

**S16 Application for Permission of Approved Tai Po
Outline Zoning Plan No. S/TP/31
Proposed Re-zoning from “AGR” to “G/IC” for a
Proposed Change of Use to “Social Welfare Facilities”
(RCHE) in “Green Belt” & “Village” Zone at Various Lots
in Lai Chi Shan, Tai Po, N.T.**

TIA Report

September 2026



CTA Consultants Limited

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1. INTRODUCTION

1.1 Background

1.1.1 CTA Consultants Limited was commissioned as the traffic consultant to prepare a Traffic Impact Assessment Report for proposed change of use to “Social Welfare Facilities” Residential Care Home for the Elderly (RCHE) at Lot 364 S.A RP, ss.1-2, S.B RP, ss.1-5, 365, 804 RP, S.A-S.C, 805 S.A-S.C, 946 RP, 963 RP, S.B, S.D, S.E RP, ss.1, S.F, S.G and adjoining government lands in D.D. 22 Lai Chi Shan, Tai Po, New Territories (hereafter called “proposed development”).

1.1.2 The location of the proposed development is shown in **Figure 1.1**.

1.2 Study Objectives

1.2.1 The main objectives of this study are as follows:

- To assess the existing traffic conditions in the vicinity of the proposed development;
- To forecast traffic demands on the adjacent road network in the design year;
- To estimate the likely traffic generated by the proposed development;
- To assess the impacts of traffic generated by the proposed development on the adjacent road network; and
- To recommend improvement measures, if necessary, to alleviate any traffic problems on the road network



2. THE DEVELOPMENT

2.1 Site Location

- 2.1.1 The proposed development is located at Lot 364 S.A RP, ss.1-2, S.B RP, ss.1-5, 365, 804 RP, S.A-S.C, 805 S.A-S.C, 946 RP, 963 RP, S.B, S.D, S.E RP, ss.1, S.F, S.G and adjoining government lands in D.D. 22 Lai Chi Shan, Tai Po, which is bounded by Sunshine Garden to the north, the Regent to the east and access road to Kinly Fort to the west as shown in **Figure 1.1**.

2.2 Proposed Development

- 2.2.1 Development parameters of the proposed development are summarized in **Table 2.1**.

Table 2.1 Development Parameters of the Proposed Development

Site Location	At various lots in D.D. 22 Lai Chi Shan, Tai Po, New Territories
Site Area	~2,060 m ²
No. of Blocks	1
No. of Storeys	7
No. of Suites and Beds	Total: 335 beds

- 2.2.2 It is anticipated that the proposed development will be completed by 2031 tentatively. Therefore, design year 2034 (i.e. 3 years after the planned commencement year of the proposed development) is adopted assessments.

2.3 Proposed Access Road and Vehicular Access

- 2.3.1 With consideration of existing road configuration, no proper footpath from the proposed development to access road to Kinly Fort, minor road improvement of 3.5m wide single track for two-way traffic with widening at turning area together with a minimum 1.5m total footpath width is proposed.

- 2.3.2 The local access road connecting the Site is narrow and private lots are located on both sides of the road. As shown in **Figure SP-01 (Rev A)**, should 11m HGV be required for accessing the proposed development, road is not wide enough for manoeuvring of 11m vehicle and footpath could not be provided along the access road. As shown in **Figure SP-02**, should the total width of footpath outside the proposed development widen to 2.5m, road is not wide enough for manoeuvring of ambulance at the access road. 1.5m wide footpath has to be maintained for manoeuvring of ambulance.
- 2.3.3 Therefore it is proposed to provide LGV to cater future operation need. Drawing on the proposed minor road improvement of access road to the Site, and the relevant swept path analysis are shown in **Figure 2.1 (Rev A)** and **Figure SP-03**.

2.4 Internal Transport Facilities Provision

- 2.4.1 It is noted that the requirement of provision of internal transport facilities for “Residential Home for Elderly” are not specified in Hong Kong Planning Standards and Guidelines (HKPSG). Therefore, parking provision has been reference to other existing RCHE sites at remote area and summarized in **Table 2.2**.

Table 2.2 Examples of Existing RCHE

RCHE	Location	No. of beds	No. of Parking	Parking rate no. per bed
Ching Chung Taoist Association of Hong Kong Limited Ching Chung Care and Attention Home for the Aged	57 Sha Chau Lei Chuen, Ping Ha Road, Yuen Long	120	1 car parking space + 1 light bus parking space	0.008
Approved Y/YL-NTM/9	81 San Tam Road, Yuen Long	142	2 car parking spaces + 1 light bus parking space + 1 LGV + 1 Ambulance	0.014
Tung Wah Group of Hospitals Shuen Wan Complex for the Elderly	93 Sam Mun Tsai Road, Shuen Wan, Tai Po	649	24 car parking spaces	0.037
Yan Chai Hospital Tai Po Fu Tip Elderly Home	2/F (Portion), 3/F and 4/F, Social Service	100	_(1)	-



RCHE	Location	No. of beds	No. of Parking	Parking rate no. per bed
	Building, Fu Tip Estate, 11 Chung Nga Road, Tai Po, New Territories			
Ho Shin Home for the Elderly	G/F & 1/F, Shin King House, Fu Shin Estate, Tai Po, New Territories	90	_(1)	-

Note:

(1) Located within public housing estate with carpark, no parking spaces could be distinguished for RCHE.

- 2.4.2 With reference to **Table 2.2**, the maximum parking rate number for private car per bed of other RCHE, Tung Wah Group of Hospitals Shuen Wan Complex for the Elderly, is 0.037. Based on the maximum parking rate number for private car per bed, taking into consideration that a total of 335 nos. of beds will be provided, the private car parking provision of the proposed development would be 12 nos. (i.e. 0.037×335).
- 2.4.3 Taking into consideration the site constraints of the site, it is revealed that the size of site is small. Despite the essential space for fulfilling all necessary requirements of structural, E&M, fire regulations (provision of sufficient fire escape staircases), etc., very limited space is left for manoeuvring, turnaround, queuing and parking of vehicles inside the site on G/F. In addition, shuttle service will be provided by the operator for both staff and visitors (to be discussed in **Section 2.6**), therefore 4 nos. of private car parking spaces is proposed. The overall parking provision is summarized in **Table 2.3**, which should be sufficient for the daily operation needs of the proposed development.
- 2.4.4 The ground floor layout plan of the proposed development showing the internal transport provision is shown in **Figure 2.1 (Rev A)** and **Figure SP-04** demonstrating vehicles can be manoeuvred within the site.

Table 2.3 Proposed Parking Provision

Parking Spaces	Dimensions	Proposed
Motorcycle	2.4m(L) x 1m(W)	1 no.
Private Car	5m(L) x 2.5m(W)	3 nos.
Private Car for Accessible	5m(L) x 3.5m(W)	1 no.
Loading/Unloading	Dimensions	Proposed
Light bus	8m(L) x 3m(W)	1 no.
Ambulance	9m(L) x 3m(W)	1 no.
LGV	7m(L) x 3.5m(W)	1 no.

Note:

(1) LGV has to be used, please refer to **Section 2.3** for details.

2.4.5 2 nos. of private car parking spaces at the site would be for staff, 1 no. of private car parking spaces for visitors, and 1 no. of private car parking spaces for persons with disabilities. Booking in advance is required for staff, visitors or persons with disabilities. Nonetheless, visitors are encouraged to go to the proposed development via public transport, or park their vehicles near carpark of Tai Po Market Station, and interchange at Tai Po Market Station for shuttle services. (to be discussed in **Section 2.6**).

2.4.6 Light bus will not park at the proposed development, they will pick-up/drop-off at the proposed loading/unloading at the proposed development and returned to the designated parking spaces provided by the light bus operator.

2.5 Public Transport Services in the Vicinity

2.5.1 Numerous road-based public transport services are provided in vicinity of the proposed development. Details of the current services of franchised buses and GMB routes are listed in **Table 2.4** and the service points are demonstrated in **Figure 2.2 (Rev A)**. It is revealed that the public transport services in the vicinity of the Site is limited.

Table 2.4 Road-Based Public Transport Services in the Vicinity

Service	Route	Origin – Destination	Frequency (Mins)
GMB	23K ⁽¹⁾	Tung Tsz – Tai Po Market Station	4-15
	23S	Ta Tit Yan – Tai Po Market	30-60

Notes:.

(1) Circular Route.

2.6 Shuttle Service to be Provided

2.6.1 The public could access between Tai Po Market and Tat Wan Road by NT GMB Route Nos. 23K and 23S and then walk for about 2 min to the Site.

2.6.2 To reduce the impact of public transport during daytime, shuttle service using 19-seater light bus is proposed for staff and visitors to/from Tai Po Market. The boarding and alighting point for the shuttle service is proposed at the layby at Nam Wan Road (eastbound) (outside Elegance Garden Block 4) near Tai Po Market Station. The proposed routing of shuttle service is shown in **Figure 2.3**. Swept path analysis demonstrates it is feasible to maneuver light bus between Tat Wan Road and the proposed site is shown in **Figure SP-04**.

Staff

2.6.3 It is proposed 3 frequencies of 19-seater light buses shuttle service for staff (~40 staff per shift).

Visitors

2.6.4 The operator would maintain sufficient flexibility in the visitor policy to facilitate regular family contact and community integration, as required under the Code of Practice for Residential Care Homes (Elderly Persons). Being a RCHE, the number of visitors is very little. Nonetheless, visitors are encouraged to board or alight at Tai Po Market Station, preferably via railway, or park their vehicles near carparks of Tai Po Market Station, and interchange at Tai Po Market Station for shuttle services so as to minimize illegal parking or queuing activities in the vicinity.

2.6.5 To avoid overload the nearby public transport (GMB services) by visitors coming/leaving the proposed development, it is proposed to provide shuttle service (19-



seater light bus) by the Applicant for the visitors with 1 veh/bound/hr. The duration of the shuttle services is proposed between 8am and 8pm so as to minimize traffic impact to the surrounding road network.

- 2.6.6 Based on 3 frequencies of light buses for staff for each shift and 1 frequency of light bus for visitors per hour, a total of 4 veh/hr of light buses would be used for calculation purposes for each bound.



3. THE EXISTING TRAFFIC CONDITIONS

3.1 Critical Junctions

3.1.1 As shown in **Figure 3.1**, 6 junctions were identified to be critical for assessment of traffic impact due to the proposed development. They are listed in **Table 3.1** and their existing junction layout arrangements are shown in **Figures 3.2 to 3.7** respectively.

Table 3.1 Identified Critical Junctions

Ref.	Junction	Method of Control	Figure No.
A	Tat Wan Road / Access Road	Priority	3.2
B	Tat Wan Road / Slip Road From Tolo Highway	Signal	3.3
C	Tat Wan Road / Slip Road To Tolo Highway	Signal	3.4
D	Ma Wo Road / Tat Wan Rd	Signal	3.5
E	Nam Wan Road / Tat Wan Road	Signal	3.6
F	Nam Wan Road / Nga Wan Road / Shan Tong Road	Signal	3.7

3.1.2 In order to establish the existing traffic condition in the above-mentioned critical junctions, traffic survey in form of manual classified count was conducted during the AM and PM peak periods (7:30am to 9:30am and 5:00pm to 7:00pm) on a typical weekday, 6 March 2026 (Friday). Analysis of the existing traffic data indicates that the AM and PM peak hour flows occurred from 7:15am to 8:15am and 5:30pm to 6:30pm respectively. The existing traffic flow period in peak hours is presented in **Figure 3.8**.

3.1.3 A comparison with traffic flows of 2024 ATC was carried out at the nearest ATC core station Kwong Fuk Road (from Nam Wan Road to Wan Tau Street) (station no. 3011), it is noted that Friday data was highest throughout the week and December data was highest throughout the year in the ATC data, December data is +4.2% (103.319 in December ÷ 99.124 in March) compared with existing traffic flows. Therefore we therefore carried out the assessment with increase of surveyed traffic flows by +4.2%. The baseline traffic flow period in peak hours is presented in **Figure 3.9**.



3.1.4 Based on baseline traffic flows, existing operational performance of the identified critical junctions were assessed. The results are summarized in **Table 3.2** and the junction calculation sheets are attached in **Appendix A**.

Table 3.2 Junction Performance of Identified Critical Junctions in Year 2026

Ref	Junction	Method of Control	Year 2026 RC ⁽¹⁾ /RFC ⁽²⁾	
			AM Peak	PM Peak
A	Tat Wan Road / Access Road	Priority	0.16	0.09
B	Tat Wan Road / Slip Road From Tolo Highway	Signal	>100%	>100%
C	Tat Wan Road / Slip Road To Tolo Highway	Signal	63%	>100%
D	Ma Wo Road / Tat Wan Rd	Signal	81%	>100%
E	Nam Wan Road / Tat Wan Road	Signal	37%	70%
F	Nam Wan Road / Nga Wan Road / Shan Tong Road	Signal	49%	80%

Note:

(1) RC = Reserve Capacity for Signalized Junction

RFC = Ratio of Flow to Capacity for Priority Junction

3.1.5 The assessment results in **Table 3.2** indicate that all critical junctions are at present operating within their capacities during peak hours.



4. THE FUTURE TRAFFIC CONDITIONS

4.1 Design Year

4.1.1 The proposed development is anticipated to be completed by year 2031 tentatively. Year 2034 (i.e. 3 years after completion) is therefore adopted as the design year for assessment purpose.

4.2 Traffic Forecasts

4.2.1 The traffic growth can be estimated by applying growth factor, based on the following information source:

- I. Historical traffic growth in Annual Traffic Census (ATC) published by the Transport Department (TD).
- II. 2021-Based Territorial Population and Employment Data Matrices (TPEDM) published by the Planning Department.

Annual Traffic Census

4.2.2 Numerous traffic count stations are located in the vicinity of the proposed development and the traffic counts of the concerned stations reported in the Annual Traffic Census (ATC) between 2017 and 2024 are summarized in **Table 4.1**.

Table 4.1 Historical Traffic Data from Annual Traffic Census (ATC)

ATC Stn	Road Name	Annual Average Daily Traffic (AADT)					Avg. Annual Growth Rate
		2017	2018	2022	2023	2024	
5273	Tat Wan Rd (from Slip rd to Tolo Highway EB to Slip rd from Tolo Highway WB)	5,240*	6,010*	6,060*	5,590*	6,280	2.62%
5483	Tat Wan Rd (from Ma Wo Rd to Slip rd to Tolo Highway EB)	6,640*	6,800*	7,420*	7,590*	9,060*	4.54%
5666	Tat Wan Rd (from Nam Wan Rd to Ma Wo Rd)	11,250*	11,520*	10,870*	11,120*	11,150*	-0.13%
6661	Ma Wo Rd (from Tat Wan Rd to Ma Chung Rd)	N/A	N/A	6,450	5,810	5,810	-5.09%



ATC Stn	Road Name	Annual Average Daily Traffic (AADT)					Avg. Annual Growth Rate
		2017	2018	2022	2023	2024	
6662	Shan Tong Rd (from Nam Wan Rd to End)	N/A	N/A	7,520	7,080	7,110	-2.76%
Total		23,130	24,330	38,320	37,190	39,410	1.41%

Note:

- (1) Traffic volumes for Year 2019 to Year 2021 may be suppressed by the special working arrangement implemented during the COVID-19 outbreak period and/or social event outbreak, therefore AADT from Year 2019 to Year 2021 are not adopted.

Planning Data

- 4.2.3 Reference has also been made to the 2021-Based Territorial Population Employment Data Matrices (TPEDM) planning data published by the Planning Department for projection of population and employment within the study district from 2021 to 2031. The average annual growth rates in terms of population and employment from 2021 to 2031 are tabulated in **Table 4.2**.

Table 4.2 TPEDM Planning Data from 2021 to 2031

Zone	Population			Avg. Annual Growth Rate	Employment			Avg. Annual Growth Rate
	2021	2026	2031		2021	2026	2031	
Tai Po	316,450	348,900	343,250	0.82%	96,600	94,800	89,800	-0.73%

Adopted Growth Rate

- 4.2.4 A.A.D.T. of ATC indicates that the traffic flows in the local road network has an average annual growth rate of +1.41% from 2017 to 2024.
- 4.2.5 Whilst, the planning data indicates that the population and employment data of the study area are expected to grow with an average annual growth rate of +0.82% and -0.73% respectively from 2021 to 2031.
- 4.2.6 As a conservative approach, annual growth rate of **+1.41%** p.a. is adopted.



4.3 Traffic Generations of Adjacent New Developments

4.3.1 To fully reflect the growth traffic, peak hour trip generation of the future vicinity developments have been taken into consideration. The major planned development is detailed in **Figure 4.1 (Rev A)** and the estimated trip rate with reference to TPDM and trips of the adjacent planned developments are shown in **Table 4.3** and **Table 4.4** respectively.

Table 4.3 Estimated Trip Rates of Planned Adjacent Developments

Location	Use	Assumed GFA & Flat no.	Units	Trip Rates			
				AM Peak		PM Peak	
				Gen	Att	Gen	Att
Le Mont, 9 Ma Wo Road, Tai Po	Private housing	~1,650 flats	pcu/hr/flat	0.0888	0.0515	0.0356	0.048
Public housing development at To Yuen Tung, Tai Po	Public Housing	~2,000 flats (average flat size: 40m ²)	pcu/hr/flat	0.0432	0.0326	0.0237	0.0301
	Retail	985m ²	pcu/hr/100 sq m GFA	0.2296	0.2434	0.3100	0.3563
	Social Welfare Facilities	~2,251m ² (NOFA)	pcu/hr	0.235 ⁽¹⁾	0.235 ⁽¹⁾	0.23 ⁽¹⁾	0.115 ⁽¹⁾
Planned Sports Centre, Social Welfare Facilities and Public Vehicle Park at Ma Wo Road, Tai Po	Public Vehicle Park	171 parking space	pcu/hr/ parking space	0.0771 (2)	0.0907 (2)	0.0493 (2)	0.0811 (2)

Note:

(1) Adopted trip rate of community health centre in the approved TIA report for Queen’s Hill, Fanling, which has similar nature and proximity to public transport.

(2) Based on surveyed trip rate at Tai Po Tung Cheong Street Sports Centre Public Vehicle Park.



Table 4.4 Estimated Trip Generations and Attractions of Planned Adjacent Developments

Location	Use	Assumed GFA & Flat no.	Units	Trip Rates			
				AM Peak		PM Peak	
				Gen	Att	Gen	Att
Le Mont, 9 Ma Wo Road, Tai Po	Private housing	~1,650 flats	pcu/hr/flat	147	85	59	80
Public housing development at To Yuen Tung, Tai Po	Public Housing	~2,000 flats (average flat size: 40m ²)	pcu/hr	86	65	47	60
	Retail	985m ²	pcu/hr	2	2	3	4
	Social Welfare Facilities	~2,251m ² (NOFA)	pcu/hr	5	5	5	3
Planned Sports Centre, Social Welfare Facilities and Public Vehicle Park at Ma Wo Road, Tai Po	Public Vehicle Park	171 parking space	pcu/hr/ parking space	13	16	8	14

4.4 Planned Junction Layout under Planned Project

4.4.1 Junction Ma Wo Road / Tat Wan Rd (D) and Junction Nam Wan Road / Tat Wan Road (E) will be modified according to the TIA report (2021) for public housing development at To Yuen Tung, Tai Po and summarised in **Table 4.5**. It is anticipated that the planned junction layout would be in place for reference and design year 2034 for the assessments.

Table 4.5 Planned Junction Layouts

Ref	Junction	Detail	Anticipated Completion Year
D	Ma Wo Road / Tat Wan Rd	As shown in Figure 4.2	By 2034
E	Nam Wan Road / Tat Wan Road	As shown in Figure 4.3	By 2034

4.5 Reference Traffic Flows

4.5.1 2034 reference traffic flows are then derived by the following and presented diagrammatically in **Figure 4.4 (Rev A)**.

$$\begin{array}{l}
 \text{2034} \\
 \text{Reference Traffic} \\
 \text{Flows} \\
 \text{(Without Proposed} \\
 \text{Development)}
 \end{array}
 = (
 \begin{array}{l}
 \text{2026} \\
 \text{Baseline} \\
 \text{Traffic} \\
 \text{Flows}
 \end{array}
 \times
 \begin{array}{l}
 \text{Adopted} \\
 \text{Growth} \\
 \text{Factor} \\
 \text{(i.e. +1.41\%} \\
 \text{for 8 years)}
 \end{array}
) +
 \begin{array}{l}
 \text{Traffic Flows of} \\
 \text{Planned Adjacent} \\
 \text{Developments}
 \end{array}$$

4.6 Traffic Generations and Attractions of Proposed Development

4.6.1 To estimate the trip generations of the proposed development, reference has been made to the trip generation rates of the existing Tung Wah Group of Hospitals Shuen Wan Complex for the Elderly which comprises Pao Siu Loong Care and Attention Home, Wu York Yu Care and Attention Home, and Wu Chiang Wai Fong Care and Attention Home in the same district, and sites of similar nature at remote area. The adopted trip generation rates are summarized in **Table 4.6**.



Table 4.6 Adopted Generation and Attraction Trip Rates of Proposed Development

Reference Sites	Approx. No. of Beds	Unit	AM Peak		PM Peak	
			Generation	Attraction	Generation	Attraction
Tung Wah Group of Hospitals Shuen Wan Complex for the Elderly, 93 Sam Mun Tsai Road, Shuen Wan, Tai Po, N.T.	649	pcu/hr	7	10	13	9
		pcu/hr/bed	0.011	0.016	0.020	0.014
Pok Oi Hospital Yeung Chun Pui Care and Attention Home, Lot No. 2273 & Ext. in DD 125, Ping Ha Road, Ping Shan, Yuen Long, N.T.	143	pcu/hr	2	2	3	2
		pcu/hr/bed	0.014	0.014	0.021	0.014
TWGHs Wong Cho Tong Social Service Building, 39 Sheung Shing Street, Homantin, Kowloon	278	pcu/hr	24	19	12	16
		pcu/hr/bed	0.086	0.068	0.043	0.058
Adopted Rate	-	pcu/hr/bed	0.086	0.068	0.043	0.058

4.6.2 Based on **Section 2.6**, **Table 2.1** and **Table 4.6**, the estimated traffic generation and attraction due to the proposed development are summarized in **Table 4.7**.

Table 4.7 Estimated Traffic Generation and Attraction of Proposed Development

	AM		PM	
	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
Proposed Development (335 beds)	29	23	15	20
Shuttle service	4 veh/hr x 1.5 pcu factor = 6	4 veh/hr x 1.5 pcu factor = 6	4 veh/hr x 1.5 pcu factor = 6	4 veh/hr x 1.5 pcu factor = 6
Total	35	29 (say 30)	21 (say 25)	26 (say 30)



- 4.6.3 It is anticipated that the proposed development would generate and attract 35 pcu/hr and 30 pcu/hr during AM hour respectively, and generate and attract 25 pcu/hr and 30 pcu/hr during PM hour respectively.

4.7 Design Traffic Flows

- 4.7.1 The future peak hours traffic generations of the proposed development were then assigned onto the road network and superimposed onto the 2034 reference traffic flows (without proposed development) to derive the 2034 design traffic forecasts (with proposed development).

$$\begin{array}{l} \text{2034 Design Traffic Flows} \\ \text{(With Proposed} \\ \text{Development)} \end{array} = \begin{array}{l} \text{2034 Reference Traffic Flows} \\ \text{(Without Proposed} \\ \text{Development)} \end{array} + \begin{array}{l} \text{Proposed} \\ \text{Development} \\ \text{Traffic Flows} \end{array}$$

- 4.7.2 Year 2034 development traffic flows and design traffic flows (with proposed development) are shown in **Figure 4.5 (Rev A)** and **Figure 4.6 (Rev A)** respectively.



5. TRAFFIC IMPACT ASSESSMENT

5.1 Operational Assessment

5.1.1 To assess the potential traffic impact due to the proposed development, capacity analysis of the identified critical junction for both reference (without proposed development) and design scenarios (with proposed development) in year 2034 were carried out. The results are summarized in **Table 5.1** and the junction calculation sheets are attached in **Appendix A**.

**Table 5.1 Junction Performance of Identified Critical Junctions in Year 2034
(With and Without Proposed Development)**

Ref.	Junction	Method of Control	Year 2034 RC/RFC ⁽¹⁾			
			Reference Scenario (Without Proposed Development)		Design Scenario (With Proposed Development)	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Tat Wan Road / Access Road	Priority	0.16	0.09	0.25	0.14
B	Tat Wan Road / Slip Road From Tolo Highway	Signal	64%	>100%	59%	>100%
C	Tat Wan Road / Slip Road To Tolo Highway	Signal	25%	>100%	22%	>100%
D ⁽²⁾	Ma Wo Road / Tat Wan Rd	Signal	16%	96%	16%	95%
E ⁽²⁾	Nam Wan Road / Tat Wan Road	Signal	25%	45%	24%	43%
F	Nam Wan Road / Nga Wan Road / Shan Tong Road	Signal	25%	53%	23%	52%

Notes:

(1) RC = Reserve Capacity for Signalized Junction

RFC = Ratio of Flow to Capacity for Priority Junction

(2) Reference has been made to the planned junction improvement works mentioned in **Section 4.4**.



