Attachment 3

Revised Traffic Impact Assessment

Section 12A Planning Application for Proposed Amendments to the Tung Chung Valley Outline Zoning Plan to Rezone "Residential (Group C)2" Zone to "Residential (Group B)" Zone in Support of Private Residential Development at Various Lots in D.D. 1 Tung Chung and Adjoining Government Land, Tung Chung, Lantau Island

Traffic Impact Assessment Report

March 2025

AECOM

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1 INTRODUCTION

1.1 Background

1.1.1 The Application Site covers various lots and adjacent Government land in DD 1 TC and adjoining government land, Tung Chung Valley, New Territories. The Application Site is located to the west of the junction of Yu Tung Road / Chung Mun Road with an area of about 33,808m^2 (**Figure 1.1**).

1.1.2 The Application Site is zoned "Residential (Group C)2" under the current Approved Tung Chung Valley Outline Zoning Plan (OZP) no. S/I-TCV/2. In statutory planning terms, residential development with a maximum plot ratio of 1.0 and building height of 20 mPD is permitted as of right within the Site (hereinafter referred to as "Conforming Scheme").

1.1.3 The Application Site is near the planned Tung Chung West (TCW) MTR Station and Tung Chung West PTI. Under the current application, the Applicant proposes to rezone the Site to "Residential (Group B)" with a domestic ratio of 2.1 to provide about 1,783 nos. of residential units with an average flat size of about 39.8 m^2 (hereinafter referred to as "Proposed Scheme"). Also, a covered private transport lay-by and some local commercial facilities with a non-domestic plot ratio of 0.22 are proposed for the Site.

1.1.4 AECOM Asia Co. Ltd. was commissioned by the Applicant as the Traffic Consultant to prepare a TIA report in support of the Section 12A planning application.

1.2 Objectives

1.2.1 The main objectives of this report are as follows-

- Outline the proposed development parameters and internal transport facilities provision, vehicular access arrangement and pedestrian arrangement;
- Review the current traffic condition in the vicinity of the Application Site;
- Estimate the potential traffic generations and attractions of the Application Site;
- Produce traffic forecasts on the surrounding road network at the adopted design year;
- Assess traffic impact on the surrounding road network induced from the Application Site; and
- Develop traffic improvement proposal(s), if necessary.

1.3 Structure of TIA Report

1.3.1 Following this introductory chapter, the TIA is structured as follows:

- **Chapter 2**: Proposed Development, describes the development schedule of the Application Site and its internal traffic facilities provisions, vehicular access arrangement and pedestrian arrangement.
- **Chapter 3**: Existing Traffic Condition, reviews the current traffic conditions in the vicinity. The future road network serving Tung Chung West would also be discussed.

- **Chapter 4**: Traffic Forecasting describes the traffic forecasting methodology and presents the forecasted traffic flows in design year.
- **Chapter 5**: Traffic Impact Assessment, assesses the traffic impact induced on the surrounding road network and recommends improvement schemes, if necessary; and
- **Chapter 6**: Summary and Conclusion, summarizes the findings of the study and presents the conclusion of this TIA.

2 APPLICATION SITE

2.1 Development Schedule

2.1.1 **Table 2.1** summarizes the development schedule of the Proposed Scheme. The proposed indicative Master Layout Plan (MLP) under the current application is illustrated in **Figure 2.1** for reference.

Table 2.1 Indicative Development Schedule of the Application Site

	Proposed Development
Site Area	About 33,808m^2
GFA - **Domestic Portion** - **Non-Domestic Portion**	About 78,292m^2 About 70,997m^2 About 7,295m^2
Plot Ratio - **Domestic Portion** - **Non-Domestic Portion**	Not more than 2.32 Not more than 2.10 Not more than 0.22
Maximum Domestic Site Coverage	Not more than 33.3%
Maximum Building Height (main roof level) - **Area (a)** - **Area (b)** - **Area (c)**	 Not more than 50mPD Not more than 80mPD Not more than 100mPD
No. of Storeys (1)	6 to 22 storeys above a 1 to 3 storey(s) podium
Domestic Portion	
Domestic GFA	About 70,997m^2
Domestic Plot Ratio	Not more than 2.10
No. of Blocks	9
No. of Units	About 1,783
Average Flat Size	About 39.8m^2
Anticipated Population (2)	About 5,171
Private Open Space (3)	Not less than 5,171m^2
Non-Domestic Portion – Commercial and Covered Private Transport Lay-by	
Commercial GFA (4)	About 4,145m^2
Covered Private Transport Lay-by GFA	About 3,150m^2
Maximum Building Height	Not more than 19mPD
Residents' Clubhouses (5)	
Clubhouse GFA	About 3,000m^2
No. of Storeys	1

Remarks:

(1) Excluding basement floor(s) for car park and transfer plate; including above ground floors for commercial / covered private transport lay-by / ramp / E&M facilities / clubhouse / residential lobby / residential floors. The indicative typical floor-to-floor height is 3.25m which is subject to refinement at detailed design stage.

(2) Adopting a person per flat ratio of 2.9 as per Tertiary Planning Units 950 – 951 under 2021 Population Census covering the Application Site

(3) Not less than 1m^2 per person in accordance with Hong Kong Planning Standards and Guidelines (HKPSG) requirement

(4) Commercial GFA refers to commercial uses ('Eating Place' and 'Shop and Services'), 'School' (kindergarten, nursery, language, computer, commercial and tutorial schools, art school, ballet and other types of schools providing interest / hobby related courses), 'Place of Entertainment' and 'Place of Recreation, Sports or Culture'. A kindergarten with a GFA of about 930m^2 is proposed.

(5) Residents' clubhouse GFA is based on the maximum GFA concession for clubhouse according to Buildings Department's Practice Note APP-104 and shall be disregarded from the total GFA calculation

2.2 Access Arrangement and Public Transport Facilities

Refer to the **Section 3.5 Future Road Network**, a four-arm roundabout junction intersecting Yu Tung Road / Chung Mun Road (J5) is planned. The roundabout will include a vehicular access road to serve the Application Site. The vehicular access for the Application Site is shown in **Figure 2.1.** With about 20m long queuing space between the ingress/egress point of the proposed development and the main road (Refer to **Figure 3.11**), it would be sufficient to accommodate an average traffic demand of about one vehicle per minute during peak hours (Table 4.5).

2.3 Public Transport Facilities

2.3.1 As mentioned in **Table 2.1** and refer to **Figure 2.1 – Indicative Master Layout Plan**, even there will be a planned Tung Chung West MTR Station, a covered private transport lay-by is proposed within the Application Site to supplement the provision of transport services for the future residents and visitors of the Application Site. The proposed covered private transport lay-by will be located to the southeast of the Application Site. It will consist of 2 double-width bays of 7.3m in width and 42m in length and one bay of 7.3m in width and about 60m in length. All the 3 bays have been designed to allow manoeuvring of 12.8m buses. The management and maintenance responsibility of the covered private transport lay-by would be taken up the Applicant.

2.3.2 As mentioned in **Table 2.1**, the population of the Application Site will be 5,171. Reference was made to the published "Travel Characteristics Survey (TCS) 2011 Final Report". According to the TCS Final Report, the daily mechanised trip rate per population is 1.83 trips and the morning peak hour accounted for about 12% of the daily trips. The percentage of using public transport is about 73% of the total trips. By assuming a directional split of 90:10 in outbound/inbound direction, the estimated additional public transport demand in outbound direction in AM peak hour is about 746 passengers / hour (i.e. 5,171 x 1.83 x 0.12 x 0.73 x 0.9).

2.3.3 Taking into consideration (1) some of the existing bus routes at Yu Tung Road and Tung Chung Road are running to / from Tung Chung Station; and (2) the Application Site is located in proximity of North Lantau Expressway which is the major strategic route to all destinations in Hong Kong, the possible bus routes are proposed as a circular bus route running between Tung Chung Station and the Application Site and a cross-district bus route running between Urban District (Kowloon or Hong Kong Island) and the Application Site.

2.3.4 With reference to the place of work and study in the Application Site and the modal split of the working population and students at Tung Chung District in 2021 by-census published by Census and Statistics Department, it is estimated that about 27% of the future residents would work/study in Tung Chung while 73% would work/study in other districts. For people who would go to other districts for work/study, around 57% of them would take MTR. Hence, it is assumed that 70% of the future residents (i.e. 522 passengers / hr) would take the local route for local trips/bus-rail interchange and another 30% of the future residents (i.e. 224 passengers / hr) would take the cross-district bus route directly.

2.3.5 To cater for the estimated public transport demand from the Application Site, the following public transport services are proposed as listed in **Table 2.2**.

Table 2.2 Proposed Public Transport Services

Public Transport Services	No. of Public Transport Route(s)	Frequency (min.)	Estimated Service Capacity (pax/hr) (1)
Local Bus Route (Circular)	1	10	522
Cross-District Bus Route	1	20	224

Note: The capacity of bus is assumed to be 100 passengers/bus.

2.3.6 One Bus Route (Circular): Running between Tung Chung Station and the Application Site, with terminating point at the Application Site and a bus lay-by accommodating two buses at Tat Tung Road near Fu Tung Street adjacent to Tung Chung Station for passenger boarding / alighting. The estimated round trip journey distance and journey time are about 5km and 10 minutes respectively. The round trip time is estimated about 15 minutes (5km / 30kph + 5 minutes boarding/alighting time). For proposed headway of 10 minutes, in total 2 buses would be required (i.e. 15/10) during peak hour. For non-peak period, it is assumed that the proposed circular bus service would be operated in headway of 20 minutes, in total 1 bus would be required (i.e. 15/20) during the non-peak hour. The proposed routing is shown in **Figure 2.2**. The proposed circular routing and bus stops is a preliminary proposal and will be reviewed to meet the public transport plan and needs during the detailed design stage.

2.3.7 One Cross-District Bus Route: running between the Application Site and Urban Districts (Kowloon or Hong Kong Island). Based on capacity of 100 persons/bus, this would be equivalent to 3 bus trips/hour. Hence 3 bus trips of cross-district bus routes to/from urban areas (such as Kowloon, Hong Kong Island) are proposed during the AM / PM peak hours.

2.3.8 With the proposed public transport services, the overall provided capacity is around 900 passengers / hour, which shall be sufficient to accommodate the estimated public transport demand.

2.3.9 Nonetheless, the proposed public transport services and associated operation arrangement (i.e. origin/destination, frequency, stops, routings etc.) will be reviewed to align with the public transport needs of the nearby community by relevant stakeholders, bus operators and Government Departments during the detailed design stage.

2.3.10 Subject to the future planning of public transport services, the provisions of covered private transport lay-by within the Application Site will allow adequate facility to serve the future public transport demand generated by the proposed development

2.3.11 According to Table 8.7.15 Guidelines on PTI Designs, Chapter 8.7, Volume 9 of TPDM. Peripheral sawtooth bus bay, central stacking PTI and central island passenger platform PTI should be applicable to Site with a minimum breadth 60m. With the north-south running direction and approximately 30m width of the proposed covered private transport lay-by, the saw tooth design of the pick up and drop off bays of the Transport Interchange is considered not feasible. Therefore, typical parallel bays are proposed within the covered private transport lay-by.

2.3.12 As mentioned in **Table 2.1**, a covered private transport lay-by is proposed within the Application Site to cater for the provision of public transport services for the future residents and visitors of the Application Site. One bay is proposed for general pick-up / drop-off of passengers, including taxi. One bay is proposed for the circular bus route (between Tung Chung Station and the Application Site) while the remaining bay is proposed for the cross-district bus route during the AM/PM peak hours. The covered private transport laybys will be accessible to the nearby community during the operational hours of the two proposed bus routes.

2.3.13 The ingress/egress of the Covered Private Transport Lay-by are proposed to be located at Chung Mun Road as shown in **Figure 2.1**. To provide a quick and direct routing of the proposed covered transport lay-by leading to and from Yu Tung Road and Chung Mun Road, the ingress allowing the vehicles to turn right or left into the lay-by and left-out from the lay-by is proposed. The traffic impact of the proposed vehicular arrangement is considered insignificant, taking into account of the low Volume to Capacity ratio of Chung Mun Road (**Table 5.3**) and low usage of planned bus lay-by located at Chung Mun Road (11-16 buses during peak hours, **Table 3.4**) to the north of the proposed ingress point. The indicative layout of the Covered Private Transport Lay-by together with the swept path analysis is shown in **Annex A**.

2.4 Internal Parking and Servicing Provisions

2.4.1 The parking and loading/unloading facilities of the Application Site would be provided in accordance with the requirements of the Hong Kong Planning Standards and Guidelines (HKPSG). The respective requirements are summarized in **Table 2.3**.

Table 2.3 HKPSG Parking and Servicing Facilities Provisions Requirement

	HKPSG Requirements
Private Car Parking Spaces	
Private Housing – Private Car Parking Spaces	GPS x R1 x R2 x R3 For flat size ≤ 40m^2 = 1 space per 4-7 flats x 0.5 x 0.75 x 1.00 = 0.375 spaces per 4-7 flats For flat size : 40m^2< flat size ≤70m^2, = 1 space per 4-7 flats x 1.2 x 0.75 x 1.00 = 0.9 spaces per 4-7 flats
Private Housing – Visitor Private Car Parking Spaces	5 spaces per block of more than 75 residential units
Commercial (Retail) – Private Car Parking spaces	1 car space per 150 – 300m^2 GFA
Commercial (Kindergarten) – Private Car Parking Spaces	0 to 1 car parking space per 4 to 6 classrooms
Motorcycle Parking Spaces	
Private Housing – Motorcycle Parking Spaces	1 space per 100-150 flats
Retail – Motorcycle Parking Spaces	5% - 10% total provision for private cars
Bicycle Parking Spaces	
Private Housing – Bicycle Parking Spaces	1 space for every 15 flats with flat size smaller than 70m^2

	HKPSG Requirements
Loading and Unloading Bay	
Private Housing – Loading and Unloading Bay	1 space for every 800 flats subject to min. 1 bay per block
Retail – Loading and Unloading Bay	1 loading/ unloading bay for goods vehicles for every 800 to 1200m^2 or part thereof, GFA
Lay-bys	
Kindergarten – Taxi / private cars lay-by	1 lay-by for taxis and private cars for every 5 to 8 classrooms
Kindergarten – Small Coaches lay-by	A minimum of 2 lay-bys for school buses or 5 lay-bys for small coaches (each 3m x 7m)

2.4.2 In light of the HKPSG requirements given in **Table 2.3**, the proposed provision for the Application Site according to the development schedules are summarized in **Table 2.4**. Taken into consideration the proximity to public transport services, traffic conditions and the illegal parking condition in the vicinity, it is proposed to adopt a GPS of 5 for calculating the residential carparking provision according to HKPSG. The assessment the GPS under HKPSG adopted for the Application Site is shown in **Annex B**. The Application Site is within 500m radius of new Tung Chung West MTR Station to justify the Accessibility Adjustment Ratio of 0.85 is shown in **Figure 2.3** of the Planning Statement and extracted in **Annex C**. For retail private car parking space, the mid-range provision requirement has been adopted. For other facilities, higher end of provision has been adopted.

Table 2.4 Required and Proposed Parking and Servicing Facilities Provisions

	Parameters	Required Provision		Proposed Provision
Private Housing – Private Car Parking Spaces	934 Flats	FS ≤ 40m^2	51-88	**224[1] spaces**
	849 Flats	$40m^2 < FS \le 70m^2$	110-192	
	Total: 1,783 Flats	**161-280 spaces**		
Private Housing – Visitor Private Car Parking Spaces	9 Towers	45 spaces		45[2] spaces
Retail – Private Car Parking Spaces	3,215 m^2	11 – 22 spaces		16[3] spaces
Kindergarten – Private Car Parking Spaces	6 Classrooms	0 – 2 spaces		2 spaces
		Private Car Parking Spaces		**287 spaces**
Private Housing – Motorcycle Parking Spaces	1,783 Flats	12 - 18 spaces		18 spaces
Retail – Motorcycle Parking Spaces	5% - 10% total provision for private cars	1 - 2 spaces		2 spaces
		Motorcycle Parking Spaces		**20 spaces**

	Parameters	**Required Provision**	**Proposed Provision**
Private Housing – Bicycle Parking Spaces	1,783 Flats(4)	119 spaces	119 spaces
		Bicycle Parking Spaces	**119 spaces**
Private Housing – Loading and Unloading Bay	9 Towers	9 bays	9 bays
Retail – Loading and Unloading Bay	3,215 m^2	3-4 bays	4 bays
		Loading and Unloading Bays	**13 bays**
Kindergarten – Taxi / private cars lay-by	6 Classrooms	2 lay-bys for taxi / private cars	2 lay-bys
Kindergarten – Small Coaches lay-by	-	5 lay-bys for small coaches (each 3m x 7m)	5 lay-bys

Notes: Round up figures adopted.
(1) GPS of 1 space per 5 flats is adopted.
(2) All the towers have more than 75 units per block. Hence 5 visitor car parking spaces per block would be provided.
(3) 1 car space per 200 m^2 GFA is adopted.
(4) No. of flats with flat size smaller than 70 m^2.

3 EXISTING TRAFFIC CONDITION AND FUTURE ROAD NETWORK

3.1 Existing Traffic Arrangement

3.1.1 The Application Site is located to the west of the junction of Yu Tung Road / Chung Mun Road.

3.1.2 Yu Tung Road is a dual two district distributor road in east-west direction. It connects to Chung Mun Road at its western end and Tung Chung Eastern Interchange at its eastern end.

3.1.3 Tung Chung Eastern Interchange is a roundabout junction of Yu Tung Road / Yi Tung Road / North Lantau Highway. It serves as the major roundabout junction in Tung Chung area. It provides connection to the strategic highways - North Lantau Highway for all other destinations in Hong Kong.

3.2 Traffic Survey

3.2.1 A total of 6 existing critical junctions and 3 critical road links have been identified for assessment and listed in **Table 3.1** and shown in **Figure 3.1**. Existing layout of the critical junctions are presented in **Figure 3.2** to **Figure 3.7**.

Table 3.1 Surveyed Key Junctions for Assessment

Ref.	Junction	Type	Fig. No.
Junctions			
J1	Yu Tung Road / Yi Tung Road / North Lantau Highway	Roundabout	3.2
J2	Yu Tung Road / Shun Tung Road	Signal	3.3
J3	Yu Tung Road / Chung Yan Road	Signal	3.4
J4	Tung Chung Road / Chung Yan Road	Priority	3.5
J5	Yu Tung Road / Chung Mun Road	Priority	3.6
J6	Tung Chung Road / Shek Mun Kap Road	Roundabout	3.7
Road Links			
L1	Yu Tung Road (between J2 and J3)		
L2	Yu Tung Road (between J3 and J5)		
L3	Chung Mun Road (to the south of J5)		

3.2.2 To investigate the current traffic condition of the identified critical junctions and critical road links, manual classified traffic counts were conducted on a typical weekday in May 2023. The surveys were undertaken during 7:00am – 9:00am and 5:00pm – 7:00pm.

3.2.3 The identified morning (AM) and evening (PM) peak hour are from 7:30am to 8:30am and from 5:30pm to 6:30pm respectively. The 2023 observed AM and PM peak hour traffic flows are shown in **Figure 3.8**.

3.3 Junction and Link Assessment

3.3.1 Based on the 2023 observed traffic flows, capacity assessments were carried out in accordance with the methodology documented in the appendices of Transport Planning and Design Manual (TPDM) Volume 2 Chapter 4 for priority junction /

roundabout. Signal junction assessments were based on TPDM Volume 4.

3.3.2 The existing junction performance of the critical junctions are summarized in **Table 3.2**. The junction calculation spreadsheets are enclosed in **Annex D**.

Table 3.2 Existing Junction Performance

Ref.	Junction	Indicator*	2023 Observed AM Peak	2023 Observed PM Peak
J1	Yu Tung Road / Yi Tung Road / North Lantau Highway	DFC	0.36	0.30
J2	Yu Tung Road / Shun Tung Road	RC	54%	>100%
J3	Yu Tung Road / Chung Yan Road	RC	67%	>100%
J4	Tung Chung Road / Chung Yan Road	DFC	0.40	0.17
J5	Yu Tung Road / Chung Mun Road	DFC	0.27	0.22
J6	Tung Chung Road / Shek Mun Kap Road	DFC	0.24	0.24

* RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

3.3.3 At present, the critical junctions are operating within capacity during the AM and PM peak periods.

3.3.4 Based on the observed traffic flows in **Figure 3.8**, the volume / capacity (V/C) ratios of the identified critical road links were assessed. The results are summarized in **Table 3.3**.

Table 3.3 Existing Road Link Performance

Ref.	Road Link	Direction	Capacity (pcu/hr)	2023 Traffic Flows (pcu/hr) AM Peak	2023 Traffic Flows (pcu/hr) PM Peak	2023 V/C AM Peak	2023 V/C PM Peak
L1	Yu Tung Rd (Between J2 and J3)	NB	3,050	1215	900	0.40	0.30
		SB	3,050	990	965	0.32	0.32
L2	Yu Tung Road (Between J3 and J5)	NB	2745(1)	375	220	0.14	0.08
		SB	2745(1)	355	220	0.13	0.08
L3	Chung Mun Road (To the south of J5)	NB	2350	215	85	0.09	0.04
		SB	2350	195	85	0.08	0.04

Note: (1) A 10% reduction in road capacity is assumed to account for bus activities on Yu Tung Road (between J3 and J5)

3.3.5 The assessment results in Table 3.3 indicate that all the critical road links are operating within capacities during the AM and PM peak periods.

3.4 Existing Public Transport Facilities

3.4.1 The existing franchised bus routes serving Yu Tung Road, Tung Chung Road and Chung Mun Road, where are located within 500m radius of the Application Site are summarized in the **Table 3.4** and presented in **Figure 3.9**.

Table 3.4 Existing Public Transport Services

Route No.	Origin / Destination	Frequency (min.)
Franchised Bus		
	Bus Routes – Tung Chung Road	
11	Tai O ←→ Tung Chung Station Bus Terminus	5 - 45
	Tai O (Sha Tsui) → Tung Chung Station Bus Terminus	07:10 (School Days Only), 14:05, 15:00, 15:45, 16:15, 17:00, 17:25
	Tai O (Shui Hau) → Tung Chung Station Bus Terminus	06:40 (Mon to Fri), 07:00 (Mon to Sat)
11A	Shek Pik ←→ Tung Chung Station Bus Terminus	25 - 45
23	Tung Chung Tat Tung Road Bus Terminus ←→ Ngong Ping	15 - 60
34	Tung Chung Tat Tung Road Bus Terminus ←→ Shek Mun Kap	5 - 110
3M	Tung Chung Station Bus Terminus ←→ Mui Wo Pier	5 – 60
	Pui O (Lo Wai Tsuen) → Tung Chung Station Bus Terminus	06:50, 07:20, 08:20
A35	Mui Wo Pier ←→ HZMB Hong Kong Port	From HZMB HK Port : 06:15, 06:40, 08:30, 18:15, 23:30 From Mui Wo Pier: 05:30, 07:25, 17:00, 22:00, 00:15
N35	Mui Wo Pier ←→ HZMB Hong Kong Pier	From Mui Wo Pier: 03:15, 04:20 From HZMB Hong Kong Pier: 01:30, 04:30
	Bus Routes – Yu Tung Road	
36X	Mun Tung Estate → Disneyland	08:20
37H	Ying Tung Estate ←→ North Lantau Hospital	20 - 30
37P	Yung Yat House (Yu Tung Road) ←→ Caribbean Coast	3 – 5 (School Day)
39M	Tung Chung Station Bus Terminus ←→ Mun Tung Estate	7 - 15
B6	HZMB Hong Kong Port ←→ Mun Tung Estate	15 - 30
B6S	Mun Tung Estate and HZMB Hong Kong Port (Via: Tung Chung Station)	15 Mondays to Fridays – 07:00 – 08:30 only (except Public Holidays)
E11B	Tin Hau Station ←→ Tung Chung (Mun Tung Estate)	12 - 40
E11S	Tin Hau Station ←→ Tung Chung (Mun Tung Estate)	5 - 7
E21A	Ho Man Tin (Oi Man Estate) Tin Hau Station ←→ Tung Chung (Yat Tung Estate)	20 - 30
E21B	Ho Man Tin (Oi Man Estate) Tin Hau Station ←→ Tung Chung (Yat Tung Estate)	20 - 30
E21X	Tung Chung (Mun Tung Estate) → Hung Hom Station	07:48
E22S	Tung Chung (Mun Tung Estate) ←→ Tseung Kwan O (Po Lam)	From Mun Tung Estate: 06:50, 07:05, 07:20 From Po Lam: 17:35

Route No.	Origin / Destination	Frequency (min.)
E31	Tsuen Wan (Discovery Park) ← → Tung Chng (Yat Tung Estate)	15 - 25
E36A	Tung Chung (Yat Tung Estate) ← → Yuen Long (Tak Yip Street)	25 - 60
N31	Tsuen Wan (Discovery Park) ← → Airport (Ground Transportation Centre)	30
S64X	Tung Chung (Mun Tung) ← → Airport	10 - 35
Bus Routes – Chung Mun Road		
37	Yat Tung Estate ← → Ying Tung Estate	10 – 20 (School Day)
38X	Yat Tung Estate (Yu Tung Road) ← → Tung Chung Station Bus Terminus	6 – 8 (School Day)

3.5 Future Road Network

3.5.1 According to PWP item No. 7786CL Tung Chung New Town Extension (Road Works at Yu Tung Road, Chung Mun Road, Road L29, Road L30 and Shek Mun Kap Road) and (Road Works at Road L22, Road L24, Road L25, Road L26 and Road L28), there will be new planned roads and road improvement works to serve the whole Tung Chung West. The road configuration and schematic layout of these planned roads are shown in **Table 3.5** and illustrated in **Figure 3.10.**

Table 3.5 Planned Road Improvement Works and Planned New Roads

Ref.	Road	Road Configuration	Types (New/Improvement)
1	Chung Mun Road	S-4	Improvement
2	Road L22	S-2	New
3	Road L23	S-2	New
4	Road L24	S-2	New
5	Road L25	S-2	New
6	Road L26	S-2	New
7	Road L28	S-2	New
8	Road L29	S-2	New
9	Road L30	S-2	New
10	Shek Mun Kap Road	S-2	Improvement

3.5.2 The critical junctions and identified road links for the traffic impact assessment in future are listed in **Table 3.6** and shown in **Figure 3.10**. The planned junction layouts are presented in **Figure 3.11** to **Figure 3.17**. The planned junction types (i.e. signalized, priority or roundabout) and junction improvement schemes for J2 and J3 are adopted under the Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.)

3.5.3 Planned Junction Improvement Scheme for J2 under REP-116-02 (**Figure 3.18**): (1) convert the left-turn traffic lane from eastbound Yu Tung Road to northbound Shun

Tung Road into a free-flow lane and (2) make minor lane marking modification to form a separate lane for the left turn from eastbound of Yu Tung Road.

3.5.4 Planned Junction Improvement Scheme for J3 under REP-116-02 **(Figure 3.19**): (1) change the lane marking of the middle entry lane of southbound Chung Yan Road from left turn + straight ahead to straight ahead + right turn; (2) change the lane marking of the rightmost entry lane of southbound Chung Yan Road from straight ahead + right turn to right turn; (3) change the lane marking of the middle entry lane of westbound Yu Tung Road from straight ahead + right turn to straight ahead; (4) widen the eastbound Yu Tung Road to provide three entry lanes, with leftmost lane for left turn, middle lane for straight ahead, rightmost land for straight ahead + right turn.

Table 3.6 Critical Junctions for Assessment

Ref.	Junction	Existing /Planned	Type (2)	Fig. No.
Junctions				
J1	Yu Tung Road / Yi Tung Road / North Lantau Highway	Existing	Roundabout	3.2
J2 (1)	Yu Tung Road / Shun Tung Road	Planned	Signal	3.18 (1)
J3 (1)	Yu Tung Road / Chung Yan Road	Planned	Signal	3.19 (1)
J4	Tung Chung Road / Chung Yan Road	Existing	Priority	3.5
J5	Yu Tung Road / Chung Mun Road / Road L22 / Road L23	Planned	Roundabout	3.11
J6	Tung Chung Road / Shek Mun Kap Road	Planned	Priority	3.12
J7	Road L29 / Road L30	Planned	Priority	3.13
J8	Tung Chung Road / Road L30	Planned	Priority	3.14
J9	Road L25 / Road L29	Planned	Priority	3.15
J10	Shek Mun Kap Road / Road L28 / Road L29	Planned	Priority	3.16
J11	Chung Mun Road / Road 24 / Road L29	Planned	Signal	3.17
Road Links				
L1	Yu Tung Road (between J2 and J3)			
L2	Yu Tung Road (between J3 and J5)			
L3	Chung Mun Road (to the south of J5)			

Note: (1) Junction Improvement Works are adopted under Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.
(2) The planned junction types are adopted based on Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.

4 TRAFFIC FORECASTING

4.1 Design Year

4.1.1 The proposed development is tentatively scheduled for completion in 2030. Year 2033 is therefore selected as a design year for assessment purpose (i.e. 3 years after the planned completion).

4.2 Future Planned Developments

4.2.1 With the Application Site (Conforming Scheme), there are also several planned / potential developments in the vicinity, which have been taken into account in the background traffic forecast and are listed in **Table 4.1** and diagrammatically shown in **Figure 4.1**. The development parameters and average flat size in Table 4.1 are adopted based on the Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.)

Table 4.1 Planned / Potential Future Developments in the Vicinity

Ref.	Lot	Proposed Use	Development Parameter (1)	Estimated Average Flat Size (1)
1	Application Site	Private Housing	236 units	140 m^2
2	Site A	Private Housing	212 units	140 m^2
3	Site B	Private Housing	818 units	100 m^2
4	Site C	Private Housing	124 units	100 m^2
5	Site D	Private Housing	245 units	140 m^2
6	Site E	Private Housing	53 units	140 m^2
7	Site F	Private Housing	126 units	140 m^2
8	Area 23	Public Housing	1908 units	50 m^2
9	Area 23	Commercial Facilities GFA	1,635 m^2 GFA	50 m^2
10	Area 33	Private Housing	411 units	100 m^2
11	Area 38 (Area 38A & B)	Commercial Development	29,601m^2 GFA	--
12	Area 38 (Area 38C)	Commercial Development	2,742m^2 GFA	--
13	Area 42	Public Housing Commercial Facilities GFA	6,600 units Commercial Facilities GFA=16,000m^2	40 m^2
14	Area 46	Public Housing Commercial Facilities GFA	1,711 units Commercial Facilities GFA=4,480m^2	40m^2
15	Area 48	Private Housing	187 units	100 m^2

Notes:
(1) Development parameters and average flat size are adopted based on the Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.)

4.3 Trip Generation of Planned / Potential Future Developments

4.3.1 For the Conforming Scheme, the development trip rates used in this report are adopted from the Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.) and presented in **Table 4.2**.

Table 4.2 TPDM Trip Rates (pcu/hr)

Landuse	Average Flat Size (m^2)	Unit	AM Peak		PM Peak	
			Gen.	Att.	Gen.	Att.
Subsidised Hoursing Public Rental	40	pcu/hr/flat	0.0325	0.0213	0.0196	0.0263
Subsidised Houring HOS	50	pcu/hr/flat	0.0483	0.0279	0.0244	0.0351
Private Housing / R(A)	60	pcu/hr/flat	0.0415	0.0141	0.0157	0.0276
	70	pcu/hr/flat	0.0659	0.0301	0.0258	0.0409
	80	pcu/hr/flat	0.0737	0.0305	0.0289	0.0491
Private Housing / R(B)	100	pcu/hr/flat	0.1572	0.0665	0.0609	0.0864
	120	pcu/hr/flat	0.189	0.0845	0.0783	0.1074
	140	pcu/hr/flat	0.2166	0.0988	0.0924	0.1237
Retail / Shopping Complex (Office + Retail)	--	pcu/hr/100m^2 GFA	0.1285	0.1525	0.236	0.2622
Office	--	pcu/hr/100m^2 GFA	0.1045	0.1646	0.1217	0.0840

Note:
(1) the development trip rates (Conforming Scheme) used in this report are adopted from the Agreement No. CE 70/2015 (CE) Tung Chung New Town Extension (West) – Design and Construction Deliverable C31 – Final Detailed Traffic Impact Assessment Report (REP-116-02.)

4.3.2 According to the trip rate in **Table 4.2**, **Table 4.3** summarizes the estimated trip generations of the planned / potential future developments as listed in **Table 4.1**.

Table 4.3 Estimated Traffic Flows for Planned Future Developments in the Vicinity

Ref.		Estimated Trips (pcu/hr)			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
1 – Application Site	Estimated Flow (pcu/hr) (236 units)	51	23	22	29
2 – Site A	Estimated Flow (pcu/hr) (212 units)	53	30	33	42
3 – Site B	Estimated Flow (pcu/hr) (818 units)	129	54	50	71
4 – Site C	Estimated Flow (pcu/hr) (124 units)	19	8	8	11
5 – Site D	Estimated Flow (pcu/hr) (245 units)	53	24	23	30
6 – Site E	Estimated Flow (pcu/hr) (53 units)	11	5	5	7
7 – Site F	Estimated Flow (pcu/hr) (126 units)	27	12	12	16
8 – Area 23	Estimated Flow (pcu/hr) (1,908 units)	92	53	47	67
9 – Area 23	(commercial facilities GFA = 1,635 m^2)	2	2	4	4
10 – Area 33	Estimated Flow(1) (pcu/hr) (411 units)	65	27	25	36
11 – Area 38 (Area 38A & B)	Estimated Flow (pcu/hr) (29,601m^2 Retail GFA)	38	45	70	78
12 – Area 38 (Area 38C)	Estimated Flow (pcu/hr) (2,742m^2 Retail GFA)	4	4	6	7
13 – Area 42	Estimated Flow (pcu/hr) ((6,600 units)	216	142	131	175
	Estimated Flow (pcu/hr) (commercial facilities GFA = 16,000m^2)	21	24	38	42
14 – Area 46	Estimated Flow (pcu/hr) (1,711 units)	56	36	34	45
	Estimated Flow (pcu/hr) (commercial facilities GFA = 4,480m^2)	6	7	11	12
15 – Area 48	Estimated Flow (pcu/hr) (187 units)	29	12	11	16

4.4 Reference Traffic Forecasts

4.4.1 For the future traffic forecasts, in-house local area models (LAM) would be developed on this area by making reference to TD's 2019-based Base District Traffic Model (BDTM) "NTW3" covering Lantau Island.

4.4.2 The 2019 / 2026 / 2031 BDTM would be cordoned off to produce LAM for providing traffic flows within the study area. By proportional of 2019 / 2026 BDTM condoned matrix, the 2023 LAM matrix was derived. The 2019 LAM road network would also be refined for matching with existing road network in year 2023. The 2023 LAM matrix will be taken and assigned to the 2023 LAM road network by "SATURN" software to produce the year 2023 traffic flows. The cordoned 2023 LAM would be validated against 2023 observed traffic flows to ensure the base year LAM could satisfactorily replicate the traffic flow before the model is used to produce future year traffic forecasts.

4.4.3 The 2031 road network would be retrieved for matching with the planned network in Tung Chung West. The growth pattern demand from the produced 2023 / 2031 BDTM matrix were fed into the LAM for projecting the traffic flows from year 2023 to year

2033. In addition, the trip ends of traffic zones were adjusted and controlled to the estimated trips generated by the future planned development in the vicinity as listed in **Table 4.3**. The 2033 reference traffic flows with the Conforming Scheme are shown in **Figure 4.2**.

4.5 Design Traffic Forecasts

4.5.1 In the current proposal, the Applicant suggested a higher domestic plot ratio of 2.10, which would include 1,783 residential units with an average flat size of 39.8m^2. However, the TPDM has not provided any recommended trip generation rates for flats of this size. To address this, the adopted trip rates are determined by the trip rates for private housing of average flat size of 60 m^2 in Conforming Case in **Table 4.2** in proportion to the change in average flat size. For example, trip generation rate of private housing in AM peak with averaged flat size of 40m^2 would be adjusted as follows: 0.0415 pcu/hr/flat x 40m^2 / 60m^2. For the retail, the trip rate proposed in the Conforming Scheme in **Table 4.2** was adopted. For the kindergarten, the trip rate as stipulated in BDTM NT Final Report, Appendix P 2 – Proposed Trip Rates of kindergarten was adopted. The trip rate for the Proposed Scheme are summarized in **Table 4.4**. .

Table 4.4 Trip Rates for Proposed Scheme

Land Use	Average Flat Size (m^2)	Trip Rates (pcu/hr/flat)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Private Housing	40	0.0277 (1)	0.0094 (2)	0.0105 (3)	0.0184 (4)
Retail	pcu/hr/100m^2	0.1285	0.1525	0.236	0.2622
Kindergarten	pcu/hr/class operating	2.3056	2.3056	0.0286	0.0286

Note:
(1) The adopted trip generation rate = adopted trip generation rate of private housing with average flat size of 60 sqm in AM peak x flat size of 40 sqm / flat size of 60 sqm = 0.0415 x 40 / 60 = 0.0277
(2) The adopted trip attraction rate = adopted trip attraction rate of private housing with average flat size of 60 sqm in AM peak x flat size of 40 sqm / flat size of 60 sqm = 0.0141 x 40 / 60 = 0.0094
(3) The adopted trip generation rate = adopted trip generation rate of private housing with average flat size of 60 sqm in PM peak x flat size of 40 sqm / flat size of 60 sqm = 0.0157 x 40 / 60 = 0.0105
(4) The adopted trip attraction rate =adopted trip attraction rate of private housing with average flat size of 60 sqm in PM peak x flat size of 40 sqm / flat size of 60 sqm = 0.0276 x 40 / 60 = 0.0184

4.5.2 Based on the development schedule as mentioned in **Section 2**, the adopted trip rates from **Table 4.4** (Proposed Scheme) and the development trip generation and attraction under the Proposed Scheme for the Application Site are illustrated in **Table 4.5**. The traffic generation under the Conforming Scheme is also listed for comparison purpose.

Table 4.5 Estimated Traffic Flows for the Application Site

Subject Site	Estimated Trips (pcu/hr)			
	AM Peak		PM Peak	
	Gen.	Att.	Gen.	Att.
Conforming Scheme				
Domestic Portion (PR = 1.0)	51	23	22	29
Proposed Scheme				
Domestic Portion (PR = 2.10)	49	17	19	33
Retail	4	5	7	8
Kindergarten	14	14	1	1
Total Two-way Traffic (Conforming Scheme) (pcu/hr)	**74**		**51**	
Total Two-way Traffic (Proposed Scheme) (pcu/hr)	**103**		**69**	
Difference (pcu/hr)	**29**		**18**	

4.5.3 As shown in **Table 4.5**, as compared with the Conforming Scheme, the Proposed Scheme would generate additional two-way traffic of about 29 pcu/hr and 18 pcu/hr during the AM and PM peak hours.

4.5.4 The 2033 design traffic flows are produced by adding additional trip generated by the Application Site under the Proposed Scheme as estimated in **Table 4.5** to 2033 reference traffic flows. The 2033 design traffic flows (Proposed Scheme) are shown in **Figure 4.3**.

5 TRAFFIC IMPACT ASSESSMENT

5.1 Junction Capacity Assessment

5.1.1 The operational performance of 11 critical junctions based on year 2033 traffic forecasts as mentioned in **Section 4** have been assessed. The results of junction capacity analysis are summarized in **Table 5.1**. Junction capacity calculation sheets are attached in Annex B.

Table 5.1 Junction Performance in 2033

Ref.	Junction	Indicator(1)	2033			
			Reference (Conforming Scheme)		Design (Proposed Scheme)	
			AM Peak	PM Peak	AM Peak	PM Peak
J1	Yu Tung Road / Yi Tung Road / North Lantau Highway	DFC	0.60	0.52	0.61	0.53
J2	Yu Tung Road / Shun Tung Road	RC	21%	58%	20%	56%
J3	Yu Tung Road / Chung Yan Road	RC	**0%**	29%	**-1%**	28%
J4	Tung Chung Road / Chung Yan Road	DFC	0.49	0.21	0.49	0.21
J5	Yu Tung Road / Chung Mun Road / Road L22 / Road L23	DFC	0.31	0.26	0.31	0.27
J6	Tung Chung Road / Shek Mun Kap Road	DFC	0.15	0.16	0.15	0.16
J7	Road L29 / Road L30	DFC	0.30	0.33	0.30	0.33
J8	Tung Chung Road / Road L30	DFC	0.30	0.24	0.30	0.24
J9	Road L29 / Road L25	DFC	0.39	0.23	0.39	0.23
J10	Shek Mun Kap Road / Road L29 / Road L 28	DFC	0.16	0.15	0.16	0.15
J11	Chung Mun Road / Road L29 / Road L24	RC	68%	>100%	68%	>100%

Notes:
(1) RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

5.1.2 As shown in **Table 5.1**, all junctions will be operation within capacity in 2033 except J3 in AM peak period. In order to enhance junction capacity of J3, junction improvement schemes for J3 have been proposed for consideration.

