

Appendix III
Traffic Impact Assessment

**Planning Application for Redevelopment of
Lai Sun Yuen Long Centre, 21 -35 Wang Yip Street East,
Yuen Long**

Traffic Impact Assessment Report

April 2026



CTA Consultants Limited

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1. INTRODUCTION

1.1 Background

1.1.1 The site location is shown in **Figure 1.1**.

1.1.2 On 12 January, 2024, the Town Planning Board (TPB) approved the section 16 application (Application No. A/YL/304) for a minor relaxation of building height and plot ratio restrictions for construction of a residential development at the subject site with 1,019 flats, 1,600m² retail shops and 422.1m² welfare facilities.

1.1.3 In connection to the above, the Applicant would like to submit a new section 16 planning application for above-ground carpark proposal. The overall GFA is unchanged (same as previously approved S16 planning application) but only update podium design and max. height on main roof.

1.1.4 We, CTA Consultants Limited (CTA), are therefore commissioned as the traffic consultant to prepare the Traffic Impact Assessment (TIA) and provide technical justifications in supporting the application from the traffic engineering point of view.

1.2 Study Objectives

1.2.1 Main objectives of this study are listed below:

- To assess the existing and proposed traffic arrangement & provision of internal transport facilities at the subject site;
- To assess the existing traffic condition in the vicinity of the proposed development;
- To estimate the traffic trips related to the proposed development;
- To carry out the forecasts about the traffic demand of the adjacent road network in the design year 2033;
- To appraise any possible traffic impact induced by the proposed development on the adjacent road network;
- To recommend traffic improvement measures to alleviate any foreseeable traffic problem to the surrounding road network, if any.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 The proposed development is located at Wang Yip Street East, the Keung Yip Street Rest Garden in the north, Po Yip Street in the east and the On Lok Road Substation to the South.

2.2 Proposed Development

2.2.1 Parameters of the proposed development are listed in **Table 2.1**.

Table 2.1 Parameters of the Proposed Development

Site Location	Wang Yip Street East
Proposed Use	Residential Development
Site Area (m²)	7,271
Nos. of Flat	1,108
Retail Shops	1,600m ²
GFA for Welfare Facilities	Around 422.1m ²
Domestic Plot Ratio	6.5

2.2.2 It is anticipated that the proposed development will be commissioned in year 2030. Therefore, the design year 2033 (i.e. 3 years after the planned commencement year of the proposed development) is adopted for this Traffic Impact Assessment.

2.3 Proposed Vehicular Access

2.3.1 The proposed vehicular access is located at Wang Yip Street East and the location of the proposed vehicular access as shown diagrammatically in **Figure 2.1**. The proposed vehicular access would be able to facilitate the turning of 12m long vehicle from Wang Yip Street East / to site entrance.



2.4 Provision of Internal Transport Facilities

2.4.1 The required internal transport facilities provision for the proposed development for individual lots are summarized in **Table 2.2** and **2.3** below.

Table 2.2 Internal Transport Provision under the HKPSG Requirements

Proposed Development		HKPSG Requirement							
		Private Car Parking Space					Motorcycle Parking	Loading / Unloading Bay	
Residential (1,108 flats)									
Flat size	No. of Flats	GPS	R1	R2	R3	GPS x R1 x R2 x R3	5 visitor spaces per block	1 motorcycle parking per 100 – 150 flats	1 bay for each housing block
<40m ²	468	4-7	0.50	0.75	0.90	23 - 40	10 (2 Blocks)	-	2
40m ² -70m ²	612	4-7	1.20	0.75	0.90	71 - 124			
70< FS<100	28	4-7	2.40	0.75	0.90	7 - 12			
Total Required		101 - 176					10	-	2
Required Provision[A]		<u>111 - 186</u>					<u>8 - 11</u>	<u>2</u>	
Retail (1,600 m²)									
		1 car space per 150 – 300 m ² GFA					5 – 10% of the total provision for private cars	1 per 800 – 1200 m ² GFA	
Required Provision [B]		<u>6 - 11</u>					<u>1 - 2</u>	<u>2</u>	
Total Required Provision [A+B]		<u>117-197</u>					<u>9 - 13</u>	<u>4</u>	
Proposed Provision		<u>197 nos.</u> <i>(Included 3 nos. of accessible parking)</i>					<u>13 nos.</u>	<u>4 nos.</u> <i>(Included 3 nos. of HGV and 1 no. of LGV)</i>	

Note: (1) The above parking requirements under the latest HKPSG is the same as that adopted in the Approved TIA under approved Planning Application (Application No. A/YL/304).



Table 2.3 Transport Facilities Provision for Welfare and Bicycle Parking Space as adopted under approved Planning Application (Application No. A/YL/304)

Under requirement in Approved TIA	Proposed Provision
1 loading / unloading bay for shared use by the welfare facilities 1 ambulance/ private light bus lay-by for HCS for Frail Elderly Persons 1 private light bus parking space for HCS for Frail Elderly Persons	1 no. HGV (Shared Layby) 1 no. PrLB
1 bicycle parking space for every 7.5 flats with flat size smaller than 70m ²	144 nos.

2.4.2 The carpark layout plans for loading/unloading and parking spaces at ground floor and first floor are shown in **Figure 2.1** to **Figure 2.2** and the EVA connects from first floor to second floor as shown in **Figure 2.3**.

3. THE EXISTING TRAFFIC CONDITION

3.1 Existing Road Network

3.1.1 Po Yip Street is a dual-carriageway which connects Long Yip Street to the southern side and Keung Yip Street at the middle of section.

3.1.2 Long Yip Street is an eastbound road which connecting Castle Peak Road – Yuen Long at its eastern end and to Wang Tat Road at its western end.

3.2 Critical Junctions

3.2.1 Five junctions are identified to be critical for the Traffic Impact Assessment due to the proposed development. Relevant details are listed in **Table 3.1** and shown in **Figure 3.1**. Existing junction layouts are tabulated in **Figures 3.2** to **3.6** respectively.

Table 3.1 Identified Critical Junctions

Ref.	Junction	Type	Figure No.
A	Yuen Long On Lok Road/ Long Yip Street/ Po Yip Street / Yuen Long Tung Tai Street	Signalized	3.2
B	Po Yip Street / Keung Yip Street	Priority	3.3
C	Wang Yip Street East/ Keung Yip Street	Priority	3.4
D	Wang Yip Street East/ Hi Yip Street	Priority	3.5
E	Yuen Long On Lok Road/ Long Yip Street /Wang Lok Street/ Wang Tat Road/ Ma Wang Road	Signalized	3.6

3.2.2 In order to study the existing traffic condition of the above critical junctions, traffic survey in the form of manual-classified count was conducted for the five junctions during the peak periods on a typical weekday in 16 March 2026 from 07:30 to 09:30 and from 17:00 to 19:00 respectively. The survey provides most up-to-date details of the traffic condition within the study area under normal operation. Based on the observed traffic flows, it reveals that morning and evening peak hours occurred from 07:45 to 08:45 and from 17:15 to 18:15 respectively.

3.2.3 The 2026 existing peak traffic flows are presented in **Figure 3.7**. The operational performances of the critical junctions are listed in **Table 3.2** below.

Table 3.2 Operational Performances of Critical Junctions in 2026

Ref.	Junction	Method of Control	Year 2026 RC/DFC ⁽¹⁾	
			AM Peak	PM Peak
A	Yuen Long On Lok Road/ Long Yip Street/ Po Yip Street / Yuen Long Tung Tai Street	Signalized	58%	88%
B	Po Yip Street / Keung Yip Street	Priority	0.31	0.34
C	Wang Yip Street East/ Keung Yip Street	Priority	0.24	0.25
D	Wang Yip Street East/ Hi Yip Street	Priority	0.39	0.35
E	Yuen Long On Lok Road/ Long Yip Street /Wang Lok Street/ Wang Tat Road/ Ma Wang Road	Signalized	72%	88%

Note: (1) RC = Reserve Capacity for Signal Junction;
DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

3.2.4 The assessment results in **Table 3.2** indicate that all critical junctions are at present operating with ample capacities during the peak hours.

3.3 Public Transport Services in the Vicinity

3.3.1 Numerous road-based public transport services, for instance, franchised bus and GMB are also provided in vicinity of the proposed development. Details of the current services of franchised bus and GMB routes are listed in **Table 3.3** and are illustrated diagrammatically in **Figure 3.8**.



Table 3.3 Public Transport Services in the Vicinity of the Proposed Development

Service	Route	Origin / Destination	Frequency (mins)
KMB	53	Yoho Mall (Yuen Long) - Tsuen Wan (Nina Tower)	25-35
	54	Yuen Long (West) - Sheung Tsuen (Circular)	30
	69	Tin Shui Wai Town Centre - Yuen Long (Tak Yip Street)	20-30
	64K	Yuen Long (West) - Tai Po Market Station	7-20
	64X	Hung Shui Kiu (Hung Yuen Road) - Hong Kong Science Park	AM Peak
	68M	Tsuen Wan Station - Yuen Long (West) B/T	7-20
	68X	Hung Shui Kiu (Hung Fuk Estate) - Mong Kok (Park Avenue)	9-25
	77K	Sheung Shui - Yuen Long (Fung Cheung Road)	12-30
	76K	Sheung Shui (Ching Ho) - Long Ping Estate	20-30
	251C	Kong Ha Wai - Yuen Long (Hong Lok Road)	30
	264R	Tai Po Market Station - Tin Yiu	30
	265S	Tai Po Industrial Estate - Tin Shui Wai Town Centre	AM
	268A	Long Ping Estate - Kwun Tong Ferry	AM and PM Peak
	268B	Long Ping Station - Hung Hom (Hung Luen Road)	20-30
	268C	Long Ping Station - Kwun Tong Ferry	5-30
	268P	Ma Wang Road (San Shui House) - Kwun Tong Ferry	AM and PM Peak
	268X	Hung Shui Kiu (Hung Fuk Estate) - Jordan (West Kowloon Station)	6-35
	269D	Tin Fu - Lek Yuen	7-25
	276	Tin Tsz - Sheung Shui	15-30
	276C	Tin Shui Wai Station - Fanling (Cheung Wah)	AM and PM Peak
	276P	Tin Shui Wai Station - Sheung Shui	7-30
	968	Yuen Long (West) - Causeway Bay (Tin Hau)	6-20
	968A	Yuen Long (West) - Causeway Bay (Tin Hau)	AM Peak
	968X	Yuen Long (Tak Yip Street) - Quarry Bay (King's Road)	AM and PM Peak
P968	Yuen Long (West) - Causeway Bay (Tin Hau)	AM and PM Peak	
B1	Tin Tsz - Lok Ma Chau Station (Futian)	8-30	
N269	Tin Tsz - Mei Foo	Overnight	
N368	Yuen Long (West) - Central (Macao Ferry)	Overnight	
LWB	A36	Kam Sheung Road Station - Airport (Ground Transportation Centre)	15-60
	A37	Long Ping Station - Airport (Ground Transportation Centre)	20-30
	E36	Pat Heung Road - Airport (Ground Transportation Centre)	15-30
	E36C	Yuen Long (Tak Yip Street) - Aircraft Maintenance Area	AM Peak and PM Peak
	E36S	Yuen Long (Ma Wang Road) - Airport (Ground Transportation Centre)	15-25
	NA36	Kam Sheung Road Station - Cathay Pacific City	Overnight
	N30	Yuen Long Station - Airport (Cheong Tat Road)	Overnight
MTR	K68	Yuen Long Industrial Estate - Tai Kiu Tsuen	10-20
	K73	Yuen Long West - Tin Heng	4-10
	K74	Tin Shui Wai Town Centre - Au Tau (Circular)	20-60
	K66	Long Ping - Tai Tong Wong Nai Tun Tsuen	4-15
	K65	Yuen Long Station - Lau Fau Shan	9-16
NLB	B2	Yuen Long Mtr Station - Shenzhen Bay Port	20



GMB	32	Yuen Long Station (North) Public Transport Interchange - Tan Kwai Tsuen	10-15
	33	Yuen Long (Tai Fung Street) - Ha Pak Nai	20-30
	35	Yuen Long (Tai Fung Street) - Sha Kiu (Tsim Bei Tsui)	18-23
	36	Yuen Long (Fook Hong Street) - Tai Shang Wai Rural Office	10-15
	36A	Yuen Long (Fook Hong Street) - Yau Pok Road Light Public Housing	20
	37	Yuen Long (Fook Hong Street) - Yau Tam Mei Village Office	12-15
	38	Yuen Long (Fook Hong Street) - Ha Chuk Yuen (Near Ho Sang Farm)	10-15
	71	Shek Wu Tong (Ho Pui) - Yuen Long (Yuen Long Tai Hang Street)	15
	72	Yuen Long (Yuen Long Tai Hang Street) - Lui Kung Tin	10
	73	Yuen Long (Fook Hong Street) Public Light Bus Terminus - Sung Shan San Tsuen	10-20
	74	Yuen Long (Fook Hong Street) - Shing Uk Tsuen	8-15
	74A	Yuen Long (Fook Hong Street) - Tung Tau Wai	15
	75	Yuen Long (Fook Hong Street) - Ha Wan Tsuen	15-20
	76	Yuen Long (Fook Hong Street) - Siu Hum Tsuen	15-20
	79S	Tin Shui Wai (Grandeur Terrace) - Lok Ma Chau Control Point	30-60
	601	Yuen Long (Fung Cheung Road) - Pak Wai Tsuen	10-20
	601C	Yuen Long (Fung Cheung Road) - Kam Sheung Road Station (Circular)	20
	602	Yuen Long (Fung Cheung Road) - Tai Kong Po	15-20
	603	Yuen Long (Fung Cheung Road) - Fung Kat Heung	20-25
	604	Yuen Long (Fung Cheung Road) - Shan Ha Tsuen	10-20
	608	Wang Toi Shan (Pat Heung) > Yuen Long (Fung Cheung Road) (Circular Route)	10-13
	609	Yuen Long Stadium - Pok Oi Hospital (Circular Route)	6-15
	609B	Long Shin Estate - Yuen Long Station (Circular)	6
	609S	Long Shin Estate - Yuen Long Station (North) Public Transport Interchange	10
	611	Shan Pui Road - Fau Tsoi Street (Circular)	8-15
	611A	Yuen Long Station - Shan Pui Road (Circular)	5
	611B	Kwan Lok Lane - Yuen Long Station (Circular)	15
	611P	Shan Pui Road - On Shun Street (Circular)	20-30
	611S	United Court (Shan Pui Road) - Yuen Long Station (Circular)	15

Note:

KMB – Kowloon Motor Bus

LWB – Long Win Bus

MTR – MTR Bus

NLB – New Lantao Bus



4. FUTURE TRAFFIC CONDITION & TRAFFIC IMPACT ASSESSMENT

4.1 Design Year

4.1.1 It is anticipated that the proposed development would be completed in 2030 tentatively with full intended operation. In order to assess the possible traffic impacts to the local road network due to the proposed development, year 2033 (i.e. 3 years after completion) has been adopted as the design year for this study.

4.2 Traffic Forecast

4.2.1 To estimate the reference traffic flow in year 2033 (without the proposed development) in the local road network, an appropriate growth factor has to be identified for the area in the first instance. The following approaches have been adopted to derive the growth factor for the Area of Influence.

Historical Trend

4.2.2 Numerous traffic-count stations are located in the vicinity of the proposed development. The traffic counts reported in the Annual Traffic Census (ATC), which is published by Transport Department, over a period of seven years, i.e. 2018 to 2024 are summarized in **Table 4.1**.

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

Stn No.	Road Name	AADT							Annual Growth Rate
		2018	2019	2020	2021	2022	2023	2024	2018-2024
5011	Wang Chau Rd (From Yuen Long On Ning Rd to Yuen Long On Lok Rd)	5,970	5,880	5,300	5,210	5,080	4,990	5,140	-2.46%
5837	Yuen Long On Ning Rd (From Tai Kiu Rd to Wang Chau Rd)	10,140	10,070	9,650	9,860	9,290	9,510	9,053	-1.87%
5812	Long Yip St & Yuen Long On Lok Rd (From Tai Kiu Rd to Wang Chau Rd)	23,790	24,730	23,540	25,330	25,340	26,920	27,080	2.18%
6032	Yuen Long On Ning Rd (From Wang Chau Rd to Tai)	16,080	15,960	15,300	15,920	13,430	13,640	13,680	-2.66%
6008	Long Yip St & Yuen Long On Lok Rd (From Wang Chau Rd to Tai Cheung St)	32,160	33,440	31,830	33,380	32,480	32,660	32,840	0.35%



5836	Tai Kiu Rd (From Yuen Long On Ning Rd to Yuen Long On Lok Rd)	6,480	6,430	6,170	6,590	7,180	7,350	7,370	2.17%
6059	Long Yip St FO <192>	25,480	26,500	25,230	26,460	24,450	23,240	23,370	-1.43%
5440	Castle Peak Rd - Yeun Long	45,510	45,570	45,860	47,700	46,240	47,330	45,680	0.06%
5208	Long Yip St & Yuen Long On Lok Rd	37,360	37,050	35,270	36,990	35,350	37,320	39,600	0.98%
6019	Long Yip St & Yuen Long On Lok Rd	22,050	22,920	21,820	22,890	24,180	26,130	26,280	2.97%
5611	Wang Tat Rd, Ma Wang Rd, Long Yip Rd & Yuen Long On Lok Rd	16,620	17,280	19,150	20,760	19,840	21,080	21,200	4.14%
6628	Wang Lok St	15,220	16,720	15,430	16,410	16,460	16,680	17,490	2.34%
Total AADT of Vicinity		256,860	262,550	254,550	267,500	259,320	266,850	268,783	+0.76%

Planning Data

4.2.3 Reference has also been made to the latest 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. The average annual growth rates in terms of population and employment from 2026 to 2031 are tabulated in **Table 4.2**.