- 5.1.2 The assessment results in **Table 5.1** revealed that all critical junctions would still operate within their capacities in both reference scenario (without proposed development) and design scenario (with proposed development) in 2034.
- 5.1.3 It is anticipated that the proposed development would generate and attract 35 pcu/hr and 30 pcu/hr during AM hour respectively, and generate and attract 25 pcu/hr and 30 pcu/hr during PM hour respectively.
- 5.1.4 The traffic generated by the proposed development is small and would induce insignificant impact on the surrounding road network during the traffic flow periods in peak hours.



6. CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

6.1 Construction Programme

- 6.1.1 The proposed development is anticipated to be completed by year 2031 tentatively. Year 2031 is therefore adopted as the design year for the Construction TIA.

6.2 Operational Assessment

- 6.2.1 Based on the past experience of main contractor, it is assumed that the one-way construction traffic generated by the proposed development would be 6 vehicles per hour during the construction period.
- 6.2.2 Hence it is assumed that 18 pcu/hr (6veh x 3 pcu factor) of construction trucks for this construction TIA as design scenario (with construction traffic).
- 6.2.3 Same annual growth rate as in **Section 4.2** (i.e. +1.41% p.a.) has been adopted, the reference traffic flows in year 2031 which is the final year of the entire construction project are then derived by the following and is illustrated diagrammatically in **Figure 6.1**. The junction calculation sheets are attached as in **Appendix A**.

$$\begin{array}{l} \text{2031} \\ \text{Reference Flows} \\ \text{(Without Construction} \\ \text{Traffic of the Proposed Site)} \end{array} = \begin{array}{l} \text{2026} \\ \text{Baseline} \\ \text{Traffic Flows} \end{array} \times \begin{array}{l} \text{Adopted Growth Factor} \\ \text{(i.e. +1.41\% for 5 years)} \end{array}$$

- 6.2.4 The future traffic generations of construction vehicles of the proposed site were then assigned onto the road network and superimposed onto the 2031 reference traffic flows to derive the 2031 design traffic forecasts with construction vehicles of the proposed site which is illustrated diagrammatically in **Figure 6.2**

$$\begin{array}{l} \text{2031 Design Traffic Flows} \\ \text{(With Construction Traffic =} \\ \text{of the Proposed Site)} \end{array} = \begin{array}{l} \text{2031 Reference} \\ \text{Traffic Flows} \end{array} + \begin{array}{l} \text{Construction} \\ \text{Traffic of the} \\ \text{Proposed Site} \end{array}$$

- 6.2.5 To assess underlying traffic impact due to the construction works of the proposed site, operational performance assessment of the critical junctions have been carried out for

reference scenario (without construction traffic) and design scenario (with construction traffic) in year 2031, which is the final year of the entire construction project. The results are summarized in **Table 6.1**, and the junction calculation sheets are attached as in **Appendix A**.

Table 6.1 Junction Performance of Identified Critical Junction in Year 2031 (With and Without Construction Traffic of Proposed Site) – For Construction Traffic Impact Assessment

Ref.	Junction	Method of Control	Year 2031 RC/RFC ⁽¹⁾			
			Reference Scenario (Without Construction Traffic of Proposed Site)		Design Scenario (With Construction Traffic of Proposed Site)	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Tat Wan Road / Access Road	Priority	0.16	0.09	0.20	0.13
B	Tat Wan Road / Slip Road From Tolo Highway	Signal	80%	>100%	77%	>100%
C	Tat Wan Road / Slip Road To Tolo Highway	Signal	26%	>100%	23%	>100%
D	Ma Wo Road / Tat Wan Rd	Signal	47%	>100%	47%	>100%
E	Nam Wan Road / Tat Wan Road	Signal	18%	52%	16%	49%
F	Nam Wan Road / Nga Wan Road / Shan Tong Road	Signal	34%	63%	33%	61%

Note: (1) RC = Reserve Capacity

RFC = Ratio of Flow to Capacity for Priority Junction

6.2.6 The assessment results in **Table 6.1** revealed that all critical junctions would still operate within their capacities in both reference scenario (without construction traffic of proposed site) and design scenario (with construction traffic of proposed site) in 2031 during the peak hours for construction traffic impact assessment.

6.2.7 Nevertheless, the peak traffic generated by construction traffic of the proposed development is small and would induce insignificant impact on the surrounding road network.

7. PEDESTRIAN ASSESSMENT

7.1 Survey on Pedestrian Flows

- 7.1.1 Sections for assessment at the pedestrian facilities (footpath and crossing facilities) along the pedestrian routing to major public transport facilities is shown in **Figure 7.1**.
- 7.1.2 In order to establish the existing pedestrian condition in the above-mentioned critical section, pedestrian surveys were carried out during AM and PM peak periods (7:30am to 9:30am and 5:00pm to 7:00pm) on a typical weekday, 6 March 2026 (Friday).
- 7.1.3 The concept of Minimum Width of Footways and Level-of-service (LOS) in accordance with T.P.D.M. Volume 2 Chapter 3.4.11 and Volume 6 Chapter 10 have been applied for assessing the concerned walkways. The Minimum Width of Footways refers to the desirable minimum effective widths of footways according to pedestrian volume and type of land use. LOS directly relates to the pedestrian comfort and ease with which pedestrians queued and proceed at the walkway.
- 7.1.4 The related assessment of pedestrian is based on Level-of-Service (LOS) approach, which is stipulated in T.P.D.M. (Volume 6, Chapter 10, Section 10.4.2), defines the service level of walkway in terms of several parameters such as pedestrian flow rate, pedestrian space, walking speed, etc. The standard with relevant descriptions for footpath are summarized in **Table 7.1**. In general, LOS C is desirable for most design at streets with dominant ‘living’ pedestrian activities under T.P.D.M. Volume 6, Chapter 10.

Table 7.1 Descriptions of Level-of-Service (LOS) for Footpath

LOS	Flow Rate (ped/min/meter)	Description
A	≤ 16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	16 - 23	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	23 - 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional stream. Where reverse direction or crossing movement exists, minor conflicts will occur, and speed and volume will be somewhat lower.
D	33 - 49	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speeds and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	49 - 75	Virtually, all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulties. Design volumes approach the limit of walking capacity with resulting stoppages and interruptions to flow.
F	> 75	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristics of queued pedestrians than of moving pedestrian streams.

7.1.5 The observed pedestrian flows is presented in **Figure 7.2**.

7.1.6 The level-of-service (LOS) for existing operational performances of the identified critical sections for footpaths are listed in **Table 7.2** respectively.

Table 7.2 Operational Performance of Critical Footpath in Year 2026

Critical Section	Total Footpath Width (m) ⁽¹⁾	Effective Width (m) ⁽¹⁾	Observed Scenario (Year 2026)					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS	Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS
			(ped/15 mins)	(ped/min/m) ⁽²⁾		(ped/15 mins)	(ped/min/m) ⁽²⁾	
P1	2.5	1.5	15	0.7	A	5	0.2	A
P2	2	1	70	4.7	A	20	1.3	A
P3	2	1	20	1.3	A	15	1.0	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from walls).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 15 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

7.1.7 The results of assessment shown in **Table 7.2** indicate that the critical sections are operating with ample reserved capacity during peak 15-min.

7.2 Future Pedestrian Condition

7.2.1 Reference has been made to the growth rate of 1.41% from **Section 4.2** for the background pedestrian growth from 2026 to 2034.

7.2.2 The 2034 reference pedestrian flows are presented in **Figure 7.3**.

7.2.3 The level-of-service (LOS) for reference scenario (without proposed development) operational performances of the identified critical sections for footpaths are listed in **Table 7.3**.

**Table 7.3 Operational Performance of Critical Footpath in Year 2034
(Without Proposed Development)**

Critical Section	Total Footpath Width (m) ⁽¹⁾	Effective Width (m) ⁽¹⁾	Reference Scenario (2034)					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS	Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS
			(ped/15 mins)	(ped/min/m) ⁽²⁾		(ped/15 mins)	(ped/min/m) ⁽²⁾	
P1	2.5	1.5	15	0.2	A	10	0.1	A
P2	2	1	75	1.3	A	25	0.4	A
P3	2	1	20	0.3	A	15	0.3	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from walls).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 15 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

7.3 Pedestrian Generations and Attractions of Proposed Redevelopment

7.3.1 The trip generation rates of RCHE are considered as low. As a conservative approach, assumptions are made based on the policy of general RCHE. Based on the policy of limiting 2 visitors per bed under normal visiting arrangement, the total estimated visitor generation and attraction is about 670 visitors/hr (335 x 2).

7.3.2 The pedestrian flows from the proposed development was then superimposed onto the 2034 reference pedestrian flows to derive the 2034 design pedestrian flows.

7.3.3 The 2034 design pedestrian flows are presented in **Figure 7.4**.

7.3.4 The level-of-service (LOS) for design scenario (with proposed development) operational performances of the identified critical sections footpaths are listed in **Table 7.4**.



Table 7.4 Operational Performance of Critical Footpath in Year 2034 (With Proposed Development)

Critical Section	Total Footpath Width (m) ⁽¹⁾	Effective Width (m) ⁽¹⁾	Design Scenario (2034)					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS	Two-way Pedestrian Flow	Two-way Pedestrian Flow Rate	LOS
			(ped/15 mins)	(ped/min/m) ⁽²⁾		(ped/15 mins)	(ped/min/m) ⁽²⁾	
P1	2.5	1.5	185	2.1	A	180	2.0	A
P2	2	1	160	2.7	A	110	1.8	A
P3	2	1	105	1.8	A	100	1.7	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from walls).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 15 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

7.3.5 The assessment results revealed in **Table 7.2**, **Table 7.3** and **Table 7.4** that critical sections of pedestrian facilities along the pedestrian routing to public transport facilities would be able to attain the acceptable LOS with additional pedestrian flows arising from the proposed development during peak hours in the design year 2034.



8. SUMMARY AND CONCLUSION

8.1 Summary

8.1.1 CTA Consultants Limited (CTA) is commissioned as the traffic consultant to prepare the Traffic Impact Assessment Report and provide technical justifications in supporting the proposed development from traffic engineering point of view.

8.1.2 To reduce the impact of public transport during daytime, shuttle service using 19-seater light bus is proposed for staff and visitors to/from Tai Po Market. The boarding and alighting point for the shuttle service is proposed at the layby at Nam Wan Road (eastbound) (outside Elegance Garden Block 4) near Tai Po Market Station

Staff

8.1.3 It is proposed 3 frequencies of 19-seater light buses shuttle service for staff (~40 staff per shift).

Visitors

8.1.4 The operator would maintain sufficient flexibility in the visitor policy to facilitate regular family contact and community integration, as required under the Code of Practice for Residential Care Homes (Elderly Persons). Being a RCHE, the number of visitors is very little. Nonetheless, visitors are encouraged to board or alight at Tai Po Market Station, preferably via railway, or park their vehicles near carparks of Tai Po Market Station, and interchange at Tai Po Market Station for shuttle services so as to minimize illegal parking or queuing activities in the vicinity.

8.1.5 To avoid overload the nearby public transport (GMB services) by visitors coming/leaving the proposed development, it is proposed to provide shuttle service (19-seater light bus) by the Applicant for the visitors with 1 veh/bound/hr. The duration of the shuttle services is proposed between 8am and 8pm so as to minimize traffic impact to the surrounding road network.

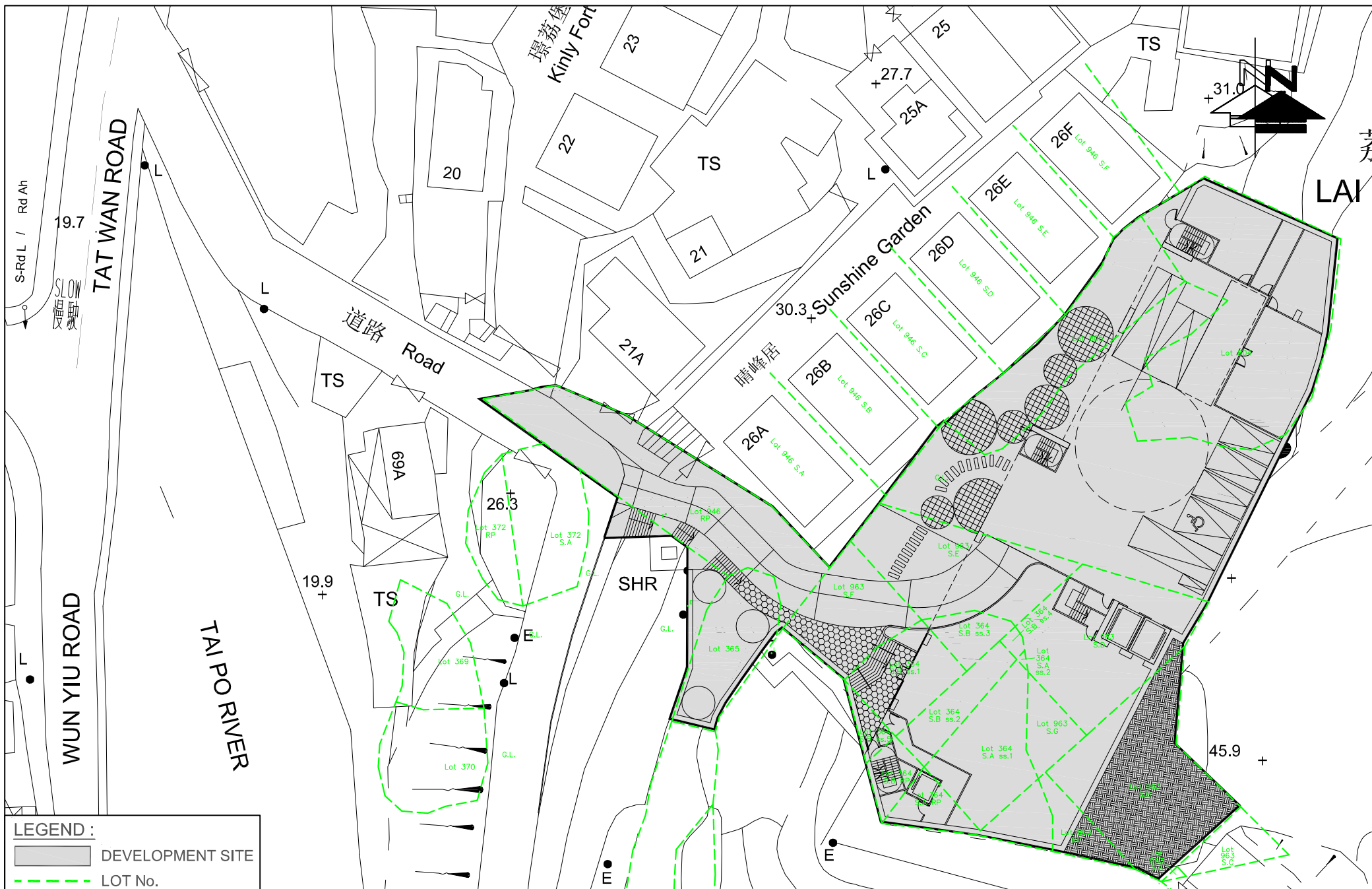
8.1.6 To appraise the existing traffic condition, manual-classified counting surveys were conducted at critical junctions in 2026. Current operational performance of the critical

junctions has been assessed. The results reveal all critical junctions are at present operating within their capacities during the traffic flow periods in peak hours.

- 8.1.7 The assessment results revealed that all critical junctions would still operate within their capacities in both reference scenario (without proposed development) and design scenario (with proposed development) in 2034 during the traffic flow periods in peak hours.
- 8.1.8 It is anticipated that the proposed development would generate and attract 35 pcu/hr and 30 pcu/hr during AM hour respectively, and generate and attract 25 pcu/hr and 30 pcu/hr during PM hour respectively.
- 8.1.9 The assessment results revealed that all critical junctions would still operate within their capacities in both reference scenario (without construction traffic of proposed site) and design scenario (with construction traffic of proposed site) in 2031 during the peak hours for construction traffic impact assessment.
- 8.1.10 The traffic generated by the proposed development is small and would induce insignificant impact on the surrounding road network.
- 8.1.11 It is revealed that critical sections of pedestrian facilities along the pedestrian routing to public transport facilities would be able to attain the acceptable LOS with additional pedestrian flows arising from the proposed development during peak hours in the design year 2034.

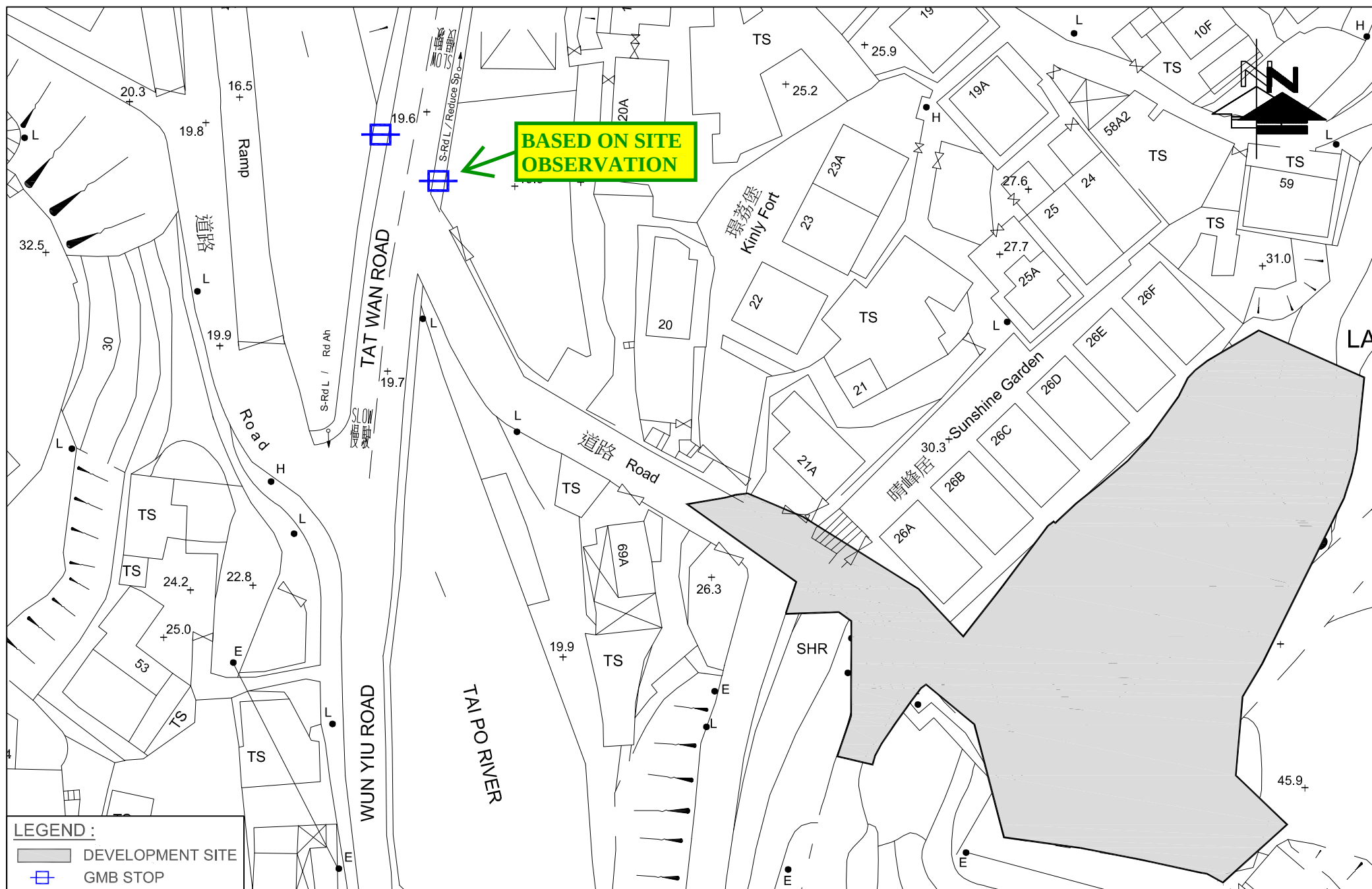
8.2 Conclusion

- 8.2.1 In conclusion, this Traffic Impact Assessment Report has demonstrated that the related traffic trips related to the proposed development can be absorbed by the nearby road network and no significant traffic impact will be induced.
- 8.2.2 Therefore, the proposed development is reckoned feasible from traffic engineering point of view.



LEGEND :	
	DEVELOPMENT SITE
	LOT No.

FIGURE NO.: 2.1(REV A)		PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK		DRAWING TITLE: PROPOSED LAYOUT PLAN AND MINOR ROAD IMPROVEMENT BETWEEN ACCESS ROAD TO KINLY FORT AND THE SITE		
SCALE: 1 : 450 @A4	DATE: 10 SEP 2026			



LEGEND :

- DEVELOPMENT SITE
- GMB STOP

FIGURE NO.: 2.2(REV A)	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: EXISTING PUBLIC TRANSPORT FACILITIES	
SCALE: 1 : 570 @A4	DATE: 04 SEP 2026	

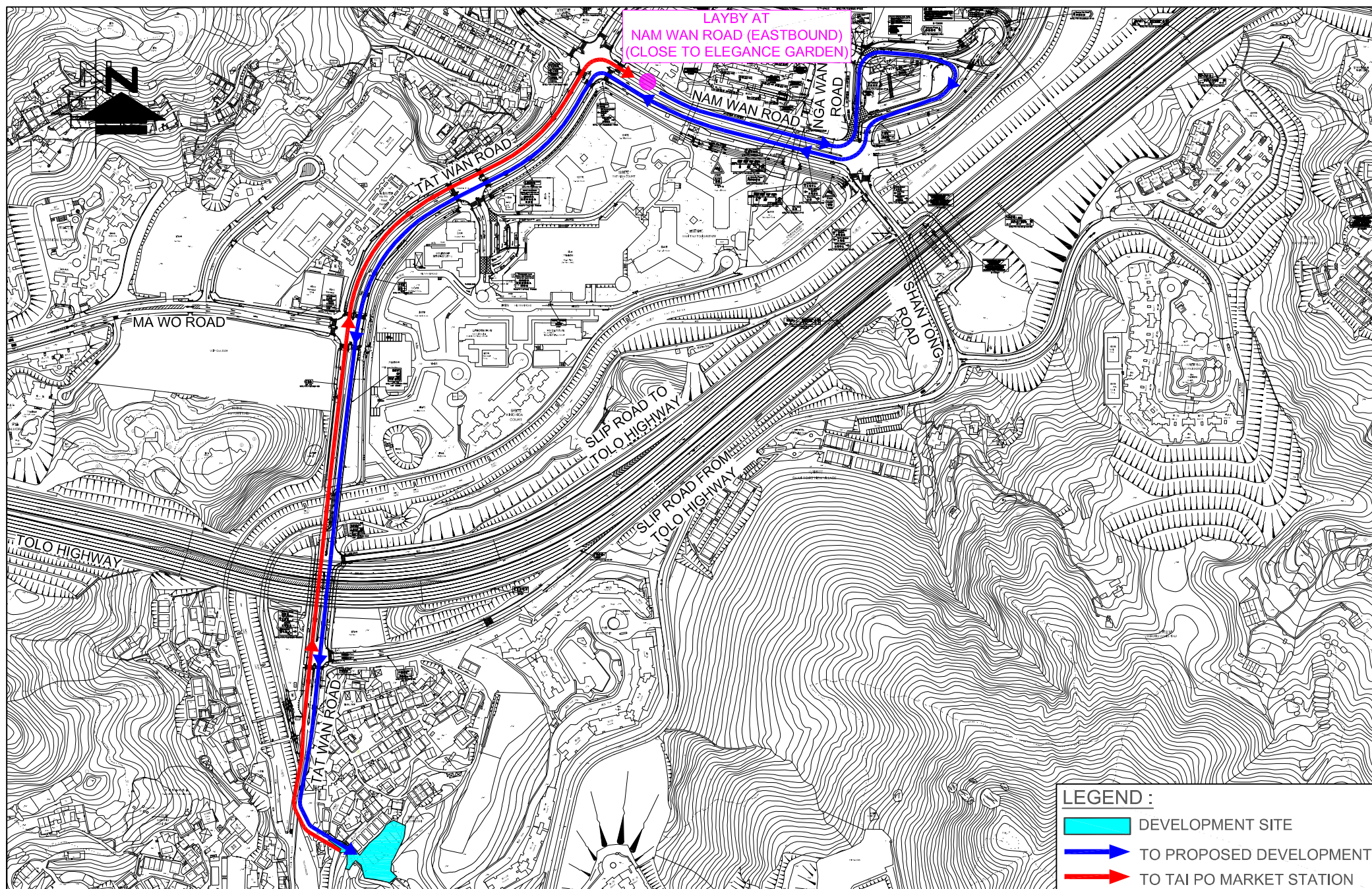
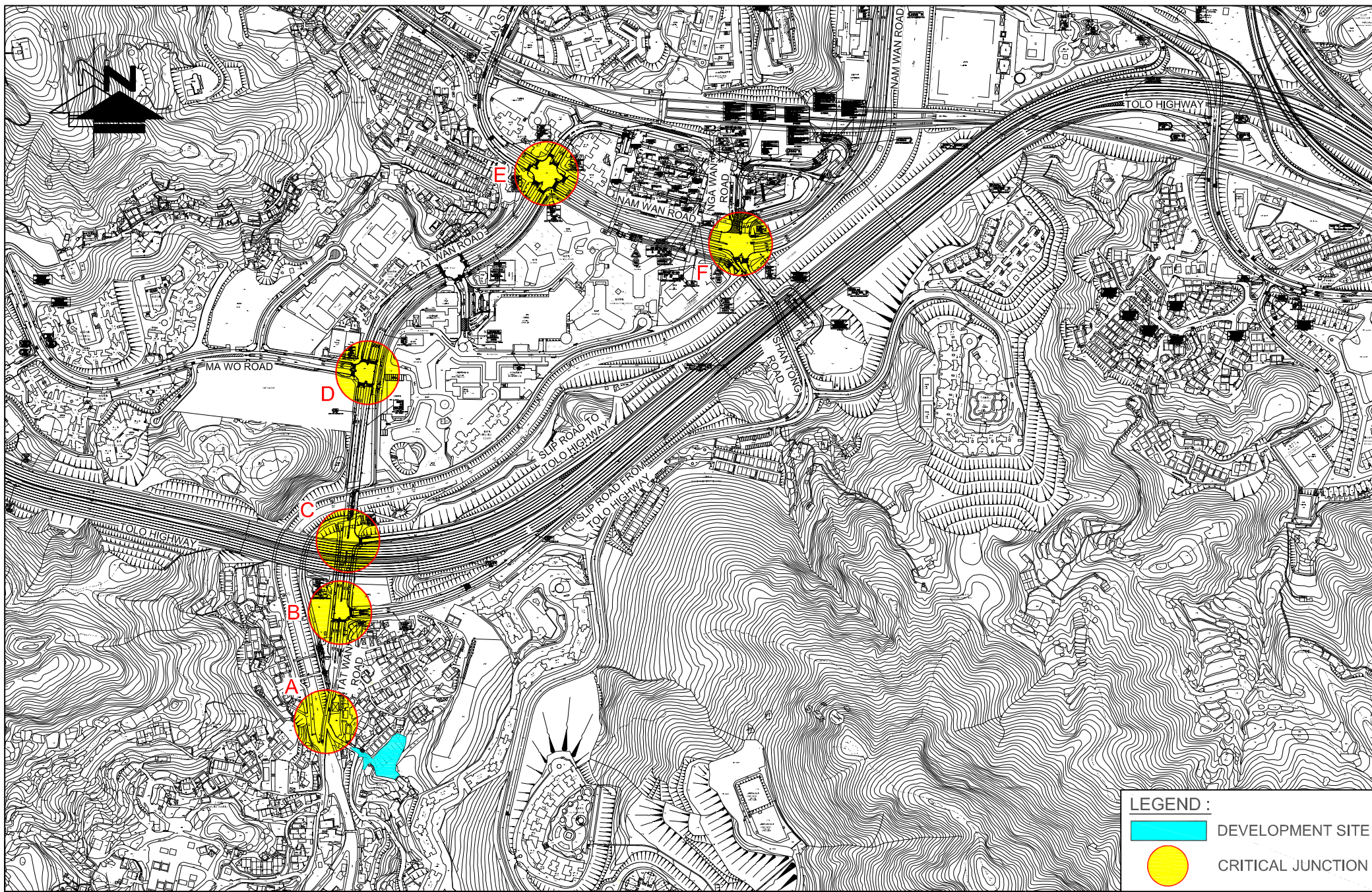