5.2 Junction Improvement for Junction of Yu Tung Road / Chung Yan Road (J3)

5.2.1 To enhance junction capacity of J3, it is proposed to provide one additional westbound far-side flare traffic lane of about 60m on Yu Tung Road and revise the lane markings to optimize the junction performance. In addition, it is proposed to provide one additional receiving lane at Yu Tung Road eastbound on Yu Tung Road to cater the straight-ahead traffic of Yu Tung Road eastbound. The proposed junction layout for junction of Yu Tung Road / Chung Yan Road (J3) is shown in **Figure 5.1**. The junction performance is reassessed by taking into consideration the junction improvement and the junction would operate with sufficient capacity as shown in **Table 5.2**. Further junction improvement scheme, with demarcation of works indicated in **Figure 5.1**, at J3 is formulated for improving the junction performance and will be carried out by the project proponent prior to the completion of the Proposed Development.

Table 5.2 2033 Junction Performance with Improvement Scheme

Ref.	Junction	Indicator*	2033 Design Case	
			AM Peak	PM Peak
J3	Yu Tung Road / Chung Yan Road	RC	20%	55%

Notes: RC = Reserve Capacity for signal junction

5.3 Road Link Assessment

5.3.1 The volume / capacity (V/C) ratios of the identified critical road links based on 2033 traffic forecasts Reference and Design Cases have been assessed. The results are summarized in **Table 5.3**.

Table 5.3 Road Link Performance in 2033

Ref.	Road Link	Direction	Capacity (pcu/hr)	2033							
				Reference Case				Design Case			
				Traffic Flows (pcu/hr)		V/C		Traffic Flows (pcu/hr)		V/C	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
L1	Yu Tung Rd (Between J2 and J3)	NB	3,050	2105	1455	0.69	0.48	2130	1475	0.70	0.48
		SB	3,050	1550	1665	0.51	0.55	1560	1675	0.51	0.55
L2	Yu Tung Road (Between J3 and J5)	NB	2,745 (1)	1105	685	0.40	0.25	1125	700	0.41	0.26
		SB	2,745(1)	775	740	0.28	0.27	785	755	0.29	0.28
L3	Chung Mun Road	NB	2350	725	390	0.31	0.17	725	390	0.31	0.17
		SB	2350	435	395	0.19	0.17	435	395	0.19	0.17

Note: (1) A 10% reduction in road capacity is assumed to account for bus activities on Yu Tung Road (between J3 and J5)

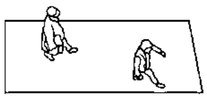
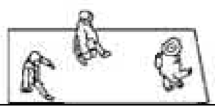
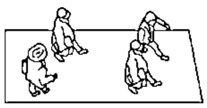
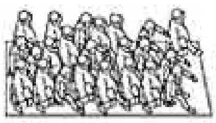
5.3.2 The assessment results in **Table 5.3** indicated that all the above road links would be operated within capacity in year 2033.

5.4 Pedestrian Impact Assessment

5.4.1 Pedestrian LOS was used to assess the performance of footpaths. The assessment of the LOS depends on the pedestrian flows and the widths of the footpaths by making reference to the TPDM, published by TD.

5.4.2 LOS defines the walking environment in six levels by measuring the pedestrian flow rate in terms of the effective width of footpath. LOS A and B are both very good service levels and LOS F is the worst condition, while LOS C is desirable for most design with dominant 'living' pedestrian activities. **Table 5.4** describes different levels of LOS related to different ranges of pedestrian flow rate.

Table 5.4 Description of Pedestrian Level-of-Service (LOS) on Footpath

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

Sources: Transport Planning and Design Manual (TPDM) Volume 6 Chapter 10 and Highway Capacity Manual (HCM-version 2000) Chapter 11 Exhibit 11-8.

5.4.3 According to the TCS Final Report, the daily mechanised trip rate per population is 1.83 trips and the morning peak hour accounted for about 12% of the daily trips. The percentage of using MTR is 27% of the total trips. As a conservative approach, 30% of the total trip is adopted to estimate the walking trips to MTR station. During AM peak hour the walking trips to MTR station is about 341 pedestrian / hour (i.e. 5,171 x 1.83 x 0.12 x 0.3).

5.4.4 The anticipated pedestrian traffic from the Application Site (i.e. 341 pedestrian / hour) to TCW Station is expected to cross the Road L22. The adjacent developments in close proximity to the subject site are also taken into account for the pedestrian assessment.

5.4.5 **Table 5.5** and **Figure 5.2** indicate the estimated pedestrian traffic of the adjacent developments to the subject site.

Table 5.5 Estimated Pedestrian Traffic in close vicinity to the subject site

Land Lot No.	Landuse	Parameters	Estimated Pedestrian Traffic (1) (2)
36A	Social Welfare Facilities (GIC)	Land Area: 4,858 m^2	50 ped/hr
36F	Telephone Exchange (GIC)	Land Area: 1,062 m^2	50 ped/hr
38A & 38B	Commercial	GFA: 31,248 m^2	1,250 ped/hr
38C	Commercial	GFA: 2,742 m^2	110 ped/hr
45F	Stormwater Attenuation and Treatment Ponds (OU)	Land Area: 3,426 m^2	50 ped/hr

Note: (1) Assumed 50 ped/hr for GIC and OU facilities.
(2) With reference to HKPSG Chpater 5, Table 2, 25m2 commercial GFA per worker is adopted and 100% of workers would access the site during peak hours..

5.4.6 Along the at-grade route, pedestrian would pass through the footpath at the west of Road L22, cautionary crossing across Road L22 and north of Yu Tung Road to reach the MTR station. The minimum width of the footpath at the west of Road L22 and the north of Yu Tung Road is 2.5m and 4.8m respectively. The width of crossing across Road L22 is 3.5m.

5.4.7 To achieve a conservative approach, a surge factor of 1.2 has been considered for estimating the pedestrian traffic. **Table 5.6** and **Figure 5.3** summarize the estimated pedestrian traffic impact to the footpath in vicinity to the subject site.

Table 5.6 Estimated Pedestrian Traffic Impact to the footpath in vicinity to the subject site

Footpath of	Min. Width	Estimated Pedestrian Traffic	LOS
West of Road L22	2.5m	662 ped/hr (5 ped/min/m)	A
North of Yu Tung Road	4.8m	2222 ped/hr (8 ped/min/m)	A

5.4.8 With reference to TPDM Vol. 2, the capacity of a 3.5m wide pedestrian crossing is ranged from 2,100 ped/hr to 4,200 ped/hr. According to **Table 5.6**, the estimated pedestrian traffic using west of Road L22 is 662 ped/hr, it is anticipated those pedestrians would cross Road L22 crossing. In light of the above, the pedestrian traffic would not generate insurmountable impact to the pedestrian crossing and the estimated pedestrian traffic impact to the crossing is tabulated in **Table 5.7**.

Table 5.7 Estimated Pedestrian Traffic Impact to the crossing in vicinity to the subject site

Pedestrian Crossing across	Min. Width	Capacity	Estimated Pedestrian Traffic	Sufficient
Road L22	3.5m	4200 ped/hr	662 ped/hr	Yes

5.4.9 The pedestrian assessment results above revealed that all the footpath sections and crossing will be still operating at acceptable level.

6 CONCLUSION

6.1 Summary

6.1.1 The Application Site covers various lots and adjacent Government land in DD 1 TC and adjoining government land, Tung Chung Valley, New Territories. The Site is located to the west of the junction of Yu Tung Road / Chung Mun Road with an area of about 33,808m².

6.1.2 The Application Site is zoned "Residential (Group C)2" under the current Approved Tung Chung Valley Outline Zoning Plan (OZP) no. S/I-TCV/2. In statutory planning terms, residential development with a maximum plot ratio of 1.0 and building height of 20 mPD is permitted as of right within the Site.

6.1.3 Refer to the **Section 3.5 Future Road Network**, a four-arm roundabout junction intersecting Yu Tung Road / Chung Mun Road (J5) is planned. The roundabout will include a vehicular access road to serve the Application Site.

6.1.4 The Application Site is close to the planned TCW MTR Station. Under the current application, the Applicant proposes to rezone the Site with a domestic plot ratio of 2.10 to provide about 1,783 nos. of residential units (with an average flat size of about 39.8m²) on the Site.

6.1.5 The parking and loading/unloading facilities of the Application Site would be provided in accordance with the requirements as stipulated in the HKPSG.

6.1.6 In order to review the existing traffic condition, traffic count surveys were conducted at 6 identified critical junctions and 3 identified road links to investigate the traffic condition during commuting peak hours. At present, all the critical junctions and identified road links are operating within capacity.

6.1.7 To supplement the provision of transport services for the future residents and visitors of the Application Site, the proposed Covered Private Transport Lay-by will consist of 2 double-width bays of 7.3m in width and 42m in length and 1 double-width bay of 7.3m in width and 60m in length. All the 3 bays have been designed to allow manoeuvring of 12.8m buses. One bay is proposed for general pick-up/drop-off of passengers, including taxi. The remaining two bays are proposed for bus services. The covered private transport laybys will be accessible to the nearby community during the operational hours of the two proposed bus routes. The management and maintenance responsibility of the covered private transport lay-by would be taken up the Applicant.

6.1.8 As compared with the Conforming Scheme, the Proposed Scheme would generate additional two-way traffic of about 29 pcu/hr and 18 pcu/hr during the AM and PM peak hour.

6.1.9 The Application Site is tentatively scheduled for completion in 2030. According to Guidelines and Requirements of TIA Studies, the TIA should assess at least 3 years after the planned completion of the Proposed Development. Hence, 2033 is adopted as the design year for this TIA.

6.1.10 Peak hour traffic forecasts in design year 2033 were generated by the local area model. In addition, the traffic generated by other key future developments and to/from the Application Site have been included.

6.1.11 Junction capacity assessment was conducted for both 2033 reference and design cases. The results revealed that all junctions would be operating within junction capacity RC>=15% or DFC<=0.85 under design case in 2033 except for J3 in AM peak period even in 2033 Reference Case (i.e. Conforming Scheme). In light of this, further junction improvement scheme at J3 (as shown in **Figure 5.1**) is formulated for improving the junction capacity. With the said junction improvement scheme, J3 would operate with sufficient capacity in 2033 design case.

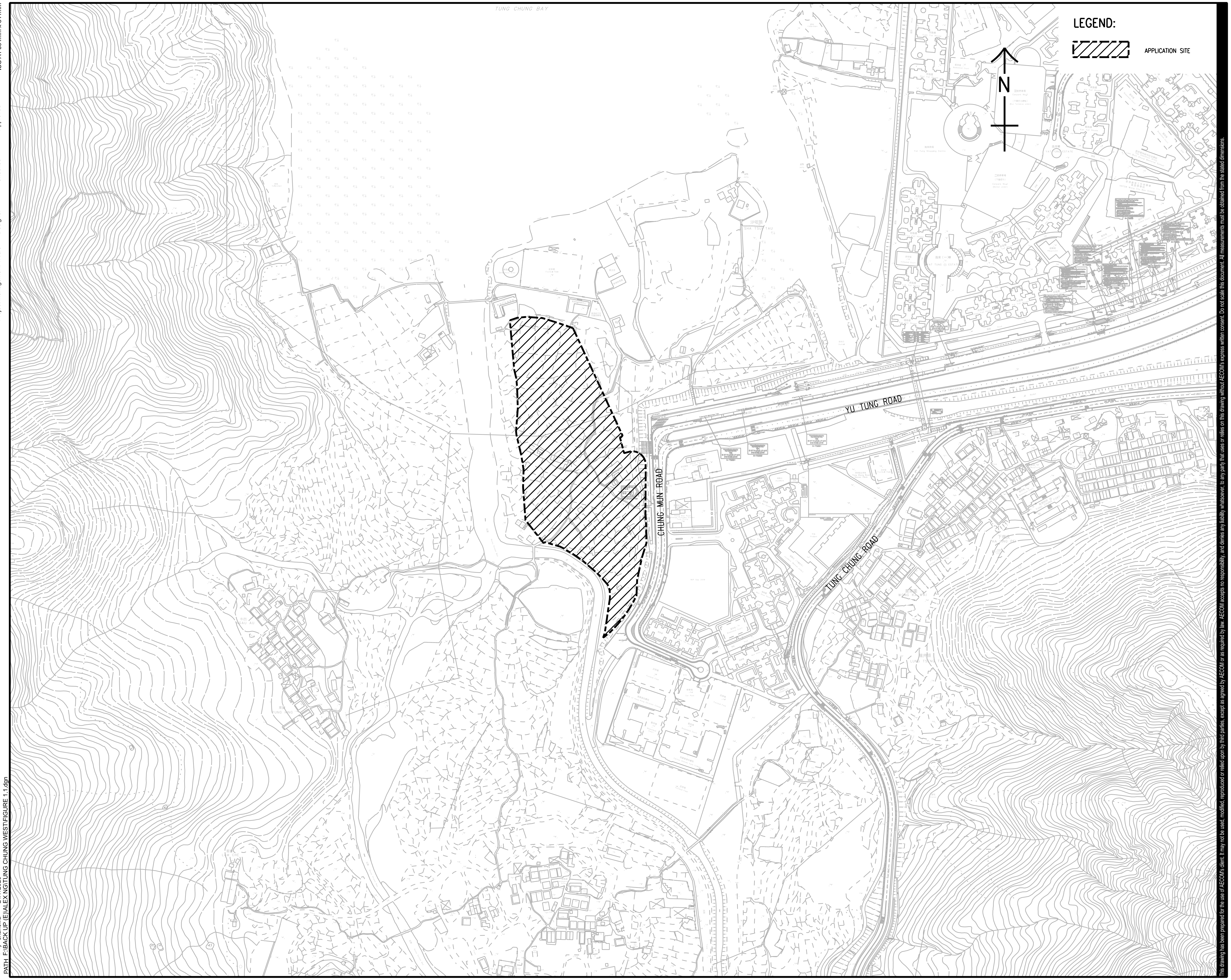
6.1.12 The assessment results in **Table 5.3** indicated that all the identified road links operated within capacity in year 2033.

6.1.13 Pedestrian assessment has been conducted for footpaths and crossings between the subject site and future MTR Tung Chung West station. The assessment result shows that sufficient footpath width has been provided to cater for at-grade pedestrian movements generated to/from the subject site, which have been tabulated in **Table 5.6** and **Table 5.7**.

6.1.14 **Conclusion**

6.1.15 In light of the findings of this TIA, it is concluded that there is no adverse traffic impact imposed on the surrounding road network due to the Application Site. With the proposed mitigation measures in place, the Application Site is technically feasible in traffic terms.

Figure



AECOM

PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核

STATUS
階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 4000

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

SITE LOCATION

SHEET NUMBER
圖紙編號

FIGURE 1.1

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: chancwa 21/7/2023
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 1.1.dgn

ISO A1 594mm x 841mm

Approved:

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Designer:

Project Management Initials:

Plot File by: chancwa 10/3/2025
PATH C:\Users\chancwa\OneDrive - AECOM\PRIVATE JOB\ALEX NG\TUNG CHUNG WEST\FIGURE 2.1.dgn

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PROJECT
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SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS
階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 2000

KEY PLAN
索引圖

PROJECT NO.
項目編號

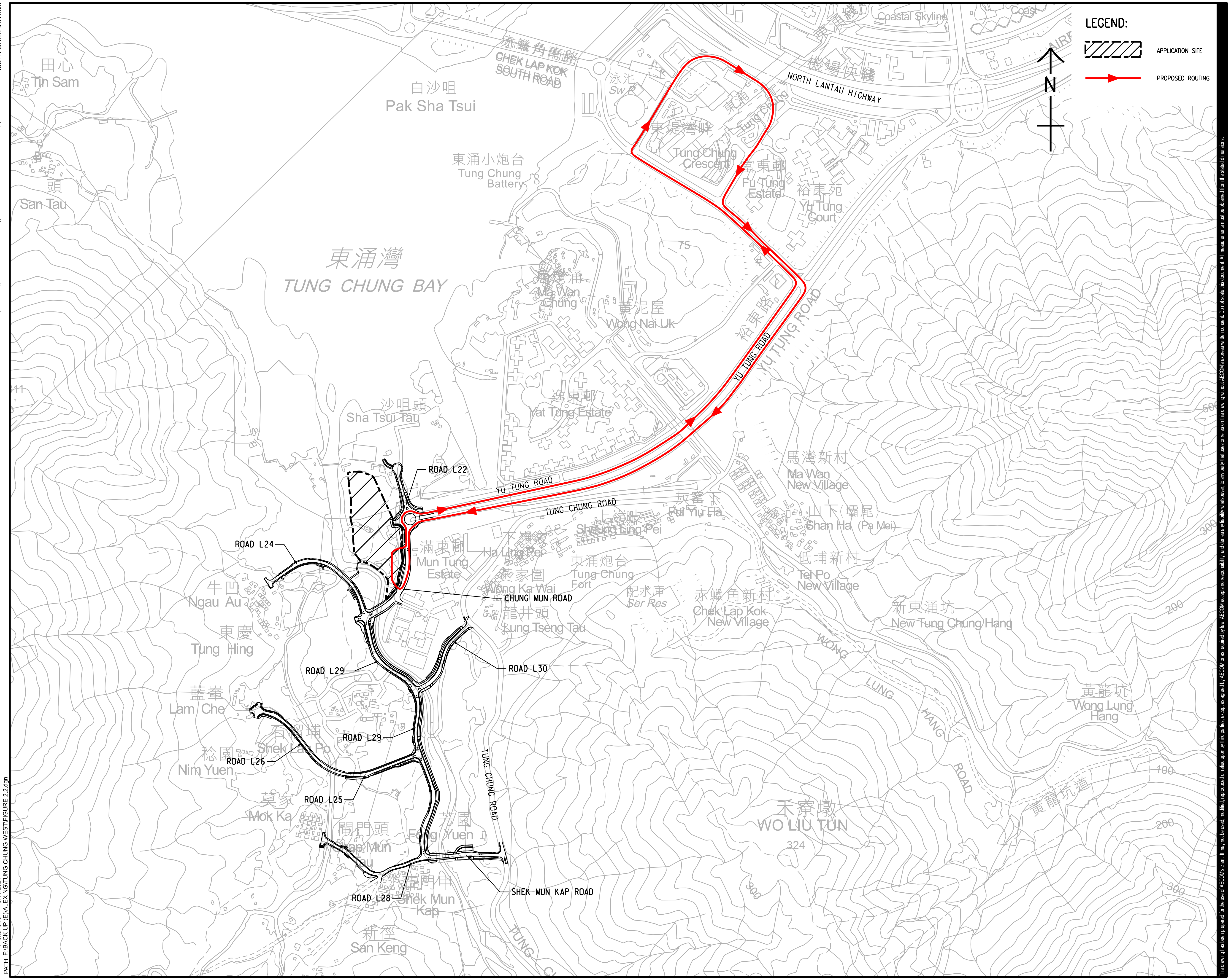
CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

INDICATIVE MASTER LAYOUT PLAN

SHEET NUMBER
圖紙編號

FIGURE 2.1



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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS 階段

SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 10000

KEY PLAN 索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE 圖紙名稱

ROUTING OF BUS SERVICE BETWEEN APPLICATION SITE AND TUNG CHUNG STATION

SHEET NUMBER 圖紙編號

FIGURE 2.2

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

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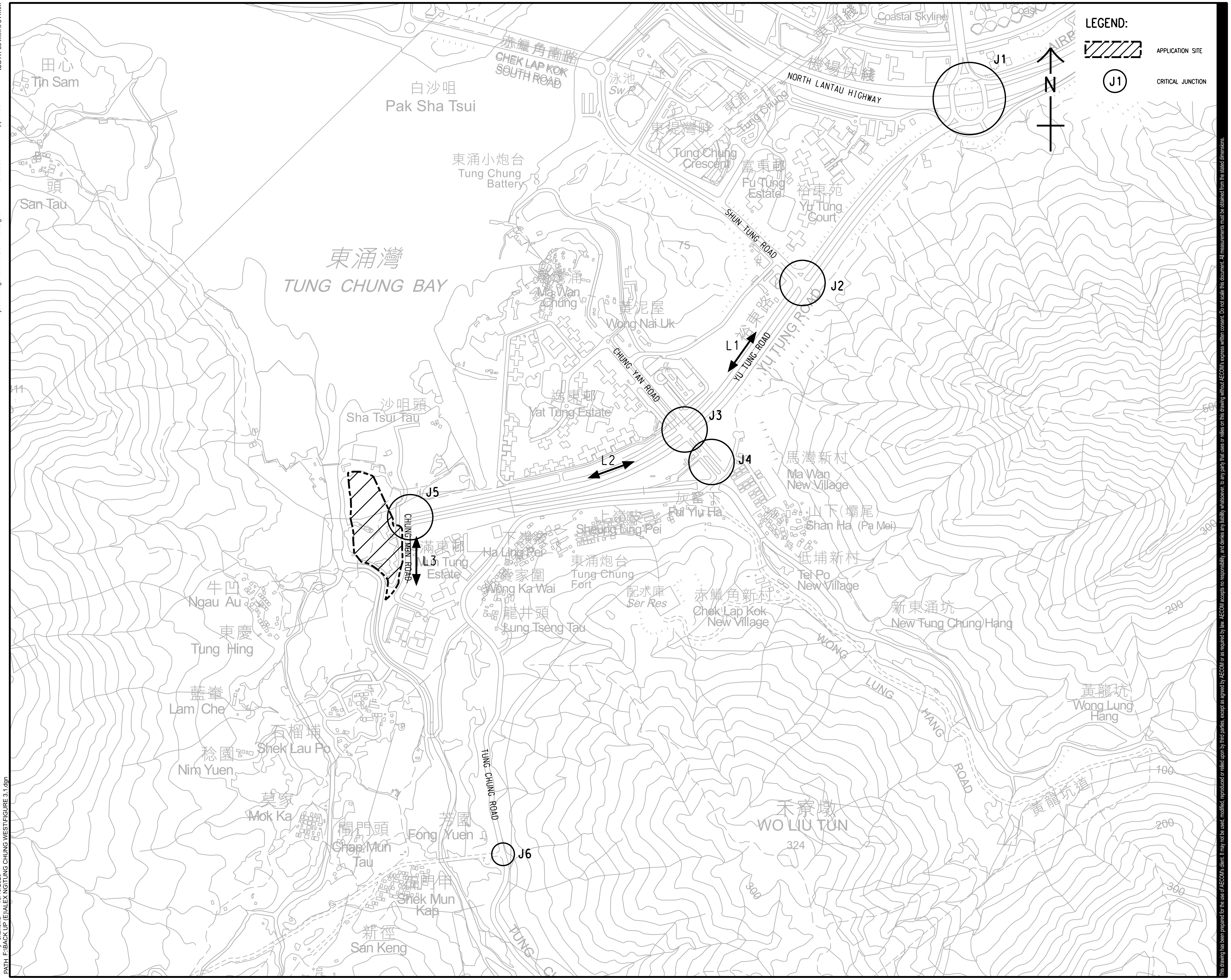
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 2.2.dgn



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PROJECT
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SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 10000

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

LOCATION OF SURVEYED JUNCTIONS

SHEET NUMBER
圖紙編號

FIGURE 3.1

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

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PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.1.dgn

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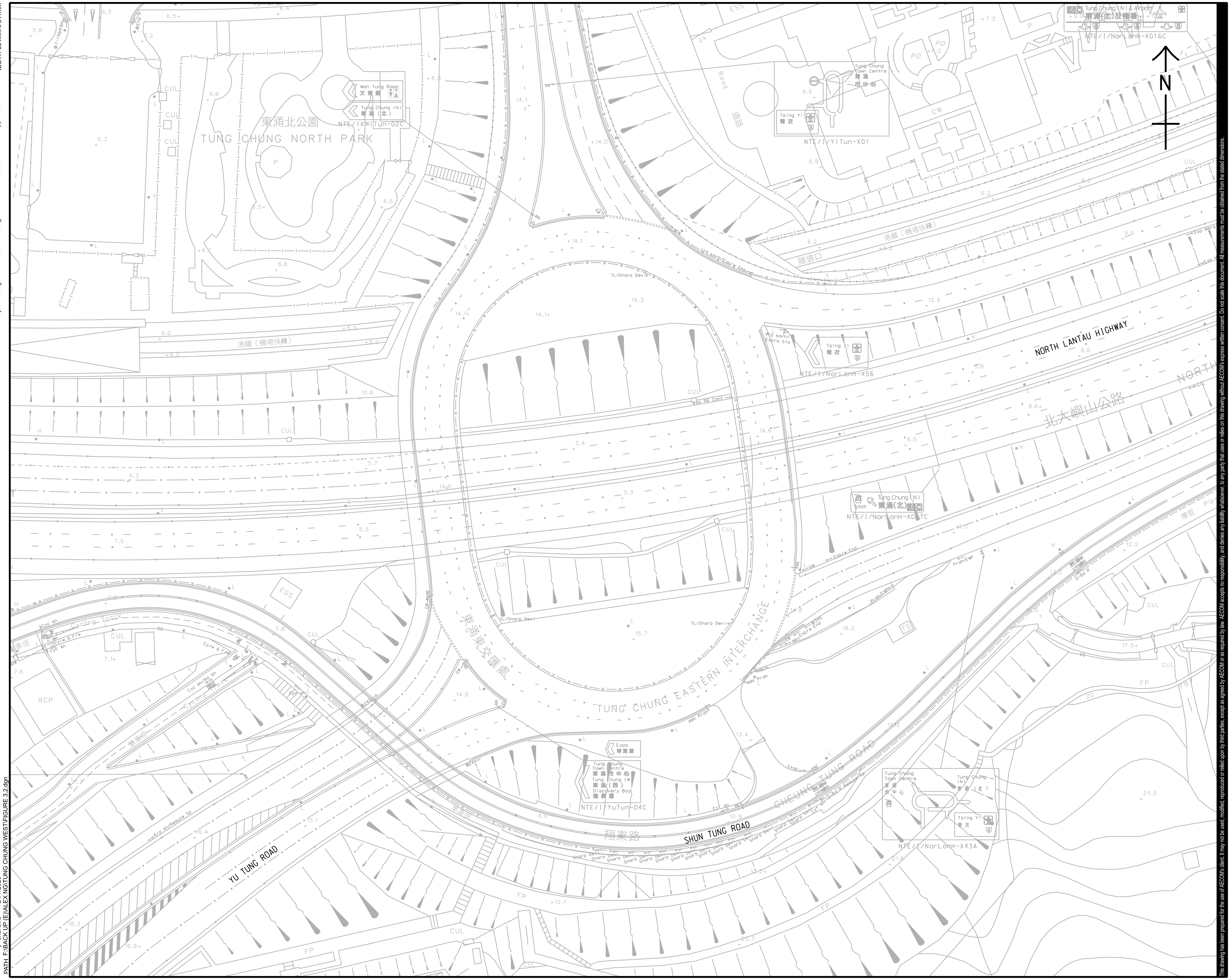

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PROJECT

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS

SCALE | **DIMENSION UNIT**

A3 1 : 1000

KEY PLAN

PROJECT NO. | **CONTRACT NO.**

SHEET TITLE

EXISTING JUNCTION LAYOUT OF YU TUNG ROAD / YI TUNG ROAD / NORTH LANTAU HIGHWAY

SHEET NUMBER

FIGURE 3.2

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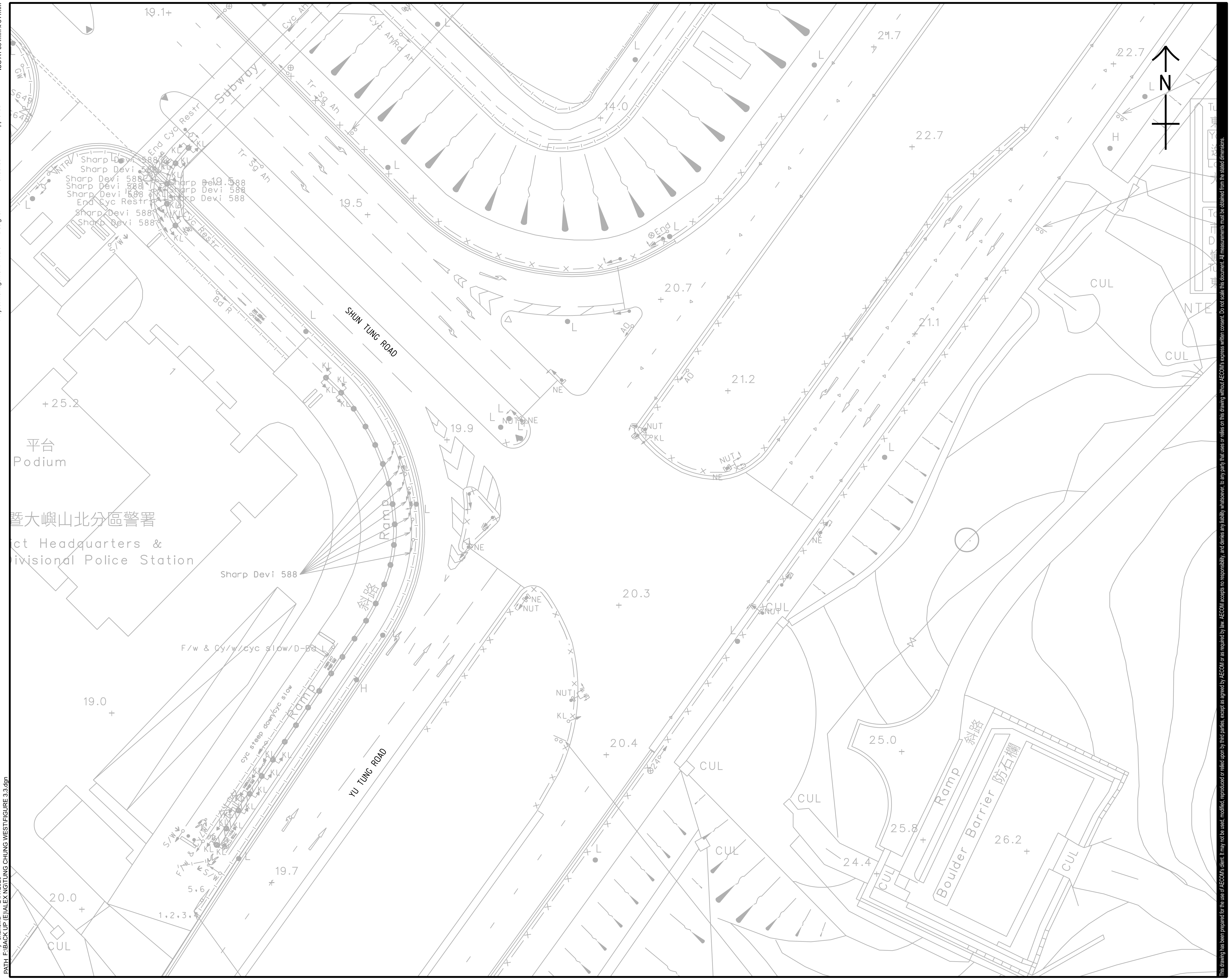
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.2.dgn



ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: chancwa 24/7/2023
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.3.dgn

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PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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階段

SCALE 比例　　**DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN
索引圖

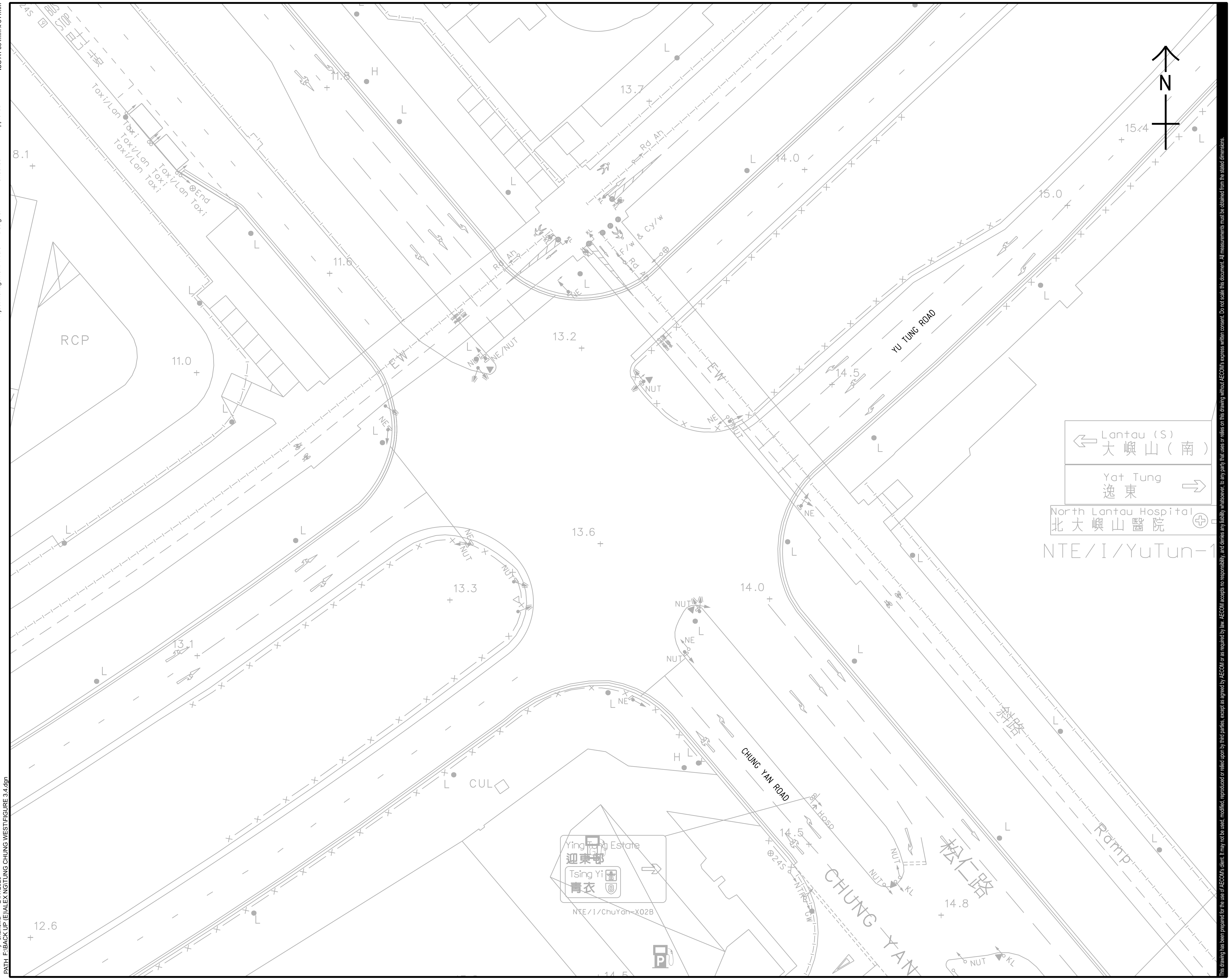
PROJECT NO. 項目編號　　**CONTRACT NO.** 合約編號

SHEET TITLE
圖紙名稱

EXISTING JUNCTION LAYOUT OF YU TUNG ROAD / SHUN TUNG ROAD (J2)

SHEET NUMBER
圖紙編號

FIGURE 3.3



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PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 4000

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

EXISTING JUNCTION LAYOUT OF YU TUNG ROAD / CHUNG YAN ROAD (J3)

SHEET NUMBER
圖紙編號

FIGURE 3.4

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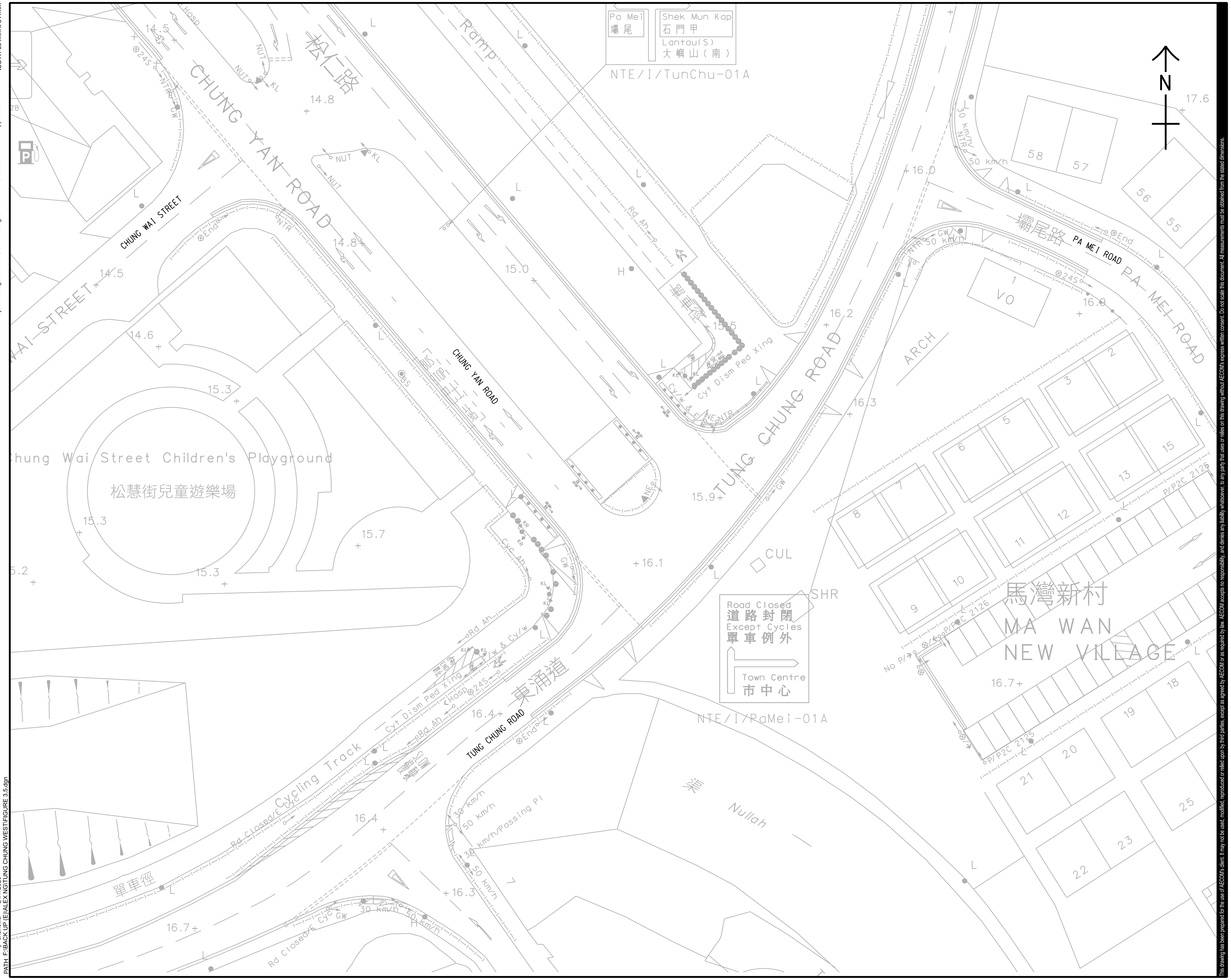

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SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 4000

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

EXISTING JUNCTION LAYOUT OF TUNG CHUNG ROAD / CHUNG YAN ROAD (J4)

SHEET NUMBER
圖紙編號

FIGURE 3.5

ISO A1 594mm x 841mm
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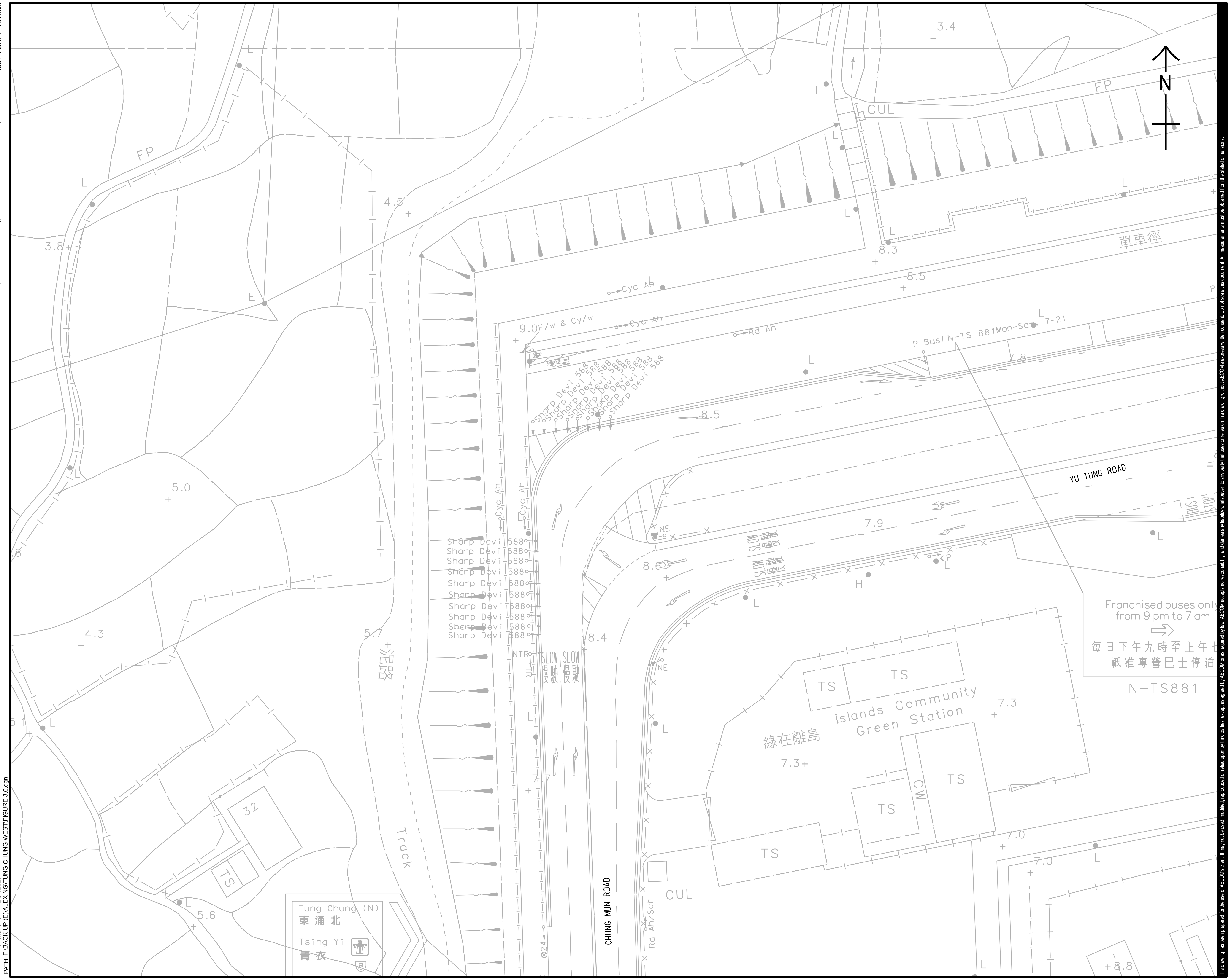
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.5.dgn



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SCALE

A3 1 : 500

DIMENSION UNIT

KEY PLAN

PROJECT NO.