Table 4.2 2021-Based Planning Data from 2021 to 2031

Yuen Long District				
Data	Year			Average Annual Growth Rate (2026-2031)
	2021	2026	2031	
Population	668,100	685,000	760,600	2.12%
Employment	152,850	238,500	258,200	1.60%
Total	820,950	923,500	1018,800	+1.99%

4.2.4 From Hong Kong Population Projections 2022-2046 obtained from the Census and Statistics Department, average annual growth rates in terms of population from 2031 to 2046 is +0.31%, details are summarised in **Table 4.3**.

Table 4.3 Hong Kong Population Projections 2031-2046

Year	2031	2046	Average Growth Rate
Population	7,820,200	8,190,400	+0.31%

Adopted Growth Rate

- 4.2.5 A.A.D.T. of ATC indicates that the traffic flow of the local road network has an average annual growth rate of +0.76% from year 2018 to year 2024.
- 4.2.6 Whilst, the planning data indicates that the population and employment of the study area are expected to grow with an average annual growth rate of +1.99% from 2026 to 2031 and the population with an average growth rate of +0.31% from 2031 to 2046.
- 4.2.7 As a conservative approach, an annual growth rate of **+1.99% p.a.** is adopted for assessment year 2026-2031 and an annual growth rate of **+0.31% p.a.** is adopted from assessment year 2031-2033. It is deemed sufficient to allow for any unexpected future growth as a result of some changes in land use or development in the study area.

Adjacent New Developments

- 4.2.8 Additional traffic generation and attraction of major committed/planned developments in the vicinity have been estimated and superimposed onto the road network to derive the year 2033 reference traffic flow. The estimated trip generation and attractions of the planned developments are summarized and illustrated in **Table 4.3**.

Table 4.3 Major Planned/ Committed Development in the Vicinity

Planning Application No.	Development Site	Uses	Development Parameters (Approx.)	Trip (pcu/hr)			
				AM Peak		PM Peak	
				GEN	ATT	GEN	ATT
A/YL/290	Tung Tau Industrial Area ⁽¹⁾	Non-domestic	190 parking spaces	27	42	33	31
/	Wang Chau Phase I ⁽²⁾	Domestic	4,400 flats	217	156	121	167
A/YL/312	Multi-storey Building in YLIE ⁽³⁾	Non-domestic	161,500 m ²	195	311	222	202
/	Public Housing Development at Tin Tsz Road ⁽⁴⁾	Domestic	8,400 flats	493	407	319	348
LSPS/005	Land Sharing Pilot Scheme at Wing Ning Tsuen ⁽⁵⁾	Domestic	5,613 flats	460	324	246	290
/	Wang Chau Remaining Phase ⁽⁶⁾	Domestic	13,000 flats	922	732	505	597
/	Proposed Extension of YLIE ⁽⁷⁾	Non-domestic	2,915,000 m ²	81	87	91	47
Y/YL/21	Proposed RCHE, residential and retail uses development of Yuen Long Theatre Lot 3678 in DD120 ⁽⁸⁾	Domestic	74 flats	16	17	23	21
		RCHE	220 beds				
		Non-domestic	1,546 m ²				
LSPS/002	Proposed Land Sharing Pilot Scheme for a Site at Various Lots in D.D. 115, Yuen Long, the New Territories ⁽⁹⁾	Domestic	3,316 flats	272	196	114	147
		Non-domestic	25,770 m ²				
/	Proposed Comprehensive Development with Wetland Enhancement (CDWE) at Nam Sang Wai and Lut Chau ⁽¹⁰⁾	Domestic	2,512 Flats	662	494	485	501

Notes:

1. Reference from Table 4.6 of previously approved Traffic Impact Assessment (TIA)
2. Data retrieved from ‘Wang Chau Phase 1 Planning Brief’, published by Hong Kong Housing Authority
https://www.pland.gov.hk/file/resources/approved_pb/hd_pb/pdf/Wang_Chau_Phase_1_Yuen_Long.pdf
3. Reference from Town Planning Board:
https://www.tpb.gov.hk/en/plan_application/A_YL_312.html
4. Data retrieved from ‘Sites for Public Housing Development Estimated to be Completed from 2029-30 to 2033-34 (Position as at September 2023)’, published by Development Bureau
https://www.devb.gov.hk/filemanager/en/content_1322/2nd%20five-year%20project%20list_EN.pdf
5. Reference from: https://www.devb.gov.hk/filemanager/en/content_1154/LSPS_005_Gist.pdf
6. Reference from:
<https://www.cedd.gov.hk/eng/media-corner/project-reports/index-id-18.html>
7. Reference from:
https://hos.housingauthority.gov.hk/pdf/wangchau_report/TIA_Main_text.pdf
8. Reference from:
https://www.tpb.gov.hk/en/plan_application/A_YL_319/FI_20240805/Traffic_Impact_Assessment_1.pdf
9. Reference from its TIA
10. Reference from:
https://www.epd.gov.hk/eia/files/applications/en/pp_234/eia_5872/progress/action_172864/HTML/EIA%20Report%20PDF/Executive%20Summary/%E8%A1%8C%E6%94%BF%E6%91%98%E8%A6%81.pdf

4.3 Reference Traffic Flow in Year 2033

- 4.3.1 The year 2033 reference traffic flow is estimated by applying the adopted growth rate to the year 2026 adopted traffic flow.
- 4.3.2 The 2033 reference peak traffic flows are presented in **Figure 4.1**.

$$\begin{array}{l} \text{2033 Reference Traffic} \\ \text{Flows} \\ \text{(without proposed} \\ \text{development)} \end{array} = \begin{array}{l} \text{2026} \\ \text{Adopted} \\ \text{Traffic} \\ \text{Flows} \end{array} \times \begin{array}{l} \text{Adopted Growth} \\ \text{Factor} \\ \text{i.e. } \underline{+1.99\%} \text{ p.a. for 5} \\ \text{years and } \underline{+0.31\%} \text{ p.a.} \\ \text{for 2 years} \end{array} + \begin{array}{l} \text{Adjacent} \\ \text{Developments} \end{array}$$

4.4 Traffic Trips of the Proposed Development

- 4.4.1 Trip generation and attraction rates of private housing and retail as stipulated in T.P.D.M have been adopted for estimating the trip generations and attractions of the proposed development and summarized in the **Table 4.4**.

Table 4.4 Adopted Trip Rates for the Proposed Private Housing and Retail

Use	Category	Unit	Trip Generation Rates			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
Residential	R(A) - FS <= 60 - Mean	pcu/hour/flat	0.0718	0.0425	0.0286	0.0370
	R(A) - FS <= 70 - Mean	pcu/hour/flat	0.0888	0.0515	0.0356	0.0480
	R(A) - FS <= 80 - Mean	pcu/hour/flat	0.1058	0.0605	0.0426	0.0590
Retail	Retail/ Shopping Complex (Office + Retail)	pcu/hour/100m ²	0.2296	0.2434	0.3100	0.3563

4.4.2 As the use of government, institution and community (GIC) is not specified in the latest Transport Planning & Design Manual (TPDM), the estimation of the traffic trips related to GIC made reference to A/FSS/299, Instruction No. A20 – Proposed Public Housing Development at Po Shek Wu Road Traffic Review. Detail is summarized in the **Table 4.5**.

Table 4.5 Adopted Trip Rates for Proposed GIC

Use	Units	Trip Generation (pcu/hr) ⁽¹⁾			
		AM Peak		PM Peak	
		Gen	Att	Gen	Att
Government, Institution and Community (GIC) ⁽²⁾ : - 100-place Child Care Centre (CCC) - A 100-place Residential Care Home for the Elderly (RCHE) - A main base of Short-term Food Assistance Service Team (STFAST) - Home Care Services (HCS) for Frail Elderly Persons	pcu/hr/ 100m ² GFA	0.2230	0.2230	0.2230	0.2230

Notes:

- (1) The adopted trip rates for the proposed development were referenced from A/FSS/299, Instruction No. A20 – Proposed Public Housing Development at Po Shek Wu Road, Traffic Review approved on 10 January 2025, which could be retrieved from pages 121-180 of https://www.tpb.gov.hk/uploads/page/meetings/RNTPC/A_FSS_299_A/A_FSS_299_A_Appendix.pdf. The GFA of its approved welfare facilities is 4,484 m², with corresponding trips of 10 pcu/hr for both AM and PM trip generation and attraction, as shown at p.124 of the pdf. The trip rate estimation method applied to the proposed GIC is calculated as 10 pcu/hr ÷ 4,484 m² × 100 m² = 0.2230 pcu/hr/100m² GFA.
- (2) Refer to p.187 on the pdf of A/FSS/299, Instruction No. A20 – Proposed Public Housing Development at Po Shek Wu Road, Traffic Review for type of GIC

4.4.3 Based on the adopted trip rate listed in **Table 4.4** and **Table 4.5** as well as the development parameters in **Table 2.1**, the total of the trip generation and attraction of the proposed development are estimated and summarized in the **Table 4.6**.

Table 4.6 Traffic Generations and Attractions of Proposed Development

Use	Development Parameter	Trip Generation (pcu/hr)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Private Housing: High-Density (Average Flat Size: 60 m ²)	1,053 flats	76	45	31	39
Private Housing: High-Density (Average Flat Size: 70 m ²)	27 flats	3	2	1	2
Private Housing: High-Density (Average Flat Size: 80 m ²)	28 flats	3	2	2	2
Retail	1,600 m ²	4	4	5	6
Government, Institution and Communities (GIC)	422.1 m ²	1	1	1	1
Total (pcu/hr)		<u>87</u>	<u>54</u>	<u>40</u>	<u>50</u>

4.4.4 For reference, the net change in traffic generation between the Proposed Development and the approved scheme, which will have slightly increase of traffic trips to the surrounding road network as shown in **Table 4.7**.

Table 4.7 Net Difference of Traffic Trip between current and the approved proposals

Item	Trip Generation (pcu/hour)			
	AM Peak		PM Peak	
	Gen	Att	Gen	Att
Current Scheme ⁽¹⁾	87	54	40	50
Approved Scheme ⁽²⁾	83	53	38	47
<u>Difference</u>	<u>+4</u>	<u>+1</u>	<u>+2</u>	<u>+3</u>

Notes:

(1) Refer to Table 4.6

(2) Reference from previously approved Traffic Impact Assessment report Table 4.4.

4.5 Traffic Forecast for Design Year 2033

4.5.1 The traffic trips of the proposed development as shown in **Figure 4.2**, which is superimposed onto the year 2033 reference traffic flow (without the proposed development) as shown in **Figure 4.1** to derive the year 2033 design traffic flow (with the proposed development).

$$\begin{array}{l} \text{Year 2033 Design} \\ \text{Traffic Flow} \\ \text{(with the Proposed} \\ \text{Development)} \end{array} = \begin{array}{l} \text{Year 2033 Reference} \\ \text{Traffic Flow} \\ \text{(without the Proposed} \\ \text{Development)} \end{array} + \begin{array}{l} \text{Traffic Trips of the} \\ \text{Proposed} \\ \text{Development} \end{array}$$

4.5.2 The traffic flow during peaks derived from AM and PM peak periods in the design year 2033 (with the proposed development) as shown in **Figure 4.3**.

4.6 Operational Assessment

4.6.1 To assess traffic impacts due to the proposed development, operational assessment of the critical junctions identified in **Chapter 3** are carried out for both reference (without the proposed development) and design (with the proposed development) scenarios in year 2033. The results are summarized in **Table 4.8**.

Table 4.8 Operational Performance of Critical Junctions in Year 2033

Ref.	Junction	Method of Control	Year 2033 RC/DFC ⁽¹⁾			
			Reference Scenario (Without the Proposed Development)		Design Scenario (With the Proposed Development)	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Yuen Long On Lok Road/ Long Yip Street/ Po Yip Street / Yuen Long Tung Tai Street	Signalized	26%	48%	21%	45%
B	Po Yip Street / Keung Yip Street	Priority	0.40	0.42	0.57	0.50
C	Wang Yip Street East/ Keung Yip Street	Priority	0.27	0.28	0.34	0.34
D	Wang Yip Street East/ Hi Yip Street	Priority	0.44	0.39	0.46	0.41
E	Yuen Long On Lok Road/ Long Yip Street /Wang Lok Street/ Wang Tat Road/ Ma Wang Road	Signalized	23%	38%	22%	37%

Notes: (1) RC = Reserve Capacity for Signal Junction;
DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout



- 4.6.2 The assessment result in **Table 4.8** reveals that all junctions operate with ample capacities in both reference and design scenarios in year 2033.
- 4.6.3 The traffic generated by the proposed development would induce insignificant impact on the surrounding road network. Therefore, the application is supported from the traffic points of view.

5. PEDESTRIAN IMPACT ASSESSMENT

5.1 Survey on Pedestrian Flows in the Vicinity

- 5.1.1 In order to acquire the existing pedestrian condition around the proposed development, a pedestrian headcount survey was conducted at concerned footpath sections on a normal weekday on 16 March 2026 from 07:30 to 09:30 and from 17:00 to 19:00 respectively. The assessment sections are shown in **Figure 6.1**.
- 5.1.2 To 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.
- 5.1.3 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 is summarized in **Table 6.1**.

Table 6.1 Descriptions of Level-of-Service (LOS)

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.

5.1.4 The level-of-service (LOS) for baseline operational performances of the identified critical sections are listed in **Table 6.2** and presented in **Figure 5.1**.

Table 6.2 Performance of Critical Footpath in Year 2026

2026 Observed Scenario								
Critical Sections	Actual Width (m)	Effective Width (m) ⁽¹⁾	AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
A	3.5	2.5	217	1.45	A	285	1.90	A
B	3.2	2.2	166	1.26	A	188	1.42	A
C	3.3	2.3	562	4.07	A	687	4.98	A
D	3.5	2.5	1,219	8.13	A	1,363	9.09	A

Notes: (1) Effective Width = Actual Width – Death Width (0.5m from railings or walls for both sides)
(2) Two-way Pedestrian Flow Rate (ped/min/m) – Peak Pedestrian Flow / 60min / Effective Width
(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3

5.1.5 The results of assessment shown in **Table 6.2** indicate that all critical sections are operating with ample reserved capacity during AM and PM peak hours.

5.2 Future Pedestrian Conditions

5.2.1 Based on the observed pedestrian flows and the adopted growth rate of **+1.99%** from 2026 to 2031 and growth rate of **+0.31%** from 2031 to 2033 as in **Section 4.3.2**, future pedestrian reference flows at the critical sections (without proposed development) in Year 2033 are estimated and summarized in **Table 6.3** and presented in **Figure 5.2**.

Table 6.3 Performance of Critical Footpath in Reference Scenario Year 2033

2033 Reference Scenario								
Critical Sections	Actual Width (m)	Effective Width (m) ⁽¹⁾	AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
A	3.5	2.5	240	1.60	A	315	2.10	A
B	3.2	2.2	185	1.40	A	210	1.59	A
C	3.3	2.3	625	4.53	A	765	5.54	A
D	3.5	2.5	1,355	9.03	A	1,515	10.10	A

5.3 Pedestrian Traffic Forecast

5.3.1 To estimate the pedestrian trips related to the proposed developments, same pedestrian trip rates are adopted from the approved TIA report as shown in the **Table 6.4**.

Table 6.4 Pedestrian Generation Rates

Use	Units	AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Private Housing	ped/15-min/flat	0.075	0.0487	0.0443	0.0443
Retail	ped/15-min/100m ²	0.49	0.217	1.067	1.067
Welfare Facilities	ped/15-min/100m ²	0.0482	0.2651	0.2892	0.2048

5.3.2 The pedestrian generated by the proposed development are summarized in **Table 6.5**.

Table 6.5 Proposed Development Pedestrian Generation

Use	Units	AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Residential	1,108 flats	84	54	50	50
Retail	1,600 m ²	8	4	18	18
Welfare Facility	422.1m ²	1	2	2	1
Total (15-min)		93	60	70	69
Total (Hourly)		372	240	280	276

5.3.3 Based on the pedestrian generation as shown in **Table 6.5**. The expected pedestrian trips at AM and PM peak hour due to the proposed development is assigned to the reference pedestrian flow and the LOS assessment is shown in **Table 6.6** and presented in **Figure 5.3**.

Table 6.6 Performance of Critical Footpath in Design Scenario Year 2033

2033 Design Scenario								
Critical Sections	Actual Width (m)	Effective Width (m) ⁽¹⁾	AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
A	3.5	2.5	850	5.67	A	870	5.80	A
B	3.2	2.2	795	6.02	A	765	5.80	A
C	3.3	2.3	1,235	8.95	A	1,320	9.57	A
D	3.5	2.5	1,965	13.10	A	2,070	13.80	A

5.3.4 The assessment results in **Table 6.6** show that the concerned sections of footpath and will all operate with ample reserved capacity (LOS A) during AM and PM peak hours in design year 2033.



6. SUMMARY AND CONCLUSION

6.1 Summary

- 6.1.1 CTA Consultants Limited (CTA) is commissioned as the traffic consultant to prepare the Traffic Impact Assessment (TIA) and provide technical justifications in supporting the planning application from traffic engineering point of view.
- 6.1.2 To appraise the existing traffic condition, a traffic survey in the form of manual-classified count was conducted at the surrounding road network of the proposed development. Current operational performance of the critical junctions have been assessed with the observed traffic flow. The results reveal that all critical junctions and road links are at present operating within its capacities.
- 6.1.3 The LOS assessment results indicated that the critical section of footpath at proposed site will operate with adequate capacities to accommodate the estimated pedestrian flows in 2033 design year.
- 6.1.4 Based on the above assessment, the development is supported from the traffic points of view.