FIGURE NO.:	2.3	PROJECT TITLE:	S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.
PROJECT NO.:	26009HK	DRAWING TITLE:	PROPOSED ROUTING OF SHUTTLE SERVICE
SCALE:	1 : 5000 @A4	DATE:	25 AUG 2026



LEGEND :



DEVELOPMENT SITE



CRITICAL JUNCTION

FIGURE NO.: 3.1	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: IDENTIFIED CRITICAL JUNCTIONS	
SCALE: 1 : 6800 @A4	DATE: 23 MAR 2026	

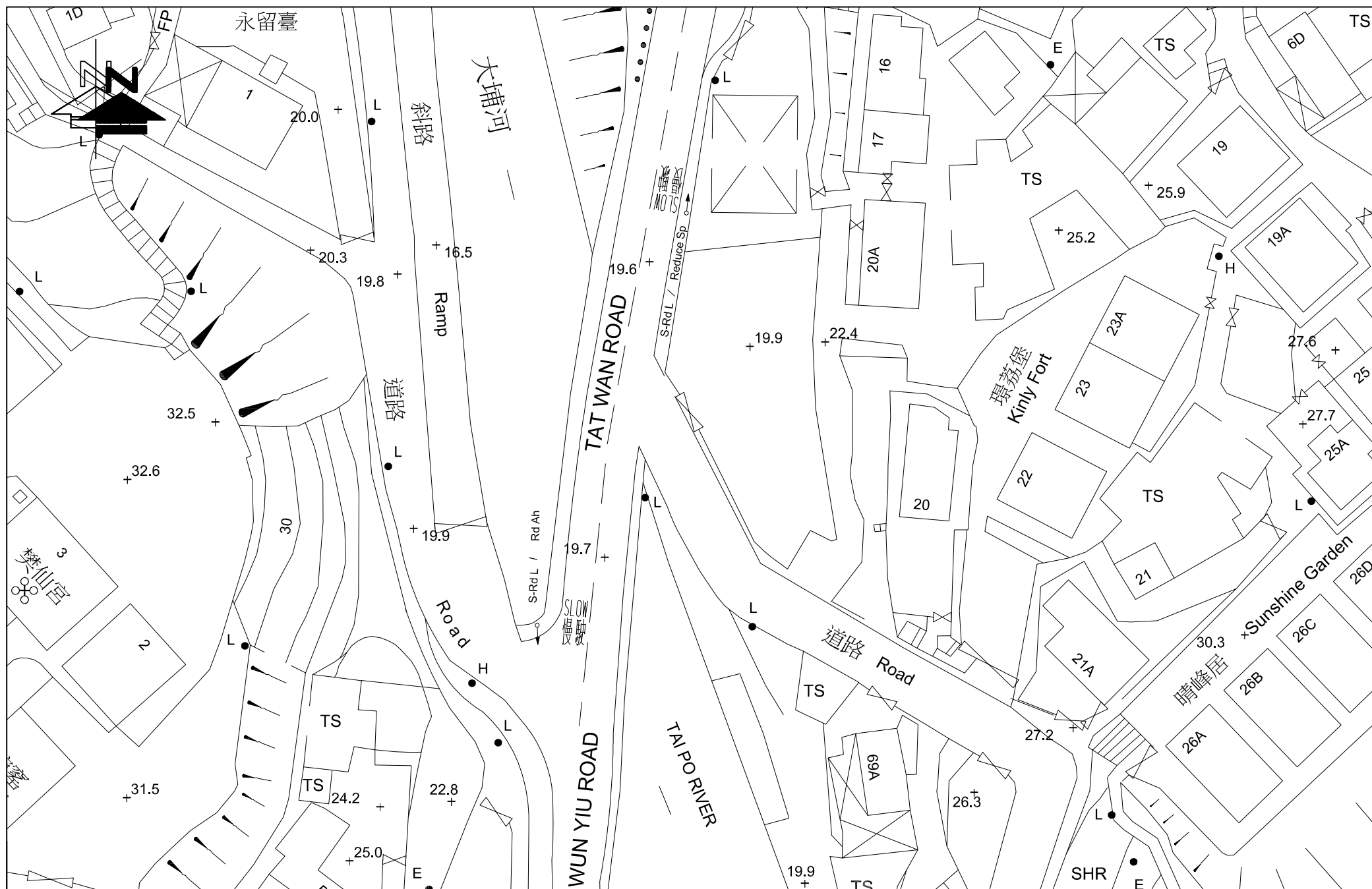


FIGURE NO.: 3.2	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TAT WAN ROAD / ACCESS ROAD (A)	
SCALE: 1 : 500 @A4	DATE: 12 MAR 2026	

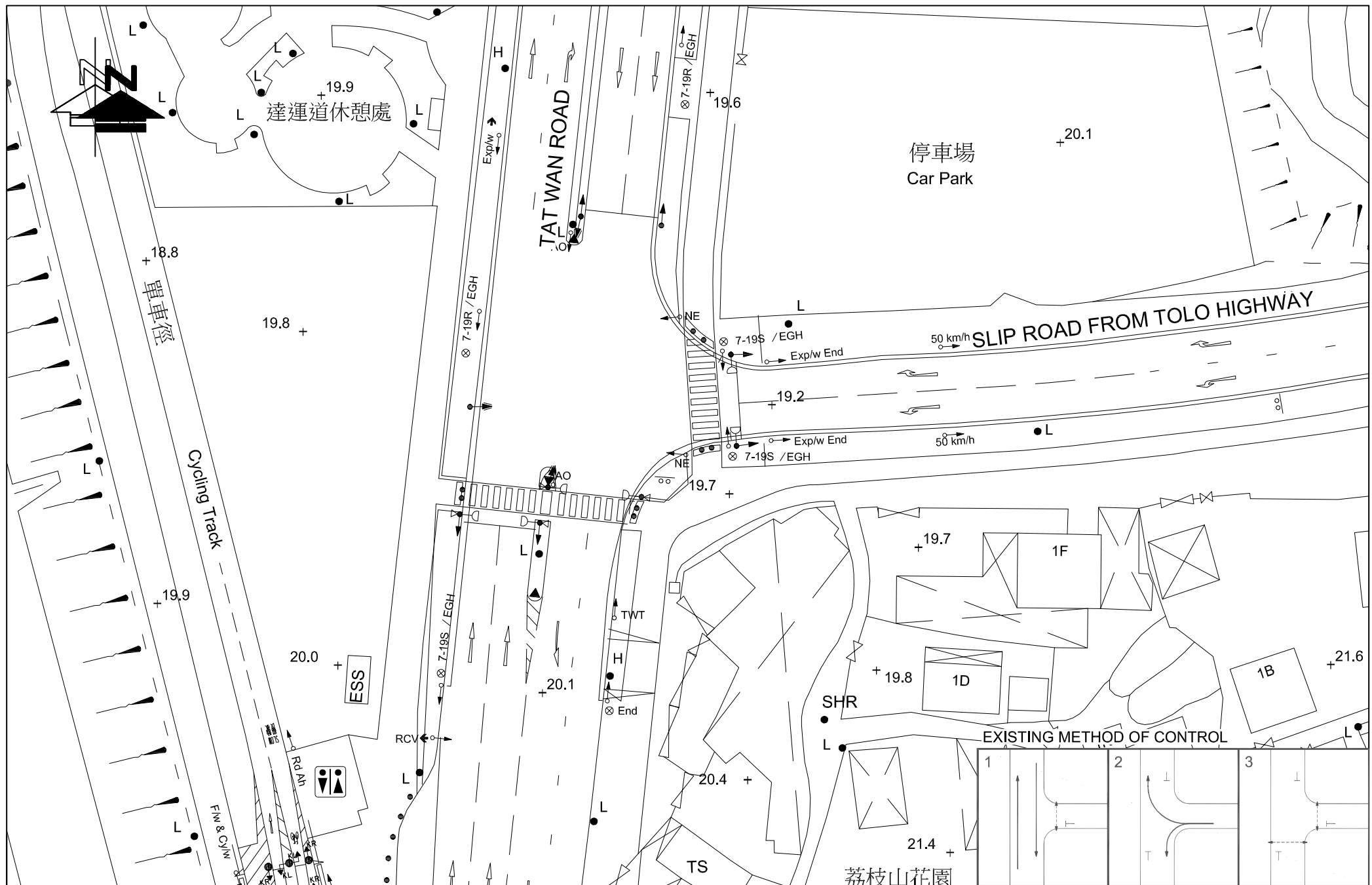


FIGURE NO.: 3.3	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TAT WAN ROAD / SLIP ROAD FROM TOLO HIGHWAY (B)	
SCALE: 1 : 500 @A4	DATE: 23 MAR 2026	

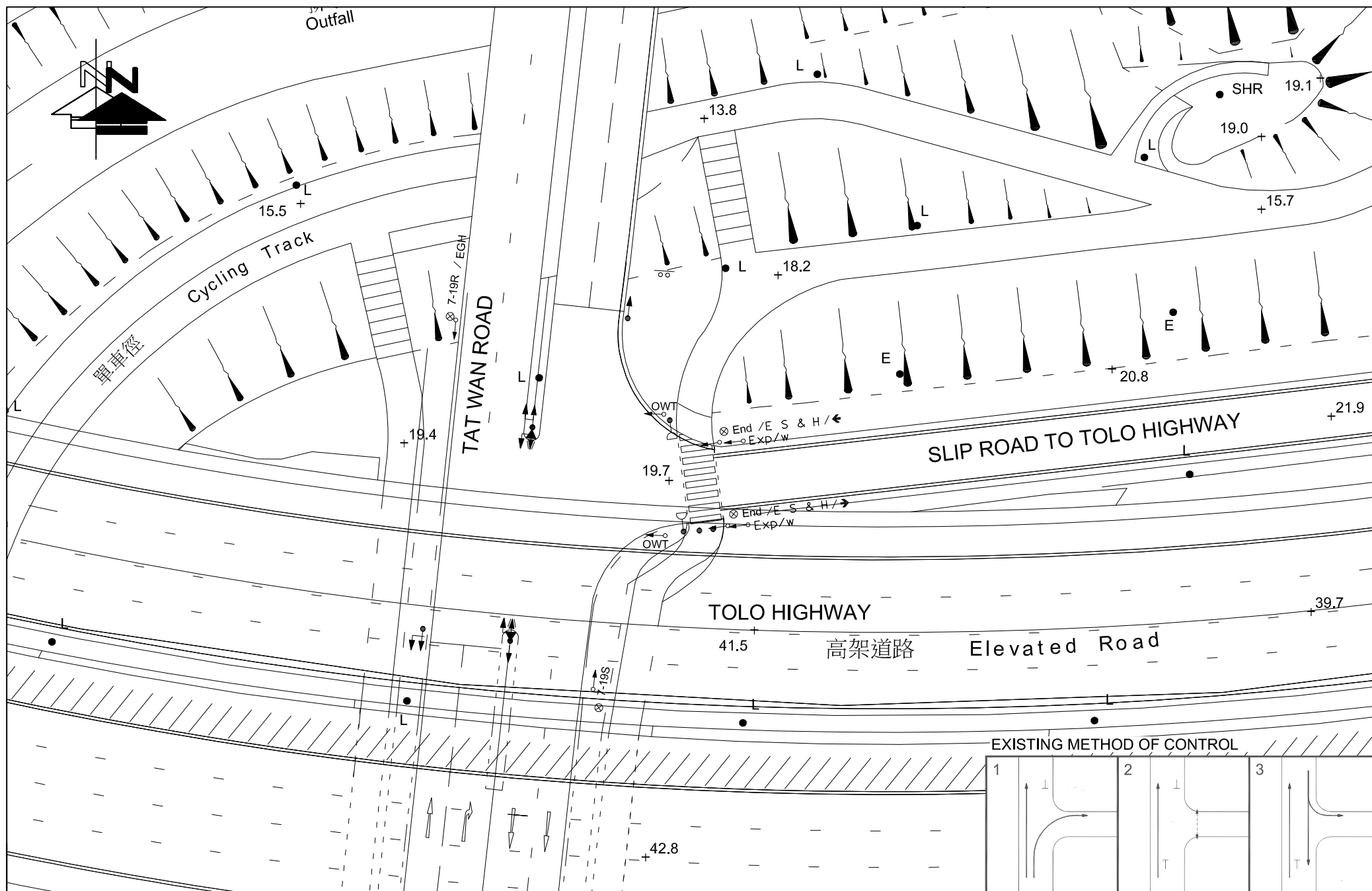
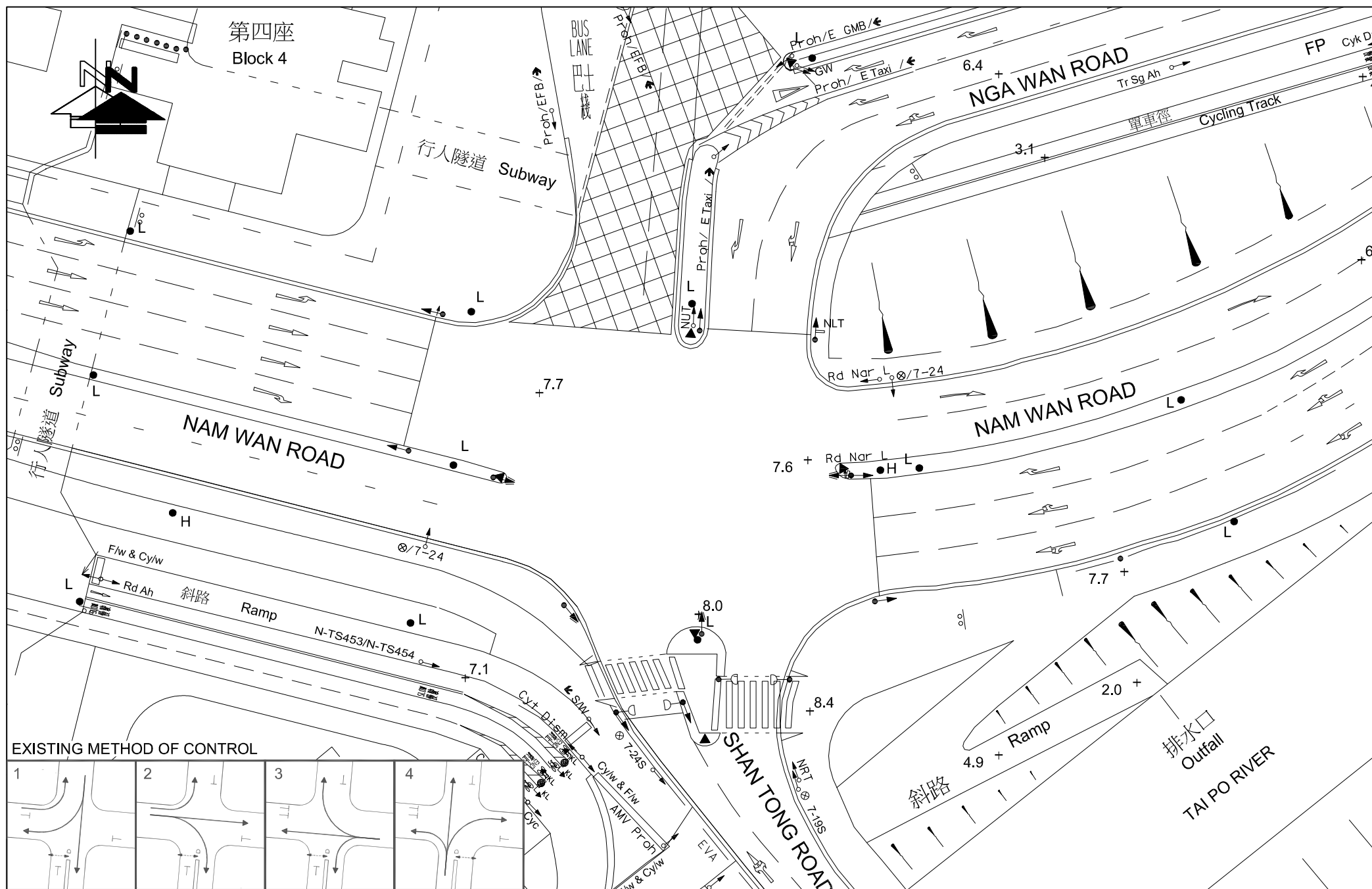


FIGURE NO.: 3.4	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TAT WAN ROAD / SLIP ROAD TO TOLO HIGHWAY (C)	
SCALE: 1 : 500 @A4	DATE: 23 MAR 2026	