CONTRACT NO.

SHEET TITLE

EXISTING JUNCTION LAYOUT OF YU TUNG ROAD / CHUNG MUN ROAD (J5)

SHEET NUMBER

FIGURE 3.6

ISO A1 594mm x 841mm
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Checked:
Designer:
Project Management Initials:
Plot File by: chancwa 24/7/2023
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ISO A1 594mm x 841mm

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PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.7.dgn

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PROJECT 項目

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SCALE 比例 **DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN 索引圖

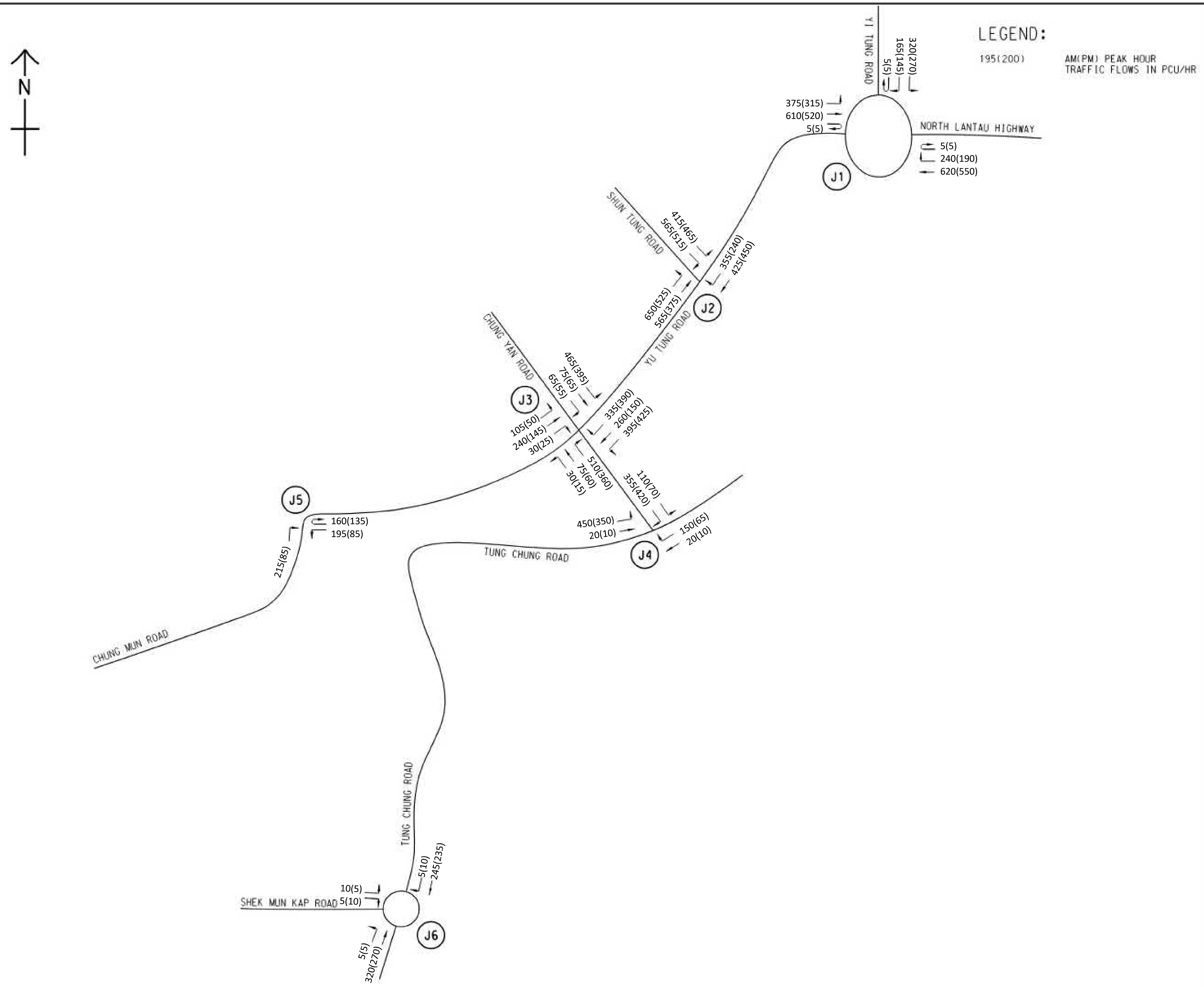
PROJECT NO. 項目編號 **CONTRACT NO.** 合約編號

SHEET TITLE 圖紙名稱

EXISTING JUNCTION LAYOUT OF TUNG CHUNG ROAD / SHEK MUN KAP ROAD (J6)

SHEET NUMBER 圖紙編號

FIGURE 3.7



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PROJECT

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SCALE: A3 N.T.S.

DIMENSION UNIT: METRES

KEY PLAN

PROJECT NO.

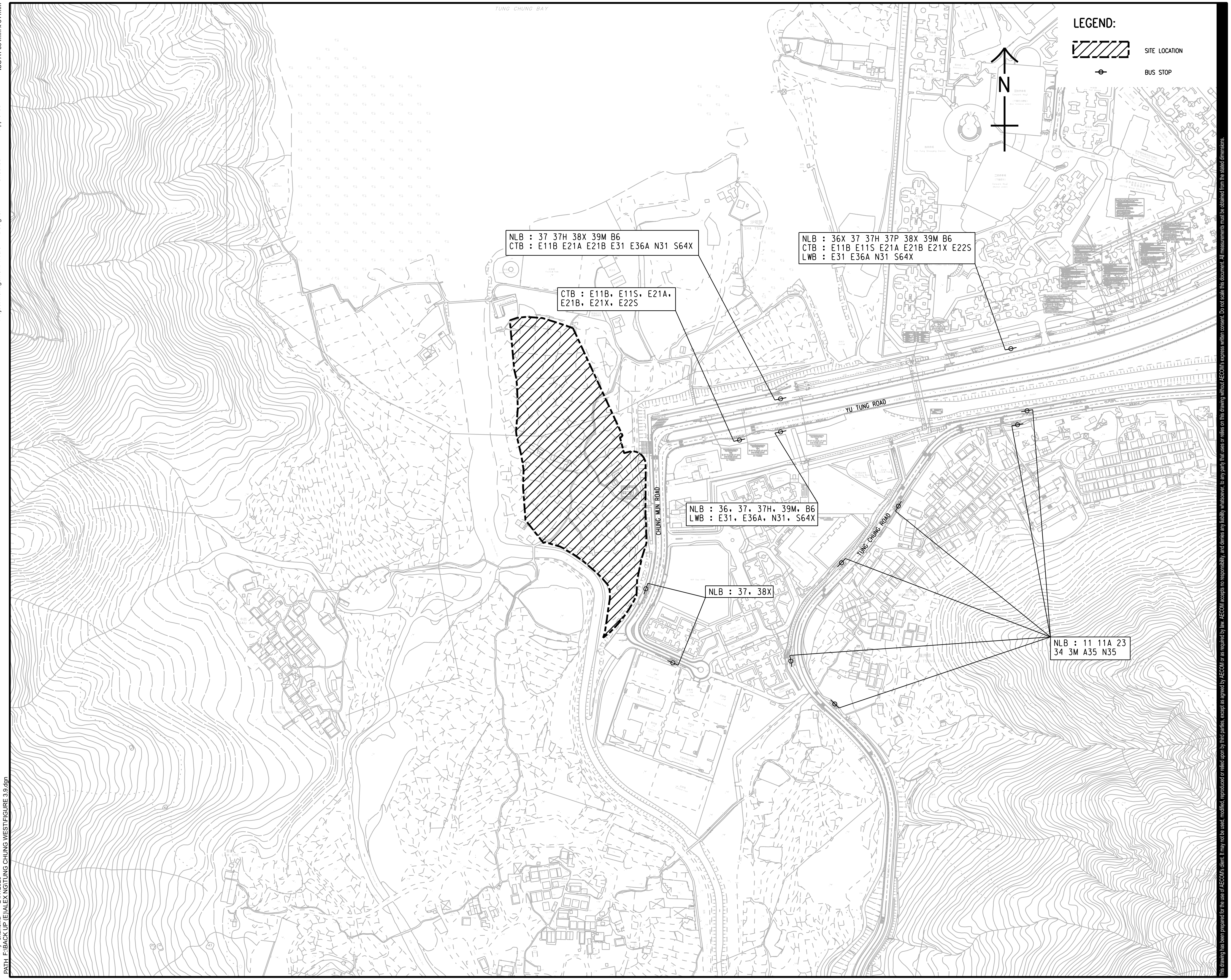
CONTRACT NO.

SHEET TITLE

2023 OBSERVED TRAFFIC FLOWS

SHEET NUMBER

FIGURE 3.8



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SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 4000

KEY PLAN
索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE
圖紙名稱

EXISTING PUBLIC TRANSPORT IN IN THE VICINITY OF APPLICATION SITE

SHEET NUMBER
圖紙編號

FIGURE 3.9

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

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PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.9.dgn

ISO A1 594mm x 841mm

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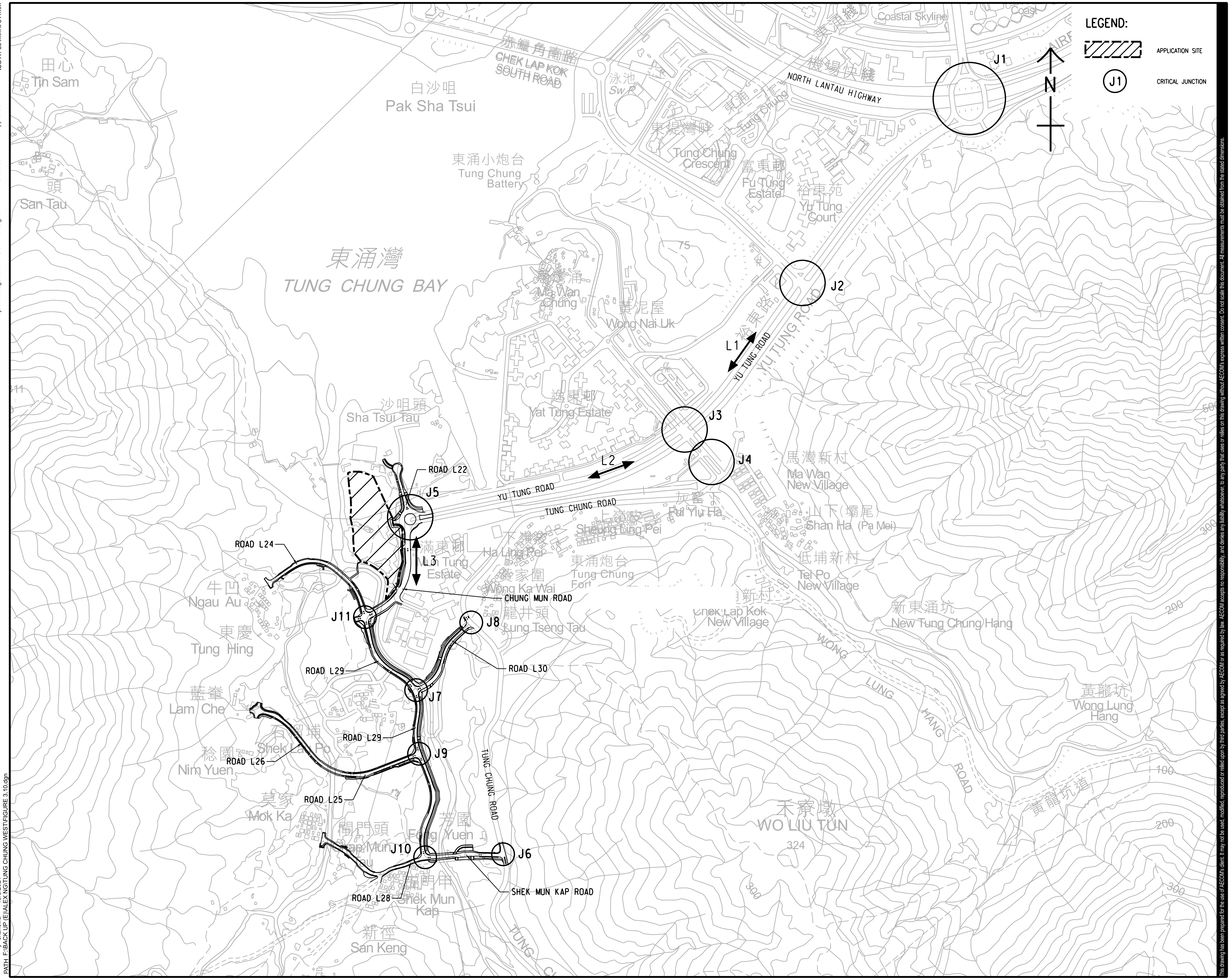
Checked:

Designer:

Project Management Initials:



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PROJECT
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SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 10000

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

SCHEMATIC LAYOUT OF PLANNED ROAD NETWORK AND PLANNED CRITICAL JUNCTIONS

SHEET NUMBER
圖紙編號

FIGURE 3.10

Plot File by: chancwa 19/8/2024
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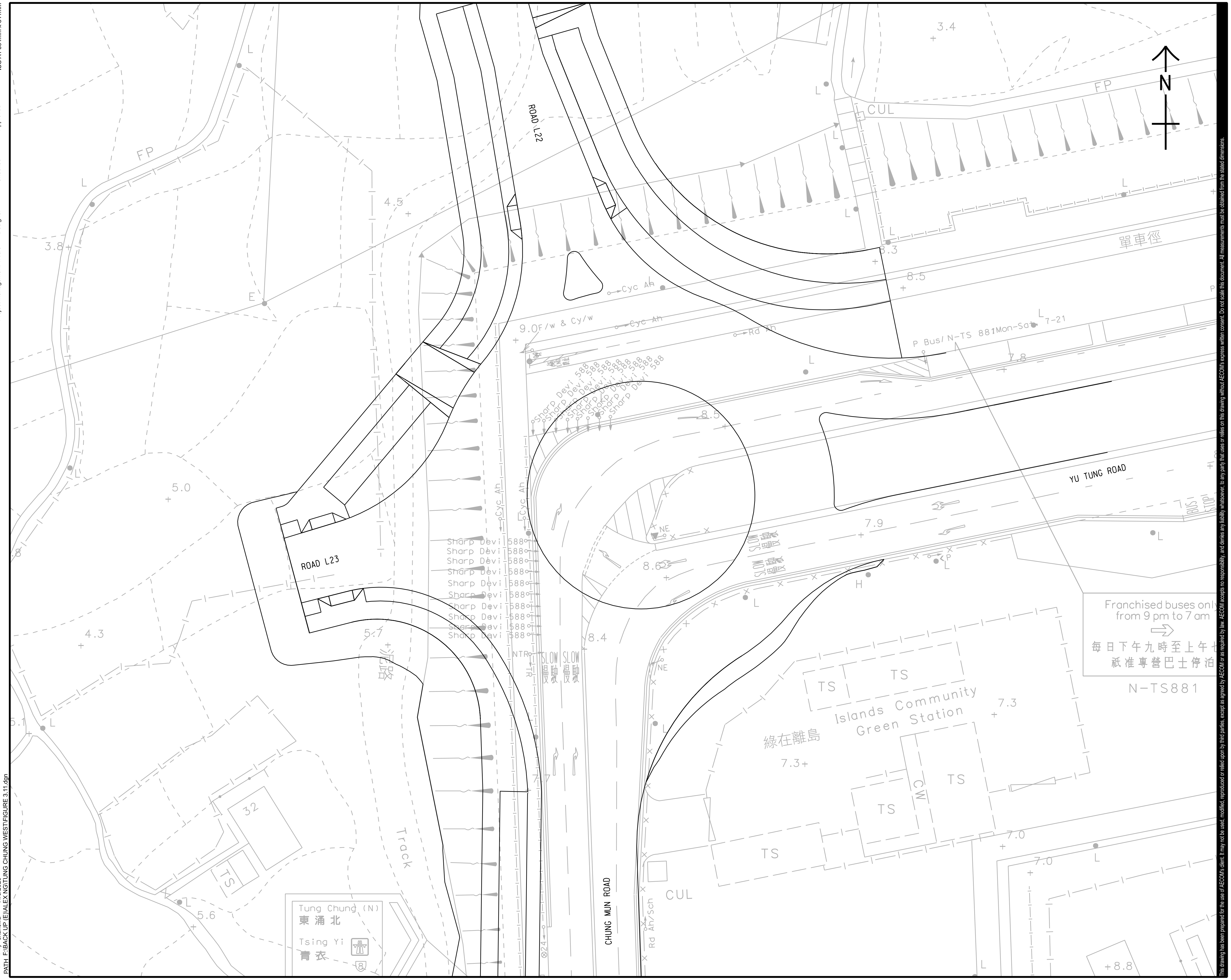
Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



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PRELIMINARY

SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN
索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE
圖紙名稱

PLANNED JUNCTION LAYOUT OF YU TUNG ROAD / CHUNG MUN ROAD / ROAD L23 (J5)

SHEET NUMBER
圖紙編號

FIGURE 3.11

Plot File by: chancwa 11/8/2023
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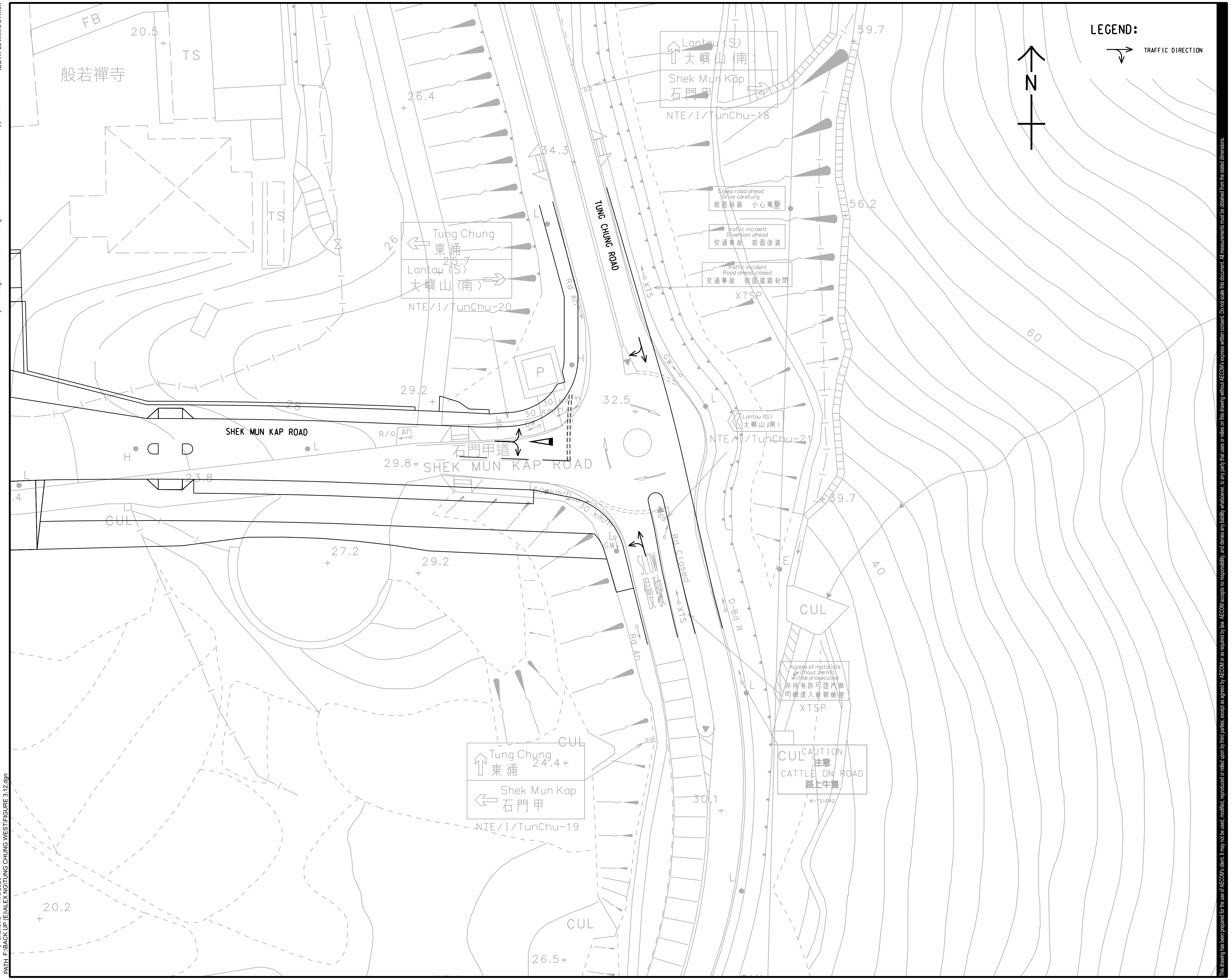

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PROJECT 項目

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SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN 索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE 圖紙名稱

PLANNED JUNCTION LAYOUT OF TUNG CHUNG ROAD / SHEK MUN KAP ROAD (J6)

SHEET NUMBER 圖紙編號

FIGURE 3.12

ISO A1 594mm x 841mm
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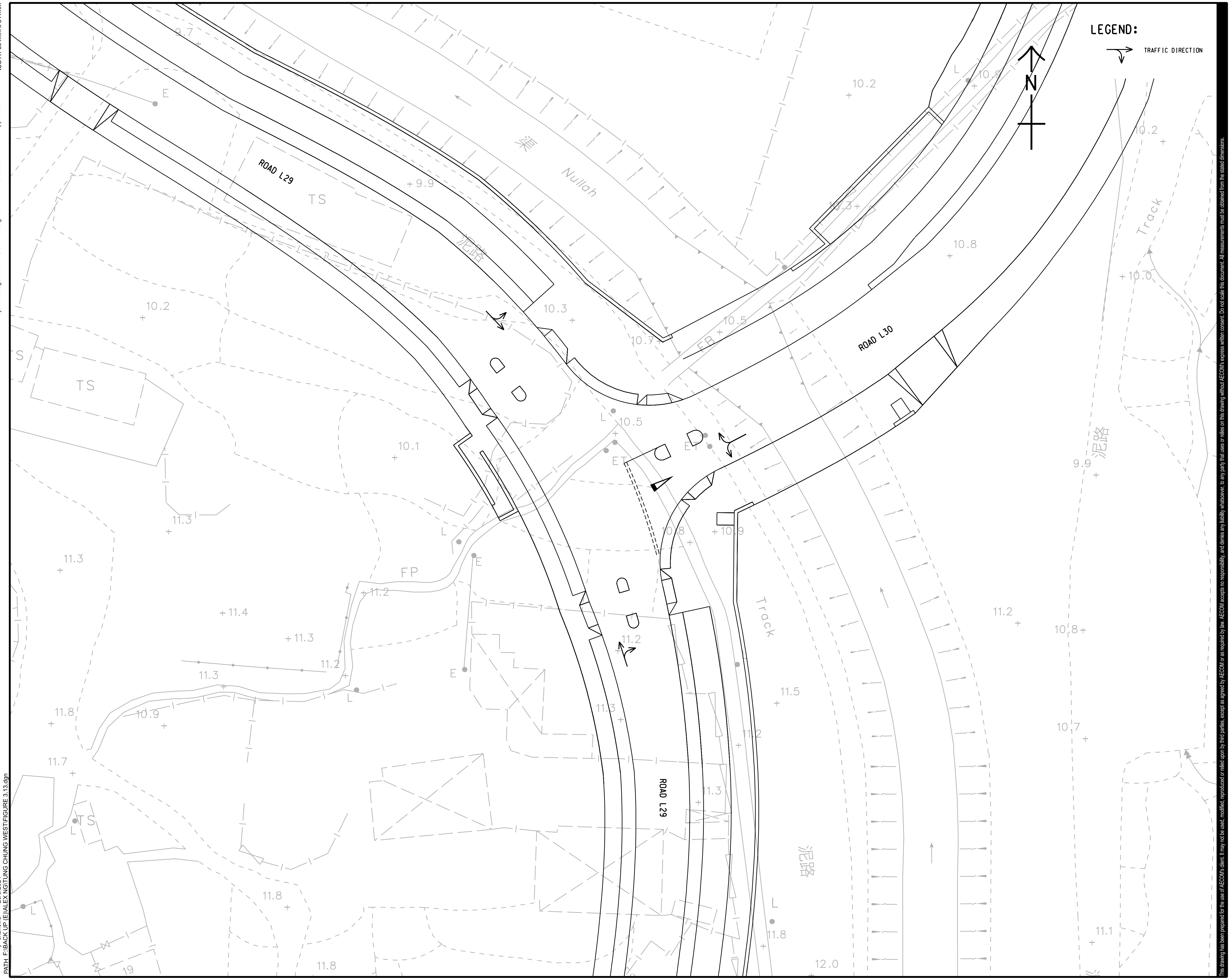
Project Management Initials:
Plot File by: chancwa 11/8/2023
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.12.dgn



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PROJECT
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SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS
階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 500

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

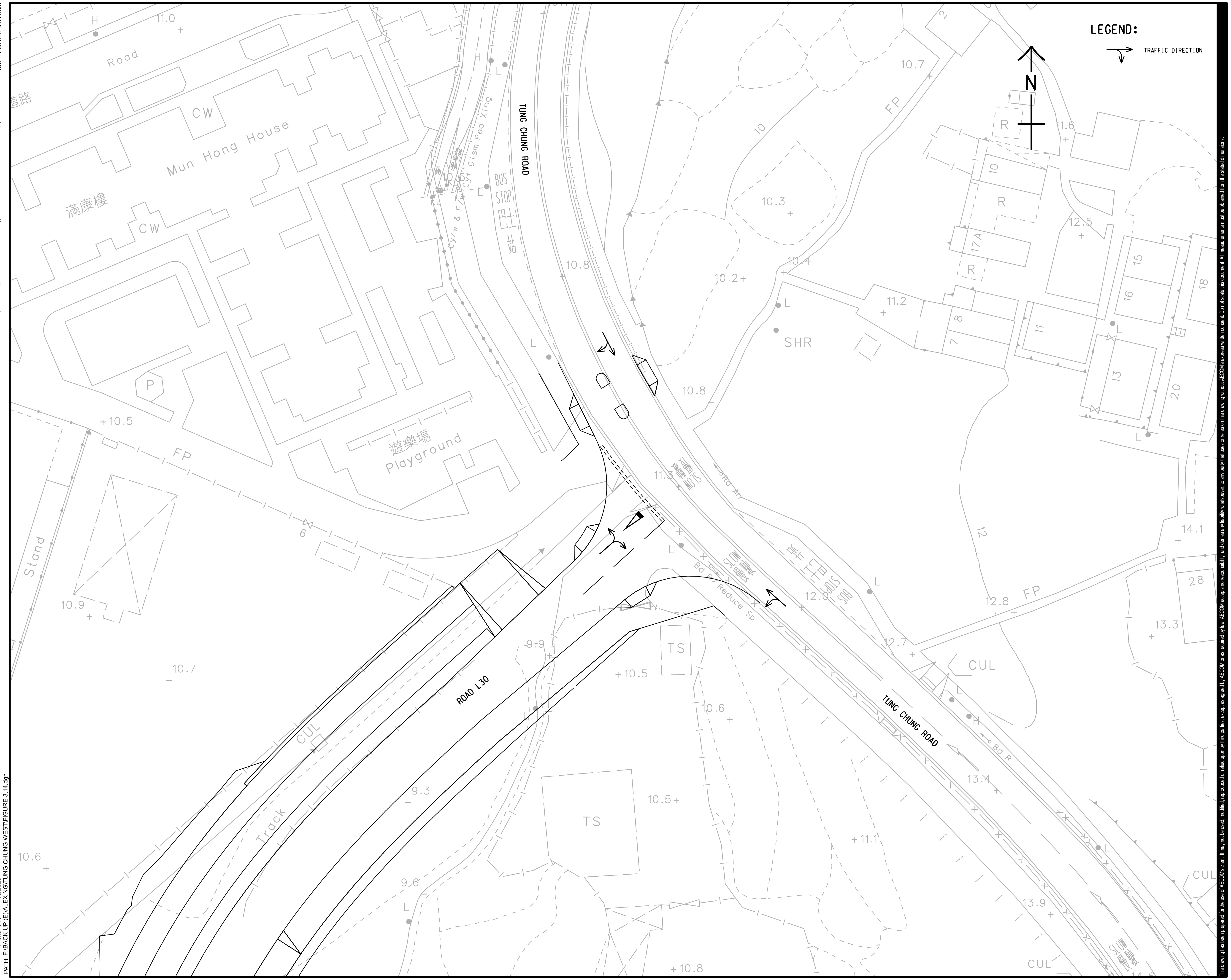
PLANNED JUNCTION LAYOUT OF ROAD L29 / ROAD L30 (J7)

SHEET NUMBER
圖紙編號

FIGURE 3.13

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

Plot File by: chancwa 26/8/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.13.dgn



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PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS
階段

SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 500

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

PLANNED JUNCTION LAYOUT OF TUNG CHUNG ROAD / ROAD L30 (J8)

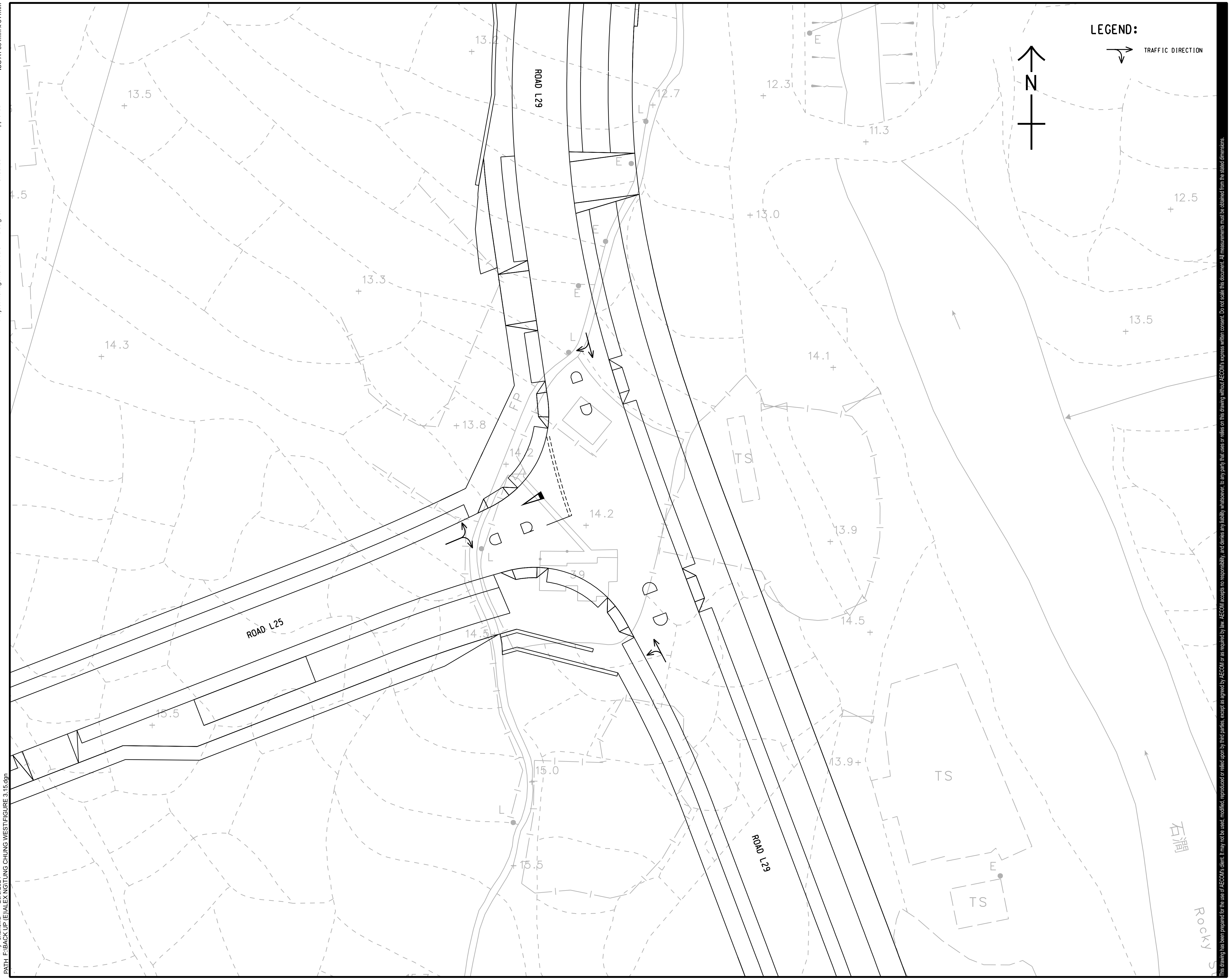
SHEET NUMBER
圖紙編號

FIGURE 3.14

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: chancwa 11/8/2023
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.14.dgn

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS 狀態

SCALE 比例 **DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN 索引圖

PROJECT NO. 項目編號 **CONTRACT NO.** 合約編號

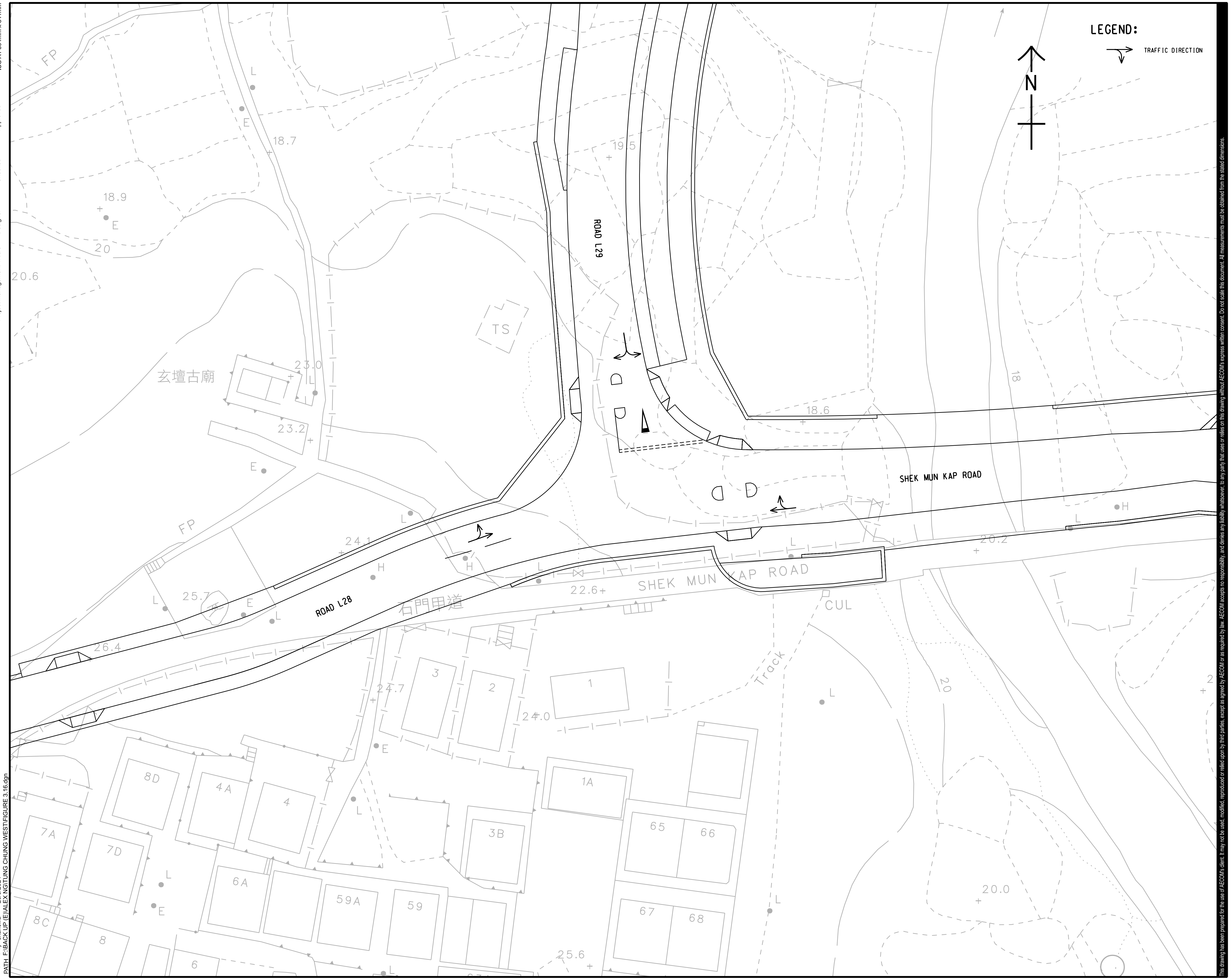
SHEET TITLE 圖紙名稱

PLANNED JUNCTION LAYOUT OF ROAD L25 / ROAD L29 (J9)

SHEET NUMBER 圖紙編號

FIGURE 3.15

Plot File by: chancwa 26/8/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.15.dgn



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PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS
階段

SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 500

KEY PLAN
索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

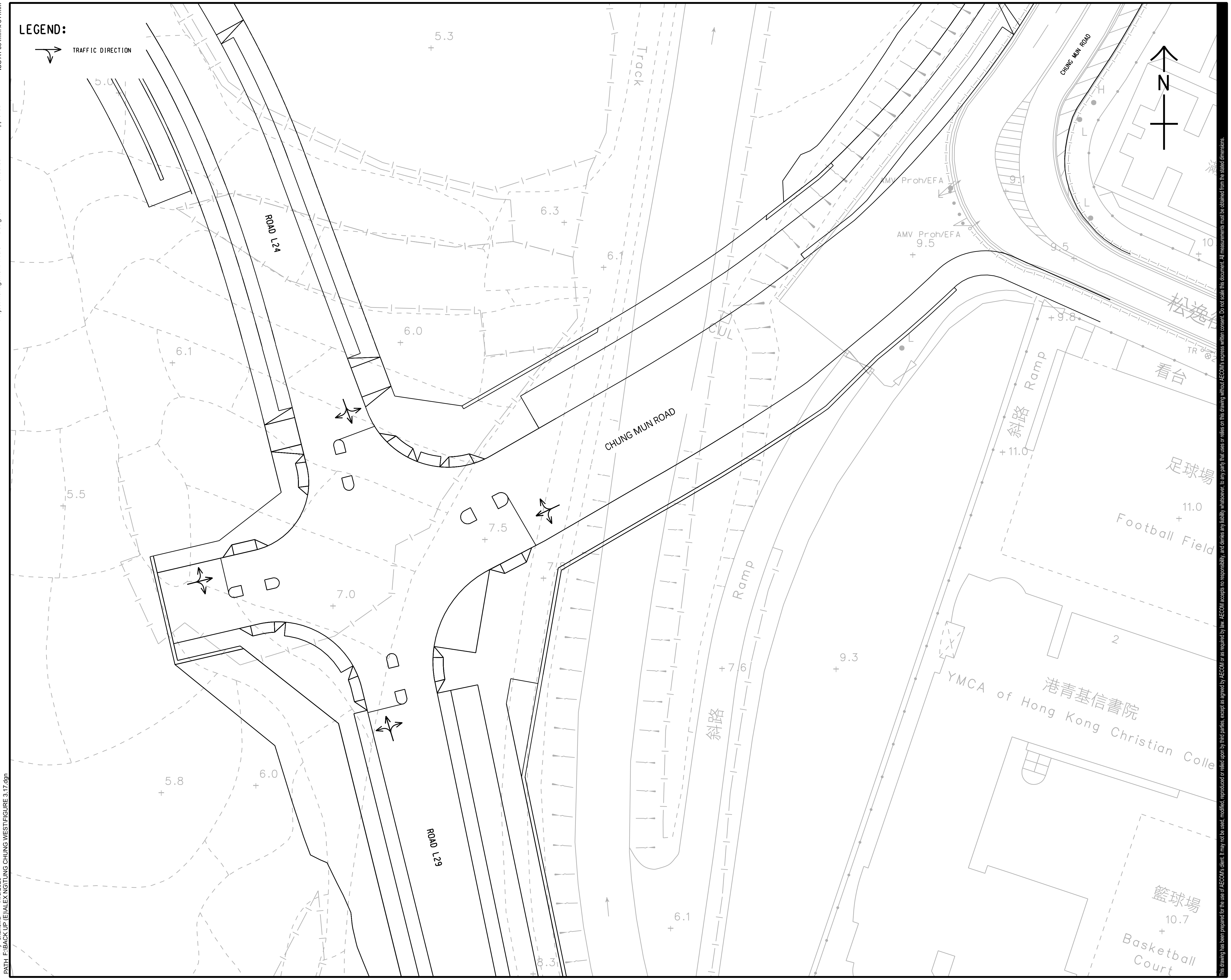
SHEET TITLE
圖紙名稱

PLANNED JUNCTION LAYOUT OF SHEK MUN KAP ROAD / ROAD L28/ ROAD L29 (J10)

SHEET NUMBER
圖紙編號

FIGURE 3.16

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: chancwa 26/8/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.16.dgn



ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

Plot File by: chancwa 11/8/2023

PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.17.dgn

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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS 階段

SCALE 比例

A3 1 : 500

DIMENSION UNIT 尺寸單位

KEY PLAN 索引圖

PROJECT NO. 項目編號

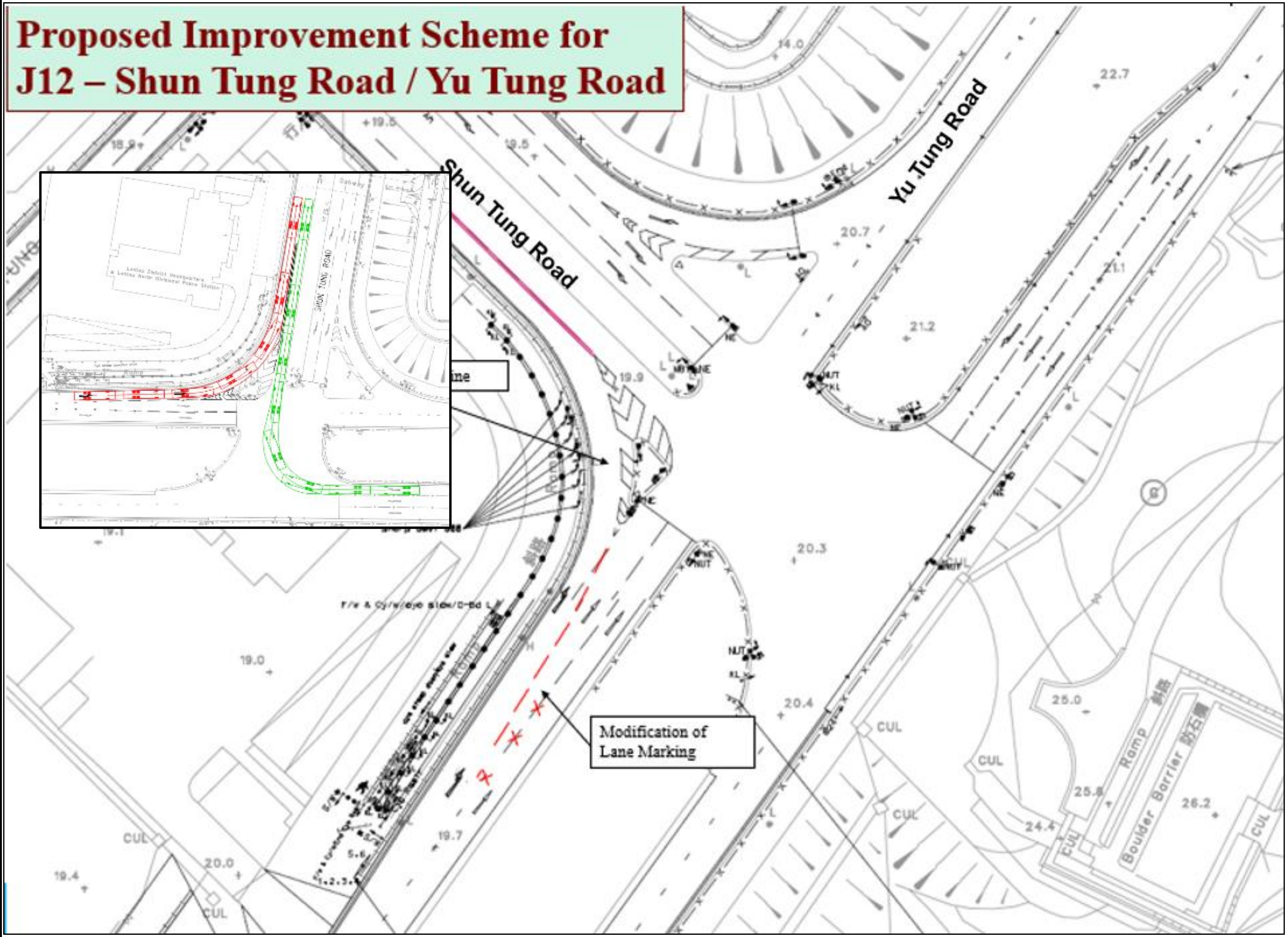
CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

PLANNED JUNCTION LAYOUT OF CHUNG MUN ROAD / ROAD 24 / ROAD L29 (J11)

SHEET NUMBER 圖紙編號

FIGURE 3.17



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PROJECT

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE A3 1 : 500

DIMENSION UNIT

KEY PLAN

PROJECT NO.

