Appendix 6

Traffic Impact Assessment

Section 16 Application for Proposed Minor Relaxation of Building Height Restriction and Plot Ratio for the Hong Kong International Legal Service Building at Wan Chai

Traffic Impact Assessment

Report (Rev.D)

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1. INTRODUCTION

1.1 Background

1.1.1 In support of the Section 16 planning application of the captioned project, a Traffic Impact Assessment (TIA) is required to review and appraise any potential traffic impact induced by the proposed development on the adjacent road network.

1.1.2 CTA Consultants Limited (CTA) was commissioned by Architectural Services Department (ArchSD) as the traffic consultant to prepare the TIA and provide technical justifications in supporting the application from 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 traffic trips related to the proposed development;
- To carry out forecasts about traffic demand of the adjacent road network in design year 2033; and
- To appraise any potential traffic impact induced by the proposed development on the adjacent road network.

1.2.2 To recommend traffic improvement measures to alleviate any potential traffic impact induced by the proposed development to the surrounding road network, if any.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 The application site is abutting Jaffe Road and Lockhart Road in Wan Chai and adjacent to the headquarters of the International Organization for Mediation (IOMed). The site location is shown in **Figure 2.1**.

2.2 Development Proposal

2.2.1 The National 15th Five-Year Plan states various key initiatives, including deepening the development of the international legal and dispute resolution services centre, support the IOMed in better fulfilling its role, supporting Hong Kong and Macao in building international hubs for high-calibre talent, accelerate the development of the system and capacity for the foreign-related rule of law, and support for Hong Kong and Macao to participate deeply in joint high-quality Belt and Road development and leverage the strengths of professional services to assist enterprises seeking to "go global", etc. The construction of the Hong Kong International Legal Service Building (HKILSB) is a mission critical project to provide the necessary infrastructure to support various initiatives of the Department of Justice (DoJ) to proactively align with the above key initiatives in the National 15th Five-Year Plan. It is also included in the First Five-Year Plan for Economic and Social Development of the Hong Kong Special Administrative Region (2026-2030) (HK5YP) as a key initiative to deepen Hong Kong's position as an international legal and dispute resolution services centre.

2.2.2 As mentioned by the Chief Executive (CE) in the 2025 Policy Address (PA), DoJ will construct the HKILSB which will house the headquarters of the Hong Kong International Legal Talents Training Academy (HKILTTA) alongside international legal and dispute resolution services institutions, facilities for international legal conferences, facilities for international legal research as well as arbitration and mediation, etc. The CE has further stated in the 2026 PA that the construction of the HKILSB which will serve as a new landmark of Hong Kong's international legal hub is targeted to begin by the end of 2027.

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

Table 2.1 Parameters of the Proposed Development

Proposed Use	Government and Institutional Use for the Hong Kong International Legal Service Building	
Site Area	About 1,825 m^2	
Nos. of Block	1	
Total Gross Floor Area (GFA)	27,375 m^2	
Facilities	**Facility**	**Parameters**
	An auditorium	about 300 seats
	A multi-purpose hall	160 – 170 persons
	A classroom	200 persons
	2 moot courts	Total 130 seats / persons
	20 sets of arbitration and mediation facilities	Total 584 seats / persons
	145 nos. conference / multi-purpose / meeting rooms (1)	Total 1,397 seats / persons
	Space for Administration/ Operation Support for IOMed/HKILTTA	2,718 m^2 GFA

Note:

(1) The 145 nos. conference / multi-purpose / meeting rooms include, among others, space (totaling about 1,360m^2 NOFA) to be allocated to local, regional and international law-related organisations (LROs) to support their functions such as arbitrations, mediations, legal conferences/seminars, and other legal events/activities. Unlike ordinary offices with fixed business hours, the LROs can flexibly use these spaces according to their own needs and plans. Therefore, the occupancy of these spaces is not regular but operational driven in respect of LROs' activities.

2.2.4 It is anticipated that the construction of the proposed development will commence by the end of 2027. While the target completion time of the HKILSB is still under review at the current planning stage, the Government aims to complete the construction as early as practicable to align with the timeframe of the HK5YP. For planning purpose, 2030 has been set as the project completion year. Therefore, design year 2033 (i.e. 3 years after the planned commissioning of the proposed development) has been adopted for the TIA.

3. EXISTING TRAFFIC CONDITION

3.1 Existing Road Network

3.1.1 Lockhart Road is a dual carriageway with one to two lanes for both eastbound and westbound traffic. It is a local distributor connecting Fleming Road (elevated) to the West and Stewart Road to the East.

3.1.2 Jaffe Road is a single carriageway with one lane for eastbound traffic. It is a district distributor connecting Fleming Road (at-grade) and Gloucester Road to the West and Stewart Road to the East.

3.2 Critical Junctions

3.2.1 The major vehicular ingress and egress routings of the Site is shown in **Figure 3.1**. A total of 10 nos. of junctions are identified to be critical for the TIA due to the proposed development. The area of influence and the identified critical junctions are illustrated in **Figure 3.2**. The relevant details are listed in **Table 3.1** and the existing junction layouts are illustrated in **Figures 3.3** to **3.12** respectively.

Table 3.1 Identified Critical Junctions

Ref.	Junction	Type	Figure No.
A	Lockhart Road / Fleming Road	Signalized	3.3
B	Hennessy Road / Fleming Road	Signalized	3.4
C	Lockhart Road / Stewart Road	Signalized	3.5
D	Jaffe Road / Stewart Road	Priority	3.6
E	Gloucester Road / Stewart Road / Tonnochy Road	Signalized	3.7
F	Harbour Road / Fleming Road	Signalized	3.8
G	Lung Wo Road / Expo Drive East / Hung Hing Road / Fleming Road	Signalized	3.9
H	Lockhart Road / Marsh Road	Signalized	3.10
I	Johnston Road / Fleming Road / Wan Chai Road	Signalized	3.11
J	Jaffe Road / Luard Road	Priority	3.12

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 ten junctions during the peak periods on typical weekdays on 18 May, 22 July and 10 August 2026 from 07:30 to 10:00 and from 17:30 to 19:30 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 09:00 to 10:00 and from 18:00 to 19:00 respectively.

3.2.3 The 2026 existing peak traffic flows are presented in **Figure 3.13**. 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	Lockhart Road / Fleming Road	Signalized	27%	33%
B	Hennessy Road / Fleming Road	Signalized	25%	28%
C	Lockhart Road / Stewart Road	Signalized	>100%	>100%
D	Jaffe Road / Stewart Road	Priority	0.28	0.28
E	Gloucester Road / Stewart Road / Tonnochy Road	Signalized	>100%	>100%
F	Harbour Road / Fleming Road	Signalized	26%	31%
G	Lung Wo Road / Expo Drive East / Hung Hing Road / Fleming Road	Signalized	34%	37%
H	Lockhart Road / Marsh Road	Signalized	>100%	>100%
I	Johnston Road / Fleming Road / Wan Chai Road	Signalized	55%	61%
J	Jaffe Road / Luard Road	Priority	0.24	0.19

Note: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction

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

3.3 Public Transport Services in the Vicinity

3.3.1 The proposed development is well served by a wide range of public transport services (franchised bus, GMB, MTR and tram) in the vicinity. In particular, the development is easily accessible by MTR, with Wan Chai Station only 200m away and Exhibition Centre Station 600m away.

3.3.2 Details of the current services of franchised bus and GMB routes are listed in **Table 3.3** and are illustrated diagrammatically in **Figure 3.14**.

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

Service	Route	Origin / Destination
CTB	1	Central (Macao Ferry) - Happy Valley (Upper)
	1M	Exhibition Centre Station - Wong Nai Chung Gap (Circular)
	2	Grand Promenade - Central (Macao Ferry)
	2A	Yiu Tung Estate - Exhibition Centre Station
	2X	Grand Promenade - Exhibition Centre Station
	5B	Felix Villas - Hong Kong Stadium
	5X	Kennedy Town - Causeway Bay (Whitfield Road)
	8	Heng Fa Chuen - Exhibition Centre Station
	8P	Siu Sai Wan (Island Resort) - Exhibition Centre Station
	11	Central (Ferry Piers) - Jardine's Lookout (Circular)
	15B	The Peak - Wan Chai (Convention Centre)
	18	North Point (Healthy Street Central) - Kennedy Town (Belcher Bay)
	18P	Kennedy Town (Belcher Bay) - North Point (Healthy Street Central)
	23	North Point Ferry - Pokfield Road
	23B	Braemar Hill - Park Road / Robinson Road
	25	Central (Piers 3) - Braemar Hill (Circular)
	25A	Exhibition Centre Station - Braemar Hill (Circular)
	26	Lai Tak Tsuen - Hollywood Road (Circular)
	37A	Chi Fu Fa Yuen - Admiralty (Circular)
	37B	Chi Fu Fa Yuen - Central (Circular)
	37X	Chi Fu Fa Yuen - Central (Circular)
	40	Wah Fu (North) - Exhibition Centre Station
	40M	Wah Fu (North) - Exhibition Centre Station
	70	Wah Kwai - Central (Exchange Square)
	70P	Shek Pai Wan - Central (Exchange Square)
	75	Sham Wan - Central (Exchange Square)
	90	Ap Lei Chau Estate - Central (Exchange Square)
	97	Lei Tung Estate - Central (Exchange Square)
	260	Central (Exchange Square) - Stanley Market

	511	Tai Hang Drive - Central (Central Ferry Piers)
	679	Queen's Hill Fanling - Central (Hong Kong Station)
	720	Grand Promenade - Central (Wing Wo Street) (Circular)
	720A	Grand Promenade - Admiralty (Admiralty Centre)
	720P	Taikoo Shing - Central (Wing Wo Street) (Circular)
	722	Yiu Tung Estate - Central (Ferry Piers) (Circular)
	780	Chai Wan (East) - Central (Central Ferry Piers)
	780P	Chai Wan (Hing Wah Estate) - Central (Central Ferry Piers)
	788	Siu Sai Wan (Island Resort) - Central (Macao Ferry)
	789	Siu Sai Wan (Island Resort) - Admiralty (Rodney Street)
	930	Exhibition Centre Station - Tsuen Wan West Station
	930A	Tsuen Wan West Station/Tsuen Wan (Discovery Park) - Exhibition Centre Station
	930A	Fleming Road - Tsuen Wan (Discovery Park)
	930B	Kwai Shing Circuit - Causeway Bay (Moreton Terrace)
	930X	Causeway Bay (Moreton Terrace) - Tsuen Wan (Discovery Park)
	950	Tuen Mun (Ching Tin and Wo Tin) - Exhibition Centre Station
	952	Tuen Mun (Chi Lok Fa Yuen) - Causeway Bay (Moreton Terrace)
	952P	Tuen Mun (Chi Lok Fa Yuen) - Causeway Bay (Moreton Terrace)
	952P	So Kwun Wat - Causeway Bay (Moreton Terrace)
	952P	Gold Coast - Causeway Bay (Moreton Terrace)
	962	Tuen Mun (Lung Mun Oasis) - Causeway Bay (Moreton Terrace)
	962G	Causeway Bay (Moreton Terrace) - Tuen Mun (Yuet Wu Villa)
	962P	Tuen Mun (Lung Mun Oasis) - Causeway Bay (Moreton Terrace)
	962P	Yip Wong Estate - Causeway Bay (Moreton Terrace)
	962X	Tuen Mun (Lung Mun Oasis) - Causeway Bay (Moreton Terrace)
	967X	Tin Shui Wai (Tin Yan Estate) - Causeway Bay
	967X	Causeway Bay (Moreton Terrace) - Tin Shui Wai (Tin Yan Estate)
	969	Tin Shui Wai Town Center - Causeway Bay (Moreton Terrace)
	969B	Tin Shui Wai Town Centre - Wan Chai
	969N	Tin Shui Wai Town Center - Causeway Bay (Moreton Terrace)
	969P	Tin Shui Wai Town Centre - Causeway Bay (Moreton Terrace)
	969X	Tin Shui Wai Town Centre - Causeway Bay (Leighton Centre)
	979	Queen's Hill Fanling - Central (Hong Kong Station)
	979	North Point Ferry Pier - Queen's Hill Fanling
	A11	North Point Ferry Pier -Airport (Ground Transportation Centre)
	E11	Tin Hau Station - Skycity
	E11A	Tin Hau Station - Skycity
	E11B	Tin Hau Station - Tung Chung (Mun Tung Estate)
	E11S	Tung Chung (Mun Tung Estate) - Tin Hau Station
	E18	Tung Chung (Cheung Tung Estate) - North Point Ferry Pier
	H2	Tsim Sha Tsui - Central (Star Ferry)
	N11	Central (Macao Ferry) - Airport (Ground Transportation Centre)
	N8P	Siu Sai Wan (Island Resort) - Wan Chai (Harbour Road) (Circular)
	N8X	Siu Sai Wan (Island Resort) - Kennedy Town

	N90	South Horizons - Central (Macao Ferry)
	N930	Tsuen Wan (Discovery Park) - Causeway Bay (Moreton Terrace)
	N952	Tuen Mun (Chi Lok Fa Yuen) - Causeway Bay (Moreton Terrace)
	N962	Tuen Mun (Lung Mun Oasis) - Causeway Bay (Moreton Terrace)
	N969	Tin Shui Wai Town Centre - Causeway Bay (Moreton Terrace)
	NA11	North Point Ferry Pier - HZMB Hong Kong Port
	NR88	City One Shatin - Central
	X9	Shek O - Central (Star Ferry)
KMB	373	Fanling (Luen Wo Hui) - Central (Hong Kong Station)
	600	Anderson - Central (Rumsey Street)
	603	Ping Tin - Central Ferry Piers
	603A	Ping Tin - Central Market
	603A	Central (Rumsey Street) - Ping Tin
	603P	Central Ferry Piers - Ping Tin
	603S	Ping Tin - Central (Gilman Street)
	673	Sheung Shui - Central (Hong Kong Station)
	673A	Sheung Shui - Central (Rumsey Street)
	673A	Central (Hong Kong Station) - Sheung Shui
	900	Pak Shek Kok - Wan Chai (Convention Centre)
	900X	Pak Shek Kok - Wan Chai (Convention Centre)
	930B	Kwai Shing Circuit - Causeway Bay (Moreton Terrace)
	930X	Causeway Bay (Moreton Terrace) - Tsuen Wan (Discovery Park)
	934	Tsuen Wan (Bayview Garden) - Wan Chai (Fleming Road)
	934A	Tsuen Wan (Allway Gardens) - Wan Chai (Fleming Road)
	935	Shek Lei (Tai Loong Street) - Wan Chai (Fleming Road)
	935	Kwai Chung (On Yam Estate) - Wan Chai (Fleming Road)
	936	Tsuen Wan (Shek Wai Kok) - Causeway Bay (Cotton Path)
	936A	Tsuen Wan (Shek Wai Kok) - Causeway Bay (Cotton Path)
	936A	Causeway Bay (Cotton Path) - Lei Muk Shue
	960	Tuen Mun (Kin Sang Estate) - Exhibition Centre Station
	960C	Tuen Mun (Fu Tai Estate) - Causeway Bay (Victoria Park)
	960P	Hung Shui Kiu (Hung Yuen Road) - Causeway Bay (Victoria Park)
	960S	Tuen Mun (Fu Tai Estate) - Causeway Bay (Victoria Park)
	961	Tuen Mun (Shan King Estate) - Wan Chai (HKCECE)
	961P	Tuen Mun (Leung King Estate) - Causeway Bay (Victoria Park)
	961S	Tuen Mun (Leung King Estate) - Causeway Bay (Victoria Park)
	968	Yuen Long (West) - Causeway Bay (Tin Hau)
	968A	Yuen Long (West) - Causeway Bay (Tin Hau)
	978	Fanling (Wah Ming) - Exhibition Centre Station
	978A	Fanling (Luen Wo Hui) - Exhibition Centre Station
	978B	Chi Fuk Circuit - Exhibition Centre Station
	N368	Yuen Long (West) - Central (Macao Ferry)
	N373	Fanling (Luen Wo Hui) - Central (Macao Ferry)
	N960	Tuen Mun (Kin Sang Estate) - Wan Chai (Exhibition Centre Station)

	P960	Siu Hong Station (North) - Exhibition Centre Station
	P968	Yuen Long (West) - Causeway Bay (Tin Hau)
	P968	Long Ping Station - Causeway Bay (Tin Hau)
KMB/CTB	101	Kwun Tong (Yue Man Square) -Kennedy Town
	103	Chuk Yuen Estate - Pokfield Road
	104	Kennedy Town - Sham Shui Po (Pak Tin Estate)
	111	Ping Shek / Choi Hung Station - Central (Macao Ferry)
	111P	Choi Fook - Central (Macao Ferry)
	115	Kowloon City Ferry - Central (Macao Ferry)
	115P	Laguna Verde - Central (Macao Ferry)
	182	Yu Chui Court - Central (Macao Ferry)
	182X	Central (Macao Ferry) - Yu Chui Court
	302	Tsz Wan Shan (North) - Sheung Wan
	307	Tai Po Central - Central (Central Ferry Piers)
	307A	Tai Po (Tai Po Tau) - Sheung Wan
	601	Po Tat - Admiralty Station (East)
	601P	Po Tat - Sheung Wan
	619	Shun Lee - Central (Macao Ferry)
	619P	Shun Lee - Central (Macao Ferry)
	619X	Shun Lee - Central (Macao Ferry)
	621	Laguna City - Central (Hong Kong Station)
	641	Kai Tak (Kai Ching Estate) - Central (Macao Ferry)
	673P	Sheung Shui - Central (Rumsey Street)
	680	Lee On - Admiralty Station (East)
	680B	Chevalier Garden Bus Terminus - Admiralty Station (East)
	680P	Wu Kai Sha Station - Admiralty Station (East)
	680X	Wu Kai Sha Station - Central (Macao Ferry)
	681	Central (Hong Kong Station) - Ma On Shan Town Centre
	681P	Yiu On - Sheung Wan
	690	Tseung Kwan O (Hong Sing Garden) - Central (Exchange Square)
	690P	Hong Sing Garden - Central (Exchange Square)
	690S	Hang Hau - Central (Exchange Square)
	905	Lai Chi Kok - Exhibition Centre Station
	905P	Lai Chi Kok - Wan Chai (Harbour Road)
	907C	Fu Tip Bus Terminus - Wan Chai (Convention Centre)
	907C	Admiralty Station - Fu Tip Bus Terminus
	914	Hoi Lai Estate - Causeway Bay (Tin Hau)
	914P	Hoi Lai Estate - Causeway Bay (Tin Hau)
	914X	Hoi Lai Estate - Causeway Bay (Tin Hau)
	948	Tsing Yi (Cheung On Estate) - Causeway Bay (Tin Hau)
	948A	Cheung On Estate - Causeway Bay (Tin Hau)
	948B	Greenfield Garden - Causeway Bay (Tin Hau)
	948P	Cheung On Estate - Causeway Bay (Tin Hau)
	948X	Cheung Wang - Causeway Bay (Tin Hau)

	980A	Shek Mun Estate - Wan Chai (Fleming Road)
	980X	Wu Kai Sha Station - Wan Chai (Fleming Road)
	980X	Admiralty Station (East) - Wu Kai Sha Station
	980X	Sai Sha Residences Transport Interchange - Wan Chai (Fleming Road)
	980X	Admiralty Station (East) - Sai Sha Residences Transport Interchange
	981P	Yiu On - Wan Chai (Fleming Road)
	982X	Yu Chui Court - Wan Chai (Fleming Road)
	982X	Shui Chuen O B/T - Wan Chai (Fleming Road)
	982X	Admiralty Station (East) - Yu Chui Court
	985	Mei Tin (Mei Chi House) - Wan Chai
	985	Admiralty Station (East) - Mei Tin
	985A	Mei Tin Estate (Mei Chi House) - Wan Chai (Hennessy Road)
	985B	Tin Sam Village - Wan Chai (Hennessy Road)
	N121	Central (Macao Ferry) - Ngau Tau Kok
	N182	Kwong Yuen - Central (Macao Ferry)
	N307	Tai Wo - Sheung Wan
	N307	Central (Macao Ferry) - Tai Wo
	N619	Shun Lee - Central (Macao Ferry)
	N680	Kam Ying Court - Central (Macao Ferry)
	N691	Tiu Keng Leng - Central (Macao Ferry)
GMB	4A	Aberdeen (Shek Pai Wan) - Causeway Bay (Cannon Street)
	4B	Aberdeen (Shek Pai Wan) - Wan Chai (Circular)
	10	Causeway Bay (Jaffe Road) - Cyberport Public Transport Interchange
	24A	Admiralty Station (Drake Street) - Shiu Fai Terrace (Circular)
	24M	Mount Butler - Admiralty Station (Drake Street)
	31	Tin Wan Estate - Causeway Bay (Jaffe Road)
	35M	Aberdeen (Shek Pai Wan) - Wan Chai (Johnston Road)
	49S	Tuen Mun Siu Hong Court - Wan Chai
	N31	Tin Wan Estate - Causeway Bay (Jaffe Road)
	N4A	Aberdeen (Shek Pai Wan) - Causeway Bay (Cannon Street)

Note:
KMB - Kowloon Motor Bus
CTB - City bus
GMB - Green Minibus

3.3.3 In view of the above, the proposed development has sufficient accessibility to the public transport facilities.

4. FUTURE TRAFFIC CONDITION & TRAFFIC IMPACT ASSESSMENT

4.1 Design Year

4.1.1 In order to assess the possible traffic impacts to the local road network due to the proposed development, year 2033 has been adopted as the design year for this study, as stated in **paragraph 2.2.4**.

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 six years, i.e. 2019 to 2024 are summarised in **Table 4.1**.

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

Stn No.	Road Name	Annual Average Daily Traffic (AADT)						Annual Growth Rate
		2019	2020	2021	2022	2023	2024	(2019-2024)
1433	Fleming Road	12,400	14,100	14,370	13,620	14,290	14,120	2.63%
2015	Hennessy Road	16,510	14,880	15,350	15,190	15,760	15,610	-1.11%
2032	Johnston Road	9,350	9,010	9,190	7,370	8,460	8,670	-1.50%
1232	Johnston Road	3,290	3,170	3,230	3,060	3,220	3,370	0.48%
1028	Gloucester Road	129,880	114,370	117,300	112,860	122,320	119,970	-1.57%
1029	Hennessy Road	28,930	27,660	29,040	27,560	28,080	27,660	-0.89%
Total AADT of Vicinity		**200,360**	**183,190**	**188,480**	**179,660**	**192,130**	**189,400**	**-1.12%**

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 2021 to 2031 are tabulated in **Table 4.2**.

Table 4.2 2021-Based Planning Data from 2021 to 2031

Wan Chai District					
Data	**Year**			**Average Annual Growth Rate (2021 – 2031)**	**Average Annual Growth Rate (2026 – 2031)**
	2021	**2026**	**2031**		
Population	166,700	156,000	145,700	-1.34%	-1.36%
Employment	299,700	301,700	287,250	-0.42%	-0.98%
Total	466,400	457,700	432,950	**-0.74%**	**-1.11%**

Adopted Growth Rate

4.2.4 AADT of ATC indicates that the traffic flow of the local road network with a declining trend of average annual growth rate of -1.12% from year 2019 to year 2024.

4.2.5 The planning data also indicates that the population and employment of the study area with a declining trend of average annual growth rate of -0.74% and -1.11% from 2021 to 2031 and 2026 to 2031 respectively.

4.2.6 As a conservative approach, a nominal annual growth rate **+0.5% p.a.** is adopted for assessment year 2026-2033. 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

4.2.7 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 summarised in **Table 4.3** and **Table 4.4.** The location of the committed/planned developments is illustrated in **Figure 4.1**.

Table 4.3 Estimated Trip Rates of Adjacent Developments

Planned/Committed Development	Proposed Use	Key Parameters	Average Flat Size (m^2)	Unit	Trip Rates (1)			
					AM Peak		PM Peak	
					Generation (GEN)	Attraction (ATT)	GEN	ATT
A. 175 – 177 Hennessy Road(2)	Office	2,564.2 m^2	-	pcu/hr/ 100m^2	0.1703	0.2452	0.1573	0.1175
B. 199 – 203 Hennessy Road(2)	Retail(5)	1,721 m^2	-	pcu/hr/ 100m^2	0.2296	0.2434	0.3100	0.3563
	Office(5)	9,468.1 m^2	-		0.1703	0.2452	0.1573	0.1175
C. 110 Thomson Road(2)	Hotel	~75 rooms	-	pcu/hr/ room	0.1329	0.1457	0.1290	0.1546
D. 165 – 171 Wan Chai Road(3)	Retail	3,384 m^2	-	pcu/hr/ 100m^2	0.2296	0.2434	0.3100	0.3563
	Office	6,243 m^2	-		0.1703	0.2452	0.1573	0.1175
E. 13 – 21 Wood Road & 22 – 30 Wing Cheung Street(2)	Residential	167 flats	45.5 m^2	pcu/hr/ flat	0.0718	0.0425	0.0286	0.0370
	Retail	433.2 m^2	-	pcu/hr/ 100m^2	0.2296	0.2434	0.3100	0.3563
F. 25 – 27 Morrison Hill Road(2)	Hotel	122 rooms	-	pcu/hr/ room	0.1329	0.1457	0.1290	0.1546
G. 48 Wood Road(2)	School	30 classrooms(6)	-	-	-	-	-	-
H. 2 – 8 Cross Street(2)	Residential	72 flats(7)	~45 m^2	pcu/hr/ flat	0.0718	0.0425	0.0286	0.0370
	Retail	386.2 m^2	-	pcu/hr/ 100m^2	0.2296	0.2434	0.3100	0.3563
I. 269 Queen's Road East(4)	Residential	191 flats	50.1 m^2	pcu/hr/ flat	0.0718	0.0425	0.0286	0.0370
	Retail	1,227 m^2	-	pcu/hr/ 100m^2	0.2296	0.2434	0.3100	0.3563

Notes:
(1) With reference to the latest TPDM Volume 1 Annex C.
(2) Refer to monthly digest of Buildings Department.
(3) Refer to the planning application no. A/H5/421 as available from the Statutory Planning Portal 3 by Town Planning Board.
(4) Refer to the planning application no. A/H5/417 as available from the Statutory Planning Portal 3 by Town Planning Board.
(5) There is lack of information and the GFA breakdown is assumed based on the nos. of storey for retail and office.
(6) Nos. of classrooms same as existing.
(7) There is lack of information and the nos. of flat is derived based on the assumption of average 45m^2 flat size.

Table 4.4 Estimated Traffic Generations and Attractions of Adjacent Development

Planned/Committed Development	Proposed Use	Key Parameters	Trip (pcu/hour)			
			AM Peak		PM Peak	
			GEN	ATT	GEN	ATT
A. 175 – 177 Hennessy Road	Office	2,564.2 m^2	5	7	5	4
B. 199 – 203 Hennessy Road	Retail	1,721 m^2	4	5	6	7
	Office	9,468.1 m^2	17	24	15	12
C. 110 Thomson Road	Hotel	~75 rooms	3	3	3	4
D. 165 – 171 Wan Chai Road	Retail	3,384 m^2	8	9	11	13
	Office	6,243 m^2	11	16	10	8
E. 13 – 21 Wood Road & 22 – 30 Wing Cheung Street	Residential	167 flats	12	8	5	7
	Retail	433.2 m^2	1	2	2	2
F. 25 – 27 Morrison Hill Road	Hotel	122 rooms	17	18	16	19
G. 48 Wood Road	School	30 classrooms	10(1)	10(1)	10(1)	10(1)
H. 2 – 8 Cross Street	Residential	72 flats	6	4	3	3
	Retail	386.2 m^2	1	1	2	2
I. 269 Queen's Road East	Residential	191 flats	14	9	6	8
	Retail	1,227 m^2	3	3	4	5

Note:
(1) Nos. of classrooms same as existing. Additional traffic of a nominal 10 pcu/hour/direction assumed.

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 observed traffic flow.

4.3.2 The 2033 reference peak traffic flows are presented in **Figure 4.2**.

2033 Reference Traffic Flows (without proposed development) = **2026 Observed Traffic Flows** x **Adopted Growth Factor i.e. +0.5% p.a. for 7 years** + **Adjacent Developments**

4.4 Traffic Trips of the Proposed Development

4.4.1 As presented in **Table 2.1**, the proposed development consists of auditorium, multi-purpose hall, classroom, moot courts, arbitration and mediation facilities, conference/multi-purpose/meeting rooms, such that the traffic rates of both generation and attraction for these facilities are not specified in the Transport Planning & Design Manual (TPDM).

4.4.2 Due to absence of any other standards or reference directly applicable to these unique facilities, for conservative approach, the traffic trips are estimated based on the traffic rates of office use specified in the TPDM, as presented in **Table 4.5**.

Table 4.5 Estimated Traffic Trips of Proposed Development

Use	Units / Parameters	Traffic Trips (pcu/hour)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Office Trip Rates	(pcu/hr/100m^2)	0.1703	0.2452	0.1573	0.1175
Estimated Traffic Trips (27,375 m^2 GFA)	(pcu/hr)	**47**	**68**	**44**	**33**

4.5 Traffic Forecast for Design Year 2033

4.5.1 The traffic trips of the proposed development as shown in **Figure 4.3**, which is superimposed onto the year 2033 reference traffic flow (without the proposed development) as shown in **Figure 4.2** to derive the year 2033 design traffic flow (with the proposed development).

Year 2033 Design Traffic Flow (with the Proposed Development) = **Year 2033 Reference Traffic Flow (without the Proposed Development)** + **Traffic Trips of the Proposed Development**

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 4.4**.

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** and critical road section are carried out for both reference (without the proposed development) and design (with the proposed development) scenarios in year 2033. The results are summarised in **Table 4.6**.

Table 4.6 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	Lockhart Road / Fleming Road	Signalized	19%	25%	16%	23%
B	Hennessy Road / Fleming Road	Signalized	16%	20%	16%	20%
C	Lockhart Road / Stewart Road	Signalized	>100%	>100%	>100%	>100%
D	Jaffe Road / Stewart Road	Priority	0.30	0.28	0.37	0.36
E	Gloucester Road / Stewart Road / Tonnochy Road	Signalized	>100%	>100%	>100%	>100%
F	Harbour Road / Fleming Road	Signalized	19%	24%	16%	22%
G	Lung Wo Road / Expo Drive East / Hung Hing Road / Fleming Road	Signalized	27%	31%	26%	31%
H	Lockhart Road / Marsh Road	Signalized	>100%	94%	>100%	94%
I	Johnston Road / Fleming Road / Wan Chai Road	Signalized	44%	52%	43%	51%
J	Jaffe Road / Luard Road	Priority	0.25	0.20	0.32	0.24

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

4.6.2 The assessment result in **Table 4.6** reveals that all junctions operate within 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 engineering points of view.

5. INTERNAL TRANSPORT FACILITIES

5.1 Provision of Access Arrangement

5.1.1 The proposed run-in and run-out of the site are located at Lockhart Road and Jaffe Road respectively. The widths of the run-in and run-out are both approximately 10m. The width of the run-in and run-out has been optimised to maximise the length of layby for pick-up/drop-off cum loading/unloading bays within the site. Based on the result of swept path analysis of 12m coach, a total of 7 nos. existing metered car parking spaces at Lockhart Road and Jaffe Road will be affected by the proposed run-in / out, as shown in **Figure 5.1**. The proposed location for re-provision of the affected metered car parking spaces will be identified in the construction TIA before commencement of construction works. The swept path analysis of private car overtaking a coach at the layby is also illustrated in **Figure 5.2**.

5.2 Provision of Internal Transport Facilities

A. Guidelines / Requirement of Internal Transport Facilities Provision for GIC

5.2.1 The HKILSB is a Government, Institution and Community (GIC) development. It will be the first of its kind in Hong Kong as a purpose-built legal hub building, featuring unique uses, and combination of facilities for international legal events, legal training and seminars, professional arbitrations and mediations under DoJ's central management. Because of this uniqueness in nature, the proposed development's overall traffic characteristics are not comparable to ordinary office buildings or commercial premises.

5.2.2 There is no specific parking requirement for GIC developments in the Hong Kong Planning Standard and Guidelines (HKPSG) published by Planning Department, except for educational facilities, medical facilities and churches (religious institutions). According to TPDM Volume 7 para. 1.4.2.9, in GIC developments, parking provision should be adequate to fully meet the **operational requirements** with visitor parking as deemed reasonable, thereby avoiding the necessity for on-street parking spaces and loading/unloading facilities.

B. <u>Operational Requirements based on Reference of HKU Centennial Campus</u>

5.2.3 In accordance with the HKPSG, the provision of car parking spaces and loading / unloading bays should be determined based on the most relevant development type specified in the HKPSG, or by reference to an existing project of similar nature.