EXISTING METHOD OF CONTROL

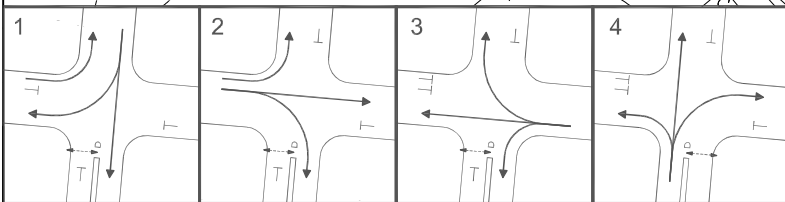
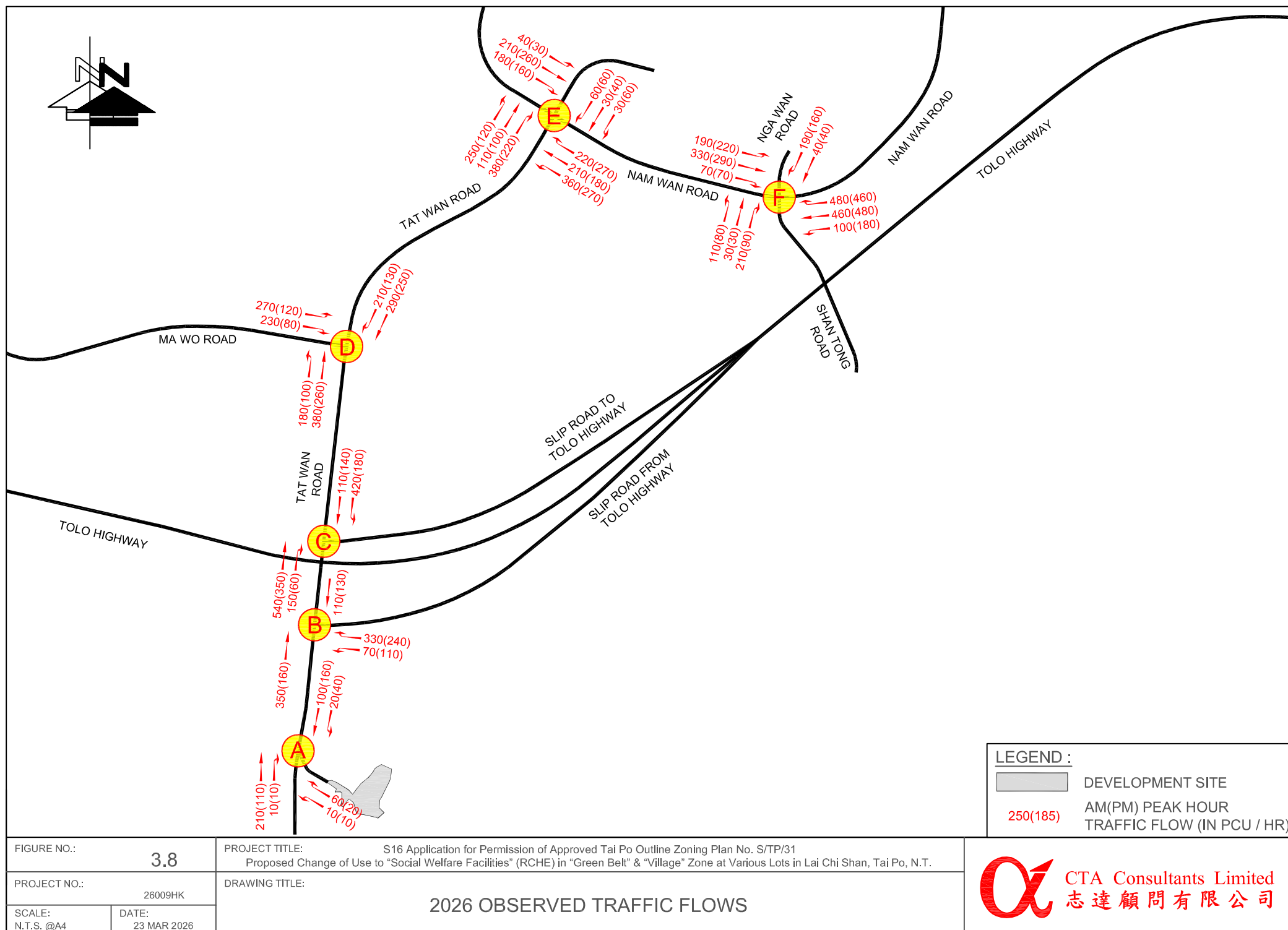
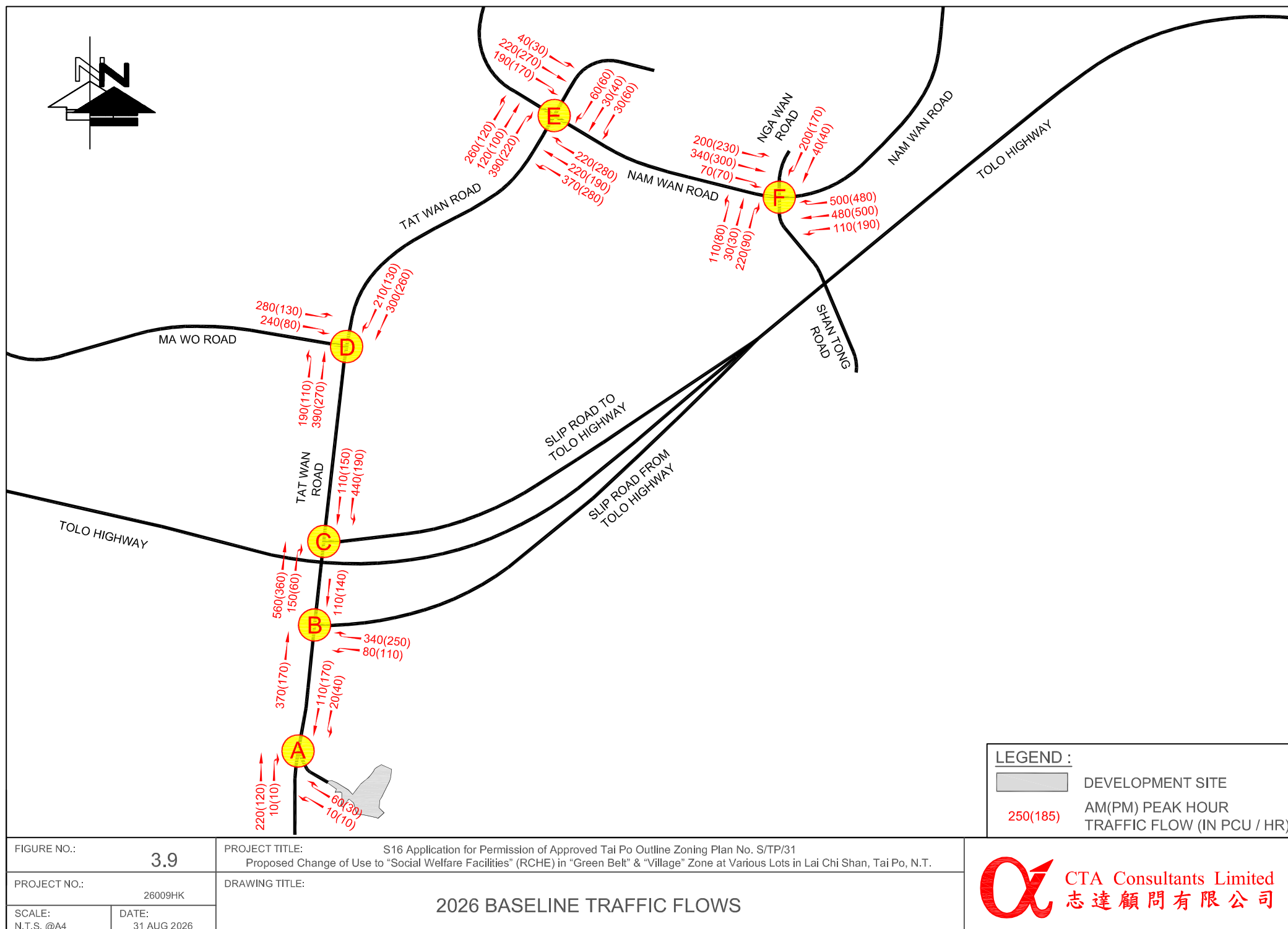
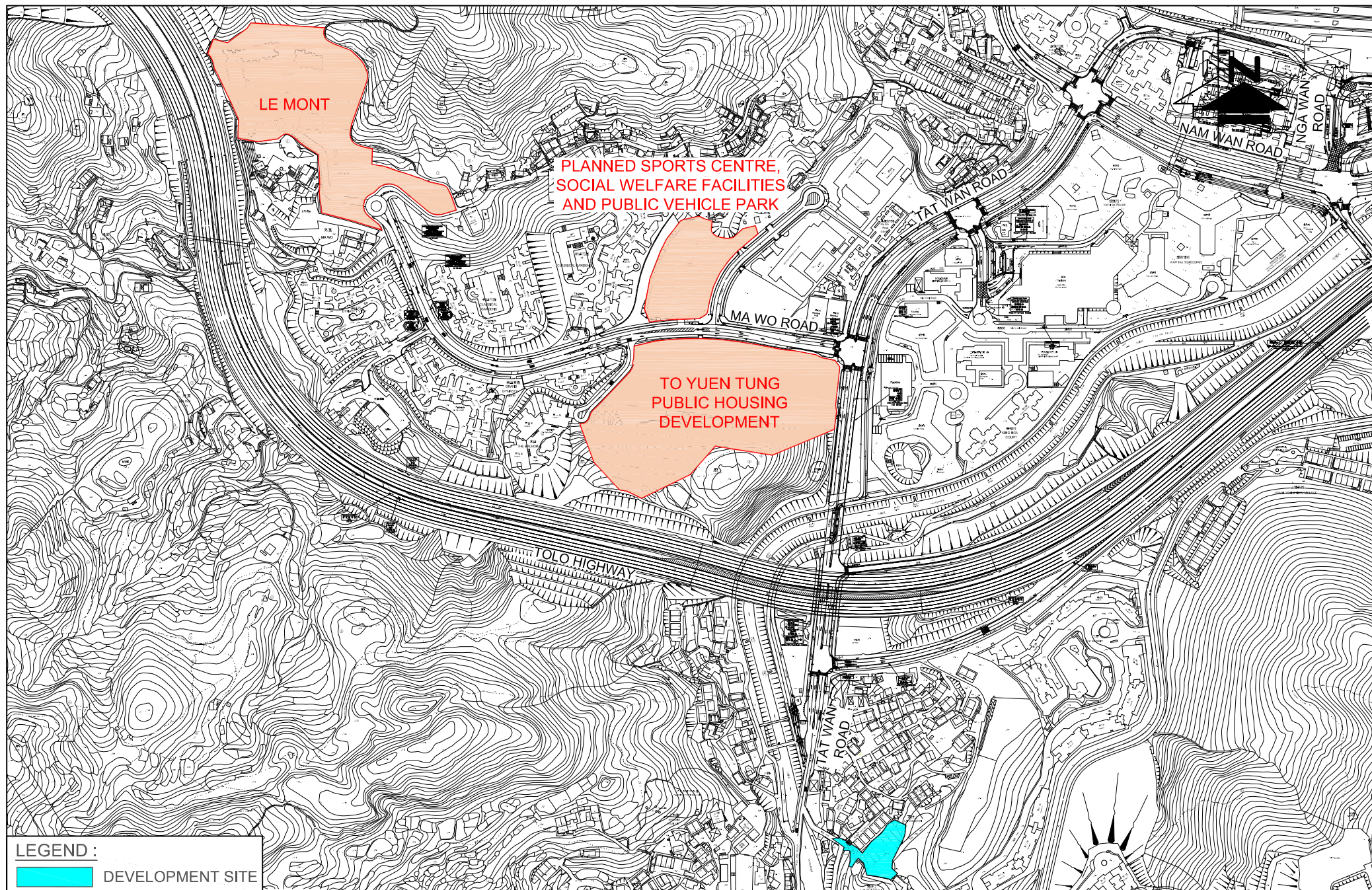


FIGURE NO.: 3.7	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF NAM WAN ROAD / NGA WAN ROAD / SHAN TONG ROAD (F)	
SCALE: 1 : 500 @A4	DATE: 23 MAR 2026	







LEGEND :
 DEVELOPMENT SITE

FIGURE NO.: 4.1(REV A)	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: PLANNED MAJOR DEVELOPMENTS IN THE VICINITY	
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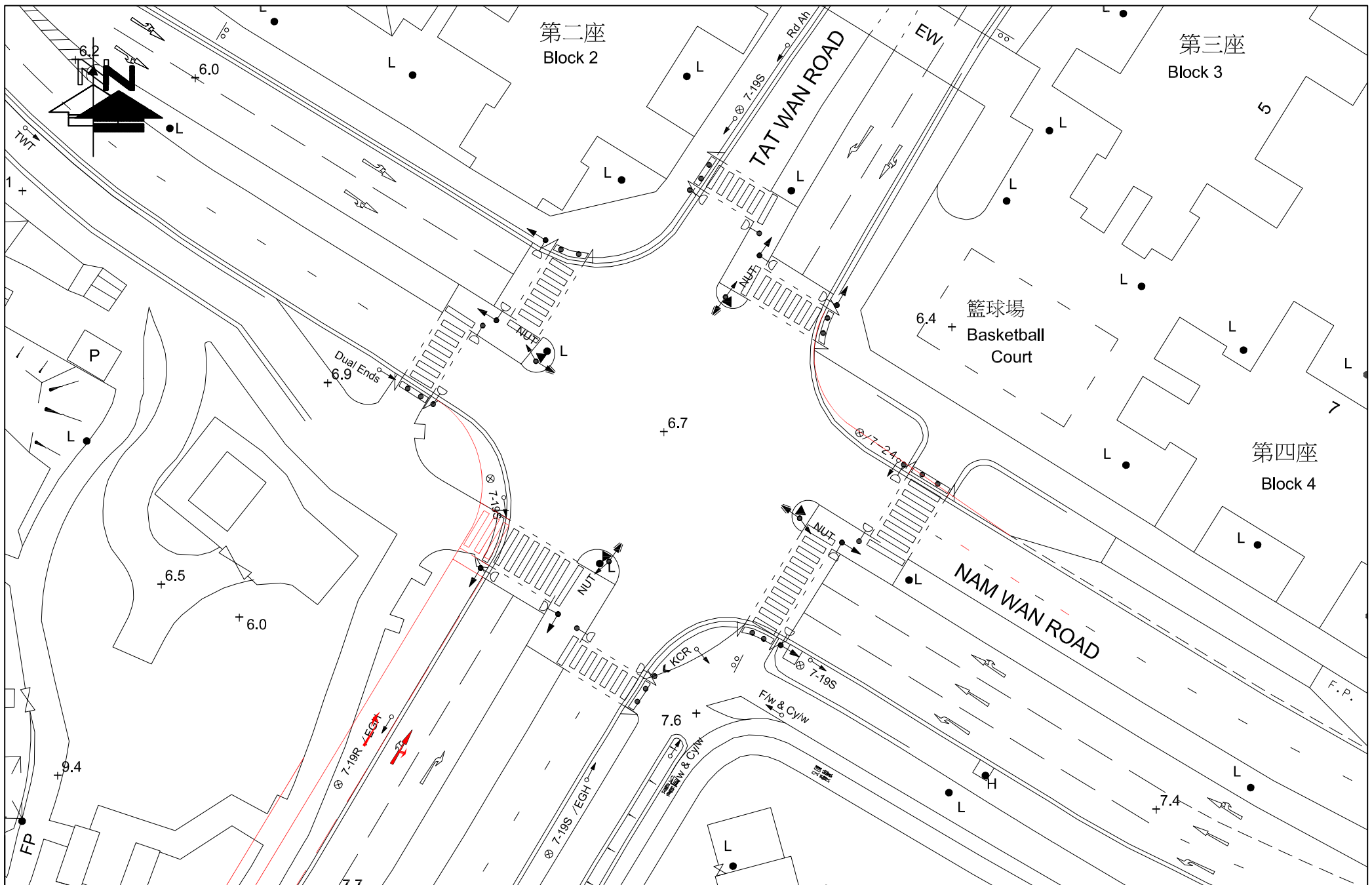


FIGURE NO.: 4.3		PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK		DRAWING TITLE: PLANNED JUNCTION LAYOUT OF TAT WAN ROAD / NAM WAN ROAD (E) UNDER TO YUEN TUNG PUBLIC HOUSING DEVELOPMENT		
SCALE: 1 : 500 @A4	DATE: 20 MAR 2026			

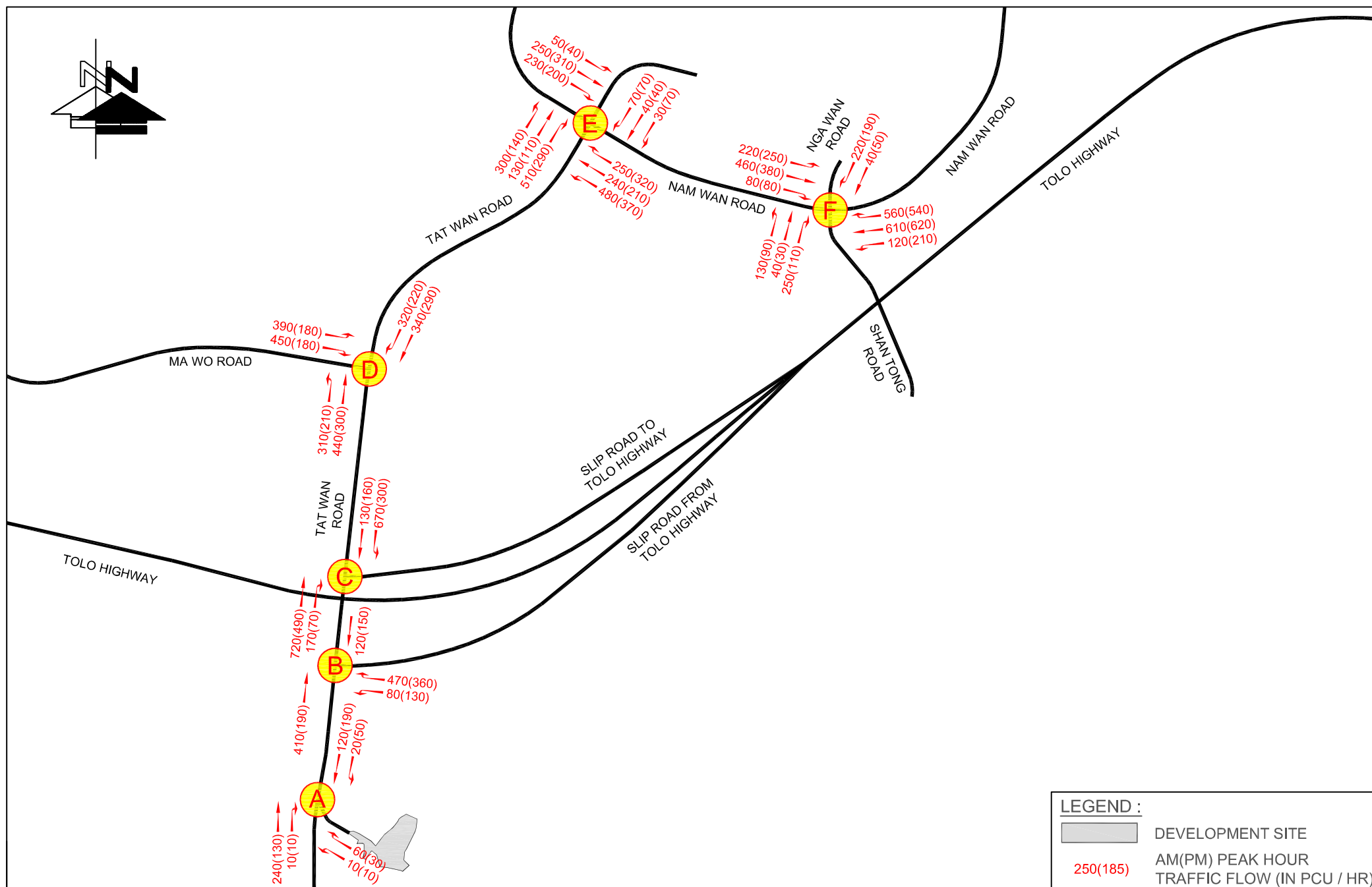


FIGURE NO.: 4.4 (REV A)	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: 2034 REFERENCE TRAFFIC FLOWS (WITHOUT PROPOSED DEVELOPMENT)	
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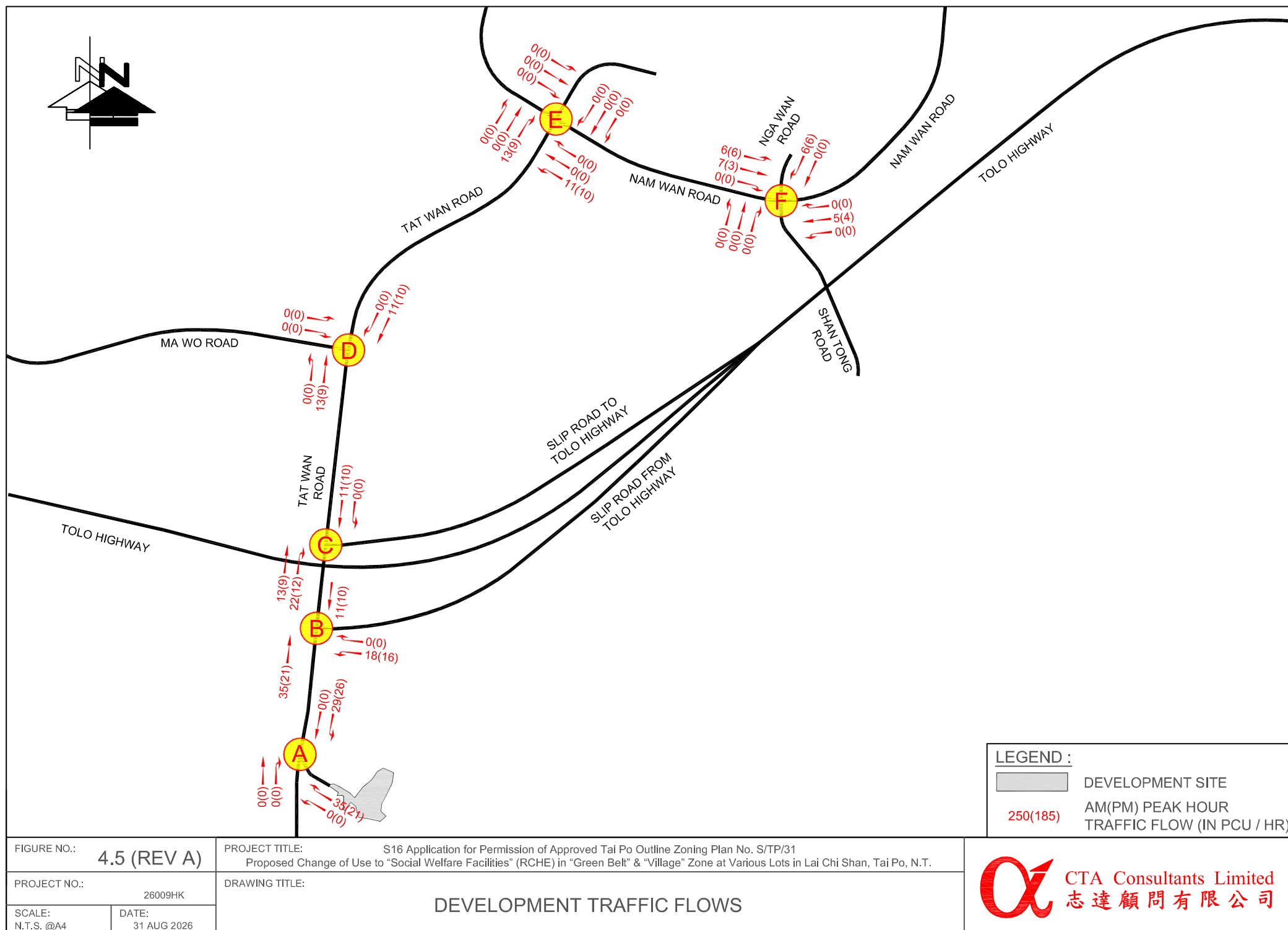


FIGURE NO.: 4.5 (REV A)

PROJECT NO.: 26009HK

SCALE: N.T.S. @A4
DATE: 31 AUG 2026

PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31
Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.

DRAWING TITLE:

DEVELOPMENT TRAFFIC FLOWS

CTA Consultants Limited
志達顧問有限公司

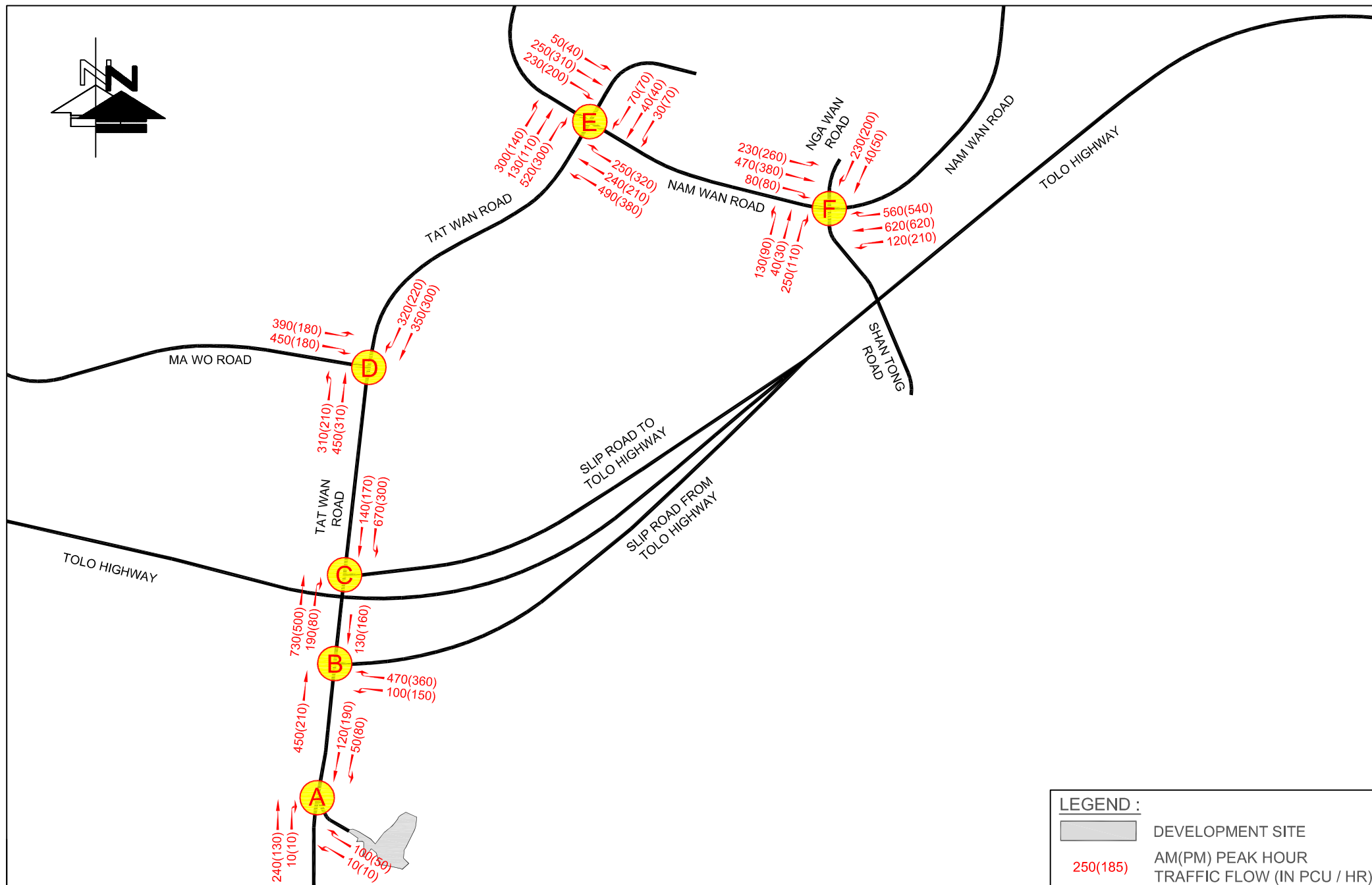


FIGURE NO.: 4.6 (REV A)	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: 2034 DESIGN TRAFFIC FLOWS (WITH PROPOSED DEVELOPMENT)	
SCALE: N.T.S. @A4	DATE: 31 AUG 2026	

