ARUP

Appendix D

Traffic Impact Assessment

27/11/2024

Reference number CHK50748310

SECTION 16 APPLICATION FOR PROPOSED FLAT, SHOP AND SERVICES AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN "RESIDENTIAL (GROUP E)" ZONE AT NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

TRAFFIC IMPACT ASSESSMENT REPORT

SYSTRA MVA

IDENTIFICATION TABLE	
Client/Project owner	China Resources Land (Overseas) Limited
Project	Section 16 Application for Proposed Flat, Shop and Services and Eating Place with Minor Relaxation of Plot Ratio and Building Height Restrictions in "Residential (Group E)" Zone at No. 4 Tung Yuen Street, Yau Tong, Kowloon
Type of document	Traffic Impact Assessment Report
Date	27/11/2024
File name	No. 4 Tung Yuen Street Development Traffic Impact Assessment Report .docx
Reference number	CHK50748310

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1.1 Background

1.1.1 The application site is located at No. 4 Tung Yuen Street, as indicated in **Drawing 1.1**. It is currently zoned “Residential (Group E)” (“R(E)”) under the latest approved Cha Kwo Ling, Yau Tong, Lei Yue Mun Outline Zoning Plan (OZP) no. S/K15/27.

1.1.2 The application site is currently occupied by an industrial building, and is planned to be re-developed into a residential-based development with shop & services, and eating place as No. 4 Tung Yuen Street Redevelopment.

1.2 Study Objective

1.2.1 The main objective of this study is to investigate the anticipated traffic impact of proposed No. 4 Tung Yuen Street Redevelopment to the adjacent local road network, by performing the following tasks:

- review the current traffic condition in the vicinity;
- study the traffic related matters of the proposed MLP;
- produce traffic forecasts on the adjacent local road network;
- assess the traffic impact of this development scheme to the adjacent local road network and suggest mitigation measures, if applicable.

1.3 Report Structure

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

- Chapter 2 – Traffic Context, review the current traffic condition in the vicinity;
- Chapter 3 – The Redevelopment, introduces the proposed No. 4 Tung Yuen Street Redevelopment scheme, planning parameters, internal transport facilities and etc.;
- Chapter 4 – Traffic Forecasts, describes the traffic forecasting methodology and presents the results;
- Chapter 5 – Traffic Impact Assessment, presents the assessment findings and suggests mitigation measures, if applicable; and,
- Chapter 6 – Summary and Conclusion, summarises the study findings and presents the conclusion accordingly.

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

SITE LOCATION PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	1.1	-

SYSTRA MVA

CHK50748310/TIA/F11.CDR/LLH/10OCT24

Original Size : A4

2. TRAFFIC CONTEXT

2.1 Existing Road Network

2.1.1 The application site is located at No. 4 Tung Yuen Street. The application site situates at the northwestern fringe of YTIA and is accessible from Tung Yuen Street. The site location is indicated in **Drawing 1.1**. The vehicular access routes of the application site are through Tung Yuen Street, Ko Fai Road, Cha Kwo Ling Road, Yau Tong Road, and Ko Chiu Road.

2.1.2 Cha Kwo Ling Road, a single 4-lane district distributor, is the main transport corridors of Yau Tong area to provide external linkage to Eastern Harbour Crossing (EHC), Tseung Kwan O – Lam Tin Tunnel (TKO-LTT), Kwun Tong Bypass and Kwun Tong Road.

2.1.3 Yau Tong Road and Ko Chiu Road are both local distributors, linking up Lei Yue Mun Road and Cha Kwo Ling Road on the North and South respectively.

2.1.4 Tung Yuen Street and Ko Fai Road are both single 2-lane local distributors, connecting the application site to Yan Yue Wai and Cha Kwo Ling Road.

2.2 Public Transport Services

2.2.1 MTR Yau Tong Station is the nearest MTR station to the application site. It is located on the north-east of the application site across Cha Kwo Ling Road, and can be reached within 10 minutes of walk. Yau Tong MTR Station is the interchange station of Kwun Tong Line and Tseung Kwan O Line leading to Island Line.

2.2.2 There are two public transport interchanges (PTI) located at The Domain Mall and Yau Tong Estate Phase 3, near Ko Chiu Road, in the vicinity of the application site. There is one franchised bus route - 14X and one Green Minibus (GMB) route - 24, operating along Tung Yuen Street.

2.2.3 The nearby public transport services are indicated in **Drawing 2.1**, whilst their service details are summarised in **Appendix A**.

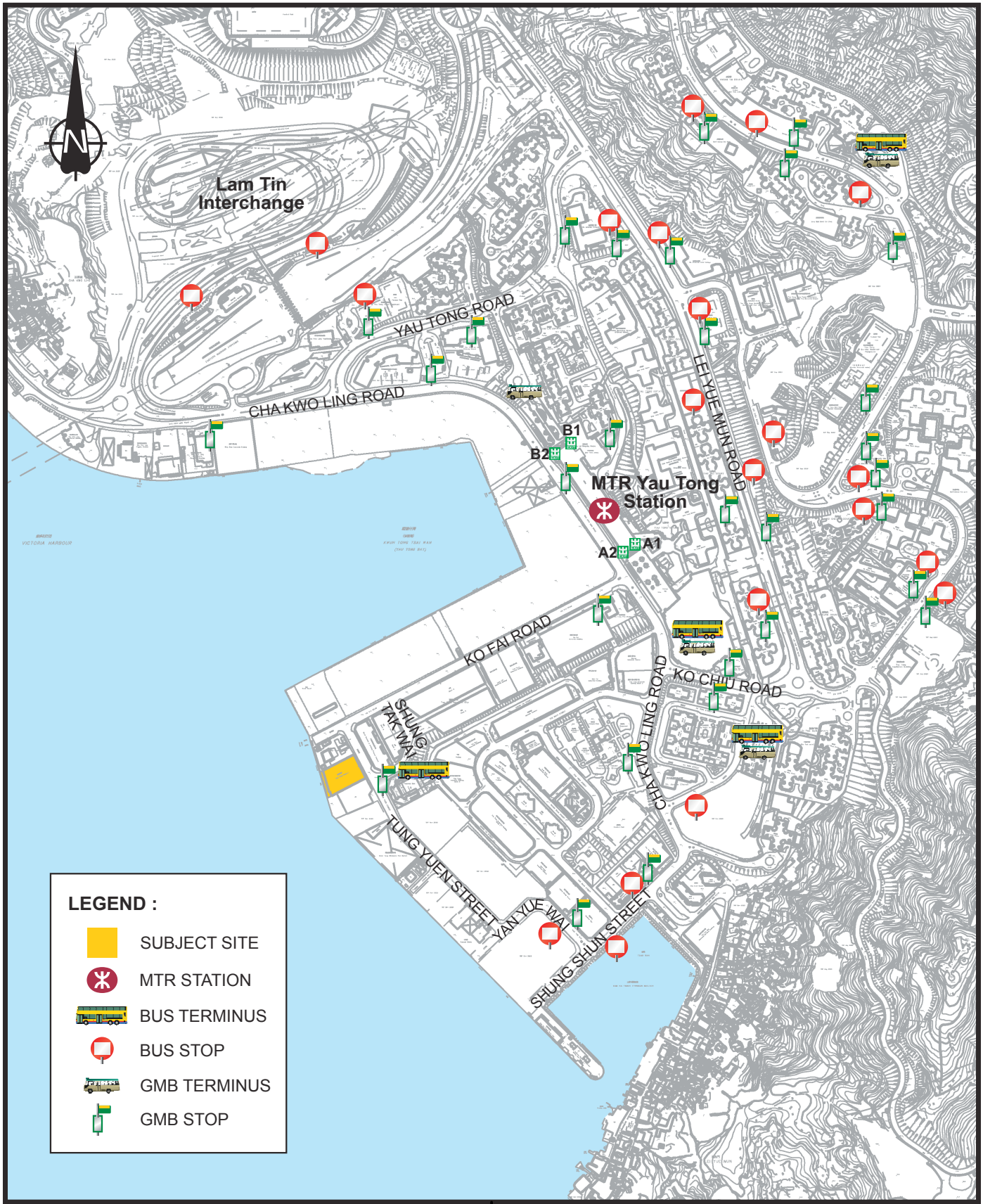
2.3 Junction Operational Performance

2.3.1 A total of eight key local junctions have been identified for assessment purpose in this study. The identified key local junctions, as listed in **Table 2.1**, are indicated in **Drawing 2.2**.

Table 2.1 Identified Key Local Junctions

Ref. (1)	Junction	Control Method	Drawing No.
A	Cha Kwo Ling Road / Lam Tin Interchange	Roundabout	2.3
B	Cha Kwo Ling Road / Yau Tong Road	Signal	2.4
C	Cha Kwo Ling Road / Ko Fai Road	Priority	2.5
D	Cha Kwo Ling Road / Ko Chiu Road	Signal	2.6
E	Lei Yue Mun Road / Ko Chiu Road	Roundabout	2.7
F	Lei Yue Mun Road / Yau Tong Road	Signal	2.8
G	Kai Tin Road / Lei Yue Mun Road	Roundabout	2.9
H	Wai Yip Street / Wai Fat Road	Signal	2.10

Remarks:
(1) Refer to **Drawing 2.2**.



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

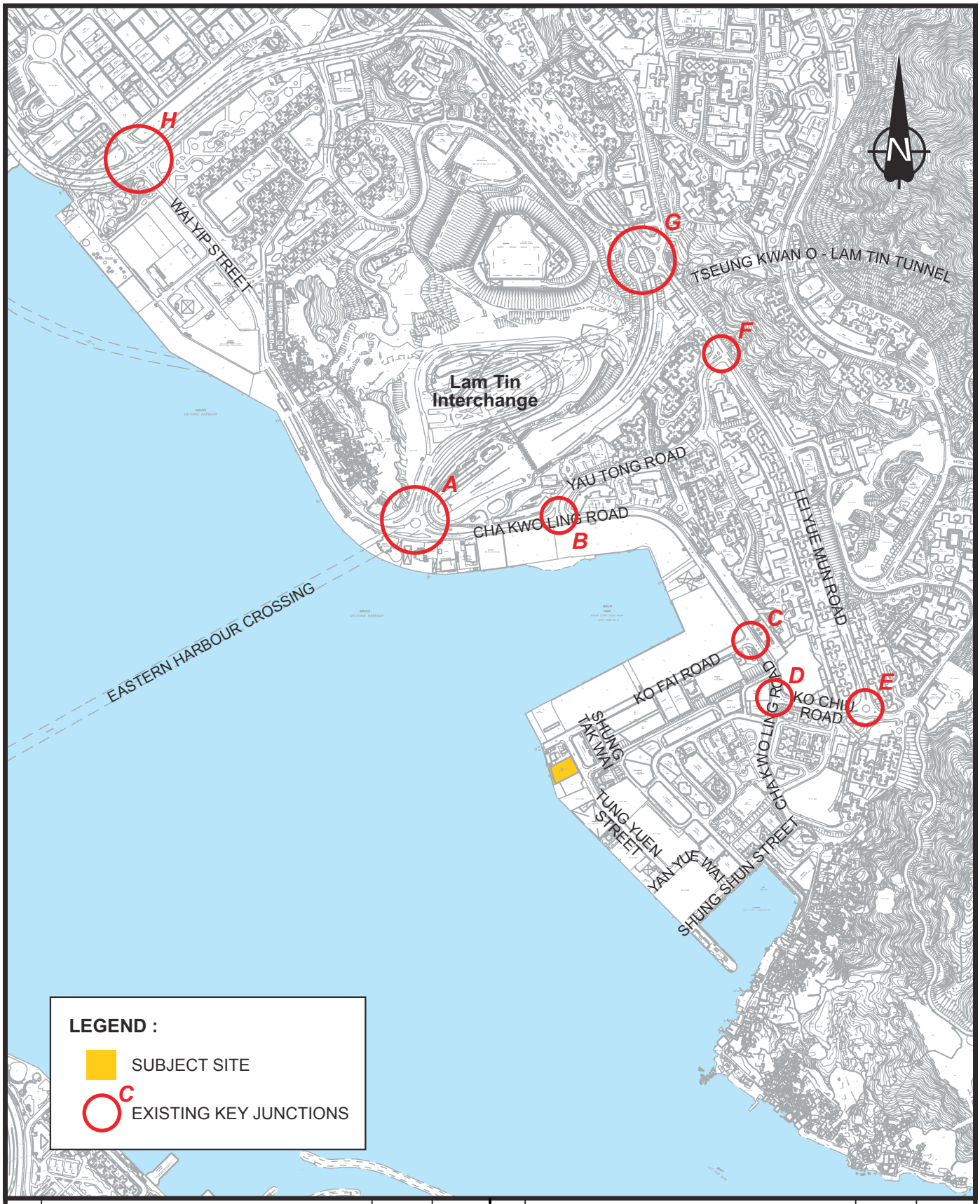
EXISTING PUBLIC TRANSPORT SERVICES

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	2.1	-

SYSTRA MVA

CHK50748310/TIA/F21.CDR/LLH/10OCT24

Original Size : A4



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

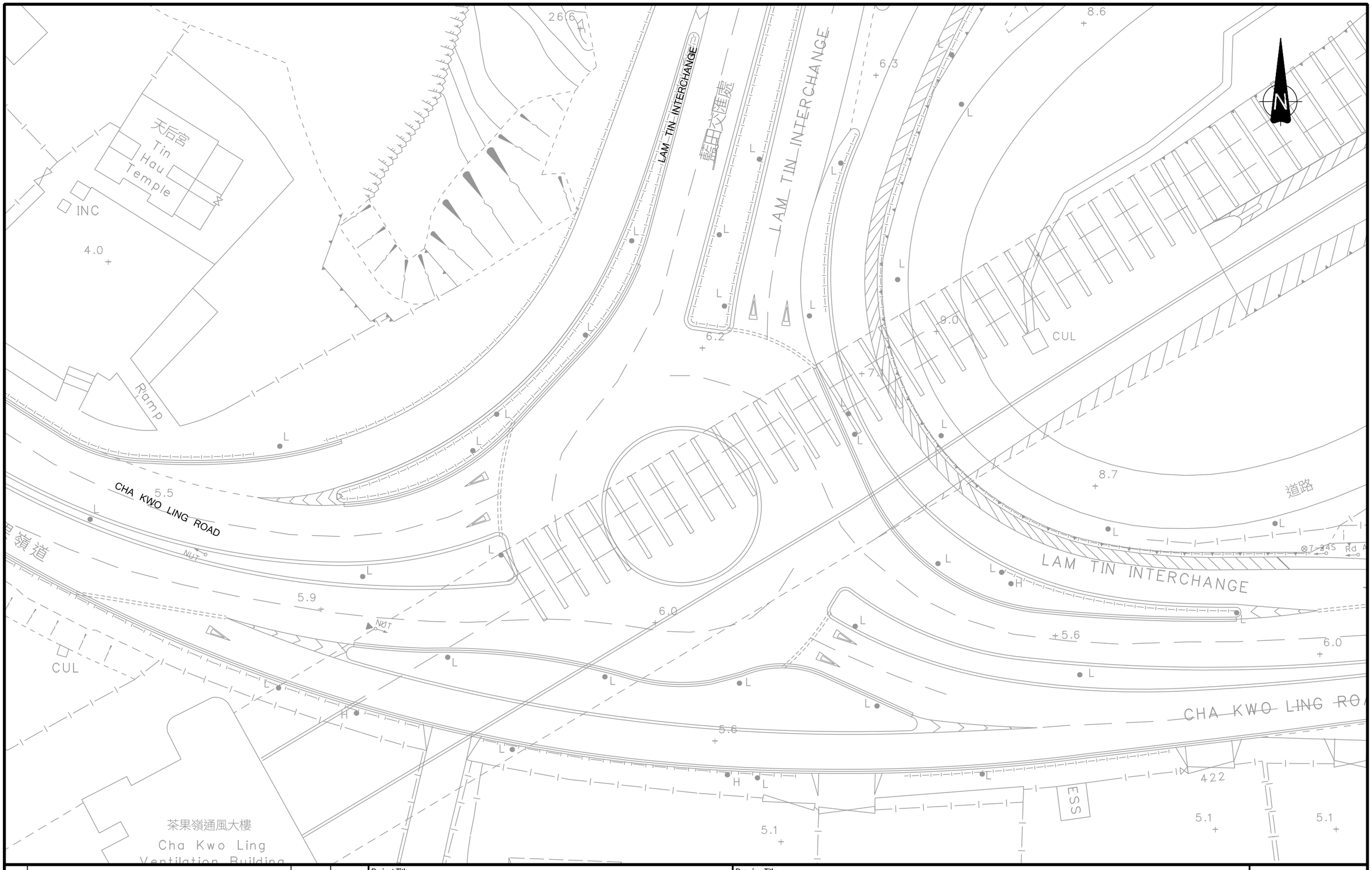
IDENTIFIED KEY LOCAL JUNCTIONS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	2.2	-

SYSTRA MVA

CHK50748310/TIA/F22.CDR/LLH/10OCT24

Original Size : A4



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF CHA KWO LING ROAD / LAM TIN INTERCHANGE (A)

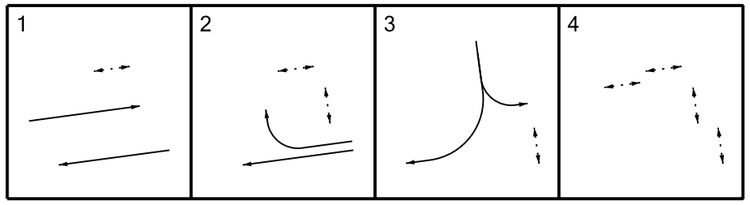
Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**2.3**	-

SYSTRA MVA

CHK50748310/TIA/F23.DGN/KCM/08OCT24

Original Size : A3

METHOD OF CONTROL



Ventilation Building

YAU TONG ROAD

CHA KWO LING ROAD

CHA KWO LING ROAD

茶果嶺道

TS

TS

Tunnel Bus Stop
隧道巴士站
K-TS441

Tunnel Bus Stop
隧道巴士站
K-TS439

K-TS441

K-TS439

PLB Proh

PLB Proh

NUT

NUT

中華基督教會基法小學(油塘)

C.C.C. Kei Faat Primary School (Yau Tong)

籃球場
Basketball Court

籃球場
Basketball Court

Hong Kong (E)
香港(東)

K/KT/ChaKL-09

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF CHA KWO LING ROAD / YAU TONG ROAD (B)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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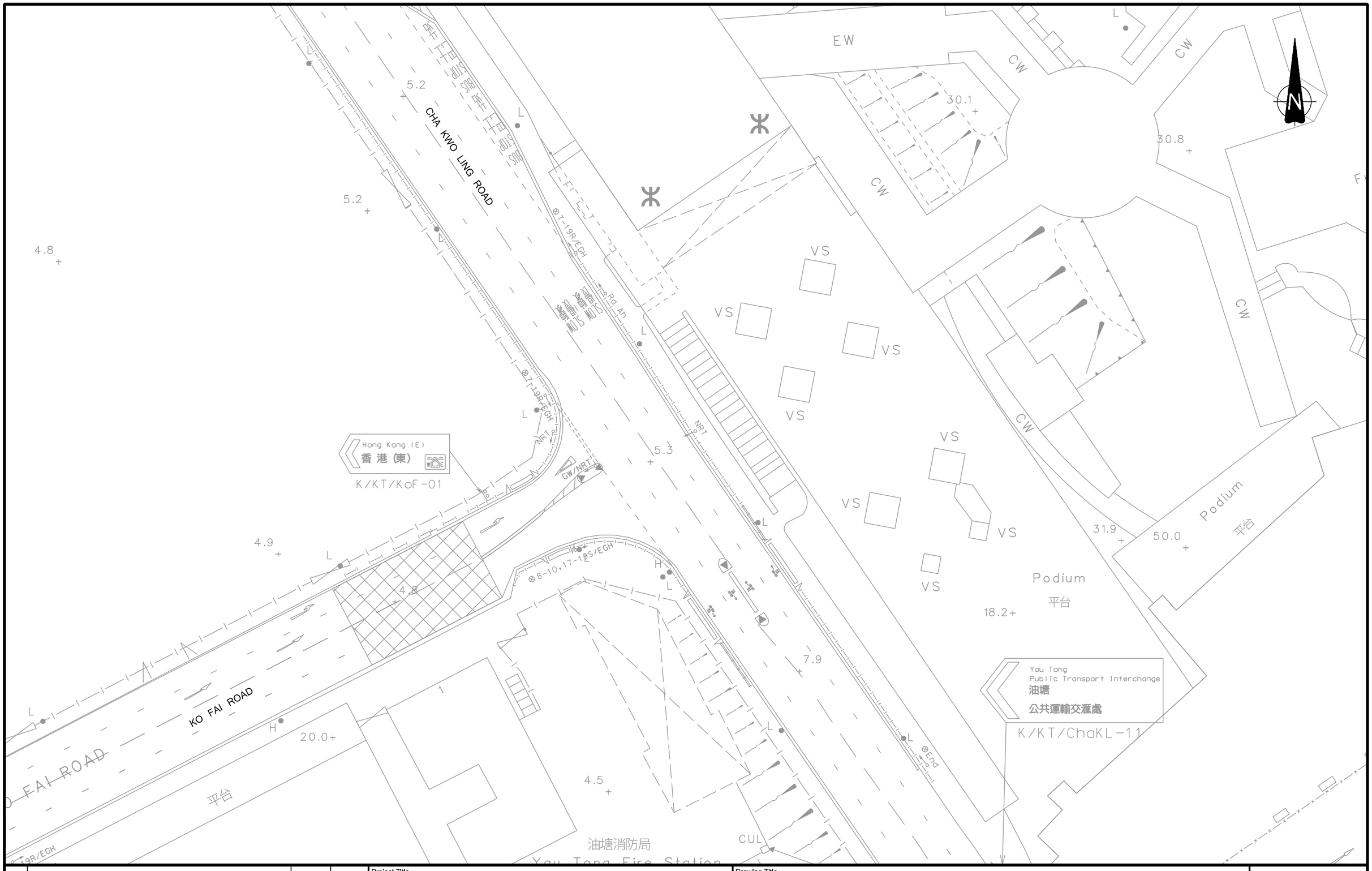
CHK50748310/TIA/F24.DGN/KCM/08OCT24

Original Size : A3



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Project Title

PROPOSED FLAT, SHOP AND SERVICES,
AND EATING PLACE WITH MINOR RELAXATION OF
PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS
IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

