銅鑼灣
Causeway Bay



Annex G
Approved Traffic Review Report

12/05/2022

Reference number CHK50603110/CHC/L2200701/sys

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG

TRAFFIC REVIEW REPORT

SYSTRA MVA

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MVA Hong Kong Limited
22/F Genesis • 33-35 Wong Chuk Hang Road • Hong Kong
T. +852 2529 7037 • F. +852 2527 8490 • E. info@mvaasia.com • www.mvaasia.com

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1. INTRODUCTION

1.1 Background

1.1.1 The subject site with a total site area of approximately 14,802m^2 is situated Inland Lot No. 8945, Caroline Hill Road, Causeway Bay. The location of the subject site is indicated in **Drawing No. 1.1**.

1.1.2 The subject site was zoned "Commercial (2)" in the approved Wong Nai Chung Outline Zoning Plan (the WNC OZP). It was planned for commercial use with provision of Government Accommodation (including a child care centre, a day care centre for elderly and a district health centre), laybys for minibus and a public vehicle park (PVP).

1.1.3 Under the lease of the subject site (the Lease), a development with the total gross floor area (GFA) for of not less than 60,000m^2 and not exceed 100,000m^2 is permitted provided that the GFA for non-industrial use other than Government Accommodation, hotel and office uses is not exceeding 10,000m^2. Subject to the approval of Town Planning Board by considering the individual merits of the development, the provision of additional government, institution, community facilities would be allowed.

1.1.4 To support the developments at the subject site (the Development) and the District Court site (the District Court), a road scheme with road improvement works at Caroline Hill Road, Link Road, Hoi Ping Road and Leighton Road (the Road Scheme) was proposed in the Highways Department (HyD)'s Traffic Review Report in 2019, and Road Scheme was gazetted and authorized in December 2020. The formation of the Green Areas of the subject site as required under the Lease is subject to the Road Scheme.

1.1.5 To serve the vehicular access to the Developments as well as the District Court, it is required to form a new access road at the Pink Hatched Blue Strata (PHB Strata) of the subject site under the Lease.

1.1.6 As per the requirement of the Lease, i.e. the Special Condition No. (65)(a) in the Conditions of Sale, a traffic review report is required for submission to the Director for his approval. The traffic review report shall include the review and projection of the vehicular and pedestrian traffic conditions of the Green Areas, the PHB Strata and the local road network adjacent to and in the vicinity of the lot and the projected vehicular and pedestrian traffic for the future development at the lot and identification of appropriate traffic mitigation measures, road routings, adjustments, designs, improvement and other measures and works.

1.1.7 MVA Hong Kong Limited (MVA) is commissioned as a traffic consultant to conduct a traffic study and prepare a traffic review report.

1.1.8 The purpose of this study is to assess the future traffic condition upon the development at the subject site by taking into account the Road Scheme and identify appropriate traffic mitigation measures, adjustment to the design of the Road Scheme and the design of new access road.

1.2 Study Objectives

1.2.1 The main objectives of the study are as follows:

- To present the details on the Development such as the development parameters, internal transport provisions, proposed layout plan and access arrangements;
- To review the Road Scheme and discuss the proposed new access road layout at the PHB Strata;
- To undertake manual classified count traffic surveys and pedestrian head count surveys to determine the existing traffic and pedestrian conditions in the vicinity of the subject site;
- To study and assess the existing travel patterns, junction capacities in the local area adjacent to the subject site;
- To identify the traffic and pedestrian generation of subject site under the proposed development schedule and carry out distribution and assignment of the generated vehicular and pedestrian traffic;
- To estimate the future traffic and pedestrian flows for the design year on the surrounding local road and pedestrian networks;
- To assess the future traffic and pedestrian conditions of the surround local road and pedestrian networks of the design year; and
- To recommend traffic improvement measures to alleviate the foreseeable traffic problems on the surrounding local road networks, if necessary.

1.3 Structure of the Report

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

1.3.2 **Chapter 2** – *The Development*, which presents the development schedules of the Development, the internal transport provisions, the proposed layout plan and access arrangements.

1.3.3 **Chapter 3** – *The Road Scheme and New Access Road*, which review the Road Scheme and discuss the proposed road scheme for the Green Areas and the new access road at the PHB Strata.

1.3.4 **Chapter 4** – *Existing Traffic Conditions*, which describes the existing road network, presents the summary of traffic count surveys and assesses the existing traffic condition.

1.3.5 **Chapter 5 –** *Future Traffic Forecasts*, which discusses the design year and the future scenarios for assessments in this study, review the future road network in the vicinity of the subject site, anticipates the potential traffic generation and attraction of the Development at the subject site, summarises the methodology for future traffic forecasts, and presents the traffic forecast for the design year.

1.3.6 **Chapter 6 –** *Traffic Impact Assessment*, which presents the findings of the traffic impact assessment in the future design year and recommends traffic mitigation measures if necessary.

1.3.7 **Chapter 7 –** *Pedestrian Facilities and Assessment*, which reviews the existing and future pedestrian facilities and presents results and findings from the pedestrian assessments.

1.3.8 **Chapter 8 –** *Summary and Conclusion*, which summarizes the study findings and presents the conclusion for this traffic review report.

2. THE DEVELOPMENT

2.1 Proposed Development Schedule

2.1.1 With the proposed additional GIC facilities, i.e. the Performing Arts and Cultural Facilities for the benefit to the community, the total GFA of the Development is about 102,000m^2. The proposed development schedule are summarised in **Table 2.1**.

Table 2.1 Proposed Development Schedule

Site Area		14,802 m^2
GFA	Office	85,000 m^2
	Retail	10,000 m^2
	Lay-bys for Light Buses	2,000 m^2
	Government Accommodation (comprising a Child Care Centre, a Day Care Centre for the Elderly and a District Health Centre)	3,000 m^2
	Additional GIC facilities: Performing Arts and Cultural Facilities	2,000 m^2
	Total	**102,000 m^2**

Note: the about figures would be subject to further adjustment in the detail design

2.2 Internal Transport Provision

2.2.1 Based on the development schedule as listed in **Table 2.1**, the provisions of internal facilities for the Development including the light bus lay-bys and the Public Vehicle Park as required in accordance with the Lease are reviewed, and the proposed provisions are shown in **Table 2.2**.

Table 2.2 Summary on Internal Transport Facilities

Transport Facilities	Development Component	Development Parameters	Lease Requirement	Provision
Private Parking and Loading/Unloading				
Private Car Parking Space	Office	85,000 m^2	1 space for every 150 m^2 or part thereof of the first 15,000 m^2 GFA and 1 space for every 200 m^2 or part thereof of the remaining GFA for office purpose (1)	450
	Retail & Additional GIC Facilities	12,000 m^2	1 space for every 200 m^2 for non-industrial (excluding residential, office, hotel, godown and petrol filling station) purposes (2)	60
	Total			**510**
Motorcycle Parking Spaces	Office	85,000 m^2	10% of the total number of the office parking spaces (3)	45
	Retail & Additional GIC Facilities	12,000 m^2	10% of the total number of the non-industrial parking spaces (4)	6
	Total			**51**

Table 2.2 Summary on Internal Transport Facilities (Cont'd)

Transport Facilities	Development Component	Development Parameters	Lease Requirement	Provision
Layby for Taxi and Private Car	Office	85,000 m^2	1 space for every 20,000 m^2 GFA for office purpose (5)	5
Loading/ unloading Bays	Office	85,000 m^2	1 space for every 2,000 m^2 GFA for office purpose (6) (7)	HGV: 15 LGV: 27 (9) **Total: 42** (10)
	Retail & Additional GIC Facilities	12,000 m^2	1 space for every 800 m^2 GFA for non-industrial (excluding residential, office, hotel, godown and petrol filling station) purposes (6) (8)	HGV: 6 LGV: 10 **Total: 16** (10)
	Total			**HGV: 21** **LGV: 37** **Total: 58**
Public Vehicle Park and Light Bus Lay-bys				
Private Car Parking Spaces	Public Vehicle Park		100 spaces for the parking of private cars (11)	100
Goods Vehicle Parking Spaces			• 15 spaces for the parking of light goods vehicles (10) • 5 spaces for the parking of medium goods vehicles and heavy goods vehicles (11)	MGV/HGV: 5 LGV: 15 **Total: 20**
Coaches Parking Spaces			5 spaces for the parking of coaches (11)	5
Light Bus Lay-bys	Light Bus Lay-bys		4 lay-bys for the picking up and setting down of passengers from light buses (12)	4
Parking and Loading/unloading for Government Accommodation				
Loading/ unloading Bays	Day Care Centre for the Elderly		Not specified	1 (13)(14)
	Child Care Centre			1 (13)(14)
Light Buses Parking Spaces	Day Care Centre for the Elderly		3 spaces for the parking of light buses and belonging to the occupiers of the day care centre for the elderly (15)	3
	District Health Centre		1 space for the parking of light buses and belonging to the occupiers of the district health centre (16)	1
Private Car Parking Space	District Health Centre		1 space for the parking of motor vehicles and belonging to the occupiers of the district health centre (17)	1

Notes:
(1) Refer to Clause 43(a)(i)(I) of the Conditions of Sale
(2) Refer to Clause 43(a)(i)(II) of the Conditions of Sale
(3) Refer to Clause 43(c)(i)(I) of the Conditions of Sale
(4) Refer to Clause 43(c)(i)(II) of the Conditions of Sale
(5) Refer to Clause 44(a)(ii)(I) of the Conditions of Sale
(6) Refer to Clause 44(b)(i) of the Conditions of Sale, 65% (in numbers) of such spaces shall be used for the loading and unloading of light goods vehicles [7m(L) x 3.5m(W) x 3.6m(H)] and 35% (in numbers) of such spaces shall be used for loading and unloading of heavy goods vehicles [11m(L) x 3.5m(W) x 4.7m(H)]
(7) Refer to Clause 44(a)(i)(I) of the Conditions of Sale
(8) Refer to Clause 44(a)(i)(II) of the Conditions of Sale
(9) Including 1 loading bay shared with Child Care Centre and Day Care Centre for the Elderly
(10) Refer to Clause 46 of the Conditions of Sale, loading and unloading provisions, the Purchaser may increase or reduce the respective numbers of spaces required to be provided under the said Special Conditions by not more than 5% provided that the total number of spaces so increased ore reduced shall not exceed 50
(11) Refer to Clause 49(a) of the Conditions of Sale
(12) Refer to Clause 44(a)(iii) of the Conditions of Sale
(13) To be reserved out of the LGV loading/unloading bays for private use
(14) Refer to Clause 44(b)(i) of the Conditions of Sale
(15) Refer to Clause 23(a)(ii)(II) of the Conditions of Sale
(16) Refer to Clause 23(a)(iii)(III) of the Conditions of Sale
(17) Refer to Clause 23(a)(iii)(II) of the Conditions of Sale

2.3 Vehicular Access and Internal Traffic Arrangement

Vehicular Access

2.3.1 To facilitate the access of the Development as well as the future District Court, a new access road connecting Caroline Hill Road (East) and Caroline Hill Road (West) will be provided at the PHB Strata of the subject site. The proposed layout and traffic arrangement of the new access road will be discussed in **Section 3**.

2.3.2 For the purpose of serving different accesses to the various internal transport facilities to be provided in the Development, two vehicular accesses are planned at the on the new access road via the points as allowed under the Lease (i.e. x_1, y_1, z_1 and u_1, v_1, w_1). It is proposed that the eastern access of the Development will mainly serve the accesses for light buses, goods vehicles and coaches while the western access will mainly serve the accesses for private cars and taxis. The proposed access arrangement and the key ingress and egress traffic routes of the Development are shown in **Drawing No. 2.1** and **Drawing No. 2.2** respectively.

Internal Traffic Arrangement

2.3.3 Off-street pick-up/drop-off laybys for private cars and taxis would be provided at G/F via the western vehicular access as shown in **Drawing No. 2.1**.

2.3.4 It is planned that the light bus lay-bys would be located at B1/F and the laybys can be accessed via the eastern vehicular access as shown in **Drawing No. 2.3**.

2.3.5 Except for the one loading/unloading bay located at G/F to serve special operational needs, all the ancillary loading/unloading area would be provided at B2/F and to be access via the eastern vehicular access as shown in **Drawing No. 2.4**.

2.3.6 The public vehicle park for goods vehicles and coaches and the lay-by, car parking spaces and loading/unloading area for the Tower 3 GIC facilities will be provided at B3/F, and their ingress and egress would be served by the eastern car ramp via the eastern vehicular access. Whilst, B3/F would also provide ancillary and public car parks for private cars, and their ingress and egress would be served by the western car ramp via the western vehicular access. The internal traffic arrangement at B3 is shown in **Drawing No. 2.5**.

2.3.7 The car park floors at B4/F and B5/F would serve ancillary parking only and to be connected with B3/F by the internal car ramp on the western side as shown in **Drawing No. 2.6**.

2.3.8 To avoid obstruction to the public road due to the waiting vehicles to enter the car park, the entry gates of the car park would be located at B3/F in order to allow sufficient length for potential vehicle queueing as illustrated in **Drawing No. 2.7**.

2.3.9 With the provisions of two separated two-way car ramps, flexibility in car park access arrangement would be allowed to serve different management plans, e.g. during the peak period when the car park is fully utilized. As demonstrated in **Drawing No. 2.7**, it would be feasible to allow vehicle queuing at car ramp without obstructing the monthly parking users to access the car park by operating the western car ramp for ingress only. Since the internal connection between the public and ancillary car parks at B3/F would be reserved, egress of all car park related traffic can be managed to leave the car park via the eastern car ramp. The details of car park management plan would be further developed in the detail design stage to ensure the internal traffic can be properly managed.

2.4 Development Traffic

2.4.1 The potential traffic generation and attraction of the Development are estimated by the proposed development schedule as listed in **Table 2.1**, the trip rates as made reference to / derived from the mean trip rates as stipulated in TPDM as well as the consultant's in-house trip rates as obtained from various traffic surveys. The adopted trip rates and the estimated traffic generation and attraction of the Development are presented in **Table 2.3**. The details of the surveyed trip rates at the reference sites are attached in **Appendix F**.

Table 2.3 Estimated Traffic Generation of the Development in Design Scenario of 2031

Development Component	Weekday						Weekend	
	AM Peak		Noon Peak		PM Peak		Noon Peak	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
Adopted Trip Rates								
Office [1] [2] (pcu/hr/100 m^2)	0.1703	0.2452	0.1835	0.1748	0.1573	0.1175	0.1431	0.1589
Retail [3] [4] (pcu/hr/100 m^2)	0.2296	0.2434	0.3617	0.5302	0.3100	0.3563	0.2821	0.4817
GIC - Performing Arts and Cultural Facilities [5] (pcu/hr/100 m^2)	0.0600	0.0920	0.0626	0.1024	0.1644	0.0569	0.1492	0.1723
Child Care Centre [6] (pcu/hr/100 m^2)	0.9434	1.0377	0.5660	0.6604	0.2830	0.2830	0.0943	0.0943
Day Care Centre for the Elderly [7] (pcu/hr/100 m^2)	1.5094	0.5660	0.2830	1.1321	1.1321	1.3208	0.3774	0.5660
District Health Centre [8] (pcu/hr/100 m^2)	0.1770	0.3540	0.5310	0.7965	0.0973	0.0973	0.0885	0.0885
Public Vehicle Park [9] (pcu/hr/parking space)	0.0929	0.5897	0.2340	0.2000	0.4619	0.1500	0.6000	0.3220
Lay-bys for Light Bus [10] (pcu/hr/layby)	18	18	18	18	18	18	18	18
Estimated Trip Generation and Attraction of the Development (pcu/hr)								
Office (85,000 m^2)	145	208	156	149	134	100	122	135
Retail (10,000 m^2)	23	24	36	53	31	36	28	48
GIC - Performing Arts and Cultural Facilities (2,000 m^2)	1	2	1	2	3	1	3	3
Child Care Centre (850 m^2)	8	9	5	6	2	2	1	1
Day Care Centre for the Elderly (550 m^2)	8	3	2	6	6	7	2	3
District Health Centre (1,600 m^2)	3	6	8	13	2	2	1	1
Public Vehicle Park (125 spaces)	12	74	29	25	58	19	75	40
Lay-bys for Light Bus (4 Nos.)	72	72	72	72	72	72	72	72
Total	**272**	**398**	**309**	**326**	**308**	**239**	**304**	**303**

Notes: (1) TPDM mean trip rates for office adopted for Weekday AM and PM Peaks

(2) Trip rates for weekday and weekend noon peaks are derived from the surveyed variance to the weekday PM peak trips of office development and applied onto the TPDM trip rates for office

(3) TPDM mean trip rates for retail/shopping complex

(4) Trip rates for weekday and weekend noon peaks are derived from the surveyed variance to the weekday PM peak trips of retail development and applied onto the TPDM trip rates for retail/shopping complex

(5) Trip rates derived from the consultant's surveyed highest trip rates from Yao Tsung-I Academy, Kwai Tsing Theatre and M+

(6) Trip rates derived from the consultant's surveyed trip rates from SIA Shaukiwan Day Creche

(7) Trip rates derived from the consultant's surveyed trip rates from T.W.G.Hs. Anita Mui Day Care Centre for the Elderly
(8) Trip rates derived from the consultant's surveyed trip rates from Central District Health Centre General Outpatient Clinic
(9) Trip rates derived from the consultant's surveyed trip rates from ex-Murray Road Multi-storey Car Park
(10) Trip rates derived from the average peak frequencies of public light bus services in the vicinity.

2.4.2 As shown in **Table 2.3**, it is estimated that the Development would potentially generated a two-way traffic flow of about 670 pcus/hr during the AM peak hour, 635 pcus/hr during the weekday noon peak hour, 547 pcus/hr during the weekday PM peak hour and 607 pcus/hr during the weekend noon peak.

3. THE ROAD SCHEME AND NEW ACCESS ROAD

3.1 The Road Scheme

3.1.1 To support the Development and the future District Court, a Road Scheme with road improvement works at Caroline Hill Road, Link Road, Hoi Ping Road and Leighton Road was proposed in the Highways Department (HyD)'s Traffic Review Report in 2019 as exhibited in **Appendix A**. The Road Scheme was subsequently gazetted and authorized in December 2020.

3.1.2 The improvement works covered by the Road Scheme include:

(i) modification of the existing priority junction at Caroline Hill Road (West) / Link Road into a roundabout-like junction;
(ii) provision of an additional left-turning traffic lane at the eastern entry arm of Leighton Road at the junction of Leighton Road / Caroline Hill Road (West) / Hoi Ping Road;
(iii) modification of the "left-turn" lane to "left-turn and right turn" shared lane at the entry arm of Caroline Hill Road of the junction of Leighton Road / Caroline Hill Road (West) / Hoi Ping Road; and
(iv) road widening at Caroline Hill Road (East) near its junction with the future new access road to provide right-turn pocket and a refuge island for pedestrian.

3.1.3 The road layout at the Green Areas (the proposed road scheme) is reviewed and proposed with reference the Road Scheme as presented in **Drawing No. 3.1**.

3.1.4 For further improvement to the future traffic condition at the junction at Caroline Hill Road and Link Road, the proposed road scheme has included the proposed signal control arrangement at the junction.

3.2 The New Access Road

3.2.1 As required under the Lease, a new access road shall be formed at the PHB Strata to facilitate accesses to the Development and the future District Court for both the vehicular and pedestrian traffic.

3.2.2 The proposed layout of the new access road has taken into account the accessibility of both the future vehicular and pedestrian traffic as well as the constraint of the tree canopy of an old and valuable tree at the District Court site near the PHB Strata.

3.2.3 The new access road is proposed to connect with future road layout at the Green Areas on both the eastern and western section of Caroline Hill Road with provisions of two traffic lanes for each direction and minimum 3m wide footpaths on both sides.

3.2.4 To facilitate the north-south pedestrian movements along Caroline Hill Road, pedestrian crossings with provision of refuge islands will be provided at both ends of the new access road. Given that the overall length of the new access road is about 150m, an intermediate pedestrian crossing point is also proposed.

3.2.5 The proposed layout of the new access road is shown in **Drawing No. 3.1**.

4. EXISTING TRAFFIC SITUATION

4.1 Existing Road Network

4.1.1 Access of vehicular traffic to the subject site is mainly served by the district distributor Leighton Road, the local distributor Caroline Hill Road and the local road Link Road.

4.1.2 Leighton Road serves the southern part of Causeway Bay as a major east-west connection. It connects Causeway Road and Tung Lo Wan Road to the east and Morrison Hill Road to the west. Leighton Road is generally a two-way road with 1 to 3 traffic lanes in each direction, except that the road section between Tung Lo Wan Road and Caroline Hill Road (East) is a one-way carriageway running along southbound direction.

4.1.3 Caroline Hill Road is a U-shaped local distributor serving the developments near Hong Kong Stadium. Its western section, i.e. road section connecting the junction of Leighton Road / Hoi Ping Road, is a single 2-lane carriageway running in north-south direction. Its eastern section, i.e. road section connecting the junction of Leighton Road / Pennington Street / Yun Ping Road, is mainly a one-way northbound road between Stadium Path and Cotton Path.

4.1.4 Link Road is a single-2 carriageway connecting Caroline Hill Road (West) with Broadwood Road to the south. It mainly serves the local residential developments and is one of the corridors leading to the Jardine's Lookout area.

4.1.5 The existing road network in the vicinity of the subject site is shown in **Drawing No. 4.1**.

4.2 Existing Traffic Condition

4.2.1 To obtain the update traffic flows for the review on the existing traffic condition in the vicinity of the subject site, traffic surveys in the form of manual classified count were conducted to examine 17 junctions along the anticipated ingress and egress traffic routes of the subject site.

4.2.2 The traffic surveys were carried out between the hours of 08:00-10:00, 11:30-13:30 and 17:30-19:30 on a typical weekday and 11:30-13:30 on a weekend (Saturday) in mid-September 2021.

4.2.3 The locations of these junctions are identified in **Drawing No. 4.1** and **Table 4.1** below.

Table 4.1 Critical Junction of Assessment

Ref No.	Junctions	Method of Control	Drawing No.
J1	Hennessy Road / Percival Street	Signalised	4.2
J2	Matheson Street / Percival Street / Russell Street	Signalised	4.3
J3	Leighton Road / Percival Street / Hysan Avenue	Signalised	4.4
J4	Leighton Road / Hysan Avenue / Leighton Lane	Signalised	4.4
J5	Leighton Road / Caroline Hill Road (West) / Hoi Ping Road	Signalised	4.5
J6	Caroline Hill Road (West) / Link Road	Priority	4.6
J7	Caroline Hill Road / Cotton Path	Priority	4.7
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Signalised	4.8
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Signalised	4.9

Table 4.1 Critical Junction of Assessment (Cont'd)

Ref No.	Junctions	Method of Control	Drawing No.
J10	Causeway Road / Moreton Terrace	Signalised	4.10
J11	Pennington Street / Irving Street / Jardine's Bazaar	Signalised	4.11
J12	Link Road / Broadwood Road	Signalised	4.12
J13	Broadwood Road / Ventris Road	Priority	4.13
J14	Wong Nai Chung Road / Sports Road	Signalised	4.14
J15	Leighton Road / Wong Nai Chung Road	Signalised	4.15
J16	Tung Lo Wan Road / Eastern Hospital Road	Signalised	4.16
J17	Tung Lo Wan Road / Moreton Terrace	Signalised	4.17
J19	Hysan Avenue / Hoi Ping Road	Priority	4.18
J20	Tung Lo Wan Road / Tai Hang Road	Priority	4.17

4.2.4 Observed traffic data indicated that the AM, Noon and PM peak hour flows occurred during hours of 08:15-09:15, 12:00-13:00 and 17:45-18:45 respectively on a typical weekday, and the weekend peak hour flows occurred during the hours of 11:30-12:30. The weekday and weekend observed traffic flows are shown in **Drawing Nos. 4.19** and **4.20** respectively. The existing layouts of the junctions to be assessed are shown in **Drawing Nos. 4.2** to **4.18**.

4.2.5 To evaluate the existing traffic condition in the vicinity of the subject site, the operational performance of the identified junctions were assessed based on the observed traffic flows and their existing junction layouts and control methods. The junction assessment results are summarised in **Table 4.2**. The details of junction assessments are attached in **Appendix D**.

Table 4.2 Year 2021 Existing Operational Performance of Critical Junctions

Ref No.	Junctions	Method of Control	Year 2021 RC/RFC[(1)]			
			Weekday			Weekend
			AM	Noon	PM	Noon
J1	Hennessy Road / Percival Street	Signal	150%	83%	81%	68%
J2	Matheson Street / Percival Street / Russell Street	Signal	408%	297%	363%	270%
J3	Leighton Road / Percival Street / Hysan Avenue	Signal	67%	39%	52%	33%
J4	Leighton Road / Hysan Avenue / Leighton Lane	Signal	310%	302%	274%	169%
J5	Leighton Road / Caroline Hill Road (West) / Hoi Ping Road	Signal	21%	20%	32%	26%
J6	Caroline Hill Road (West) / Link Road	Priority	0.34	0.43	0.43	0.52
J7	Caroline Hill Road / Cotton Path	Priority	0.13	0.21	0.07	0.15
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Signal	37%	37%	24%	23%
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Signal	64%	46%	49%	46%
J10	Causeway Road / Moreton Terrace	Signal	49%	37%	29%	39%
J11	Pennington Street / Irving Street / Jardine's Bazaar	Signal	239%	198%	179%	191%
J12	Link Road / Broadwood Road	Signal	26%	34%	28%	24%
J13	Broadwood Road / Ventris Road	Priority	0.54	0.55	0.55	0.54
J14	Wong Nai Chung Road / Sports Road	Signal	201%	165%	170%	150%

Table 4.2 Year 2021 Existing Operational Performance of Critical Junctions (Cont'd)

Ref No.	Junctions	Method of Control	Year 2021 RC/RFC[1]			
			Weekday			Weekend
			AM	Noon	PM	Noon
J15	Leighton Road / Wong Nai Chung Road	Signal	44%	39%	37%	40%
J16	Tung Lo Wan Road / Eastern Hospital Road	Signal	71%	66%	94%	86%
J17	Tung Lo Wan Road / Moreton Terrace	Signal	47%	29%	35%	86%
J19	Hysan Avenue / Hoi Ping Road	Priority	0.42	0.41	0.42	0.40
J20	Tung Lo Wan Road / Tai Hang Road	Priority	0.66	0.68	0.70	0.35

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

4.2.6 The assessment results in **Table 4.2** indicate that all critical junctions are at present operating with adequate capacities during the AM, Noon and PM peaks on weekday, and Noon peak on weekend.

4.2.7 Apart from the junction assessment, queue length analysis is also conducted for the identified signal junctions. The queue length analysis results are summarised in below **Table 4.3.** The details of the queue length analysis and results are attached in **Appendix E**.

Table 4.3 Average Queue Length in Year 2021 Existing Scenario

Ref No.	Junctions	Movement	Capacity (m)	Average Queue Length (m)			
				Existing Scenario			
				Weekday			Weekend
				AM	Noon	PM	Noon
J1	Hennessy Road / Percival Street	Hennessy Road WB	150	24	28	33	29
		Hennessy Road EB	110	21	17	21	22
		Percival Street SB	34	23	25	26	26
J2	Matheson Street / Percival Street / Russell Street	Percival Street SB	65	15	19	19	20
		Matheson Street NB	65	7	10	11	10
J3	Leighton Road / Percival Street / Hysan Avenue	Leighton Road WB	150	25	31	30	39
		Leighton Road EB	115	21	32	23	32
		Percival Street SB	115	19	29	22	32
J4	Leighton Road / Hysan Avenue / Leighton Lane	Leighton Road WB	120	21	20	20	21
		Leighton Road EB	35	13	13	14	20
		Hysan Avenue SB	48	4	5	6	6
J5	Leighton Road / Caroline Hill Road (West)	Leighton Road WB	90	32	19	24	43
		Caroline Hill Road NB	90	19	33	20	27
		Leighton Road EB	115	37	16	34	23
		Hoi Ping Road SB	105	19	45	22	39
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Leighton Road WB	195	24	25	34	31
		Caroline Hill Road NB	175	6	6	5	14
		Leighton Road EB	85	30	31	40	37
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Causeway Road WB	95	31	34	36	36
		Tung Lo Wan Road NB	80	8	14	8	11
		Causeway Road EB	45	17	21	21	21
J10	Causeway Road / Moreton Terrace	Causeway Road WB	>200	21	20	21	23
		Moreton Terrace NB	120	50	44	53	48
		Causeway Road EB	90	24	29	28	29
J11	Pennington Street / Jardine's Bazaar / Irving Street	Irving Street WB	150	10	13	12	11
		Pennington Street NB 1st stop	100	16	22	20	19
		Pennington Street NB 2nd stop	40	11	12	13	12

Table 4.3 Average Queue Length in Year 2021 Existing Scenario (Cont'd)

Ref No.	Junctions	Movement	Capacity (m)	Average Queue Length (m)			
				Reference Scenario			
				Weekday			Weekend
				AM	Noon	PM	Noon
J12	Link Road / Broadwood Road	Link Road SB	155	51	35	47	38
		Broadwood Road (E) NB	140	35	32	35	30
		Broadwood Road (W) NB	>200	56	40	50	42
J14	Wong Nai Chung Road / Sports Road	Sports Road EB	180	15	14	16	15
		Wong Nai Chung Road SB	120	12	12	14	13
J15	Leighton Road / Wong Nai Chung Road	Leighton Road WB	155	21	22	23	22
		Leighton Rd EB	75	11	14	11	13
J16	Tung Lo Wan Road / Eastern Hospital Road	Tung Lo Wan Rd SB	85	24	23	22	24
		Ka Ning Path NB	95	27	26	25	26
J17	Tung Lo Wan Road / Moreton Terrace	Tung Lo Wan Rd EB (Section between Tai Hang Road and Moreton Terrace)	70	33	35	37	28
		Tung Lo Wan Rd WB (Section between Tung Lo Wan Road and Tung Lo Wan Drive)	>200	27	27	29	27
		Tung Lo Wan Rd EB (West of Tung Lo Wan Drive)	60	23	22	23	18
		Tung Lo Wan Drive SB	>200	22	26	27	18

4.2.8 As shown in **Table 4.3**, the results have indicated the available queue lengths provided at the signal junctions are sufficient to cater for existing average vehicle queues during peak hours.

5. TRAFFIC FORECASTS

5.1 Design Year and Future Scenarios to be Assessed

Design Year

5.1.1 In view of the formations of the Green Areas and the PHB Strata shall be completed by 30th June 2026 as per the requirements under the Lease while the Development is also targeted to be completed by 2026, a design of 2031 is adopted for assessment in this study. The adopted design year 2031 is also the one of the strategic study years adopted by the Government for the overall long term planning of Hong Kong's transportation system.

Future Scenario to be Assessed

5.1.2 To evaluate the effect to the surrounding road condition due to the Development as well as the road scheme proposed for the Green Areas and the PHB Strata, the below future scenarios will be assessed:

- Reference Scenario in Year 2031 – Future scenario in year 2031 under existing traffic arrangement without the development at the subject site; and
- Design Scenario in Year 2031 – Future scenario in year 2031 with proposed road scheme for Green Areas and the PHB Strata as well as the development at the subject site.

5.1.3 Given that the future ingress and egress of the District Court will rely on the future new access road at the PHB Strata, the future District Court is only taken into account in the Design Scenario.

5.2 Traffic Forecasts

Background Traffic Growth

5.2.1 To derive the year 2031 reference traffic flows, the background growth in traffic should be reviewed and identified for the area, which are made reference to the historical growth trend and the population and employment projections.

5.2.2 Transport Department has traffic count stations on the road sections in the vicinity of the subject site. The Average Annual Daily Traffic (A.A.D.T.) data from year 2015 to 2020 as reported in the Annual Traffic Census (ATC) are summarized in **Table 5.1**.

Table 5.1 Average Annual Daily Traffic (A.A.D.T.) Data ATC

Stn. No.	Road	AADT (Vehicle/Day)						Annual Growth Rate (% p.a.)
		2015	2016	2017	2018	2019	2020	
1107	Tung Lo Wan Road (Causeway Rd – Moreton Terrace)	18,890	18,300	18,350	18,040	18,060	17,010	-2.07%
1212	Irving Street and Pennington Street (Leighton Rd – Yee Wo St)	14,130	14,130	13,800	11,320	12,290	11,730	-3.65%
1212	Causeway Road (Tung Lo Wan Rd – Shelter St)	34,360	34,360	33,550	30,660	30,490	29,090	-3.28%
1414	Leighton Road (Tung Lo Wan Rd – Irving St)	25,060	25,060	24,470	24,900	22,970	21,040	-3.44%
1436	Percival Street (Hennessy Rd – Leighton Rd)	13,360	12,920	12,830	12,860	12,180	12,170	-1.85%
1819	Hennessy Road and Yee Wo Street (Percival St – Pennington St)	22,680	21,280	20,840	20,830	18,530	16,700	-5.94%
2016	Yee Wo Street (Pennington St – Tung Lo Wan Rd)	22,280	22,300	20,980	18,420	16,390	14,770	-7.89%
2035	Leighton Road (Wong Nai Chung Rd – Percival St)	28,000	27,960	27,110	28,080	27,830	26,470	-1.12%
2036	Leighton Road (Irving St – Percival St)	14,450	14,430	14,910	15,080	14,950	14,220	-0.32%
2608	Caroline Hill Road (Leighton Rd – Yun Ping Rd)	5,290	6,630	4,900	5,220	4,550	4,800	-1.93%
2623	Lee Garden Road (Hennessy Rd – Hysan Ave)	3,440	3,590	3,250	3,200	3,470	2,870	-3.56%
Total		**201,940**	**200,960**	**194,990**	**188,610**	**181,710**	**170,870**	**-3.29%**

Source: The Annual Traffic Census 2015 – 2020 as available on TD's website.

5.2.3 The A.A.D.T. flows in **Table 5.1** show that the overall average traffic growth on the road sections in the vicinity of the subject site decreased at the rate of -3.29% per annum for year 2015 to 2020.

5.2.4 Other than the historical trend, the population and employment estimates from Territorial Population and Employment Data Matrix (TPEDM) as available on Planning Department's website are also referred for the review on the background traffic growth. The population and employment estimates for Wan Chai in years 2021 and 2026 are presented in **Table 5.2**.

Table 5.2 Population and Employment Estimates from TPEDM

Planning Data for Wan Chai District	Year		Growth Rate (% p.a.)
	2021	2026	2026/2021
Population	157,650	147,150	-1.37%
Employment	297,650	293,650	-0.27%
Population + Employment	455,300	440,800	-0.65%

Source: 2016-based Territorial Population and Employment Data Matrix as available on Planning Department's website.

5.2.5 As presented in **Table 5.2**, the growth rates as derived from TPEDM estimates for Wan Chai District from year 2016 to 2026 are ranged from -1.37% to -0.27% p.a.

5.2.6 Although both the historical trend and planning data have reflected the negative growths for the area, a nominal traffic growth rate of +0.1% is adopted in this study to reflect the background traffic growth in the area from year 2021 to 2031 for a conservative approach.

Planned/Potential Future Developments

5.2.7 There are some planned/potential developments identified in the vicinity of the subject site including the adjoining District Court site. The planning parameters of these planned/committed developments are shown in the below **Table 5.3**. Adopting a conservative approach, it is assumed that these future developments will be completed and occupied before year 2031.

Table 5.3 Planning Parameter for Planned Future Developments

Site Ref. No.	Planned Future Developments (1)	Use	Details
1	District Court site (2)	District Court	Total GFA : 70,000 m^2
2	Commercial Development in 8 Leighton Road (3) (A/H7/172)	Commercial	Total GFA : 14,945 m^2
3	Commercial Development in 1-5 Irving Street and 14 Pennington Street (4)	Commercial	Total GFA of 7,548.8 m^2
4	Redevelopment of Po Leung Kuk Headquarters (5)	Social Services	The service quotas for social services will increase from the current 451 to 773 upon the completion of the redevelopment

Notes: (1) Locations are indicated in **Drawing No. 5.1**
(2) Refer to MPC Paper No.5/19 as available on Town Planning Board's website
(3) Refer to information on the approved application no. A/H7/172 as available from the Statutory Planning Portal 2 by Town Planning Board
(4) Refer to information as available in the Monthly Digest in May 2020 published by Building Department
(5) Refer to information in Po Leung Kuk Annual Report 2020 – 2021 as available from Po Leung Kuk's website

5.2.8 Apart from the future developments listed in the **Table 5.3**, it is noted that a redevelopment proposal of Hong Kong Stadium is being planned by the Government, and the proposal is being consulted with the Wan Chai District Council (WCDC). According to the information presented to WCDC by Leisure and Cultural Services Department (LCSD) in November 2021, the capacity of the stadium would be reduced from the existing 40,000 seats to 9,000 seats upon its redevelopment. Meanwhile, the redevelopment would provide athletics track, ancillary facilities such multi-function room, media centre, washroom, changing room, ambulance room, drug test room and nursery room as well as a public car park with not less than the existing provision of 50 parking spaces. Further details as well as it programme are yet available from public domain.

5.2.9 Since the redevelopment of Hong Kong Stadium would be targeted to serve mainly the local and school activities which would be held outside the communal peak periods, it is anticipated that the additional traffic induced by the redevelopment during the communal peak hours should not be significant. Nevertheless, a sensitivity test on the potential accumulated traffic impact due to the redevelopment of Hong Kong Stadium is conducted as attached in **Appendix C**.

5.2.10 The trip generations from the future developments as listed in **Table 5.3** are estimated by the corresponding parameters and the trip rates as made reference to / derived from the mean trip rates as stipulated in TPDM as well as the consultant's in-house trip rates as obtained from various traffic surveys. The adopted trip rates and estimated traffic generations of these future developments are summarized in **Tables 5.4**.

Table 5.4 Adopted Trip Rates and Estimated Traffic Generation of Planned Future Developments

	Weekday						Weekend	
	AM Peak		Noon Peak		PM Peak		Noon Peak	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
1. District Court Site – 70,000m² GFA								
Adopted Trip Rates (1) (pcu/hr/100 m²)	0.0606	0.0918	0.0483	0.0450	0.0466	0.0437	N/A	N/A
Estimated Trips (pcu/hr)	42	64	34	31	33	31	5(2)	5(2)
2. Commercial Development in 8 Leighton Road – 14,945 m² GFA								
Adopted Trip Rates (2) (3) (pcu/hr/100 m²)	0.1703	0.2452	0.1835	0.1748	0.1573	0.1175	0.1431	0.1589
Estimated Trips (pcu/hr)	25	37	27	26	24	18	21	24
3. Commercial Development in 1-5 Irving Street and 14 Pennington Street - 7,548.8 m² GFA								
Adopted Trip Rates (2) (3) (pcu/hr/100 m²)	0.1703	0.2452	0.1835	0.1748	0.1573	0.1175	0.1431	0.1589
Estimated Trips (pcu/hr)	13	19	14	13	12	9	11	12
4. Redevelopment of Po Leung Kuk Headquarters – Additional 322 Service Quotas								
Adopted Trip Rates (4) (pcu/hr/quota)	0.0487	0.0200	0.0200	0.0243	0.0177	0.0222	0.0155	0.0200
Estimated Trips (pcu/hr)	16	6	6	8	6	7	5	6

Notes: (1) Trip rates derived from the consultant's surveyed trip rates from Wanchai Tower and Lands Tribunal
(2) TPDM mean trip rates for office adopted for Weekday AM and PM Peaks
(3) Trip rates for weekday and weekend noon peaks are derived from the surveyed variance to the weekday PM peak trips of office development and applied onto the TPDM trip rates for office
(4) Trip rates derived from the consultant's surveyed trip rates from the existing Po Leung Kuk

Year 2031 Reference Traffic Flows

5.2.11 Given that there is no plan for any major road infrastructure in the vicinity of the subject site by the design year 2031, the 2031 reference traffic flows are derived by:

(i) Applying a growth rate of 0.1% p.a. on the 2021 observed flows upto the design year 2031; and

(ii) Superimposing the potential additional traffic as induced by the planned future developments in the vicinity of the subject site (**Table 5.4**), except for the District Court site, onto the traffic flows in (i).

5.2.12 The anticipated year 2031 weekday and weekend reference traffic flows are presented in **Drawing No. 5.2** and **Drawing No. 5.3** respectively.

Year 2031 Design Traffic Flows

5.2.13 As discussed in **Section 5.1**, the completions of the Development with the proposed road scheme at Green Areas and PHB Strata as well as the development at the District Court site will be considered in the Design Scenario.

5.2.14 The year 2031 design traffic flows are derived by superimposing the estimated trips of the Development (**Table 2.3**) and the development at the District Court site (**Table 5.4**) onto the year 2031 reference traffic flows (**Drawing No. 5.2** and **Drawing No. 5.3**) by taking into account the proposed road scheme for the Green Areas and PHB Strata (**Drawing 3.1**) and the anticipated trip distribution of the ingress and egress traffic (**Drawing Nos. 5.4** and **5.5**).

5.2.15 The anticipated year 2031 weekday and weekend design traffic flows are presented in **Drawing Nos. 5.6A** & **5.6B** and **Drawing Nos. 5.7A** & **5.7B** respectively.

6. TRAFFIC IMPACT ASSESSMENT

6.1 Junction Assessments for Year 2031 Reference and Design Scenarios

6.1.1 The operational performances of the junctions identified in **Section 4.2** are assessed with the derived 2031 reference and design traffic flows under the existing layouts and method of control except for the junctions of Leighton Road / Caroline Hill Road (West) / Hoi Ping Road (J5), Caroline Hill Road (West) / Link Road (J6) and the new junction of Caroline Hill Road (East) / New Access Road (J18) that the proposed road scheme at the Green Areas is taken into account.

6.1.2 As discussed in **Section 3.1**, the modification works at Junction J5 include the provision of an additional left-turning traffic lane at the eastern entry arm of Leighton Road and modification of the "left-turn" lane to "left-turn and right turn" shared lane at the entry arm of Caroline Hill Road. The future junction layout and arrangement of J5 are presented in **Drawing No. 6.1.**

6.1.3 To serve the future access from Caroline Hill Road (West) to the Development as well as the District Court Site, the existing priority junction J6 would be modified into roundabout-like junction in accordance with the Road Scheme. As discussed in **Section 3.1**, signal control arrangement is proposed in order to further improve the future traffic condition at the junction. The proposed junction layout and arrangement of J6 are presented in **Drawing No. 6.2**.

6.1.4 For comparison purpose, the operational performance of Junction J6 in the design scenario of year 2031 without the proposed signal control (i.e. priority control) is also assessed. The traffic arrangement and flow circulation at the junction J6 under priority control arrangement are shown in **Drawing Nos. 6.3A and 6.3B**.

6.1.5 On the other hand, a new junction J18 would be formed to serve the future access from Caroline Hill Road (East). The works for the new junction J18 involve road widening at Caroline Hill Road (East) near its junction with the future new access road to provide right-turn pocket and a refuge island for pedestrian. The future junction layout and arrangement of J18 are presented in **Drawing No. 6.4**.

6.1.6 The assessment results for reference and design year of 2031 are summarised in **Table 6.1**, and the details of junction assessments are attached in **Appendix D**.

Table 6.1 Year 2031 Operational Performance of Identified Key Junctions

Ref No.	Junctions	Method of Control	Year 2031 RC/RFC[(1)]							
			Reference Scenario				Design Scenario			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
J1	Hennessy Road / Percival Street	Signal	143%	78%	80%	65%	122%	66%	74%	58%
J2	Matheson Street / Percival Street / Russell Street	Signal	391%	286%	356%	258%	348%	265%	335%	243%
J3	Leighton Road / Percival Street / Hysan Avenue	Signal	65%	38%	51%	31%	43%	26%	38%	22%

Table 6.1 Year 2031 Operational Performance of Identified Key Junctions (Cont'd)

Ref No.	Junctions	Method of Control	Year 2031 RC/RFC[(1)]							
			Reference Scenario				Design Scenario			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
J4	Leighton Road / Hysan Avenue / Leighton Lane	Signal	304%	296%	269%	164%	304%	296%	269%	164%
J5	Leighton Road / Caroline Hill Road (West) / Hoi Ping Road	Signal	19%	15%	30%	26%	22%	25%	37%	33%
J6	*Existing Layout & Arrangement*									
	Caroline Hill Road (West) / Link Road	Priority	0.34	0.43	0.45	0.52	-	-	-	-
	Future Layout – Proposed Signal Control Arrangement									
	Caroline Hill Road (West) / Link Road / New Access Road	Signal	-	-	-	-	42%	47%	47%	48%
	Future Layout – Priority Control Arrangement									
	J6A - Caroline Hill Road (West) Southbound / U-turn	Priority	-	-	-	-	0.72	0.68	0.57	0.74
	J6B - Caroline Hill Road (West) Southbound / Access Road of CHR Site	Priority	-	-	-	-	0.45	0.50	0.51	0.46
	J6C - Caroline Hill Road (West) Southbound / Caroline Hill Road (West) Northbound / Link Road Southbound	Priority	-	-	-	-	0.38	0.49	0.51	0.58
J7	Caroline Hill Road / Cotton Path	Priority	0.13	0.21	0.07	0.15	0.23	0.29	0.15	0.22
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Signal	30%	33%	20%	19%	29%	33%	21%	20%
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Signal	57%	44%	45%	44%	47%	37%	40%	40%
J10	Causeway Road / Moreton Terrace	Signal	46%	35%	27%	37%	40%	29%	23%	32%
J11	Pennington Street / Irving Street / Jardine's Bazaar	Signal	230%	193%	175%	187%	230%	193%	175%	187%
J12	Link Road / Broadwood Road	Signal	25%	33%	27%	23%	19%	25%	20%	18%
J13	Broadwood Road / Ventris Road	Priority	0.55	0.55	0.56	0.54	0.58	0.59	0.58	0.58
J14	Wong Nai Chung Road / Sports Road	Signal	195%	161%	166%	146%	164%	142%	153%	132%
J15	Leighton Road / Wong Nai Chung Road	Signal	40%	35%	32%	37%	28%	20%	18%	24%
J16	Tung Lo Wan Road / Eastern Hospital Road	Signal	68%	65%	94%	84%	54%	55%	79%	72%
J17	Tung Lo Wan Road / Moreton Terrace	Signal	46%	27%	33%	84%	41%	25%	31%	78%
J18	Caroline Hill Road (East) / New Access Road	Priority	-	-	-	-	0.23	0.19	0.15	0.11
J19	Hysan Avenue / Hoi Ping Road	Priority	0.43	0.43	0.44	0.41	0.61	0.56	0.53	0.52
J20	Tung Lo Wan Road / Tai Hang Road	Priority	0.67	0.69	0.72	0.35	0.69	0.70	0.73	0.35

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

6.1.7 The assessment results in **Table 6.1** show that all identified junctions with their existing traffic arrangements will be operating within their capacities during the peak hours on weekday and weekend in the reference scenario of year 2031 without the Development and District Court. The junction J5 was identified the most critical junction in the reference scenario but its RC at 15% is still considered acceptable during the noon peak on weekday.

6.1.8 With implementation of the proposed road scheme at the Green Areas, the assessment results show that the operational performance of the critical junction J5 can be improved with sufficient reserve capacity to cater for the future traffic flows induced by the Development and the District Court in the design scenario of year 2031. Besides, the assessment results reveal that all identified junctions including the modified junction J6 with signal control and the new priority junction J18 will be operating adequate capacities in the design scenario of year 2031.

6.1.9 In addition, it was assessed that the junction performance at J6 would be still acceptable under the priority control arrangement. Nevertheless, the proposed signal control arrangement would offer a better scheme to avoid the potential grid-lock at the junction and to enhance road safety.

6.2 Queue Length Analysis for Year 2031 Reference and Design Scenarios

6.2.1 The estimated queue length along the approaching arms of the critical signal junctions based on 2031 traffic flow under reference and design scenarios are summarized in **Table 6.2** below. The details of the queue length analysis and results are attached in **Appendix E**.

Table 6.2 Average Queue Length in Year 2031 Reference and Design Scenarios

Ref No.	Junctions	Movement	Capacity (m)	Average Queue Length (m)							
				Reference Scenario				Design Scenario			
				Weekday			Weekend	Weekday			Weekend
				AM	Noon	PM	Noon	AM	Noon	PM	Noon
J1	Hennessy Road / Percival Street	Hennessy Road WB	150	25	28	33	29	27	30	34	30
		Hennessy Road EB	110	13	18	18	22	19	22	22	25
		Percival Street SB	34	24	25	26	26	24	25	26	26
J2	Matheson Street / Percival Street / Russell Street	Percival Street SB	65	15	20	19	21	17	21	21	22
		Matheson Street NB	65	8	10	11	11	8	10	11	11
J3	Leighton Road / Percival Street / Hysan Avenue	Leighton Road WB	150	25	32	25	39	30	38	35	45
		Leighton Road EB	115	21	31	19	33	25	35	25	36
		Percival Street SB	115	19	29	28	32	22	32	24	36
J4	Leighton Road / Hysan Avenue / Leighton Lane	Leighton Road WB	120	22	20	21	21	24	24	24	25
		Leighton Road EB	35	13	14	15	20	13	14	15	20
		Hysan Avenue SB	48	4	4	6	6	4	4	6	6
J5	Leighton Road / Caroline Hill Road (West)	Leighton Road WB	90	33	19	25	44	26	26	28	30
		Caroline Hill Road NB	90	19	34	21	27	42	46	49	48
		Leighton Road EB	115	39	16	35	23	20	25	29	36
		Hoi Ping Road SB	105	19	47	23	38	25	25	26	26
J6	Caroline Hill Road (West) / Link Road / New Access Road	Caroline Hill Road SB	40	N/A				29	26	25	28
		Link Road NB	100					34	36	36	36
		New Access Road WB	150					13	15	15	13
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Leighton Road WB	195	26	26	36	32	27	25	34	31
		Caroline Hill Road NB	175	5	6	5	13	9	11	10	19
		Leighton Road EB	85	32	32	42	39	31	31	41	37
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Causeway Road WB	95	32	35	36	37	35	37	38	38
		Tung Lo Wan Road NB	80	8	14	7	11	8	14	8	11
		Causeway Road EB	45	18	21	21	22	19	22	22	22
J10	Causeway Road / Moreton Terrace	Causeway Road WB	>200	22	20	21	23	25	22	23	26
		Moreton Terrace NB	120	48	45	54	49	65	56	63	61
		Causeway Road EB	90	24	29	28	29	25	24	29	29
J11	Pennington Street / Jardine's Bazaar / Irving Street	Irving Street WB	150	10	13	12	11	10	13	12	11
		Pennington Street NB 1st stop	100	17	22	20	19	16	22	19	19
		Pennington Street NB 2nd stop	40	11	12	13	12	11	12	13	12

Table 6.2 Average Queue Length in Year 2031 Reference and Design Scenarios (Cont'd)

Ref No.	Junctions	Movement	Capacity (m)	Average Queue Length (m)							
				Reference Scenario				Design Scenario			
				Weekday			Weekend	Weekday			Weekend
				AM	Noon	PM	Noon	AM	Noon	PM	Noon
J12	Link Road / Broadwood Road	Link Road SB	155	51	36	48	38	56	42	55	44
		Broadwood Road (E) NB	140	36	33	36	30	47	39	40	37
		Broadwood Road (W) NB	>200	57	40	51	44	60	42	55	46
J14	Wong Nai Chung Road / Sports Road	Sports Road EB	180	15	15	16	15	16	16	17	16
		Wong Nai Chung Road SB	120	12	13	14	13	13	13	14	13
J15	Leighton Road / Wong Nai Chung Road	Leighton Road WB	155	22	22	23	22	23	25	26	24
		Leighton Rd EB	75	11	14	11	13	12	14	11	13
J16	Tung Lo Wan Road / Eastern Hospital Road	Tung Lo Wan Rd SB	85	25	23	22	24	25	24	23	25
		Ka Ning Path NB	95	27	26	25	26	31	29	28	28
J17	Tung Lo Wan Road / Moreton Terrace	Tung Lo Wan Rd EB (Section between Tai Hang Road and Moreton Terrace)	70	33	33	35	28	35	36	39	30
		Tung Lo Wan Rd WB (Section between Tung Lo Wan Road and Tung Lo Wan Drive)	>200	28	30	32	27	28	28	30	27
		Tung Lo Wan Rd EB (West of Tung Lo Wan Drive)	60	24	24	26	18	24	23	24	18
		Tung Lo Wan Drive SB	>200	21	25	25	18	21	26	27	18

6.2.2 As shown in **Table 6.2**, the results have indicated the available queue lengths provided at the signal junctions including the modified junction J6 with signal control will be sufficient to cater for average vehicle queues during peak hour in both the reference and design scenarios of year 2031.

7. PEDESTRIAN FACILITIES AND ASSESSMENT

7.1 Existing Pedestrian Situation

7.1.1 Currently, the pedestrians in the Caroline Hill Road area are relying on the at-grade footpaths and pedestrian crossing facilities including the signalized and cautionary crossings provided at Caroline Hill Road and Leighton Road traveling to/from the central area of Causeway Bay, MTR station and other public transport facilities. The key pedestrian corridors are mainly Leighton Road, Hoi Ping Road, Sunning Road, Yun Ping Road and Pennington Street.