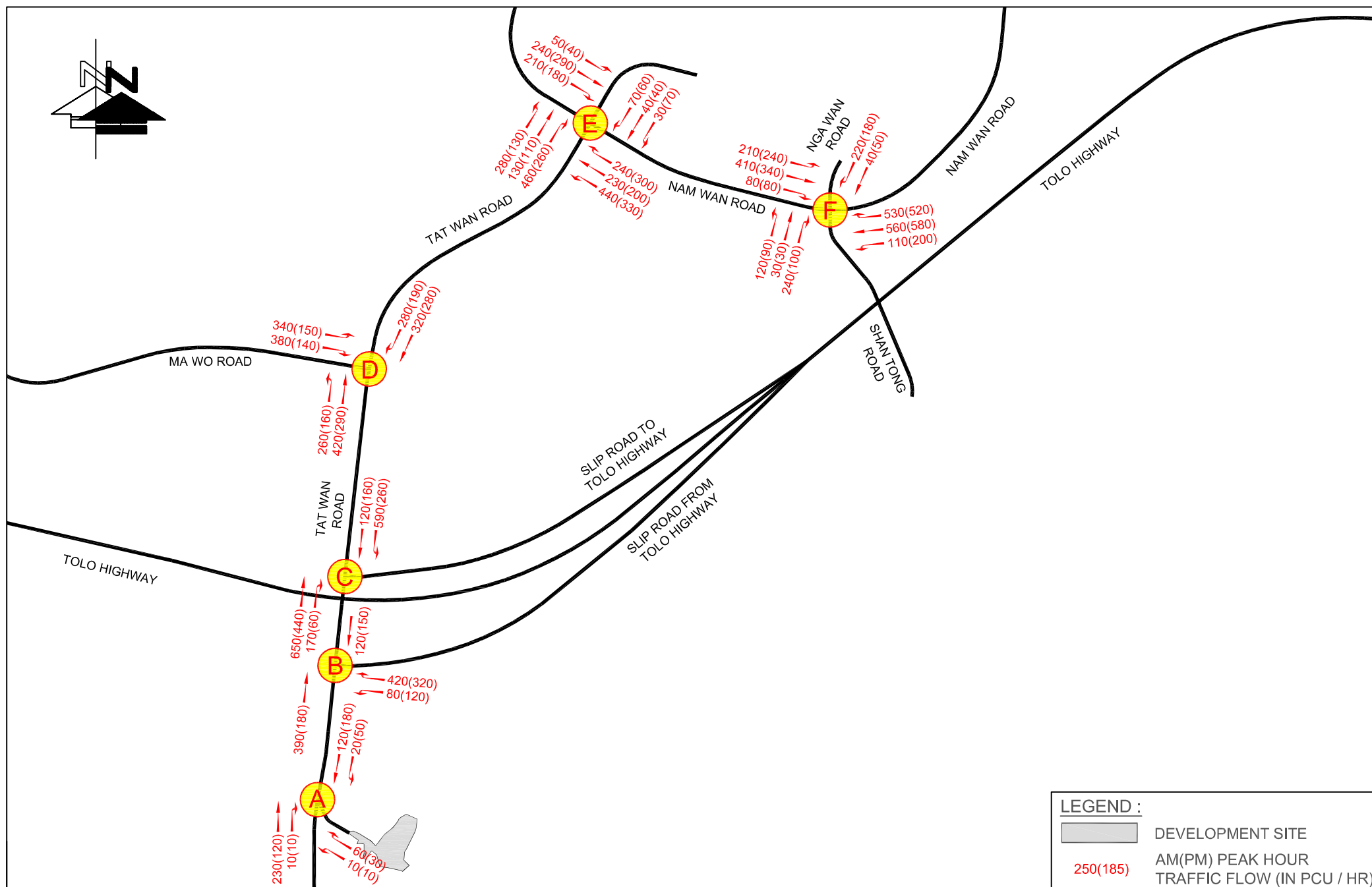


FIGURE NO.: 6.1		PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK		DRAWING TITLE: 2031 REFERENCE TRAFFIC FLOWS (WITHOUT CONSTRUCTION TRAFFIC OF PROPOSED SITE)		
SCALE: N.T.S. @A4	DATE: 31 AUG 2026			

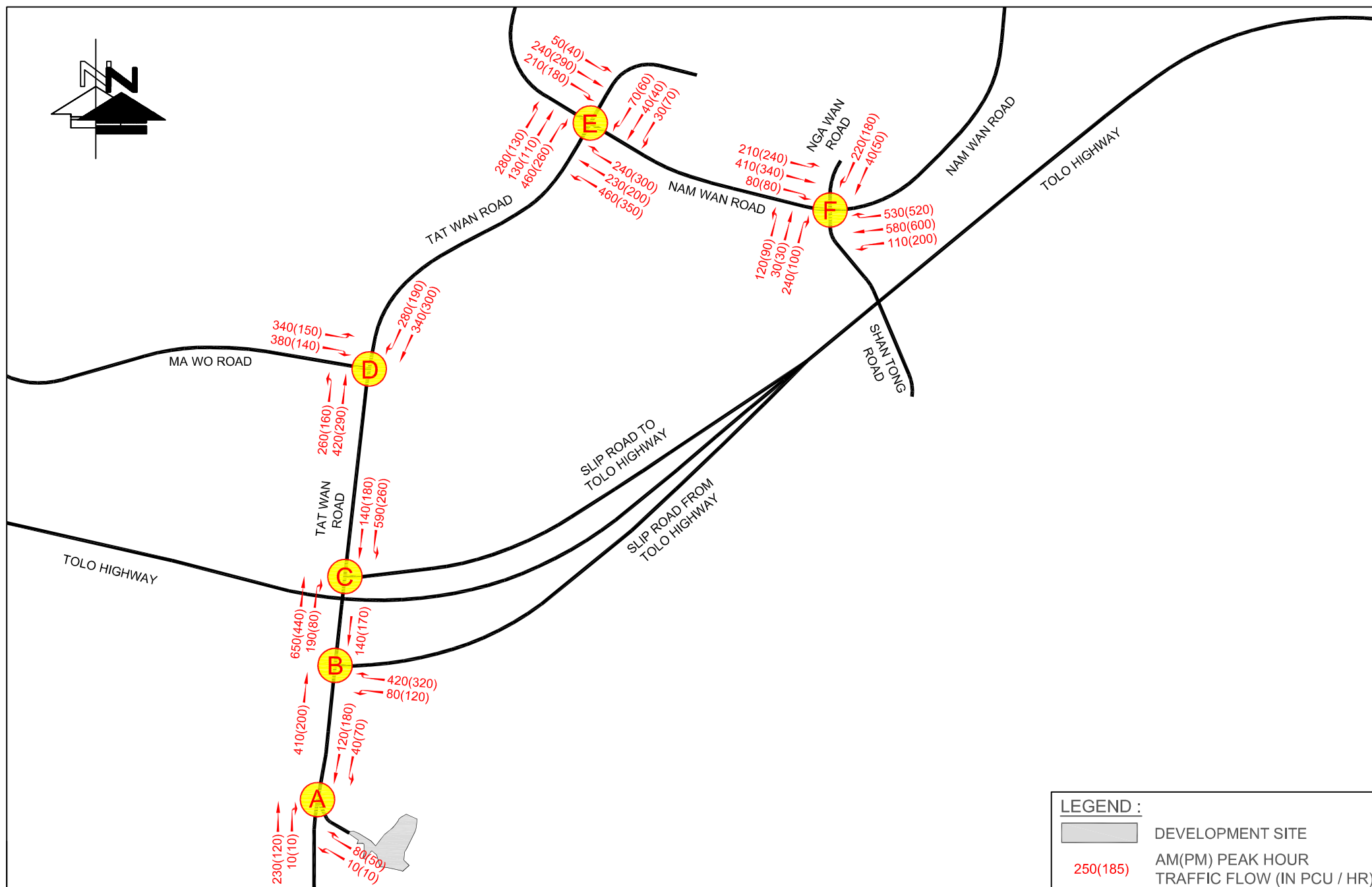


FIGURE NO.:	6.2	PROJECT TITLE:	S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.
PROJECT NO.:	26009HK	DRAWING TITLE:	2031 DESIGN TRAFFIC FLOWS (WITH CONSTRUCTION TRAFFIC OF PROPOSED SITE)
SCALE:	N.T.S. @A4	DATE:	31 AUG 2026

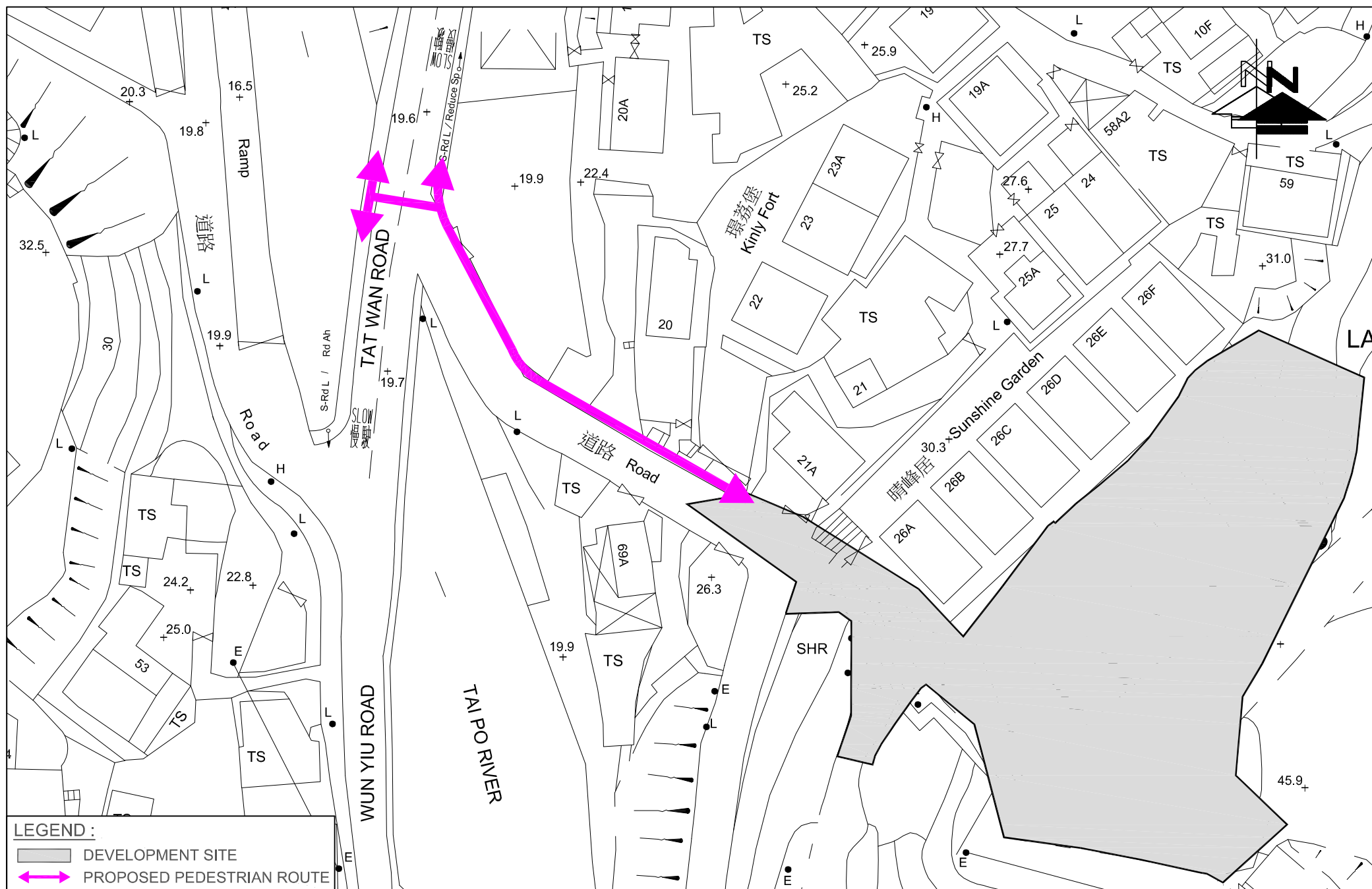
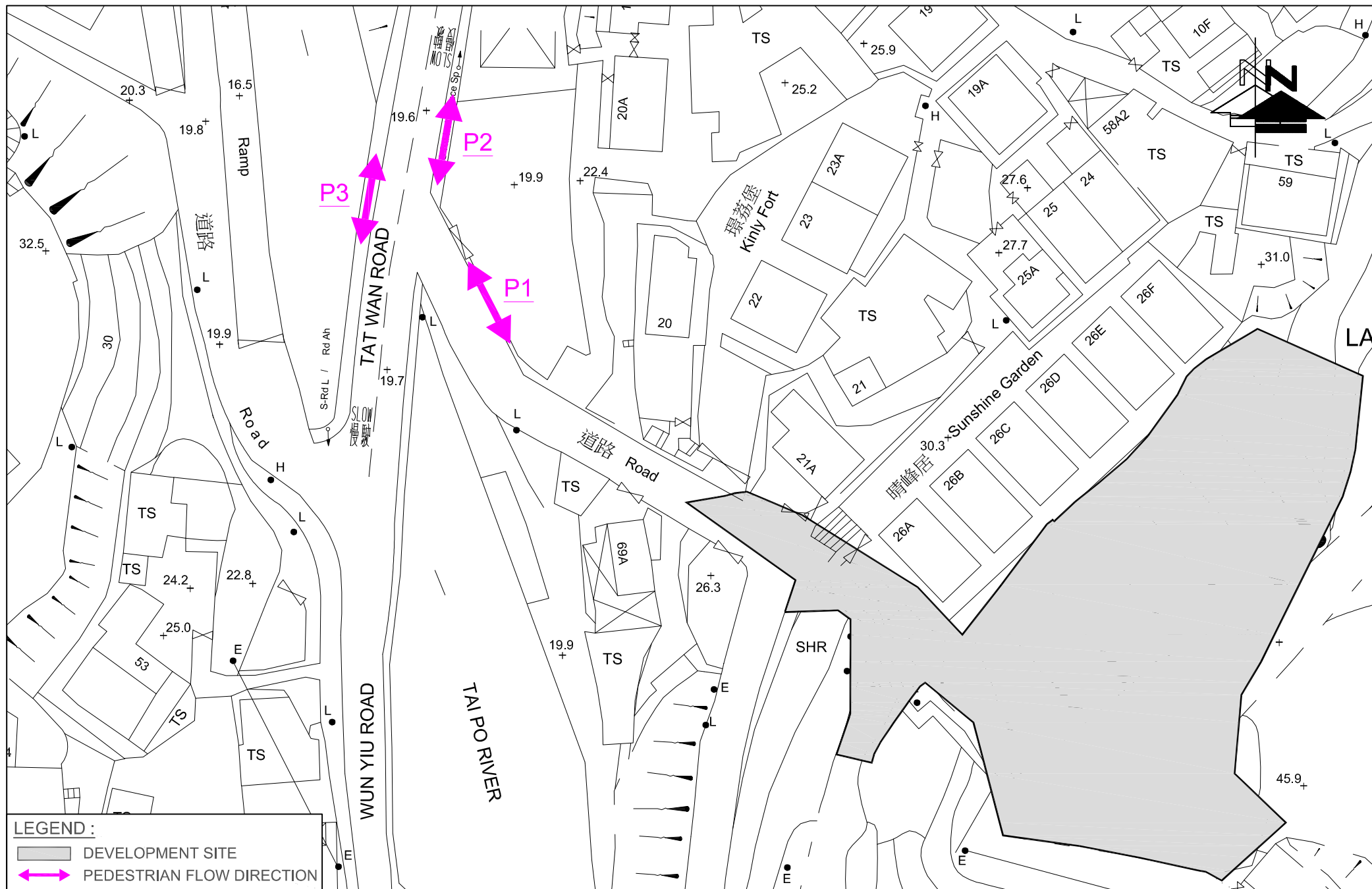
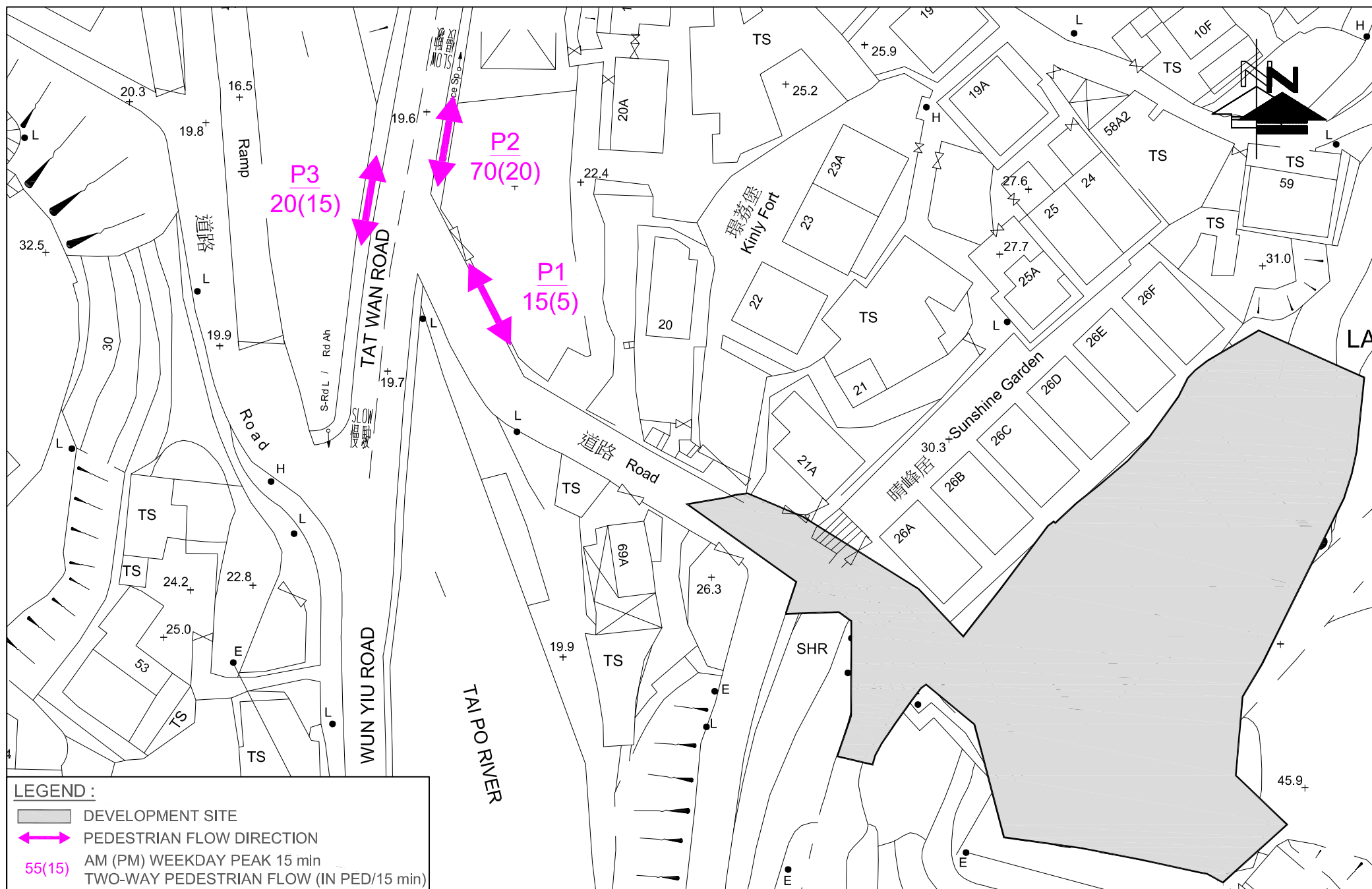


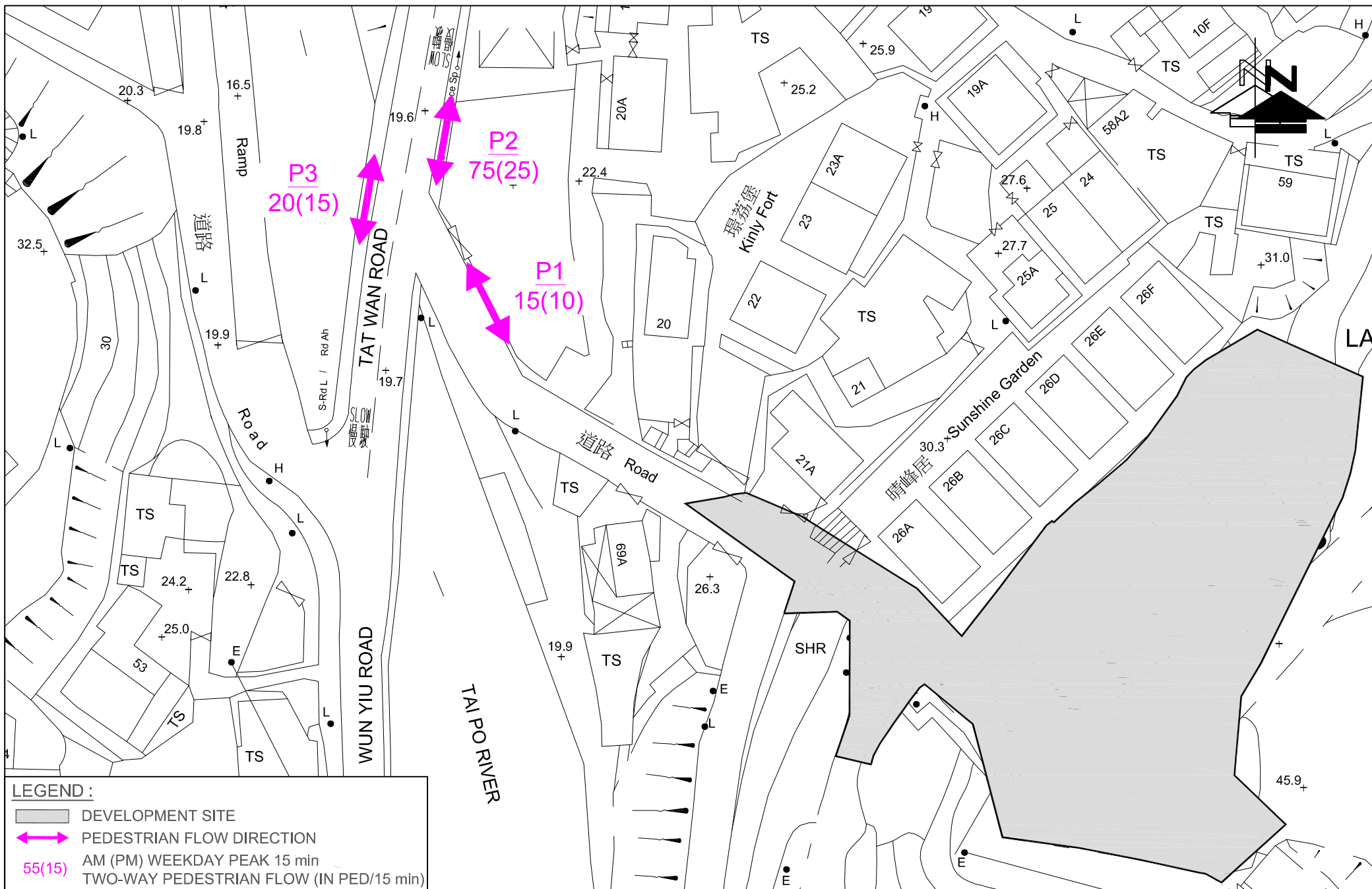
FIGURE NO.: 7.1	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: PEDESTRIAN CONNECTIVITY OF THE PROPOSED DEVELOPMENT	
SCALE: 1 : 570 @A4	DATE: 04 SEP 2026	



LEGEND :
 DEVELOPMENT SITE
 PEDESTRIAN FLOW DIRECTION

FIGURE NO.: 7.2	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: INDEX PLAN OF PEDESTRIAN ASSESSMENT	
SCALE: 1 : 570 @A4	DATE: 07 SEP 2026	





