Revised Traffic Impact Assessment Report

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

TRAFFIC IMPACT ASSESSMENT REPORT

Reference: 31041-T01-04
Date: June 2025

AXON
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Contents

1 Introduction

1.1 Background

“自由福居”located at Nos. 24 and 25 Tong To Ping Tsuen, Sha Tau Kok, New Territories, has been operated as a columbarium use since 1988. The site currently contains a total of 864 niches, including 60 niches sold. The remaining niches are yet to be sold. The facility's operation and capacity necessitate an evaluation of its traffic impact, especially as the columbarium reaches full occupancy (hereafter, “proposed development”).

The Applicant intends to submit an application under Section 12A to the Town Planning Board for an amendment to the approved Sha Tau Kok Outline Zoning Plan Number S/NE-STK/2 from the existing “Village Type Development” zone to the "Government, Institution and Community (1)" Zone.

AXON Consultancy Limited has been commissioned to carry out this Traffic Impact Assessment (TIA) to support the application for the amendment of the plan and facilitate the proposed development at the Application Site.

1.2 Objectives

The objectives of the traffic impact study are as follows:

- to estimate the potential traffic generation/attraction due to the proposed development; and
- to assess the future traffic situation in the surrounding network; and
- to appraise the potential traffic impacts of the development; and
- to evaluate the transport facilities of the development; and
- to consider road improvement proposals, if required.

1.3 Structure of Report

Chapter 1 – Introduction, which covers the study's background, objectives and report structure.

After this introductory chapter, there are the following chapters:

Chapter 2 – The Proposed Development, which describes the site location, development schedules;

Chapter 3 – Traffic Management and Visitor Strategy, outlines the visitor management systems and traffic arrangements, including the administrative visitor booking system and pre-booked shuttle services;

Chapter 4 – Existing Traffic Situation, which presents the existing local road network within the vicinity of the proposed development, the details of the traffic count survey and the traffic assessment of the existing traffic conditions;

Chapter 5 – Future Traffic Situation, which presents future traffic flows for the design year under reference and design scenarios while incorporating the anticipated annual growth rate and the planned developments;

Chapter 6 – Summary and Conclusion, which summarises the findings of this traffic impact assessment and presents the conclusions regarding the traffic issues associated with the proposed development.

2 The Proposed Development

2.1 The Application Site

The Application Site spans approximately 157 m^2 and is located at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories. The site location is depicted in **Figure 2.1**.

The site can be accessed via a single-track access road, which is branching off from Sha Tau Kok Road - Shek Chung Au.

2.2 The Proposed Development

The existing columbarium-used development, “自由福居”, has been operating since 1988. The Applicant has reported that the site contains a total of 864 niches, with 60 niches sold. The proposed development aims to fully utilize the columbarium's capacity. The development schedule is summarised in **Table 2.1** below.

Table 2.1 Development Schedule

Design Parameter	Quantity of Proposed Development Parameter
Application Area	About 157m^2
Existing Zoning	“Village Type Development” zone
Number of Sold Niches	60
Proposed Zoning	"Government, Institution and Community (1)" Zone
Total Number of Niches	864
Total Number of Visitors*	3,456

Note: * Total Number of Visitors = Total Number of Niches x 4 (Anticipated Average no. of Visitor for 1 Niche)

3 Traffic Management and Visitor Strategy

3.1 Introduction

Effective traffic management and visitor strategy are crucial for ensuring smooth operation and minimizing traffic impact at “自由福居”. The following sections detail the Administrative Visitor Booking System and pre-booked shuttle services designed to manage visitor traffic effectively, particularly during both festive periods (Ching Ming Festival, Chung Yeung Festival, the Saturdays and Sundays of the two weeks before and after Ching Ming Festival and Chung Yeung Festival) and non-festive periods (Wednesdays and Sundays, except the Sundays during festive periods).

3.2 Administrative Visitor Booking System

To manage visitor traffic effectively, “自由福居”has implemented a comprehensive Administrative Visitor Booking System, which includes the following key components:

a. **Advance Reservations**
Visitors are required to make appointments in advance through the columbarium’s pre-booking system, either by phone or WhatsApp (WhatsApp number: 5346 4499). Reservations are processed on a first-come, first-served basis to ensure fair access for all visitors and to control the flow of visitors.

For non-festive periods, visitors must book their visit at least 7 days in advance, while for festive periods such as Ching Ming and Chung Yeung, visitors must book 14 days in advance. This pre-booking system ensures efficient management of visitor numbers and helps to prevent congestion at the columbarium.

b. **Confirmation of Slots**
During festive periods, upon booking, visitors will receive a confirmation of their pick-up and drop-off times via the same channel they used to book (phone or WhatsApp). This confirmation includes detailed instructions about shuttle service timings, pick-up/drop-off locations, and any relevant traffic management guidelines. By providing this information ahead of time, the columbarium ensures a smooth visitor flow and avoids any overlaps or congestion. In the non-festive periods, visitors can also inquire about their entry and exit times via phone or WhatsApp.

c. **Booking Verification**

Festival periods
Visitors are required to present their booking confirmation at lay-by near Sheung Shui Station before boarding the vehicle. Visitors who arrive on foot without using the designated transport, even if pre-booked, will not be admitted. This arrangement ensures safe, orderly operation and effective crowd control, which reduces congestion along the access road.

Non-festival periods
Visitors are required to present their booking confirmation. This verification process ensures that only those with scheduled appointments are allowed to visit, maintaining the planned traffic flow and preventing unplanned influxes of visitors.

d. **Information Dissemination**
Clear instructions and guidelines regarding the booking process, shuttle services, and traffic management measures are provided to visitors through multiple channels. These include WhatsApp, phone, and the columbarium’s Facebook page, where visitors can stay updated on the latest information regarding bookings and site access.

3.3 Pre-Booked Shuttle Services

The pre-booked shuttle service is a key part of the visitor management strategy, providing efficient transportation for visitors to “自由福居”. The following sections outline key aspects of the service:

a. Operating Hours
During **festive periods** such as Ching Ming and Chung Yeung and the two weekends before and after these festivals, the pre-booked shuttle service operates from **07:30 to 18:00**, ensuring that visitors can complete their activities before the columbarium closes. The service uses **27-seater vehicle**, which provides sufficient capacity to meet visitor demand during peak periods while ensuring a smooth and controlled flow of traffic.

For **non-festive periods**, the columbarium operates on a limited basis, specifically on Wednesdays and Sundays, with visitation allowed only through advance booking. No shuttle service is provided on these days. The number of visitors is very low, typically limited to one or two persons per day. These individuals may access the site on foot.

b. Pick-Up/Drop-Off Locations

San Wan Road Lay-By

The shuttle service runs between Sheung Shui Station and “自由福居”, with the pick-up and drop-off point located at the southern side lay-by area on San Wan Road, close to Exit B2 of Sheung Shui MTR Station, as shown in **Figure 3.1**.

“自由福居”

On the “自由福居” side, the pick-up/drop-off areas are provided near the application area, as shown in **Figure 3.2**. The Swept Path Analysis of typical 27-seater vehicle, enclosed in **Appendix A**, depicted that sufficient maneuvering space could be provided along between the Access Road to Tong To Ping Tsuen and the “自由福居”. Consents from the lot owners of adjacent private lots have been obtained from the Applicant.

c. Scheduled Intervals

During festive periods, the shuttle service operates at a frequency of 2 trips per hour in each direction, resulting in a total of 20 trips per day per direction, accommodating a maximum of 400 visitors per day.

The columbarium will accommodate 864 niches. As depicted in **Table 2.1**, there are totally 3,456 visitors per festive period. The proposed development will operate for 9 designated days per festival (two weekends before and after the festival day, plus the festival day itself). To manage this demand evenly and maintain a safe and orderly environment, the daily target is set as: 3,456 visitors ÷ 9 days = 384 visitors per day, rounded to 400 visitors/day to allow buffer and operational flexibility.

d. Visitor Control

All visitors during festival periods to “自由福居” must use the pre-booked shuttle service, ensuring effective control of visitor numbers and managing traffic flow. During festival periods, no private vehicles, taxis, or walking to the site are permitted, and violations of these rules may lead to penalties, including the termination of the ash placement contract as stipulated in the management plan.

4 Existing Traffic Situation

4.1 Existing Road Network

The major road networks in the vicinity of the Application Site are listed as follows:

Fanling Highway functions as an Expressway, featuring a dual-three carriageway that stretches in an east-west direction. This road is a primary route for the commute of the motorists between Tai Po and San Tin at its endpoints, passing through Fanling and Sheung Shui along the way. At the eastern end, the road links up with the Tolo Highway at the Lam Kam Interchange, which also connects with Tai Wo Service Road West, Lam Kam Road, and Tai Po Road. Towards the western end, the highway goes through the Kwu Tung area and succeeds the San Tin Highway.

Heung Yuen Wai Highway functions as a Rural Trunk, featuring a dual-two carriageway that stretches in the north-south direction. It acts as a primary linkage between the Fanling Highway and the Heung Yuen Wai Boundary Control Point. The road includes the Lung Shan Tunnel and Cheung Shan Tunnel, along with four interchanges, making it easier for motorists in Sha Tau Kok, Ta Kwu Ling, and Ping Che to reach Fanling, Sheung Shui, Tai Po, and Kowloon.

Sha Tau Kok Road – Wo Hang functions as a Rural Road A. It is a signle-two carriageway that runs in the east-west direction.

Sha Tau Kok Road – Shek Chung Au functions as a rural road, serving as the sole access route to Sha Tau Kok Control Point. This single two-lane carriageway runs in the east-west direction.

4.2 Pre-booked Shuttle Service Routes

During the festivals and their shallow periods, a pre-booked shuttle service follows the following routes:

Ingress Route

Starting from San Wan Road, via Lung Sum Avenue, Lung Wan Street, San Wan Road, So Kwun Po Road, Fanling Highway, Heung Yuen Wai Highway, Sha Tau Kok Road – Wo Hang and then Sha Tau Kok Road – Shek Chung Au, eventually leading to its final stretch on the access road to Tong To Ping Tsuen.

Egress Route

Starting from the access road to Tong To Ping Tsuen, via Sha Tau Kok Road – Shek Chung Au, Sha Tau Kok Road – Wo Hang, Heung Yuen Wai Highway, Fanling Highway and then So Kwun Po Road, ultimately arriving at San Wan Road

The vehicular ingress/egress arrangement of the proposed development is depicted in **Figure 4.1**.

4.3 Public Transport

Public transport services including franchised buses in the vicinity are depicted in **Figure 4.2** and summarised in **Table 4.1**.

Table 4.1 Franchised Buses Services

Operator	Route No.	Destination
KMB	78	Sha Tau Kok → Sheung Shui (Tai Ping) [(a)]
KMB	78K	Sheung Shui (Tai Ping) ↔ Sha Tau Kok
KMB	78S	Sheung Shui → Sha Tau Kok [(b)]
		Sha Tau Kok → Sheung Shui [(c)]
KMB	N78	Sheung Shui ↔ Sha Tau Kok [(d)]
KMB	277A	Lam Tin Station → Sha Tau Kok [(e)]
		Sha Tau Kok → Lam Tin Station [(f)]

Note: (a) Service Period: Mondays to Fridays except Public Holidays – Morning Service
(b) Service Period Mondays to Sundays – Morning Service
(c) Service Period: Mondays to Sundays – Afternoon Service
(d) Service Period: Mondays to Sundays – Midnight Service
(e) Service Period: Mondays to Sundays – Afternoon Service & Saturday and Holiday – Morning Service
(f) Service Period: Mondays to Sundays – Morning Service & Saturday and Holiday – Afternoon Service

4.4 Traffic Surveys

Classified Turning Movement Count Survey

In order to appraise the existing traffic conditions, classified turning movement count surveys have been carried out at the key junctions of the study area, as shown in **Figure 4.3**, on the Ching Ming Festival in 2024 (4th April 2024) from 07:30 to 18:30.

The traffic counts were recorded in a 15-minute interval, and to be converted into passenger car unit (pcu). The highest consecutive 15-minute hourly traffic volume was adopted as the peak hour traffic flow.

The peak hour of the road network has been identified as 08:15 to 09:15 and 2024 observed traffic flow during peak hour during the festival periods is depicted in **Figure 4.4**.

Lay-by Occupancy Survey

To evaluate the existing occupancy of the San Wan Road Lay-by, which serves as the terminating point for the shuttle service, as shown in **Figure 3.1**, a comprehensive survey was conducted during the Ching Ming Festival on 4th April 2024, from 07:30 to 18:30.

During the survey, vehicles entering and exiting the lay-by were categorized by vehicle type, and their arrival and departure times were recorded. The primary objective was to determine the lay-by's occupancy throughout the day.

4.5 Existing Traffic Assessment

Junction Capacity Assessment

Junction capacity assessments have been conducted at major junctions along the vehicular ingress/egress route, following the guidelines set out in the Transport Planning and Design Manual (“TPDM”) Volumes 2. The results of these assessments are summarised in **Table 4.2**, while the detailed calculation sheets can be found in **Appendix B**.

The performance of a priority junction or roundabout is indicated by its Design Flow / Capacity Ratio ("DFC"). A DFC value of 0.85 or below is considered within an acceptable level without causing undue delay to motorists passing through the concerned junctions.

Table 4.2 Existing Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Observed Scenario
Jn A	Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Ping Tsuen	Priority/ DFC	0.12
Jn B	Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma Mei Ha	Roundabout/ DFC	0.37

*Notes: * DFC - Design Flow / Capacity Ratio.*

As depicted in **Table 4.2**, all key junctions, currently operate below their maximum capacities during the identified peak.

Lay-by Occupancy Assessment

To evaluate the lay-by occupancy of the lay-by area on San Wan Road, near Exit B2 of Sheung Shui MTR Station, an extensive survey was conducted throughout the shuttle service period during the Ching Ming Festival. The instant occupancy of the lay-by was collected in a 5-minute interval.

The results were illustrated in **Figure 4.5**, which can be interpreted as follows:

a. **Horizontal Axis**: Represents the time intervals during the Ching Ming Festival, from 07:30 to 18:30, with data points collected every 5 minutes.

b. **Vertical Axis**: Represents the length of the lay-by occupied, measured in meters.

c. **Blue Bars:** Indicate the length of the lay-by occupied by the “自由福居” shuttle service vehicle. While the vehicle itself has an approximate length of 8 meters, an additional buffer is required for safe maneuvering and alignment when parked in the lay-by, leading to an overall occupied length of 9 meters.

   The combined height of the blue and red bars at each time interval shows the total length occupied.

d. **Orange Line**: Represents the maximum length provided by the San Wan Road lay-by, which is 59 meters.

The results show that the busiest periods are observed around 08:00 - 08:05, where the occupancy totals about 45 meters. Even during the peak periods, the lay-by occupancy did not exceed the maximum provided length of 59 meters. This indicates that the lay-by has sufficient capacity to accommodate the shuttle services for “自由福居”, even during peak festival periods.

5 Future Traffic Situation

5.1 2030 Design Year Road Network

Given that “自由福居” has been in operation since 1988. Typically, the design year is determined as either three years post-completion (not applicable) or five years subsequent to the application year (resulting in 2030). The decision has been made to adopt the longer duration as it provides a more conservative approach. Consequently, the year 2030 has been selected as the design year for this study.

For the Design Year 2030, the Growth Factor Method is employed to forecast traffic. This method utilizes the historical data from Annual Traffic Census Data (ATC) and demographic trends from the Projected Population by District Council District to predict future traffic volumes. The more significant growth factor derived from these two sources is adopted to ensure the most conservative traffic estimate.

Considering the ongoing and planned infrastructure projects, it is evident that any significant developments influencing traffic patterns are either in the planning stages or already underway. These aspects are elaborated upon in **Section 5.4** of this report.

The current and expected road network developments reinforce the suitability of using the Growth Factor Method. This approach effectively leverages existing traffic trends to project future traffic patterns, ensuring a robust and realistic forecast for the Design Year 2030.

5.2 Development Traffic Generation

Modal Split

As detailed in **Section 3.3**, a a pre-booked shuttle service with vehicles accommodating up to 27 seats is implemented during festive periods (such as Ching Ming, Chung Yeung, and the two weekends before and after these festivals). During these periods, all visitors are required to use the pre-booked service, with no private vehicles, taxis, or walking access allowed on-site.

Trip Generation and Attraction

The pre-booked service operates with a fixed frequency of 2 trips per hour in each direction during peak hours of festive periods from 07:30-18:00. The schedule, based on predicted demand, helps regulate trip generation and manage visitor numbers effectively. The service is expected to handle a consistent flow of visitors while adhering to the capacity limit of 20 passengers per trip, despite the vehicles’ ability to seat 27 passengers. This adjustment further ensures safety and traffic management.