7.1.2 To obtain the update pedestrian flows for the review on the existing pedestrian situation in the vicinity of the subject site, pedestrian head count surveys have been conducted at the at-grade footpaths and pedestrian crossings along the key pedestrian corridors between the hours of 08:00-10:00, 11:30-13:30 and 17:30-19:30 on a typical weekday and the hours of 11:30-13:30 on a weekend (Saturday) in September 2021. The locations of the surveyed footpaths and pedestrian crossings are indicated in **Drawing No. 7.1**.

7.1.3 The observed pedestrian data indicated that AM, Noon and PM peak hour pedestrian flows occurred during hours of 08:15-09:15, 12:30-13:30 and 18:00-19:00 respectively on a typical weekday, and the weekend peak hour pedestrian flows during the hours of 11:30-12:30.

7.1.4 The pedestrian facilities are assessed by the surveyed peak pedestrian flows with reference to the criteria of Level-of-Service (LOS) from Highway Capacity Manual (HCM) 2000 as exhibited in TPDM. The observed pedestrian flows and LOS assessment results are summarized in the **Table 7.1**.

Table 7.1 Operational Performance of Existing Pedestrian Facilities

Location[1]	Clear Width (m)	Effective Width[2] (m)	Observed 2-way Pedestrian Flow[3] (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	350	410	770	550	A	A	A	A
3	2.9	1.9	290	420	210	260	A	A	A	A
4	2.0	1.0	430	510	800	700	A	A	A	A
5	3.2	2.2	430	580	660	420	A	A	A	A
6	2.3	1.3	270	400	390	340	A	A	A	A
7	2.0	1.0	190	160	190	150	A	A	A	A
8	2.0	1.0	190	190	340	340	A	A	A	A
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	480	700	500	520	A	A	A	A
11	2.3	1.3	150	130	190	100	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	530	1190	850	910	A	A	A	A
14	2.5	1.5	330	790	680	640	A	A	A	A
15	2.2	1.2	850	1380	1050	1070	A	B	A	A
16	2.0	1.0	150	220	190	200	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	890	2380	1310	1350	A	B	A	A
19	3.0	2.0	480	1150	710	850	A	A	A	A
20	1.7	0.7	30	50	30	50	A	A	A	A
C1	4.0	4.0	520	530	430	410	A	A	A	A

Table 7.1 Operational Performance of Existing Pedestrian Facilities (Cont'd)

Location[1]	Clear Width (m)	Effective Width[2] (m)	Observed 2-way Pedestrian Flow[3] (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
C2	3.6	3.6	130	240	220	270	A	A	A	A
C3	3.3	3.3	370	330	350	240	A	A	A	A
C4	3.3	3.3	280	500	400	290	A	A	A	A
C5	3.6	3.6	380	330	380	410	A	A	A	A
C6	6.8	6.8	790	1490	1080	1120	A	A	A	A
C7	4.0	4.0	1000	1710	1250	1300	A	A	A	A
C8	4.2	4.2	1310	2400	1730	1940	A	C	B	B
C9	4.2	4.2	220	390	260	350	A	A	A	A
C10	6.4	6.4	1210	2530	1750	1950	A	B	A	A

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity.

7.1.5 The assessment results in **Table 7.1** suggested that all footpaths and pedestrian crossing facilities in the pedestrian network surrounding the subject site are currently operating at LOS C or better.

7.2 Future Pedestrian Facilities

Proposed Road Scheme at Green Areas

7.2.1 In the proposed road scheme at the Green Areas, the eastern footpath at Caroline Hill Road (West) would be widened to 3.5m. To facilitate the road improvement at the junction of Caroline Hill Road (West) / Link Road, the existing cautionary crossing at Caroline Hill Road (West) outside Po Leung Kuk would be permanently suspended. Pedestrians could cross the road by using the adjacent signalized and cautionary crossing in the future upon the implementation of the proposed road scheme.

7.2.2 To cater for the increased pedestrian demand across Leighton Road upon the completion of the Development and the District Court, the signalized crossings at the eastern entry arm of junction of Leighton Road/Caroline Hill Road (West)/Yun Ping Road would be widened from the existing some 3m to 5m.

7.2.3 On Caroline Hill Road (East), there would be new cautionary crossing with refuge island provided near its junction with New Access Road. This new crossing would help on diverting the pedestrians to the wider footpath provided on the eastern side of Caroline Hill Road (East).

Pedestrian Links in Causeway Bay

7.2.4 The Chief Executive in Council has approved premium wavier for the pedestrian links in Causeway Bay (The Pedestrian Links) under the Policy of Facilitating Provision of Pedestrian Links by Private Sector in January 2021. The Pedestrian Links consist of a covered walkway along Yun Ping Road connecting Hysan Place with Lee Garden Two and four footbridges linking up Lee Garden Two, Lee Garden Three, Lee Garden Five, Lee Garden Six and the

subject site. The Pedestrian Links could divert pedestrians away from existing busy at-grade roads such as Yun Ping Road, Hysan Avenue, Pennington Street and Leighton Road. It would be a more direct, safe and comfortable access from the Causeway Bay MTR Station to the hinterland, covering areas frequented by pedestrians including the Development. The plan of Pedestrian Links as extracted from the Government's press release on 5 January 2021 is exhibited in **Appendix B**.

7.2.5 The Development will provide a footbridge connection to receive the future footbridge from Lee Garden Six, and the footbridge connection will link up with the internal pedestrian links/walkways leading to the public open space (POS), various commercial and community facilities as well as the street level of Caroline Hill Road as illustrated in **Drawing Nos. 7.2** and **7.3**.

7.2.6 To further enhance the pedestrian connectivity, accessibility and walkability, a landscape bridge is also proposed to link up the two portions of the subject site across the future new access road. Apart from the disable lift connecting the landscape bridge at 2/F with the GIC facilities and the ground level as shown in **Drawing Nos. 7.2** and **7.3**, shuttle lifts will also be provided at the Tower 3 site to serve the convenient pedestrian connection between 2/F and G/F during the office hours.

7.2.7 Furthermore, a proper pedestrian path will also be provided at the proposed POS of the Tower 3 site to serve as an alternative 24-hr pedestrian route between the landscape bridge's level and the ground level in a pleasant walkway environment as exhibited on the plan in **Appendix G**.

7.3 Pedestrian Forecasts and Future Pedestrian Condition

Background Pedestrian Growth

7.3.1 To derive the design year 2031 pedestrian flows in the pedestrian network, reference are made to the population and employment estimates from TPEDM in order to determine the background pedestrian growth in the area.

7.3.2 As discussed in **Section 5.2**, the estimates of both the population and employment for the Wan Chai District in the planning data were decreasing from year 2021 to 2026, and thus a nominal growth rate of +0.1% is adopted to cover the growth in background pedestrian flows from year 2021 upto the design year of 2031 for a conservative approach.

Pedestrian flows induced by the Development and the Planned Potential Future Developments

7.3.3 The potential pedestrian generation and attraction of the Development are estimated by the proposed development schedule as listed in **Table 2.1** and the consultant's in-house pedestrian trip rates as obtained from various traffic surveys. The adopted pedestrian trip rates and the estimated pedestrian generation and attraction of the Development are presented in **Table 7.2.** The details of the surveyed pedestrian trip rates at the reference sites are attached in **Appendix F**.

Table 7.2 Estimated Pedestrian Generation of the Development

Development Component	Weekday						Weekend	
	AM		Noon		PM		Noon	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
Office - 85,000 m²								
Adopted Trip Rates (1) (ped/hr/100 m²)	0.27	2.74	2.70	1.01	2.66	0.33	0.27	0.37
Estimated Trips (ped/hr)	230	2,329	2,295	859	2,261	281	230	315
Retail - 10,000 m²								
Adopted Trip Rates (2) (ped/hr/100 m²)	1.92	2.52	6.00	4.52	4.96	6.44	6.19	6.83
Estimated Trips (ped/hr)	192	252	600	452	496	644	619	683
Government Accommodation (Child Care Centre) – 805 m²								
Adopted Trip Rates (3) (ped/hr/100 m²)	0.35	0.68	0.66	0.19	0.41	0.15	3.21	1.60
Estimated Trips (ped/hr)	3	6	6	2	3	1	27	14
Government Accommodation (District Health Centre) – 1,600 m²								
Adopted Trip Rates (4) (ped/hr/100 m²)	2.39	6.52	0.80	1.15	2.13	1.20	1.86	2.12
Estimated Trips (ped/hr)	38	104	13	18	34	19	30	34
Government Accommodation (Day Care Centre for the Elderly) – 550 m²								
Adopted Trip Rates (5) (ped/hr/100 m²)	0.09	0.66	1.13	0.94	0.57	0.09	0.38	0.38
Estimated Trips (ped/hr)	1	4	6	5	3	1	2	2
Public Vehicle Park – 125 spaces								
Adopted Trip Rates (6) (ped/hr/space)	0.59	0.10	0.36	0.34	0.27	0.67	0.58	0.87
Estimated Trips (ped/hr)	74	13	45	43	34	84	73	109
Additional GIC Facilities (Performing Arts and Cultural Facilities) – 2,000 m²								
Adopted Trip Rates (7) (ped/hr/100 m²)	0.57	0.95	0.76	1.00	0.67	1.72	1.49	1.29
Estimated Trips (ped/hr)	11	19	15	20	13	34	30	26
Total	**549**	**2,727**	**2,980**	**1,399**	**2,844**	**1,064**	**1,011**	**1,183**

Notes:
(1) Pedestrian trip rates derived from the consultant's surveyed trip rates from office portion at Lee Garden One, Two and Three
(2) Pedestrian trip rates derived from the consultant's surveyed trip rates from retail portion at Lee Garden One, Two and Three
(3) Pedestrian trip rates derived from the consultant's surveyed trip rates from SIA Shaukiwan Day Creche
(4) Pedestrian trip rates derived from the consultant's surveyed trip from Central District Health Centre General Outpatient Clinic
(5) Pedestrian trip rates derived from the consultant's surveyed trip rates from T.W.G.Hs. Anita Mui Day Care Centre for the Elderly
(6) Pedestrian trip rates derived from consultant's surveyed trip rates from ex-Murray Road Multi-storey Car Park
(7) Pedestrian trip rates derived from the consultant's surveyed highest trip rates from Yao Tsung-I Academy, Kwai Tsing Theatre and M+

7.3.4 As discussed in **Section 5.2**, there are some planned/potential developments identified in the vicinity of the subject site as listed in **Table 5.3**. Additional pedestrian trips induced by these developments were estimated as shown in **Table 7.3.**

Table 7.3 Adopted Trip Rates and Estimated Pedestrian Generation of Planned Future Developments

	Weekday						Weekend	
	AM Peak		Noon Peak		PM Peak		Noon Peak	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
1. District Court Site – 70,000m² GFA								
Adopted Trip Rates (1) (ped/hr/100 m²)	0.25	2.71	1.70	0.84	1.22	0.43	N/A(2)	N/A(2)
Estimated Trips (ped/hr)	175	1,898	1,189	591	855	303	20(2)	20(2)
2. Commercial Development in 8 Leighton Road – 14,945 m² GFA								
Adopted Trip Rates (3) (ped/hr/100 m²)	0.27	2.74	2.70	1.01	2.66	0.33	0.27	0.37
Estimated Trips (ped/hr)	40	409	404	151	398	49	40	55
3. Commercial Development in 1-5 Irving Street and 14 Pennington Street - 7,548.8 m² GFA								
Adopted Trip Rates (3) (ped/hr/100 m²)	0.27	2.74	2.70	1.01	2.66	0.33	0.27	0.37
Estimated Trips (ped/hr)	20	207	204	76	201	25	20	28
4. Redevelopment of Po Leung Kuk Headquarters – Additional 322 Service Quotas								
Adopted Trip Rates (4) (ped/hr/quota)	0.31	0.52	0.51	0.24	0.59	0.08	0.17	0.05
Estimated Trips (ped/hr)	99	166	163	77	191	25	56	16

Notes: (1) Pedestrian trip rates derived from the consultant's surveyed trip rates from Wanchai Tower and Lands Tribunal in September 2021

(2) Since the existing Wanchai Tower and Lands Tribunal are closed in weekend, a nominal pedestrian trips of 20 ped/hr is adopted.

(3) Pedestrian trip rates derived from the consultant's surveyed trip rates from office portion at Lee Garden One, Two and Three

(4) Pedestrian trip rates derived from the consultant's surveyed trip rates from the existing Po Leung Kuk

7.3.5 The estimated pedestrian trips of the Development and the planned/potential developments were then distributed and assigned onto the pedestrian network based on the three future scenarios as follows:

- Reference Scenario in Year 2031 – under the existing pedestrian network without the Development, the District Court and the proposed road scheme at Green Areas;
- Design Scenario in Year 2031 – with the Development, the District Court and the proposed road scheme at Green Areas; and
- Ultimate Scenario in Year 2031 - with the Development, the District Court, the proposed road scheme at Green Areas as well as the future footbridge connecting the Development with Lee Garden Six.

Future Pedestrian Condition in Reference Scenario

7.3.6 The anticipated future pedestrian flows and the assessed LOS for footpaths and pedestrian crossing facilities in the reference scenario of year 2031 are shown in **Table 7.4**.

Table 7.4 Operational Performance of Pedestrian Facilities in Reference Scenario of Year 2031

Location[1]	Clear Width (m)	Effective Width[2] (m)	Year 2031 Two-way Pedestrian Flows[3] In Reference Scenario (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	350	410	770	550	A	A	A	A
3	2.9	1.9	410	450	220	260	A	A	A	A
4	2.0	1.0	430	510	800	700	A	A	A	A
5	3.2	2.2	460	610	700	440	A	A	A	A
6	2.3	1.3	320	460	440	370	A	A	A	A
7	2.0	1.0	300	270	280	190	A	A	A	A
8	2.0	1.0	190	190	340	340	A	A	A	A
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	530	760	550	540	A	A	A	A
11	2.3	1.3	150	130	190	100	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	530	1200	860	920	A	A	A	A
14	2.5	1.5	350	820	700	640	A	A	A	A
15	2.2	1.2	880	1430	1080	1090	A	B	A	A
16	2.0	1.0	150	220	190	200	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	900	2410	1330	1370	A	B	A	A
19	3.0	2.0	480	1170	710	850	A	A	A	A
20	1.7	0.7	30	50	30	50	A	A	A	A
C1	4.0	4.0	750	720	600	480	A	A	A	A
C2	3.6	3.6	180	280	270	290	A	A	A	A
C3	3.3	3.3	540	470	470	280	A	A	A	A
C4	3.3	3.3	280	500	400	290	A	A	A	A
C5	3.6	3.6	380	330	380	410	A	A	A	A
C6	6.8	6.8	800	1510	1100	1130	A	A	A	A
C7	4.0	4.0	1020	1730	1270	1320	A	A	A	A
C8	4.2	4.2	1330	2430	1750	1960	A	C	B	B
C9	4.2	4.2	220	390	260	350	A	A	A	A
C10	6.4	6.4	1220	2550	1770	1970	A	B	A	A

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity.

7.3.7 As shown in the **Table 7.4**, the assessment results suggested that the existing footpaths and pedestrian crossing facilities in the surrounding will be able to cater for the future pedestrian flows in the reference scenario of year 2031 with operating at LOS C or better.

7.3.8 Apart from the footpaths and pedestrian crossing facilities, the LOS assessment on pedestrian waiting spaces provided at the two central refuge islands at the junction of Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) (Junction J8) are also conducted for the reference scenario of year 2031. The assessment results are summarized in the **Table 7.5**.

Table 7.5 Operational Performance of Central Refuge Islands at J8 in Reference Scenario of Year 2031

Location	Effective Area (m^2)	Estimated Average Number of Pedestrian Waiting at Refuge Island[1]				Level-of-Service[2] (LOS)			
		Weekday			Weekend	Weekday			Weekend
		AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
Northern Refuge Island	18	10	15	15	14	A	B	B	A
Southern Refuge Island	21	2	4	3	4	A	A	A	A

Notes: (1) Estimated by the forecasted pedestrian crossing demand and MOC of the signal junction.

(2) Based on the criteria of LOS from Table 18-7 in Chapter 18 of HCM 2000, the LOS reflects the space per person which is computed by effective waiting area divided by waiting pedestrian. LOS is A for space > $1.2m^2$; B for space > 0.9-$1.2m^2$; C for space > 0.6-$0.9m^2$; D for space > 0.3-$0.6m^2$; E for space > 0.2-$0.3m^2$ and F for space ≤ $0.2m^2$.

7.3.9 As shown in **Table 7.5**, the assessment results suggested that the available waiting spaces provided on the refuge islands at Junction J8 will still able to cater for the anticipated waiting pedestrian demand at acceptable LOS in the reference scenario of year 2031.

Future Pedestrian Condition in Design Scenario

7.3.10 In the design scenario, the Development, the District Court and the proposed road scheme at Green Areas were taken into account for pedestrian forecast and assessment. The anticipated future pedestrian flows and the assessed LOS at the footpaths and pedestrian crossing facilities in the design scenario of year 2031 are shown in **Table 7.6**.

Table 7.6 Operational Performance of Pedestrian Facilities in Design Scenario of Year 2031

Location[1]	Clear Width (m)	Effective Width[2] (m)	Year 2031 Two-way Pedestrian Flows[3] In Design Scenario (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	350	410	770	550	A	A	A	A
3	2.9	1.9	410	450	220	260	A	A	A	A
4[5]	3.5	2.5	1180	1160	1220	700	A	A	A	A
5	3.2	2.2	520	670	750	460	A	A	A	A
6	2.3	1.3	640	830	740	500	A	A	A	A
7	2.0	1.0	460	460	430	260	A	A	A	A
8	2.0	1.0	1450	1640	1530	860	C	C	C	A
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	690	950	700	610	A	A	A	A
11	2.3	1.3	150	130	190	100	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	1140	1910	1450	1180	A	B	B	A
14	2.5	1.5	990	1560	1300	900	A	B	A	A
15	2.2	1.2	1470	2110	1640	1330	B	C	B	B
16	2.0	1.0	520	650	550	350	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	900	2410	1330	1370	A	B	A	A
19	3.0	2.0	2030	2960	2180	1480	B	C	B	A
20	1.7	0.7	850	1000	810	390	B	C	B	A
C1	4.0	4.0	810	780	650	500	A	A	A	A
C2	3.6	3.6	550	710	630	440	A	A	A	A
C3	3.3	3.3	860	840	770	410	A	A	A	A
C4	3.3	3.3	440	690	550	360	A	A	A	A
C5[6]	5.0	5.0	1800	1960	1720	990	B	C	B	A
C6	6.8	6.8	1410	2220	1690	1390	A	A	A	A
C7	4.0	4.0	2250	3150	2430	1820	B	B	B	A
C8	4.2	4.2	3180	4560	3500	2720	C	**D**	**D**	C
C9	4.2	4.2	590	820	620	500	A	A	A	A
C10	6.4	6.4	3440	5110	3870	2880	B	**D**	C	B

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity
(5) The clear width of footpath will be widened from the existing 2m to 3.5m upon the implementation of the proposed road scheme at the Green Areas
(6) The crossing width will be widened from the existing 3.6m to 5m upon the implementation of the proposed road scheme at the Green Areas.

7.3.11 As shown in the **Table 7.6**, the assessment results suggested that all the pedestrian facilities in the surrounding will be still operated at LOS C or better in the design scenario of year 2031, except the pedestrian crossings (locations C8 and C10) at Leighton Road would operate at LOS D. Nevertheless, LOS D is still considered an acceptable level for operation at the existing pedestrian facilities especially the pedestrian situation will be improved upon the commissioning of the Pedestrian Links with future footbridge connecting the Development to Lee Garden Six.

7.3.12 Notwithstanding the future footbridges should be deemed as the long-term solution to enhance pedestrian conditions in the Causeway Bay South area, it is reviewed that slightly increase of the green time for the pedestrian crossings C6, C8 and C10 by 3 seconds for weekday noon would improve the pedestrian crossing C10 from LOS D to LOS C, while increasing the green time by 4 seconds for evening peak on weekday would improve the pedestrian crossing C8 from LOS D to LOS C. The proposed increase in pedestrian green time will not cause significant impact to junction performance and queue length.

7.3.13 The LOS assessment on pedestrian waiting spaces provided at the two central refuge islands Junction J8 are also conducted for the design scenario of year 2031. The assessment results are summarized in the **Table 7.7**.

Table 7.7 Operational Performance of Central Refuge Islands at J8 in Design Scenario of Year 2031

Location	Effective Area (m^2)	Estimated Average Number of Pedestrian Waiting at Refuge Island[(1)]				Level-of-Service[(2)] (LOS)			
		Weekday			Weekend	Weekday			Weekend
		AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
Northern Refuge Island	18	28	27	25	20	C	C	C	C
Southern Refuge Island	21	8	7	7	6	A	A	A	A

Notes: (1) Estimated by the forecasted pedestrian crossing demand and MOC of the signal junction.

(2) Based on the criteria of LOS from Table 18-7 in Chapter 18 of HCM 2000, the LOS reflects the space per person which is computed by effective waiting area divided by waiting pedestrian. LOS is A for space > $1.2m^2$; B for space > 0.9-$1.2m^2$; C for space > 0.6-$0.9m^2$; D for space > 0.3-$0.6m^2$; E for space > 0.2-$0.3m^2$ and F for space ≤ $0.2m^2$.

7.3.14 As shown in **Table 7.7**, the assessment results suggested that the available waiting spaces provided on the refuge islands at Junction J8 will still able to cater for the anticipated waiting pedestrian demand at acceptable LOS in the design scenario of year 2031.

Future Pedestrian Condition in Ultimate Scenario

7.3.15 As discussed in **Section 7.2**, a footbridge connection will be provided at the Development to receive the future footbridge from Lee Garden Six, and the footbridge connection will link up the internal pedestrian links/walkways leading to the public open space, various commercial and community facilities as well as the street level of Caroline Hill Road.

7.3.16 With the connection to the future footbridge, the Development will be linked up with the Pedestrian Links such that the at-grade pedestrian flows would be diverted from the street level to the elevated level in particular the north-south movements between the MTR station and the subject site. The re-distribution of north-south pedestrian movements with the future footbridges is illustrated in **Drawing No. 7.4**.

7.3.17 By taking into account the future footbridge connection to Lee Garden Six, the future pedestrian flows in the ultimate scenario of year 2031 derived as shown **Table 7.8**. The results of LOS assessments for the ultimate scenario are also presented in the **Table 7.8**.

Table 7.8 Operational Performance of Pedestrian Facilities in Ultimate Scenario of Year 2031

Location[1]	Clear Width (m)	Effective Width[2] (m)	Observed 2-way Pedestrian Flow[3] (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	350	410	770	550	A	A	A	A
3	2.9	1.9	410	450	220	260	A	A	A	A
4[5]	3.5	2.5	660	690	940	690	A	A	A	A
5	3.2	2.2	520	670	750	460	A	A	A	A
6	2.3	1.3	480	640	590	430	A	A	A	A
7	2.0	1.0	360	340	330	170	A	A	A	A
8	2.0	1.0	410	410	580	470	A	A	A	A
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	690	950	700	610	A	A	A	A
11	2.3	1.3	80	60	150	70	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	420	1290	820	800	A	A	A	A
14	2.5	1.5	370	960	710	650	A	A	A	A
15	2.2	1.2	1150	1770	1330	1190	A	C	B	B
16	2.0	1.0	330	430	370	270	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	900	2410	1330	1370	A	B	A	A
19	3.0	2.0	660	1610	930	890	A	A	A	A
20	1.7	0.7	380	480	380	210	A	A	A	A
C1	4.0	4.0	810	750	620	480	A	A	A	A
C2	3.6	3.6	390	520	480	370	A	A	A	A
C3	3.3	3.3	700	630	590	320	A	A	A	A
C4	3.3	3.3	380	600	490	360	A	A	A	A
C5[6]	5.0	5.0	660	630	670	540	A	A	A	A
C6	6.8	6.8	680	1520	1060	1040	A	A	A	A
C7	4.0	4.0	1310	2200	1530	1430	A	B	A	A
C8	4.2	4.2	1540	2920	2000	2020	A	C	B	B
C9	4.2	4.2	400	600	440	420	A	A	A	A
C10	6.4	6.4	1620	3250	2200	2110	A	B	B	A

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity
(5) The clear width of footpath will be widened from the existing 2m to 3.5m upon the implementation of the proposed road scheme at the Green Areas
(6) The crossing width will be widened from the existing 3.6m to 5m upon the implementation of the proposed road scheme at the Green Areas

7.3.18 As shown in **Table 7.8**, the operation performance of the critical pedestrian crossings at Leighton Road (locations C8 and C10) can be significantly improved to the LOS C or better upon commissioning of the future footbridge connecting the Development with Lee Garden Six.

7.3.19 In addition, the results of LOS assessment on pedestrian waiting space in **Table 7.9** also reflected that the future footbridge would help on improving the pedestrian waiting condition on the refuge islands at Junction J8.

Table 7.9 Operational Performance of Central Refuge Islands at J8 in Ultimate Scenario of Year 2031

Location	Effective Area (m^2)	Estimated Average Number of Pedestrian Waiting at Refuge Island(1)				Level-of-Service(2) (LOS)			
		Weekday			Weekend	Weekday			Weekend
		AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
Northern Refuge Island	18	15	19	16	16	B	B	B	B
Southern Refuge Island	21	5	5	5	5	A	A	A	A

Notes: (1) Estimated by the forecasted pedestrian crossing demand and MOC of the signal junction.

(2) Based on the criteria of LOS from Table 18-7 in Chapter 18 of HCM 2000, the LOS reflects the space per person which is computed by effective waiting area divided by waiting pedestrian. LOS is A for space > $1.2m^2$; B for space > 0.9-$1.2m^2$; C for space > 0.6-$0.9m^2$; D for space > 0.3-$0.6m^2$; E for space > 0.2-$0.3m^2$ and F for space ≤ $0.2m^2$.

8. SUMMARY AND CONCULSION

8.1 Summary

8.1.1 To support the Development and the District Court, a road scheme with road improvement works at Caroline Hill Road, Link Road, Hoi Ping Road and Leighton Road was proposed in the HyD's Traffic Review Report in 2019, and Road Scheme was gazetted and authorized in December 2020. The formation of the Green Areas of the subject site as required under the Lease is subject to the Road Scheme.

8.1.2 To serve the vehicular access to the Developments as well as the District Court, it is required to form a new access road at the PHB Strata of the subject site under the Lease.

8.1.3 As per the requirement of the Lease, a traffic review report is required to review the vehicular and pedestrian traffic conditions of the Green Areas, the PHB Strata and the local road network adjacent to and in the vicinity of the lot and the projected vehicular and pedestrian traffic for the future development at the lot; and to identify appropriate traffic mitigation measures, road routings, adjustments, designs, improvement and other measures and works. In compliance with the lease requirement, MVA was commissioned as a traffic consultant to conduct a traffic study and prepare a traffic review report.

8.1.4 For the purpose of serving different accesses to the various internal transport facilities to be provided in the Development, two vehicular accesses were planned at the on the new access road via the points as allowed under the Lease. It was proposed that the eastern access of the Development will mainly serve the accesses for light buses, goods vehicles and coaches while the western access will only serve the accesses for private cars and taxis.

8.1.5 The internal transport facilities of the development were proposed following the requirements in the Lease.

8.1.6 The road layout at the Green Areas was reviewed and proposed with reference the Road Scheme in HyD's traffic review report. The improvement works covered by the proposed scheme include: (i) modification of the existing priority junction at Caroline Hill Road (West) / Link Road into a roundabout-like junction; (ii) provision of an additional left-turning traffic lane at the eastern entry arm of Leighton Road at the junction of Leighton Road / Caroline Hill Road (West) / Hoi Ping Road; (iii) modification of the "left-turn" lane to "left-turn and right turn" shared lane at the entry arm of Caroline Hill Road of the junction of Leighton Road / Caroline Hill Road (West) / Hoi Ping Road; and (iv) road widening at Caroline Hill Road (East) near its junction with the future new access road to provide right-turn pocket and a refuge island for pedestrian.

8.1.7 To further improve the future traffic condition at the junction of Caroline Hill Road (West) and Link Road, the proposed road scheme has included the proposed signal control arrangement at the junction.

8.1.8 The layout of the new access road at the PHB Strata was proposed by taking into account the accessibility of both the future vehicular and pedestrian traffic as well as the constraint of the tree canopy of an old and valuable tree at the District Court site near the PHB Strata. It was proposed to connect with future road layout at the Green Areas on both the eastern and western section of Caroline Hill Road with provisions of two traffic lanes for each direction, minimum 3m wide footpaths on both sides and cautionary crossings at both ends and the

mid-section of the road. In addition, an on-street lay-by was proposed on the southern side of the road to serve as an alternative drop-off point for the general public especially for the Government Accommodation.

8.1.9 To review the existing traffic condition, traffic surveys were conducted at the identified key junctions on a weekday and a weekend in mid-September 2021. Based on the observed traffic flows, the results of junction operational assessment revealed that all identified key junctions were operating within capacities.

8.1.10 In view of the formations of the Green Areas and the PHB Strata shall be completed by 30th June 2026 as per the requirements under the Lease while the Development is also targeted to be completed by 2026, a design of 2031 was adopted for assessments.

8.1.11 To evaluate the effect to the surrounding road condition due to the Development as well as the road scheme proposed for the Green Areas and the PHB Strata, two future scenarios in year 2031 were assessed. The reference Scenario considered the existing traffic arrangement will be maintained without the Development and the District Court; and the design scenario was taken into account the proposed road scheme for Green Areas and the PHB Strata, the Development and the District Court.

8.1.12 Traffic forecasts for the design year 2031 were formulated by taken into consideration (i) the background traffic growth as derived from historical traffic data and planning data; (ii) the additional traffic as induced by the planned future development in the vicinity including the District Court; and (iii) the development traffic of the Development.

8.1.13 Junction operational assessments were carried out and the results showed that all identified junctions with their existing traffic arrangements will be operating within their capacities during the peak hours on weekday and weekend in the reference scenario of year 2031.

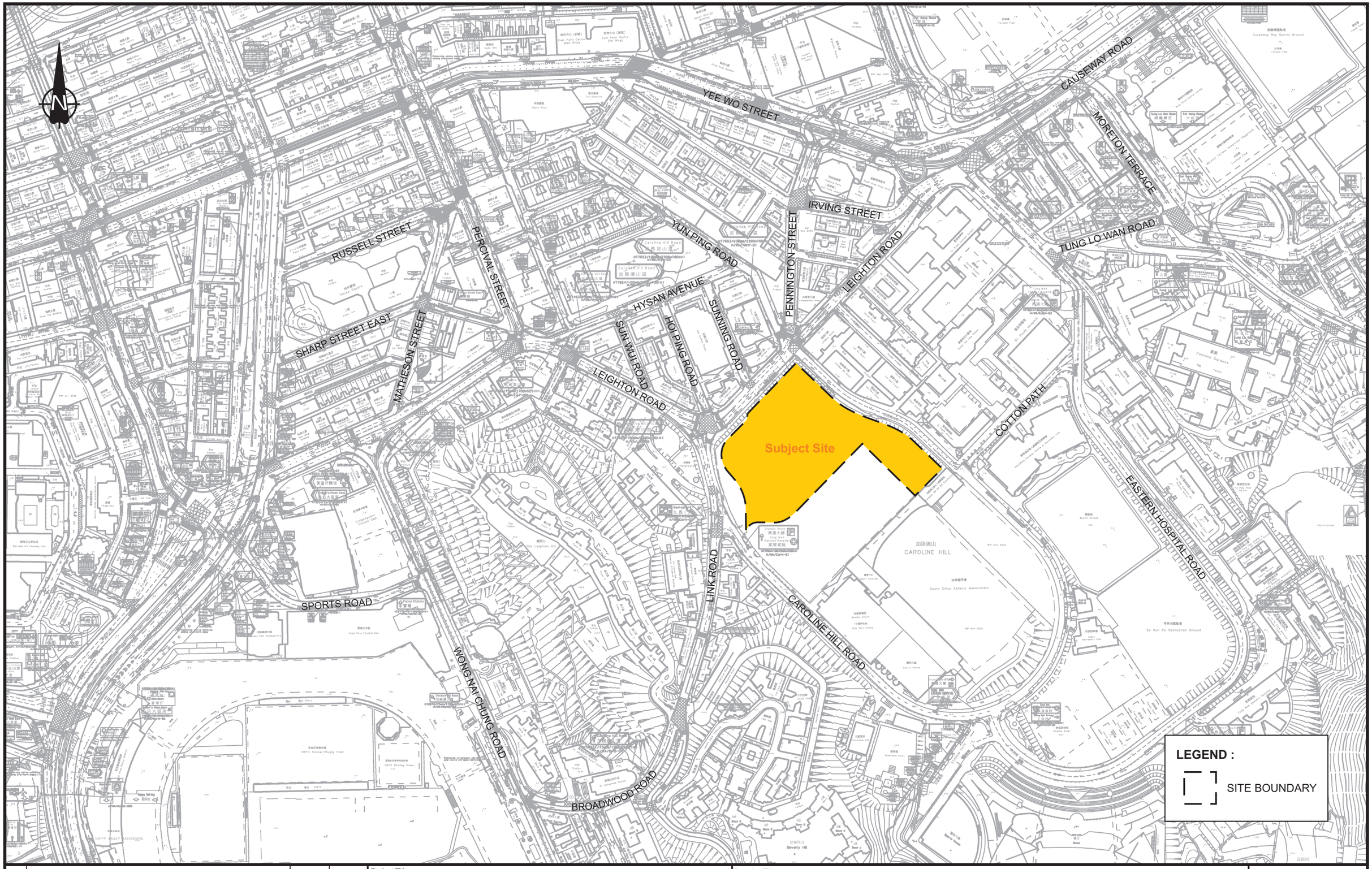
8.1.14 With implementation of the proposed road scheme at the Green Areas, the assessment results showed that all identified junctions, including the modified junction J5, the modified junction J6 with the proposed signal control arrangement and the new junction J18, will be operating with adequate capacities in the design scenario of year 2031.

8.1.15 In addition, pedestrian assessments was also conducted for the design year 2031. The assessment results suggested that all the pedestrian facilities in the surrounding will be still operated at acceptable LOS in the design scenario of year 2031. Upon the commissioning of the future footbridge connecting the Development with Lee Garden Six in the ultimate scenario, the pedestrian condition will be improved and all the pedestrian facilities in the surrounding will be operated at LOS C or better.

8.2 Conclusion

8.2.1 In conclusion, the results from this traffic review demonstrated that the surrounding road network with implementation of the proposed road scheme at the Green Areas and PHB Strata will be adequate to serve the future traffic demand upon the completions of the Development and the District Court. Meanwhile, the future footbridge connection and the proposed landscape bridge at the Development will improve the future pedestrian condition.

Drawings



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

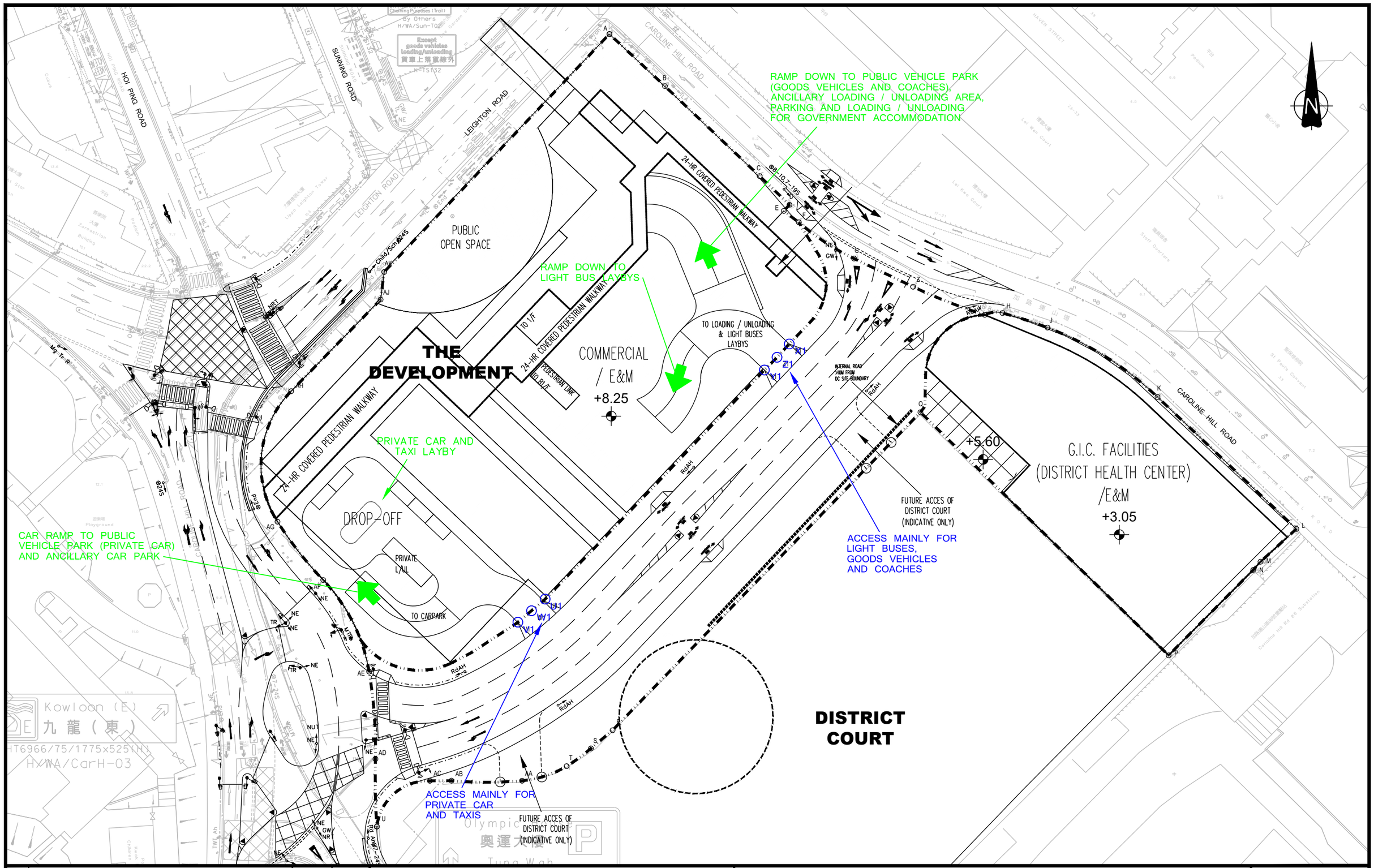
SITE LOCATION

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	1.1	-

SYSTRA MVA

CHK50603110/TIA/F11.CDR/LLH/9DEC21

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	14APR22
A	TD'S COMMENTS INCORPORATED	CHC	28FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

ACCESS ARRANGEMENT

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:1000(A3)	DEC 2021	2.1	B

SYSTRA MVA

CHK50603110/TIA/F21-B.DWG/KCM/14APR22

Original Size : A3

Western Access

- Light buses laybys at B1
- Ancillary loading / unloading area at B2
- Drop-off, parking & loading / unloading for government accommodation at B3
- Public vehicle park (goods vehicles & coaches) at B3

Eastern Access

- Private car / taxi layby at GF
- An ancillary loading / unloading bay (heavy goods vehicle) at GF
- Public vehicle park (private cars) at B3
- Ancillary car park at B3-B5

LEGEND :

- SITE BOUNDARY
- INGRESS TRAFFIC ROUTE
- EGRESS TRAFFIC ROUTE

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	13APR22
A	TD'S COMMENTS INCORPORATED	CHC	24FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

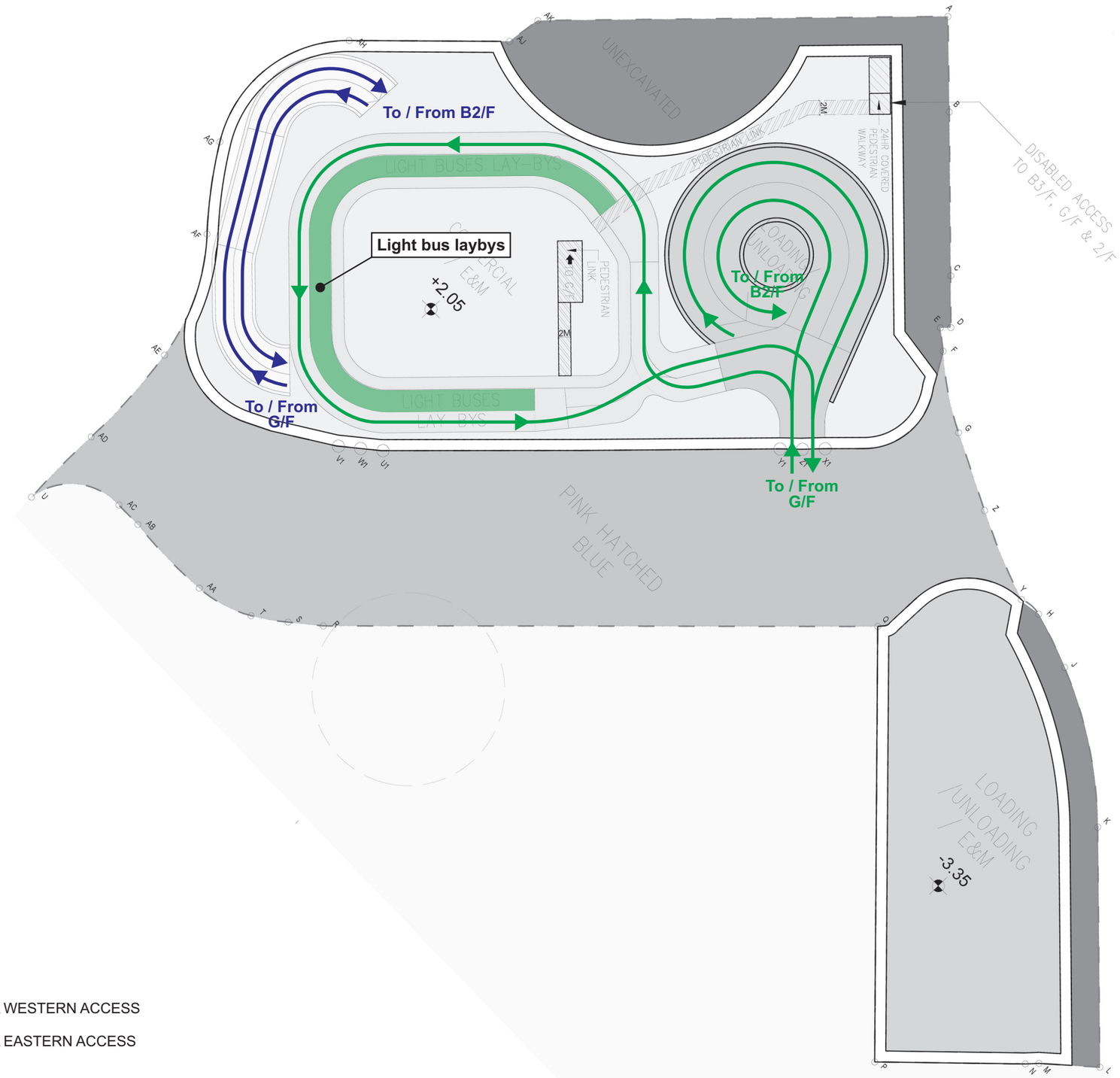
KEY INGRESS AND EGRESS TRAFFIC ROUTES

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	2.2	B

SYSTRA MVA

CHK50603110/TIA/F22-B.CDR/LLH/13APR22

Original Size : A3



LEGEND :

- VEHICULAR ROUTES VIA WESTERN ACCESS
- VEHICULAR ROUTES VIA EASTERN ACCESS

Note :
Internal traffic arrangement shown on the drawing is indicative only and it is subject to detail design.

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

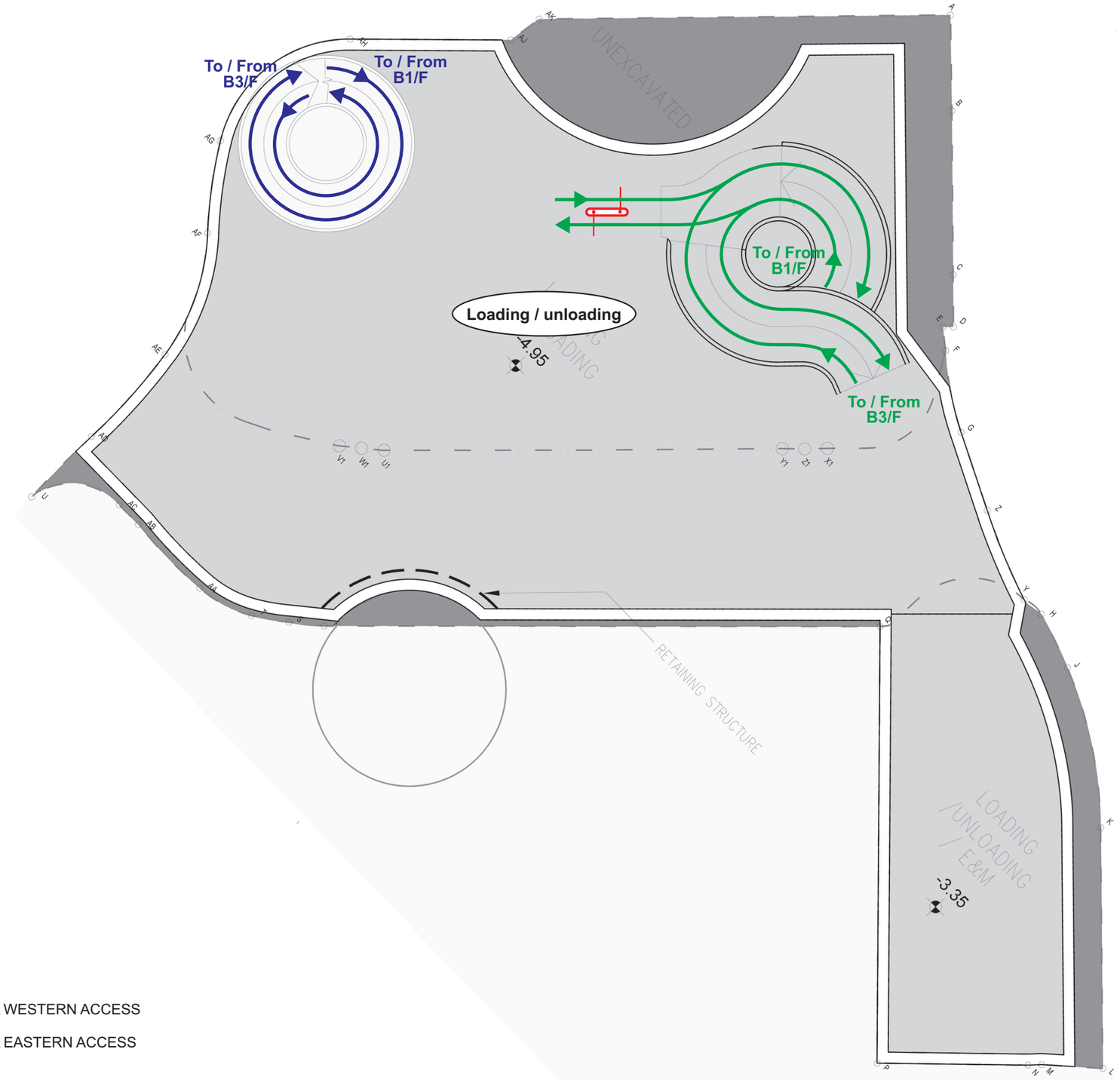
INTERNAL TRAFFIC ARRANGEMENT - B1/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	2.3	-

SYSTRA MVA

CHK50603110/TIA/F23.CDR/LLH/11APR22

Original Size : A3



LEGEND :

- CONTROL GATE
- VEHICULAR ROUTES VIA WESTERN ACCESS
- VEHICULAR ROUTES VIA EASTERN ACCESS

Note :
Internal traffic arrangement shown on the drawing is indicative only and it is subject to detail design.

Rev.	Description	Checked	Date
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-	-	-	-

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

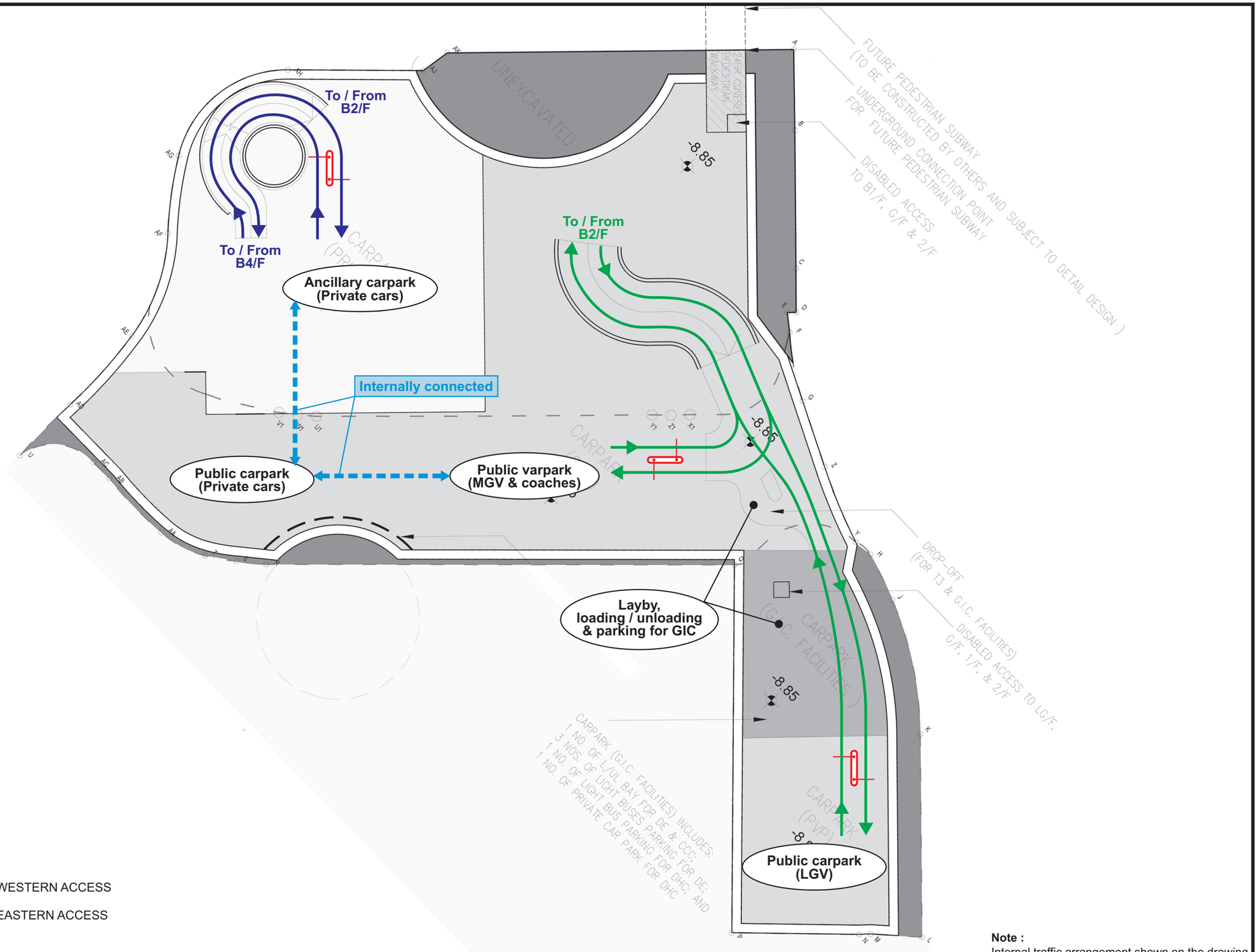
INTERNAL TRAFFIC ARRANGEMENT - B2/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	2.4	-

SYSTRA MVA

CHK50603110/TIA/F24.CDR/LLH/11APR22

Original Size : A3



LEGEND :

- CONTROL GATE
- VEHICULAR ROUTES VIA WESTERN ACCESS
- VEHICULAR ROUTES VIA EASTERN ACCESS

Note :
Internal traffic arrangement shown on the drawing is indicative only and it is subject to detail design.

