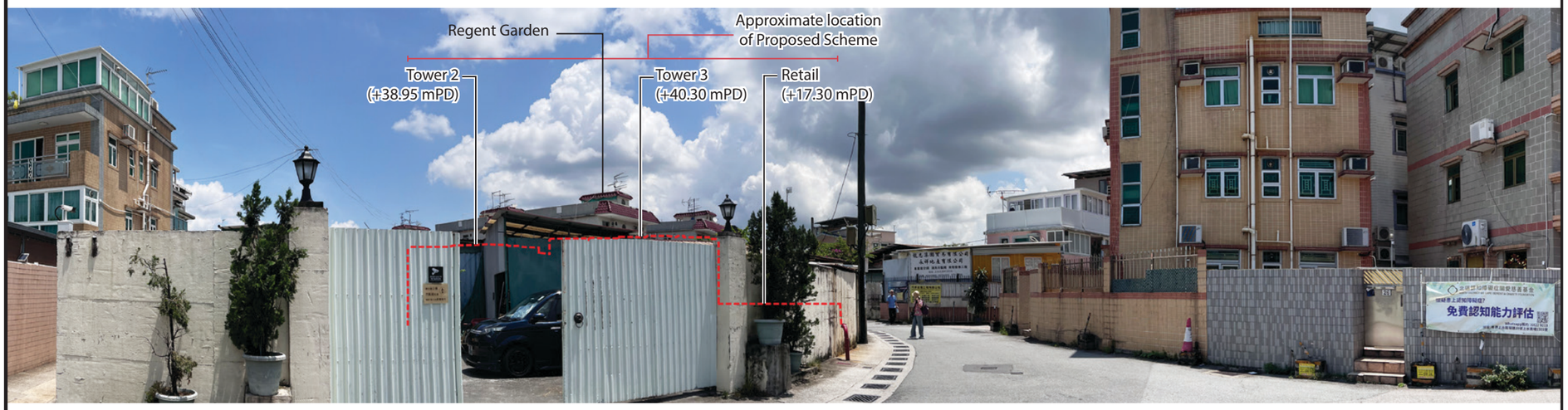
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Jun 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.8	REV	C

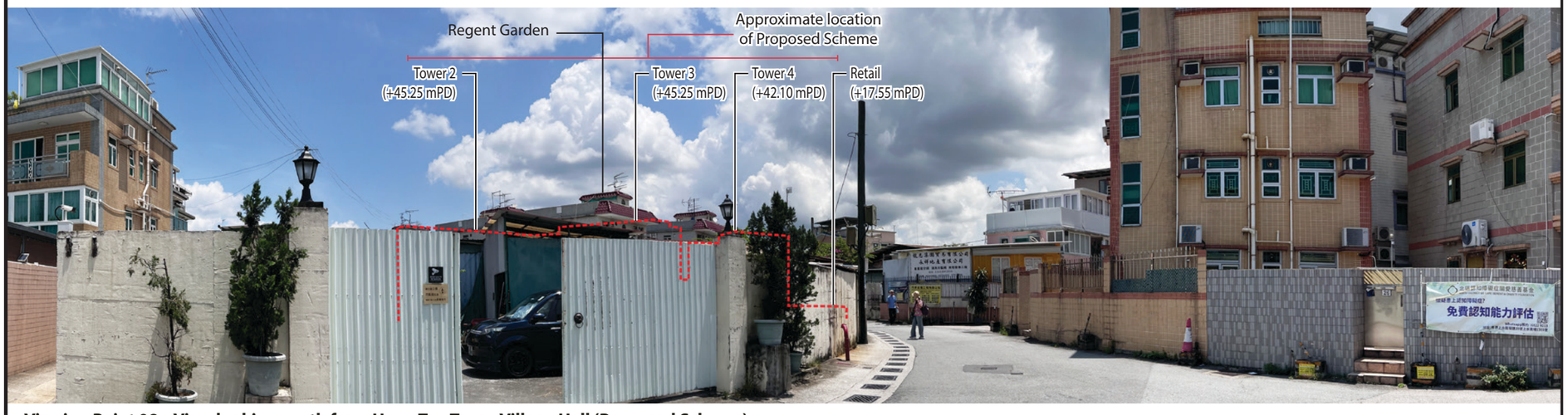
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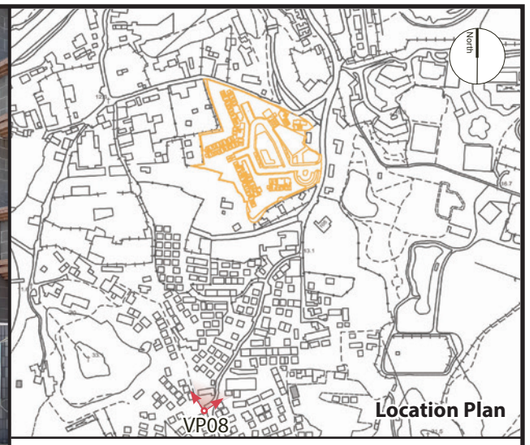
Viewing Point 08 : View looking north from Hang Tau Tsuen Village Hall (Existing Situation)`