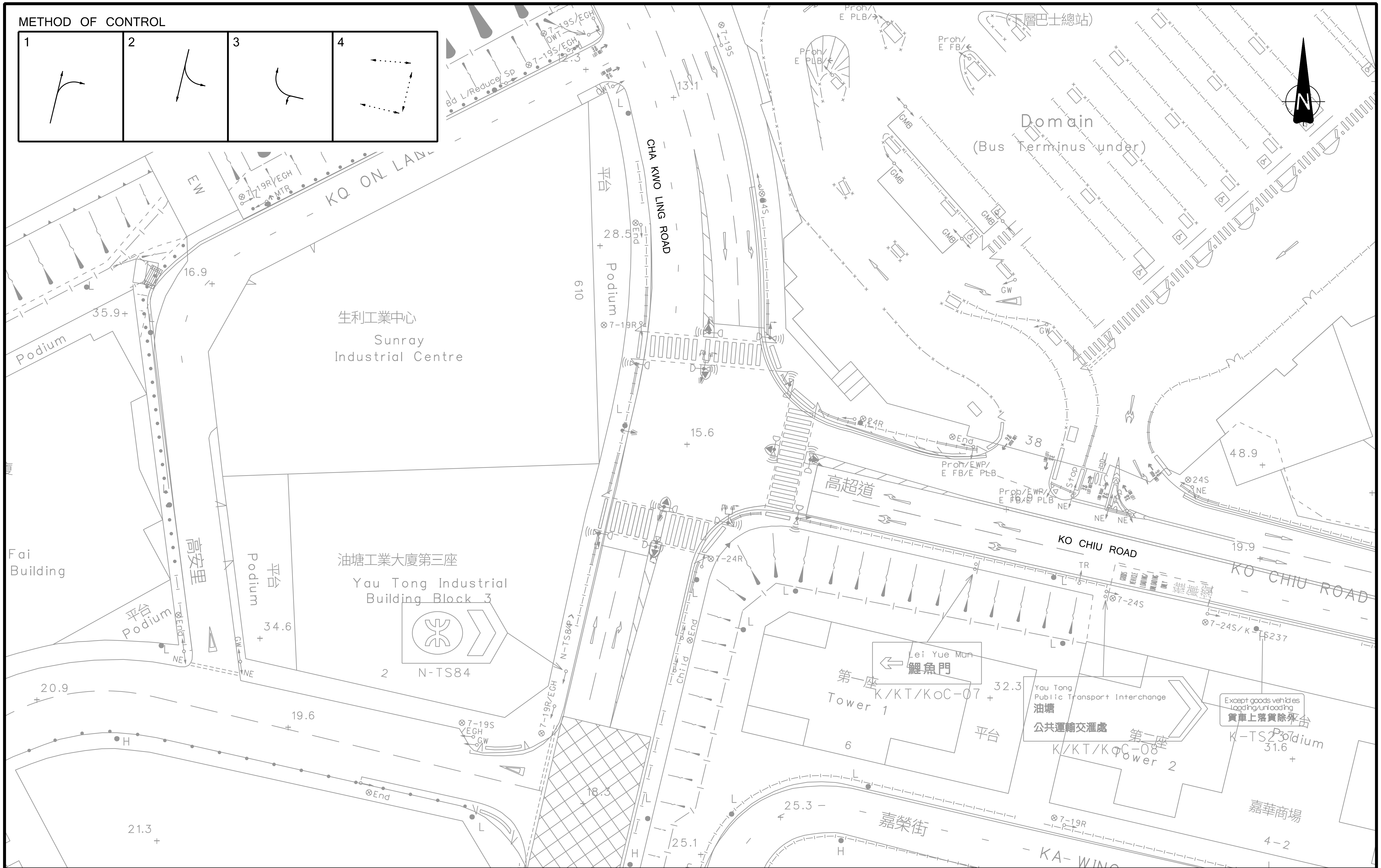
EXISTING JUNCTION LAYOUT OF CHA KWO LING ROAD / KO FAI ROAD (C)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**2.5**	-

SYSTRA MVA

CHK50748310/TIA/F25.DGN/KCM/08OCT24

Original Size : A3



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

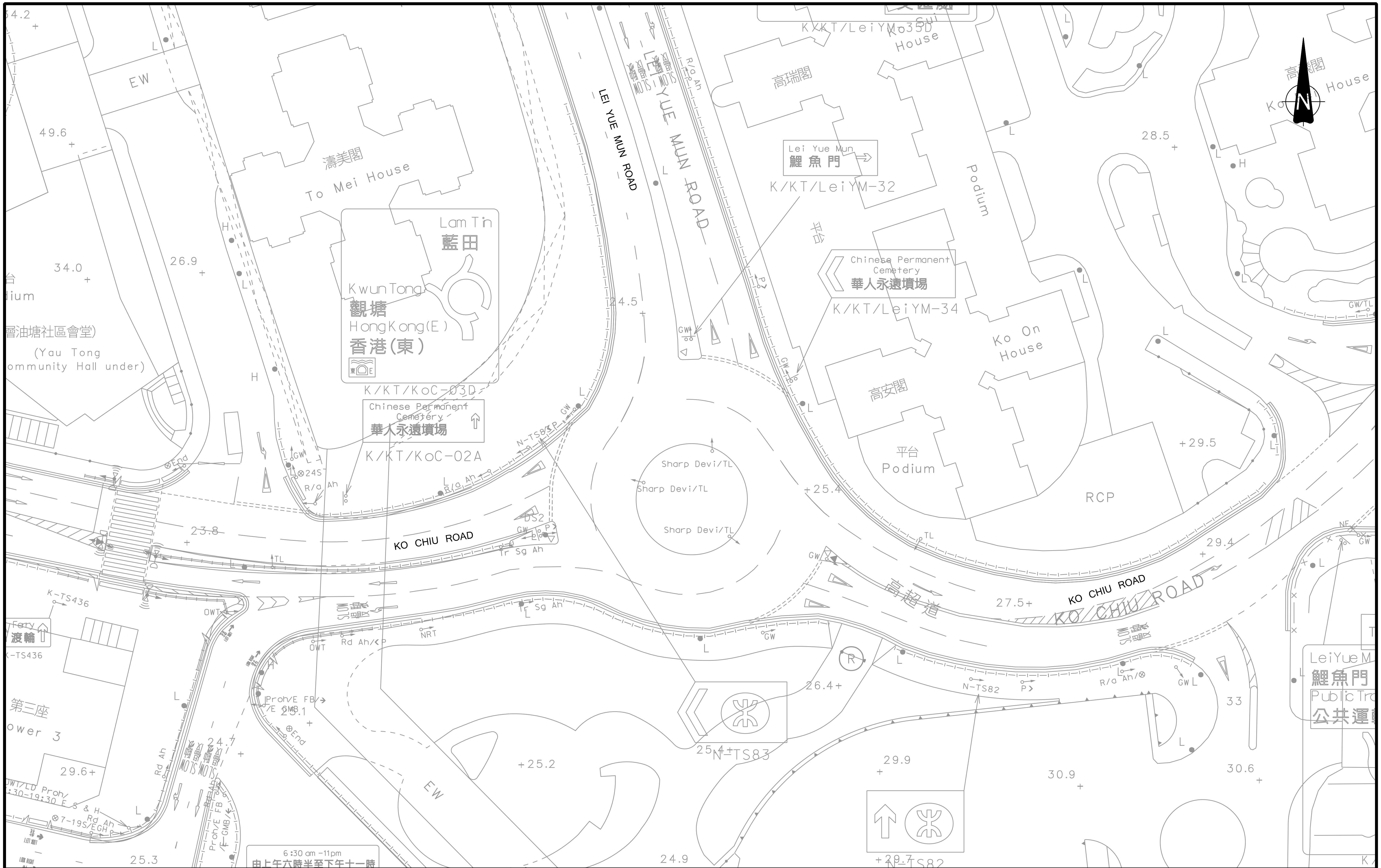
EXISTING JUNCTION LAYOUT OF CHA KWO LING ROAD / KO CHIU ROAD (D)

SYSTRA MVA

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	2.6	-

CHK50748310/TIA/F26.DGN/KCM/08OCT24

Original Size : A3



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF LEI YUE MUN ROAD / KO CHIU ROAD (E)

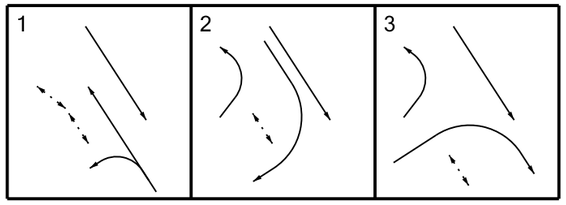
Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	2.7	-

SYSTRA MVA

CHK50748310/TIA/F27.DGN/KCM/08OCT24

Original Size : A3

METHOD OF CONTROL



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Project Title

PROPOSED FLAT, SHOP AND SERVICES,
AND EATING PLACE WITH MINOR RELAXATION OF
PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS
IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

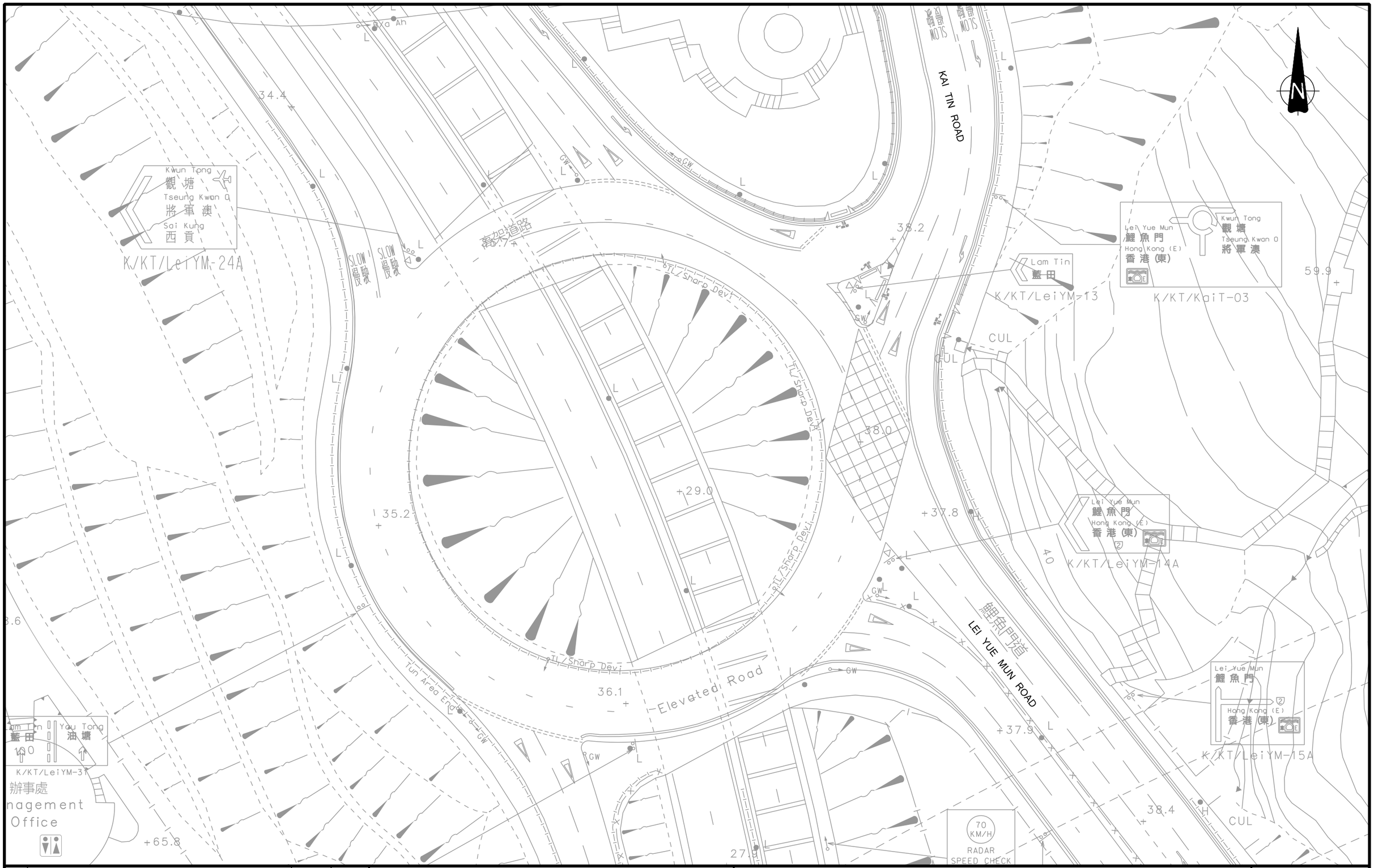
EXISTING JUNCTION LAYOUT OF LEI YUE MUN ROAD / YAU TONG ROAD (F)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**2.8**	-

SYSTRA MVA

CHK50748310/TIA/F28.DGN/KCM/08OCT24

Original Size : A3



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Project Title

PROPOSED FLAT, SHOP AND SERVICES,
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PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS
IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF KAI TIN ROAD / LEI YUE MUN ROAD (G)

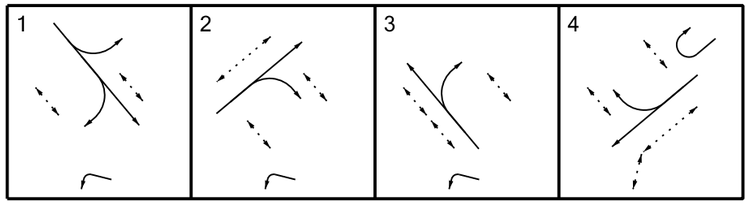
Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**2.9**	-

SYSTRA MVA

CHK50748310/TIA/F29.DGN/KCM/08OCT24

Original Size : A3

METHOD OF CONTROL



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Project Title

PROPOSED FLAT, SHOP AND SERVICES,
AND EATING PLACE WITH MINOR RELAXATION OF
PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS
IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF WAI YIP STREET / WAI FAT ROAD (H)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**2.10**	-

SYSTRA MVA

CHK50748310/TIA/F210.DGN/KCM/10APR24

Original Size : A3

2.3.2 In order to establish the current peak hour traffic condition in the area, traffic surveys in the form of manual classified count were conducted at the identified key local junctions during the morning and evening peak hours of a typical weekday.

2.3.3 The traffic surveys were arranged and conducted during morning peak hours between 07:30 – 09:30 and the evening peak hours between 17:00 – 19:00 on a typical weekday in early-September 2024. The survey results reveal that the weekday morning and evening peak hour occur during 08:15 – 09:15 and 17:00 – 18:00 respectively. The observed peak hour traffic flows are summarised in **Drawing 2.11**.

2.3.4 Junction capacity assessments have been conducted to evaluate the current operational performance of the identified key local junctions. The assessments would be validated with the site observations, such as queue length, by applying appropriate site factors and adjustments accordingly in order to reflect the actual site conditions. The assessment results are summarised in **Table 2.2**. The junction calculation sheets are attached in **Appendix B**.

Table 2.2 Current Junction Operational Performance

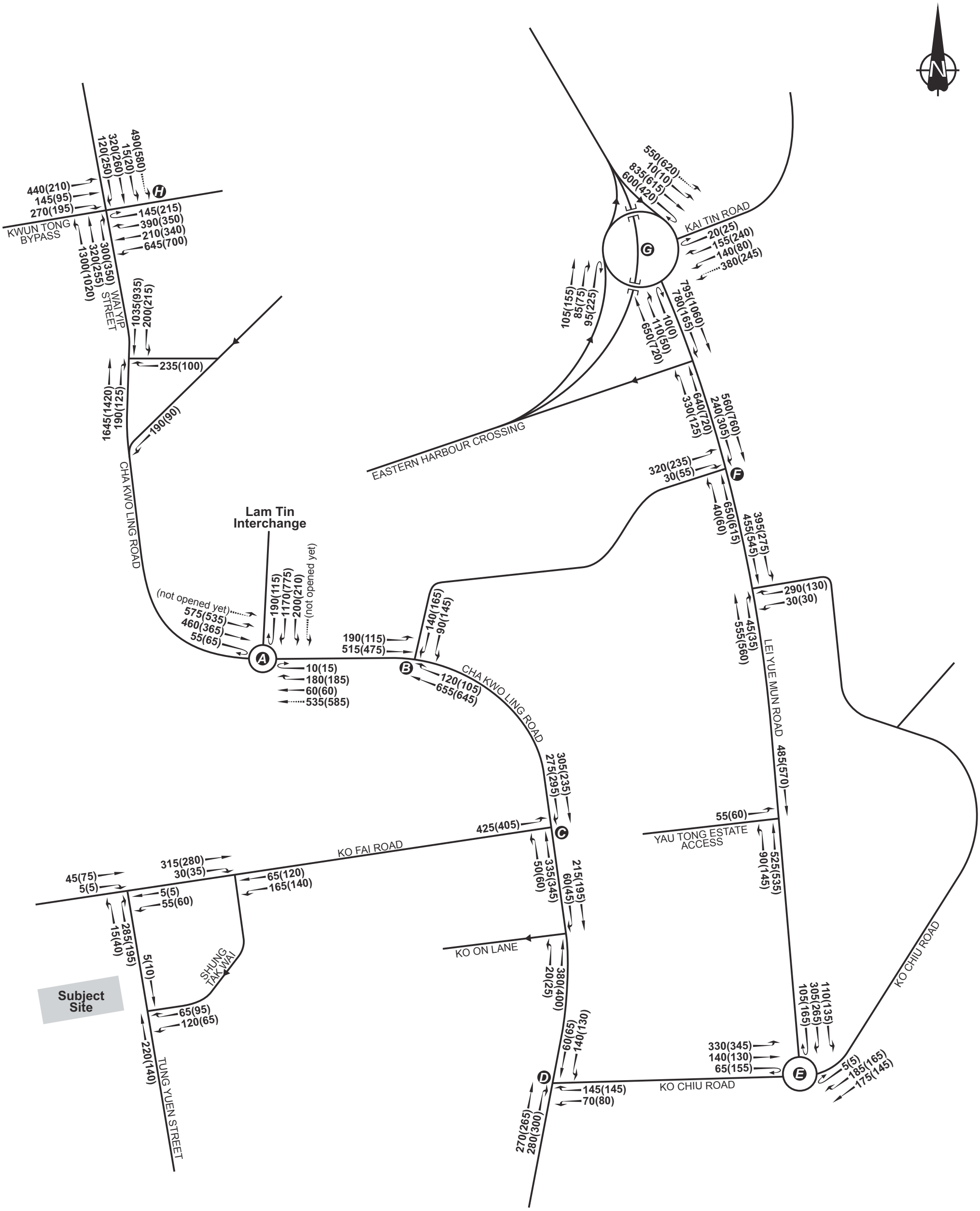
Ref. (1)	Junction	RC/RFC (2)	
		AM Peak	PM Peak
A	Cha Kwo Ling Road / Lam Tin Interchange	0.60	0.53
B	Cha Kwo Ling Road / Yau Tong Road	64%	62%
C	Cha Kwo Ling Road / Ko Fai Road	0.56	0.63
D	Cha Kwo Ling Road / Ko Chiu Road	63%	91%
E	Lei Yue Mun Road / Ko Chiu Road	0.34	0.30
F	Lei Yue Mun Road / Yau Tong Road	>100%	>100%
G	Kai Tin Road / Lei Yue Mun Road	0.87	0.91
H	Wai Yip Street / Wai Fat Road	<0%	3%

Remarks:

(1) Refer to **Drawing 2.2**.

(2) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.

2.3.5 The assessment results indicate that except for J/O Wai Yip Street / Wai Fat Road (H), the other identified key local junctions are operating within capacity during the weekday peak hour periods.



LEGEND :

145(145) AM(PM) PEAK TRAFFIC FLOW IN PCU/HR

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

YEAR 2024 OBSERVED TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	2.11	-

SYSTRA MVA

CHK50748310/TIA/F211.CDR/LLH/10OCT24

Original Size : A3

3. THE REDEVELOPMENT

3.1 Development Parameter

3.1.1 For the purpose of Section 16 planning application, No. 4 Tung Yuen Street is this TIA study area.

3.1.2 Currently, there is a 7-storey industrial building on the site, and the subject site has been rezoned as R(E). The current proposed development comprises a residential tower with clubhouse, shop and services, and eating place. The proposed main development parameters of the No. 4 Tung Yuen Street Redevelopment are summarised in **Table 3.1** and the master layout plan is shown in **Drawing 3.1**.

Table 3.1 Proposed Development Parameters

		Proposed MLP
Site Area (m^2)		Approx. 2,419 m^2
Total Plot Ratio		Not more than 6.9
Total GFA (m^2)		Not more than 16,691.1 m^2
Key Development Parameters		
Residential	no. of units	342
Commercial – retail	GFA (m^2)	2,177.1

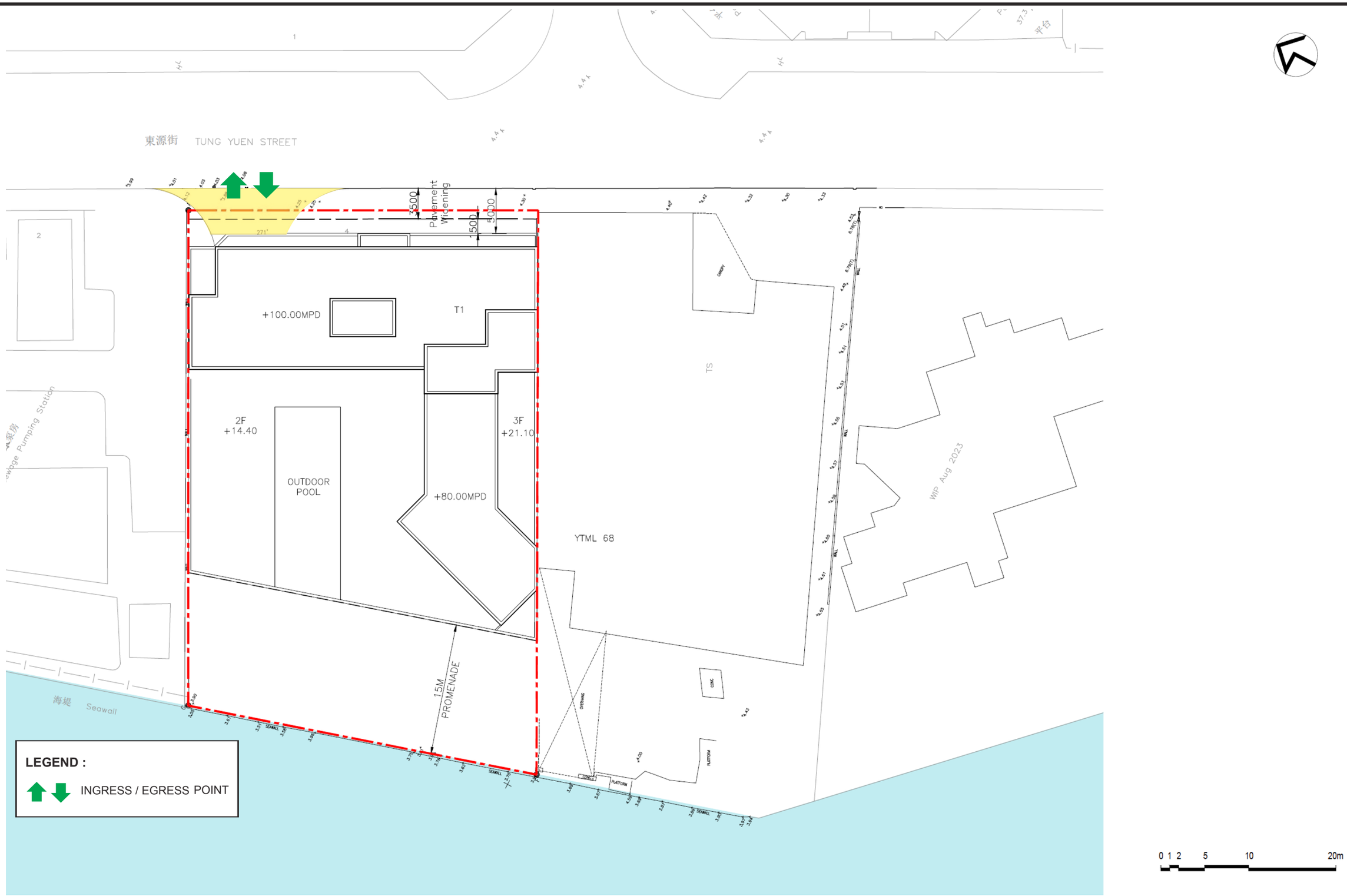
3.1.3 The No. 4 Tung Yuen Street Redevelopment would be completed in year 2032.