6.2 Conclusion

- 6.2.1 In conclusion, this Traffic Impact Assessment (TIA) study 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.
- 6.2.2 Therefore, the Site is considered feasible for the proposed development from traffic engineering point of view.



Appendix A

Junction Calculation Sheets

TRAFFIC SIGNALS CALCULATION

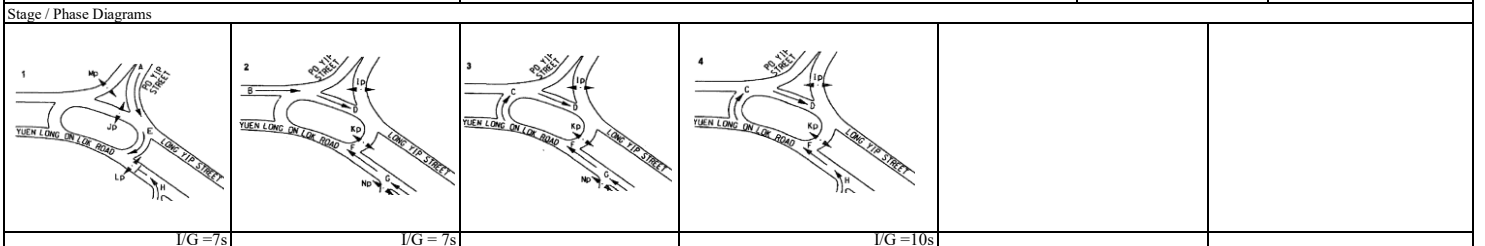
Job No: 26016HK

CTA Consultants Ltd.

Junction: **Yuen Long On Lok Road / Long Yip Street / Po Yip Street / Yuen Long Tung Tai Street (Jn A)**
 Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)			Radius (m)			Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M.			P.M.			
					Left	Right	Nearside 0/1	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				
																						Flow (pcu/hr)		Flow (pcu/hr)	
Po Yip Street	S	↘	A	1	3.5	35	0	1	100%	100%	1965	6175	1885	1885	6020	6025	229	0.121	0.121	189	0.100				
	S	↘	A	1	3.5	35	0	0	88%	81%	2105	0	2030	2035	0	0	246	0.121		204	0.100				
	S	↓	A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	255	0.121		211	0.100				
Po Yip Street	S	↙	E	1	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	190	0.099		195	0.102	0.102			
	S	↙	E	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	190	0.099		195	0.102				
Long Yip Street	E	↗	B	2	3.3	40	0	0	14%	19%	2085	6255	2075	2070	6245	6240	400	0.193	0.193	320	0.155				
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	402	0.193		322	0.155				
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	402	0.193		322	0.155				
Long Yip Street	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	4170	2085	2085	4170	4170	663	0.318		518	0.248				
	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	663	0.318		518	0.248				
	E	↘	D	2,3,4	3.3	0	15	0	100%	100%	2085	2085	1895	1895	1895	1895	95	0.050		140	0.074				
Po Yip Street	N	↑	C	3,4	5.5	0	0	1	0%	0%	2165	4470	2165	2165	4295	4280	338	0.156	0.156	304	0.140				
	N	↗	C	3,4	5.5	0	15	0	81%	91%	2305	0	2130	2115	0	0	332	0.156		296	0.140				
Yuen Long On Lok Road	W	←	F	2,3,4	3.5	0	0	1	0%	0%	1965	6175	1965	1965	6175	6175	539	0.274		574	0.292	0.292			
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	578	0.274		615	0.292				
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	578	0.274		615	0.292				
Yuen Long On Lok Road	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	6315	2105	2105	6315	6315	442	0.210		455	0.216				
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	442	0.210		455	0.216				
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	442	0.210		455	0.216				
Yuen Long Tung Tai Street	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	4210	1915	1915	3830	3830	185	0.097		220	0.115				
	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	0	1915	1915	0	0	185	0.097		220	0.115				
Pedestrian Crossing			Ip	2,3,4	Min. Crossing Time = 9Gm + 10FGm = 19s																				
			Jp	1	Min. Crossing Time = 8Gm + 9Gm = 17s																				
			Kp	2,3,4	Min. Crossing Time = 10Gm + 12FGm = 22s																				
			Lp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																				
			Mp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																				
			Np	2,3	Min. Crossing Time = 10Gm + 12FGm = 22s																				

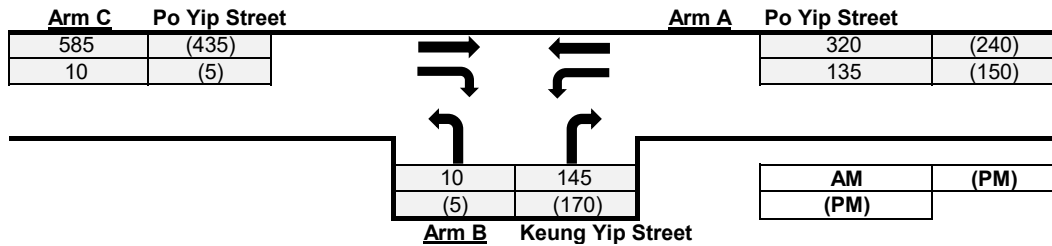
Notes:	Traffic Flow (pcu / hr) 	AM(PM) 285(250) 445(355)	A.M. Check Phase		P.M. Check Phase	
			E _y 0.470 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 58%	E _y 0.394 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 88%		



Priority Junction Calculation

Junction : Po Yip Street / Keung Yip Street (Jn B) Job No.: 26016HK

Scenario : 2026 Observed 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	17	D 0.921
W-CR	1.5	E 0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F 1.154
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.414
V-rBA	80	
V-IBA	98	
V-rBC	85	
V-rCB	250	
w-BA	3.5	
w-BC	3.5	
w-CB	4	

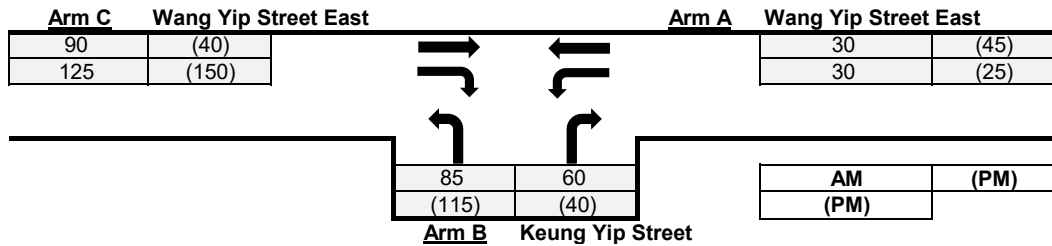
Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
q-CA	585	435	Q-BA	492	516		
q-CB	10	5	Q-BC	658	668		
q-AB	135	150	Q-CB	781	792		
q-AC	320	240	Q-CA	N/A	N/A		(If C-B blocked C-A)
q-BA	145	170	Q-BAC	500	520		(If Minor Road Share LT&RT)
q-BC	10	5					
f	0.065	0.029					

Results :	Ratio of Flow-to-Capacity	AM	PM
B-A		N/A	N/A
B-C		N/A	N/A
C-B		0.01	0.01
C-A		N/A	N/A
B-AC		0.31	0.34

Critical DFC **0.31** **0.34**

Priority Junction Calculation

Junction : Wang Yip Street East/ Keung Yip Street (Jn C) Job No.: 26016HK
 Scenario : 2026 Observed 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	10	V-rBA	80	w-BA	3.5	D	0.891
	W-CR	0	V-IBA	45	w-BC	3.5	E	0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		1	V-rBC	85	w-CB	5	F	1.259
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	250			Y	0.655

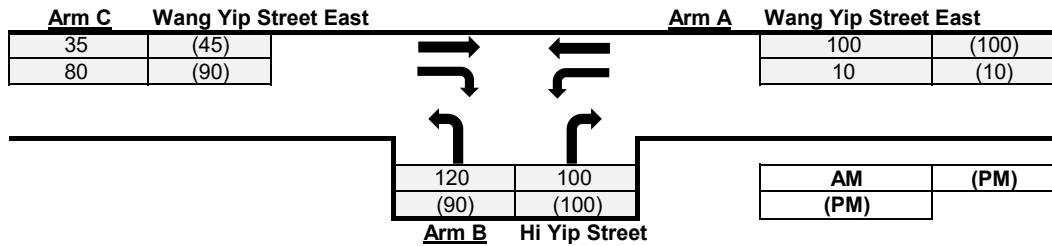
Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	90	40	Q-BA	500	496	
	q-CB	125	150	Q-BC	702	699	
	q-AB	30	25	Q-CB	920	917	
	q-AC	30	45	Q-CA	1555	1505	(If C-B blocked C-A)
	q-BA	60	40	Q-BAC	601	632	(If Minor Road Share LT&RT)
	q-BC	85	115				
	f	0.586	0.742				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.14	0.16
	C-A	0.06	0.03
	B-AC	0.24	0.25

Critical DFC **0.24** **0.25**

Priority Junction Calculation

Junction : Wang Yip Street East/ Hi Yip Street (Jn D) Job No.: 26016HK
 Scenario : 2026 Observed 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	10	V-rBA	37	w-BA	3.3	D	0.838
	W-CR	0	V-IBA	45	w-BC	3.3	E	0.900
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		1	V-rBC	43	w-CB	5	F	1.121
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	114			Y	0.655

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	35	45	Q-BA	478	474	
	q-CB	80	90	Q-BC	648	648	
	q-AB	10	10	Q-CB	806	806	
	q-AC	100	100	Q-CA	1621	1599	(If C-B blocked C-A)
	q-BA	100	100	Q-BAC	558	543	(If Minor Road Share LT&RT)
	q-BC	120	90				
	f	0.545	0.474				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.10	0.11
	C-A	0.02	0.03
	B-AC	0.39	0.35

Critical DFC **0.39** **0.35**

Junction: **Yuen Long On Lok Road / Long Yip Street / Po Yip Street / Yuen Long Tung Tai Street (Jn A)**
 Description: **2033 Reference Traffic Flows**

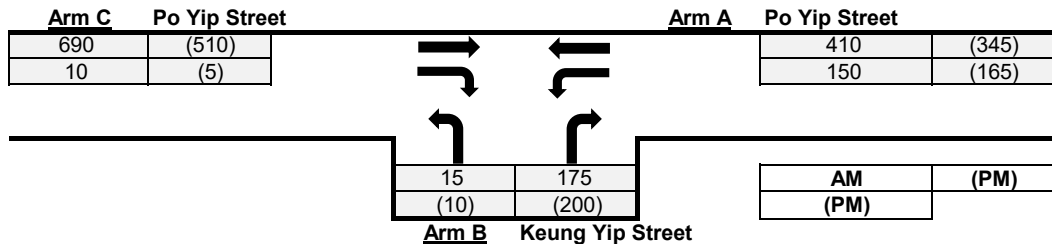
Approach	Direction	Movement notation	Phase	Stage	Width (m)			Radius (m)		Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M.			P.M.		
					Left	Right	Nearside 0/1	A.M.	P.M.	A.M.	P.M.			A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Po Yip Street	S	↘	A	1	3.5	35	0	1	100%	100%	1965	6175	1885	1885	6015	6020	271	0.144	0.144	221	0.117	0.117	
	S	↘	A	1	3.5	35	0	0	91%	84%	2105	0	2025	2030	0	0	291	0.144		238	0.117		
	S	↓	A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	303	0.144		246	0.117		
Po Yip Street	S	↙	E	1	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	218	0.114		220	0.115		
	S	↙	E	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	218	0.114		220	0.115		
Long Yip Street	E	↗	B	2	3.3	40	0	0	13%	18%	2085	6255	2075	2070	6245	6240	540	0.260	0.260	410	0.198		
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	543	0.260		413	0.198		
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	543	0.260		413	0.198		
Long Yip Street	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	4170	2085	2085	4170	4170	883	0.423		665	0.319		
	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	883	0.423		665	0.319		
	E	↘	D	2,3,4	3.3	0	15	0	100%	100%	2085	2085	1895	1895	1895	1895	105	0.055		155	0.082		
Po Yip Street	N	↑	C	3,4	5.5	0	0	1	0%	0%	2165	4470	2165	2165	4300	4285	405	0.187	0.187	384	0.177		
	N	↗	C	3,4	5.5	0	15	0	79%	86%	2305	0	2135	2120	0	0	400	0.187		376	0.177		
Yuen Long On Lok Road	W	←	F	2,3,4	3.5	0	0	1	0%	0%	1965	6175	1965	1965	6175	6175	708	0.360		756	0.385	0.385	
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	758	0.360		810	0.385		
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	758	0.360		810	0.385		
Yuen Long On Lok Road	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	6315	2105	2105	6315	6315	598	0.284		620	0.295		
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	598	0.284		620	0.295		
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	598	0.284		620	0.295		
Yuen Long Tung Tai Street	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	4210	1915	1915	3830	3830	220	0.115		265	0.138		
	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	0	1915	1915	0	0	220	0.115		265	0.138		
Pedestrian Crossing			Ip	2,3,4	Min. Crossing Time = 9Gm + 10FGm = 19s																		
			Jp	1	Min. Crossing Time = 8Gm + 9Gm = 17s																		
			Kp	2,3,4	Min. Crossing Time = 10Gm + 12FGm = 22s																		
			Lp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																		
			Mp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																		
			Np	2,3	Min. Crossing Time = 10Gm + 12FGm = 22s																		

Notes:	Traffic Flow (pcu / hr) 	AM(PM) 330(285) 535(420)	A.M. Check Phase		P.M. Check Phase	
			Eγ 0.591 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 26%	Eγ 0.502 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 48%		

Stage / Phase Diagrams			
I/G = 7s	I/G = 7s		I/G = 10s

Priority Junction Calculation

Junction : Po Yip Street / Keung Yip Street (Jn B) Job No.: 26016HK
 Scenario : 2033 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	17	V-rBA	80	w-BA	3.5	D	0.921
	W-CR	1.5	V-IBA	98	w-BC	3.5	E	0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		0	V-rBC	85	w-CB	4	F	1.154
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	250			Y	0.414

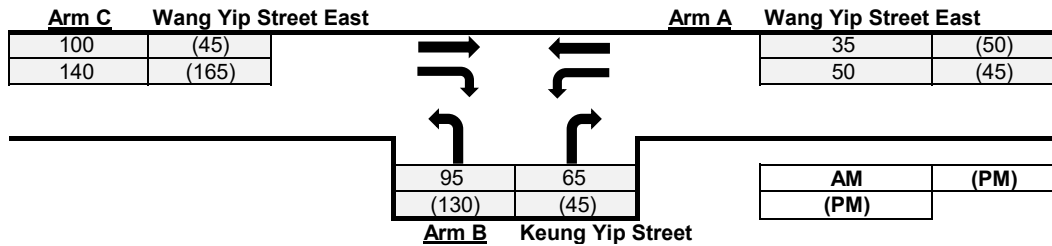
Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	690	510	Q-BA	469	494	
	q-CB	10	5	Q-BC	644	652	
	q-AB	150	165	Q-CB	762	771	
	q-AC	410	345	Q-CA	N/A	N/A	(If C-B blocked C-A)
	q-BA	175	200	Q-BAC	480	500	(If Minor Road Share LT&RT)
	q-BC	15	10				
	f	0.079	0.048				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.01	0.01
	C-A	N/A	N/A
	B-AC	0.40	0.42

Critical DFC **0.40** **0.42**

Priority Junction Calculation

Junction : Wang Yip Street East/ Keung Yip Street (Jn C) Job No.: 26016HK
 Scenario : 2033 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	10	D 0.891
W-CR	0	E 0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 1.259
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.655
V-rBA	80	
V-IBA	45	
V-rBC	85	
V-rCB	250	
w-BA	3.5	
w-BC	3.5	
w-CB	5	

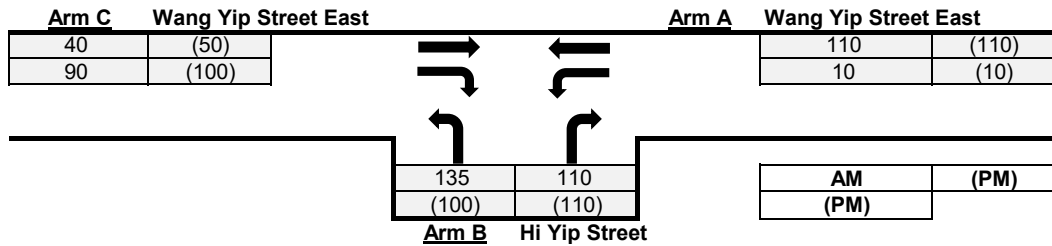
Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM
	pcu/hr			pcu/hr		
q-CA	100	45	Q-BA	491	488	(If C-B blocked C-A) (If Minor Road Share LT&RT)
q-CB	140	165	Q-BC	699	696	
q-AB	50	45	Q-CB	912	909	
q-AC	35	50	Q-CA	1524	1473	
q-BA	65	45	Q-BAC	596	627	
q-BC	95	130				
f	0.594	0.743				

Results :	Ratio of Flow-to-Capacity	AM	PM
B-A		N/A	N/A
B-C		N/A	N/A
C-B		0.15	0.18
C-A		0.07	0.03
B-AC		0.27	0.28

Critical DFC **0.27** **0.28**

Priority Junction Calculation

Junction : Wang Yip Street East/ Hi Yip Street (Jn D) Job No.: 26016HK
 Scenario : 2033 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	10	V-rBA	37	w-BA	3.3	D	0.838
	W-CR	0	V-IBA	45	w-BC	3.3	E	0.900
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		1	V-rBC	43	w-CB	5	F	1.121
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	114			Y	0.655

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	40	50	Q-BA	472	468	
	q-CB	90	100	Q-BC	646	646	
	q-AB	10	10	Q-CB	803	803	
	q-AC	110	110	Q-CA	1598	1576	(If C-B blocked C-A)
	q-BA	110	110	Q-BAC	554	539	(If Minor Road Share LT&RT)
	q-BC	135	100				
	f	0.551	0.476				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.11	0.12
	C-A	0.03	0.03
	B-AC	0.44	0.39

Critical DFC **0.44** **0.39**

TRAFFIC SIGNALS CALCULATION

Job No: 26016HK

CTA Consultants Ltd.