CONTRACT NO.

SHEET TITLE

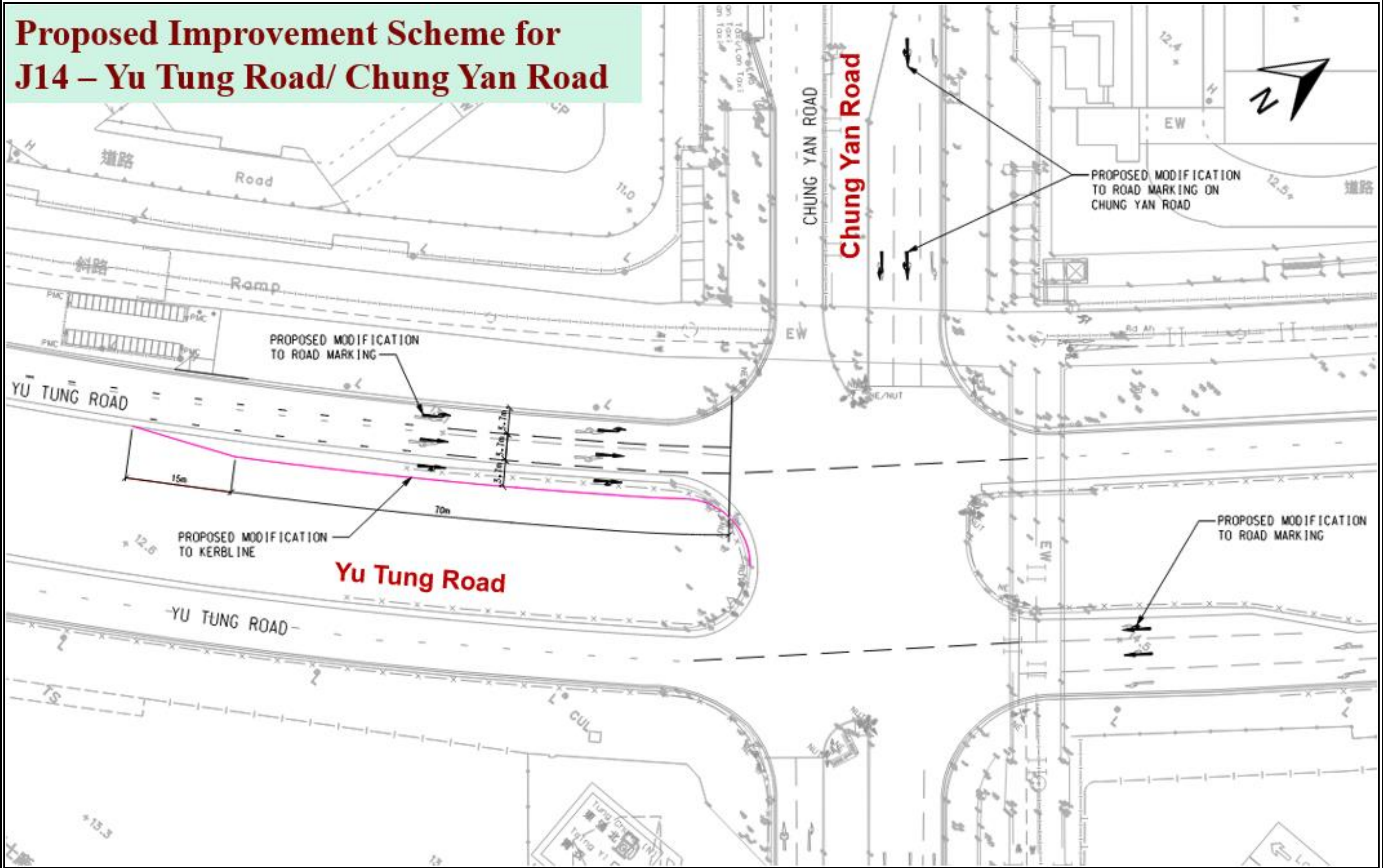
PLANNED JUNCTION IMPROVEMENT SCHEME OF J2 UNDER TUNG CHUNG NEW TOWN EXTENSION (WEST) TIA (REP-116-02)

SHEET NUMBER

FIGURE 3.18

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
$DATE$
Plot File by: $USER$
PATH $FILE$

Proposed Improvement Scheme for J14 – Yu Tung Road/ Chung Yan Road



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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS 階段

SCALE 比例 A3 1 : 500

DIMENSION UNIT 尺寸單位

KEY PLAN 索引圖

PROJECT NO. 項目編號

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

PLANNED JUNCTION IMPROVEMENT SCHEME OF J3 UNDER TUNG CHUNG NEW TOWN EXTENSION (WEST) TIA (REP-116-02)

SHEET NUMBER 圖紙編號

FIGURE 3.19

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: chancwa 7/11/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 3.19.dgn

AECOM

PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 10000

KEY PLAN
索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE
圖紙名稱

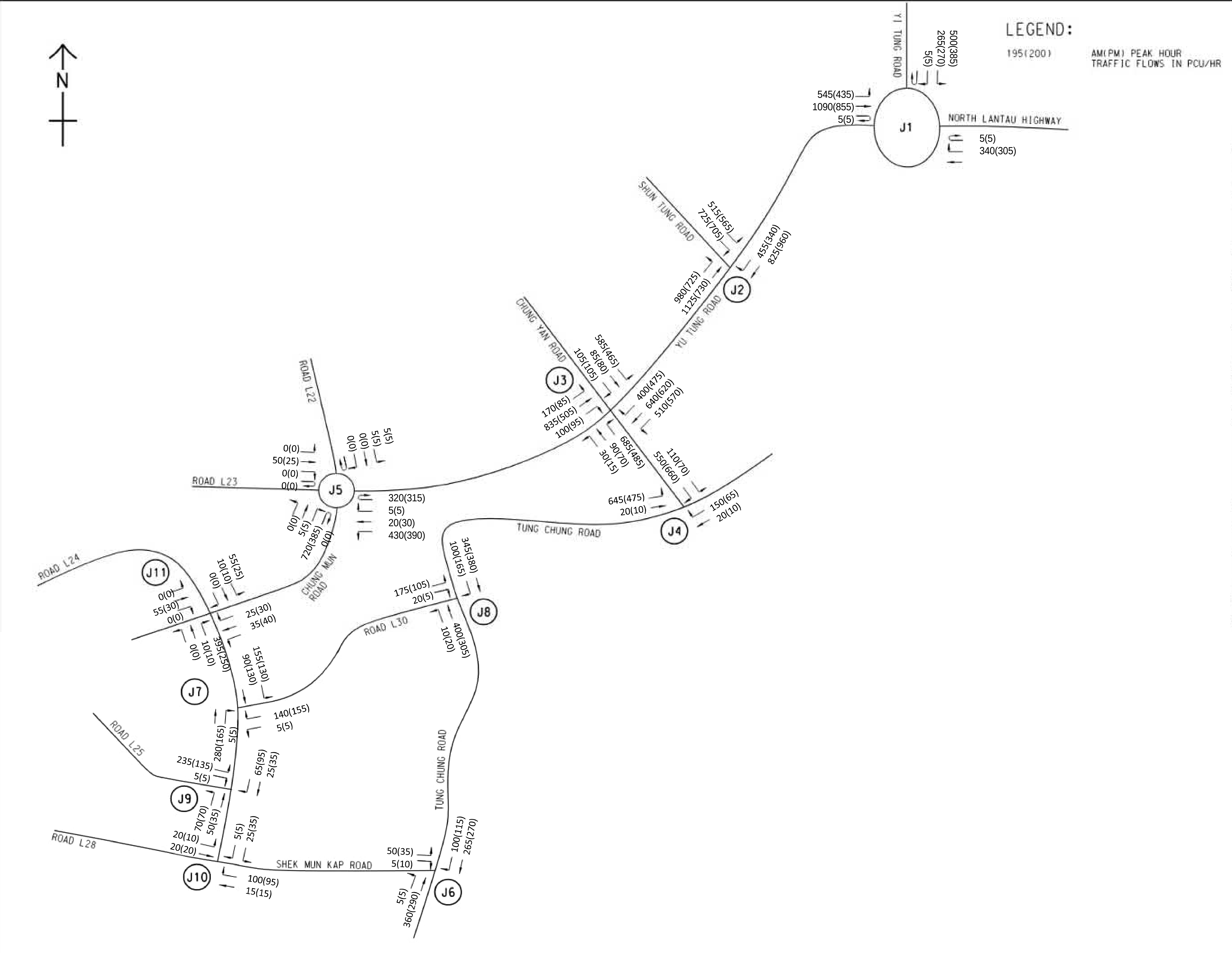
PLANNED / POTENTIAL DEVELOPMENTS IN THE VICINITY OF APPLICATION SITE

SHEET NUMBER
圖紙編號

FIGURE 4.1

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: chancwa 24/7/2023
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 4.1.dgn



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SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS

SCALE: A3 N.T.S.

DIMENSION UNIT: METRES

KEY PLAN

PROJECT NO.

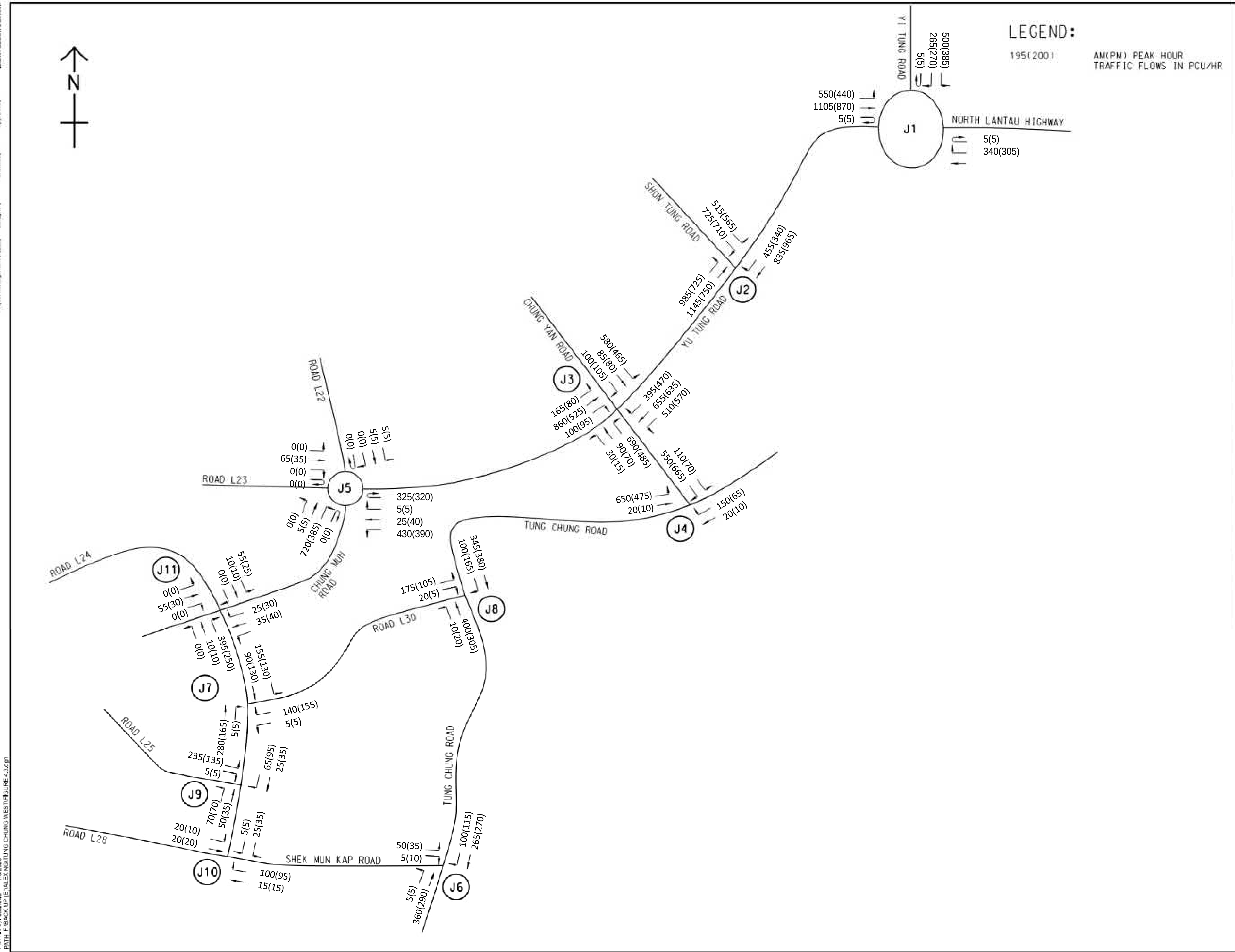
CONTRACT NO.

SHEET TITLE

2033 REFERENCE TRAFFIC FLOWS (CONFORMING SCHEME)

SHEET NUMBER

FIGURE 4.2



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PROJECT

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS

SCALE A3 N.T.S.

DIMENSION UNIT METRES

KEY PLAN

PROJECT NO.

CONTRACT NO.

SHEET TITLE

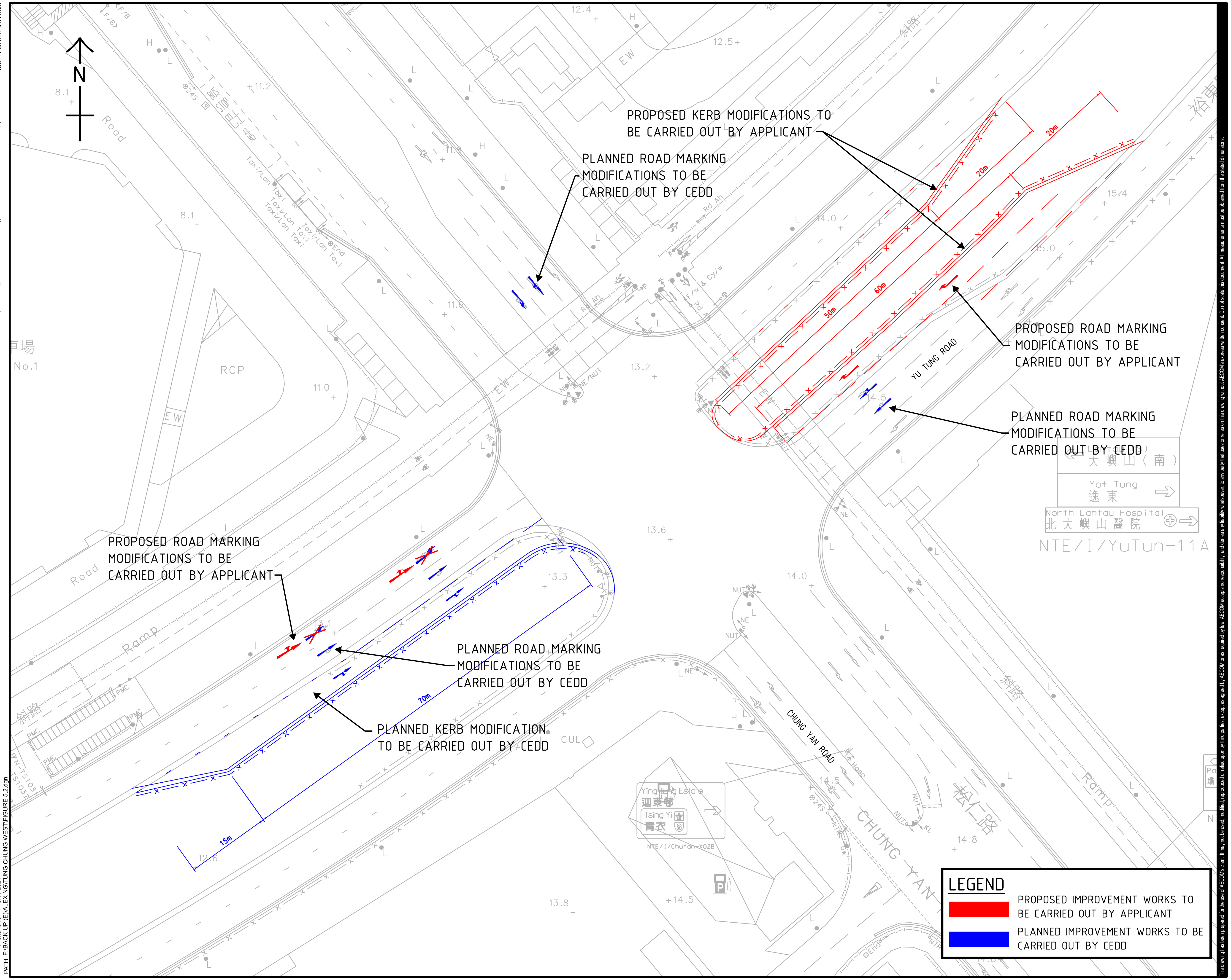
2033 DESIGN TRAFFIC FLOWS (PROPOSED SCHEME)

SHEET NUMBER

FIGURE 4.3

ISO A1 594mm x 841mm

Project Management Initials: Designer: Checked: Approved:



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PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 5.2.dgn

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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS 階段

SCALE 比例 **DIMENSION UNIT** 尺寸單位

A3 1 : 600

KEY PLAN 索引圖

PROJECT NO. 項目編號 **CONTRACT NO.** 合約編號

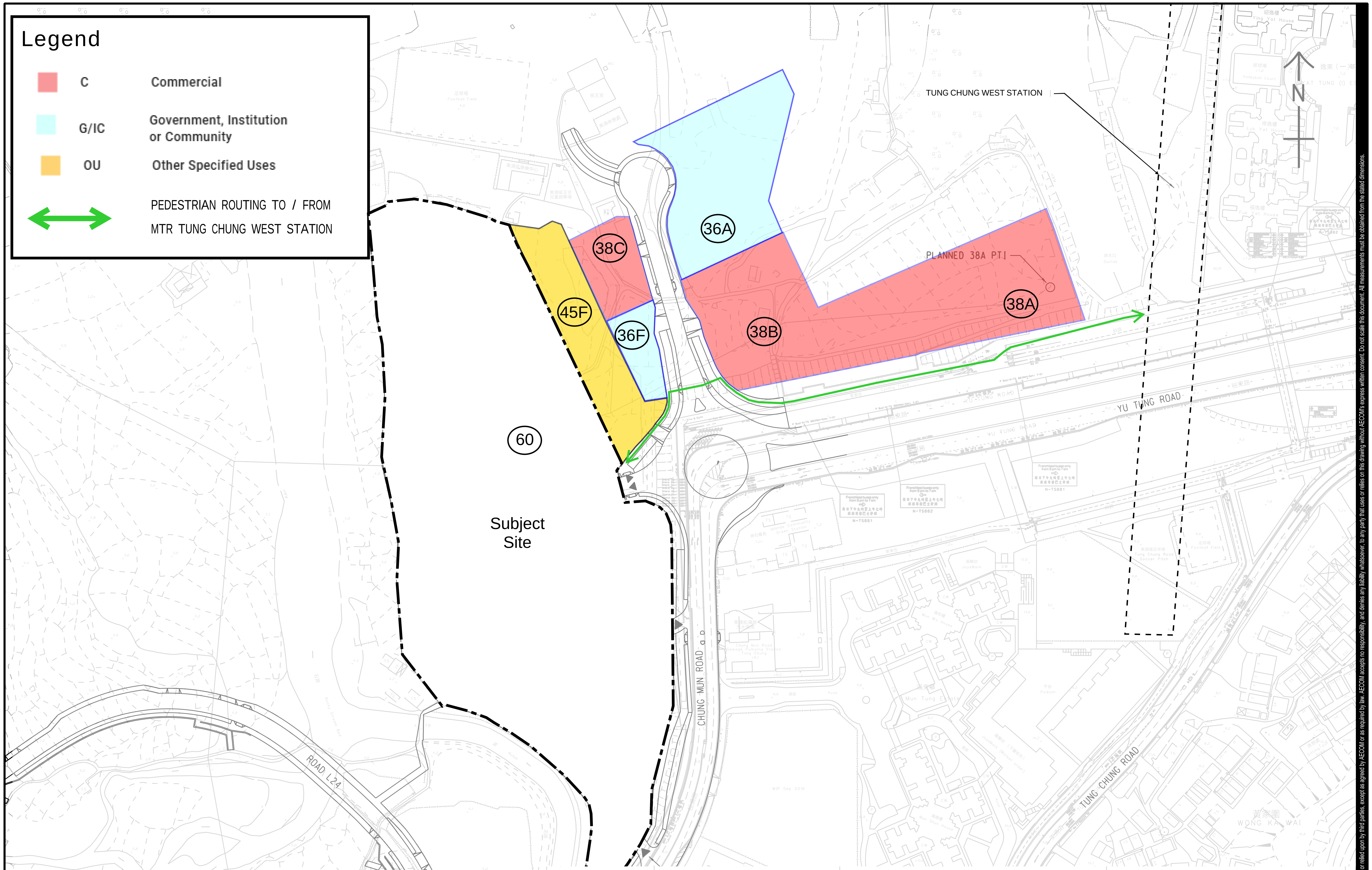
SHEET TITLE 圖紙名稱

PROPOSED JUNCTION IMPROVEMENT SCHEME AT J3 (YU TUNG ROAD / CHUNG YAN ROAD)

SHEET NUMBER 圖紙編號

FIGURE 5.1

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:



Land Lot No.	Landuse	Parameters	Potential Pedestrian Traffic [1][2]
36A	Social Welfare Facilities	Land Area: 4,858 sqm.	50ped/ hr
36F	Telephone Exchange	Land Area: 1,062 sqm.	50ped/ hr
38A & 38B	Commerical	GFA: 31,248 sqm.	1,250ped/ hr
38C	Commerical	GFA: 2,742 sqm.	110ped/ hr
45F	Stormwater Treatment	Land Area: 3,426 sqm.	50ped/ hr

Note: (1) Assumed 50 ped/hr for GIC and OU facilities.

(2) With reference to HKPSG Chpater 5, Table 2, 25m2 commercial GFA per worker is adopted and 100% of workers would access the site during peak hours.

Plot File by: chancwa 7/11/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 2.1.dgn

AECOM

PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE 比例 **DIMENSION UNIT** 尺寸單位

A3 1 : 2000

KEY PLAN 索引圖

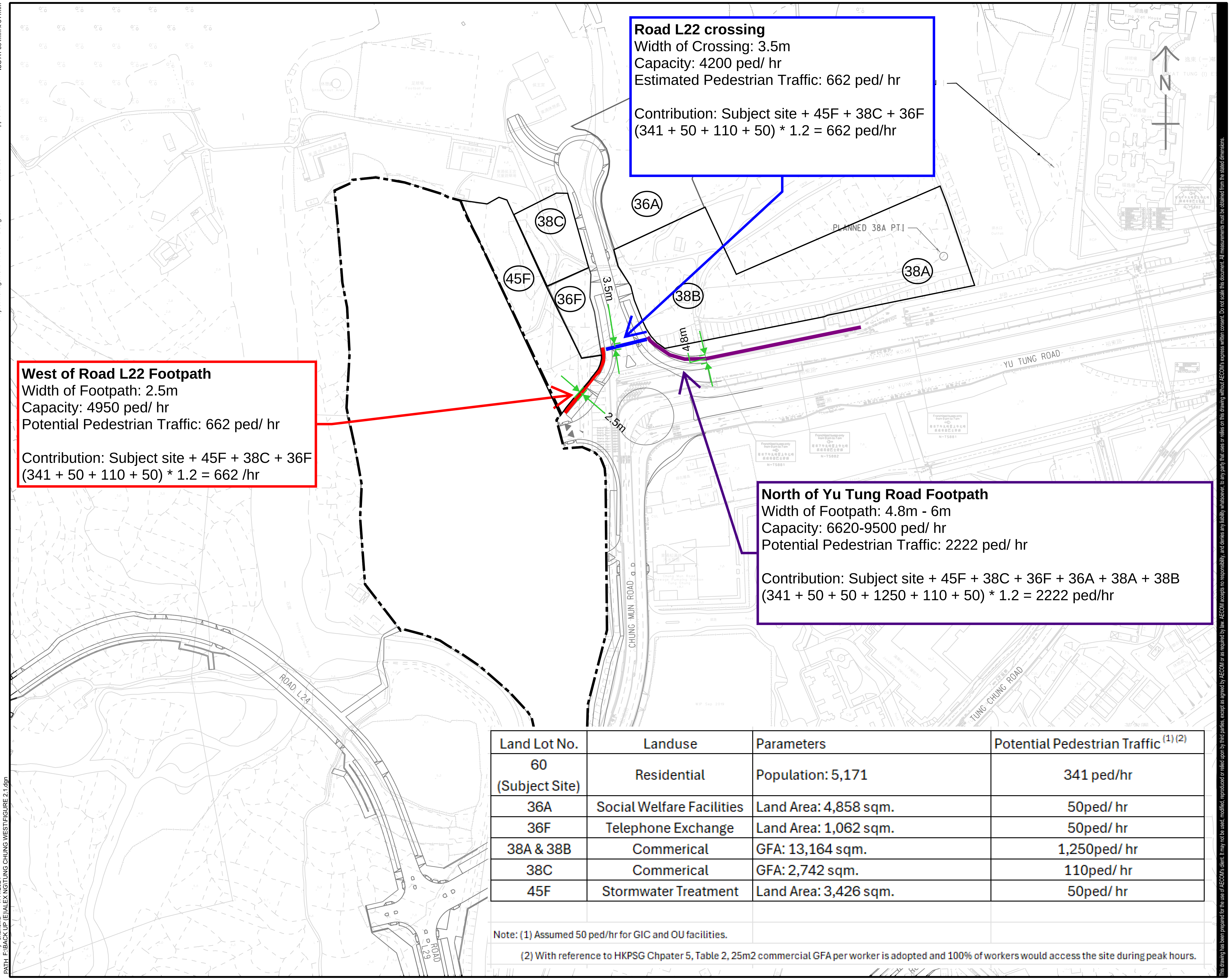
PROJECT NO. 項目編號 **CONTRACT NO.** 合約編號

SHEET TITLE 圖紙名稱

PEDESTRIAN ROUTING TO / FROM TUNG CHUNG WEST MTR STATION AND ESTIMATED PEDESTRIAN TRAFFIC FROM ADJACENT SITE

SHEET NUMBER 圖紙編號

FIGURE 5.2



Land Lot No.	Landuse	Parameters	Potential Pedestrian Traffic (1) (2)
60 (Subject Site)	Residential	Population: 5,171	341 ped/hr
36A	Social Welfare Facilities	Land Area: 4,858 sqm.	50ped/ hr
36F	Telephone Exchange	Land Area: 1,062 sqm.	50ped/ hr
38A & 38B	Commerical	GFA: 13,164 sqm.	1,250ped/ hr
38C	Commerical	GFA: 2,742 sqm.	110ped/ hr
45F	Stormwater Treatment	Land Area: 3,426 sqm.	50ped/ hr

Note: (1) Assumed 50 ped/hr for GIC and OU facilities.

(2) With reference to HKPSG Chpater 5, Table 2, 25m2 commercial GFA per worker is adopted and 100% of workers would access the site during peak hours.

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PROJECT 項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE 比例 A3 1 : 2000

DIMENSION UNIT 尺寸單位

KEY PLAN 索引圖

PROJECT NO. 項目編號

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

PEDESTRIAN ASSESSMENT

SHEET NUMBER 圖紙編號

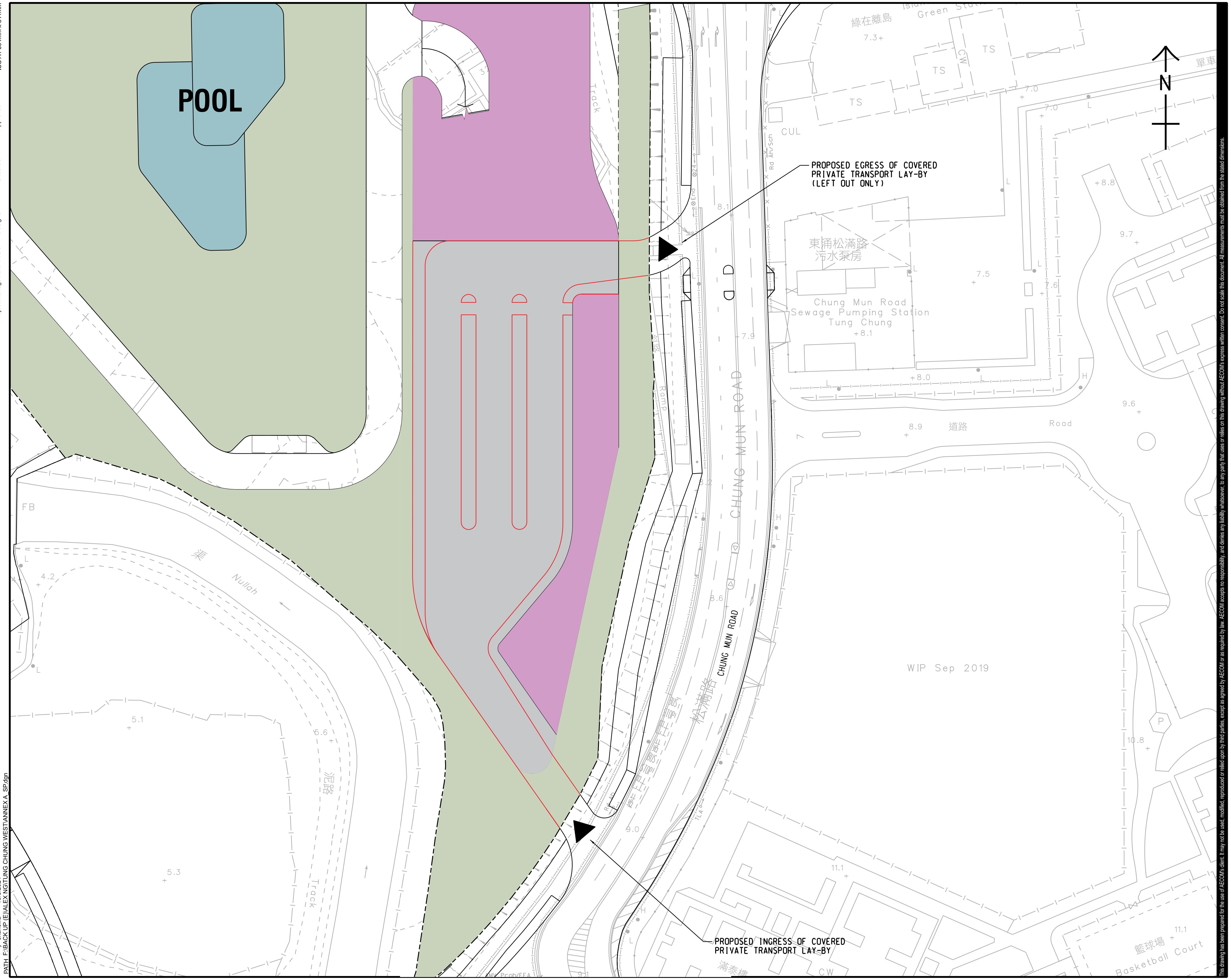
FIGURE 5.3

ISO A1 594mm x 841mm Approved: Checked: Designer: Project Management Initials:

Plot File by: chancwa 7/11/2024 PATH: F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\FIGURE 2.1.dgn

Annex A

Indicative Covered Private Transport Lay-by Layout Plan & Swept Path Analysis



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PROJECT
項目

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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SCALE 比例 | **DIMENSION UNIT** 尺寸單位

A3 1 : 700

KEY PLAN
索引圖

PROJECT NO. 項目編號 | **CONTRACT NO.** 合約編號

SHEET TITLE
圖紙名稱

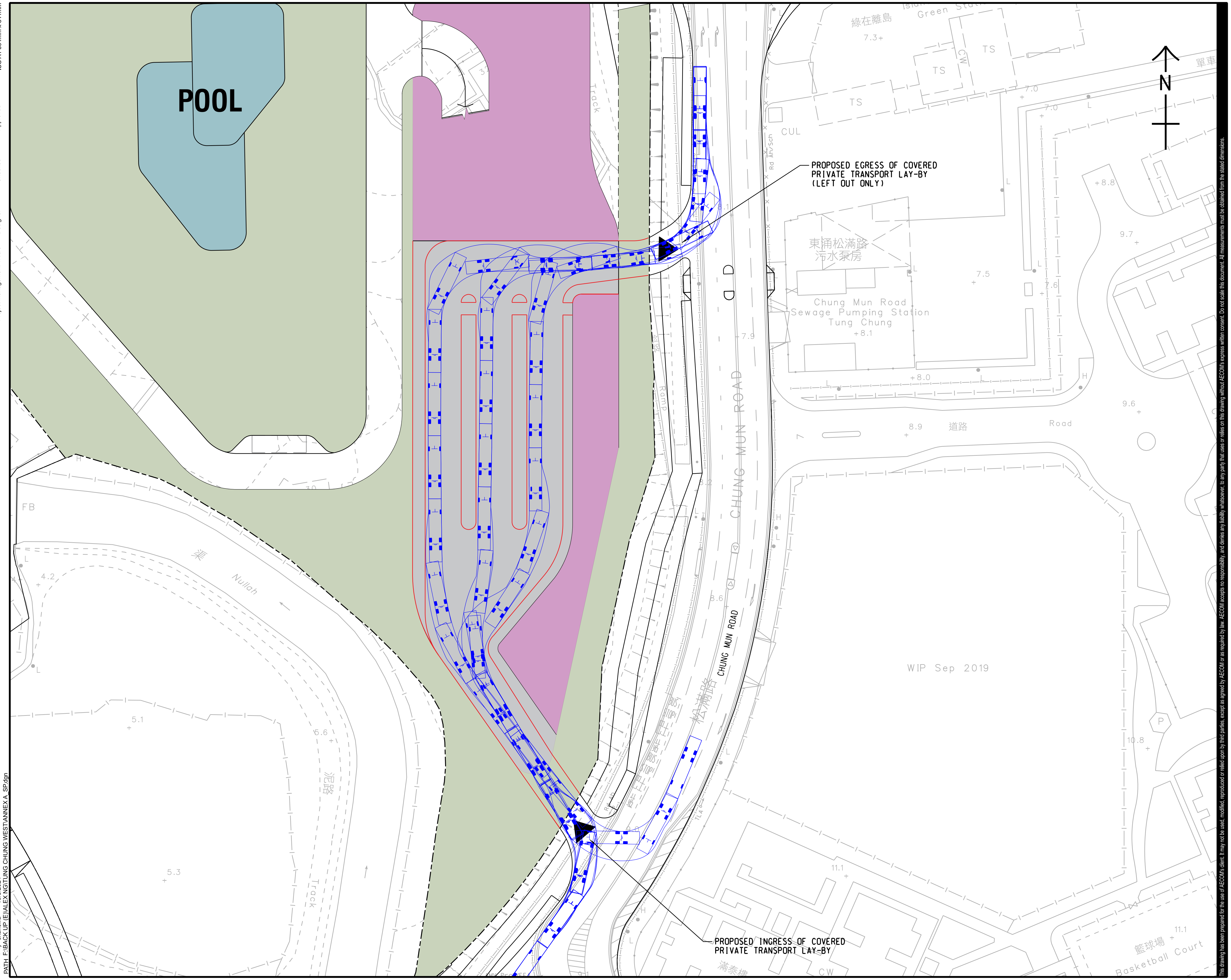
INDICATIVE COVERED PRIVATE TRANSPORT LAY-BY LAYOUT PLAN

SHEET NUMBER
圖紙編號

ANNEX A

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

Plot File by: chancwa 19/8/2024
PATH F:\BACK UP (E)\ALEX NG\TUNG CHUNG WEST\ANNEX A_SP.dgn



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PROJECT

SECTION 12A PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO THE TUNG CHUNG VALLEY OUTLINE ZONING PLAN TO REZONE "RESIDENTIAL (GROUP C)2" ZONE TO "RESIDENTIAL (GROUP B)" ZONE IN SUPPORT OF PRIVATE RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 1 TC AND ADJOINING GOVERNMENT LAND, TUNG CHUNG, LANTAU ISLAND

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STATUS

SCALE A3 1 : 700

DIMENSION UNIT

KEY PLAN

PROJECT NO.