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

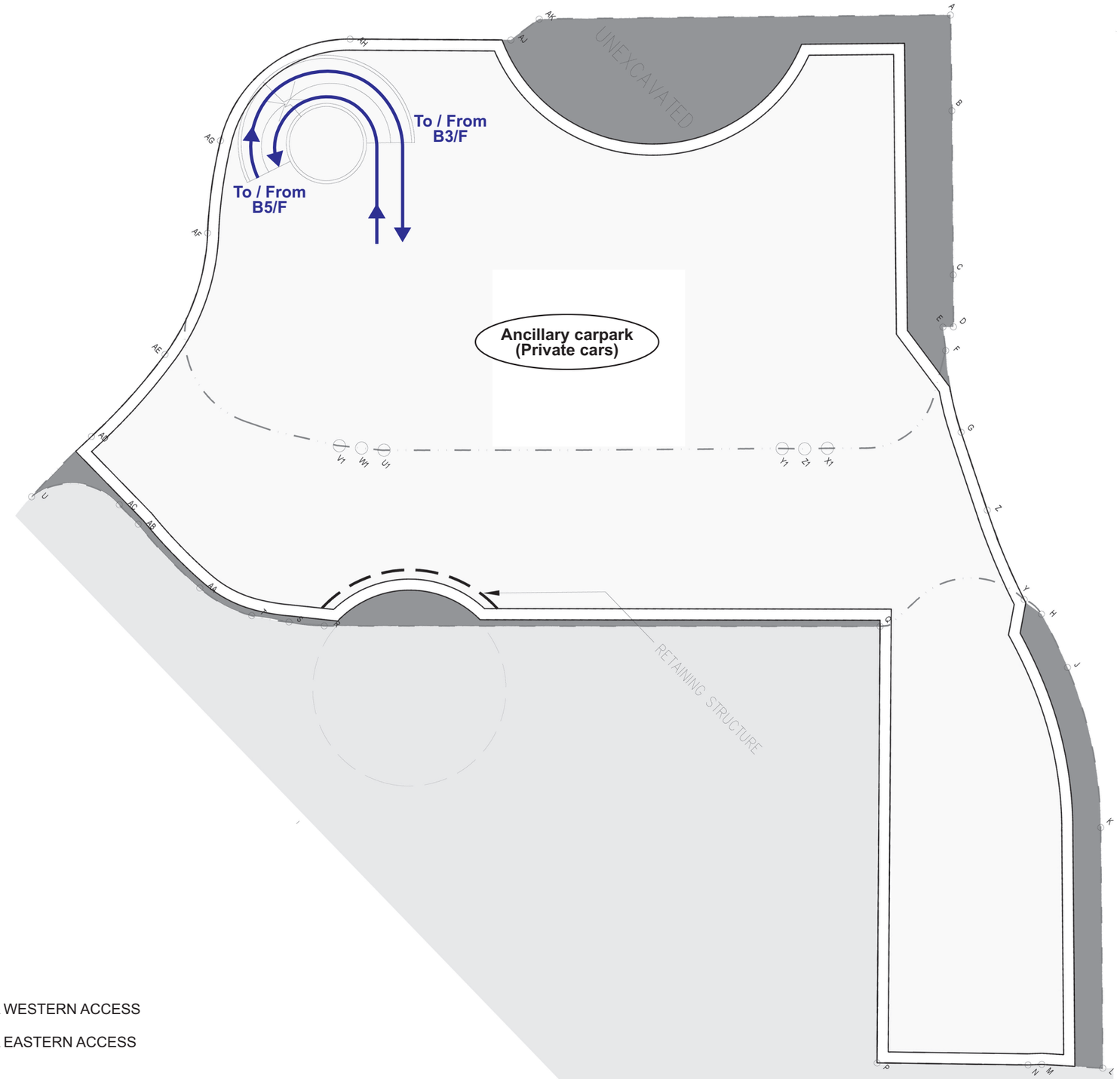
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Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

CHK50603110/TIA/F25.CDR/LLH/11APR22

Original Size : A3



LEGEND :

VEHICULAR ROUTES VIA WESTERN ACCESS

VEHICULAR ROUTES VIA EASTERN ACCESS

Note :
Internal traffic arrangement shown on the drawing is indicative only and it is subject to detail design.

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

Project Title

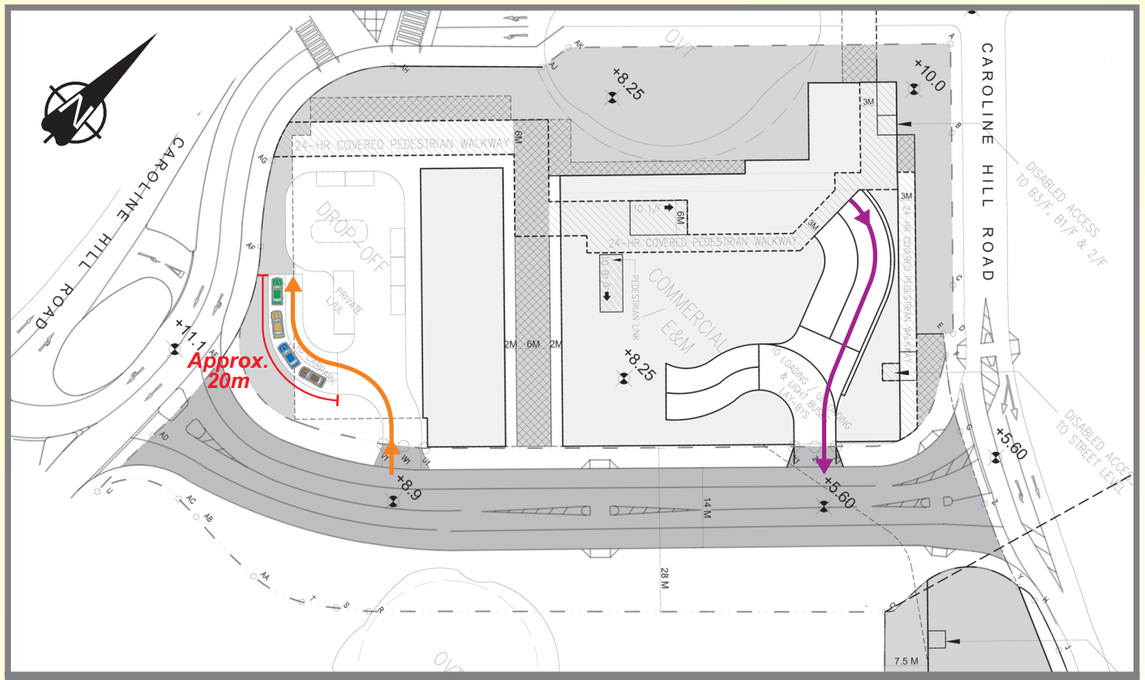
PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

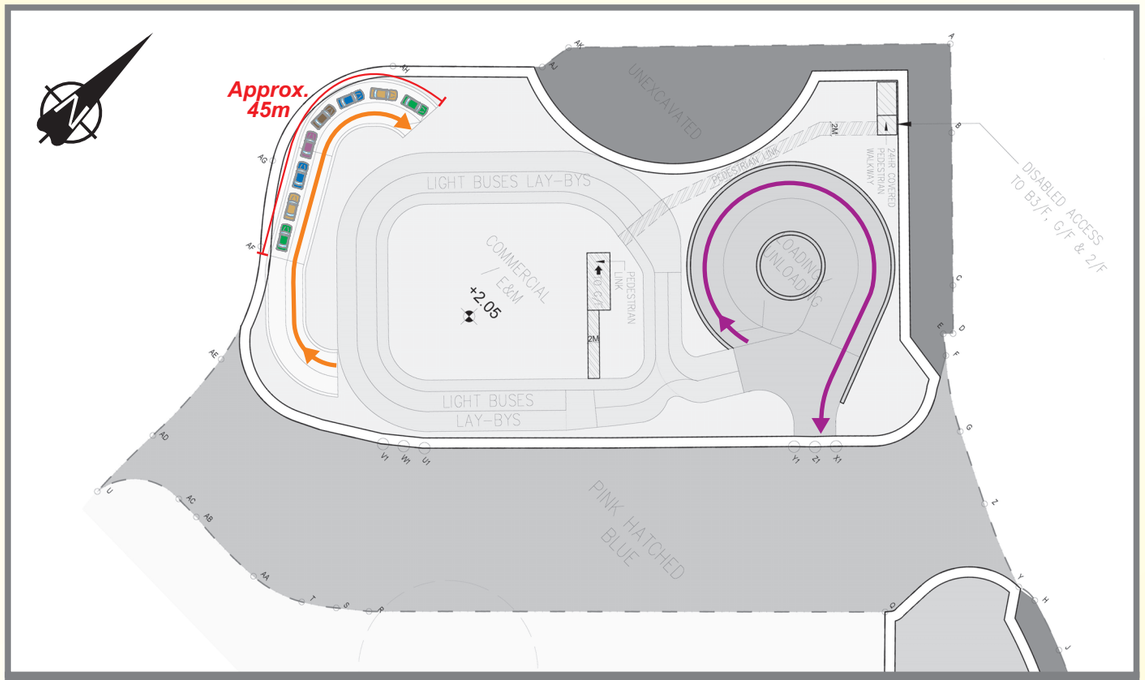
INTERNAL TRAFFIC ARRANGEMENT - B4/F & B5/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	2.6	-

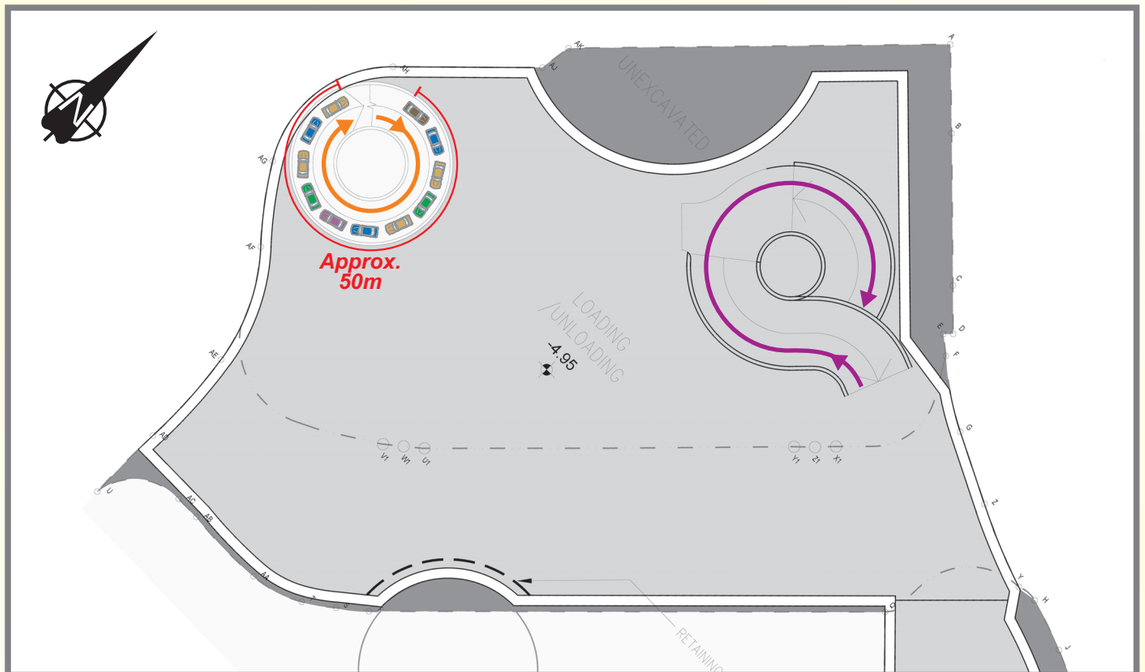
SYSTRA MVA



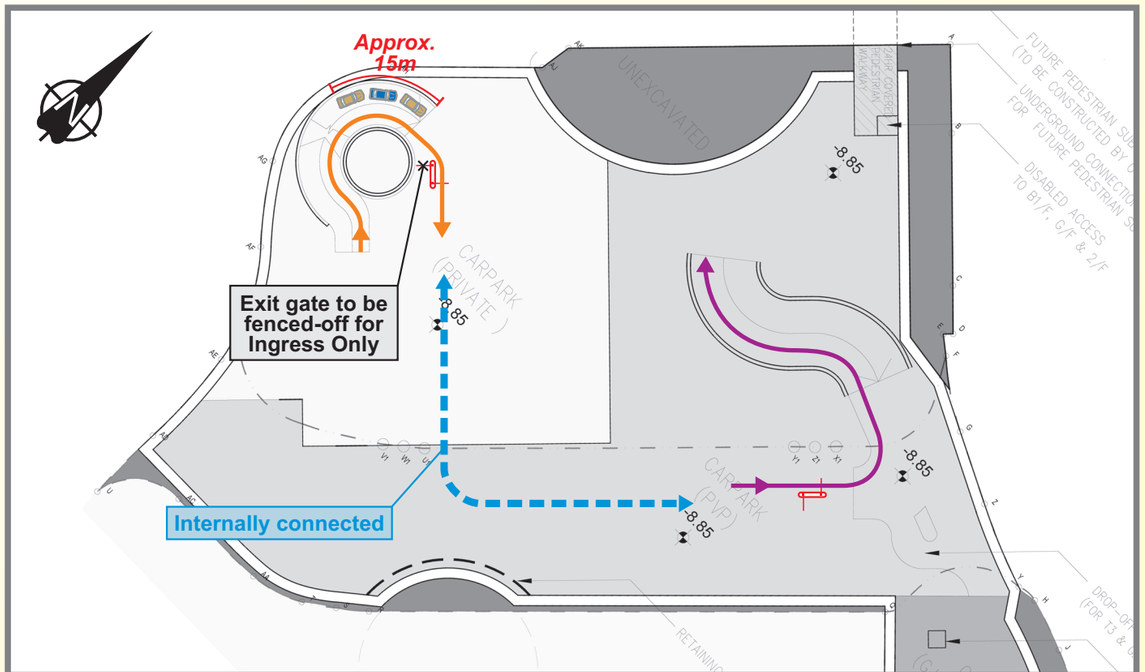
G/F



B1/F



B2/F



B3/F

Note :
Internal traffic arrangement shown on the drawing is indicative only and it is subject to detail design.

LEGEND : LOCATION OF CONTROL GATES | WAITING VEHICLE TO ACCESS CARPARK | BYPASS ROUTE FOR MONTHLY PARKING ACCESS | EXIT ROUTE OF CARPARK

Rev.	Description	Checked	Date
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-	-	-	-
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

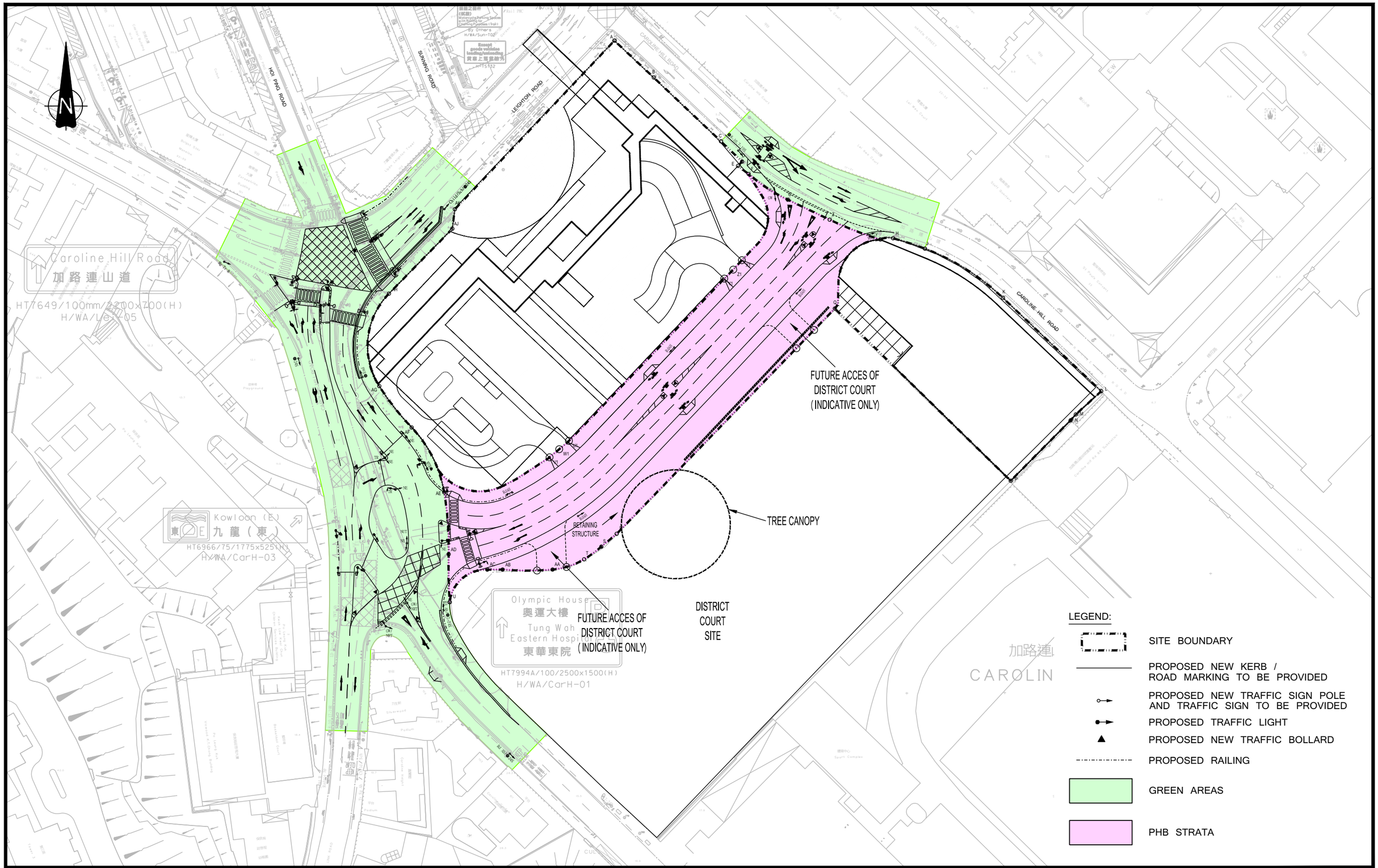
FLEXIBILITY IN TRAFFIC ARRANGEMENT

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	2.7	-

SYSTRA MVA

CHK50603110/TIA/F27.CDR/LLH/11APR22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	13APR22
A	TD'S COMMENTS INCORPORATED	CHC	25FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

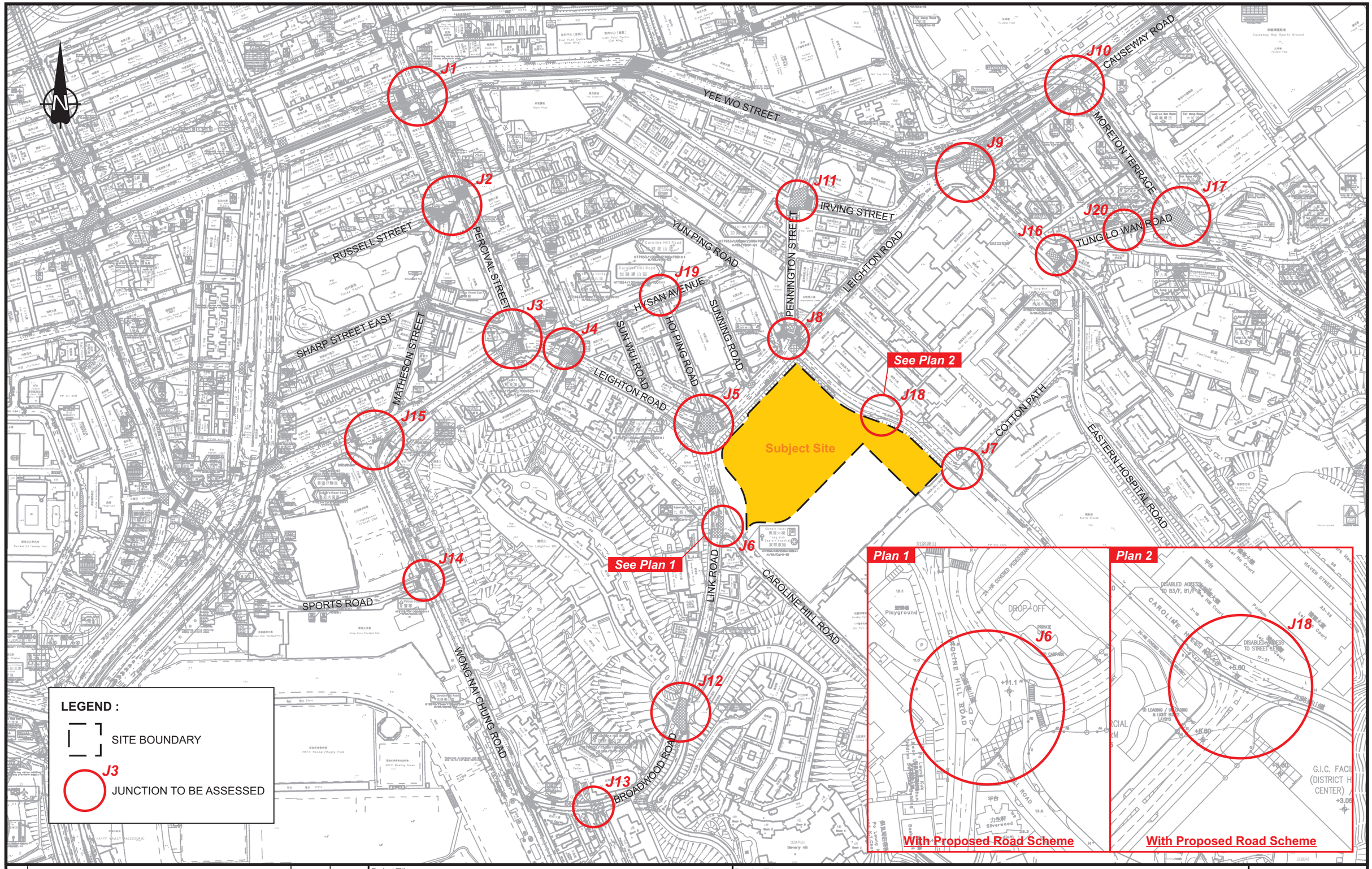
PROPOSED ROAD SCHEME AT GREEN AREAS AND THE NEW ROAD AT PHB STRATA

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:1000(A3)	DEC 2021	3.1	B

SYSTRA MVA

CHK50603110/TIA/F31-B.DWG/CPW/13APR22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	13APR22
A	TD'S COMMENTS INCORPORATED	CHC	22FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

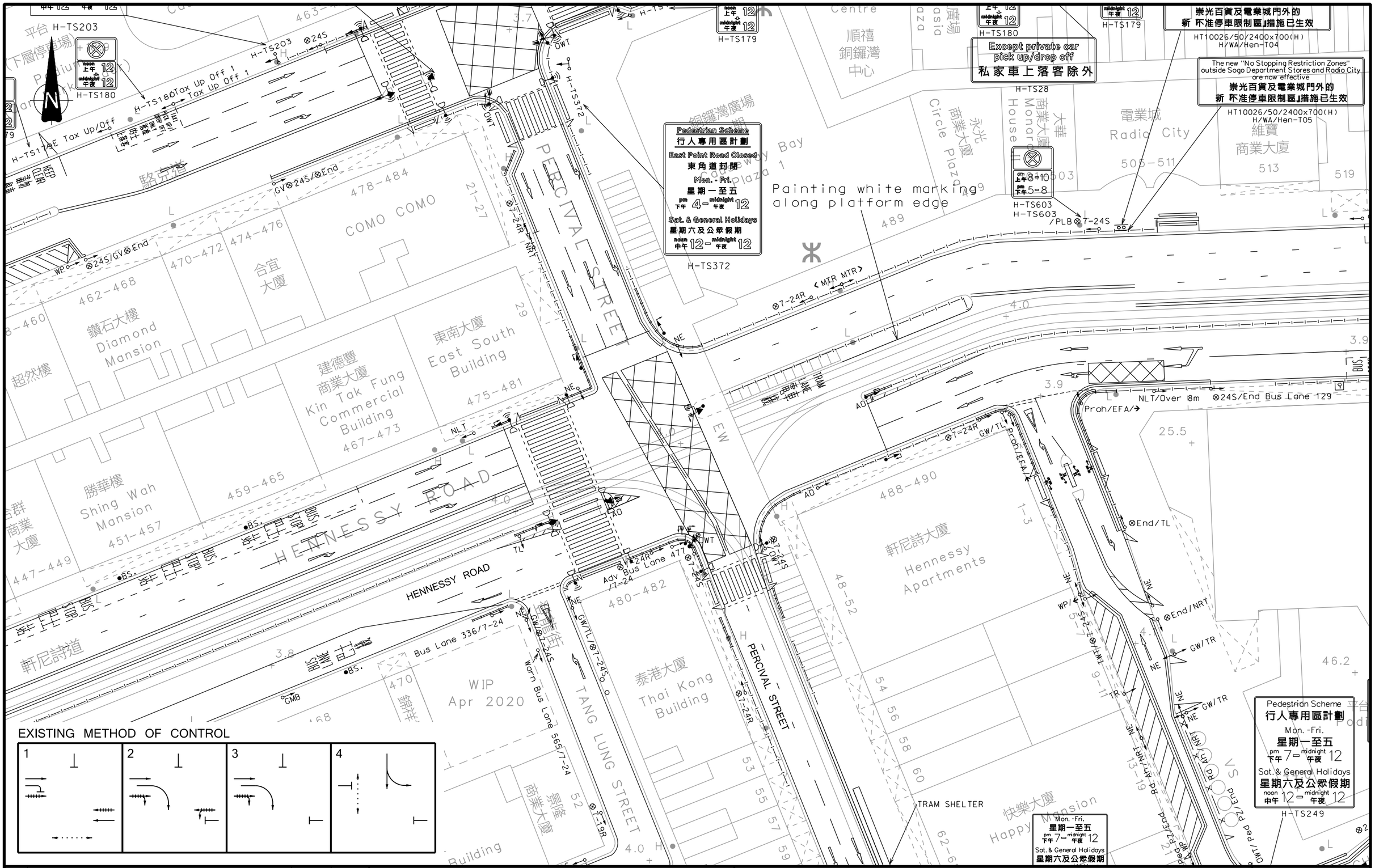
EXISTING ROAD NETWORK AND IDENTIFIED JUNCTIONS TO BE ASSESSED

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	4.1	B

SYSTRA MVA

CHK50603110/TIA/F41-B.CDR/LLH/13APR22

Original Size : A3



EXISTING METHOD OF CONTROL

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

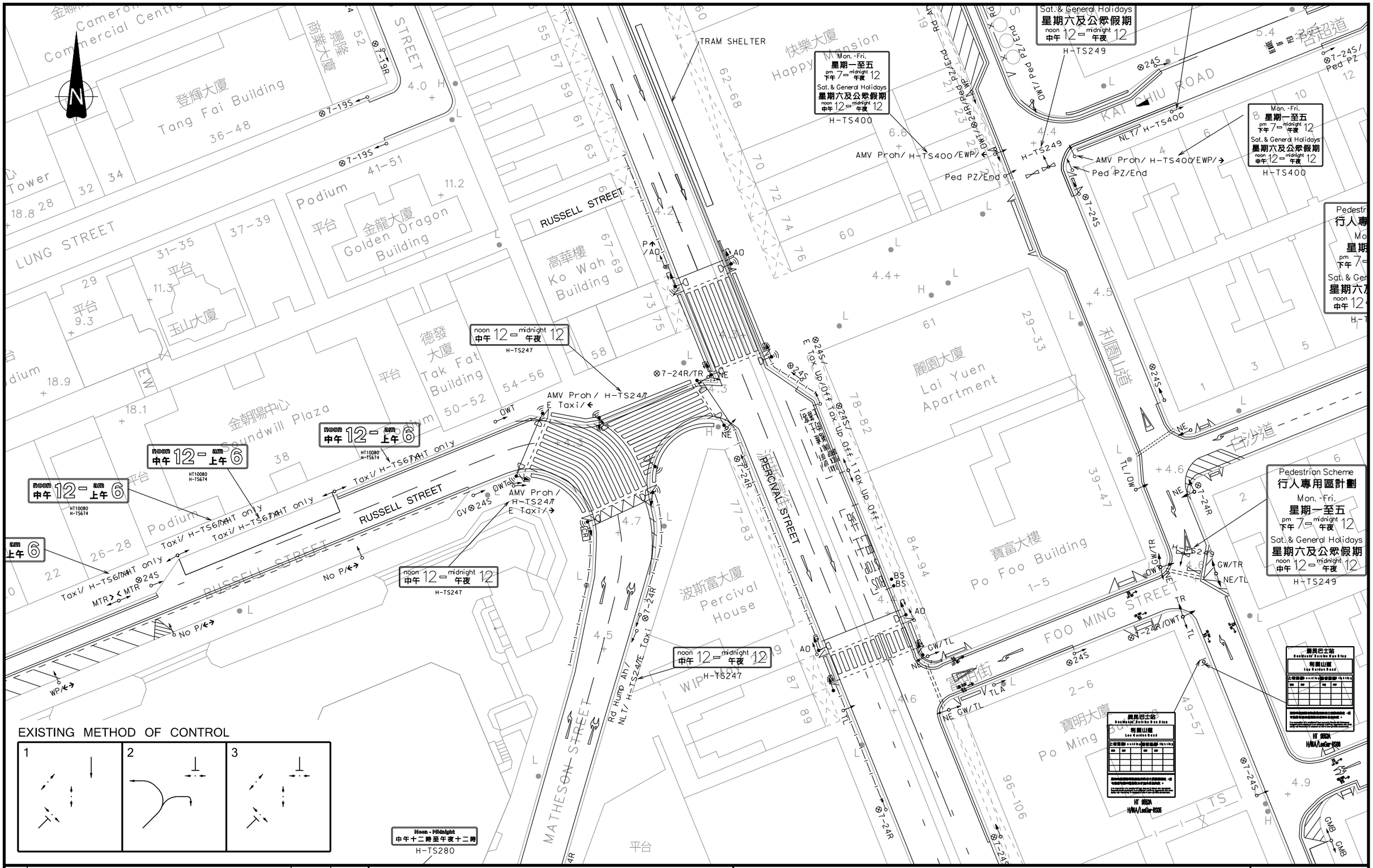
EXISTING JUNCTION LAYOUT OF HENNESSY ROAD / PERCIVAL STREET (J1)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.2	-

SYSTRA MVA

CHK50603110/TIA/F42.DGN/CKC/09DEC21

Original Size : A3



Rev.	Description	Checked	Date
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-	-	-	-

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

EXISTING JUNCTION LAYOUT OF MATHESON STREET / PERCIVAL STREET / RUSSELL STREET (J2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.3	-

SYSTRA MVA

CHK50603110/TIA/F43.DGN/CKC/09DEC21

Original Size : A3

Sharp Street East
雯東街
H/WA/Per-01

Leighton Road
禮頓道

HT7463/75mm/1650x1025(H)
H/WA/Hys-01

J3

J4

GIVE WAY TO TRAM
請讓
電車先行
H-TS156

Follow the Pedestrian Signal
過路請依
行人燈號
H-TS24

HT9553
H/WA/LeeGar-RS03

HT9553
H/WA/LeeGar-RS04

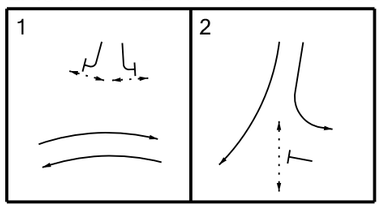
Caroline Hill Road
加路連山道

HT7462/75mm/1700x525(H)
H/WA/Lei-04

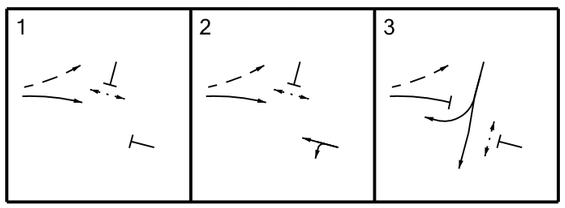
Beware of Tram Stopping
小心電車

Sharp Street East 雯東街
Russell Street 羅素街

EXISTING METHOD OF CONTROL FOR J3



EXISTINIG METHOD OF CONTROL FOR J4



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

EXISTING JUNCTION LAYOUT OF LEIGHTON ROAD / PERCIVAL STREET / HYSAN AVENUE (J3) AND LEIGHTON ROAD / HYSAN AVENUE / LEIGHTON LANE (J4)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.4	-

SYSTRA MVA

CHK50603110/TIA/F44.DGN/CKC/09DEC21

Original Size : A3

HOI PING ROAD

SUNNING ROAD

LEIGHTON ROAD

CAROLINE HILL ROAD

Except goods vehicles loading/unloading 貨車上落貨除外

H-TS132

Caroline Hill Road 加路連山道

HT7653/100mm/2300x700(H)
H/WA/Lei-06

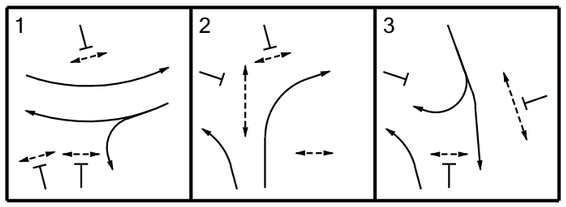
Caroline Hill Road 加路連山道

HT7649/100mm/2200x700(H)
H/WA/Lei-05

IL8945

WIP Mar 2021

EXISTING METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

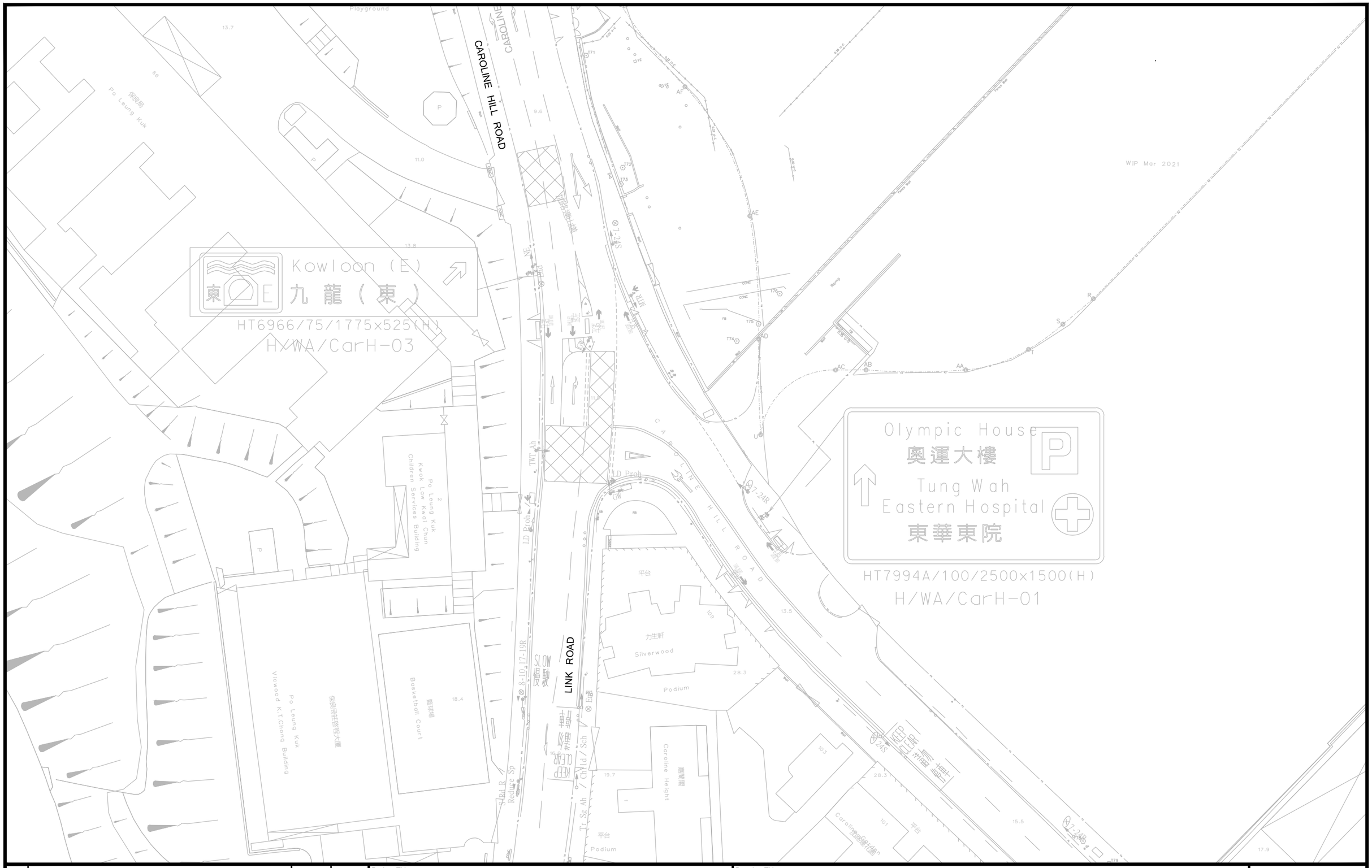
**EXISTING JUNCTION LAYOUT OF
LEIGHTON ROAD / CAROLINE HILL ROAD (WEST) (J5)**

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	**4.5**	-

SYSTRA MVA

CHK50603110/TIA/F45.DWG/CKC/09DEC21

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

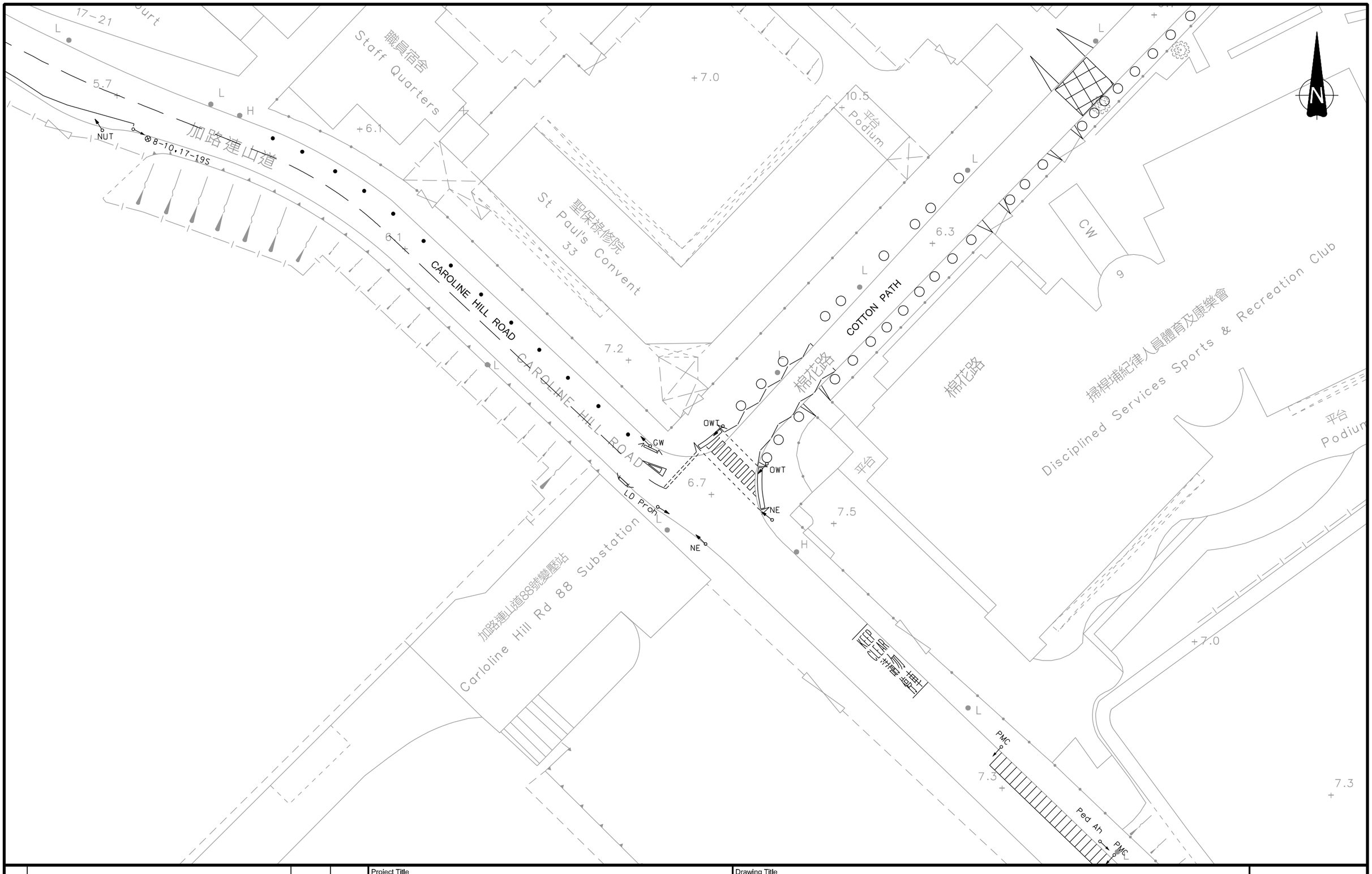
EXISTING JUNCTION LAYOUT OF CAROLINE HILL ROAD (WEST) / LINK ROAD (J6)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	**4.6**	-

SYSTRA MVA

CHK50603110/TIA/F46.DWG/CKC/09DEC21

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

EXISTING JUNCTION LAYOUT OF CAROLINE HILL ROAD / COTTON PATH (J7)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	**4.7**	-

SYSTRA MVA

CHK50603110/TIA/F47.DGN/CKC/09DEC21

Original Size : A3

Caroline Hill Road
加路連山道
HT8940/25/650x175(H)
H/WA/YunP-P01

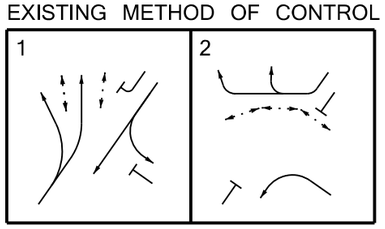
此電單車泊位
設有供扣上
鎖鏈之欄杆
(試驗)
Motorcycle Parking Spaces with Railing for Chaining Purposes (Trail)
By Others
H/WA/Sun-T01

此電單車泊位
設有供扣上
鎖鏈之欄杆
(試驗)
Motorcycle Parking Spaces with Railing for Chaining Purposes (Trail)
By Others
H/WA/Sun-T02

Except goods vehicles loading/unloading
貨車上落貨除外
H-TS132

Caroline Hill Road
加路連山道
HT7653/100mm/2300x700(H)
H/WA/Lei-06

EXISTING METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title
PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title
EXISTING JUNCTION LAYOUT OF LEIGHTON ROAD / YUN PING ROAD / PENNINGTON STREET / CAROLINE HILL ROAD (EAST) (J8)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.8	-

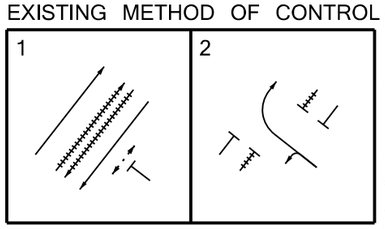
CHK50603110/TIA/F48.DGN/CKC/09DEC21

Original Size : A3

Podium
A座 Block A
Gloucester Road 告士打道
3.5m
HT8929/50mm/1025x1025(H)
H/WA/Glo-56
樂聲大廈 Lok Sing Centre
Block B
19-31
PLB Prohibited
⊗7-24R
⊗7-24S
OWT
12.5+
4.6
4.8
4.7
4.9
5.2
5.3
Follow the Pedestrian Signal 過路請依行人燈號
H-TS24
Hong Kong Central Library 香港中央圖書館
HT7103/25
H/WA/YeeW-P01
⊗8-10,17-19S
PLB⊗7-24S
KL
⊗8-10,17-19R
⊗7-19R
CAUSEWAY ROAD
NE
NL/⊗24S
CW/TL
H-TS603
am 上午 8-10
pm 下午 5-8
18.7+
Shelter Street 信德街
Temp D.S. HT7727/100/1925x700(H)
H/WA/Cau-T01
⊗24S
WP
Causeway Tower
16-22
Causeway Tower
華都大廈 Waldorf Mansion
2-6A
Cathay Mansion 國泰大廈
7
8
12.1
19.4
平台 Podium
富豪香港酒店 Regal Hong Kong Hotel
怡和街變電站
88
TUNG LO WAN ROAD
銅鑼灣道
B.S.
To be Repainted RED
End
KEEP CLEAR 禁止停車
Amb
IRVING STREET
CAUSEWAY ROAD 謝斐道
⊗8-10,17-19S / TL
⊗8-10,16-19R
⊗24S / H-TS134
Except c light buses up/drop off 巴上落客除外
I-TS134
School
Rosedale Hotel 珀麗酒店
Regent Heights
HT7727/100
H/WA/TunL W-

EXISTING METHOD OF CONTROL

1



2

Rev.	Description	Checked	Date
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Project Title

TRAFFIC CONSULTANCY SERVICE FOR COMMERCIAL DEVELOPMENT ON IL 8945, CAUSEWAY BAY, HONG KONG

Drawing Title

EXISTING JUNCTION LAYOUT OF CAUSEWAY ROAD / LEIGHTON ROAD / TUNG LO WAN ROAD / IRVING STREET (J9)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.9	-

SYSTRA MVA

CHK50603110/TIA/F49.DGN/CKC/09DEC21

Original Size : A3

Hong Kong Central Library
香港中央圖書館
HT7104/25
H/WA/Cau-P02

Hong Kong Central Library
香港中央圖書館
HT7105/25
H/WA/Cau-P01

Tung Lo Wan Road
銅鑼灣道
HT7982/200/3900x1900(h)H
H/WA/Tai

CAUSEWAY ROAD
Elevated Road
MORETON TERRACE
Causeway Tower
Bay View Mansion
高架道路
TRAM LANE
Swing Gate w/ Lock
End PLB End
8-10,17-19S
8-10,17-19RS
T-24R
NLT/245
Lane D'n 2601
D-Bd L
D-Bd L Reduce Sp
H-TS601
H-TS602
H-TS603
BUS STOP
平台

EXISTING METHOD OF CONTROL

1

2

Rev.	Description	Checked	Date
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-	-	-	-

Project Title

TRAFFIC CONSULTANCY SERVICE FOR COMMERCIAL DEVELOPMENT ON IL 8945, CAUSEWAY BAY, HONG KONG

Drawing Title

EXISTING JUNCTION LAYOUT OF CAUSEWAY ROAD / MORETON TERRACE (J10)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	MAR 2022	4.10	-

SYSTRA MVA

CHK50603110/TIA/F410.DGN/CKC/01MAR22

Original Size : A3

Except goods vehicles loading/unloading
貨車上落貨除外
H-TS132

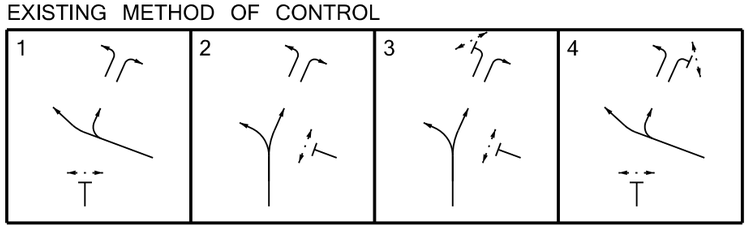
Except public light buses pick up/drop off
公共小巴上落客除外
H-TS134

Follow the Pedestrian Signal
過路請依行人燈號
H-TS24

Caroline Hill Road
加路連山道

HT7653/100mm/2300x700(H)
H/WA/YunP-01

EXISTING METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

EXISTING JUNCTION LAYOUT OF PENNINGTON STREET / IRVING STREET / JARDINE'S BAZAAR (J11)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	**4.11**	-

SYSTRA MVA

CHK50603110/TIA/F411.DGN/CKC/09DEC21

Original Size : A3

Caroline Hill Road
加路連山道

HT8971/75mm/1650x525(H)
H/WA/Bro-01

EXISTING METHOD OF CONTROL

1	2	3	4

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

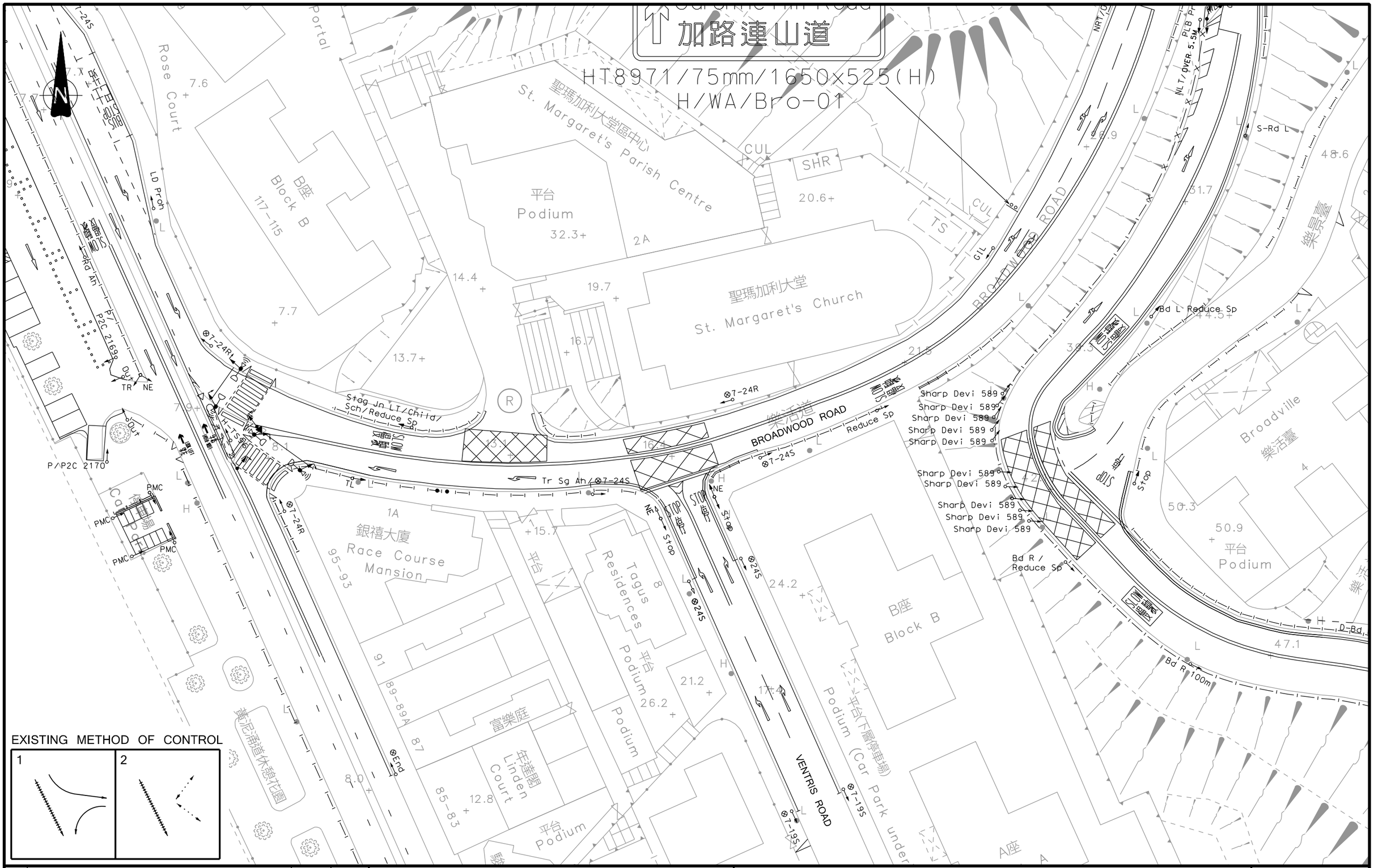
Drawing Title

EXISTING JUNCTION LAYOUT OF LINK ROAD / BROADWOOD ROAD (J12)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.12	-

CHK50603110/TIA/F412.DGN/CKC/09DEC21

Original Size : A3



EXISTING METHOD OF CONTROL

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

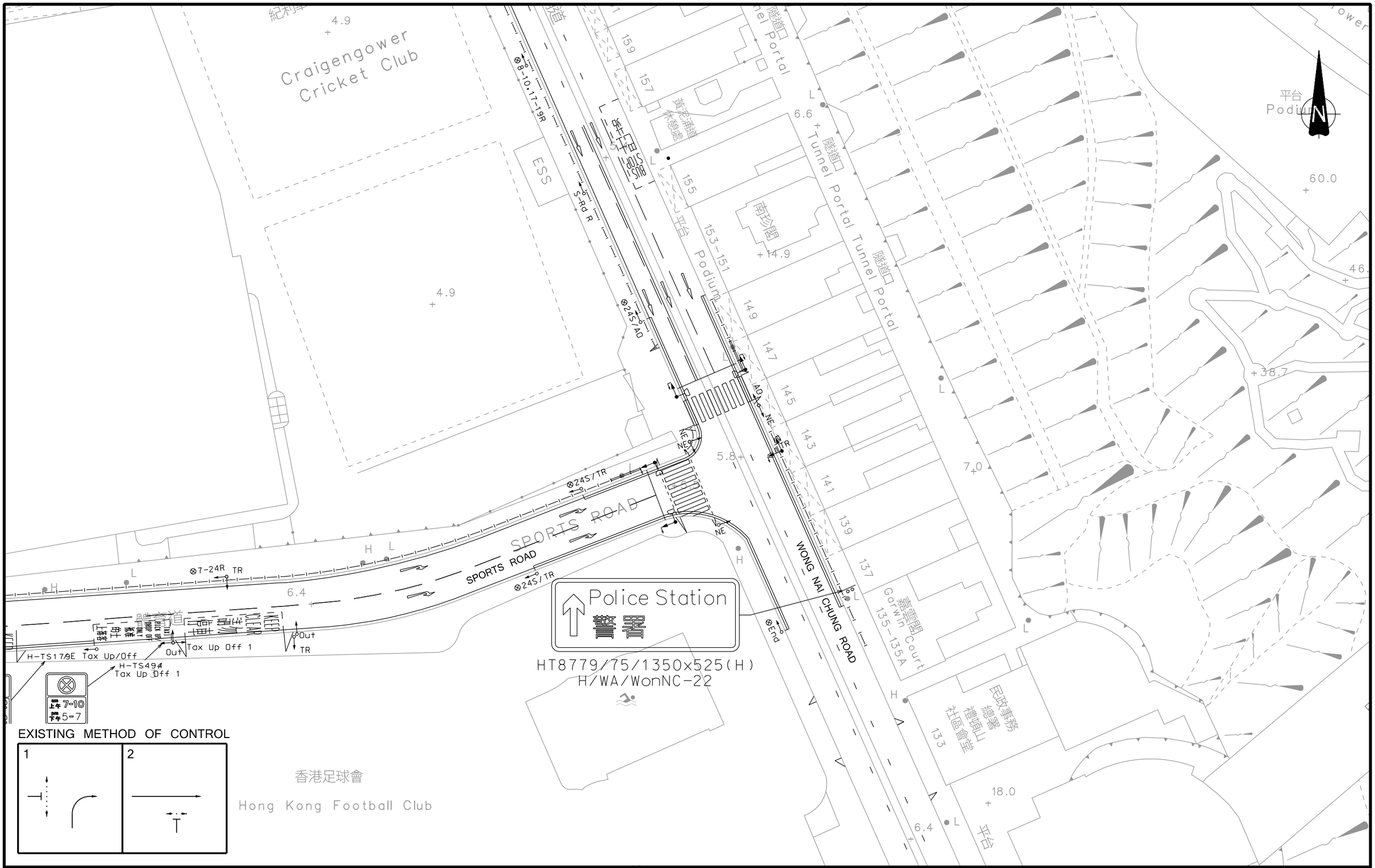
EXISTING JUNCTION LAYOUT OF BROADWOOD ROAD / VENTRIS ROAD (J13)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.13	-