5.2.4 While the HKILSB is a unique development as a whole, some of its specific functional components share common operational characteristics with the HKU Centennial Campus (HKU CC). The HKU CC currently consists of a lecture centre, a grand hall, the Faculty of Law mooting chamber, classrooms, seminar rooms, and administrative support spaces, which provide facilities and services for use similar to the HKILSB, such as conferencing, legal training, and administrative operations. Because these specific components share comparable user profiles, comprising a baseline of regular staff alongside fluctuating volumes of event attendees, trainees, and legal professionals, their traffic generation patterns and parking demands are closely aligned. Therefore, the HKU CC has been taken as a relevant reference case for estimating the internal transport facility demands of the HKILSB in view of the similarities in operational characteristics and scope of facilities/services.

5.2.5 The estimated demand of internal transport facilities are summarised in **Table 5.1** below.

Table 5.1 Estimated Demand of Internal Transport Facilities

	Provision Rate	**Demand**
Private Car Parking		
HKILSB (27,375m^2 GFA)	1 car parking space per 833m^2 GFA (1)	33 nos.
Loading/Unloading (L/UL) and Pick-up/Drop-off (PUDO)		
HKILSB (27,375m^2 GFA)	1 L/UL bay per 16,667m^2 GFA (1)	2 nos.

Note:
(1) With reference to the ratio of car parking and L/UL provision under HKU CC project.

5.2.6 As shown in **Table 5.1**, the private car parking and loading/unloading demand are 33 nos. and 2 nos. respectively. These serves as the reference figures of the operational requirement of the proposed development.

C. Constraints on the Provision of Additional Private Car Parking Spaces

5.2.7 **Limited Site Area:** The highly unique nature of this legal service building requires integrating a complex array of space demanding core functions—including an auditorium and a multi-purpose hall for international legal events, legal training facilities, HKILTTA, moot courts, and 20 sets of arbitration and mediation facilities (each comprising a hearing room and three break-out rooms)—within a severely constrained site of approximately 1,825 m^2. Consequently, spatial utilisation on the ground floor is already pushed to its absolute limit. The current layout can only accommodate a strict maximum of 8 private car parking spaces, as the remaining area is entirely consumed by critical operational needs: loading/unloading bays, pick-up/drop-off zones, and essential architectural elements such as the main entrance lobby, lift cores, and E&M facilities. Any attempt to increase the number of parking spaces would severely compromise the building's functionality, resulting in undersized E&M rooms, unsafe vehicular circulation, or a heavily degraded entrance lobby that fails to serve the building's high-capacity functions.

5.2.8 **Net Operating Floor Area (NOFA) Optimisation:** In order to achieve a building height more compatible with the surrounding "Commercial" zones that are subject to a maximum building height of 135mPD, the project proponent applied only for a minor relaxation of building height from 110mPD to 135mPD with a view to balancing visual impact and operational requirements of floor areas. Every available meter of this vertical space has already been fully utilised to accommodate DoJ's operational requirements, particularly because specialist facilities—such as the auditorium and moot courts—demand exceptionally high headroom. With a view to keeping the height at 135mPD, allocating above-ground space for parking would cause an unacceptable reduction in NOFA, fundamentally compromising the development's capacity to deliver its primary functions.

5.2.9 **Public Mission:** Since the proposed development is required to provide the essential infrastructure to support various initiatives to deepen Hong Kong's position as an international legal and dispute resolution services centre, etc, as enshrined under the National 15th Five-Year Plan and the HK5YP, the government needs to complete the development and commission its operation early to proactively align with the timeframe of these national development strategies.

5.2.10 Constructing a basement car park is not recommended after considering the severe risks to heritage preservation and project programming. The site is in immediate proximity to the existing IOMed headquarters, a designated historical building. Any deep excavation and lateral support (ELS) works would necessitate stringent precautionary measures to protect the heritage asset. Executing these subterranean works at the required, highly cautious pace would inevitably cause severe schedule overruns, directly jeopardising the project's ability to complete the development early.

5.2.11 Similarly, incorporating an additional above-ground floor(s) to accommodate the shortfall is not recommended after considering spatial efficiency, urban design, and cost-effectiveness. Due to the site's constrained footprint, a substantial portion of any additional above-ground floor plate would be consumed by vehicular ramps and circulation areas, making it highly inefficient to dedicate structural floor(s) for 25 car parking spaces. While adopting vehicular lifts (car lifts) could theoretically mitigate the need for ramps, this alternative introduces significant traffic management risks. Operating car lifts necessitates adequate queuing and waiting areas at the ground level. Given the already tight ground-floor layout, there is insufficient space to safely absorb this vehicular queue. Consequently, this would create a high risk of vehicular tailbacks spilling onto the adjacent public street during peak hours, causing unacceptable disruptions to local traffic.

5.2.12 Furthermore, adding extra floor(s) would increase the overall building bulk and height. Given the immediate proximity to the historical IOMed headquarters, it is highly desirable to minimise the building mass to maintain visual harmony and respect the surrounding heritage context. As the demand for car parking spaces will be addressed holistically through the provision of on-site parking spaces, supplementary supply of parking spaces at Justice Place (JP), and implementation of various administrative measures, there will be no adequate justifications to increase the building bulk or introduce traffic risks for such a minor shortfall.

5.2.13 It is also not feasible to reduce the operational facilities of the proposed development to spare the space for carpark. As the proposed facilities in the HKILSB are already the bare minimum, any reduction in scope or scale will jeopardise the effectiveness of the project to serve the policy objective. Like all public works project, the Government should be accountable for the prudent use of public money. The cost-effectiveness of constructing, operating, and maintaining additional structural floor(s), or installing and maintaining a car lift system, to address shortfall of this magnitude would likely be

untenable as there are mitigation measures to address the traffic demand as explained in **Sections 5.2.15** to **5.2.30** below.

5.2.14 In view of the above mentioned site constraints and public mission, the project proponent proposed to provide 8 nos. of private car parking spaces.

D. Mitigation Measures and Traffic Management Plan

5.2.15 The HKILSB is a unique development in terms of its nature and functions with no precedent in Hong Kong. The building houses the HKILTTA, provides space for LROs, operates facilities for arbitration and mediation activities and legal events so as to support various initiatives and services for deepening Hong Kong's position as an international legal and dispute resolution services centre, etc. Unlike ordinary commercial or office buildings supporting a wide range of general activities of their tenants/users without any coordination, the HKILSB is a purpose-built legal hub building featuring unique uses, and combination of facilities under DoJ's management for international legal events, legal training and seminars, professional arbitration and mediation activities, and all users (including DoJ) must observe the house rules etc when organising legal activities/events in the HKILSB. The people and traffic flow can be managed through administrative measures such as pre-booking of venues, visitor pre-registration and proactive coordination of events/activities in the HKILSB.

5.2.16 All communal facilities in the HKILSB (e.g. auditorium, multi-purpose hall, classrooms, moot courts, and arbitration and mediation (A&M) facilities) for holding events will be put under central management of DoJ through an electronic booking system. Venue bookings will be made in advance for planning and organising of legal events, trainings and A&M activities. For all bookings, event organisers will also be required to provide information about the estimated number of participants, start/end time of the event, whether coaches will be used for group transport, etc.

5.2.17 As all activities and events to be organised at the communal facilities are pre-planned, the management can execute administrative measures, if needed, to minimise any adverse traffic impact including pedestrian on site and in the vicinity of the building. The measures will cover –:

i. Event planning and coordination

5.2.18 The management can monitor via the booking system the anticipated total number of visitors and the number of anticipated arrivals/departures in each hour of a future day and blackout the booking of facilities for some hours or some days, as necessary, to ensure smooth people flow within the building. Such blackout arrangement can also be applied on specific days when the traffic of the district is known to be heavy, such as first school day. Specifically, in line with the estimated total traffic trips of the proposed development, the management will cap the maximum visitor trips in any particular hour at about 760 drop-off trips or about 670 pick-up trips so as to ensure that the 35m L/UL provision is sufficient to cope with the pick-up and drop-off activities, and the pedestrian flow at both Lockhart Road and Jaffe Road will generally be maintained at Grade C or above[1]. The assessment on adequacy of pick-up/drop-off facilities and pedestrian flow are covered in **Section 5.3** and **Chapter 6** respectively. When the booking system has operated for some time to accumulate more utilisation data, the system would be capable, with the use of AI technology, of producing more accurate prediction on the number of participants and their arrival/departure pattern to support effective management decision. The management will keep the cap under continuous review in the light of the actual operation of the building and prevailing circumstances. While the facilities on the blackout days/hours are not available for use, the management will gainfully make use of the time slot to arrange facility maintenance, venue setup, etc.

5.2.19 The management will also coordinate with organisers of large-scale events to stagger their events as far as possible to minimise any adverse traffic impact on site and in the vicinity of the HKILSB.

5.2.20 When organisers plan to organise events on the same day, the management can also coordinate with them to adopt different start-time and end-time to prevent concurrent arrivals/departures of too many participants.

5.2.21 The management will require the event organisers to provide their transport plans for events with large number of participants for prior consideration and necessary coordination. The organiser will be encouraged to use coach for group transport. For mega events with anticipated substantial people and traffic flow, the management will liaise with the Police and relevant government departments, as appropriate, in advance

[1] There is only one section of footpath with performance at Grade C (bordering on Grade B).

to implement necessary on-site traffic management measures and arrangements. The organiser will advise the visitors to consider using the carparks in the vicinity (see **Table 5.2** below) or the special parking and transfer arrangement offered by DoJ at JP, if needed.

5.2.22 With the aid of the data collected from the booking system, the management can suitably plan and deploy their building support manpower to suit the activity level of the building on different days and ensure adequate manpower is deployed for regulating the loading/unloading activities, guiding visitors to use the appropriate entry/exit of the building, etc.

ii. Public Transport Promotion

5.2.23 The Site is exceptionally well-served by a wide range of public transport services (franchised bus, GMB, MTR, tram) in the vicinity. In particular, the development is easily accessible by MTR, with Wan Chai Station only 200m away and Exhibition Centre Station 600m away. As one of the venue booking conditions, event organisers will be required to encourage their participants to access the HKILSB by use of public transport. All official event invitations, registration platforms, and visitor communications should provide comprehensive guides to the nearby MTR network and bus routes to encourage the use of public transport and to ensure seamless pedestrian access.

iii. Use of Car Parking Spaces

5.2.24 As mentioned in **Table 5.1**, **Sections 5.2.11** and **5.2.14** that the development may be considered having a difference of 25 car parking spaces. To address the parking needs, an off-site park-and-ride arrangement will be implemented. There are currently over 90 car parking spaces and a number of laybys at the DoJ headquarters at JP in Central. As all these parking spaces are managed by DoJ for its exclusive use, DoJ can make available 15 car parking spaces for visitors to the HKILSB on a daily basis to fill the gap of daily demand if needed. For those days with mega events in the HKILSB, DoJ can arrange some 30 parking spaces in total for visitors to park at JP during the events to address possible extra parking demand. The management will operate an electronic booking system to allow pre-booking of on-site and off-site parking spaces to facilitate their efficient allocation and turnover. Transportation services (e.g. free shuttle bus) will be arranged to facilitate travel between the HKILSB and JP under the off-site park-and-

ride arrangement so that the needs of additional car parking spaces can be suitably addressed.

E. Existing Nearby Off-Street Car Parking Condition

5.2.25 The operational car parking demand of the HKILSB will generally be accommodated by the proposed on-site parking spaces and the mitigation measure of the off-site parking spaces at JP. Nevertheless, to cater for contingency conditions of incidental visitor parking, a parking survey was conducted at nearby off-street car parks to evaluate the surplus capacity. These car parks are considered as strategic last resort in case of incidental visitor parking.

5.2.26 The survey was primarily conducted at the 5 nos. off-street car parks with reference to the Traffic Review of the headquarters of the International Organization for Mediation (IOMed) (Quotation Contract No. ASD103/8871/CA/J34/QC1 dated February 2024). Additional survey was also conducted at the 2 nos. off-street car parks (i.e. Allied Kajima Building Car Park and Siu On Centre Car Park) that are located within 100m of the HKILSB.

5.2.27 All the surveyed car parks are situated within a reasonable 400m walking distance from the Site. In particular, 4 nos. of these locations - namely Capital Centre Car Park, Tai Yau Car Park, Allied Kajima Building Car Park, and Siu On Centre Car Park, are in close proximity within a convenient 200m walking distance. The survey was conducted in typical weekdays on 20 May and 8 September 2026 from 07:00 to 19:00 to observe their utilisation. The surveyed locations are illustrated in **Figure 5.3**.

5.2.28 Based on the observed car park utilisation, it reveals that morning, noon and evening peak hours occurred from 07:00 to 08:00, 14:00 to 15:00 and from 18:00 to 19:00 respectively. The results of car park utilisation are summarised in **Table 5.2**.

Table 5.2 Observed Car Park Utilisation

Location	Time Period	Supply (Private Car & Goods Vans)		Parking Space Utilisation (Private Car & Goods Vans)		Vacant Parking Space (Private Car & Goods Vans)	
		Hourly	Monthly	Hourly	Monthly	Hourly	Monthly
1. Eagle Harbour Public Car Park	AM	402	186	318	128	84	58
	Noon			199	107	203	79
	PM			250	120	152	66
2. China Resources Building Car Park	AM	34	196	13	89	21	107
	Noon			11	61	23	135
	PM			23	85	11	111
3. Sun Hung Kai Centre Car Park	AM	59	135	7	35	52	100
	Noon			10	39	49	96
	PM			12	36	47	99
4. Capital Centre Car Park	AM	38	75	33	50	5	25
	Noon			10	38	28	37
	PM			19	46	19	29
5. Tai Yau Car Park(1)	AM	52	-	2	-	50	-
	Noon			38	-	14	-
	PM			28	-	24	-
6. Allied Kajima Building Car Park(1)	AM	62	-	25	-	37	-
	Noon			32	-	30	-
	PM			31	-	31	-
7. Siu On Centre Car Park(1)	AM	55	-	18	-	37	-
	Noon			55	-	0	-
	PM			50	-	5	-
Total 7 Sites	**AM**	**702**	**592**	**416 (59%)**	**302 (51%)**	**286**	**290**
	Noon			**355 (51%)**	**245 (41%)**	**347**	**347**
	PM			**413 (59%)**	**287 (48%)**	**289**	**305**

Note:

(1) Data not available for monthly car parking of Tai Yau Car Park, Allied Kajima Building Car Park and Siu On Centre Car Park.

5.2.29 Based on the results in **Table 5.2**, the 7 nos. surveyed car parks within the 400m walking distance operate with spare capacity, with hourly utilisation rates of 59% in the AM peak, 51% at noon, and 59% in the PM peak. This yields an area-wide parking space vacancy of 286, 347 and 289 hourly private car parking spaces during the critical AM peak, noon and PM peak periods respectively.

5.2.30 For the car parks in close proximity within the 200m walking distance (Capital Centre Car Park, Tai Yau Car Park, Allied Kajima Building Car Park, and Siu On Centre Car

Park), there are parking space vacancies of 129 (5 + 50 + 37 + 37), 72 (28 + 14 + 30 + 0), and 79 spaces (19 + 24 + 31 + 5) during AM, noon and PM peak periods respectively.

5.2.31 The results demonstrate that the nearby off-street car parks are having surplus capacity to cope with contingency conditions of incidental visitor parking.

5.3 Assessment on Adequacy of Pick-up / Drop-off Bay

Baseline Scenario

5.3.1 The proposed development provides a 35m layby for share use of loading / unloading and pick-up / drop-off activities. The proposed 35m layby serves as a vital infrastructure that provides exceptional operational capacity and efficiency. It has also completely utilised / maximised the site's available footprint. Designed with flexibility, the space can primarily accommodate 1 coach and 4 private cars, 2 coaches and 2 private cars or 6 private cars simultaneously.

5.3.2 It is assessed that the pick-up / drop-off activities during ordinary event days could primarily be accommodated by the proposed 35m layby (approx. 6 private cars). With the implementation of proposed event planning and coordination measures as mentioned in **paragraphs 5.2.18** to **5.2.22**, the daily pick-up / drop-off activities will be rationalised and closely monitored. Additional building management staff will be deployed when needed to ascertain the efficient use of the loading / unloading bays. The proposed 35m layby should be able to satisfy the operational needs of the HKILSB. The assessment on the ordinary event days scenario of pick-up / drop-off bay is shown in **Table 5.3**.

Table 5.3 Ordinary Event Days Scenario of Pick-up / Drop-off Bay

(a) Visitor trips / hour(1)	760 Drop-off trip / hour	670 Pick-up trip / hour
(b) Visitor trips / peak 30-minute(2)	760 Drop-off trip/peak 30-minute	670 Pick-up trip/peak 30-minute
(c) Modal split of private car / taxi(3)	20%	20%
(d) Occupancy	1.5	1.5
(e) Pick-up/drop-off time	1 minute (drop-off)	1.5 minute (pick-up)
(f) Required PUDO bay no. = (b) / 30-minute x (c) / (d) x (e)	4 nos.	5 nos.

Notes:

(1) Assume visitors of ordinary event days same as large-scale event for conservative assessment. As to be discussed in **Table 5.4**, the estimated visitor trips during large-scale event are 760 and 670 in AM

and PM peak respectively.
(2) Assume the event attendees will arrive or depart in concentrated clusters within a shorter timeframe, the peak hour trips are considered as peak 30-minute trips for conservative assessment.
(3) According to the "Travel Characteristics Survey 2022 Report" published by Transport Department, private car and taxi account for a total modal split of 20%.

Critical Scenario of Large-Scale Event

5.3.3 During critical scenario of large-scale event, to seamlessly manage high-volume traffic, the driveway could also be used for parallel pick-up / drop-off under traffic regulation by staff, effectively doubling the layby efficiency to accommodate up to **12 private cars** simultaneously without disrupting the overall site circulation. The pick-up / drop-off arrangement is illustrated in **Figure 5.4**.

5.3.4 The numbers of visitors for each time slot estimated by DoJ has also taken into consideration the management measure to blackout the booking of facilities for some hours to ensure smooth people flow within the building. The detailed breakdown of the data of the estimated visitors are attached in **Appendix 1**.

5.3.5 For conservative assessment purpose, the said maximum handling capacity of 12 private cars could accommodate the event attendees with modal split of **50%** using private car / taxi. The assumed modal split could be able to cater different event conditions and act as a sensitivity test for critical scenario of large-scale event. Also, the assessment has taken into account of the event attendees that arrive or depart in concentrated clusters within a shorter timeframe for conservative approach.

5.3.6 The assessment on the critical scenario of pick-up / drop-off bay is shown in **Table 5.4**.

Table 5.4 Critical Scenario of Pick-up / Drop-off Bay

Use	AM Peak	PM Peak
(a) Visitor trips / hour(1)	760 Drop-off trip / hour	670 Pick-up trip / hour
(b) Visitor trips / peak 30-minute(2)	760 Drop-off trip/peak 30-minute	670 Pick-up trip/peak 30-minute
(c) Modal split of private car / taxi(3)	50%	50%
(d) Occupancy	1.5	1.5
(e) Pick-up/drop-off time	1 minute (drop-off)	1.5 minute (pick-up)
(f) Required PUDO bay no. = (b) / 30-minute x (c) / (d) x (e)	9 nos.	12 nos.

Notes:
(1) Detail of breakdown refer to **Appendix 1**.
(2) Assume the event attendees will arrive or depart in concentrated clusters within a shorter timeframe,

the peak hour trips are considered as peak 30-minute trips for conservative assessment.

(3) Assume 50% of event attendees using private car / taxi for conservative assessment of pick-up / drop-off bay. Provides additional buffer over the assumed modal split in **Table 5.3** as sensitivity test.

5.3.7 The results shows that the required pick-up / drop-off bay nos. are 9 nos. and 12 nos. during AM and PM peak hour respectively in critical scenario of large-scale event, which could be accommodated by the maximum handling capacity of 12 private cars as mentioned in **paragraphs 5.3.3** – **5.3.5**.

5.3.8 Although the layby is designed to accommodate a peak capacity of 760 drop-off or 670 pick-up trips per hour, the occurrence of the critical scenario is rare. This maximum throughput might only occur during large-scale events, meaning the facility operates with low day-to-day volume and significant spare capacity during regular operations. The high-throughput capability of layby ensures smooth operation and prevent spillover queues onto adjacent public roads.

5.3.9 Whenever there is heavy utilisation of the layby, additional management staff may be deployed to facilitate the pick-up and drop-off activities, regulate the traffic, and discourage unnecessary stay at the layby. This can ensure that the 35m layby can cope with any pick-up and drop-off demand arising from the activities in the Building.

5.3.10 The proposed 35m layby could also accommodate the demand of 2 nos. of L/UL bays as mentioned in **Table 5.1**. Moreover, the loading / unloading activities of goods vehicles (even not expected many) will be arranged at non-peak hours to minimise any traffic impact.

6. PEDESTRIAN IMPACT ASSESSMENT

6.1 Survey on Pedestrian Flows in the Vicinity

6.1.1 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 18 May and 22 July 2026 from 07:30 to 09:30 and from 17:30 to 19:30. Based on the observed pedestrian flows, it reveals that morning and evening peak 15-minute periods occurred from 08:50 to 09:05 and from 18:40 to 18:55 respectively. The assessment sections are shown in **Figure 6.1**. The observed pedestrian flows are illustrated in **Figure 6.2**.

6.1.2 The concept of Minimum Width of Footways and Level-of-service (LOS) in accordance with TPDM 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.

6.1.3 The related assessment of pedestrian is based on Level-of-Service (LOS) approach, which is stipulated in TPDM (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 summarised 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.

6.1.4 The level-of-service (LOS) for baseline operational performances of the identified critical sections are listed in **Table 6.2**.

Table 6.2 Performance of Critical Footpath in Year 2026

2026 Observed Scenario								
			AM Peak			PM Peak		
Critical Sections	**Actual Width (m)**	**Effective Width (m)**	**Two-way Pedestrian Flow (ped/15-min)**	**Two-way Pedestrian Flow Rate (ped/15-min/m)[4]**	**LOS [5]**	**Two-way Pedestrian Flow (ped/15-min)**	**Two-way Pedestrian Flow Rate (ped/15-min/m) [4]**	**LOS [5]**
P1	4.1	1.1[1]	35	2.12	A	25	1.52	A
P2	2.1	1.1[2]	95	5.76	A	125	7.58	A
P3	2.8	1.3[3]	140	7.18	A	130	6.67	A
P4	4.0	3.0[2]	650	14.44	A	310	6.89	A
P5	3.8	2.3[3]	190	5.51	A	145	4.2	A
P6	3.8	2.3[3]	165	4.78	A	240	6.96	A
P7	3.1	2.1[2]	145	4.60	A	150	4.76	A
P8	3.3	1.8[3]	125	4.63	A	500	18.52	B
P9	3.5	2.0[3]	200	6.67	A	255	8.5	A
P10	3.7	2.2[3]	205	6.21	A	360	10.91	A
P11	3.5	2.0[3]	205	6.83	A	390	13	A
P12	3.5	2.0[3]	150	5.00	A	275	9.17	A

Notes: (1) Effective Width = Actual Width 4.1m – 2.0m (from tree to kerb) – 1.0m Death Width (0.5m from tree and wall for both sides)

(2) Effective Width = Actual Width – 1.0m Death Width (0.5m from kerb or walls for both sides)

(3) Effective Width = Actual Width – 1.5m Death Width (0.5m from kerb and 1m from shopping frontages)

(4) Two-way Pedestrian Flow Rate (ped/min/m) – Peak Pedestrian Flow / 60min / Effective Width

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

6.1.5 The results of assessment shown in **Table 6.2** indicate that all critical sections are operating with spare capacity during AM and PM peak 15-minute periods.

6.2 Future Pedestrian Conditions

Adopted Growth Rate

6.2.1 As presented in **Section 4.2.6**, a nominal annual growth rate **+0.5% p.a.** is adopted to project the pedestrian flow from 2026 to 2033.

Adjacent New Developments

6.2.2 Additional pedestrian generation and attraction of major committed/planned developments in the vicinity have also been estimated to derive the year 2033 reference traffic flow.

6.2.3 Based on the locations of the identified committed/planned developments in **Table 4.3** and **Figure 4.1**, it is anticipated that the pedestrian generation from items A: 175 – 177 Hennessy Road, B: 199 – 203 Hennessy Road and C: 110 Thomson Road will be attributed to the concerned assessed footpath sections, whereas the remaining items D to I are not located in the vicinity of the concerned assessed footpath sections and hence are not considered in the assessment.

6.2.4 The pedestrian generation are made reference to the trip generation rates from in-house survey data of similar existing office/retail and hotel buildings. The pedestrian trip rates and the pedestrian generation due to the committed/planned developments are summarised in **Table 6.3**.

Table 6.3 Estimated Pedestrian Trips of Committed/Planned Developments

Use	Units / Parameters	Pedestrian Trips (ped/15-minute)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Office & Retail Trip Rates	ped/15-min/m^2	0.0028	0.0060	0.0114	0.0050
Hotel Trip Rates	ped/15-min/room	0.1125	0.1125	0.1625	0.1125
Planned/Committed Development	**Key Parameters**	**AM Peak**		**PM Peak**	
		Gen.	**Att.**	**Gen.**	**Att.**
A. 175 – 177 Hennessy Road	Office: 2,564.2 m^2	8	16	30	13
B. 199 – 203 Hennessy Road	Retail: 1,721 m^2 Office: 9,468.1 m^2	32	68	128	56
C. 110 Thomson Road	Hotel: ~75 rooms	9	9	13	9

6.2.5 The generated pedestrian trips will be distributed to the major attraction nodes of MTR Wan Chai Station, MTR Exhibition Centre Station and the four major bus stops at Hennessy Road. The distribution of the major attraction nodes are shown in **Table 6.4**.

Table 6.4 Distribution of the Major Attraction Nodes

Modal Split	Percentage	Major Attraction Node	Percentage of Distribution
MTR(1)	61%	MTR Wan Chai Station(2)	46%
		MTR Exhibition Centre Station(2)	15%
Bus(1)	39%	Bus Stop of Fleming Road, Hennessy Road (Eastbound)(3)	9.75%
		Bus Stop of Fleming Road, Hennessy Road (Westbound)(3)	9.75%
		Bus Stop of Stewart Road, Hennessy Road (Eastbound)(3)	9.75%
		Bus Stop of Hennessy Road Government Primary School (Westbound)(3)	9.75%
Total	100%	**Total**	100%

Notes: (1) Based on 2021 Population Census Table C204 in Wan Chai District, the modal split of working population of MTR and Bus are 19,123 and 12,229 persons respectively.

(2) With reference to the 2021 Population Census – Interactive Data Dissemination Service (by working population, district and place of work), it is identified that about 25% of the working population in Wan Chai District attributes to/from the districts of Kowloon City, Wong Tai Sin, Tuen Mun, Yuen Long, North, Tai Po and Sha Tin, which are

potentially accessed by East Rail Line via MTR Exhibition Centre Station. The remaining 75% of working population are attributed to the other districts accessed by MTR Wan Chai Station. Hence, the percentage distribution of MTR Wan Chai Station = 61% MTR modal split x 75% = 46%, MTR Exhibition Centre Station = 61% MTR modal split x 25% = 15%.

(3) Assume an equal split for the 39% of the four major bus stops at Hennessey Road.

6.2.6 Based on the estimated pedestrian trips generation in **Table 6.3** and the distribution of the major attraction nodes in **Table 6.4**, the pedestrian flows of the committed/planned developments is then superimposed to the network to produce the 2033 reference pedestrian flow. The 2033 reference pedestrian flows are illustrated in **Figure 6.2**.

6.2.7 The level-of-service (LOS) for 2033 reference scenario of the identified critical sections are listed in **Table 6.5**.

Table 6.5 Performance of Critical Footpath in Year 2033 Reference Scenario

2033 Reference Scenario								
			AM Peak			PM Peak		
Critical Sections	Actual Width (m)	Effective Width (m)	Two-way Pedestrian Flow (ped/15-min)	Two-way Pedestrian Flow Rate (ped/min/m) (4)	LOS (5)	Two-way Pedestrian Flow (ped/15-min)	Two-way Pedestrian Flow Rate (ped/min/m) (4)	LOS (5)
P1	4.1	1.1(1)	35	2.12	A	25	1.52	A
P2	2.1	1.1(2)	100	6.06	A	130	7.88	A
P3	2.8	1.3(3)	165	8.46	A	175	8.97	A
P4	4.0	3.0(2)	695	15.44	A	360	8.00	A
P5	3.8	2.3(3)	195	5.65	A	150	4.35	A
P6	3.8	2.3(3)	195	5.65	A	290	8.41	A
P7	3.1	2.1(2)	150	4.76	A	160	5.08	A
P8	3.3	1.8(3)	135	5.00	A	525	19.44	B
P9	3.5	2.0(3)	250	8.33	A	345	11.50	A
P10	3.7	2.2(3)	225	6.82	A	400	12.12	A
P11	3.5	2.0(3)	225	7.50	A	430	14.33	A
P12	3.5	2.0(3)	170	5.67	A	310	10.33	A

Notes: (1) Effective Width = Actual Width 4.1m – 2.0m (from tree to kerb) – 1.0m Death Width (0.5m from tree and wall for both sides)

(2) Effective Width = Actual Width – 1.0m Death Width (0.5m from kerb or walls for both sides)

(3) Effective Width = Actual Width – 1.5m Death Width (0.5m from kerb and 1m from shopping frontages)

(4) Two-way Pedestrian Flow Rate (ped/min/m) – Peak Pedestrian Flow / 60min / Effective Width

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

Proposed Development

6.2.8 For conservative approach, the pedestrian generation are made reference to the trip generation rates from in-house survey data of existing office building in the absence of any other standards or reference directly applicable to these unique facilities. The pedestrian trip rates and the pedestrian generation due to the development are summarised in **Table 6.6**.

Table 6.6 Estimated Pedestrian Trips of Proposed Development

Use	Units / Parameters	Pedestrian Trips (ped/15-minute)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Office Trip Rates	(ped/15-min/m^2)	0.0028	0.0060	0.0114	0.0050
Estimated Pedestrian Trips (27,375 m^2 GFA)	(ped/15-min)	**77**	**165**	**313**	**137**

6.2.9 Based on the estimated pedestrian trips generation in **Table 6.6** and the distribution of the major attraction nodes in **Table 6.4**, the pedestrian flows of the proposed development is then superimposed to the year 2033 reference pedestrian flow (without proposed development) to derive the year 2033 design pedestrian flow (with the proposed development). The 2033 design pedestrian flows are illustrated in **Figure 6.2**.

6.2.10 The assessment of the year 2033 design scenario is summarised in **Table 6.7** below.

Table 6.7 Performance of Critical Footpath in Year 2033 Design Scenario

2033 Design Scenario								
			AM Peak			PM Peak		
Critical Sections	Actual Width (m)	Effective Width (m)	Two-way Pedestrian Flow (ped/15-min)	Two-way Pedestrian Flow Rate (ped/min/m) (4)	LOS (5)	Two-way Pedestrian Flow (ped/15-min)	Two-way Pedestrian Flow Rate (ped/min/m) (4)	LOS (5)
P1	4.1	1.1(1)	240	14.55	A	405	24.55	C
P2	2.1	1.1(2)	135	8.18	A	200	12.12	A
P3	2.8	1.3(3)	200	10.26	A	245	12.56	A
P4	4.0	3.0(2)	730	16.22	B	430	9.56	A
P5	3.8	2.3(3)	250	7.25	A	255	7.39	A
P6	3.8	2.3(3)	250	7.25	A	395	11.45	A
P7	3.1	2.1(2)	195	6.19	A	250	7.94	A
P8	3.3	1.8(3)	180	6.67	A	615	22.78	B
P9	3.5	2.0(3)	275	9.17	A	390	13.00	A
P10	3.7	2.2(3)	250	7.58	A	445	13.48	A
P11	3.5	2.0(3)	250	8.33	A	475	15.83	A
P12	3.5	2.0(3)	195	6.50	A	355	11.83	A

Notes: (1) Effective Width = Actual Width 4.1m – 2.0m (from tree to kerb) – 1.0m Death Width (0.5m from tree and wall for both sides)

(2) Effective Width = Actual Width – 1.0m Death Width (0.5m from kerb or walls for both sides)

(3) Effective Width = Actual Width – 1.5m Death Width (0.5m from kerb and 1m from shopping frontages)

(4) Two-way Pedestrian Flow Rate (ped/min/m) – Peak Pedestrian Flow / 60min / Effective Width

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

6.2.11 The assessment results in **Table 6.7** show that the concerned sections of footpath and will all operate with sufficient capacity (LOS A for 10 sections, LOS B for 1 section and LOS C for 1 section[2]) during AM and PM peak 15-minute periods in design year 2033.