CONTRACT NO.

SHEET TITLE

12.8m BUS SWEPT PATH ANALYSIS

SHEET NUMBER

ANNEX A_SP

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: chancwa 19/8/2024
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Annex B

Assessment Results of Global Parking Standard under HKPSG Adopted for the Application Site

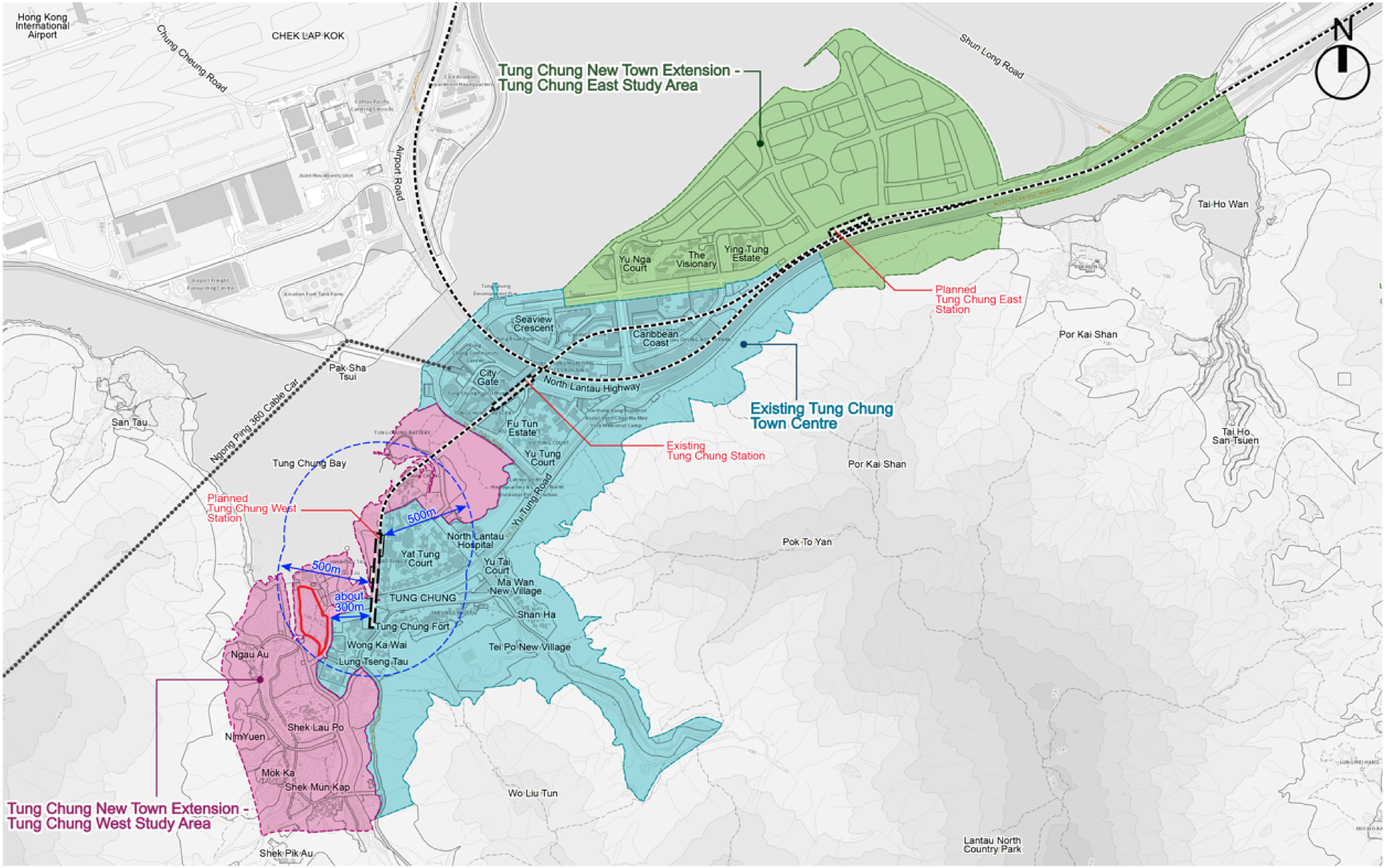
The following Table summarizes our assessment the Global Parking Standard (GPS) under HKPSG adopted for the Subject Site.

	Assessment	Adopted Value	Weighting
Proximity and convenience for access to PT services	There are 3 on-street bus terminus/en-route bus stop covering 15 bus routes at Yu Tung Road and an enroute bus stop covering 2 bus routes at Chung Mun Road. The walking distance from the Subject Site to those stops are about 200m. As stated in TPDM, the ideal walking distance to a bus stop should not exceed 400m. In addition, the proposed transport facilities to the southeast of the Subject Site will be provided to enhance road-based public transport. Hence the development site is considered to be quite accessible to the public transport services.	0.25	20%
Availability of public car parking spaces during peak hours	The nearest Mun Tung Estate car park provides 29 public private car parking spaces, including one designated for disabled drivers, which are available for use by the local community. It is located about 250m from the Subject Site. A recent observation of the Mun Tung Estate car park found that about 30% or more public parking spaces were available during AM and PM peak hours. It indicates that the unused capacity can be allocated to meet additional parking demands from nearby areas. Hence the public car parking spaces are considered to be moderately available for the development site.	0.50	30%
Traffic conditions	The nearby critical junctions in the vicinity has been assess in the TIA. All the assessed junctions including the proposed junction improvement scheme of Junction J3 Yu Tung Road / Chung Yan Road would operate within capacities. Hence the traffic conditions is considered to be moderately congested.	0.50	10%
Level of illegal parking	Illegal parking is observed in the vicinity but the situation is not common. Hence, level of illegal parking is considered slightly severe.	0.25	40%

Based on the above assessment and the adopted values for respective factors, the GPS is determined as 0.35 (i.e. 0.25 x 20% + 0.50 x 30% + 0.5 x 10% + 0.25 x 40%). Referring to the table above, the GPS value based GPSI under HKPSG GPS is 5 if (0.2 <= GPSI < 0.4), a GPS of 5 would be appropriate for calculating the carparking provision at the proposed development according to HKPSG requirements.

Annex C

Tung Chung New Town Extension Extracted from Planning Statement



Application Site

llewelyn davies

Title	Tung Chung New Town Extension

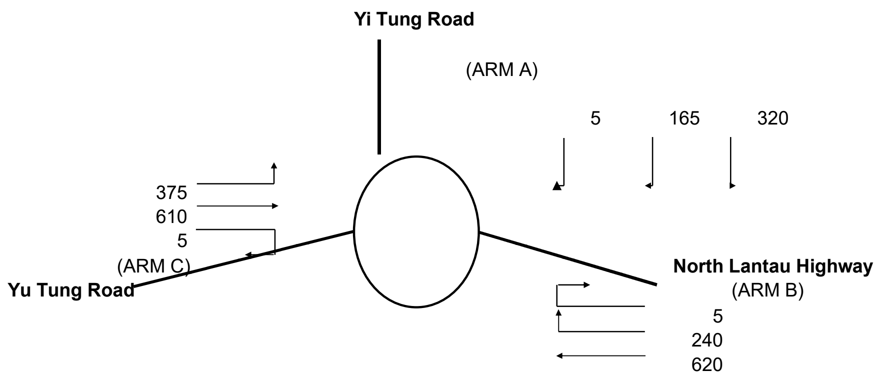
Checked	DH	Drawn	PW
Rev	0	Date	Sep 2024
Scale		Figure	2.3

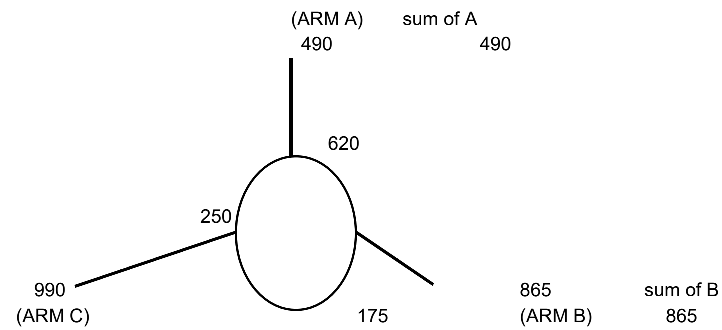
Annex D

Junction Calculation Sheet

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung East Interchange (J1)	Scenario	2023 - Observed Traffic Flows (AM)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	490	865	990
Qc= Circulating flow across entry (pcu/h)	620	175	250
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2560	2638	2774
DFC = Design flow/Capacity = Q/Qe	0.19	0.33	0.36

TOTAL ENTRY FLOWS = 2345 PCU

CRITICAL DFC = 0.36

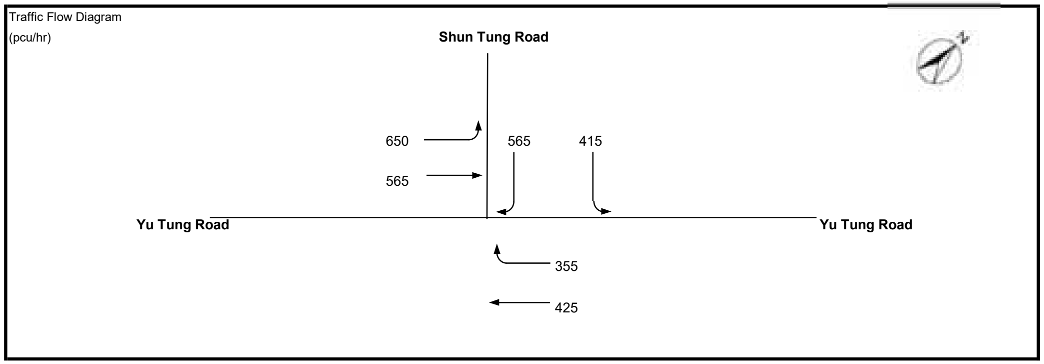
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road	2023 AM Observed Traffic Flows	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

Traffic Flow Diagram
(pcu/hr)



J2

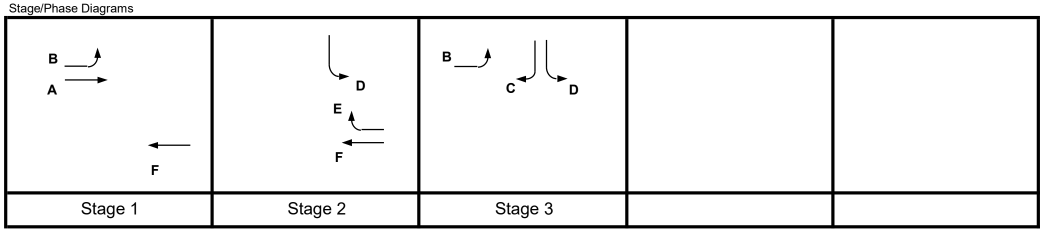
No. of stages per cycle N = 3

Cycle time C = 120 sec

Sum(y) Y = 0.510
Lost time L = 15 sec
Total Flow = 18,780 pcu

Optimum Cycle C_o = $(1.5 \times L+5)/(1-Y)$ = 56 sec
Min. Cycle Time C_m = $L/(1-Y)$ = 31 sec
Y_{ult} = $0.9-0.0075 \times L$ = 0.788
$R.C._{ult}$ = $(Y_{ult}-Y)/Y \times 100\%$ = 54.5 %
Practical Cycle Time C_p = $0.9 \times L/(0.9-Y)$ = 35 sec
Y_{max} = $1-L/C$ = 0.875

Stage/Phase Diagrams



I/G = 5 I/G = 12 I/G =

Critical Case : B,E

R.C.(C) = $(0.9xY_{max}-Y)/Yx100\%$ = 54%

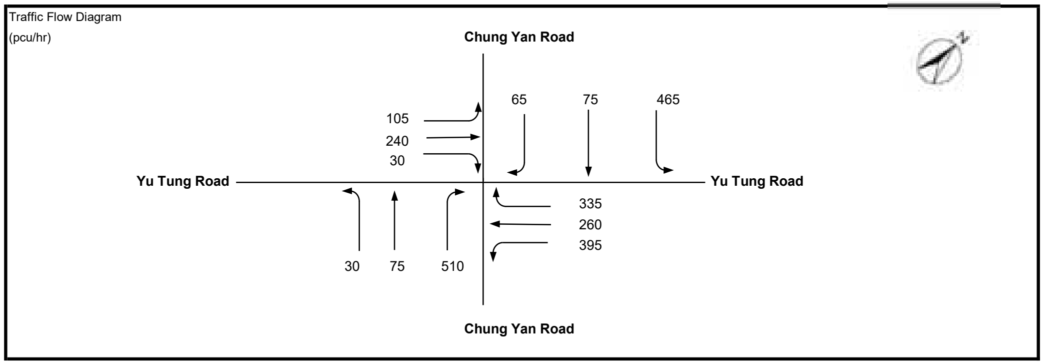
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
	B	1,3	4.000	1	50			1		0		2015	650			650	100%		1956	0.332	0.332
	A	1	4.000	2			0	0		0		4310		565		565			4310	0.131	
Shun Tung Road EB																					
	D	2,3	3.700	1	25			1		0		1985	415			415	100%		1873	0.222	
	C	3	3.700	2		30	0	0		0		4250			565	565		100%	4048	0.140	
Yu Tung Road SB																					
	F	1,2	3.650	2				1		0		4100		425		425			4100	0.104	
	E	2	3.650	1		25	0	0		0		2120			355	355		100%	2000	0.178	0.178

JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road	2023 AM Observed Traffic Flows	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

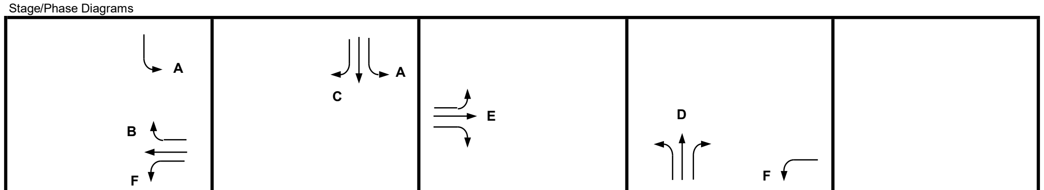
Traffic Flow Diagram
(pcu/hr)



J3

No. of stages per cycle		N =	4	
Cycle time		C =	120	sec
Sum(y)		Y =	0.455	
Lost time		L =	19	sec
Total Flow		=	20,510	pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y)$	=	61	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	35	sec
Y_{ult}	$= 0.9-0.0075\times L$	=	0.758	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y\text{x}100\%$	=	66.5	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y)$	=	38	sec
Y_{max}	= 1-L/C	=	0.842	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3	Stage 4	
I/G =	I/G = 5	I/G = 5	I/G = 12	

Critical Case : A,E,D

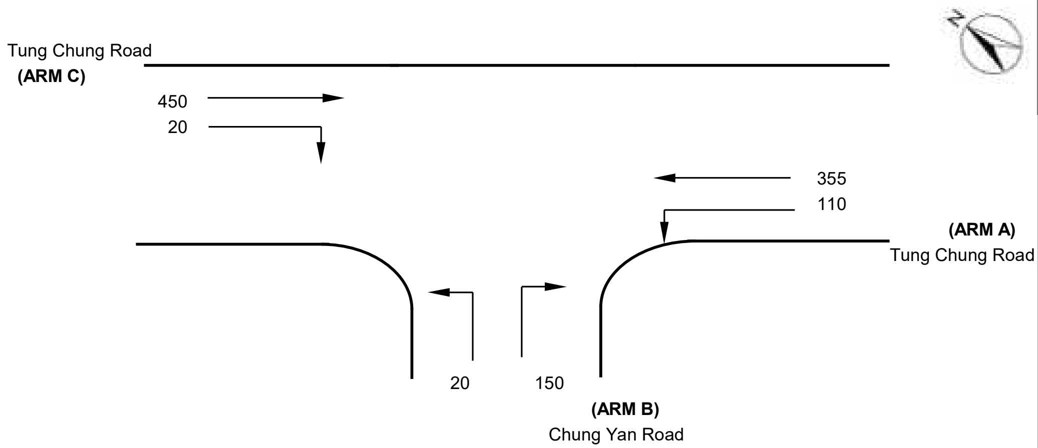
R.C.(C) $= (0.9\text{x}Y_{max}-Y)/Y\text{x}100\%$ = 67%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	15			1		0		1965	395			395	100%		1786	0.221	
	B	1	3.600	1		20	0	0		0		2115		260	56	316		18%	2087	0.152	
	B	1	3.600	1		10	0	0		0		2115			279	279		100%	1839	0.152	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	30	75	194	299	10%	65%	1880	0.159	
	D	4	3.500	1		25	0	0		0		2105			316	316		100%	1986	0.159	0.159
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	105	72		177	59%		1855	0.095	
	E	3	3.500	1		15	0	0		0		2105		168	30	198		15%	2074	0.095	0.095
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	360			360	100%		1797	0.200	0.200
	C	2	3.500	1	18					0		2105	105	15		120	88%		1962	0.061	
	C	2	3.500	1		25	0	0		0		2105		60	65	125		52%	2041	0.061	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2023 AM Observed Traffic Flows	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA) J4

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	7.3 (metres)	W c-b	=	3.6 (metres)	W b-a	=	3.6 (metres)
W cr	=	0 (metres)	Vr c-b	=	100 (metres)	W b-c	=	3.6 (metres)
q a-b	=	110 (pcu/hr)	q c-a	=	450 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	355 (pcu/hr)	q c-b	=	20 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	100 (metres)
						q b-a	=	150 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	411
Q b-c	=	622
Q c-b	=	604
Q b-ac	=	428

CRITICAL DFC = 0.40

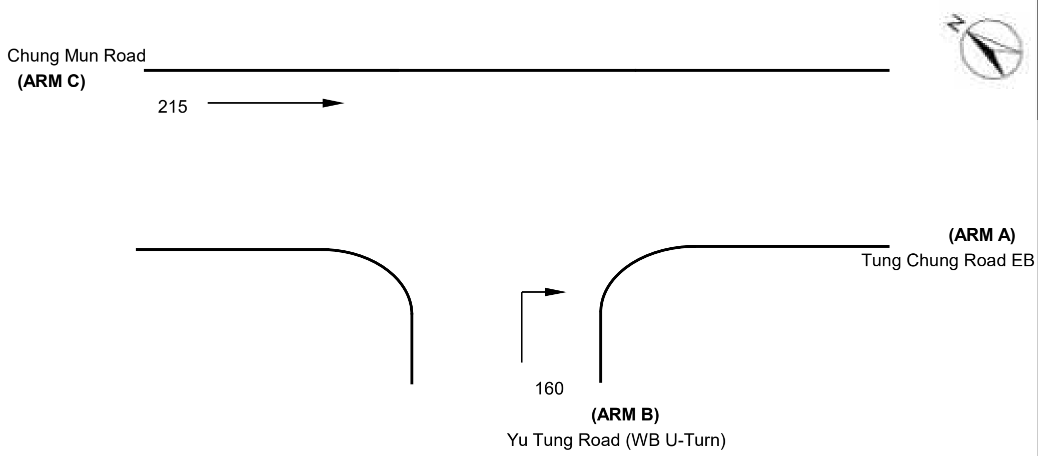
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.36
DFC b-c	=	0.03
DFC c-b	=	0.03
DFC b-ac	=	0.40

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J5 - Chung Mun Road / Yu Tung Road	2023 AM Observed Traffic Flows	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J5

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	8.8	(metres)
W cr	=	0	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	0	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4	(metres)
Vr c-b	=	200	(metres)
q c-a	=	215	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	50	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	17	(metres)
q b-a	=	160	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.002944
E	=	0.903036
F	=	1.107269
Y	=	0.696400

THE CAPACITY OF MOVEMENT :

Q b-a	=	594
Q b-c	=	673
Q c-b	=	825
Q b-ac	=	594

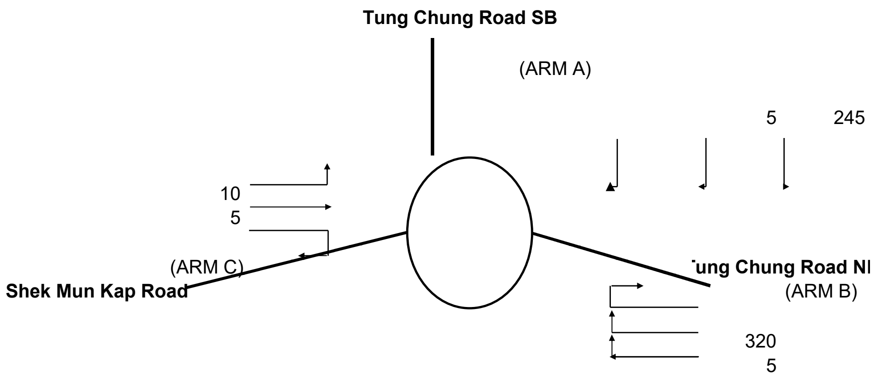
CRITICAL DFC = 0.27

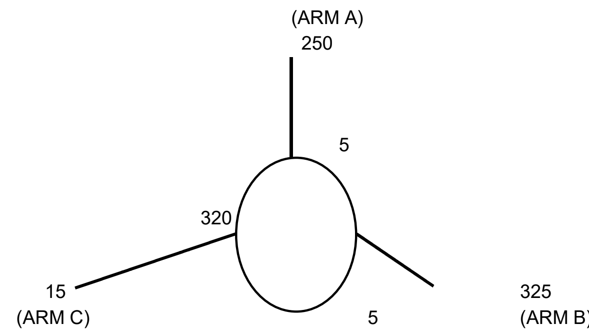
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.27
DFC b-c	=	0.00
DFC c-b	=	0.00
DFC b-ac	=	0.27

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung Road / Shek Mun Kap Road (J6)	Scenario	2023 - Observed Traffic Flows (AM)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	3.50	3.50	5.00
E = Entry width (m)	3.50	6.00	4.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	20.00	20.00	20.00
D = Inscribed circle diameter (m)	22.00	22.00	22.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	250	325	15
Qc= Circulating flow across entry (pcu/h)	5	5	320
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.00	0.33	-0.13
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.97	0.95	0.95
X2= V + ((E-V)/(1+2S))	3.50	5.00	3.64
M = EXP((D-60)/10)	0.02	0.02	0.02
F = 303*X2	1061	1515	1102
Td= 1+(0.5/(1+M))	1.49	1.49	1.49
Fc= 0.21*Td(1+0.2*X2)	0.53	0.63	0.54
Qe= K(F-Fc*Qc)	1021	1433	881
DFC = Design flow/Capacity = Q/Qe	0.24	0.23	0.02

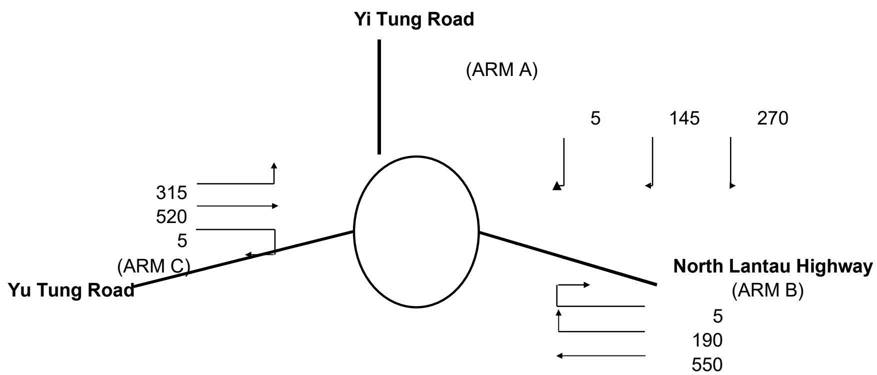
TOTAL ENTRY FLOWS = 590 PCU

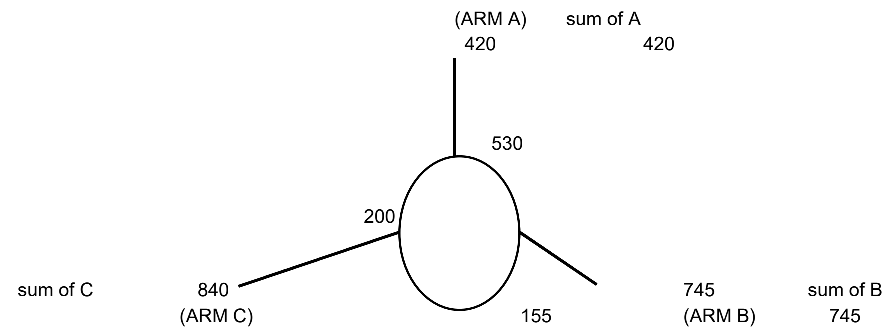
CRITICAL DFC = 0.24

Filename:

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung East Interchange (J1)	Scenario	2023 - Observed Traffic Flows (AM)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	420	745	840
Qc= Circulating flow across entry (pcu/h)	530	155	200
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2616	2649	2805
DFC = Design flow/Capacity = Q/Qe	0.16	0.28	0.30

TOTAL ENTRY FLOWS = 2005 PCU

CRITICAL DFC = 0.30

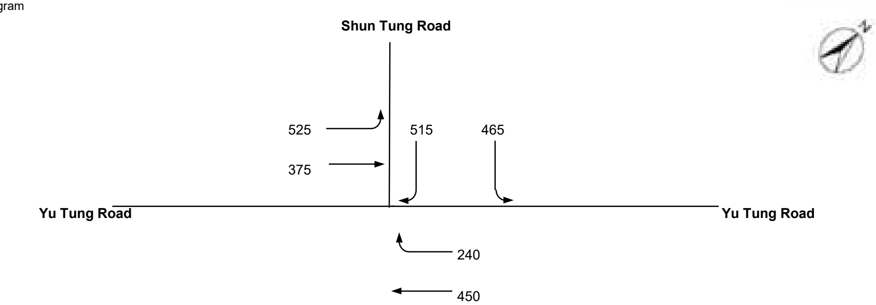
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road	2023 AM Observed Traffic Flows	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

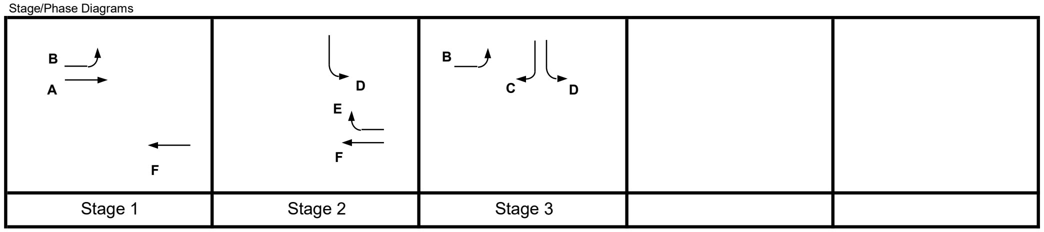
Traffic Flow Diagram
(pcu/hr)



J2

No. of stages per cycle	N =	3	
Cycle time	C =	120	sec
Sum(y)	Y =	0.388	
Lost time	L =	15	sec
Total Flow	=	18,780	pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y) =$	45	sec
Min. Cycle Time C_m	$= L/(1-Y) =$	25	sec
Y_{ult}	$= 0.9-0.0075\times L =$	0.788	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y\text{x}100\% =$	102.8	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y) =$	26	sec
Y_{max}	$= 1-L/C =$	0.875	

Stage/Phase Diagrams



I/G = 5 I/G = 12 I/G =

Critical Case : B,E

R.C.(C) $= (0.9\text{x}Y_{max}-Y)/Y\text{x}100\% =$ 103%

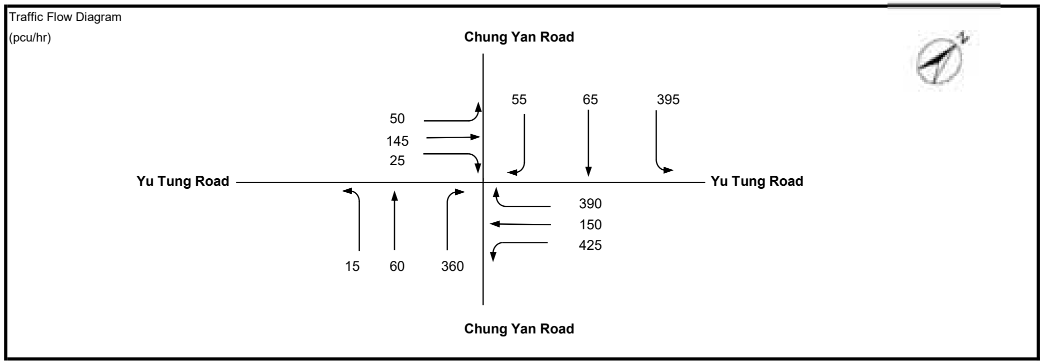
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
	B	1,3	4.000	1	50			1		0		2015	525			525	100%		1956	0.268	0.268
	A	1	4.000	2			0	0		0		4310		375		375			4310	0.087	
Shun Tung Road EB																					
	D	2,3	3.700	1	25			1		0		1985	465			465	100%		1873	0.248	
	C	3	3.700	2		30	0	0		0		4250			515	515		100%	4048	0.127	
Yu Tung Road SB																					
	F	1,2	3.650	2				1		0		4100		450		450			4100	0.110	
	E	2	3.650	1		25	0	0		0		2120			240	240		100%	2000	0.120	0.120

JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road	2023 AM Observed Traffic Flows	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

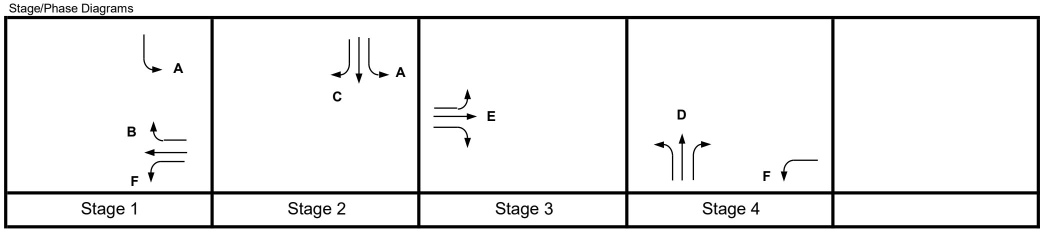
Traffic Flow Diagram
(pcu/hr)



J3

No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.346	
Lost time	L =	19	sec
Total Flow	=	20,510	pcu
Optimum Cycle C_o = $(1.5\times L+5)/(1-Y)$	=	51	sec
Min. Cycle Time C_m = $L/(1-Y)$	=	29	sec
Y_{ult} = $0.9-0.0075\times L$	=	0.758	
$R.C._{ult}$ = $(Y_{ult}-Y)/Y\times 100\%$	=	118.7	%
Practical Cycle Time C_p = $0.9\times L/(0.9-Y)$	=	31	sec
Y_{max} = $1-L/C$	=	0.842	

Stage/Phase Diagrams



I/G =   I/G = 5   I/G = 5   I/G = 12

Critical Case : A,E,D

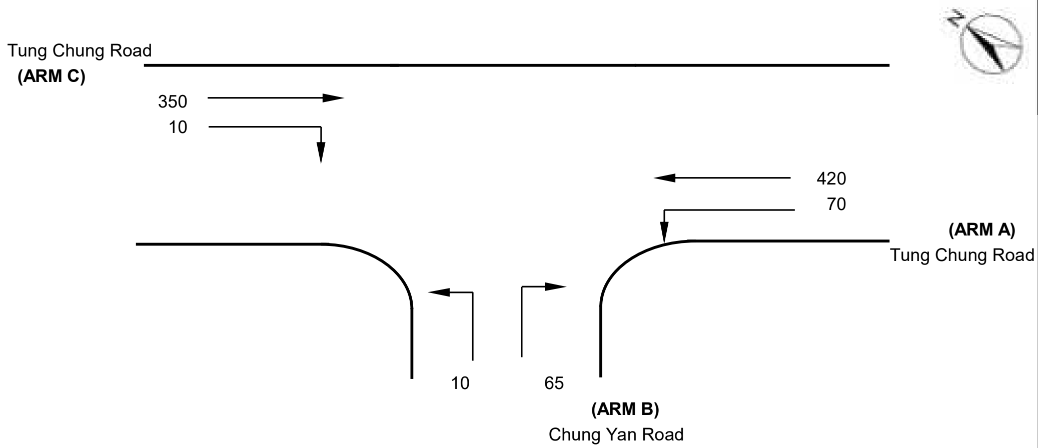
R.C.(C) $= (0.9\mathrm{x}Y_{max}-Y)/Y\mathrm{x}100\%$ = 119%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	15			1		0		1965	425			425	100%		1786	0.238	
	B	1	3.600	1		20	0	0		0		2115		150	134	284		47%	2043	0.139	
	B	1	3.600	1		10	0	0		0		2115			256	256		100%	1839	0.139	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	15	60	137	212	7%	65%	1884	0.112	0.112
	D	4	3.500	1		25	0	0		0		2105			223	223		100%	1986	0.112	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	50	55		105	48%		1876	0.056	
	E	3	3.500	1		15	0	0		0		2105		90	25	115		22%	2060	0.056	0.056
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	320			320	100%		1797	0.178	0.178
	C	2	3.500	1	18					0		2105	75	21		96	78%		1976	0.049	
	C	2	3.500	1		25	0	0		0		2105		44	55	99		56%	2037	0.049	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2023 AM Observed Traffic Flows	Designed By :	Checked By :	Job No. :	Date : Nov 24



J4

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	70	(pcu/hr)
q a-c	=	420	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	100	(metres)
q c-a	=	350	(pcu/hr)
q c-b	=	10	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	65	(pcu/hr)
q b-c	=	10	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	418
Q b-c	=	609
Q c-b	=	598
Q b-ac	=	437

CRITICAL DFC = 0.17

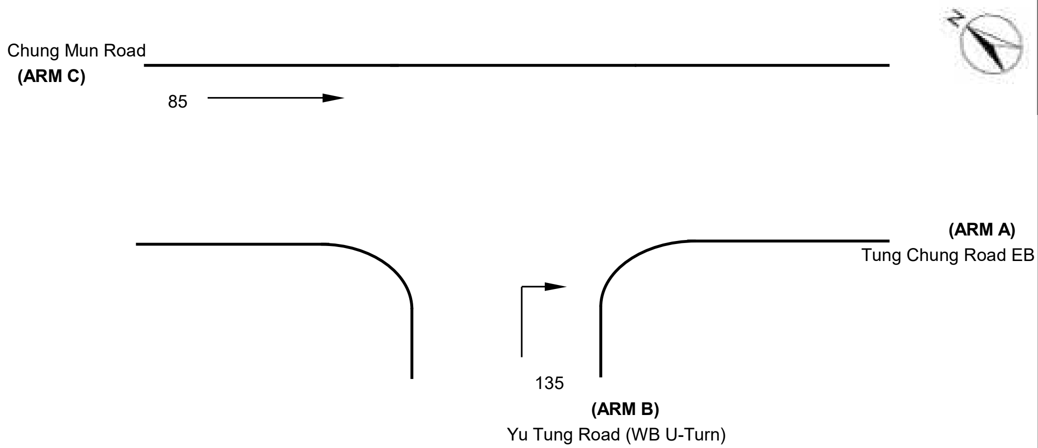
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.16
DFC b-c	=	0.02
DFC c-b	=	0.02
DFC b-ac	=	0.17

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J5 - Chung Mun Road / Yu Tung Road	2023 AM Observed Traffic Flows	Designed By :	Checked By :	Job No. :	Date : Nov 24



J5

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	8.8	(metres)
W cr	=	0	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	0	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4	(metres)
Vr c-b	=	200	(metres)
q c-a	=	85	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	50	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	17	(metres)
q b-a	=	135	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.002944
E	=	0.903036
F	=	1.107269
Y	=	0.696400

THE CAPACITY OF MOVEMENT :

Q b-a	=	615
Q b-c	=	673
Q c-b	=	825
Q b-ac	=	615

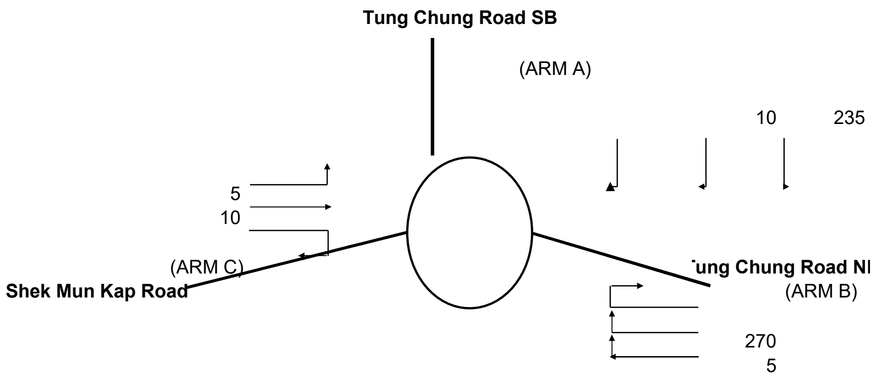
CRITICAL DFC = 0.22

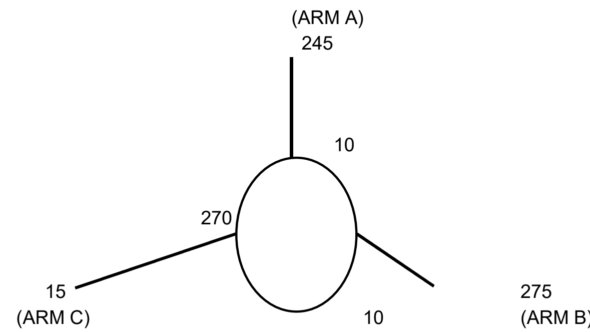
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.22
DFC b-c	=	0.00
DFC c-b	=	0.00
DFC b-ac	=	0.22

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung Road / Shek Mun Kap Road (J6)	Scenario	2023 - Observed Traffic Flows (AM)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	3.50	3.50	5.00
E = Entry width (m)	3.50	6.00	4.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	20.00	20.00	20.00
D = Inscribed circle diameter (m)	22.00	22.00	22.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	245	275	15
Qc= Circulating flow across entry (pcu/h)	10	10	270
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.00	0.33	-0.13
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.97	0.95	0.95
X2= V + ((E-V)/(1+2S))	3.50	5.00	3.64
M = EXP((D-60)/10)	0.02	0.02	0.02
F = 303*X2	1061	1515	1102
Td= 1+(0.5/(1+M))	1.49	1.49	1.49
Fc= 0.21*Td(1+0.2*X2)	0.53	0.63	0.54
Qe= K(F-Fc*Qc)	1019	1430	906
DFC = Design flow/Capacity = Q/Qe	0.24	0.19	0.02

TOTAL ENTRY FLOWS = 535 PCU

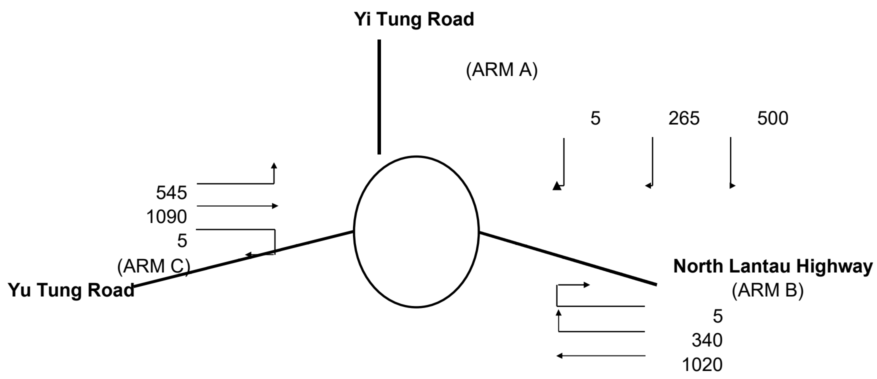
CRITICAL DFC = 0.24

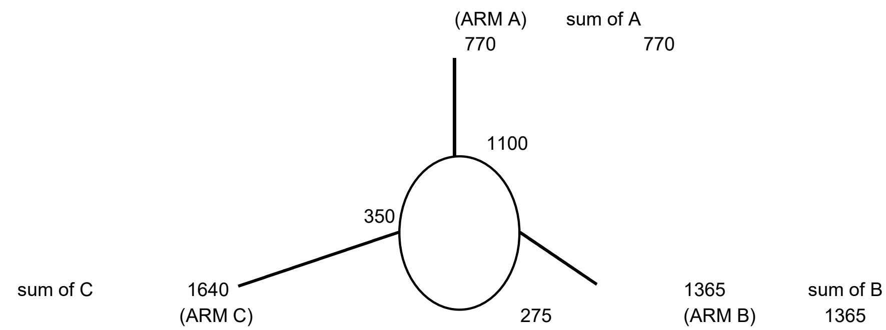
Filename:

ROUNDABOUT CAPACITY CALCULATION

AECOM

Junction	Tung Chung East Interchange (J1)	Scenario	2033 - AM - Reference Traffic Flows (Conforming Scheme)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	770	1365	1640
Qc= Circulating flow across entry (pcu/h)	1100	275	350
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2263	2579	2713
DFC = Design flow/Capacity = Q/Qe	0.34	0.53	0.60