Junction: **Yuen Long On Lok Road / Long Yip Street / Ma Wang Road / Wang Tat Road / Wang Lok Street (Jn E)**
 Description: **2033 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)		Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M.			P.M.		
					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		
Long Yip Street	W	↖	A	1	3.0	0	27	0	100%	100%	2055	4110	1945	1945	3890	3890	378	0.194	0.194	395	0.203	0.203	
	W	↗	A	1	3.0	0	27	0	100%	100%	2055	4110	1945	1945	3890	3890	378	0.194		395	0.203		
	W	←	A	1	3.0	0	0	0	0%	0%	2055	4110	2055	2055	4110	4110	263	0.128		293	0.142		
	W	↔	A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	263	0.128		293	0.142		
	W	↘	A	1	3.0	10	0	1	100%	100%	1915	1915	1665	1665	1665	1665	5	0.003		5	0.003		
Wang Lok Street	N	↖	D	2	3.0	0	25	0	100%	100%	2055	2055	1940	1940	1940	1940	5	0.003		5	0.003		
	N	↗	D	2	3.0	20	0	1	50%	50%	1915	1915	1845	1845	1845	1845	10	0.005		10	0.005		
Wang Tat Road	E	↖	C	3	3.5	16	0	1	100%	100%	1965	8280	1795	1795	8105	8105	220	0.123		130	0.072		
	E	↗	C	3	3.5	18	0	0	0%	0%	2105	0	2105	2105	0	0	387	0.184	0.184	300	0.143	0.143	
	E	↔	C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	387	0.184		300	0.143		
	E	↘	C	3	3.5	0	15	0	1%	2%	2105	0	2100	2100	0	0	386	0.184		300	0.143		
Wang Lok Street	S	↖	B	4	3.5	25	0	1	100%	100%	1965	6175	1855	1855	5850	5850	328	0.177	0.177	276	0.149	0.149	
	S	↗	B	4	3.5	25	27	0	4% / 146% / 33'		2105	0	1990	1990	0	0	352	0.177		296	0.149		
	S	↔	B	4	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	355	0.177		298	0.149		
Pedestrian Crossing			Ep	3	Min. Crossing Time = 6Gm + 12FGm =18s																		
			Fp	1,2,4	Min. Crossing Time = 10Gm + 15FGm =25s																		
			Gp	4	Min. Crossing Time = 7Gm + 11FGm =18s																		
			Hp	1,2,3	Min. Crossing Time = 8Gm + 10FGm =18s																		
			Ip	2	Min. Crossing Time = 7Gm + 7FGm =14s																		
			Jp	1,3,4	Min. Crossing Time = 5Gm + 6FGm =11s																		

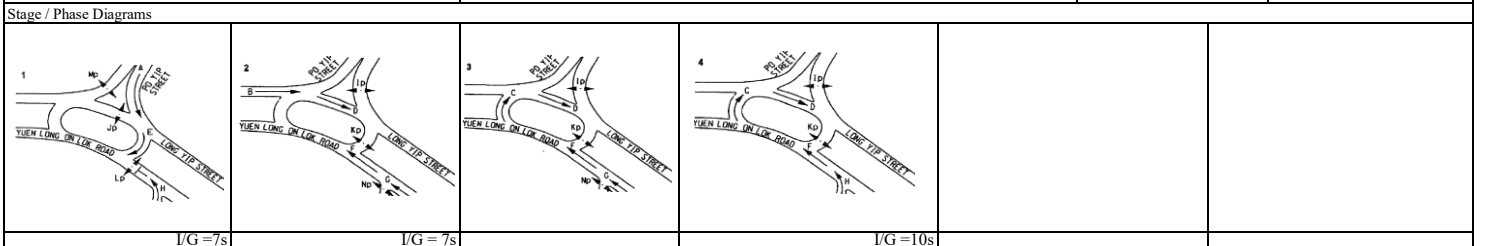
Notes:	<p>Traffic Flow (pcu / hr)</p> <p>AM(PM)</p> <p>405(395) 5(5) 625(470)</p> <p>220(130) ↖ ↗ ↔ ↘</p> <p>1155(895) ↔ ↘ ↙ ↖</p> <p>5(5) ↙ ↖ ↗ ↘</p> <p>5(5) 5(5) 5(5)</p>	<p>A.M. Check Phase</p> <p>Ey 0.555</p> <p>L (sec) 29</p> <p>C (sec) 120</p> <p>y pract. 0.683</p> <p>R.C. (%) 23%</p>	<p>P.M. Check Phase</p> <p>Ey 0.494</p> <p>L (sec) 29</p> <p>C (sec) 120</p> <p>y pract. 0.683</p> <p>R.C. (%) 38%</p>
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Stage / Phase Diagrams			
<p>1</p> <p>I/G = 7s</p>	<p>2</p> <p>I/G = 5+4s</p>	<p>3</p> <p>I/G = 8s</p>	<p>4</p> <p>I/G = 9s</p>

Junction: **Yuen Long On Lok Road / Long Yip Street / Po Yip Street / Yuen Long Tung Tai Street (Jn A)**
 Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)			Radius (m)		Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M.			P.M.		
					Left	Right	Nearside 0/1	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		
Po Yip Street	S	↘	A	1	3.5	35	0	1	100%	100%	1965	6175	1885	1885	6015	6020	296	0.157	0.157	232	0.123	0.123	
	S	↘	A	1	3.5	35	0	0	92%	85%	2105	0	2025	2030	0	0	318	0.157		250	0.123		
	S	↓	A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	331	0.157		259	0.123		
Po Yip Street	S	↙	E	1	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	230	0.120		225	0.117		
	S	↙	E	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	230	0.120		225	0.117		
Long Yip Street	E	↗	B	2	3.3	40	0	0	15%	21%	2085	6255	2075	2070	6245	6240	543	0.262	0.262	413	0.199		
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	546	0.262		416	0.200		
	E	→	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	546	0.262		416	0.200		
Long Yip Street	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	4170	2085	2085	4170	4170	883	0.423		665	0.319		
	E	→	D	2,3,4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	883	0.423		665	0.319		
	E	↘	D	2,3,4	3.3	0	15	0	100%	100%	2085	2085	1895	1895	1895	1895	105	0.055		155	0.082		
Po Yip Street	N	↑	C	3,4	5.5	0	0	1	0%	0%	2165	4470	2165	2165	4310	4295	422	0.195	0.195	398	0.184		
	N	↗	C	3,4	5.5	0	15	0	75%	83%	2305	0	2145	2130	0	0	418	0.195		392	0.184		
Yuen Long On Lok Road	W	←	F	2,3,4	3.5	0	0	1	0%	0%	1965	6175	1965	1965	6175	6175	719	0.366		765	0.389	0.389	
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	770	0.366		820	0.389		
	W	←	F	2,3,4	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	770	0.366		820	0.389		
Yuen Long On Lok Road	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	6315	2105	2105	6315	6315	610	0.290		630	0.299		
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	610	0.290		630	0.299		
	W	←	G	2,3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	610	0.290		630	0.299		
Yuen Long Tung Tai Street	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	4210	1915	1915	3830	3830	220	0.115		265	0.138		
	N	↗	H	1,4	3.5	15	0	0	100%	100%	2105	0	1915	1915	0	0	220	0.115		265	0.138		
Pedestrian Crossing			Ip	2,3,4	Min. Crossing Time = 9Gm + 10FGm = 19s																		
			Jp	1	Min. Crossing Time = 8Gm + 9Gm = 17s																		
			Kp	2,3,4	Min. Crossing Time = 10Gm + 12FGm = 22s																		
			Lp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																		
			Mp	1	Min. Crossing Time = 8Gm + 9FGm = 17s																		
			Np	2,3	Min. Crossing Time = 10Gm + 12FGm = 22s																		

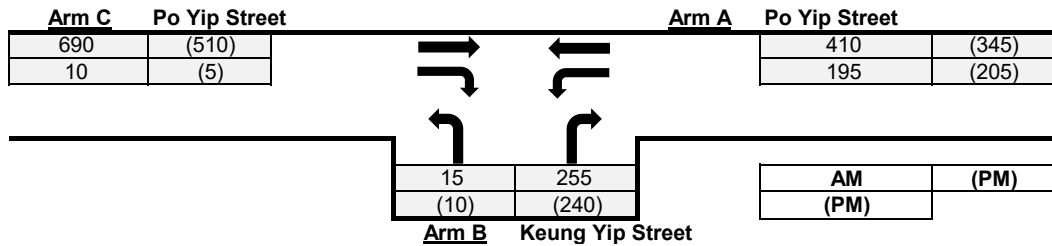
Notes:	Traffic Flow (pcu / hr) 	AM(PM) 355(295) 590(445)	A.M. Check Phase		P.M. Check Phase	
			E _y 0.614 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 21%	E _y 0.512 L (sec) 21 C (sec) 120 y pract. 0.743 R.C. (%) 45%		



Priority Junction Calculation

Junction : Po Yip Street / Keung Yip Street (Jn B) Job No.: 26016HK

Scenario : 2033 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	17	D 0.921
W-CR	1.5	E 0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F 1.154
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.414
V-rBA	80	
V-IBA	98	
V-rBC	85	
V-rCB	250	
w-BA	3.5	
w-BC	3.5	
w-CB	4	

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
q-CA	690	510		Q-BA	467	492	
q-CB	10	5		Q-BC	641	650	
q-AB	195	205		Q-CB	754	764	
q-AC	410	345		Q-CA	N/A	N/A	(If C-B blocked C-A)
q-BA	255	240		Q-BAC	474	497	(If Minor Road Share LT&RT)
q-BC	15	10					
f	0.056	0.040					

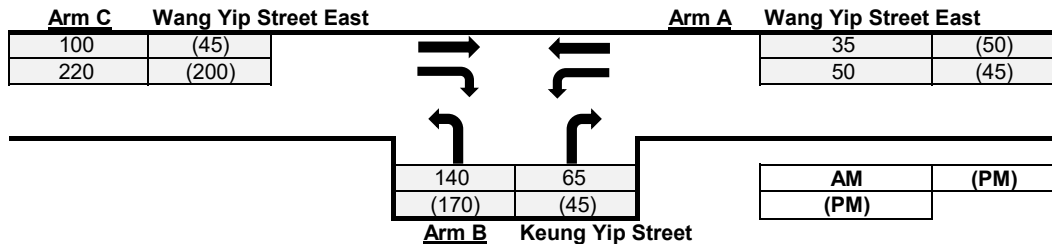
Results :	Ratio of Flow-to-Capacity	AM	PM
B-A		N/A	N/A
B-C		N/A	N/A
C-B		0.01	0.01
C-A		N/A	N/A
B-AC		0.57	0.50

Critical DFC **0.57** **0.50**

Priority Junction Calculation

Junction : Wang Yip Street East/ Keung Yip Street (Jn C) Job No.: 26016HK

Scenario : 2033 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	10	V-rBA	80	w-BA	3.5	D	0.891
	W-CR	0	V-IBA	45	w-BC	3.5	E	0.955
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		1	V-rBC	85	w-CB	5	F	1.259
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	250			Y	0.655

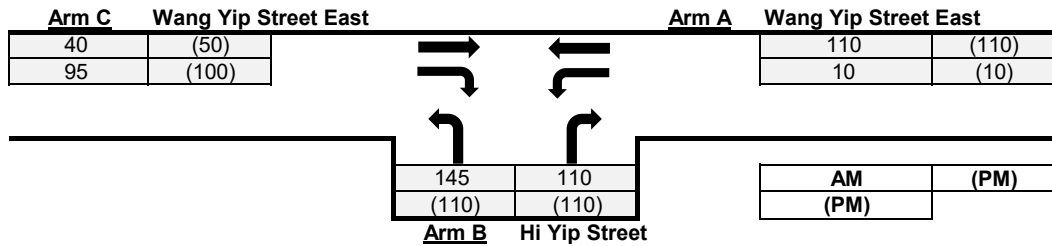
Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM	
	pcu/hr			pcu/hr			
	q-CA	100	45	Q-BA	467	477	
	q-CB	220	200	Q-BC	699	696	
	q-AB	50	45	Q-CB	912	909	
	q-AC	35	50	Q-CA	1366	1404	(If C-B blocked C-A)
	q-BA	65	45	Q-BAC	604	635	(If Minor Road Share LT&RT)
	q-BC	140	170				
	f	0.683	0.791				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.24	0.22
	C-A	0.07	0.03
	B-AC	0.34	0.34

Critical DFC **0.34** **0.34**

Priority Junction Calculation

Junction : Wang Yip Street East/ Hi Yip Street (Jn D) Job No.: 26016HK
 Scenario : 2033 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	10	D 0.838
W-CR	0	E 0.900
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 1.121
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.655
V-rBA	37	
V-IBA	45	
V-rBC	43	
V-rCB	114	
w-BA	3.3	
w-BC	3.3	
w-CB	5	

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM
	pcu/hr			pcu/hr		
q-CA	40	50	Q-BA	471	468	(If C-B blocked C-A) (If Minor Road Share LT&RT)
q-CB	95	100	Q-BC	646	646	
q-AB	10	10	Q-CB	803	803	
q-AC	110	110	Q-CA	1587	1576	
q-BA	110	110	Q-BAC	557	543	
q-BC	145	110				
f	0.569	0.500				

Results :	Ratio of Flow-to-Capacity	AM	PM
B-A		N/A	N/A
B-C		N/A	N/A
C-B		0.12	0.12
C-A		0.03	0.03
B-AC		0.46	0.41

Critical DFC **0.46** **0.41**

TRAFFIC SIGNALS CALCULATION

Job No: 26016HK

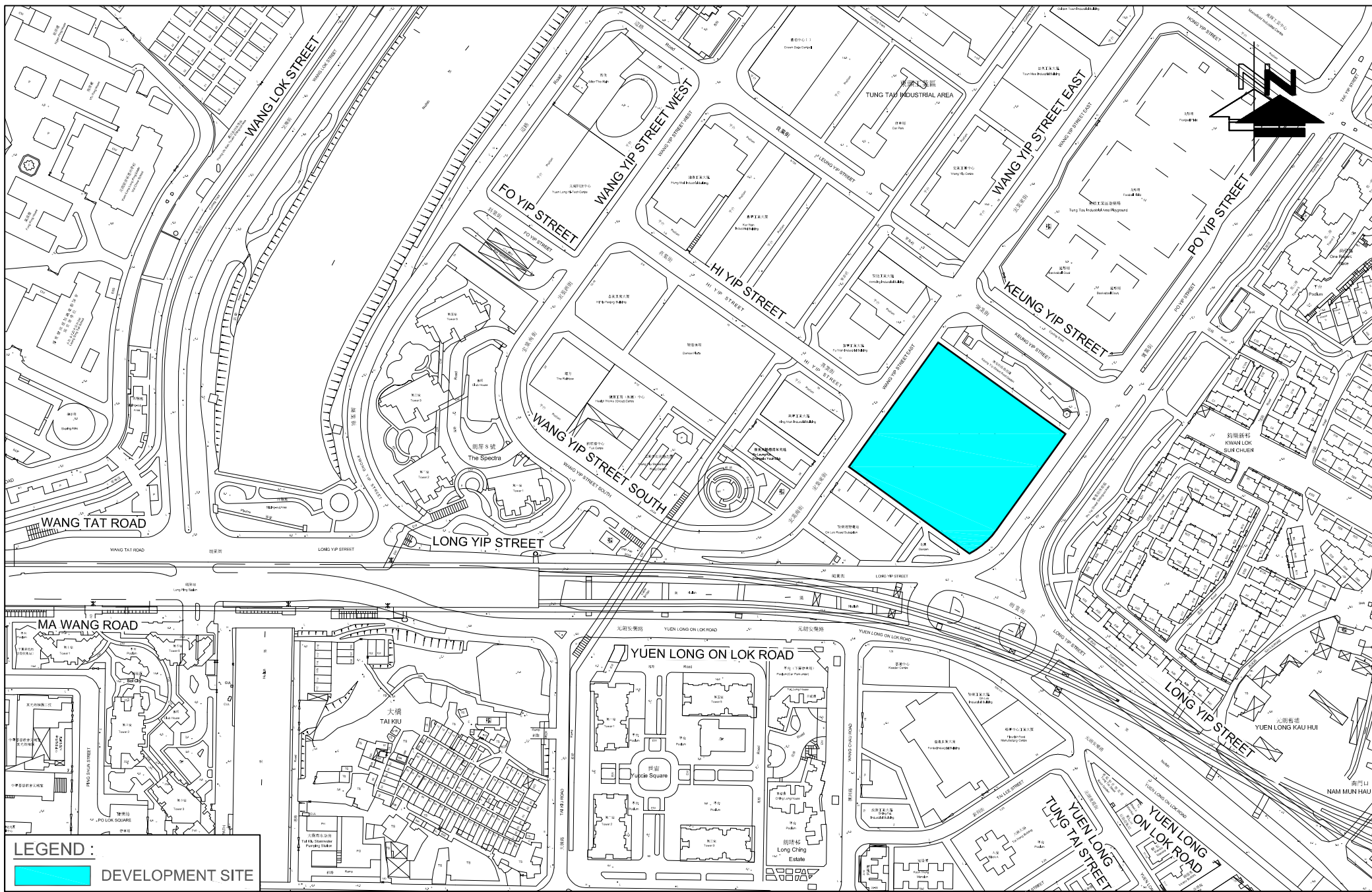
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Junction: **Yuen Long On Lok Road / Long Yip Street / Ma Wang Road / Wang Tat Road / Wang Lok Street (Jn E)**
 Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)		Radius (m)		Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M.			P.M.		
					Left	Right	Nearside 0/1	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	
Long Yip Street	W	↖	A	1	3.0	0	27	0	100%	100%	2055	4110	1945	1945	3890	3890	378	0.194	0.194	395	0.203	0.203
	W	↗	A	1	3.0	0	27	0	100%	100%	2055	4110	1945	1945	3890	3890	378	0.194		395	0.203	
	W	←	A	1	3.0	0	0	0	0%	0%	2055	4110	2055	2055	4110	4110	275	0.134		298	0.145	
	W	↔	A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	275	0.134		298	0.145	
	W	↘	A	1	3.0	10	0	1	100%	100%	1915	1915	1665	1665	1665	1665	5	0.003		5	0.003	
Wang Lok Street	N	↗	D	2	3.0	0	25	0	100%	100%	2055	2055	1940	1940	1940	1940	5	0.003		5	0.003	
	N	↖	D	2	3.0	20	0	1	50%	50%	1915	1915	1845	1845	1845	1845	10	0.005		10	0.005	
Wang Tat Road	E	↖	C	3	3.5	16	0	1	100%	100%	1965	8280	1795	1795	8105	8105	220	0.123		130	0.072	
	E	↗	C	3	3.5	18	0	0	0%	0%	2105	0	2105	2105	0	0	392	0.186	0.186	305	0.145	0.145
	E	↔	C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	392	0.186		305	0.145	
	E	↔	C	3	3.5	0	15	0	1%	2%	2105	0	2100	2100	0	0	391	0.186		305	0.145	
Wang Lok Street	S	↖	B	4	3.5	25	0	1	100%	100%	1965	6175	1855	1855	5850	5850	328	0.177	0.177	276	0.149	0.149
	S	↔	B	4	3.5	25	27	0	4% / 146% / 33'		2105	0	1990	1990	0	0	352	0.177		296	0.149	
	S	↗	B	4	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	355	0.177		298	0.149	
Pedestrian Crossing	Ep			3																		
	Fp			1,2,4																		
	Gp			4																		
	Hp			1,2,3																		
	Ip			2																		
	Jp			1,3,4																		
												Min. Crossing Time = 6Gm + 12FGm =18s										
												Min. Crossing Time = 10Gm + 15FGm =25s										
												Min. Crossing Time = 7Gm + 11FGm =18s										
												Min. Crossing Time = 8Gm + 10FGm =18s										
												Min. Crossing Time = 7Gm + 7FGm =14s										
												Min. Crossing Time = 5Gm + 6FGm =11s										