[2] There is only one section of footpath with performance at Grade C (bordering on Grade B).

7. SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The application site intends to develop the HKILSB at Wan Chai.

7.1.2 CTA Consultants Limited (CTA) was commissioned by ArchSD as the traffic consultant to prepare the TIA and provide technical justifications in supporting the application from traffic engineering point of view.

7.1.3 To appraise the existing traffic condition, a vehicular 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 has been assessed with the observed traffic flow. The results reveal that all critical junctions are at present operating within its capacities.

7.1.4 The development is well served by a wide range of public transport services in the vicinity. In particular, the development is easily accessible by MTR, with Wan Chai Station only 200m away and Exhibition Centre Station 600m away. The development has sufficient accessibility to the public transport facilities.

7.1.5 In view of the site constraints and public mission, well public transport connectivity, effective mitigation measures / traffic management plans, and surplus car park in the vicinity, the proposed internal transport provision as well as the proposed traffic management measures to be taken by the DoJ should be able to address the traffic demand, and the traffic impact arising from the proposed development should be manageable.

7.1.6 Assessment of operational performance of the critical junctions indicates that all critical junctions will still operate within their capacities in both reference and design scenarios in year 2033.

7.1.7 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.

7.1.8 Based on the above assessment, the development is supported from the traffic engineering points of view.

7.2 Conclusion

7.2.1 In conclusion, this 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.

7.2.2 Therefore, the proposed development of the HKILSB is reckoned feasible from traffic engineering point of view.

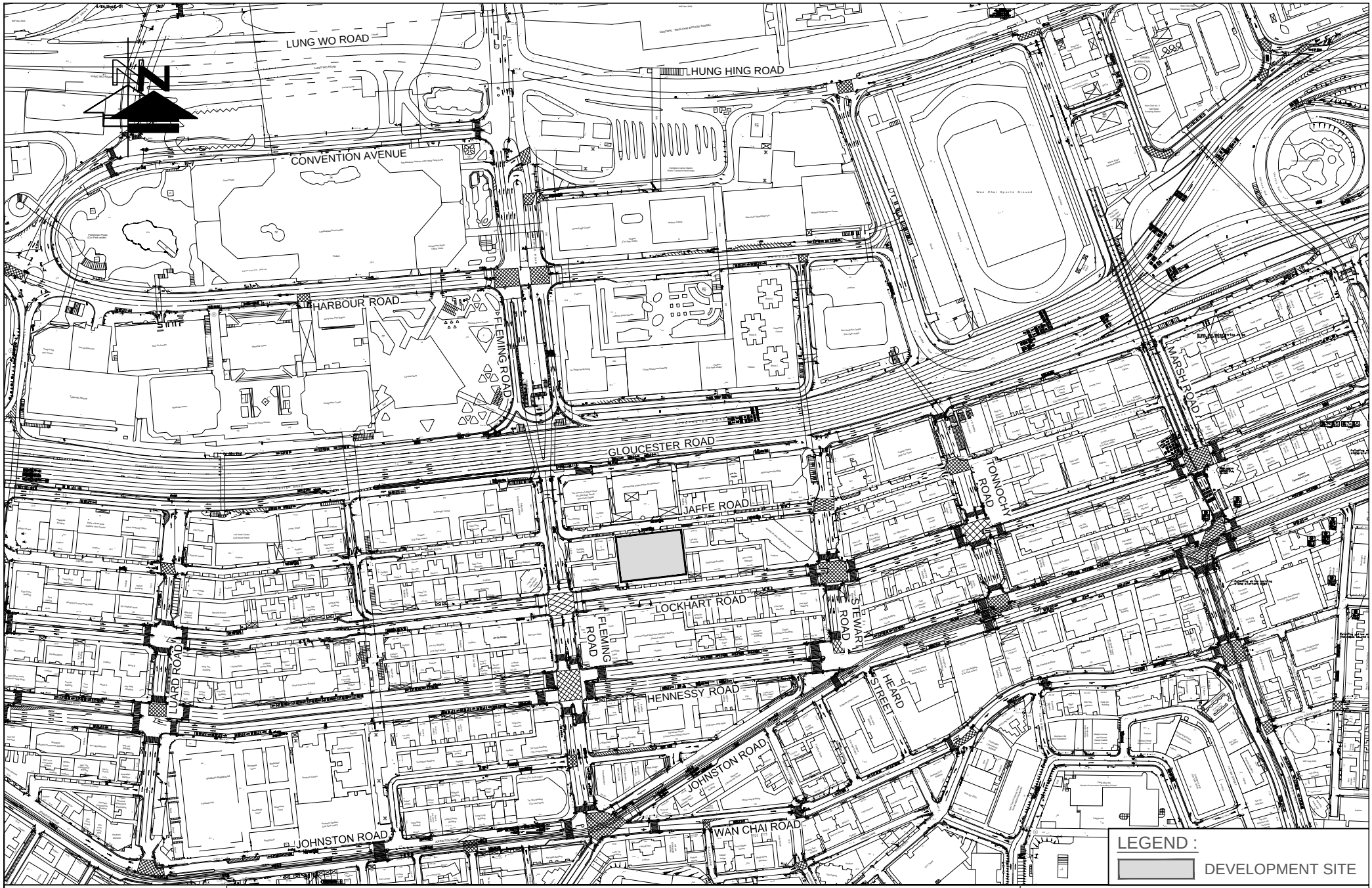


FIGURE NO.: 2.1	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: SITE LOCATION PLAN	
SCALE: 1 : 3900 @A4	DATE: 29 OCT 2026	

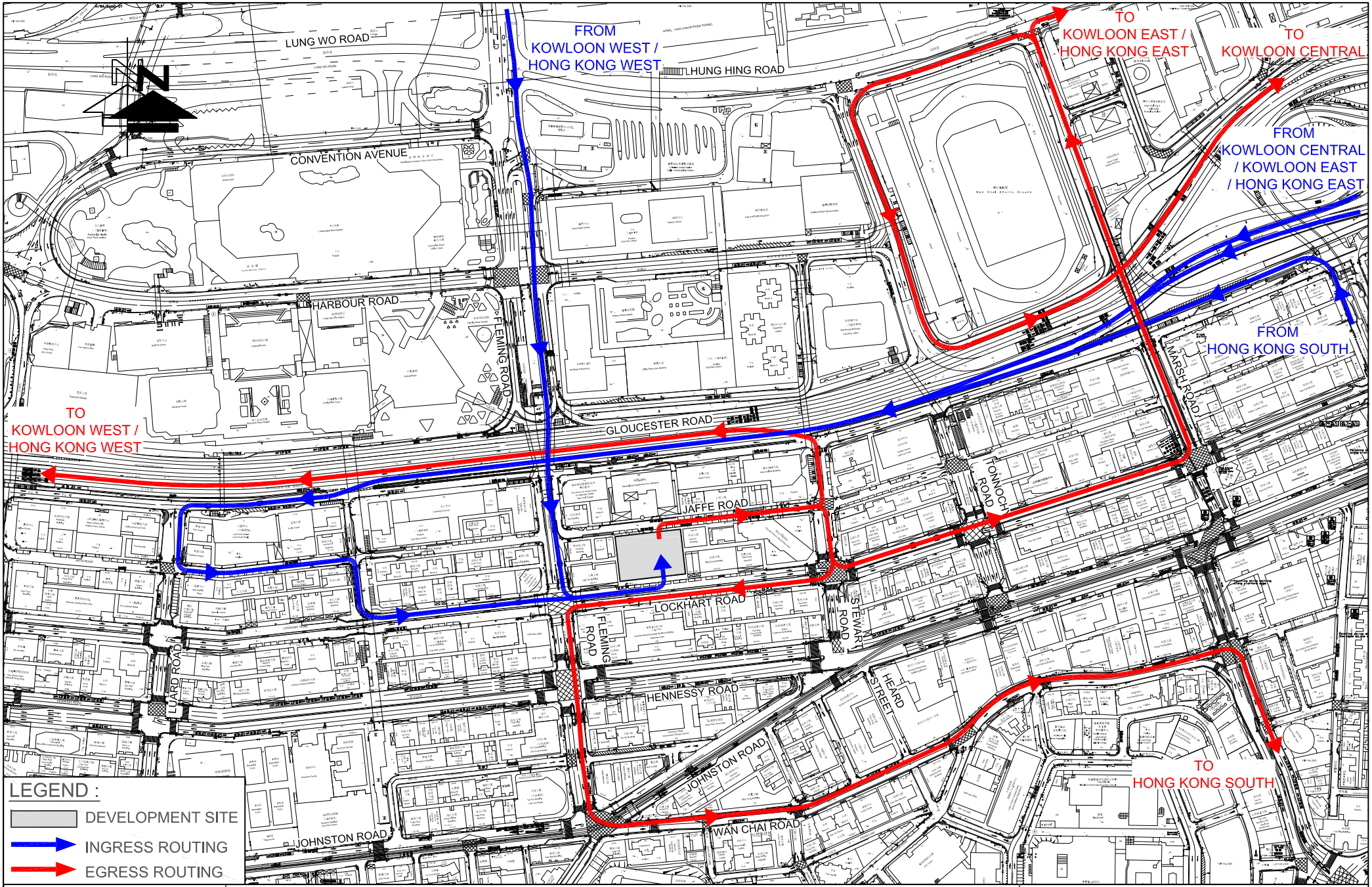


FIGURE NO.: 3.1	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: MAJOR VEHICULAR INGRESS AND EGRESS ROUTING	
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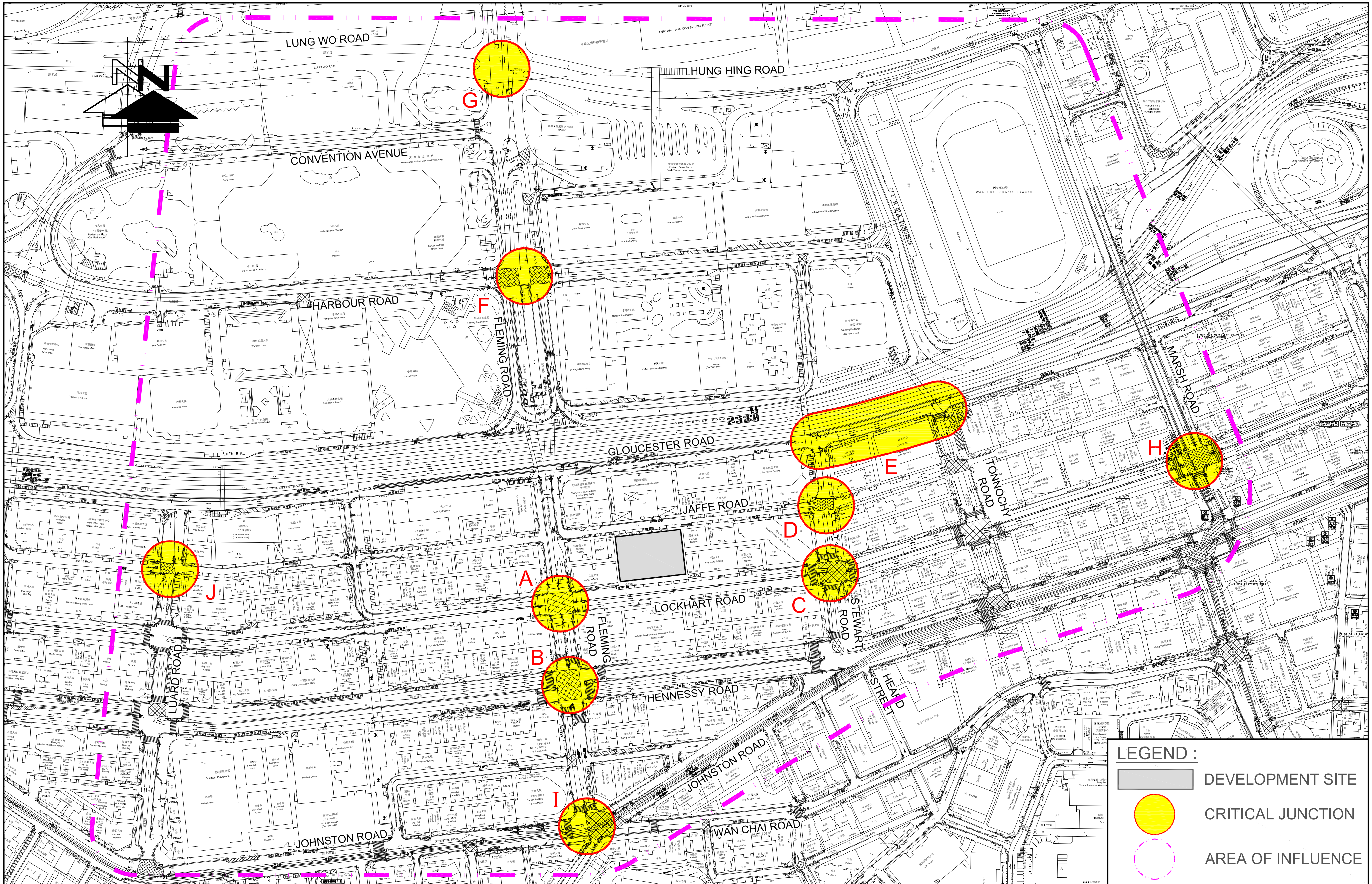
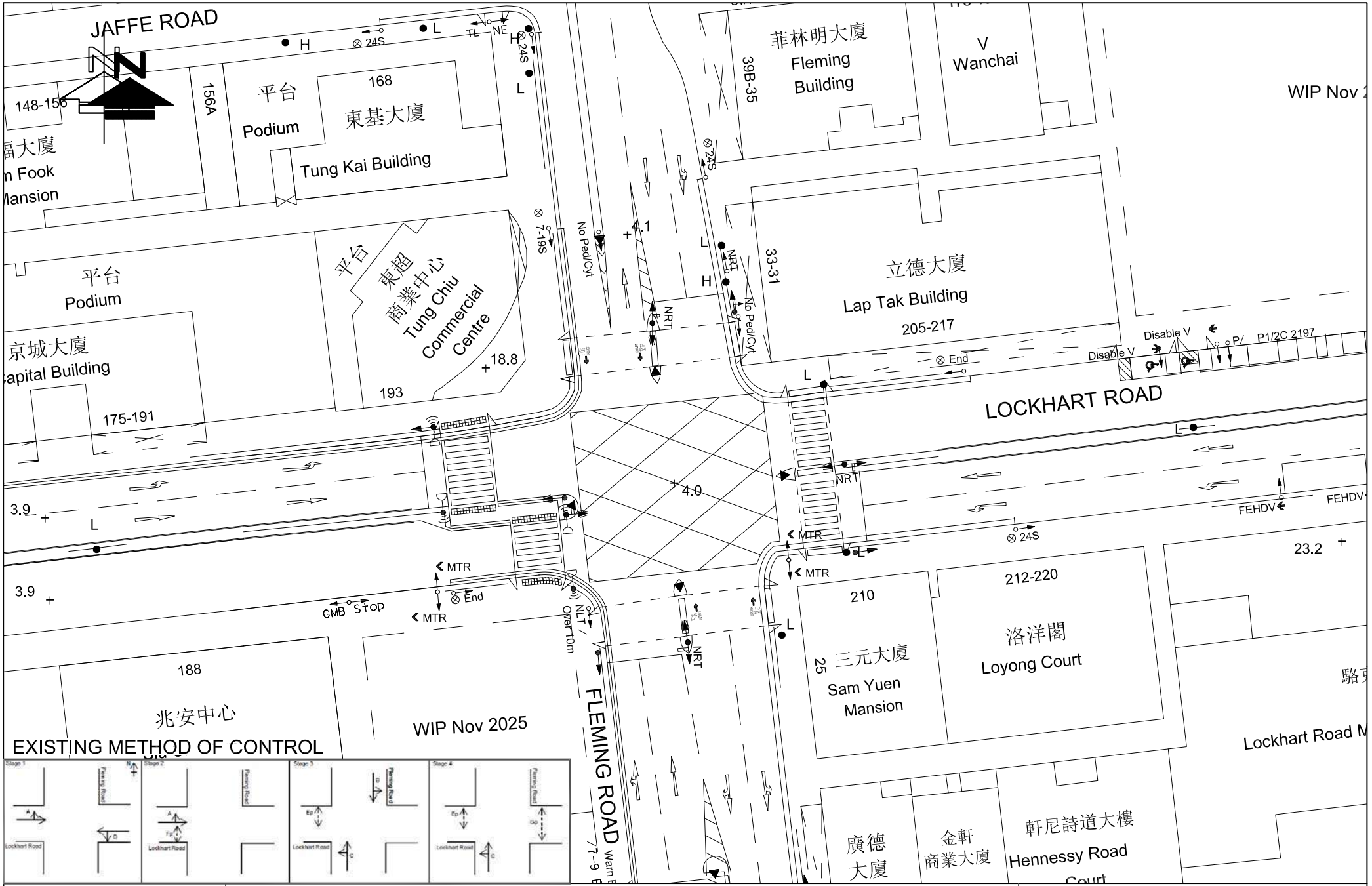


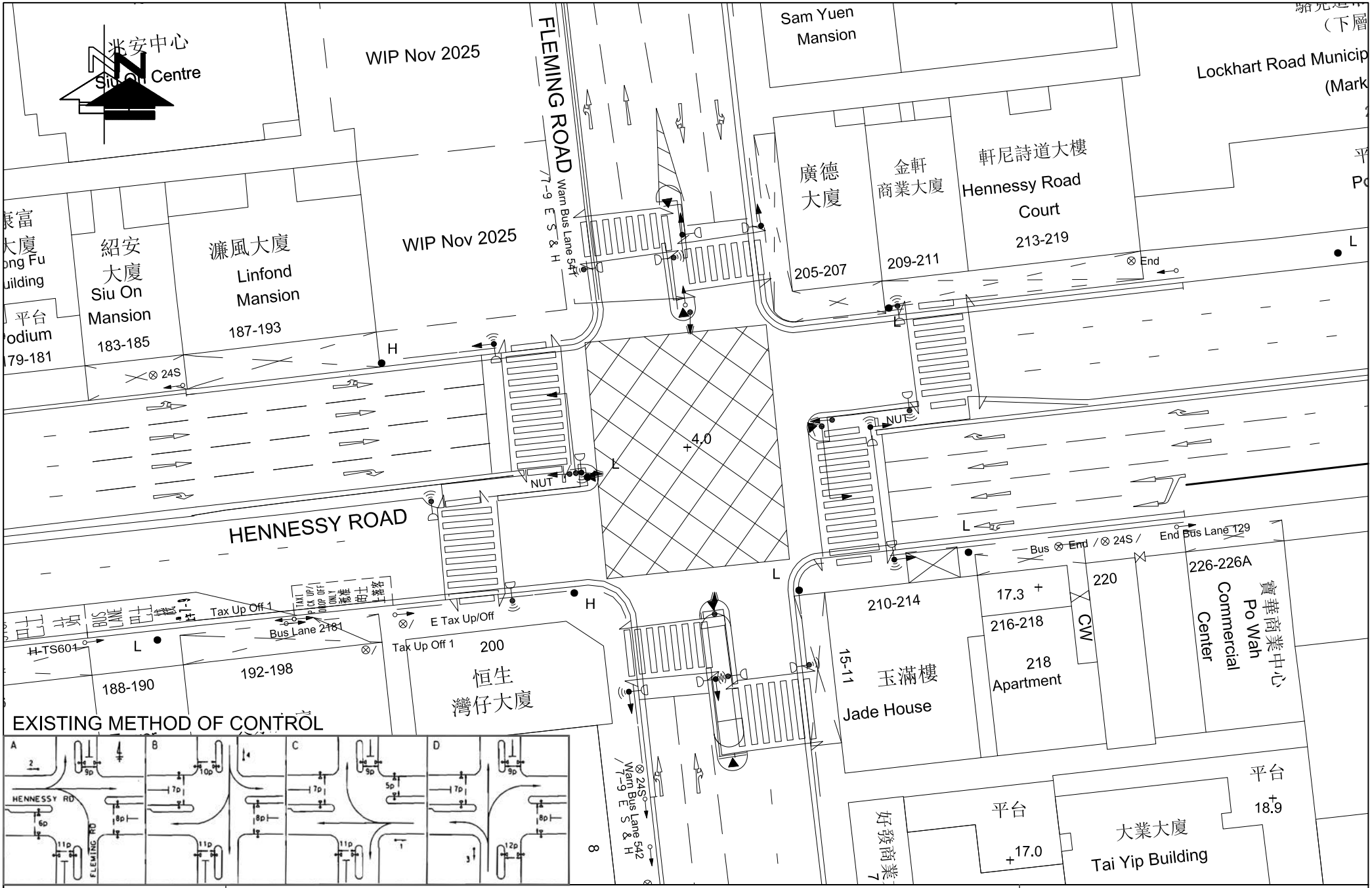
FIGURE NO.: 3.2	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA
PROJECT NO.: 26041HK	DRAWING TITLE: IDENTIFIED CRITICAL JUNCTIONS AND AREA OF INFLUENCE
SCALE: 1 : 3900 @A4 / DATE: 25 AUG 2026	

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EXISTING METHOD OF CONTROL

FIGURE NO.: 3.3	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF LOCKHART ROAD / FLEMING ROAD (A)	
SCALE: 1 : 500 @A4 / DATE: 26 AUG 2026		



EXISTING METHOD OF CONTROL

FIGURE NO.: 3.4	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF HENNESSY ROAD / FLEMING ROAD (B)	
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026	

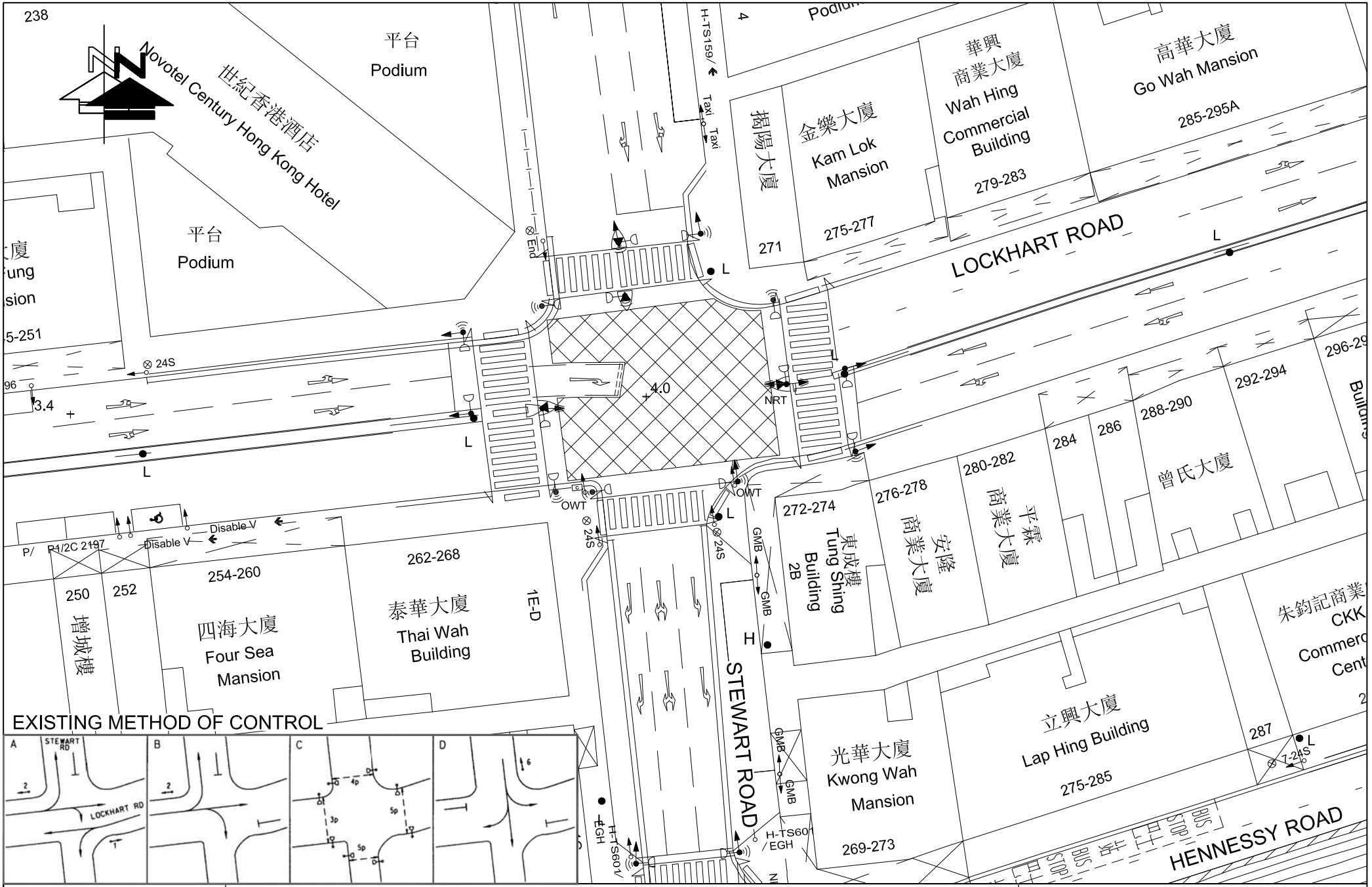


FIGURE NO.: 3.5	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA		
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF LOCKHART ROAD / STEWART ROAD (C)		
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026		

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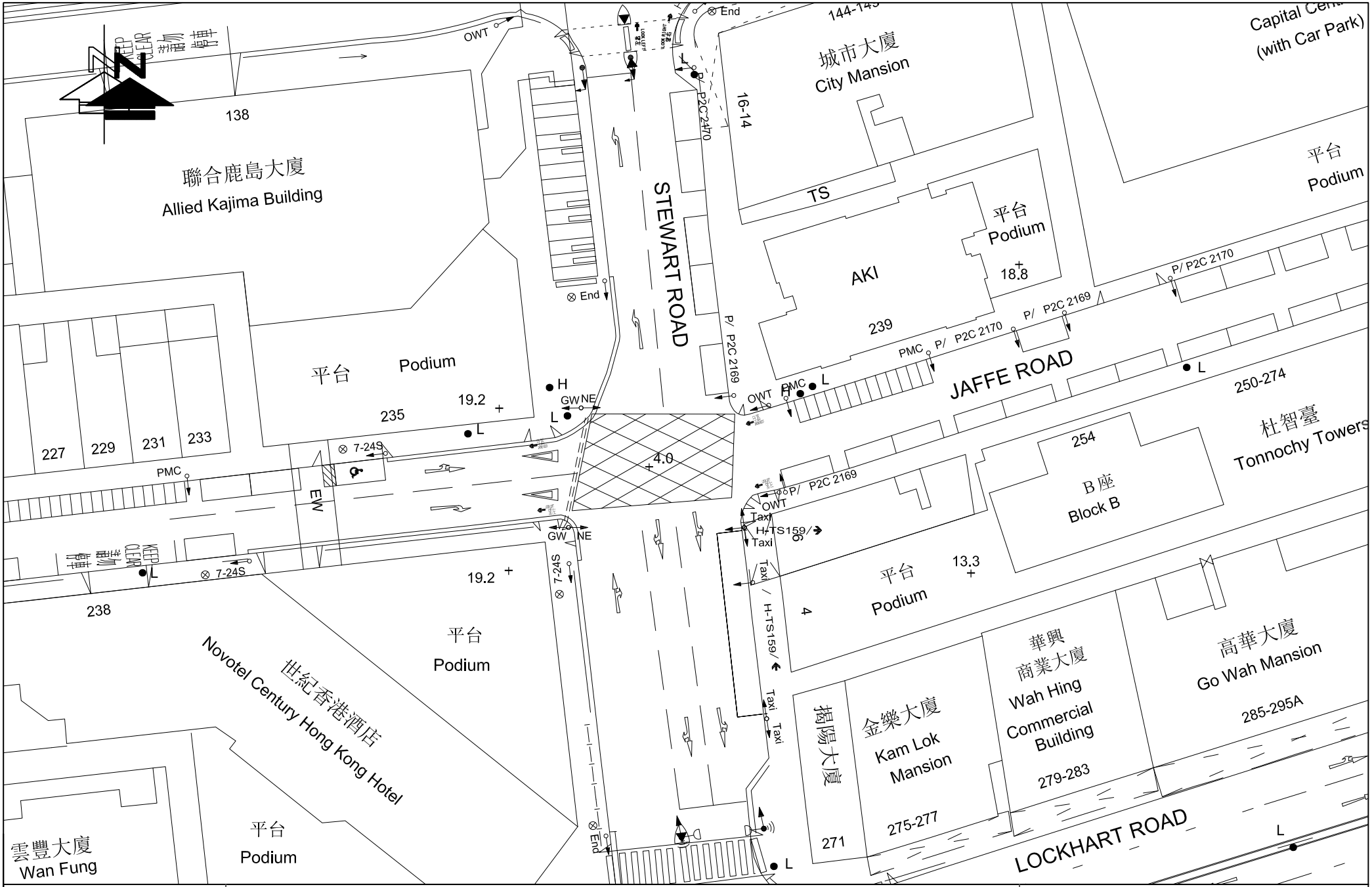


FIGURE NO.: 3.6	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF JAFFE ROAD / STEWART ROAD (D)	CTA Consultants Limited 志達顧問有限公司
SCALE: 1 : 500 @A4 / DATE: 26 AUG 2026		

EXISTING METHOD OF CONTROL

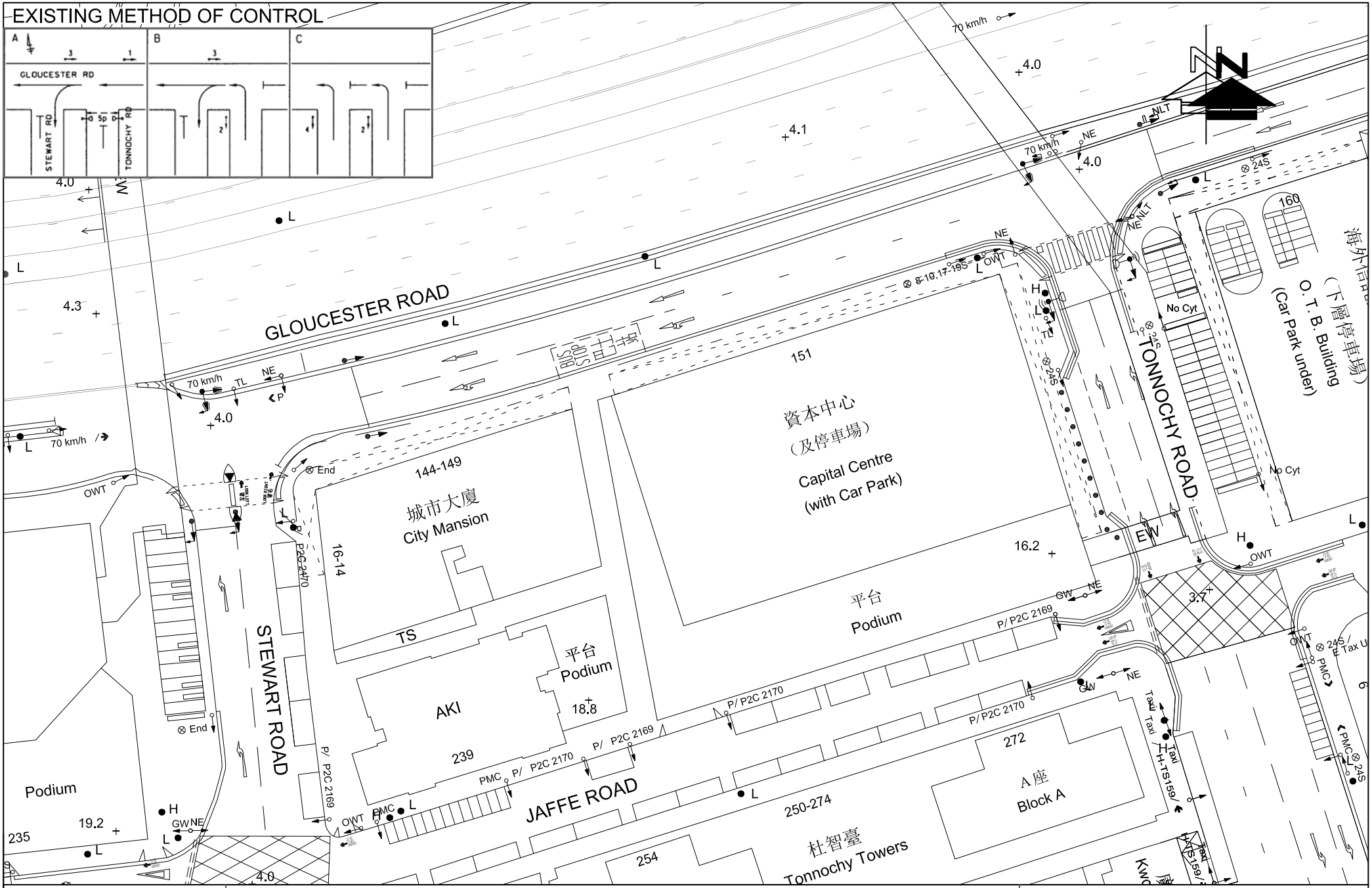


FIGURE NO.: 3.7	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA		
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF GLOUCESTER ROAD / STEWART ROAD / TONNOCHY ROAD (E)		
SCALE: 1 : 550 @A4	DATE: 26 AUG 2026		