Table 5.1 shows the projected vehicular trips of 3 pcu per hour per direction, based on the pre-booked shuttle service schedule during the busiest periods, including festival days and surrounding weekends.

Table 5.1 Fixed Trip Generation and Attraction for“自由福居”during Festive Periods

Vehicular Trips (PCU/hour)	
Generation	**Attraction**
3	3

Traffic Demand Assessment Summary

On non-festive days, the columbarium operates an exclusive pre-booked shuttle service on Wednesdays and Sundays, offering four scheduled timeslots at 10:00, 11:30, 13:30, and 15:00. Each trip accommodates a maximum of 20 visitors, resulting in an average of fewer than one trip per hour throughout the day. While this reflects the maximum service capacity, historical data indicates that actual demand is generally low, with many non-festive days recording few or no bookings.

During festive periods, a controlled shuttle service is implemented to manage increased visitor demand. The service operates at a fixed frequency of two trips per hour in each direction, with each trip capped at 20 visitors, despite the 27-seat vehicle capacity. This arrangement translates to a peak traffic volume of 3 Passenger Car Units (PCU) per hour per direction, as outlined in the traffic impact assessment.

The combination of capped visitor numbers, pre-booking requirements, and fixed shuttle scheduling ensures that traffic demand remains well within the capacity of the surrounding road network. Consequently, the columbarium's operations—both during festive and non-festive periods—are expected to have a minimal impact on local traffic conditions.

5.3 Regional Traffic Growth

For the estimation of traffic flows in the design year of 2030, it is proposed to adjust the existing traffic flows to take into account the natural traffic growth.

Annual Traffic Census (ATC)

Reference has been made to the 2020 to 2023 Annual Traffic Census Reports, published by Transport Department. The traffic data recorded at counting stations adjacent to the Application Site are shown in **Table 5.2.**

Table 5.2 Annual Traffic Census Data

No.	Link	From	To	Road Type	2020	2021	2022	2023	Growth Rate p.a.
5003	Fanling Highway	So Kwun Po INT	Wo Hop Shek INT	EX	61,080	64,840	62,830	75,040	7.10%
5041	Lung Shan Tunnel	Fanling Highway	Sha Tau Kok Road	RT	13,840	16,870	16,400	20,630	14.23%
5660	Sha Tau Kok Rd	On Kui St	Ping Che Rd	RR	23,740	22,980	22,280	22,810	-1.32%
5860	Sha Tau Kok Rd	Ping Che Rd	Shun Lung St	RR	6,300	5,970	4,900	5,010	-7.35%
5885	San Wan Rd	Ramp A of So Kwun Po INT	Lung Sum Ave	DD	17,120	15,680	15,600	15,960	-2.31%
6653	Ping Che Rd	Sha Tau Kok Rd	Lin Ma Hang Rd	DD	11,030	11,870	11,510	12,150	3.28%
Total					133,110	138,210	133,520	151,600	**4.43%**

Table 5.2 presents the traffic flow information spanning four years. Since the opening of Heung Yuen Wai Highway in 2019, the traffic pattern on Sha Tau Kok Road has undergone a redistribution in 2019 and has remained stable since 2020. Notably, there has been a significant reduction in traffic volume along Sha Tau Kok Road, while there has been a substantial increase in traffic volume within Heung Yuen Wai Highway (Lung Shan Tunnel section). Based on Annual Traffic Census Reports 2020 to 2023, the data indicates variable annual growth rates for different road links, with some experiencing increases and others experiencing decreases in traffic volume. When considering all the links collectively, the compounded annual growth rate averages out to **+4.43%**.

Projected Population Data

According to the report "Projections of Population Distribution 2023-2031" published by the Planning Department, the population growth data from the year 2024 to 2030 in North District is summarised in **Table 5.3**.

Table 5.3 Projected Population by District Council District, 2023-2031

District Council District	Year 2024	Year 2030	Growth Rate p.a. (%)
North	344,900	417,100	**3.22%**

The data indicate the growth in population in North District is at an annual rate of **+3.22%** from 2024 to 2030.

After comparing the historical data and the future planning data, for conservative purposes, an annual growth rate of **+4.43%** was adopted. This growth factor will apply in 2024 observed traffic flows.

5.4 Major Planned/ Committed Developments

The forecast includes traffic generated by major planned or committed developments near the site, detailed in **Table 5.4**.

Table 5.4 Major Planned/ Committed Developments

Location	Type of Development	Completion Year
Proposed Temporary Transitional Housing and Ancillary Facilities for a Period of 7 Years at Government Land in D.D. 82, Ping Che, Ta Kwu Ling, New Territories	Residential Development	Before or in 2030

5.5 Reference and Design Flows

The growth factor will be applied to the traffic flows of 2024 Observed Peak Hour, to estimate the 2030 Reference Flows. The reference and design flows for Design Year 2030 are calculated from the following formulae:

2030 Reference Flows = 2024 Observed Flows x $(1+4.43\%)^6$ + Planned Development Traffic

2030 Design Flows = 2030 Reference Flows + 3 pcu/hr

Figure 5.1 shows the 2030 Reference Peak Hour Flows in the road network. By adding the Development Flow, **Figure 5.2** shows the 2030 Design Peak Hour Traffic Flows.

5.6 Future Traffic Assessment

Junction Capacity Assessment

Junction capacity assessments were carried out for the major junctions in the local road network for both the Reference and Design scenarios. The results are summarised and presented in **Table 5.5** with detailed calculation sheets attached in **Appendix B**.

Table 5.5 Future Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario	Design Scenario
Jn A	Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Ping Tsuen	Priority/ DFC	0.16	0.16
Jn B	Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma Mei Ha	Roundabout/ DFC	0.50	0.50

*Notes: * DFC - Design Flow / Capacity Ratio.*

As shown in **Table 5.5**, the capacities of all key junctions would be performing satisfactorily during the peak periods for both the Reference and Design Scenarios. Furthermore, based on the results, the impact of the proposed development traffic on the road network is negligible.

Lay-by Occupancy Assessment

Based on the lay-by occupancy data presented in **Section 4.5** and **Figure 4.5** and incorporating the shuttle service from **Table 5.1**, which projects an additional 3 pcu or 2 trips per hour, the projected lay-by occupancy for 2030 is illustrated in **Figure 5.3**.

The current lay-by occupancy data indicates that the San Wan Road lay-by has adequate capacity to handle existing demand. With the anticipated shuttle service trips by 2030 (3 pcu or 2 trips per hour), the in-house model projects that these trips will only require 1 more loading bay which is approximately 9 more meters of the lay-by space.

Given that the maximum length provided by the lay-by is 59 meters, and the current peak occupancy is well below this limit, the analysis confirms that the lay-by will continue to have sufficient capacity.

Pedestrians Impact

On non-festival periods, the columbarium operates on a limited basis, specifically on Wednesdays and Sundays, with visitation allowed only through advance booking. No shuttle service is provided on these days. The number of visitors is very low, typically limited to one or two persons per day. These individuals may access the site on foot.
Given the low frequency and managed nature of these visits, pedestrian activity remains minimal and does not result in any adverse impact to the local environment or transport network. Security personnel will be available to assist with access coordination if necessary.

During Festive Periods, for local residents such as Tong To villagers, walking access will be permitted. Based on our on-site survey, pedestrian activity from local residents is low, with a maximum of approximately 2 to 3 persons observed walking during peak hours.

- Security personnel will be deployed along the access road to manage pedestrian movements and ensure safe interaction with vehicles.

- As depicted in Figure SP-01 to 02, The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and give way for them to cross first.

6 Summary and Conclusion

6.1 Summary

The applicant has commissioned AXON Consultancy Limited to conduct a Traffic Impact Assessment (TIA) for the proposed development of the “自由福居” columbarium, situated at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories. This development encompasses a total of 864 niches, with 60 niches sold, and aims to formalize the site's rezoning from "Village Type Development" to "Government, Institution and Community (1)" Zone.

The pre-booked shuttle service, operating between “自由福居” and Sheung Shui MTR Station, is integral to minimizing vehicular traffic in the area. The shuttle service operates at a fixed maximum frequency of 2 trips per hour in each direction during festive peak periods, ensuring a controlled and predictable flow of visitors. This fixed schedule effectively manages trip generation and ensures that the traffic impact remains minimal.

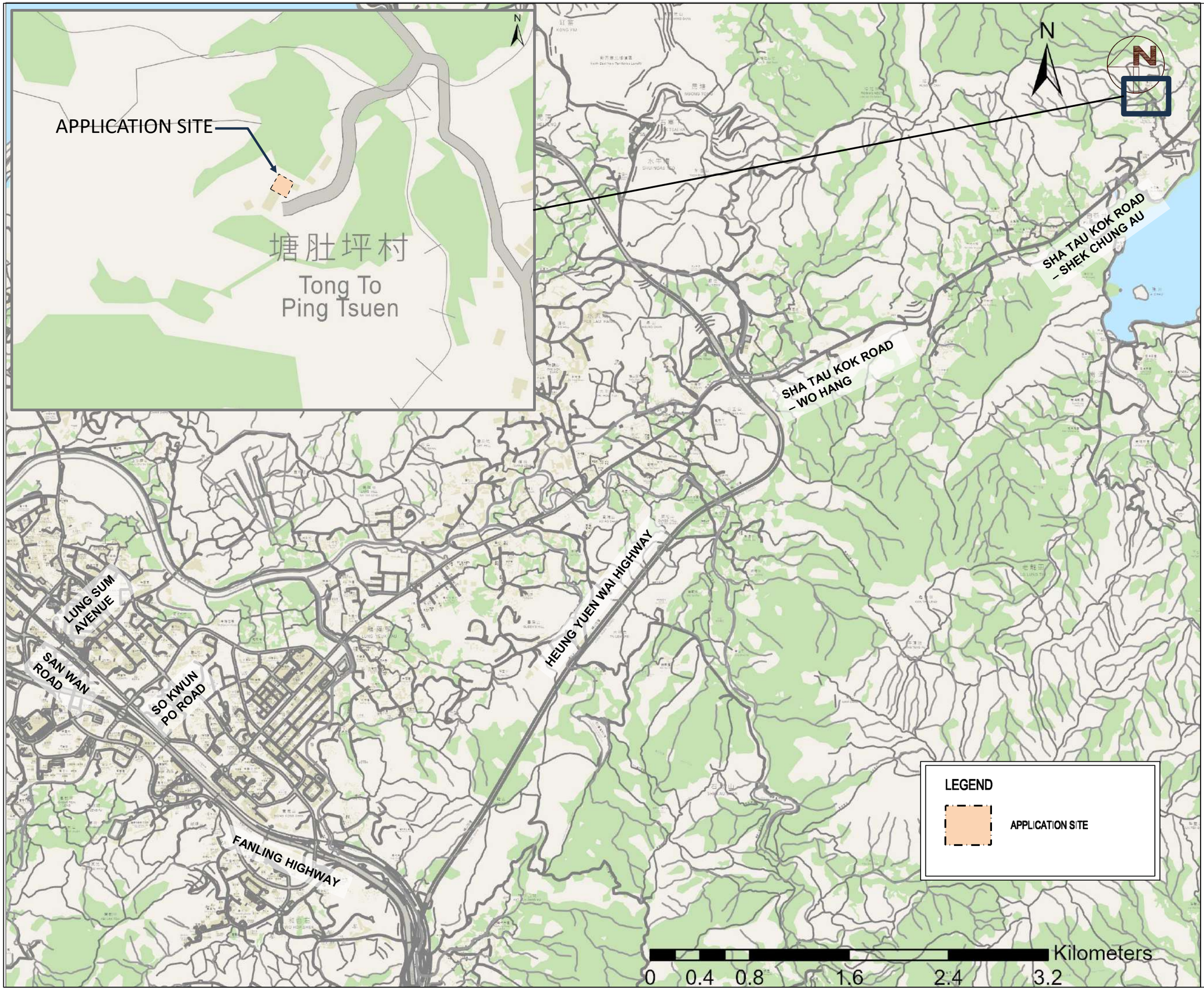
The year 2030 is used as the design year for the traffic impact assessment. After comparing historical data and future planning data, a conservative annual growth rate of +4.43% was adopted. This growth factor has been applied to the observed traffic flows in 2024 to project the 2030 anticipated traffic flows.

Capacity assessments of all major junctions along the ingress and egress routes indicated that all key junctions would perform satisfactorily under both reference and design scenarios for the year 2030. A detailed survey of the San Wan Road Lay-by confirmed its capacity to handle the increased demand from additional shuttle service trips during operational periods.

6.2 Conclusions

The traffic impact assessment findings reveal that the road network surrounding the area will be able to handle the traffic from the shuttle service at “自由福居”, which attracts 3 pcu/hr and generates 3 pcu/hr during festivals. This assessment confirms that the proposed development would not cause any adverse impact from a traffic perspective.

Figures



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SITE LOCATION

FIGURE 2.1

Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

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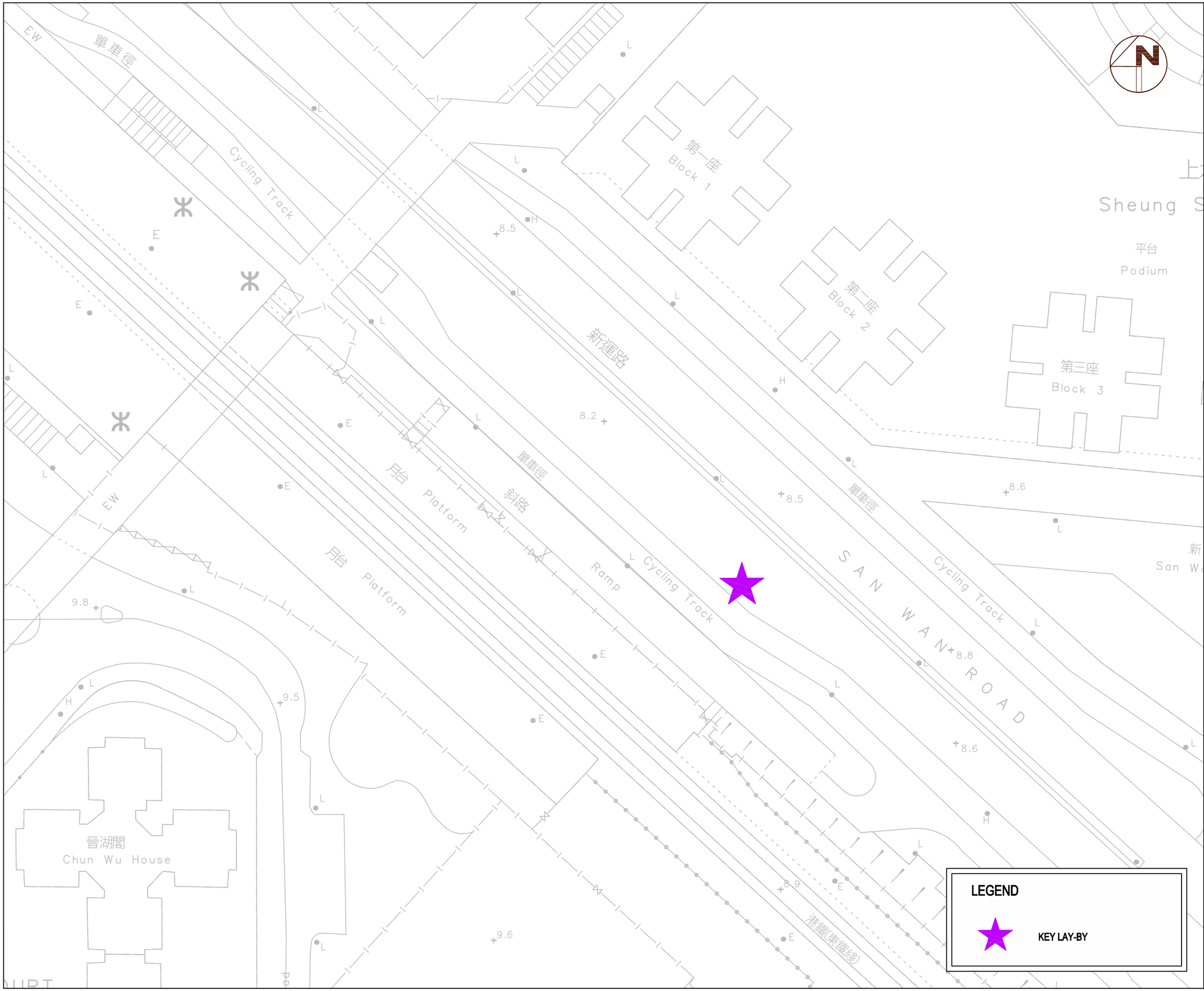