SYSTRA MVA

CHK50603110/TIA/F413.DGN/CKC/09DEC21

Original Size : A3



Rev.	Description	Checked	Date
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-	-	-	-

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

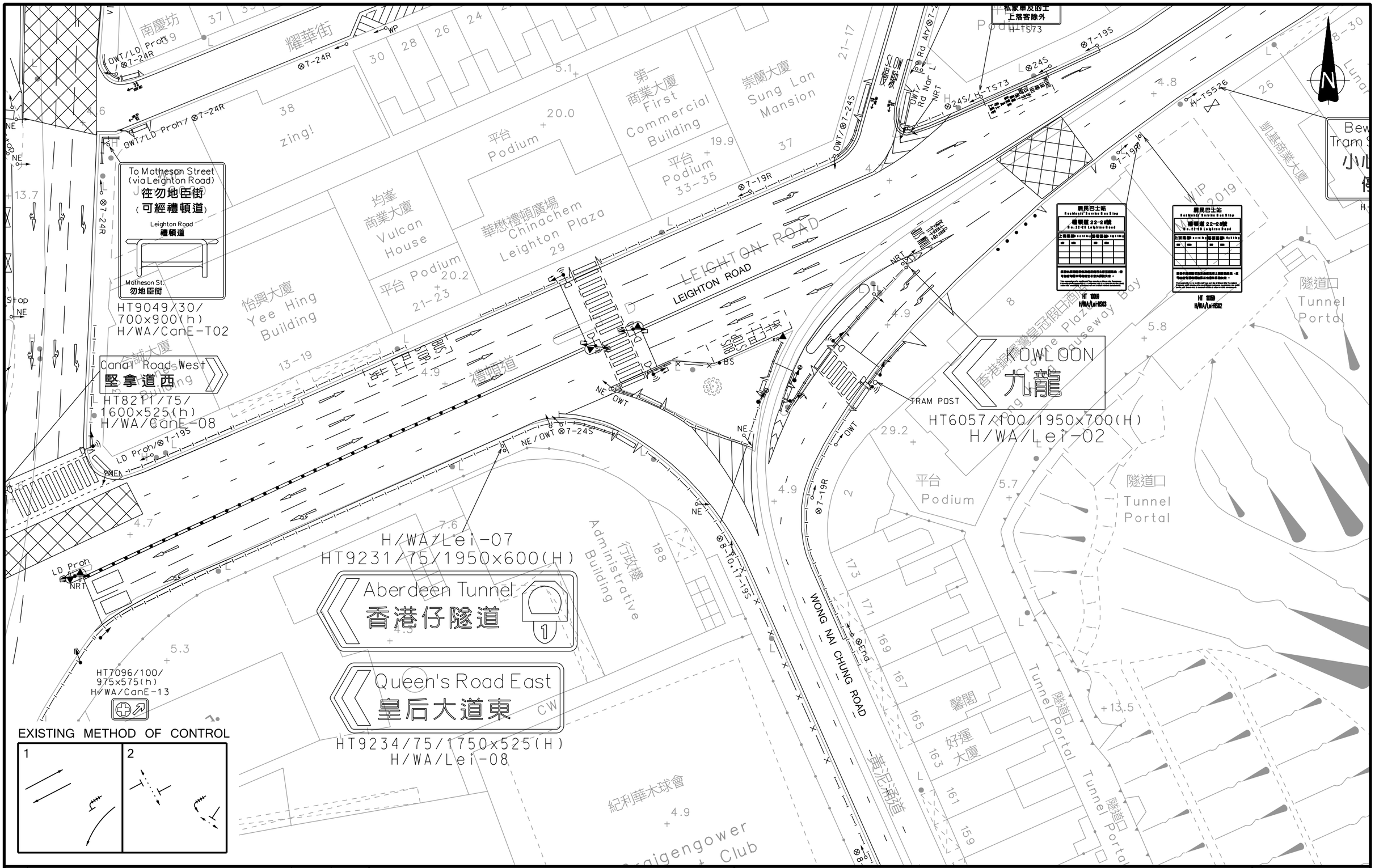
EXISTING JUNCTION LAYOUT OF WONG NAI CHUNG ROAD / SPORTS ROAD (J14)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.14	-

SYSTRA MVA

CHK50603110/TIA/F414.DGN/CKC/09DEC21

Original Size : A3



Rev.	Description	Checked	Date
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-	-	-	-

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

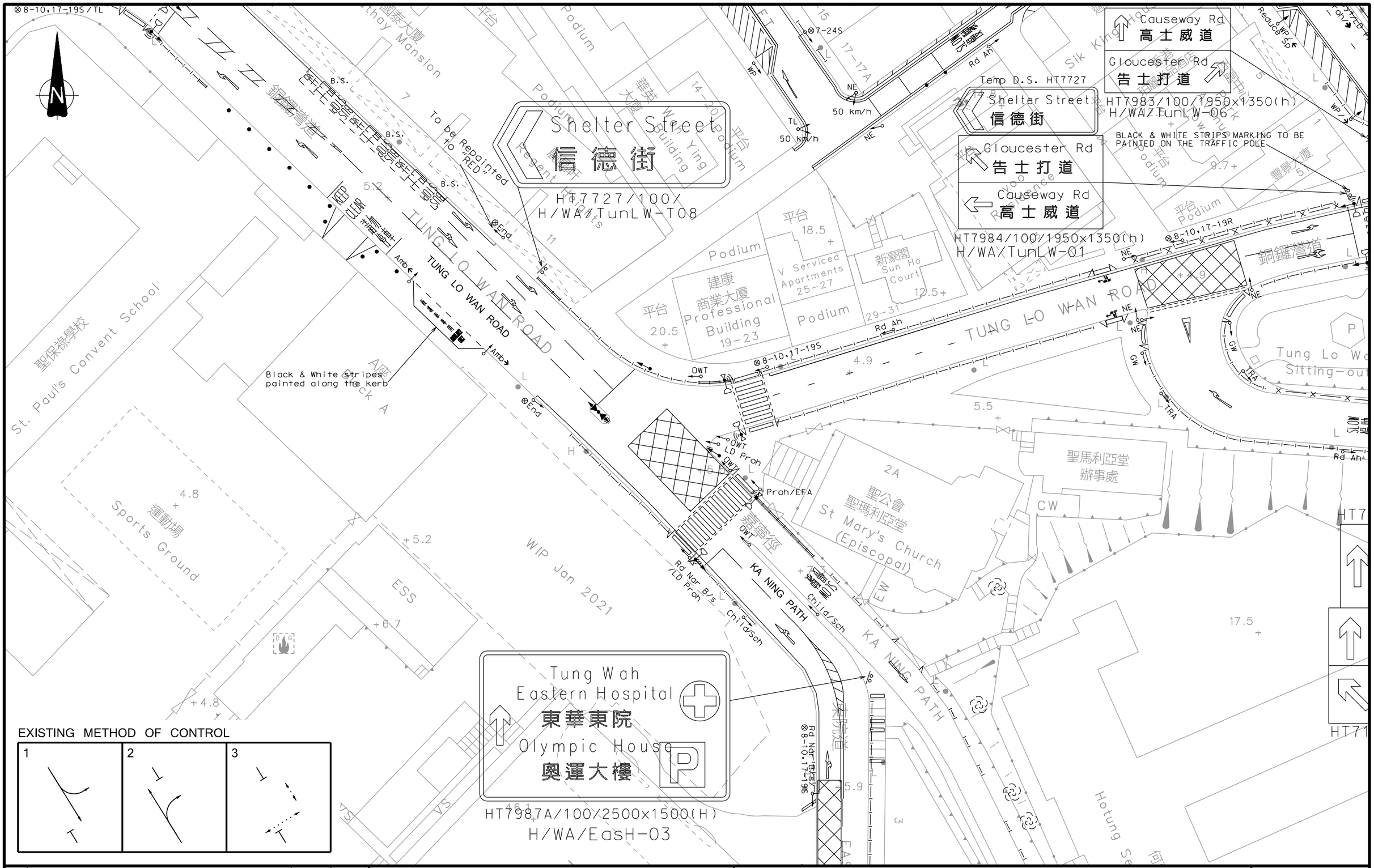
EXISTING JUNCTION LAYOUT OF LEIGHTON ROAD / WONG NAI CHUNG ROAD (J15)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.15	-

SYSTRA MVA

CHK50603110/TIA/F415.DGN/CKC/09DEC21

Original Size : A3



EXISTING METHOD OF CONTROL

1	2	3

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

EXISTING JUNCTION LAYOUT OF
TUNG LO WAN ROAD / EASTERN HOSPITAL ROAD (J16)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	**4.16**	-

CHK50603110/TIA/F416.DGN/CKC/09DEC21

Original Size : A3

HT-TS601

Temp D.S. HT7727

Shelter Street
信德街

1925x700(h)

H/WA/MorTS01

HT7989X100/1700x700(h)

Tai Hang Rd
大坑道

H/WA/TunLW-02

Causeway Rd
高士威道

Gloucester Rd
告士打道

HT7983/100/1950x1350(h)

H/WA/TunLW-06

Temp D.S. HT7727

Shelter Street
信德街

Gloucester Rd
告士打道

Causeway Rd
高士威道

HT7984/100/1950x1350(h)

H/WA/TunLW-01

BLACK & WHITE STRIPS MARKING TO BE PAINTED ON THE TRAFFIC POLE

J17

J20

Paint alternate black and white striped marking

Paint alternate black and white striped marking

TUNG LO WAN ROAD

TAI HANG ROAD

Moreton Terrace

Tung Lo Wan Road Sitting-out Area

銅鑼灣道休憩處

Elevated Road

Bus Terminus

巴士總站

Volleyball Court

排球場

Football Field

足球場

Sik King House

適景樓

Vansun Building

宏信大廈

Parkvale Commercial Building

Serviced Apartments 25-27

Podium

新豪閣 Sun Ho Court 29-31

聖馬利亞堂辦事處

聖約翰救傷隊港島總區總部 St. John Ambulance Brigade Hong Kong Island Command Headquarters

HT7486/100/2200x900(H)

Kowloon 九龍

中 C 東 E 西 W

Gloucester Road

EXISTING METHOD OF CONTROL FOR J17

1 2 3

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	25FEB22

Project Title

TRAFFIC CONSULTANCY SERVICE FOR COMMERCIAL DEVELOPMENT ON IL 8945, CAUSEWAY BAY, HONG KONG

Drawing Title

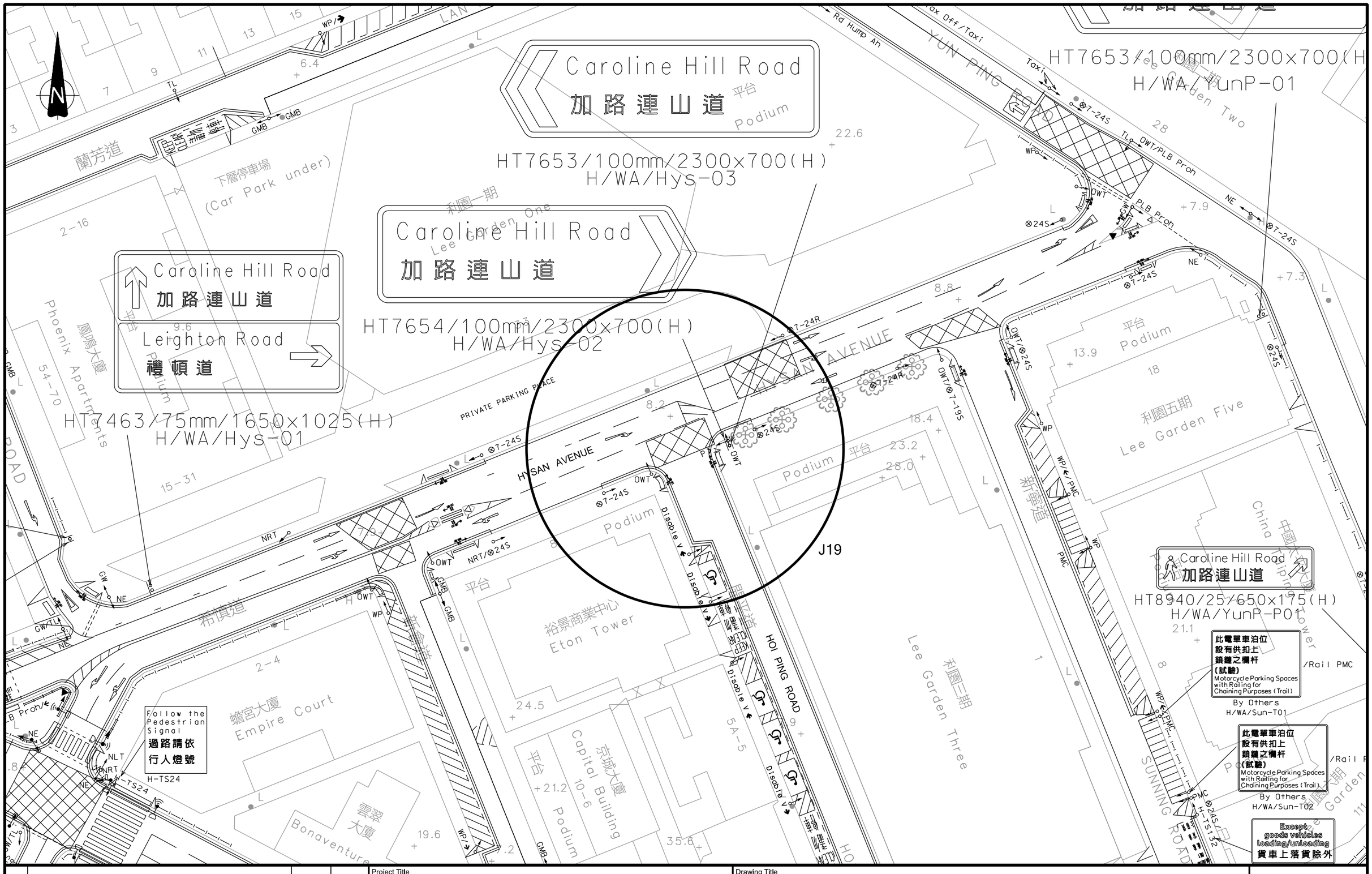
EXISTING JUNCTION LAYOUT OF TUNG LO WAN ROAD / MORETON TERRACE (J17) AND TUNG LO WAN ROAD / TAI HANG ROAD (J20)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	4.17	A

SYSTRA MVA

CHK50603110/TIA/F417-A.DGN/CKC/25FEB22

Original Size : A3



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

Project Title

TRAFFIC CONSULTANCY SERVICE FOR COMMERCIAL DEVELOPMENT ON IL 8945, CAUSEWAY BAY, HONG KONG

Drawing Title

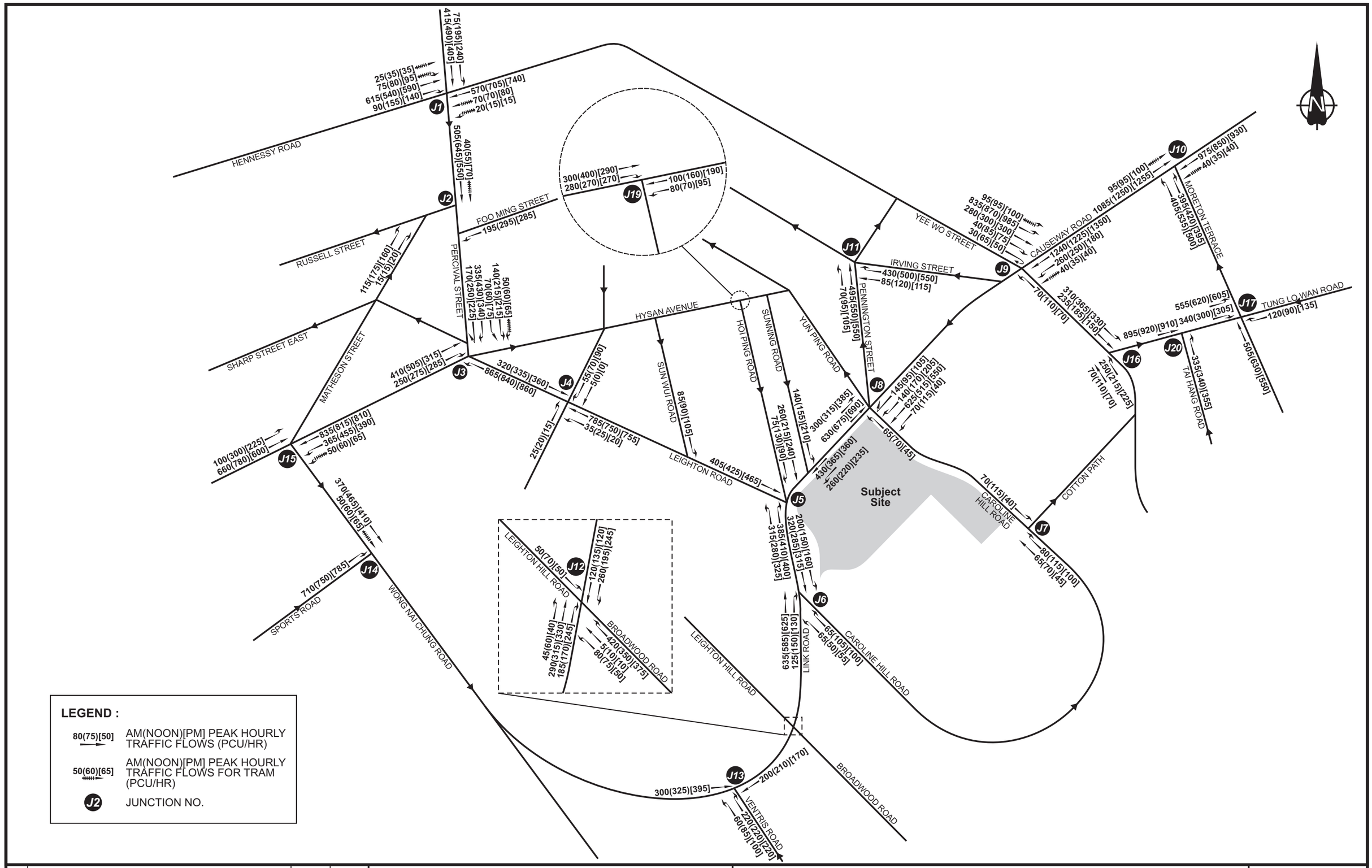
EXISTING JUNCTION LAYOUT OF HYSAN AVENUE / HOI PING ROAD (J19)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	FEB 2022	4.18	-

SYSTRA MVA

CHK50603110/TIA/F418.DGN/CKC/25FEB22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	28FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

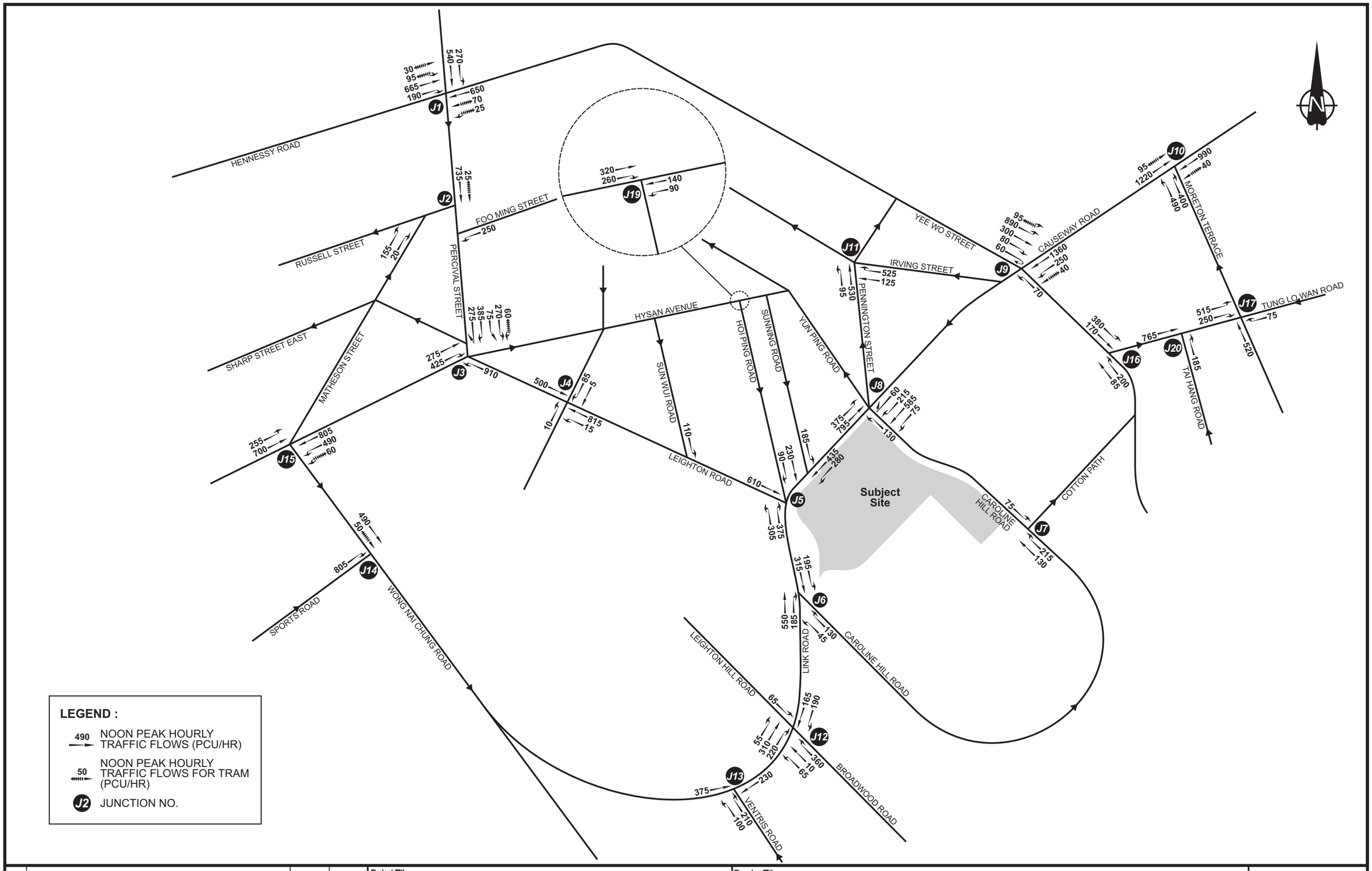
YEAR 2021 OBSERVED WEEKDAY TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	4.19	A

SYSTRA MVA

CHK50603110/TIA/F419-A.CDR/LLH/28FEB22

Original Size : A3



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

YEAR 2021 OBSERVED WEEKEND TRAFFIC FLOWS

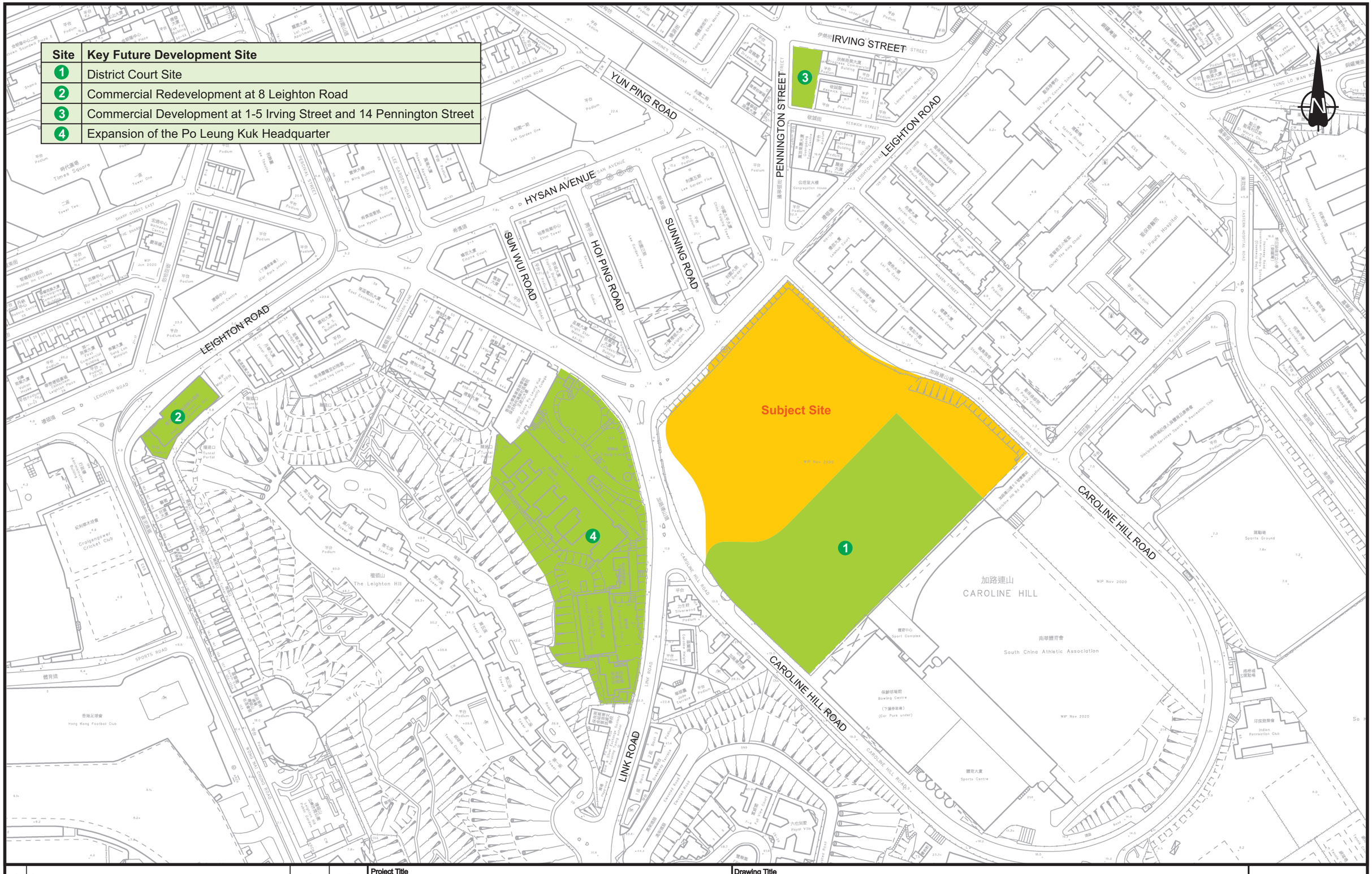
Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	FEB 2022	4.20	-

SYSTRA MVA

CHK50603110/TIA/F420.CDR/LLH/28FEB22

Original Size : A3

Site	Key Future Development Site
1	District Court Site
2	Commercial Redevelopment at 8 Leighton Road
3	Commercial Development at 1-5 Irving Street and 14 Pennington Street
4	Expansion of the Po Leung Kuk Headquarter



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

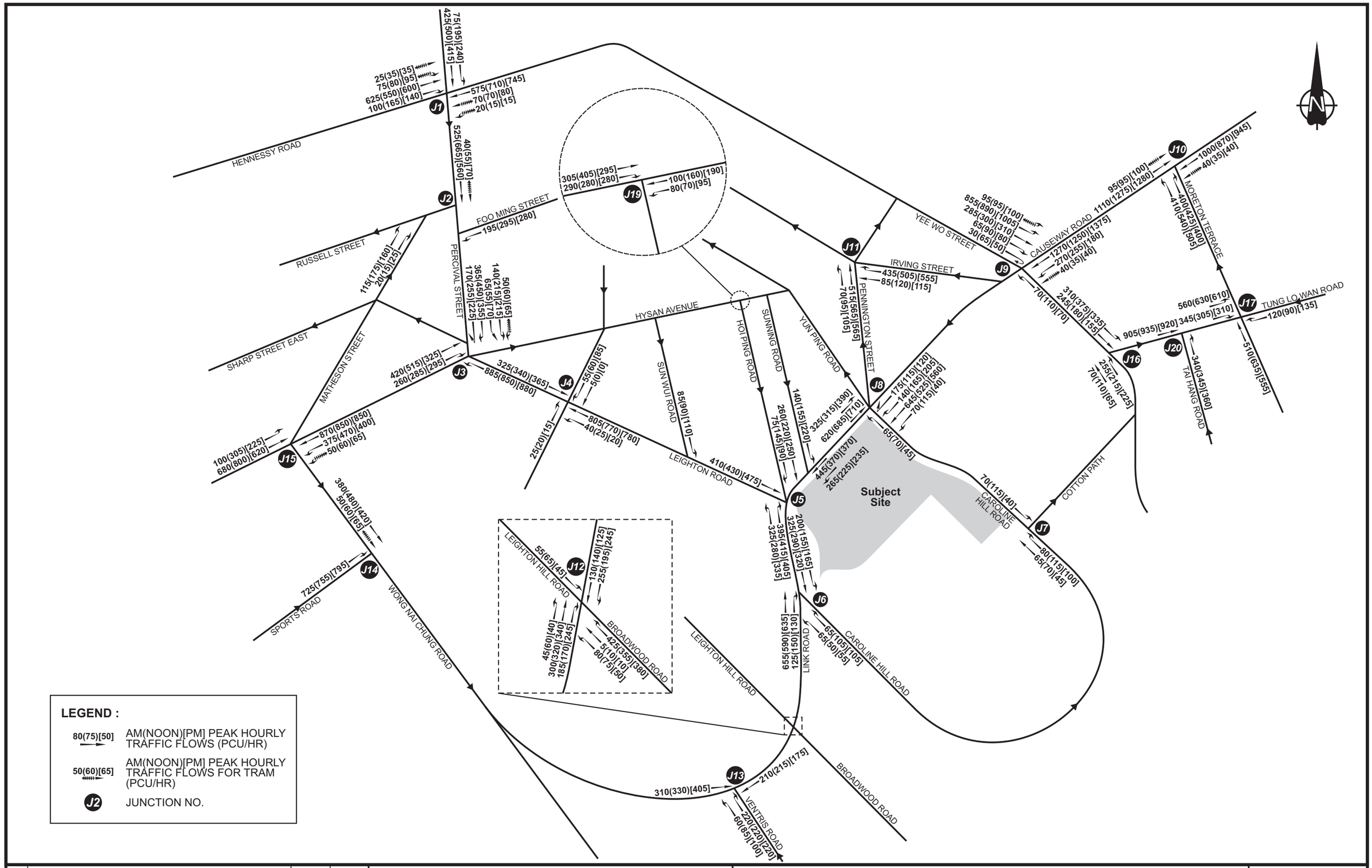
PLANNED / POTENTIAL FUTURE DEVELOPMENT IN THE VICINITY

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	5.1	-

SYSTRA MVA

CHK50603110/TIA/F51.CDR/LLH/9DEC21

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	28FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

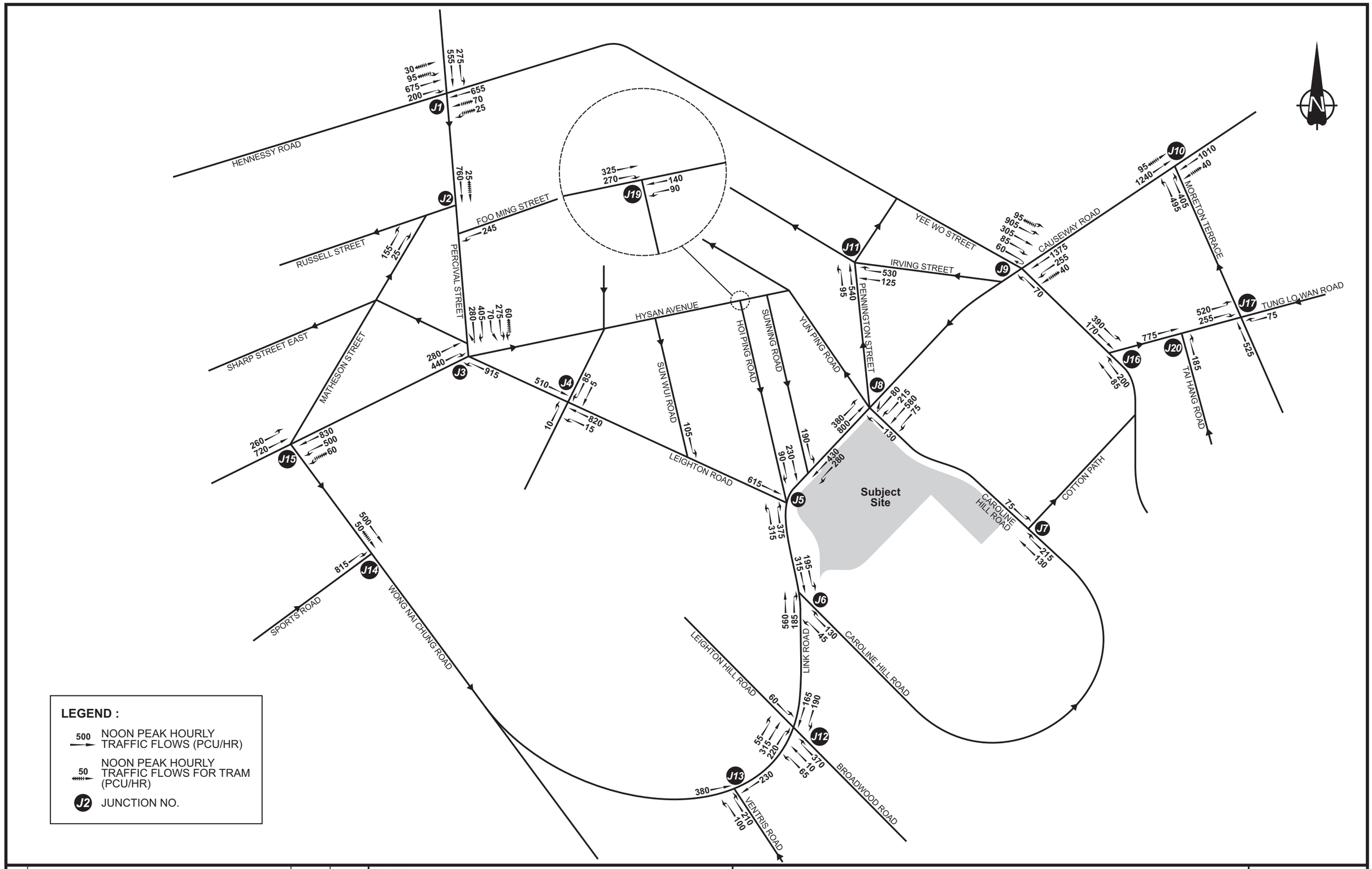
YEAR 2031 REFERENCE WEEKDAY TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	5.2	A

SYSTRA MVA

CHK50603110/TIA/F52-A.CDR/LLH/28FEB22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	28FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

YEAR 2031 REFERENCE WEEKEND TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	5.3	A

SYSTRA MVA

CHK50603110/TIA/F53-A.CDR/LLH/28FEB22

Original Size : A3

HKI W
KLN W
NT W
30%(30%)
[30%]{30%}

HKI E
KLN E
NT E
40%(40%)
[40%]{40%}

HKI S
30%(30%)
[30%]{30%}

Subject Site

J1 J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17 J18 J19 J20

RUSSELL STREET
PERCIVAL STREET
SHARP STREET EAST
MATHESON STREET
HYSAN AVENUE
SUN WUI ROAD
HOI PING ROAD
LEIGHTON ROAD
YUN PING ROAD
SUNNING ROAD
PENNINGTON STREET
YEE WO STREET
IRVING STREET
CAUSEWAY ROAD
MORETON TERRACE
TUNG LO WAN ROAD
COTTON PATH
EASTERN HOSPITAL ROAD
CAROLINE HILL ROAD
LINK ROAD
SPORTS ROAD
WONG NAI CHUNG ROAD
BROADWOOD ROAD

CAROLINE HILL
加路連山

LEGEND :

- INGRESS ROUTING
- 30%(30%) [30%]{30%} WEEKDAY AM(WEEKDAY NOON) [WEEKDAY PM] {WEEKEND NOON} PROPORTION OF DEVELOPMENT TRAFFIC FLOWS
- J3 JUNCTION TO BE ASSESSED

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

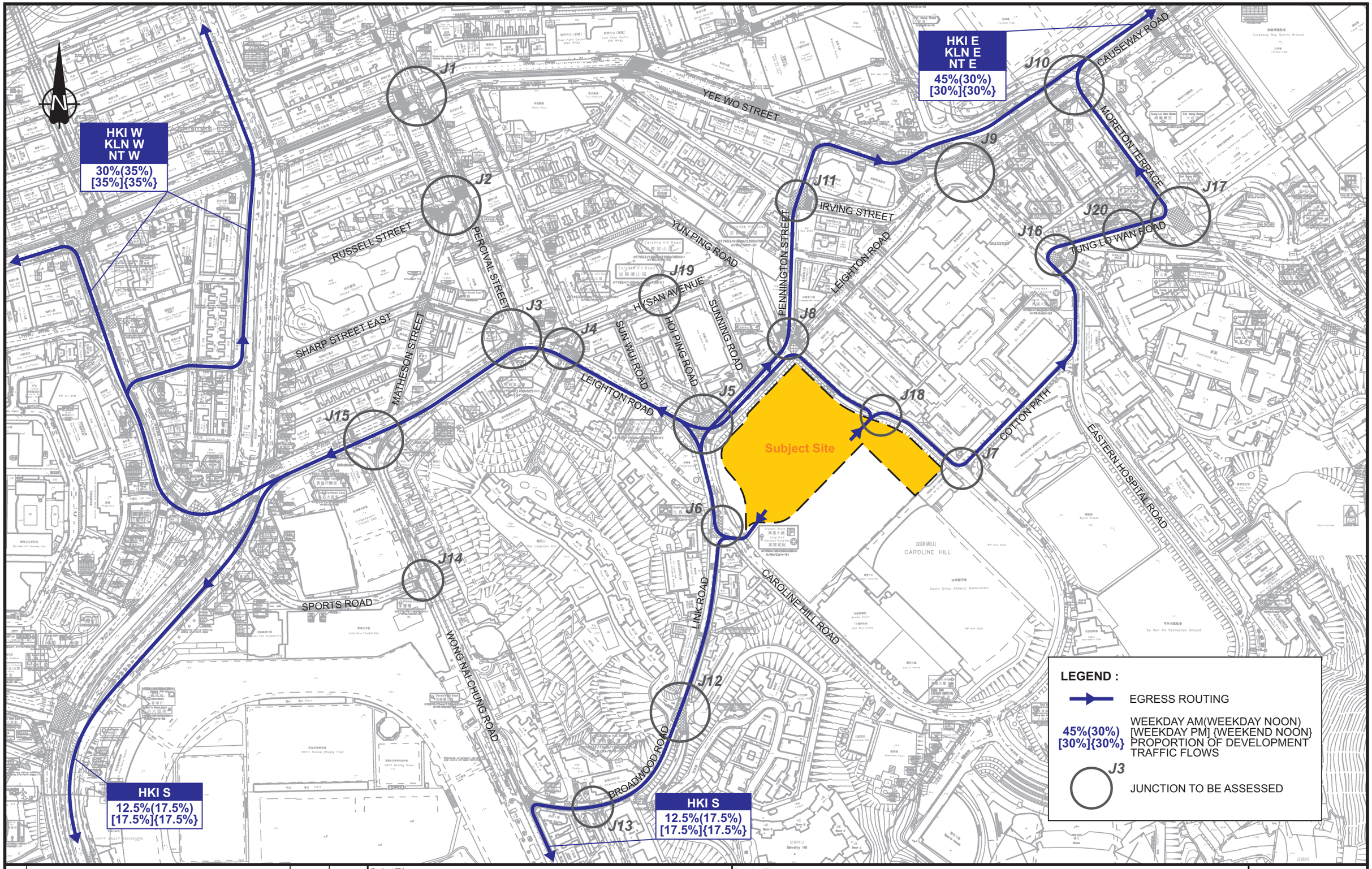
DISTRIBUTION OF DEVELOPMENT INGRESS TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	MAR 2022	5.4	-

SYSTRA MVA

CHK50603110/TIA/F54.CDR/LLH/1MAR22

Original Size : A3



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

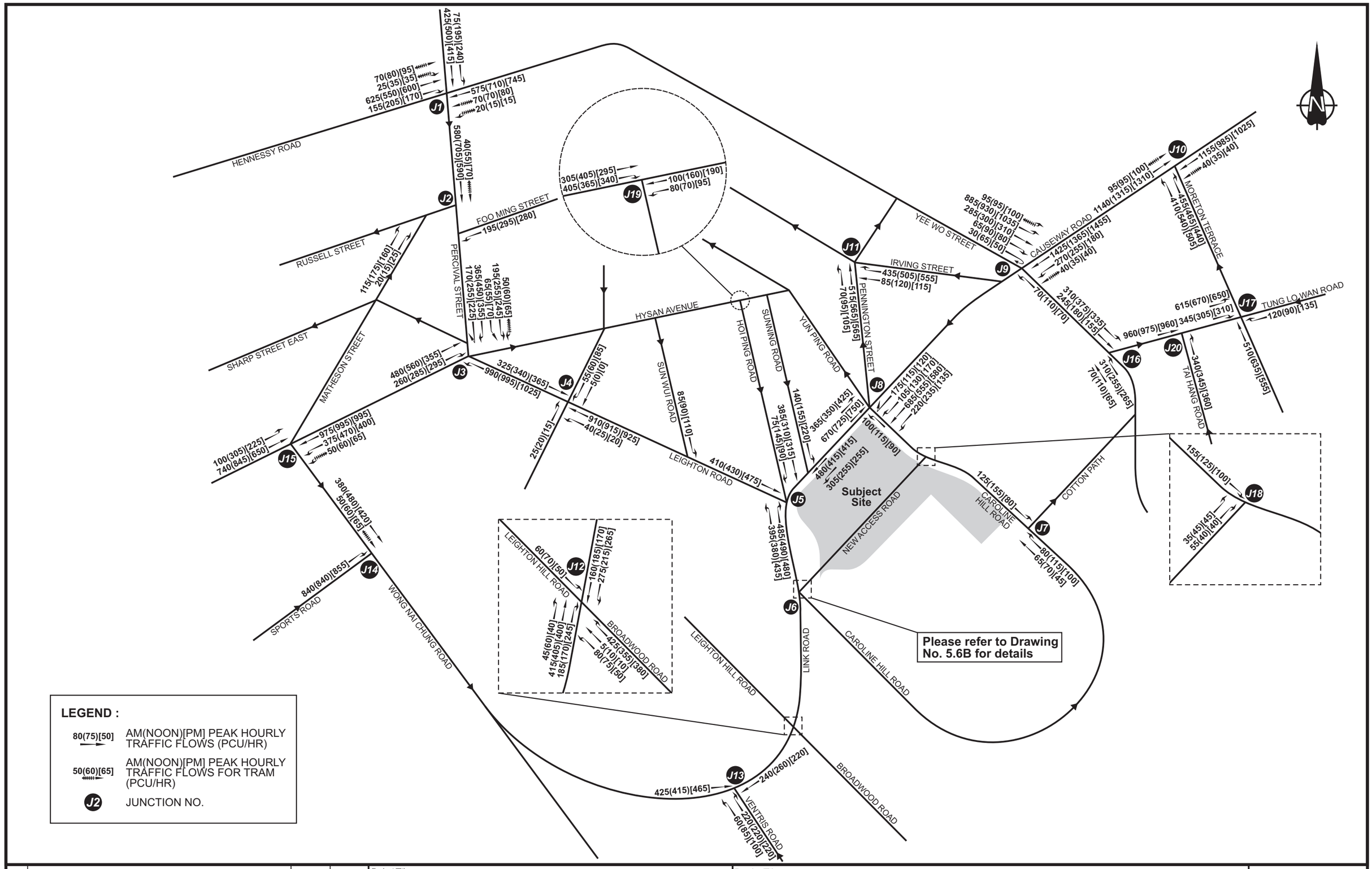
DISTRIBUTION OF DEVELOPMENT EGRESS TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	MAR 2022	5.5	-

SYSTRA MVA

CHK50603110/TIA/F55.CDR/LLH/1MAR22

Original Size : A3



LEGEND :

80(75)[50]	AM(NOON)[PM] PEAK HOURLY TRAFFIC FLOWS (PCU/HR)
50(60)[65]	AM(NOON)[PM] PEAK HOURLY TRAFFIC FLOWS FOR TRAM (PCU/HR)
J2	JUNCTION NO.

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

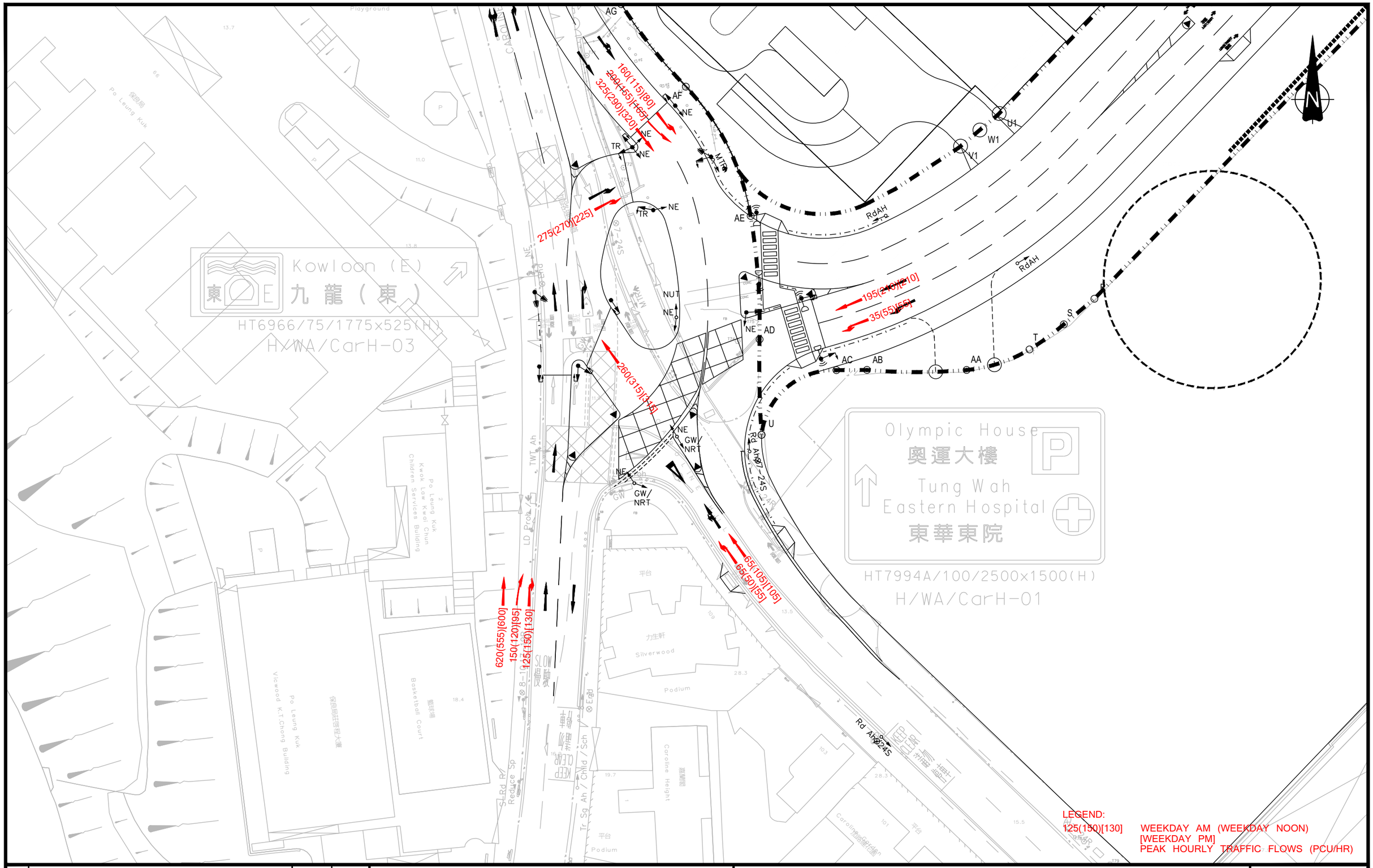
YEAR 2031 DESIGN WEEKDAY TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	5.6A	-

SYSTRA MVA

CHK50603110/TIA/F56A.CDR/LLH/14APR22

Original Size : A3



LEGEND:
125(150)[130] WEEKDAY AM (WEEKDAY NOON) [WEEKDAY PM]
PEAK HOURLY TRAFFIC FLOWS (PCU/HR)

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	12APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

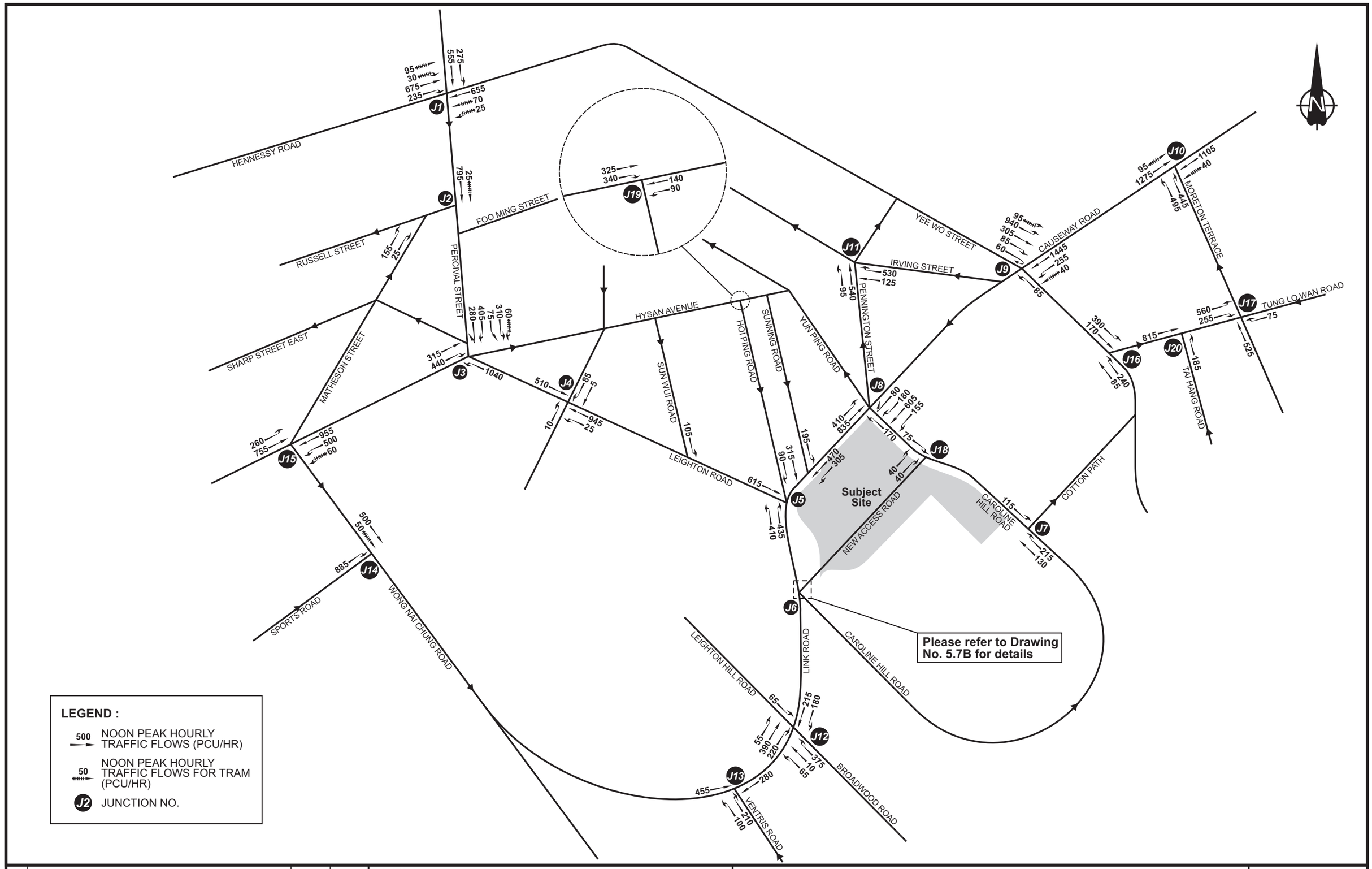
YEAR 2031 DESIGN WEEKDAY TRAFFIC FLOWS AT JUNCTIONS J6