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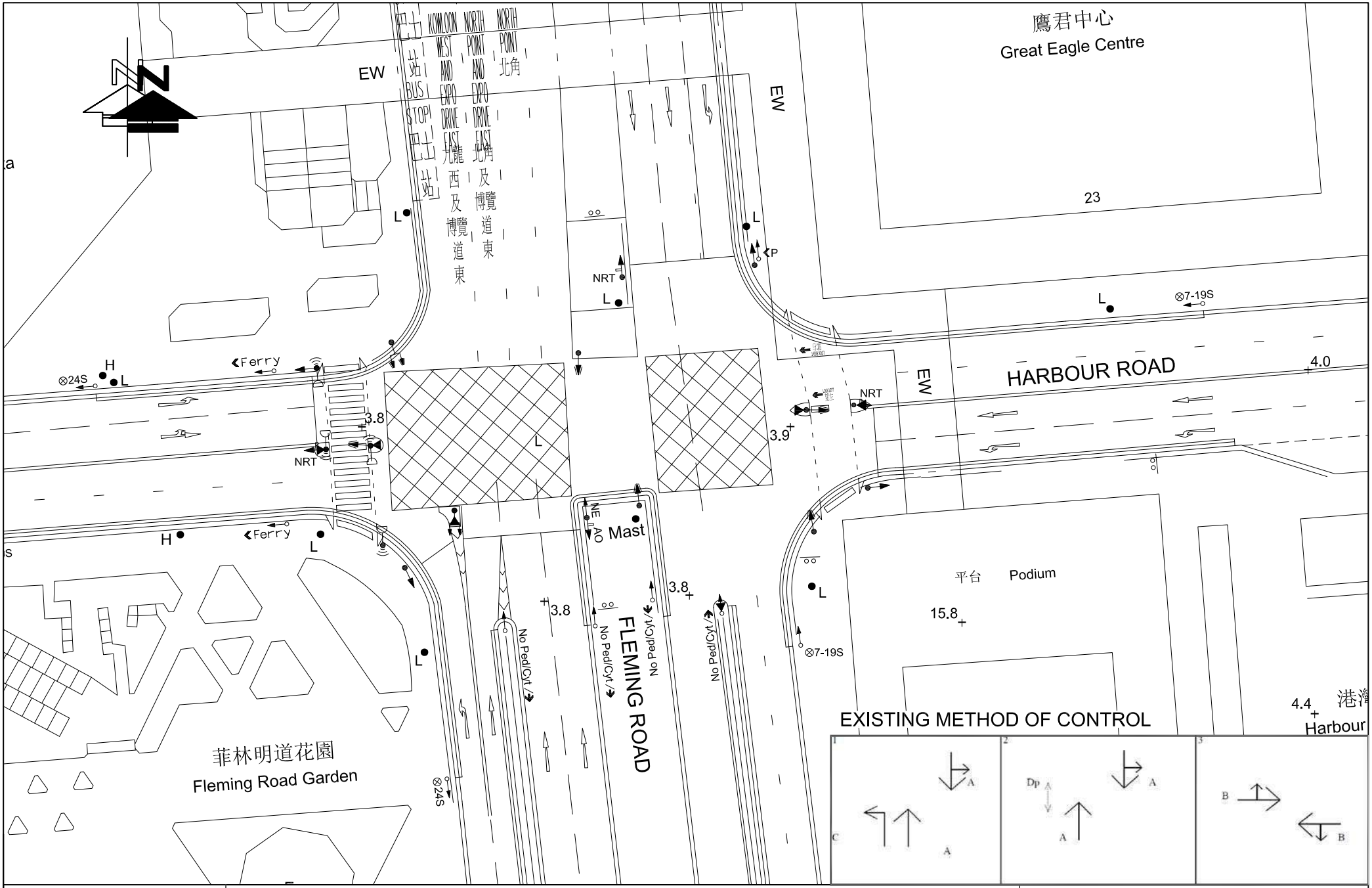


FIGURE NO.: 3.8	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF HARBOUR ROAD / FLEMING ROAD (F)	
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026	

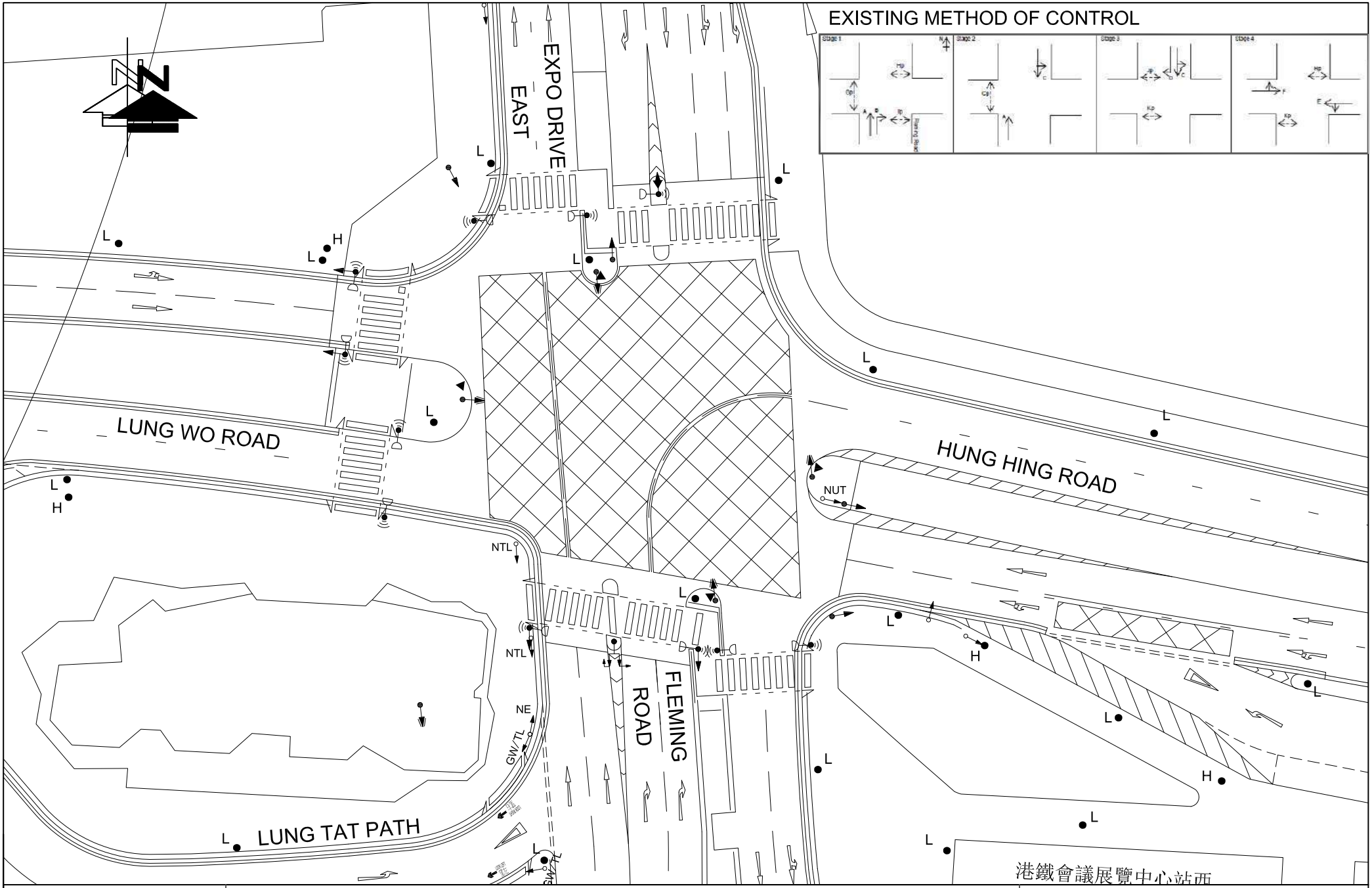


FIGURE NO.: 3.9	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF LUNG WO ROAD / EXPO DRIVE EAST / HUNG HING ROAD / FLEMING ROAD (G)	
SCALE: 1 : 500 @A4 / DATE: 26 AUG 2026		

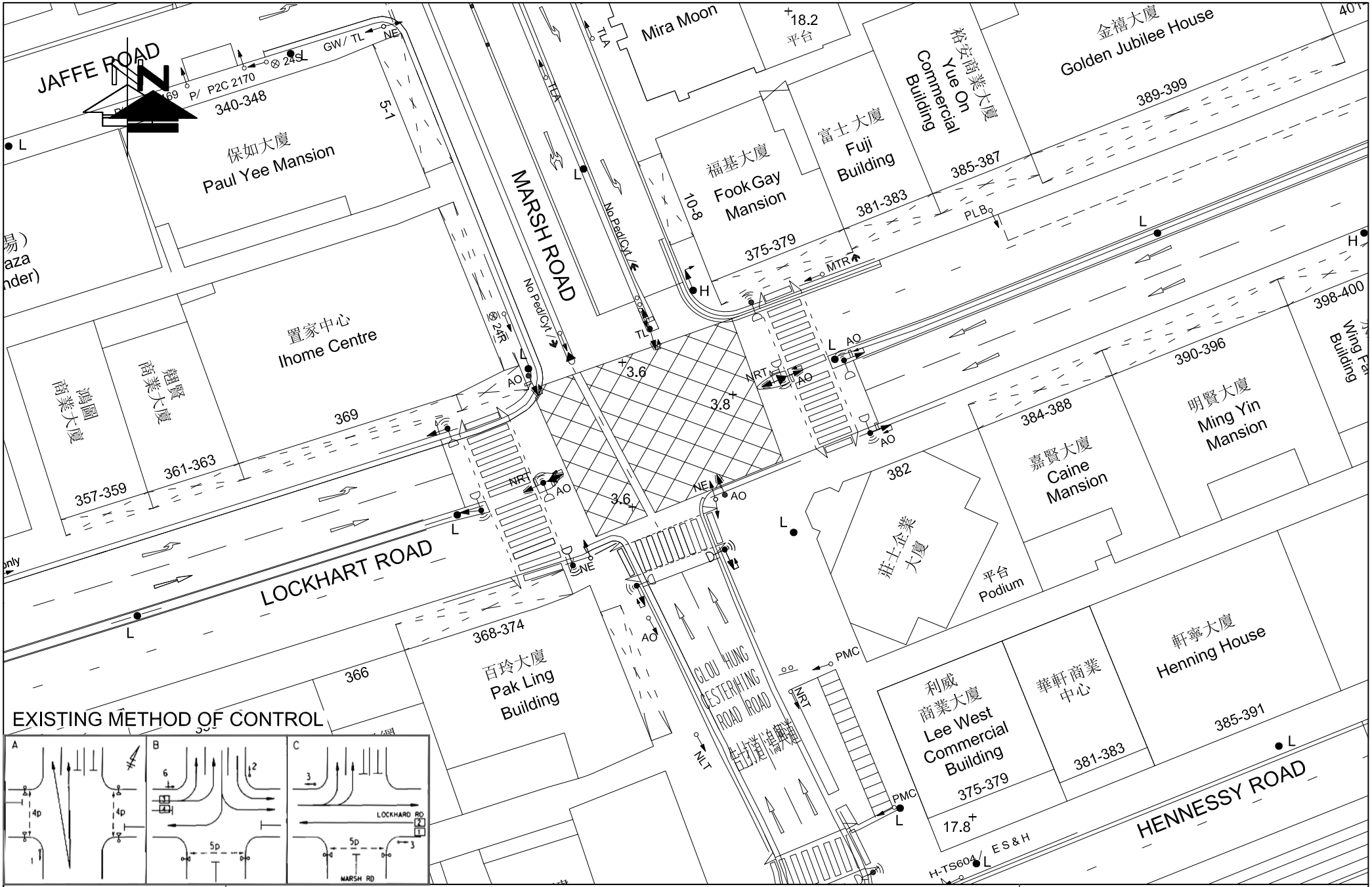


FIGURE NO.: 3.10	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA		
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF LOCKHART ROAD / MARSH ROAD (H)		
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026		

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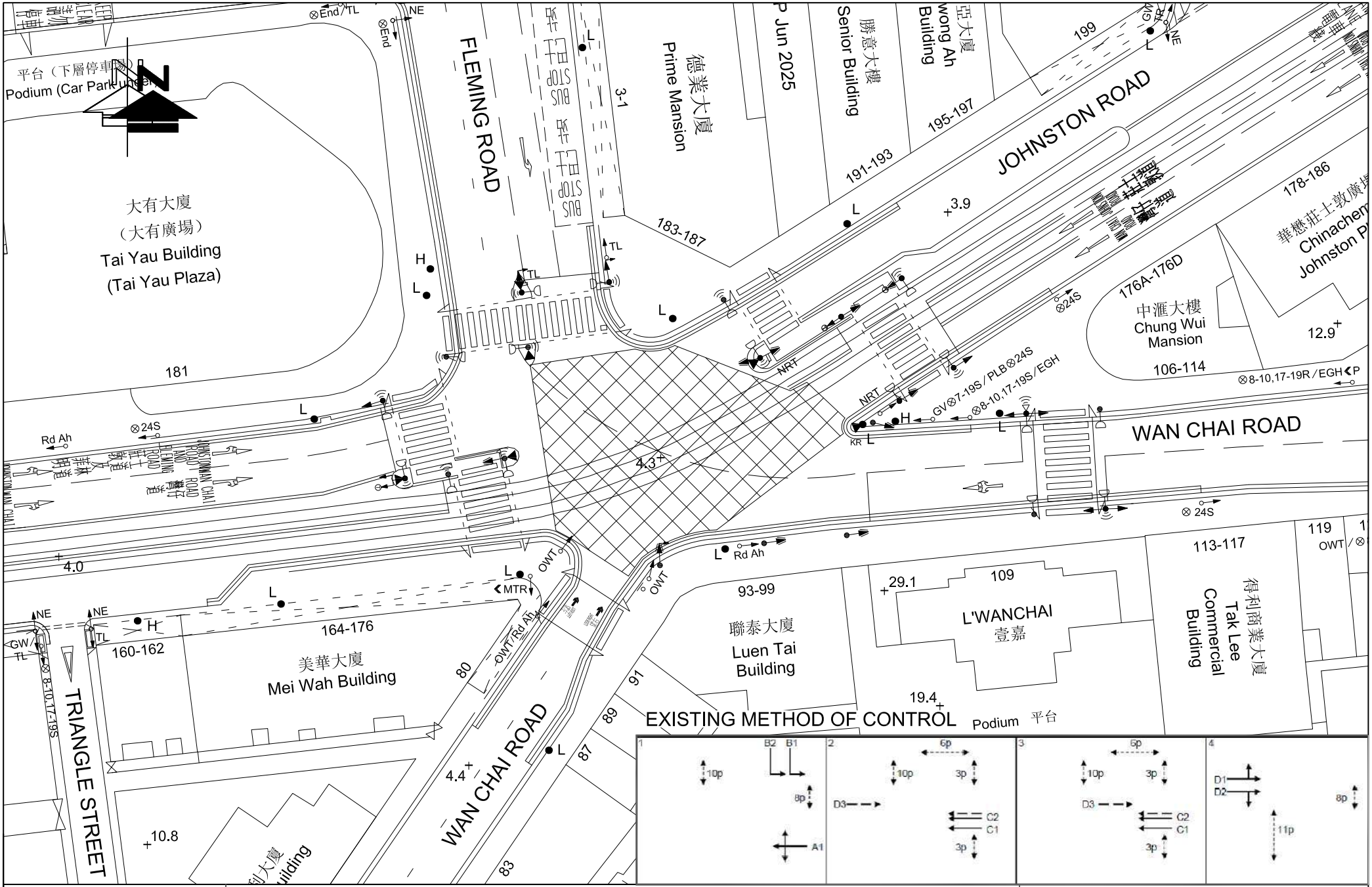


FIGURE NO.: 3.11	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA		
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF JOHNSTON ROAD / FLEMING ROAD / WAN CHAI ROAD (I)		
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026		

CTA Consultants Limited
志達顧問有限公司



FIGURE NO.: 3.12	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF JAFFE ROAD / LUARD ROAD (J)	
SCALE: 1 : 500 @A4	DATE: 26 AUG 2026	

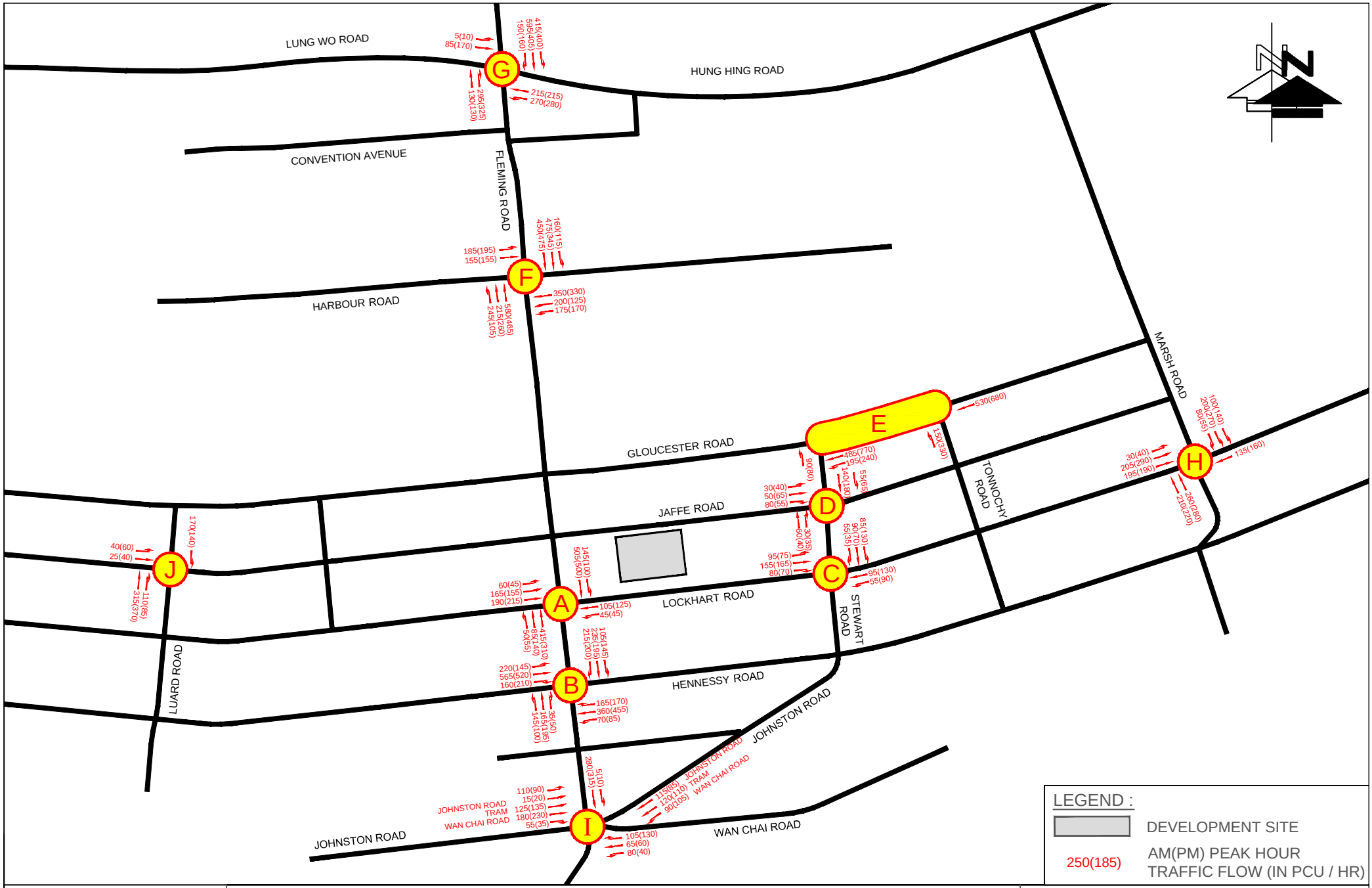


FIGURE NO.: 3.13	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: 2026 OBSERVED TRAFFIC FLOWS	
SCALE: N.T.S. @A4 / DATE: 26 AUG 2026		

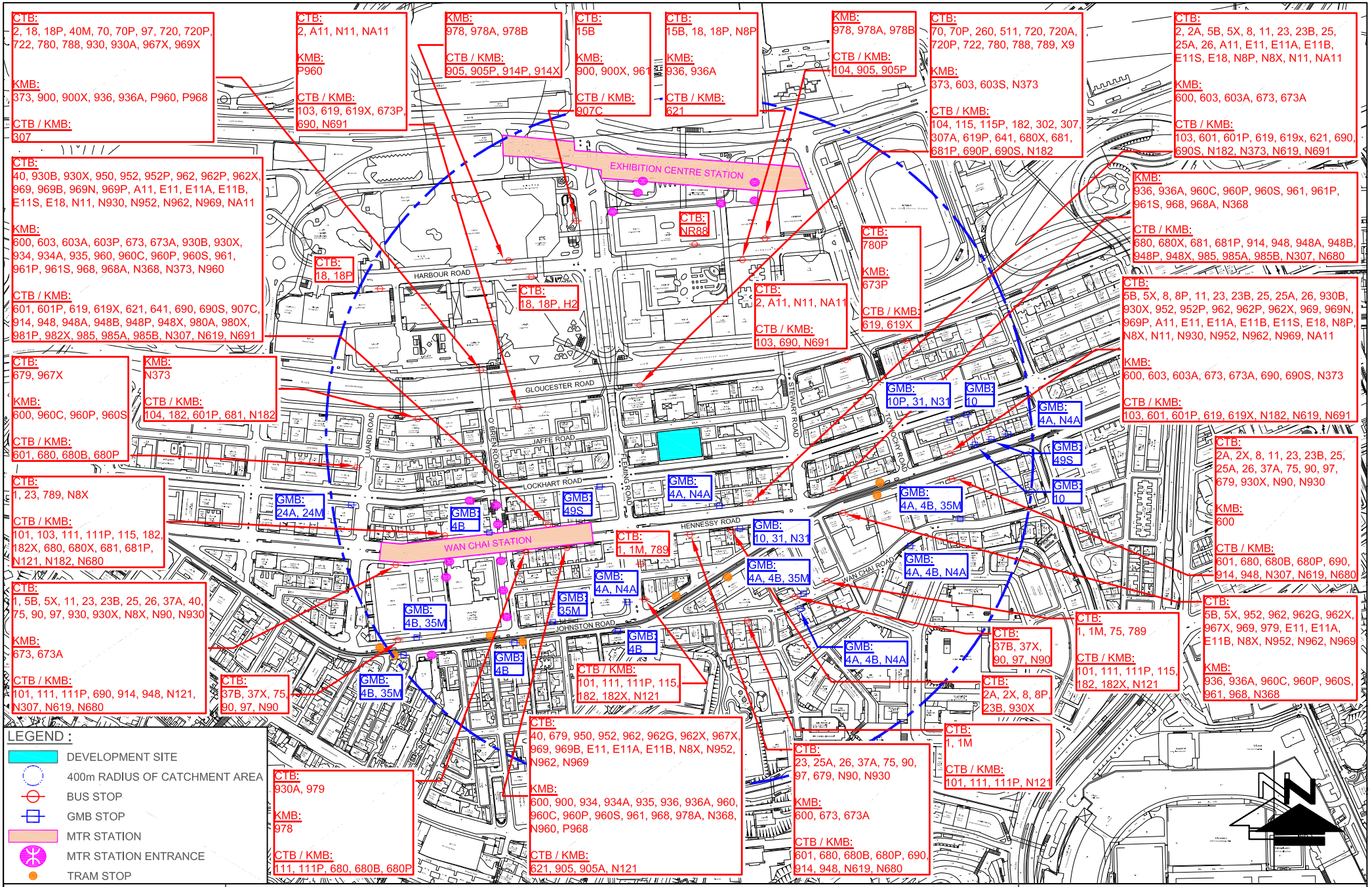


FIGURE NO.: 3.14	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA
PROJECT NO.: 26041HK	DRAWING TITLE: PUBLIC TRANSPORT SERVICES IN THE VICINITY
SCALE: 1 : 6000 @A4	DATE: 26 AUG 2026

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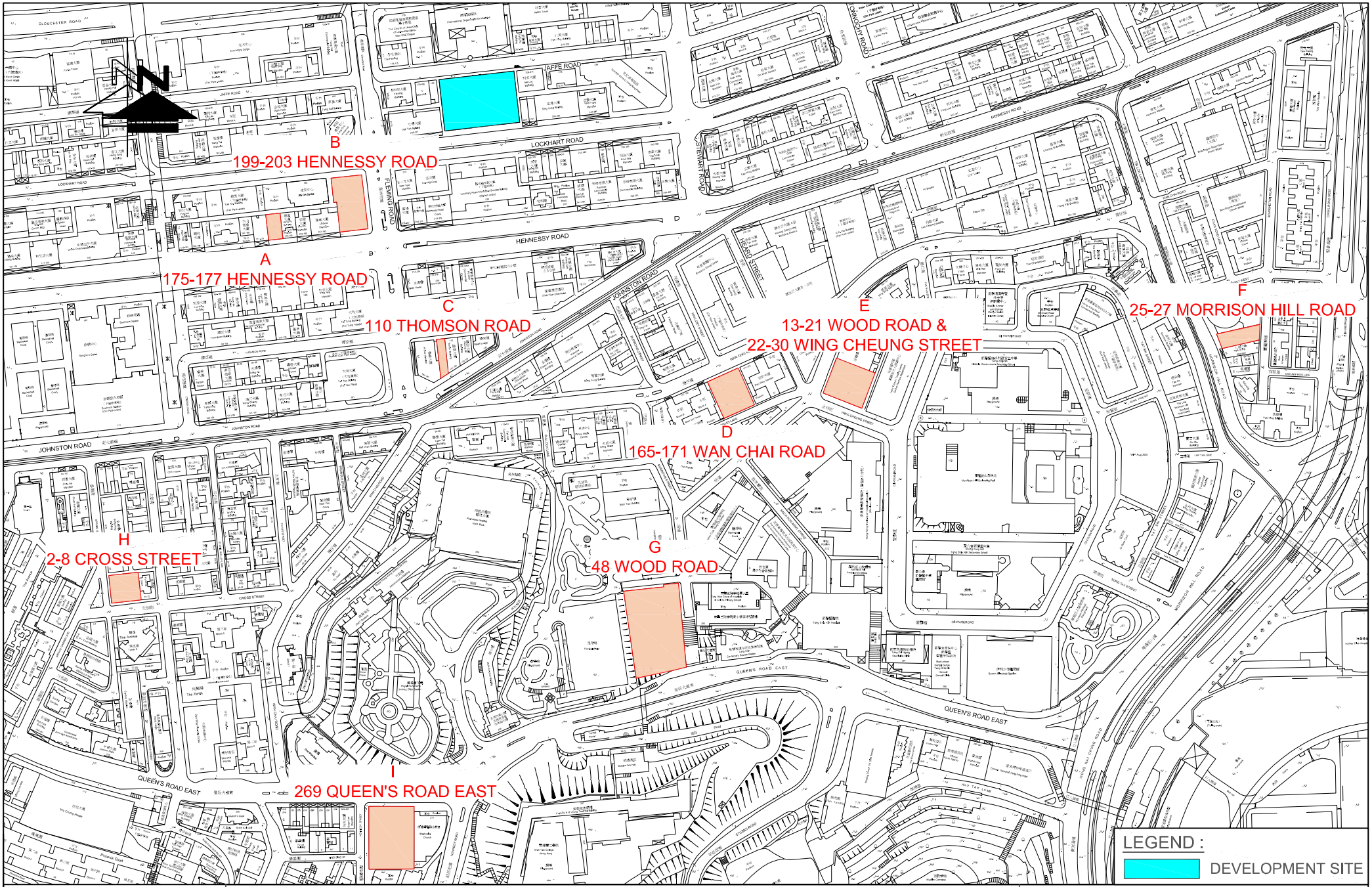


FIGURE NO.: 4.1	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: PLANNED / COMMITTED DEVELOPMENT IN THE VICINITY	
SCALE: 1 : 3400 @A4 / DATE: 12 JUN 2026		

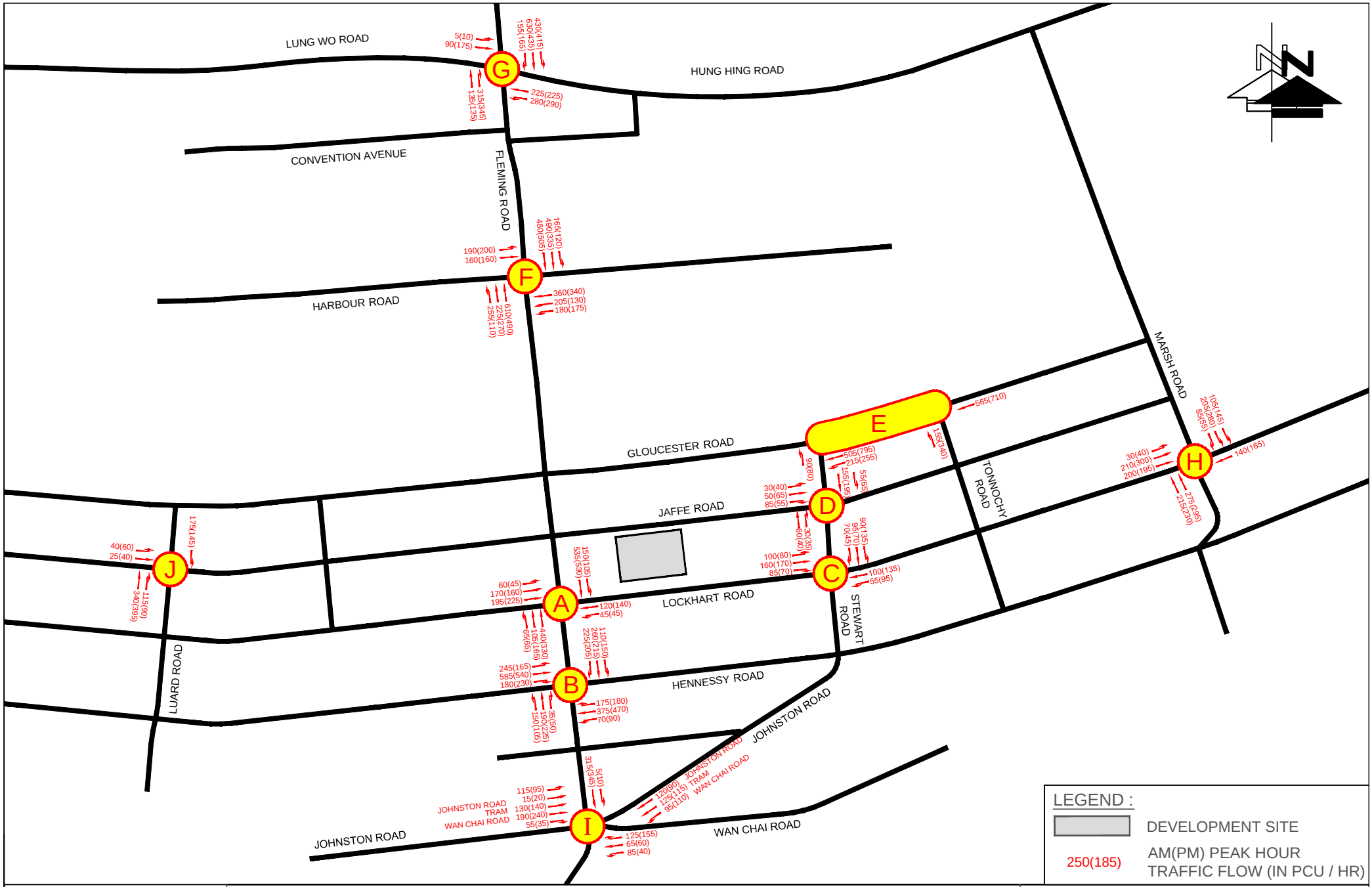


FIGURE NO.: 4.2	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	
PROJECT NO.: 26041HK	DRAWING TITLE: 2033 REFERENCE TRAFFIC FLOWS	CTA Consultants Limited 志達顧問有限公司
SCALE: N.T.S. @A4 / DATE: 26 AUG 2026		