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KEY LAY-BY

FIGURE 3.1

Scale : **1:500 (A3)**

Date : **JAN 2025**

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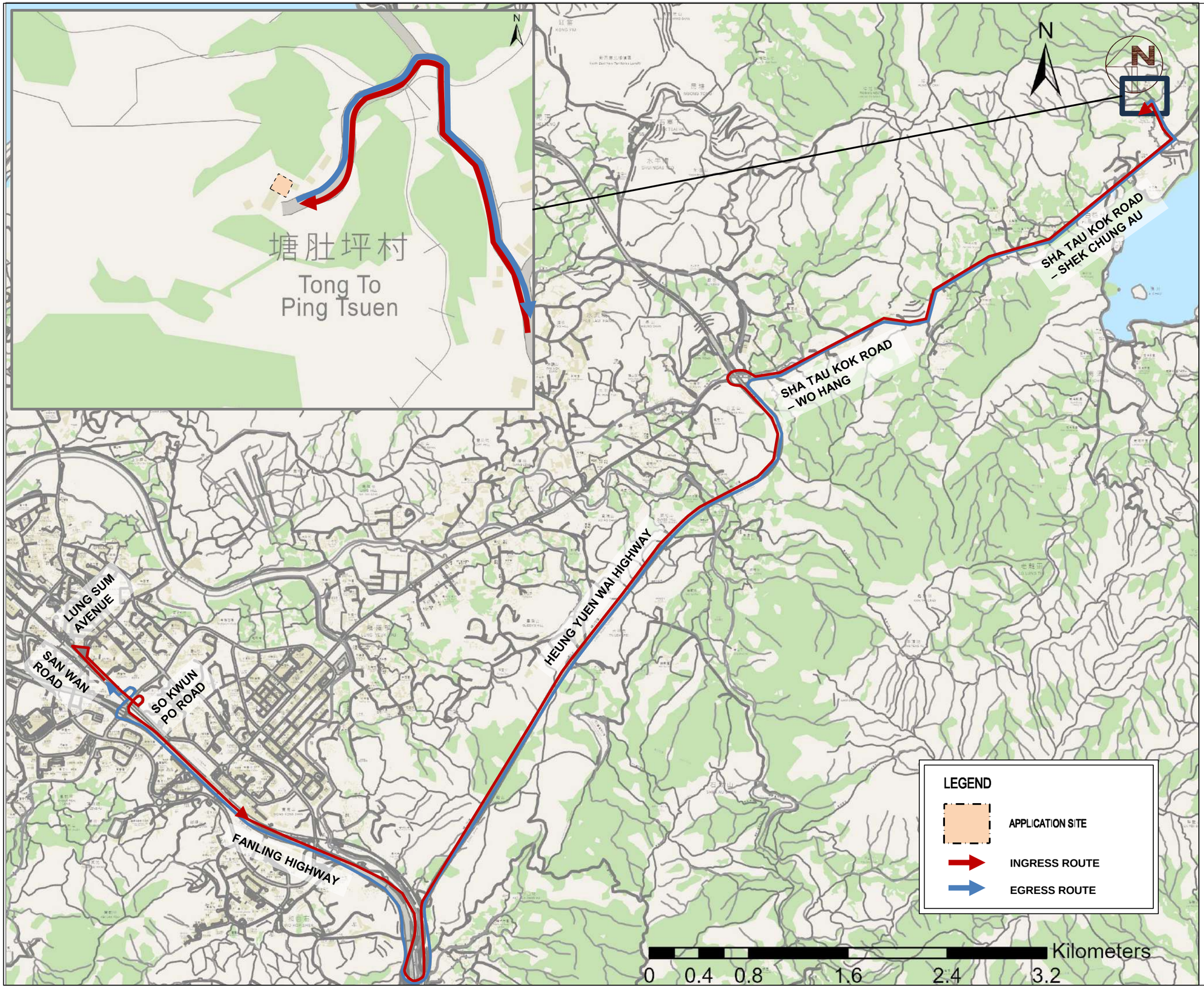

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VEHICULAR INGRESS AND EGRESS ROUTE

FIGURE 4.1

Scale : **N.T.S**

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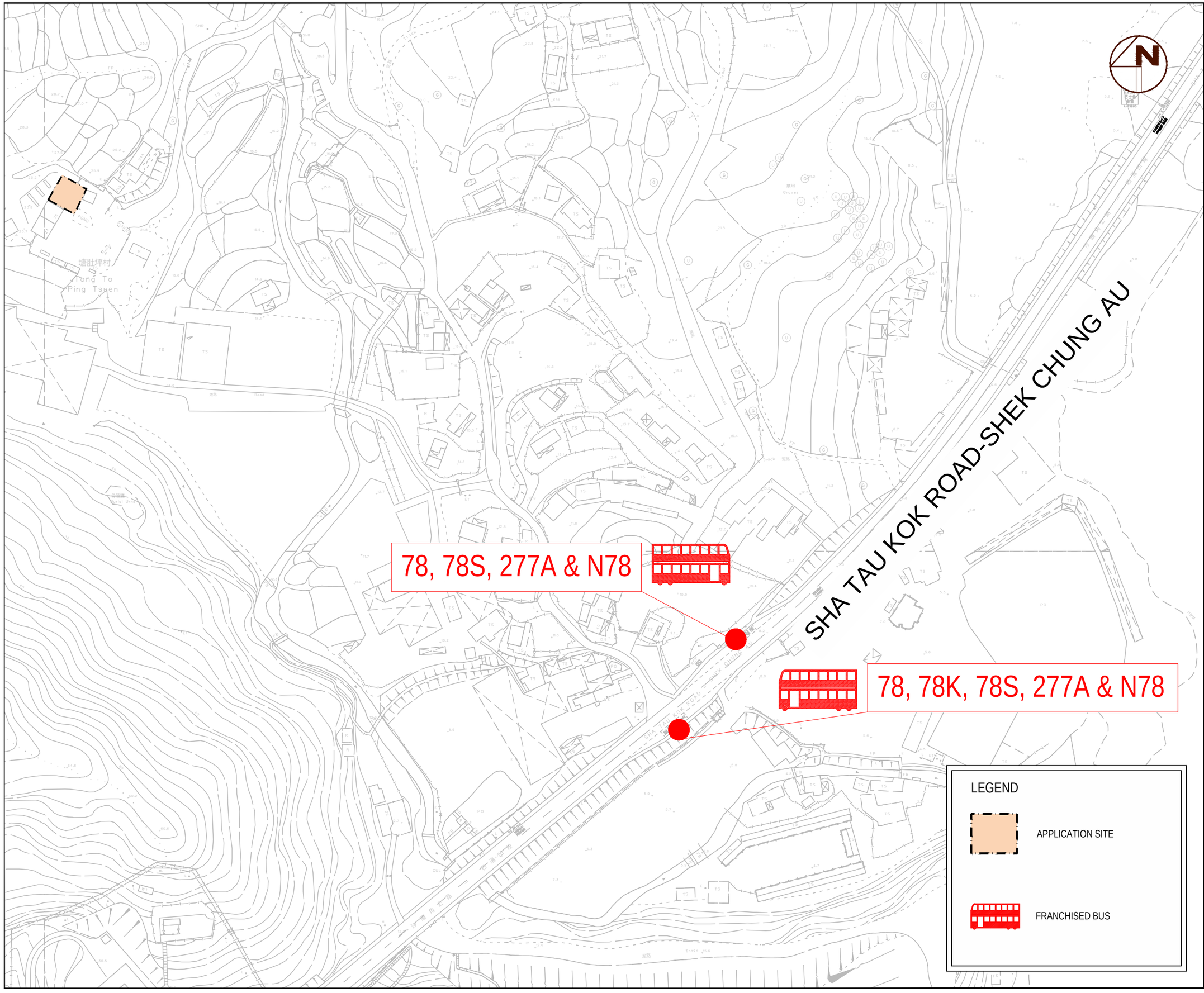
X:\PROJECT\13104 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DATA\DRAW\INGREPORT DRAW\INGFIG 4.3.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

PUBLIC TRANSPORT FACILITIES

FIGURE 4.2

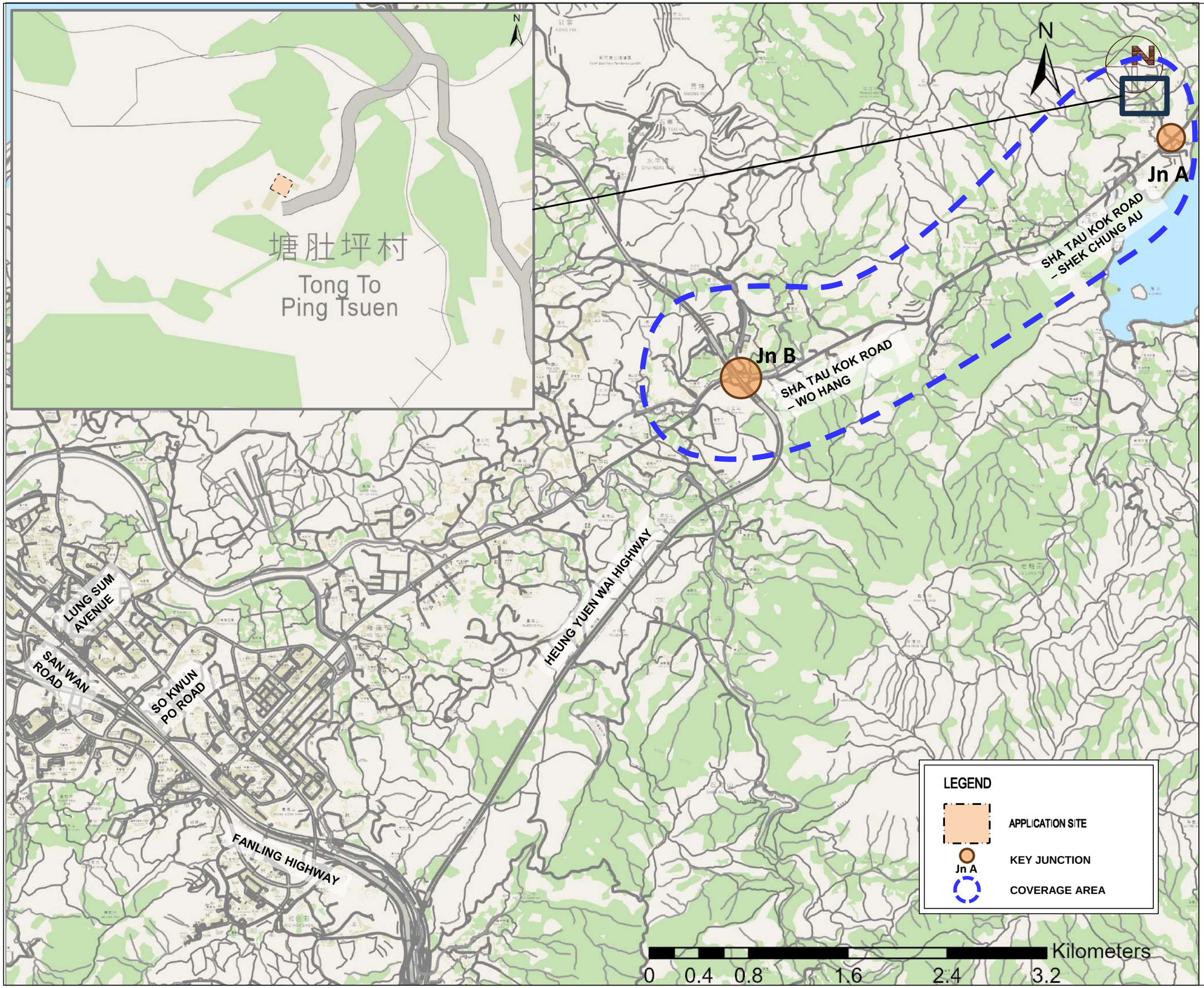
Scale : **1:1500 (A3)**

Date : **MAY 2025**

Rev. :

AXON CONSULTANCY
http://www.axonhk.com

Z:\DOWNLOADS\陳財交通安排\31041 TIA\20250108\FIG 4.2 PUBLIC TRANSPORT.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

KEY JUNCTION

FIGURE 4.3

Scale : **N.T.S**

Date : **MAY 2025**

Rev. : **B**

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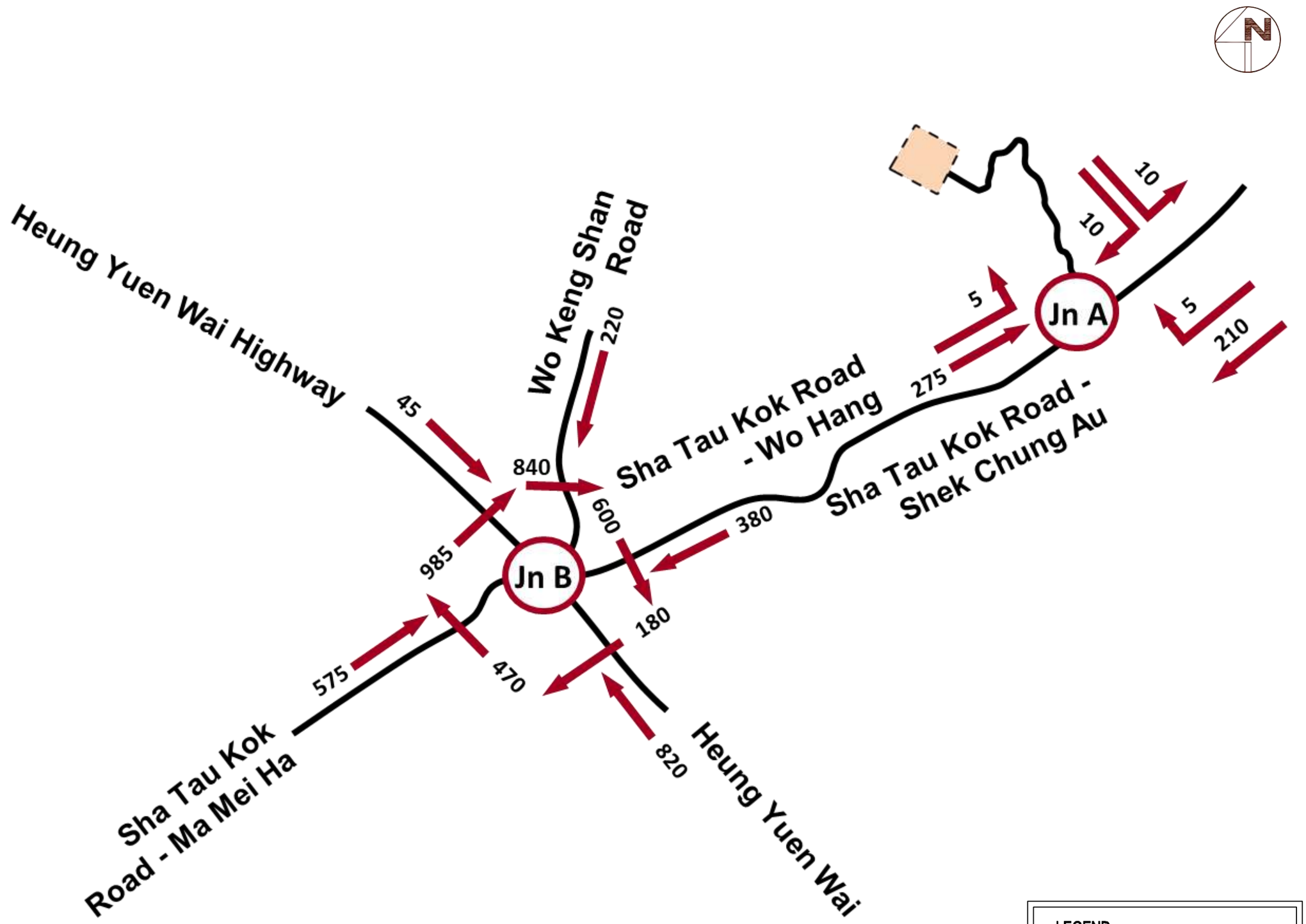
http://www.axonhk.com