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	MAR 2022	5.6B	A

SYSTRA MVA

CHK50603110/TIA/F56B-A.DWG/KCM/12APR22

Original Size : A3



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

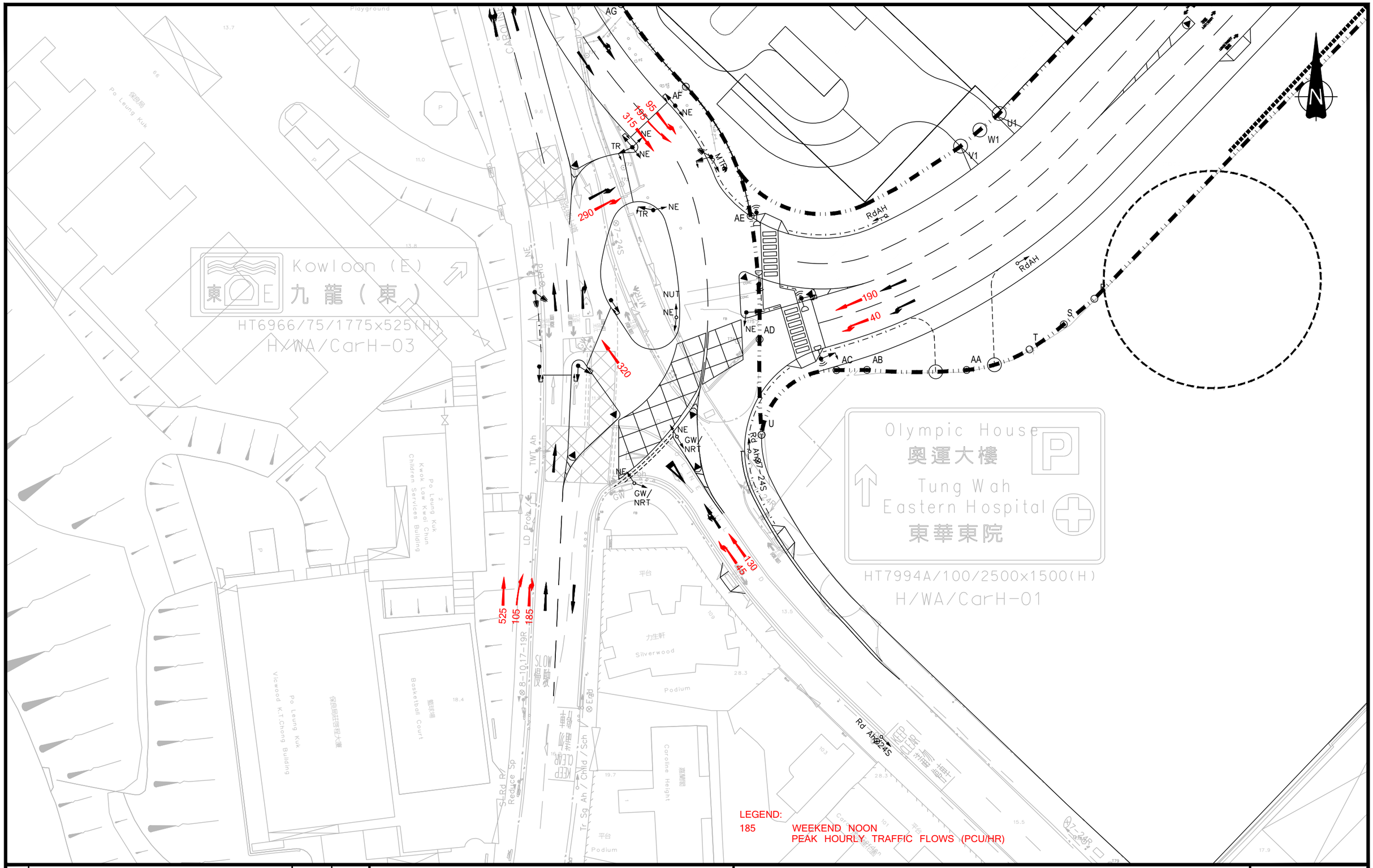
YEAR 2031 DESIGN WEEKEND TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	5.7A	-

SYSTRA MVA

CHK50603110/TIA/F57A.CDR/LLH/14APR22

Original Size : A3



LEGEND:

185 WEEKEND NOON PEAK HOURLY TRAFFIC FLOWS (PCU/HR)

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	12APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

YEAR 2031 DESIGN WEEKEND TRAFFIC FLOWS AT JUNCTIONS J6

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	MAR 2022	5.7B	A

SYSTRA MVA

CHK50603110/TIA/F57B-A.DWG/KCM/12APR22

Original Size : A3

HOI PING ROAD

SUNNING ROAD

LEIGHTON ROAD

CAROLINE HILL ROAD

Except goods vehicles loading/unloading 貨車上落貨除外

24-HR COVERED PEDESTRIAN WALKWAY

TO 1/F

PEDESTRIAN LINK TO B1/F

TO LOADING & LIGHT LAYBY

COMMERCIAL / E&M +8.25

DROP-OFF

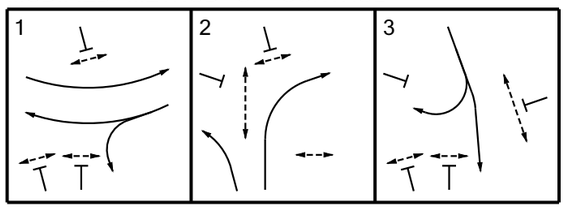
PRIVATE L/UL

TO CARPARK

Caroline Hill Road 加路連山道

T7649/100mm/2200×200(H) H/WA/Le:1:05

MODIFIED METHOD OF CONTROL



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	14APR22
A	TD'S COMMENTS INCORPORATED	CHC	25FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

FUTURE JUNCTION LAYOUT OF LEIGHTON ROAD / CAROLINE HILL ROAD (WEST) (J5)

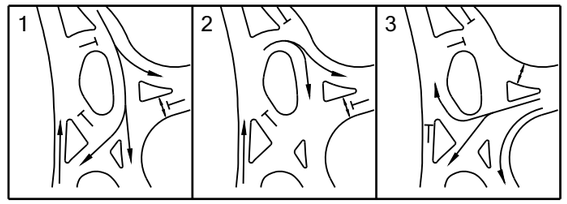
Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	6.1	B

SYSTRA MVA

CHK50603110/TIA/F61-B.DWG/KCM/14APR22

Original Size : A3

PROPOSED METHOD OF CONTROL



NOTE:

THE LAYOUT, MOC, ROAD MARKING AND SIGNAGE ARRANGEMENTS ARE SUBJECT TO FURTHER REFINEMENT/ADJUSTMENT IN THE DETAIL DESIGN STAGE

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	CHC	12APR22
A	TD'S COMMENTS INCORPORATED	CHC	25FEB22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

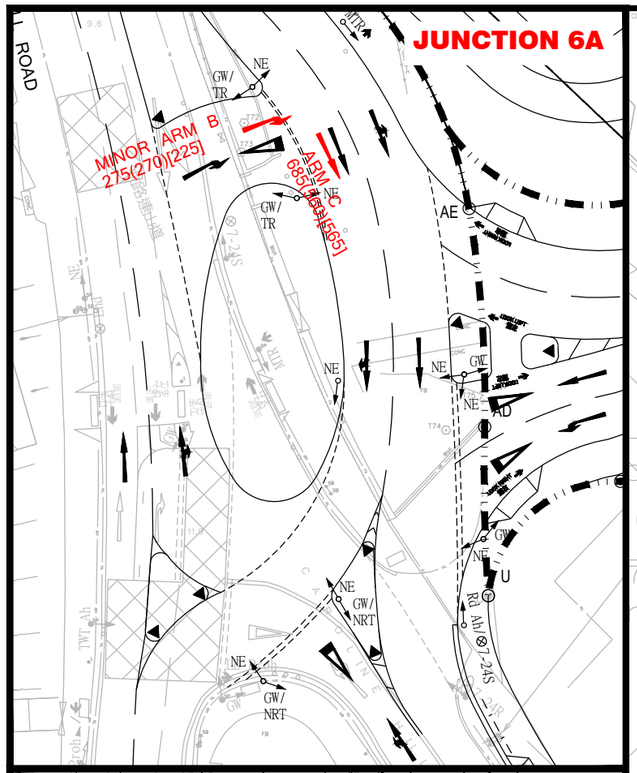
PROPOSED LAYOUT AND ARRANGEMENT FOR JUNCTION OF CAROLINE HILL ROAD (WEST) / LINK ROAD / NEW ACCESS ROAD (J6)

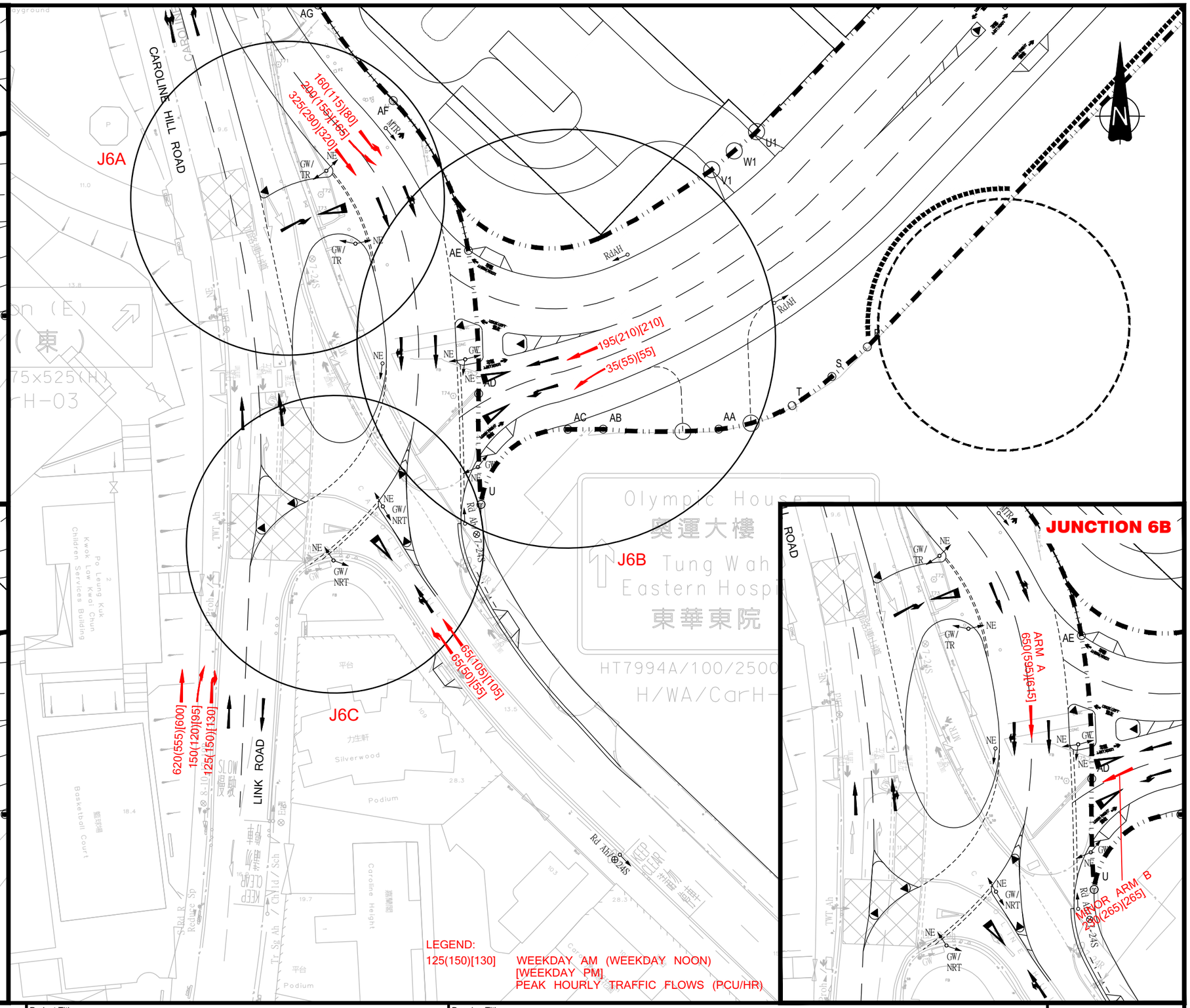
Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	6.2	B

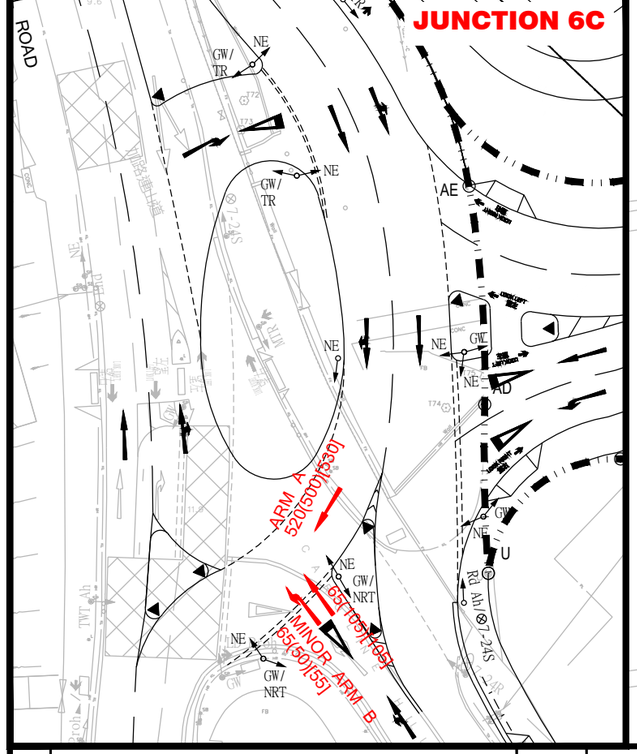
SYSTRA MVA

CHK50603110/TIA/F62-B.DWG/KCM/12APR22

Original Size : A3







LEGEND:
125(150)[130] WEEKDAY AM (WEEKDAY NOON) [WEEKDAY PM] PEAK HOURLY TRAFFIC FLOWS (PCU/HR)

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

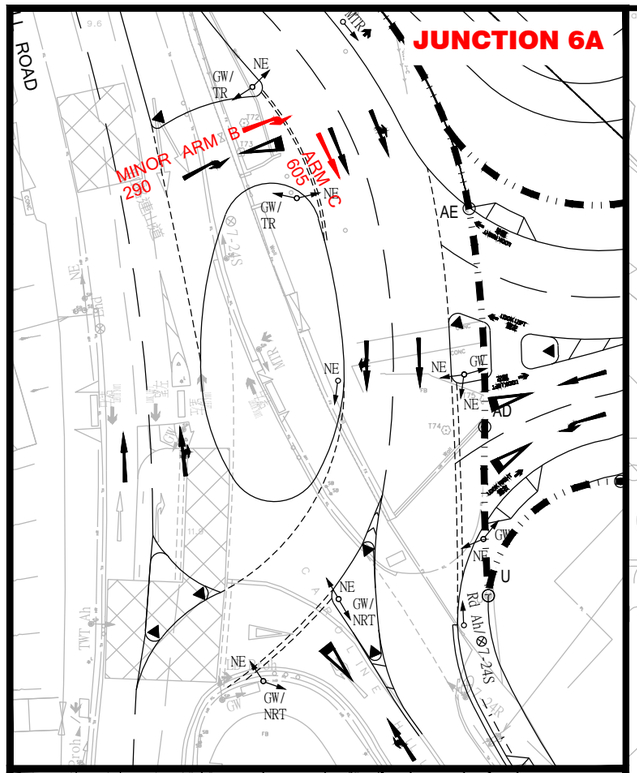
YEAR 2031 DESIGN WEEKDAY TRAFFIC FLOWS AT JUNCTION J6 UNDER PRIORITY CONTROL ARRANGEMENT

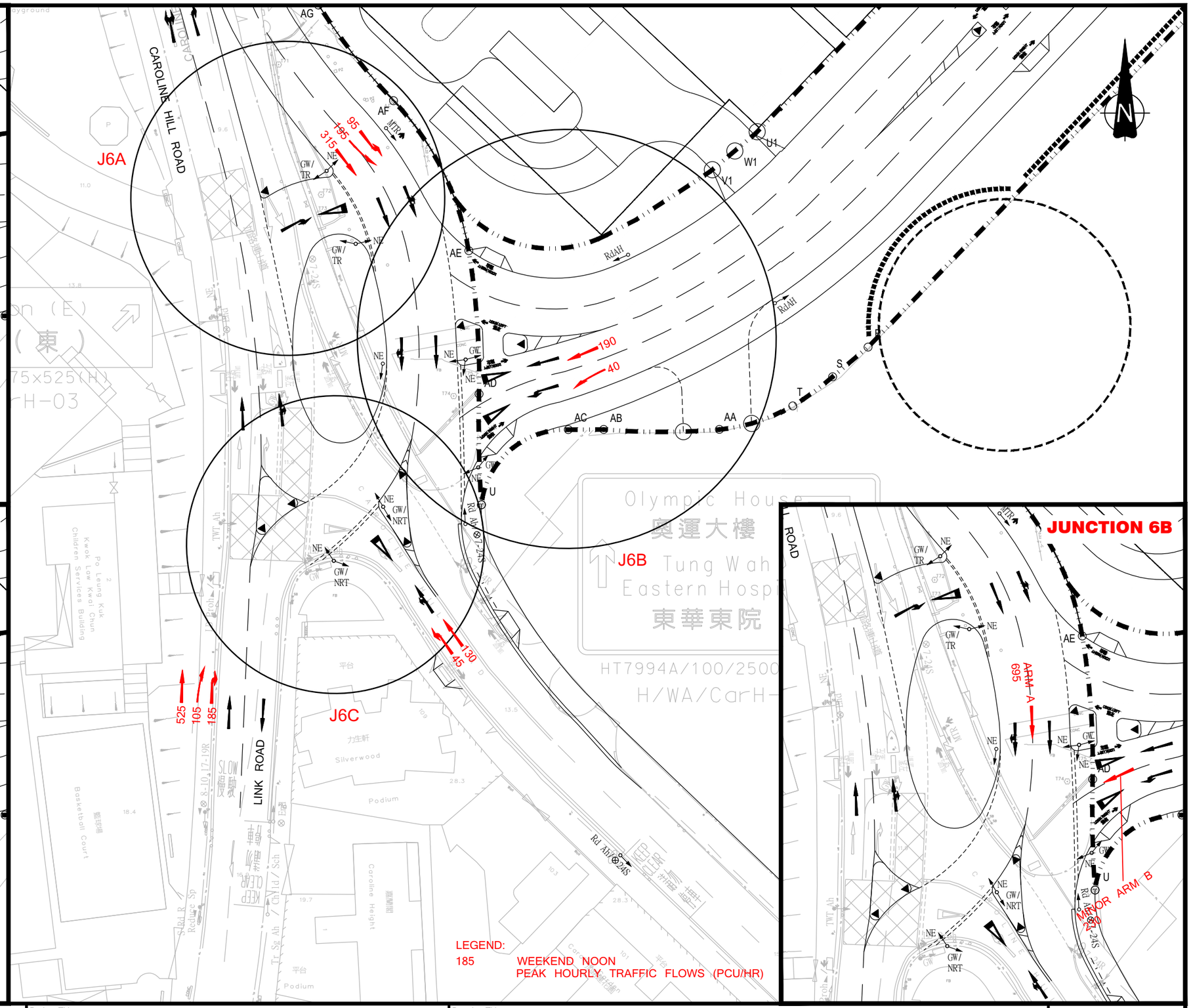
Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	MAY 2022	6.3A	-

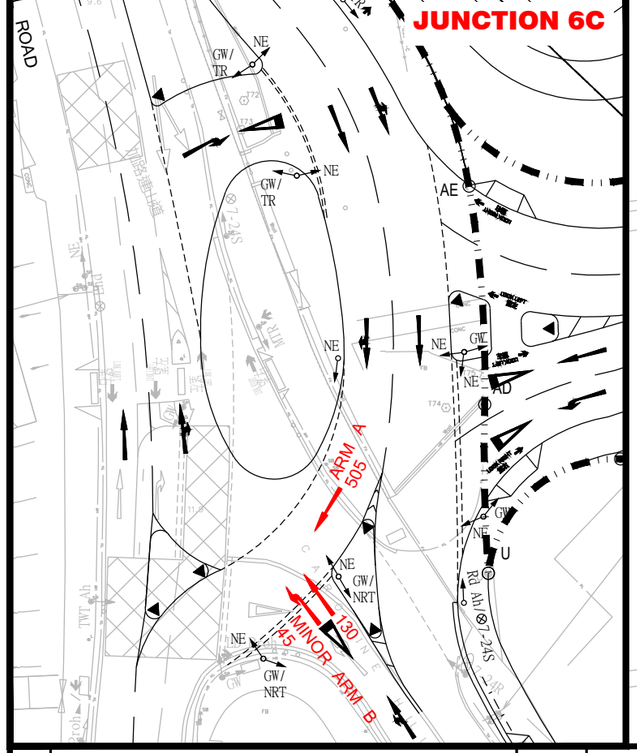
SYSTRA MVA

CHK50603110/TIA/F63A.DWG/CKC/12MAY22

Original Size : A3







LEGEND:
185 WEEKEND NOON PEAK HOURLY TRAFFIC FLOWS (PCU/HR)

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

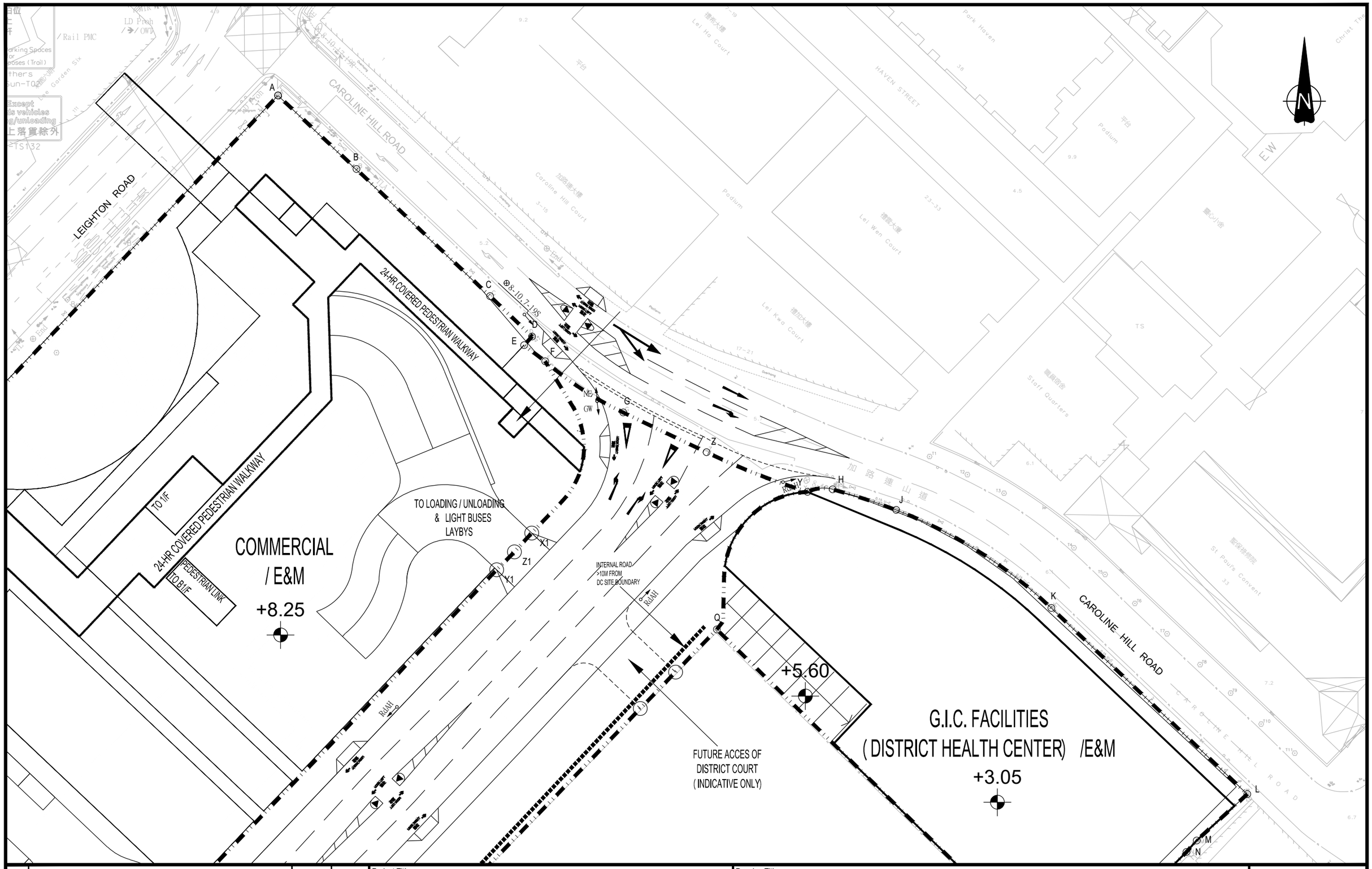
YEAR 2031 DESIGN WEEKEND TRAFFIC FLOWS AT JUNCTION J6 UNDER PRIORITY CONTROL ARRANGEMENT

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	MAY 2022	6.3B	-

SYSTRA MVA

CHK50603110/TIA/F63B.DWG/CKC/12MAY22

Original Size : A3



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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

FUTURE JUNCTION LAYOUT OF CAROLINE HILL ROAD (EAST) / NEW ACCESS ROAD (J18)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	1:500(A3)	DEC 2021	6.4	-

SYSTRA MVA

CHK50603110/TIA/F64.DWG/CKC/12MAY22

Original Size : A3

Lee Garden Two
Lee Garden Five
Lee Garden Three
Lee Garden Six
HYSAN AVENUE
YUN PING ROAD
PENNINGTON STREET
KESWICK STREET
LEIGHTON ROAD
SUNNING ROAD
HOI PING ROAD
SUN WUI ROAD
LEE GARDEN ROAD
FOO MING STREET
LAN FONG ROAD
LEIGHTON LANE
CAROLINE HILL ROAD
COTTON PATH
HAVEN STREET
Subject Site
加路連山
CAROLINE HILL
St. Paul's Hospital

15 16 14 13 17 18 11 12 8 7 6 9 19 20 10 5 4 3 2 1

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10

LEGEND :

- INDEX OF FOOTPATH
- INDEX OF PEDESTRIAN CROSSING
- FUTURE PEDESTRIAN LINKS
- FUTURE FOOTBRIDGE CONNECTING TO LEE GARDEN SIX

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

INDEX PLAN FOR FOOTPATHS AND PEDESTRIAN CROSSING

Designed	Checked	Scale	Date	Drawing No.	Rev.
APU	CHC	NTS	DEC 2021	7.1	-

SYSTRA MVA

CHK50603110/TIA/F71.CDR/LLH/9DEC21

Original Size : A3

To / From
B3 (subway connection)
B1 (light bus layby)
2F (landscape bridge)

To / From
1/F & 2/F

At-grade
pedestrian crossing

Alternative pedestrian
route via POS

To / From B1
(light bus layby)

At-grade
pedestrian crossing

LEIGHTON ROAD

CAROLINE HILL ROAD

CAROLINE HILL ROAD

DISABLED ACCESS
TO B3/F, B1/F & 2/F

DISABLED ACCESS
TO STREET LEVEL

DISABLED ACCESS
TO B3/F, LG/F,
1/F & 2/F

DISABLED ACCESS
TO B3/F, LG/F,
1/F & 2/F

G.I.C. FACILITIES
(DAY CARE CENTER
FOR THE ELDERLY)
/ E&M

G/F

G.I.C. FACILITIES
(DISTRICT HEALTH
CENTER) / E&M

LG/F

COMMERCIAL
/ E&M

TO LOADING / UNLOADING
& LIGHT BUSES
LAY-BYS

PEDESTRIAN LINK

COVERED PEDESTRIAN WALKWAY

DROP-OFF

PRIVATE
L/UL

TO CARPARK

SITE OF FUTURE
DISTRICT COURT

DISTRICT COURT

DISTRICT COURT

+4.97
+10.0
+5.60
+7.55
+7.55
+5.60
+8.25
+5.60
+3.05
+8.9
+11.1

14 M
6 M
2W
3W

LEGEND :

PEDESTRIAN ROUTE

ESCALATOR / LIFT

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

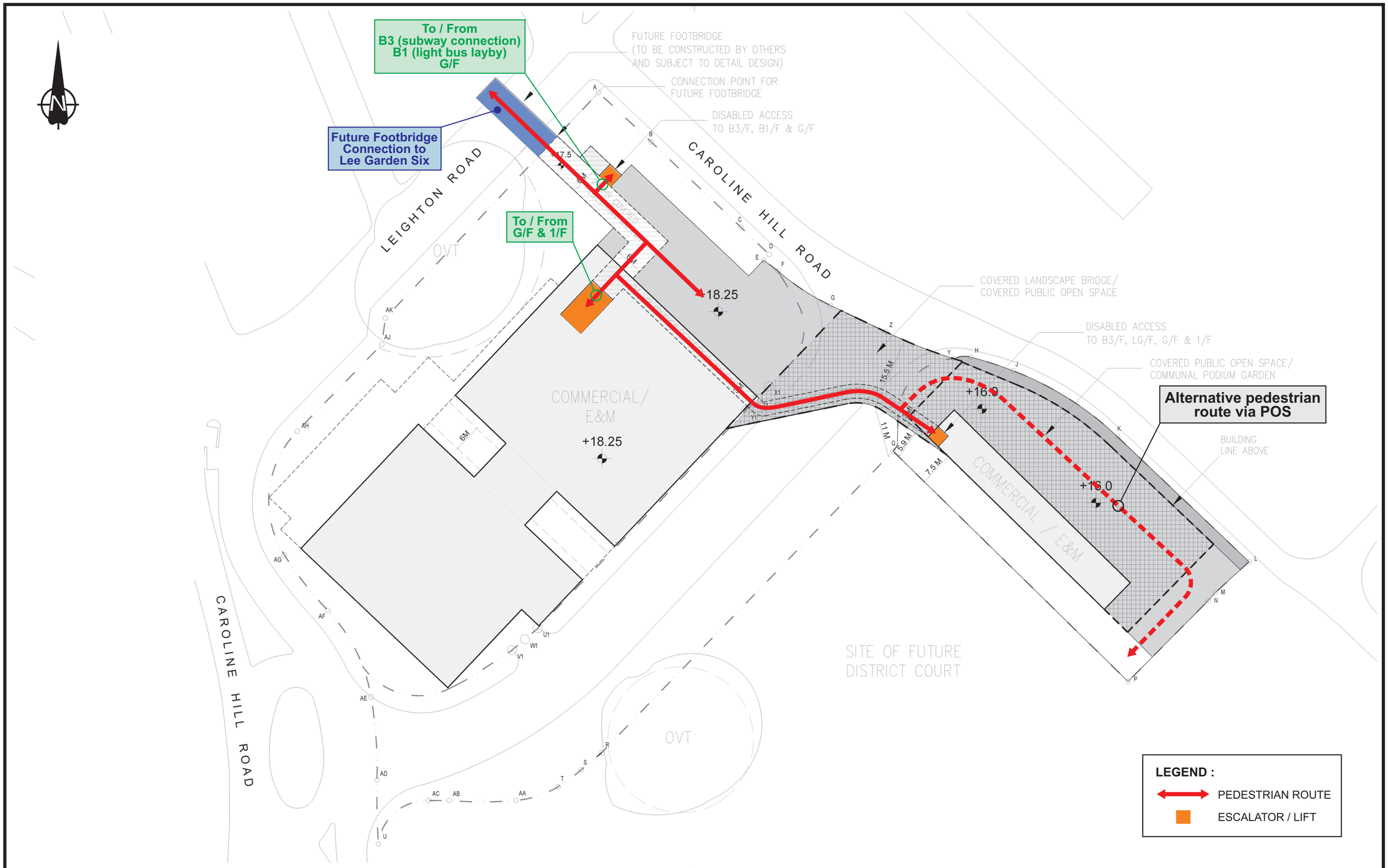
INTERNAL PEDESTRIAN CONNECTION (G/F)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	MAR 2022	7.2	A

SYSTRA MVA

CHK50603110/TIA/F72-A.CDR/LLH/13APR22

Original Size : A3



LEGEND :

PEDESTRIAN ROUTE

ESCALATOR / LIFT

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

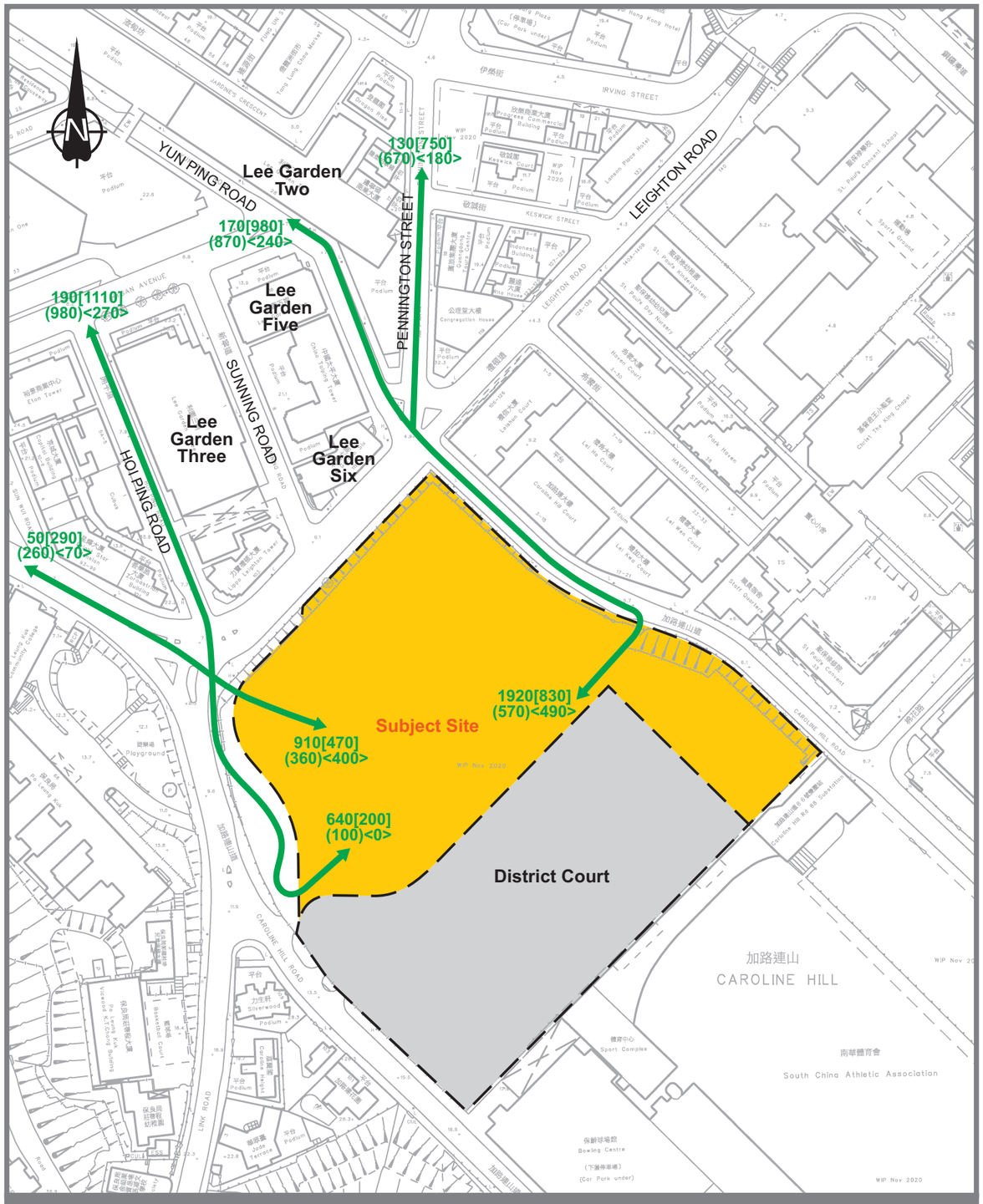
INTERNAL PEDESTRIAN CONNECTION (2/F – LANDSCAPE BRIDGE LEVEL)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	MAR 2022	7.3	A

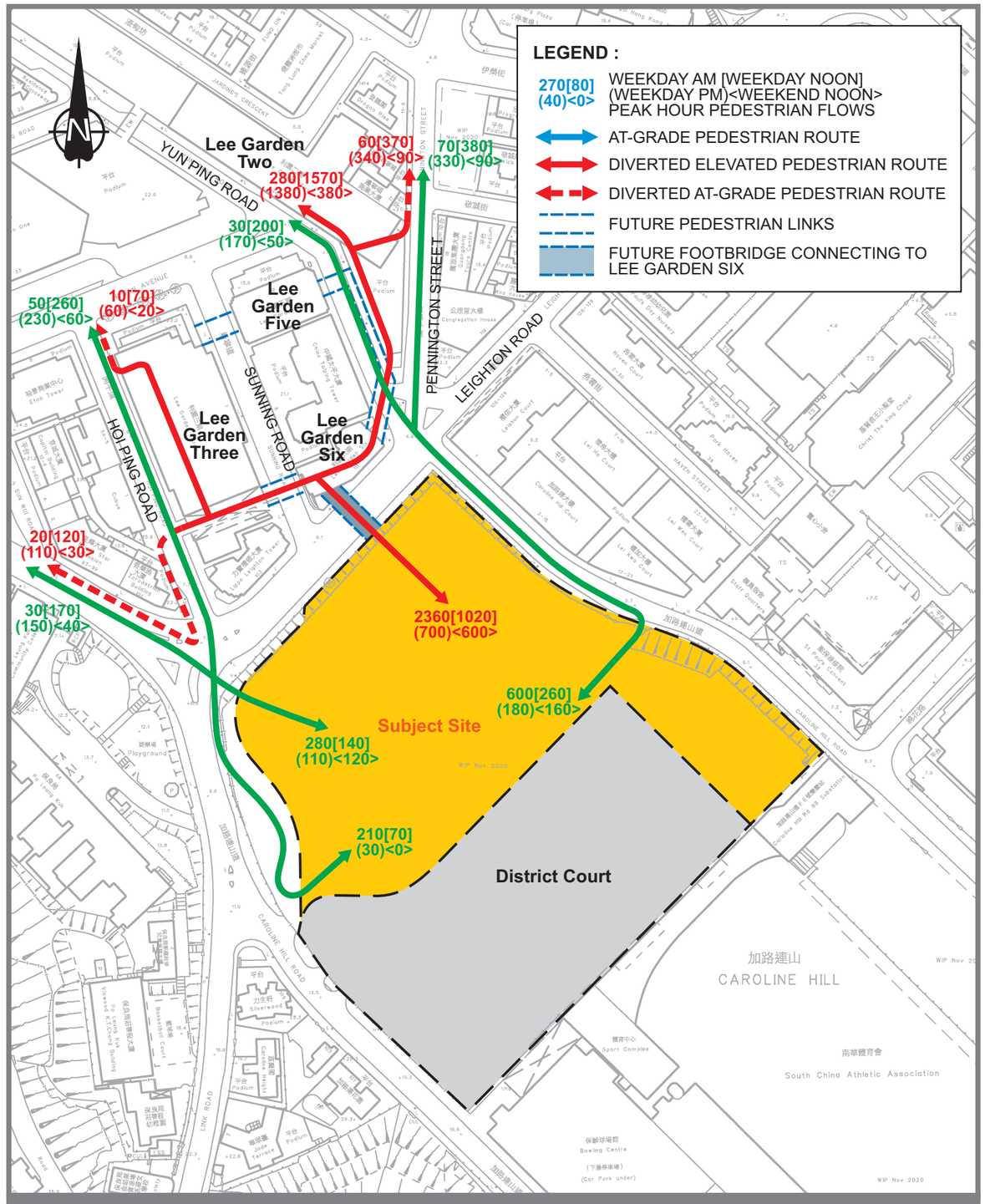
SYSTRA MVA

CHK50603110/TIA/F73-A.CDR/LLH/13APR22

Original Size : A3



N-S Pedestrian Movement in Year 2031 Design Scenario without Future Footbridges



N-S Pedestrian Movement in Year 2031 Ultimate Scenario with Future Footbridges

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

RE-DISTRIBUTION OF N-S PEDESTRIAN MOVEMENTS WITH FUTURE FOOTBRIDGES IN YEAR 2031 ULTIMATE SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	MAR 2022	7.4	-

SYSTRA MVA

CHK50603110/TIA/F74.CDR/LLH/1MAR22

Original Size : A3

APPENDIX A – The Road Scheme As Proposed in HyD's Traffic Review Report

Source:
http://www.info.gov.hk/tpb/en/papers/MPC/626-mpc_5-19.pdf

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initiials:

815450 N

837100 E

837200 E

837300 E

815350 N

815250 N

SIGNALISED CROSSING TO BE WIDENED BY 1.5m TO 4m.

ADDITIONAL DEDICATED LEFT-TURNING TRAFFIC LANE TO BE PROVIDED

THE LEFT-TURN LANE TO BE MODIFIED TO "LEFT-TURN AND RIGHT-TURN" SHARED LANE

EXISTING PRIORITY JUNCTION TO BE MODIFIED TO A ROUNDABOUT-LIKE CIRCULATION

ADDITIONAL PEDESTRIAN CROSSING TO BE PROVIDED

RIGHT-TURN POCKET TO BE PROVIDED

LEGEND:

THE SITE

N

SUNNING ROAD

LEIGHTON ROAD

HOI PING ROAD

CAROLINE HILL ROAD

LINK ROAD

COTTON PATH

Caroline Hill Road 加路連山道

CAROLINE HILL

加路連山

WIP Mar 2016

WIP Dec 2015

WIP Dec

Plot File by: LUH9 2019/11/15
PATH: P:\PROJECTS\60492827\DRAWING\REPORT\TR2\TR2_CWB_522.dgn

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AECOM

PROJECT
項目

ROAD WORKS IN CONNECTION WITH PROPOSED SITES FOR HOUSING / COMMERCIAL DEVELOPMENT (PACKAGE1) - FEASIBILITY STUDY

CLIENT
業主

路政署 HIGHWAYS DEPARTMENT

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

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

STATUS
現狀

SCALE 比例: A3 1 : 1000

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60492827

AGREEMENT NO. 協議編號: CE57/2015(HY)

SHEET TITLE
圖紙名稱

PROPOSED ROAD SCHEME

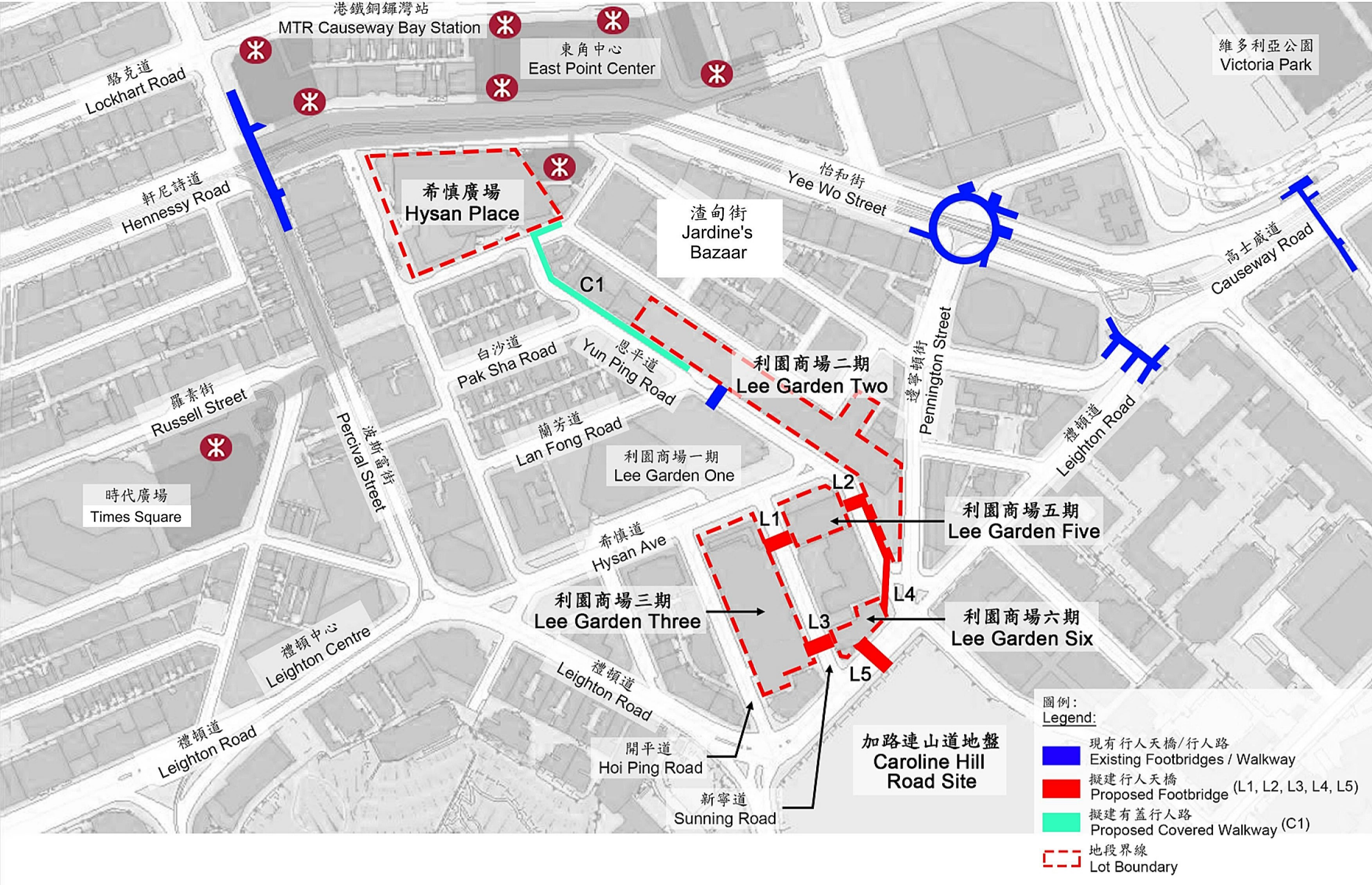
SHEET NUMBER
圖紙編號

60492827/TR2/CWB_FIGURE 2.1

APPENDIX B – Plan of Pedestrian Links in Causeway Bay

Source:
https://gia.info.gov.hk/general/202101/05/P2021010500742_357901_1_1609851261905.pdf

Proposed provision of Pedestrian Links in Causeway Bay
銅鑼灣擬建行人通道走線



APPENDIX C – Sensitivity Test on Accumulated Traffic Impact with Redevelopment of Hong Kong Stadium

APPENDIX C –

SENSITIVITY TEST ON ACCUMULATED TRAFFIC IMPACT WITH REDEVELOPMENT OF HONG KONG STADIUM

C.1 Junction Assessments for Sensitivity Test

C.1.1 Based on the Discussion Paper No. 53/2021 – Redevelopment Proposal of Hong Kong Stadium as discussed on the 15th meeting of Wan Chai District Council Meeting on 16th November 2021, it is noted that the total number of seats for Hong Kong Stadium will be reduced from approximate 40,000 seats to 9,000 seats. In addition, the future redevelopment of Hong Kong Stadium will mainly host school athletic meet and local soccer game.

C.1.2 In order to estimate the traffic generation and attraction of the future redevelopment of Hong Kong Stadium, reference has made to the consultant's in-house traffic data obtained from traffic survey for Wan Chai Sports Ground in 2019 on a typical school event day with approximately 500 students, which exhibits similar purpose with the future redevelopment of Hong Kong Stadium.

C.1.3 Based on the result of the aforesaid trip generation survey for Wan Chai Sports Ground, it was observed that approximate 40 pcu/hr and 40 pcu/hr for trip generation and attraction respectively from an hour before the start time of the event at 0700 – 0800, and it does not coincide with the road network AM commuting peak (i.e. 0815 – 0915).

C.1.4 For conservative purpose, the traffic generation and attraction of 40 pcu/hr during the AM event peak are superimposed onto the year 2031 AM, Noon and PM peak hours design traffic flows for sensitivity test, and the results are listed in below **Table C1**.

Table C1 Junction Performance in Design Scenario of Year 2031 with Redevelopment of Hong Kong Stadium

Ref No.	Junctions	Method of Control	Design Scenario in Year 2031 RC/RFC[(1)]							
			Without the Redevelopment of Hong Kong Stadium				With the Redevelopment of Hong Kong Stadium			
			Weekday			Weekend	Weekday			Weekend
			AM	Noon	PM	Noon	AM	Noon	PM	Noon
J1	Hennessy Road / Percival Street	Signalised	122%	66%	74%	58%	122%	66%	74%	58%
J2	Matheson Street / Percival Street / Russell Street	Signalised	348%	265%	335%	243%	348%	265%	335%	243%
J3	Leighton Road / Percival Street / Hysan Avenue	Signalised	43%	26%	38%	22%	42%	26%	37%	21%
J4	Leighton Road / Hysan Avenue / Leighton Lane	Signalised	304%	296%	269%	164%	304%	296%	269%	164%
J5	Leighton Road / Caroline Hill Road (West)	Signalised	22%	25%	37%	33%	20%	24%	34%	31%
J6	Caroline Hill Road (West) / Link Road / New Access Road	Signalised	42%	47%	47%	48%	40%	43%	43%	43%

Ref No.	Junctions	Method of Control	Design Scenario in Year 2031 RC/RFC(1)							
			Without the Redevelopment of Hong Kong Stadium				With the Redevelopment of Hong Kong Stadium			
			Weekday			Weekend	Weekday			Weekend
			AM	Noon	PM	Noon	AM	Noon	PM	Noon
J7	Caroline Hill Road / Cotton Path	Priority	0.23	0.29	0.15	0.22	0.23	0.29	0.15	0.22
J8	Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Signalised	29%	33%	21%	20%	29%	33%	20%	19%
J9	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street	Signalised	47%	37%	40%	40%	46%	37%	40%	39%
J10	Causeway Road / Moreton Terrace	Signalised	40%	29%	23%	32%	39%	28%	22%	31%
J11	Pennington Street / Jardine's Bazaar / Irving Street	Signalised	230%	193%	175%	187%	230%	193%	175%	187%
J12	Link Road / Broadwood Road	Signalised	19%	25%	20%	18%	19%	24%	19%	18%
J13	Broadwood Road / Ventris Road	Priority	0.58	0.59	0.58	0.58	0.59	0.59	0.59	0.58
J14	Wong Nai Chung Road / Sports Road	Signalised	164%	142%	153%	132%	162%	140%	150%	130%
J15	Leighton Road / Wong Nai Chung Road	Signalised	28%	20%	18%	24%	27%	18%	16%	22%
J16	Tung Lo Wan Road / Eastern Hospital Road	Signalised	54%	55%	79%	72%	51%	52%	76%	69%
J17	Tung Lo Wan Road / Moreton Terrace	Signalised	41%	25%	31%	78%	41%	25%	30%	78%
J18	Caroline Hill Road / Site Access	Priority	0.23	0.19	0.15	0.11	0.23	0.19	0.15	0.11
J19	Hysan Avenue / Hoi Ping Road	Priority	0.61	0.56	0.53	0.52	0.62	0.57	0.54	0.53
J20	Tung Lo Wan Road / Tai Hang Road	Priority	0.69	0.70	0.73	0.35	0.69	0.70	0.73	0.36

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

C.1.5 The assessment results in **Table C1** show that all identified junctions including the modified junction J5, the modified junction J6 with signal control arrangement as well as the new junction J18 at the Green Areas will be operating within their capacities in the design scenario of year 2031 with redevelopment of Hong Kong Stadium.

C.2 Pedestrian Assessments for Sensitivity Test

Sensitivity Test for Future Pedestrian Condition in Design Scenario

C.2.1 As mentioned above, the future redevelopment of Hong Kong Stadium will mainly host school athletic meet and local soccer game. Taking into consideration the local soccer games

are normally held on the non-peak time period, the assessment on pedestrian facilities by assuming school athletic meet with 1,000 attendances is conducted for this sensitivity test.