3.2 Internal Traffic Arrangement

Vehicular Access

3.2.1 Under the proposed MLP, there is one vehicular access of subject site and is located on Tung Yuen Street. The location of the vehicular accesses of No. 4 Tung Yuen Street Redevelopment under the proposed MLP are indicated in **Drawing 3.1**.

3.2.2 Vehicular Access to the Proposed Scheme is provided at Tung Yuen Street, which is a major road connecting to Ko Fai Road at its western end and to Shung Shun Street at its eastern end. The traffic going to/from Hong Kong Island would pass through Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / EHC or Ko Fai Road priority junction / Cha Kwo Ling Road / Lam Tin Interchange. For the traffic going to/from Tseung Kwan O, which would pass through Ko Fai Road priority junction / Cha Kwo Ling Road / Lam Tin Interchange or Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / Lei Yue Mun Road. And the traffic can also pass through the Wai Yip street to Kwun Tong Action Area to/from Kwun Tong. The traffic ingress and egress routings of the site are illustrated in **Drawing Nos. 3.2 to 3.3**.



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

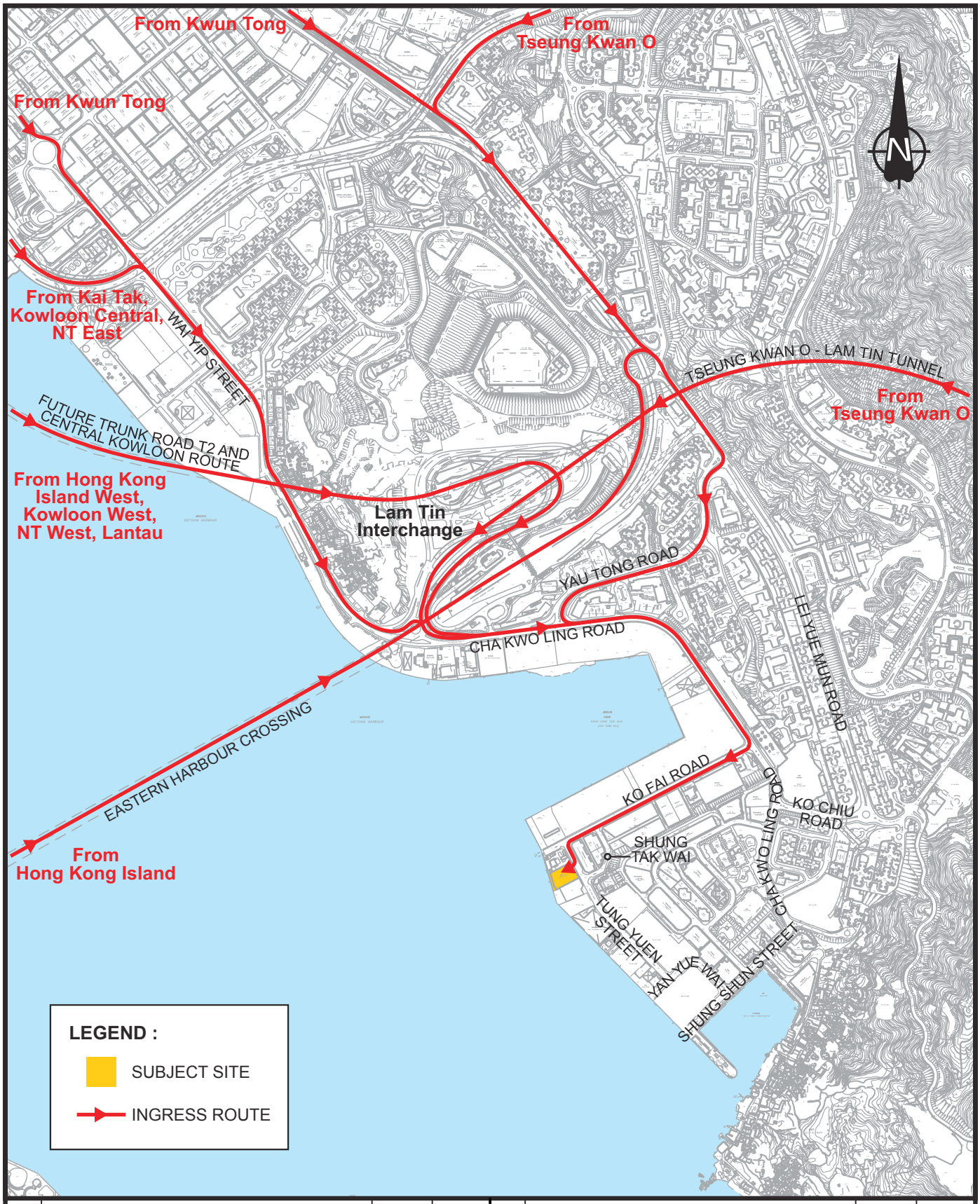
MASTER LAYOUT PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	3.1	-

SYSTRA MVA

CHK50748310/TIA/F31.CDR/LLH/10OCT24

Original Size : A3



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

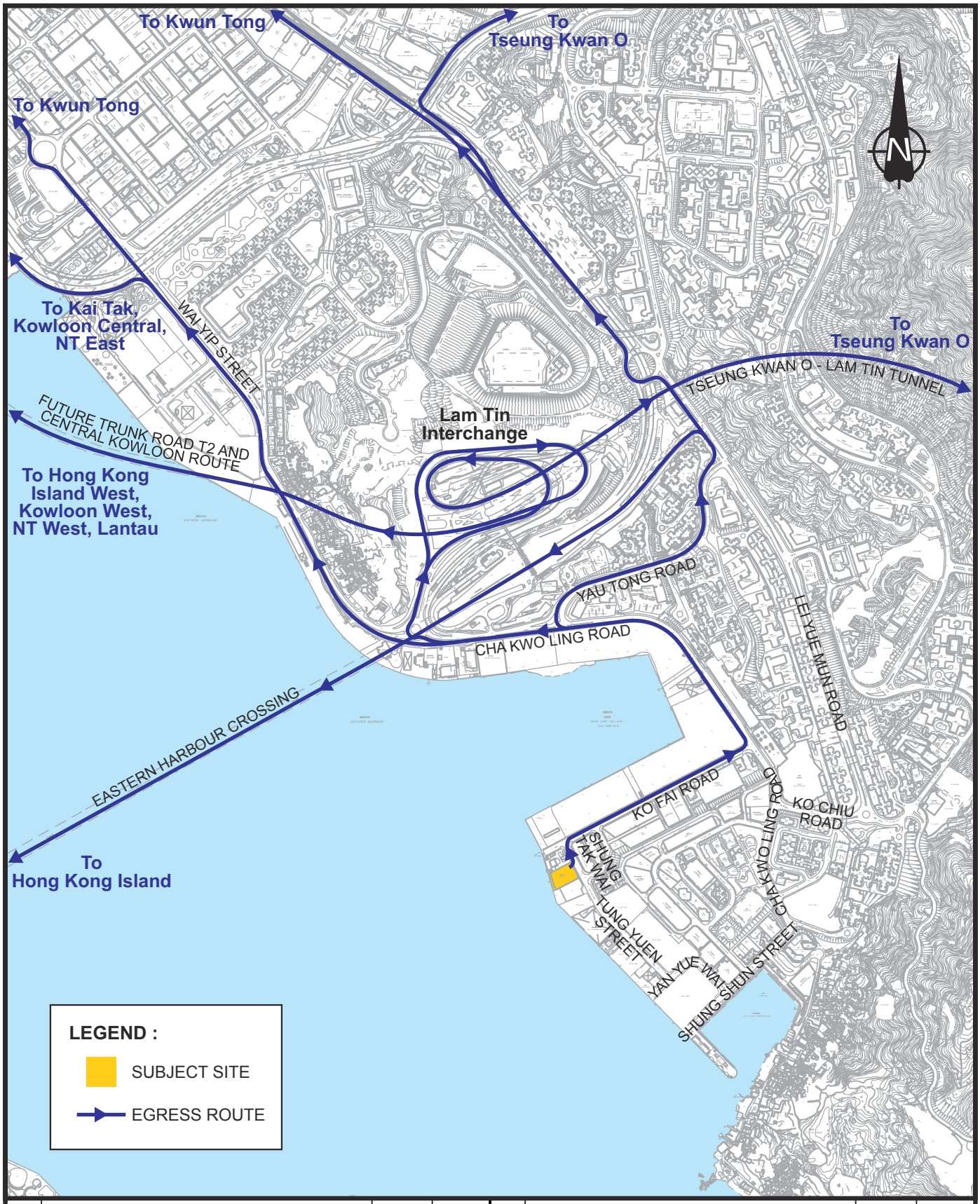
DEVELOPMENT INGRESS ROUTE

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	3.2	-

SYSTRA MVA

CHK50748310/TIA/F32.CDR/LLH/10OCT24

Original Size : A4



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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

DEVELOPMENT EGRESS ROUTE

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CCT	JPP	NTS	OCT 2024	3.3	-

SYSTRA MVA

CHK50748310/TIA/F33.CDR/LLH/10OCT24

Original Size : A4

Internal Driveway

3.2.3 The vehicular accesses and the internal transport facilities are linked up by internal driveway. Car parking spaces are located at the two basement floors and the loading/unloading spaces are located at ground floor.

3.3 Internal Transport Facility

3.3.1 Provisions of internal transport facilities, including parking spaces, loading/unloading bays and etc., for No. 4 Tung Yuen Street Redevelopment are proposed in accordance with the relevant requirements stipulated in the latest Hong Kong Planning Standard Guideline (HKPSG).

3.3.2 The proposed provisions have taken into consideration the factors of building function, residential flat mix and locality of No. 4 Tung Yuen Street Redevelopment. **Table 3.2** summarises the requirement and proposed provisions of internal transport facility of subject site.

Table 3.2 Proposed Internal Transport Facility

<table>
<tr><th>Component</th><th colspan="4">HKPSG Requirements (1)</th><th>Parameters</th><th>Provision Range</th><th>Proposed Provision</th></tr>
<tr><td>Residential – 342 units</td><td colspan="4"></td><td></td><td></td><td></td></tr>
<tr><td>Private Car Parking Space</td><td>GPS (2)</td><td>R1 (3)</td><td>R2 (4)</td><td>R3 (5)</td><td></td><td></td><td></td></tr>
<tr><td>Flat Size (FS) ≤ 40m²</td><td rowspan="6">1 space per 4-7 units</td><td>0.5</td><td rowspan="6">1.0</td><td rowspan="6">R3=1,when 2.00< PR ≤ 5.00; R3=0.90, when 5.00< PR ≤ 8.00</td><td>139 units</td><td>9-16</td><td>9</td></tr>
<tr><td>40m² < FS ≤ 70m²</td><td>1.2</td><td>158 units</td><td>25-43</td><td>25</td></tr>
<tr><td>70m² < FS ≤ 100m²</td><td>2.4</td><td>43 units</td><td>14-24</td><td>14</td></tr>
<tr><td>100m² < FS ≤ 130m²</td><td>4.1</td><td>0 units</td><td>0</td><td>0</td></tr>
<tr><td>130m² < FS ≤ 160m²</td><td>5.5</td><td>0 units</td><td>0</td><td>0</td></tr>
<tr><td>FS >160m²</td><td>7.0</td><td>2 units</td><td>2-3</td><td>2</td></tr>
<tr><td></td><td colspan="4">Sub-total</td><td>342 units</td><td>50-86</td><td>50</td></tr>
<tr><td>Visitor Parking Space</td><td colspan="4">5 spaces per block</td><td>1 block</td><td>5</td><td>5</td></tr>
<tr><td colspan="5">Sub-total</td><td>55-91</td><td>55</td></tr>
<tr><td>Motorcycle Parking Space</td><td colspan="4">1 space per 100-150 units</td><td>342 units</td><td>3-4</td><td>3</td></tr>
<tr><td>Loading/Unloading Bay</td><td colspan="4">1 bay per block</td><td>1 block</td><td>1</td><td>1 (HGV)</td></tr>
<tr><td>Commercial – retail – 2,177.1m²</td><td colspan="4"></td><td></td><td></td><td></td></tr>
<tr><td>Private Car Parking Space</td><td colspan="4">1 space per 150-300m² GFA</td><td>2,177.1m²</td><td>8-15</td><td>8</td></tr>
<tr><td>Motorcycle Parking Space</td><td colspan="4">5%-10% of total car parking spaces</td><td>8-15 spaces</td><td>1-2</td><td>1</td></tr>
</table>

<table>
<tr><th>Component</th><th>HKPSG Requirements (1)</th><th>Parameters</th><th>Provision Range</th><th>Proposed Provision</th></tr>
<tr><td>Loading/Unloading Bay</td><td>1 bay per 800-1,200m^2 GFA</td><td>2,177.1m^2</td><td>2-3</td><td>2 (1 for HGV and 1 for LGV)</td></tr>
<tr><td colspan="4">Total :</td><td></td></tr>
<tr><td colspan="4">Car Parking Space</td><td>63</td></tr>
<tr><td>Reserved Space for Disabilities</td><td>TPDM Volume 6, Chapter 8.5:<table><tr><th>Total No. of Car Parking Space in Lot</th><th>Required Space for Disabilities</th></tr><tr><td>1-50</td><td>1</td></tr><tr><td>51-150</td><td>2</td></tr><tr><td>151-250</td><td>3</td></tr><tr><td>251-350</td><td>4</td></tr><tr><td>351-450</td><td>5</td></tr><tr><td>Above 450</td><td>6</td></tr></table></td><td>55-91 spaces</td><td>2</td><td>2 (Included in the above 63 spaces)</td></tr>
<tr><td colspan="4">Motorcycle Parking Space</td><td>4</td></tr>
<tr><td colspan="4">Loading/Unloading Bay</td><td>3 (2 for HGVs and 1 for LGV)</td></tr>
</table>

Remarks:
(1) Provision requirements are based on the latest HKPSG Chapter 8, Section 7, unless specified otherwise.
(2) GPS refers as Global Parking Standard.
(3) R1 is the Demand Adjustment Ratio, subject to the corresponding unit size.
(4) R2 is the Accessibility Adjustment Ratio, subject to the location of application site. Ratio of 1 is applied in this case, as the application site is not within the 500m-radius catchment of the nearest rail station.
(5) R3 is the Domestic Plot Ratio.

3.3.3 **Table 3.2** suggests that the No. 4 Tung Yuen Street Redevelopment would provide 63 car parking spaces, in which 2 parking spaces would be reserved for disabilities. Besides, 4 motorcycle parking spaces and 3 loading/unloading bays (2 loading/unloading bays for HGVs and 1 loading/unloading bay for LGV) would be provided as ancillary transport facilities.

4. TRAFFIC FORECASTS

4.1 Forecasting Assumptions and Methodology

Design Year

4.1.1 The tentative full occupation year of No. 4 Tung Yuen Street Redevelopment is year 2032. The design year of 2035, three years after full occupation, is therefore adopted in this study for forecasting and assessment purposes.

Future Road Network

4.1.2 Review of the Hong Kong Government planning documents reveals the one planned strategic highway structure in East Kowloon – Trunk Road T2 in Kai Tak, which would affect the traffic circulation of Yau Tong area.

4.1.3 Trunk Road T2 is a dual two-lane trunk road of approximately 3 km long connecting Central Kowloon Route (CKR) leading to Western Harbour Crossing (WHC) on the West, and TKO-LTT leading to the Cross Bay Link on the East. Trunk Road T2 runs along South East Kowloon connecting CKR at its west and TKO-LTT at its east.

4.1.4 The major function of Trunk Road T2 is to relieve the internal traffic loading of East Kowloon. Trunk Road T2, together with CKR and TKO-LTT will form the Route 6 alignment in the strategic road network, providing an east-west express link across Kowloon to relief the existing heavily utilised road network in the Central and East Kowloon areas. Together with CKR, the tentative commissioning year of Trunk Road T2 is 2026.

4.1.5 The latest future planned Trunk Road T2 alignment is shown in **Drawing 4.1**.

Traffic Growth Rate

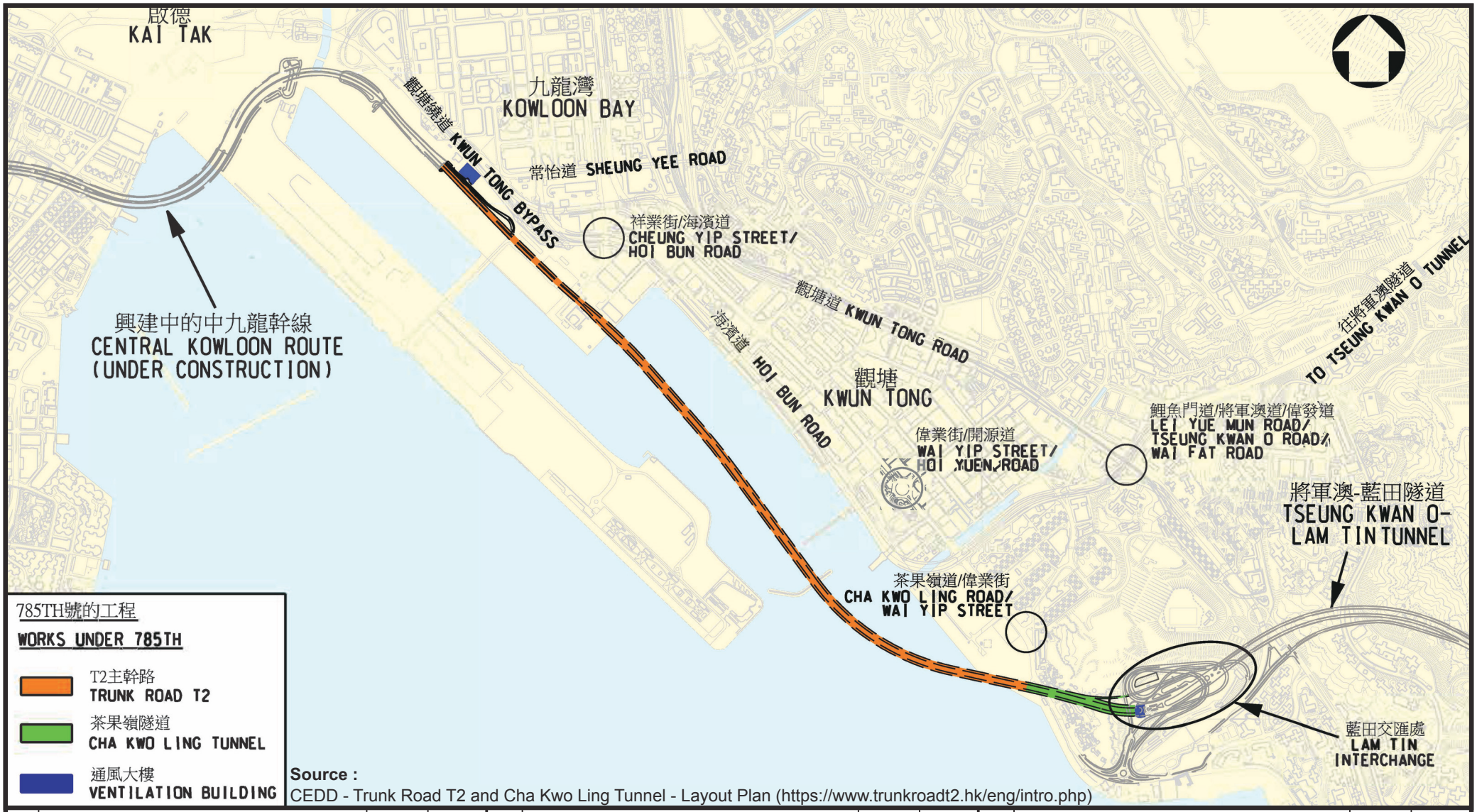
4.1.6 To estimate the year 2035 reference traffic flows in the local road network, an appropriate growth factor was identified for the area. The derivation of the growth rate is determined with reference to population data, historical growth trends and area planning data, which are summarised below.

Population Data (From The Census and Statistics Department (C&SD)

4.1.7 According to the Census and Statistics Department (C&SD), the Hong Kong resident population will increase to 8.19 million in 2046, and the average growth rate from years 2024 to 2046 is +0.38%. The Hong Kong Resident Population between Year 2024 and Year 2046 are summarised in **Table 4.1**.

Table 4.1 Hong Kong Resident Population between Year 2024 and Year 2046

Year	Hong Kong Resident Population
2024	7,526,800
2030	7,777,100
2032	7,862,100
2035	7,987,900
2040	8,137,300



Source :
CEDD - Trunk Road T2 and Cha Kwo Ling Tunnel - Layout Plan (https://www.trunkroadt2.hk/eng/intro.php)

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Rev.	Description	Checked	Date
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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

FUTURE TRUNK ROAD T2

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	4.1	-

SYSTRA MVA

CHK50748310/TIA/F41.CDR/LLH/10OCT24

Original Size : A4

Year	Hong Kong Resident Population
2045	8,190,700
2046	8,190,400
Annual Growth Rate (p.a.) – 2046/2024	**+0.38%**

Historical Growth Trends

4.1.8 Reference has also been made to the historic records extracted in the latest Annual Traffic Census (ATC) published by Transport Department, the Average Annual Daily Traffic (AADT) of the nearby count station between Year 2018 and Year 2022 have been taken into account to establish the historical growth trend, the findings are summarised in **Table 4.2** and location of total 6 count stations are indicated in **Drawing 4.2**.

Table 4.2 AADT of nearby ATC Traffic Counts between Years 2018 to 2022

Road	Stn No.	Annual Average Daily Traffic (AADT)					Growth Rate (p.a.)
		2018	2019	2020	2021	2022	2022/ 2018
Lei Yue Mun Rd (Ko Chiu Rd - Kai Tin Rd)	4651	1,170	1,270	1,260	1,500	1,500	+7.05%
Shung Shun Street & Yan Wing Street (Ko Chiu Road - Sam Ka Tsuen Ferry Pier)	3883	11,320*	11,400*	10,670*	11,900	11,000	-0.71%
Ko Chiu Road (Cha Kwo Ling Road - Lei Yue Mun Road)	4084	12,080	12,170*	11,390*	11,880*	13,120	+2.15%
Ko Chiu Road (Lei Yue Mun Road - Lei Yue Mun Road)	4621	8,050	8,390	8,690	9,390	8,590	+1.68%
Lei Yue Mun Road (Ko Chiu Road - Ko Chiu Road)	4031	20,710	20,860*	19,530*	20,360*	20,290	-0.51%
Yau Tong Road (Lei Yue Mun Road - Cha Kwo Ling Road)	4653	6,560	6,830	7,010	8,170	7,440	+3.35%
Total		**59,890**	**60,920**	**58,550**	**63,200**	**61,940**	**+0.86%**

Note: (*) Estimated by Growth Factor.

4.1.9 As suggested in **Table 4.2** above, the average annual growth rate of the AADT of the nearby count stations from Year 2018 to 2022 is +0.86% per annum.