Viewing Point 08 : View looking north from Hang Tau Tsuen Village Hall (Approved Scheme)



Viewing Point 08 : View looking north from Hang Tau Tsuen Village Hall (Proposed Scheme)



Viewing Point 08 (VP08)

Viewing point elevation: +15mPD
Viewing distance: 270m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

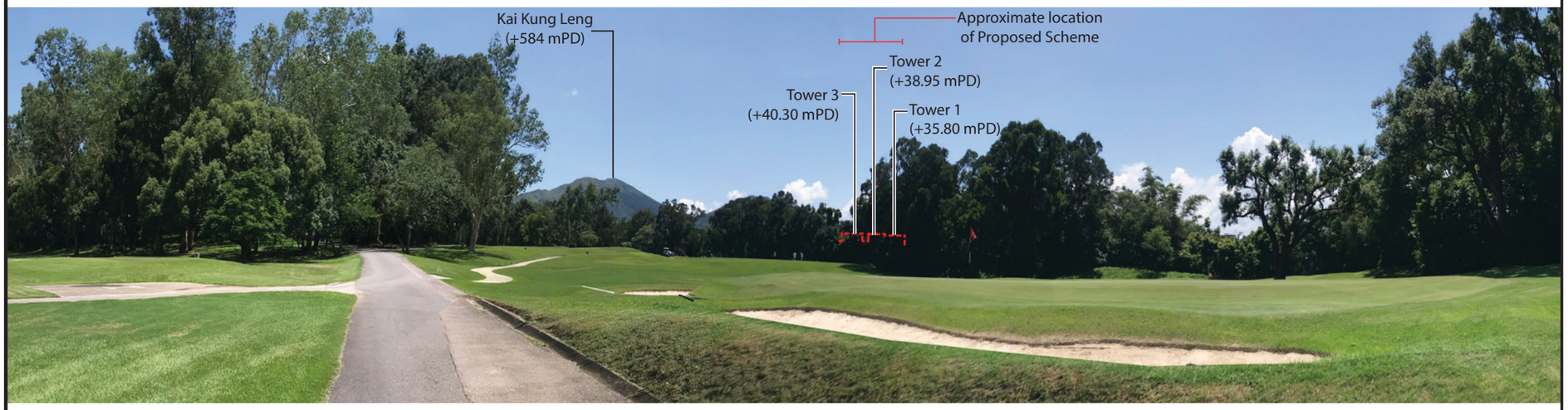
SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH

FIGURE NO. Figure 7.9 REV A

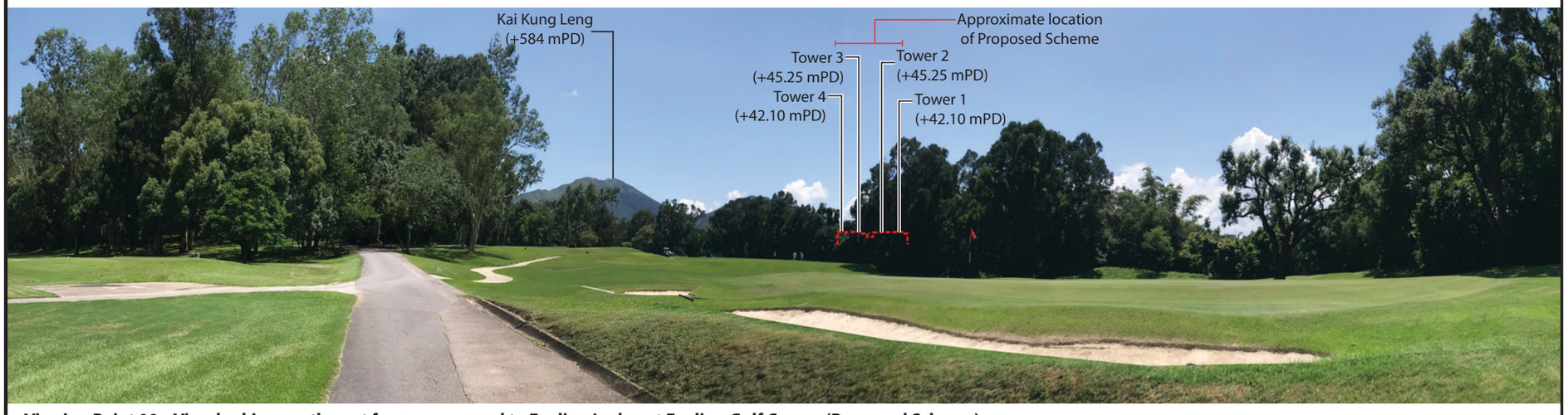
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Viewing Point 09 : View looking south west from access road to Fanling Lodge at Fanling Golf Course (Existing Situation)



Viewing Point 09 : View looking south west from access road to Fanling Lodge at Fanling Golf Course (Approved Scheme)



Viewing Point 09 : View looking south west from access road to Fanling Lodge at Fanling Golf Course (Proposed Scheme)



Viewing Point 09 (VP09)

Viewing point elevation: +11 mPD
Viewing distance: 1425m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

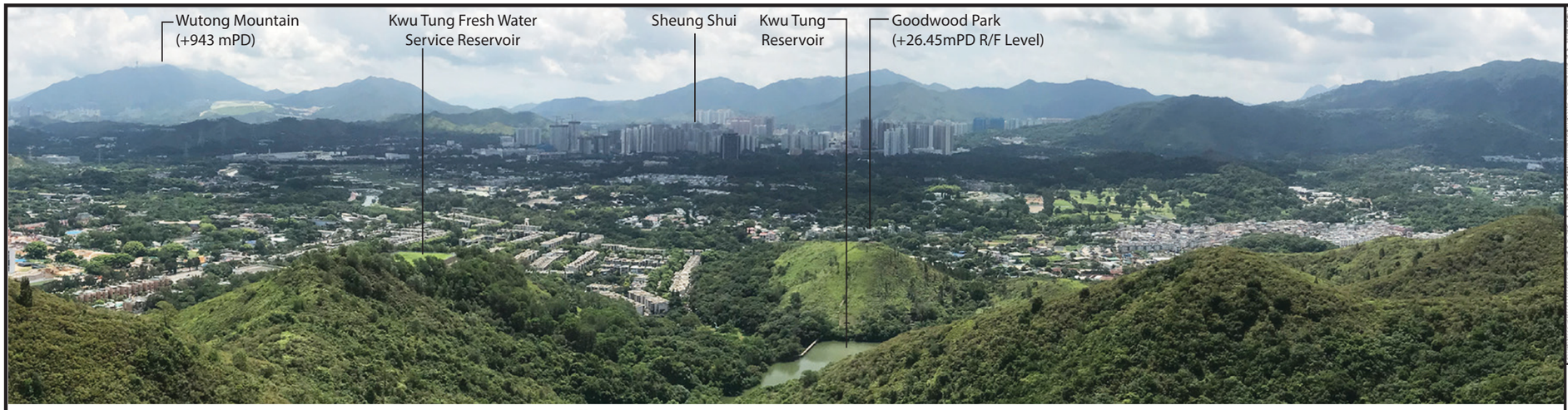
FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