C.2.2 In general, arrival and dismissal time of school athletic meet are not overlapping the communal morning and evening peak hours. Nevertheless, the assessment is conducted by assuming the arrival and dismissal period overlaps with the observed communal peak hours in the study area. The pedestrian generation and attraction due to the school event are listed in **Table C2** below:

Table C2 Pedestrian Generation and Attraction of School Athletic Meet at the Redevelopment of Hong Kong Stadium

Event	Weekday						Weekend	
	AM		Noon		PM		Noon	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
School Athletic Meet	0	1,000	500	500	1,000	0	500	500

C.2.3 The additional pedestrian trips due to the event is then distributed and assigned onto the pedestrian network in Year 2031 Design Scenario, and the assessment results on the pedestrian facilities are summarized in **Tables C3.**

Table C3 Operational Performance of Pedestrian Facilities in Design Scenario of Year 2031 with Redevelopment of Hong Kong Stadium

Location[1]	Clear Width (m)	Effective Width[2] (m)	Year 2031 Two-way Pedestrian Flows[3] In Design Scenario With Redevelopment of Hong Kong Stadium (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	600	710	1020	850	A	A	A	A
3	2.9	1.9	410	450	220	260	A	A	A	A
4[5]	3.5	2.5	1360	1380	1400	920	B	B	C	A
5	3.2	2.2	530	770	760	560	A	A	A	A
6	2.3	1.3	640	830	740	500	A	A	A	A
7	2.0	1.0	460	460	430	260	A	A	A	A
8	2.0	1.0	1620	1760	1700	980	C	C	C	B
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	690	950	700	610	A	A	A	A
11	2.3	1.3	150	130	190	100	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	1230	1970	1540	1240	A	B	B	A
14	2.5	1.5	1070	1620	1380	960	A	B	A	A
15	2.2	1.2	1470	2110	1640	1330	B	C	B	B
16	2.0	1.0	530	650	560	350	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	900	2410	1330	1370	A	B	A	A
19	3.0	2.0	2210	3080	2360	1600	B	C	B	A
20	1.7	0.7	850	1000	810	390	B	C	B	A
C1	4.0	4.0	820	880	660	600	A	A	A	A
C2	3.6	3.6	560	810	640	540	A	A	A	A
C3	3.3	3.3	860	840	770	410	A	A	A	A
C4	3.3	3.3	440	690	550	360	A	A	A	A
C5[6]	5.0	5.0	1970	2080	1890	1110	C	C	C	B

C6	6.8	6.8	1500	2280	1780	1450	A	A	A	A
C7	4.0	4.0	2330	3210	2510	1880	B	C	B	A
C8	4.2	4.2	3350	4680	3670	2840	**D**	**D**	**D**	C
C9	4.2	4.2	600	820	630	500	A	A	A	A
C10	6.4	6.4	3620	5230	4050	3000	C	**D**	C	B

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity
(5) The clear width of footpath will be widened from the existing 2m to 3.5m upon the implementation of the proposed road scheme at the Green Areas
(6) The crossing width will be widened from the existing 3.6m to 5m upon the implementation of the proposed road scheme at the Green Areas.

C.2.4 As shown in the **Table C3**, the assessment results suggested that all the pedestrian facilities in the surrounding will be still operated at LOS C or better in the design scenario of year 2031, except the pedestrian crossings (locations C8 and C10) at Leighton Road would operate at LOS D. Nevertheless, LOS D is still considered an acceptable level for operation at the existing pedestrian facilities especially the pedestrian situation will be improved upon the commissioning of the Pedestrian Links with future footbridge connecting the Development to Lee Garden Six.

C.2.5 Notwithstanding the future footbridges should be deemed as the long-term solution to enhance pedestrian conditions in the Causeway Bay South area, it is reviewed that slightly increase of the green time for the pedestrian crossings C6, C8 and C10 by 3 seconds for weekday noon would improve the pedestrian crossing C10 from LOS D to LOS C, while increasing the green time by 4 seconds for evening peak on weekday would improve the pedestrian crossing C8 from LOS D to LOS C. The proposed increase in pedestrian green time will not cause significant impact to junction performance and queue length.

Sensitivity Test for Future Pedestrian Condition in Ultimate Scenario

C.2.6 As discussed in **Section 7.2** of Traffic Review Report, a footbridge connection will be provided at the Development to receive the future footbridge from Lee Garden Six. With the connection to the future footbridge, the Development will be linked up with the Pedestrian Links such that the at-grade pedestrian flows would be diverted from the street level to the elevated level in particular the north-south movements between the MTR station and the subject site.

C.2.7 By taking into account the future footbridge connection to Lee Garden Six, the future pedestrian flows in the ultimate scenario of year 2031 with the redevelopment of Hong Kong Stadium are derived. The results of LOS assessments for the year 2301 ultimate scenario with redevelopment of Hong Kong Stadium are presented in the **Table C4**.

Table C4 Operational Performance of Pedestrian Facilities in Ultimate Scenario of Year 2031 with Redevelopment of Hong Kong Stadium

Location[1]	Clear Width (m)	Effective Width[2] (m)	Year 2031 Two-way Pedestrian Flows[3] In Ultimate Scenario With Redevelopment of Hong Kong Stadium (Ped/hour)				Level-of-Service[4] (LOS)			
			Weekday			Weekend	Weekday			Weekend
			AM Peak	Noon Peak	PM Peak	Noon Peak	AM Peak	Noon Peak	PM Peak	Noon Peak
1	3.0	2.0	170	210	190	70	A	A	A	A
2	3.0	2.0	420	590	880	730	A	A	A	A
3	2.9	1.9	410	450	220	260	A	A	A	A
4[5]	3.5	2.5	660	790	980	790	A	A	B	A
5	3.2	2.2	520	770	750	560	A	A	A	A
6	2.3	1.3	480	640	590	430	A	A	A	A
7	2.0	1.0	360	340	330	170	A	A	A	A
8	2.0	1.0	410	410	610	470	A	A	A	A
9	2.7	1.7	370	570	490	310	A	A	A	A
10	3.0	2.0	690	950	700	610	A	A	A	A
11	2.3	1.3	80	60	150	70	A	A	A	A
12	2.0	1.0	130	100	90	60	A	A	A	A
13	2.5	1.5	420	1290	840	800	A	A	A	A
14	2.5	1.5	370	960	730	650	A	A	A	A
15	2.2	1.2	1150	1770	1330	1190	A	C	B	B
16	2.0	1.0	340	430	380	270	A	A	A	A
17	4.4	3.4	50	110	90	120	A	A	A	A
18	3.3	2.3	900	2410	1330	1370	A	B	A	A
19	3.0	2.0	670	1610	970	890	A	A	A	A
20	1.7	0.7	380	480	380	210	A	A	A	A
C1	4.0	4.0	810	850	620	580	A	A	A	A
C2	3.6	3.6	390	620	480	470	A	A	A	A
C3	3.3	3.3	700	630	590	320	A	A	A	A
C4	3.3	3.3	380	600	490	360	A	A	A	A
C5[6]	5.0	5.0	660	630	700	540	A	A	A	A
C6	6.8	6.8	680	1520	1080	1040	A	A	A	A
C7	4.0	4.0	1310	2200	1550	1430	A	B	A	A
C8	4.2	4.2	1540	2920	2030	2020	A	C	B	B
C9	4.2	4.2	410	600	450	420	A	A	A	A
C10	6.4	6.4	1630	3250	2240	2110	A	B	A	A

Notes:
(1) Refer to **Drawing No. 7.1**
(2) Effective Width = Clear Width – Dead Width. Dead width = 0.5m for clearance from kerb/structure on footpaths; and no dead width at pedestrian crossing
(3) Rounded to the nearest 10
(4) Based the criteria of LOS from HCM 2000 as exhibited in TPDM. In general, LOS A and B provide a good walking environment; LOS C and D are acceptable value; and LOS E and F reflect the design volume has approached or over the limit of walking capacity
(5) The clear width of footpath will be widened from the existing 2m to 3.5m upon the implementation of the proposed road scheme at the Green Areas
(6) The crossing width will be widened from the existing 3.6m to 5m upon the implementation of the proposed road scheme at the Green Areas

C.2.8 As shown in **Table C4**, the operation performance of the critical pedestrian crossings at Leighton Road (locations C8 and C10) can be improved to the LOS C or better upon commissioning of the future footbridge connecting the Development with Lee Garden Six.

APPENDIX D – Junction Calculation Worksheets

Year 2021 Observed

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

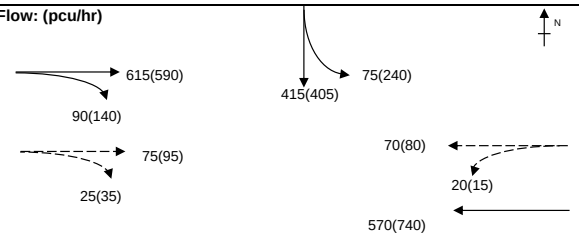
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	235	0.157		306	0.205	0.205
	←	A	1	3.700						2125	2125	335	0.158	0.158	434	0.204	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	20	0.011		15	0.008	
	←	A	1	3.000						2055	2055	70	0.034		80	0.039	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	196	0.204		188	0.196	
	→	B	1,2,3	3.000						2055	2055	419	0.204		402	0.196	
	↘	C	2,3	3.000		25				1940	1940	90	0.046	0.046	140	0.072	0.072
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	75	0.039		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	25	0.013		35	0.018	
Percival Street SB	↳	E	4	3.300	10					1690	1690	75	0.044		240	0.142	0.142
	↓	E	4	3.300						2085	2085	207	0.099	0.099	202	0.097	
	↓	E	4	3.500						2105	2105	208	0.099		203	0.096	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =	12	+	14	=	26								
		Gp	1	MIN GREEN + FLASH =	5	+	7	=	12								

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

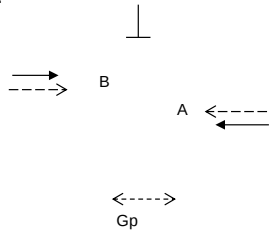
Flow: (pcu/hr)



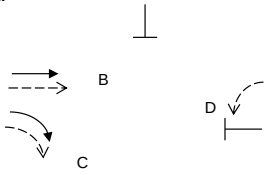
Group	A,C,Fp	A,C,E	Group	A,C,Fp	A,C,E
y	0.204	0.303	y	0.277	0.419
L (sec)	46	19	L (sec)	46	19
C (sec)	120	120	C (sec)	120	120
y pract.	0.555	0.758	y pract.	0.555	0.758
R.C. (%)	172%	150%	R.C. (%)	100%	81%

Stage / Phase Diagrams

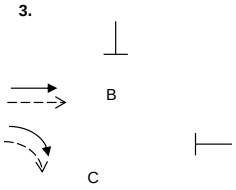
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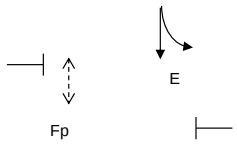
2.



3.



4.



5.

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

Date: FEB, 2022 **Junction:** J1 Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

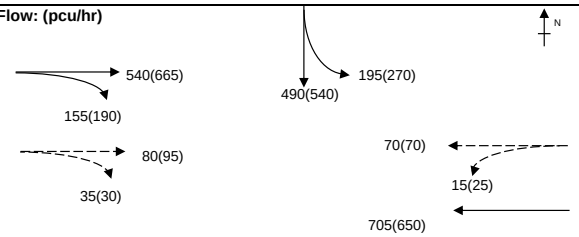
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	291	0.195		268	0.179	
	←	A	1	3.700						2125	2125	414	0.195	0.195	382	0.180	0.180
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	15	0.008		25	0.014	
	←	A	1	3.000						2055	2055	70	0.034		70	0.034	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	172	0.179		212	0.221	
	→	B	1,2,3	3.000						2055	2055	368	0.179		453	0.220	
	↘	C	2,3	3.000		25				1940	1940	155	0.080	0.080	190	0.098	0.098
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	80	0.042		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	35	0.018		30	0.015	
Percival Street SB	↳	E	4	3.300	10					1690	1690	195	0.115		270	0.160	0.160
	↓	E	4	3.300						2085	2085	244	0.117		269	0.129	
	↓	E	4	3.500						2105	2105	246	0.117		271	0.129	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26			*			
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

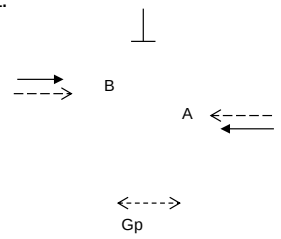
Flow: (pcu/hr)



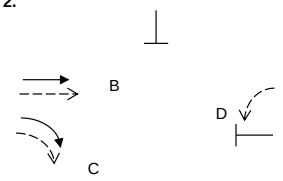
Group	A,C,E	A,C,Fp	Group	A,C,Fp	A,C,E
y	0.392	0.275	y	0.278	0.437
L (sec)	19	46	L (sec)	46	19
C (sec)	104	104	C (sec)	104	104
y pract.	0.736	0.502	y pract.	0.502	0.736
R.C. (%)	88%	83%	R.C. (%)	81%	68%

Stage / Phase Diagrams

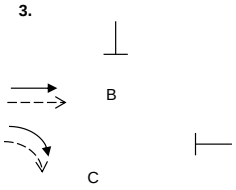
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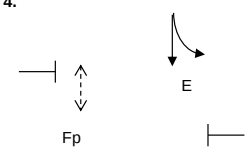
2.



3.



4.



5.

I/G= 4		I/G= 8		I/G=		I/G= 10	26
I/G= 6		I/G= 8		I/G=		I/G= 8	

I/G=		**Date:**	FEB, 2022
I/G=		**Junction:**	J1 Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

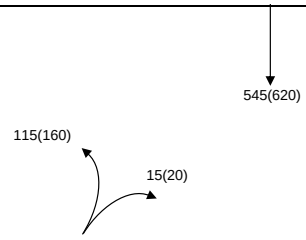
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Percival Street	↓	A	1	3.600						1975	1975	273	0.138	0.138	310	0.157	0.157
SB	↓	A	1	3.600						1975	1975	272	0.138		310	0.157	
Matheson Street	↰	B	2	3.300	10					1690	1690	64	0.038		89	0.053	
NB	↰→	B	2	3.300	13.3	10		77% / 23%	78% / 22%	1735	1735	66	0.038		91	0.052	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 120s are adopted for AM and PM Peak

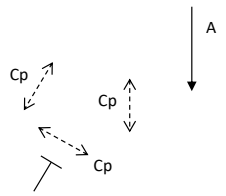
Flow: (pcu/hr)



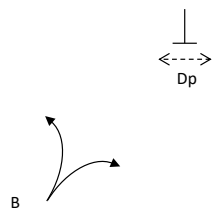
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.038	0.138	y	0.053	0.157
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	120	120
y pract.	0.643	0.703	y pract.	0.675	0.728
R.C. (%)	1590%	408%	R.C. (%)	1182%	363%

Stage / Phase Diagrams

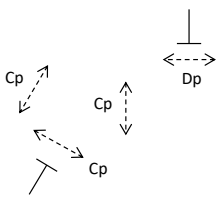
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

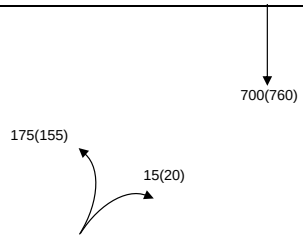
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Percival Street	↓	A	1	3.600						1975	1975	350	0.177	0.177	380	0.192	0.192
SB	↓	A	1	3.600						1975	1975	350	0.177		380	0.192	
Matheson Street	↰↑↱	B	2	3.300	10					1690	1690	94	0.056		86	0.051	
NB	↰↑↱	B	2	3.300	13.3	10		84% / 16%	78% / 22%	1740	1735	96	0.055		89	0.051	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 110s are adopted for WD and WE Noon

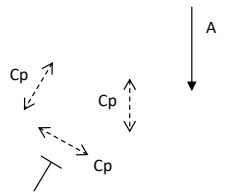
Flow: (pcu/hr)



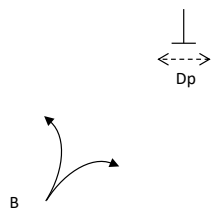
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.056	0.177	y	0.051	0.192
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	110	110
y pract.	0.643	0.703	y pract.	0.655	0.712
R.C. (%)	1056%	297%	R.C. (%)	1176%	270%

Stage / Phase Diagrams

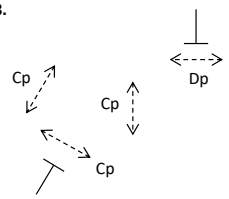
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	422	0.269		420	0.268	
	← *	E	1	3.000						1645	1645	443	0.269		440	0.267	
Leighton Road EB	→ **	A	1	2.500						1120	1120	318	0.284	0.284	289	0.258	
	→ **	A	1	2.500						1205	1205	342	0.284		311	0.258	0.258
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	210	0.184	0.184	290	0.254	0.254
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	222	0.139		233	0.146	
	** ↲	C	2	3.500		20				1175	1175	163	0.139		172	0.146	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

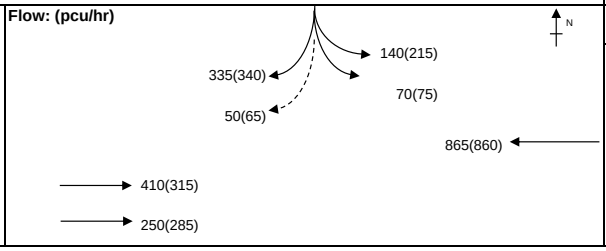
Notes:

TAC junction: Cycle time of 105s and 105s are adopted for AM and PM Peak

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

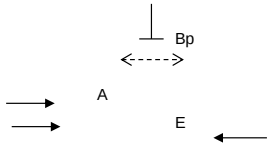
Flow: (pcu/hr)



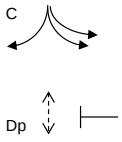
Group	E,C	A,C	Group	E,C	A,C
y	0.454	0.468	y	0.522	0.512
L (sec)	9	14	L (sec)	9	14
C (sec)	105	105	C (sec)	105	105
y pract.	0.823	0.780	y pract.	0.823	0.780
R.C. (%)	81%	67%	R.C. (%)	58%	52%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	410	0.261		444	0.283	
	← *	E	1	3.000						1645	1645	430	0.261		466	0.283	
Leighton Road EB	→ **	A	1	2.500						1120	1120	376	0.336	0.336	337	0.301	
	→ **	A	1	2.500						1205	1205	404	0.335		363	0.301	0.301
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	275	0.241	0.241	345	0.303	0.303
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	283	0.177		257	0.161	
	** ↲	C	2	3.300		20				1165	1165	207	0.178		188	0.161	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

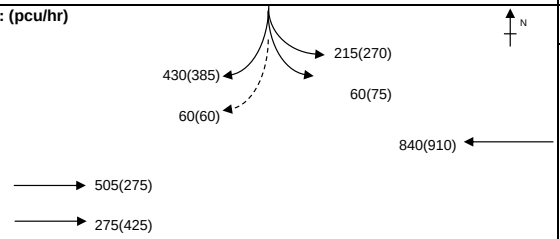
Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

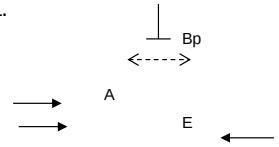
Flow: (pcu/hr)



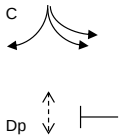
Group	E,C	A,C	Group	E,C	A,C
y	0.503	0.577	y	0.586	0.604
L (sec)	9	14	L (sec)	9	14
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.803	y pract.	0.838	0.803
R.C. (%)	67%	39%	R.C. (%)	43%	33%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

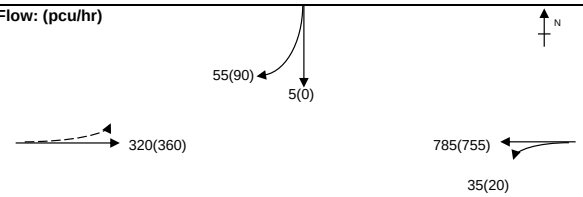
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	↓	B	2	3.500	5			9%	5%	1915	1935	393	0.205		374	0.193	
	←	B	2	3.200						2075	2075	427	0.206		401	0.193	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	320	0.163	0.163	360	0.183	0.183
Hysan Avenue SB	↓	C	3	3.300		17		84%	100%	1810	1785	32	0.018		48	0.027	
	↲	C	3	3.000		10				1585	1585	28	0.018		42	0.026	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 120s and 130s are adopted for AM and PM Peak

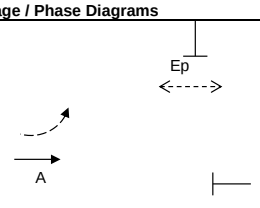
Flow: (pcu/hr)



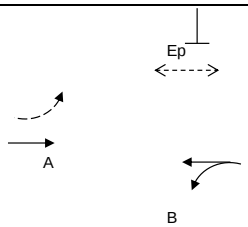
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.181	0.163	y	0.210	0.183
L (sec)	9	31	L (sec)	9	31
C (sec)	120	120	C (sec)	130	130
y pract.	0.833	0.668	y pract.	0.838	0.685
R.C. (%)	361%	310%	R.C. (%)	299%	274%

Stage / Phase Diagrams

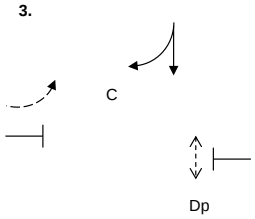
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I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

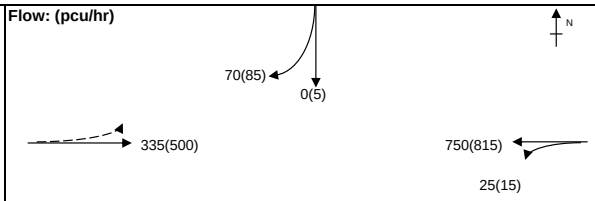
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	↓	B	2	3.500	5			7%	4%	1925	1945	373	0.194		401	0.206	
	←	B	2	3.200						2075	2075	402	0.194		429	0.207	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	335	0.170	0.170	500	0.254	0.254
Hysan Avenue	↓	C	3	3.300		17		100%	90%	1785	1805	37	0.021		48	0.027	
SB	↲	C	3	3.000		10				1585	1585	33	0.021		42	0.026	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

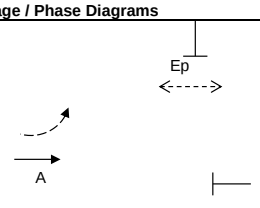
Flow: (pcu/hr)



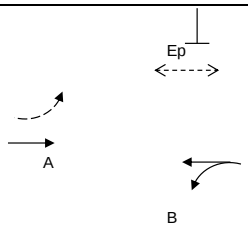
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.191	0.170	y	0.281	0.254
L (sec)	9	31	L (sec)	9	31
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.685	y pract.	0.838	0.685
R.C. (%)	338%	302%	R.C. (%)	198%	169%

Stage / Phase Diagrams

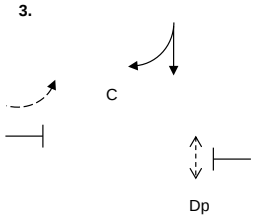
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I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	^	A	1	3.500	25			100%	100%	1110	1110	260	0.234	0.234	235	0.212	0.212
		A	1	3.000						2055	2055	430	0.209		360	0.175	
Caroline Hill Road		D	2,3	3.500	65					1920	1920	315	0.164		325	0.169	
NB	**	B	2	3.500		20				1665	1665	385	0.231	0.231	400	0.240	0.240
Leighton Road	#	A	1	3.500						1570	1570	174	0.111		200	0.127	
EB		A	1	3.300						2085	2085	231	0.111		265	0.127	
Hoi Ping Road		C	3	3.000						1915	1915	260	0.136	0.136	240	0.125	
SB	*	C	3	3.000		10				715	715	75	0.105		90	0.126	0.126

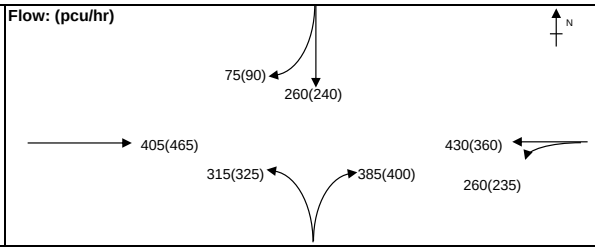
Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak
^ = Site Factor of 0.6 adopted due to merging traffic ahead
* = Site Factor of 0.4 adopted due to flare lane
** = Site Factor of 0.85 adopted

= Site Factor of 0.8 adopted

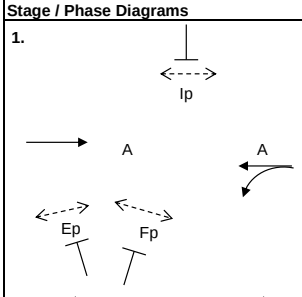
Flow: (pcu/hr)



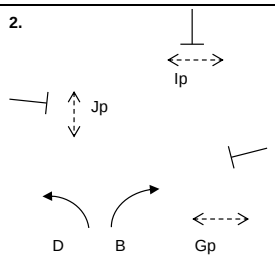
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.465	0.601	y	0.452	0.578
L (sec)	38	20	L (sec)	38	20
C (sec)	105	105	C (sec)	130	130
y pract.	0.574	0.729	y pract.	0.637	0.762
R.C. (%)	23%	21%	R.C. (%)	41%	32%

Stage / Phase Diagrams

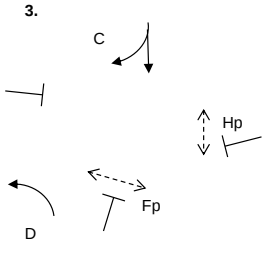
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	^	A	1	3.500	25			100%	100%	1110	1110	220	0.198	0.198	280	0.252	0.252
		A	1	3.000						2055	2055	365	0.178		435	0.212	
Caroline Hill Road		D	2,3	3.500	65					1920	1920	280	0.146		305	0.159	
NB	**	B	2	3.500		20				1665	1665	410	0.246	0.246	375	0.225	0.225
Leighton Road	#	A	1	3.500						1570	1570	183	0.117		262	0.167	
EB		A	1	3.300						2085	2085	242	0.116		348	0.167	
Hoi Ping Road		C	3	3.000						1915	1915	215	0.112		230	0.120	
SB	*	C	3	3.000		10				715	715	130	0.182	0.182	90	0.126	0.126

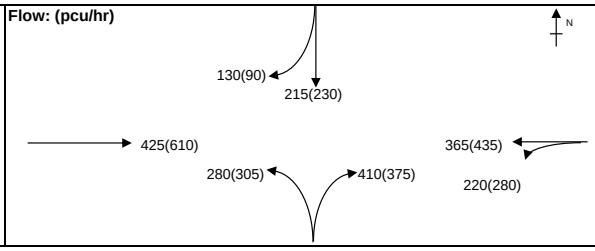
Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15	
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19	
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19	
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17	
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17	
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17	

Notes:

TAC junction: Cycle time of 120s and 130s are adopted for WD and WE Noon
^ = Site Factor of 0.6 adopted due to merging traffic ahead
* = Site Factor of 0.4 adopted due to flare lane
** = Site Factor of 0.85 adopted

= Site Factor of 0.8 adopted

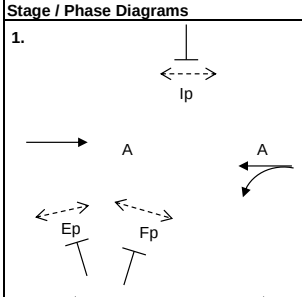
Flow: (pcu/hr)



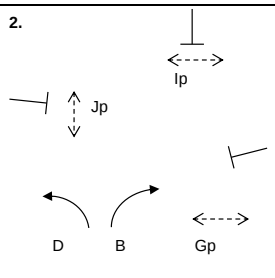
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.444	0.626	y	0.477	0.603
L (sec)	38	20	L (sec)	38	20
C (sec)	120	120	C (sec)	130	130
y pract.	0.615	0.750	y pract.	0.637	0.762
R.C. (%)	38%	20%	R.C. (%)	33%	26%

Stage / Phase Diagrams

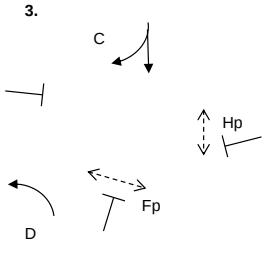
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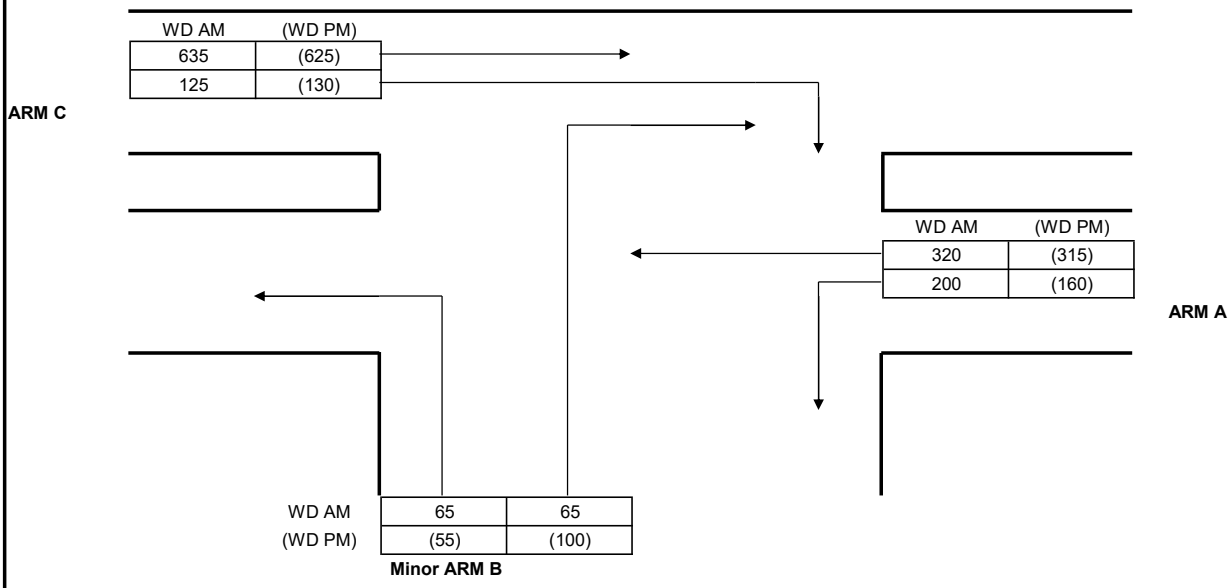
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) / Link Road			Ref. No.:	J6
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	9.40	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.65
	Vr(c-b)	100		Y	0.68

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		635	625
	q(c-b)		125	130
	q(a-b)		200	160
	q(a-c)		320	315
	q(b-a)		65	100
	q(b-c)		65	55
	f		0.50	0.35
		Factor		
CAPACITIES	Q(b-a)	1	311	315
	Q(b-c)	1	497	501
	Q(c-b)	1	398	405
	Q(b-ac)	1	383	363
RFC's	b-a		0.209	0.317
	b-c		0.131	0.110
	c-b		0.314	0.321
	b-ac		0.339	0.427
Worst RFC			**0.339**	**0.427**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

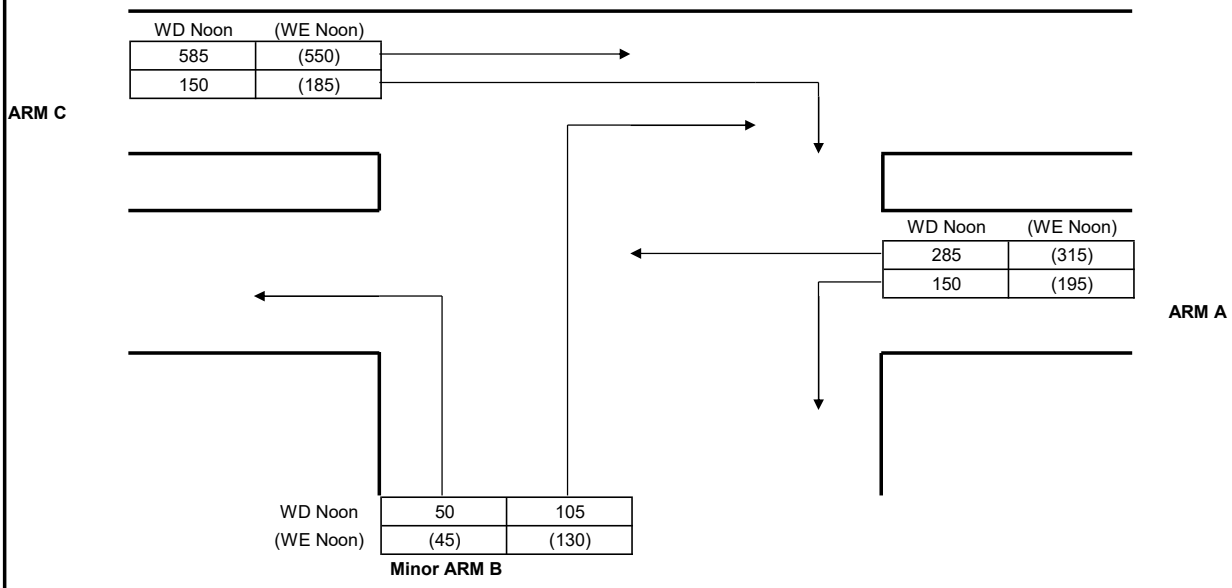
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) / Link Road			Ref. No.:	J6
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	9.40	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.65
	Vr(c-b)	100		Y	0.68

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		585	550
	q(c-b)		150	185
	q(a-b)		150	195
	q(a-c)		285	315
	q(b-a)		105	130
	q(b-c)		50	45
	f		0.32	0.26
		Factor		
CAPACITIES	Q(b-a)	1	321	306
	Q(b-c)	1	508	499
	Q(c-b)	1	412	400
	Q(b-ac)	1	364	340
RFC's	b-a		0.327	0.425
	b-c		0.098	0.090
	c-b		0.364	0.463
	b-ac		0.426	0.515
Worst RFC			**0.426**	**0.515**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

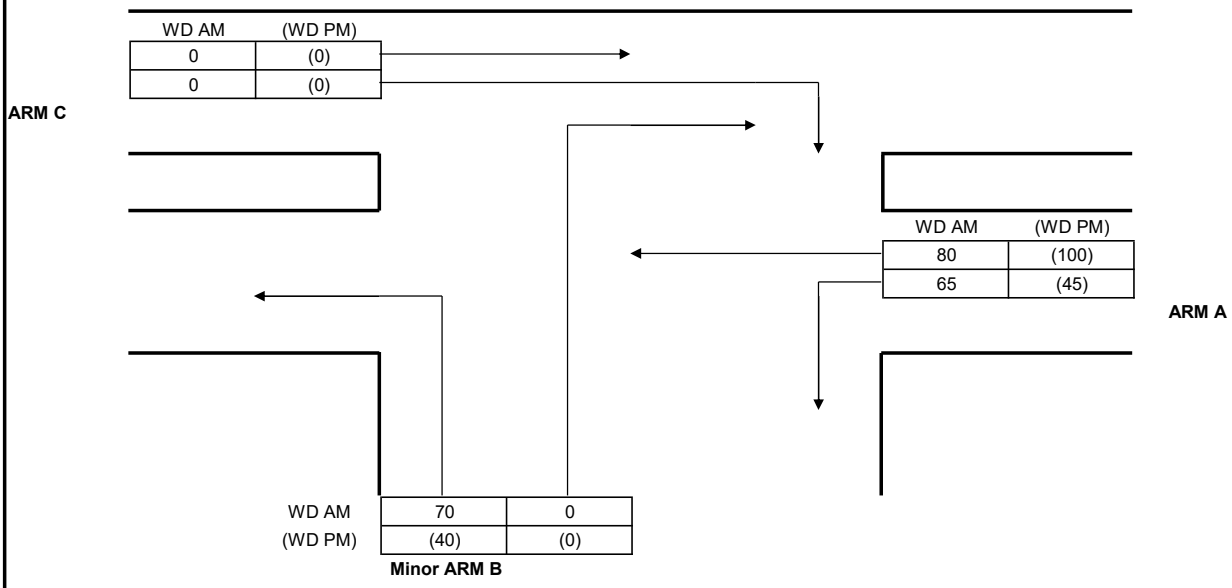
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY					
Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		65	45
	q(a-c)		80	100
	q(b-a)		0	0
	q(b-c)		70	40
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	480	477
	Q(b-c)	1	550	547
	Q(c-b)	1	412	412
	Q(b-ac)	1	550	547
RFC's	b-a		0.000	0.000
	b-c		0.127	0.073
	c-b		0.000	0.000
	b-ac		0.127	0.073
Worst RFC			**0.127**	**0.073**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

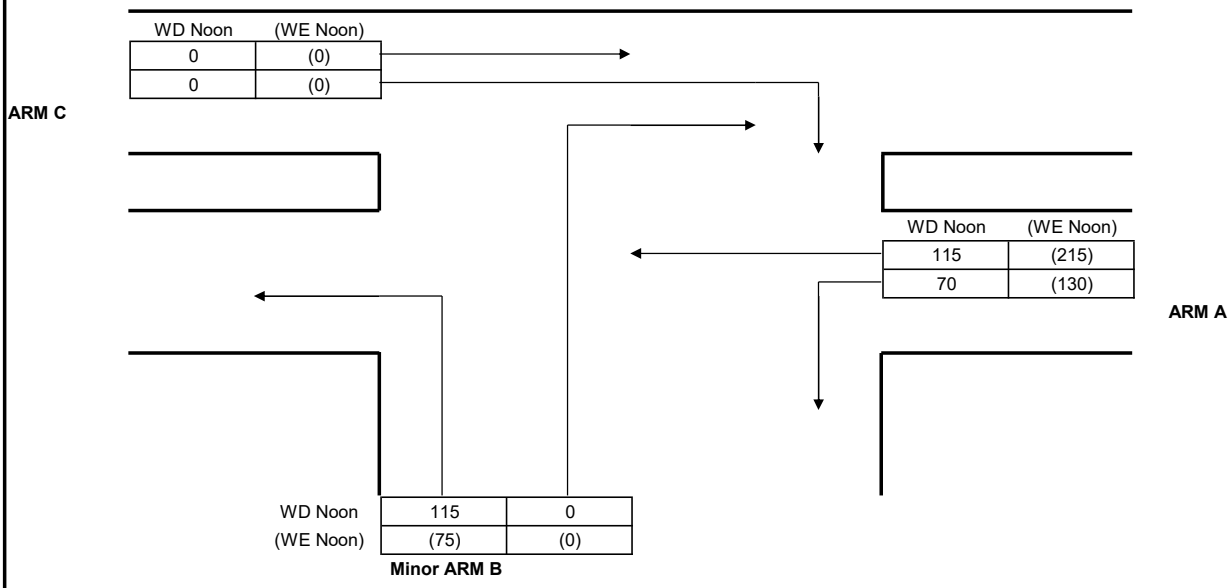
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		70	130
	q(a-c)		115	215
	q(b-a)		0	0
	q(b-c)		115	75
	f		1.00	1.00
CAPACITIES	Q(b-a)	1	472	443
	Q(b-c)	1	541	514
	Q(c-b)	1	406	379
	Q(b-ac)	1	541	514
RFC's	b-a		0.000	0.000
	b-c		0.213	0.146
	c-b		0.000	0.000
	b-ac		0.213	0.146
Worst RFC			**0.213**	**0.146**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	↓ *	A	1	3.000	7			29%	19%	1080	1105	244	0.226		209	0.189	
	←	A	1	2.500						2005	2005	451	0.225		381	0.190	
Leighton Road WE	↑ **	C	2	3.500		9				1180	1180	285	0.242	0.242	310	0.263	0.263
Caroline Hill Road NB	↖ *	C	2	4.000	5					930	930	65	0.070		45	0.048	
Leighton Road EB	↗ **	A	1	3.000	15			69%	77%	1255	1245	433	0.345		499	0.401	0.401
	→ **	A	1	3.000						1440	1440	497	0.345	0.345	576	0.400	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

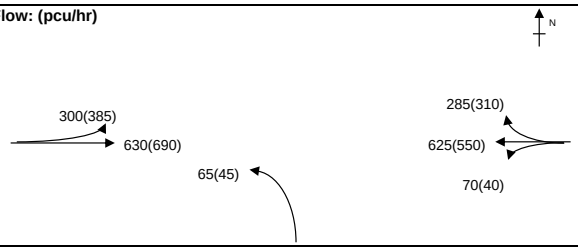
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

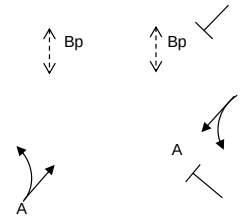
Flow: (pcu/hr)



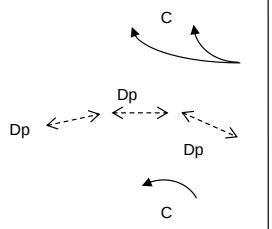
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.345	0.587	y	0.401	0.664
L (sec)	27	11	L (sec)	27	11
C (sec)	105	105	C (sec)	130	130
y pract.	0.669	0.806	y pract.	0.713	0.824
R.C. (%)	94%	37%	R.C. (%)	78%	24%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	↰ *	A	1	3.000	7			54%	33%	1030	1075	214	0.208		230	0.214	
	←	A	1	2.500						2005	2005	416	0.207		430	0.214	
Leighton Road WE	↰ **	C	2	3.500		9				1180	1180	265	0.225	0.225	275	0.233	0.233
Caroline Hill Road NB	↰ *	C	2	4.000	5					930	930	70	0.075		130	0.140	
Leighton Road EB	↱ **	A	1	3.000	15			68%	69%	1255	1255	461	0.367		545	0.434	0.434
	→ **	A	1	3.000						1440	1440	529	0.367	0.367	625	0.434	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

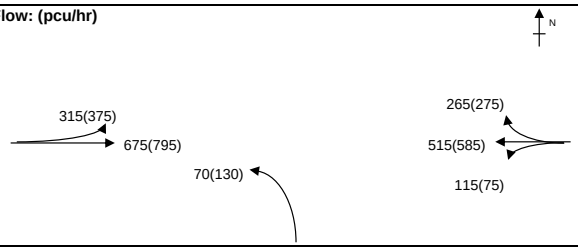
Notes:

TAC junction: Cycle time of 110s and 120s are adopted for WD and WE Noon

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

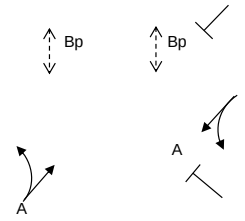
Flow: (pcu/hr)



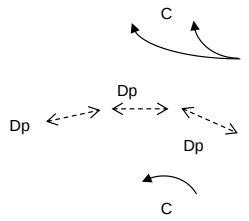
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.367	0.592	y	0.434	0.667
L (sec)	27	11	L (sec)	27	11
C (sec)	110	110	C (sec)	120	120
y pract.	0.679	0.810	y pract.	0.698	0.818
R.C. (%)	85%	37%	R.C. (%)	61%	23%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

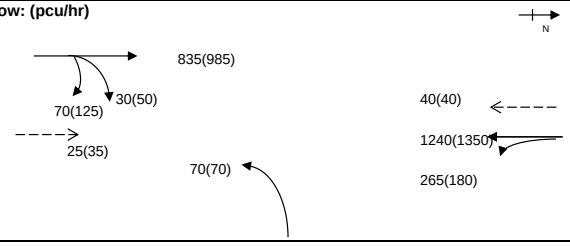
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	265	0.230	0.230	180	0.157	
Causeway Road WB	← *	A	1	3.000						1340	1340	305	0.228		332	0.248	0.248
	←	A	1	3.000						2055	2055	467	0.227		509	0.248	
	←	A	1	3.000						2055	2055	468	0.228		509	0.248	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	40	0.030		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	70	0.053		70	0.053	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↘ **	C	3	4.000		12				1255	1255	172	0.137	0.137	209	0.167	0.167
	↘ **	C	3	4.500		8				1300	1300	178	0.137		216	0.166	
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	25	0.019		35	0.026	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

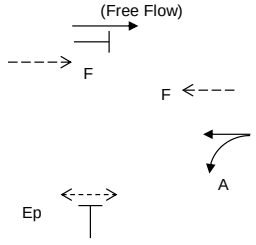
Flow: (pcu/hr)



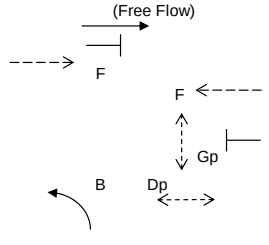
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.420	0.367	y	0.467	0.414
L (sec)	20	33	L (sec)	20	33
C (sec)	100	100	C (sec)	105	105
y pract.	0.720	0.603	y pract.	0.729	0.617
R.C. (%)	71%	64%	R.C. (%)	56%	49%

Stage / Phase Diagrams

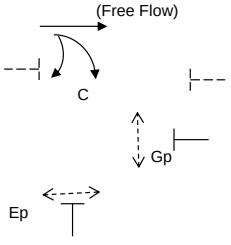
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

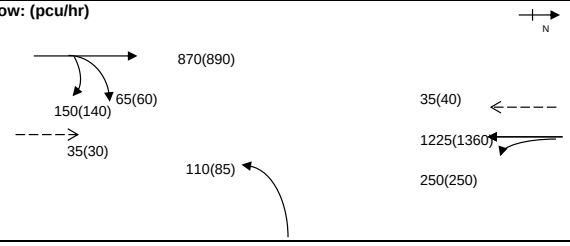
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	250	0.217		250	0.217	
Causeway Road WB	← *	A	1	3.000						1340	1340	301	0.225		334	0.249	
	←	A	1	3.000						2055	2055	462	0.225	0.225	513	0.250	0.250
	←	A	1	3.000						2055	2055	462	0.225		513	0.250	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	35	0.026		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	110	0.083		85	0.064	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↓ **	C	3	4.000		12				1255	1255	221	0.176		216	0.172	
	↓ **	C	3	4.500		8				1300	1300	229	0.176	0.176	224	0.172	0.172
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	35	0.026		30	0.022	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

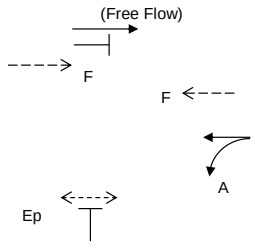
Flow: (pcu/hr)



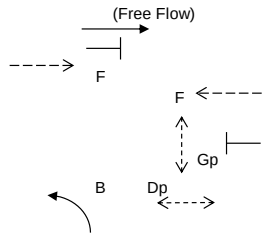
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.484	0.401	y	0.486	0.422
L (sec)	20	33	L (sec)	20	33
C (sec)	95	95	C (sec)	105	105
y pract.	0.711	0.587	y pract.	0.729	0.617
R.C. (%)	47%	46%	R.C. (%)	50%	46%

Stage / Phase Diagrams

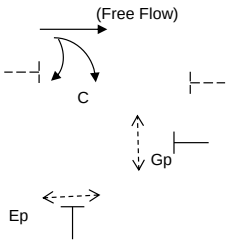
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

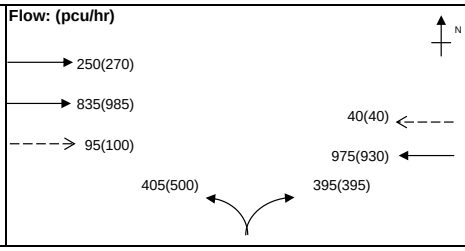
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	← *	C	1	3.700						795	795	263	0.331		251	0.316	
	←	C	1	4.000						2155	2155	712	0.330		679	0.315	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	40	0.021		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	244	0.145		274	0.163	
	↰↑	E	2	3.300	15	20		58% / 42%	73% / 27%	1915	1905	278	0.145	0.145	310	0.163	0.163
	↱	E	2	3.500		15				1915	1915	278	0.145		311	0.162	
Causeway Road WB	→	A	1	3.500						1965	1965	250	0.127		270	0.137	
	→	A	1	3.500						2105	2105	835	0.397	0.397	985	0.468	0.468
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		100	0.052	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

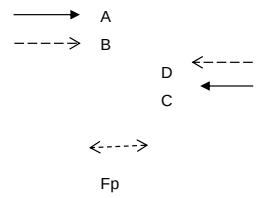
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.476	0.542	y	0.478	0.631
L (sec)	10	10	L (sec)	10	10
C (sec)	100	100	C (sec)	105	105
y pract.	0.810	0.810	y pract.	0.814	0.814
R.C. (%)	70%	49%	R.C. (%)	70%	29%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

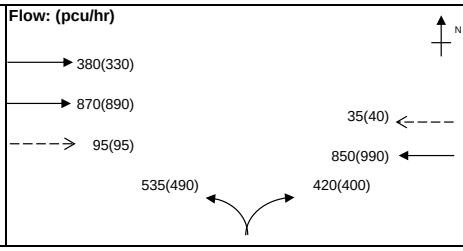
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WDNN	Pro. Turning (%) WE NN	Revised Saturation Flow (pcu/hr) WD NN	Revised Saturation Flow (pcu/hr) WD NN	WD NN Flow (pcu/hr)	WD NN y Value	WD NN Critical y	WENN Flow (pcu/hr)	WENN y Value	WENN Critical y
Causeway Road WB	← *	C	1	3.700						795	795	229	0.288		267	0.336	
	←	C	1	4.000						2155	2155	621	0.288		723	0.335	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	35	0.018		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	292	0.173		272	0.161	
	↰↑	E	2	3.300	15	20		73% / 27%	71% / 29%	1905	1910	331	0.174	0.174	309	0.162	0.162
	↱	E	2	3.500		15				1915	1915	332	0.173		309	0.161	
Causeway Road WB	→	A	1	3.500						1965	1965	380	0.193		330	0.168	
	→	A	1	3.500						2105	2105	870	0.413	0.413	890	0.423	0.423
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		95	0.050	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

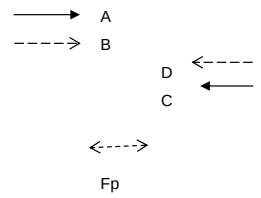
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.462	0.587	y	0.498	0.585
L (sec)	10	10	L (sec)	10	10
C (sec)	95	95	C (sec)	105	105
y pract.	0.805	0.805	y pract.	0.814	0.814
R.C. (%)	74%	37%	R.C. (%)	64%	39%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J10 Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

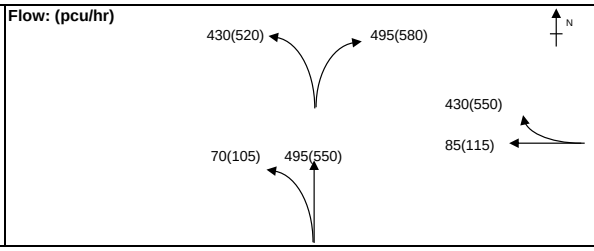
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	78	0.081	0.081	100	0.104	
	↖	A	1,4	3.000		16		95%	92%	1885	1890	153	0.081		198	0.105	
	↰	A	1,4	3.000		13				1840	1840	149	0.081		192	0.104	
	↰	A	1,4	3.000		10				1665	1665	135	0.081		175	0.105	0.105
Pennington Street NB 1st stop line	↰↑	B	2,3	3.800	5			26%	34%	1850	1810	272	0.147	0.147	312	0.172	0.172
	↑	B	2,3	3.800						1995	1995	293	0.147		343	0.172	
Pennington Street NB 2nd stop line	↰	E	1,2,4	5.000	10					1840	1840	430	0.234		520	0.283	
	↱	F	1,2,3	3.500		10				1830	1830	264	0.144		310	0.169	
	↱	F	1,2,3	3.500		6.5				1595	1595	231	0.145		270	0.169	

Pedestrian Crossing								
	Cp	1,4	MIN GREEN + FLASH =	8	+	8	=	16
	Dp	2,3	MIN GREEN + FLASH =	8	+	8	=	22
	Gp	4	MIN GREEN + FLASH =	7	+	7	=	14
	Hp	3	MIN GREEN + FLASH =	6	+	6	=	12

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

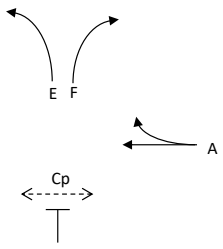
Flow: (pcu/hr)



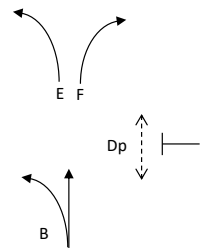
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.147	0.228	y	0.172	0.277
L (sec)	24	14	L (sec)	24	14
C (sec)	100	100	C (sec)	100	100
y pract.	0.684	0.774	y pract.	0.684	0.774
R.C. (%)	365%	239%	R.C. (%)	297%	179%

Stage / Phase Diagrams

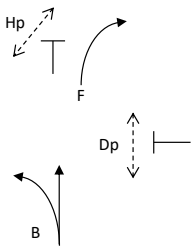
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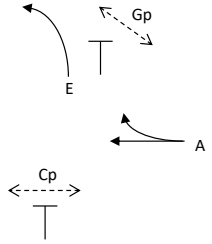
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** J11 Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

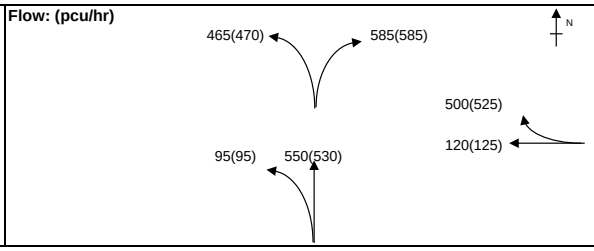
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	94	0.098	0.098	98	0.102	
	↖↑	A	1,4	3.000		16		86%	86%	1900	1900	185	0.097		194	0.102	
	↖	A	1,4	3.000		13				1840	1840	180	0.098		188	0.102	0.102
	↖	A	1,4	3.000		10				1665	1665	161	0.097		170	0.102	
Pennington Street	↑	B	2,3	3.800	5			31%	32%	1825	1820	308	0.169		298	0.164	
NB 1st stop line	↑	B	2,3	3.800						1995	1995	337	0.169	0.169	327	0.164	0.164
Pennington Street	↰	E	1,2,4	5.000	10					1840	1840	465	0.253		470	0.255	
NB 2nd stop line	↱	F	1,2,3	3.500		10				1830	1830	313	0.171		313	0.171	
	↱	F	1,2,3	3.500		6.5				1595	1595	272	0.171		272	0.171	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

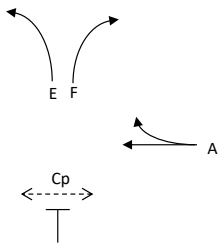
Flow: (pcu/hr)



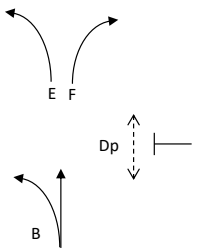
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.169	0.267	y	0.164	0.266
L (sec)	24	14	L (sec)	24	14
C (sec)	120	120	C (sec)	100	100
y pract.	0.720	0.795	y pract.	0.684	0.774
R.C. (%)	326%	198%	R.C. (%)	317%	191%

Stage / Phase Diagrams

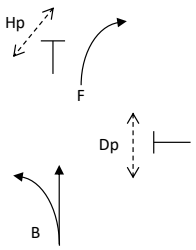
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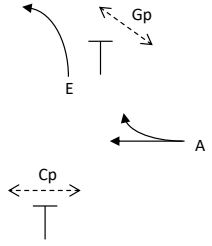
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** J11 Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

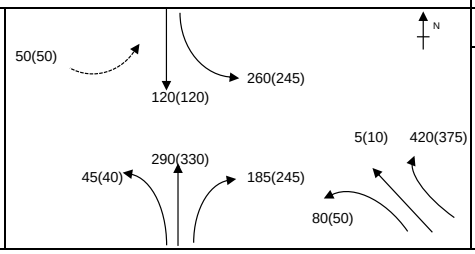
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Link Road		A	1	3.500	80			68%	67%	1940	1940	380	0.196	0.196	365	0.188	0.188
Broadwoord Road (E)		B	1,2	3.000	15			13%	11%	1890	1895	335	0.177		370	0.195	
		E	2	3.000		8				1730	1730	185	0.107	0.107	245	0.142	0.142
Broadwoord Road (W)		C	3	3.500	5	60		16% / 83%	11% / 86%	1840	1860	505	0.274	0.274	435	0.234	0.234
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

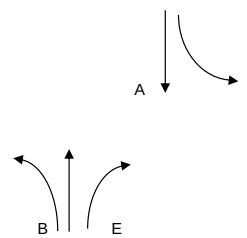
Notes:



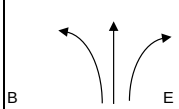
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.577	0.577	y	0.564	0.564
L (sec)	16	27	L (sec)	16	27
C (sec)	140	140	C (sec)	135	135
y pract.	0.797	0.726	y pract.	0.793	0.720
R.C. (%)	38%	26%	R.C. (%)	41%	28%

Stage / Phase Diagrams

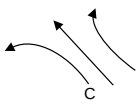
1.