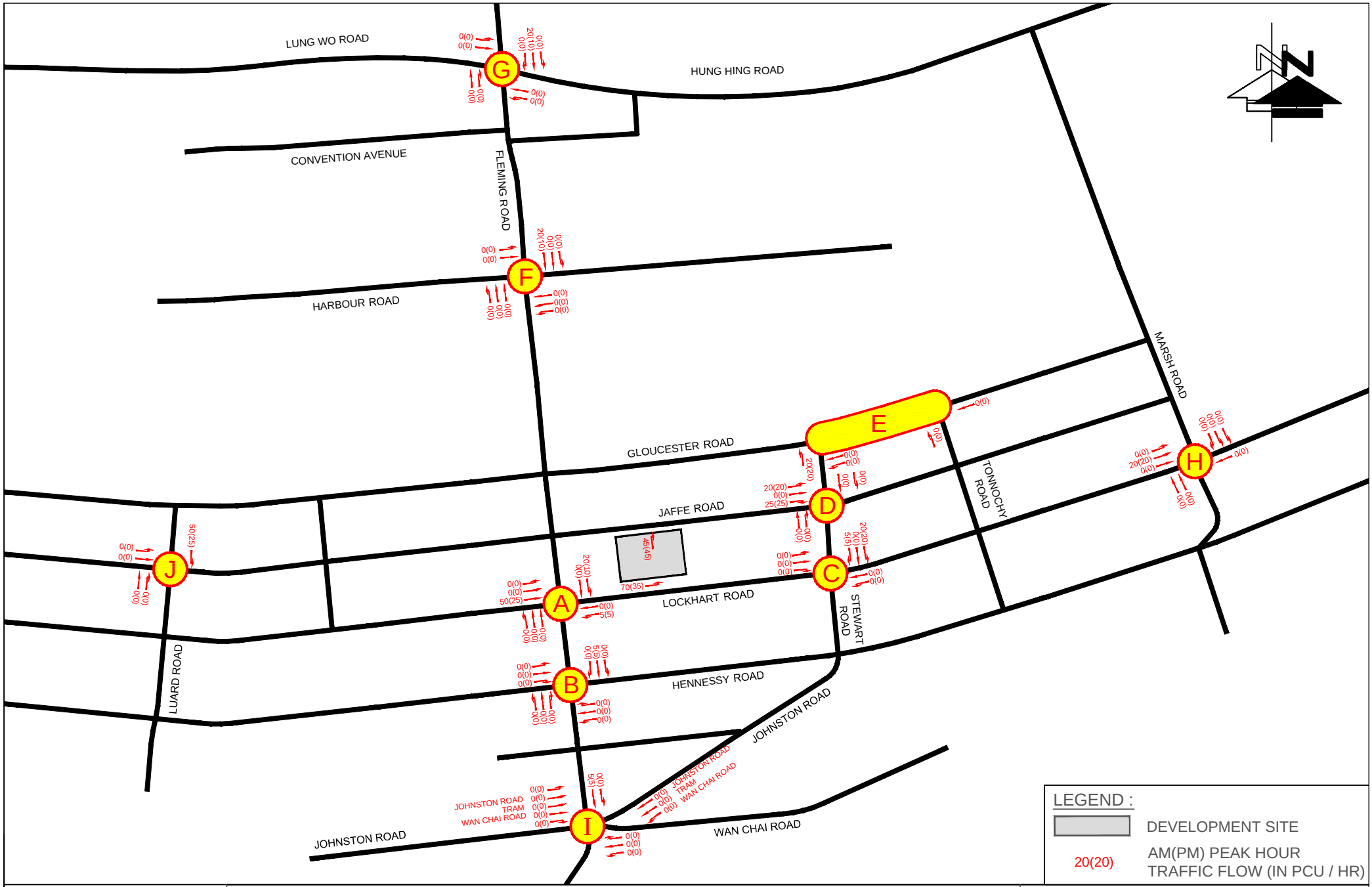


FIGURE NO.: 4.3	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: DEVELOPMENT TRAFFIC FLOWS	
SCALE: N.T.S. @A4 / DATE: 29 OCT 2026		

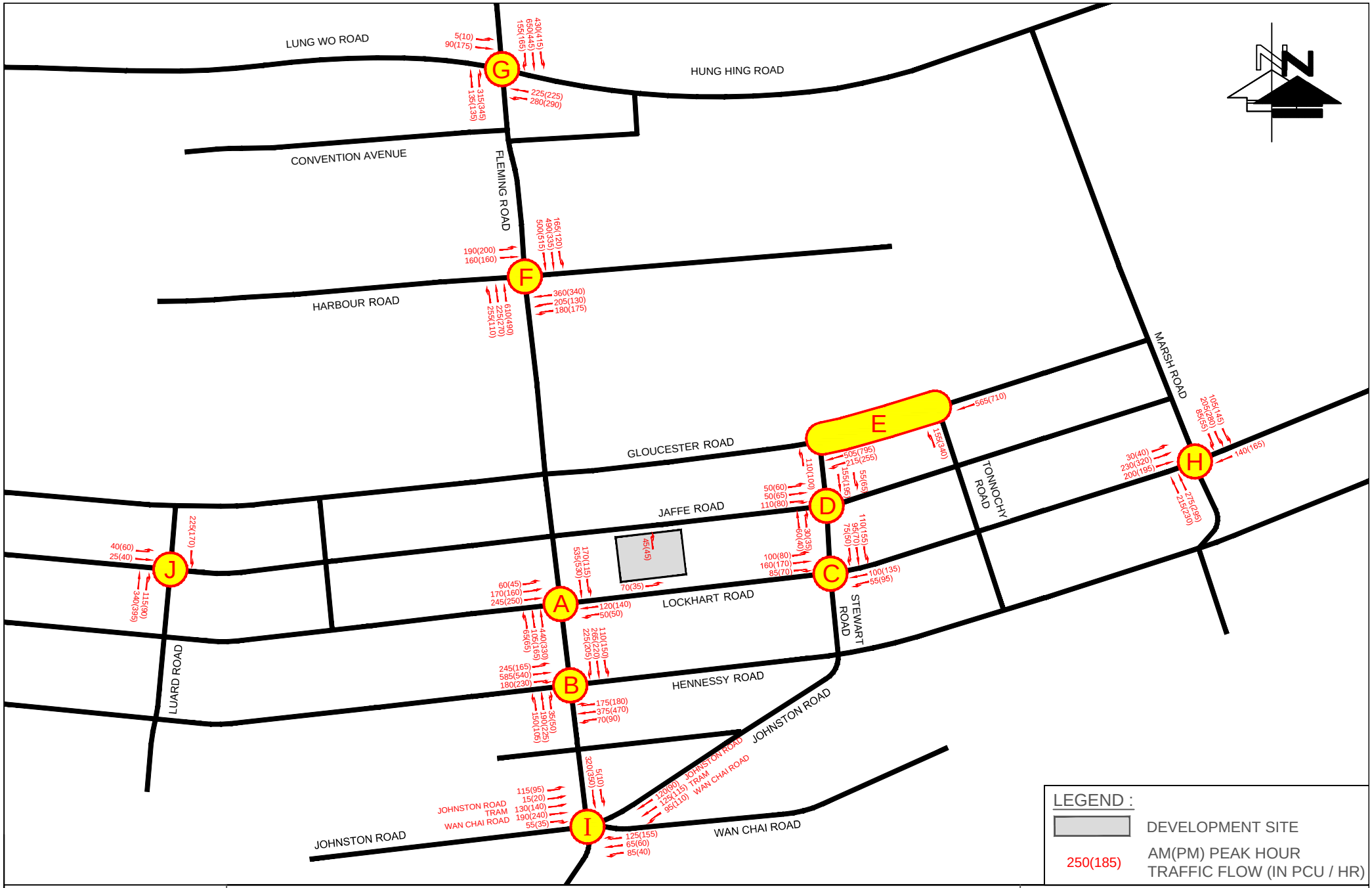


FIGURE NO.: 4.4	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	
PROJECT NO.: 26041HK	DRAWING TITLE: 2033 DESIGN TRAFFIC FLOWS	CTA Consultants Limited 志達顧問有限公司
SCALE: N.T.S. @A4 / DATE: 29 OCT 2026		

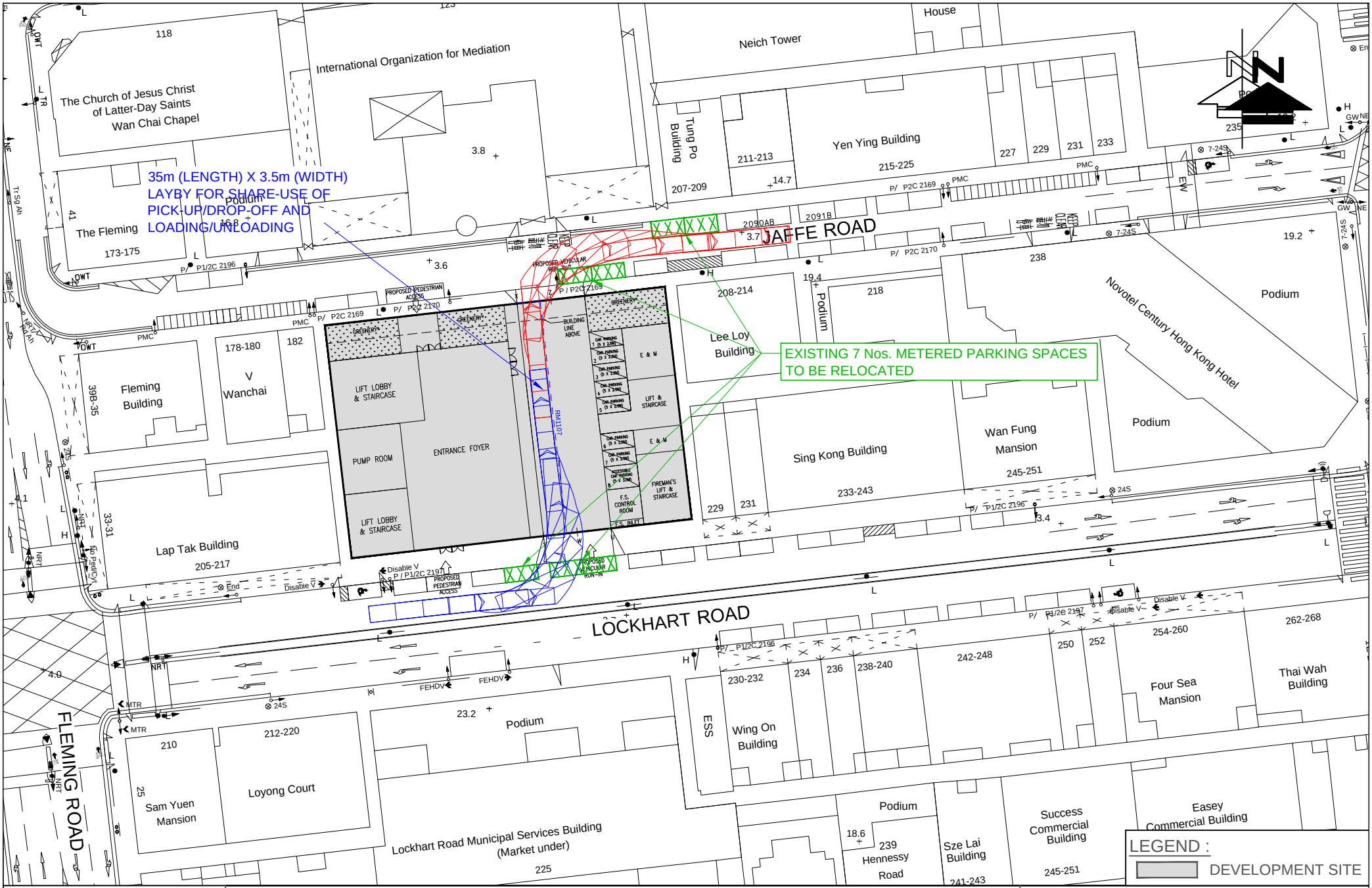


FIGURE NO.: 5.1	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF 12M COACH AT G/F	
SCALE: 1 : 750 @A4	DATE: 30 OCT 2026	

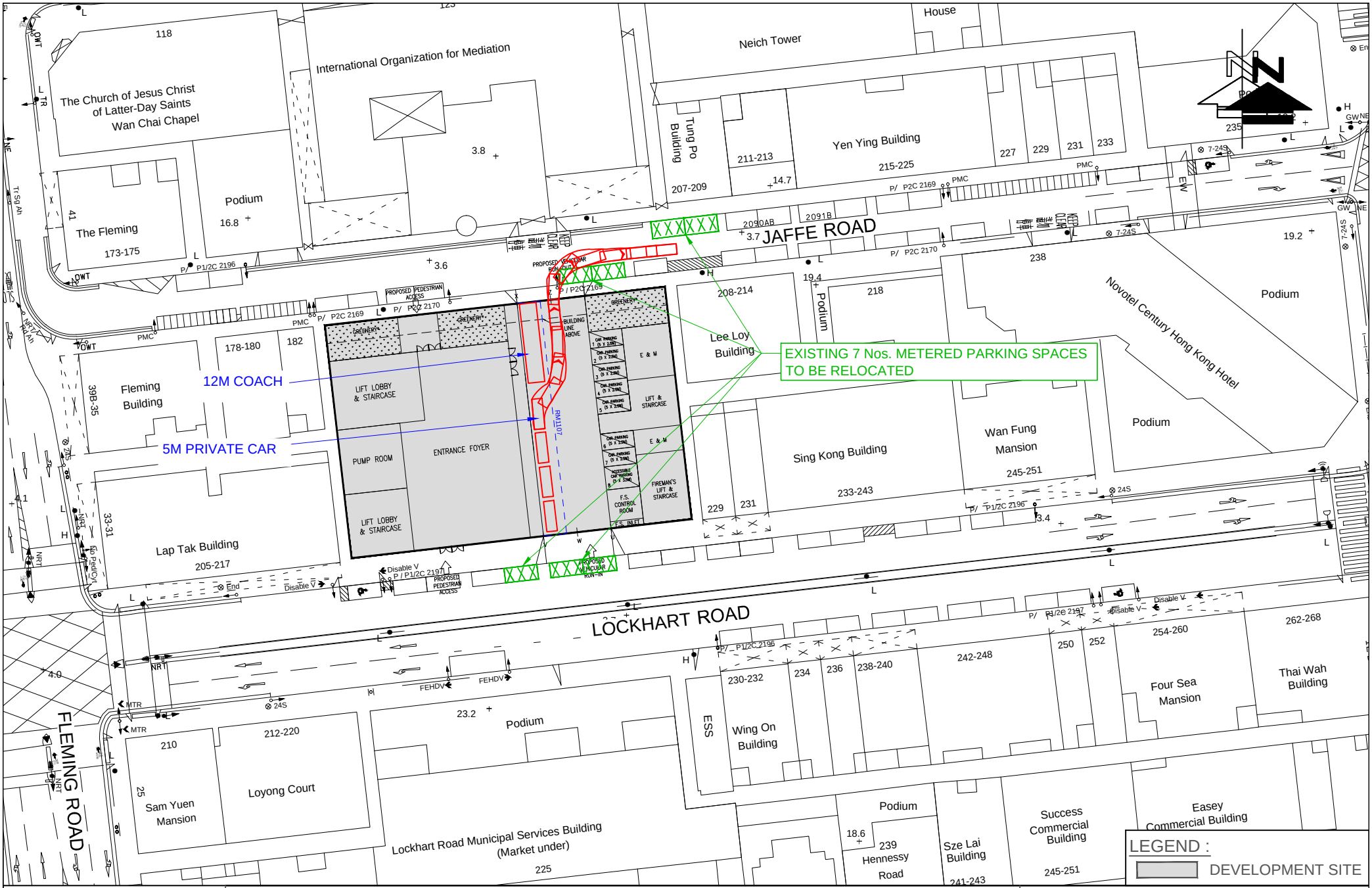


FIGURE NO.: 5.2	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF A PRIVATE CAR OVERTAKING A COACH AT LAYBY	
SCALE: 1 : 750 @A4	DATE: 30 OCT 2026	

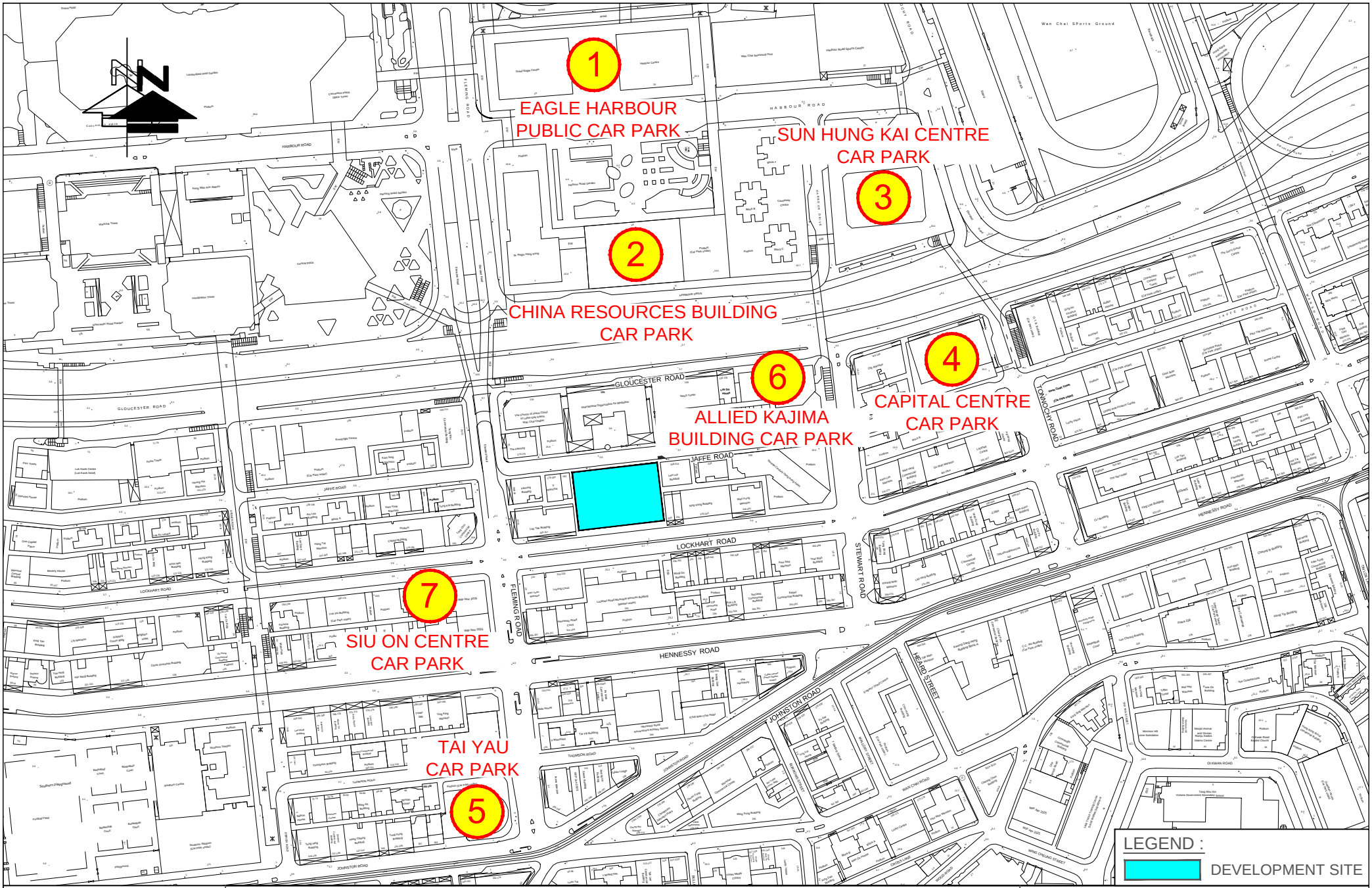


FIGURE NO.: 5.3	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: LOCATION OF THE SURVEYED CAR PARK	
SCALE: 1 : 3000 @A4 / DATE: 30 OCT 2026		

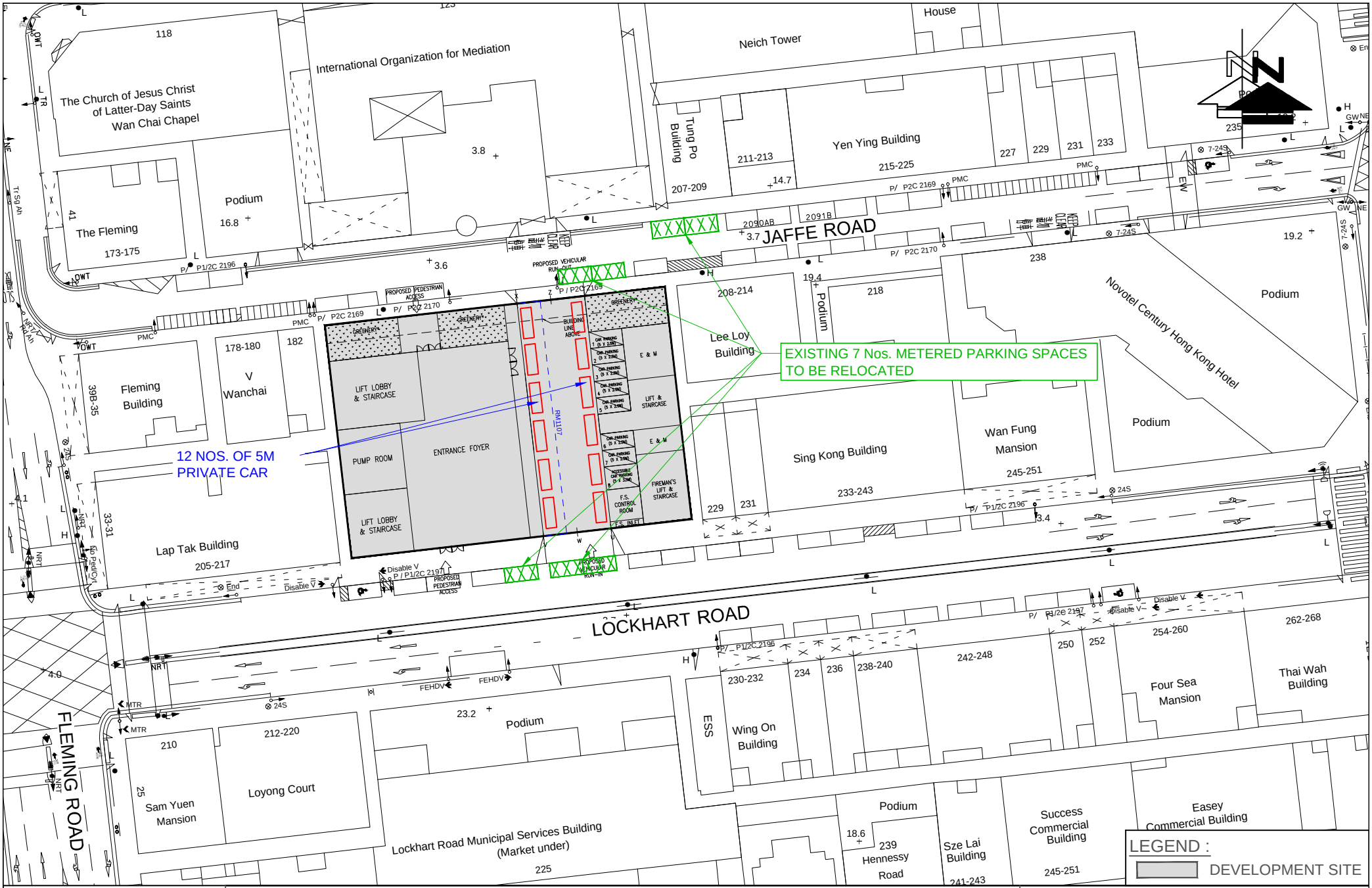


FIGURE NO.: 5.4	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: CRITICAL SCENARIO OF PICK-UP / DROP-OFF AT LAYBY	
SCALE: 1 : 750 @A4	DATE: 2 NOV 2026	

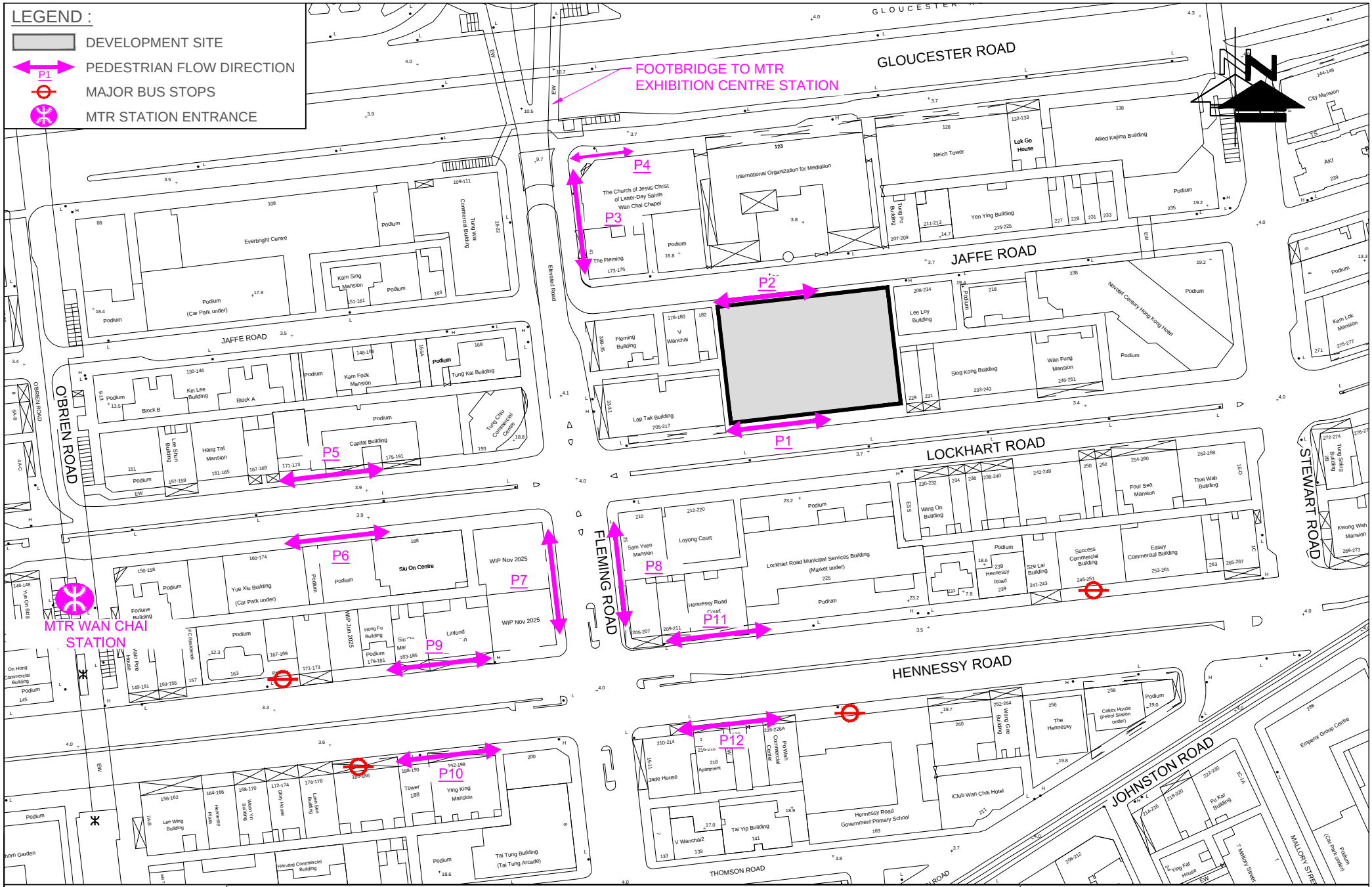


FIGURE NO.: 6.1	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: PEDESTRIAN FLOW INDEX	
SCALE: 1 : 1500 @A4	DATE: 29 OCT 2026	

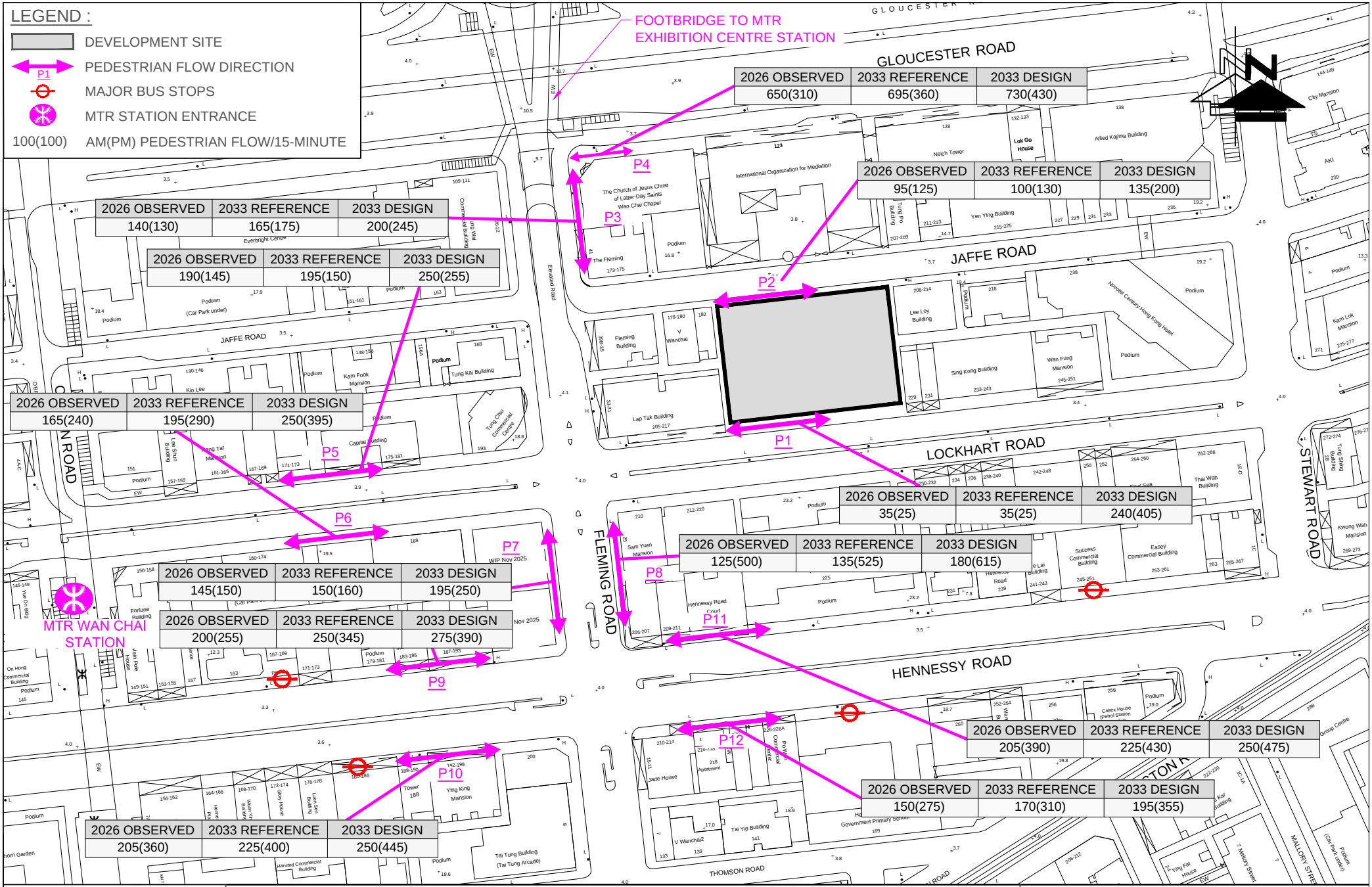


FIGURE NO.: 6.2	PROJECT TITLE: Section 16 for Relaxation of Building Height Restriction and Plot Ratio for The Hong Kong International Legal Service Building at Wan Chai Programme No. 142KA	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 26041HK	DRAWING TITLE: PEDESTRIAN FLOW	
SCALE: 1 : 1500 @A4 / DATE: 29 OCT 2026		

Appendix 1

Detailed Breakdown of the Data of the Estimated Visitors

Nos. of Visitors Arrival in AM and PM Peak

Detailed Breakdown of Estimated Visitors for Each Facility at Each Time Slot

From		7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
To		8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
Facility	**Parameter**	**Estimated No. of Visitors at Each Facility at Each Time Slot**													
a. Auditorium	300 seats	0	15	150	210	210	150	30	150	210	210	150	30	15	15
b. Multi-purpose hall	160 - 170 persons	0	10	85	120	120	85	20	85	120	120	85	20	10	10
c. Classroom	200 persons	0	10	100	140	140	100	20	100	140	140	100	20	10	10
d. Moot courts	130 seats / persons	0	5	65	90	90	65	15	65	90	90	65	15	5	5
e. Arbitration and mediation facilities	584 seats / persons	0	30	290	410	410	290	60	290	410	410	290	60	30	30
(Number of visitors capped with management measure)		(0)	(15)	(130)	(185)	(185)	(130)	(25)	(130)	(185)	(185)	(130)	(25)	(15)	(15)
f. Conference / multi-purpose / meeting rooms	1397 seats / persons	0	70	700	980	980	700	140	700	980	980	700	140	70	70
(Number of visitors capped with management measure)		(0)	(30)	(315)	(440)	(440)	(315)	(65)	(315)	(440)	(440)	(315)	(65)	(30)	(30)
Total		**0**	**140**	**1390**	**1950**	**1950**	**1390**	**285**	**1390**	**1950**	**1950**	**1390**	**285**	**140**	**140**
(With management measure)		**(0)**	**(85)**	**(845)**	**(1185)**	**(1185)**	**(845)**	**(175)**	**(845)**	**(1185)**	**(1185)**	**(845)**	**(175)**	**(85)**	**(85)**

AM PEAK

PM PEAK

Estimated No. of Visitors Induced Pick-up / Drop-off Activities

From		7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
To		8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
Facility	**Parameter**	**Estimated No. of Visitors Induced Pick-up / Drop-off Activities**													
a. Auditorium	300 seats		15	135	60		60	120	120	60		60	120	15	
b. Multi-purpose hall	160 - 170 persons		10	75	35		35	65	65	35		35	65	10	
c. Classroom	200 persons		10	90	40		40	80	80	40		40	80	10	
d. Moot courts	130 seats / persons		5	60	25		25	50	50	25		25	50	10	
e. Arbitration and mediation facilities	584 seats / persons		30	260	120		120	230	230	120		120	230	30	
(Number of visitors capped with management measure)			(15)	(115)	(55)		(55)	(105)	(105)	(55)		(55)	(105)	(10)	
f. Conference / multi-purpose / meeting rooms	1397 seats / persons		70	630	280		280	560	560	280		280	560	70	
(Number of visitors capped with management measure)			(30)	(285)	(125)		(125)	(250)	(250)	(125)		(125)	(250)	(35)	
Pick-up Visitor Trips / hour		**0**	**0**	**0**	**0**	**0**	**560**	**1105**	**0**	**0**	**0**	**560**	**1105**	**145**	**0**
(With management measure)		**(0)**	**(0)**	**(0)**	**(0)**	**(0)**	**(340)**	**(670)**	**(0)**	**(0)**	**(0)**	**(340)**	**(670)**	**(90)**	**(0)**
Drop-off Visitor Trips / hour		**0**	**140**	**1250**	**560**	**0**	**0**	**0**	**1105**	**560**	**0**	**0**	**0**	**0**	**0**
(With management measure)		**(0)**	**(85)**	**(760)**	**(340)**	**(0)**	**(0)**	**(0)**	**(670)**	**(340)**	**(0)**	**(0)**	**(0)**	**(0)**	**(0)**
Total (2-Way Trips / hour)		**0**	**140**	**1250**	**560**	**0**	**560**	**1105**	**1105**	**560**	**0**	**560**	**1105**	**145**	**0**
(With management measure)		**(0)**	**(85)**	**(760)**	**(340)**	**(0)**	**(340)**	**(670)**	**(670)**	**(340)**	**(0)**	**(340)**	**(670)**	**(90)**	**(0)**

Legend:
90 Pick-up Visitor Trips
90 Drop-off Visitor Trips

AM PEAK

PM PEAK

Note

The management measure will only be applied during peak hours when needed.