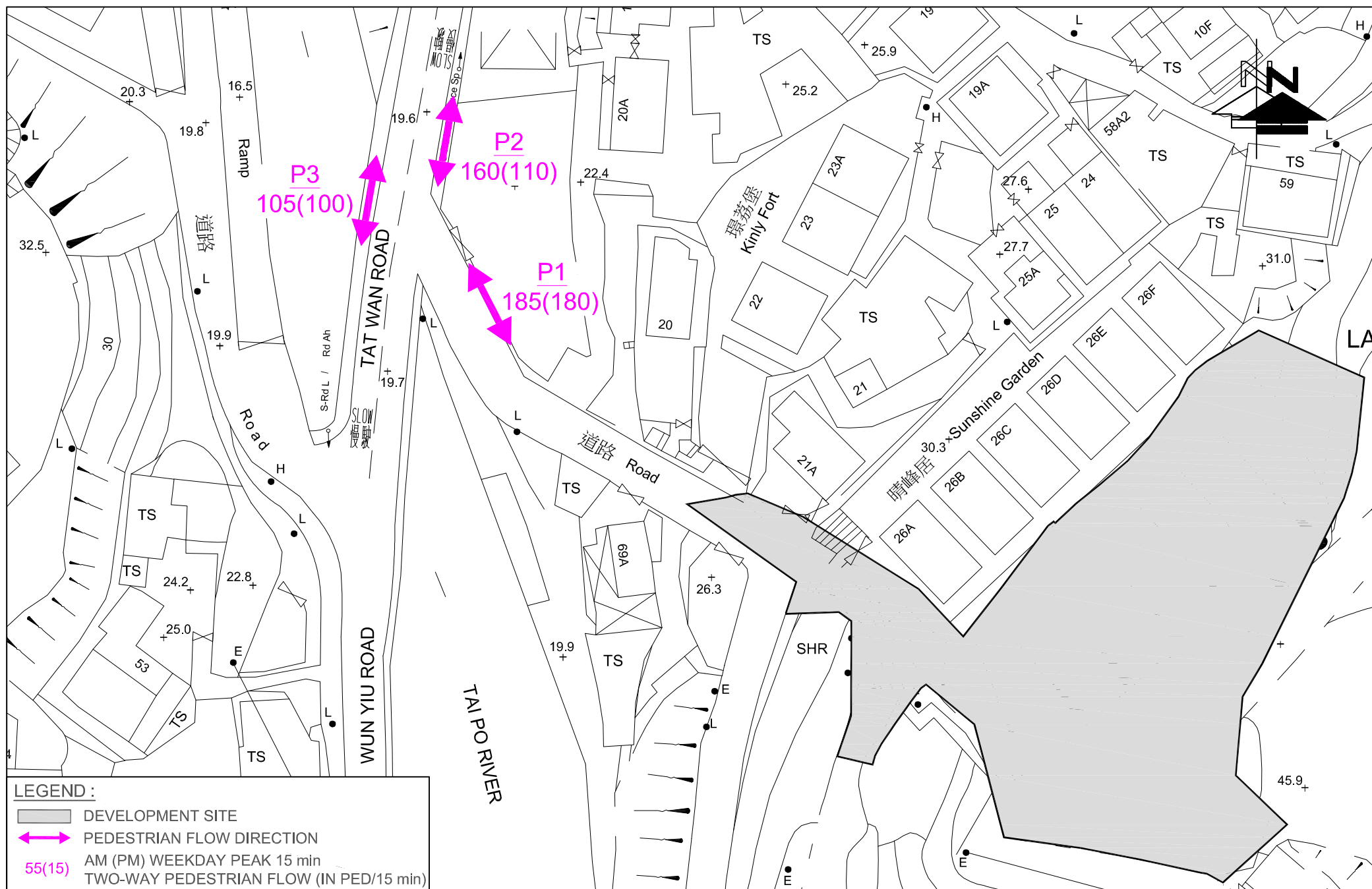
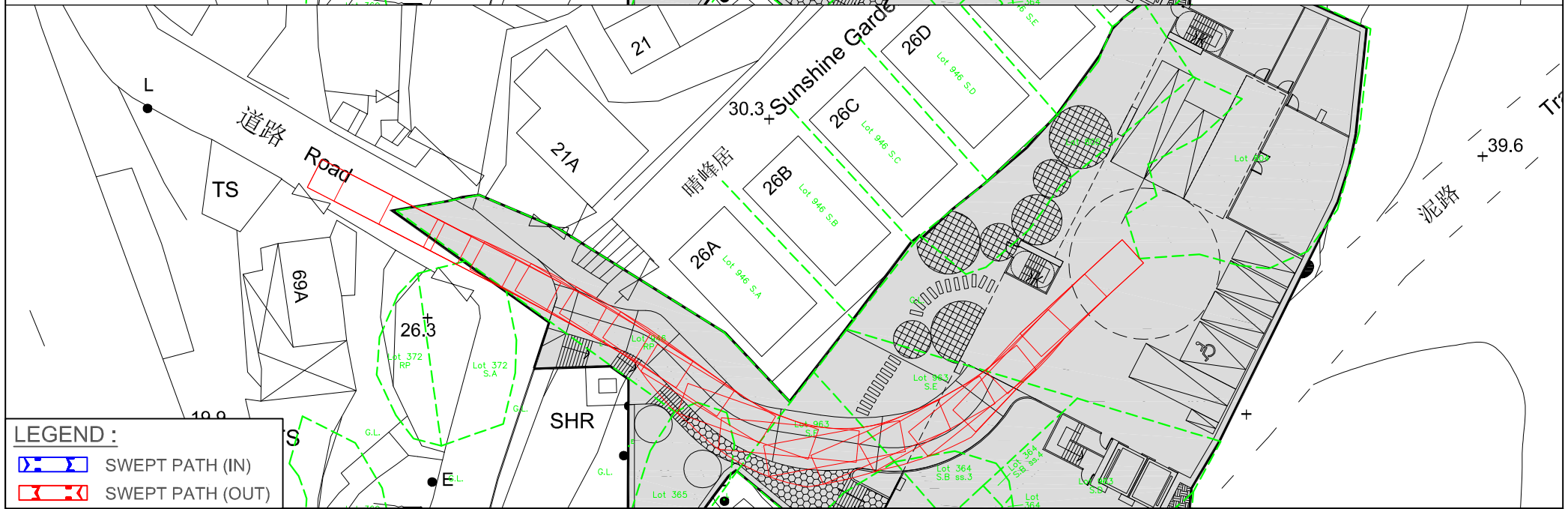
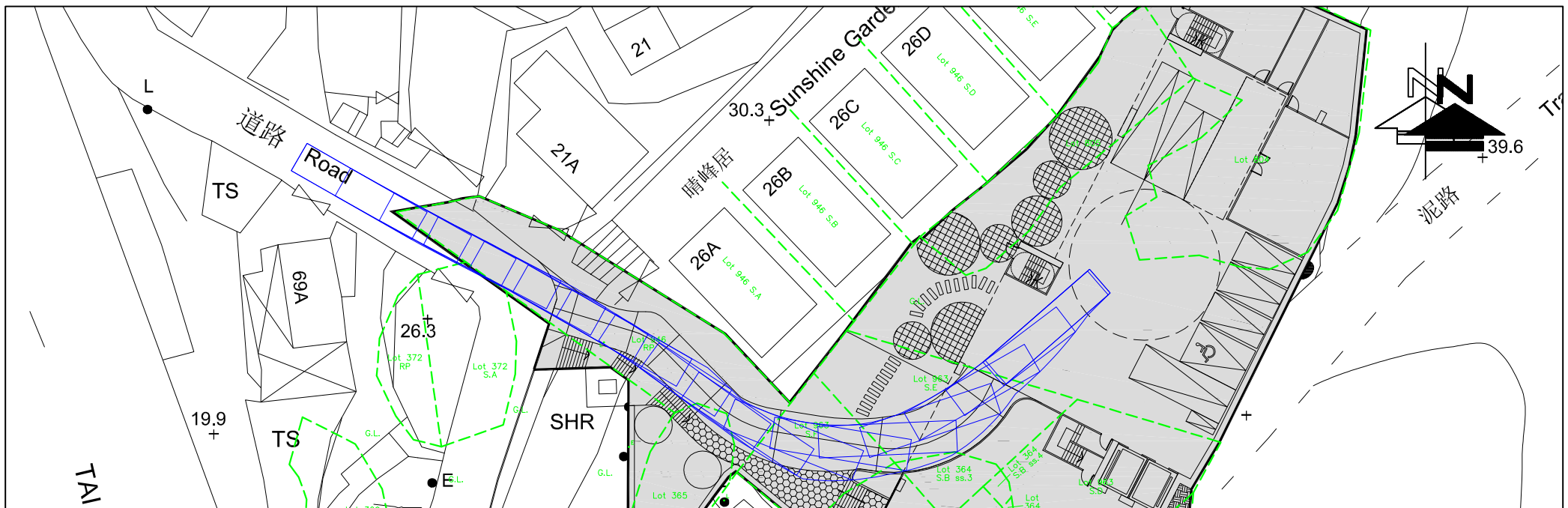


FIGURE NO.: 7.5	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: 2034 DESIGN PEDESTRIAN FLOWS	
SCALE: 1 : 570 @A4	DATE: 07 SEP 2026	



LEGEND :

- ▶ SWEPT PATH (IN)
- ▶ SWEPT PATH (OUT)

FIGURE NO.: **SP-01(REV A)**

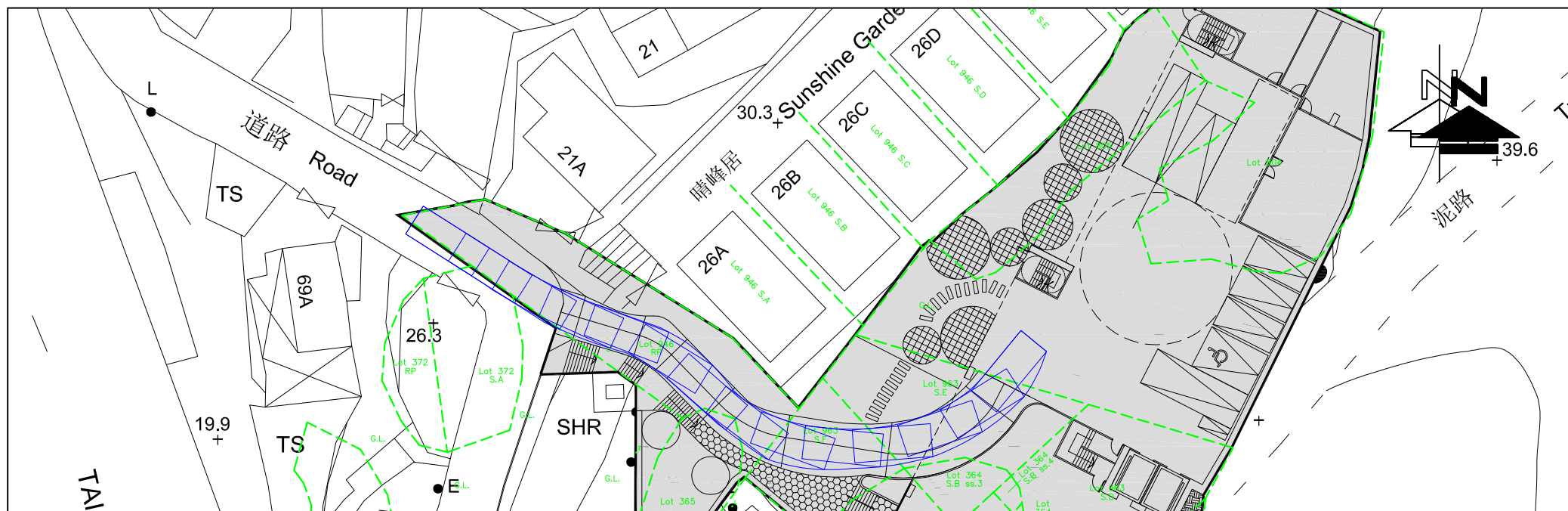
PROJECT NO.: 26009HK

SCALE: 1 : 450 @A4
DATE: 10 SEP 2026

PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31
Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.

DRAWING TITLE:

SWEPT PATH ANALYSIS OF 11m VEHICLE ALONG ACCESS ROAD



LEGEND :

- SWEPT PATH (IN)
- SWEPT PATH (OUT)

FIGURE NO.: SP-02	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF AMBULANCE ALONG ACCESS ROAD	
SCALE: 1 : 450 @A4	DATE: 10 SEP 2026	



FIGURE NO.: SP-04	PROJECT TITLE: S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31 Proposed Change of Use to "Social Welfare Facilities" (RCHE) in "Green Belt" & "Village" Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26009HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF LIGHT BUS BETWEEN TAT WAN ROAD AND PROPOSED SITE	
SCALE: 1 : 850 @A4	DATE: 10 SEP 2026	



APPENDIX A

Junction Calculation Sheets

Priority Junction Calculation

Junction : <u>Tat Wan Road/ Access Road (A)</u>		Job No.: <u>26009HK</u>	
Scenario : <u>2026 Baseline Traffic Flows</u>			

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

$Y = 1 - 0.0345W$
 $q-AB$, etc = the design flow of movement AB, etc
 W = major road width
 $W-CR$ = central reserve width
 $w-BA$, etc = lane width to vehicle
 $v-rBA$, etc = visibility to the right for waiting vehicles in stream BA, etc
 $v-IBA$ = visibility to the left for waiting vehicles in stream BA, etc

Geometry :		Input			Calculated			
	W	7	V-rBA	50	w-BA	2.5	D	0.786
	W-CR	0	V-IBA	50	w-BC	2.5	E	0.836
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		1	V-rBC	50	w-CB	2.1	F	0.800
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	50			Y	0.759

Analysis :	Traffic Flow pcu/hr		Capacity pcu/hr		
	AM	PM	AM	PM	
q-CA	220	120	Q-BA	434	433
q-CB	10	10	Q-BC	595	580
q-AB	20	40	Q-CB	568	550
q-AC	110	170	Q-CA	1768	1767
q-BA	60	30	Q-BAC	451	462
q-BC	10	10			
f	0.143	0.250			

(If C-B blocked C-A)
(If Minor Road Share LT&RT)

Results :	Ratio of Flow-to-Capacity	
	AM	PM
B-A	N/A	N/A
B-C	N/A	N/A
C-B	0.02	0.02
C-A	0.12	0.07
B-AC	0.16	0.09

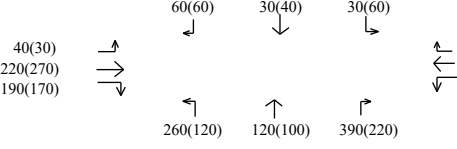
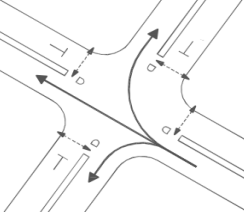
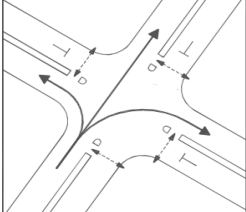
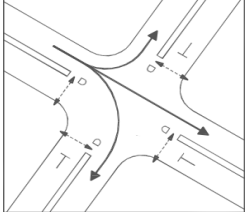
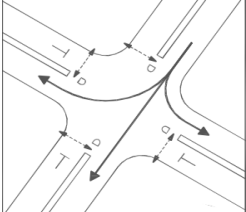
Critical DFC	0.16	0.09
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TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.										
Junction: Tat Wan Road/ Slip Road From Tolo Highway (B)																						
Description: 2026 Baseline Traffic Flows																						
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak				
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Tat Wan Road	SB	↓	A	1	3.5	0	0	1	0%	0%	1965	1965	0	0	53	0.027		68	0.034			
	SB	↓	A	1	3.5	0	0	0	0%	0%	2105	2105	4070	4070	57	0.027		72	0.034			
Slip Road From Tolo Highway	WB	↗	B	2	4.0	0	20	0	100%	100%	2005	2005	2005	2005	340	0.170	0.170	250	0.125	0.125		
	WB	↘	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	80	0.043		110	0.059			
Tat Wan Road	NB	↑	C	1	3.5	0	0	1	0%	0%	1965	1965	4070	4070	179	0.091	0.091	82	0.042	0.042		
	NB	↑	D	1	3.5	0	0	0	0%	0%	2105	2105	0	0	191	0.091		88	0.042			
*Pedestrian Crossing	↔	P1	1						Min. Crossing Time = 5GM + 10FGM = 15s													
	⬇	P2	1,3						Min. Crossing Time = 5GM + 6FGM = 11s													
Notes:								Traffic Flow (pcu / hr)								[AM (PM)]		AM Check Phase		PM Check Phase		
								110(140) ↓ ↑ 370(170)								340(250) 80(110)		E _y 0.260 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 110%		E _y 0.166 L (sec) 34 C (sec) 79 y pract. 0.513 R.C. (%) 208%		
Stage / Phase Diagrams																						
1					2					3												
I/G = 6s					I/G = 5s					I/G = 23s+2s												

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.												
Junction: Tat Wan Road/ Slip Road To Tolo Highway (C)																								
Description: 2026 Baseline Traffic Flows																								
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak						
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y				
Tat Wan Rd	SB	↓	A	3	3.5	0	0	0	0%	0%	2105	2105	2105	2105	110	0.052		150	0.071					
	SB	↘	A	3	3.6	30	0	1	100%	100%	1880	1880	1880	1880	440	0.234	0.234	190	0.101	0.101				
Tat Wan Rd	NB	↗	C	1	3.8	0	33	0	100%	100%	2040	2040	2040	2040	150	0.074	0.074	60	0.029	0.029				
	NB	↑	D	1,2,3	3.3	0	0	1	0%	0%	1945	1945	1945	1945	560	0.288		360	0.185					
*Pedestrian Crossing		↕	P1	2	Min. Crossing Time = 5GM + 11FGM = 16s																			
Notes:								Traffic Flow (pcu / hr)					[AM (PM)]		AM Check Phase		PM Check Phase							
								560(360) 110(150) 440(190) ↑ ↓ ↘ 150(60)							εy 0.308 L (sec) 35 C (sec) 79 y pract. 0.501 R.C. (%) 63%		εy 0.130 L (sec) 35 C (sec) 85 y pract. 0.529 R.C. (%) 306%							
Stage / Phase Diagrams																								
1						2						3												
I/G = 8s						I/G = 21s + 2s						I/G = 6s												

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.											
Junction: Ma Wo Road/ Tat Wan Road (D)																							
Description: 2026 Baseline Traffic Flows																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak					
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
Tat Wan Road	SB	↓	C	3	3.5	0	0	0	0%	0%	2105	2105	4070	4070	155	0.074	0.106	134	0.064	0.065			
	SB	↘	C	3	3.5	0	0	1	0%	0%	1965	1965	0	0	145	0.074		126	0.064				
	SB	↙	C	3	3.5	0	25	0	100%	100%	1985	1985	1985	1985	210	0.106		130	0.065				
Ma Wo Road	EB	↗	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	280	0.149	0.149	130	0.069	0.069			
	EB	↘	B	2	3.5	0	30	0	100%	100%	2005	2005	2005	2005	240	0.120		80	0.040				
Tat Wan Road	NB	↖	A	1	3.3	15	0	1	70%	62%	1815	1830	3900	3915	270	0.149	0.149	178	0.097	0.097			
	NB	↑	A	1	3.3	0	0	0	0%	0%	2085	2085	0	0	310	0.149		202	0.097				
*Pedestrian Crossing		↔	Dp	4	Min. Crossing Time = 5GM + 12FGM = 17s																		
		↔	Ep	4	Min. Crossing Time = 6GM + 8FGM = 14s																		
		↔	Fp	4	Min. Crossing Time = 5GM + 8FGM = 13s																		
Notes:						Traffic Flow (pcu / hr) 210(130) 300(260) 280(130) 240(80) 190(110) 390(270) [AM (PM)] AM Check Phase PM Check Phase Ey 0.404 0.232 L (sec) 21 21 C (sec) 112 102 y pract. 0.731 0.715 R.C. (%) 81% 208%																	
Stage / Phase Diagrams																							
1						2						3						4					
I/G = 7s						I/G = 5s						I/G = 5s						I/G = 13+2s (Demand Dependent)					

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.											
Junction: Nam Wan Road / Tat Wan Road (E)																							
Description: 2026 Baseline Traffic Flows																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak					
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
Nam Wan Road	WB		A	1	3.5	0	25	0	100%	100%	1985	1985	0	0	220	0.111		280	0.141				
	WB		A	1	3.5	0	0	0	0%	0%	2105	2105	4090	4090	220	0.105		190	0.090				
	WB		A	1	3.5	20	0	1	100%	100%	1830	1830	1830	1830	370	0.202	0.202	280	0.153	0.153			
Name Wan Road	EB		C	3	3.3	15	0	1	18%	13%	1910	1920	3905	3930	220	0.115	0.115	229	0.120	0.120			
	EB		C	3	3.5	0	23	0	83%	71%	1995	2010	0	0	230	0.115		241	0.120				
Tat Wan Road	NB		B	2	3.5	20	0	1	68%	55%	1870	1890	1870	1890	380	0.203		220	0.116	0.116			
	NB		B	2	3.5	0	20	0	100%	100%	1960	1960	1960	1960	390	0.199	0.199	220	0.112				
Tat Wan Road	SB		D	4	3.5	20	0	1	50%	60%	1895	1880	1895	1880	60	0.032	0.032	100	0.053	0.053			
	SB		D	4	3.5	0	30	0	100%	100%	2005	2005	2005	2005	60	0.030		60	0.030				
*Pedestrian Crossing		Ep	1,2,4	Min. Crossing Time = 5GM + 7FGM = 12s																			
		Fp	3	Min. Crossing Time = 5GM + 7FGM = 12s																			
		Gp	1,3,4	Min. Crossing Time = 5GM + 7FGM = 12s																			
		Hp	2	Min. Crossing Time = 5GM + 6FGM = 11s																			
		Ip	2,3,4	Min. Crossing Time = 5GM + 10FGM = 15s																			
		Jp	1	Min. Crossing Time = 5GM + 6FGM = 11s																			
		Kp	1,2,3	Min. Crossing Time = 5GM + 7FGM = 12s																			
		Lp	4	Min. Crossing Time = 5GM + 5FGM = 10s																			
Notes:								Traffic Flow (pcu / hr)								[AM (PM)]		AM Check Phase		PM Check Phase			
																		Ey 0.548 L (sec) 22 C (sec) 135 y pract. 0.753 R.C. (%) 37%		Ey 0.442 L (sec) 22 C (sec) 135 y pract. 0.753 R.C. (%) 70%			
Stage / Phase Diagrams																							
																							
I/G = 6s				I/G = 6s				I/G = 8s				I/G = 6s											

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.							
Junction: Nam Wan Road/ Nga Wan Road/Shan Tong Road (F)																											
Description: 2026 Baseline Traffic Flows																											
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Nam Wan Road	EB	↖	A	1,2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	200	0.107		230	0.123								
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	4130	4130	170	0.082	0.082	150	0.073	0.073							
	EB	↗	B	2	3.1	15	0	0	0%	0%	2065	2065	0	0	170	0.082		150	0.073								
	EB	↘	B	2	5.2	0	15	0	100%	100%	2070	2070	2070	2070	70	0.034		70	0.034								
Shan Tong Road	NB	↕	D	4	3.0	30	25	1	31% / 61%	40% / 45%	1820	1830	1820	1830	360	0.198	0.198	200	0.109	0.109							
Nam Wan Road	WB	↖	C	3	3.4	0	30	0	100%	100%	1995	1995	0	0	364	0.183	0.183	392	0.197	0.197							
	WB	→	C	3	3.4	0	35	0	36%	22%	2065	2075	0	0	377	0.182		408	0.197								
	WB	↗	C	3	3.4	20	0	1	32%	51%	1910	1880	5970	5950	349	0.183		370	0.197								
Nga Wan Road	SB	↖	E	1	4.5	0	18	0	100%	100%	2035	2035	0	0	118	0.058	0.058	103	0.050	0.050							
	SB	↘	E	1	4.5	0	25	0	67%	63%	2120	2125	4155	4160	122	0.058		107	0.050								
*Pedestrian Crossing	↔	Fp	1,2,3						Min. Crossing Time = 5GM + 6FGM = 11s																		
	↔	Gp	4						Min. Crossing Time = 5GM + 6FGM = 11s																		
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase		PM Check Phase			
						200(230) 340(300) 70(70) ↖ → ↘														200(170) 40(40) ↖ ↓		500(480) 480(500) 110(190) ↖ → ↘		εy 0.521 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 49%		εy 0.429 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 80%	
Stage / Phase Diagrams																											
1					2					3					4												
I/G = 5s					I/G = 6s					I/G = 7s					I/G = 5s												

Priority Junction Calculation

Junction :	Tat Wan Road/ Access Road (A)	Job No.:	26009HK
Scenario :	2034 Reference Traffic Flows		

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
	W = 7	D = 0.786
	W-CR = 0	E = 0.836
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F = 0.800
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y = 0.759

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM	
	q-CA	240	130	Q-BA	429	426	(If C-B blocked C-A) (If Minor Road Share LT&RT)
	q-CB	10	10	Q-BC	593	574	
	q-AB	20	50	Q-CB	565	543	
	q-AC	120	190	Q-CA	1768	1767	
	q-BA	60	30	Q-BAC	447	456	
	q-BC	10	10				
	f	0.143	0.250				

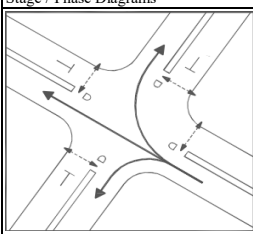
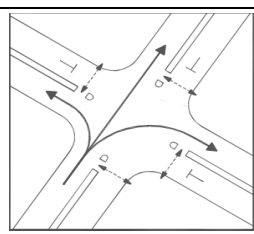
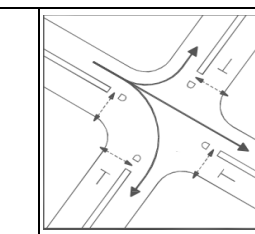
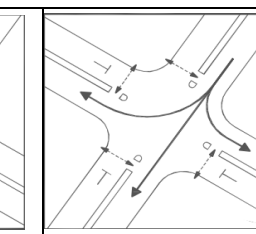
Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.02	0.02
	C-A	0.14	0.07
	B-AC	0.16	0.09
	Critical DFC	0.16	0.09