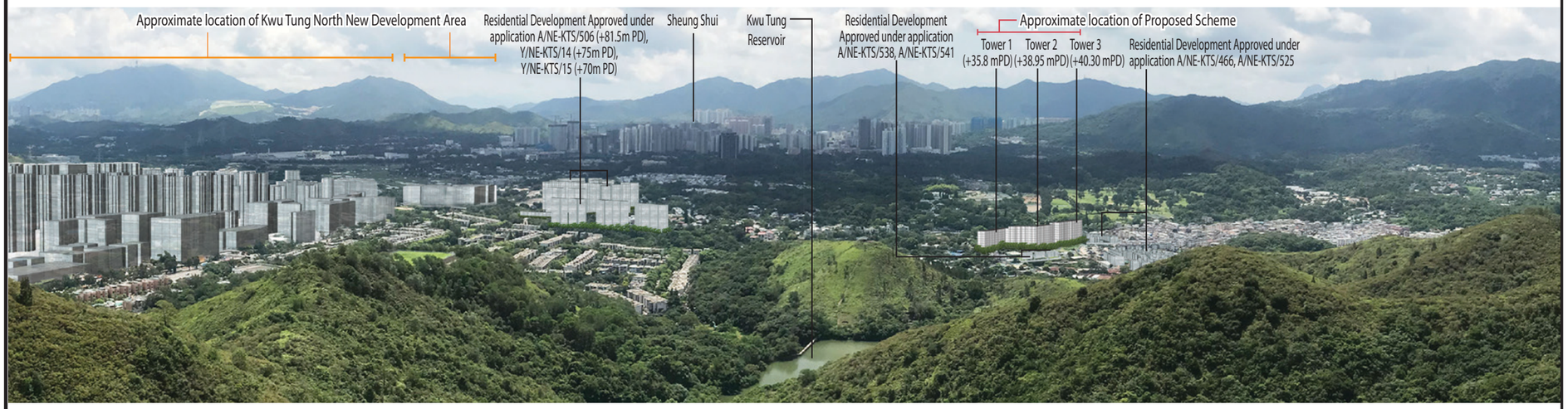
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.10	REV	A