Appendix 2

Junction Calculation Sheets

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(A) Lockhart Road / Fleming Road**

Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lockhart Road	EB		A	1,2	3.5	8	0	1	100%	100%	1655	1655	1655	1655	225	0.136		200	0.121	
	EB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	2105	2105	190	0.090		215	0.102	
Fleming Road	SB		B	3	3.5	10	0	1	22%	17%	1805	1820	1805	1820	650	0.360	0.360	600	0.330	0.330
Fleming Road	NB		C	3,4	3.3	10	0	1	37%	28%	1845	1865	1845	1865	135	0.073		195	0.105	
	NB		C	3,4	4.5	0	0	0	0%	0%	2205	2205	2205	2205	415	0.188		310	0.141	
Lockhart Road	WB		D	1	3.4	0	0	0	0%	0%	2095	2095	2095	2095	105	0.050	0.050	125	0.060	0.060
	WB		D	1	3.6	10	0	1	100%	100%	1715	1715	1715	1715	45	0.026		45	0.026	

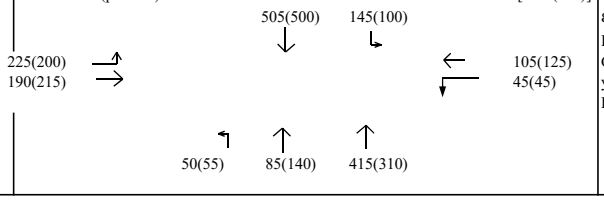
*Pedestrian Crossing

Ep	3,4	Min. Crossing Time = 7GM + 7FGM = 14s
Fp	2	Min. Crossing Time = 9GM + 8FGM = 17s
Gp	4	Min. Crossing Time = 8GM + 7FGM = 15s

Notes:

^ Site factor 0.95 applied to reflect the actual traffic condition

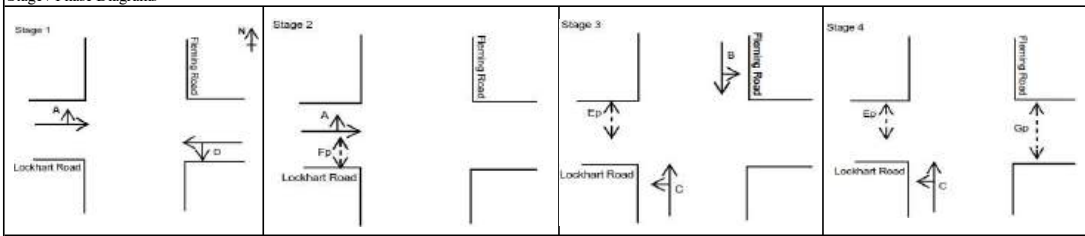
Traffic Flow (pcu / hr) [AM (PM)]



	D,Fp,B,Gp	A,B,Gp
AM Check Phase		
εy	0.410	0.496
L (sec)	55	30
C (sec)	130	130
y pract.	0.519	0.692
R.C. (%)	27%	40%

	D,Fp,B,Gp	A,B,Gp
PM Check Phase		
εy	0.389	0.451
L (sec)	55	30
C (sec)	130	130
y pract.	0.519	0.692
R.C. (%)	33%	54%

Stage / Phase Diagrams



I/G = 8 | Ped G = 9s, I/G = 13s | I/G = 8s | Ped G = 8s, I/G = 11s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(B) Hennessy Road / Fleming Road**

Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Hennessy Road	WB		A*	3	3.0	10	0	1	71%	69%	1210	1215	5300	5305	98	0.081		124	0.102	0.102
	WB		A	3	3.0	0	0	0	0%	0%	2055	2055	0	0	167	0.081		209	0.102	
	WB		A	3	2.8	0	0	0	0%	0%	2035	2035	0	0	165	0.081		207	0.102	
	WB		A	3	2.9	0	16	0	100%	100%	1870	1870	1870	1870	165	0.088	0.088	170	0.091	
Hennessy Road	EB		B	1	3.0	12	0	1	95%	73%	1710	1755	5820	5865	231	0.135	0.135	199	0.113	0.113
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	277	0.135		233	0.113	
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	277	0.135		233	0.113	
	EB		B	1	3.0	0	16	0	100%	100%	1880	1880	1880	1880	160	0.085		210	0.112	
Fleming Road	NB		C	4	3.3	13	0	1	91%	62%	1760	1815	3830	3875	159	0.090	0.090	162	0.089	0.089
	NB		C	4	3.4	0	23	0	19%	27%	2070	2060	0	0	186	0.090		183	0.089	
Fleming Road	SB		D^	2	3.7	16	0	1	38%	55%	960	945	1940	1925	275	0.286	0.286	265	0.280	0.281
	SB		D^	2	3.1	0	21	0	77%	73%	980	980	0	0	280	0.286		275	0.281	

*Pedestrian Crossing

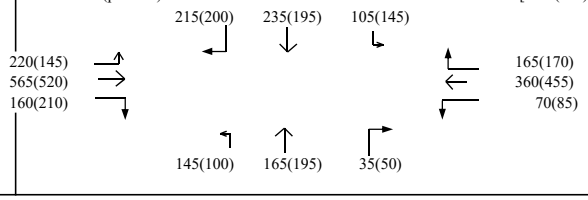
Ep	3	Min. Crossing Time = 5GM + 8FGM = 13s
Fp	1	Min. Crossing Time = 5GM + 8FGM = 13s
Gp	2,3,4	Min. Crossing Time = 11GM + 10FGM = 21s
Hp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s
Ip	1,3,4	Min. Crossing Time = 10GM + 6FGM = 16s
Jp	2	Min. Crossing Time = 6GM + 7FGM = 13s
Kp	1,2,3	Min. Crossing Time = 10GM + 6FGM = 16s
Lp	4	Min. Crossing Time = 7GM + 6FGM = 13s

Notes:

^ Site factor 0.5 applied to reflect the actual traffic condition

* 0.7 Site factor addopted with effect of bus stop

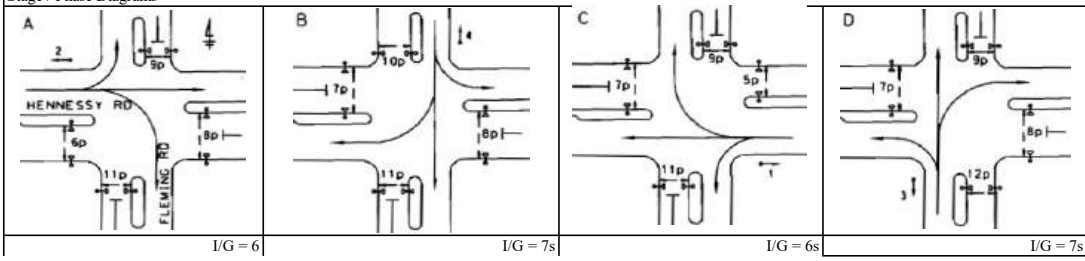
Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.599	0.511
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	25%	30%

PM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.585	0.483
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	28%	38%

Stage / Phase Diagrams



I/G = 6 I/G = 7s I/G = 6s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(C) Lockhart Road / Stewart Road**

Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lockhart Road	WB		A	1	3.8	12	0	1	78%	88%	1820	1800	3875	3855	70	0.039		103	0.057	
	WB		A	1	3.0	0	0	0	0%	0%	2055	2055	0	0	80	0.039		117	0.057	
Lockhart Road	EB		B	1,2	3.4	13	0	1	57%	48%	1835	1850	3650	3670	166	0.090	0.090	156	0.085	0.085
	EB		B	1,2	3.5	0	23	0	49%	46%	1815	1820	0	0	164	0.090		154	0.084	
Stewart Road	SB		F	4	3.7	10	0	1	79%	100%	1775	1725	3790	3760	108	0.061	0.061	130	0.075	0.075
	SB		F	4	3.5	0	15	0	45%	33%	2015	2035	0	0	122	0.061		105	0.052	

*Pedestrian Crossing

Cp	3	Min. Crossing Time = 14GM + 7FGM = 21s
Dp	3	Min. Crossing Time = 10GM + 7FGM = 17s
Ep	3	Min. Crossing Time = 9GM + 11FGM = 20s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

55(35) 90(70) 85(130)

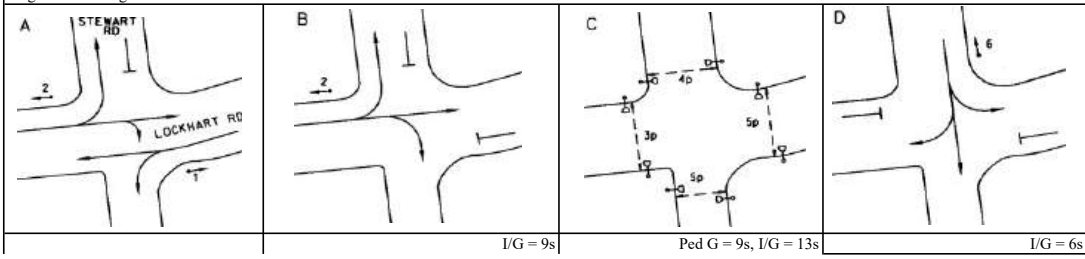
95(75)
155(165)
80(70)

95(130)
55(90)

B,Ep,F

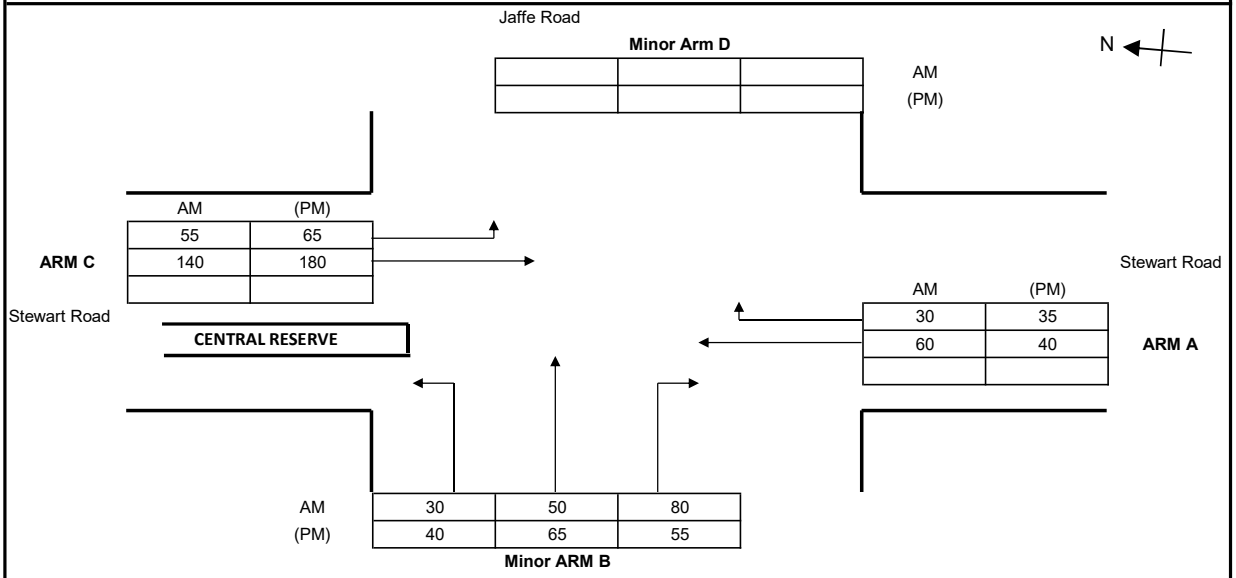
AM Check Phase		PM Check Phase	
εy	0.151	εy	0.160
L (sec)	35	L (sec)	35
C (sec)	90	C (sec)	90
y pract.	0.550	y pract.	0.550
R.C. (%)	264%	R.C. (%)	244%

Stage / Phase Diagrams



I/G = 9s | Ped G = 9s, I/G = 13s | I/G = 6s

Job Title:			
Junction:	(D) Stewart Road / Jaffe Road		
Scheme:			Ref. No.:
Year:	2026 Observed Traffic Flows	Job No.:	Rev.: -
ARM A:	Stewart Road		
ARM B:	Jaffe Road		
ARM C:	Stewart Road		
ARM D:	Jaffe Road		



GEOMETRY					ARM B		ARM D	
Major road width	W	11.20	Lane widths		w(b-a)	4.50	w(d-c)	0.00
Central Reserve width	Wcr	0.00			w(b-c)	3.80	w(d-a)	0.00
					w(c-b)	0.00	w(a-d)	3.40
Visibilities	Vr(b-a)	19	Vr(d-c)	0	D	0.91	D	0.53
	Vl(b-a)	30	Vl(d-c)	0	E	0.92	E	0.59
	Vr(b-c)	19	Vr(d-a)	0	F	0.59	F	0.93
	Vr(c-b)	0	Vr(a-d)	62	Y	0.61	Y	0.61
		160					Arm D	

ANALYSIS		AM PEAK	(PM) PEAK		AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)	140	180	q(a-c)	90	80
	q(c-b)	0	0	q(a-d)	30	35
	q(a-b)	0	0	q(c-d)	55	65
	q(a-c)	60	40	q(c-a)	220	235
	q(b-a)	130	120	q(d-c)	0	0
	q(b-c)	30	40	q(d-a)	0	0
	f	0.19	0.25	f	0.00	0.00
CAPACITIES	Q(b-a)	541	540	Q(d-c)	294	291
	Q(b-c)	674	679	Q(d-a)	405	402
	Q(c-b)	429	431	Q(a-d)	633	628
	Q(b-ac)	562	569	Q(d-ca)	294	291
	Q(c-a)	1800	1800	Q(a-c)	1715	1700
RFC's	b-a	0.240	0.222	d-c	0.000	0.000
	b-c	0.045	0.059	d-a	0.000	0.000
	c-b	0.000	0.000	a-d	0.047	0.056
	b-ac	0.285	0.281	d-ca	0.000	0.000
	c-a	0.078	0.100	a-c	0.052	0.047

	AM	(PM)
Worst RFC	**0.285**	**0.281**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

Capacity of combined streams
- in accordance with TPDM V2.4

T.P.D.M.V.2.4
Appendix 1

Calculated by:	Date: Oct-26	Checked by:

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(E) Gloucester Road / Tonnochy Road / Stewart Road**

Description: **2026 Observed Traffic Flows**

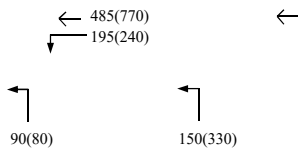
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Gloucester Road	WB	← ↓	C*	1,2	3.6	10	0	1	77%	63%	1240	1260	3345	3365	252	0.203	0.203	379	0.301	0.301
	WB	←	C	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	428	0.203		631	0.300	
Tonnochy Road	NB	↰	B	2,3	3.3	10	0	1	100%	100%	1690	1690	3650	3650	69	0.041		153	0.090	
	NB	↰	B	2,3	4.0	15	0	0	100%	100%	1960	1960	0	0	81	0.041		177	0.090	
Gloucester Road	WB	←	A	1	3.0	0	0	0	0%	0%	2055	2055	3970	3970	274	0.134		352	0.171	
	WB	←	A	1	3.0	0	0	1	0%	0%	1915	1915	0	0	256	0.134		328	0.171	
Stewart Road	NB	↰	D	3	4.3	10	0	1	100%	100%	1780	1780	1780	1780	90	0.051	0.051	80	0.045	0.045

*Pedestrian Crossing ⌒ Ep 1 Min. Crossing Time = 5GM + 10FGM = 15s

Notes:

* 0.7 Site factor addopted with effect of bus stop

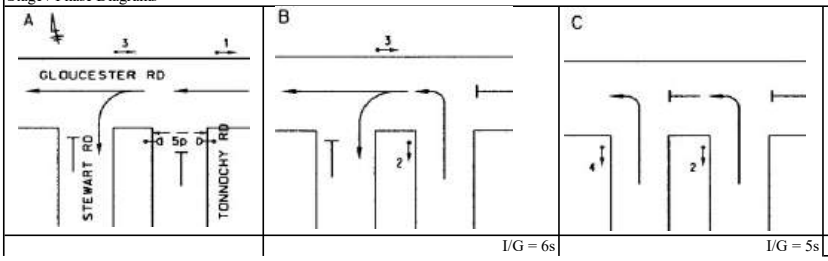
Traffic Flow (pcu / hr) [AM (PM)]



	C,D	A,B
AM Check Phase		
εy	0.254	0.175
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	219%	364%

	C,D	A,B
PM Check Phase		
εy	0.345	0.262
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	134%	210%

Stage / Phase Diagrams



TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

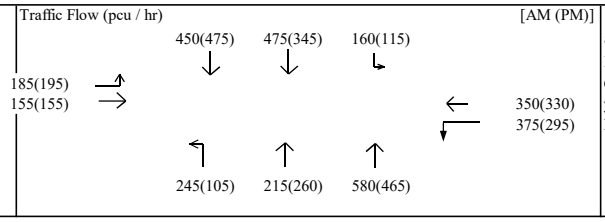
Junction: **(F) Fleming Road / Harbour Road**
Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Fleming Road (At-Grade)	NB		C	1	3.1	15	0	1	100%	100%	1750	1750	1750	1750	245	0.140		105	0.060	
Fleming Road (At-Grade)	NB		A	1,2	3.0	0	0	0	0%	0%	2055	2055	2055	2055	215	0.105		260	0.127	
Fleming Road (Slip Road)	NB		A	1,2	3.6	0	0	0	0%	0%	2115	2115	4220	4220	291	0.137		233	0.110	
Fleming Road (Slip Road)	NB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	289	0.137		232	0.110	
Fleming Road (At-Grade)	SB		A	1,2	3.8	10	0	1	100%	100%	1735	1735	1735	1735	160	0.092		115	0.066	
Fleming Road (At-Grade)	SB		A	1,2	3.9	0	0	0	0%	0%	2145	2145	2145	2145	475	0.221		345	0.161	
Fleming Road (Slip Road)	SB	^	A	1,2	3.6	0	0	0	0%	0%	1060	1060	1060	1060	450	0.425	0.425	475	0.448	0.448
Harbour Road	EB		B	3	3.1	15	0	1	100%	100%	1750	1750	3800	3795	157	0.090		161	0.092	
	EB		B	3	3.2	18	0	0	15%	18%	2050	2045	0	0	183	0.089		189	0.092	
Harbour Road	WB		B	3	3.6	13	0	1	100%	100%	1770	1770	1770	1770	375	0.212		295	0.167	
	WB		B	3	3.4	0	0	0	0%	0%	2095	2095	2095	2095	350	0.167	0.212	330	0.158	0.167

*Pedestrian Crossing Dp 2 Min. Crossing Time = 8GM + 7FGM = 15s

Notes:
^ Site factor 0.5 applied to reflect the actual traffic condition

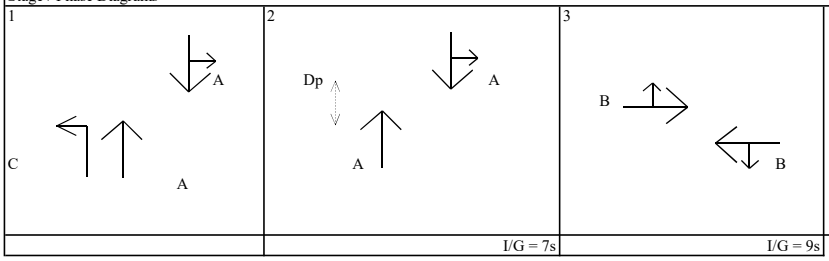
Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase	A,B	C,Dp,B
εy	0.636	0.352
L (sec)	14	33
C (sec)	125	125
y pract.	0.799	0.662
R.C. (%)	26%	88%

PM Check Phase	A,B	C,Dp,B
εy	0.615	0.293
L (sec)	14	33
C (sec)	130	130
y pract.	0.803	0.672
R.C. (%)	31%	129%

Stage / Phase Diagrams



TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(G) Hung Hing Road / Lung Wo Road / Fleming Road / Expo Drive East**

Description: **2026 Observed Traffic Flows**

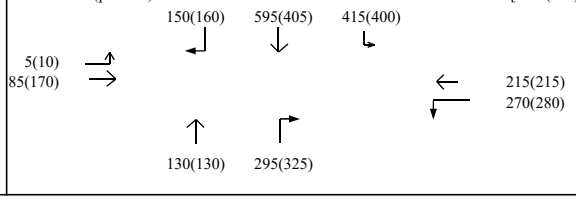
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Fleming Road	NB	↑	A	1,2	3.1	0	0	1	0%	0%	1925	1925	4030	4030	62	0.032		62	0.032	
	NB	↑	A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	68	0.032		68	0.032	
Fleming Road	NB	↱^	B	1	3.8	0	20	0	100%	100%	2125	2125	2125	2125	295	0.139	0.139	325	0.153	0.153
Expo Drive South	SB	↱	C	1,2	3.4	12	0	1	90%	100%	1760	1740	3845	3825	462	0.262		400	0.230	
	SB	↓	C	1,2	3.3	0	0	0	0%	0%	2085	2085	0	0	548	0.263	0.263	405	0.194	0.230
	SB	↲	D	3	3.6	0	16	0	100%	100%	1935	1935	1935	1935	150	0.078		160	0.083	
Convention Avenue	WB	←↓	E	4	3.7	10	0	1	100%	100%	1725	1725	3850	3850	270	0.157		280	0.162	
	WB	←	E	4	3.7	0	0	0	0%	0%	2125	2125	0	0	215	0.101	0.157	215	0.101	0.162
Convention Avenue	EB	↑→	F	4	3.8	10	0	1	12%	12%	1960	1960	4085	4085	43	0.022		86	0.044	
	EB	→	F	4	3.7	0	0	0	0%	0%	2125	2125	0	0	47	0.022		94	0.044	

*Pedestrian Crossing			
	Gp	1,2	
	Hp	1,4	
⟨ ⟩⟨ ⟩⟨ ⟩⟨ ⟩	Ip	1	Min. Crossing Time = 5GM + 7FGM = 12s
	Jp	3	Min. Crossing Time = 5GM + 8FGM = 13s
	Kp	3,4	

Notes:

^ Additional saturation flow 150 pcu/hr for flare lane

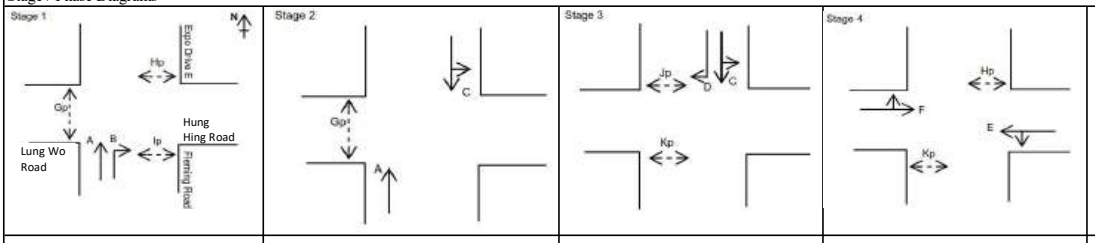
Traffic Flow (pcu / hr) [AM (PM)]



	Ip,C,E	B,C,E
AM Check Phase		
εy	0.419	0.558
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	61%	34%

	Ip,C,E	B,C,E
PM Check Phase		
εy	0.392	0.545
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	72%	37%

Stage / Phase Diagrams



I/G = 10s I/G = 10s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

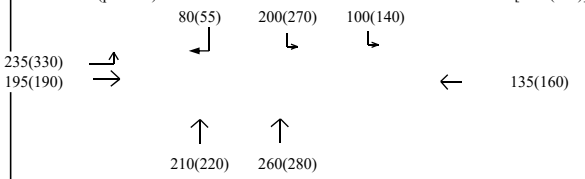
Junction: **(H) Marsh Road / Lockhart Road**
Description: **2026 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Marsh Road	NB	↑	A	1	4.0	0	0	1	0%	0%	2015	2015	2015	2015	210	0.104		220	0.109	
Marsh Road (Slip Road)	NB	↑	A	1	3.8	0	0	0	0%	0%	2135	2135	2135	2135	260	0.122	0.122	280	0.131	0.131
Marsh Road	SB	↳	B	2	4.2	10	0	1	100%	100%	1770	1770	1770	1770	100	0.056		140	0.079	
Marsh Road (Slip Road)	SB	↳	B	2	3.0	15	18	0	71% / 29%	83% / 17%	1875	1875	1875	1875	280	0.149	0.149	325	0.173	0.173
Lockhart Road	EB	↱	F	2,3	3.1	10	0	1	100%	100%	1675	1675	1675	1675	235	0.140		330	0.197	
	EB	→	C	3	4.2	0	0	0	0%	0%	2175	2175	2175	2175	195	0.090		190	0.087	
Lockhart Road	WB	←	C	3	4.0	0	0	1	0%	0%	2015	2015	4070	4070	67	0.033		79	0.039	
	WB	←	C	3	3.0	0	0	0	0%	0%	2055	2055	0	0	68	0.033	0.090	81	0.039	0.087

*Pedestrian Crossing
Dp 1 Min. Crossing Time = 5GM + 6FGM = 11s
Ep 2,3 Min. Crossing Time = 6GM + 7FGM = 13s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

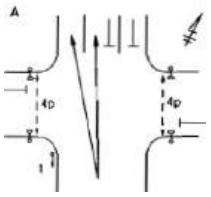


AM Check Phase	Dp,B,C	A,B,C
εy	0.239	0.361
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	198%	118%

PM Check Phase	Dp,B,C	A,B,C
εy	0.261	0.392
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	173%	101%

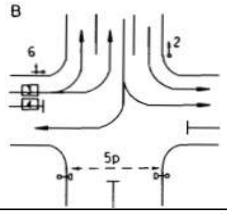
Stage / Phase Diagrams

Stage 1



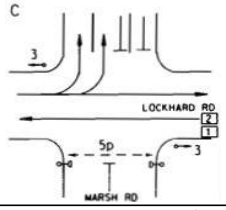
I/G = 6s

Stage 2



I/G = 5s

Stage 3



I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(I) Johnston Road / Fleming Road / Wan Chai Road**

Description: **2026 Observed 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
Wan Chai Road	WB		A1	1	4.8	11	11	1	32% / 42%	17% / 57%	1905	1905	1905	1905	250	0.131		230	0.121	
Fleming Road	SB		B1	1	3.7	10	0	1	100%	100%	1725	1725	1725	1725	5	0.003		10	0.006	
	SB		B2	1	3.2	25	0	0	100%	100%	1960	1960	1960	1960	280	0.143	0.143	315	0.161	0.161
Johnston Road	WB	#	C1	2,3	3.4															
	WB		C2	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	325	0.160	0.160	300	0.148	0.148
Johnston Road	EB		D1	4	2.9	11	0	1	88%	82%	1700	1715	1700	1715	125	0.074		110	0.064	
	EB		D2	4	3.4	0	10	0	23%	13%	2025	2055	2025	2055	235	0.116	0.116	265	0.129	0.129
	EB	^	D3	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	125	0.062		135	0.067	

*Pedestrian Crossing

〈 〉〈 〉〈 〉〈 〉	3p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
	6p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
	8p	1,4	Min. Crossing Time = 11GM + 11FGM = 22s
	10p	1,2,3	Min. Crossing Time = 7GM + 7FGM = 14s
	11p	4	Min. Crossing Time = 6GM + 6FGM = 12s

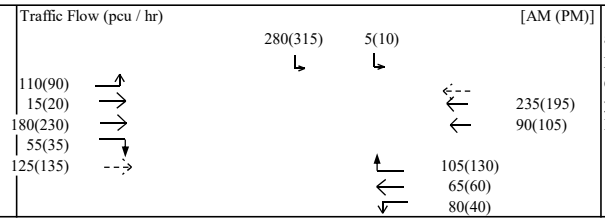
B2,C2,D2 B2,C2,D2

Notes:

Assume Phase C1 is blocked due to kerbside activities

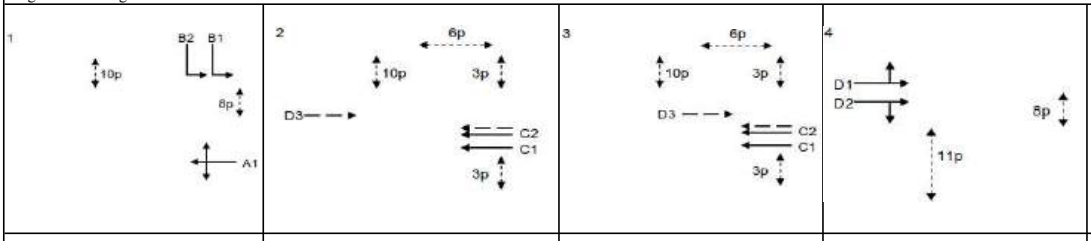
^ Tram only lane

Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase		PM Check Phase	
εy	0.419	εy	0.438
L (sec)	28	L (sec)	28
C (sec)	100	C (sec)	130
y pract.	0.648	y pract.	0.706
R.C. (%)	55%	R.C. (%)	61%

Stage / Phase Diagrams

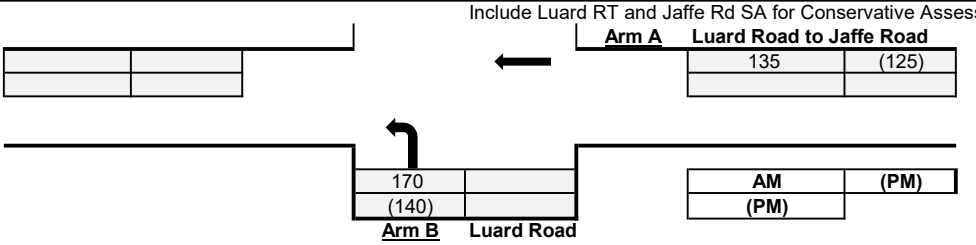


I/G = 13s I/G = 9s I/G = 9s

Priority Junction Calculation

Junction :	Luard Road (NB) / Luard Road (SB) (Jn J-2)	Job No.:	26041HK
Scenario :	2026 Observed Traffic Flows		

Include Luard RT and Jaffe Rd SA for Conservative Assessment



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	6.4	V-rBA	33	w-BA	4.7	D	0.942
W-CR	0	V-lBA	33	w-BC	4.7	E	1.013
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	V-rBC	33	w-CB	2.05	F	0.775
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	V-rCB	22			Y	0.779

Analysis :

Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM	
q-CA	0	0	Q-BA	554	557	
q-CB	0	0	Q-BC	716	719	
q-AB	0	0	Q-CB	547	550	
q-AC	135	125	Q-CA	1800	1800	(If C-B blocked C-A)
q-BA	0	0	Q-BAC	716	719	(If Minor Road Share LT&RT)
q-BC	170	140				
f	1.000	1.000				

Results :

Ratio of Flow-to-Capacity	AM	PM
B-A	N/A	N/A
B-C	N/A	N/A
C-B	0.00	0.00
C-A	0.00	0.00
B-AC	0.24	0.19
Critical DFC	**0.24**	**0.19**

CTA Consultants Ltd.