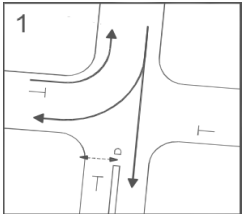
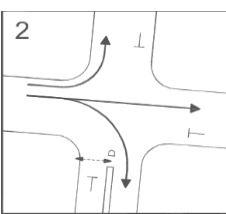
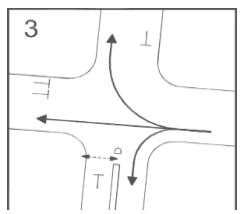
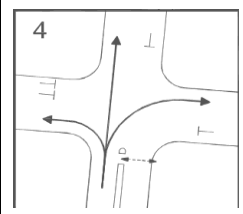
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TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.									
Junction: Tat Wan Road/ Slip Road From Tolo Highway (B)																													
Description: 2034 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Tat Wan Road	SB	↓	A	1	3.5	0	0	1	0%	0%	1965	1965	0	0	58	0.029		72	0.037										
	SB	↓	A	1	3.5	0	0	0	0%	0%	2105	2105	4070	4070	62	0.029		78	0.037										
Slip Road From Tolo Highway	WB	↗	B	2	4.0	0	20	0	100%	100%	2005	2005	2005	2005	470	0.234	0.234	360	0.180										
	WB	↘	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	80	0.043		130	0.069										
Tat Wan Road	NB	↑	C	1	3.5	0	0	1	0%	0%	1965	1965	4070	4070	198	0.101	0.101	92	0.047										
	NB	↑	D	1	3.5	0	0	0	0%	0%	2105	2105	0	0	212	0.101		98	0.047										
*Pedestrian Crossing	↔		P1	1	Min. Crossing Time = 5GM + 10FGM = 15s																								
	⊥		P2	1,3	Min. Crossing Time = 5GM + 6FGM = 11s																								
Notes:								Traffic Flow (pcu / hr)												[AM (PM)]		AM Check Phase		PM Check Phase					
								120(150) ↓ 410(190) ↑												470(360) 80(130)		εy 0.335 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 64%		εy 0.226 L (sec) 34 C (sec) 79 y pract. 0.513 R.C. (%) 127%					
Stage / Phase Diagrams																													
1					2					3																			
I/G = 6s					I/G = 5s					I/G = 23s+2s																			

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.										
Junction: Tat Wan Road/ Slip Road To Tolo Highway (C)																						
Description: 2034 Reference Traffic Flows																						
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak				
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Tat Wan Rd	SB	↓	A	3	3.5	0	0	0	0%	0%	2105	2105	2105	2105	130	0.062		160	0.076			
	SB	↘	A	3	3.6	30	0	1	100%	100%	1880	1880	1880	1880	670	0.356	0.356	300	0.160	0.160		
Tat Wan Rd	NB	↗	C	1	3.8	0	33	0	100%	100%	2040	2040	2040	2040	170	0.083	0.083	70	0.034	0.034		
	NB	↑	D	1,2,3	3.3	0	0	1	0%	0%	1945	1945	1945	1945	720	0.370		490	0.252			
*Pedestrian Crossing		↕	P1	2	Min. Crossing Time = 5GM + 11FGM = 16s																	
Notes:								Traffic Flow (pcu / hr)								[AM (PM)]		AM Check Phase		PM Check Phase		
								130(160) 670(300) ↑ ↗ ↓ ↘ 720(490) 170(70)										εy 0.440 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 25%		εy 0.194 L (sec) 34 C (sec) 80 y pract. 0.518 R.C. (%) 167%		
Stage / Phase Diagrams																						
1						2						3										
I/G = 8s						I/G = 21s + 2s						I/G = 6s										

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.																	
Junction: Ma Wo Road/ Tat Wan Road (D)																													
Description: 2034 Reference Traffic Flows (Planned Junction Improvement)																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Tat Wan Road	SB	↓	C	2	3.3	0	0	1	0%	0%	1945	1945	0	0	164	0.084	0.161	140	0.072	0.111									
	SB	↓	C	2	3.3	0	0	0	0%	0%	2085	2085	4030	4030	176	0.084		150	0.072										
	SB	↙	C	2	3.5	0	25	0	100%	100%	1985	1985	1985	1985	320	0.161		220	0.111										
Ma Wo Road	EB	↗	B	2,3	3.5	15	0	1	100%	100%	1785	1785	1785	1785	390	0.218		180	0.101										
	EB	↘	D	3	3.5	0	30	0	100%	100%	2005	2005	2005	2005	450	0.224	0.224	180	0.090	0.090									
Tat Wan Road	NB	↖	A	1	3.3	15	0	1	90%	89%	1785	1785	3870	3870	346	0.194	0.194	235	0.132	0.132									
	NB	↑	A	1	3.3	0	0	0	0%	0%	2085	2085	0	0	404	0.194		275	0.132										
*Pedestrian Crossing		↔	Ep	4						Min. Crossing Time = 6GM + 13FGM = 17s																			
		↔	Fp	4						Min. Crossing Time = 6GM + 8FGM = 14s																			
		↔	Gp	4						Min. Crossing Time = 5GM + 8FGM = 13s																			
Notes:						Traffic Flow (pcu / hr)										[AM (PM)]		AM Check Phase			PM Check Phase								
						390(180) ↗ 450(180) ↘										320(220) ↙ 340(290) ↓		Ey 0.579 L (sec) 28 C (sec) 112 y pract. 0.675 R.C. (%) 16%			Ey 0.332 L (sec) 28 C (sec) 102 y pract. 0.653 R.C. (%) 96%								
Stage / Phase Diagrams																													
1						2						3						4											
I/G = 6s						I/G = 5s						I/G = 5s						I/G = 13+2s											

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.									
Junction: Nam Wan Road / Tat Wan Road (E)																					
Description: 2034 Reference Traffic Flows (Planned Junction Improvement)																					
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Nam Wan Road	WB		A	1	3.5	0	25	0	100%	100%	1985	1985	0	0	250	0.126	0.256	320	0.161	0.197	
	WB		A	1	3.5	0	0	0	0%	0%	2105	2105	4090	4090	240	0.114		210	0.100		
	WB		A	1	4.0	20	0	1	100%	100%	1875	1875	1875	1875	480	0.256		370	0.197		
Name Wan Road	EB		C	3	3.3	25	0	1	19%	15%	1925	1930	3910	3930	261	0.136	0.136	270	0.140	0.140	
	EB		C	3	3.3	0	25	0	85%	71%	1985	2000	0	0	269	0.136		280	0.140		
Tat Wan Road	NB		B	2	3.5	15	0	1	100%	100%	1785	1785	1785	1785	300	0.168	0.168	140	0.078		
	NB		B	2	3.5	0	22	0	60%	46%	2020	2040	3965	3985	326	0.161		205	0.100	0.100	
	NB		B	2	3.5	0	18	0	100%	100%	1945	1945	0	0	314	0.161		195	0.100		
Tat Wan Road	SB		D	4	3.5	20	0	1	43%	64%	1905	1875	1905	1875	70	0.037	0.037	110	0.059	0.059	
	SB		D	4	3.5	0	30	0	100%	100%	2005	2005	2005	2005	70	0.035		70	0.035		
*Pedestrian Crossing		Ep	1,2,4	Min. Crossing Time = 5GM + 7FGM = 12s																	
		Fp	3	Min. Crossing Time = 5GM + 7FGM = 12s																	
		Gp	1,3,4	Min. Crossing Time = 5GM + 10FGM = 15s																	
		Hp	2	Min. Crossing Time = 5GM + 6FGM = 11s																	
		Ip	2,3,4	Min. Crossing Time = 5GM + 10FGM = 15s																	
		Jp	1	Min. Crossing Time = 5GM + 6FGM = 11s																	
		Kp	1,2,3	Min. Crossing Time = 5GM + 7FGM = 12s																	
		Lp	4	Min. Crossing Time = 5GM + 5FGM = 10s																	
Notes:								Traffic Flow (pcu / hr)						[AM (PM)]		AM Check Phase		PM Check Phase			
								50(40) 250(310) 230(200)  70(70) 40(40) 30(70)    300(140) 130(110) 510(290)   						250(320) 240(210) 480(370)		E _y 0.596 L (sec) 22 C (sec) 128 y pract. 0.745 R.C. (%) 25%		E _y 0.496 L (sec) 22 C (sec) 110 y pract. 0.720 R.C. (%) 45%			
Stage / Phase Diagrams																					
																					
I/G = 6s					I/G = 6s					I/G = 8s					I/G = 6s						

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.									
Junction: Nam Wan Road/ Nga Wan Road/Shan Tong Road (F)																													
Description: 2034 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Nam Wan Road	EB	↗	A	1,2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	220	0.117		250	0.133										
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	4130	4130	230	0.111	0.111	190	0.092	0.092									
	EB	↘	B	2	3.1	15	0	0	0%	0%	2065	2065	0	0	230	0.111		190	0.092										
	EB	↖	B	2	5.2	0	15	0	100%	100%	2070	2070	2070	2070	80	0.039		80	0.039										
Shan Tong Road	NB	↕	D	4	3.0	30	25	1	31% / 60%	39% / 48%	1820	1825	1820	1825	420	0.231	0.231	230	0.126	0.126									
Nam Wan Road	WB	↖	C	3	3.4	0	30	0	100%	100%	1995	1995	0	0	431	0.216	0.216	458	0.230	0.230									
	WB	←	C	3	3.4	0	35	0	29%	17%	2070	2080	0	0	447	0.216		478	0.230										
	WB	↗	C	3	3.4	20	0	1	29%	48%	1915	1885	5980	5960	413	0.216		434	0.230										
Nga Wan Road	SB	↖	E	1	4.5	0	18	0	100%	100%	2035	2035	0	0	127	0.063	0.063	117	0.058	0.058									
	SB	↘	E	1	4.5	0	25	0	70%	59%	2115	2130	4150	4165	133	0.063		123	0.058										
*Pedestrian Crossing	↔	Fp	1,2,3						Min. Crossing Time = 5GM + 6FGM = 11s																				
	↔	Gp	4						Min. Crossing Time = 5GM + 6FGM = 11s																				
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase		PM Check Phase					
						220(250) 460(380) 80(80) ↗ → ↘														220(190) 40(50) ↙ ↓		560(540) 610(620) 120(210) ↖ ← ↗		εy 0.621 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 25%		εy 0.505 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 53%			
Stage / Phase Diagrams																													
																													
I/G = 5s					I/G = 6s					I/G = 7s					I/G = 5s														

560(540)
610(620)
120(210)

↖
←
↘

Priority Junction Calculation

Junction :	Tat Wan Road/ Access Road (A)	Job No.:	26009HK
Scenario :	2034 Design Traffic Flows		

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

$Y = 1 - 0.0345W$
 $q-AB, etc =$ the design flow of movement AB, etc
 $W =$ major road width
 $W-CR =$ central reserve width
 $w-BA, etc =$ lane width to vehicle
 $v-rBA, etc =$ visibility to the right for waiting vehicles in stream BA, etc
 $v-IBA =$ visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
	W 7	D 0.786
	W-CR 0	E 0.836
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 0.800
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.759

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	240	130	Q-BA	426	424	
	q-CB	10	10	Q-BC	590	571	
	q-AB	50	80	Q-CB	559	537	
	q-AC	120	190	Q-CA	1768	1766	
	q-BA	100	50	Q-BAC	437	443	
	q-BC	10	10				(If C-B blocked C-A)
	f	0.091	0.167				(If Minor Road Share LT&RT)

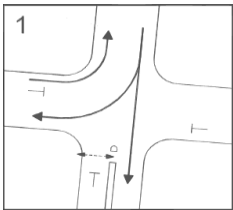
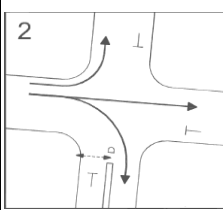
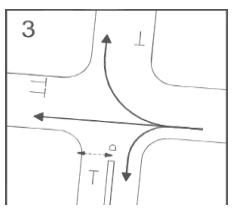
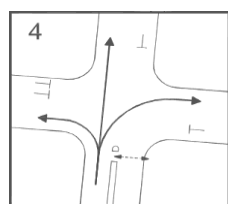
Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.02	0.02
	C-A	0.14	0.07
	B-AC	0.25	0.14
	Critical DFC	0.25	0.14

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK				CTA Consultants Ltd.							
Junction: Tat Wan Road/ Slip Road From Tolo Highway (B)																					
Description: 2034 Design Traffic Flows																					
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Tat Wan Road	SB	↓	A	1	3.5	0	0	1	0%	0%	1965	1965	0	0	63	0.032		77	0.039		
	SB	↓	A	1	3.5	0	0	0	0%	0%	2105	2105	4070	4070	67	0.032		83	0.039		
Slip Road From Tolo Highway	WB	↗	B	2	4.0	0	20	0	100%	100%	2005	2005	2005	2005	470	0.234	0.234	360	0.180	0.180	
	WB	↘	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	100	0.053		150	0.080		
Tat Wan Road	NB	↑	C	1	3.5	0	0	1	0%	0%	1965	1965	4070	4070	217	0.111	0.111	101	0.052	0.052	
	NB	↑	D	1	3.5	0	0	0	0%	0%	2105	2105	0	0	233	0.111		109	0.052		
*Pedestrian Crossing	↔	P1	1						Min. Crossing Time = 5GM + 10FGM = 15s												
	⊥	P2	1,3						Min. Crossing Time = 5GM + 6FGM = 11s												
Notes:								Traffic Flow (pcu / hr)								[AM (PM)]		AM Check Phase		PM Check Phase	
								130(160) ↓ ↑ 450(210)								470(360) 100(150)		E _y 0.345 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 59%		E _y 0.231 L (sec) 34 C (sec) 79 y pract. 0.513 R.C. (%) 122%	
Stage / Phase Diagrams																					
1					2					3											
I/G = 6s					I/G = 5s					I/G = 23s+2s											

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.									
Junction: Tat Wan Road/ Slip Road To Tolo Highway (C)																					
Description: 2034 Design Traffic Flows																					
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Tat Wan Rd	SB	↓	A	3	3.5	0	0	0	0%	0%	2105	2105	2105	2105	140	0.067		170	0.081		
	SB	↘	A	3	3.6	30	0	1	100%	100%	1880	1880	1880	1880	670	0.356	0.356	300	0.160	0.160	
Tat Wan Rd	NB	↗	C	1	3.8	0	33	0	100%	100%	2040	2040	2040	2040	190	0.093	0.093	80	0.039	0.039	
	NB	↑	D	1,2,3	3.3	0	0	1	0%	0%	1945	1945	1945	1945	730	0.375		500	0.257		
*Pedestrian Crossing		↕	P1	2	Min. Crossing Time = 5GM + 11FGM = 16s																
Notes:								Traffic Flow (pcu / hr) 140(170) 670(300) 730(500) 190(80) ↑ ↗ [AM (PM)] AM Check Phase Ey 0.450 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 22% PM Check Phase Ey 0.199 L (sec) 34 C (sec) 80 y pract. 0.518 R.C. (%) 160%													
Stage / Phase Diagrams																					
1 I/G = 8s					2 I/G = 21s + 2s					3 I/G = 6s											

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.												
Junction: Ma Wo Road/ Tat Wan Road (D)																								
Description: 2034 Design Traffic Flows (Planned Junction Improvement)																								
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak						
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y				
Tat Wan Road	SB	↓	C	2	3.3	0	0	1	0%	0%	1945	1945	0	0	169	0.087	0.161	145	0.074	0.111				
	SB	↓	C	2	3.3	0	0	0	0%	0%	2085	2085	4030	4030	181	0.087		155	0.074					
	SB	↙	C	2	3.5	0	25	0	100%	100%	1985	1985	1985	1985	320	0.161		220	0.111					
Ma Wo Road	EB	↗	B	2,3	3.5	15	0	1	100%	100%	1785	1785	1785	1785	390	0.218		180	0.101					
	EB	↘	D	3	3.5	0	30	0	100%	100%	2005	2005	2005	2005	450	0.224	0.224	180	0.090	0.090				
Tat Wan Road	NB	↖	A	1	3.3	15	0	1	88%	87%	1785	1790	3870	3875	351	0.197	0.197	240	0.134	0.134				
	NB	↑	A	1	3.3	0	0	0	0%	0%	2085	2085	0	0	409	0.196		280	0.134					
*Pedestrian Crossing ↔ Ep4 ↔ Fp4 ↔ Gp4 Min. Crossing Time = 6GM + 13FGM = 17s Min. Crossing Time = 6GM + 8FGM = 14s Min. Crossing Time = 5GM + 8FGM = 13s																								
Notes:								Traffic Flow (pcu / hr)								[AM (PM)]		AM Check Phase			PM Check Phase			
								390(180)↗ 450(180)↘ 320(220)↙ 310(210)↖ 350(300)↓ 450(310)↑										Ey0.582 L (sec)28 C (sec)112 y pract.0.675 R.C. (%)16%			Ey0.335 L (sec)28 C (sec)102 y pract.0.653 R.C. (%)95%			
Stage / Phase Diagrams																								
1 I/G = 6s					2 I/G = 5s					3 I/G = 5s					4 I/G = 13+2s									

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.									
Junction: Nam Wan Road / Tat Wan Road (E)																													
Description: 2034 Design Traffic Flows (Planned Junction Improvement)																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Nam Wan Road	WB	↔	A	1	3.5	0	25	0	100%	100%	1985	1985	0	0	250	0.126	0.261	320	0.161	0.203									
	WB	↔	A	1	3.5	0	0	0	0%	0%	2105	2105	4090	4090	240	0.114		210	0.100										
	WB	↔	A	1	4.0	20	0	1	100%	100%	1875	1875	1875	1875	490	0.261		380	0.203										
Name Wan Road	EB	↔	C	3	3.3	25	0	1	19%	15%	1925	1930	3910	3930	261	0.136	0.136	270	0.140	0.140									
	EB	↔	C	3	3.3	0	25	0	85%	71%	1985	2000	0	0	269	0.136		280	0.140										
Tat Wan Road	NB	↔	B	2	3.5	15	0	1	100%	100%	1785	1785	1785	1785	300	0.168	0.168	140	0.078										
	NB	↔	B	2	3.5	0	22	0	61%	48%	2020	2040	3965	3985	331	0.164		210	0.103	0.103									
	NB	↔	B	2	3.5	0	18	0	100%	100%	1945	1945	0	0	319	0.164		200	0.103										
Tat Wan Road	SB	↔	D	4	3.5	20	0	1	43%	64%	1905	1875	1905	1875	70	0.037	0.037	110	0.059	0.059									
	SB	↔	D	4	3.5	0	30	0	100%	100%	2005	2005	2005	2005	70	0.035		70	0.035										
*Pedestrian Crossing		↔	Ep	1,2,4	Min. Crossing Time = 5GM + 7FGM = 12s																								
		↔	Fp	3	Min. Crossing Time = 5GM + 7FGM = 12s																								
		↔	Gp	1,3,4	Min. Crossing Time = 5GM + 10FGM = 15s																								
		↔	Hp	2	Min. Crossing Time = 5GM + 6FGM = 11s																								
		↔	Ip	2,3,4	Min. Crossing Time = 5GM + 10FGM = 15s																								
		↔	Jp	1	Min. Crossing Time = 5GM + 6FGM = 11s																								
		↔	Kp	1,2,3	Min. Crossing Time = 5GM + 7FGM = 12s																								
		↔	Lp	4	Min. Crossing Time = 5GM + 5FGM = 10s																								
Notes:								Traffic Flow (pcu / hr)						[AM (PM)]		AM Check Phase			PM Check Phase										
								50(40) 250(310) 230(200)↔↔↔ ↙↘																					

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.															
Junction: Nam Wan Road/ Nga Wan Road/Shan Tong Road (F)																											
Description: 2034 Design Traffic Flows																											
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Nam Wan Road	EB	→	A	1,2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	230	0.123		260	0.139								
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	4130	4130	235	0.114	0.114	190	0.092	0.092							
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	0	0	235	0.114		190	0.092								
	EB	→	B	2	5.2	0	15	0	100%	100%	2070	2070	2070	2070	80	0.039		80	0.039								
Shan Tong Road	NB	↕	D	4	3.0	30	25	1	31% / 60%	39% / 48%	1820	1825	1820	1825	420	0.231	0.231	230	0.126	0.126							
Nam Wan Road	WB	←	C	3	3.4	0	30	0	100%	100%	1995	1995	0	0	434	0.217	0.217	458	0.230	0.230							
	WB	←	C	3	3.4	0	35	0	28%	17%	2070	2080	0	0	450	0.217		478	0.230								
	WB	←	C	3	3.4	20	0	1	29%	48%	1915	1885	5980	5960	416	0.217		434	0.230								
Nga Wan Road	SB	↕	E	1	4.5	0	18	0	100%	100%	2035	2035	0	0	132	0.065	0.065	122	0.060	0.060							
	SB	↕	E	1	4.5	0	25	0	71%	61%	2115	2125	4150	4160	138	0.065		128	0.060								
*Pedestrian Crossing	↔	Fp	1,2,3			Min. Crossing Time = 5GM + 6FGM = 11s																					
	↔	Gp	4			Min. Crossing Time = 5GM + 6FGM = 11s																					
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase			PM Check Phase		
						230(200) 40(50) 230(260) ↖ ↓ 470(380) → ↗ ↖ ↗ 80(80) → ↘ ↙ ↘ ↙ 130(90) 40(30) 250(110)														560(540) 620(620) 120(210)		E _y 0.627 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 23%			E _y 0.508 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 52%		
Stage / Phase Diagrams																											
																											
I/G = 5s					I/G = 6s					I/G = 7s					I/G = 5s												

Priority Junction Calculation

Junction :	Tat Wan Road/ Access Road (A)	Job No.:	26009HK
Scenario :	2031 Construction Reference Traffic Flows		

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input				Calculated			
	W	7	V-rBA	50	w-BA	2.5	D	0.786
	W-CR	0	V-IBA	50	w-BC	2.5	E	0.836
	C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	V-rBC	50	w-CB	2.1	F	0.800
	Minor Road Share LT&RT? (Yes: 1, No: 0)	1	V-rCB	50			Y	0.759

Analysis :	Traffic Flow		Capacity				
	pcu/hr	AM	PM	pcu/hr		AM	PM
	q-CA	230	120	Q-BA		430	430
	q-CB	10	10	Q-BC		593	577
	q-AB	20	50	Q-CB		565	546
	q-AC	120	180	Q-CA		1768	1767
	q-BA	60	30	Q-BAC		448	459
q-BC	10	10					
f	0.143	0.250					

(If C-B blocked C-A)
(If Minor Road Share LT&RT)

Results :	Ratio of Flow-to-Capacity			
			AM	PM
	B-A	N/A	N/A	N/A
	B-C	N/A	N/A	N/A
	C-B	0.02	0.02	
	C-A	0.13	0.07	
B-AC	0.16	0.09		
Critical DFC		0.16	0.09	

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TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.								
Junction: Tat Wan Road/ Slip Road From Tolo Highway (B)																				
Description: 2031 Construction Reference Traffic Flows																				
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tat Wan Road	SB	↓	A	1	3.5	0	0	1	0%	0%	1965	1965	0	0	58	0.029		72	0.037	
	SB	↓	A	1	3.5	0	0	0	0%	0%	2105	2105	4070	4070	62	0.029		78	0.037	
Slip Road From Tolo Highway	WB	↗	B	2	4.0	0	20	0	100%	100%	2005	2005	2005	2005	420	0.209	0.209	320	0.160	0.160
	WB	↘	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	80	0.043		120	0.064	
Tat Wan Road	NB	↑	C	1	3.5	0	0	1	0%	0%	1965	1965	4070	4070	188	0.096	0.096	87	0.044	0.044
	NB	↑	D	1	3.5	0	0	0	0%	0%	2105	2105	0	0	202	0.096		93	0.044	
*Pedestrian Crossing			P1	1	Min. Crossing Time = 5GM + 10FGM = 15s															
			P2	1,3	Min. Crossing Time = 5GM + 6FGM = 11s															
Notes:					Traffic Flow (pcu / hr) 120(150) ↓ 390(180) ↑ [AM (PM)] 420(320) 80(120) AM Check Phase εy 0.305 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 80% PM Check Phase εy 0.204 L (sec) 34 C (sec) 79 y pract. 0.513 R.C. (%) 152%															
Stage / Phase Diagrams																				
1 2 3 I/G = 6s I/G = 5s I/G = 23s+2s																				

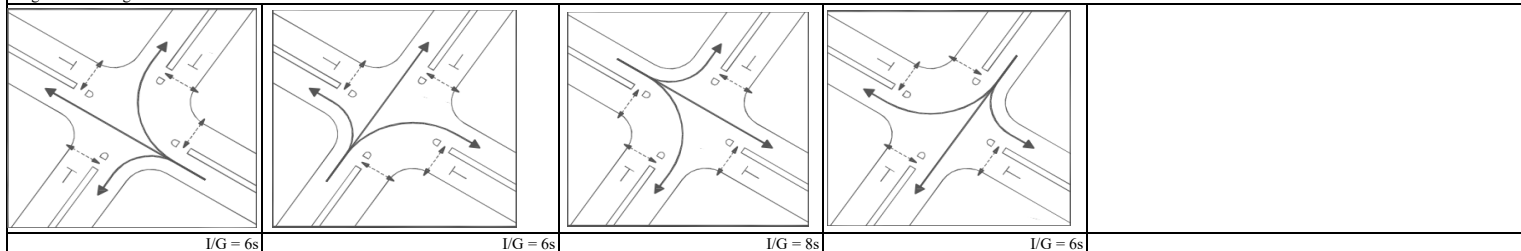
TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.									
Junction: Tat Wan Road/ Slip Road To Tolo Highway (C)																													
Description: 2031 Construction Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Tat Wan Rd	SB	↓	A	3	3.5	0	0	0	0%	0%	2105	2105	2105	2105	120	0.057		160	0.076										
	SB	↘	A	3	3.6	30	0	1	100%	100%	1880	1880	1880	1880	590	0.314	0.314	260	0.138	0.138									
Tat Wan Rd	NB	↗	C	1	3.8	0	33	0	100%	100%	2040	2040	2040	2040	170	0.083	0.083	60	0.029	0.029									
	NB	↑	D	1,2,3	3.3	0	0	1	0%	0%	1945	1945	1945	1945	650	0.334		440	0.226										
*Pedestrian Crossing		↕	P1	2	Min. Crossing Time = 5GM + 11FGM = 16s																								
Notes:								Traffic Flow (pcu / hr) 120(160) 590(260) 650(440) 170(60) [AM (PM)] AM Check Phase PM Check Phase εy 0.397 0.168 L (sec) 35 35 C (sec) 79 85 y pract. 0.501 0.529 R.C. (%) 26% 216%																					
Stage / Phase Diagrams																													
1 2 3 I/G = 8s I/G = 21s + 2s I/G = 6s																													