2.



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5.

I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

TRAFFIC SIGNALS CALCULATION

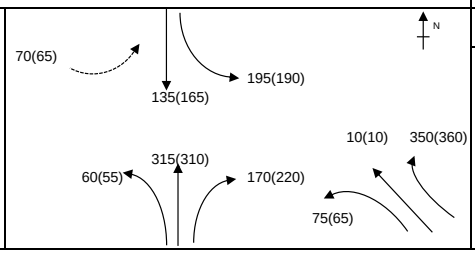
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road		A	1	3.500	80			59%	54%	1945	1945	330	0.170	0.170	355	0.183	0.183
Broadwoord Road (E)		B	1,2	3.000	15			16%	15%	1885	1885	375	0.199		365	0.194	
		E	2	3.000		8				1730	1730	170	0.098	0.098	220	0.127	0.127
Broadwoord Road (W)		C	3	3.500	5	60		17% / 80%	15% / 83%	1835	1845	435	0.237	0.237	435	0.236	0.236
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

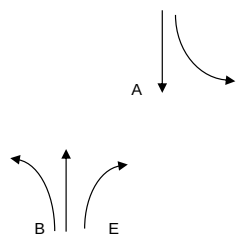
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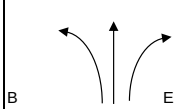
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.505	0.505	y	0.545	0.545
L (sec)	16	27	L (sec)	16	27
C (sec)	110	110	C (sec)	110	110
y pract.	0.769	0.679	y pract.	0.769	0.679
R.C. (%)	52%	34%	R.C. (%)	41%	24%

Stage / Phase Diagrams

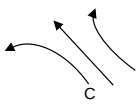
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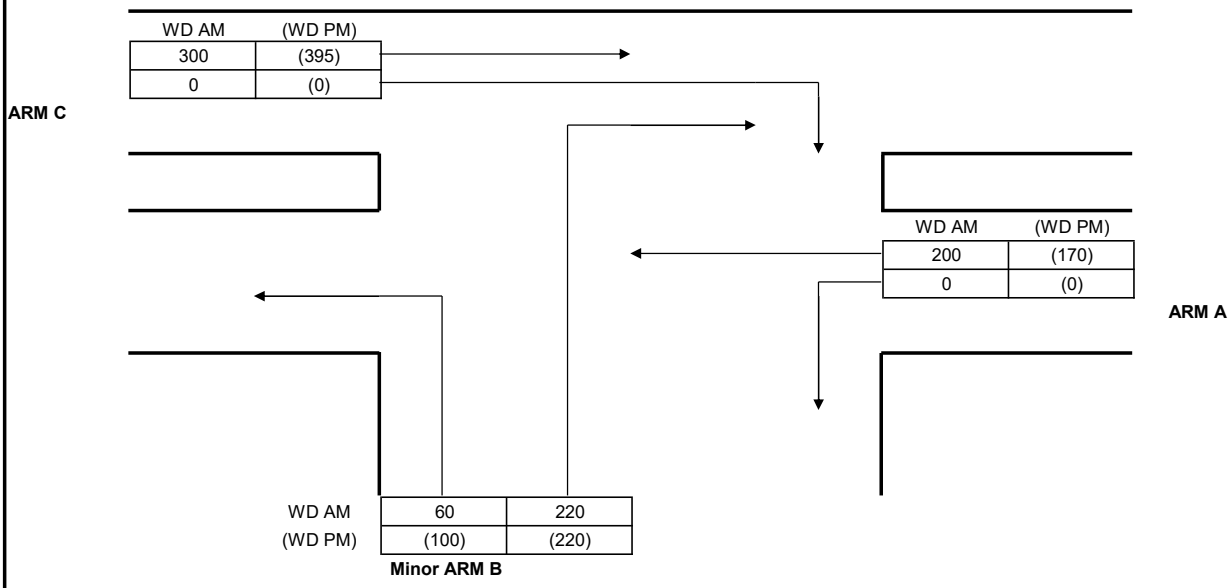
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I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		300	395
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		200	170
	q(b-a)		220	220
	q(b-c)		60	100
	f		0.21	0.31
		Factor		
CAPACITIES	Q(b-a)	1	404	398
	Q(b-c)	1	600	607
	Q(c-b)	1	727	736
	Q(b-ac)	1	434	446
RFC's	b-a		0.545	0.553
	b-c		0.100	0.165
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.545**	**0.553**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

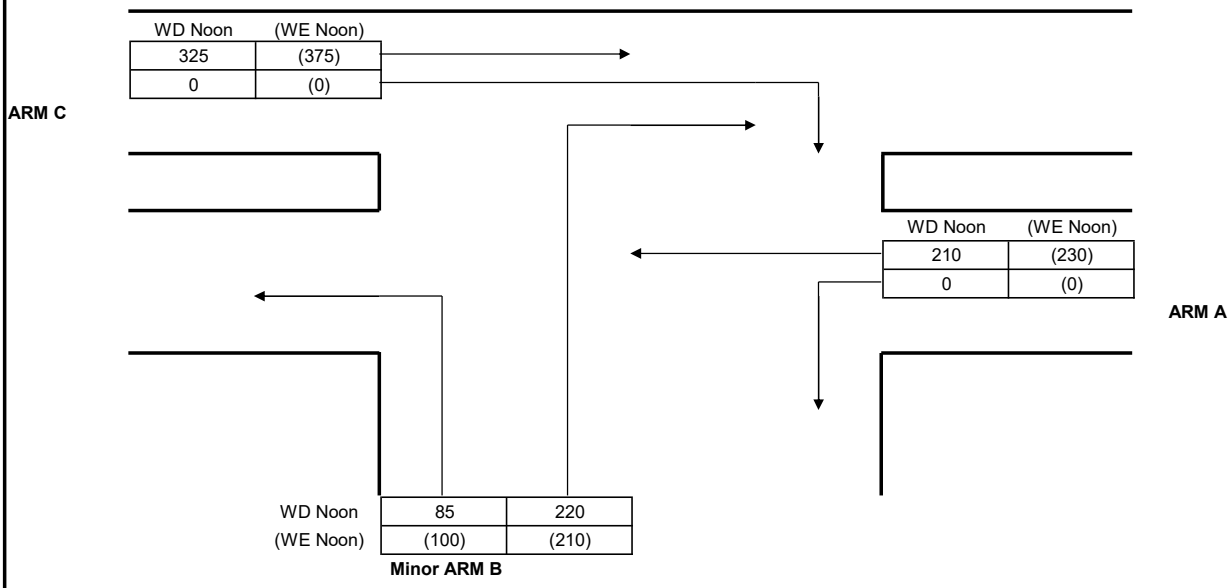
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		325	375
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		210	230
	q(b-a)		220	210
	q(b-c)		85	100
	f		0.28	0.32
		Factor		
CAPACITIES	Q(b-a)	1	398	387
	Q(b-c)	1	597	593
	Q(c-b)	1	724	718
	Q(b-ac)	1	439	435
RFC's	b-a		0.553	0.543
	b-c		0.142	0.169
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.553**	**0.543**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Sports Road	→	A	1	3.800		10				1735	1735	337	0.194		373	0.215	0.215
EB	→	A	1	3.800		13.5				1920	1920	373	0.194	0.194	412	0.215	
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	137	0.072	0.072	155	0.081	0.081
	↓	B	2	3.000						2055	2055	146	0.071		165	0.080	
	↓	B	2	3.000						1915	1915	137	0.072		155	0.081	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

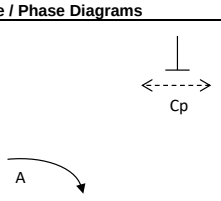
Flow: (pcu/hr)



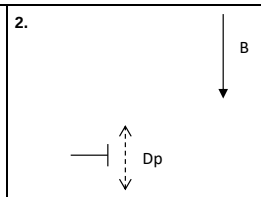
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.194	0.266	y	0.215	0.296
L (sec)	27	10	L (sec)	27	10
C (sec)	90	90	C (sec)	90	90
y pract.	0.630	0.800	y pract.	0.630	0.800
R.C. (%)	224%	201%	R.C. (%)	193%	170%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

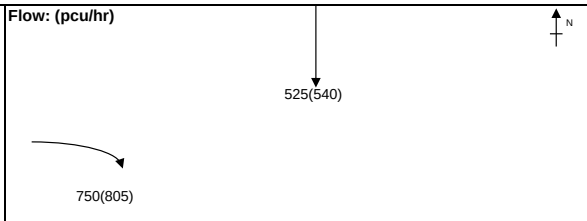
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Sports Road	→	A	1	3.800		10				1735	1735	356	0.205		382	0.220	
EB	→	A	1	3.800		13.5				1920	1920	394	0.205	0.205	423	0.220	0.220
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	171	0.089	0.089	176	0.092	0.092
	↓	B	2	3.000						2055	2055	183	0.089		188	0.091	
	↓	B	2	3.000						1915	1915	171	0.089		176	0.092	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

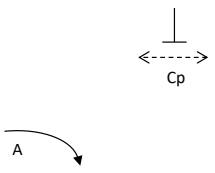
Flow: (pcu/hr)



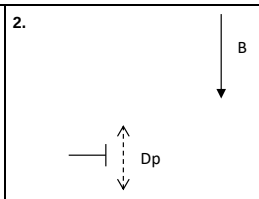
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.205	0.295	y	0.220	0.312
L (sec)	27	10	L (sec)	27	10
C (sec)	75	75	C (sec)	75	75
y pract.	0.576	0.780	y pract.	0.576	0.780
R.C. (%)	181%	165%	R.C. (%)	161%	150%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	↰	A	1	3.500	20					1830	1830	300	0.164		321	0.175	
	↰ *	A	1	3.500	25					395	395	65	0.165		69	0.175	
Leighton Road WB (Tram)	↰ *	B	2	3.000	40					370	370	50	0.135	0.135	65	0.176	0.176
Leighton Road WB	←***	A	1	3.000						1530	1530	659	0.431	0.431	639	0.418	0.418
	← *	A	1	3.000						410	410	176	0.429		171	0.417	
Leighton Road EB	→ *	A	1	3.500						395	395	106	0.268		97	0.246	
	→**	A	1	3.000						1030	1030	277	0.269		251	0.244	
	→**	A	1	3.000						1030	1030	277	0.269		252	0.245	
Pedestrian Crossing	Cp	2	MIN GREEN + FLASH =		10	+	9	=	19								
	Dp	2	MIN GREEN + FLASH =		7	+	7	=	14								

Notes:

TAC junction: Cycle time of 130s and 120s are adopted for AM and PM Peak

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

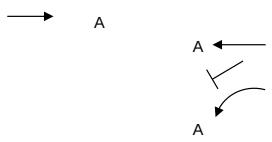
Flow: (pcu/hr)



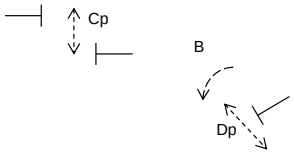
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.431	0.566	y	0.418	0.593
L (sec)	30	12	L (sec)	30	12
C (sec)	130	130	C (sec)	120	120
y pract.	0.692	0.817	y pract.	0.675	0.810
R.C. (%)	61%	44%	R.C. (%)	62%	37%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB		A	1	3.500	20					1830	1830	374	0.204		403	0.220	
	*	A	1	3.500	25					395	395	81	0.205		87	0.220	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	60	0.162	0.162	60	0.162	0.162
Leighton Road WB	***	A	1	3.000						1530	1530	643	0.420	0.420	635	0.415	0.415
	*	A	1	3.000						410	410	172	0.420		170	0.415	
Leighton Road EB	*	A	1	3.500						395	395	125	0.316		113	0.286	
	**	A	1	3.000						1030	1030	328	0.318		293	0.284	
	**	A	1	3.000						1030	1030	327	0.317		294	0.285	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Dp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

TAC junction: Cycle time of 120s and 120s are adopted for WD and WE Noon

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

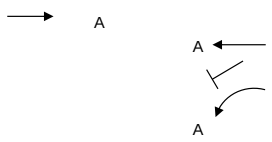
Flow: (pcu/hr)



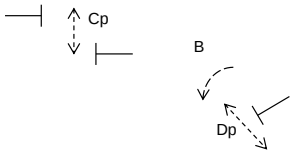
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.420	0.582	y	0.415	0.577
L (sec)	30	12	L (sec)	30	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.675	0.810	y pract.	0.675	0.810
R.C. (%)	61%	39%	R.C. (%)	63%	40%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

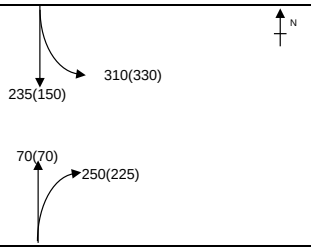
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road SB	↳	*	A	1	3.300	25					1285	1285	212	0.165	0.165	187	0.146	
	↓		A	1	3.000	30			29%	49%	2025	2005	333	0.164		293	0.146	0.146
Ka Ning Path NB	↑		B	2	3.500		10		78%	76%	1760	1765	320	0.182	0.182	295	0.167	0.167
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

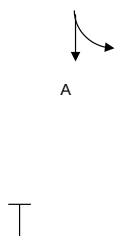
Flow: (pcu/hr)



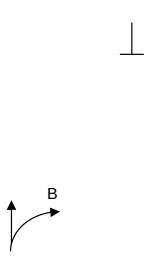
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.347	0.347	y	0.313	0.313
L (sec)	31	34	L (sec)	31	34
C (sec)	100	100	C (sec)	105	105
y pract.	0.621	0.594	y pract.	0.634	0.609
R.C. (%)	79%	71%	R.C. (%)	102%	94%

Stage / Phase Diagrams

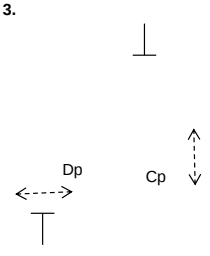
1.



2.



3.



4.

5.

I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	
I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

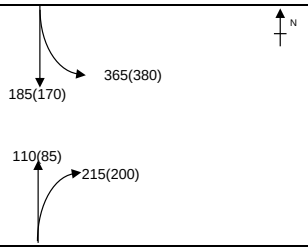
Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road SB	↳	*	A	1	3.300	25					1285	1285	214	0.167		215	0.167	0.167
	↓		A	1	3.000	30			45%	49%	2010	2005	336	0.167	0.167	335	0.167	
Ka Ning Path NB	↑		B	2	3.500		10		66%	70%	1790	1780	325	0.182	0.182	285	0.160	0.160
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

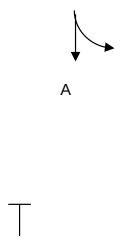
Flow: (pcu/hr)



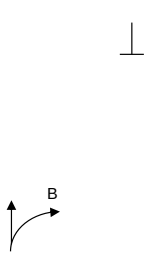
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.349	0.349	y	0.327	0.327
L (sec)	31	34	L (sec)	31	34
C (sec)	95	95	C (sec)	105	105
y pract.	0.606	0.578	y pract.	0.634	0.609
R.C. (%)	74%	66%	R.C. (%)	94%	86%

Stage / Phase Diagrams

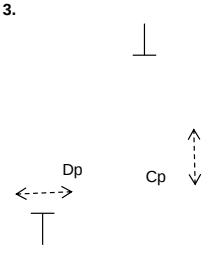
1.



2.



3.



4.

5.

I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=
I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

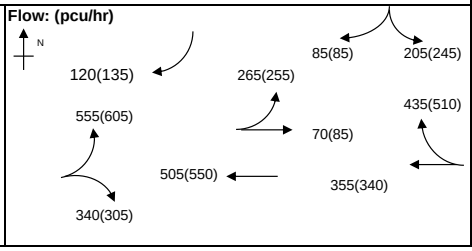
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	244	0.127		265	0.138	
	←	C	2	3.000						2055	2055	261	0.127		285	0.139	
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	425	0.254	0.254	433	0.259	0.259
	↑	A	1	3.500	13	35		28% / 72%	36% / 64%	1850	1840	470	0.254		477	0.259	
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	120	0.060		135	0.067	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	355	0.179		340	0.171	
	↰	E	2,3	3.000		8		100%	100%	1535	1535	435	0.283	0.283	510	0.332	0.332
Tung Lo Wan Road EB	↱	E	2,3	5.000	13			79%	75%	1940	1945	335	0.173		340	0.175	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		71% / 29%	74% / 26%	1680	1675	290	0.173		330	0.197	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

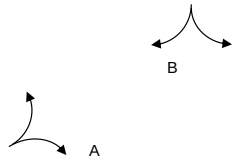
Flow: (pcu/hr)



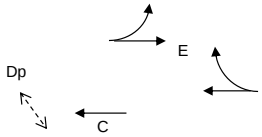
Group	A,C,F	A,E	Group	A,C,F	A,E
y	0.442	0.538	y	0.465	0.592
L (sec)	19	12	L (sec)	19	12
C (sec)	100	100	C (sec)	105	105
y pract.	0.729	0.792	y pract.	0.737	0.797
R.C. (%)	65%	47%	R.C. (%)	58%	35%

Stage / Phase Diagrams

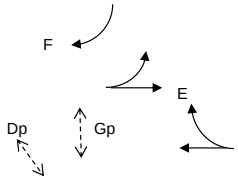
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I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J17) Tung Lo Wan Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

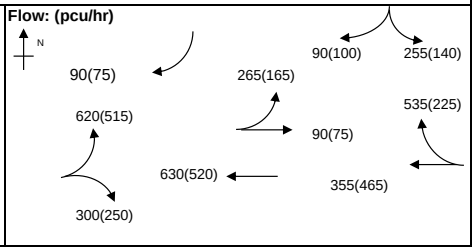
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2021 Observed Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	304	0.159		251	0.131	0.131
	←	C	2	3.000						2055	2055	326	0.159		269	0.131	
Tung Lo Wan Road EB	↗	A	1	3.700	8					1670	1670	438	0.262		364	0.218	
	↑	A	1	3.500	13	35		38% / 62%	38% / 62%	1835	1835	482	0.263	0.263	401	0.219	0.219
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	90	0.045		75	0.037	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	355	0.179		381	0.192	
	↖	E	2,3	3.000		8		100%	73%	1535	1605	535	0.349	0.349	309	0.193	
Tung Lo Wan Road EB	↗	E	2,3	5.000	13			75%	69%	1945	1960	355	0.183		240	0.122	
Tung Lo Wan Drive SB	↓	B	1	3.500	8	12		74% / 26%	58% / 42%	1680	1690	345	0.205		240	0.142	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						*

Notes:

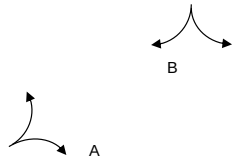
Flow: (pcu/hr)



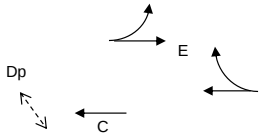
Group	A,C,Gp	A,E	Group	A,C,F	A,C,Gp
y	0.421	0.611	y	0.387	0.350
L (sec)	29	12	L (sec)	19	29
C (sec)	95	95	C (sec)	105	105
y pract.	0.625	0.786	y pract.	0.737	0.651
R.C. (%)	48%	29%	R.C. (%)	90%	86%

Stage / Phase Diagrams

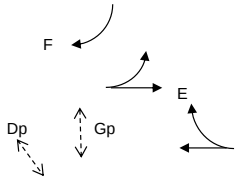
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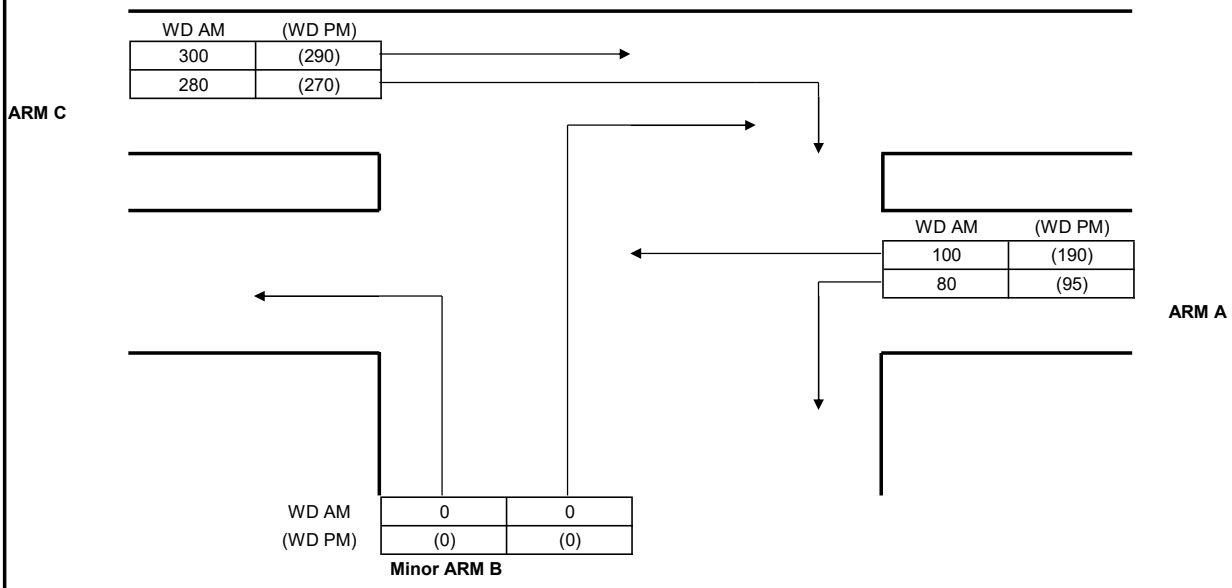
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I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 2		I/G= 7		I/G= 5	17	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J17) Tung Lo Wan Road / Moreton Terrace

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		300	290
	q(c-b)		280	270
	q(a-b)		80	95
	q(a-c)		100	190
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	251	241
	Q(b-c)	1	427	413
	Q(c-b)	1	667	643
	Q(b-ac)	1	251	241
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.420	0.420
	b-ac		0.000	0.000
Worst RFC			**0.420**	**0.420**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

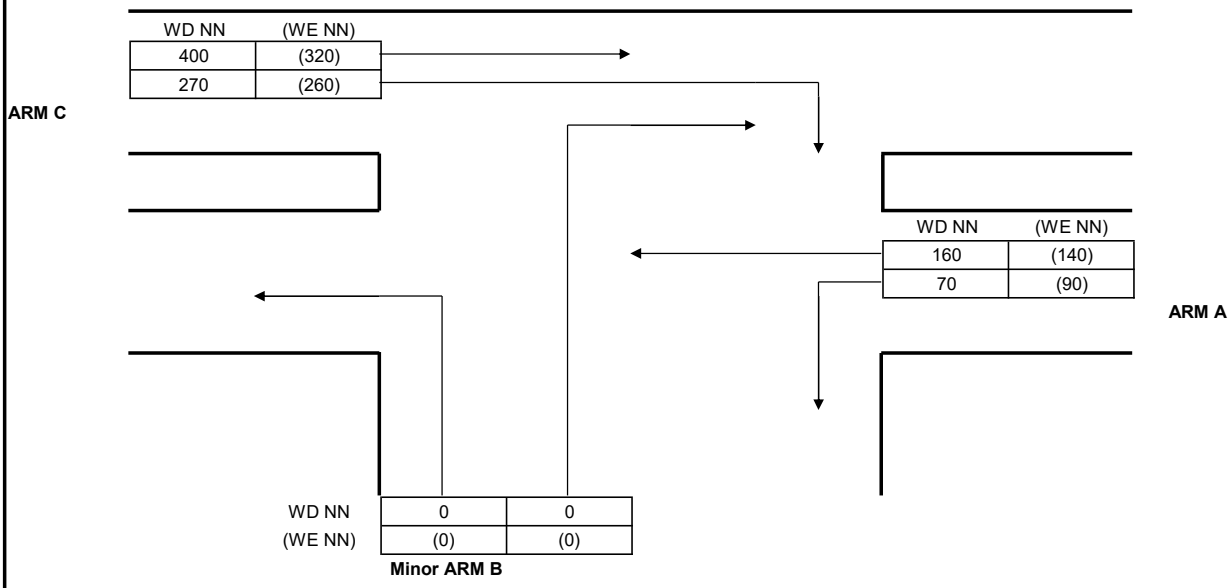
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY

Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS

			WD NN PEAK	(WD NN) PEAK
TRAFFIC FLOWS	q(c-a)		400	320
	q(c-b)		270	260
	q(a-b)		70	90
	q(a-c)		160	140
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	237	247
	Q(b-c)	1	419	420
	Q(c-b)	1	655	655
	Q(b-ac)	1	237	247
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.412	0.397
	b-ac		0.000	0.000
Worst RFC			**0.412**	**0.397**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

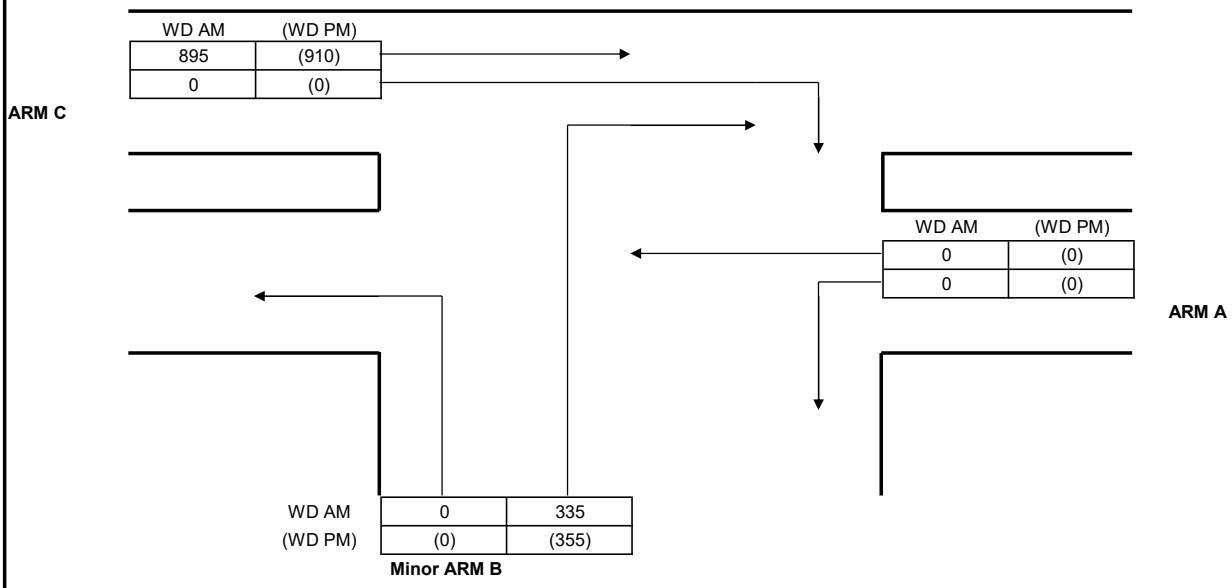
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		895	910
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		335	355
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	507	504
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	507	504
RFC's	b-a		0.661	0.704
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.661	0.704
Worst RFC			**0.661**	**0.704**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

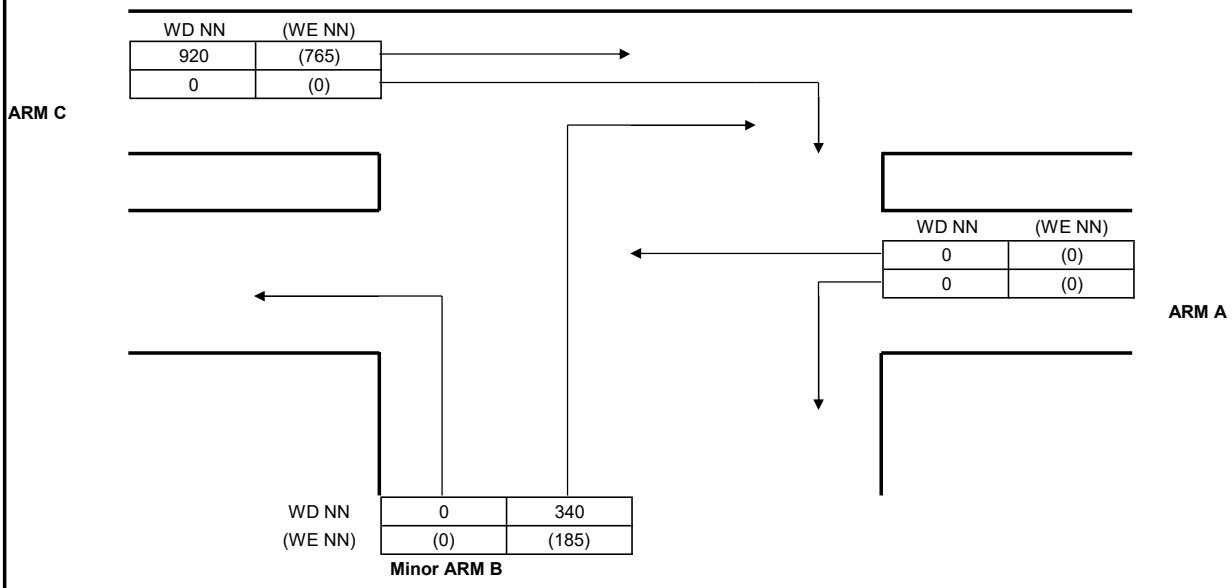
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD NN PEAK	(WE NN) PEAK
TRAFFIC FLOWS	q(c-a)		920	765
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		340	185
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	502	531
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	502	531
RFC's	b-a		0.677	0.348
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.677	0.348
Worst RFC			**0.677**	**0.348**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Year 2031 Reference

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

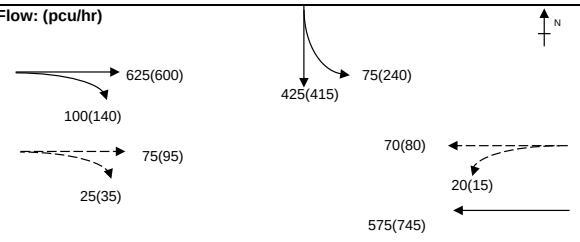
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	237	0.159		308	0.206	0.206
	←	A	1	3.700						2125	2125	338	0.159	0.159	437	0.206	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	20	0.011		15	0.008	
	←	A	1	3.000						2055	2055	70	0.034		80	0.039	
Hennessy Road EB	→**	B	1,2,3	3.000						960	960	199	0.207		191	0.199	
	→	B	1,2,3	3.000						2055	2055	426	0.207		409	0.199	
	↘	C	2,3	3.000		25				1940	1940	100	0.052	0.052	140	0.072	0.072
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	75	0.039		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	25	0.013		35	0.018	
Percival Street SB	↳	E	4	3.300	10					1690	1690	75	0.044		240	0.142	0.142
	↓	E	4	3.300						2085	2085	211	0.101		207	0.099	
	↓	E	4	3.500						2105	2105	214	0.102	0.102	208	0.099	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26						
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

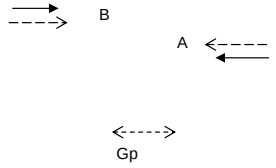
Flow: (pcu/hr)



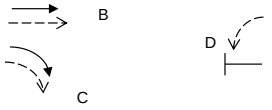
Group	A,C,Fp	A,C,E	Group	A,C,Fp	A,C,E
y	0.211	0.312	y	0.278	0.420
L (sec)	46	19	L (sec)	46	19
C (sec)	120	120	C (sec)	120	120
y pract.	0.555	0.758	y pract.	0.555	0.758
R.C. (%)	164%	143%	R.C. (%)	100%	80%

Stage / Phase Diagrams

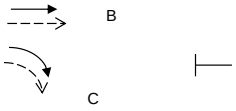
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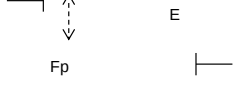
2.



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5.

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

Date: FEB, 2022 **Junction:** J1 Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

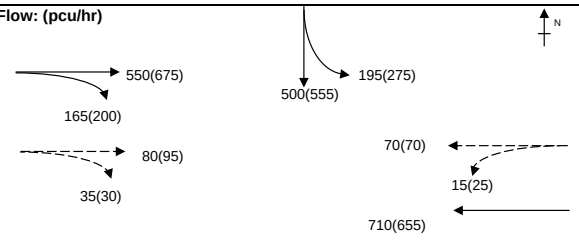
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	293	0.196		271	0.181	0.181
	←	A	1	3.700						2125	2125	417	0.196	0.196	384	0.181	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	15	0.008		25	0.014	
	←	A	1	3.000						2055	2055	70	0.034		70	0.034	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	175	0.182		215	0.224	
	→	B	1,2,3	3.000						2055	2055	375	0.182		460	0.224	
	↘	C	2,3	3.000		25				1940	1940	165	0.085	0.085	200	0.103	0.103
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	80	0.042		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	35	0.018		30	0.015	
Percival Street SB	↳	E	4	3.300	10					1690	1690	195	0.115		275	0.163	0.163
	↓	E	4	3.300						2085	2085	249	0.119		276	0.132	
	↓	E	4	3.500						2105	2105	251	0.119		279	0.133	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26			*			
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

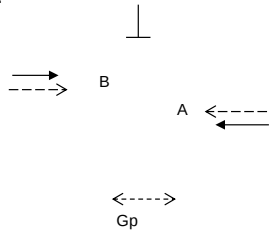
Flow: (pcu/hr)



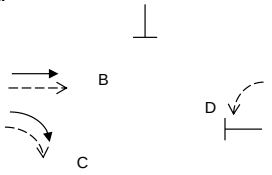
Group	A,C,E	A,C,Fp	Group	A,C,Fp	A,C,E
y	0.401	0.281	y	0.284	0.447
L (sec)	19	46	L (sec)	46	19
C (sec)	104	104	C (sec)	104	104
y pract.	0.736	0.502	y pract.	0.502	0.736
R.C. (%)	84%	78%	R.C. (%)	77%	65%

Stage / Phase Diagrams

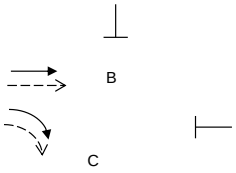
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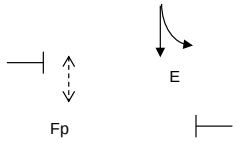
2.



3.



4.



5.

I/G= 4		I/G= 8		I/G=		I/G= 10	26
I/G= 6		I/G= 8		I/G=		I/G= 8	

I/G=	
I/G=	

Date: FEB, 2022 **Junction:** J1 Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

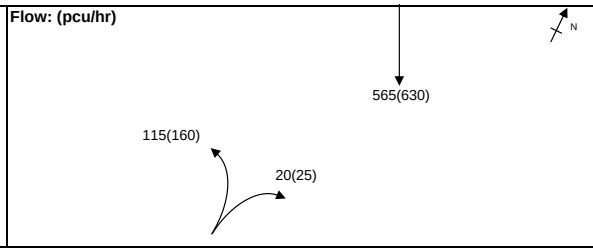
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Percival Street	↓	A	1	3.600						1975	1975	283	0.143	0.143	315	0.159	0.159
SB	↓	A	1	3.600						1975	1975	282	0.143		315	0.159	
Matheson Street	↰	B	2	3.300	10					1690	1690	67	0.040		91	0.054	
NB	↰↑	B	2	3.300	13.3	10		71% / 29%	73% / 27%	1730	1730	68	0.039		94	0.054	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 120s are adopted for AM and PM Peak

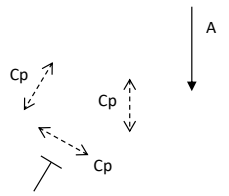
Flow: (pcu/hr)



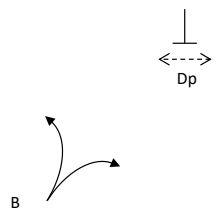
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.040	0.143	y	0.054	0.159
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	120	120
y pract.	0.643	0.703	y pract.	0.675	0.728
R.C. (%)	1522%	391%	R.C. (%)	1142%	356%

Stage / Phase Diagrams

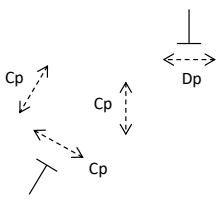
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

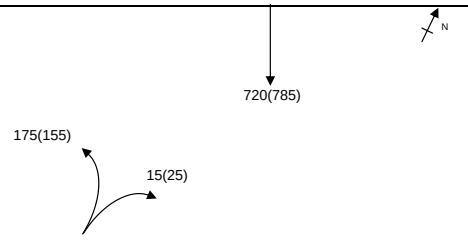
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Percival Street	↓	A	1	3.600						1975	1975	360	0.182	0.182	393	0.199	0.199
SB	↓	A	1	3.600						1975	1975	360	0.182		392	0.198	
Matheson Street	↰	B	2	3.300	10					1690	1690	94	0.056		89	0.053	
NB	↰↑	B	2	3.300	13.3	10		84% / 16%	73% / 27%	1740	1730	96	0.055		91	0.053	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 110s are adopted for WD and WE Noon

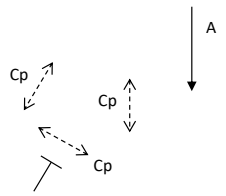
Flow: (pcu/hr)



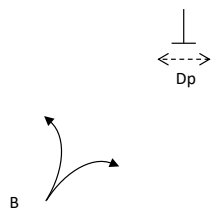
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.056	0.182	y	0.053	0.199
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	110	110
y pract.	0.643	0.703	y pract.	0.655	0.712
R.C. (%)	1056%	286%	R.C. (%)	1143%	258%

Stage / Phase Diagrams

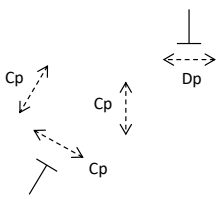
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	432	0.275		430	0.274	
	← *	E	1	3.000						1645	1645	453	0.275		450	0.274	
Leighton Road EB	→ **	A	1	2.500						1120	1120	328	0.293	0.293	299	0.267	0.267
	→ **	A	1	2.500						1205	1205	352	0.292		321	0.266	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	205	0.180	0.180	285	0.250	0.250
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	239	0.150		242	0.152	
	** ↲	C	2	3.500		20				1175	1175	176	0.150		178	0.151	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

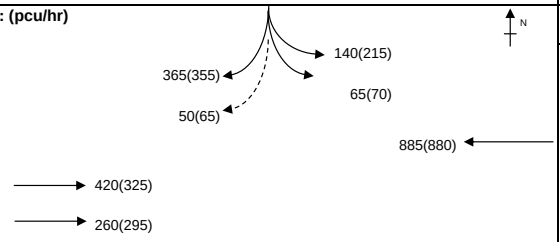
Notes:

TAC junction: Cycle time of 105s and 105s are adopted for AM and PM Peak

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

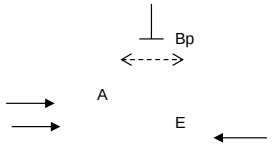
Flow: (pcu/hr)



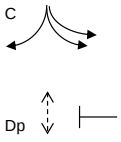
Group	E,C	A,C	Group	E,C	A,C
y	0.455	0.473	y	0.524	0.517
L (sec)	9	14	L (sec)	9	14
C (sec)	105	105	C (sec)	105	105
y pract.	0.823	0.780	y pract.	0.823	0.780
R.C. (%)	81%	65%	R.C. (%)	57%	51%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	415	0.264		447	0.285	
	← *	E	1	3.000						1645	1645	435	0.264		468	0.284	
Leighton Road EB	→ **	A	1	2.500						1120	1120	385	0.344		347	0.310	0.310
	→ **	A	1	2.500						1205	1205	415	0.344	0.344	373	0.310	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	270	0.237	0.237	345	0.303	0.303
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	294	0.184		268	0.168	
	** ↲	C	2	3.500		20				1175	1175	216	0.184		197	0.168	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

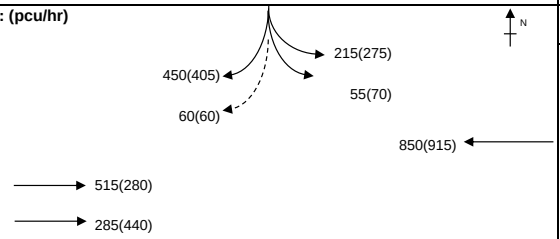
Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

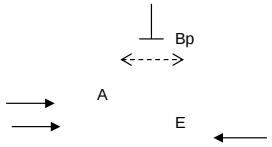
Flow: (pcu/hr)



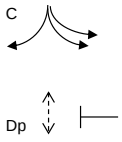
Group	E,C	A,C	Group	E,C	A,C
y	0.501	0.581	y	0.587	0.612
L (sec)	9	14	L (sec)	9	14
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.803	y pract.	0.838	0.803
R.C. (%)	67%	38%	R.C. (%)	43%	31%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

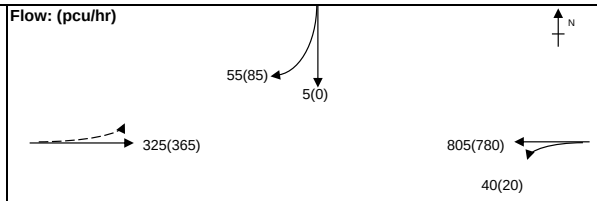
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	↓	B	2	3.500	5			10%	5%	1910	1935	405	0.212		386	0.199	
	←	B	2	3.200						2075	2075	440	0.212		414	0.200	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	325	0.165	0.165	365	0.186	0.186
Hysan Avenue SB	↓	C	3	3.300		17		84%	100%	1810	1785	32	0.018		45	0.025	
	↲	C	3	3.000		10				1585	1585	28	0.018		40	0.025	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 120s and 130s are adopted for AM and PM Peak

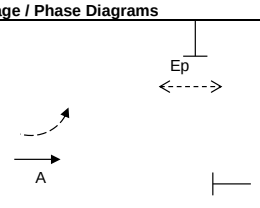
Flow: (pcu/hr)



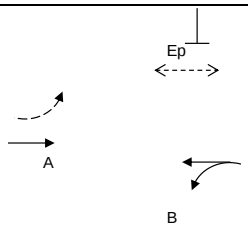
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.183	0.165	y	0.211	0.186
L (sec)	9	31	L (sec)	9	31
C (sec)	120	120	C (sec)	130	130
y pract.	0.833	0.668	y pract.	0.838	0.685
R.C. (%)	355%	304%	R.C. (%)	297%	269%

Stage / Phase Diagrams

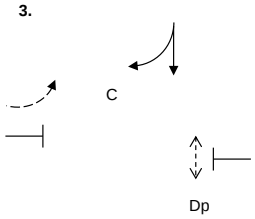
1.



2.



3.



4.

5.

I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J4 Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

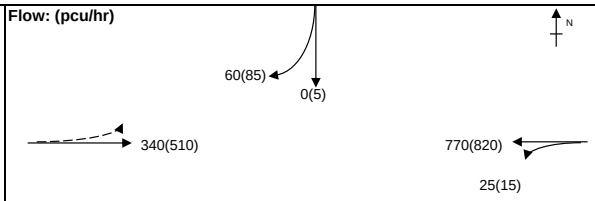
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	↓	B	2	3.500	5			7%	4%	1925	1945	383	0.199		404	0.208	
	←	B	2	3.200						2075	2075	412	0.199		431	0.208	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	340	0.173	0.173	510	0.260	0.260
Hysan Avenue SB	↓	C	3	3.300		17		100%	90%	1785	1805	32	0.018		48	0.027	
	↲	C	3	3.000		10				1585	1585	28	0.018		42	0.026	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

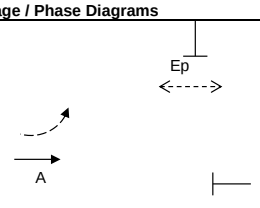
Flow: (pcu/hr)



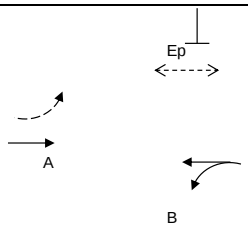
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.191	0.173	y	0.286	0.260
L (sec)	9	31	L (sec)	9	31
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.685	y pract.	0.838	0.685
R.C. (%)	339%	296%	R.C. (%)	193%	164%

Stage / Phase Diagrams

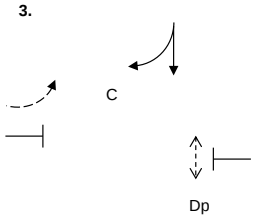
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I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	^	A	1	3.500	25			100%	100%	1110	1110	265	0.239	0.239	235	0.212	0.212
		A	1	3.000						2055	2055	445	0.217		370	0.180	
Caroline Hill Road		D	2,3	3.500	65					1920	1920	325	0.169		335	0.174	
NB	**	B	2	3.500		20				1665	1665	395	0.237	0.237	405	0.243	0.243
Leighton Road	#	A	1	3.500						1570	1570	176	0.112		204	0.130	
EB		A	1	3.300						2085	2085	234	0.112		271	0.130	
Hoi Ping Road		C	3	3.000						1915	1915	260	0.136	0.136	250	0.131	0.131
SB	*	C	3	3.000		10				715	715	75	0.105		90	0.126	

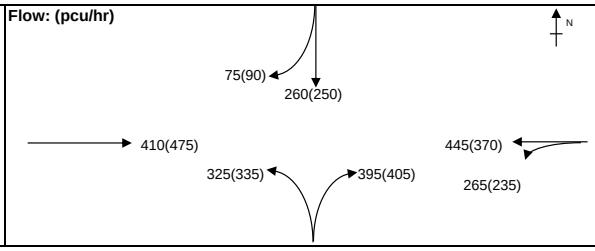
Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak
^ = Site Factor of 0.6 adopted due to merging traffic ahead
* = Site Factor of 0.4 adopted due to flare lane
** = Site Factor of 0.85 adopted

= Site Factor of 0.8 adopted

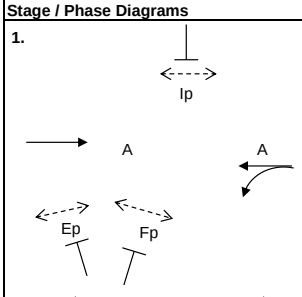
Flow: (pcu/hr)



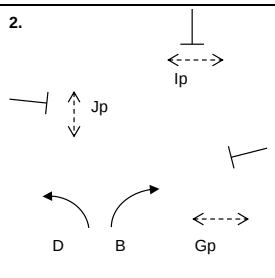
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.476	0.612	y	0.455	0.586
L (sec)	38	20	L (sec)	38	20
C (sec)	105	105	C (sec)	130	130
y pract.	0.574	0.729	y pract.	0.637	0.762
R.C. (%)	21%	19%	R.C. (%)	40%	30%

Stage / Phase Diagrams

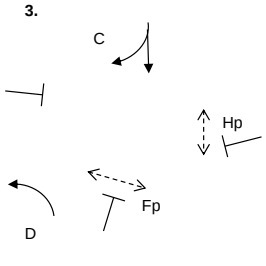
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	^	A	1	3.500	25			100%	100%	1110	1110	225	0.203	0.203	280	0.252	0.252
		A	1	3.000						2055	2055	370	0.180		430	0.209	
Caroline Hill Road		D	2,3	3.500	65					1920	1920	280	0.146		315	0.164	
NB	**	B	2	3.500		20				1665	1665	415	0.249	0.249	375	0.225	0.225
Leighton Road	#	A	1	3.500						1570	1570	185	0.118		264	0.168	
EB		A	1	3.300						2085	2085	245	0.118		351	0.168	
Hoi Ping Road		C	3	3.000						1915	1915	220	0.115		230	0.120	
SB	*	C	3	3.000		10				715	715	145	0.203	0.203	90	0.126	0.126

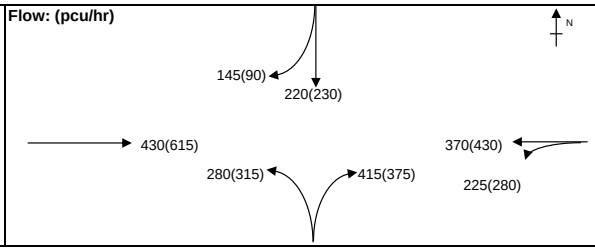
Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

Notes:

TAC junction: Cycle time of 120s and 130s are adopted for WD and WE Noon
^ = Site Factor of 0.6 adopted due to merging traffic ahead
* = Site Factor of 0.4 adopted due to flare lane
** = Site Factor of 0.85 adopted

= Site Factor of 0.8 adopted

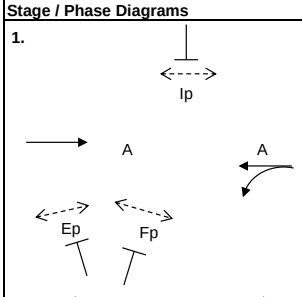
Flow: (pcu/hr)



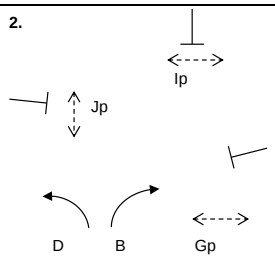
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.452	0.655	y	0.477	0.603
L (sec)	38	20	L (sec)	38	20
C (sec)	120	120	C (sec)	130	130
y pract.	0.615	0.750	y pract.	0.637	0.762
R.C. (%)	36%	15%	R.C. (%)	33%	26%

Stage / Phase Diagrams

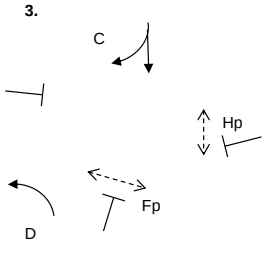
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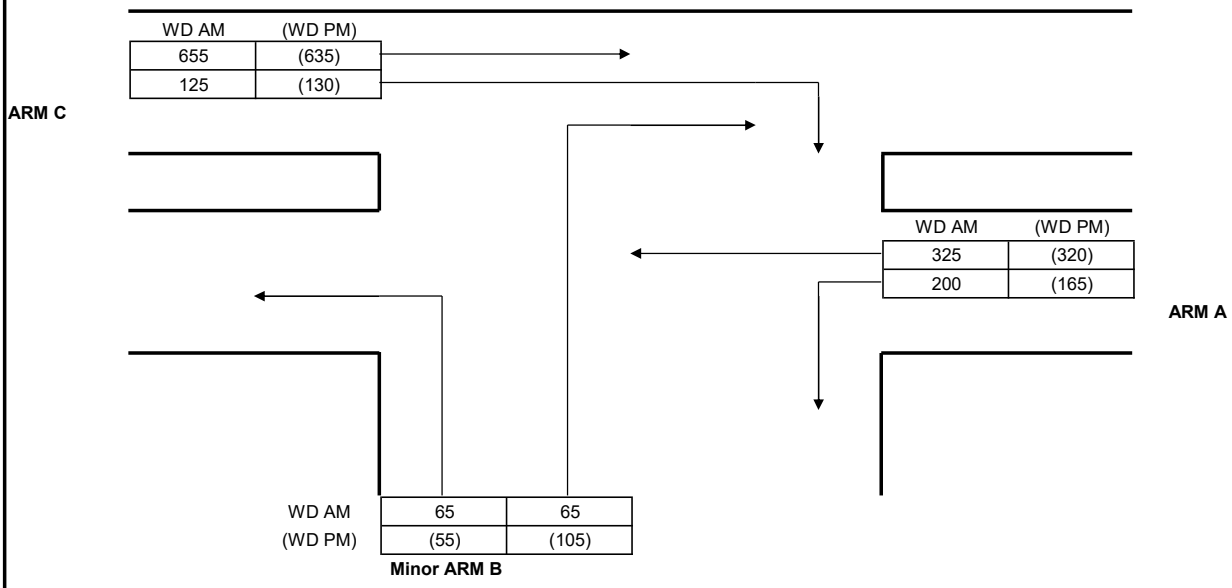
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) / Link Road			Ref. No.:	J6
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	9.40	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.65
	Vr(c-b)	100		Y	0.68