TOTAL ENTRY FLOWS = 3775 PCU

CRITICAL DFC = 0.60

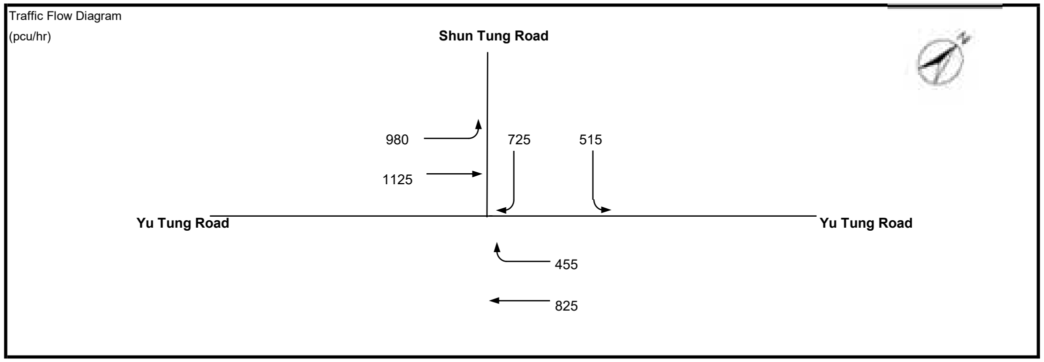
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road - Improved Scheme	2033 AM Reference Traffic Flows (Conforming Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

Traffic Flow Diagram
(pcu/hr)

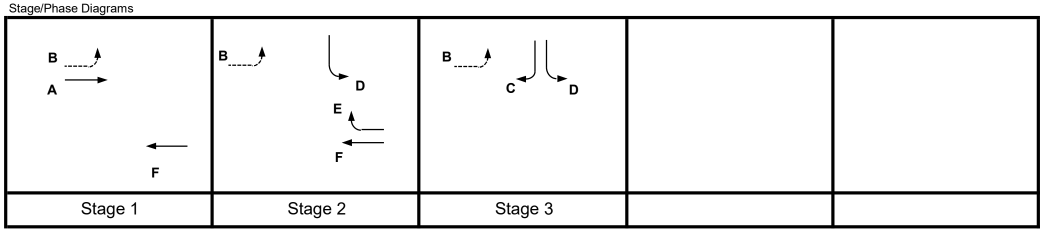


J2

No. of stages per cycle	N =	3	
Cycle time	C =	120	sec
Sum(y)	Y =	0.668	
Lost time	L =	12	sec
Total Flow	=	18,780	pcu

Optimum Cycle C_o	$= (1.5 \times L+5)/(1-Y) =$		69	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	36	sec
Y_{ult}	$= 0.9-0.0075 \times L$	=	0.810	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y \times 100\%$	=	21.3	%
Practical Cycle Time C_p	$= 0.9 \times L/(0.9-Y)$	=	46	sec
Y_{max}	$= 1-L/C$	=	0.900	

Stage/Phase Diagrams



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

Critical Case : A,E,C

R.C.(C) $= (0.9 \times Y_{max}-Y)/Y \times 100\% =$ 21%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
			4.000	1	50			1		0		2015	980			980	100%		1956	0.501	
	A	1	4.000	2			0	0		0		4310		1125		1125			4310	0.261	0.261
Shun Tung Road EB																					
	D	2,3	3.700	1	25			1		0		1985	515			515	100%		1873	0.275	
	C	3	3.700	2		30	0	0		0		4250			725	725		100%	4048	0.179	0.179
Yu Tung Road SB																					
	F	1,2	3.650	2				1		0		4100		825		825			4100	0.201	
	E	2	3.650	1		25	0	0		0		2120			455	455		100%	2000	0.228	0.228

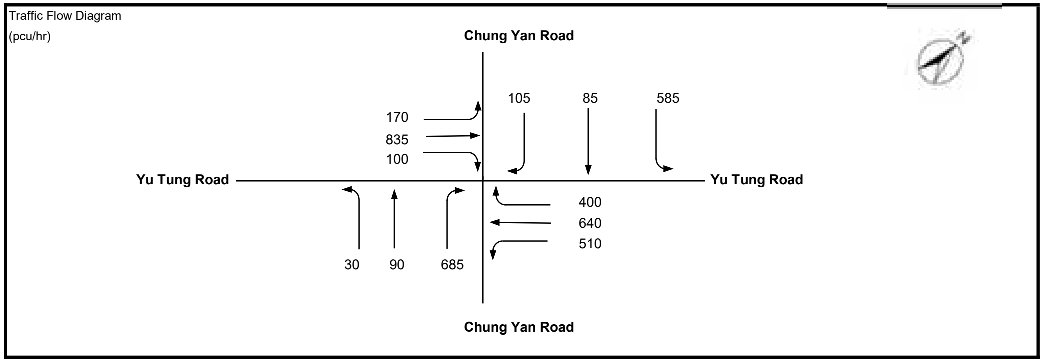
JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 AM Reference Traffic Flows (Conforming Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

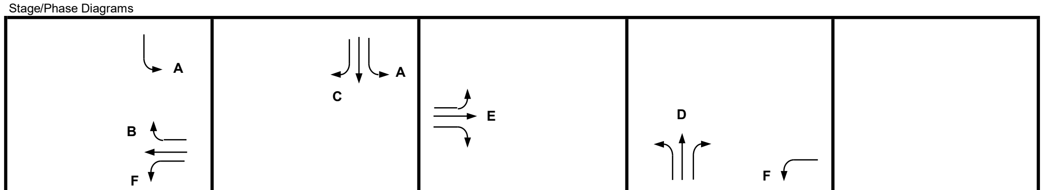
J3

Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.757	
Lost time	L =	19	sec
Total Flow	=	22,595	pcu
Optimum Cycle C_o	$= (1.5 \times L+5)/(1-Y) =$	138	sec
Min. Cycle Time C_m	$= L/(1-Y) =$	78	sec
Y_{ult}	$= 0.9-0.0075 \times L =$	0.758	
$R.C._{ult}$	$= (Y_{ult}-Y)/Yx100\% =$	0.0	%
Practical Cycle Time C_p	$= 0.9 \times L/(0.9-Y) =$	120	sec
Y_{max}	$= 1-L/C =$	0.842	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3	Stage 4	
I/G =	I/G = 5	I/G = 5	I/G = 12	

Critical Case : A,E,D

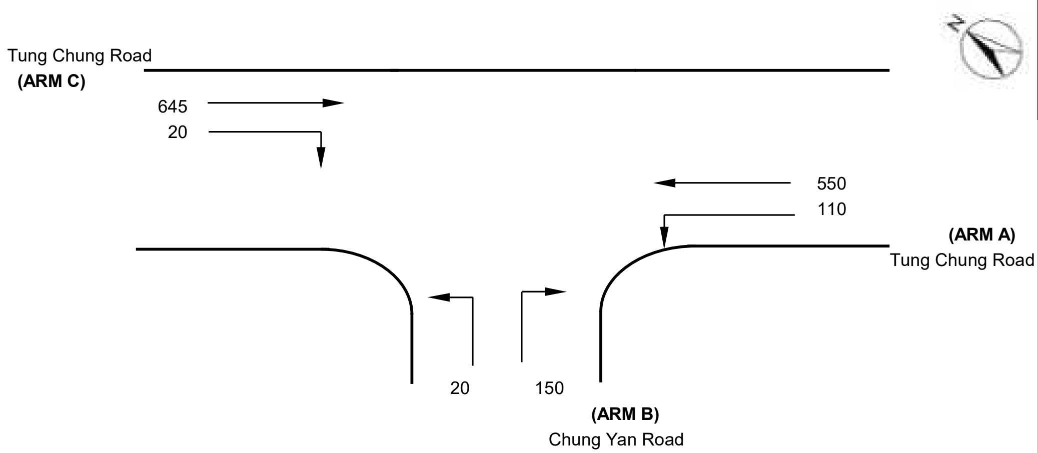
R.C.(C) $= (0.9xY_{max}-Y)/Yx100\% =$ 0%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	510			510	100%		1828	0.279	
	B	1	3.500	1				0		0		2105		531		531			2105	0.252	
	B	1	3.500	1		28	0			0		2105		109	400	509		79%	2020	0.252	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	30	90	271	391	8%	69%	1878	0.208	0.208
	D	4	3.500	1		25	0	0		0		2105			414	414		100%	1986	0.208	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	170			170	100%		1786	0.095	
	E	3	3.500	1						0		2105		471		471			2105	0.224	0.224
	E	3	3.500	1		25	0	0		0		2105		365	100	465		22%	2078	0.224	
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	585			585	100%		1797	0.326	0.326
	C	2	3.500	1		18				0		2105		85	12	97		13%	2083	0.047	
	C	2	3.500	1		25	0	0		0		2105			93	93		100%	1986	0.047	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J4

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	7.3 (metres)	W c-b	=	3.6 (metres)	W b-a	=	3.6 (metres)
W cr	=	0 (metres)	Vr c-b	=	100 (metres)	W b-c	=	3.6 (metres)
q a-b	=	110 (pcu/hr)	q c-a	=	645 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	550 (pcu/hr)	q c-b	=	20 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	100 (metres)
						q b-a	=	150 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	329
Q b-c	=	570
Q c-b	=	552
Q b-ac	=	346

CRITICAL DFC = 0.49

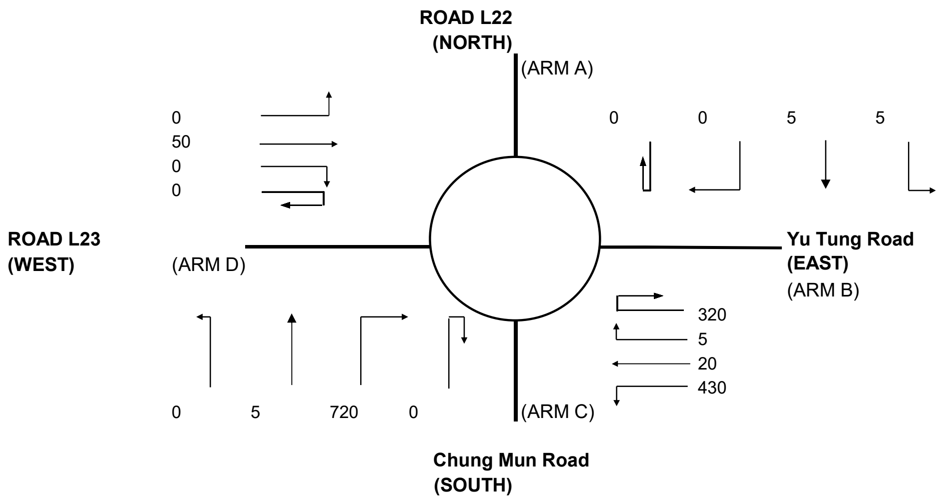
COMPARISION OF DESIGN FLOW TO CAPACITY :

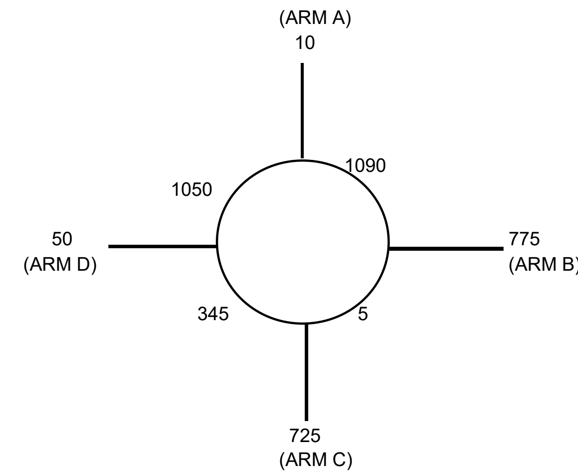
DFC b-a	=	0.46
DFC b-c	=	0.04
DFC c-b	=	0.04
DFC b-ac	=	0.49

ROUNDABOUT CAPACITY CALCULATIC

AECOM

				Project No.	Prepared By	Checked By	Date
Junction	**J5 - Yu Tung Road / Chung Mun Road**	Scenario	**2033 - AM - Reference Traffic Flows (Conforming Scheme)**	-	-	-	Nov 2024





ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.75	8.80	7.30	4.85
E = Entry width (m)	6.50	9.00	8.50	6.00
L = Effective length of flare (m)	10.00	7.00	15.00	15.00
R = Entry radius (m)	25.00	25.00	40.00	25.00
D = Inscribed circle diameter (m)	60.00	60.00	60.00	60.00
A = Entry angle (degree)	20.00	20.00	30.00	20.00
Q = Entry flow (pcu/h)	10	775	725	50
Qc= Circulating flow across entry (pcu/h)	1090	5	345	1050
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.12	0.05	0.13	0.12
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	1.04	1.02	1.04
X2= V + ((E-V)/(1+2S))	6.35	8.98	8.26	5.77
M = EXP((D-60)/10)	1.00	1.00	1.00	1.00
F = 303*X2	1926	2722	2501	1749
Td= 1+(0.5/(1+M))	1.25	1.25	1.25	1.25
Fc= 0.21*Td(1+0.2*X2)	0.60	0.73	0.70	0.57
Qe= K(F-Fc*Qc)	1332	2839	2317	1207
DFC = Design flow/Capacity = Q/Qe	0.01	0.27	0.31	0.04

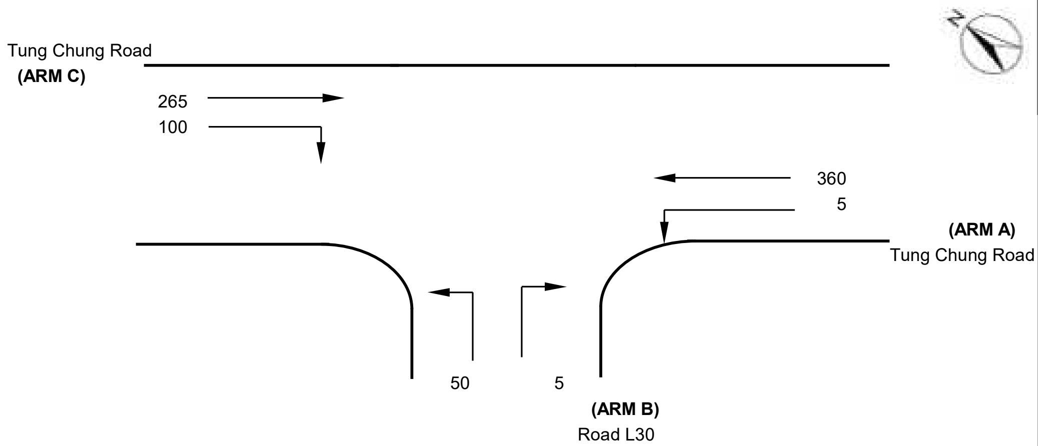
TOTAL ENTRY FLOWS = 1560 PCU

CRITICAL DFC = 0.31

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Tung Chung Road / Shek Mun Kap Road	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J6

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	7.3 (metres)	W c-b	=	3.6 (metres)	W b-a	=	3.6 (metres)
W cr	=	0 (metres)	Vr c-b	=	200 (metres)	W b-c	=	3.6 (metres)
q a-b	=	5 (pcu/hr)	q c-a	=	265 (pcu/hr)	Vl b-a	=	200 (metres)
q a-c	=	360 (pcu/hr)	q c-b	=	100 (pcu/hr)	Vr b-a	=	200 (metres)
						Vr b-c	=	200 (metres)
						q b-a	=	5 (pcu/hr)
						q b-c	=	50 (pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	488
Q b-c	=	690
Q c-b	=	689
Q b-ac	=	665

CRITICAL DFC = 0.15

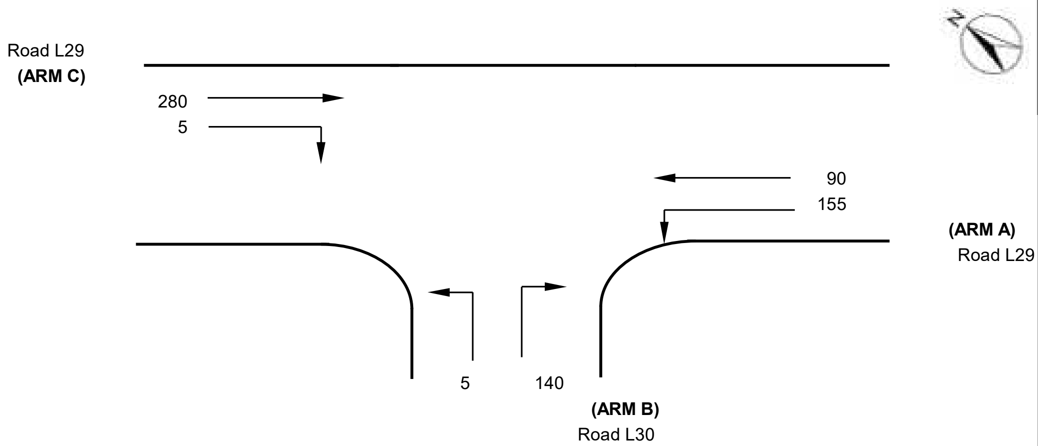
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.07
DFC c-b	=	0.15
DFC b-ac	=	0.08

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J7 - Road L29 / Road L30	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J7

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	11.7	(metres)
W cr	=	1.5	(metres)
q a-b	=	155	(pcu/hr)
q a-c	=	90	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	280	(pcu/hr)
q c-b	=	5	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	140	(pcu/hr)
q b-c	=	5	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.857384
Y	=	0.596350

THE CAPACITY OF MOVEMENT :

Q b-a	=	479
Q b-c	=	611
Q c-b	=	593
Q b-ac	=	482

COMPARISION OF DESIGN FLOW TO CAPACITY :

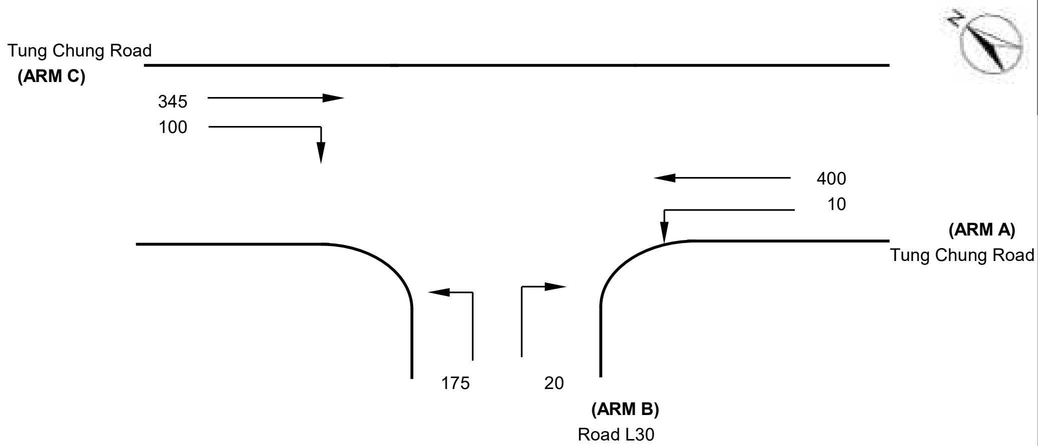
DFC b-a	=	0.29
DFC b-c	=	0.01
DFC c-b	=	0.01
DFC b-ac	=	0.30

CRITICAL DFC = 0.30

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Tung Chung Road / Road L30	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J8

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	400	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	200	(metres)
q c-a	=	345	(pcu/hr)
q c-b	=	100	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	200	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	200	(metres)
q b-a	=	20	(pcu/hr)
q b-c	=	175	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	460
Q b-c	=	678
Q c-b	=	676
Q b-ac	=	646

COMPARISION OF DESIGN FLOW TO CAPACITY :

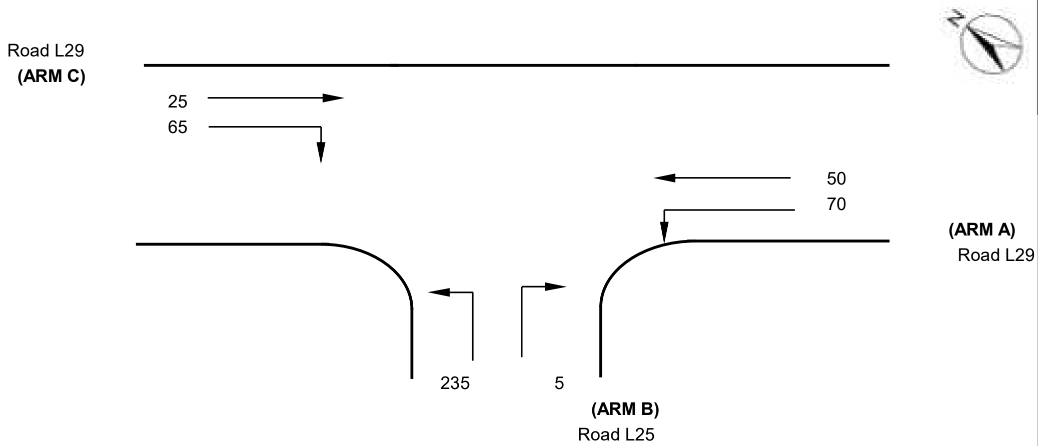
DFC b-a	=	0.04
DFC b-c	=	0.26
DFC c-b	=	0.15
DFC b-ac	=	0.30

CRITICAL DFC = 0.30

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Road L29 / Road L25	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J9

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	10.3	(metres)
W cr	=	1.5	(metres)
q a-b	=	70	(pcu/hr)
q a-c	=	50	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	100	(metres)
q c-a	=	25	(pcu/hr)
q c-b	=	65	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	235	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.838923
Y	=	0.644650

THE CAPACITY OF MOVEMENT :

Q b-a	=	503
Q b-c	=	623
Q c-b	=	601
Q b-ac	=	620

CRITICAL DFC = 0.39

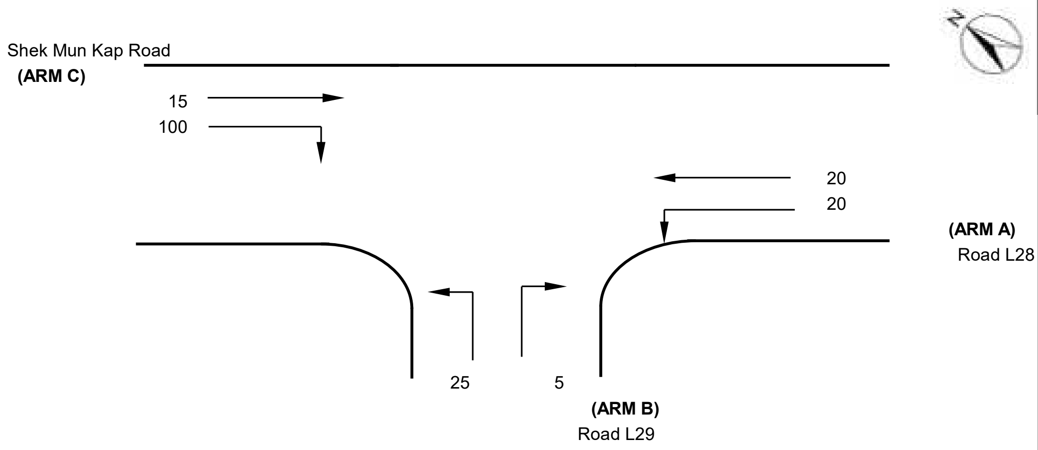
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.38
DFC c-b	=	0.11
DFC b-ac	=	0.39

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Road L28 / Road L29 / Shek Mun Kap Road	2033 AM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J10

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	20	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	15	(pcu/hr)
q c-b	=	100	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.7	(metres)
W b-c	=	2.7	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	25	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.867478
E	=	0.894307
F	=	0.857384
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	501
Q b-c	=	659
Q c-b	=	629
Q b-ac	=	627

CRITICAL DFC = 0.16

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.04
DFC c-b	=	0.16
DFC b-ac	=	0.05

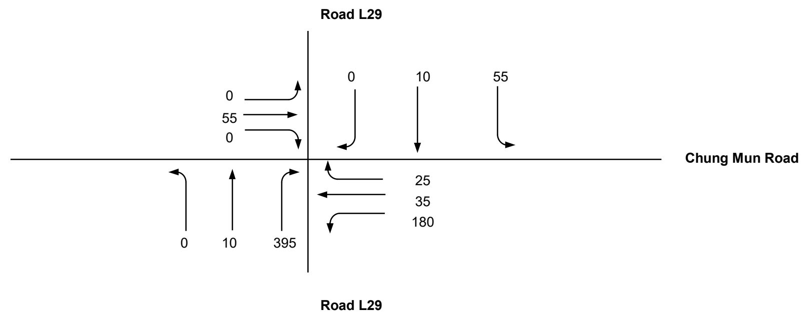
JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Chung Mun Road / Road L29	2033 AM Reference Traffic Flows (Conforming Scheme)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

J11

Traffic Flow Diagram
(pcu/hr)



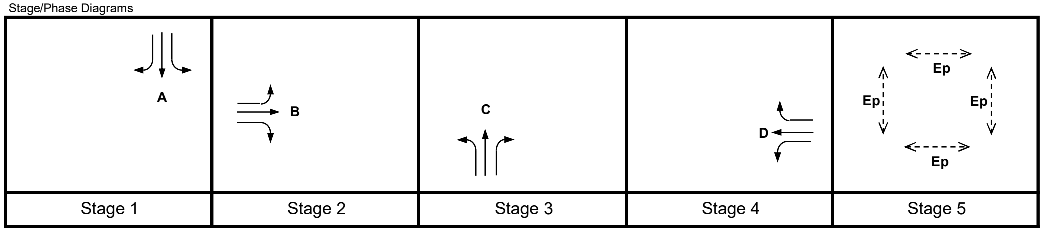
No. of stages per cycle	N =	5	
Cycle time	C =	120	sec
Sum(y)	Y =	0.316	
Lost time	L =	49	sec
Total Flow	=	9,965	pcu

Optimum Cycle C_o	$= (1.5\times L+5)/(1\text{-}Y) =$	115	sec
Min. Cycle Time C_m	$= L/(1\text{-}Y)$ =	72	sec
Y_{ult}	$= 0.9\text{-}0.0075\times L$ =	0.533	
$R.C._{ult}$	$= (Y_{ult}\text{-}Y)/Y\text{x}100\%$ =	68.3	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9\text{-}Y)$ =	76	sec
Y_{max}	= 1-L/C =	0.592	

Critical Case : A,B,C,D,Ep

R.C.(C) = $(0.9\text{x}Y_{max}\text{-}Y)/Y\text{x}100\%$ = 68%

Stage/Phase Diagrams



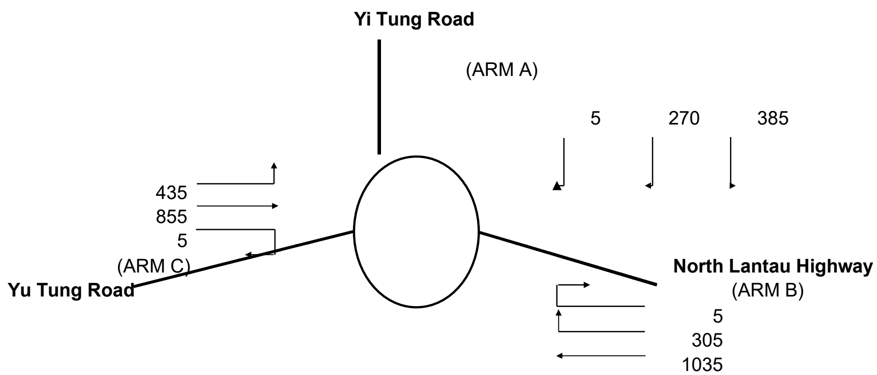
G = 5 I/G = 5 G = 5 I/G = 5 I/G = 5 I/G = 5 G = 20 I/G = 2

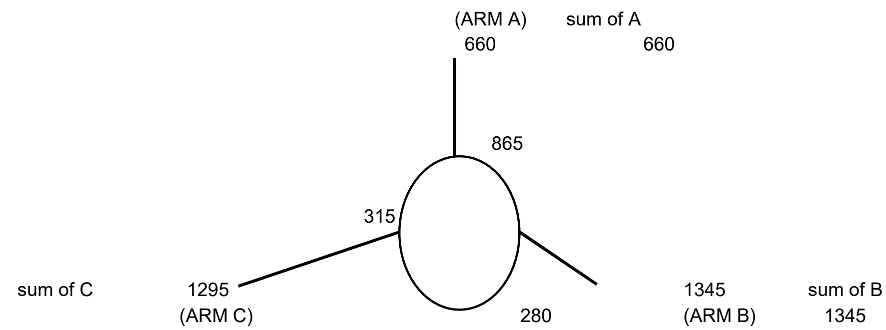
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
	A	1	3.500	1	30	25	0	1		0		1965	55	10	0	65	85%	0%	1885	0.034	0.034
	B	2	3.500	1	30	25	0	1		0		1965	0	55	0	55	0%	0%	1965	0.028	
	C	3	3.500	1	30	25	0	1		0		1965	0	10	395	405	0%	98%	1856	0.218	0.218
	D	4	3.500	1	15			1		0		1965	114			114	100%		1786	0.064	0.064
	D	4	3.500	1	15	25	0	0		0		2105	66	35	25	126	52%	20%	1978	0.064	
Pedestrian Crossing				GM		FGM															
	Ep	5	min.	15	+	5	=	20	sec												

ROUNDABOUT CAPACITY CALCULATION

AECOM

Junction	Tung Chung East Interchange (J1)	Scenario	2033 - PM - Reference Traffic Flows (Conforming Scheme)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	660	1345	1295
Qc= Circulating flow across entry (pcu/h)	865	280	315
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2408	2576	2734
DFC = Design flow/Capacity = Q/Qe	0.27	0.52	0.47

TOTAL ENTRY FLOWS = 3300 PCU

CRITICAL DFC = 0.52

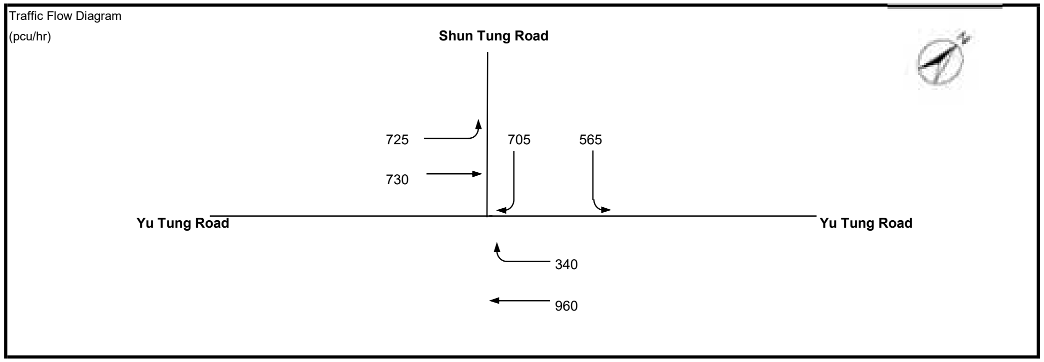
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road - Improved Scheme	2033 PM Reference Traffic Flows (Conforming Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

Traffic Flow Diagram
(pcu/hr)

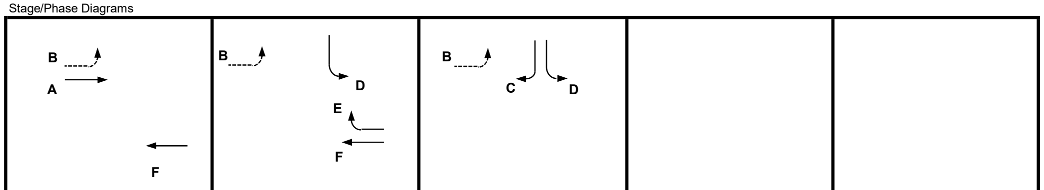


J2

No. of stages per cycle	N =	3	
Cycle time	C =	120	sec
Sum(y)	Y =	0.514	
Lost time	L =	12	sec
Total Flow	=	18,780	pcu

Optimum Cycle C_o	$= (1.5 \times L+5)/(1-Y)$ =		47	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	25	sec
Y_{ult}	$= 0.9-0.0075 \times L$	=	0.810	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y \times 100\%$	=	57.7	%
Practical Cycle Time C_p	$= 0.9 \times L/(0.9-Y)$	=	28	sec
Y_{max}	$= 1-L/C$	=	0.900	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3		

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

Critical Case : A,E,C

R.C.(C) $= (0.9 \times Y_{max} - Y)/Y \times 100\%$ = 58%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
↰			4.000	1	50			1		0		2015	725			725	100%		1956	0.371	
↑	A	1	4.000	2			0	0		0		4310		730		730			4310	0.169	0.169
Shun Tung Road EB																					
↰	D	2,3	3.700	1	25			1		0		1985	565			565	100%		1873	0.302	
↱	C	3	3.700	2		30	0	0		0		4250			705	705		100%	4048	0.174	0.174
Yu Tung Road SB																					
↑	F	1,2	3.650	2				1		0		4100		960		960			4100	0.234	
↱	E	2	3.650	1		25	0	0		0		2120			340	340		100%	2000	0.170	0.170

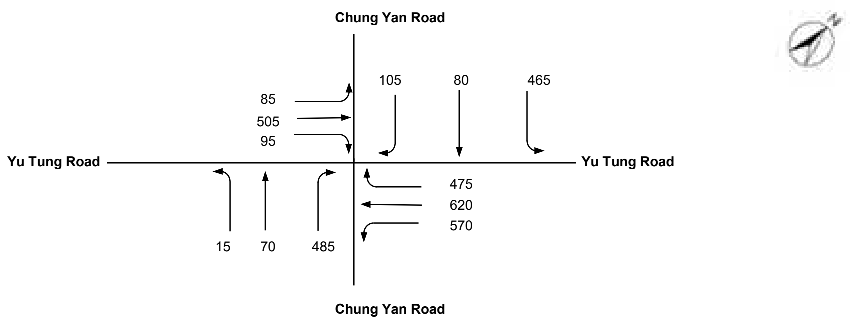
JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 PM Reference Traffic Flows (Conforming Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

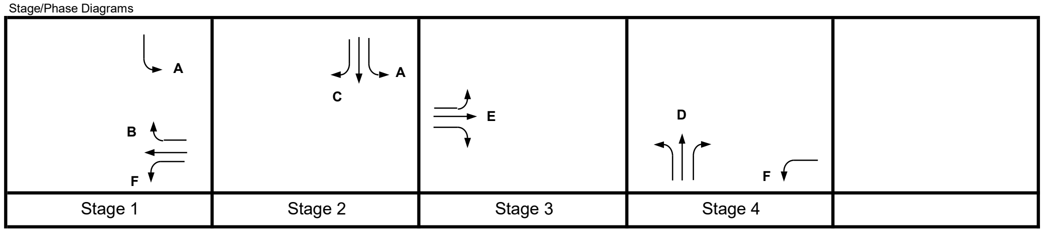
J3

Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.603	
Lost time	L =	16	sec
Total Flow	=	22,595	pcu
Optimum Cycle C_o	= (1.5×L+5)/(1-Y) =	73	sec
Min. Cycle Time C_m	= L/(1-Y) =	40	sec
Y_{ult}	= 0.9-0.0075×L =	0.780	
$R.C._{ult}$	= (Y_{ult}-Y)/Yx100% =	29.4	%
Practical Cycle Time C_p	= 0.9×L/(0.9-Y) =	48	sec
Y_{max}	= 1-L/C =	0.867	

Stage/Phase Diagrams



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

Critical Case : B,C,E,D

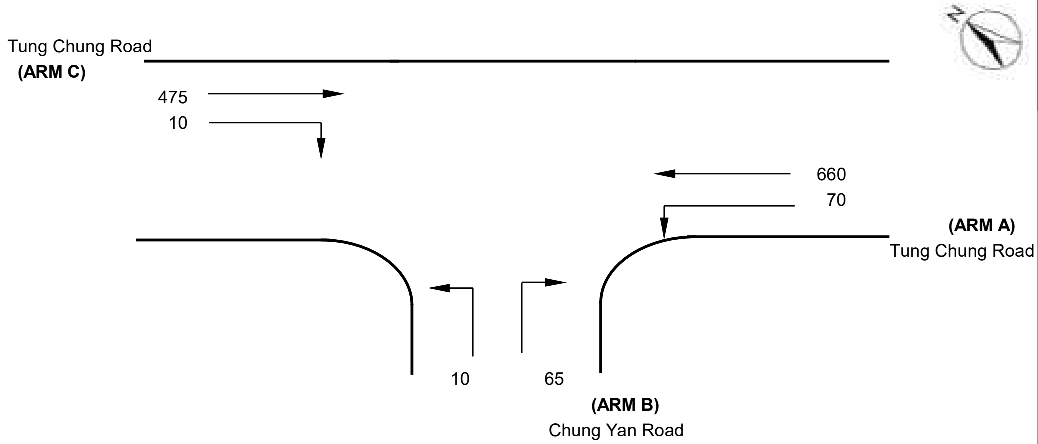
R.C.(C) = $(0.9xY_{max}$-Y)/Yx100% = 29%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	570			570	100%		1828	0.312	
	B	1	3.500	1				0		0		2105		560		560			2105	0.266	0.266
	B	1	3.500	1		28	0			0		2105		60	475	535		89%	2009	0.266	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	15	70	192	277	5%	69%	1881	0.147	0.147
	D	4	3.500	1		25	0	0		0		2105			293	293		100%	1986	0.147	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	85			85	100%		1786	0.048	
	E	3	3.500	1						0		2105		303		303			2105	0.144	0.144
	E	3	3.500	1		25	0	0		0		2105		202	95	297		32%	2065	0.144	
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	465			465	100%		1797	0.259	
	C	2	3.500	1		18				0		2105		80	15	95		15%	2078	0.046	0.046
	C	2	3.500	1		25	0	0		0		2105			90	90		100%	1986	0.046	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2033 PM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J4

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	70	(pcu/hr)
q a-c	=	660	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	100	(metres)
q c-a	=	475	(pcu/hr)
q c-b	=	10	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	65	(pcu/hr)
q b-c	=	10	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	336
Q b-c	=	545
Q c-b	=	534
Q b-ac	=	354

CRITICAL DFC = 0.21

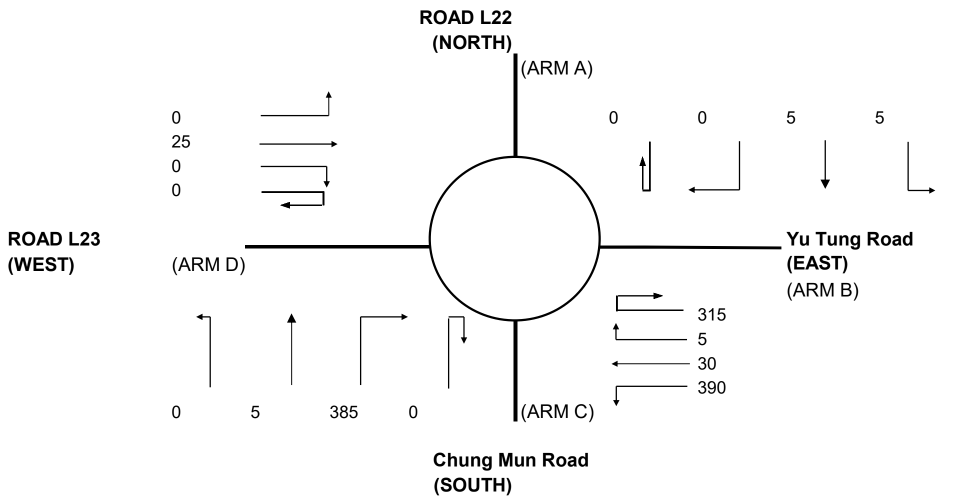
COMPARISION OF DESIGN FLOW TO CAPACITY :

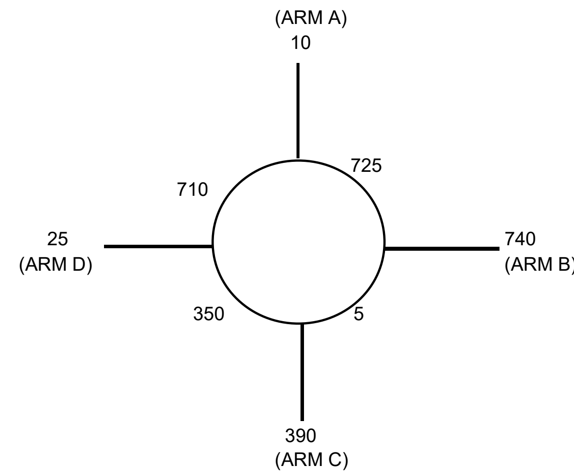
DFC b-a	=	0.19
DFC b-c	=	0.02
DFC c-b	=	0.02
DFC b-ac	=	0.21

ROUNDABOUT CAPACITY CALCULATIC

AECOM

Junction	J5 - Yu Tung Road / Chung Mun Road	Scenario	2033 - PM - Reference Traffic Flows (Conforming Scheme)	Project No.	Prepared By	Checked By	Date
				-	-	-	Nov 2024





ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.75	8.80	7.30	4.85
E = Entry width (m)	6.50	9.00	8.50	6.00
L = Effective length of flare (m)	10.00	7.00	15.00	15.00
R = Entry radius (m)	25.00	25.00	40.00	25.00
D = Inscribed circle diameter (m)	60.00	60.00	60.00	60.00
A = Entry angle (degree)	20.00	20.00	30.00	20.00
Q = Entry flow (pcu/h)	10	740	390	25
Qc= Circulating flow across entry (pcu/h)	725	5	350	710
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.12	0.05	0.13	0.12
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	1.04	1.02	1.04
X2= V + ((E-V)/(1+2S))	6.35	8.98	8.26	5.77
M = EXP((D-60)/10)	1.00	1.00	1.00	1.00
F = 303*X2	1926	2722	2501	1749
Td= 1+(0.5/(1+M))	1.25	1.25	1.25	1.25
Fc= 0.21*Td(1+0.2*X2)	0.60	0.73	0.70	0.57
Qe= K(F-Fc*Qc)	1560	2839	2313	1408
DFC = Design flow/Capacity = Q/Qe	0.01	0.26	0.17	0.02

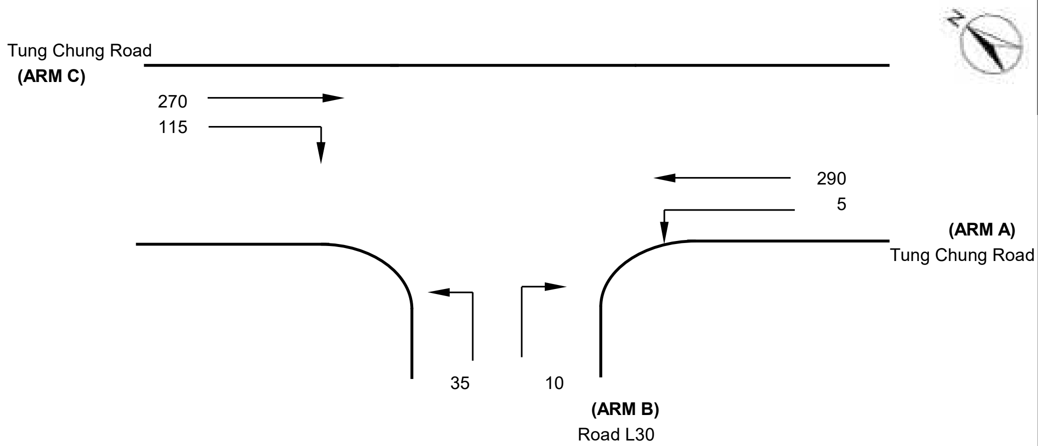
TOTAL ENTRY FLOWS = 1165 PCU

CRITICAL DFC = 0.26

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Tung Chung Road / Shek Mun Kap Road	**2033 PM Reference Traffic Flows (Conforming Scheme)**	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J6

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)				*MAJOR ROAD (ARM C)*				*MINOR ROAD (ARM B)*			
W	=	7.3	(metres)	W c-b	=	3.6	(metres)	W b-a	=	3.6	(metres)
W cr	=	0	(metres)	Vr c-b	=	200	(metres)	W b-c	=	3.6	(metres)
q a-b	=	5	(pcu/hr)	q c-a	=	270	(pcu/hr)	Vl b-a	=	200	(metres)
q a-c	=	290	(pcu/hr)	q c-b	=	115	(pcu/hr)	Vr b-a	=	200	(metres)
								Vr b-c	=	200	(metres)
								q b-a	=	10	(pcu/hr)
								q b-c	=	35	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	502
Q b-c	=	710
Q c-b	=	709
Q b-ac	=	650

CRITICAL DFC = 0.16

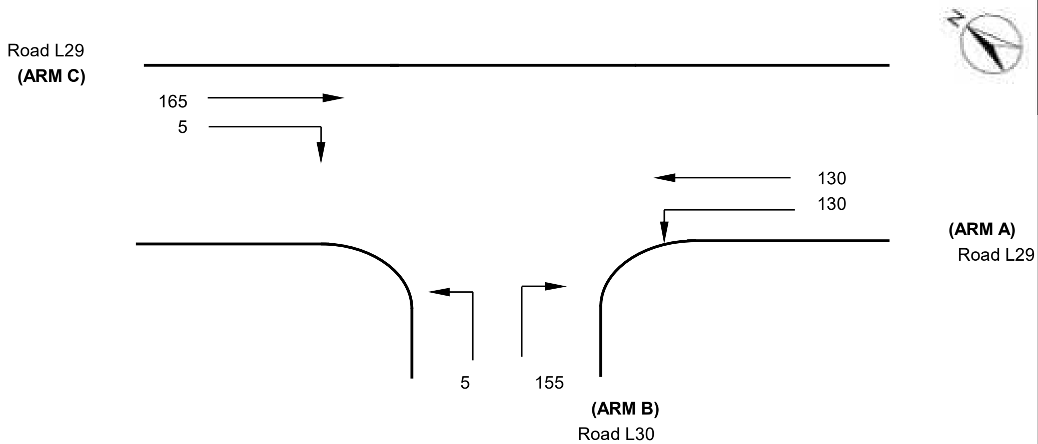
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.02
DFC b-c	=	0.05
DFC c-b	=	0.16
DFC b-ac	=	0.07

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J7 - Road L29 / Road L30	2033 PM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J7

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	11.7 (metres)	W c-b	=	2.3 (metres)	W b-a	=	2.3 (metres)
W cr	=	1.5 (metres)	Vr c-b	=	100 (metres)	W b-c	=	2.3 (metres)
q a-b	=	130 (pcu/hr)	q c-a	=	165 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	130 (pcu/hr)	q c-b	=	5 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	100 (metres)
						q b-a	=	155 (pcu/hr)
						q b-c	=	5 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.857384
Y	=	0.596350

THE CAPACITY OF MOVEMENT :

Q b-a	=	486
Q b-c	=	605
Q c-b	=	590
Q b-ac	=	489

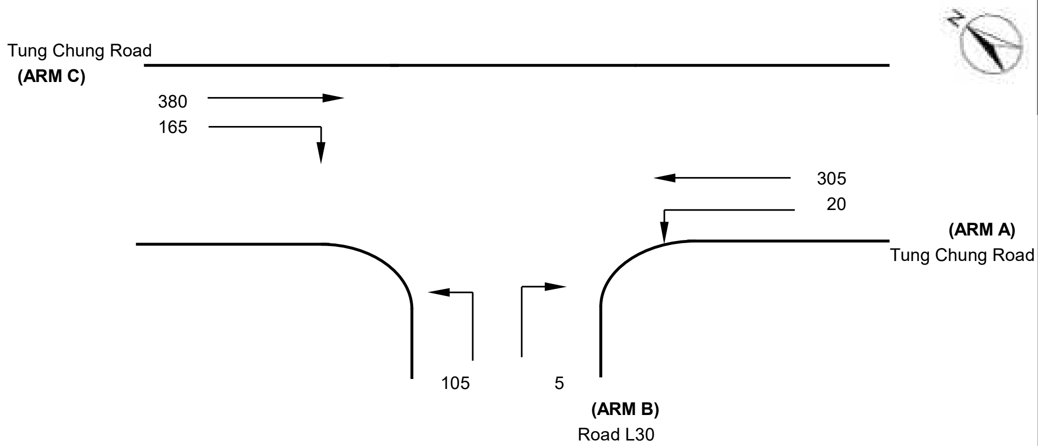
CRITICAL DFC = 0.33

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.32
DFC b-c	=	0.01
DFC c-b	=	0.01
DFC b-ac	=	0.33

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J8 - Tung Chung Road / Road L30	2033 PM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J8

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	7.3 (metres)	W c-b	=	3.6 (metres)	W b-a	=	3.6 (metres)
W cr	=	0 (metres)	Vr c-b	=	200 (metres)	W b-c	=	3.6 (metres)
q a-b	=	20 (pcu/hr)	q c-a	=	380 (pcu/hr)	Vl b-a	=	200 (metres)
q a-c	=	305 (pcu/hr)	q c-b	=	165 (pcu/hr)	Vr b-a	=	200 (metres)
						Vr b-c	=	200 (metres)
						q b-a	=	5 (pcu/hr)
						q b-c	=	105 (pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	453
Q b-c	=	704
Q c-b	=	700
Q b-ac	=	687

CRITICAL DFC = 0.24

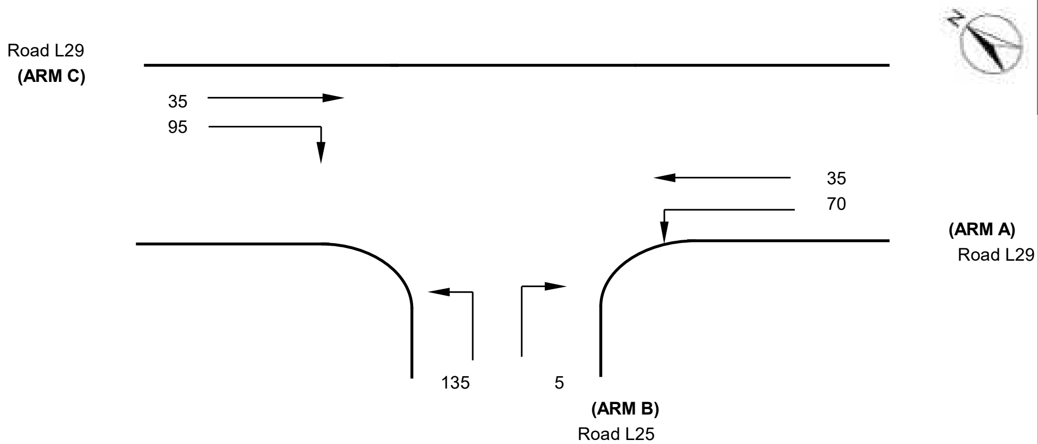
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.15
DFC c-b	=	0.24
DFC b-ac	=	0.16

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Road L29 / Road L25	2033 PM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J9

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)				*MAJOR ROAD (ARM C)*				*MINOR ROAD (ARM B)*			
W	=	10.3	(metres)	W c-b	=	2.1	(metres)	W b-a	=	2.3	(metres)
W cr	=	1.5	(metres)	Vr c-b	=	100	(metres)	W b-c	=	2.3	(metres)
q a-b	=	70	(pcu/hr)	q c-a	=	35	(pcu/hr)	Vl b-a	=	100	(metres)
q a-c	=	35	(pcu/hr)	q c-b	=	95	(pcu/hr)	Vr b-a	=	100	(metres)
								Vr b-c	=	100	(metres)
								q b-a	=	5	(pcu/hr)
								q b-c	=	135	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.838923
Y	=	0.644650

THE CAPACITY OF MOVEMENT :

Q b-a	=	496
Q b-c	=	626
Q c-b	=	604
Q b-ac	=	620

CRITICAL DFC = 0.23

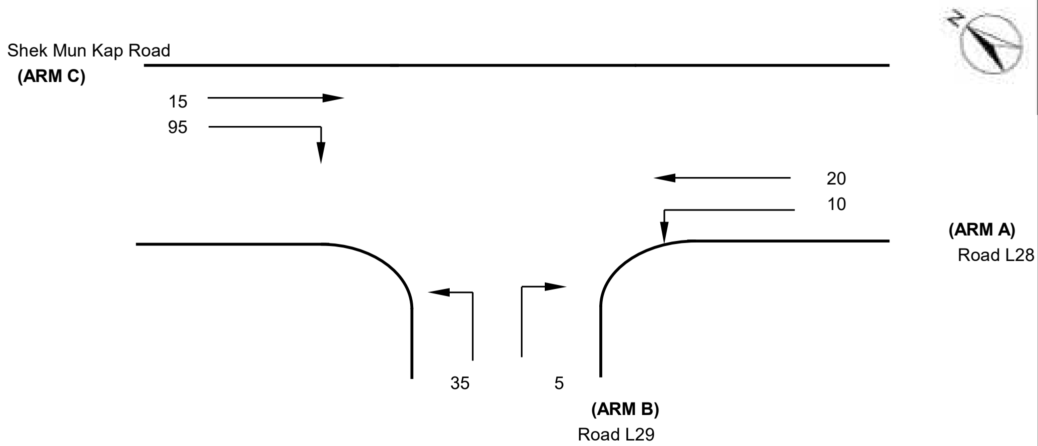
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.22
DFC c-b	=	0.16
DFC b-ac	=	0.23

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Road L28 / Road L29 / Shek Mun Kap Road	2033 PM Reference Traffic Flows (Conforming Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J10

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	15	(pcu/hr)
q c-b	=	95	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.7	(metres)
W b-c	=	2.7	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	35	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.867478
E	=	0.894307
F	=	0.857384
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	504
Q b-c	=	660
Q c-b	=	632
Q b-ac	=	636

CRITICAL DFC = 0.15

COMPARISION OF DESIGN FLOW TO CAPACITY :

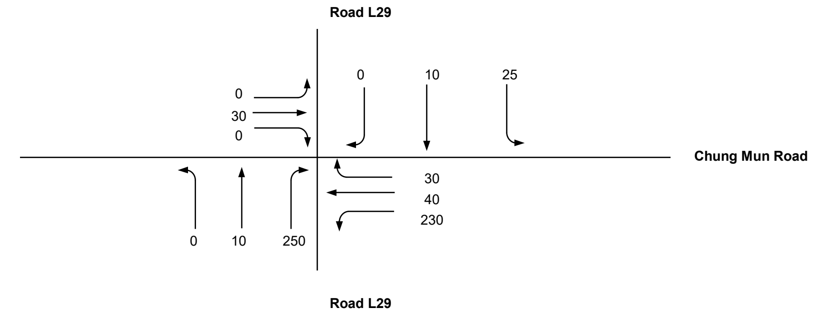
DFC b-a	=	0.01
DFC b-c	=	0.05
DFC c-b	=	0.15
DFC b-ac	=	0.06

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Chung Mun Road / Road L29	2033 PM Reference Traffic Flows (Conforming Scheme)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

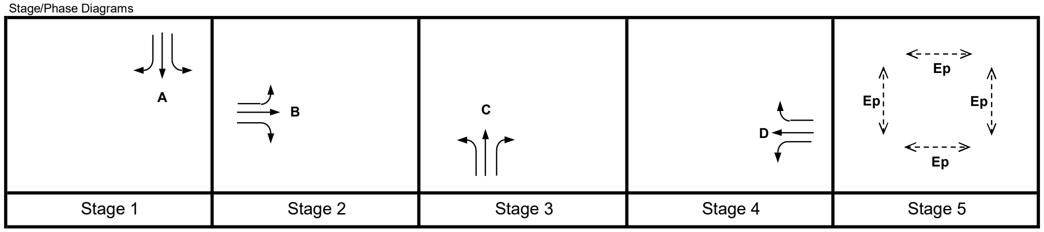
Traffic Flow Diagram
(pcu/hr)



J11

No. of stages per cycle	N =	5	
Cycle time	C =	120	sec
Sum(y)	Y =	0.220	
Lost time	L =	50	sec
Total Flow	=	9,965	pcu
Optimum Cycle C_o = $(1.5\times L+5)/(1-Y)$	=	103	sec
Min. Cycle Time C_m = $L/(1-Y)$	=	64	sec
Y_{ult} = $0.9-0.0075\times L$	=	0.525	
$R.C._{ult}$ = $(Y_{ult}-Y)/Y\times100\%$	=	138.9	%
Practical Cycle Time C_p = $0.9\times L/(0.9-Y)$	=	66	sec
Y_{max} = $1-L/C$	=	0.583	

Stage/Phase Diagrams



G = 5 I/G = 5 G = 5 I/G = 5 I/G = 5 I/G = 5 G = 20 I/G = 2

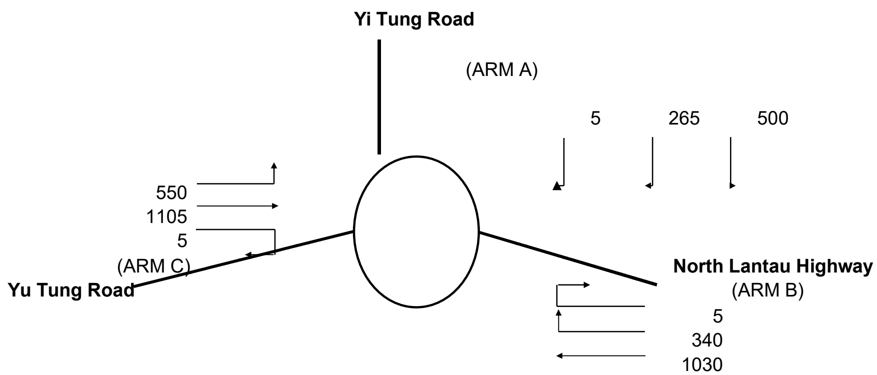
Critical Case : A,B,C,D,Ep

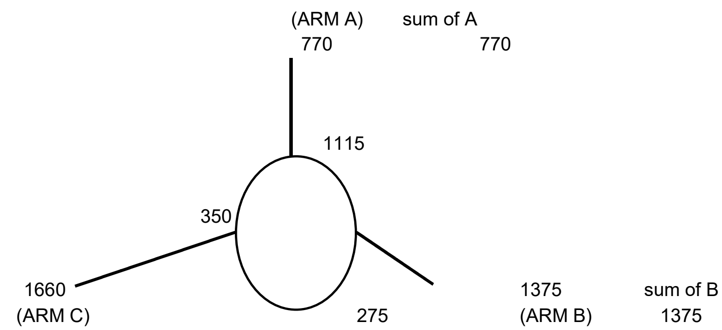
R.C.(C) = $(0.9\times Y_{max}-Y)/Y\times100\%$ = 139%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
	A	1	3.500	1	30	25	0	1		0		1965	25	10	0	35	71%	0%	1897	0.018	
	B	2	3.500	1	30	25	0	1		0		1965	0	30	0	30	0%	0%	1965	0.015	
	C	3	3.500	1	30	25	0	1		0		1965	0	10	250	260	0%	96%	1858	0.140	0.140
	D	4	3.500	1	15			1		0		1965	143			143	100%		1786	0.080	0.080
	D	4	3.500	1	15	25	0	0		0		2105	87	40	30	157	56%	19%	1973	0.080	
Pedestrian Crossing				GM		FGM															
	Ep	5	min.	15	+	5	=	20	sec												

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung East Interchange (J1)	Scenario	2033 - AM - Design Traffic Flows (Proposed Scheme)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	770	1375	1660
Qc= Circulating flow across entry (pcu/h)	1115	275	350
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2253	2579	2713
DFC = Design flow/Capacity = Q/Qe	0.34	0.53	0.61

TOTAL ENTRY FLOWS = 3805 PCU

CRITICAL DFC = 0.61

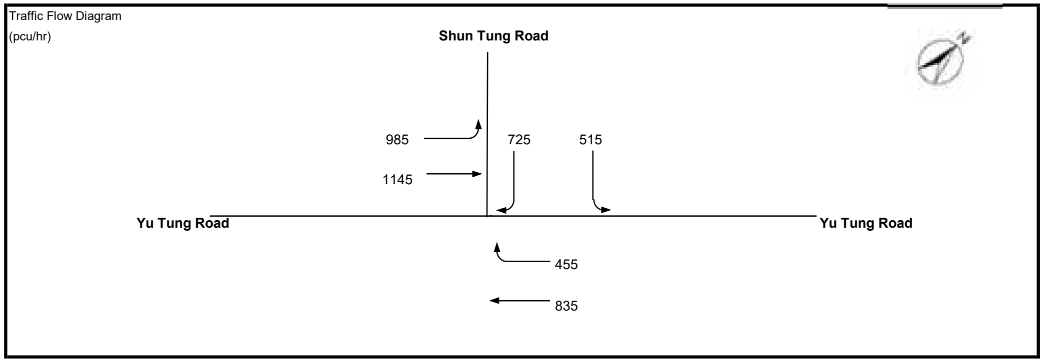
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road - Improved Scheme	2033 AM Design Traffic Flows (Proposed Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

Traffic Flow Diagram
(pcu/hr)

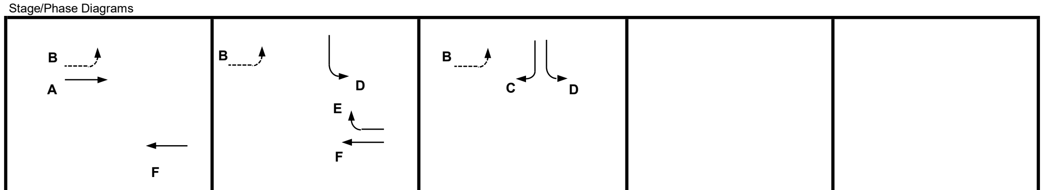


J2

No. of stages per cycle	N =	3	
Cycle time	C =	120	sec
Sum(y)	Y =	0.672	
Lost time	L =	12	sec
Total Flow	=	18,780	pcu

Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y)$ =		70	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	37	sec
Y_{ult}	$= 0.9-0.0075\times L$	=	0.810	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y\times 100\%$	=	20.5	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y)$	=	47	sec
Y_{max}	$= 1-L/C$	=	0.900	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3		

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

Critical Case : A,E,C

R.C.(C) $= (0.9xY_{max}-Y)/Yx100\%$ = 20%

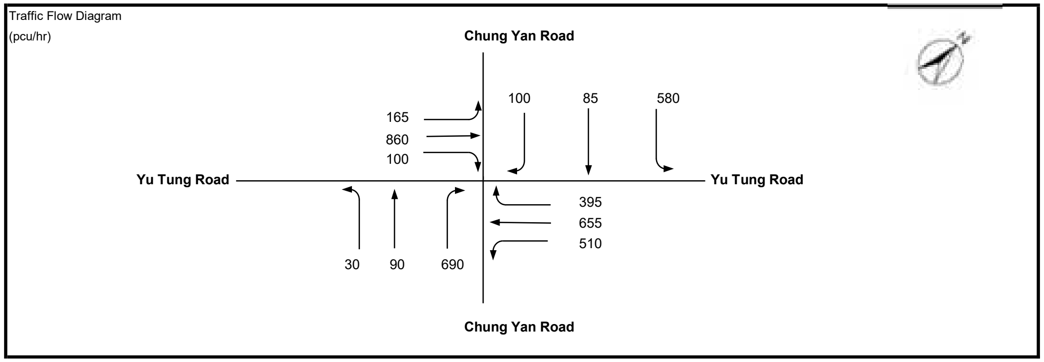
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
↰			4.000	1	50			1		0		2015	985			985	100%		1956	0.503	
↑	A	1	4.000	2			0	0		0		4310		1145		1145			4310	0.266	0.266
Shun Tung Road EB																					
↰	D	2,3	3.700	1	25			1		0		1985	515			515	100%		1873	0.275	
↱	C	3	3.700	2		30	0	0		0		4250			725	725		100%	4048	0.179	0.179
Yu Tung Road SB																					
↑	F	1,2	3.650	2				1		0		4100		835		835			4100	0.204	
↱	E	2	3.650	1		25	0	0		0		2120			455	455		100%	2000	0.228	0.228

JUNCTION CAPACITY CALCULATION

AECOM

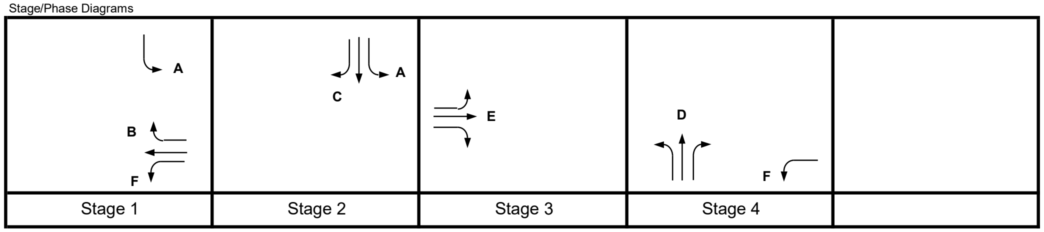
Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 AM Design Traffic Flows (Proposed Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

J3



No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.762	
Lost time	L =	19	sec
Total Flow	=	22,595	pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y) =$	141	sec
Min. Cycle Time C_m	$= L/(1-Y) =$	80	sec
Y_{ult}	$= 0.9-0.0075\times L =$	0.758	
$R.C._{ult}$	$= (Y_{ult}-Y)/Yx100\% =$	-0.6	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y) =$	124	sec
Y_{max}	$= 1-L/C =$	0.842	

Stage/Phase Diagrams



I/G = | I/G = 5 | I/G = 5 | I/G = 12

Critical Case : A,E,D

R.C.(C) $= (0.9xY_{max}-Y)/Yx100\% =$ -1%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	510			510	100%		1828	0.279	
	B	1	3.500	1				0		0		2105		536		536			2105	0.254	
	B	1	3.500	1		28	0			0		2105		119	395	514		77%	2022	0.254	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	30	90	274	394	8%	70%	1878	0.210	0.210
	D	4	3.500	1		25	0	0		0		2105			416	416		100%	1986	0.210	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	165			165	100%		1786	0.092	
	E	3	3.500	1						0		2105		483		483			2105	0.229	0.229
	E	3	3.500	1		25	0	0		0		2105		377	100	477		21%	2079	0.229	
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	580			580	100%		1797	0.323	0.323
	C	2	3.500	1		18				0		2105		85	10	95		10%	2087	0.045	
	C	2	3.500	1		25	0	0		0		2105			90	90		100%	1986	0.045	

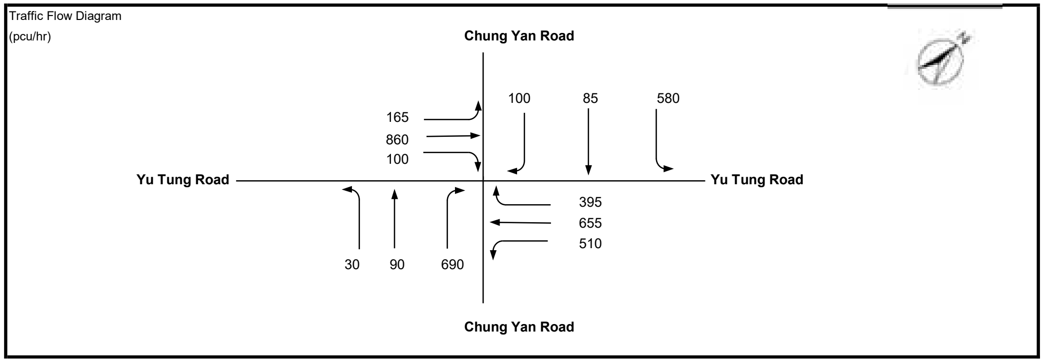
JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 AM Design Traffic Flows (Proposed Scheme) (With Additional Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 24

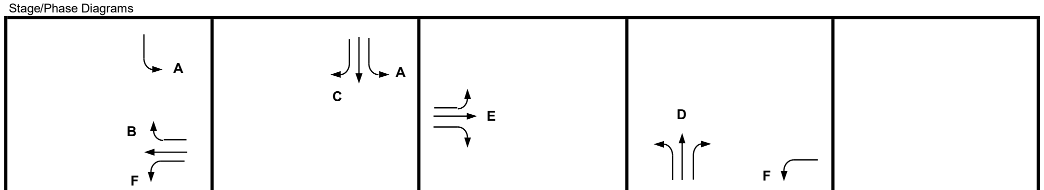
J3

Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.651	
Lost time	L =	16	sec
Total Flow	=	24,700	pcu
Optimum Cycle C_o = $(1.5\times L+5)/(1-Y)$	=	83	sec
Min. Cycle Time C_m = $L/(1-Y)$	=	46	sec
Y_{ult} = $0.9-0.0075\times L$	=	0.780	
$R.C._{ult}$ = $(Y_{ult}-Y)/Y\times100\%$	=	19.8	%
Practical Cycle Time C_p = $0.9\times L/(0.9-Y)$	=	58	sec
Y_{max} = $1-L/C$	=	0.867	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3	Stage 4	
I/G = 5	I/G = 5	I/G = 5	I/G = 5	

Critical Case : B,C,E,D

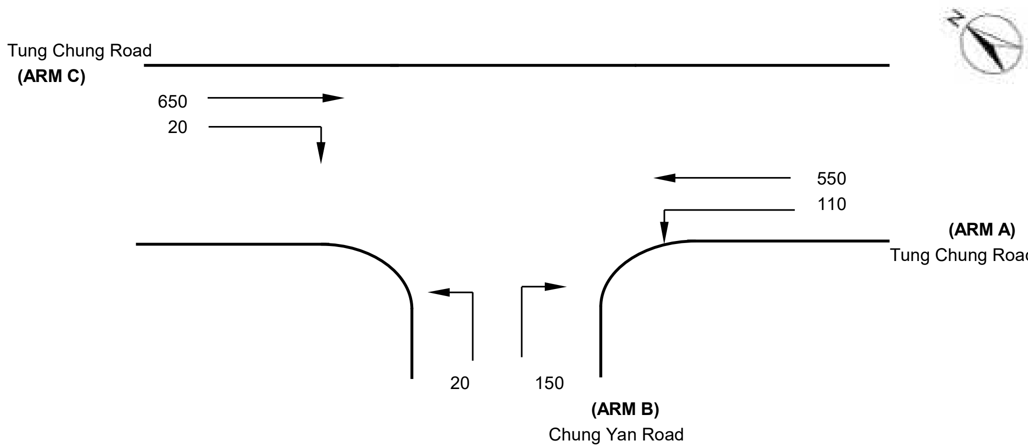
R.C.(C) = $(0.9xY_{max}-Y)/Yx100\%$ = 20%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	510			510	100%		1828	0.279	
	B	1	3.500	1				0		0		2105		358		358			2105	0.170	0.170
	B	1	3.500	1		28	0			0		2105		297	57	355		16%	2087	0.170	
	B	1	3.500	1		25	0	0		0		2105			338	338		100%	1986	0.170	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	30	90	274	394	8%	70%	1878	0.210	0.210
	D	4	3.500	1		25	0	0		0		2105			416	416		100%	1986	0.210	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	165	184		349	47%		1876	0.186	
	E	3	3.500	1				0		0		2105		391		391			2105	0.186	
	E	3	3.500	1		25	0	0		0		2105		285	100	385		26%	2073	0.186	0.186
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	422			422	100%		1797	0.235	
	C	2	3.500	1	18					0		2105	158	15		173	51%		2019	0.086	0.086
	C	2	3.500	1		25	0	0		0		2105		70	100	170		100%	1986	0.086	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J4

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	110	(pcu/hr)
q a-c	=	550	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	100	(metres)
q c-a	=	650	(pcu/hr)
q c-b	=	20	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	150	(pcu/hr)
q b-c	=	20	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	328
Q b-c	=	570
Q c-b	=	552
Q b-ac	=	345

CRITICAL DFC = 0.49

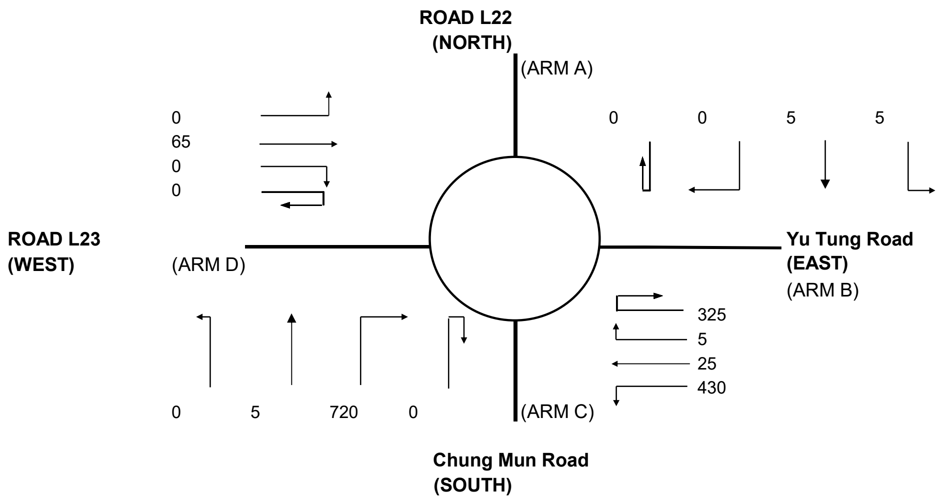
COMPARISION OF DESIGN FLOW TO CAPACITY :

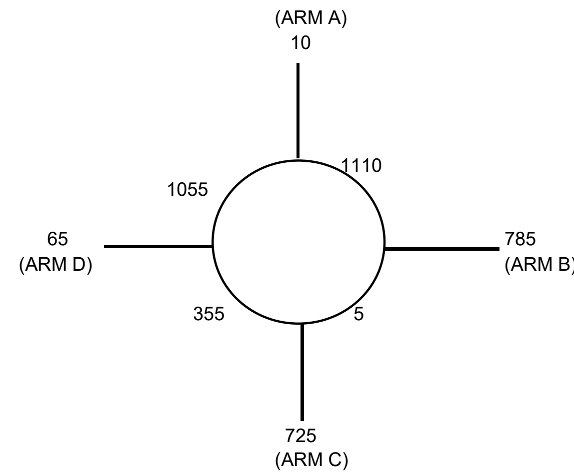
DFC b-a	=	0.46
DFC b-c	=	0.04
DFC c-b	=	0.04
DFC b-ac	=	0.49

ROUNDABOUT CAPACITY CALCULATIC

AECOM

Junction	J5 - Yu Tung Road / Chung Mun Road	Scenario	2033 - AM - Design Traffic Flows (Proposed Scheme)	Project No.	Prepared By	Checked By	Date
				-	-	-	Nov 2024





ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.75	8.80	7.30	4.85
E = Entry width (m)	6.50	9.00	8.50	6.00
L = Effective length of flare (m)	10.00	7.00	15.00	15.00
R = Entry radius (m)	25.00	25.00	40.00	25.00
D = Inscribed circle diameter (m)	60.00	60.00	60.00	60.00
A = Entry angle (degree)	20.00	20.00	30.00	20.00
Q = Entry flow (pcu/h)	10	785	725	65
Qc= Circulating flow across entry (pcu/h)	1110	5	355	1055
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.12	0.05	0.13	0.12
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	1.04	1.02	1.04
X2= V + ((E-V)/(1+2S))	6.35	8.98	8.26	5.77
M = EXP((D-60)/10)	1.00	1.00	1.00	1.00
F = 303*X2	1926	2722	2501	1749
Td= 1+(0.5/(1+M))	1.25	1.25	1.25	1.25
Fc= 0.21*Td(1+0.2*X2)	0.60	0.73	0.70	0.57
Qe= K(F-Fc*Qc)	1320	2839	2309	1204
DFC = Design flow/Capacity = Q/Qe	0.01	0.28	0.31	0.05

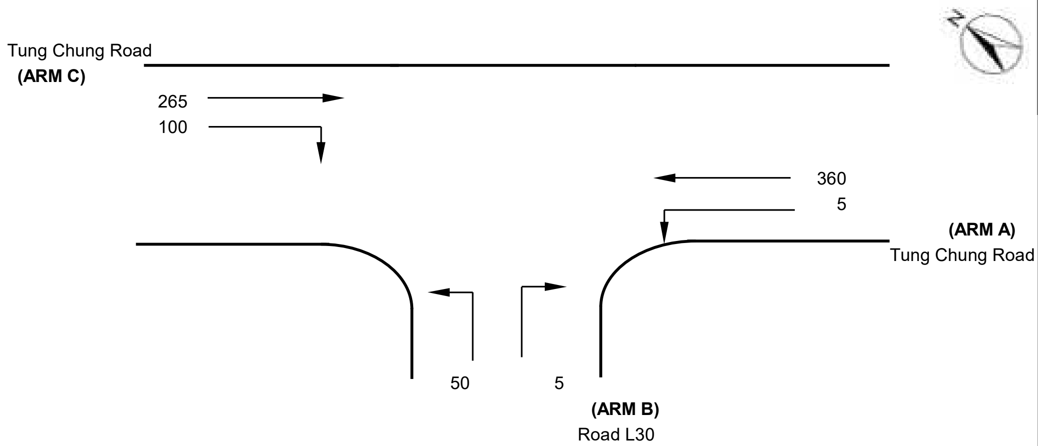
TOTAL ENTRY FLOWS = 1585 PCU

CRITICAL DFC = 0.31

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Tung Chung Road / Shek Mun Kap Road	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J6

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	5	(pcu/hr)
q a-c	=	360	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	200	(metres)
q c-a	=	265	(pcu/hr)
q c-b	=	100	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	200	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	200	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	50	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	488
Q b-c	=	690
Q c-b	=	689
Q b-ac	=	665

CRITICAL DFC = 0.15

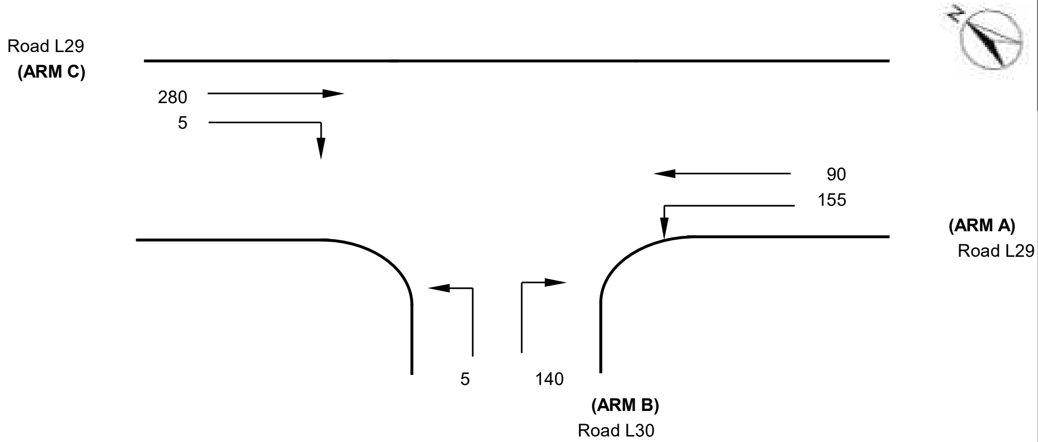
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.07
DFC c-b	=	0.15
DFC b-ac	=	0.08

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J7 - Road L29 / Road L30	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J7

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	11.7	(metres)
W cr	=	1.5	(metres)
q a-b	=	155	(pcu/hr)
q a-c	=	90	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	280	(pcu/hr)
q c-b	=	5	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	140	(pcu/hr)
q b-c	=	5	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.857384
Y	=	0.596350

THE CAPACITY OF MOVEMENT :

Q b-a	=	479
Q b-c	=	611
Q c-b	=	593
Q b-ac	=	482

CRITICAL DFC = 0.30

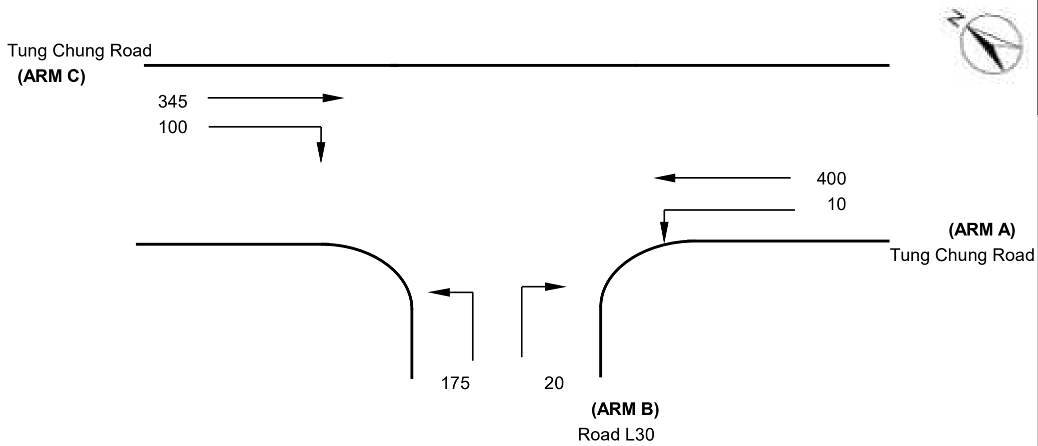
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.29
DFC b-c	=	0.01
DFC c-b	=	0.01
DFC b-ac	=	0.30

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Tung Chung Road / Road L30	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J8

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	400	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	200	(metres)
q c-a	=	345	(pcu/hr)
q c-b	=	100	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	200	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	200	(metres)
q b-a	=	20	(pcu/hr)
q b-c	=	175	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	460
Q b-c	=	678
Q c-b	=	676
Q b-ac	=	646

CRITICAL DFC = 0.30

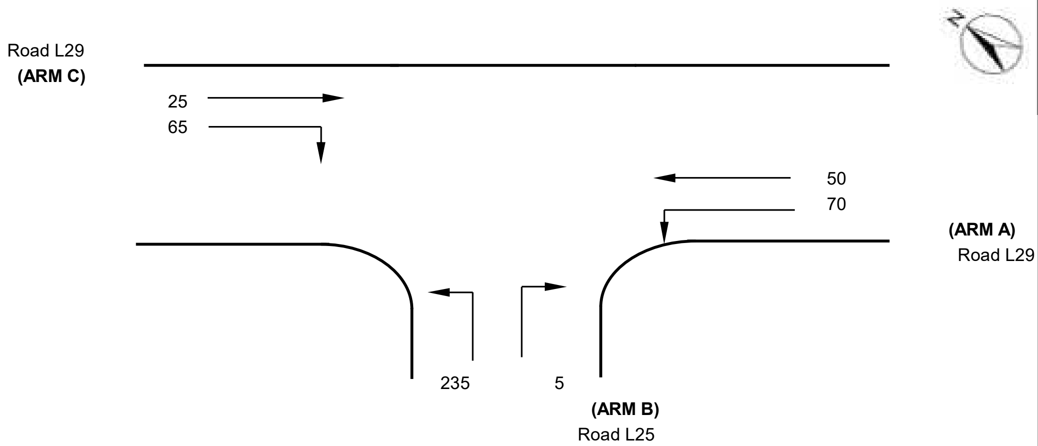
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.04
DFC b-c	=	0.26
DFC c-b	=	0.15
DFC b-ac	=	0.30