Notes:	Traffic Flow (pcu / hr) 220(130) ↗ 1170(910) → 5(5) ↘	AM(PM) 405(395) ↖ 5(5) ↓ 625(470) ↗	A.M. Check Phase Ey 0.557 L (sec) 29 C (sec) 120 y pract. 0.683 R.C. (%) 22%	P.M. Check Phase Ey 0.497 L (sec) 29 C (sec) 120 y pract. 0.683 R.C. (%) 37%

Stage / Phase Diagrams				
<p>L/G = 7s</p>	<p>L/G = 5+4s</p>	<p>L/G = 8s</p>	<p>L/G = 9s</p>	

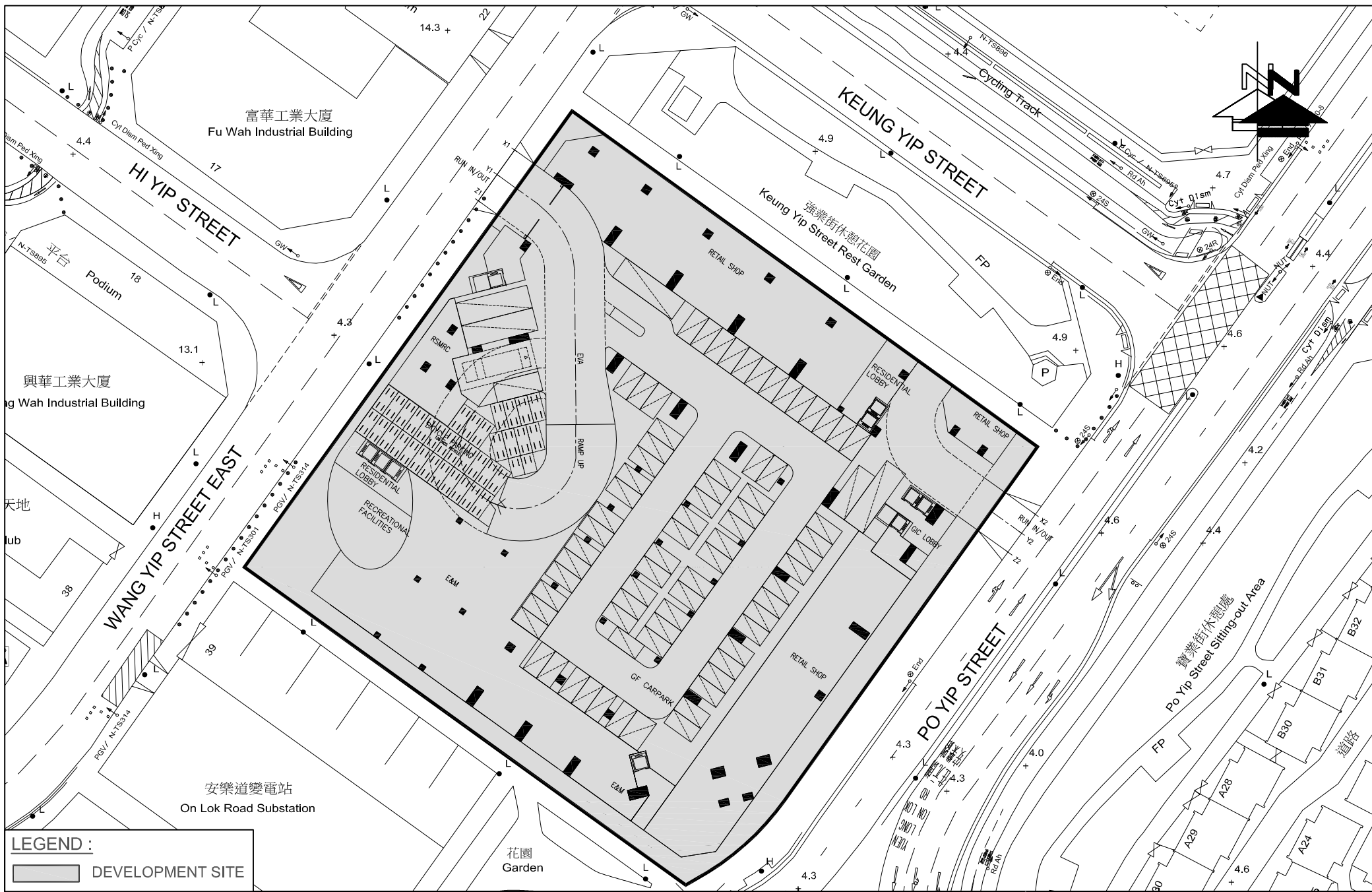


LEGEND :	
	DEVELOPMENT SITE

FIGURE NO.:	1.1	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	SITE LOCATION PLAN
SCALE:	DATE:		
1 : 2750 @A4	14 APR 2026		



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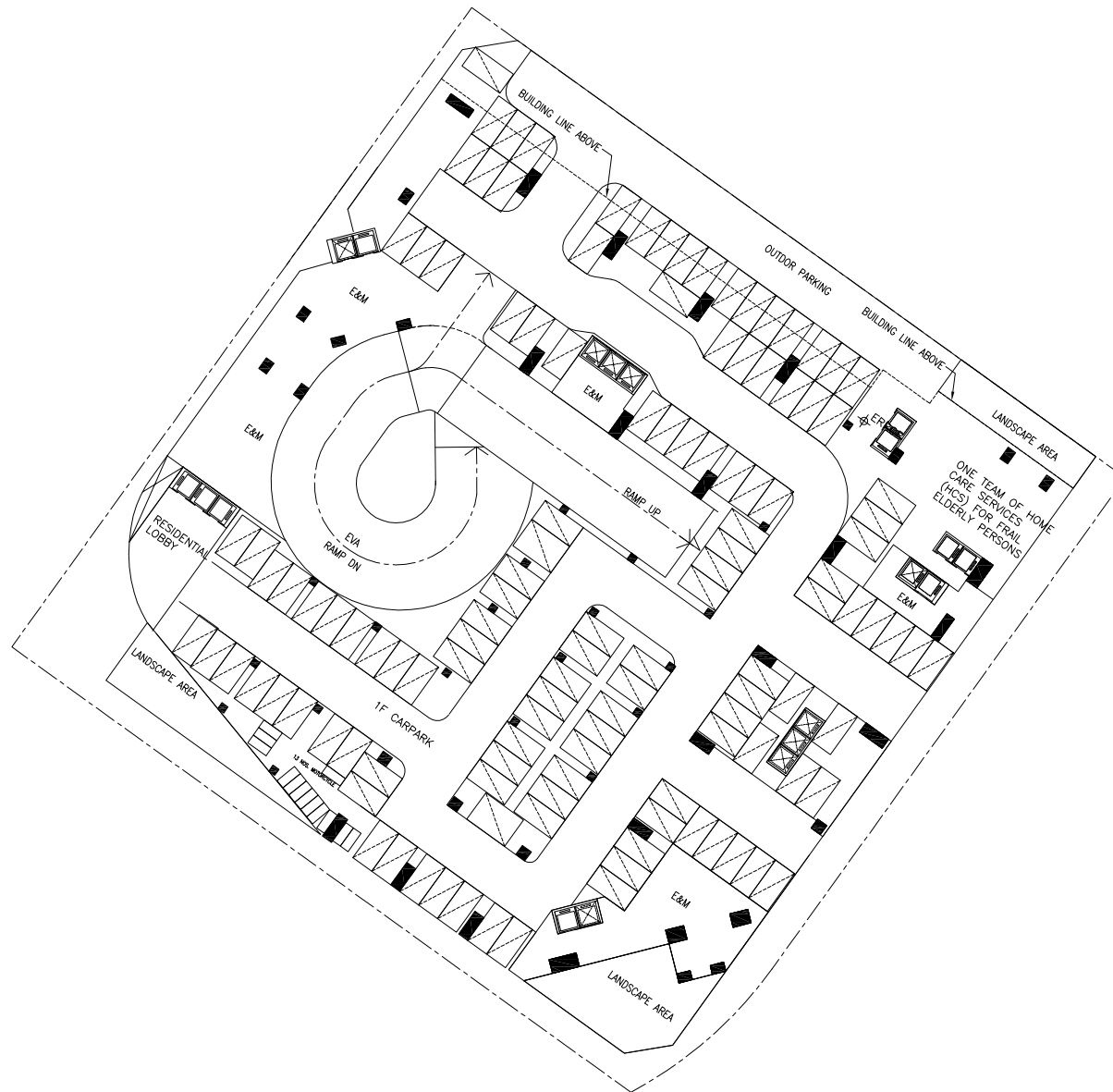
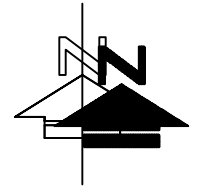



FIGURE NO.: 2.2	PROJECT TITLE: S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26016HK	DRAWING TITLE: 1/F LAYOUT PLAN	
SCALE: 1 : 750 @A4	DATE: 23 APR 2026	

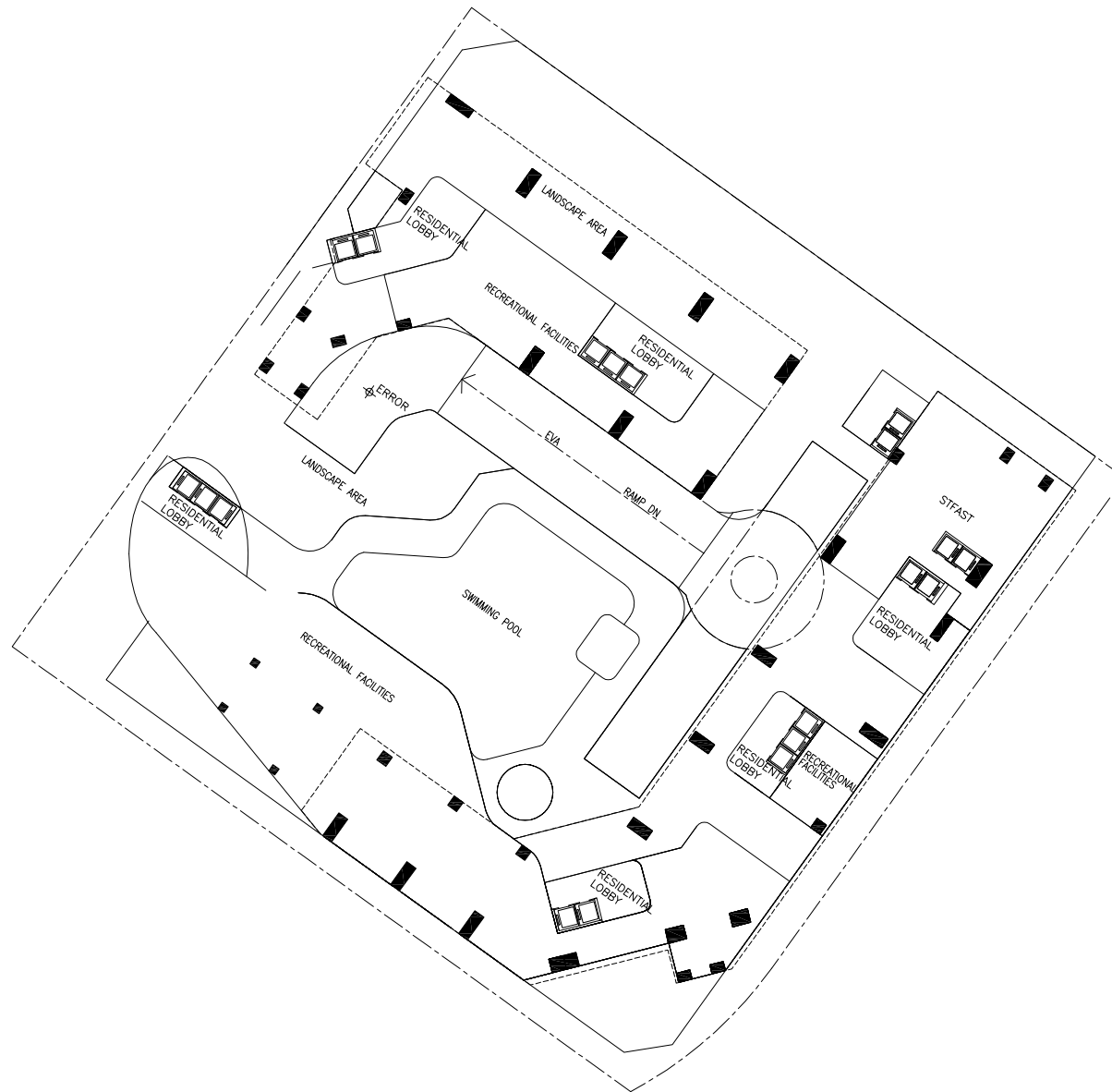
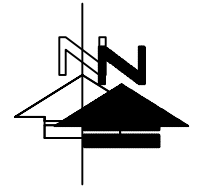