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(A) Lockhart Road / Fleming Road**

Description: **2033 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
Lockhart Road	EB		A	1,2	3.5	8	0	1	100%	100%	1655	1655	1655	1655	230	0.139		205	0.124	
	EB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	2105	2105	195	0.093		225	0.107	
Fleming Road	SB		B	3	3.5	10	0	1	22%	17%	1805	1820	1805	1820	685	0.380	0.380	635	0.349	0.349
Fleming Road	NB		C	3,4	3.3	10	0	1	38%	28%	1840	1865	1840	1865	170	0.092		230	0.123	
	NB		C	3,4	4.5	0	0	0	0%	0%	2205	2205	2205	2205	440	0.200		330	0.150	
Lockhart Road	WB		D	1	3.4	0	0	0	0%	0%	2095	2095	2095	2095	120	0.057	0.057	140	0.067	0.067
	WB		D	1	3.6	10	0	1	100%	100%	1715	1715	1715	1715	45	0.026		45	0.026	

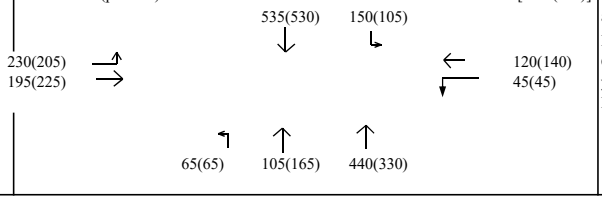
*Pedestrian Crossing

Ep	3,4	Min. Crossing Time = 7GM + 7FGM = 14s
Fp	2	Min. Crossing Time = 9GM + 8FGM = 17s
Gp	4	Min. Crossing Time = 8GM + 7FGM = 15s

Notes:

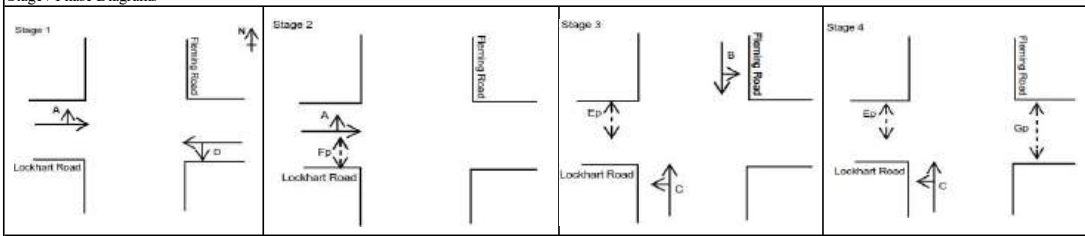
^ Site factor 0.95 applied to reflect the actual traffic condition

Traffic Flow (pcu / hr) [AM (PM)]



	AM Check Phase			PM Check Phase		
		D,Fp,B,Gp	A,B,Gp		D,Fp,B,Gp	A,B,Gp
εy	0.437	0.518		εy	0.416	0.473
L (sec)	55	30		L (sec)	55	30
C (sec)	130	130		C (sec)	130	130
y pract.	0.519	0.692		y pract.	0.519	0.692
R.C. (%)	19%	34%		R.C. (%)	25%	46%

Stage / Phase Diagrams



I/G = 8 | Ped G = 9s, I/G = 13s | I/G = 8s | Ped G = 8s, I/G = 11s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(B) Hennessy Road / Fleming Road**

Description: **2033 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Hennessy Road	WB		A*	3	3.0	10	0	1	69%	70%	1215	1215	5305	5305	102	0.084		128	0.105	0.106
	WB		A	3	3.0	0	0	0	0%	0%	2055	2055	0	0	172	0.084		217	0.106	
	WB		A	3	2.8	0	0	0	0%	0%	2035	2035	0	0	171	0.084		215	0.106	
	WB		A	3	2.9	0	16	0	100%	100%	1870	1870	1870	1870	175	0.094	0.094	180	0.096	
Hennessy Road	EB		B	1	3.0	12	0	1	100%	79%	1700	1745	5810	5855	245	0.144	0.144	210	0.120	0.122
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	293	0.142		247	0.120	
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	293	0.142		247	0.120	
	EB		B	1	3.0	0	16	0	100%	100%	1880	1880	1880	1880	180	0.096		230	0.122	
Fleming Road	NB		C	4	3.3	13	0	1	87%	59%	1770	1820	3840	3880	173	0.098	0.098	178	0.098	0.098
	NB		C	4	3.4	0	23	0	17%	25%	2070	2060	0	0	202	0.098		202	0.098	
Fleming Road	SB		D^	2	3.7	16	0	1	37%	54%	960	945	1940	1930	294	0.307	0.307	279	0.296	0.296
	SB		D^	2	3.1	0	21	0	75%	71%	980	985	0	0	301	0.307		291	0.295	

*Pedestrian Crossing

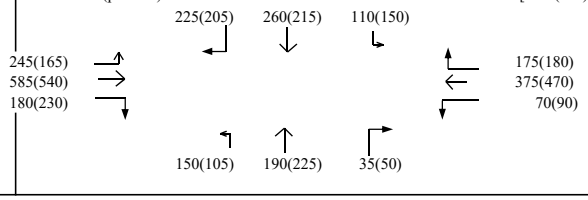
Ep	3	Min. Crossing Time = 5GM + 8FGM = 13s
Fp	1	Min. Crossing Time = 5GM + 8FGM = 13s
Gp	2,3,4	Min. Crossing Time = 11GM + 10FGM = 21s
Hp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s
Ip	1,3,4	Min. Crossing Time = 10GM + 6FGM = 16s
Jp	2	Min. Crossing Time = 6GM + 7FGM = 13s
Kp	1,2,3	Min. Crossing Time = 10GM + 6FGM = 16s
Lp	4	Min. Crossing Time = 7GM + 6FGM = 13s

Notes:

^ Site factor 0.5 applied to reflect the actual traffic condition

* 0.7 Site factor addopted with effect of bus stop

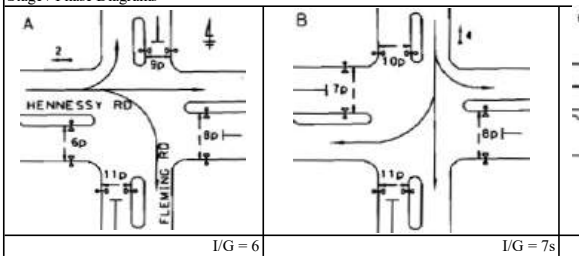
Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.642	0.549
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	16%	21%

PM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.622	0.516
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	20%	29%

Stage / Phase Diagrams



I/G = 6 I/G = 7s I/G = 6s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(C) Lockhart Road / Stewart Road**

Description: **2033 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lockhart Road	WB		A	1	3.8	12	0	1	75%	89%	1825	1795	3880	3850	73	0.040		107	0.060	
	WB		A	1	3.0	0	0	0	0%	0%	2055	2055	0	0	82	0.040		123	0.060	
Lockhart Road	EB		B	1,2	3.4	13	0	1	58%	50%	1835	1850	3650	3675	173	0.094	0.095	161	0.087	0.087
	EB		B	1,2	3.5	0	23	0	50%	44%	1815	1825	0	0	172	0.095		159	0.087	
Stewart Road	SB		F	4	3.7	10	0	1	75%	100%	1785	1725	3785	3750	120	0.067	0.067	135	0.078	0.078
	SB		F	4	3.5	0	15	0	52%	39%	2000	2025	0	0	135	0.067		115	0.057	

*Pedestrian Crossing

Cp	3	Min. Crossing Time = 14GM + 7FGM = 21s
Dp	3	Min. Crossing Time = 10GM + 7FGM = 17s
Ep	3	Min. Crossing Time = 9GM + 11FGM = 20s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

70(45) 95(70) 90(135)

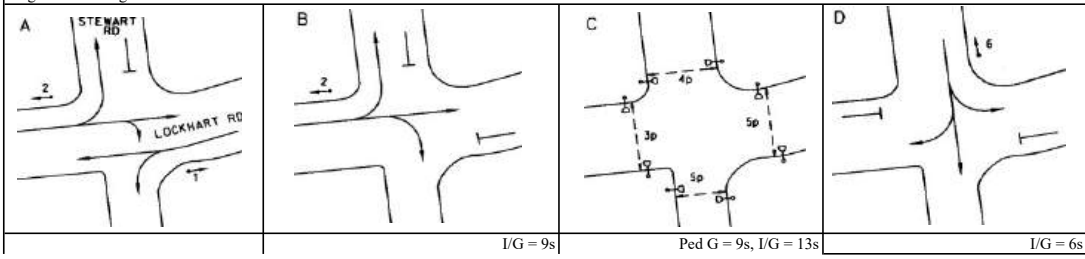
100(80)
160(170)
85(70)

100(135)
55(95)

B,Ep,F

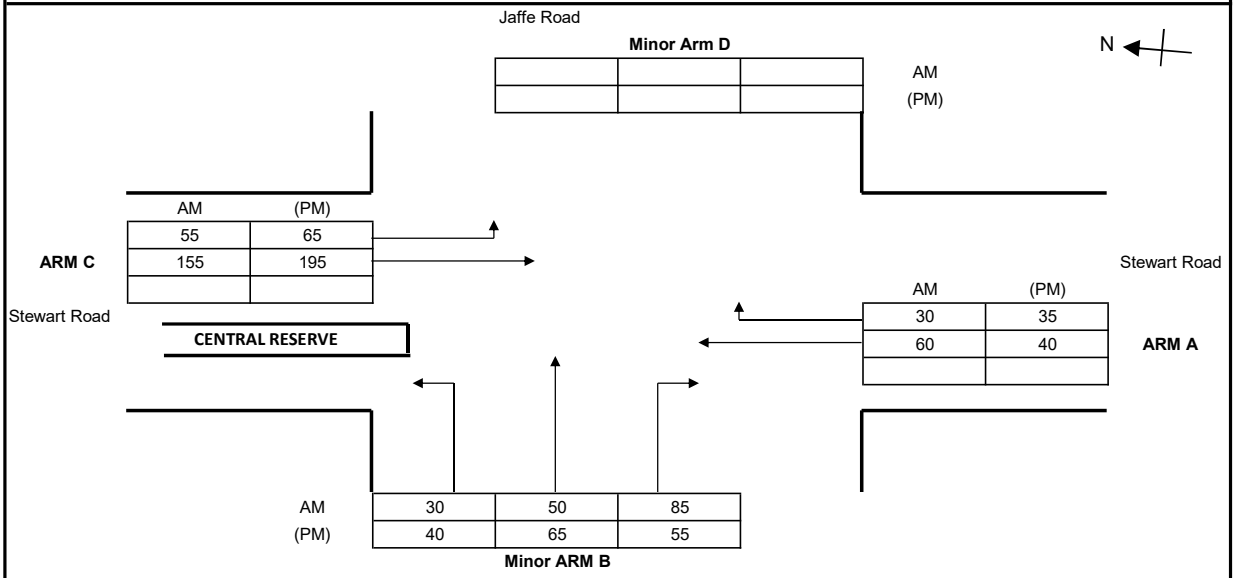
AM Check Phase		PM Check Phase	
εy	0.162	εy	0.165
L (sec)	35	L (sec)	35
C (sec)	90	C (sec)	90
y pract.	0.550	y pract.	0.550
R.C. (%)	239%	R.C. (%)	233%

Stage / Phase Diagrams



I/G = 9s | Ped G = 9s, I/G = 13s | I/G = 6s

Job Title:				
Junction:	(D) Stewart Road / Jaffe Road			
Scheme:			Ref. No.:	
Year:	2033 Reference Traffic Flows	Job No.:	Rev.:	-
ARM A:	Stewart Road			
ARM B:	Jaffe Road			
ARM C:	Stewart Road			
ARM D:	Jaffe Road			



GEOMETRY					ARM B		ARM D	
Major road width	W	11.20	Lane widths		w(b-a)	4.50	w(d-c)	0.00
Central Reserve width	Wcr	0.00			w(b-c)	3.80	w(d-a)	0.00
					w(c-b)	0.00	w(a-d)	3.40
Visibilities	Vr(b-a)	19	Vr(d-c)	0	D	0.91	D	0.53
	Vl(b-a)	30	Vl(d-c)	0	E	0.92	E	0.59
	Vr(b-c)	19	Vr(d-a)	0	F	0.59	F	0.93
	Vr(c-b)	0	Vr(a-d)	62	Y	0.61	Y	0.61
		160					Arm D	

ANALYSIS		AM PEAK	(PM) PEAK		AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)	155	195	q(a-c)	90	80
	q(c-b)	0	0	q(a-d)	30	35
	q(a-b)	0	0	q(c-d)	55	65
	q(a-c)	60	40	q(c-a)	240	250
	q(b-a)	135	120	q(d-c)	0	0
	q(b-c)	30	40	q(d-a)	0	0
	f	0.18	0.25	f	0.00	0.00
CAPACITIES	Q(b-a)	539	538	Q(d-c)	291	290
	Q(b-c)	674	679	Q(d-a)	402	400
	Q(c-b)	429	431	Q(a-d)	629	624
	Q(b-ac)	559	567	Q(d-ca)	291	290
	Q(c-a)	1800	1800	Q(a-c)	1714	1699
RFC's	b-a	0.250	0.223	d-c	0.000	0.000
	b-c	0.045	0.059	d-a	0.000	0.000
	c-b	0.000	0.000	a-d	0.048	0.056
	b-ac	0.295	0.282	d-ca	0.000	0.000
	c-a	0.086	0.108	a-c	0.053	0.047

	AM	(PM)
Worst RFC	**0.295**	**0.282**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

Capacity of combined streams
- in accordance with TPDM V2.4

T.P.D.M.V.2.4
Appendix 1

Calculated by:	Date: Oct-26	Checked by:

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(E) Gloucester Road / Tonnochy Road / Stewart Road**

Description: **2033 Reference Traffic Flows**

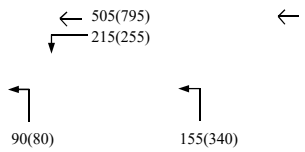
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Gloucester Road	WB	← ↓	C*	1,2	3.6	10	0	1	81%	65%	1235	1260	3340	3365	266	0.215	0.216	393	0.312	0.312
	WB	←	C	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	454	0.216		657	0.312	
Tonnochy Road	NB	↰	B	2,3	3.3	10	0	1	100%	100%	1690	1690	3650	3650	72	0.042		157	0.093	
	NB	↰	B	2,3	4.0	15	0	0	100%	100%	1960	1960	0	0	83	0.042		183	0.093	
Gloucester Road	WB	←	A	1	3.0	0	0	0	0%	0%	2055	2055	3970	3970	292	0.142		368	0.179	
	WB	←	A	1	3.0	0	0	1	0%	0%	1915	1915	0	0	273	0.142		342	0.179	
Stewart Road	NB	↰	D	3	4.3	10	0	1	100%	100%	1780	1780	1780	1780	90	0.051	0.051	80	0.045	0.045

*Pedestrian Crossing ⌒ Ep 1 Min. Crossing Time = 5GM + 10FGM = 15s

Notes:

* 0.7 Site factor addopted with effect of bus stop

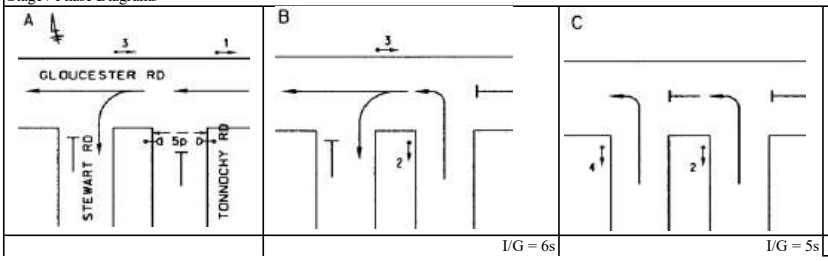
Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase	C,D	A,B
εy	0.266	0.185
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	204%	338%

PM Check Phase	C,D	A,B
εy	0.357	0.272
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	127%	198%

Stage / Phase Diagrams



TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

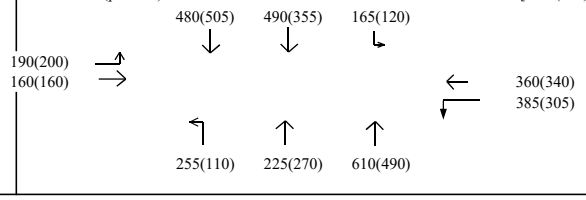
Junction: **(F) Fleming Road / Harbour Road**
Description: **2033 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Fleming Road (At-Grade)	NB		C	1	3.1	15	0	1	100%	100%	1750	1750	1750	1750	255	0.146		110	0.063	
Fleming Road (At-Grade)	NB		A	1,2	3.0	0	0	0	0%	0%	2055	2055	2055	2055	225	0.109		270	0.131	
Fleming Road (Slip Road)	NB		A	1,2	3.6	0	0	0	0%	0%	2115	2115	4220	4220	306	0.145		246	0.116	
Fleming Road (Slip Road)	NB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	304	0.145		244	0.116	
Fleming Road (At-Grade)	SB		A	1,2	3.8	10	0	1	100%	100%	1735	1735	1735	1735	165	0.095		120	0.069	
Fleming Road (At-Grade)	SB		A	1,2	3.9	0	0	0	0%	0%	2145	2145	2145	2145	490	0.228		355	0.166	
Fleming Road (Slip Road)	SB	^	A	1,2	3.6	0	0	0	0%	0%	1060	1060	1060	1060	480	0.453	0.453	505	0.476	0.476
Harbour Road	EB		B	3	3.1	15	0	1	100%	100%	1750	1750	3800	3795	161	0.092		166	0.095	
	EB		B	3	3.2	18	0	0	15%	18%	2050	2045	0	0	189	0.092		194	0.095	
Harbour Road	WB		B	3	3.6	13	0	1	100%	100%	1770	1770	1770	1770	385	0.218		305	0.172	
	WB		B	3	3.4	0	0	0	0%	0%	2095	2095	2095	2095	360	0.172	0.218	340	0.162	0.172

*Pedestrian Crossing Dp 2 Min. Crossing Time = 8GM + 7FGM = 15s

Notes:
^ Site factor 0.5 applied to reflect the actual traffic condition

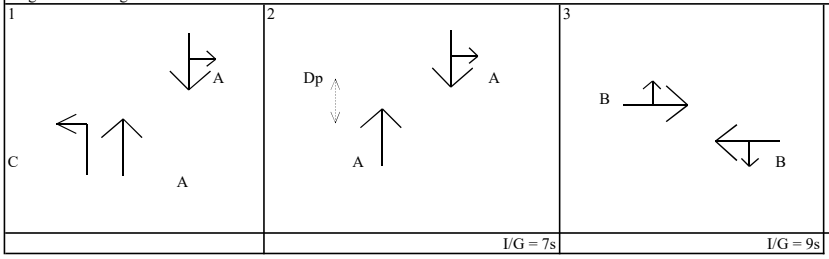
Traffic Flow (pcu / hr) [AM (PM)]



	A,B	C,Dp,B
AM Check Phase		
εy	0.670	0.363
L (sec)	14	33
C (sec)	125	125
y pract.	0.799	0.662
R.C. (%)	19%	82%

	A,B	C,Dp,B
PM Check Phase		
εy	0.649	0.304
L (sec)	14	33
C (sec)	130	130
y pract.	0.803	0.672
R.C. (%)	24%	121%

Stage / Phase Diagrams



I/G = 7s I/G = 9s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(G) Hung Hing Road / Lung Wo Road / Fleming Road / Expo Drive East**

Description: **2033 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
Fleming Road	NB	↑	A	1,2	3.1	0	0	1	0%	0%	1925	1925	4030	4030	64	0.033		64	0.033	
	NB	↑	A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	71	0.033		71	0.033	
Fleming Road	NB	↱^	B	1	3.8	0	20	0	100%	100%	2125	2125	2125	2125	315	0.148	0.148	345	0.162	0.162
Expo Drive South	SB	↱	C	1,2	3.4	12	0	1	89%	100%	1760	1740	3845	3825	485	0.276		415	0.239	
	SB	↓	C	1,2	3.3	0	0	0	0%	0%	2085	2085	0	0	575	0.276	0.276	435	0.209	0.239
	SB	↲	D	3	3.6	0	16	0	100%	100%	1935	1935	1935	1935	155	0.080		165	0.085	
Convention Avenue	WB	←↓	E	4	3.7	10	0	1	100%	100%	1725	1725	3850	3850	280	0.162		290	0.168	
	WB	←	E	4	3.7	0	0	0	0%	0%	2125	2125	0	0	225	0.106	0.162	225	0.106	0.168
Convention Avenue	EB	↑→	F	4	3.8	10	0	1	11%	11%	1965	1960	4090	4085	46	0.023		89	0.045	
	EB	→	F	4	3.7	0	0	0	0%	0%	2125	2125	0	0	49	0.023		96	0.045	

*Pedestrian Crossing

( ) ( ) ( ) ( )	Gp	1,2
	Hp	1,4
	Ip	1
	Jp	3
	Kp	3,4

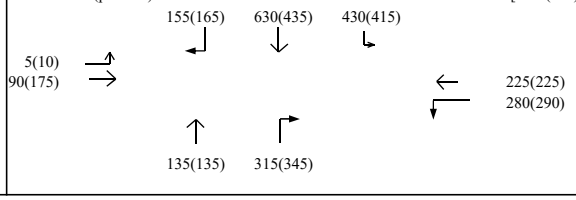
Min. Crossing Time = 5GM + 7FGM = 12s

Min. Crossing Time = 5GM + 8FGM = 13s

Notes:

^ Additional saturation flow 150 pcu/hr for flare lane

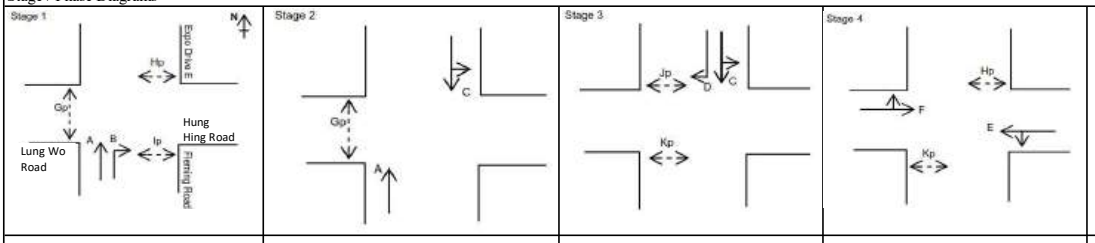
Traffic Flow (pcu / hr) [AM (PM)]



	Ip,C,E	B,C,E
AM Check Phase		
εy	0.438	0.586
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	54%	27%

	Ip,C,E	B,C,E
PM Check Phase		
εy	0.407	0.569
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	66%	31%

Stage / Phase Diagrams



I/G = 10s I/G = 10s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(H) Marsh Road / Lockhart Road**

Description: **2033 Reference Traffic Flows**

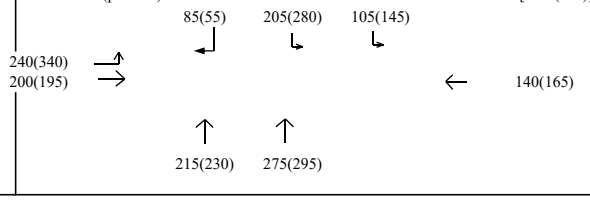
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Marsh Road	NB	↑	A	1	4.0	0	0	1	0%	0%	2015	2015	2015	2015	215	0.107		230	0.114	
Marsh Road (Slip Road)	NB	↑	A	1	3.8	0	0	0	0%	0%	2135	2135	2135	2135	275	0.129	0.129	295	0.138	0.138
Marsh Road	SB	↳	B	2	4.2	10	0	1	100%	100%	1770	1770	1770	1770	105	0.059		145	0.082	
Marsh Road (Slip Road)	SB	↰↳	B	2	3.0	15	18	0	71% / 29%	84% / 16%	1875	1875	1875	1875	290	0.155	0.155	335	0.179	0.179
Lockhart Road	EB	↱	F	2,3	3.1	10	0	1	100%	100%	1675	1675	1675	1675	240	0.143		340	0.203	
	EB	→	C	3	4.2	0	0	0	0%	0%	2175	2175	2175	2175	200	0.092		195	0.090	
Lockhart Road	WB	←	C	3	4.0	0	0	1	0%	0%	2015	2015	4070	4070	69	0.034		82	0.041	
	WB	←	C	3	3.0	0	0	0	0%	0%	2055	2055	0	0	71	0.034	0.092	83	0.041	0.090

*Pedestrian Crossing

〈 〉	Dp	1	Min. Crossing Time = 5GM + 6FGM = 11s
〈 〉	Ep	2,3	Min. Crossing Time = 6GM + 7FGM = 13s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

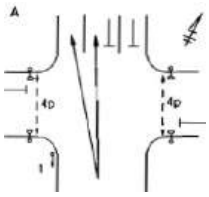


	Dp,B,C	A,B,C
AM Check Phase		
εy	0.247	0.375
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	189%	110%

	Dp,B,C	A,B,C
PM Check Phase		
εy	0.268	0.406
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	166%	94%

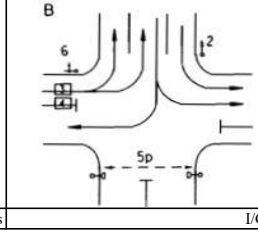
Stage / Phase Diagrams

Stage 1



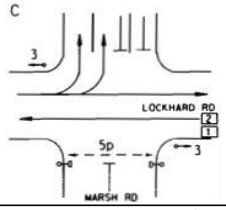
I/G = 6s

Stage 2



I/G = 5s

Stage 3



I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(I) Johnston Road / Fleming Road / Wan Chai Road**

Description: **2033 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
Wan Chai Road	WB		A1	1	4.8	11	11	1	31% / 45%	16% / 61%	1895	1895	1895	1895	275	0.145		255	0.135	
Fleming Road	SB		B1	1	3.7	10	0	1	100%	100%	1725	1725	1725	1725	5	0.003		10	0.006	
	SB		B2	1	3.2	25	0	0	100%	100%	1960	1960	1960	1960	315	0.161	0.161	345	0.176	0.176
Johnston Road	WB	#	C1	2,3	3.4															
	WB		C2	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	340	0.168	0.168	315	0.156	0.156
Johnston Road	EB		D1	4	2.9	11	0	1	88%	83%	1700	1710	1700	1710	130	0.076		115	0.067	
	EB		D2	4	3.4	0	10	0	22%	13%	2025	2055	2025	2055	245	0.121	0.121	275	0.134	0.134
	EB		D3	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	130	0.064		140	0.069	

*Pedestrian Crossing

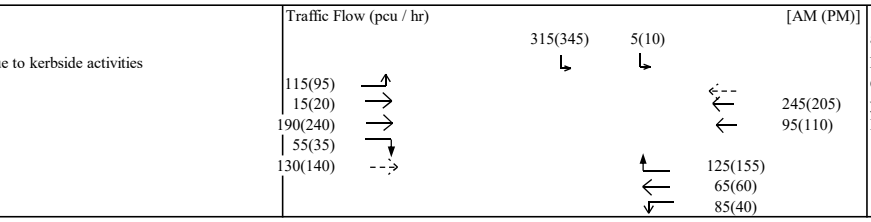
3p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
6p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
8p	1,4	Min. Crossing Time = 11GM + 11FGM = 22s
10p	1,2,3	Min. Crossing Time = 7GM + 7FGM = 14s
11p	4	Min. Crossing Time = 6GM + 6FGM = 12s

Notes:

Assume Phase C1 is blocked due to kerbside activities

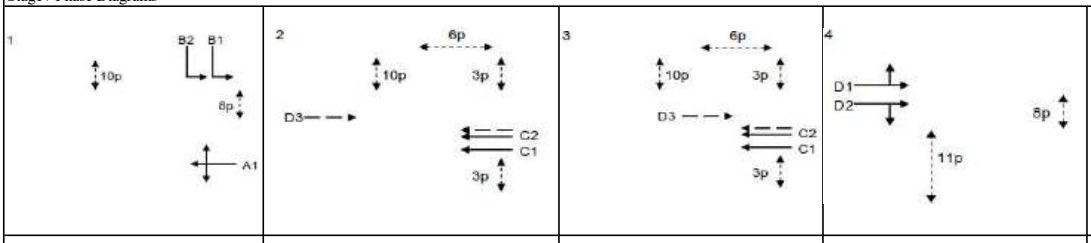
^ Tram only lane

Traffic Flow (pcu / hr) [AM (PM)]



	B2,C2,D2		B2,C2,D2
AM Check Phase		PM Check Phase	
εy	0.450	εy	0.465
L (sec)	28	L (sec)	28
C (sec)	100	C (sec)	130
y pract.	0.648	y pract.	0.706
R.C. (%)	44%	R.C. (%)	52%

Stage / Phase Diagrams

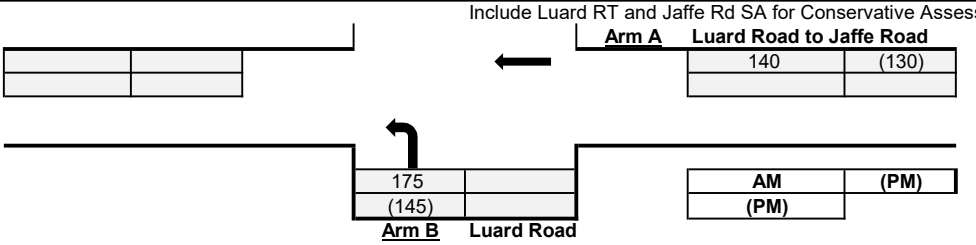


I/G = 13s I/G = 9s I/G = 9s

Priority Junction Calculation

Junction :	Luard Road (NB) / Luard Road (SB) (Jn J-2)	Job No.:	26041HK
Scenario :	2033 Reference Traffic Flows		

Include Luard RT and Jaffe Rd SA for Conservative Assessment



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	6.4	V-rBA	33	w-BA	4.7	D	0.942
W-CR	0	V-IBA	33	w-BC	4.7	E	1.013
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	V-rBC	33	w-CB	2.05	F	0.775
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	V-rCB	22			Y	0.779

Analysis :

Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM	
q-CA	0	0	Q-BA	553	556	
q-CB	0	0	Q-BC	714	717	
q-AB	0	0	Q-CB	546	549	
q-AC	140	130	Q-CA	1800	1800	(If C-B blocked C-A)
q-BA	0	0	Q-BAC	714	717	(If Minor Road Share LT&RT)
q-BC	175	145				
f	1.000	1.000				

Results :

Ratio of Flow-to-Capacity	AM	PM
B-A	N/A	N/A
B-C	N/A	N/A
C-B	0.00	0.00
C-A	0.00	0.00
B-AC	0.25	0.20
Critical DFC	**0.25**	**0.20**

CTA Consultants Ltd.