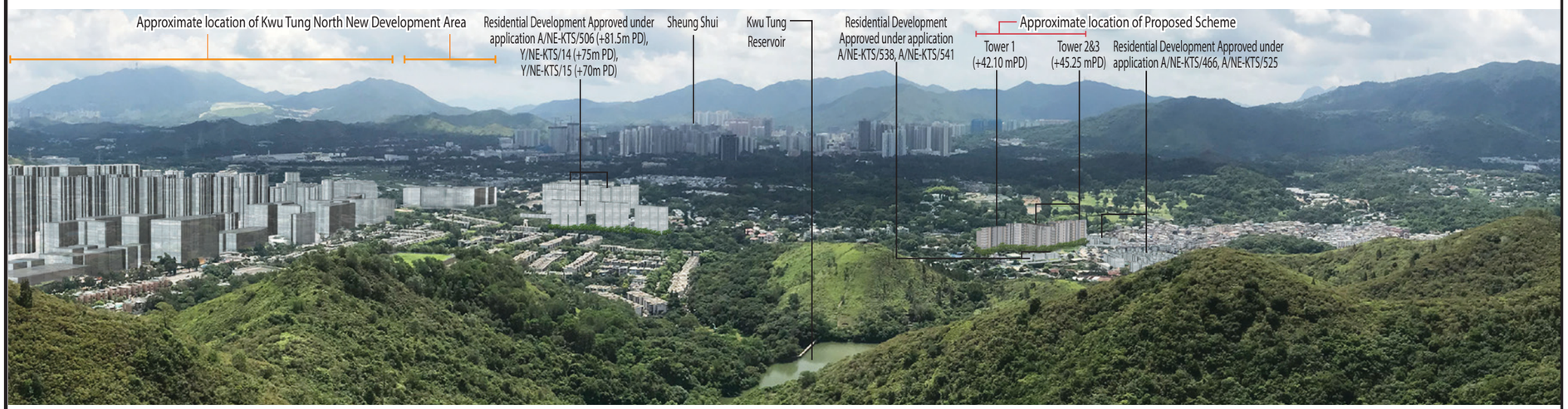
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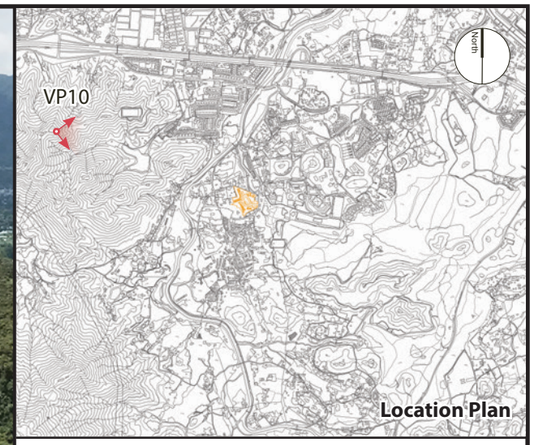
Viewing Point 10 : View looking east towards the site from Hadden Hill (Existing Situation)



Viewing Point 10 : View looking east towards the site from Hadden Hill (Approved Scheme)



Viewing Point 10 : View looking east towards the site from Hadden Hill (Proposed Scheme)



Viewing Point 10 (VP10)

Viewing point elevation: +178mPD
Viewing distance: 1250m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

The building layout for the Kwu Tung North New Development Area (KTN NDA) is based on the Recommended Outline Development Plan (RODP) contained in the approved EIA for Agreement No. CE 61/2007 (CE) North East New Territories New Development Areas Planning and Engineering Study - Investigation. The Building Heights are from Kwu Tung North Outline Zoning Plan (S/KTN/4) dated 19th September 2023.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Jun 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.11	REV	C

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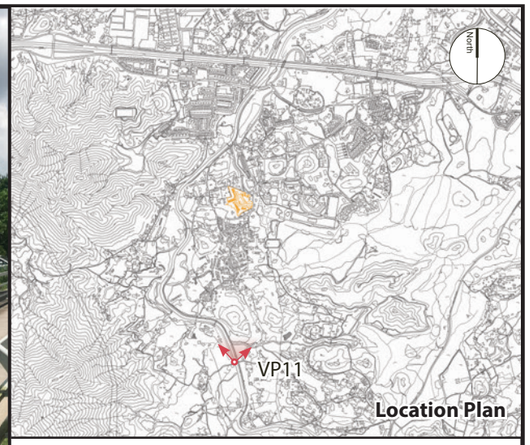
Viewing Point 11 : View looking north from Riverside footpath near Cheung Lek Village (Existing Situation)



Viewing Point 11 : View looking north from Riverside footpath near Cheung Lek Village (Approved Scheme)



Viewing Point 11 : View looking north from Riverside footpath near Cheung Lek Village (Proposed Scheme)



Viewing Point 11 (VP11)

Viewing point elevation: +16mPD
Viewing distance: 970m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