FIGURE NO.: 2.3

PROJECT TITLE: S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long

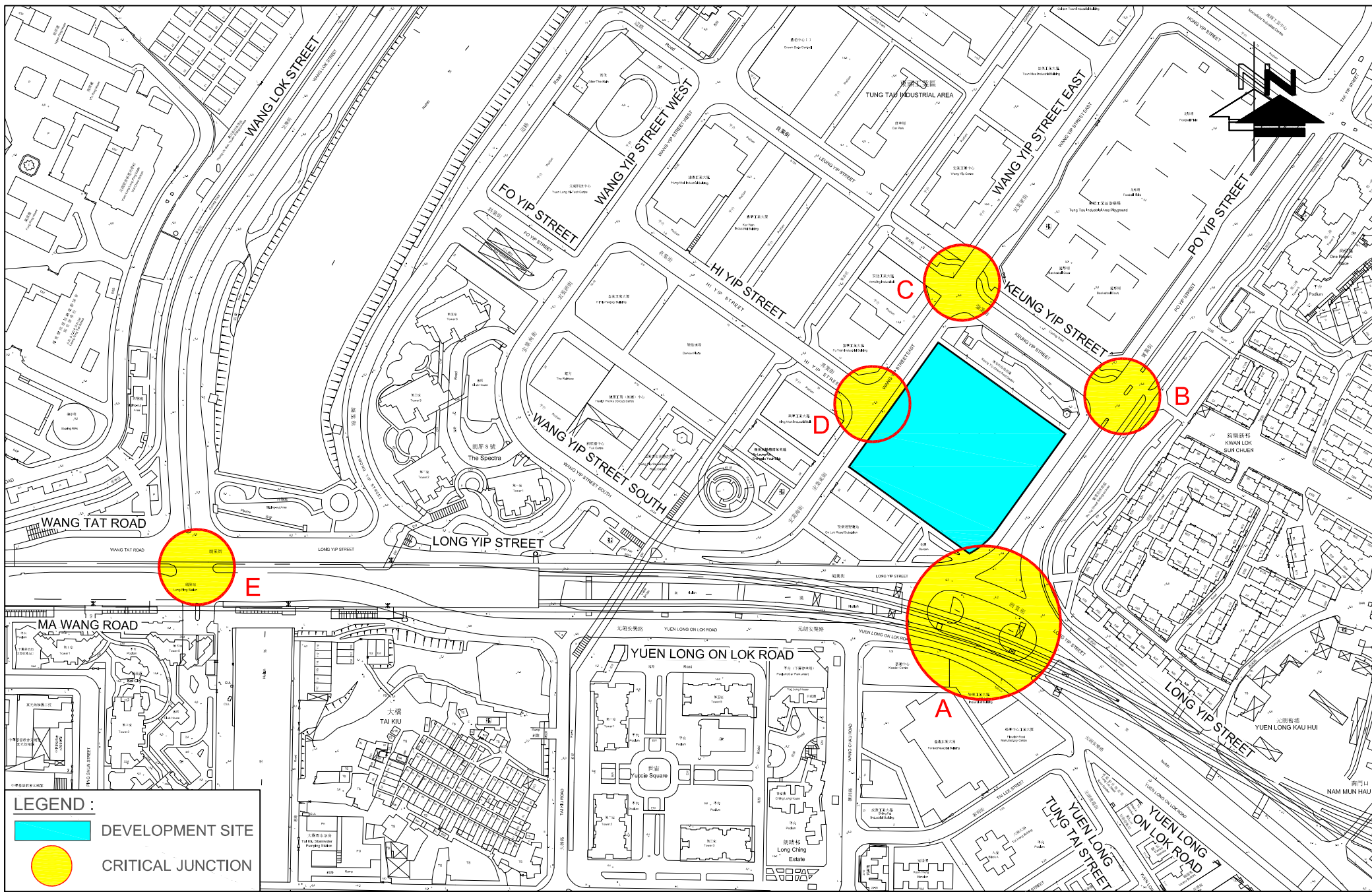
PROJECT NO.: 26016HK

DRAWING TITLE: 2/F LAYOUT PLAN

SCALE: 1 : 750 @A4

DATE: 23 APR 2026





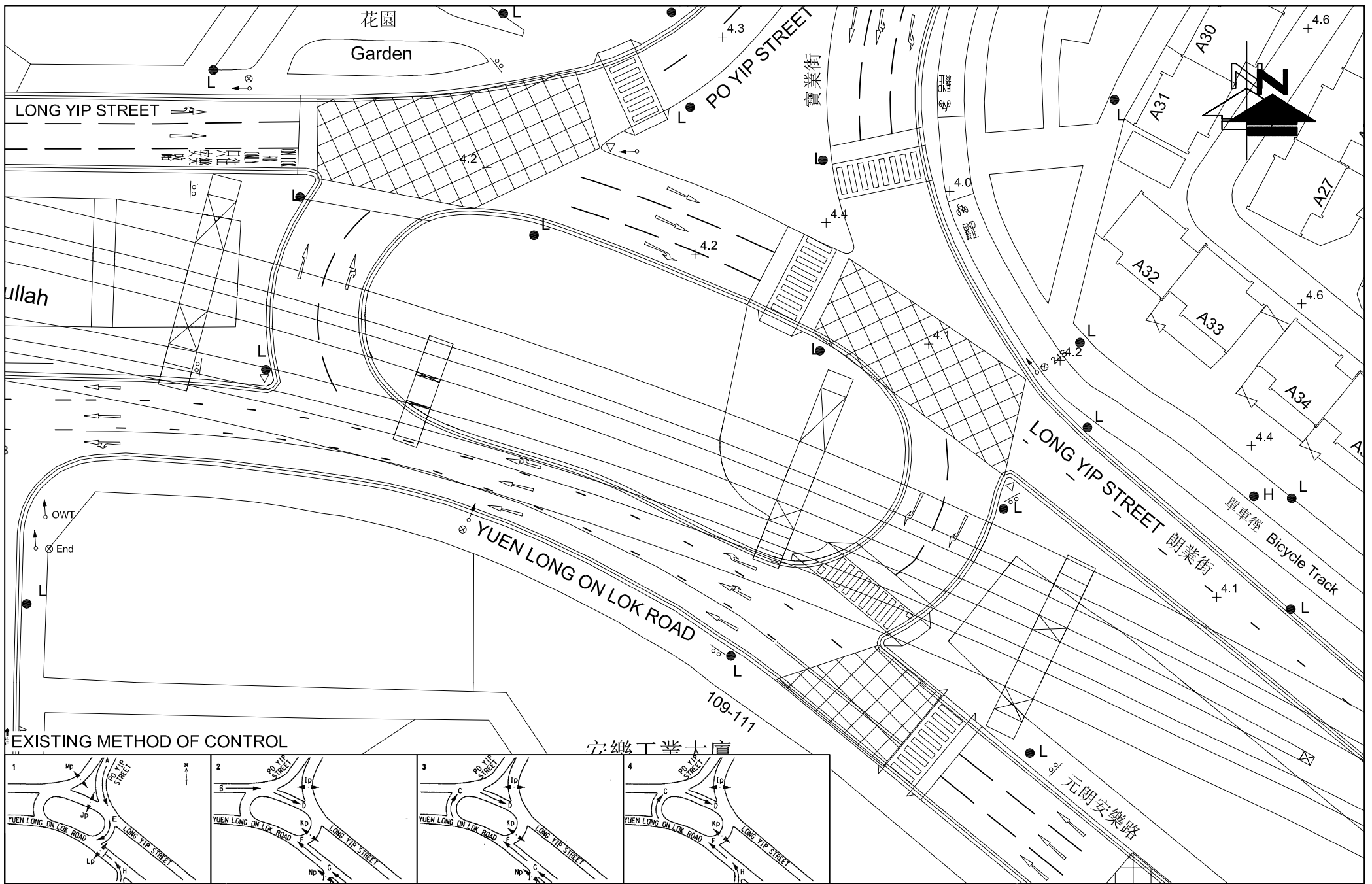
LEGEND :

- DEVELOPMENT SITE
- CRITICAL JUNCTION

FIGURE NO.:	3.1	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	IDENTIFIED CRITICAL JUNCTIONS
SCALE:	1 : 2750 @A4	DATE:	

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EXISTING METHOD OF CONTROL

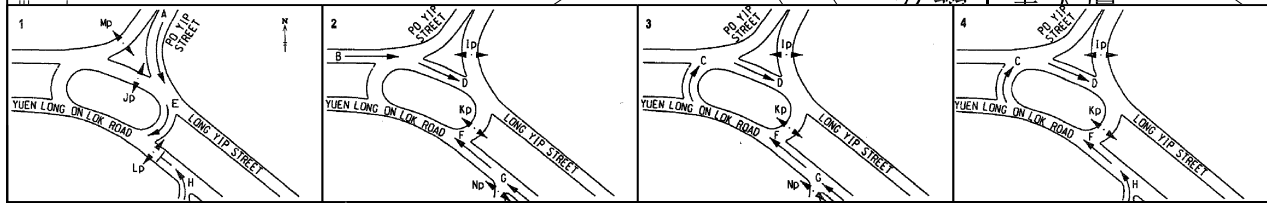


FIGURE NO.: 3.2		PROJECT TITLE: S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.: 26016HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF YUEN LONG ON LOK ROAD / LONG YIP STREET / PO YIP STREET / YUEN LONG TUNG TAI STREET (A)
SCALE: 1 : 550 @A4	DATE: 22 APR 2026	



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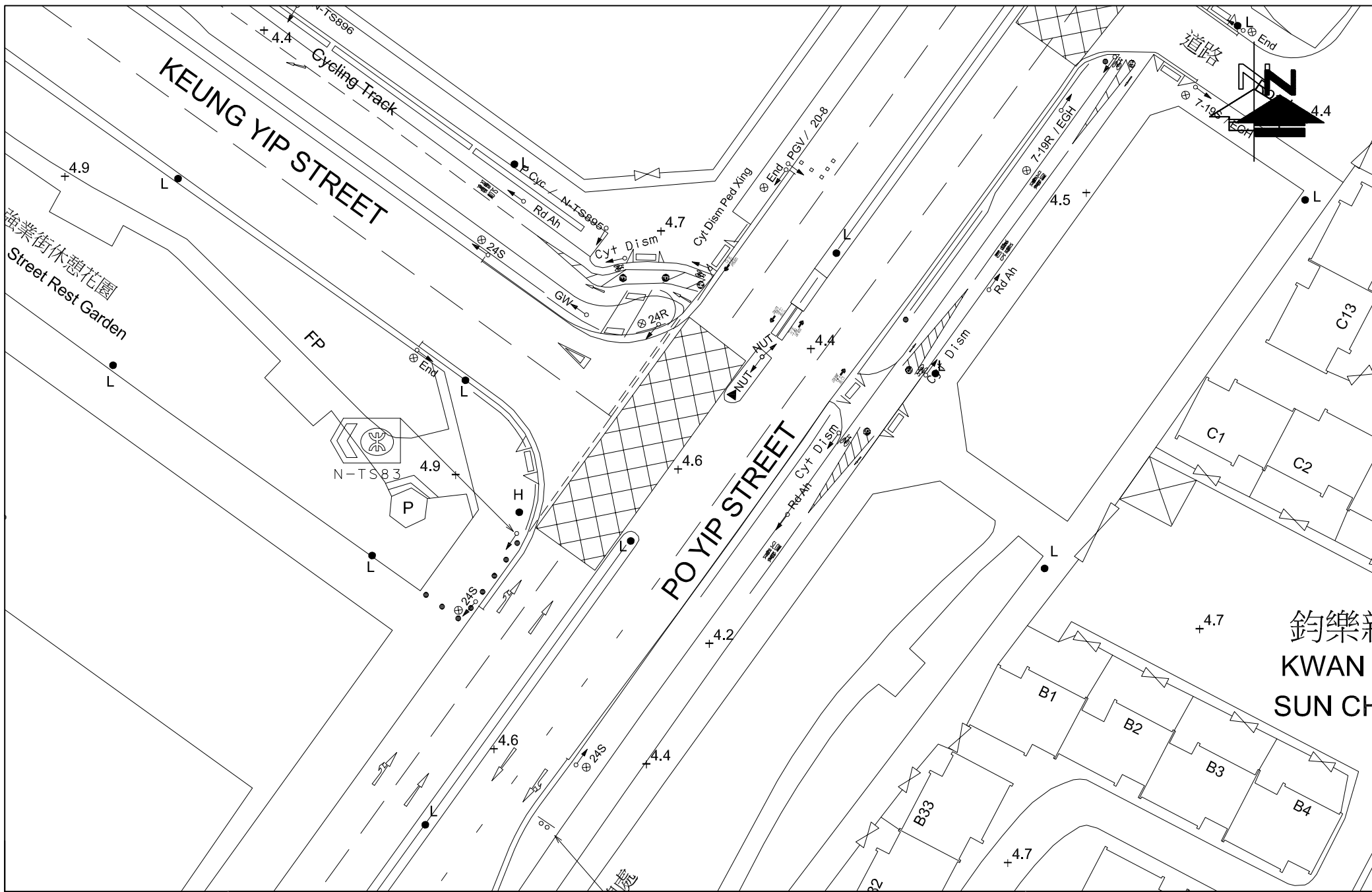


FIGURE NO.:		3.3
PROJECT NO.:		26016HK
SCALE:	DATE:	
1 : 500 @A4	27 MAR 2026	

PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
DRAWING TITLE:	EXISTING JUNCTION LAYOUT OF PO YIP STREET / KEUNG YIP STREET (B)



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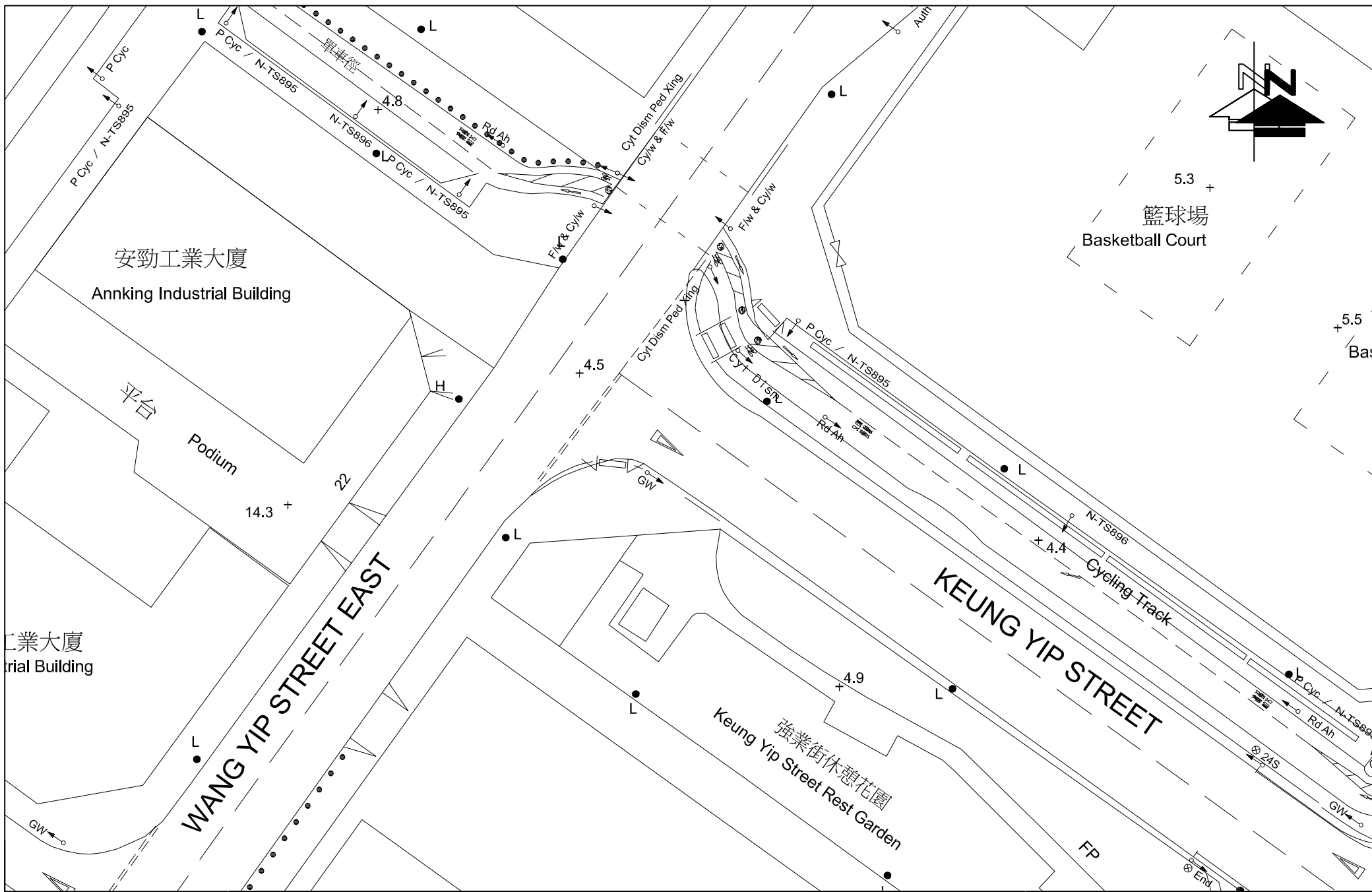
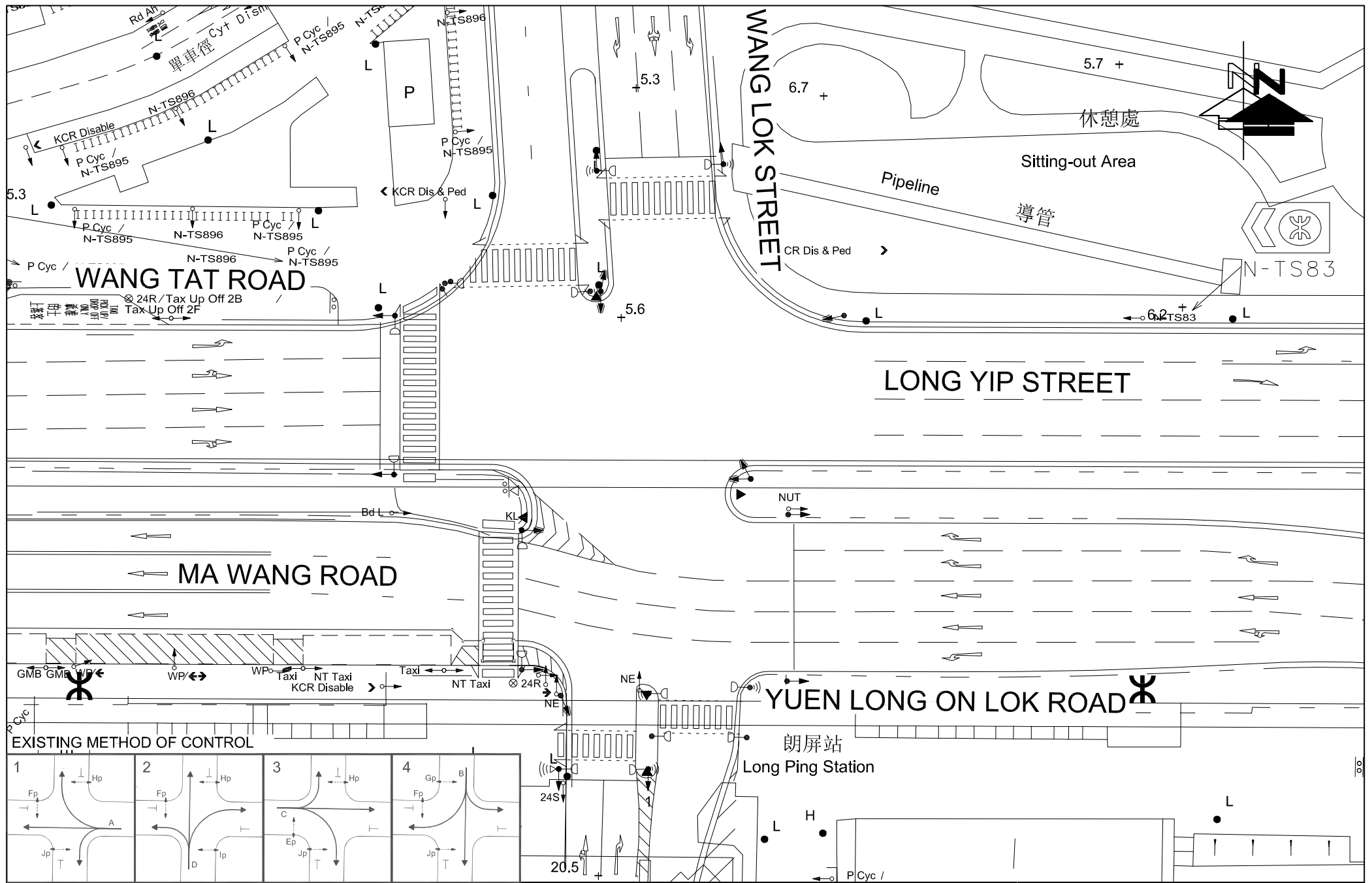