Planning Data (From Working Group on Population Distribution Projections (WGPD)

4.1.10 Based on the projections of population distribution from Working Group on Population Distribution Projections (WGPD), the population from 2019 to 2029 for Kwun Tong District has been projected. The average annual growth rate from years 2024 to 2029 is illustrated in **Table 4.3**.

Rev.	Description	Checked	Date	Rev.	Description	Checked	Date
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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

LOCATION OF ATC COUNTING STATIONS IN THE VICINITY

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	4.2	-

SYSTRA MVA

CHK50748310/TIA/F42.CDR/LLH/10OCT24

Original Size : A4

Table 4.3 Projected Population of Kwun Tong District, 2019-2029

Year	Population
2019	693,900
2020	692,400
2021	701,700
2022	703,800
2023	703,800
2024	706,800
2025	712,200
2026	723,800
2027	719,900
2028	716,600
2029	721,200
Growth Rate (p.a.) – 2029/2023	**+0.41%**

4.1.11 In order to ensure the robust forecast scenario, the annual growth rate of +0.86% per annum derived from AADT of the nearby count stations from Year 2018 to 2022 is adopted, to produce the year 2035 traffic forecasts from the 2024 observed traffic flows.

Nearby Planned Developments

4.1.12 Large portion of Yau Tong industrial area is currently zoned into "CDA", "R(E)" and "C" uses in the latest Outline Zoning Plan (OZP) and a number of residential developments are being committed in the recent years. The substantial change of land use would have significant impact to the current local traffic pattern in the future year.

4.1.13 The planned and committed developments in Yau Tong area, as listed in **Table 4.4**, which would have traffic contribution to the road network in the vicinity, have been considered in the traffic forecast for the year 2035. The peak hour traffic trips of each developments are also summarised in **Table 4.4**.

Table 4.4 Estimated Trip Generations of Nearby Planned Developments

Ref.	Development	Type	Peak Hour Traffic Trip (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
1.	5 and 8 Tung Yuen Street, and adjoining Government Land ("CDA(1) Zone")	- Private Residential: 903 units (1)	37	12	14	24
2.	Yau Tong Inland Lot s 4B and 9, Yau Tong Marine Lot 57 and adjoining Government Land, Tung Yuen Street ("CDA(3) Zone")	- Private Residential: 1,393 units (1) - Retail: 172m^2 GFA (2)	57	19	21	38
3.	Yau Tong Inland Lot 44 and adjoining Government Land, Junction of Shung Shun Street	- Private Residential: 657 units (1)	79	54	48	61

Ref.	Development	Type	Peak Hour Traffic Trip (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
	and Yan Yue Wai ("CDA(5) Zone")	- Retail: 7,900m^2 GFA [2]				
4.	Lei Yue Mun Estate Phase 4	- Public Housing: 2000 units [3] - GIC [3]	96	75	57	70
5.	New Kowloon Inland Lot No. 6593 at Ko Chiu Road	- Private: 500 units [4] - Retail: 5,520m^2 GFA [4]	47	34	31	37
6.	New Kowloon Inland Lot No. 6602 at Ko Chiu Road (Yau Tong Ventilation Building Redevelopment)	- Private Residential: 500 units [4]	35	21	14	18
7.	Public Housing Development at Pik Wan Road	- Public Housing: 3,208 units [4] - Retail: 5,300m^2 GFA [4] - GIC [4]	226	163	126	161
8.	28 Sze Shan Street	- Private Residential: 92 units [1] - Retail: 2,061m^2 GFA [1]	24	15	15	20
9.	Ex-Cha Kwo Ling Kaolin Mine Site	- Public Housing: 2,250 units [5] - Private Housing: 836 units [2] - Primary School: 30 class [6]	146	99	84	105
10.	Various Lots and Adjoining Government Land at Yau Tong Bay, Yau Tong, Kowloon	- Private Residential: 7,078 units [1] - Retail: 8,290m^2 GFA [1] - Hotel: 733 [1] - Kindergarten and GIC	445	261	246	353
11.	Yau Tong Industrial Building Block 4	- Private Residential: - 676 units [4] - Day Care Centre for the Elderly [4]	33	14	15	23
12.	Olympic Godown	- Private Residential 483 units [1]	20	6	7	13
13.	Gloria Weaving & Knitting Factory	- Transitional Housing 166 units [4]	7	5	3	4
14.	Public Housing Development at Cha Kwo Ling Village	- Public Housing: 4,500 units[1] - Retail: 29,097.05 m^2 GFA[4]	97	90	140	166
15.	Proposed Commercial Development at Yau Tong	- Retail: 2,560m^2 GFA[1]	86	123	82	65

Ref.	Development	Type	Peak Hour Traffic Trip (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
	Marine Lots 73 and 74 in Yau Tong Bay	- Office: 48,040 m^2 GFA(1)				
16.	Kwun Tong Action Area	- Retail: 17,000m^2 GFA(4) - Office: 62,600 m^2 GFA(4)	145	194	150	133
17.	18 Tung Yuen Street	- Private Residential: 224 units (1)	35	41	13	19
18.	Canaryside	- Private Residential - 210 units (1)	15	8	6	7

Remarks:

(1) As extracted from the latest approved planning application.
(2) As extracted from the Sale Brochure.
(3) As extracted from the Planning Brief of Lei Yue Mun Estate Phase 4 published by Hong Kong Housing Authority
(4) As extracted from newspaper articles / online information
(5) As extracted from Public Housing Development at Ex-Cha Kwo Ling Kaolin Mine Site
(6) As extracted from the Land Supply Initiatives, Paper No. 03/2017 from Task Force on Land Supply, Development Bureau and Planning Review on Development of Ex-Cha Kwo Ling Kaolin Mine Site Final Report (Quotation Ref.: PLNQ21/2011)

4.2 Forecasting Scenarios

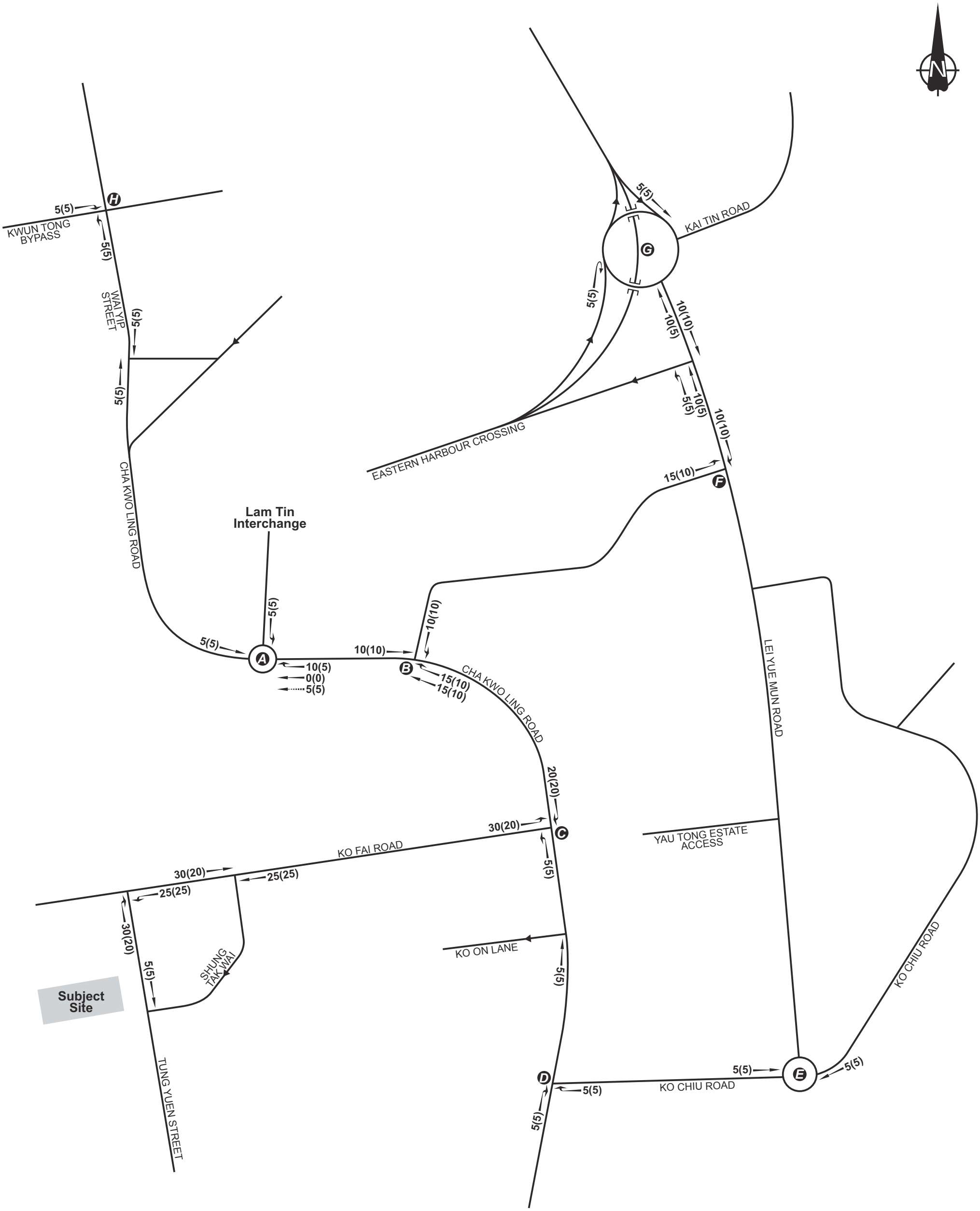
4.2.1 The derived peak hour traffic trips of the subject site would be assigned onto the local road network in accordance with the observed traffic circulation pattern and the future planned road network described in **Section 4.1**. The distributions of the peak hour development traffic trips are shown in **Drawing 4.3**.

The Redevelopment Traffic Trips

4.2.2 The development peak hour traffic trips of the No. 4 Tung Yuen Street are estimated in accordance with the appropriate trip rates extracted from the latest T.P.D.M. Volume 1 Chapter 3 published by Transport Department with respect to the development parameters summarised in **Table 3.1**. The adopted trip rates and the estimated development traffic trips are summarised in **Table 4.5**.

Table 4.5 Estimated No. 4 Tung Yuen Street Redevelopment Traffic Trips

	Peak Hour Traffic Trip (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Subject Site				
Residential				
Average unit size (m^2)	43 m^2			
Trip rates (pcu/hr/flat) (1)	0.0718	0.0425	0.0286	0.037
No. of units	342			
Trips (pcu/hr)	**25**	**15**	**10**	**13**



LEGEND :

25(20) AM(PM) PEAK TRAFFIC FLOW IN PCU/HR

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

DEVELOPMENT TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	4.3	-

SYSTRA MVA

CHK50748310/TIA/F43.CDR/LLH/10OCT24

Original Size : A3

	Peak Hour Traffic Trip (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Commercial – retail				
Trip rates (pcu/100m^2/hr) (2)	0.2296	0.2434	0.3100	0.3563
GFA (m^2)	2,177.1m^2			
Trips (pcu/hr)	5	6	7	8
Total	**30**	**21**	**17**	**21**

Remarks:

(1) Mean values of residential trip rates for the unit size of 60m^2 are adopted as the average unit size of the proposed scheme is around 47.2m^2.

(2) Mean values of trip rates are adopted.

(3) Nominal traffic trips are adopted.

4.2.3 A two-way traffic trip generated by No. 4 Tung Yuen Street Redevelopment in 2035 will be 51 pcu/hr and 38 pcu/hr in the AM and PM peak respectively.

4.2.4 Currently, the industrial building on the site generate a two-way vehicles traffic trip of 8 pcu/hr and 9 pcu/hr during the AM and PM peak respectively. The current (2024) and future (2035) traffic trip of this site are summarised in **Table 4.6**.

Table 4.6 Trip Generations of Current Land-use and Proposed Future Land-use

	Peak Hour Traffic Trip (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Observed 2024	6	2	5	4
Forecasts 2035	30	21	17	21
Net Difference (Forecasts - Observed)	+24	+19	+12	+17

4.2.5 The result in **Table 4.6** reveals that the net difference is rather small in both peak hours. The proposed development will have little impact on the traffic of the vicinity in the peak hours.

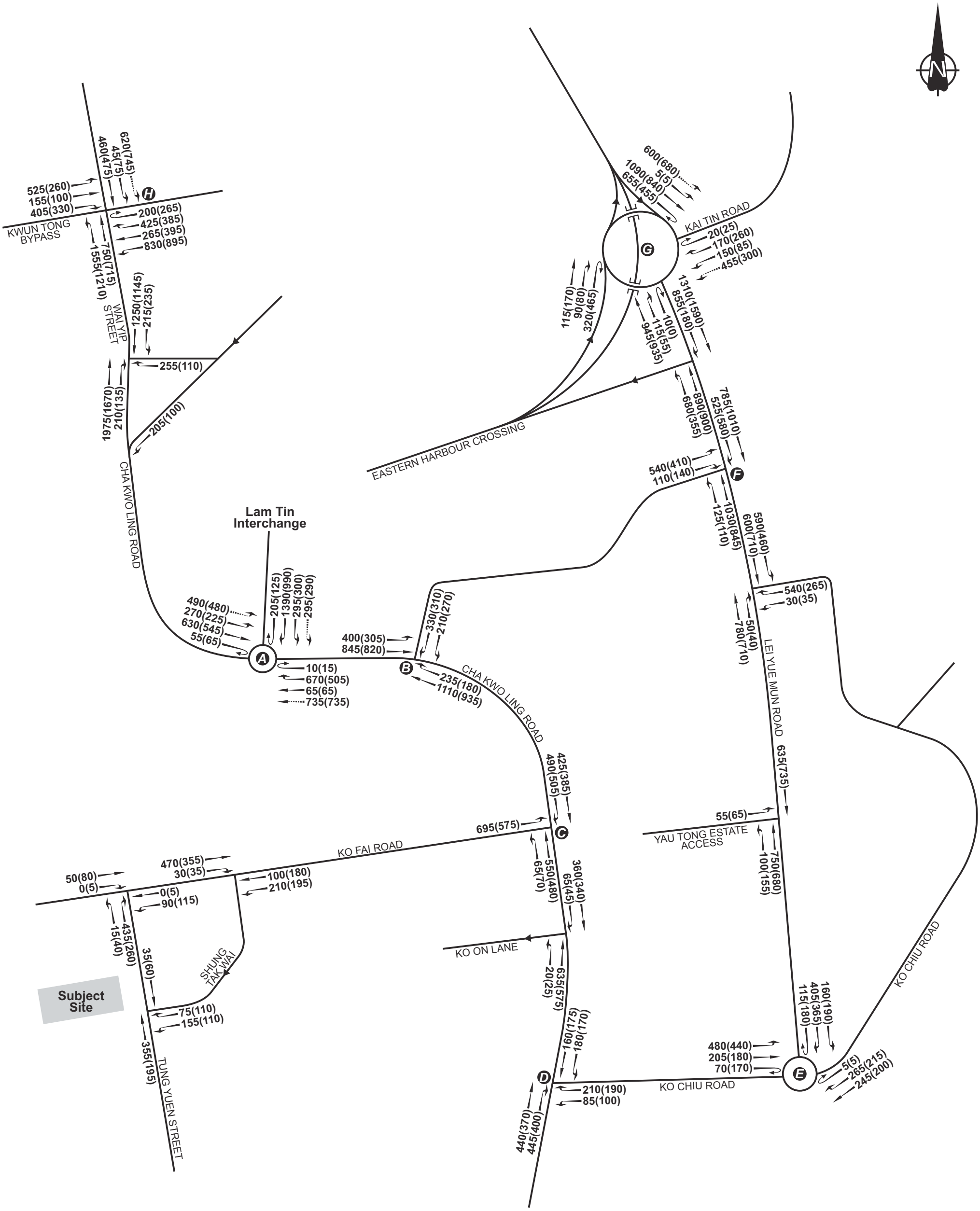
4.2.6 The annual traffic growth rate and the nearby planned developments as discussed in **Section 4.1** would be considered to produce the year 2035 background traffic flows during the typical weekday morning and evening peak hours of the local road network.

4.2.7 The traffic trips of No. 4 Tung Yuen Street Redevelopment would be superimposed onto the background traffic flows to produce the anticipated year 2035 peak hour traffic flows for reference and design scenarios.

4.2.8 Based on an annual growth rate of +0.86% p.a. from 2023 to 2035, and the traffic generation of committed and potential developments is shown in **Table 4.4**. The reference traffic flows and design traffic flows in year 2035 as shown in **Drawing 4.4** and **Drawing 4.5** respectively.

2035 Reference Flows = 2024 Observed Traffic Flows + 2023-2035 background traffic growth + Committed Development Traffic

2035 Design Flows = 2024 Observed Traffic Flows + 2023-2035 background traffic growth - 2024 Application Site Traffic Flows + Proposed Development Traffic Flows



LEGEND :

210(190) AM(PM) PEAK TRAFFIC FLOW IN PCU/HR

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

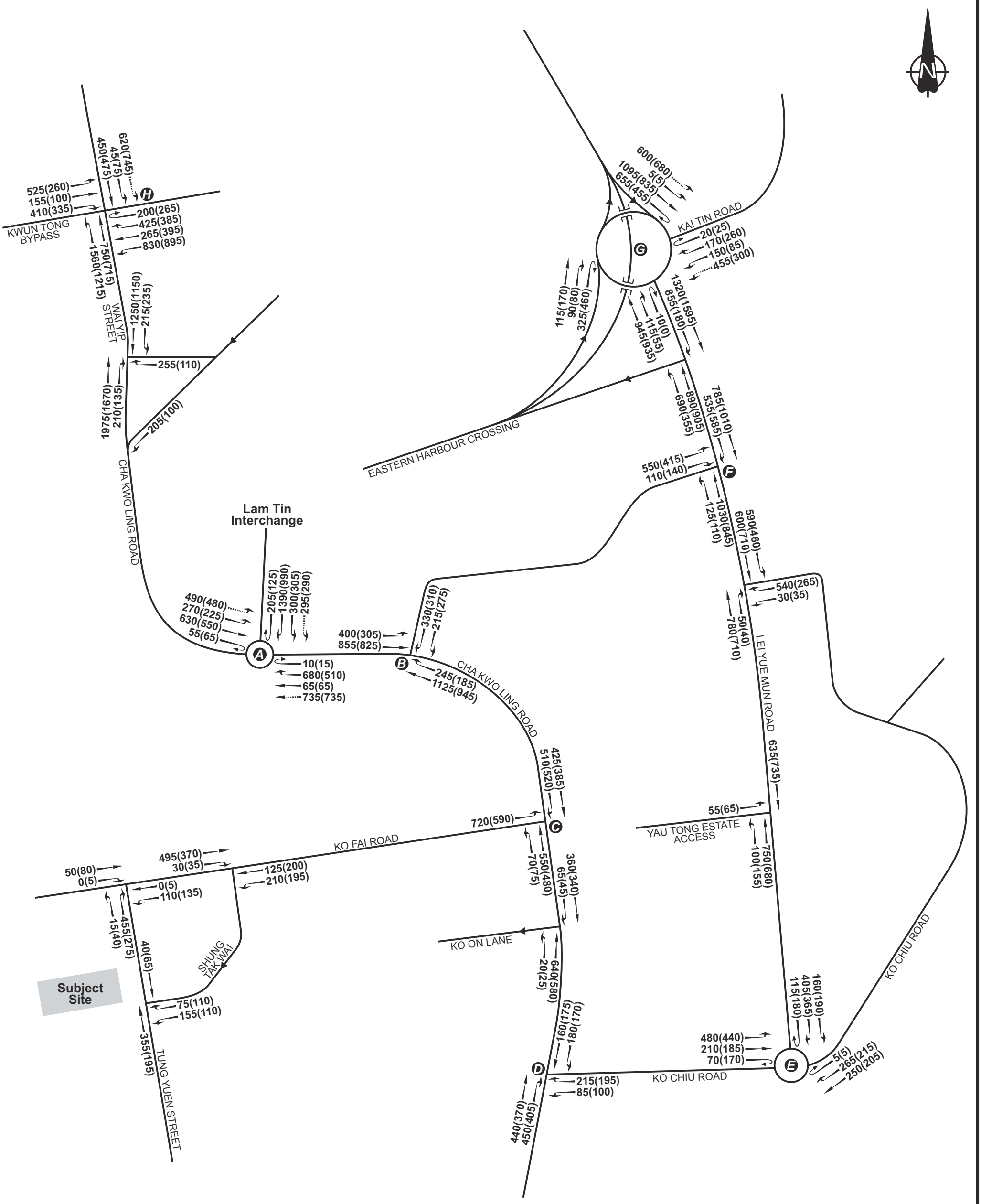
YEAR 2035 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	4.4	-

SYSTRA MVA

CHK50748310/TIA/F44.CDR/LLH/10OCT24

Original Size : A3



LEGEND :

215(195) AM(PM) PEAK TRAFFIC FLOW IN PCU/HR

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

YEAR 2035 DESIGN TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	OCT 2024	4.5	-

SYSTRA MVA

CHK50748310/TIA/F45.CDR/LLH/10OCT24

Original Size : A3

5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Operational Performance

5.1.1 The identified 8 key local junctions would be assessed in accordance with the anticipated year 2035 traffic flows for both reference and design scenarios in order to investigate the traffic impact of the proposed scheme with respect to the scenario without the subject development.

5.1.2 The junction assessments are based on the existing layouts and arrangements of the respective junctions, except J/O Cha Kwo Ling Road / Yau Tong Road (B), J/O Cha Kwo Ling Road / Ko Fai Road (C), J/O Lei Yue Mun Road / Yau Tong Road (F), and J/O Wai Yip Street / Wai Fat Road (H).

5.1.3 For the J/O Cha Kwo Ling Road / Yau Tong Road (B), an additional traffic lane from Yau Tong Road to Cha Kwo Ling Road has been suggested under the previously approved Section 16 application of the Yau Tong Bay Comprehensive Development, providing a left and right turn traffic lane for vehicles to Cha Kwo Ling Road. The indicative suggested junction layout is shown in **Drawing 5.1**.

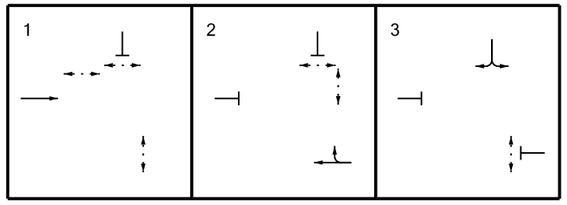
5.1.4 The J/O Cha Kwo Ling Road / Ko Fai Road (C) has been planned to be converted into a signalised junction under the previously approved Section 16 application of the Yau Tong Bay Comprehensive Development, the indicative planned junction layout is shown in **Drawing 5.2**.

5.1.5 An additional traffic lane from Lei Yue Mun Road Northbound to Slip Road to EHC at J/O Lei Yue Mun Road / Yau Tong Road (F) has been planned, as shown in **Drawing 5.3**.

5.1.6 According to the Kwun Tong District Council Discussion Papers No. 9/2021 - Infrastructure works for developments at Kwun Tong Action Area, the right-turn traffic lanes on Wai Yip Street Northbound and Southbound at J/O Wai Yip Street / Wai Fat Road (H) will be cancelled. The planned junction layout is shown in **Drawing 5.4**.