X:\PROJECTS\1041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DATA\DRAWING\REPORT DRAWING\FIG 4.3.DWG



LEGEND

APPLICATION SITE

100 TRAFFIC FLOW IN PCU/HR AT PEAK HOUR

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2024 OBSERVED TRAFFIC FLOW

FIGURE 4.4

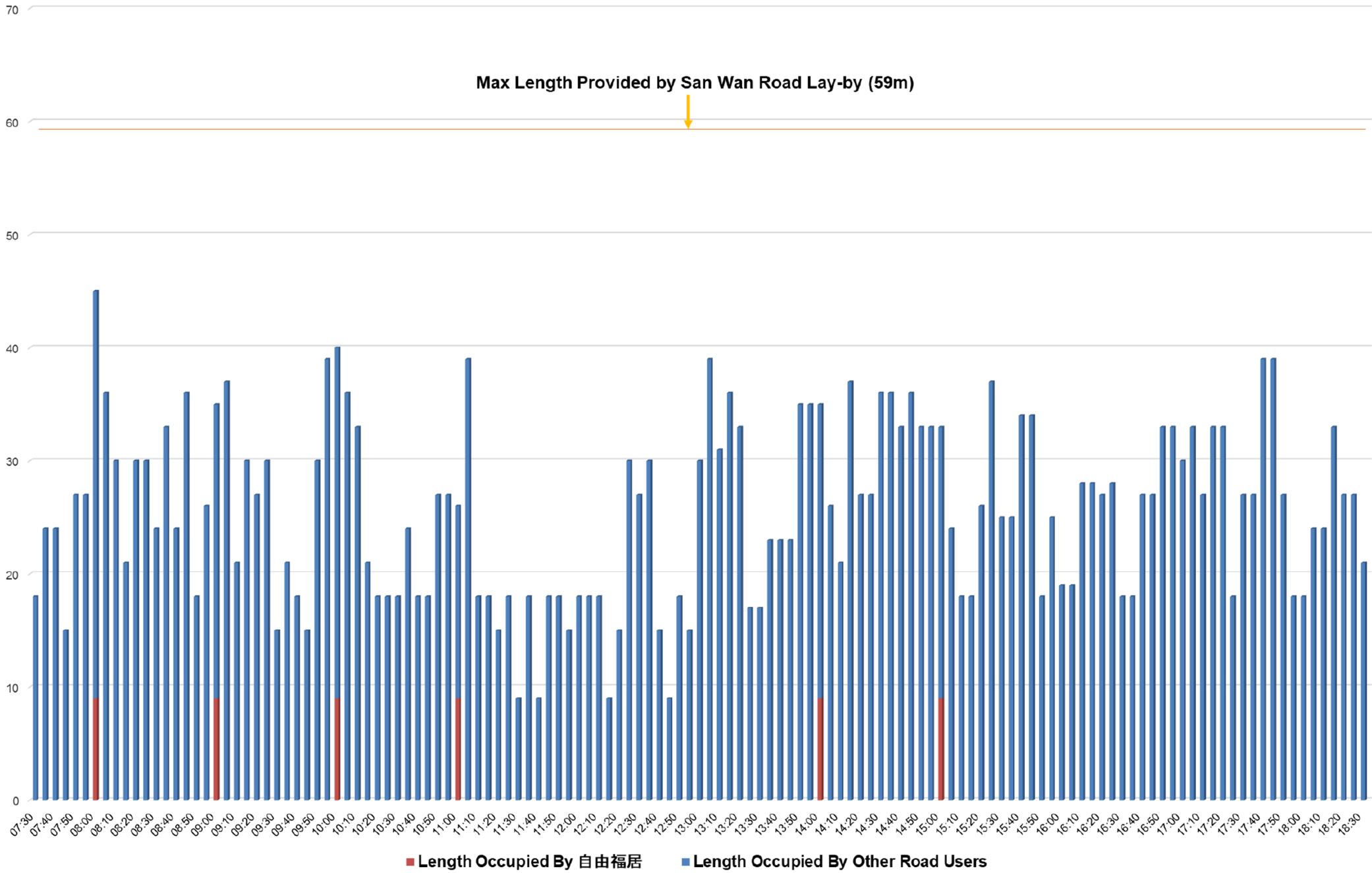
Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

AXON CONSULTANCY
http://www.axonhk.com

X:\PROJECT\31041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DAT\AUTOCAD\DRAWING\REPORT DRAWING\FIG 4.3.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2024 OBSERVED LAY-BY OCCUPANCY

FIGURE 4.5

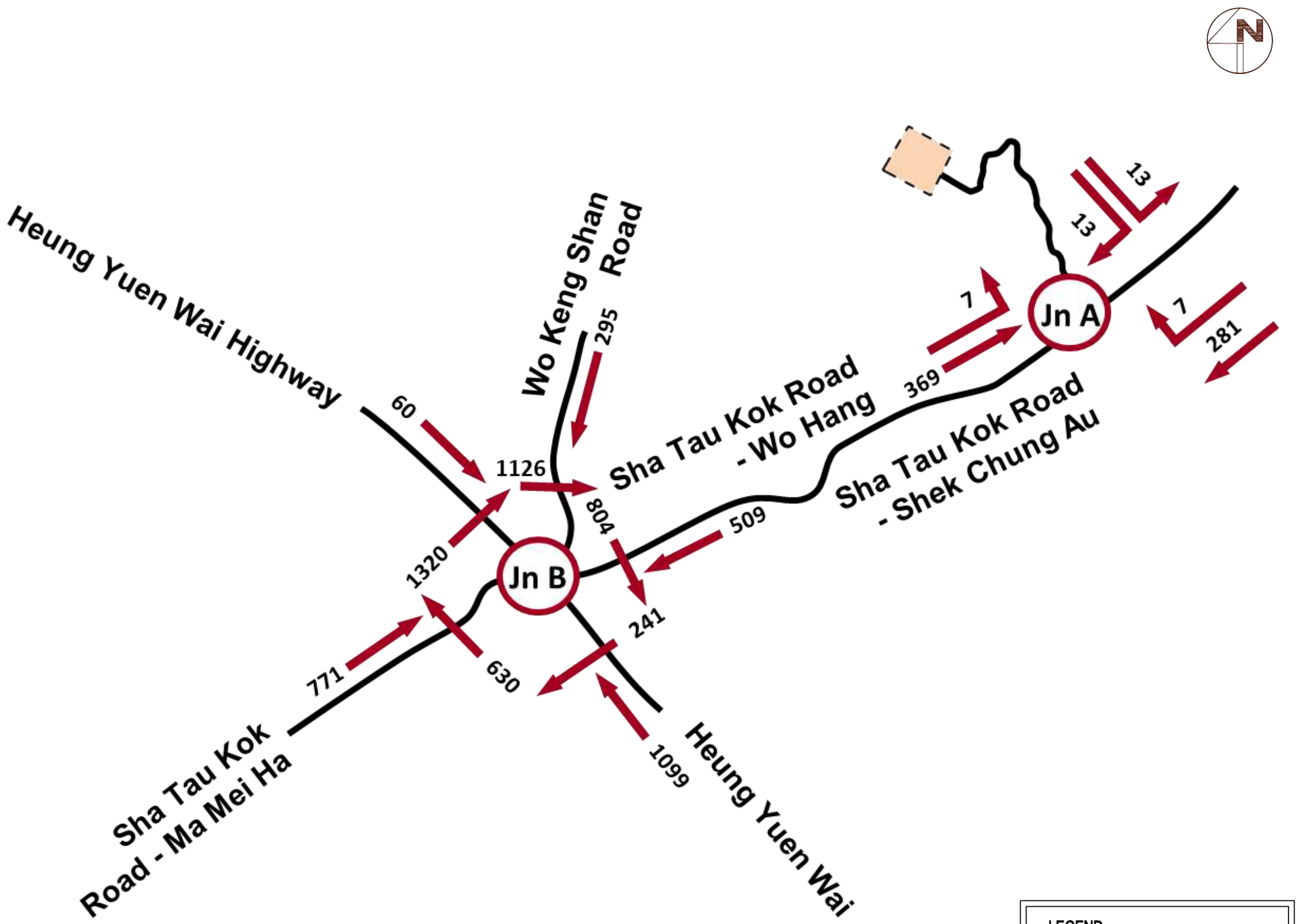
Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

AXON CONSULTANCY
http://www.axonhk.com

X:\PROJECT\31041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUI\DATA\DRAWINGS\REPORT DRAWINGS\FIG 4.4.DWG



LEGEND

APPLICATION SITE

100 TRAFFIC FLOW IN PCU/HR AT PEAK HOUR

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2030 REFERENCE TRAFFIC FLOW

FIGURE 5.1

Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

AXON CONSULTANCY
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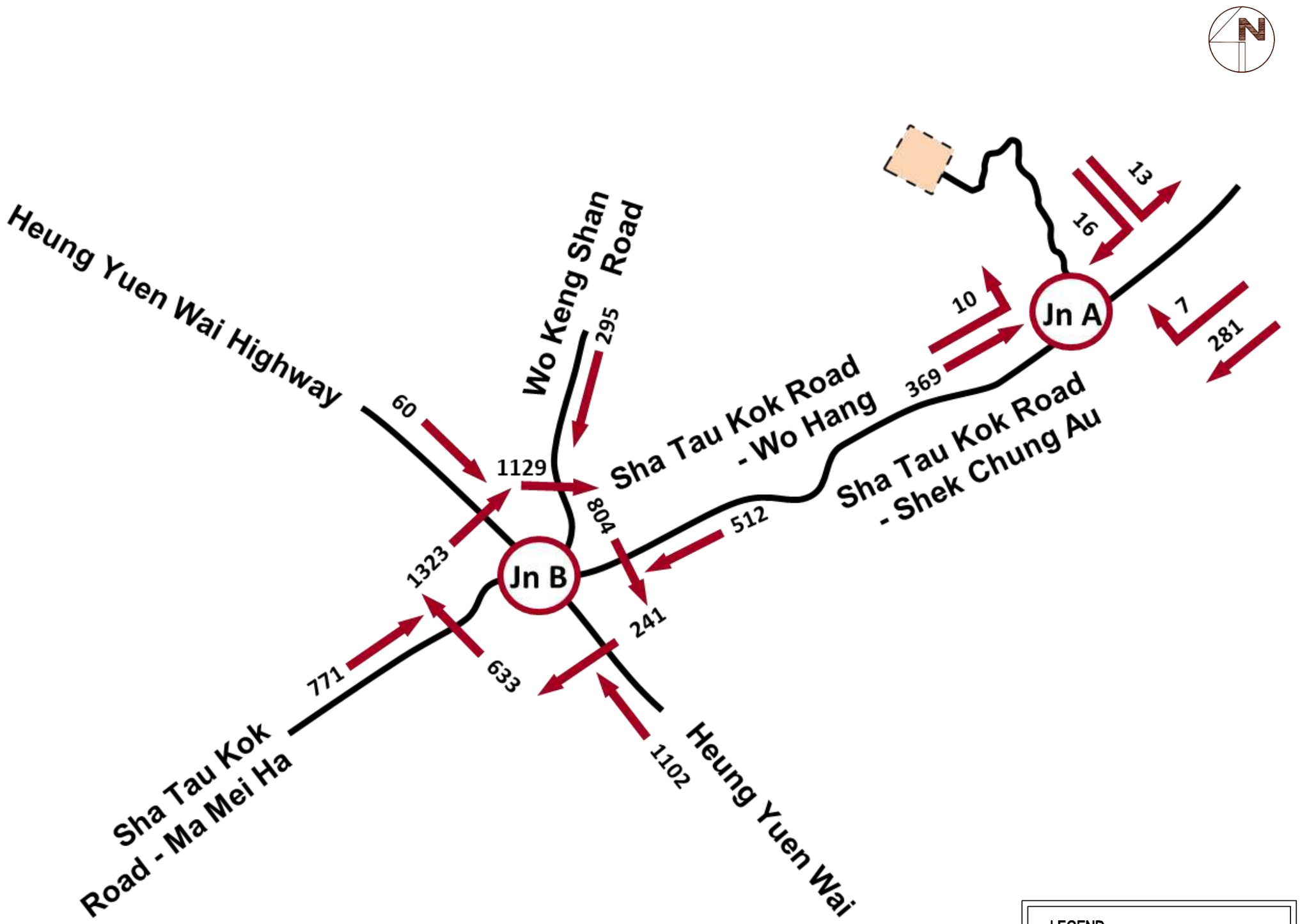
X:\PROJECTS\31041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DATA\DRAWING\REPORT DRAWING\FIG 5.1.DWG



LEGEND

APPLICATION SITE

100 TRAFFIC FLOW IN PCU/HR AT PEAK HOUR

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2030 DESIGN TRAFFIC FLOW

FIGURE 5.2

Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

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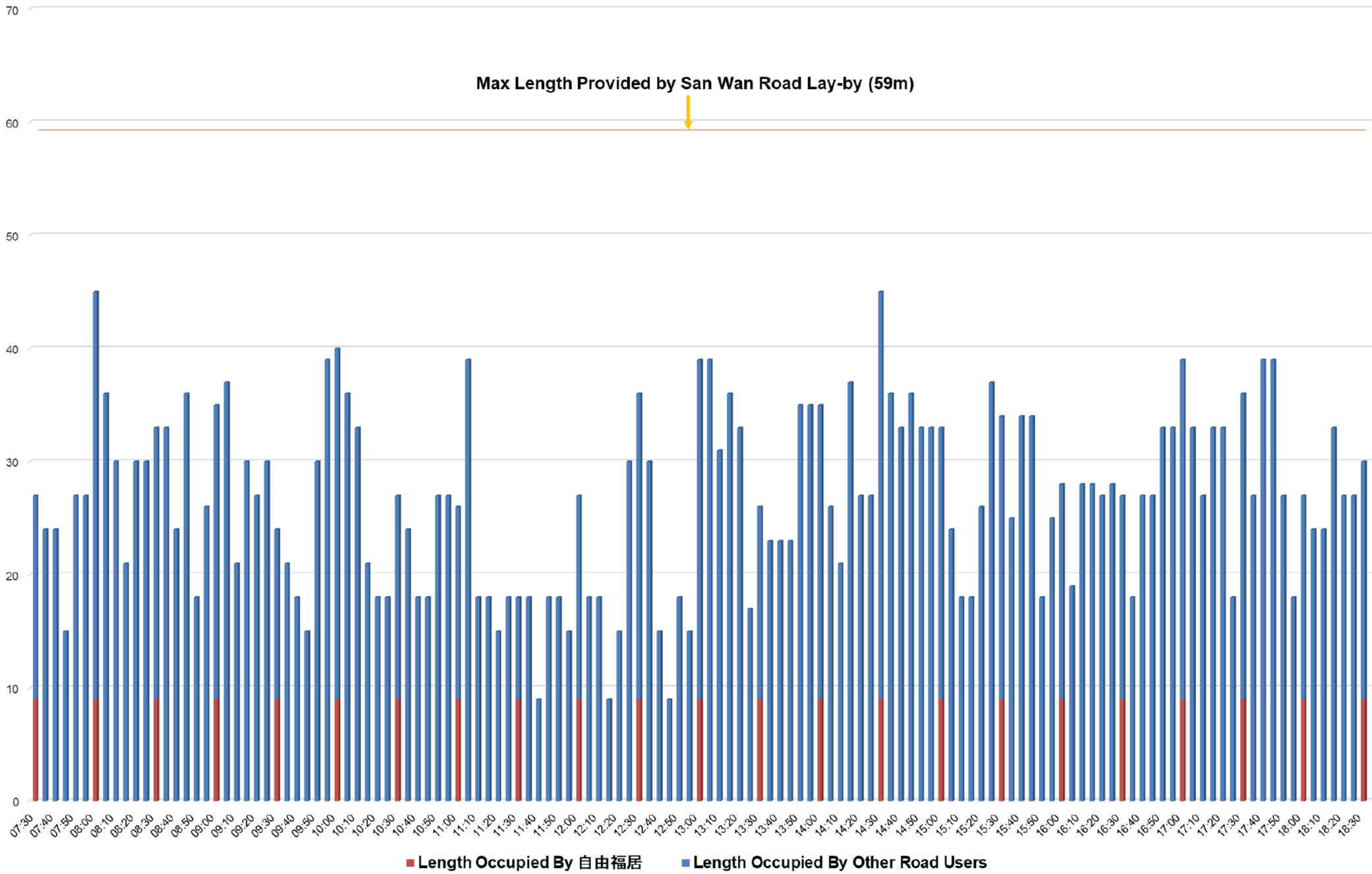
http://www.axonhk.com

X:\PROJECTS\1041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DATA\DRAWING\REPORT DRAWING\FIG 5.2.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2030 DESIGN LAY-BY OCCUPANCY