FIGURE NO.: 3.4		PROJECT TITLE: S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.: 26016HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF WANG YIP STREET EAST / KEUNG YIP STREET (C)
SCALE: 1 : 500 @A4	DATE: 27 MAR 2026	



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EXISTING METHOD OF CONTROL

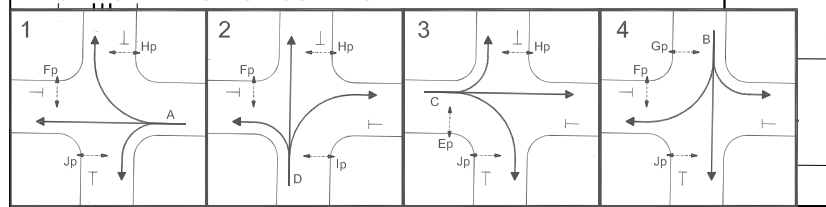


FIGURE NO.: 3.6		PROJECT TITLE: S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long	
PROJECT NO.: 26016HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF YUEN LONG ON LOK ROAD / LONG YIP STREET / WANG LOK STREET / WANG TAT ROAD / MA WANG ROAD (E)	
SCALE: 1 : 500 @A4	DATE: 22 APR 2026		



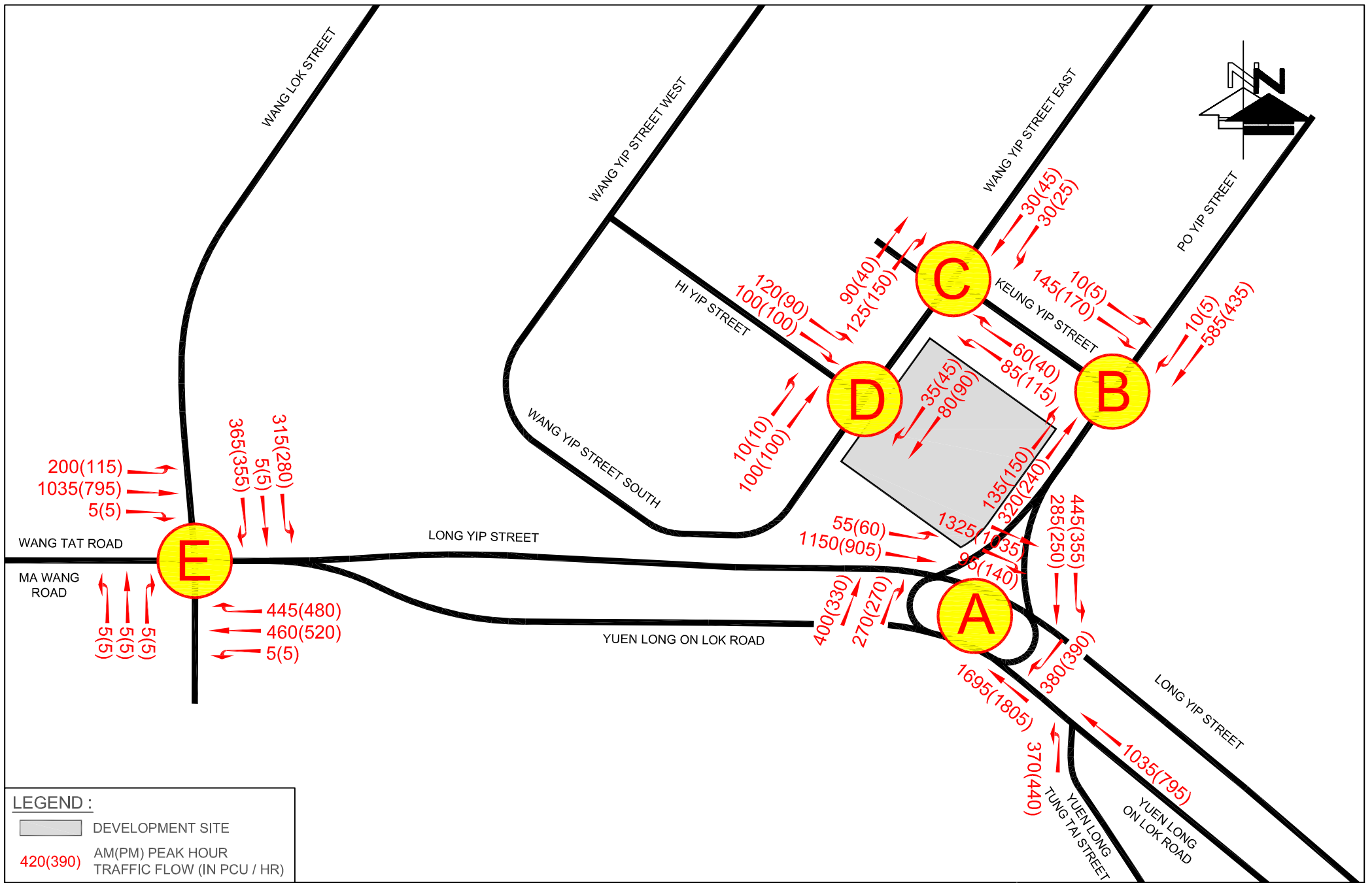
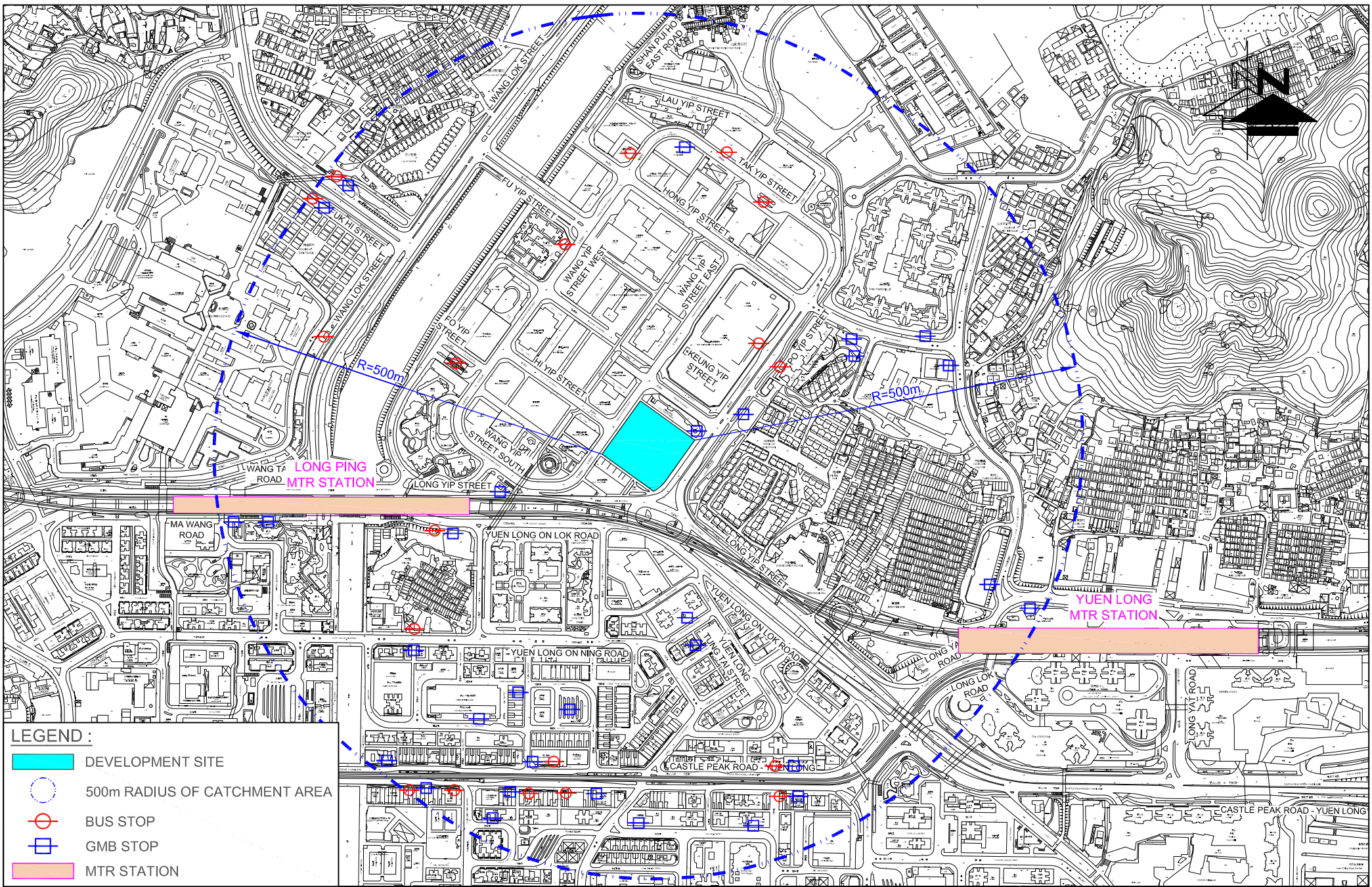


FIGURE NO.:	3.7	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2026 OBSERVED TRAFFIC FLOW
SCALE:	N.T.S. @A4	DATE:	14 APR 2026





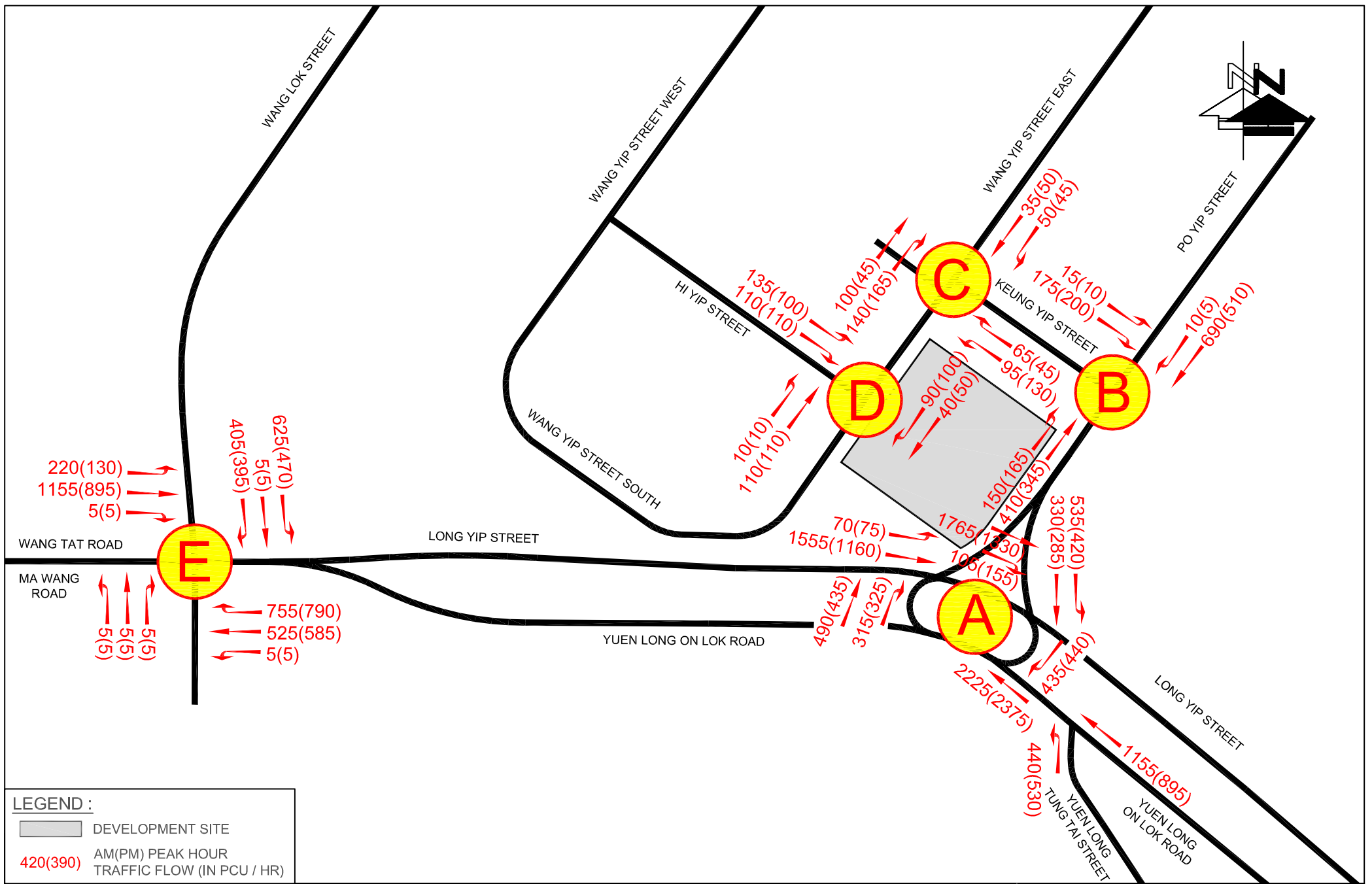
LEGEND:

	DEVELOPMENT SITE
	500m RADIUS OF CATCHMENT AREA
	BUS STOP
	GMB STOP
	MTR STATION

FIGURE NO.:	3.8	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	PUBLIC TRANSPORT SERVICES IN THE VICINITY
SCALE:	DATE:		
1 : 6400 @A4	27 MAR 2026		



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LEGEND :
 DEVELOPMENT SITE
420(390) AM(PM) PEAK HOUR TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.:	4.1	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2033 REFERENCE TRAFFIC FLOW (WITHOUT PROPOSED DEVELOPMENT)
SCALE:	N.T.S. @A4	DATE:	15 APR 2026



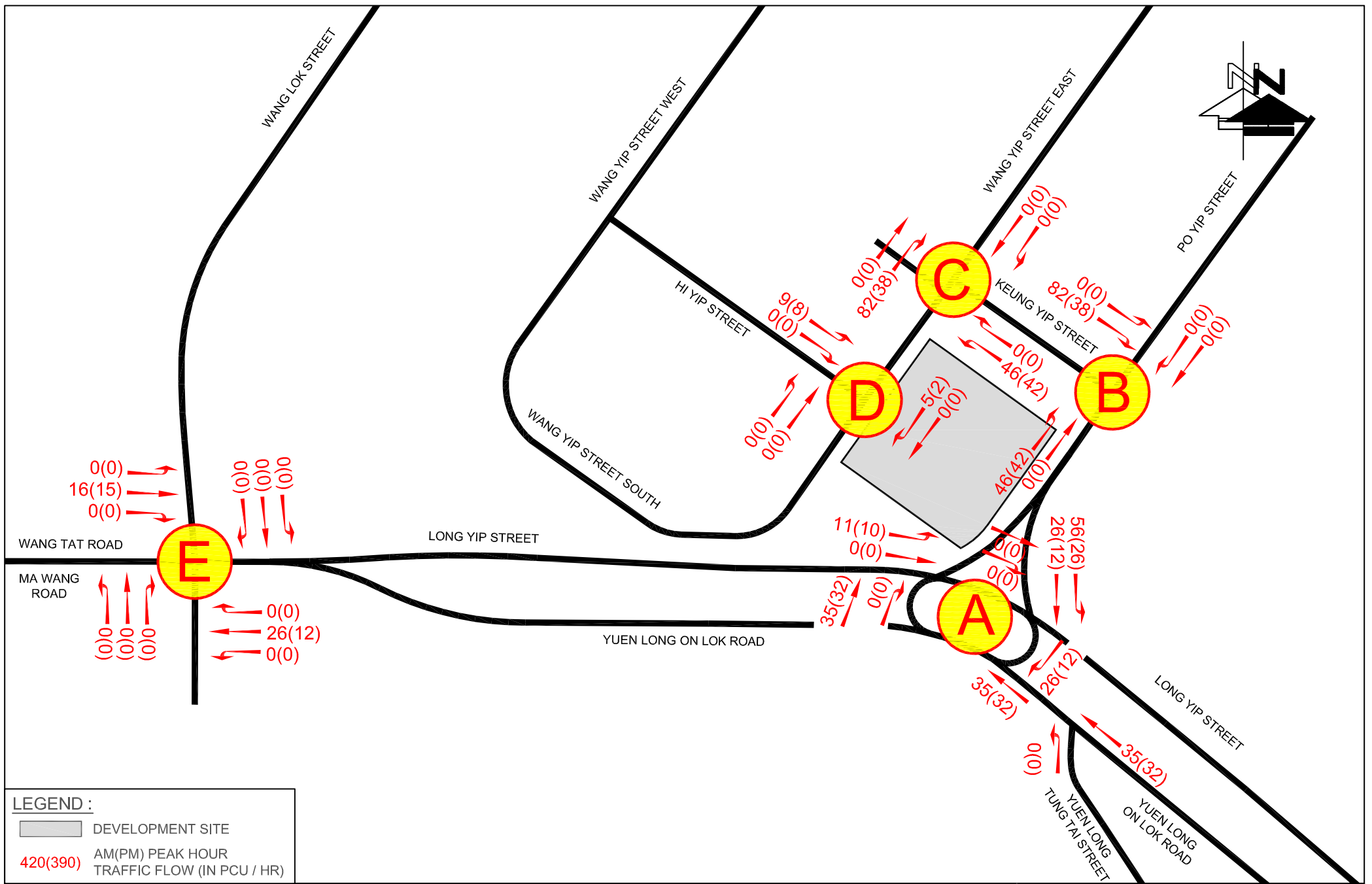


FIGURE NO.:	4.2	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2033 DEVELOPMENT TRAFFIC FLOW
SCALE:	N.T.S. @A4	DATE:	15 APR 2026