5.1.7 The assessment results are summarised in **Table 5.1**. The junction calculation sheets are attached in **Appendix B**.

PROPOSED METHOD OF CONTROL



LEGEND:

SUGGESTED JUNCTION LAYOUT

Kwo Ling Ventilation Building

YAU TONG ROAD

CHA KWO LING ROAD

CHA KWO LING ROAD

茶果嶺道

中華基督教會基法小學(油塘)

C.C.C. Kei Faat Primary School (Yau Tong)

籃球場 Basketball Court

籃球場 Basketball Court

Tunnel Bus Stop 隧道巴士站 K-TS441

Tunnel Bus Stop 隧道巴士站 K-TS439

Hong Kong (E) 香港(東)

K/KT/ChaKL-09

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Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

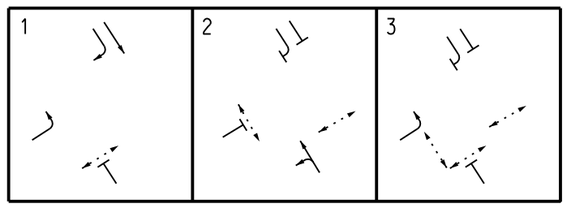
SUGGESTED JUNCTION LAYOUT OF CHA KWO LING ROAD / YAU TONG ROAD (B)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**5.1**	-

CHK50748310/TIA/F51.DGN/KCM/08OCT24

Original Size : A3

PROPOSED METHOD OF CONTROL



KO FAI ROAD

CHA KWO LING ROAD

Hong Kong (E)
香港(東)
K/KT/KoF-01

Yau Tong
Public Transport Interchange
油塘
公共運輸交滙處
K/KT/ChaKL-11

油塘消防局
Yau Tong Fire Station

Podium
平台

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

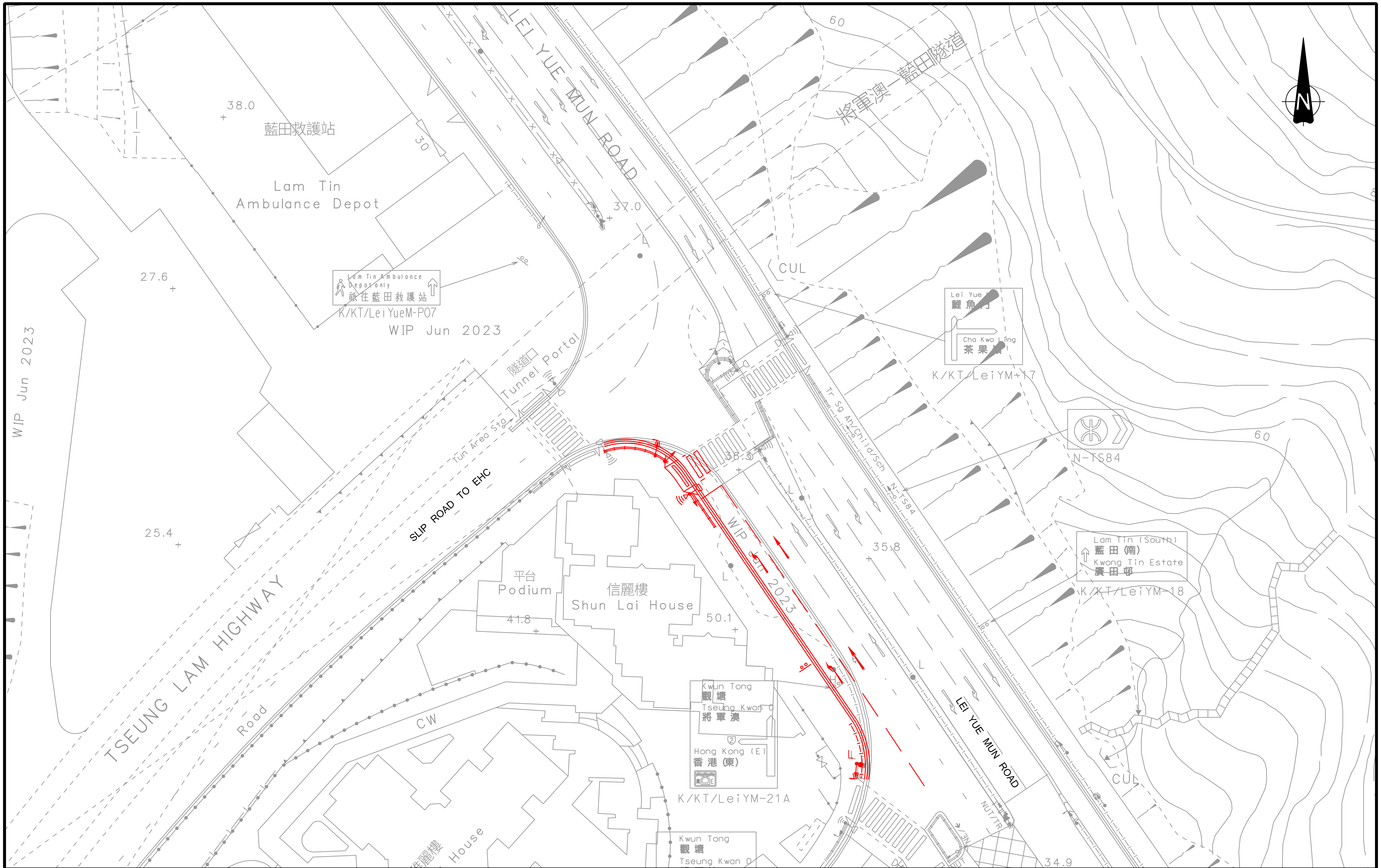
PLANNED JUNCTION LAYOUT OF CHA KWO LING ROAD / KO FAI ROAD (C)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**5.2**	-

SYSTRA MVA

CHK50748310/TIA/F52.DGN/KCM/08OCT24

Original Size : A3



Rev.	Description	Checked	Date
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-	-	-	-

Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

PLANNED ROAD WIDENING SCHEME NEAR THE JUNCTION OF LEI YUE MUN ROAD / YAU TONG ROAD (F)

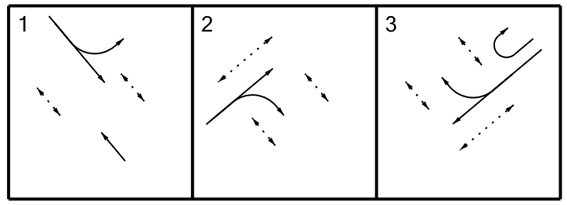
Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	5.3	-

SYSTRA MVA

CHK50748310/TIA/F53.DGN/KCM/08OCT24

Original Size : A3

METHOD OF CONTROL



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Project Title

PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN NO.4 TUNG YUEN STREET, YAU TONG, KOWLOON

Drawing Title

PLANNED JUNCTION LAYOUT OF WAI YIP STREET / WAI FAT ROAD (H)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	OCT 2024	**5.4**	-

SYSTRA MVA

CHK50748310/TIA/F54.DGN/KCM/08OCT24

Original Size : A3

Table 5.1 Junction Operational Performance in Year 2035

Ref. (1)	Junction	RC/RFC (6)			
		Reference		Design	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Cha Kwo Ling Road / Lam Tin Interchange	0.83	0.60	0.83	0.61
B	Cha Kwo Ling Road / Yau Tong Road(2)	22%	34%	20%	33%
C	Cha Kwo Ling Road / Ko Fai Road(3)	81%	85%	76%	80%
D	Cha Kwo Ling Road / Ko Chiu Road	39%	50%	38%	49%
E	Lei Yue Mun Road / Ko Chiu Road	0.35	0.36	0.35	0.37
F	Lei Yue Mun Road / Yau Tong Road(4)	68%	71%	67%	71%
G	Kai Tin Road / Lei Yue Mun Road	0.94	0.71	0.94	0.71
H	Wai Yip Street / Wai Fat Road(5)	88%	69%	87%	69%

Remarks:

(1) Refer to **Drawing 2.2**;

(2) Junction Layout as shown in **Drawing 5.1**;

(3) Junction Layout as shown in **Drawing 5.2;**

(4) Junction Layout as shown in **Drawing 5.3;**

(5) Junction Layout as shown in **Drawing 5.4;**

(6) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.

5.1.8 The results in **Table 5.1** indicate that the identified key junctions would operate within capacities with the Proposed Development in Year 2035, the operational performance of all key junctions would be similar for the reference and design scenarios in year 2035. Therefore, it is anticipated that the Proposed Development would not induce significant traffic impact to the surrounding road network.

6. CONCLUSION

6.1 Summary

6.1.1 The application site is currently zoned Residential (Group E)" ("R(E)") under the latest approved Cha Kwo Ling, Yau Tong, Lei Yue Mun Outline Zoning Plan (OZP) no. S/K15/27. The application site was intended to be re-developed into a residential-based development with shop and services, and eating place. The applicant's intention to propose more residential units and commercial services for the community.

6.1.2 Currently, the subject site is occupied by a 7-storey industrial building, which will be redeveloped into one residential block with 342 residential units, and a 2,177.1m^2 commercial area.

6.1.3 Provisions of internal ancillary transport facilities, including parking spaces, loading/unloading bays and etc., for the No. 4 Tung Yuen Street Redevelopment are proposed in accordance with the relevant requirements stipulated in the latest Hong Kong Planning Standard Guideline (HKPSG). The proposed provisions have taken into consideration the factors of building function, residential flat mix and locality of No. 4 Tung Yuen Street Redevelopment.

6.1.4 In order to review the traffic impact of the new developments on the vicinity, traffic surveys have been conducted to establish the current peak hour traffic condition in the vicinity.

6.1.5 The proposed Redevelopment would be completed in year 2032. The design year of 2035, three years after full occupation, is therefore adopted in this study for forecasting and assessment purposes. This study have considered the future strategic transport link - Trunk Road T2, future local developments and the latest Government planning assumptions.

6.1.6 Assessment results revealed that the traffic condition would be more or less the same in both Reference and Design scenarios in Year 2035. The traffic impact due to the Proposed Redevelopment is considered insignificant and could be accommodated by the surrounding road network.

6.2 Conclusion

6.2.1 In view of the above, the proposed Redevelopment under this Section 16 application is considered acceptable in traffic term.

Appendix A

Public Transport Details and Servicing Schedules

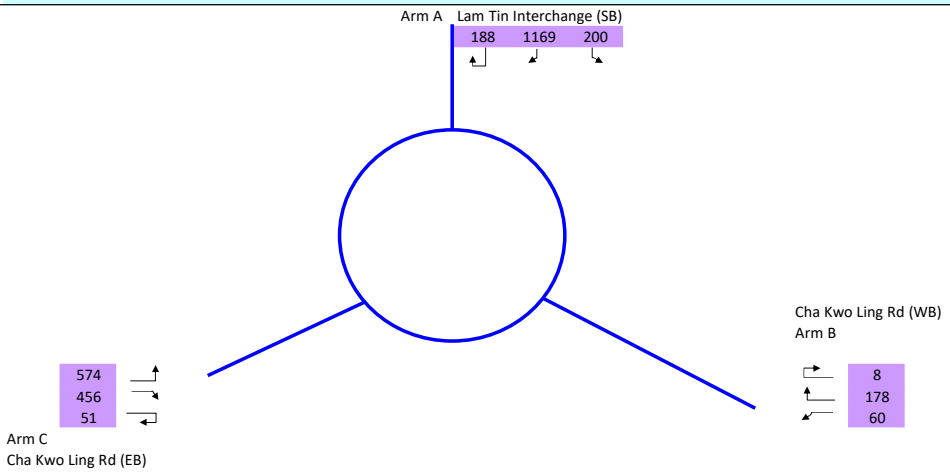
Route No.	Destinations		Frequency (min)
Franchised Bus			
6P	Lei Yue Mun Estate	Cheung Sha Wan (So Uk Estate)	3 scheduled service
14	Lei Yue Mun Estate	China Ferry Terminal	15
14D	Yau Tong	Choi Hung	5 scheduled service
14H	Yau Tong	(CIRCULAR) Shun Lee	60
14X	Yau Tong (Shung Tak Wai)	(CIRCULAR) Tsim Sha Tsui	15
33	Yau Tong	Tsuen Wan West Station	20
33B	Yau Tong	Tsuen Wan West Station	25
62P	Tuen Mun Central	Lei Yue Mun Estate	8
62X	Lei Yue Mun Estate	Siu Hong Station (South)	8
88X	Ping Tin	(CIRCULAR) Fo Tan Chun Yeung Estate	20
214	Yau Tong	Cheung Sha Wan (Kom Tsun Street)	12
215P	Lam Tin (Kwong Tin Estate)	Kowloon Station	1 scheduled service
216M	Lam Tin Station	(CIRCULAR) Yau Tong Station	15
259D	Lei Yue Mun Estate	Tuen Mun (Lung Mun Oasis)	7
603	Ping Tin	Central Ferry Piers	2 scheduled services
603A	Ping Tin	Central Market	15
603S	Ping Tin	Central (Guilman St)	3 scheduled service
613	On Tai (West) (Wo Tai House)	Shau Kei Wan Bus Terminal	15
A26	Yau Tong	Airport	30
A26P	Yau Tong	Airport	2 scheduled service
E22P	Yau Tong	AsiaWorld-Expo	3 scheduled service
E22X	Yau Tong	AsiaWorld-Expo	3 scheduled service
X42C	Yau Tong	Tsing Yi (Cheung Hang Estate)	1
N26	Yau Tong	Tung Chung Station	3 scheduled service
N214	Yau Tong	Mei Foo	2 scheduled service
N216	Yau Tong	Hung Hom Station	20
GMB			
23C	Laguna City	(CIRCULAR) Yau Tong Station	10
24	Lam Tin (Ping Tin PTI)	(CIRCULAR) Sam Ka Tsuen FerryPier	6
24M	Yau Tong PTI	Hing Tin (Pik Wan Road)	2
76B	Yau Tong PTI	United Christian Hospital	20
87	Lei Yue Mun Estate PTI	Kowloon Bay	20
90A	Hong Kong Children's Hospital	Yau Tong (Yau Lai Estate)	10

Appendix B

Signal Calculation Sheets

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2024 Observed Flow AM Peak		Checked by: JPP
Design Year:	2024	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (WB)		
Arm C	Cha Kwo Ling Rd (EB)		
Arm D			
Arm E			

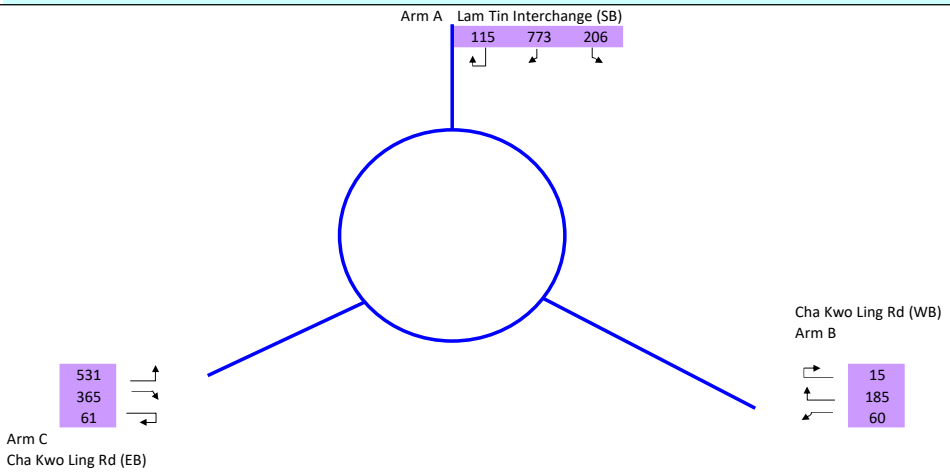


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		8.20	8.10	9.10		
E	Entry Width (m)		10.50	8.60	11.20		
L	Effective Length of Flare (m)		3.75	1.40	6.20		
R	Entry Radius (m)		30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)		52.00	52.00	52.00		
A	Entry Angle (degree)		20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)		1,557	246	1,081		
Qc	Circulating Flow Across Entry (pcu/hour)		515	1,408	374		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))		8.98	8.33	10.11		
M	= EXP ((D-60) /10)		0.45	0.45	0.45		
F	= 303 * X2		2720	2525	3063		
Td	= 1 + (0.5 / (1+M))		1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)		0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)		2431	1583	2915		
Qp	= Q*P		1557	246	1081		
DFC	= Qp / Qe	Design Flow / Capacity	0.64	**0.64**	0.16	0.37	
		Total Entry Flows	2,884				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2024 Observed Flow PM Peak		Checked by: JPP
Design Year:	2024	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (WB)		
Arm C	Cha Kwo Ling Rd (EB)		
Arm D			
Arm E			

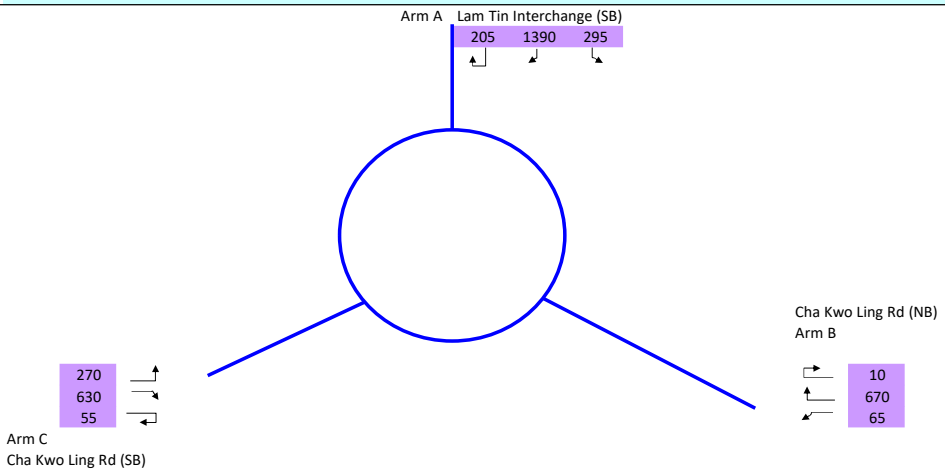


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		8.20	8.10	9.10		
E	Entry Width (m)		10.50	8.60	11.20		
L	Effective Length of Flare (m)		3.75	1.40	6.20		
R	Entry Radius (m)		30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)		52.00	52.00	52.00		
A	Entry Angle (degree)		20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)		1,094	260	957		
Qc	Circulating Flow Across Entry (pcu/hour)		441	949	316		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))		8.98	8.33	10.11		
M	= EXP ((D-60) /10)		0.45	0.45	0.45		
F	= 303 * X2		2720	2525	3063		
Td	= 1 + (0.5 / (1+M))		1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)		0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)		2492	1956	2968		
Qp	= Q*P		1094	260	957		
DFC	= Qp / Qe	Design Flow / Capacity 0.44	**0.44**	0.13	0.32		
		Total Entry Flows 2,311					

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2035 Reference Flow AM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (NB)		
Arm C	Cha Kwo Ling Rd (SB)		
Arm D			
Arm E			

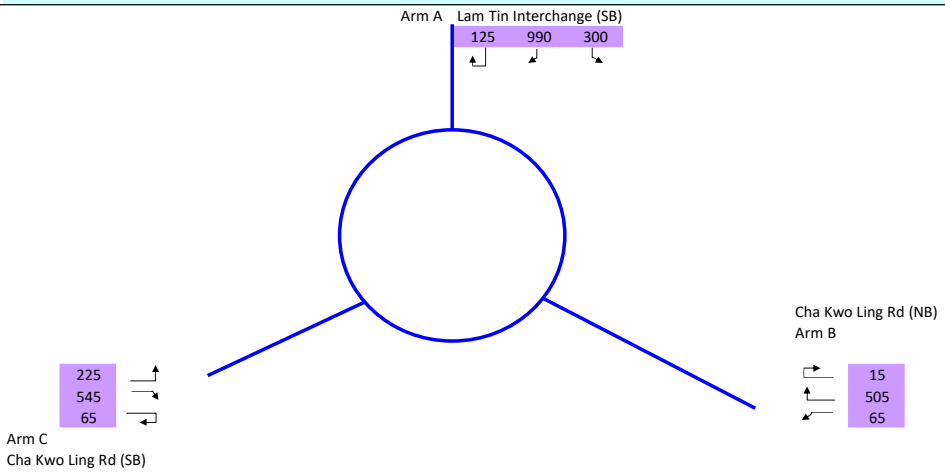


				ENTRY ARM	A	B	C		
INPUT PARAMETERS									
V	Approach Half Width (m)				8.20	8.10	9.10		
E	Entry Width (m)				10.50	8.60	11.20		
L	Effective Length of Flare (m)				3.75	1.40	6.20		
R	Entry Radius (m)				30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)				52.00	52.00	52.00		
A	Entry Angle (degree)				20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)				1,890	745	955		
Qc	Circulating Flow Across Entry (pcu/hour)				695	1,650	885		
P	Peak Hour Factor				1.0	1.0	1.0		
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))				8.98	8.33	10.11		
M	= EXP ((D-60) /10)				0.45	0.45	0.45		
F	= 303 * X2				2720	2525	3063		
Td	= 1 + (0.5 / (1+M))				1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)				2282	1386	2452		
Qp	= Q*P				1890	745	955		
DFC	= Qp / Qe	Design Flow / Capacity	0.83		**0.83**	0.54	0.39		
		Total Entry Flows	3,590						

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2035 Reference Flow PM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (NB)		
Arm C	Cha Kwo Ling Rd (SB)		
Arm D			
Arm E			

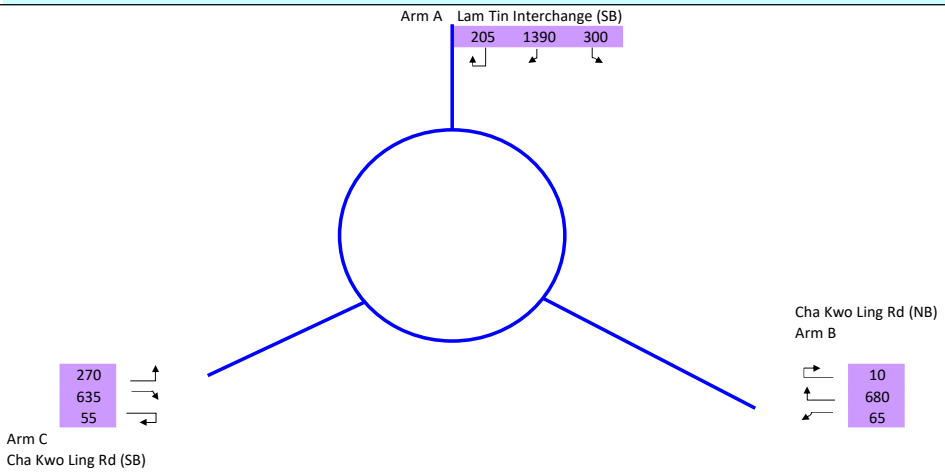


				ENTRY ARM	A	B	C		
INPUT PARAMETERS									
V	Approach Half Width (m)				8.20	8.10	9.10		
E	Entry Width (m)				10.50	8.60	11.20		
L	Effective Length of Flare (m)				3.75	1.40	6.20		
R	Entry Radius (m)				30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)				52.00	52.00	52.00		
A	Entry Angle (degree)				20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)				1,415	585	835		
Qc	Circulating Flow Across Entry (pcu/hour)				625	1,180	645		
P	Peak Hour Factor				1.0	1.0	1.0		
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))				8.98	8.33	10.11		
M	= EXP ((D-60) /10)				0.45	0.45	0.45		
F	= 303 * X2				2720	2525	3063		
Td	= 1 + (0.5 / (1+M))				1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)				2340	1768	2669		
Qp	= Q*P				1415	585	835		
DFC	= Qp / Qe	Design Flow / Capacity	0.60		**0.60**	0.33	0.31		
		Total Entry Flows	2,835						