FIGURE 5.3

Scale : **N.T.S**

Date : **JAN 2025**

Rev. :

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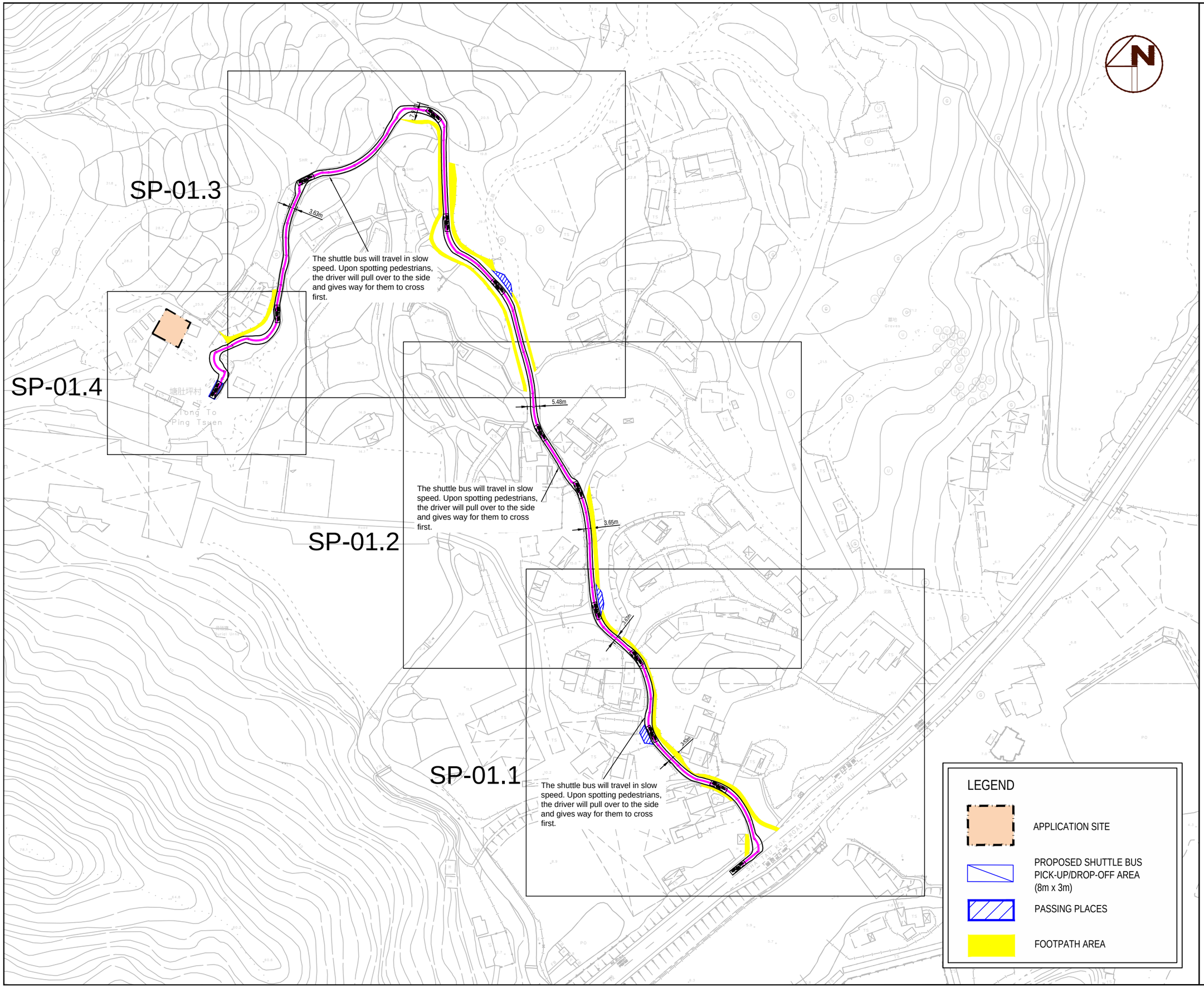
X:\PROJECT\31041 COLUMBARIUM DEVELOPMENT AT TONG TO PING TSUEN\DATA\DRAWINGS\REPORT DRAWINGS\FIG 5.3.DWG

Appendix A

Swept Path Analysis



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01

Scale : **1:1500 (A3)**

Date : **MAY 2025**

Rev. : **A**

AXON CONSULTANCY
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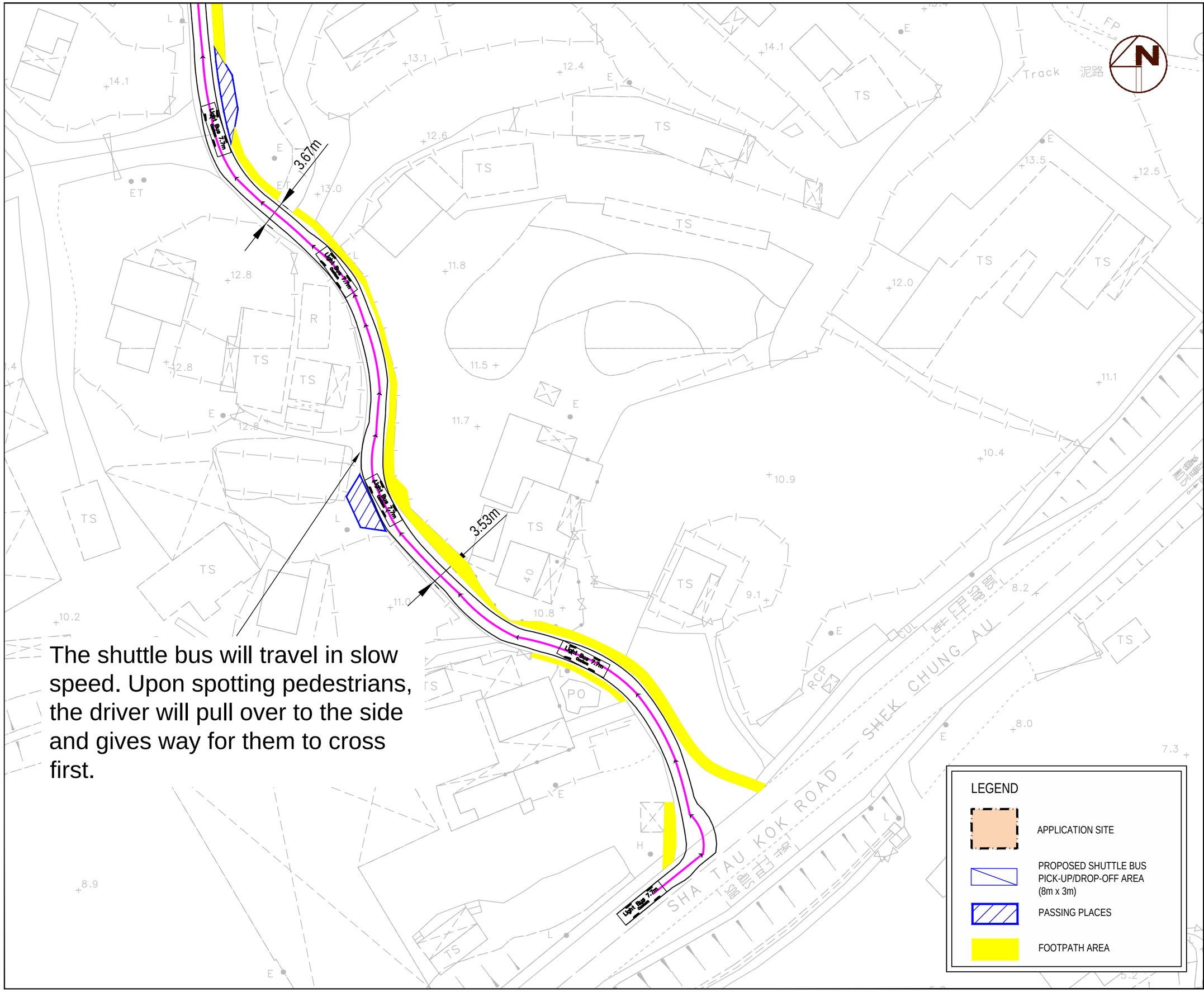
Z:\DOWNLOADS\臨時交通安排\31041 TIA\20250108\FIG-SP01_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)A.DWG



The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.1

Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

AXON CONSULTANCY
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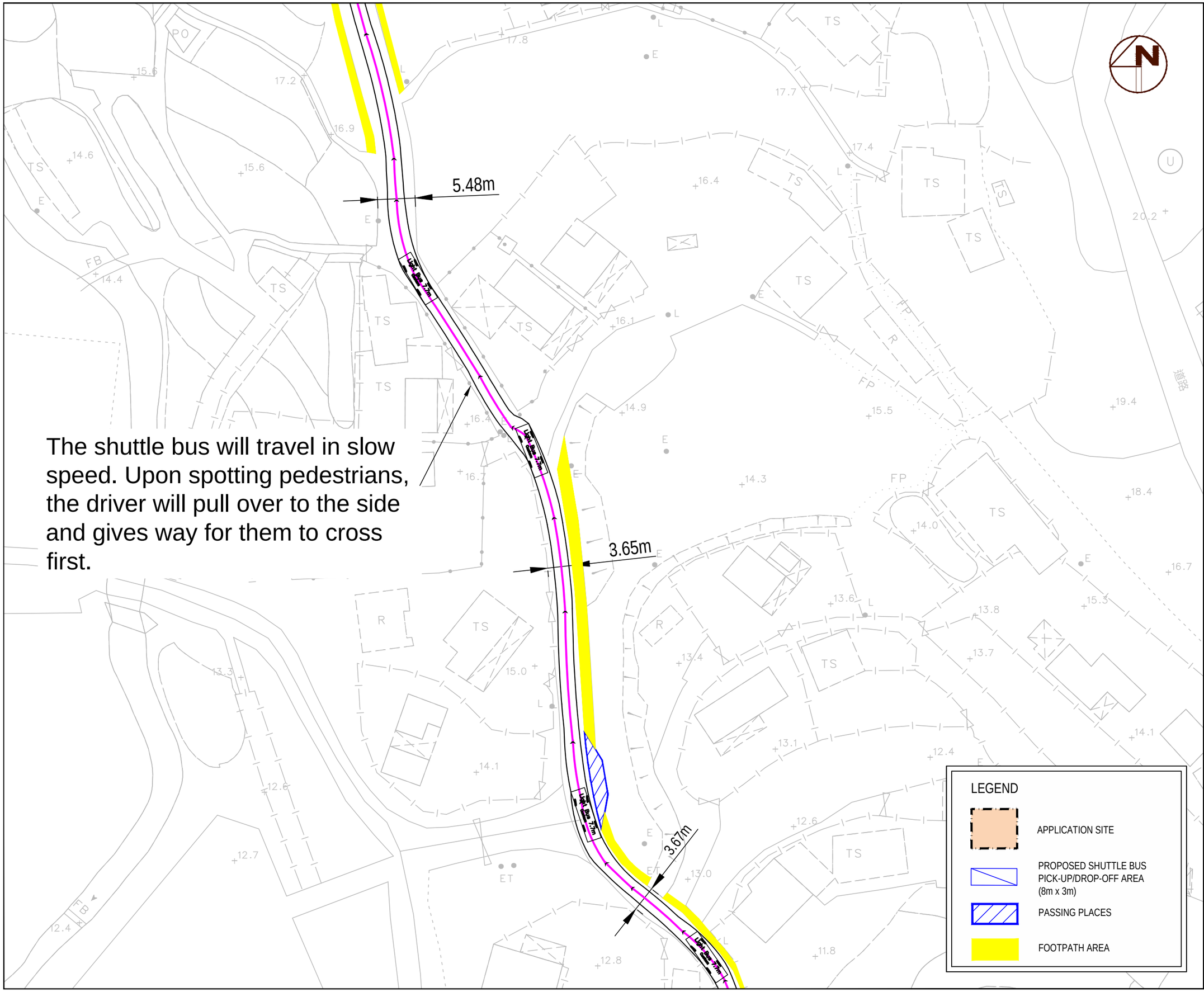
Z:\DOWNLOADS\临时交通安排\31041 TIA\20250108\FIG-SP01_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.2

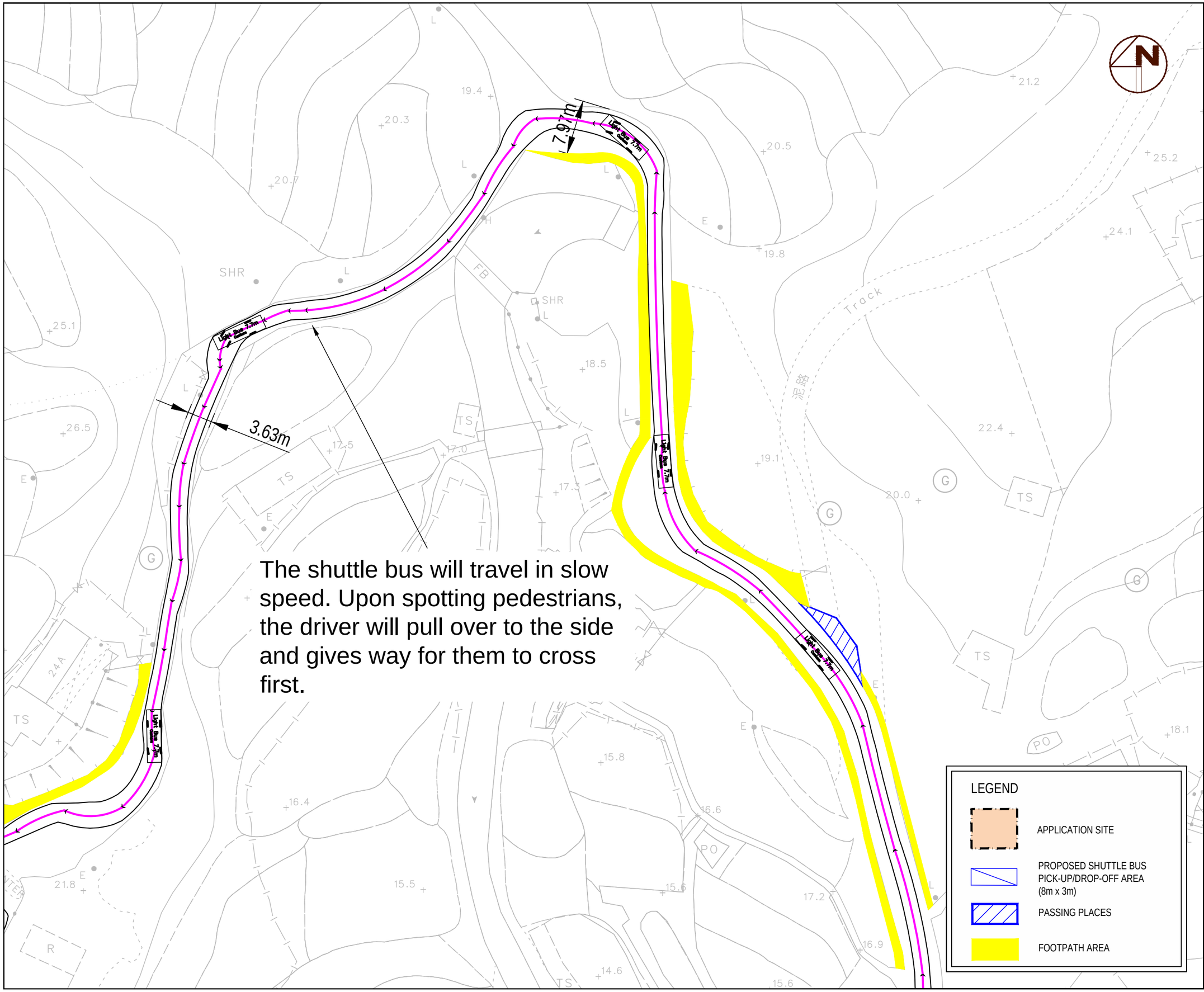
Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

AXON CONSULTANCY
http://www.axonhk.com

Z:\DOWNLOADS\臨時交通安排\31041 TIA\20250108\FIG-SP01_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.3