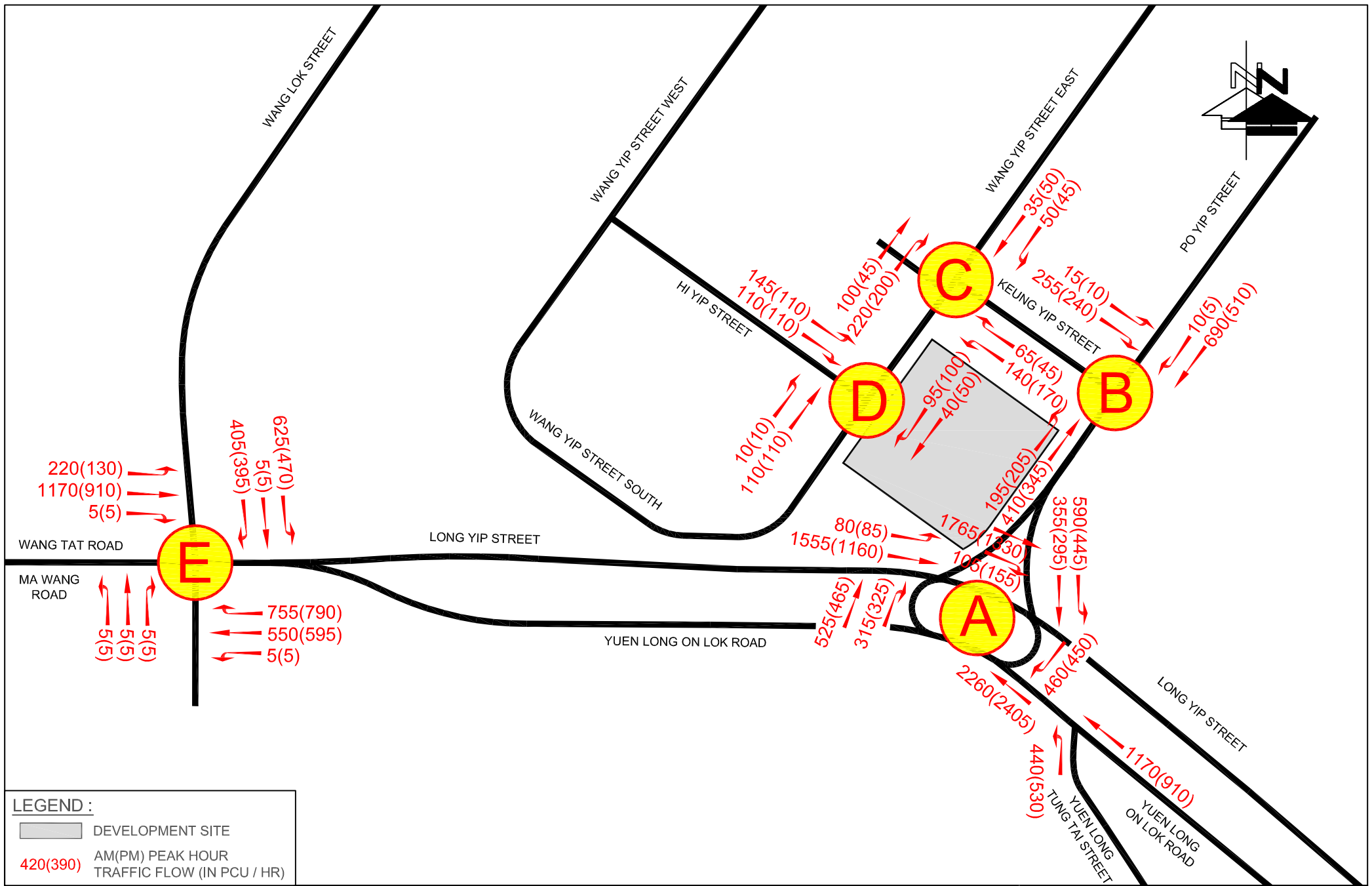
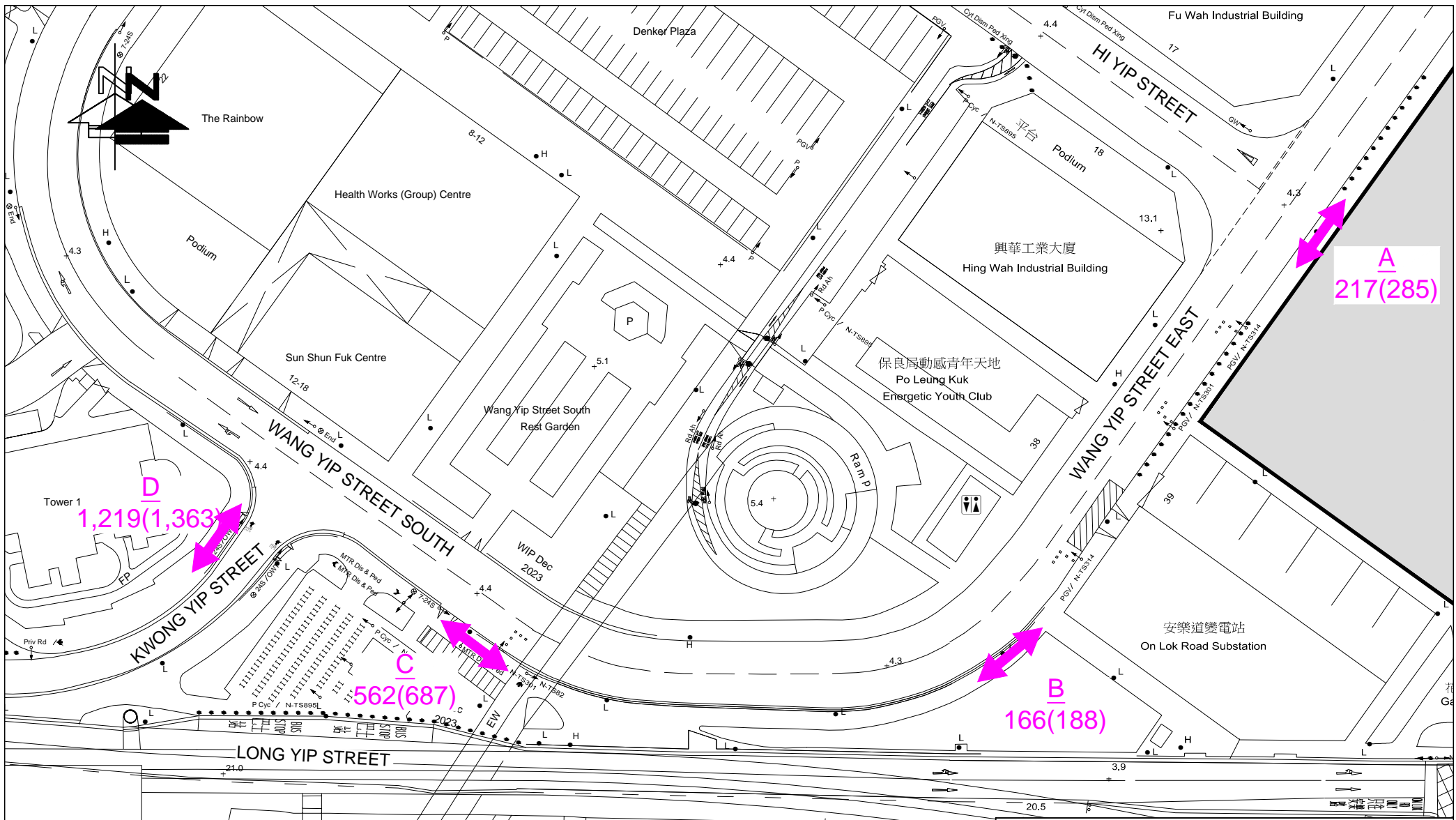


FIGURE NO.:	4.3	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2033 DESIGN TRAFFIC FLOW (WITH PROPOSED DEVELOPMENT)
SCALE:	N.T.S. @A4	DATE:	15 APR 2026

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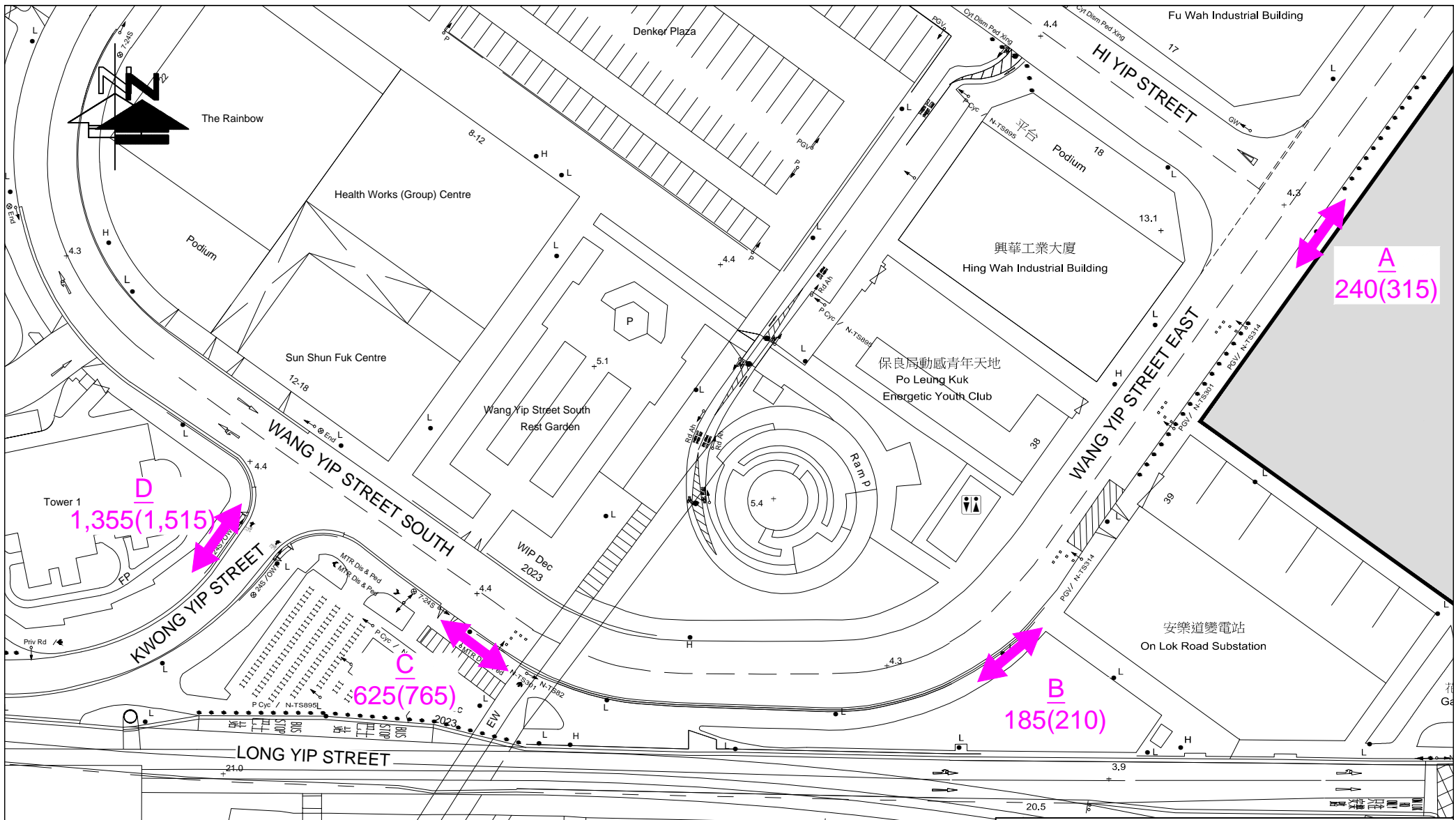


LEGEND :

- DEVELOPMENT SITE
- PEDESTRIAN FLOW DIRECTION
- AM (PM) WEEKDAY PEAK 15 min
- TWO-WAY PEDESTRIAN FLOW (IN PED/15 min)

FIGURE NO.:	5.1	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2026 OBSERVED PEDESTRIAN FLOWS
SCALE:	1 : 850 @A4	DATE:	16 APRIL 2026

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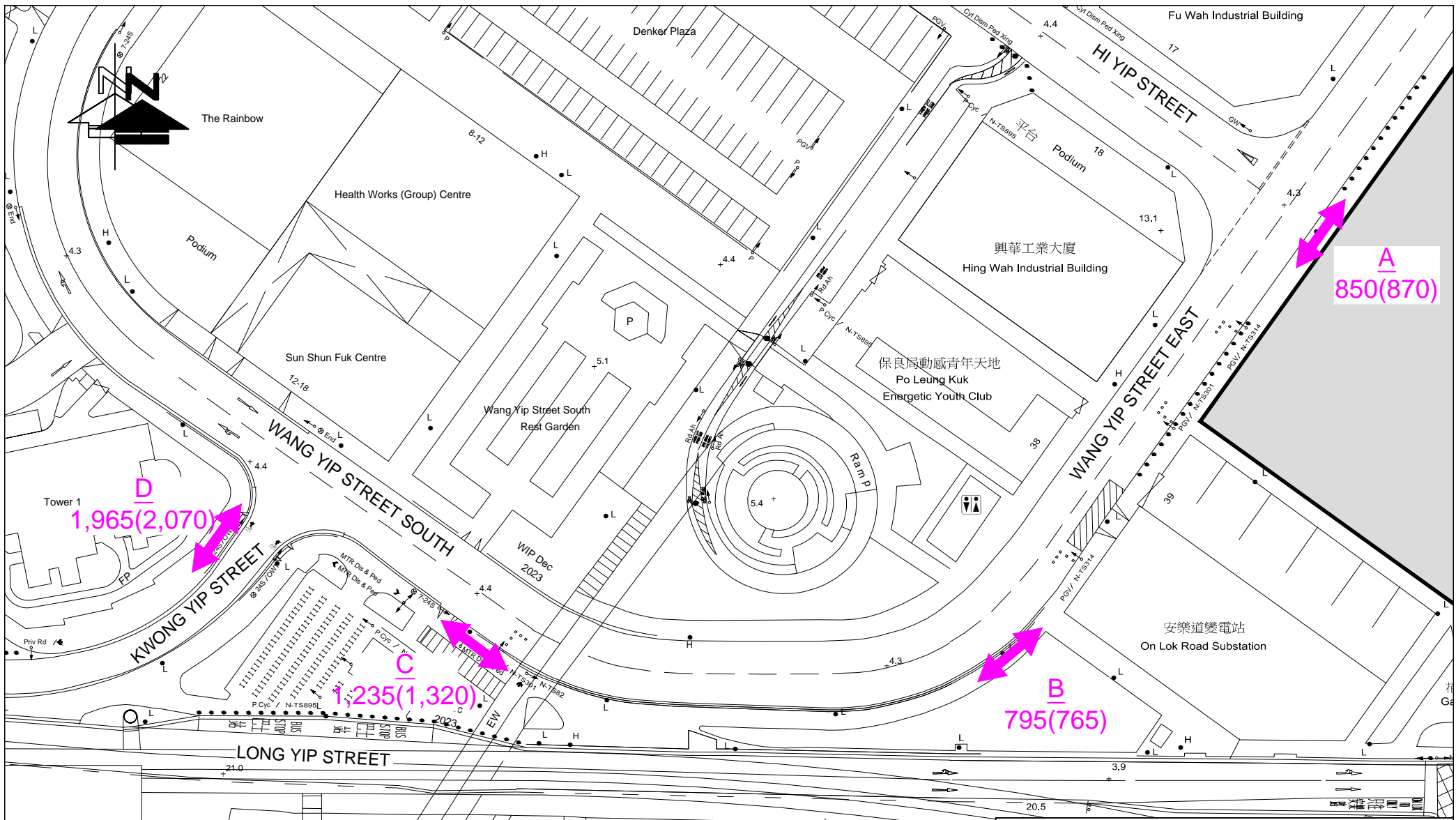


LEGEND :



	DEVELOPMENT SITE
	PEDESTRIAN FLOW DIRECTION
	AM (PM) WEEKDAY PEAK 15 min
	TWO-WAY PEDESTRIAN FLOW (IN PED/15 min)

FIGURE NO.:	5.2	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2033 REFERENCE PEDESTRIAN FLOWS
SCALE:	1 : 850 @A4	DATE:	16 APRIL 2026

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LEGEND :

-  DEVELOPMENT SITE
-  PEDESTRIAN FLOW DIRECTION
- AM (PM) WEEKDAY PEAK 15 min
- TWO-WAY PEDESTRIAN FLOW (IN PED/15 min)

55(15)

FIGURE NO.:	5.3	PROJECT TITLE:	S16 of Lai Sun Yuen Long Center at 21-35 Wang Yip Street East, Yuen Long
PROJECT NO.:	26016HK	DRAWING TITLE:	2033 DESIGN PEDESTRIAN FLOWS
SCALE:	DATE:		
1 : 850 @A4	16 APRIL 2026		



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