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2035 Design Flow AM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (NB)		
Arm C	Cha Kwo Ling Rd (SB)		
Arm D			
Arm E			

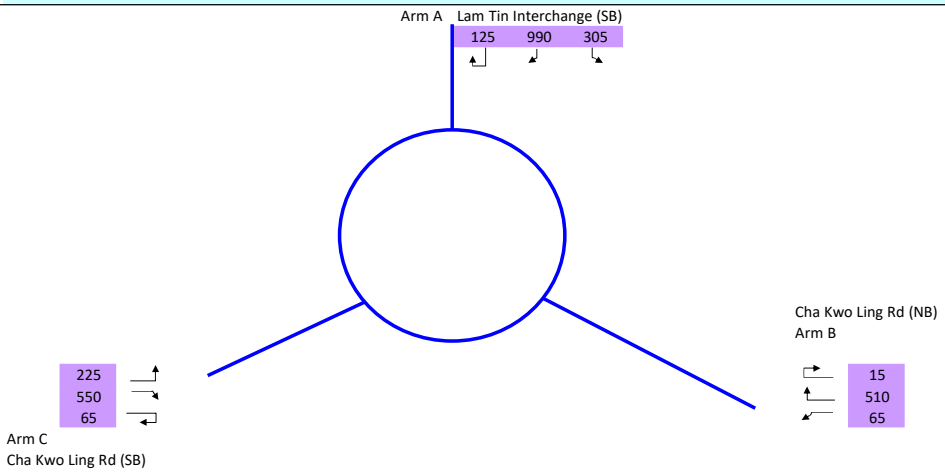


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		8.20	8.10	9.10		
E	Entry Width (m)		10.50	8.60	11.20		
L	Effective Length of Flare (m)		3.75	1.40	6.20		
R	Entry Radius (m)		30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)		52.00	52.00	52.00		
A	Entry Angle (degree)		20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)		1,895	755	960		
Qc	Circulating Flow Across Entry (pcu/hour)		700	1,650	895		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))		8.98	8.33	10.11		
M	= EXP ((D-60) /10)		0.45	0.45	0.45		
F	= 303 * X2		2720	2525	3063		
Td	= 1 + (0.5 / (1+M))		1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)		0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)		2278	1386	2443		
Qp	= Q*P		1895	755	960		
DFC	= Qp / Qe	Design Flow / Capacity	0.83	**0.83**	0.54	0.39	
		Total Entry Flows	3,610				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Cha Kwo Ling Road / Lam Tin Interchange (A)		Designed by: SWY
Scheme:	2035 Design Flow PM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lam Tin Interchange (SB)		
Arm B	Cha Kwo Ling Rd (NB)		
Arm C	Cha Kwo Ling Rd (SB)		
Arm D			
Arm E			



				ENTRY ARM	A	B	C		
INPUT PARAMETERS									
V	Approach Half Width (m)				8.20	8.10	9.10		
E	Entry Width (m)				10.50	8.60	11.20		
L	Effective Length of Flare (m)				3.75	1.40	6.20		
R	Entry Radius (m)				30.00	26.00	35.00		
D	Inscribed Circle Diameter (m)				52.00	52.00	52.00		
A	Entry Angle (degree)				20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)				1,420	590	840		
Qc	Circulating Flow Across Entry (pcu/hour)				630	1,180	650		
P	Peak Hour Factor				1.0	1.0	1.0		
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.98	0.57	0.54		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))				8.98	8.33	10.11		
M	= EXP ((D-60) /10)				0.45	0.45	0.45		
F	= 303 * X2				2720	2525	3063		
Td	= 1 + (0.5 / (1+M))				1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.75	0.85		
Qe	= K (F - Fc*Qc*P)				2336	1768	2665		
Qp	= Q*P				1420	590	840		
DFC	= Qp / Qe	Design Flow / Capacity	0.61		**0.61**	0.33	0.32		
		Total Entry Flows	2,850						

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

Junction: Cha Kwo Ling Road / Yau Tong Road

Design Year: 2024

Description: 2024 Observed Flows

Designed By: CCT

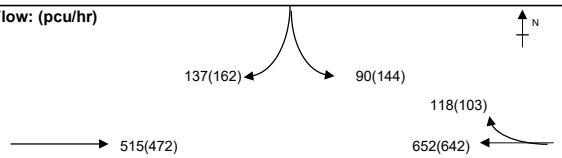
Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	B	1	3.300						1945	1945	249	0.128		228	0.117	
(EB)	↑	B	1	3.300						2085	2085	266	0.128		244	0.117	
Yau Tong Road	↰	D	3	4.500	17					1900	1900	90	0.047		144	0.076	
(SB)	↱	D	3	4.000		13				1930	1930	137	0.071		162	0.084	
Cha Kwo Ling Road	↑	A	1,2	3.800						1995	1995	652	0.327	0.327	642	0.322	0.322
(WB)	↱	C	2	3.000		13				1840	1840	118	0.064		103	0.056	

Pedestrian Crossing	Ep	1,2,4	MIN GREEN + FLASH =	5	+	10	=	15	
	Fp	2,4	MIN GREEN + FLASH =	5	+	9	=	14	
	Gp	4	MIN GREEN + FLASH =	5	+	9	=	14	
	Hp	3,4	MIN GREEN + FLASH =	5	+	5	=	10	*

Notes:

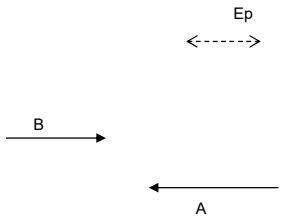
Flow: (pcu/hr)



Group	A,D,Gp	B,C,D,Gp	Group	A,D,Gp	B,C,D,Gp
y	0.192	0.327	y	0.173	0.322
L (sec)	34	40	L (sec)	30	36
C (sec)	100	100	C (sec)	90	90
y pract.	0.594	0.540	y pract.	0.600	0.540
R.C. (%)	210%	65%	R.C. (%)	246%	68%

Stage / Phase Diagrams

1.



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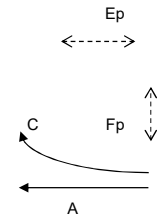

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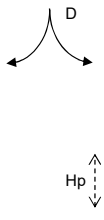

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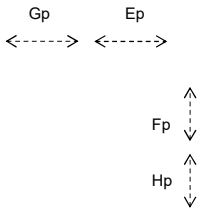


5.

I/G= 2		I/G= 5		I/G= 6		I/G= 14	14	I/G=	
I/G= 2		I/G= 5		I/G= 6	10	I/G= 14		I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Yau Tong Road (B)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

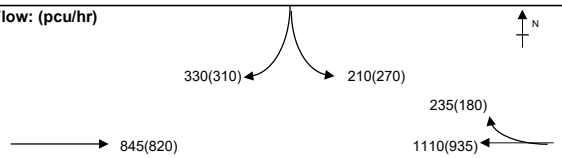
Junction: Cha Kwo Ling Road / Yau Tong Road — Design Year: 2035

Description: 2035 Reference Flows (Improvement scheme) — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	B	3	3.300						1945	1945	408	0.210	0.210	396	0.204	
(EB)	↑	B	3	3.300						2085	2085	437	0.210		424	0.203	0.203
Yau Tong Road	↰	D	2	3.300	17					1785	1785	173	0.097		186	0.104	
(SB)	↰↑↱	D	2	3.300	20	16		20% / 80%	42% / 58%	1915	1920	186	0.097	0.097	199	0.104	
	↱	D	2	3.300		13				1870	1870	181	0.097		195	0.104	0.104
Cha Kwo Ling Road	↑	A	1	3.800						1995	1995	700	0.351	0.351	580	0.291	0.291
(WB)	↑↱	A	1	3.000		13		36%	34%	1840	1845	645	0.351		535	0.290	
Pedestrian Crossing		Ep	1,3	MIN GREEN + FLASH =			5	+	10	=	15						
		Fp	1	MIN GREEN + FLASH =			5	+	9	=	14						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	2,3	MIN GREEN + FLASH =			5	+	5	=	10						

Notes:

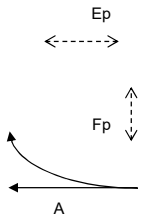
Flow: (pcu/hr)



Group	A,D,Gp	A,D,B	Group	A,D,Gp	A,D,B
y	0.448	0.658	y	0.395	0.598
L (sec)	34	13	L (sec)	34	13
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.803	y pract.	0.645	0.803
R.C. (%)	44%	22%	R.C. (%)	63%	34%

Stage / Phase Diagrams

1.



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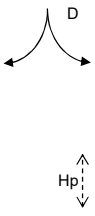

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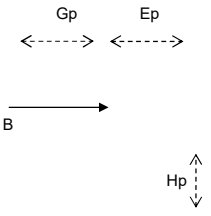


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	
I/G= 5		I/G= 6		I/G= 5		I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Yau Tong Road (B)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

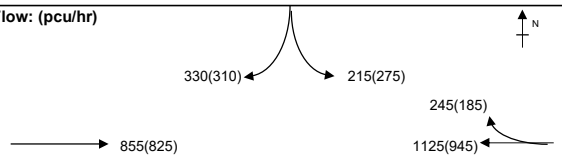
Junction: Cha Kwo Ling Road / Yau Tong Road Design Year: 2035

Description: 2035 Design Flows (Improvement scheme) Designed By: CCT Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	B	3	3.300						1945	1945	413	0.212	0.212	398	0.205	
(EB)	↑	B	3	3.300						2085	2085	442	0.212		427	0.205	0.205
Yau Tong Road	↰	D	2	3.300	17					1785	1785	175	0.098		187	0.105	
(SB)	↰↑↱	D	2	3.300	20	16		21% / 79%	44% / 56%	1915	1920	187	0.098	0.098	202	0.105	
	↱	D	2	3.300		13				1870	1870	183	0.098		196	0.105	0.105
Cha Kwo Ling Road	↑	A	1	3.800						1995	1995	713	0.357	0.357	587	0.294	0.294
(WB)	↑↱	A	1	3.000		13		37%	34%	1835	1845	657	0.358		543	0.294	
Pedestrian Crossing		Ep	1,3	MIN GREEN + FLASH =			5	+	10	=	15						
		Fp	1	MIN GREEN + FLASH =			5	+	9	=	14						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	2,3	MIN GREEN + FLASH =			5	+	5	=	10						

Notes:

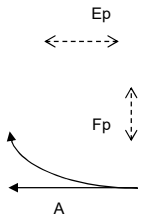
Flow: (pcu/hr)



Group	A,D,Gp	A,D,B	Group	A,D,Gp	A,D,B
y	0.455	0.667	y	0.399	0.604
L (sec)	34	13	L (sec)	34	13
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.803	y pract.	0.645	0.803
R.C. (%)	42%	20%	R.C. (%)	62%	33%

Stage / Phase Diagrams

1.



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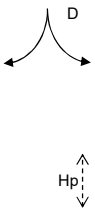

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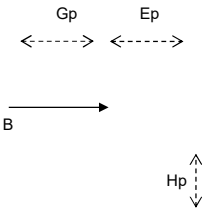


4.

5.

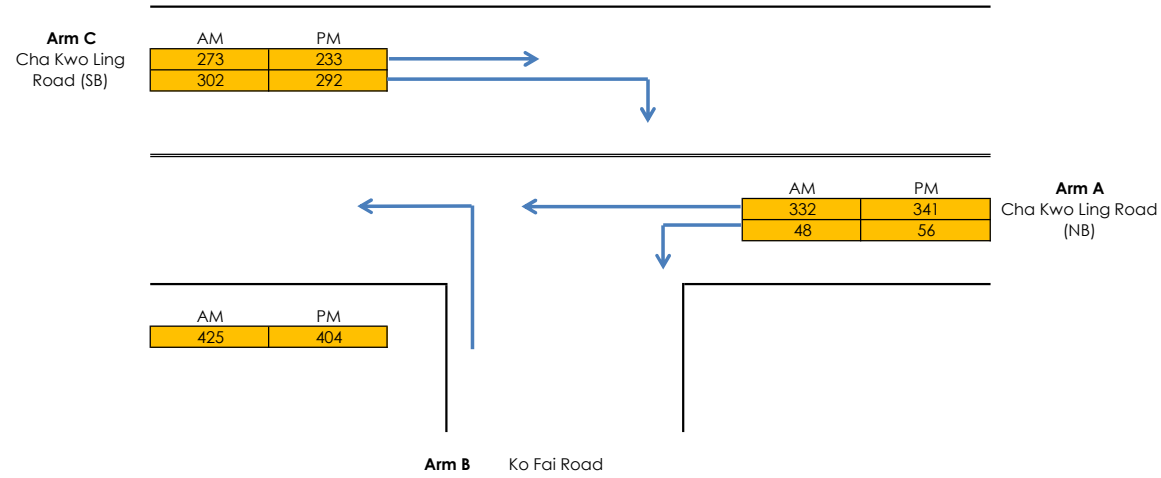
I/G= 5		I/G= 6		I/G= 5		I/G=	
I/G= 5		I/G= 6		I/G= 5		I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Yau Tong Road (B)

Simplified Priority Junction Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction: Cha Kwo Ling Road / Ko Fai Road (C)			Designed by: SWY
Scheme: 2024 Observed Flows			Checked by: JPP
Design Year: 2024	Job No.: CHK50748310		Date: Oct-24
Arm A:	Cha Kwo Ling Road (NB)		
Arm B:	Ko Fai Road		
Arm C:	Cha Kwo Ling Road (SB)		



GEOMETRY

Major Road Width (m)	W	12.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	2.87
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	48	Calculated Parameters	D	0.57
	Vl(b-a)	31		E	0.948
	Vr(b-c)	48		F	0.848
	Vr(c-b)	26		Y	0.576

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	273.35	233.4
	q(c-b)	301.95	291.7
	q(a-b)	48.1	56.1
	q(a-c)	331.8	341.5
	q(b-a)	0	0
	q(b-c)	425.25	404.1
	f	1.00	1.00
CAPACITIES (pcu/hr)	Q(b-ac)	636.831	634.3
	Q(c-b)	564.556	561.4
RFC's	c-b	0.53	0.52
	b-ac	0.67	0.64
RFC		**0.67**	**0.64**

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

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

Junction: Cha Kwo Ling Road / Ko Fai Road

Design Year: 2035

Description: 2035 Reference Flows

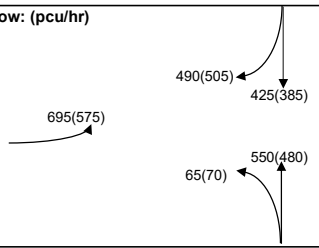
Designed By: CCT

Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	A	1	3.300						1945	1945	425	0.219		385	0.198	
(SB)	↱	A	1	3.300		15				1895	1895	490	0.259	0.259	505	0.266	0.266
Cha Kwo Ling Road	↰↑	B	2	3.300	15			22%	27%	1905	1895	293	0.154	0.154	262	0.138	
(NB)	↑	B	2	3.300						2085	2085	322	0.154		288	0.138	0.138
Ko Fai Road	↰	C	1,3	4.000	12.5					1800	1800	695	0.386		575	0.319	
(EB)																	
Pedestrian Crossing		Ep	2,3	MIN GREEN + FLASH =			5	+	5	=	10						
		Fp	2	MIN GREEN + FLASH =			5	+	5	=	10						
		Gp	3	MIN GREEN + FLASH =			5	+	5	=	10			*			*
		Hp	1,3	MIN GREEN + FLASH =			5	+	6	=	11						

Notes:

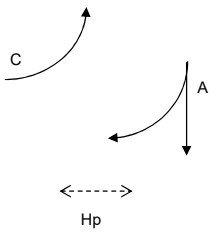
Flow: (pcu/hr)



Group	C,Fp	A,B,Gp	Group	C,Fp	A,B,Gp
y	0.386	0.412	y	0.319	0.405
L (sec)	19	17	L (sec)	19	17
C (sec)	100	100	C (sec)	100	100
y pract.	0.729	0.747	y pract.	0.729	0.747
R.C. (%)	89%	81%	R.C. (%)	128%	85%

Stage / Phase Diagrams

1.



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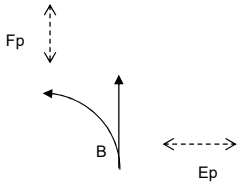

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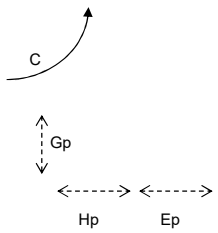


4.

5.

I/G= 2		I/G= 5		I/G= 2	10	I/G=		I/G=	
I/G= 2		I/G= 5		I/G= 2	10	I/G=		I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Ko Fai Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

Junction: Cha Kwo Ling Road / Ko Fai Road

Design Year: 2035

Description: 2035 Design Flows

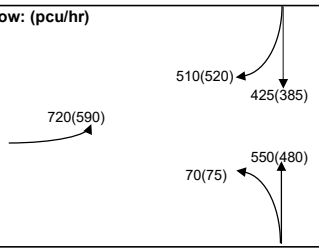
Designed By: CCT

Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	A	1	3.300						1945	1945	425	0.219		385	0.198	
(SB)	↱	A	1	3.300		15				1895	1895	510	0.269	0.269	520	0.274	0.274
Cha Kwo Ling Road	↰↑	B	2	3.300	15			24%	28%	1900	1890	296	0.156	0.156	264	0.140	
(NB)	↑	B	2	3.300						2085	2085	324	0.155		291	0.140	0.140
Ko Fai Road	↰	C	1,3	4.000	12.5					1800	1800	720	0.400		590	0.328	
(EB)																	
Pedestrian Crossing		Ep	2,3	MIN GREEN + FLASH =			5	+	5	=	10						
		Fp	2	MIN GREEN + FLASH =			5	+	5	=	10						
		Gp	3	MIN GREEN + FLASH =			5	+	5	=	10			*			*
		Hp	1,3	MIN GREEN + FLASH =			5	+	6	=	11						

Notes:

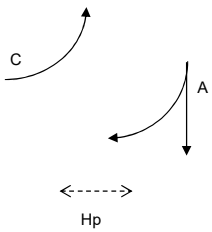
Flow: (pcu/hr)



Group	C,Fp	A,B,Gp	Group	C,Fp	A,B,Gp
y	0.400	0.425	y	0.328	0.414
L (sec)	19	17	L (sec)	19	17
C (sec)	100	100	C (sec)	100	100
y pract.	0.729	0.747	y pract.	0.729	0.747
R.C. (%)	82%	76%	R.C. (%)	122%	80%

Stage / Phase Diagrams

1.



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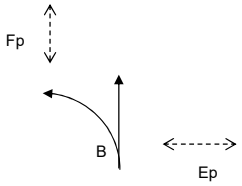

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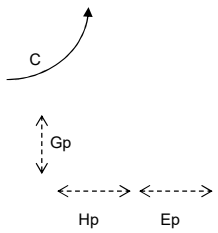


4.

5.

I/G= 2		I/G= 5		I/G= 2	10	I/G=		I/G=	
I/G= 2		I/G= 5		I/G= 2	10	I/G=		I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Ko Fai Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 — MVA HONG KONG LIMITED

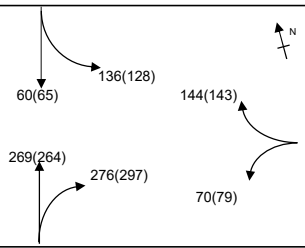
Junction: Cha Kwo Ling Road / Ko Chiu Road — Design Year: 2024

Description: 2024 Observed Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	A	1	3.300						1945	1945	269	0.138		264	0.136	
(NB)	↱	A	1	3.300		15				1895	1895	276	0.146	0.146	297	0.157	0.157
Cha Kwo Ling Road	↰	C	2	3.000	15.5		4.7			1565	1565	136	0.087	0.087	128	0.082	0.082
(SB)	↑	C	2	3.600			4.7			1780	1780	60	0.034		65	0.037	
Ko Chiu Road	↰↱	B	3	3.500	10	16		69% / 31%	75% / 25%	1735	1730	102	0.059		106	0.061	0.061
(WB)	↱	B	3	3.800		12				1900	1900	112	0.059	0.059	116	0.061	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Ep	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Fp	4	MIN GREEN + FLASH =			10	+	8	=	18			*			*

Notes:

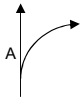
Flow: (pcu/hr)



Group	A,C,B,Dp	A,C,B,Fp	Group	A,C,B,Dp	A,C,B,Fp
y	0.291	0.291	y	0.300	0.300
L (sec)	36	40	L (sec)	36	40
C (sec)	120	120	C (sec)	120	120
y pract.	0.630	0.600	y pract.	0.630	0.600
R.C. (%)	116%	106%	R.C. (%)	110%	100%

Stage / Phase Diagrams

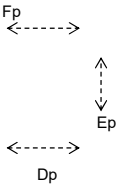
1.



2.

3.

4.



5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	18
I/G= 2		I/G= 7		I/G= 6		I/G= 10	18

I/G= | |

I/G= | |

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Ko Chiu Road (D)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

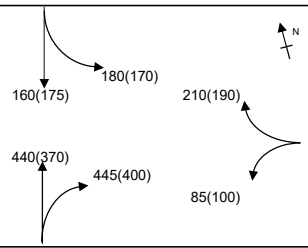
Junction: Cha Kwo Ling Road / Ko Chiu Road — Design Year: 2035

Description: 2035 Reference Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	A	1	3.300						1945	1945	440	0.226		370	0.190	
(NB)	↱	A	1	3.300		15				1895	1895	445	0.235	0.235	400	0.211	0.211
Cha Kwo Ling Road	↰	C	2	3.000	15.5		4.7			1565	1565	180	0.115	0.115	170	0.109	0.109
(SB)	↑	C	2	3.600			4.7			1780	1780	160	0.090		175	0.098	
Ko Chiu Road	↰↑	B	3	3.500	10	16		60% / 40%	72% / 28%	1745	1730	141	0.081		138	0.080	0.080
(WB)	↱	B	3	3.800		12				1900	1900	154	0.081	0.081	152	0.080	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Ep	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Fp	4	MIN GREEN + FLASH =			10	+	8	=	18			*			*

Notes:

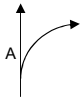
Flow: (pcu/hr)



Group	A,C,B,Dp	A,C,B,Fp	Group	A,C,B,Dp	A,C,B,Fp
y	0.431	0.431	y	0.399	0.399
L (sec)	36	40	L (sec)	36	40
C (sec)	120	120	C (sec)	120	120
y pract.	0.630	0.600	y pract.	0.630	0.600
R.C. (%)	46%	39%	R.C. (%)	58%	50%

Stage / Phase Diagrams

1.