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.															
Junction: Ma Wo Road/ Tat Wan Road (D)																											
Description: 2031 Construction Reference Traffic Flows																											
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tat Wan Road	SB	↓	C	3	3.5	0	0	0	0%	0%	2105	2105	4070	4070	166	0.079	0.141	145	0.069	0.096							
	SB	↓	C	3	3.5	0	0	1	0%	0%	1965	1965	0	0	154	0.079		135	0.069								
	SB	↙	C	3	3.5	0	25	0	100%	100%	1985	1985	1985	1985	280	0.141		190	0.096								
Ma Wo Road	EB	↗	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	340	0.181	0.181	150	0.080	0.080							
	EB	↘	B	2	3.5	0	30	0	100%	100%	2005	2005	2005	2005	380	0.190		140	0.070								
Tat Wan Road	NB	↖	A	1	3.3	15	0	1	83%	77%	1795	1805	3880	3890	315	0.175	0.175	209	0.116	0.116							
	NB	↑	A	1	3.3	0	0	0	0%	0%	2085	2085	0	0	365	0.175		241	0.116								
*Pedestrian Crossing	↔	Dp	4			Min. Crossing Time = 5GM + 12FGM = 17s																					
	↕	Ep	4			Min. Crossing Time = 6GM + 8FGM = 14s																					
	↔	Fp	4			Min. Crossing Time = 5GM + 8FGM = 13s																					
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase			PM Check Phase		
						280(190) 320(280) 340(150) ↗ ↘ 380(140) ↙ ↘ 260(160) 420(290)																Ey 0.498	Ey 0.291				
																						L (sec) 21	L (sec) 21				
																						C (sec) 112	C (sec) 102				
																						y pract. 0.731	y pract. 0.715				
																						R.C. (%) 47%	R.C. (%) 145%				
Stage / Phase Diagrams																											
1					2					3					4												
I/G = 7s					I/G = 5s					I/G = 5s					I/G = 13+2s (Demand Dependent)												

CTA Consultants Ltd.Description: **2031 Construction Reference Traffic Flows**[illegible]

Notes:	Traffic Flow (pcu / hr)			[AM (PM)]	AM Check Phase		PM Check Phase	
					Ey	0.640	Ey	0.496
		70(60)	40(40)	30(70)	L (sec)	22	L (sec)	22
					C (sec)	135	C (sec)	135
	50(40)	↗			y pract.	0.753	y pract.	0.753
	240(290)	→			R.C. (%)	18%	R.C. (%)	52%
	210(180)	↘						
		280(130)	130(110)	460(260)				

Stage / Phase Diagrams



TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.									
Junction: Nam Wan Road/ Nga Wan Road/Shan Tong Road (F)																					
Description: 2031 Construction Reference Traffic Flows																					
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Nam Wan Road	EB	↗	A	1,2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	210	0.112		240	0.128		
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	4130	4130	205	0.099	0.099	170	0.082	0.082	
	EB	↖	B	2	3.1	15	0	0	0%	0%	2065	2065	0	0	205	0.099		170	0.082		
	EB	↘	B	2	5.2	0	15	0	100%	100%	2070	2070	2070	2070	80	0.039		80	0.039		
Shan Tong Road	NB	↕	D	4	3.0	30	25	1	31% / 62%	41% / 45%	1820	1830	1820	1830	390	0.214	0.214	220	0.120	0.120	
Nam Wan Road	WB	↖	C	3	3.4	0	30	0	100%	100%	1995	1995	0	0	401	0.201	0.201	435	0.218	0.218	
	WB	→	C	3	3.4	0	35	0	31%	19%	2065	2080	0	0	415	0.201		453	0.218		
	WB	↗	C	3	3.4	20	0	1	29%	49%	1915	1885	5975	5960	384	0.201		411	0.218		
Nga Wan Road	SB	↖	E	1	4.5	0	18	0	100%	100%	2035	2035	0	0	127	0.063	0.063	112	0.055	0.055	
	SB	↘	E	1	4.5	0	25	0	70%	58%	2115	2130	4150	4165	133	0.063		118	0.055		
*Pedestrian Crossing	↔	Fp	1,2,3																		
	↔	Gp	4																		
						Min. Crossing Time = 5GM + 6FGM = 11s															
						Min. Crossing Time = 5GM + 6FGM = 11s															
Notes:								Traffic Flow (pcu / hr)						[AM (PM)]		AM Check Phase			PM Check Phase		
								210(240) ↗ 410(340) → 80(80) ↘ 120(90) ↖ 30(30) ↑ 240(100) ↗						220(180) ↖ 40(50) ↓ 530(520) ↗ 560(580) ↖ 110(200) ↗		εy 0.577 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 34%			εy 0.476 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 63%		
Stage / Phase Diagrams																					
1					2					3					4						
I/G = 5s					I/G = 6s					I/G = 7s					I/G = 5s						

Priority Junction Calculation

Junction :	Tat Wan Road/ Access Road (A)	Job No.:	26009HK
Scenario :	2031 Construction Design Traffic Flows		

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input			Calculated				
	W	7	V-rBA	50	w-BA	2.5	D	0.786
	W-CR	0	V-IBA	50	w-BC	2.5	E	0.836
	C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	V-rBC	50	w-CB	2.1	F	0.800
	Minor Road Share LT&RT? (Yes: 1, No: 0)	1	V-rCB	50			Y	0.759

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	230	120	Q-BA	429	428	
	q-CB	10	10	Q-BC	591	575	
	q-AB	40	70	Q-CB	561	541	
	q-AC	120	180	Q-CA	1768	1767	
	q-BA	80	50	Q-BAC	442	447	
	q-BC	10	10				
	f	0.111	0.167				

(If C-B blocked C-A)
(If Minor Road Share LT&RT)

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.02	0.02
	C-A	0.13	0.07
	B-AC	0.20	0.13

Critical DFC	0.20	0.13
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TRAFFIC SIGNALS CALCULATION										Job No: 26009HK				CTA Consultants Ltd.										
Junction: Tat Wan Road/ Slip Road From Tolo Highway (B)																								
Description: 2031 Construction Design Traffic Flows																								
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak						
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y				
Tat Wan Road	SB	↓	A	1	3.5	0	0	1	0%	0%	1965	1965	0	0	68	0.034		82	0.042					
	SB	↓	A	1	3.5	0	0	0	0%	0%	2105	2105	4070	4070	72	0.034		88	0.042					
Slip Road From Tolo Highway	WB	↗	B	2	4.0	0	20	0	100%	100%	2005	2005	2005	2005	420	0.209	0.209	320	0.160	0.160				
	WB	↘	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	80	0.043		120	0.064					
Tat Wan Road	NB	↑	C	1	3.5	0	0	1	0%	0%	1965	1965	4070	4070	198	0.101	0.101	97	0.049	0.049				
	NB	↑	D	1	3.5	0	0	0	0%	0%	2105	2105	0	0	212	0.101		103	0.049					
*Pedestrian Crossing	↔	P1	1						Min. Crossing Time = 5GM + 10FGM = 15s															
	⬇	P2	1,3						Min. Crossing Time = 5GM + 6FGM = 11s															
Notes:								Traffic Flow (pcu / hr) 140(170) ↓ 410(200) ↑ ↗ ↘ [AM (PM)] 420(320) 80(120) AM Check Phase E_y 0.310 L (sec) 34 C (sec) 87 y pract. 0.548 R.C. (%) 77% PM Check Phase E_y 0.209 L (sec) 34 C (sec) 79 y pract. 0.513 R.C. (%) 146%																
Stage / Phase Diagrams																								
1 I/G = 6s					2 I/G = 5s					3 I/G = 23s+2s														

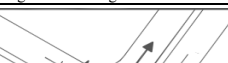
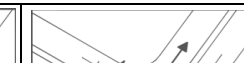
TRAFFIC SIGNALS CALCULATION										Job No: 26009HK										CTA Consultants Ltd.									
Junction: Tat Wan Road/ Slip Road To Tolo Highway (C)																													
Description: 2031 Construction Design Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Tat Wan Rd	SB	↓	A	3	3.5	0	0	0	0%	0%	2105	2105	2105	2105	140	0.067		180	0.086										
	SB	↘	A	3	3.6	30	0	1	100%	100%	1880	1880	1880	1880	590	0.314	0.314	260	0.138	0.138									
Tat Wan Rd	NB	↗	C	1	3.8	0	33	0	100%	100%	2040	2040	2040	2040	190	0.093	0.093	80	0.039	0.039									
	NB	↑	D	1,2,3	3.3	0	0	1	0%	0%	1945	1945	1945	1945	650	0.334		440	0.226										
*Pedestrian Crossing		↕	P1	2	Min. Crossing Time = 5GM + 11FGM = 16s																								
Notes:								Traffic Flow (pcu / hr) 140(180) 590(260) 650(440) 190(80) [AM (PM)] AM Check Phase PM Check Phase εy 0.407 0.178 L (sec) 35 35 C (sec) 79 85 y pract. 0.501 0.529 R.C. (%) 23% 198%																					
Stage / Phase Diagrams																													
1 I/G = 8s		2 I/G = 21s + 2s		3 I/G = 6s																									

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.													
Junction: Ma Wo Road/ Tat Wan Road (D)																									
Description: 2031 Construction Design Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak							
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y					
Tat Wan Road	SB	↓	C	3	3.5	0	0	0	0%	0%	2105	2105	4070	4070	176	0.084	0.141	155	0.074	0.096					
	SB	↓	C	3	3.5	0	0	1	0%	0%	1965	1965	0	0	164	0.084		145	0.074						
	SB	↙	C	3	3.5	0	25	0	100%	100%	1985	1985	1985	1985	280	0.141		190	0.096						
Ma Wo Road	EB	↗	B	2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	340	0.181	0.181	150	0.080	0.080					
	EB	↘	B	2	3.5	0	30	0	100%	100%	2005	2005	2005	2005	380	0.190		140	0.070						
Tat Wan Road	NB	↖	A	1	3.3	15	0	1	83%	77%	1795	1805	3880	3890	315	0.175	0.175	209	0.116	0.116					
	NB	↑	A	1	3.3	0	0	0	0%	0%	2085	2085	0	0	365	0.175		241	0.116						
*Pedestrian Crossing		↔	Dp	4						Min. Crossing Time = 5GM + 12FGM = 17s															
		↕	Ep	4						Min. Crossing Time = 6GM + 8FGM = 14s															
		↔	Fp	4						Min. Crossing Time = 5GM + 8FGM = 13s															
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase		PM Check Phase	
						280(190) 340(300) 340(150) 380(140) 260(160) 420(290)																Ey 0.498 L (sec) 21 C (sec) 112 y pract. 0.731 R.C. (%) 47%		Ey 0.291 L (sec) 21 C (sec) 102 y pract. 0.715 R.C. (%) 145%	
Stage / Phase Diagrams																									
1					2					3					4										
I/G = 7s					I/G = 5s					I/G = 5s					I/G = 13+2s (Demand Dependent)										

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Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside Ø/l	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Nam Wan Road	WB	←	A	1	3.5	0	25	0	100%	100%	1985	1985	0	0	240	0.121		300	0.151	
	WB	←	A	1	3.5	0	0	0	0%	0%	2105	2105	4090	4090	230	0.109		200	0.095	
	WB	←	A	1	3.5	20	0	1	100%	100%	1830	1830	1830	1830	460	0.251	0.251	350	0.191	0.191
Name Wan Road	EB	↕	C	3	3.3	15	0	1	20%	16%	1905	1915	3905	3930	244	0.128	0.128	248	0.130	0.130
	EB	↕	C	3	3.5	0	23	0	82%	69%	2000	2015	0	0	256	0.128		262	0.130	
Tat Wan Road	NB	↗	B	2	3.5	20	0	1	68%	54%	1870	1890	1870	1890	410	0.219		240	0.127	0.127
	NB	↘	B	2	3.5	0	20	0	100%	100%	1960	1960	1960	1960	460	0.235	0.235	260	0.133	
Tat Wan Road	SB	↙	D	4	3.5	20	0	1	43%	64%	1905	1875	1905	1875	70	0.037	0.037	110	0.059	0.059
	SB	↘	D	4	3.5	0	30	0	100%	100%	2005	2005	2005	2005	70	0.035		60	0.030	
*Pedestrian Crossing	↔	Ep	1,2,4			Min. Crossing Time = 5GM + 7FGM = 12s														
	↔	Fp	3			Min. Crossing Time = 5GM + 7FGM = 12s														
	↔	Gp	1,3,4			Min. Crossing Time = 5GM + 7FGM = 12s														
	↔	Hp	2			Min. Crossing Time = 5GM + 6FGM = 11s														
	↔	Ip	2,3,4			Min. Crossing Time = 5GM + 10FGM = 15s														
	↔	Jp	1			Min. Crossing Time = 5GM + 6FGM = 11s														
	↔	Kp	1,2,3			Min. Crossing Time = 5GM + 7FGM = 12s														
	↔	Lp	4			Min. Crossing Time = 5GM + 5FGM = 10s														

Notes:	Traffic Flow (pcu / hr)		[AM (PM)]	AM Check Phase		PM Check Phase	
			240(300) 230(200) 460(350)	E _y 0.651 L (sec) 22 C (sec) 135 y pract. 0.753 R.C. (%) 16%	E _y 0.507 L (sec) 22 C (sec) 135 y pract. 0.753 R.C. (%) 49%		

				
I/G = 6s	I/G = 6s	I/G = 8s	I/G = 6s	

TRAFFIC SIGNALS CALCULATION										Job No: 26009HK		CTA Consultants Ltd.													
Junction: Nam Wan Road/ Nga Wan Road/Shan Tong Road (F)																									
Description: 2031 Construction Design Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak							
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y					
Nam Wan Road	EB	↗	A	1,2	4.0	20	0	1	100%	100%	1875	1875	1875	1875	210	0.112		240	0.128						
	EB	→	B	2	3.1	15	0	0	0%	0%	2065	2065	4130	4130	205	0.099	0.099	170	0.082	0.082					
	EB	↖	B	2	3.1	15	0	0	0%	0%	2065	2065	0	0	205	0.099		170	0.082						
	EB	↘	B	2	5.2	0	15	0	100%	100%	2070	2070	2070	2070	80	0.039		80	0.039						
Shan Tong Road	NB	↕	D	4	3.0	30	25	1	31% / 62%	41% / 45%	1820	1830	1820	1830	390	0.214	0.214	220	0.120	0.120					
Nam Wan Road	WB	↖	C	3	3.4	0	30	0	100%	100%	1995	1995	0	0	407	0.204	0.204	442	0.221	0.221					
	WB	→	C	3	3.4	0	35	0	29%	17%	2070	2080	0	0	422	0.204		460	0.221						
	WB	↗	C	3	3.4	20	0	1	28%	48%	1915	1885	5980	5960	391	0.204		418	0.222						
Nga Wan Road	SB	↖	E	1	4.5	0	18	0	100%	100%	2035	2035	0	0	127	0.063	0.063	112	0.055	0.055					
	SB	↘	E	1	4.5	0	25	0	70%	58%	2115	2130	4150	4165	133	0.063		118	0.055						
*Pedestrian Crossing	↔	Fp	1,2,3		Min. Crossing Time = 5GM + 6FGM = 11s																				
	↔	Gp	4		Min. Crossing Time = 5GM + 6FGM = 11s																				
Notes:						Traffic Flow (pcu / hr)														[AM (PM)]		AM Check Phase		PM Check Phase	
						210(240) ↗ 410(340) → 80(80) ↘ ↖ ↘ 120(90) ↖ 30(30) ↗ 240(100) ↘														530(520) 580(600) 110(200)		εy 0.580 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 33%		εy 0.479 L (sec) 19 C (sec) 135 y pract. 0.773 R.C. (%) 61%	
Stage / Phase Diagrams																									
1 I/G = 5s					2 I/G = 6s					3 I/G = 7s					4 I/G = 5s										



APPENDIX C

Summary of ‘Responses to Comments’

(September 2026)



**S16 Application for Permission of Approved Tai Po Outline Zoning Plan No. S/TP/31
Proposed Change of Use to “Social Welfare Facilities” (RCHE) in “Green Belt” &
“Village” Zone at Various Lots in Lai Chi Shan, Tai Po, N.T.
TIA Report
Summary of ‘Responses to Comments’ (September 2026)**

Comments of Traffic Engineering (NTE) Division, Transport Department dated 23 June 2026 (Mr. JIM Holman, 2399 2563)	Responses
1. Please advise the maximum gradient of the proposed access road/	Please be advised that the maximum gradient of the proposed access road is 1:8.
2. It is noted that Junctions B to F currently exhibit significant surplus Reserved Capacities (RC). This may be attributed to the timing of the morning peak hour surveys, which may not have coincided with the peak start times of adjacent schools or may have been conducted during school holidays. Please revisit the traffic data and verify the survey dates. Upon further review, we anticipate that the future RC of Junction D (Ma Wo Road / Tat Wan Road) may drop below 15%. Should this occur, the applicant is required to propose necessary road improvement works to mitigate the anticipated traffic impact.	Noted and please note that the traffic data has been reviewed and revised, please refer to Section 3.1 of the revised TIA report for details.
3. The applicant shall clarify the management and maintenance responsibilities for the proposed roadworks. In particular, please note that the proposed modification to the road connecting the site and Tat Wan Road is not currently managed by TD. As the new access is intended to serve the subject development exclusively, TD will not take up its management or maintenance responsibilities. The applicant should consult the relevant departments for further clarification.	Noted and please note that the applicant would consult the relevant departments for further clarification on management and maintenance responsibilities for the proposed roadworks.



Comments of Traffic Engineering (NTE) Division, Transport Department dated 23 June 2026 (Mr. JIM Holman, 2399 2563)	Responses
4. It is noted that a portion of an existing village access road is included within the boundary of the rezoning application. As this road serves as a vital link for nearby local villages and residential clusters, the applicant must clarify whether the existing access will be maintained or if a suitable alternative will be provided during the construction stage. The relevant stakeholders shall be consulted accordingly.	Noted and please be clarified that the existing access will be maintained during the construction stage. The relevant stakeholders shall be consulted accordingly.
5. Comprehensive details of the proposed road improvement works must be included in the TIA report, which is currently missing in the report.	Please refer to Figure 2.1 (Rev A) of the revised TIA report for the proposed road improvement works.
6. Please also provide a drawing showing the pedestrian route to public transport facilities. Pedestrian assessment shall also be provided.	Please refer to Figure 7.1 of the revised TIA report for pedestrian route to public transport facilities. Please note that pedestrian assessment has been added, please refer to Section 7 of the revised TIA report for details.
7. It is noted that the nearest bus stop is currently missing from Table 2.4 and Figure 2.2.	Noted and please note that the nearest public transport stop has been added, please refer to Figure 2.2 (Rev A) of the revised TIA report for details.
8. The applicant shall be responsible for the implementation of all proposed road and junction improvement works as identified in the TIA report, subject to the final acceptance of TD.	Noted and please note that the applicant shall be responsible for the implementation of all proposed road and junction improvement works as identified in the TIA report.
9. Table 4.3 of the TIA report: The applicant shall consult PlanD on the latest development projects that may impact traffic in the vicinity of the site. Please coordinate with these projects on their latest layout of road improvement works.	Noted and please note that PlanD has been consulted on the latest development projects that may impact traffic in the vicinity of the site, please refer to Appendix B of the revised TIA report for details. Please note that their latest layout of road improvement works has been considered in the assessments of the



Comments of Traffic Engineering (NTE) Division, Transport Department dated 23 June 2026 (Mr. JIM Holman, 2399 2563)	Responses
	revised TIA report.
10. Paragraph 2.4.2 of the TIA report: The applicant is required to provide a detailed justification for the significant reduction in private car parking spaces (from 11 to 4). Furthermore, the applicant shall critically review the sufficiency of the proposed parking provision to ensure it meets the anticipated demand. A robust assessment is necessary to demonstrate that the reduced provision will not result in illegal parking or queuing activities in the vicinity, which could adversely affect the traffic of the adjacent road network.	Please refer to Para. 2.4.3 of the revised TIA report for the detailed justification for the significant reduction in private car parking spaces. Please be advised that shuttle service will be provided by the operator for both staff and visitors. Visitors are encouraged to go to the proposed development via public transport, or park their vehicles near car parks of Tai Po Market Station, and interchange at Tai Po Market Station for shuttle services. Therefore illegal parking or queuing activities in the vicinity can be minimized, please refer to Section 2.6 of the revised TIA report for details.
11. Table 2.3 of the TIA report: A discrepancy is noted between Table 2.3 and Paragraph 2.4.4 regarding the provision of accessible parking. Table 2.3 indicates only one (1) accessible private car parking space, which contradicts the statement in Paragraph 2.4.4 that two (2) parking spaces will be provided for visitors or persons with disabilities. In addition, there are no proposed parking spaces for light buses. The applicant shall clarify whether only 1 light bus will be in operation to serve all staff and visitors, and the frequency and duration of the shuttle service per day.	Noted and please note that Para. 2.4.5 has been revised and Para. 2.4.6 for light bus has been added, please refer to the revised TIA report for details. Please be clarified that 1 light bus will be in operation to serve all staff and visitors. Please refer to Section 2.6 of the revised TIA report for the frequency and duration of the shuttle service for staff and visitors per day.
12. It is noted that mandatory rules restricting both the number of visitors and their visiting hours will	Please note that the mandatory rules restricting both the number of visitors and their visiting hours have been removed, please



Comments of Traffic Engineering (NTE) Division, Transport Department dated 23 June 2026 (Mr. JIM Holman, 2399 2563)	Responses
be implemented to prevent peak arrivals that could lead to localized traffic congestion. The applicant is required to explore and confirm with the relevant authorities (e.g., PlanD and LandsD) how these operational rules can be formalized and enforced through Planning Application Conditions or Land Lease provisions. Furthermore, please note that any subsequent amendments to these visitor management rules must be submitted to TD for review and approval to ensure no adverse effects on local traffic.	refer to Section 2.6 of the revised TIA report for details.
13. The proposed exact location of shuttle services shall be included in the TIA report. Comments from Transport Operations (NT) Division shall be sought.	Noted and please refer to Figure 2.3 and Section 2.6 for the proposed exact location of shuttle services shall be included in the TIA report.
14. Swept path, analysis of light bus travelling to and from Tat Wan Road along the connected road between Tat Wan Road and the site shall also be included.	Noted and please refer to Figure SP-04 of the revised TIA report for the swept path analysis of light bus between Tat Wan Road and the site.
15. Traffic impact during construction stage shall also be assessed in the TIA report.	Noted and please refer to Chapter 6 of the revised TIA report for the CTIA.
16. Please clarify if the proposed 1.5m wide footpath refers to the clear, unobstructed width. If a crash barrier is required for safety reasons, the applicant must demonstrate that a minimum net effective width of 1.5m can still be maintained.	Please be clarified that 1.5m wide footpath refers to the total footpath width. Please note that for ambulance to have sufficient manoeuvring space at the access road, 1.5m wide footpath has to be maintained, please refer to Section 2.3 of the revised TIA report for details.
17. It is noted that the existing road connecting the proposed access road to Tat Wan Road is a single track, two-way carriageway. Given the	Noted and please note that the two sides of the existing road connecting the proposed access road to Tat Wan Road are surrounded by private lots, therefore additional



Comments of Traffic Engineering (NTE) Division, Transport Department dated 23 June 2026 (Mr. JIM Holman, 2399 2563)		Responses
	anticipated increase in traffic flow, the applicant should critically review the need for additional laybys along the road to serve as passing places.	laybys/passing bays could not be added.
18.	Minimum intergreen time of 5 seconds should be adopted in calculating the RC values.	Noted and please note that the assessments and calculation sheets have been revised, please refer to the revised TIA report for details.
19.	Please review the lane width, nearside lane, intergreen and cycle time in RC calculations at Tat Wan Road/slip road to Tolo Highway junction.	Noted and please note that the lane width, nearside lane, intergreen and cycle time in RC calculations for Junction Tat Wan Road/ Slip road to Tolo Highway (C) have been revised, please refer to the revised TIA report for details.
20.	Loss time of 21 seconds should be adopted for Ma Wo Road / Tat Wan Road junction.	Noted and please note that loss time of 21 has been adopted for Junction Ma Wo Road / Tat Wan Road (D), please refer to the revised TIA report for details.