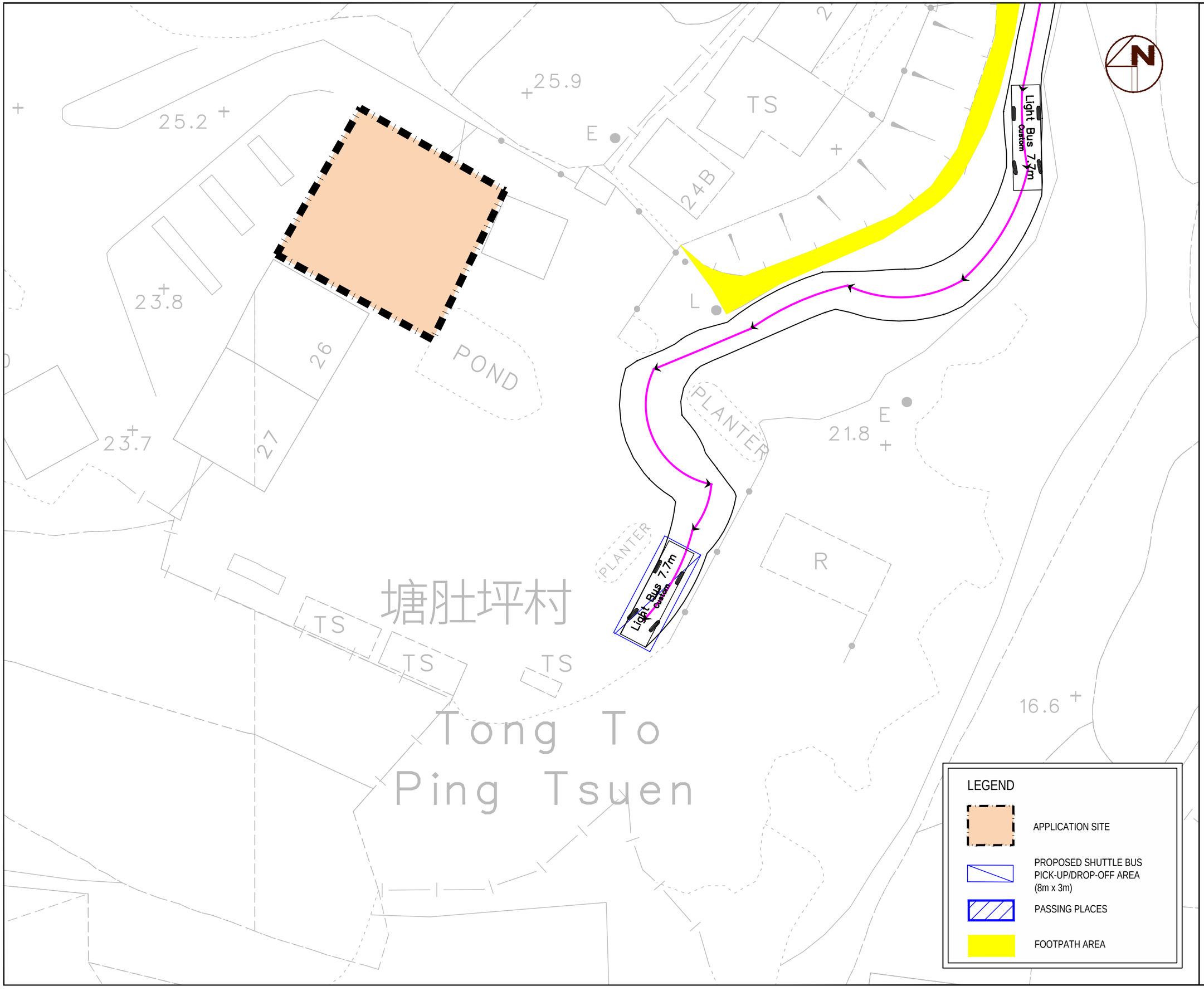
Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

AXON CONSULTANCY
http://www.axonhk.com

Z:\DOWNLOADS\臨時交通安排\31041 TIA20250108\FIG-SP01_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.4

Scale : **1:250 (A3)**

Date : **MAY 2025**

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Z:\DOWNLOADS\鄰村交通安排\31041 TIA\20250108\FIG-SP01_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)A.DWG

SP-02.2

SP-02.1

SP-02.3

SP-02.4

3.62m

The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

5.48m

The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

3.65m

3.0m

3.0m

The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

塘肚坪村
Tong To Ping Tsuen

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)

PASSING PLACES

FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02

Scale : **1:1500 (A3)**

Date : **MAY 2025**

Rev. : **A**

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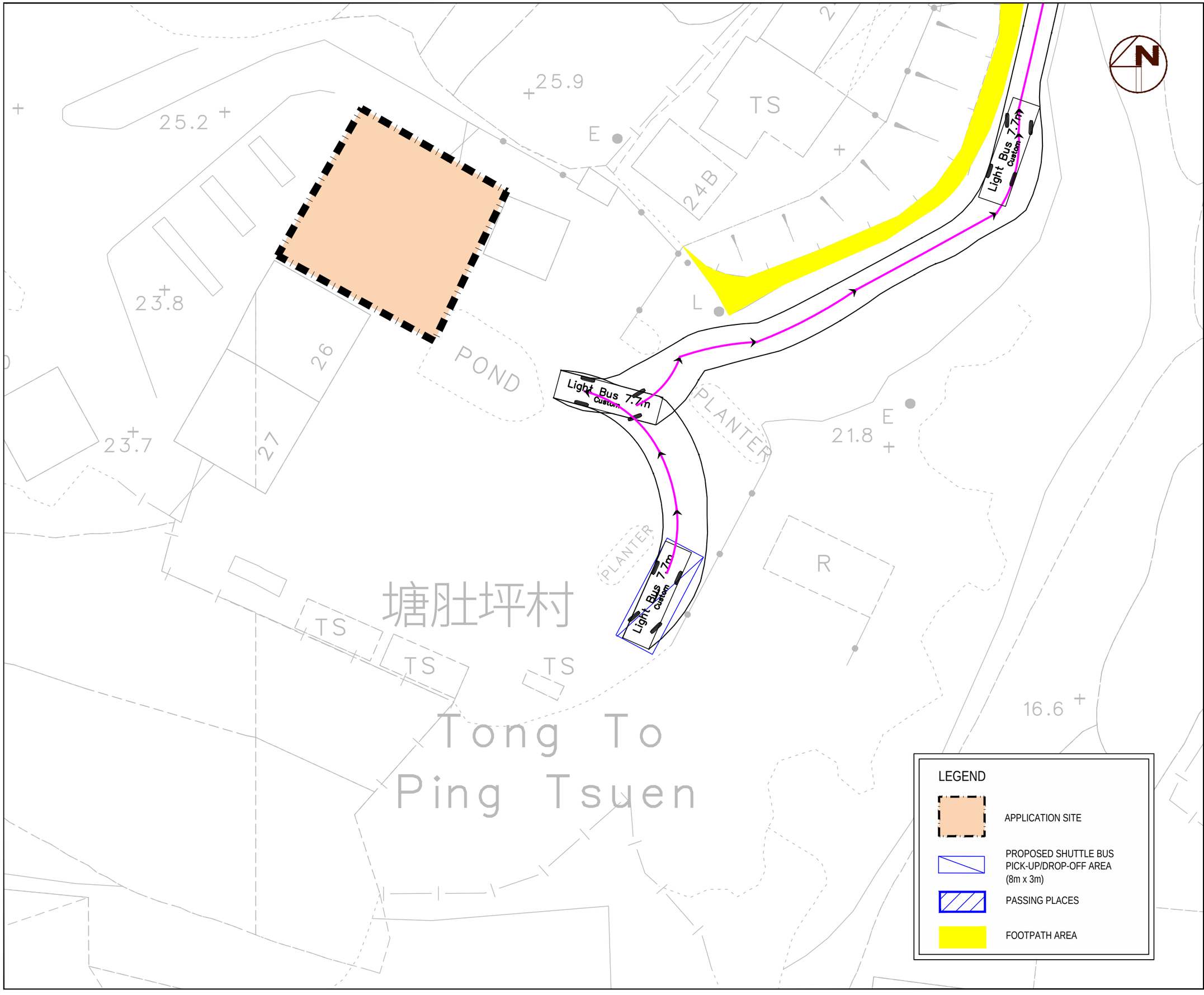
Z:\DOWNLOADS\臨時交通安排\31041 TIA\20250108\FIG-SP02_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (EGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.1

Scale : **1:250 (A3)**

Date : **MAY 2025**

Rev. : **A**

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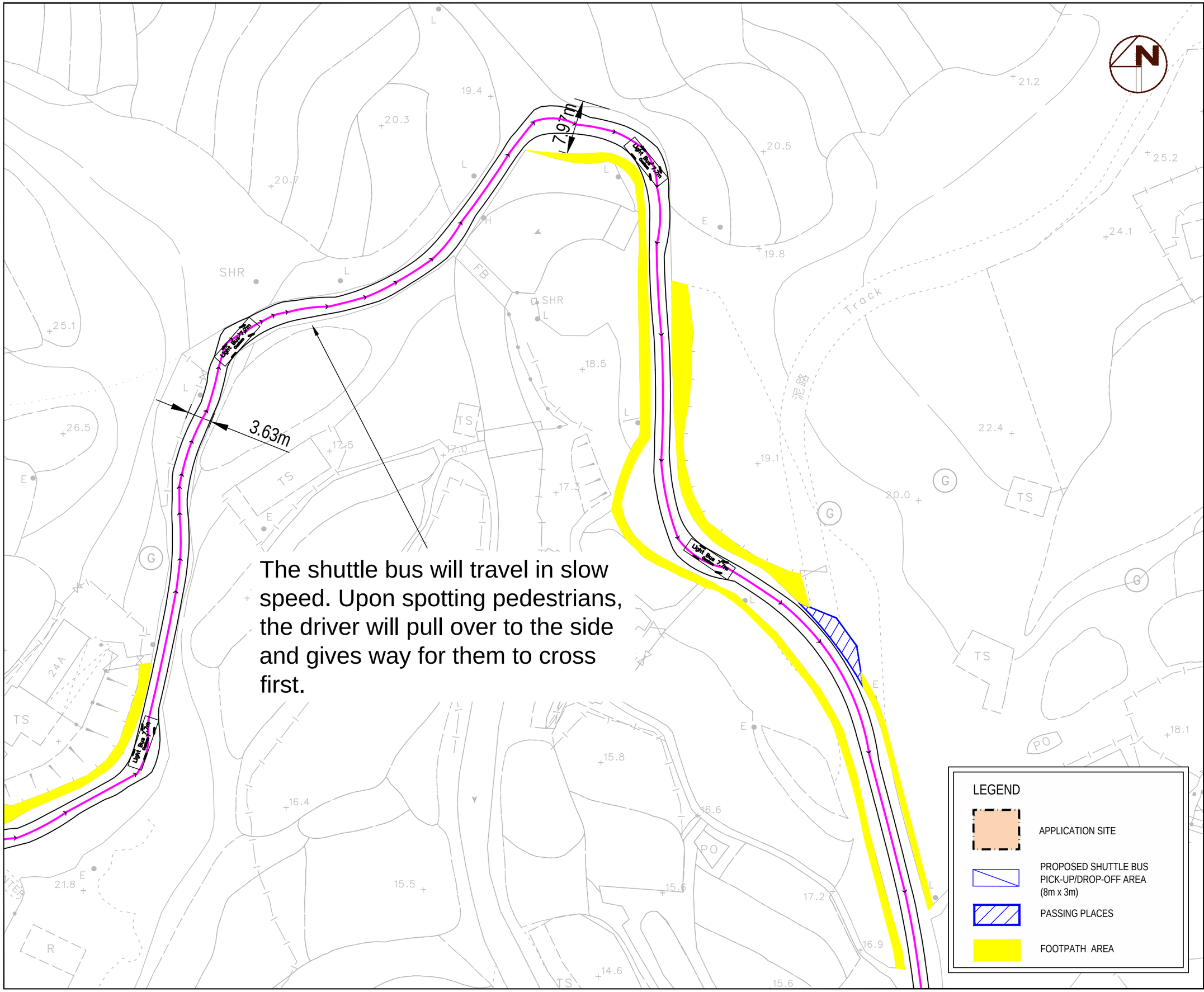
Z:\DOWNLOADS\臨時交通安排\31041 TIA\20250108\FIG-SP02_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (EGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.2

Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

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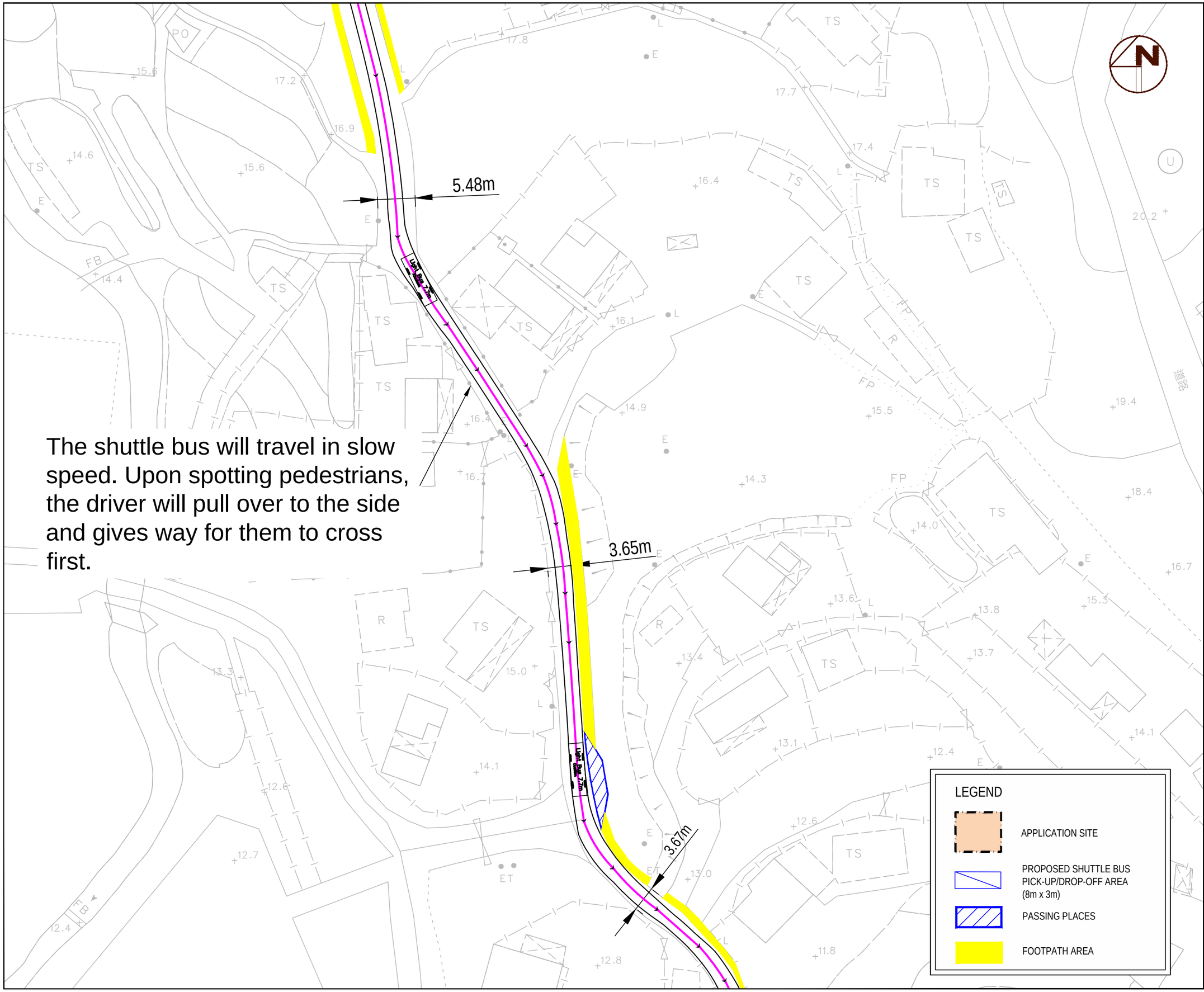
Z:\DOWNLOADS\臨時交通安排\13041 TIA\20250108\FIG-SP02_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (EGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.3

Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

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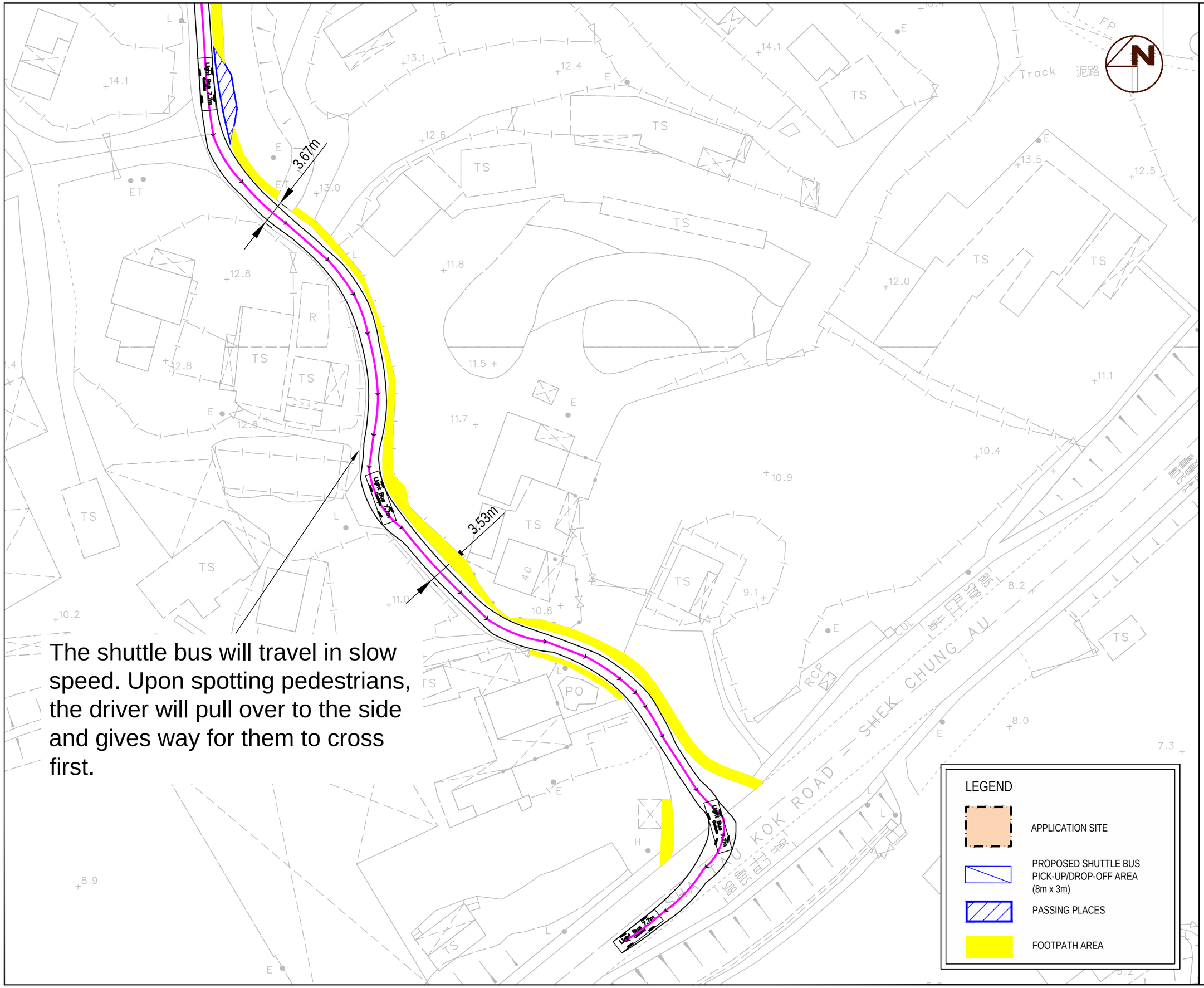
Z:\DOWNLOADS\臨時交通安排\31041 TIA\20250108\FIG-SP02_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (EGRESS)A.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.4

Scale : **1:500 (A3)**

Date : **MAY 2025**

Rev. : **A**

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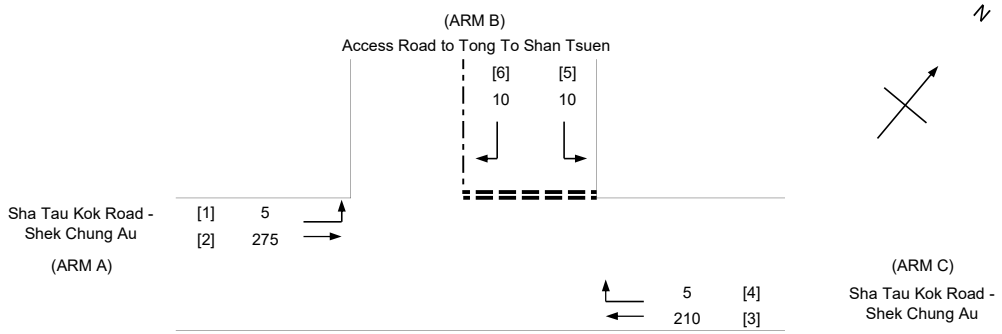
Z:\DOWNLOADS\臨時交通安排\13104 TIA\20250108\FIG-SP02_SWEPT ANALYSIS FOR TYPICAL SHUTTLE BUS (EGRESS)A.DWG

Appendix B

Junction Analysis

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	JK	11/1/2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	SY	11/1/2025
Jn A - Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Shan Tsuen	2024 Observed Traffic Flow	Project No.: 31041	Reviewed By:	AW	11/1/2025



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	5	(pcu/hr)
q a-c	=	275	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	25	(metres)
q c-a	=	210	(pcu/hr)
q c-b	=	5	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.0	(metres)
W b-c	=	3.0	(metres)
Vl b-a	=	25	(metres)
Vr b-a	=	25	(metres)
Vr b-c	=	25	(metres)
q b-a	=	10	(pcu/hr)
q b-c	=	10	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.794
E	=	0.859
F	=	0.781
Y	=	0.759
F for (Qb-ac)	=	0.5

THE CAPACITY OF MOVEMENT :

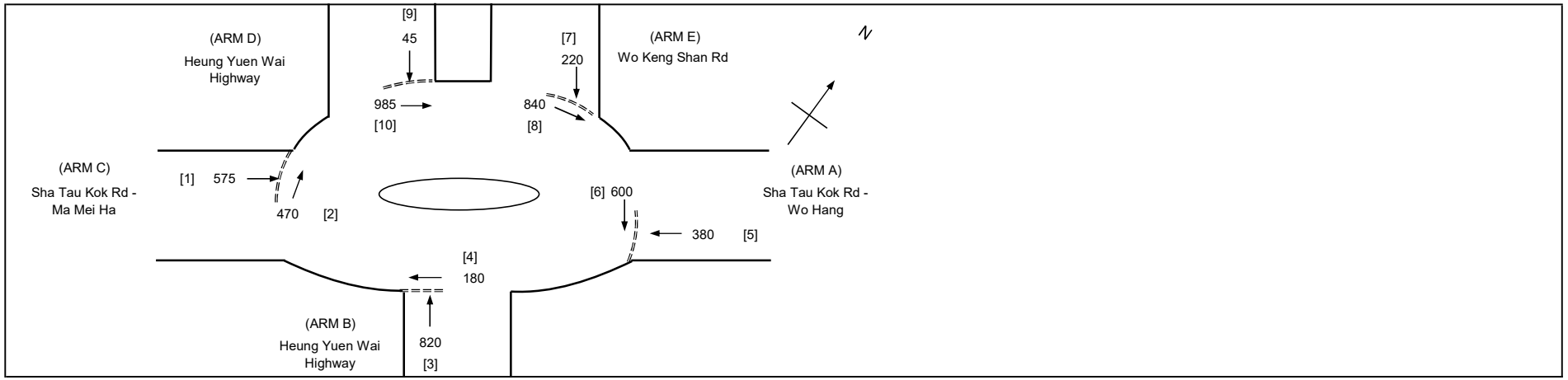
Q b-a	=	407	(pcu/hr)
Q b-c	=	574	(pcu/hr)
Q c-b	=	522	(pcu/hr)
Q b-ac	=	476	(pcu/hr)
Q c-a	=	1783	(pcu/hr)
TOTAL FLOW	=	515	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0246
DFC b-c	=	0.0174
DFC c-b	=	0.0096
DFC b-ac	=	0.0420
(Share Lane)		
DFC c-a	=	0.1178

CRITICAL DFC = 0.12

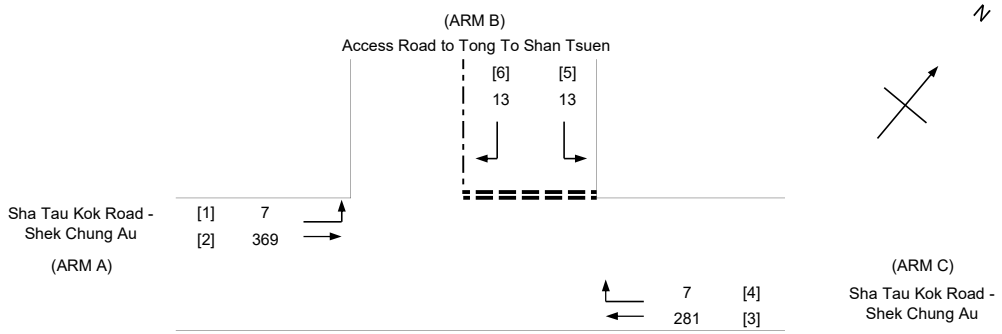
AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	GY	Jan-2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	JK	Jan-2025
Jn B - Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma I	2024 Observed Traffic Flow	Project No.: 31041	Reviewed By:	SF	Jan-2025



GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**	**E**
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		380	820	575	45	220
Qc	=	Circulating flow across entry (pcu/h)		600	180	470	985	840
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.30	0.30	0.49	0.19	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.98	1.00	0.99	0.99	1.03
X2	=	V + ((E-V)/(1+2S))		7.42	7.75	6.63	8.34	6.56
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2249	2348	2010	2526	1986
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.54	0.49	0.57	0.49
Qe	=	K(F-Fc*Qc)		1898	2246	1760	1949	1626
DFC	=	Design flow/Capacity = Q/Qe		0.20	0.37	0.33	0.02	0.14

TOTAL FLOW = 4055 (pcu/hr)
CRITICAL DFC = 0.37

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	JK	11/1/2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	SY	11/1/2025
Jn A - Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Shan Tsuen	2030 Reference Traffic Flow	Project No.: 31041	Reviewed By:	AW	11/1/2025



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	7	(pcu/hr)
q a-c	=	369	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	25	(metres)
q c-a	=	281	(pcu/hr)
q c-b	=	7	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.0	(metres)
W b-c	=	3.0	(metres)
Vl b-a	=	25	(metres)
Vr b-a	=	25	(metres)
Vr b-c	=	25	(metres)
q b-a	=	13	(pcu/hr)
q b-c	=	13	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.794
E	=	0.859
F	=	0.781
Y	=	0.759
F for (Qb-ac)	=	0.5

THE CAPACITY OF MOVEMENT :

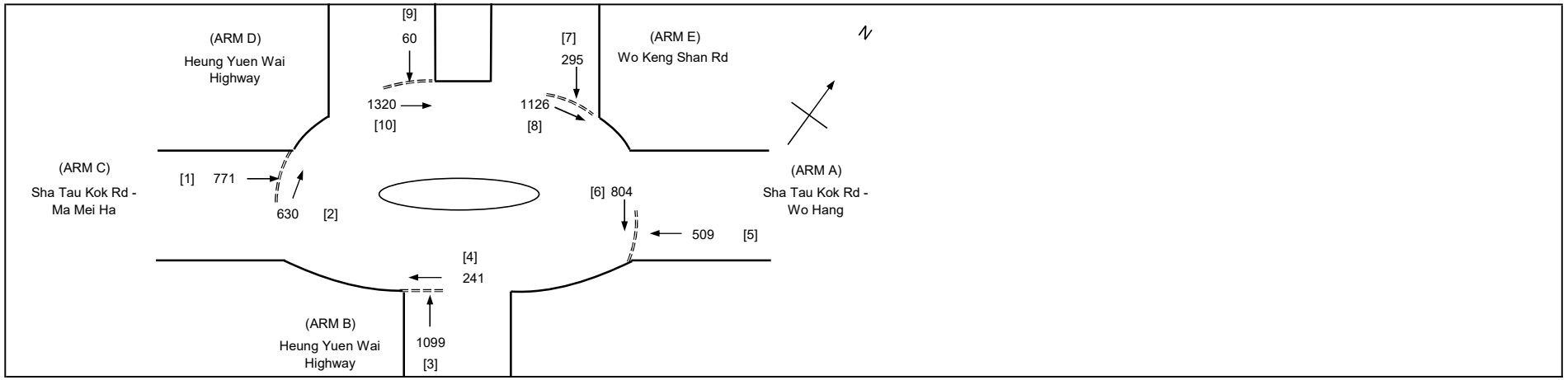
Q b-a	=	376	(pcu/hr)
Q b-c	=	552	(pcu/hr)
Q c-b	=	501	(pcu/hr)
Q b-ac	=	447	(pcu/hr)
Q c-a	=	1775	(pcu/hr)
TOTAL FLOW	=	690	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0346
DFC b-c	=	0.0236
DFC c-b	=	0.0140
DFC b-ac	=	0.0581
(Share Lane)		
DFC c-a	=	0.1583

CRITICAL DFC = 0.16

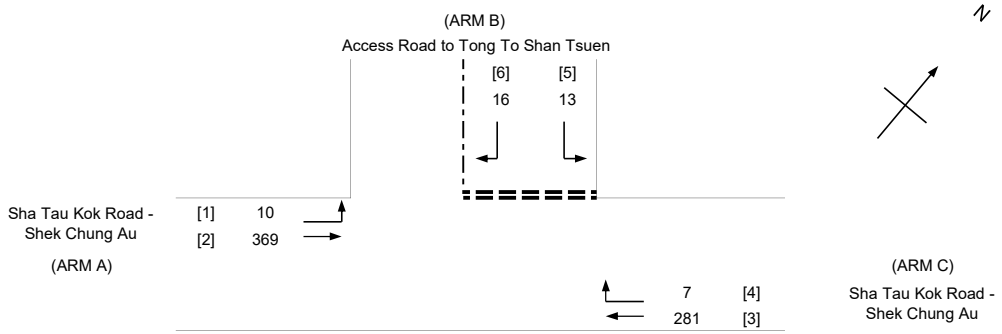
AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	GY	Jan-2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	JK	Jan-2025
Jn B - Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma M	2030 Reference Traffic Flow	Project No.: 31041	Reviewed By:	SF	Jan-2025



GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**	**E**
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		509	1099	771	60	295
Qc	=	Circulating flow across entry (pcu/h)		804	241	630	1320	1126
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.30	0.30	0.49	0.19	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.98	1.00	0.99	0.99	1.03
X2	=	V + ((E-V)/(1+2S))		7.42	7.75	6.63	8.34	6.56
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2249	2348	2010	2526	1986
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.54	0.49	0.57	0.49
Qe	=	K(F-Fc*Qc)		1792	2213	1682	1761	1482
DFC	=	Design flow/Capacity = Q/Qe		0.28	0.50	0.46	0.03	0.20

TOTAL FLOW = 5434 (pcu/hr)
CRITICAL DFC = 0.50

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	JK	11/1/2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	SY	11/1/2025
Jn A - Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Shan Tsuen	2030 Design Traffic Flow	Project No.: 31041	Reviewed By:	AW	11/1/2025



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	369	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	25	(metres)
q c-a	=	281	(pcu/hr)
q c-b	=	7	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.0	(metres)
W b-c	=	3.0	(metres)
Vl b-a	=	25	(metres)
Vr b-a	=	25	(metres)
Vr b-c	=	25	(metres)
q b-a	=	16	(pcu/hr)
q b-c	=	13	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.794
E	=	0.859
F	=	0.781
Y	=	0.759
F for (Qb-ac)	=	0.448

THE CAPACITY OF MOVEMENT :