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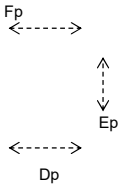


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	18
I/G= 2		I/G= 7		I/G= 6		I/G= 10	18

I/G=	
I/G=	

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Ko Chiu Road (D)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

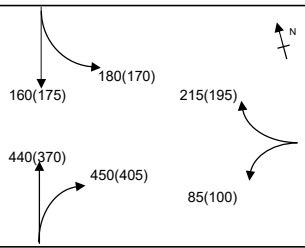
Junction: Cha Kwo Ling Road / Ko Chiu Road — Design Year: 2035

Description: 2035 Design Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Cha Kwo Ling Road	↑	A	1	3.300						1945	1945	440	0.226		370	0.190	
(NB)	↱	A	1	3.300		15				1895	1895	450	0.237	0.237	405	0.214	0.214
Cha Kwo Ling Road	↰	C	2	3.000	15.5		4.7			1565	1565	180	0.115	0.115	170	0.109	0.109
(SB)	↑	C	2	3.600			4.7			1780	1780	160	0.090		175	0.098	
Ko Chiu Road	↰↱	B	3	3.500	10	16		59% / 41%	71% / 29%	1745	1735	144	0.083		141	0.081	0.081
(WB)	↱	B	3	3.800		12				1900	1900	156	0.082	0.082	154	0.081	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Ep	4	MIN GREEN + FLASH =			8	+	7	=	15						
		Fp	4	MIN GREEN + FLASH =			10	+	8	=	18			*			*

Notes:

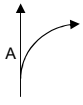
Flow: (pcu/hr)



Group	A,C,B,Dp	A,C,B,Fp	Group	A,C,B,Dp	A,C,B,Fp
y	0.435	0.435	y	0.404	0.404
L (sec)	36	40	L (sec)	36	40
C (sec)	120	120	C (sec)	120	120
y pract.	0.630	0.600	y pract.	0.630	0.600
R.C. (%)	45%	38%	R.C. (%)	56%	49%

Stage / Phase Diagrams

1.



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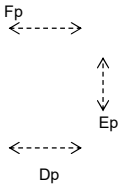


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	18
I/G= 2		I/G= 7		I/G= 6		I/G= 10	18

I/G=

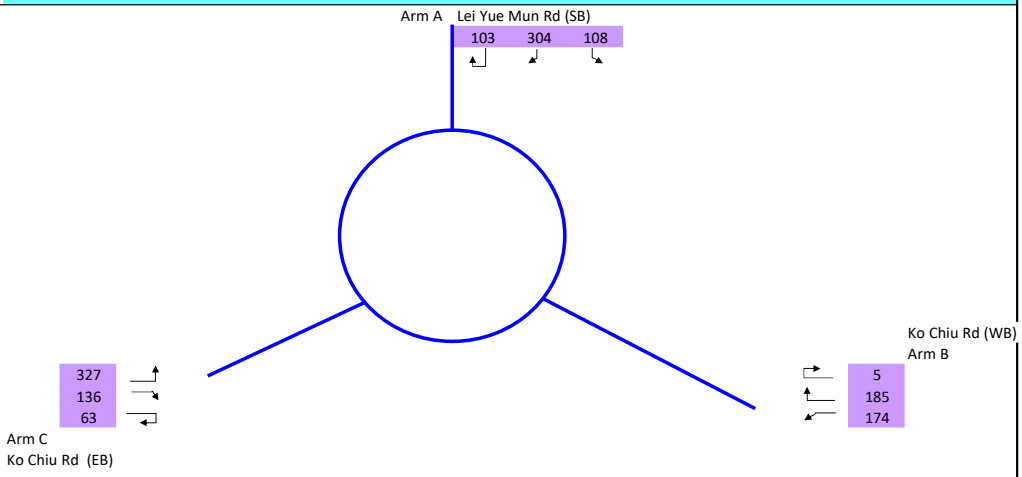
I/G=

Date: 02 Oct 2024

Junction: Cha Kwo Ling Road / Ko Chiu Road (D)

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2024 Observed Flow AM Peak		Checked by:	JPP
Design Year:	2024	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				

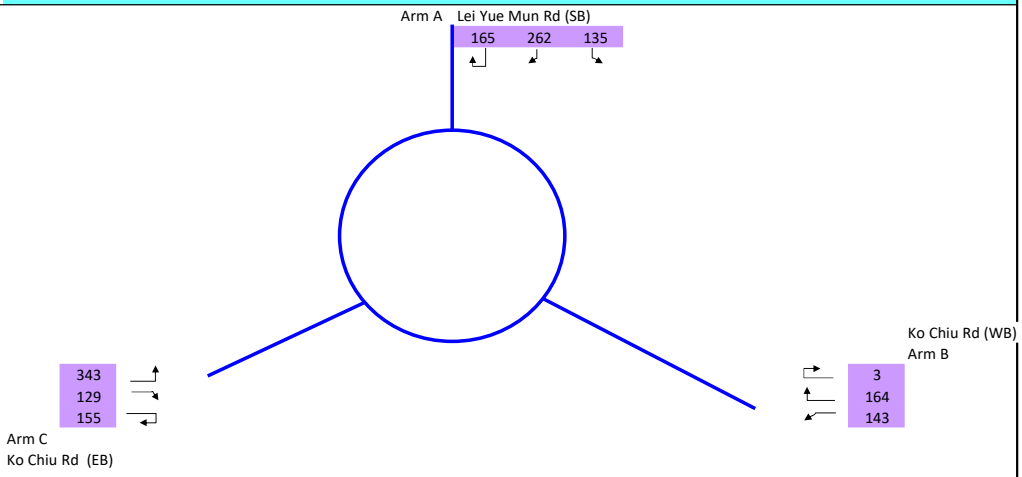


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		514	364	526		
Qc	Circulating Flow Across Entry (pcu/hour)		203	469	292		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2457	1640	2261		
Qp	= Q*P		514	364	526		
DFC	= Qp / Qe	Design Flow / Capacity	0.21	0.22	**0.23**		
		Total Entry Flows	1,404				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2024 Observed Flow PM Peak		Checked by:	JPP
Design Year:	2024	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				

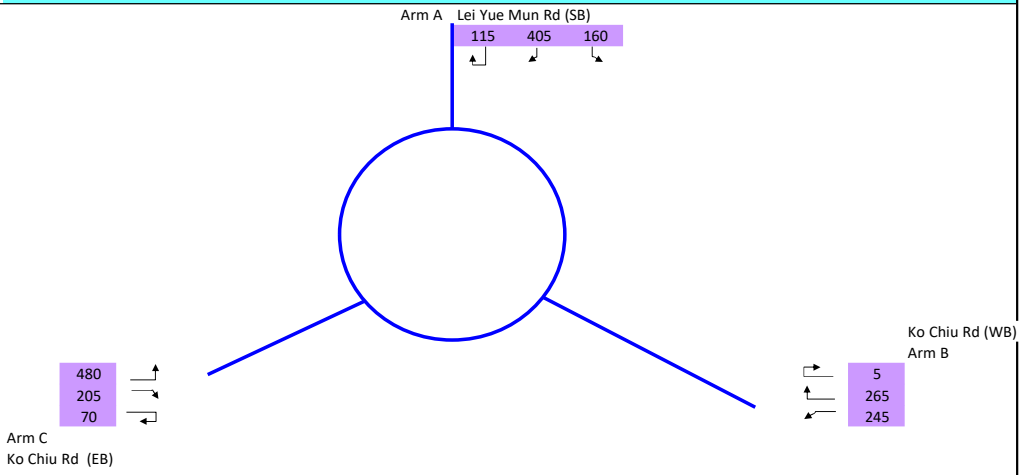


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		562	310	627		
Qc	Circulating Flow Across Entry (pcu/hour)		287	582	332		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2388	1565	2229		
Qp	= Q*P		562	310	627		
DFC	= Qp / Qe	Design Flow / Capacity	0.24	0.20	**0.28**		
		Total Entry Flows	1,499				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2035 Reference Flow AM Peak		Checked by:	JPP
Design Year:	2035	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				

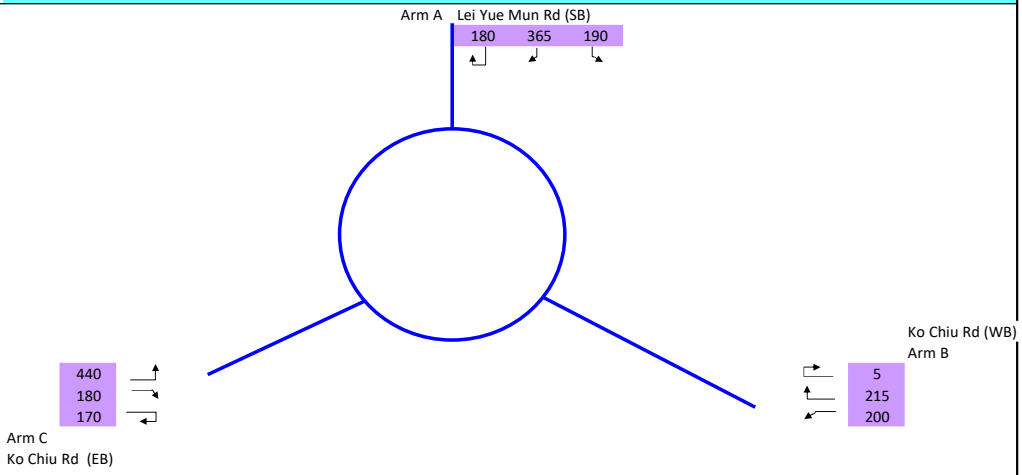


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		680	515	755		
Qc	Circulating Flow Across Entry (pcu/hour)		280	590	385		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2394	1560	2186		
Qp	= Q*P		680	515	755		
DFC	= Qp / Qe	Design Flow / Capacity	0.35	0.28	0.33	**0.35**	
		Total Entry Flows	1,950				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2035 Reference Flow PM Peak		Checked by:	JPP
Design Year:	2035	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				

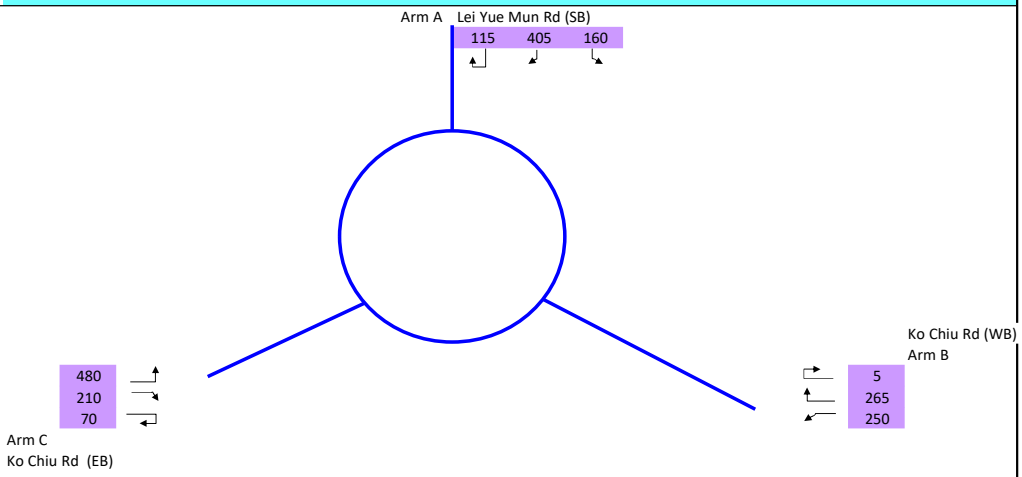


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		735	420	790		
Qc	Circulating Flow Across Entry (pcu/hour)		355	715	400		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2331	1478	2174		
Qp	= Q*P		735	420	790		
DFC	= Qp / Qe	Design Flow / Capacity	0.36	0.32	0.28	**0.36**	
		Total Entry Flows	1,945				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2035 Design Flow AM Peak		Checked by:	JPP
Design Year:	2035	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				

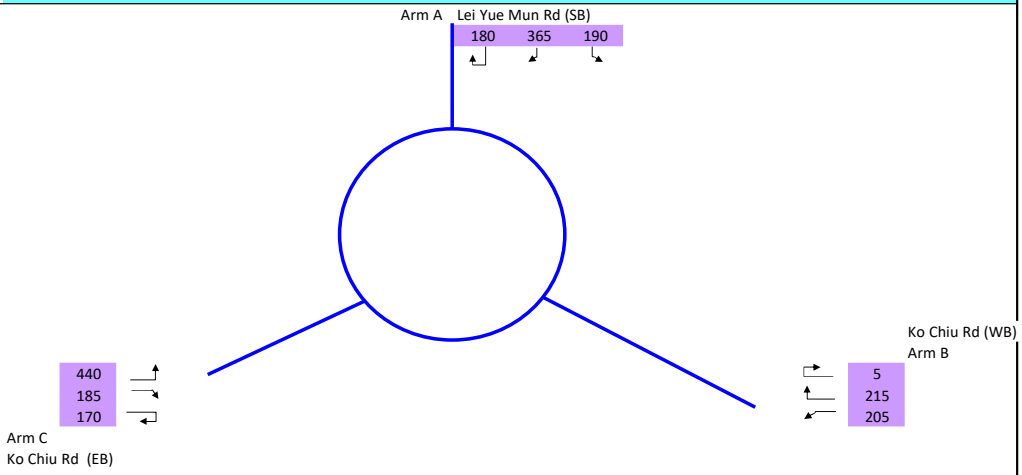


		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		680	520	760		
Qc	Circulating Flow Across Entry (pcu/hour)		285	590	385		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2389	1560	2186		
Qp	= Q*P		680	520	760		
DFC	= Qp / Qe	Design Flow / Capacity	0.35	0.28	0.33	**0.35**	
		Total Entry Flows	1,960				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA			
Junction:	Lei Yue Mun Road / Ko Chiu Road (E)		Designed by:	SWY
Scheme:	2035 Design Flow PM Peak		Checked by:	JPP
Design Year:	2035	Job No.: CHK50748310	Date:	OCT, 2024
Arm A	Lei Yue Mun Rd (SB)			
Arm B	Ko Chiu Rd (WB)			
Arm C	Ko Chiu Rd (EB)			
Arm D				
Arm E				



		ENTRY ARM	A	B	C		
INPUT PARAMETERS							
V	Approach Half Width (m)		7.43	6.50	6.70		
E	Entry Width (m)		9.60	8.50	9.76		
L	Effective Length of Flare (m)		9.70	4.62	10.48		
R	Entry Radius (m)		40.00	19.00	49.50		
D	Inscribed Circle Diameter (m)		38.70	38.70	38.70		
A	Entry Angle (degree)		38.00	65.00	40.00		
Q	Entry Flow (pcu/hour)		735	425	795		
Qc	Circulating Flow Across Entry (pcu/hour)		360	715	400		
P	Peak Hour Factor		1.0	1.0	1.0		
OUTPUT PARAMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare	0.36	0.69	0.47		
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	0.88	0.99		
X2	= V + ((E-V) / (1+2S))		8.69	7.34	8.28		
M	= EXP ((D-60) /10)		0.12	0.12	0.12		
F	= 303 * X2		2634	2224	2509		
Td	= 1 + (0.5 / (1+M))		1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)		0.83	0.75	0.81		
Qe	= K (F - Fc*Qc*P)		2327	1478	2174		
Qp	= Q*P		735	425	795		
DFC	= Qp / Qe	Design Flow / Capacity	0.37	0.32	0.29	**0.37**	
		Total Entry Flows	1,955				

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

Junction: Lei Yue Mun Road / Yau Tong Road — Design Year: 2024

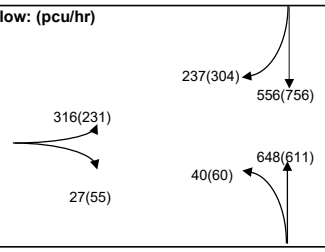
Description: 2024 Observed Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Yau Tong Road	↰	C	2,3	4.200	25					1920	1920	153	0.080		112	0.058	
(EB)	↰	C	2,3	4.100	25					2040	2040	163	0.080		119	0.058	
	↱	D	3	4.600		11.5				1960	1960	27	0.014	0.014	55	0.028	0.028
Lei Yue Mun Road	↑	H	1,2,3	3.300						1945	1945	556	0.286		756	0.389	
(SB)	↱	B	2	3.600		13.2				1775	1775	117	0.066		151	0.085	
	↱	B	2	3.750		8.5				1810	1810	120	0.066	0.066	153	0.085	0.085
Lei Yue Mun Road	↰↑	A	1	3.850	10			12%	19%	1965	1945	329	0.167	0.167	319	0.164	
(NB)	↑	A	1	3.900						2145	2145	359	0.167		352	0.164	0.164

Pedestrian Crossing	Ep	3	MIN GREEN + FLASH =	8	+	8	=	16	
	Fp	1,2	MIN GREEN + FLASH =	5	+	5	=	10	
	Gp	1	MIN GREEN + FLASH =	10	+	10	=	20	

Notes:

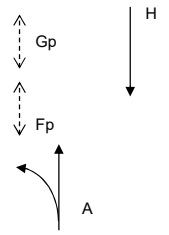
Flow: (pcu/hr)



Group	A,C	A,B,D	Group	A,C	A,B,D
y	0.247	0.248	y	0.222	0.277
L (sec)	10	12	L (sec)	10	12
C (sec)	130	130	C (sec)	110	110
y pract.	0.831	0.817	y pract.	0.818	0.802
R.C. (%)	236%	230%	R.C. (%)	268%	190%

Stage / Phase Diagrams

1.



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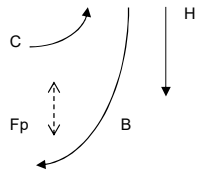

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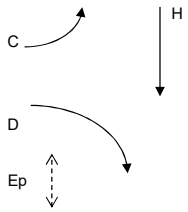


4.

5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: 02 Oct 2024

Junction: Lei Yue Mun Road / Yau Tong Road (F)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

Junction: Lei Yue Mun Road / Yau Tong Road — Design Year: 2035

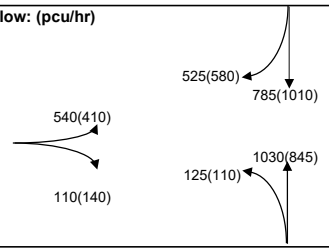
Description: 2035 Reference Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Yau Tong Road	↰	C	2,3	4.200	25					1920	1920	262	0.136		199	0.104	
(EB)	↰	C	2,3	4.100	25					2040	2040	278	0.136		211	0.103	
	↱	D	3	4.600		11.5				1960	1960	110	0.056	0.056	140	0.071	0.071
Lei Yue Mun Road	↑	H	1,2,3	3.300						1945	1945	785	0.404		1010	0.519	
(SB)	↱	B	2	3.600		13.2				1775	1775	260	0.146		287	0.162	
	↱	B	2	3.750		8.5				1810	1810	265	0.146	0.146	293	0.162	0.162
Lei Yue Mun Road	↰↑	A	1	3.850	10			23%	24%	1935	1930	548	0.283	0.283	452	0.234	
(NB)	↑	A	1	3.900						2145	2145	607	0.283		503	0.234	0.234

Pedestrian Crossing	Ep	3	MIN GREEN + FLASH =	8	+	8	=	16	
	Fp	1,2	MIN GREEN + FLASH =	5	+	5	=	10	
	Gp	1	MIN GREEN + FLASH =	10	+	10	=	20	

Notes:

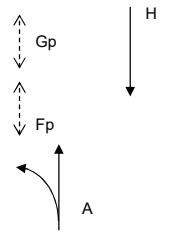
Flow: (pcu/hr)



Group	A,C	A,B,D	Group	A,C	A,B,D
y	0.419	0.486	y	0.338	0.468
L (sec)	10	12	L (sec)	10	12
C (sec)	130	130	C (sec)	110	110
y pract.	0.831	0.817	y pract.	0.818	0.802
R.C. (%)	98%	68%	R.C. (%)	142%	71%

Stage / Phase Diagrams

1.



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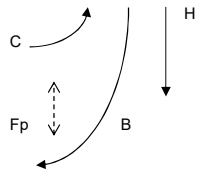

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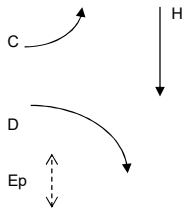


4.

5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: 02 Oct 2024 — **Junction:** Lei Yue Mun Road / Yau Tong Road (F)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

Junction: Lei Yue Mun Road / Yau Tong Road — Design Year: 2035

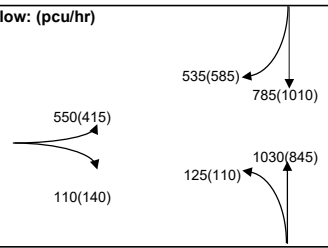
Description: 2035 Design Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Yau Tong Road	↰	C	2,3	4.200	25					1920	1920	267	0.139		201	0.105	
(EB)	↰	C	2,3	4.100	25					2040	2040	283	0.139		214	0.105	
	↱	D	3	4.600		11.5				1960	1960	110	0.056	0.056	140	0.071	0.071
Lei Yue Mun Road	↑	H	1,2,3	3.300						1945	1945	785	0.404		1010	0.519	
(SB)	↱	B	2	3.600		13.2				1775	1775	265	0.149		290	0.163	
	↱	B	2	3.750		8.5				1810	1810	270	0.149	0.149	295	0.163	0.163
Lei Yue Mun Road	↰↑	A	1	3.850	10			23%	24%	1935	1930	548	0.283	0.283	452	0.234	
(NB)	↑	A	1	3.900						2145	2145	607	0.283		503	0.234	0.234

Pedestrian Crossing	Ep	3	MIN GREEN + FLASH =	8	+	8	=	16		
	Fp	1,2	MIN GREEN + FLASH =	5	+	5	=	10		
	Gp	1	MIN GREEN + FLASH =	10	+	10	=	20		

Notes:

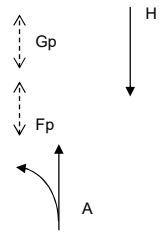
Flow: (pcu/hr)



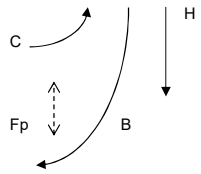
Group	A,C	A,B,D	Group	A,C	A,B,D
y	0.422	0.488	y	0.339	0.469
L (sec)	10	12	L (sec)	10	12
C (sec)	130	130	C (sec)	110	110
y pract.	0.831	0.817	y pract.	0.818	0.802
R.C. (%)	97%	67%	R.C. (%)	141%	71%

Stage / Phase Diagrams

1.



2.



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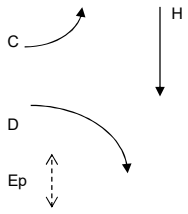


4.

5.