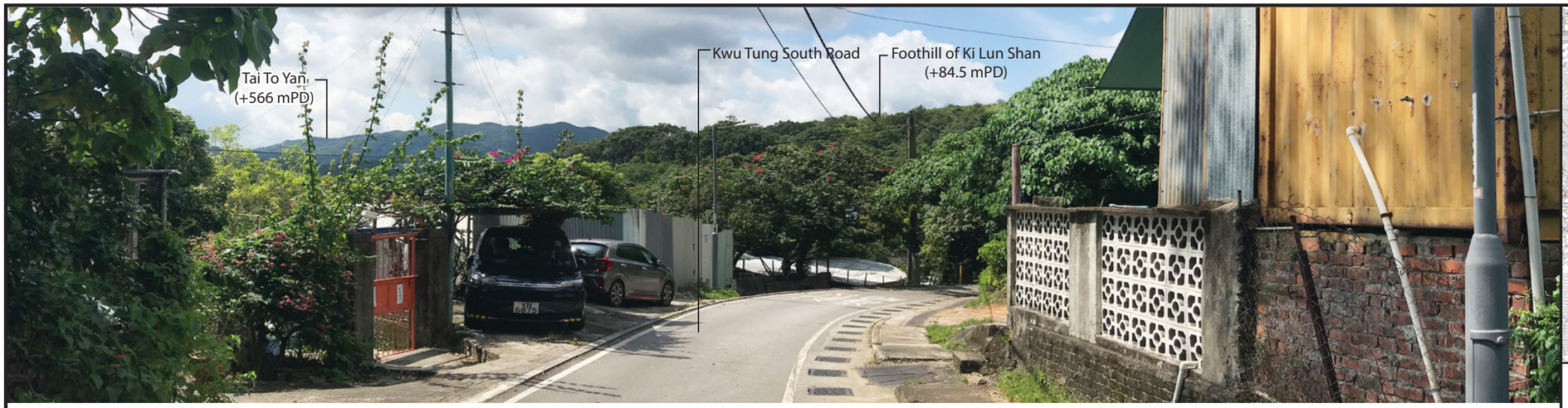
FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

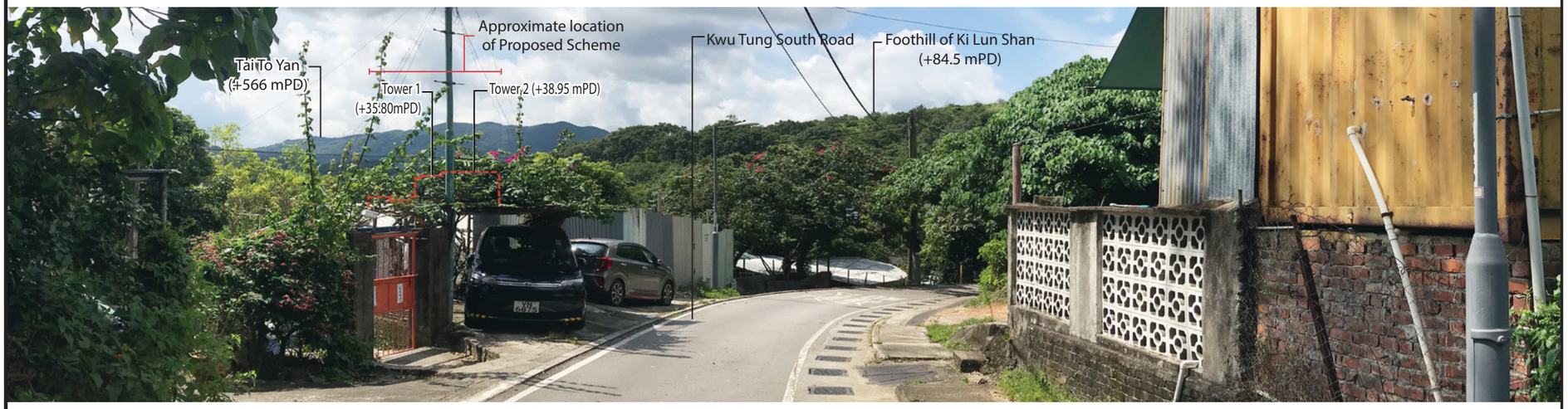
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Feb 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.12	REV	A