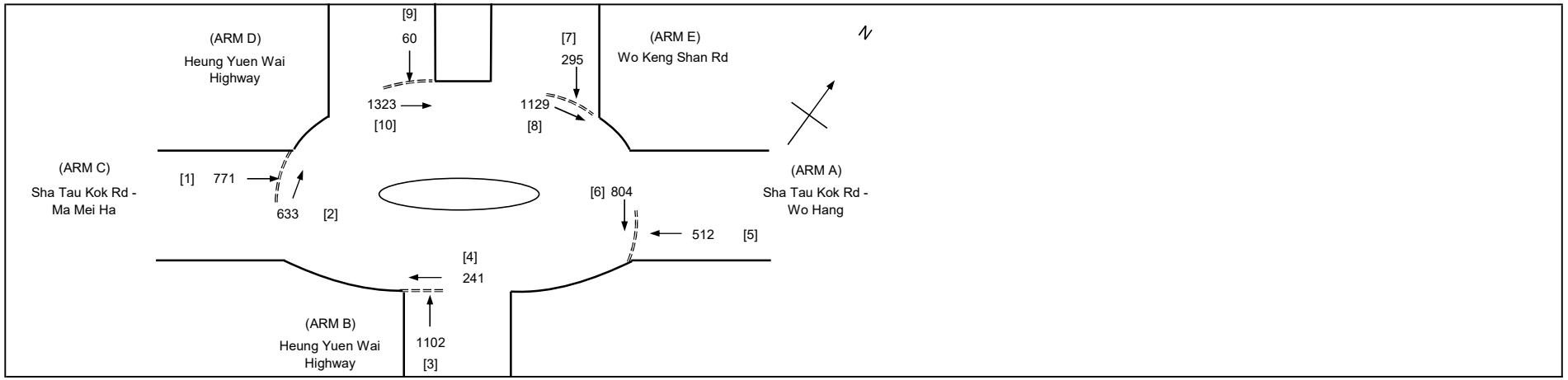
Q b-a	=	375	(pcu/hr)
Q b-c	=	551	(pcu/hr)
Q c-b	=	500	(pcu/hr)
Q b-ac	=	438	(pcu/hr)
Q c-a	=	1775	(pcu/hr)
TOTAL FLOW	=	696	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0427
DFC b-c	=	0.0236
DFC c-b	=	0.0140
DFC b-ac	=	0.0663
(Share Lane)		
DFC c-a	=	0.1583

CRITICAL DFC = 0.16

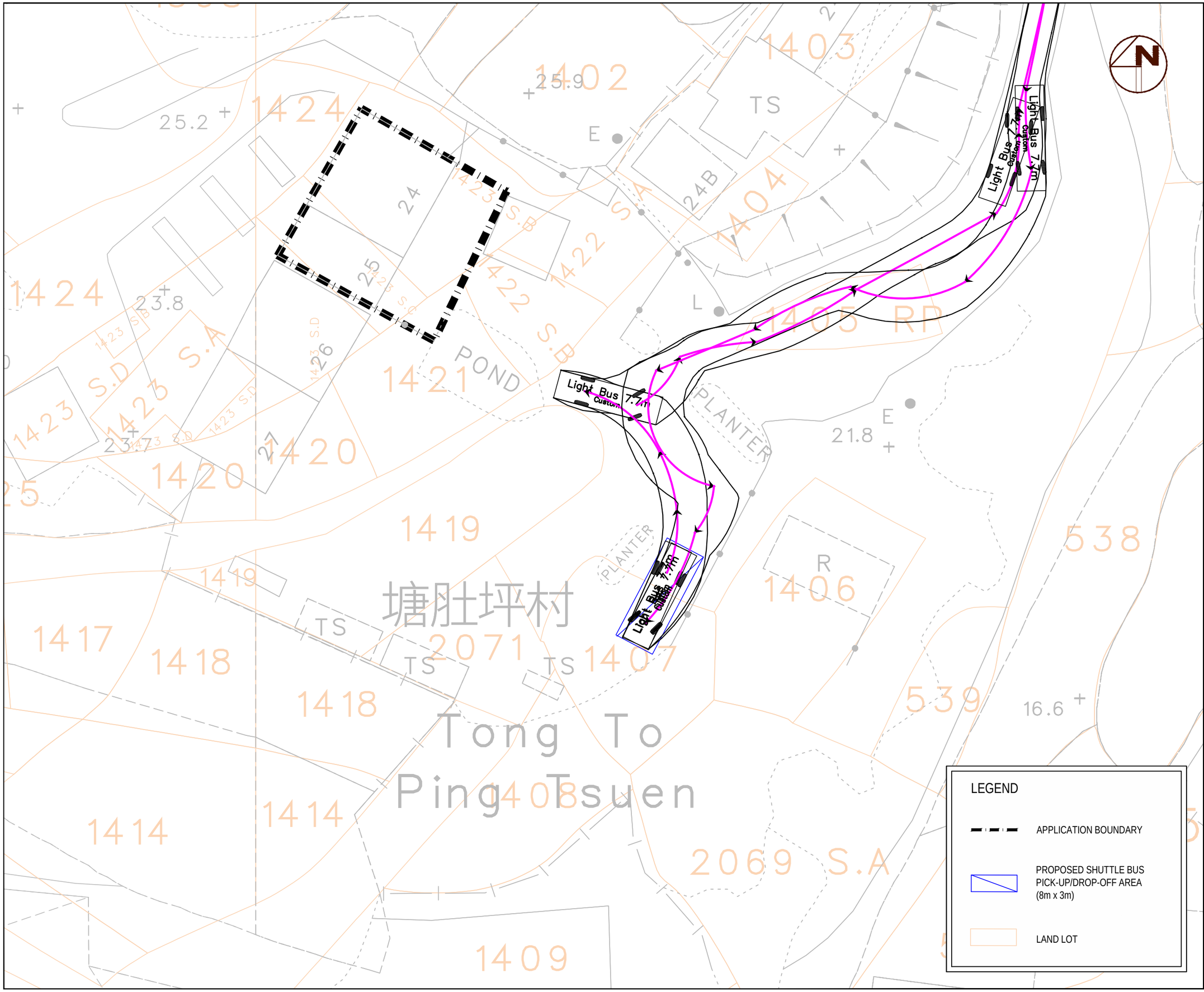
AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone			Prepared By:	GY	Jan-2025
at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories			Checked By:	JK	Jan-2025
Jn B - Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma I	2030 Design Traffic Flow	Project No.: 31041	Reviewed By:	SF	Jan-2025



GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**	**E**
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		512	1102	771	60	295
Qc	=	Circulating flow across entry (pcu/h)		804	241	633	1323	1129
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.30	0.30	0.49	0.19	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.98	1.00	0.99	0.99	1.03
X2	=	V + ((E-V)/(1+2S))		7.42	7.75	6.63	8.34	6.56
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2249	2348	2010	2526	1986
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.54	0.49	0.57	0.49
Qe	=	K(F-Fc*Qc)		1792	2213	1681	1760	1480
DFC	=	Design flow/Capacity = Q/Qe		0.29	0.50	0.46	0.03	0.20

TOTAL FLOW = 5446 (pcu/hr)
CRITICAL DFC = 0.50

Annex A



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

INDEX PLAN

FIGURE A

Scale : **1:500 (A3)**

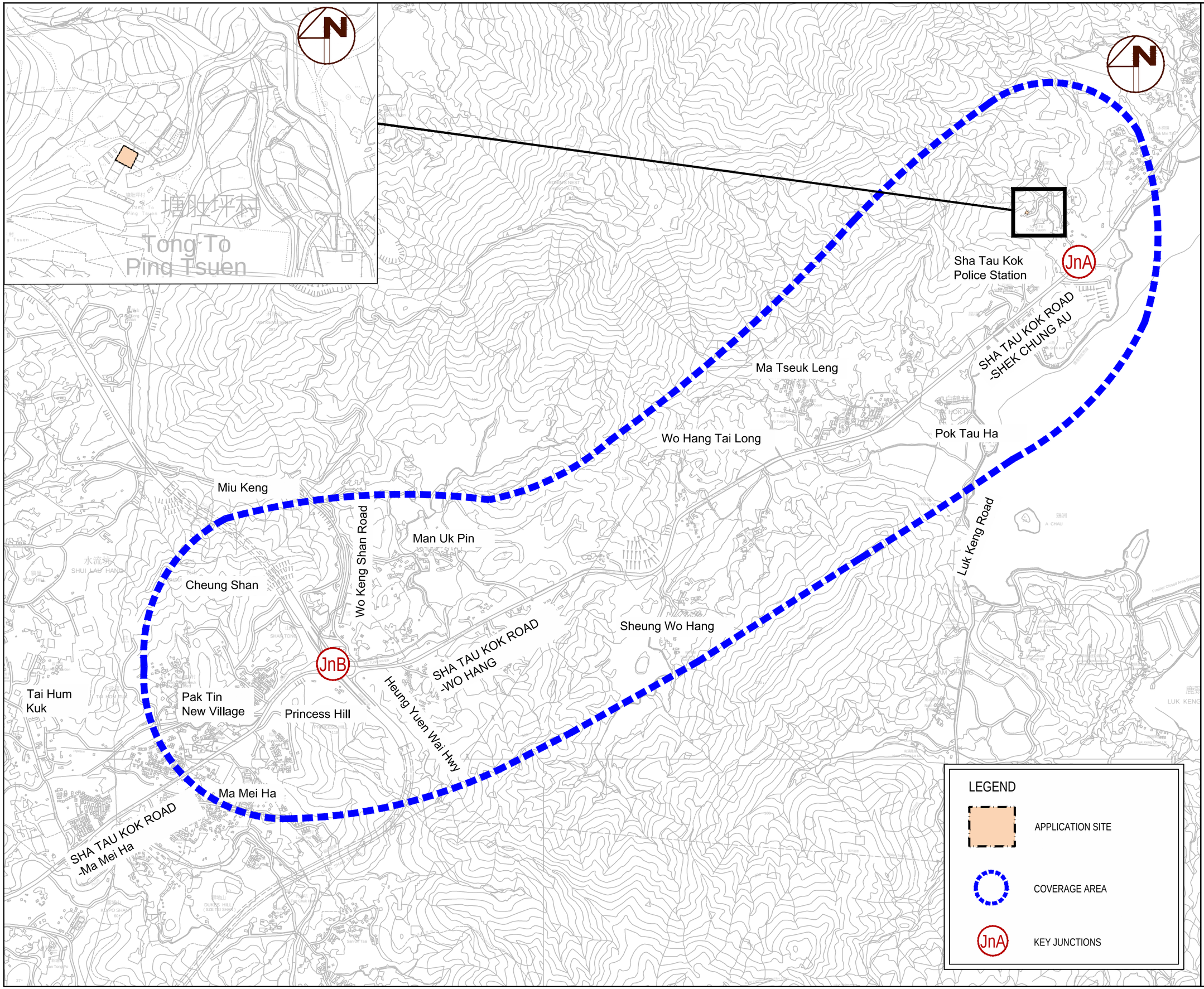
Date : **MAY 2025**

Rev. :

AXON CONSULTANCY
http://www.axonhk.com

Z:\DOWNLOADS\臨时交通交接\31041 TIA\20250108\FIG A_INDEX PLAN.DWG

Annex B



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

COVERAGE AREA

FIGURE B

Scale : **N.T.S**

Date : **MAY 2025**

Rev. : **A**

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Z:\DOWNLOADS\临时文档\客持\S1041 TIA\20250108\FIG B COVERAGE AREA.DWG

寄件者:
寄件日期: Monday, 9 June 2025 4:57 pm
收件者:
副本:

主旨: Fw: 31041 - Y/NE-STK/6 - Request of confirmation on information of the planned developments listed in the Traffic Impact Assessment Report

Dear Joel,

We refer to the boundary of the coverage area for the subject TIA for planned developments provided on 5.6.2025 ("the coverage area"), and our telephone conversation today. Please find our input as follows:

i. Approved Applications

Please note that the following approved planning applications (as agreed, since Jan 2023) are identified within the coverage area.

	Application No.	Use	Approval Date
1	A/NE-MUP/213	Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Office for a Period of 3 Years	02/05/2025
2	A/NE-LYT/845	Proposed Temporary Public Vehicle Park (Private Cars Only) and Associated Filling of Land for a Period of 3 Years	11/04/2025
3	A/NE-MUP/210	Proposed Temporary Private Car Park (Private Cars Only) for a Period of 3 Years	14/03/2025
4	A/NE-MUP/211	Proposed Temporary Logistics Centre for a Period of 3 Years and Associated Filling of Land	28/02/2025
5	A/NE-TKL/777	Proposed Temporary Place of Recreation, Sports or Culture (Hobby Farm) for a Period of Three Years and Associated Filling of Land	28/02/2025
6	A/NE-MUP/208	Proposed Temporary Warehouse for Storage of Construction Materials for a Period of Three Years	20/12/2024
7	A/NE-MUP/209	Proposed Temporary Private Car Park (Private Cars and Light Goods Vehicles Only) for a Period of 3 Years and Associated Filling of Land	20/12/2024
8	A/NE-MUP/205	Proposed Temporary Shop and Services (Retail Shop for Hardware Groceries and Construction Materials) for a Period of 3 Years	06/12/2024
9	A/NE-MUP/203	Temporary Private Car Park (Private Cars and Light Goods Vehicles Only) for a Period of Three Years	04/10/2024
10	A/NE-MUP/207	Proposed Temporary Open Storage of Construction Materials with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land	04/10/2024
11	A/NE-LK/162	Proposed Temporary Holiday Camp (Private Tent Camping Ground) for a Period of 3 Years	20/09/2024
12	A/NE-LK/161	Temporary Public Utility Installation (Solar Photovoltaic System) for a Period of 5 Years	02/08/2024

13	A/NE-STK/25	Renewal of Planning Approval for Temporary Public Vehicle Park (Coaches and Private Cars Only) for a Period of 3 Years	07/06/2024
14	A/NE-MUP/200	Proposed Temporary Animal Boarding Establishment for a Period of 3 Years and Associated Filling of Land	24/05/2024
15	A/NE-LYT/822	Renewal of Planning Approval for Temporary Golf Training Centre for a Period of 3 Years	15/03/2024
16	A/NE-MUP/193	Proposed Temporary Logistics Centre for a Period of Three Years and Associated Filling of Land	15/03/2024
17	A/NE-LK/155	Renewal of Planning Approval for Temporary Private Car Park (Private Car and Light Goods Vehicle) for a Period of 3 Years	16/02/2024
18	A/NE-MUP/194	Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land	16/02/2024
19	A/NE-MUP/197	Proposed Temporary Place of Recreation, Sports or Culture (Hobby Farm) for a Period of 3 Years	26/01/2024
20	A/NE-MUP/192	Proposed Temporary Open Storage of Planters and Landscaping Materials and Site Office for a Period of 3 Years	22/12/2023
21	A/NE-MUP/187	Proposed Temporary Animal Boarding Establishment (Dog Kennel) for a Period of 3 Years	22/09/2023

ii. Applications under Processing

Please note that the following planning applications, currently under processing, are identified within the coverage area.

	Application No.	**Use**
1	A/NE-MUP/215	Temporary Open Storage of Construction Machinery, Planters and Landscaping Material with Ancillary Site Office and Associated Filling of Land for a Period of 3 Years
2	A/NE-LYT/850	Proposed House (New Territories Exempted House - Small House)
3	A/NE-LYT/849	Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Associated Filling of Land for a Period of 3 Years

For the details of the above developments, please refer to: https://www.ozp.tpb.gov.hk/. We defer to your decision on whether the above applications should be included in the TIA.

Regarding Table 5.4 provided in your email dated 28.5.2025, it is noted that the "Proposed Temporary Transitional Housing and Ancillary Facilities for a Period of 7 Years at Government Land in D.D. 82, Ping Che, Ta Kwu Ling, New Territories" under Application No. A/NE-TKL/692 does not fall within the coverage area provided by your office. We defer to your decision on whether this development, and any other developments outside the coverage area, should be taken into account in the TIA.

Please note that the above list is not exhaustive, and the consultant should identify all existing, planned, or committed developments, including relevant planning applications and studies available in the public domain. The consultant is responsible for consulting relevant government departments to confirm the inclusion of listed developments in the assessment(s) and ensuring that the assumptions, development parameters, and completion years are up to date when conducting the assessment(s).

Regards,

William WONG
TP/N4, PlanD
Tel: 2158 6164

規劃署 Planning Department

劃出更多可能 · 創造無限機遇
Planning a Future of Boundless Opportunities

From:
Sent: Thursday, June 5, 2025 10:06 AM
To:
Cc:

Subject: RE: 31041 - Y/NE-STK/6 - Request of confirmation on information of the planned developments listed in the Traffic Impact Assessment Report

Dear William,

As per your discussion with Joel, please find attached the figure showing the coverage area, along with the associated CAD file (in ZIP format) for your ease of checking.

Should you require any further information or clarification, please feel free to let us know.

AXON

Axon Consultancy Ltd.
Unit 503, 5/F,
Tower 2, Lippo Centre,
89 Queensway, Admiralty, Hong Kong

Office: Fax:
Email: info@axonhk.com
Homepage: http://www.axonhk.com

From:
Sent: Tuesday, June 3, 2025 8:41 PM
To: >
Cc:

Subject: RE: 31041 - Y/NE-STK/6 - Request of confirmation on information of the planned developments listed in the Traffic Impact Assessment Report

Dear William,

Many thanks for your following up.

Regards,
Junior Ho

LCH (Asia-Pacific) Surveyors Limited | LCH Planning & Development Consultants Limited
17th Floor, Champion Building