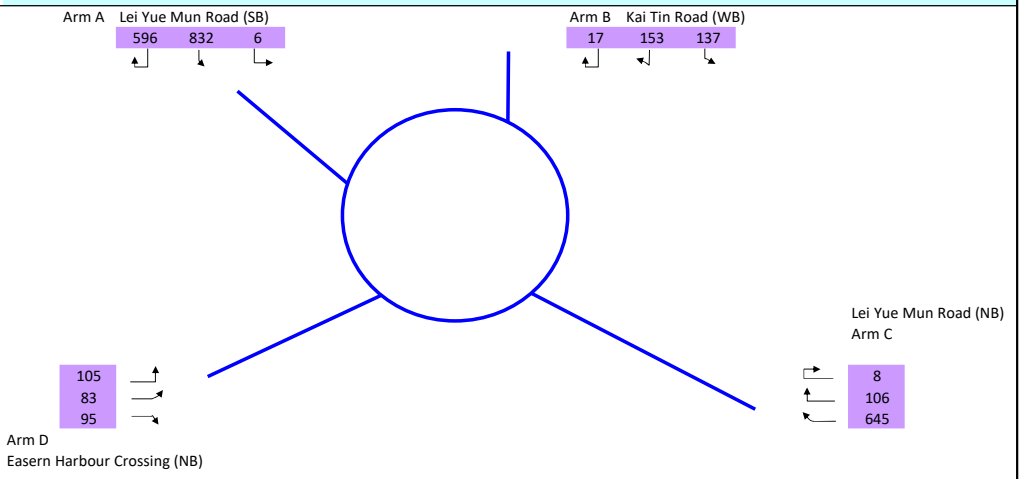
I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: 02 Oct 2024

Junction: Lei Yue Mun Road / Yau Tong Road (F)

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2024 Observed Flow AM Peak		Checked by: JPP
Design Year:	2024	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			

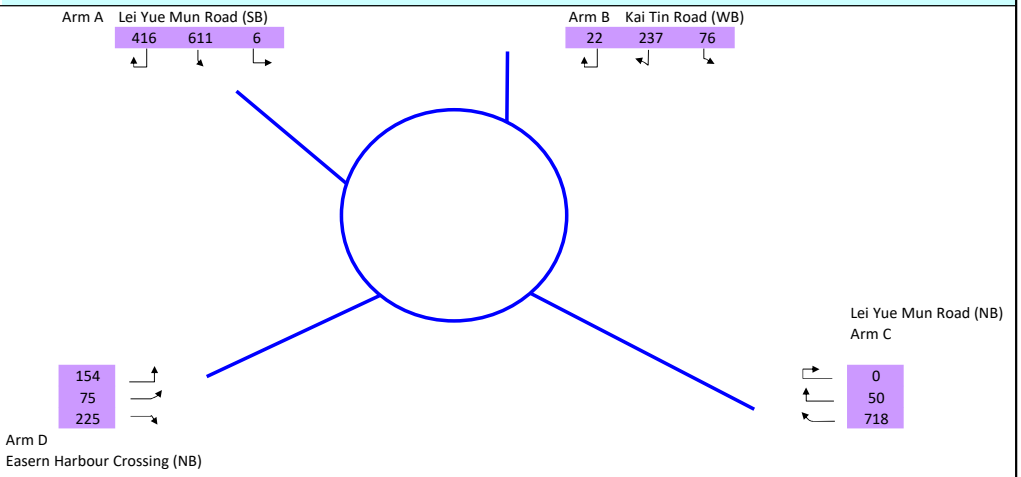


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,434	307	759	283
Qc	Circulating Flow Across Entry (pcu/hour)		309	1,531	766	1,525
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1997	1210	1964	1589
Qp	= Q*P		1434	307	759	283
DFC	= Qp / Qe	Design Flow / Capacity 0.72	**0.72**	0.25	0.39	0.18
		Total Entry Flows 2,782				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2024 Observed Flow PM Peak		Checked by: JPP
Design Year:	2024	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			

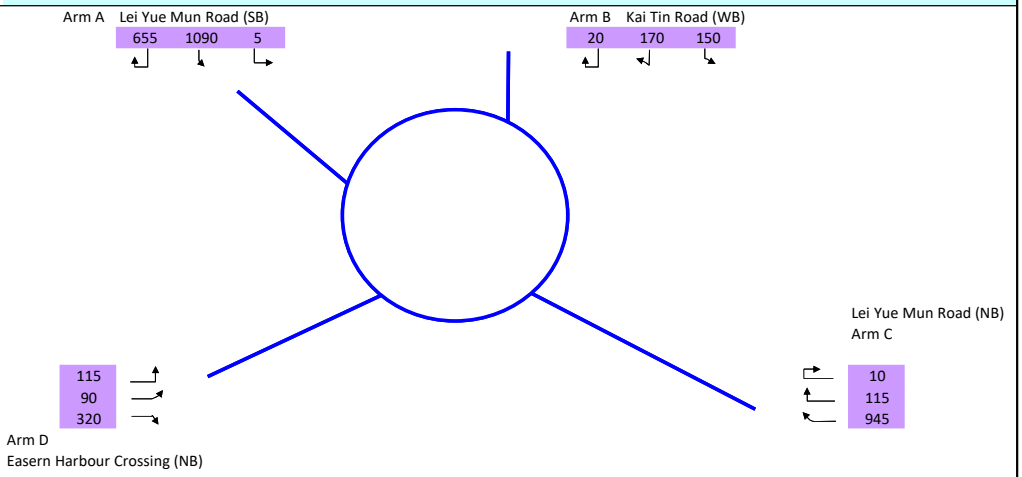


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,034	335	768	454
Qc	Circulating Flow Across Entry (pcu/hour)		372	1,252	675	1,443
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1963	1355	2015	1638
Qp	= Q*P		1034	335	768	454
DFC	= Qp / Qe	Design Flow / Capacity 0.53	**0.53**	0.25	0.38	0.28
		Total Entry Flows 2,590				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2035 Reference Flow AM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			

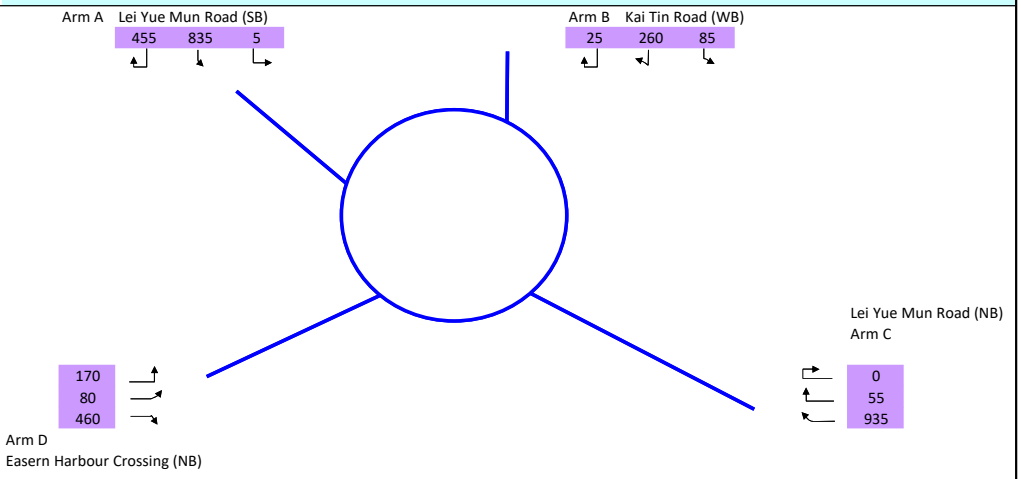


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,750	340	1,070	525
Qc	Circulating Flow Across Entry (pcu/hour)		555	2,075	845	1,915
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1862	928	1920	1358
Qp	= Q*P		1750	340	1070	525
DFC	= Qp / Qe	Design Flow / Capacity 0.94	**0.94**	0.37	0.56	0.39
		Total Entry Flows 3,685				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2035 Reference Flow PM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			

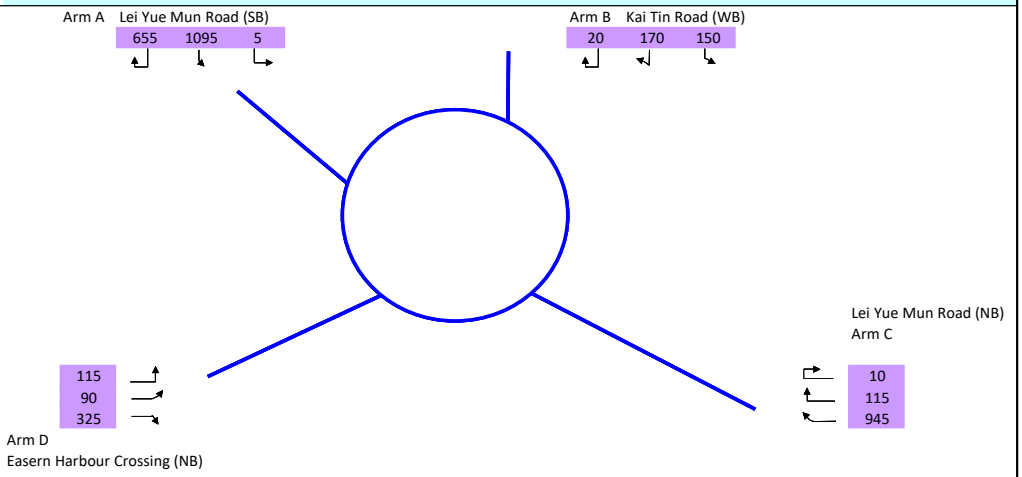


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,295	370	990	710
Qc	Circulating Flow Across Entry (pcu/hour)		620	1,750	740	1,730
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1826	1097	1979	1467
Qp	= Q*P		1295	370	990	710
DFC	= Qp / Qe	Design Flow / Capacity 0.71	**0.71**	0.34	0.50	0.48
		Total Entry Flows 3,365				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2035 Design Flow AM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			

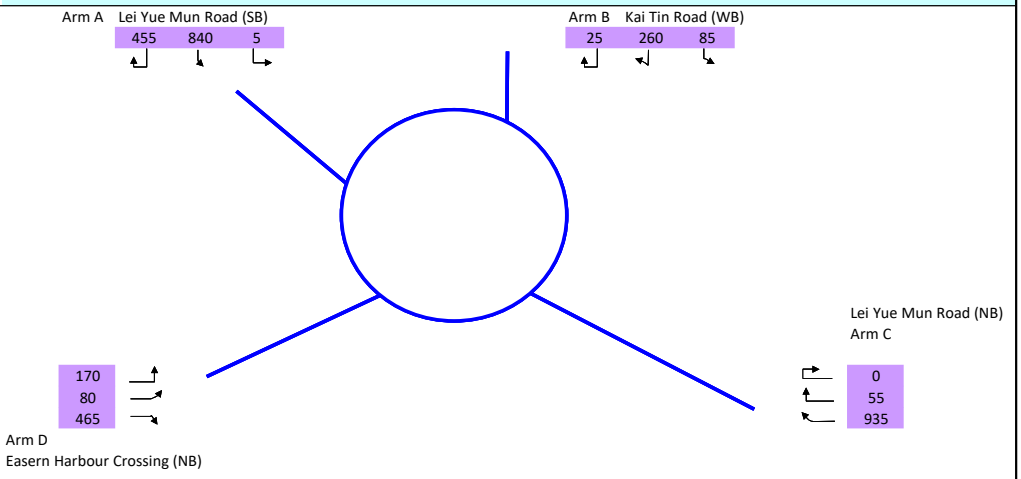


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,755	340	1,070	530
Qc	Circulating Flow Across Entry (pcu/hour)		560	2,085	845	1,915
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1859	923	1920	1358
Qp	= Q*P		1755	340	1070	530
DFC	= Qp / Qe	Design Flow / Capacity 0.94	**0.94**	0.37	0.56	0.39
		Total Entry Flows 3,695				

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

Roundabout Capacity Calculation

Job Title:	No. 4 Tung Yuen Street TIA		
Junction:	Kai Tin Road / Lei Yue Mun Road (G)		Designed by: CCT
Scheme:	2035 Design Flow PM Peak		Checked by: JPP
Design Year:	2035	Job No.: CHK50748310	Date: OCT, 2024
Arm A	Lei Yue Mun Road (SB)		
Arm B	Kai Tin Road (WB)		
Arm C	Lei Yue Mun Road (NB)		
Arm D	Easern Harbour Crossing (NB)		
Arm E			



		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		6.30	6.10	6.80	6.70
E	Entry Width (m)		7.20	6.90	10.50	9.40
L	Effective Length of Flare (m)		5.18	3.70	8.70	8.80
R	Entry Radius (m)		61.00	30.00	20.00	40.00
D	Inscribed Circle Diameter (m)		80.00	80.00	80.00	80.00
A	Entry Angle (degree)		28.00	33.00	46.00	31.00
Q	Entry Flow (pcu/hour)		1,300	370	990	715
Qc	Circulating Flow Across Entry (pcu/hour)		625	1,760	740	1,730
P	Peak Hour Factor		1.0	1.0	1.0	1.0
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.28	0.35	0.68	0.49
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.04	1.01	0.94	1.02
X2	= V + ((E-V) / (1+2S))		6.88	6.57	8.37	8.06
M	= EXP ((D-60) /10)		7.39	7.39	7.39	7.39
F	= 303 * X2		2084	1992	2535	2443
Td	= 1 + (0.5 / (1+M))		1.06	1.06	1.06	1.06
Fc	= 0.21*Td (1 + 0.2*X2)		0.53	0.52	0.59	0.58
Qe	= K (F - Fc*Qc*P)		1824	1092	1979	1467
Qp	= Q*P		1300	370	990	715
DFC	= Qp / Qe	Design Flow / Capacity 0.71	**0.71**	0.34	0.50	0.49
		Total Entry Flows 3,375				

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 | MVA HONG KONG LIMITED

Junction: Wai Yip Street / Wai Fat Road / Kwun Tong Bypass | Design Year: 2024

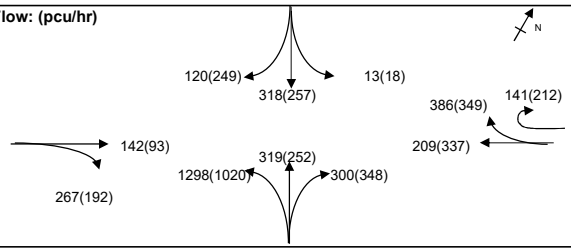
Description: 2024 Observed Flows | Designed By: CCT | Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Wai Yip Street (SB)		A	1	3.500	11			8%	14%	1945	1930	159	0.082		132	0.068	
		A	1	3.500						2105	2105	172	0.082		143	0.068	
		A	1	3.600		20				1965	1965	120	0.061		249	0.127	
Wai Yip Street (NB)		F	1,2,3	3.900	28					1905	1905	1298	0.681	0.681	1020	0.535	0.535
		C	3	3.900						2145	2145	218	0.102		213	0.099	
		C	3	3.500		18.6		51%	80%	2020	1975	205	0.101		196	0.099	
		C	3	3.650		15				1925	1925	196	0.102		191	0.099	
Kwun Tong Bypass (EB)		B	2	3.650		27		35%	39%	2080	2075	218	0.105		152	0.073	
		B	2	4.100		23				1815	1815	191	0.105		133	0.073	
Wai Fat Road (WB)		D	4	3.650						1980	1980	209	0.106		337	0.170	
		D	4	3.650		25				2000	2000	198	0.099		179	0.090	
		D	4	3.000		19				1905	1905	188	0.099		170	0.089	
		E	4	9.550		6				1085	1085	141	0.130	0.130	212	0.195	0.195

Pedestrian Crossing	Gp	2	MIN GREEN + FLASH =	13	+	12	=	25	
	Hp	1,3,4	MIN GREEN + FLASH =	5	+	9	=	14	
	Ip	2,3	MIN GREEN + FLASH =	5	+	10	=	15	
	Jp	4	MIN GREEN + FLASH =	11	+	10	=	21	
	Kp	1,2,3	MIN GREEN + FLASH =	7	+	13	=	20	
	Lp	4	MIN GREEN + FLASH =	5	+	10	=	15	
	Mp	4	MIN GREEN + FLASH =	5	+	5	=	10	

Notes:

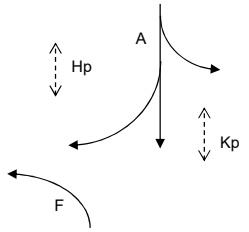
Flow: (pcu/hr)



Group	A,B,C,D	F,E	Group	A,B,C,D	F,E
y	0.387	0.811	y	0.411	0.731
L (sec)	17	20	L (sec)	17	20
C (sec)	140	140	C (sec)	140	140
y pract.	0.791	0.771	y pract.	0.791	0.771
R.C. (%)	104%	-5%	R.C. (%)	92%	6%

Stage / Phase Diagrams

1.



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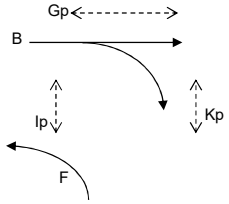

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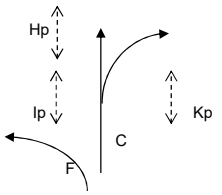

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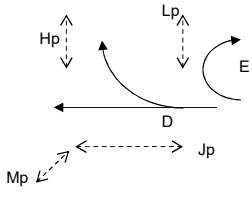

5.

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I/G= 5		I/G=		I/G=		I/G= 17		I/G=			

Date: 02 Oct 2024 | **Junction:** (H) Wai Yip Street / Wai Fat Road / Kwun Tong By

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 — MVA HONG KONG LIMITED

Junction: Wai Yip Street / Wai Fat Road / Kwun Tong Bypass — Design Year: 2035

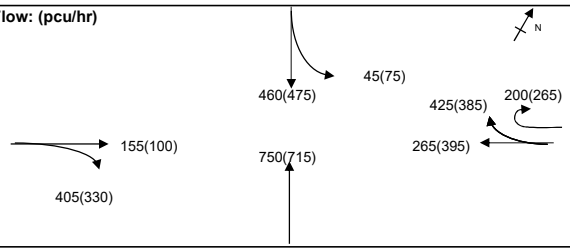
Description: 2035 Reference Flows — Designed By: CCT — Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Wai Yip Street (SB)		A	1	3.500	11			29%	45%	1890	1850	157	0.083	0.083	168	0.091	0.091
		A	1	3.500						2105	2105	174	0.083		191	0.091	
		A	1	3.500						2105	2105	174	0.083		191	0.091	
Wai Yip Street (NB)		C	1	3.500						1965	1965	362	0.184		345	0.176	
		C	1	3.500						2105	2105	388	0.184		370	0.176	
Kwun Tong Bypass (EB)		B	2	3.650		27		48%	56%	2065	2055	298	0.144	0.144	228	0.111	
		B	2	4.100		23				1815	1815	262	0.144		202	0.111	0.111
Wai Fat Road (WB)		D	3	3.650						1980	1980	265	0.134		395	0.199	0.199
		D	3	3.650		25				2000	2000	218	0.109	0.109	197	0.099	
		D	3	3.000		19				1905	1905	207	0.109		188	0.099	
		E	3	9.550		6				1085	1085	200	0.184		265	0.244	

Pedestrian Crossing								
Gp	2	MIN GREEN + FLASH =	9	+	6	=	15
Hp	1,3	MIN GREEN + FLASH =	5	+	7	=	12
Ip	2	MIN GREEN + FLASH =	6	+	12	=	18
Jp	3	MIN GREEN + FLASH =	9	+	7	=	16
Kp	1,2	MIN GREEN + FLASH =	7	+	9	=	16
Lp	3	MIN GREEN + FLASH =	5	+	4	=	9

Notes:

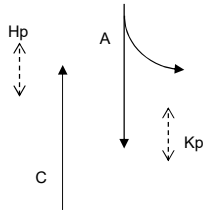
Flow: (pcu/hr)



Group	Lp,C,B	C,B,D	Group	A,B,D	C,B,D
y	0.329	0.438	y	0.402	0.486
L (sec)	25	12	L (sec)	13	12
C (sec)	140	140	C (sec)	140	140
y pract.	0.739	0.823	y pract.	0.816	0.823
R.C. (%)	125%	88%	R.C. (%)	103%	69%

Stage / Phase Diagrams

1.



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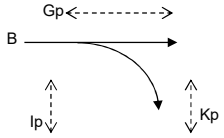

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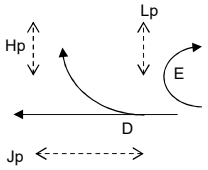

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5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: 02 Oct 2024 — Junction: (H) Wai Yip Street / Wai Fat Road / Kwun Tong By

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310 **MVA HONG KONG LIMITED**

Junction: Wai Yip Street / Wai Fat Road / Kwun Tong Bypass Design Year: 2035

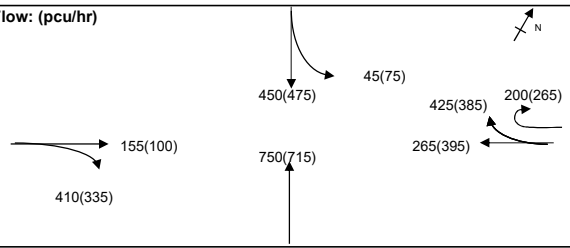
Description: 2035 Design Flows Designed By: CCT Checked By: JPP

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM Peak	Pro. Turning (%) PM Peak	Revised Saturation Flow (pcu/hr) AM Peak	Revised Saturation Flow (pcu/hr) PM Peak	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Wai Yip Street (SB)		A	1	3.500	11			29%	45%	1890	1850	153	0.081	0.081	168	0.091	0.091
		A	1	3.500						2105	2105	171	0.081		191	0.091	
		A	1	3.500						2105	2105	171	0.081		191	0.091	
Wai Yip Street (NB)		C	1	3.500						1965	1965	362	0.184		345	0.176	
		C	1	3.500						2105	2105	388	0.184		370	0.176	
Kwun Tong Bypass (EB)		B	2	3.650		27		49%	57%	2065	2055	301	0.146	0.146	231	0.112	0.112
		B	2	4.100		23				1815	1815	264	0.145		204	0.112	
Wai Fat Road (WB)		D	3	3.650						1980	1980	265	0.134		395	0.199	0.199
		D	3	3.650		25				2000	2000	218	0.109	0.109	197	0.099	
		D	3	3.000		19				1905	1905	207	0.109		188	0.099	
		E	3	9.550		6				1085	1085	200	0.184		265	0.244	

Pedestrian Crossing								
	Gp	2	MIN GREEN + FLASH =	9	+	6	=	15
	Hp	1,3	MIN GREEN + FLASH =	5	+	7	=	12
	Ip	2	MIN GREEN + FLASH =	6	+	12	=	18
	Jp	3	MIN GREEN + FLASH =	9	+	7	=	16
	Kp	1,2	MIN GREEN + FLASH =	7	+	9	=	16
	Lp	3	MIN GREEN + FLASH =	5	+	4	=	9

Notes:

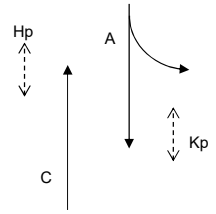
Flow: (pcu/hr)



Group	Lp,C,B	C,B,D	Group	A,B,D	C,B,D
y	0.330	0.439	y	0.403	0.487
L (sec)	25	12	L (sec)	13	12
C (sec)	140	140	C (sec)	140	140
y pract.	0.739	0.823	y pract.	0.816	0.823
R.C. (%)	124%	87%	R.C. (%)	103%	69%

Stage / Phase Diagrams

1.



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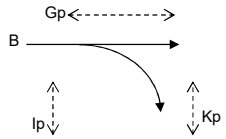

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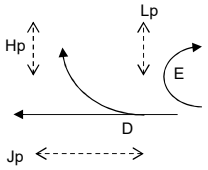

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I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: 02 Oct 2024 **Junction:** (H) Wai Yip Street / Wai Fat Road / Kwun Tong By