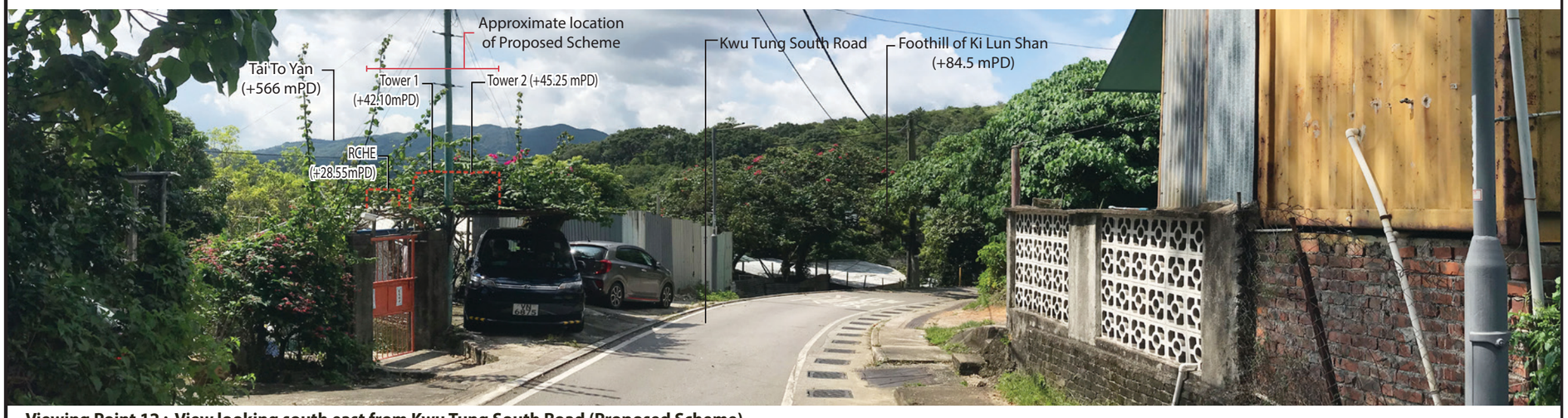
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Viewing Point 12 : View looking south east from Kwu Tung South Road (Existing Situation)



Viewing Point 12 : View looking south east from Kwu Tung South Road (Approved Scheme)



Viewing Point 12 : View looking south east from Kwu Tung South Road (Proposed Scheme)



Viewing Point 12 (VP12)

Viewing point elevation: +23mPD
Viewing distance: 600m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE: Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

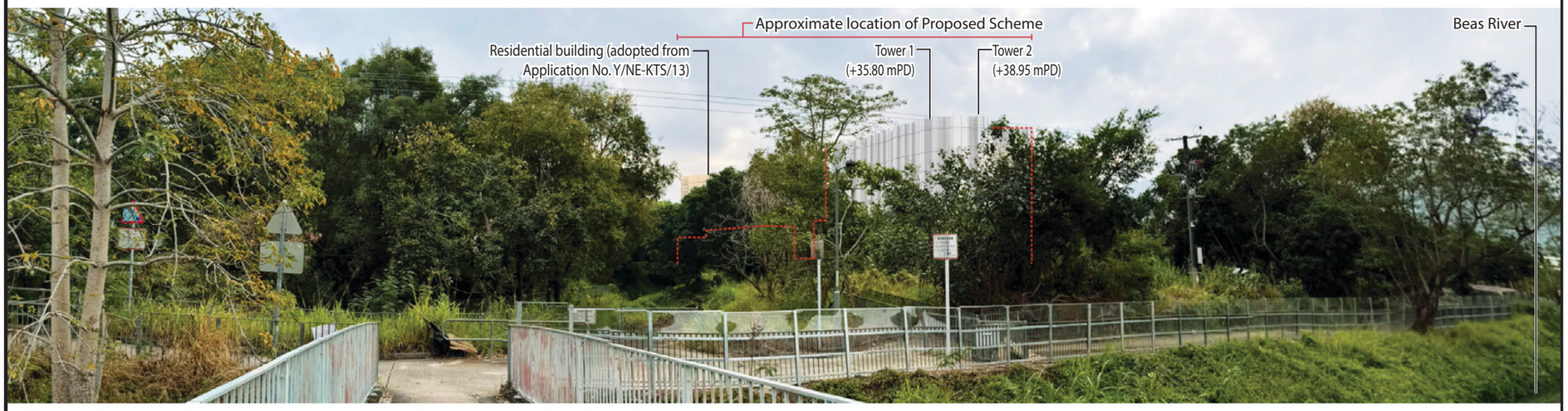
Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Jan 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.13	REV	A