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(A) Lockhart Road / Fleming Road**

Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lockhart Road	EB		A	1,2	3.5	8	0	1	100%	100%	1655	1655	1655	1655	230	0.139		205	0.124	
	EB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	2105	2105	245	0.116		250	0.119	
Fleming Road	SB		B	3	3.5	10	0	1	24%	18%	1800	1820	1800	1820	705	0.392	0.392	645	0.354	0.354
Fleming Road	NB		C	3,4	3.3	10	0	1	38%	28%	1840	1865	1840	1865	170	0.092		230	0.123	
	NB		C	3,4	4.5	0	0	0	0%	0%	2205	2205	2205	2205	440	0.200		330	0.150	
Lockhart Road	WB		D	1	3.4	0	0	0	0%	0%	2095	2095	2095	2095	120	0.057	0.057	140	0.067	0.067
	WB		D	1	3.6	10	0	1	100%	100%	1715	1715	1715	1715	50	0.029		50	0.029	

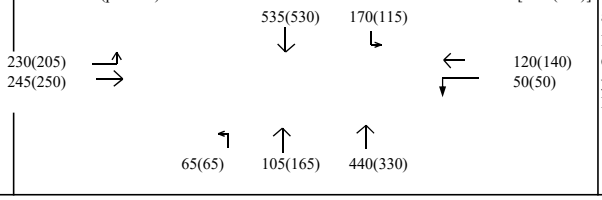
*Pedestrian Crossing

Ep	3,4	Min. Crossing Time = 7GM + 7FGM = 14s
Fp	2	Min. Crossing Time = 9GM + 8FGM = 17s
Gp	4	Min. Crossing Time = 8GM + 7FGM = 15s

Notes:

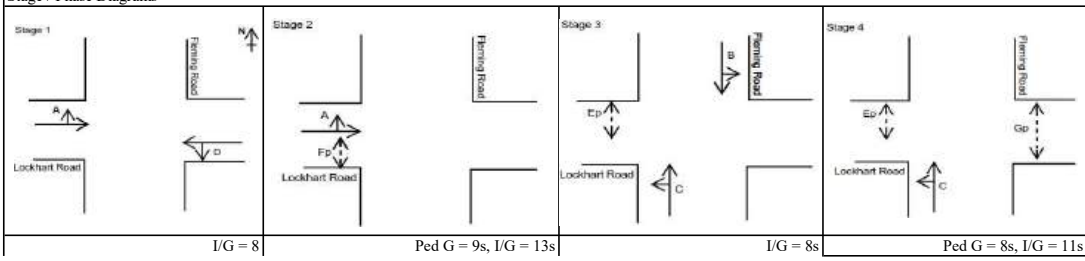
^ Site factor 0.95 applied to reflect the actual traffic condition

Traffic Flow (pcu / hr) [AM (PM)]



	AM Check Phase D,Fp,B,Gp	AM Check Phase A,B,Gp	PM Check Phase D,Fp,B,Gp	PM Check Phase A,B,Gp
εy	0.449	0.531	0.421	0.478
L (sec)	55	30	55	30
C (sec)	130	130	130	130
y pract.	0.519	0.692	0.519	0.692
R.C. (%)	16%	30%	23%	45%

Stage / Phase Diagrams



I/G = 8 | Ped G = 9s, I/G = 13s | I/G = 8s | Ped G = 8s, I/G = 11s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(B) Hennessy Road / Fleming Road**

Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Hennessy Road	WB		A*	3	3.0	10	0	1	69%	70%	1215	1215	5305	5305	102	0.084		128	0.105	0.106
	WB		A	3	3.0	0	0	0	0%	0%	2055	2055	0	0	172	0.084		217	0.106	
	WB		A	3	2.8	0	0	0	0%	0%	2035	2035	0	0	171	0.084		215	0.106	
	WB		A	3	2.9	0	16	0	100%	100%	1870	1870	1870	1870	175	0.094	0.094	180	0.096	
Hennessy Road	EB		B	1	3.0	12	0	1	100%	79%	1700	1745	5810	5855	245	0.144	0.144	210	0.120	0.122
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	293	0.142		247	0.120	
	EB		B	1	3.0	0	0	0	0%	0%	2055	2055	0	0	293	0.142		247	0.120	
	EB		B	1	3.0	0	16	0	100%	100%	1880	1880	1880	1880	180	0.096		230	0.122	
Fleming Road	NB		C	4	3.3	13	0	1	87%	59%	1770	1820	3840	3880	173	0.098	0.098	178	0.098	0.098
	NB		C	4	3.4	0	23	0	17%	25%	2070	2060	0	0	202	0.098		202	0.098	
Fleming Road	SB		D^	2	3.7	16	0	1	37%	53%	960	945	1940	1930	297	0.309	0.309	282	0.298	0.298
	SB		D^	2	3.1	0	21	0	74%	70%	980	985	0	0	303	0.309		293	0.298	

*Pedestrian Crossing

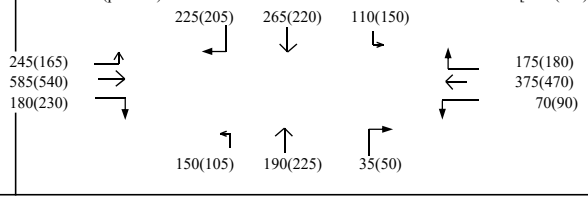
Ep	3	Min. Crossing Time = 5GM + 8FGM = 13s
Fp	1	Min. Crossing Time = 5GM + 8FGM = 13s
Gp	2,3,4	Min. Crossing Time = 11GM + 10FGM = 21s
Hp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s
Ip	1,3,4	Min. Crossing Time = 10GM + 6FGM = 16s
Jp	2	Min. Crossing Time = 6GM + 7FGM = 13s
Kp	1,2,3	Min. Crossing Time = 10GM + 6FGM = 16s
Lp	4	Min. Crossing Time = 7GM + 6FGM = 13s

Notes:

^ Site factor 0.5 applied to reflect the actual traffic condition

* 0.7 Site factor addopted with effect of bus stop

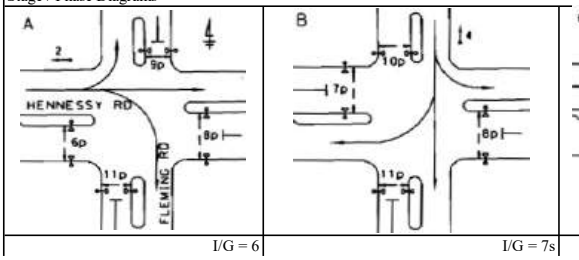
Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.645	0.551
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	16%	21%

PM Check Phase	B,D,A,C	B,D,Ep,C
εy	0.624	0.519
L (sec)	22	34
C (sec)	130	130
y pract.	0.748	0.665
R.C. (%)	20%	28%

Stage / Phase Diagrams



I/G = 6 I/G = 7s I/G = 6s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(C) Lockhart Road / Stewart Road**

Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lockhart Road	WB		A	1	3.8	12	0	1	75%	89%	1825	1795	3880	3850	73	0.040		107	0.060	
	WB		A	1	3.0	0	0	0	0%	0%	2055	2055	0	0	82	0.040		123	0.060	
Lockhart Road	EB		B	1,2	3.4	13	0	1	58%	50%	1835	1850	3650	3675	173	0.094	0.095	161	0.087	0.087
	EB		B	1,2	3.5	0	23	0	50%	44%	1815	1825	0	0	172	0.095		159	0.087	
Stewart Road	SB		F	4	3.7	10	0	1	84%	100%	1765	1725	3770	3745	131	0.074	0.074	155	0.090	0.090
	SB		F	4	3.5	0	15	0	50%	42%	2005	2020	0	0	149	0.074		120	0.059	

*Pedestrian Crossing

Cp	3	Min. Crossing Time = 14GM + 7FGM = 21s
Dp	3	Min. Crossing Time = 10GM + 7FGM = 17s
Ep	3	Min. Crossing Time = 9GM + 11FGM = 20s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

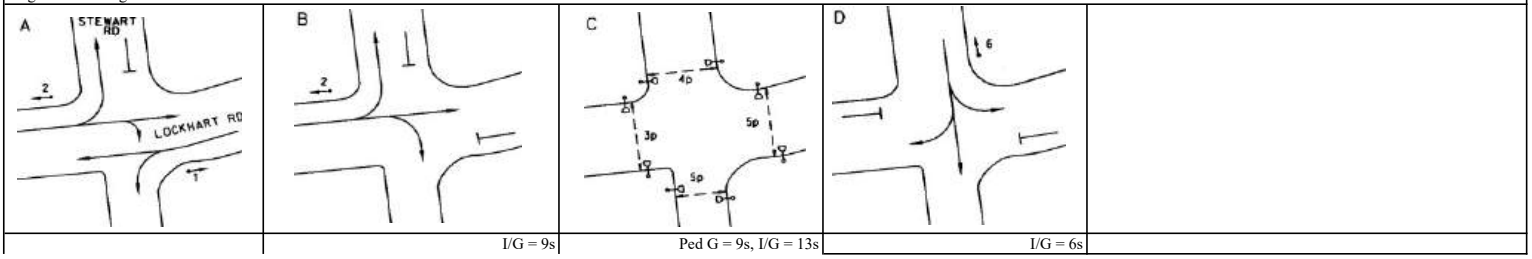
75(50) 95(70) 110(155)

100(80)
160(170)
85(70)

100(135)
55(95)

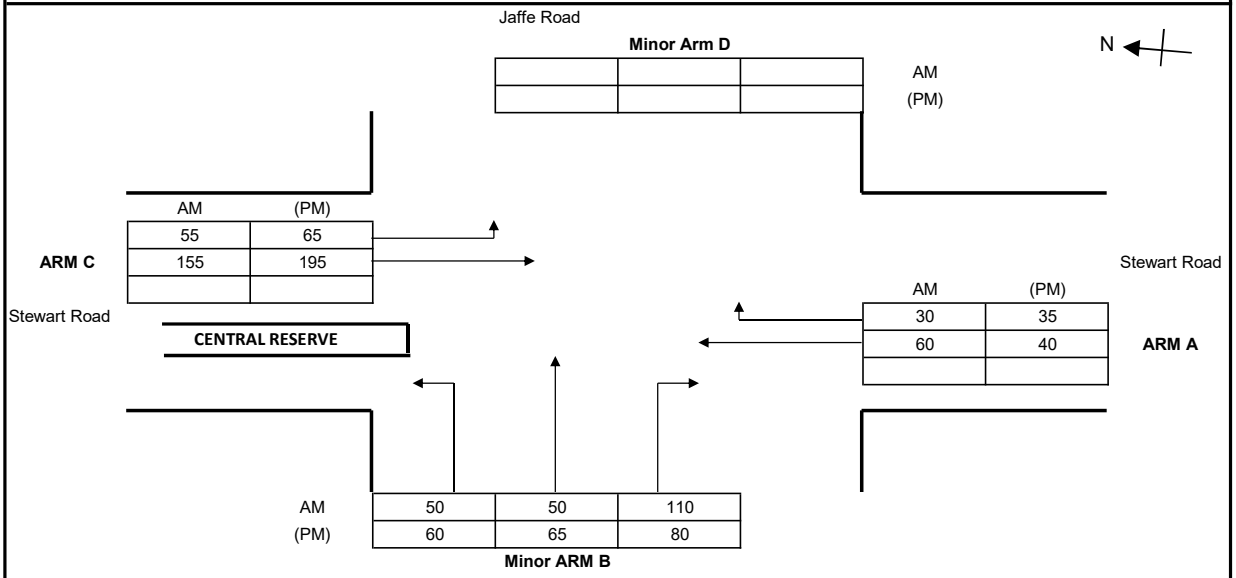
	B,Ep,F AM Check Phase	B,Ep,F PM Check Phase
εy	0.169	0.177
L (sec)	35	35
C (sec)	90	90
y pract.	0.550	0.550
R.C. (%)	226%	211%

Stage / Phase Diagrams



I/G = 9s | Ped G = 9s, I/G = 13s | I/G = 6s

Job Title:			
Junction:	(D) Stewart Road / Jaffe Road		
Scheme:			Ref. No.:
Year:	2033 Design Traffic Flows	Job No.:	Rev.: -
ARM A:	Stewart Road		
ARM B:	Jaffe Road		
ARM C:	Stewart Road		
ARM D:	Jaffe Road		



GEOMETRY					ARM B		ARM D	
Major road width	W	11.20	Lane widths		w(b-a)	4.50	w(d-c)	0.00
Central Reserve width	Wcr	0.00			w(b-c)	3.80	w(d-a)	0.00
					w(c-b)	0.00	w(a-d)	3.40
Visibilities	Vr(b-a)	19	Vr(d-c)	0	D	0.91	D	0.53
	Vl(b-a)	30	Vl(d-c)	0	E	0.92	E	0.59
	Vr(b-c)	19	Vr(d-a)	0	F	0.59	F	0.93
	Vr(c-b)	0	Vr(a-d)	62	Y	0.61	Y	0.61
		160					Arm D	

ANALYSIS		AM PEAK	(PM) PEAK		AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)	155	195	q(a-c)	110	100
	q(c-b)	0	0	q(a-d)	30	35
	q(a-b)	0	0	q(c-d)	55	65
	q(a-c)	60	40	q(c-a)	265	275
	q(b-a)	160	145	q(d-c)	0	0
	q(b-c)	50	60	q(d-a)	0	0
	f	0.24	0.29	f	0.00	0.00
CAPACITIES	Q(b-a)	539	538	Q(d-c)	287	285
	Q(b-c)	674	679	Q(d-a)	399	397
	Q(c-b)	429	431	Q(a-d)	623	619
	Q(b-ac)	566	573	Q(d-ca)	287	285
	Q(c-a)	1800	1800	Q(a-c)	1713	1698
RFC's	b-a	0.297	0.270	d-c	0.000	0.000
	b-c	0.074	0.088	d-a	0.000	0.000
	c-b	0.000	0.000	a-d	0.048	0.057
	b-ac	0.371	0.358	d-ca	0.000	0.000
	c-a	0.086	0.108	a-c	0.064	0.059

	AM	(PM)
Worst RFC	**0.371**	**0.358**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

T.P.D.M.V.2.4
Appendix 1

Capacity of combined streams
- in accordance with TPDM V2.4

Calculated by:	Date: Oct-26	Checked by:

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(E) Gloucester Road / Tonnochy Road / Stewart Road**

Description: **2033 Design Traffic Flows**

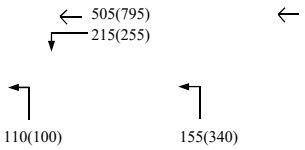
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Gloucester Road	WB	← ↓	C*	1,2	3.6	10	0	1	81%	65%	1235	1260	3340	3365	266	0.215	0.216	393	0.312	0.312
	WB	←	C	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	454	0.216		657	0.312	
Tonnochy Road	NB	↰	B	2,3	3.3	10	0	1	100%	100%	1690	1690	3650	3650	72	0.042		157	0.093	
	NB	↰	B	2,3	4.0	15	0	0	100%	100%	1960	1960	0	0	83	0.042		183	0.093	
Gloucester Road	WB	←	A	1	3.0	0	0	0	0%	0%	2055	2055	3970	3970	292	0.142		368	0.179	
	WB	←	A	1	3.0	0	0	1	0%	0%	1915	1915	0	0	273	0.142		342	0.179	
Stewart Road	NB	↰	D	3	4.3	10	0	1	100%	100%	1780	1780	1780	1780	110	0.062	0.062	100	0.056	0.056

*Pedestrian Crossing ⌒ Ep 1 Min. Crossing Time = 5GM + 10FGM = 15s

Notes:

* 0.7 Site factor addopted with effect of bus stop

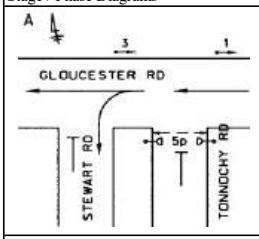
Traffic Flow (pcu / hr) [AM (PM)]

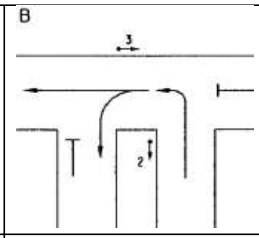


AM Check Phase	C,D	A,B
εy	0.277	0.185
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	192%	338%

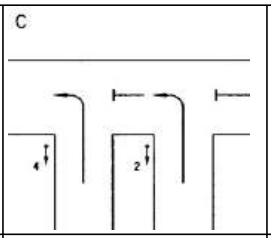
PM Check Phase	C,D	A,B
εy	0.368	0.272
L (sec)	9	9
C (sec)	90	90
y pract.	0.810	0.810
R.C. (%)	120%	198%

Stage / Phase Diagrams





I/G = 6s



I/G = 5s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

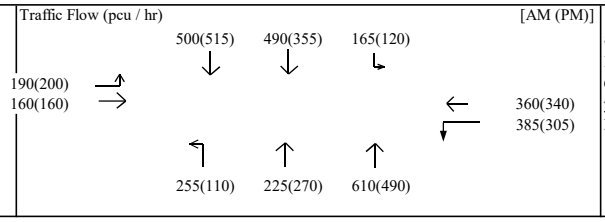
Junction: **(F) Fleming Road / Harbour Road**
Description: **2033 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Nearside 0/1	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	Total Revised Saturation Flow (pcu/hr) A.M.	Total Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Fleming Road (At-Grade)	NB		C	1	3.1	15	0	1	100%	100%	1750	1750	1750	1750	255	0.146		110	0.063	
Fleming Road (At-Grade)	NB		A	1,2	3.0	0	0	0	0%	0%	2055	2055	2055	2055	225	0.109		270	0.131	
Fleming Road (Slip Road)	NB		A	1,2	3.6	0	0	0	0%	0%	2115	2115	4220	4220	306	0.145		246	0.116	
Fleming Road (Slip Road)	NB		A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	304	0.145		244	0.116	
Fleming Road (At-Grade)	SB		A	1,2	3.8	10	0	1	100%	100%	1735	1735	1735	1735	165	0.095		120	0.069	
Fleming Road (At-Grade)	SB		A	1,2	3.9	0	0	0	0%	0%	2145	2145	2145	2145	490	0.228		355	0.166	
Fleming Road (Slip Road)	SB	^	A	1,2	3.6	0	0	0	0%	0%	1060	1060	1060	1060	500	0.472	0.472	515	0.486	0.486
Harbour Road	EB		B	3	3.1	15	0	1	100%	100%	1750	1750	3800	3795	161	0.092		166	0.095	
	EB		B	3	3.2	18	0	0	15%	18%	2050	2045	0	0	189	0.092		194	0.095	
Harbour Road	WB		B	3	3.6	13	0	1	100%	100%	1770	1770	1770	1770	385	0.218		305	0.172	
	WB		B	3	3.4	0	0	0	0%	0%	2095	2095	2095	2095	360	0.172	0.218	340	0.162	0.172

*Pedestrian Crossing Dp 2 Min. Crossing Time = 8GM + 7FGM = 15s

Notes:
^ Site factor 0.5 applied to reflect the actual traffic condition

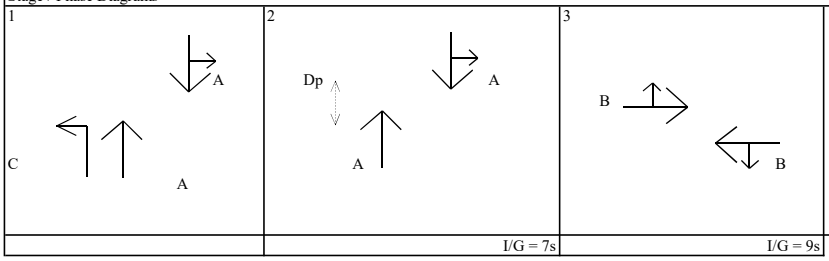
Traffic Flow (pcu / hr) [AM (PM)]



	A,B	C,Dp,B
AM Check Phase		
εy	0.689	0.363
L (sec)	14	33
C (sec)	125	125
y pract.	0.799	0.662
R.C. (%)	16%	82%

	A,B	C,Dp,B
PM Check Phase		
εy	0.658	0.304
L (sec)	14	33
C (sec)	130	130
y pract.	0.803	0.672
R.C. (%)	22%	121%

Stage / Phase Diagrams



TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(G) Hung Hing Road / Lung Wo Road / Fleming Road / Expo Drive East**

Description: **2033 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
Fleming Road	NB	↑	A	1,2	3.1	0	0	1	0%	0%	1925	1925	4030	4030	64	0.033		64	0.033	
	NB	↑	A	1,2	3.5	0	0	0	0%	0%	2105	2105	0	0	71	0.033		71	0.033	
Fleming Road	NB	↱^	B	1	3.8	0	20	0	100%	100%	2125	2125	2125	2125	315	0.148	0.148	345	0.162	0.162
Expo Drive South	SB	↓→	C	1,2	3.4	12	0	1	87%	100%	1765	1740	3850	3825	495	0.280		415	0.239	
	SB	↓	C	1,2	3.3	0	0	0	0%	0%	2085	2085	0	0	585	0.281	0.281	445	0.213	0.239
	SB	↳	D	3	3.6	0	16	0	100%	100%	1935	1935	1935	1935	155	0.080		165	0.085	
Convention Avenue	WB	←↓	E	4	3.7	10	0	1	100%	100%	1725	1725	3850	3850	280	0.162		290	0.168	
	WB	←	E	4	3.7	0	0	0	0%	0%	2125	2125	0	0	225	0.106	0.162	225	0.106	0.168
Convention Avenue	EB	↑→	F	4	3.8	10	0	1	11%	11%	1965	1960	4090	4085	46	0.023		89	0.045	
	EB	→	F	4	3.7	0	0	0	0%	0%	2125	2125	0	0	49	0.023		96	0.045	

*Pedestrian Crossing

〈 〉〈 〉〈 〉〈 〉	Gp	1,2
	Hp	1,4
	Ip	1
	Jp	3
	Kp	3,4

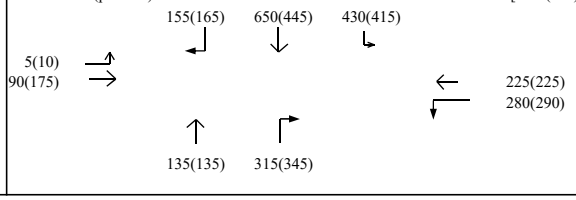
Min. Crossing Time = 5GM + 7FGM = 12s

Min. Crossing Time = 5GM + 8FGM = 13s

Notes:

^ Additional saturation flow 150 pcu/hr for flare lane

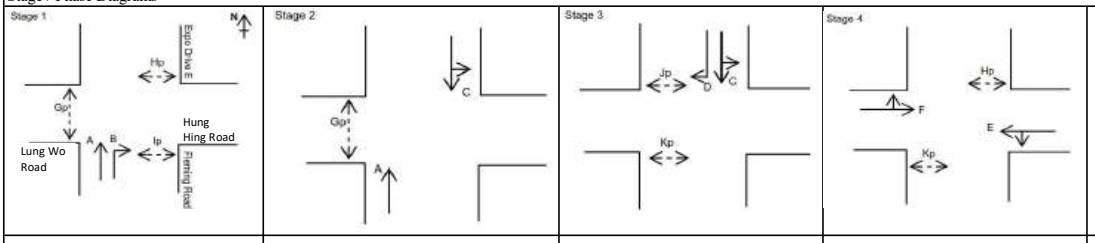
Traffic Flow (pcu / hr) [AM (PM)]



	Ip,C,E	B,C,E
AM Check Phase		
εy	0.443	0.591
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	52%	26%

	Ip,C,E	B,C,E
PM Check Phase		
εy	0.407	0.569
L (sec)	35	24
C (sec)	140	140
y pract.	0.675	0.746
R.C. (%)	66%	31%

Stage / Phase Diagrams



I/G = 10s I/G = 10s I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(H) Marsh Road / Lockhart Road**

Description: **2033 Design Traffic Flows**

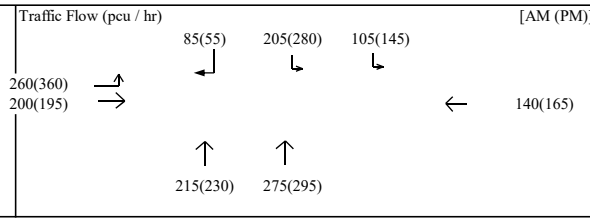
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Marsh Road	NB	↑	A	1	4.0	0	0	1	0%	0%	2015	2015	2015	2015	215	0.107		230	0.114	
Marsh Road (Slip Road)	NB	↑	A	1	3.8	0	0	0	0%	0%	2135	2135	2135	2135	275	0.129	0.129	295	0.138	0.138
Marsh Road	SB	↳	B	2	4.2	10	0	1	100%	100%	1770	1770	1770	1770	105	0.059		145	0.082	
Marsh Road (Slip Road)	SB	↰↳	B	2	3.0	15	18	0	71% / 29%	84% / 16%	1875	1875	1875	1875	290	0.155	0.155	335	0.179	0.179
Lockhart Road	EB	↱	F	2,3	3.1	10	0	1	100%	100%	1675	1675	1675	1675	260	0.155		360	0.215	
	EB	→	C	3	4.2	0	0	0	0%	0%	2175	2175	2175	2175	200	0.092		195	0.090	
Lockhart Road	WB	←	C	3	4.0	0	0	1	0%	0%	2015	2015	4070	4070	69	0.034		82	0.041	
	WB	←	C	3	3.0	0	0	0	0%	0%	2055	2055	0	0	71	0.034	0.092	83	0.041	0.090

*Pedestrian Crossing Dp 1 Min. Crossing Time = 5GM + 6FGM = 11s

Ep 2,3 Min. Crossing Time = 6GM + 7FGM = 13s

Notes:

Traffic Flow (pcu / hr) [AM (PM)]

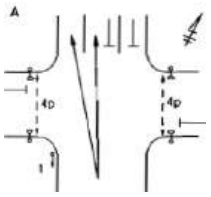


	Dp,B,C	A,B,C
AM Check Phase		
εy	0.247	0.375
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	189%	110%

	Dp,B,C	A,B,C
PM Check Phase		
εy	0.268	0.406
L (sec)	25	15
C (sec)	120	120
y pract.	0.713	0.788
R.C. (%)	166%	94%

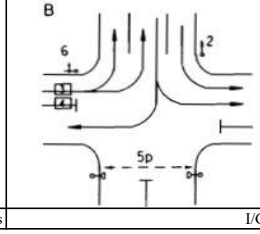
Stage / Phase Diagrams

Stage 1



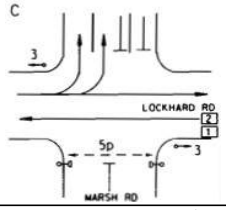
I/G = 6s

Stage 2



I/G = 5s

Stage 3



I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: 26041HK **CTA Consultants Ltd.**

Junction: **(I) Johnston Road / Fleming Road / Wan Chai Road**

Description: **2033 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
Wan Chai Road	WB		A1	1	4.8	11	11	1	31% / 45%	16% / 61%	1895	1895	1895	1895	275	0.145		255	0.135	
Fleming Road	SB		B1	1	3.7	10	0	1	100%	100%	1725	1725	1725	1725	5	0.003		10	0.006	
	SB		B2	1	3.2	25	0	0	100%	100%	1960	1960	1960	1960	320	0.163	0.163	350	0.179	0.179
Johnston Road	WB	#	C1	2,3	3.4															
	WB		C2	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	340	0.168	0.168	315	0.156	0.156
Johnston Road	EB		D1	4	2.9	11	0	1	88%	83%	1700	1710	1700	1710	130	0.076		115	0.067	
	EB		D2	4	3.4	0	10	0	22%	13%	2025	2055	2025	2055	245	0.121	0.121	275	0.134	0.134
	EB	^	D3	2,3	2.7	0	0	0	0%	0%	2025	2025	2025	2025	130	0.064		140	0.069	

*Pedestrian Crossing

3p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
6p	2,3	Min. Crossing Time = 8GM + 8FGM = 16s
8p	1,4	Min. Crossing Time = 11GM + 11FGM = 22s
10p	1,2,3	Min. Crossing Time = 7GM + 7FGM = 14s
11p	4	Min. Crossing Time = 6GM + 6FGM = 12s

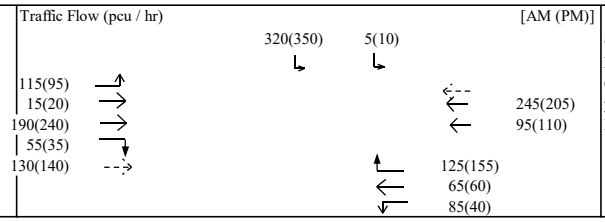
B2,C2,D2 B2,C2,D2

Notes:

Assume Phase C1 is blocked due to kerbside activities

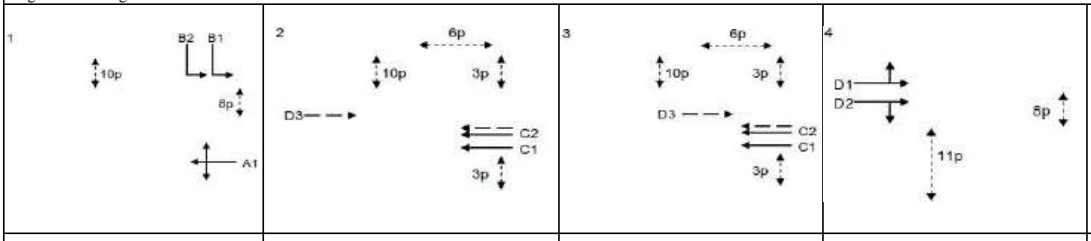
^ Tram only lane

Traffic Flow (pcu / hr) [AM (PM)]



AM Check Phase		PM Check Phase	
εy	0.452	εy	0.468
L (sec)	28	L (sec)	28
C (sec)	100	C (sec)	130
y pract.	0.648	y pract.	0.706
R.C. (%)	43%	R.C. (%)	51%

Stage / Phase Diagrams

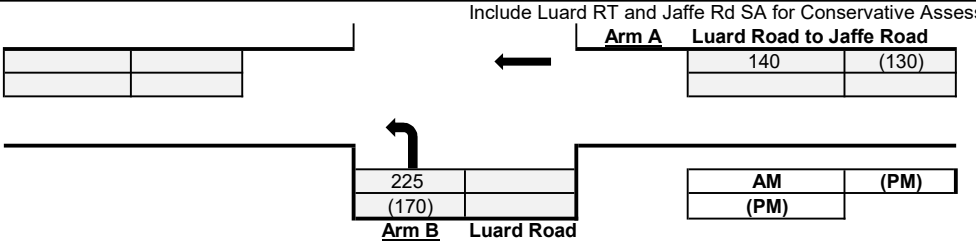


I/G = 13s I/G = 9s I/G = 9s

Priority Junction Calculation

Junction :	Luard Road (NB) / Luard Road (SB) (Jn J-2)	Job No.:	26041HK
Scenario :	2033 Design Traffic Flows		

Include Luard RT and Jaffe Rd SA for Conservative Assessment



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	6.4	V-rBA	33	w-BA	4.7	D	0.942
W-CR	0	V-IBA	33	w-BC	4.7	E	1.013
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	V-rBC	33	w-CB	2.05	F	0.775
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	V-rCB	22			Y	0.779

Analysis :

Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM	
q-CA	0	0	Q-BA	553	556	
q-CB	0	0	Q-BC	714	717	
q-AB	0	0	Q-CB	546	549	
q-AC	140	130	Q-CA	1800	1800	(If C-B blocked C-A)
q-BA	0	0	Q-BAC	714	717	(If Minor Road Share LT&RT)
q-BC	225	170				
f	1.000	1.000				

Results :

Ratio of Flow-to-Capacity	AM	PM
B-A	N/A	N/A
B-C	N/A	N/A
C-B	0.00	0.00
C-A	0.00	0.00
B-AC	0.32	0.24
Critical DFC	**0.32**	**0.24**

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