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Road L29 / Road L25	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J9

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	10.3	(metres)
W cr	=	1.5	(metres)
q a-b	=	70	(pcu/hr)
q a-c	=	50	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	100	(metres)
q c-a	=	25	(pcu/hr)
q c-b	=	65	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	235	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.838923
Y	=	0.644650

THE CAPACITY OF MOVEMENT :

Q b-a	=	503
Q b-c	=	623
Q c-b	=	601
Q b-ac	=	620

CRITICAL DFC = 0.39

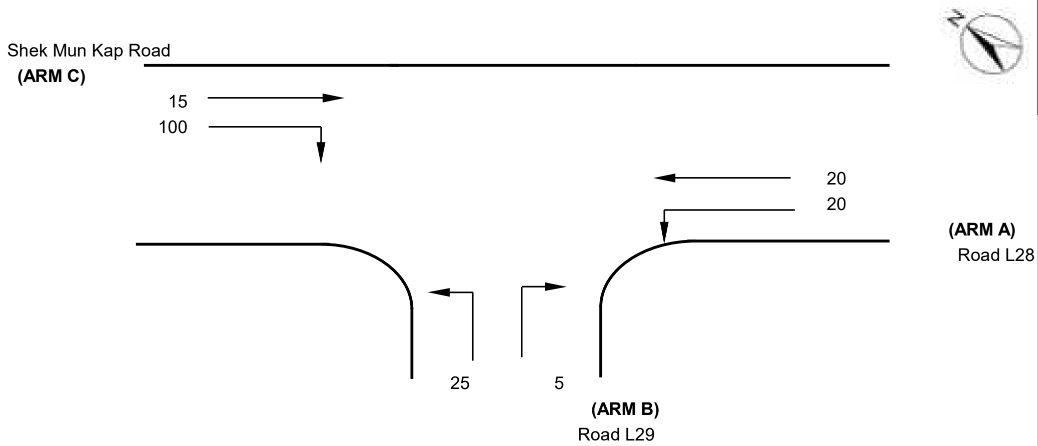
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.38
DFC c-b	=	0.11
DFC b-ac	=	0.39

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Road L28 / Road L29 / Shek Mun Kap Road	2033 AM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J10

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	20	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	15	(pcu/hr)
q c-b	=	100	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.7	(metres)
W b-c	=	2.7	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	25	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.867478
E	=	0.894307
F	=	0.857384
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	501
Q b-c	=	659
Q c-b	=	629
Q b-ac	=	627

CRITICAL DFC = 0.16

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.04
DFC c-b	=	0.16
DFC b-ac	=	0.05

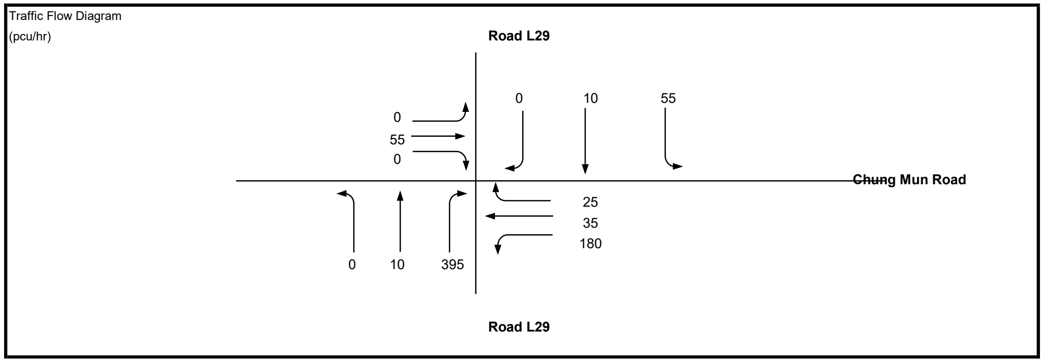
JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Chung Mun Road / Road L29	2033 AM Design Traffic Flows (Proposed Scheme)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

J11

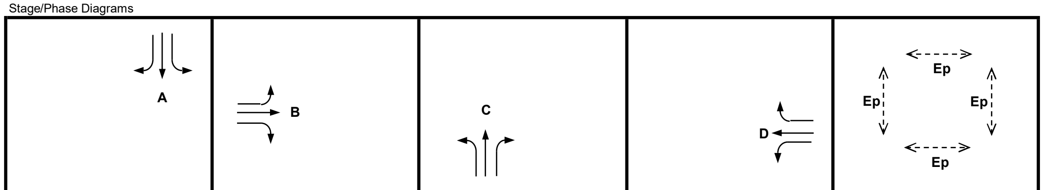
Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	5	
Cycle time	C =	120	sec
Sum(y)	Y =	0.316	
Lost time	L =	49	sec
Total Flow	=	9,965	pcu

Optimum Cycle C_o	= (1.5×L+5)/(1-Y) =	115	sec
Min. Cycle Time C_m	= L/(1-Y) =	72	sec
Y_{ult}	= 0.9-0.0075×L =	0.533	
$R.C._{ult}$	= (Y_{ult}-Y)/Yx100% =	68.3	%
Practical Cycle Time C_p	= 0.9×L/(0.9-Y) =	76	sec
Y_{max}	= 1-L/C =	0.592	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3	Stage 4	Stage 5

G = 5 I/G = 5 G = 5 I/G = 5 I/G = 5 I/G = 5 G = 20 I/G = 2

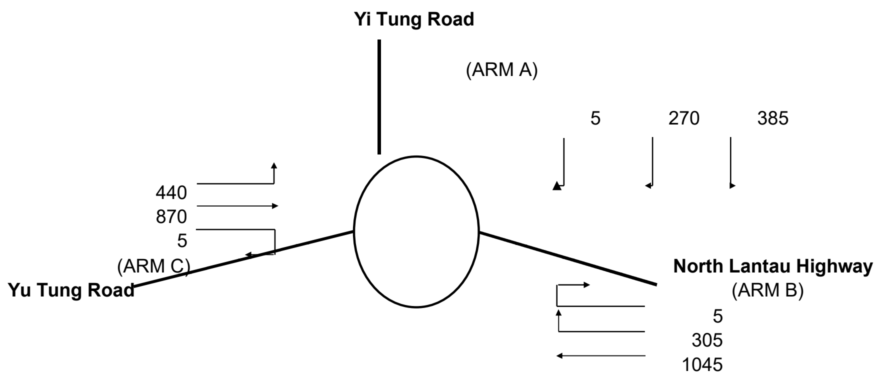
Critical Case : A,B,C,D,Ep

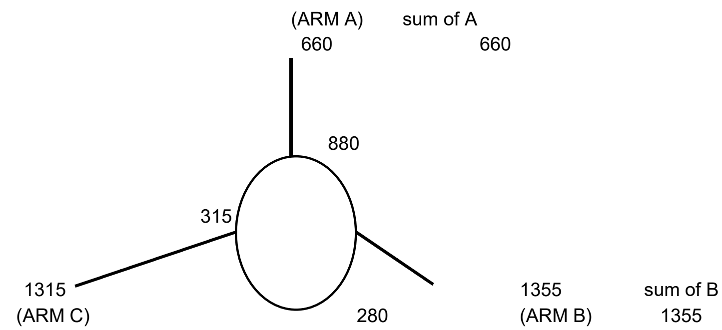
R.C.(C) = (0.9xY_{max}-Y)/Yx100% = 68%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
	A	1	3.500	1	30	25	0	1		0		1965	55	10	0	65	85%	0%	1885	0.034	0.034
	B	2	3.500	1	30	25	0	1		0		1965	0	55	0	55	0%	0%	1965	0.028	
	C	3	3.500	1	30	25	0	1		0		1965	0	10	395	405	0%	98%	1856	0.218	0.218
	D	4	3.500	1	15			1		0		1965	114			114	100%		1786	0.064	0.064
	D	4	3.500	1	15	25	0	0		0		2105	66	35	25	126	52%	20%	1978	0.064	
Pedestrian Crossing				GM		FGM															
	Ep	5	min.	15	+	5	=	20	sec												

ROUNDABOUT CAPACITY CALCULATION

Junction	Tung Chung East Interchange (J1)	Scenario	2033 - PM - Design Traffic Flows (Proposed Scheme)	Project No.	Prepared By	Checked By	Date





ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	8.00	7.10	8.00
E = Entry width (m)	12.00	12.00	12.00
L = Effective length of flare (m)	10.00	12.00	12.00
R = Entry radius (m)	55.00	60.00	40.00
D = Inscribed circle diameter (m)	107.00	107.00	107.00
A = Entry angle (degree)	40.00	45.00	45.00
Q = Entry flow (pcu/h)	660	1355	1315
Qc= Circulating flow across entry (pcu/h)	880	280	315
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.64	0.65	0.53
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.98	0.97
X2= V + ((E-V)/(1+2S))	9.75	9.22	9.94
M = EXP((D-60)/10)	109.95	109.95	109.95
F = 303*X2	2956	2795	3010
Td= 1+(0.5/(1+M))	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.62	0.60	0.63
Qe= K(F-Fc*Qc)	2399	2576	2734
DFC = Design flow/Capacity = Q/Qe	0.28	0.53	0.48

TOTAL ENTRY FLOWS = 3330 PCU

CRITICAL DFC = 0.53

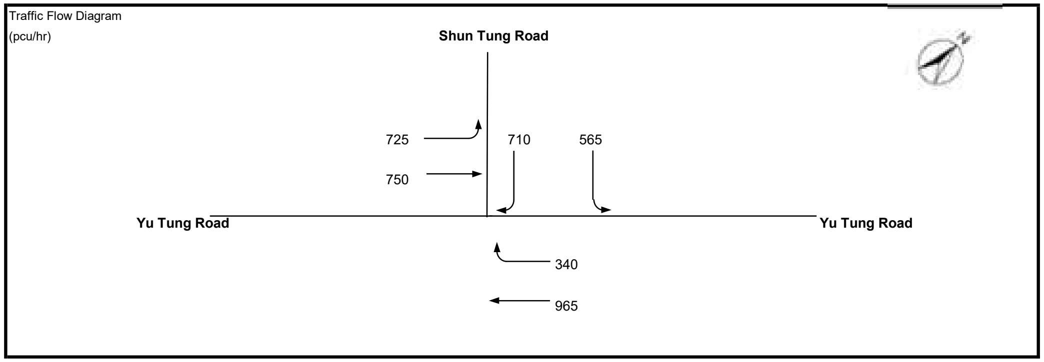
Filename:

JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Yu Tung Road / Shun Tung Road - Improved Scheme	2033 PM Design Traffic Flows (Proposed Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

Traffic Flow Diagram
(pcu/hr)

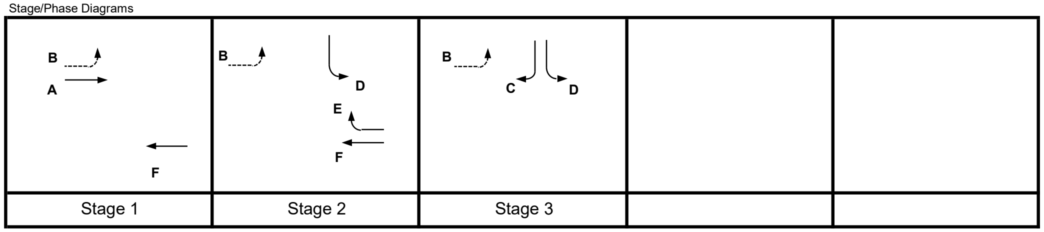


J2

No. of stages per cycle	N =	3	
Cycle time	C =	120	sec
Sum(y)	Y =	0.519	
Lost time	L =	12	sec
Total Flow	=	18,780	pcu

Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y)$	=	48	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	25	sec
Y_{ult}	$= 0.9-0.0075\times L$	=	0.810	
$R.C._{ult}$	$= (Y_{ult}-Y)/Y\times 100\%$	=	55.9	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y)$	=	28	sec
Y_{max}	$= 1-L/C$	=	0.900	

Stage/Phase Diagrams



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

Critical Case : A,E,C

R.C.(C) $= (0.9\times Y_{max}-Y)/Y\times 100\%$ = 56%

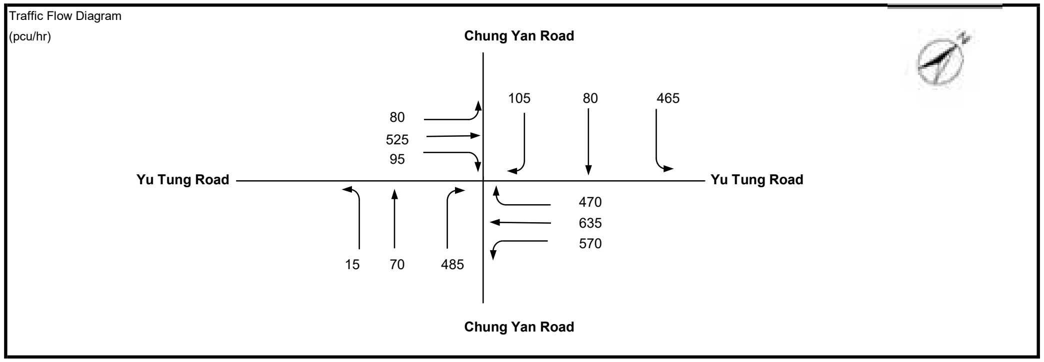
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road NB																					
			4.000	1	50			1		0		2015	725			725	100%		1956	0.371	
	A	1	4.000	2			0	0		0		4310		750		750			4310	0.174	0.174
Shun Tung Road EB																					
	D	2,3	3.700	1	25			1		0		1985	565			565	100%		1873	0.302	
	C	3	3.700	2		30	0	0		0		4250			710	710		100%	4048	0.175	0.175
Yu Tung Road SB																					
	F	1,2	3.650	2				1		0		4100		965		965			4100	0.235	
	E	2	3.650	1		25	0	0		0		2120			340	340		100%	2000	0.170	0.170

JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 PM Design Traffic Flows (Proposed Scheme) (With CEDD Improvements)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

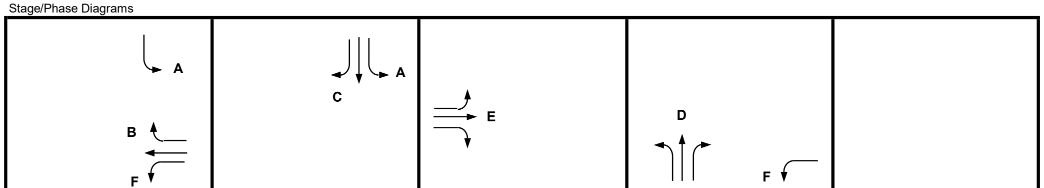
Traffic Flow Diagram
(pcu/hr)



J3

No. of stages per cycle	N =	4	
Cycle time	C =	120	sec
Sum(y)	Y =	0.610	
Lost time	L =	16	sec
Total Flow	=	22,595	pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y) =$	74	sec
Min. Cycle Time C_m	$= L/(1-Y) =$	41	sec
Y_{ult}	$= 0.9-0.0075\times L =$	0.780	
$R.C._{ult}$	$= (Y_{ult}-Y)/Yx100\% =$	27.9	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y) =$	50	sec
Y_{max}	$= 1-L/C =$	0.867	

Stage/Phase Diagrams



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

Critical Case : B,C,E,D

R.C.(C) $= (0.9xY_{max}-Y)/Yx100\% =$ 28%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	570			570	100%		1828	0.312	
	B	1	3.500	1				0		0		2105		565		565			2105	0.268	0.268
	B	1	3.500	1		28	0			0		2105		70	470	540		87%	2011	0.268	
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	15	70	192	277	5%	69%	1881	0.147	0.147
	D	4	3.500	1		25	0	0		0		2105			293	293		100%	1986	0.147	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	80			80	100%		1786	0.045	
	E	3	3.500	1						0		2105		313		313			2105	0.149	0.149
	E	3	3.500	1		25	0	0		0		2105		212	95	307		31%	2067	0.149	
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	465			465	100%		1797	0.259	
	C	2	3.500	1		18				0		2105		80	15	95		15%	2078	0.046	0.046
	C	2	3.500	1		25	0	0		0		2105			90	90		100%	1986	0.046	

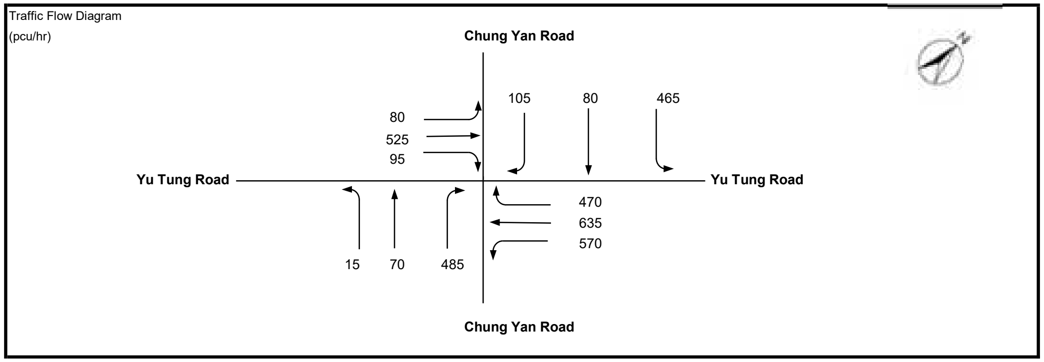
JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Yu Tung Road / Chung Yan Road - Improved Scheme	2033 PM Design Traffic Flows (Proposed Scheme)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

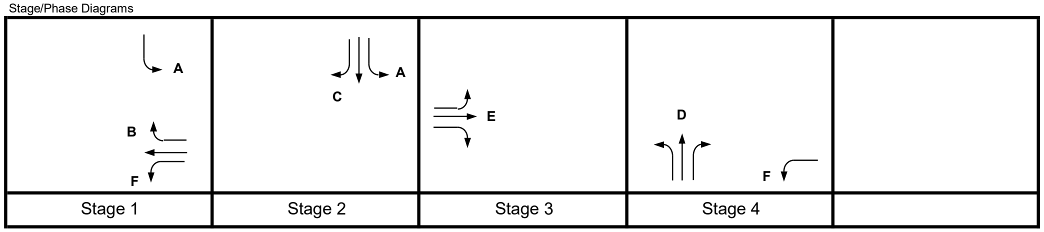
J3

Traffic Flow Diagram (pcu/hr)



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.505
Lost time		L =	16 sec
Total Flow		=	24,700 pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y) =$		59 sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	32 sec
Y_{ult}	$= 0.9-0.0075\times L$	=	0.780
$R.C._{ult}$	$= (Y_{ult}-Y)/Y\times100\%$	=	54.5 %
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y)$	=	36 sec
Y_{max}	$= 1-L/C$	=	0.867

Stage/Phase Diagrams



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

Critical Case : B,C,E,D

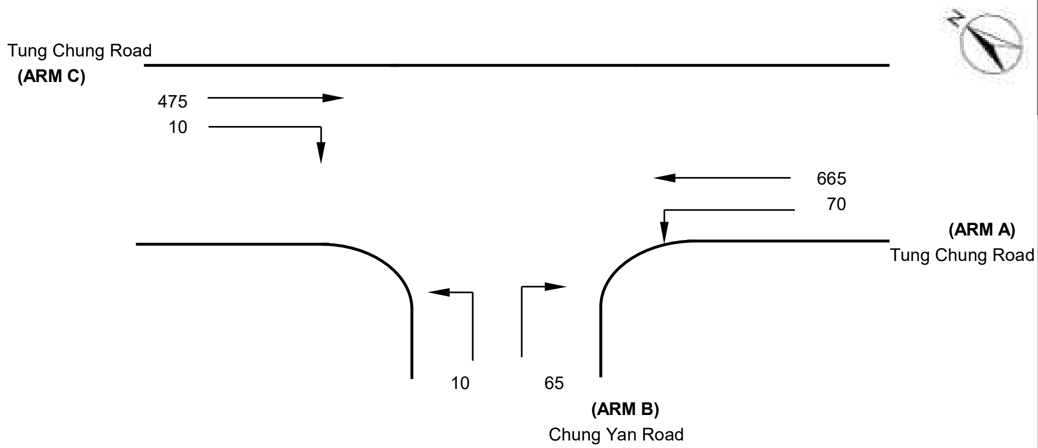
R.C.(C) $= (0.9xY_{max}-Y)/Yx100\% =$ 55%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
Yu Tung Road SB																					
	F	1,4	3.500	1	20			1		0		1965	570			570	100%		1828	0.312	
	B	1	3.500	1				0		0		2105		377		377			2105	0.179	
	B	1	3.500	1		28	0			0		2105		258	114	371		31%	2071	0.179	
	B	1	3.500	1		25	0	0		0		2105			356	356		100%	1986	0.179	0.179
Chung Yan Road WB																					
	D	4	3.500	1	25	25	0	1		0		1965	15	70	192	277	5%	69%	1881	0.147	0.147
	D	4	3.500	1		25	0	0		0		2105			293	293		100%	1986	0.147	
Yu Tung Road NB																					
	E	3	3.500	1	15			1		0		1965	80	139		219	37%		1896	0.116	0.116
	E	3	3.500	1						0		2105		243		243			2105	0.116	
	E	3	3.500	1		25	0	0		0		2105		143	95	238		40%	2056	0.116	
Chung Yan Road EB																					
	A	1,2	3.500	1	16			1		0		1965	400			400	100%		1797	0.223	
	C	2	3.500	1	18					0		2105	65	61		126	52%		2018	0.062	0.062
	C	2	3.500	1		25	0	0		0		2105		19	105	124		85%	2003	0.062	

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Tung Chung Road / Chung Yan Road	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA) J4

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	7.3 (metres)	W c-b	=	3.6 (metres)	W b-a	=	3.6 (metres)
W cr	=	0 (metres)	Vr c-b	=	100 (metres)	W b-c	=	3.6 (metres)
q a-b	=	70 (pcu/hr)	q c-a	=	475 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	665 (pcu/hr)	q c-b	=	10 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	100 (metres)
						q b-a	=	65 (pcu/hr)
						q b-c	=	10 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.948063
E	=	0.977385
F	=	0.977385
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	335
Q b-c	=	544
Q c-b	=	533
Q b-ac	=	353

CRITICAL DFC = 0.21

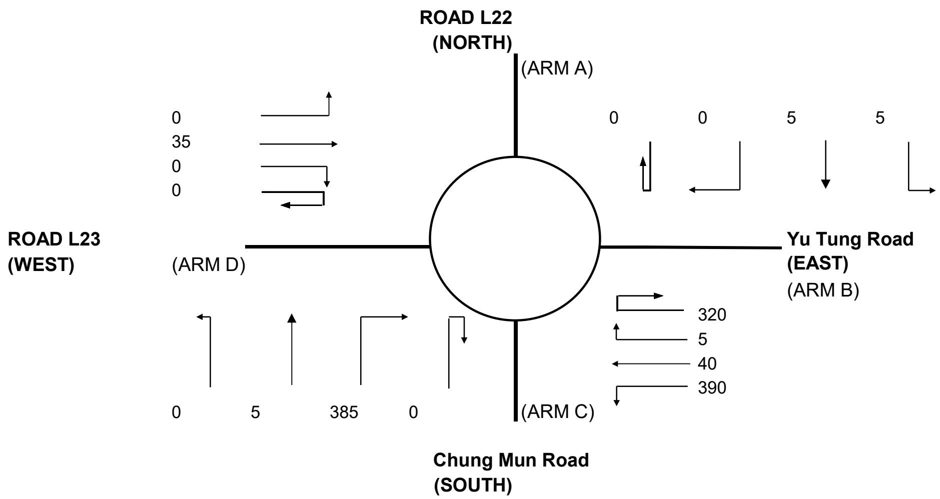
COMPARISION OF DESIGN FLOW TO CAPACITY :

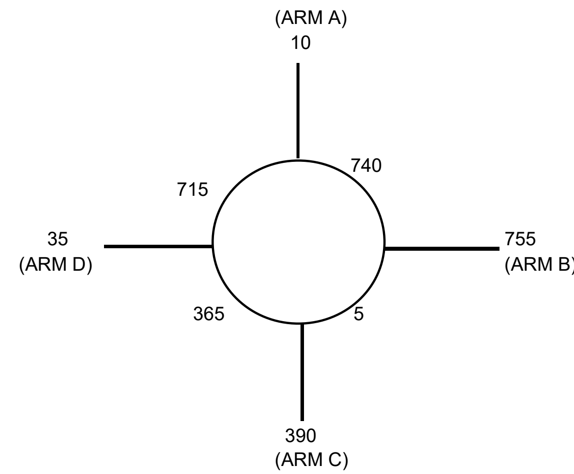
DFC b-a	=	0.19
DFC b-c	=	0.02
DFC c-b	=	0.02
DFC b-ac	=	0.21

ROUNDABOUT CAPACITY CALCULATIC

AECOM

Junction	J5 - Yu Tung Road / Chung Mun Road	Scenario	2033 - PM - Design Traffic Flows (Proposed Scheme)	Project No.	Prepared By	Checked By	Date
				-	-	-	Nov 2024





ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.75	8.80	7.30	4.85
E = Entry width (m)	6.50	9.00	8.50	6.00
L = Effective length of flare (m)	10.00	7.00	15.00	15.00
R = Entry radius (m)	25.00	25.00	40.00	25.00
D = Inscribed circle diameter (m)	60.00	60.00	60.00	60.00
A = Entry angle (degree)	20.00	20.00	30.00	20.00
Q = Entry flow (pcu/h)	10	755	390	35
Qc= Circulating flow across entry (pcu/h)	740	5	365	715
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.12	0.05	0.13	0.12
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	1.04	1.02	1.04
X2= V + ((E-V)/(1+2S))	6.35	8.98	8.26	5.77
M = EXP((D-60)/10)	1.00	1.00	1.00	1.00
F = 303*X2	1926	2722	2501	1749
Td= 1+(0.5/(1+M))	1.25	1.25	1.25	1.25
Fc= 0.21*Td(1+0.2*X2)	0.60	0.73	0.70	0.57
Qe= K(F-Fc*Qc)	1550	2839	2302	1405
DFC = Design flow/Capacity = Q/Qe	0.01	0.27	0.17	0.02

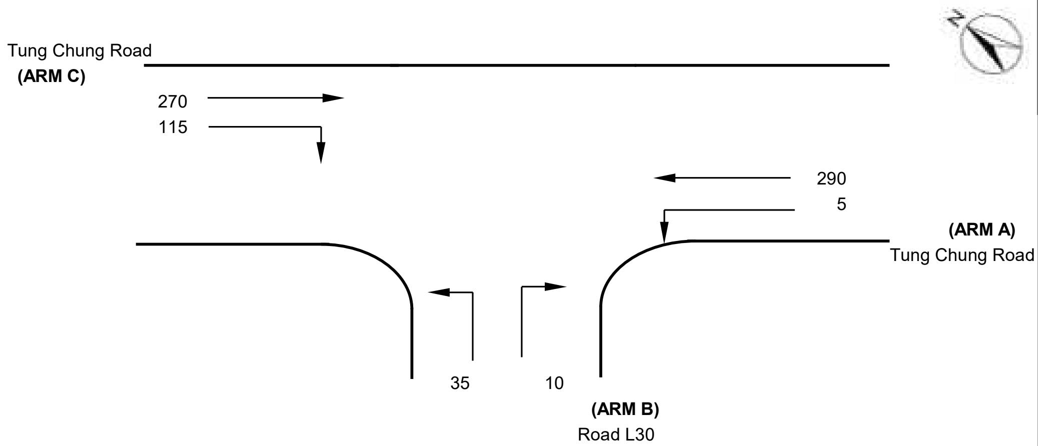
TOTAL ENTRY FLOWS = 1190 PCU

CRITICAL DFC = 0.27

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Tung Chung Road / Shek Mun Kap Road	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J6

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	5	(pcu/hr)
q a-c	=	290	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	200	(metres)
q c-a	=	270	(pcu/hr)
q c-b	=	115	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	200	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	200	(metres)
q b-a	=	10	(pcu/hr)
q b-c	=	35	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	502
Q b-c	=	710
Q c-b	=	709
Q b-ac	=	650

COMPARISION OF DESIGN FLOW TO CAPACITY :

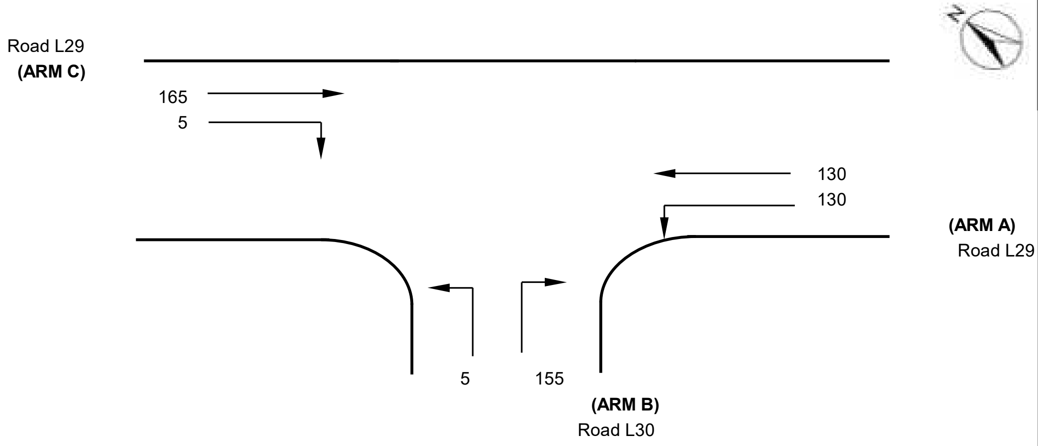
DFC b-a	=	0.02
DFC b-c	=	0.05
DFC c-b	=	0.16
DFC b-ac	=	0.07

CRITICAL DFC = 0.16

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J7 - Road L29 / Road L30	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J7

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	11.7	(metres)
W cr	=	1.5	(metres)
q a-b	=	130	(pcu/hr)
q a-c	=	130	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	165	(pcu/hr)
q c-b	=	5	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	155	(pcu/hr)
q b-c	=	5	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.857384
Y	=	0.596350

THE CAPACITY OF MOVEMENT :

Q b-a	=	486
Q b-c	=	605
Q c-b	=	590
Q b-ac	=	489

COMPARISION OF DESIGN FLOW TO CAPACITY :

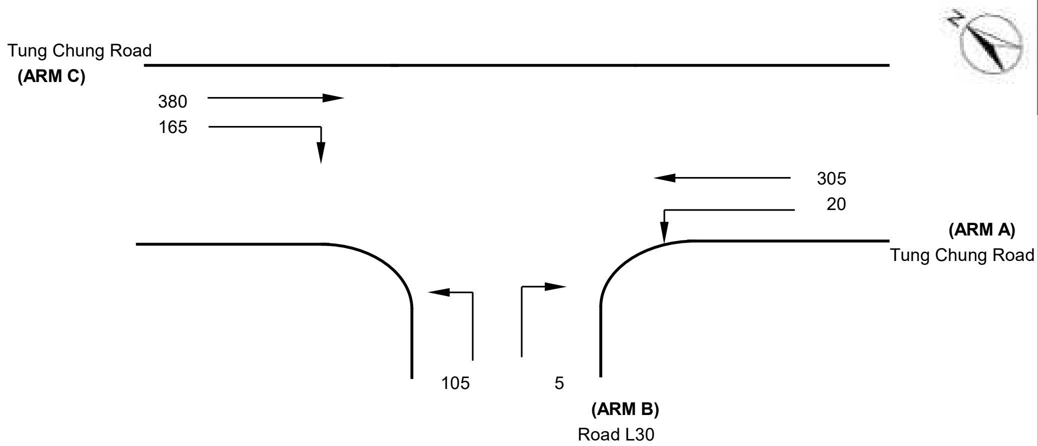
DFC b-a	=	0.32
DFC b-c	=	0.01
DFC c-b	=	0.01
DFC b-ac	=	0.33

CRITICAL DFC = 0.33

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Tung Chung Road / Road L30	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J8

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	20	(pcu/hr)
q a-c	=	305	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.6	(metres)
Vr c-b	=	200	(metres)
q c-a	=	380	(pcu/hr)
q c-b	=	165	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.6	(metres)
W b-c	=	3.6	(metres)
Vl b-a	=	200	(metres)
Vr b-a	=	200	(metres)
Vr b-c	=	200	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	105	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.098970
E	=	1.066962
F	=	1.066962
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	453
Q b-c	=	704
Q c-b	=	700
Q b-ac	=	687

CRITICAL DFC = 0.24

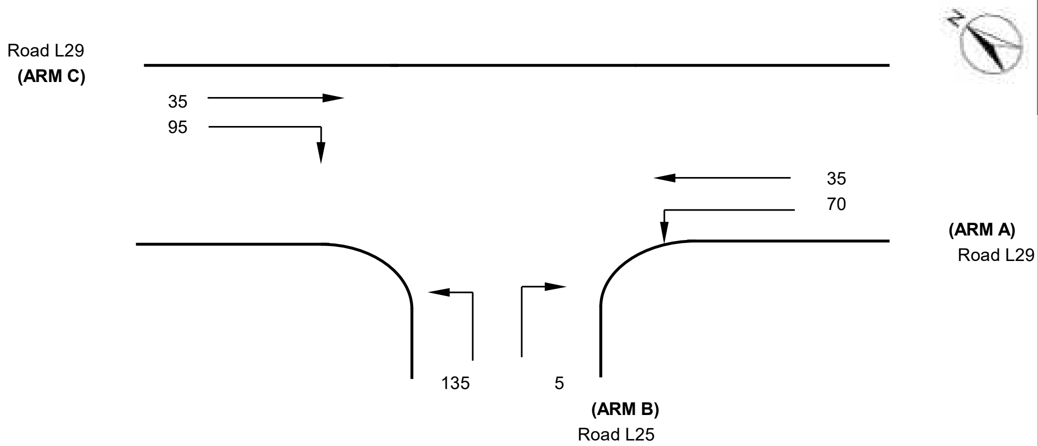
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.15
DFC c-b	=	0.24
DFC b-ac	=	0.16

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Road L29 / Road L25	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



NOTES : (GEOMETRIC INPUT DATA)

J9

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			*MAJOR ROAD (ARM C)*			*MINOR ROAD (ARM B)*		
W	=	10.3 (metres)	W c-b	=	2.1 (metres)	W b-a	=	2.3 (metres)
W cr	=	1.5 (metres)	Vr c-b	=	100 (metres)	W b-c	=	2.3 (metres)
q a-b	=	70 (pcu/hr)	q c-a	=	35 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	35 (pcu/hr)	q c-b	=	95 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	100 (metres)
						q b-a	=	5 (pcu/hr)
						q b-c	=	135 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.831663
E	=	0.857384
F	=	0.838923
Y	=	0.644650

THE CAPACITY OF MOVEMENT :

Q b-a	=	496
Q b-c	=	626
Q c-b	=	604
Q b-ac	=	620

CRITICAL DFC = 0.23

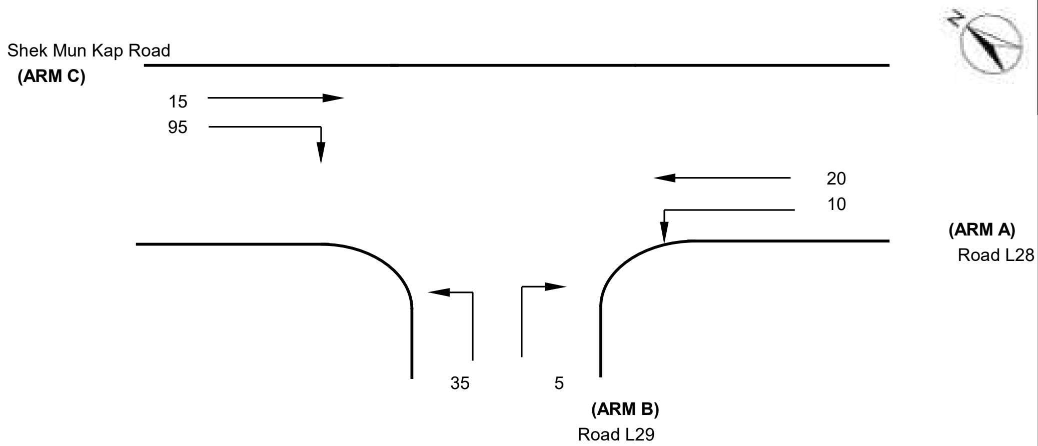
COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.22
DFC c-b	=	0.16
DFC b-ac	=	0.23

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Road L28 / Road L29 / Shek Mun Kap Road	2033 PM Design Traffic Flows (Proposed Scheme)	Designed By :	Checked By :	Job No. :	Date : Nov 24



J10

NOTES : (GEOMETRIC INPUT DATA)

W	= Major Road Width (6.4 - 20.0)
W cr	= Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a	= Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c	= Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b	= Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a	= Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a	= Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c	= Visibilitu to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b	= Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
D	= Stream-specific B-A
E	= Stream-specific B-C
F	= Stream-specific C-B
Y	= (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3	(metres)
W cr	=	0	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.3	(metres)
Vr c-b	=	100	(metres)
q c-a	=	15	(pcu/hr)
q c-b	=	95	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.7	(metres)
W b-c	=	2.7	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	100	(metres)
Vr b-c	=	100	(metres)
q b-a	=	5	(pcu/hr)
q b-c	=	35	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.867478
E	=	0.894307
F	=	0.857384
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	504
Q b-c	=	660
Q c-b	=	632
Q b-ac	=	636

CRITICAL DFC = 0.15

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.01
DFC b-c	=	0.05
DFC c-b	=	0.15
DFC b-ac	=	0.06

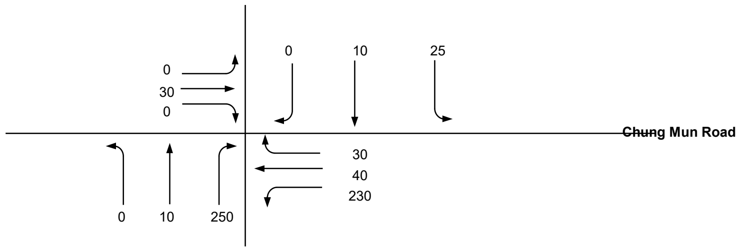
JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Chung Mun Road / Road L29	2033 PM Design Traffic Flows (Proposed Scheme)	DESIGN:	CHECK:	JOB NO:	DATE: Nov 20

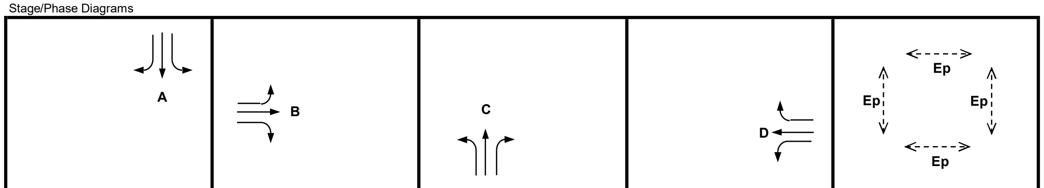
J11

Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle		N =	5	
Cycle time		C =	120	sec
Sum(y)		Y =	0.220	
Lost time		L =	50	sec
Total Flow		=	9,965	pcu
Optimum Cycle C_o	$= (1.5\times L+5)/(1-Y) =$		103	sec
Min. Cycle Time C_m	$= L/(1-Y)$	=	64	sec
Y_{ult}	$= 0.9-0.0075\times L$	=	0.525	
$R.C._{ult}$	$= (Y_{ult}-Y)/Yx100\%$	=	138.9	%
Practical Cycle Time C_p	$= 0.9\times L/(0.9-Y)$	=	66	sec
Y_{max}	= 1-L/C	=	0.583	

Stage/Phase Diagrams



Stage 1	Stage 2	Stage 3	Stage 4	Stage 5

G = 5 I/G = 5 G = 5 I/G = 5 I/G = 5 I/G = 5 G = 20 I/G = 2

Critical Case : A,B,C,D,Ep

R.C.(C) $= (0.9xY_{max}-Y)/Yx100\% =$ 139%

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m) LEFT	RADIUS (m) RIGHT	OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr) LEFT	FLOW (pcu/hr) STRAIGHT AHEAD	FLOW (pcu/hr) RIGHT	TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%) LEFT	PROPORTION OF TURNING VEHICLES (%) RIGHT	REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
	A	1	3.500	1	30	25	0	1		0		1965	25	10	0	35	71%	0%	1897	0.018	
	B	2	3.500	1	30	25	0	1		0		1965	0	30	0	30	0%	0%	1965	0.015	
	C	3	3.500	1	30	25	0	1		0		1965	0	10	250	260	0%	96%	1858	0.140	0.140
	D	4	3.500	1	15			1		0		1965	143			143	100%		1786	0.080	0.080
	D	4	3.500	1	15	25	0	0		0		2105	87	40	30	157	56%	19%	1973	0.080	
Pedestrian Crossing				GM		FGM															
	Ep	5	min.	15	+	5	=	20	sec												