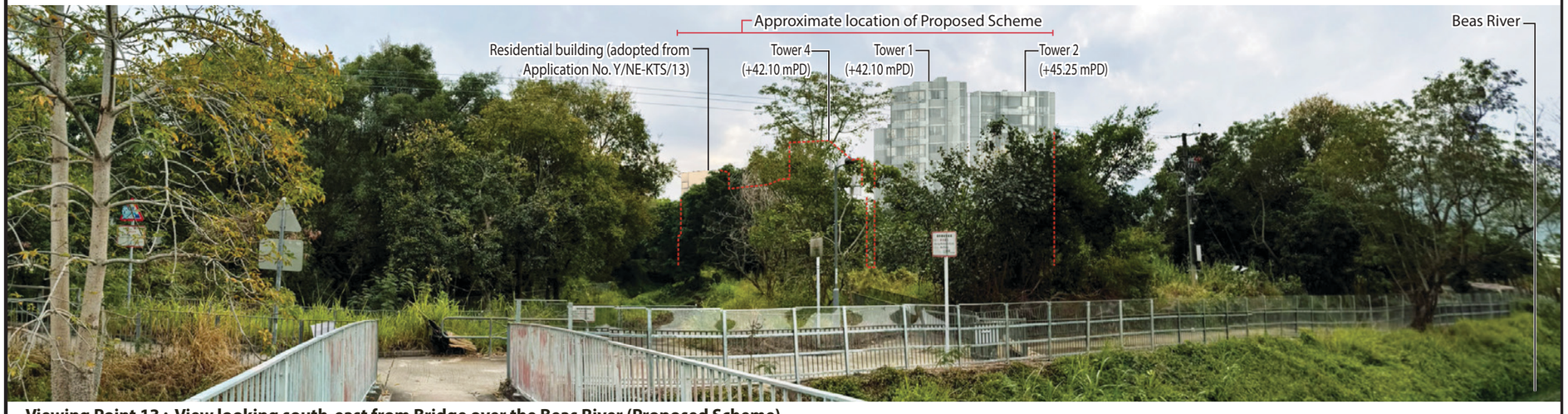
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Viewing Point 13 : View looking south-east from Bridge over the Beas River (Existing Situation)



Viewing Point 13 : View looking south-east from Bridge over the Beas River (Approved Scheme)



Viewing Point 13 : View looking south-east from Bridge over the Beas River (Proposed Scheme)



Viewing Point 13 (VP13)

Viewing point elevation: +9.5mPD
Viewing distance: 300m
Maximum building height of Proposed Scheme: +45.25mPD at R/F

Note:

A red dashed line is used to represent the extent of the Proposed Scheme where views are obscured by intervening visual objects.

FIGURE TITLE

Proposed Amendments to the Approved Kwu Tung South Outline Zoning Plan for Intensification of Housing Supply & Community Facilities at Various Lots in D.D. 92 and D.D. 94 and Adjoining Government Land in "CDA" Zone, Hang Tau Tai Po, Kwu Tung South, New Territories

Visual Impact Assessment: Photomontages

SCALE	NTS	DATE	Jun 2026
CHECKED	JBC	DRAWN	JH
FIGURE NO.	Figure 7.14	REV	A

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