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		655	635
	q(c-b)		125	130
	q(a-b)		200	165
	q(a-c)		325	320
	q(b-a)		65	105
	q(b-c)		65	55
	f		0.50	0.34
		Factor		
CAPACITIES	Q(b-a)	1	308	313
	Q(b-c)	1	496	500
	Q(c-b)	1	397	404
	Q(b-ac)	1	380	359
RFC's	b-a		0.211	0.335
	b-c		0.131	0.110
	c-b		0.315	0.322
	b-ac		0.342	0.446
Worst RFC			**0.342**	**0.446**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

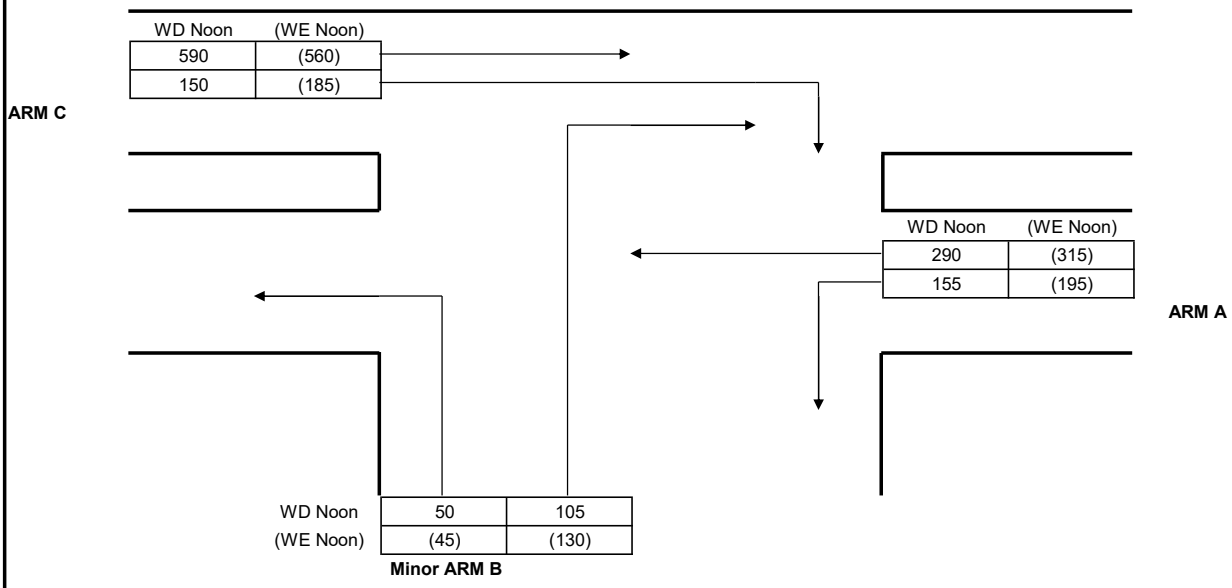
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) / Link Road			Ref. No.:	J6
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	9.40	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.65
	Vr(c-b)	100		Y	0.68

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		590	560
	q(c-b)		150	185
	q(a-b)		155	195
	q(a-c)		290	315
	q(b-a)		105	130
	q(b-c)		50	45
	f		0.32	0.26
		Factor		
CAPACITIES	Q(b-a)	1	319	305
	Q(b-c)	1	506	499
	Q(c-b)	1	410	400
	Q(b-ac)	1	362	339
RFC's	b-a		0.329	0.426
	b-c		0.099	0.090
	c-b		0.366	0.463
	b-ac		0.428	0.516
Worst RFC			**0.428**	**0.516**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

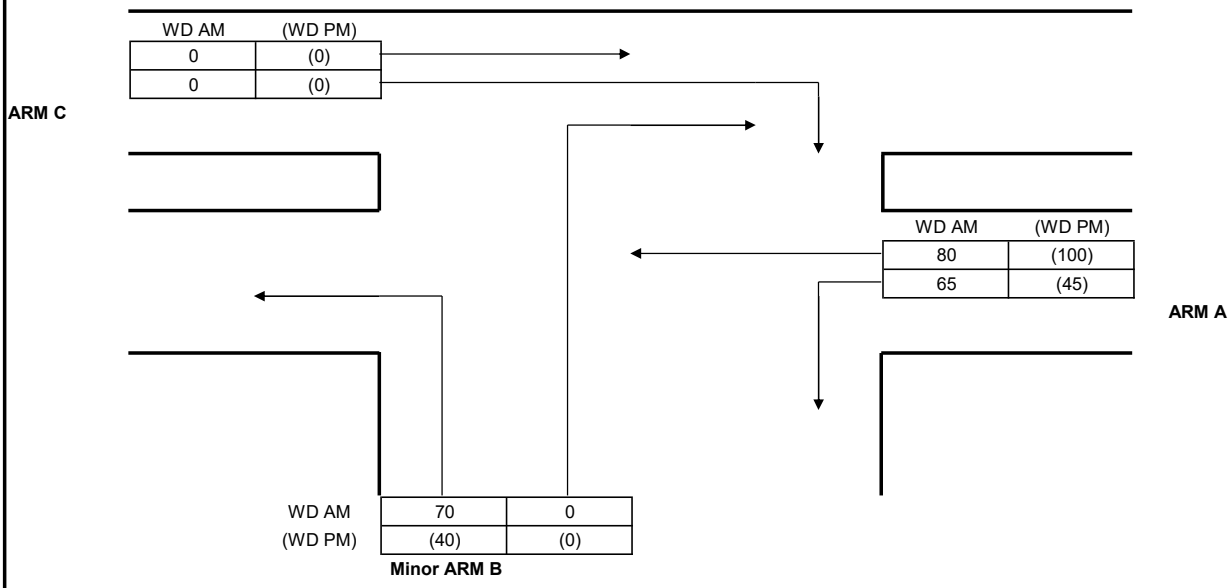
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY					
Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		65	45
	q(a-c)		80	100
	q(b-a)		0	0
	q(b-c)		70	40
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	480	477
	Q(b-c)	1	550	547
	Q(c-b)	1	412	412
	Q(b-ac)	1	550	547
RFC's	b-a		0.000	0.000
	b-c		0.127	0.073
	c-b		0.000	0.000
	b-ac		0.127	0.073
Worst RFC			**0.127**	**0.073**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

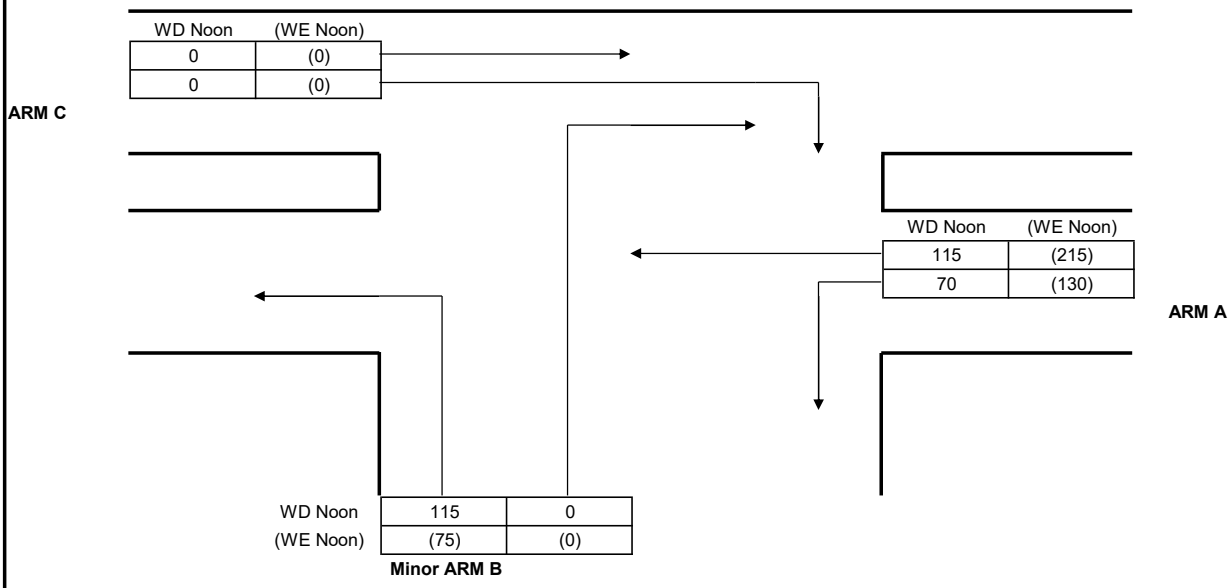
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		70	130
	q(a-c)		115	215
	q(b-a)		0	0
	q(b-c)		115	75
	f		1.00	1.00
CAPACITIES	Q(b-a)	1	472	443
	Q(b-c)	1	541	514
	Q(c-b)	1	406	379
	Q(b-ac)	1	541	514
RFC's	b-a		0.000	0.000
	b-c		0.213	0.146
	c-b		0.000	0.000
	b-ac		0.213	0.146
Worst RFC			**0.213**	**0.146**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	↓ *	A	1	3.000	7			28%	19%	1085	1105	251	0.231		213	0.193	
	←	A	1	2.500						2005	2005	464	0.231		387	0.193	
Leighton Road WE	↑ **	C	2	3.500		9				1180	1180	315	0.267	0.267	325	0.275	0.275
Caroline Hill Road NB	↰ *	C	2	4.000	5					930	930	65	0.070		45	0.048	
Leighton Road EB	↗ **	A	1	3.000	15			74%	76%	1250	1245	439	0.351		510	0.410	
	→ **	A	1	3.000						1440	1440	506	0.351	0.351	590	0.410	0.410
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

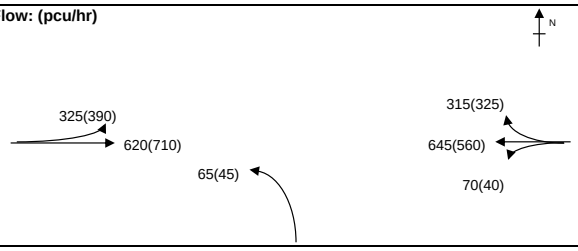
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

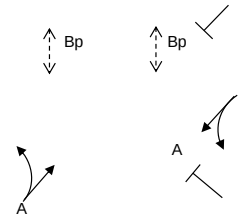
Flow: (pcu/hr)



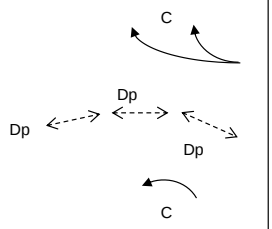
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.351	0.618	y	0.410	0.685
L (sec)	27	11	L (sec)	27	11
C (sec)	105	105	C (sec)	130	130
y pract.	0.669	0.806	y pract.	0.713	0.824
R.C. (%)	90%	30%	R.C. (%)	74%	20%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	*	A	1	3.000	7			53%	33%	1030	1075	217	0.211		228	0.212	
		A	1	2.500						2005	2005	423	0.211		427	0.213	
Leighton Road WE	**	C	2	3.500		9				1180	1180	280	0.237	0.237	295	0.250	0.250
Caroline Hill Road NB	*	C	2	4.000	5					930	930	70	0.075		130	0.140	
Leighton Road EB	**	A	1	3.000	15			68%	69%	1255	1255	466	0.371	0.371	550	0.438	0.438
	**	A	1	3.000						1440	1440	534	0.371		630	0.438	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

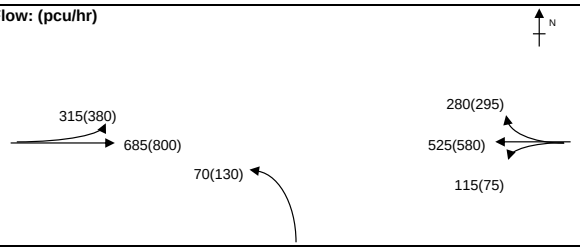
Notes:

TAC junction: Cycle time of 110s and 120s are adopted for WD and WE Noon

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

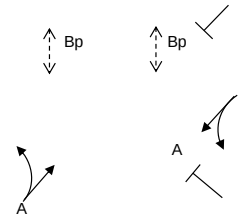
Flow: (pcu/hr)



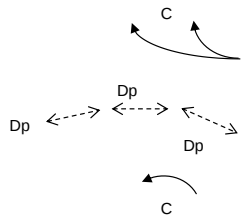
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.371	0.609	y	0.438	0.688
L (sec)	27	11	L (sec)	27	11
C (sec)	110	110	C (sec)	120	120
y pract.	0.679	0.810	y pract.	0.698	0.818
R.C. (%)	83%	33%	R.C. (%)	59%	19%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

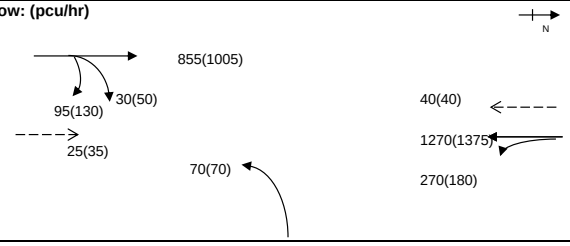
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	↱ *	A	1	3.000	9					1150	1150	270	0.235	0.235	180	0.157	
Causeway Road WB	← *	A	1	3.000						1340	1340	312	0.233		338	0.252	
	←	A	1	3.000						2055	2055	479	0.233		519	0.253	0.253
	←	A	1	3.000						2055	2055	479	0.233		518	0.252	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	40	0.030		40	0.030	
Tung Lo Wan Road NB	↰ **	B	2	4.000	25					1330	1330	70	0.053		70	0.053	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↴ **	C	3	4.000		12				1255	1255	187	0.149	0.149	216	0.172	
	↴ **	C	3	4.500		8				1300	1300	193	0.148		224	0.172	0.172
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	25	0.019		35	0.026	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

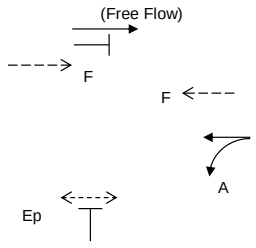
Flow: (pcu/hr)



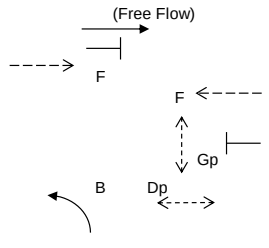
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.436	0.384	y	0.477	0.425
L (sec)	20	33	L (sec)	20	33
C (sec)	100	100	C (sec)	105	105
y pract.	0.720	0.603	y pract.	0.729	0.617
R.C. (%)	65%	57%	R.C. (%)	53%	45%

Stage / Phase Diagrams

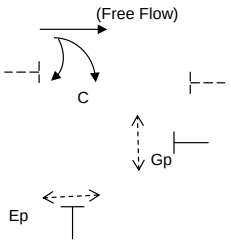
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** (J9) Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

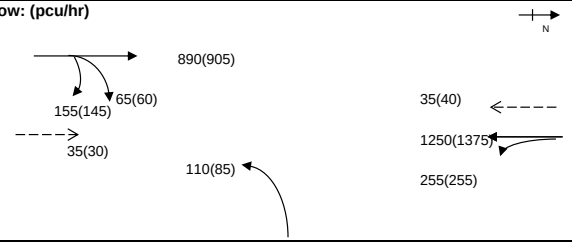
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	255	0.222		255	0.222	
Causeway Road WB	← *	A	1	3.000						1340	1340	307	0.229		338	0.252	
	←	A	1	3.000						2055	2055	472	0.230	0.230	519	0.253	0.253
	←	A	1	3.000						2055	2055	471	0.229		518	0.252	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	35	0.026		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	110	0.083		85	0.064	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↘ **	C	3	4.000		12				1255	1255	223	0.178		221	0.176	
	↘ **	C	3	4.500		8				1300	1300	232	0.178	0.178	229	0.176	0.176
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	35	0.026		30	0.022	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

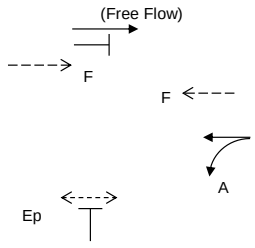
Flow: (pcu/hr)



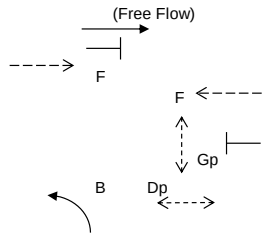
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.491	0.408	y	0.493	0.429
L (sec)	20	33	L (sec)	20	33
C (sec)	95	95	C (sec)	105	105
y pract.	0.711	0.587	y pract.	0.729	0.617
R.C. (%)	45%	44%	R.C. (%)	48%	44%

Stage / Phase Diagrams

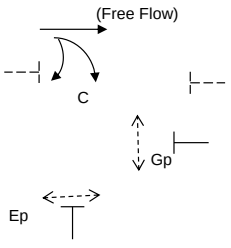
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

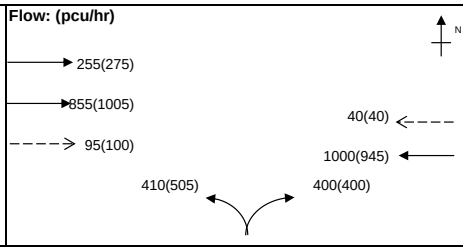
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	← *	C	1	3.700						795	795	269	0.338		255	0.321	
	←	C	1	4.000						2155	2155	731	0.339		690	0.320	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	40	0.021		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	248	0.147	0.147	277	0.164	
	↰↑	E	2	3.300	15	20		58% / 42%	73% / 27%	1915	1905	281	0.147		313	0.164	
	↱	E	2	3.500		15				1915	1915	281	0.147		315	0.164	0.164
Causeway Road WB	→	A	1	3.500						1965	1965	255	0.130		275	0.140	
	→	A	1	3.500						2105	2105	855	0.406	0.406	1005	0.477	0.477
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		100	0.052	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

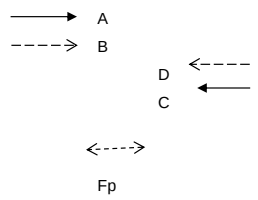
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.486	0.553	y	0.485	0.642
L (sec)	10	10	L (sec)	10	10
C (sec)	100	100	C (sec)	105	105
y pract.	0.810	0.810	y pract.	0.814	0.814
R.C. (%)	67%	46%	R.C. (%)	68%	27%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

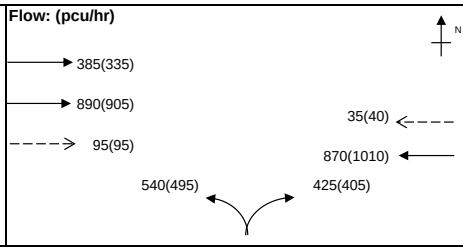
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD NN	Pro. Turning (%) WE NN	Revised Saturation Flow (pcu/hr) WD NN	Revised Saturation Flow (pcu/hr) WE NN	WD NN Flow (pcu/hr)	WD NN y Value	WD NN Critical y	WE NN Flow (pcu/hr)	WE NN y Value	WE NN Critical y
Causeway Road WB	← *	C	1	3.700						795	795	234	0.294		272	0.342	
	←	C	1	4.000						2155	2155	636	0.295		738	0.342	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	35	0.018		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	295	0.175		275	0.163	
	↰↱	E	2	3.300	15	20		73% / 27%	71% / 29%	1905	1910	334	0.175		312	0.163	
	↱	E	2	3.500		15				1915	1915	336	0.175	0.175	313	0.163	0.163
Causeway Road WB	→	A	1	3.500						1965	1965	385	0.196		335	0.170	
	→	A	1	3.500						2105	2105	890	0.423	0.423	905	0.430	0.430
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		95	0.050	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

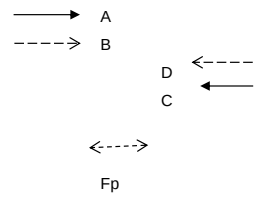
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.471	0.598	y	0.506	0.593
L (sec)	10	10	L (sec)	10	10
C (sec)	95	95	C (sec)	105	105
y pract.	0.805	0.805	y pract.	0.814	0.814
R.C. (%)	71%	35%	R.C. (%)	61%	37%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

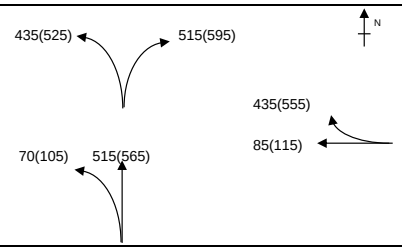
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	79	0.082	0.082	101	0.105	
	↰	A	1,4	3.000		16		96%	93%	1885	1890	154	0.082		200	0.106	0.106
	↰	A	1,4	3.000		13				1840	1840	151	0.082		194	0.105	
	↰	A	1,4	3.000		10				1665	1665	136	0.082		175	0.105	
Pennington Street	↰↑	B	2,3	3.800	5			25%	33%	1855	1815	282	0.152	0.152	319	0.176	
NB 1st stop line	↑	B	2,3	3.800						1995	1995	303	0.152		351	0.176	0.176
Pennington Street	↰	E	1,2,4	5.000	10					1840	1840	435	0.236		525	0.285	
NB 2nd stop line	↱	F	1,2,3	3.500		10				1830	1830	275	0.150		318	0.174	
	↱	F	1,2,3	3.500		6.5				1595	1595	240	0.150		277	0.174	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

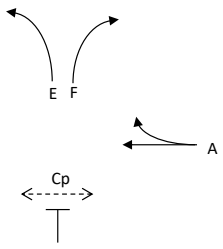
Flow: (pcu/hr)



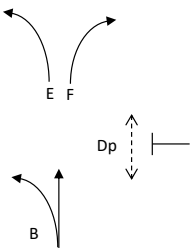
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.152	0.234	y	0.176	0.282
L (sec)	24	14	L (sec)	24	14
C (sec)	100	100	C (sec)	100	100
y pract.	0.684	0.774	y pract.	0.684	0.774
R.C. (%)	350%	230%	R.C. (%)	289%	175%

Stage / Phase Diagrams

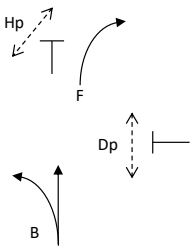
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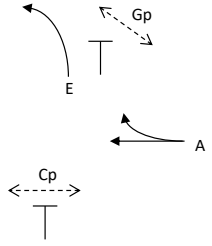
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3.



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5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** J11 Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

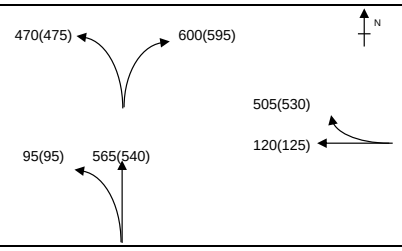
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	94	0.098		99	0.103	
	↖↑	A	1,4	3.000		16		86%	87%	1900	1900	187	0.098		196	0.103	0.103
	↖	A	1,4	3.000		13				1840	1840	180	0.098		189	0.103	
	↖	A	1,4	3.000		10				1665	1665	164	0.098	0.098	171	0.103	
Pennington Street NB 1st stop line	↑	B	2,3	3.800	5			30%	31%	1830	1825	316	0.173	0.173	303	0.166	
	↑	B	2,3	3.800						1995	1995	344	0.172		332	0.166	0.166
Pennington Street NB 2nd stop line	↰	E	1,2,4	5.000	10					1840	1840	470	0.255		475	0.258	
	↱	F	1,2,3	3.500		10				1830	1830	321	0.175		318	0.174	
	↱	F	1,2,3	3.500		6.5				1595	1595	279	0.175		277	0.174	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

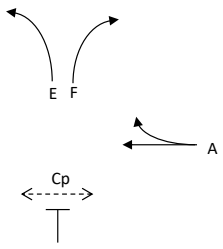
Flow: (pcu/hr)



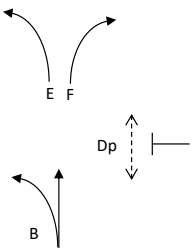
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.173	0.271	y	0.166	0.270
L (sec)	24	14	L (sec)	24	14
C (sec)	120	120	C (sec)	100	100
y pract.	0.720	0.795	y pract.	0.684	0.774
R.C. (%)	317%	193%	R.C. (%)	311%	187%

Stage / Phase Diagrams

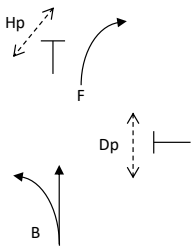
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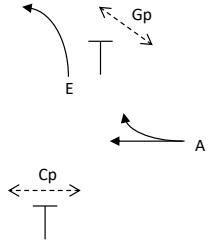
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** (J11) Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

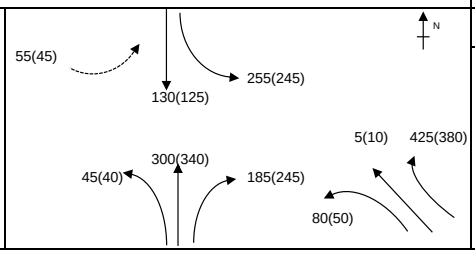
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Link Road		A	1	3.500	80			66%	66%	1940	1940	385	0.198	0.198	370	0.191	0.191
Broadwoord Road (E)		B	1,2	3.000	15			13%	11%	1890	1895	345	0.183		380	0.201	
		E	2	3.000		8				1730	1730	185	0.107	0.107	245	0.142	0.142
Broadwoord Road (W)		C	3	3.500	5	60		16% / 83%	11% / 86%	1840	1860	510	0.277	0.277	440	0.237	0.237
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

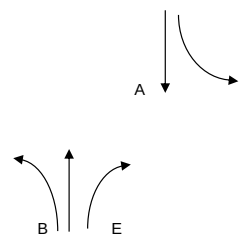
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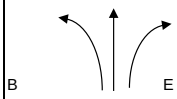
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.583	0.583	y	0.569	0.569
L (sec)	16	27	L (sec)	16	27
C (sec)	140	140	C (sec)	135	135
y pract.	0.797	0.726	y pract.	0.793	0.720
R.C. (%)	37%	25%	R.C. (%)	39%	27%

Stage / Phase Diagrams

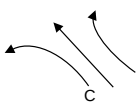
1.



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5.

I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** (J12) Link Road / Broadwood Road

TRAFFIC SIGNALS CALCULATION

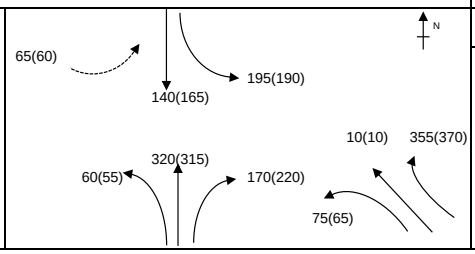
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road		A	1	3.500	80			58%	54%	1945	1945	335	0.172	0.172	355	0.183	0.183
Broadwoord Road (E)		B	1,2	3.000	15			16%	15%	1885	1885	380	0.202		370	0.196	
		E	2	3.000		8				1730	1730	170	0.098	0.098	220	0.127	0.127
Broadwoord Road (W)		C	3	3.500	5	60		17% / 81%	15% / 83%	1835	1845	440	0.240	0.240	445	0.241	0.241
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

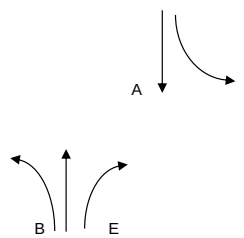
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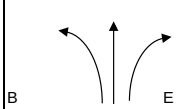
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.510	0.510	y	0.551	0.551
L (sec)	16	27	L (sec)	16	27
C (sec)	110	110	C (sec)	110	110
y pract.	0.769	0.679	y pract.	0.769	0.679
R.C. (%)	51%	33%	R.C. (%)	40%	23%

Stage / Phase Diagrams

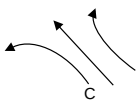
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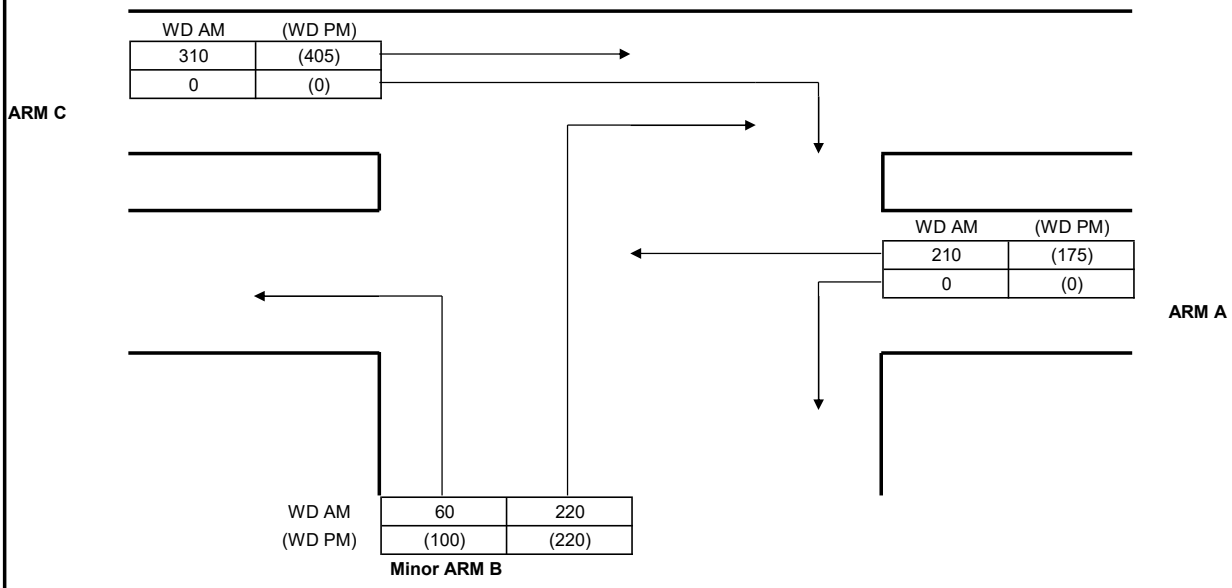
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I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	5.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.81

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		310	405
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		210	175
	q(b-a)		220	220
	q(b-c)		60	100
	f		0.21	0.31
		Factor		
CAPACITIES	Q(b-a)	1	397	391
	Q(b-c)	1	595	604
	Q(c-b)	1	721	732
	Q(b-ac)	1	428	440
RFC's	b-a		0.554	0.563
	b-c		0.101	0.166
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.554**	**0.563**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

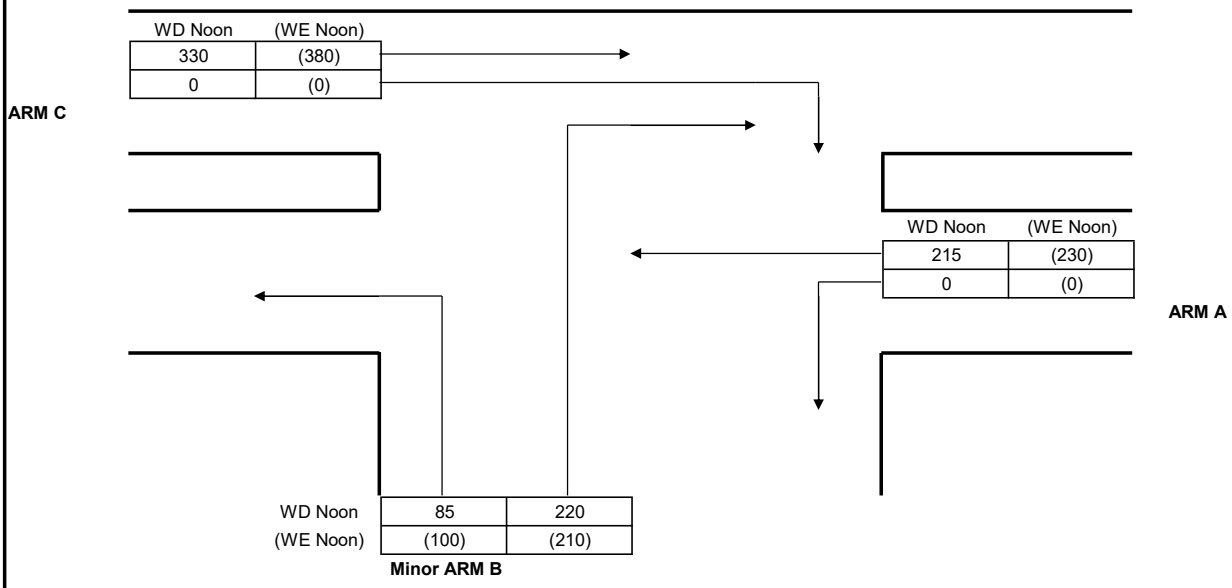
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY

Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		330	380
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		215	230
	q(b-a)		220	210
	q(b-c)		85	100
	f		0.28	0.32
CAPACITIES	Q(b-a)	1	397	386
	Q(b-c)	1	596	593
	Q(c-b)	1	723	718
	Q(b-ac)	1	438	435
RFC's	b-a		0.554	0.544
	b-c		0.143	0.169
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.554**	**0.544**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

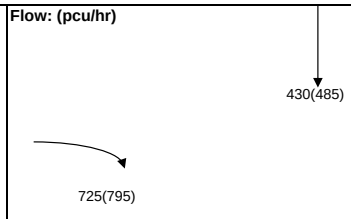
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Sports Road	→	A	1	3.800		10				1735	1735	344	0.198		377	0.217	
EB	→	A	1	3.800		13.5				1920	1920	381	0.198	0.198	418	0.218	0.218
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	140	0.073	0.073	158	0.083	0.083
	↓	B	2	3.000						2055	2055	150	0.073		169	0.082	
	↓	B	2	3.000						1915	1915	140	0.073		158	0.083	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

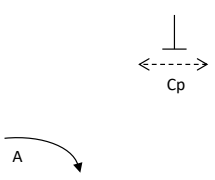
Flow: (pcu/hr)



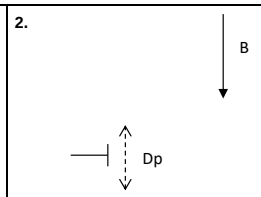
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.198	0.272	y	0.218	0.300
L (sec)	27	10	L (sec)	27	10
C (sec)	90	90	C (sec)	90	90
y pract.	0.630	0.800	y pract.	0.630	0.800
R.C. (%)	217%	195%	R.C. (%)	189%	166%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

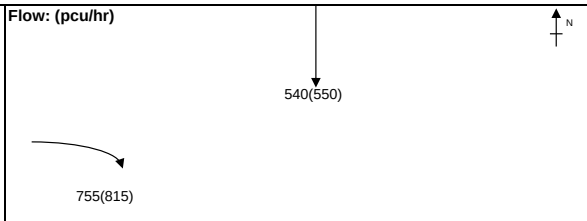
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Sports Road	↱	A	1	3.800		10				1735	1735	358	0.206		387	0.223	0.223
EB	↱	A	1	3.800		13.5				1920	1920	397	0.207	0.207	428	0.223	
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	176	0.092	0.092	179	0.093	0.093
	↓	B	2	3.000						2055	2055	188	0.091		192	0.093	
	↓	B	2	3.000						1915	1915	176	0.092		179	0.093	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

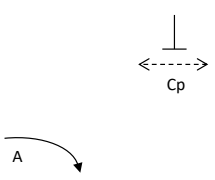
Flow: (pcu/hr)



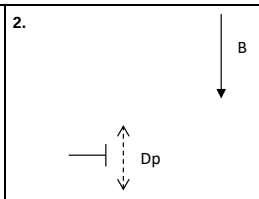
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.207	0.299	y	0.223	0.317
L (sec)	27	10	L (sec)	27	10
C (sec)	75	75	C (sec)	75	75
y pract.	0.576	0.780	y pract.	0.576	0.780
R.C. (%)	179%	161%	R.C. (%)	158%	146%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB		A	1	3.500	20					1830	1830	308	0.168		329	0.180	
	*	A	1	3.500	25					395	395	67	0.170		71	0.180	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	50	0.135	0.135	65	0.176	0.176
Leighton Road WB	***	A	1	3.000						1530	1530	686	0.448		670	0.438	
	*	A	1	3.000						410	410	184	0.449	0.449	180	0.439	0.439
Leighton Road EB	*	A	1	3.500						395	395	109	0.276		100	0.253	
	**	A	1	3.000						1030	1030	286	0.278		260	0.252	
	**	A	1	3.000						1030	1030	285	0.277		260	0.252	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+ 9	=	19							
		Dp	2	MIN GREEN + FLASH =			7	+ 7	=	14							

Notes:

TAC junction: Cycle time of 130s and 120s are adopted for AM and PM Peak

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

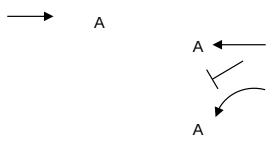
Flow: (pcu/hr)



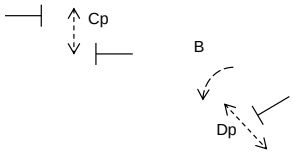
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.449	0.584	y	0.439	0.615
L (sec)	30	12	L (sec)	30	12
C (sec)	130	130	C (sec)	120	120
y pract.	0.692	0.817	y pract.	0.675	0.810
R.C. (%)	54%	40%	R.C. (%)	54%	32%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road		A	1	3.500	20					1830	1830	387	0.211		411	0.225	
WB	*	A	1	3.500	25					395	395	83	0.210		89	0.225	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	60	0.162	0.162	60	0.162	0.162
Leighton Road	***	A	1	3.000						1530	1530	670	0.438		655	0.428	0.428
WB	*	A	1	3.000						410	410	180	0.439	0.439	175	0.427	
Leighton Road	*	A	1	3.500						395	395	129	0.327		116	0.294	
EB	**	A	1	3.000						1030	1030	335	0.325		302	0.293	
	**	A	1	3.000						1030	1030	336	0.326		302	0.293	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Dp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

TAC junction: Cycle time of 120s and 120s are adopted for WD and WE Noon

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

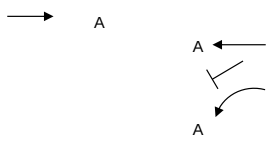
Flow: (pcu/hr)



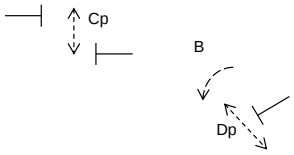
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.439	0.601	y	0.428	0.590
L (sec)	30	12	L (sec)	30	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.675	0.810	y pract.	0.675	0.810
R.C. (%)	54%	35%	R.C. (%)	58%	37%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

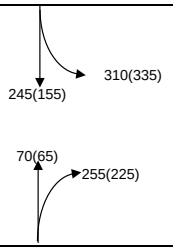
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road SB	↳	*	A	1	3.300	25					1285	1285	215	0.167		191	0.149	
	↓		A	1	3.000	30			28%	48%	2025	2005	340	0.168	0.168	299	0.149	0.149
Ka Ning Path NB	↑		B	2	3.500		10		78%	78%	1760	1760	325	0.185	0.185	290	0.165	0.165
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

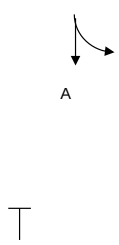
Flow: (pcu/hr)



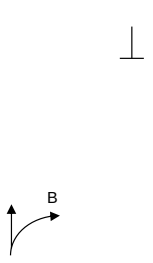
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.353	0.353	y	0.314	0.314
L (sec)	31	34	L (sec)	31	34
C (sec)	100	100	C (sec)	105	105
y pract.	0.621	0.594	y pract.	0.634	0.609
R.C. (%)	76%	68%	R.C. (%)	102%	94%

Stage / Phase Diagrams

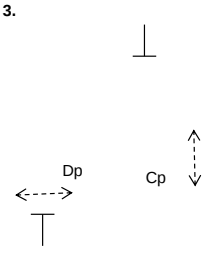
1.



2.



3.



4.

5.

I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	
I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

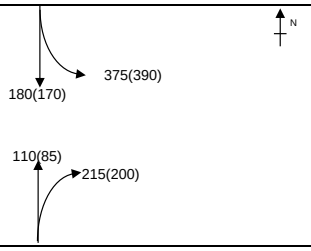
Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road SB	↳	*	A	1	3.300	25					1285	1285	217	0.169	0.169	219	0.170	0.170
	↓		A	1	3.000	30			47%	50%	2010	2005	338	0.168		341	0.170	
Ka Ning Path NB	↑		B	2	3.500		10		66%	70%	1790	1780	325	0.182	0.182	285	0.160	0.160
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

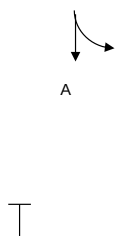
Flow: (pcu/hr)



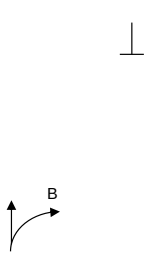
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.350	0.350	y	0.331	0.331
L (sec)	31	34	L (sec)	31	34
C (sec)	95	95	C (sec)	105	105
y pract.	0.606	0.578	y pract.	0.634	0.609
R.C. (%)	73%	65%	R.C. (%)	92%	84%

Stage / Phase Diagrams

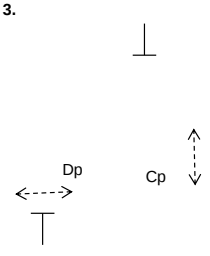
1.



2.



3.



4.

5.

I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=
I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

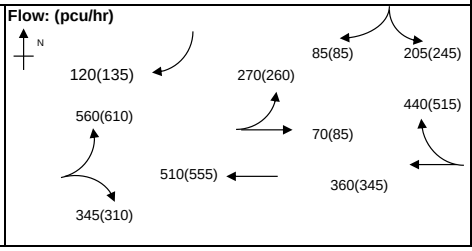
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	246	0.128		268	0.140	
	←	C	2	3.000						2055	2055	264	0.128		287	0.140	
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	429	0.257		438	0.262	0.262
	↑	A	1	3.500	13	35		28% / 72%	36% / 64%	1850	1840	476	0.257	0.257	482	0.262	
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	120	0.060		135	0.067	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		345	0.174	
	↰	E	2,3	3.000		8		100%	100%	1535	1535	440	0.287	0.287	515	0.336	0.336
Tung Lo Wan Road EB	↱	E	2,3	5.000	13			79%	75%	1935	1945	340	0.176		345	0.177	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		71% / 29%	74% / 26%	1680	1675	290	0.173		330	0.197	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

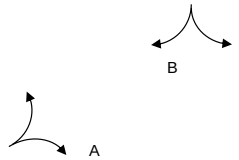
Flow: (pcu/hr)



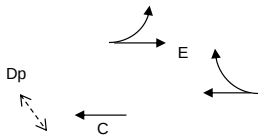
Group	A,C,F	A,E	Group	A,C,F	A,E
y	0.446	0.544	y	0.470	0.598
L (sec)	19	12	L (sec)	19	12
C (sec)	100	100	C (sec)	105	105
y pract.	0.729	0.792	y pract.	0.737	0.797
R.C. (%)	64%	46%	R.C. (%)	57%	33%

Stage / Phase Diagrams

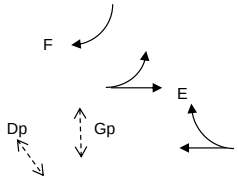
1.



2.



3.



4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J17) Tung Lo Wan Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

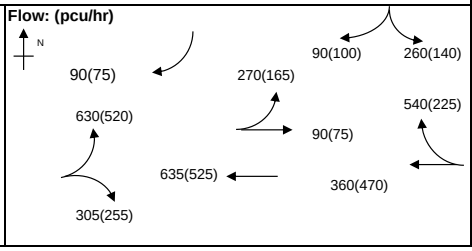
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Reference Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	306	0.160		253	0.132	
	←	C	2	3.000						2055	2055	329	0.160		272	0.132	0.132
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	445	0.266		369	0.221	
	↱↑	A	1	3.500	13	35		38% / 62%	37% / 63%	1835	1835	490	0.267	0.267	406	0.221	0.221
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	90	0.045		75	0.037	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		384	0.193	
	←↑	E	2,3	3.000		8		100%	72%	1535	1605	540	0.352	0.352	311	0.194	
Tung Lo Wan Road EB	↑→	E	2,3	5.000	13			75%	69%	1945	1960	360	0.185		240	0.122	
Tung Lo Wan Drive SB	↓→	B	1	3.500	8	12		74% / 26%	58% / 42%	1675	1690	350	0.209		240	0.142	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						*

Notes:

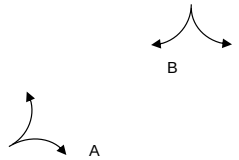
Flow: (pcu/hr)



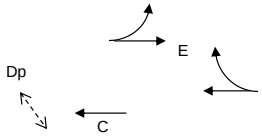
Group	A,C,Gp	A,E	Group	A,C,F	A,C,Gp
y	0.427	0.619	y	0.391	0.354
L (sec)	29	12	L (sec)	19	29
C (sec)	95	95	C (sec)	105	105
y pract.	0.625	0.786	y pract.	0.737	0.651
R.C. (%)	46%	27%	R.C. (%)	89%	84%

Stage / Phase Diagrams

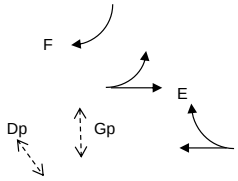
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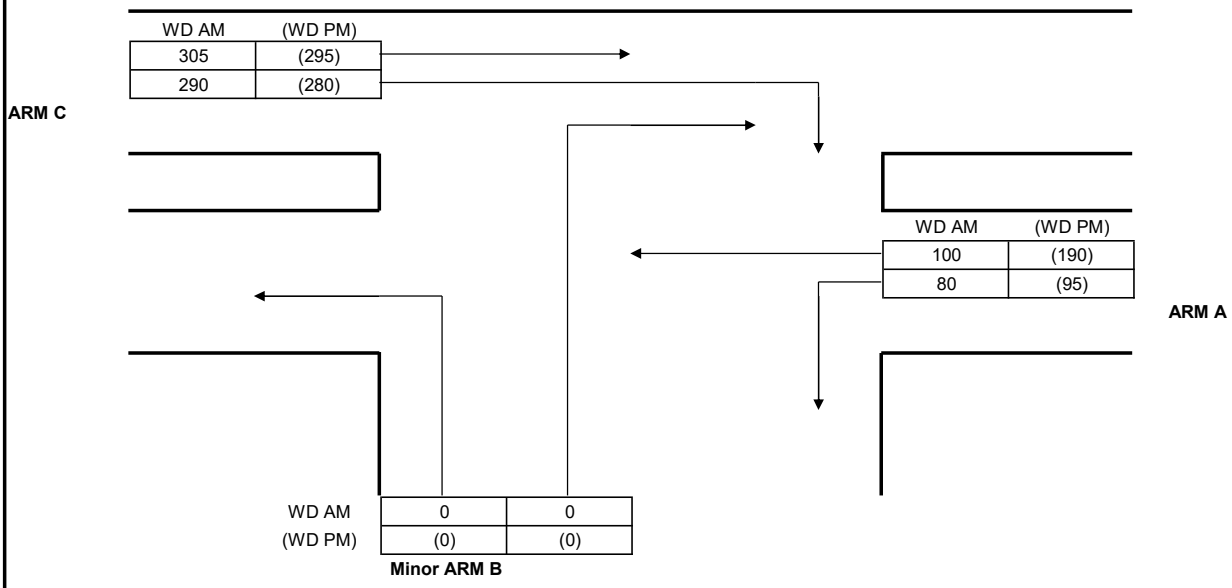
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I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 2		I/G= 7		I/G= 5	17	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J17 Tung Lo Wan Road / Moreton Terrace

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		305	295
	q(c-b)		290	280
	q(a-b)		80	95
	q(a-c)		100	190
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	249	239
	Q(b-c)	1	427	413
	Q(c-b)	1	667	643
	Q(b-ac)	1	249	239
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.435	0.435
	b-ac		0.000	0.000
Worst RFC			**0.435**	**0.435**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

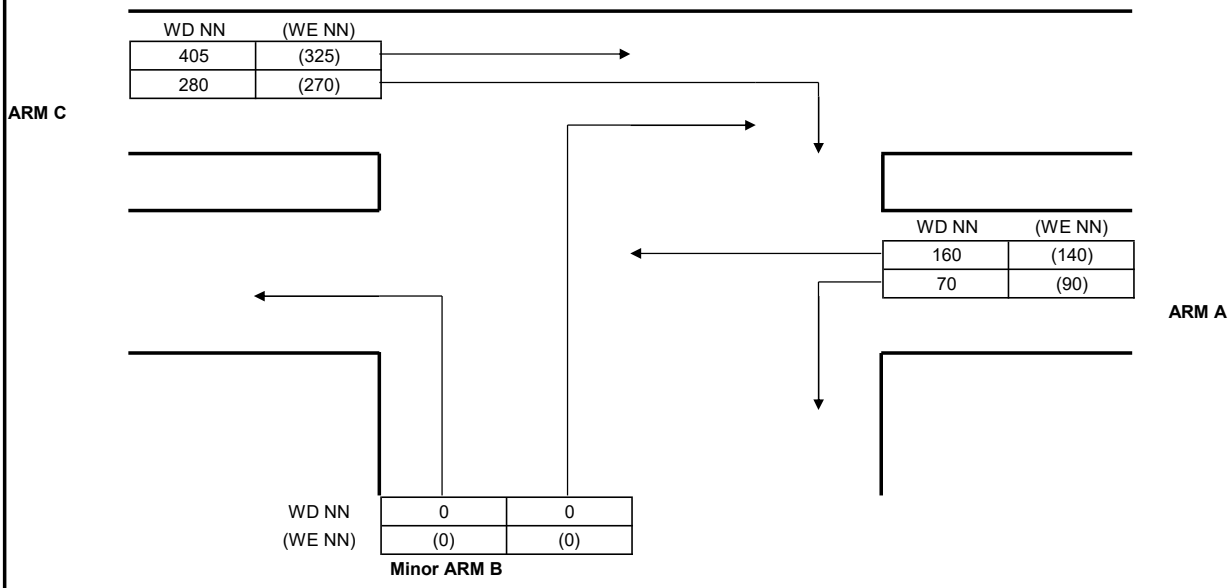
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY

Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS

		Factor	WD NN PEAK	(WE NN) PEAK
TRAFFIC FLOWS	q(c-a)		405	325
	q(c-b)		280	270
	q(a-b)		70	90
	q(a-c)		160	140
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
CAPACITIES	Q(b-a)	1	235	245
	Q(b-c)	1	419	420
	Q(c-b)	1	655	655
	Q(b-ac)	1	235	245
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.427	0.412
	b-ac		0.000	0.000
Worst RFC			**0.427**	**0.412**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

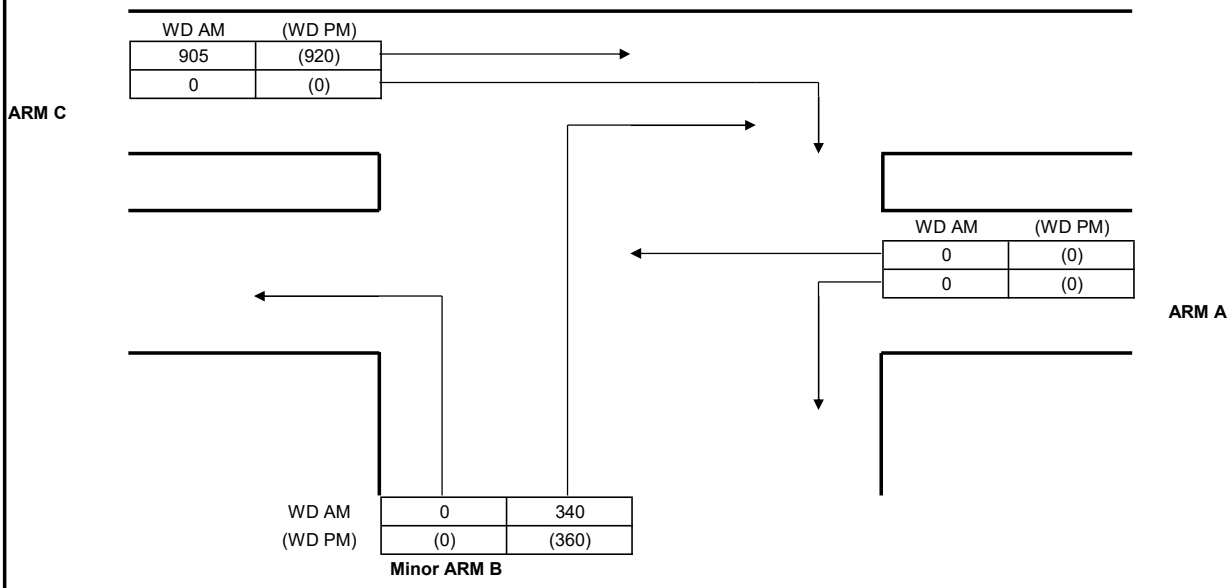
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY

Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS

		Factor	WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		905	920
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		340	360
	q(b-c)		0	0
	f		0.00	0.00
CAPACITIES	Q(b-a)	1	505	502
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	505	502
RFC's	b-a		0.673	0.717
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.673	0.717
Worst RFC			**0.673**	**0.717**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

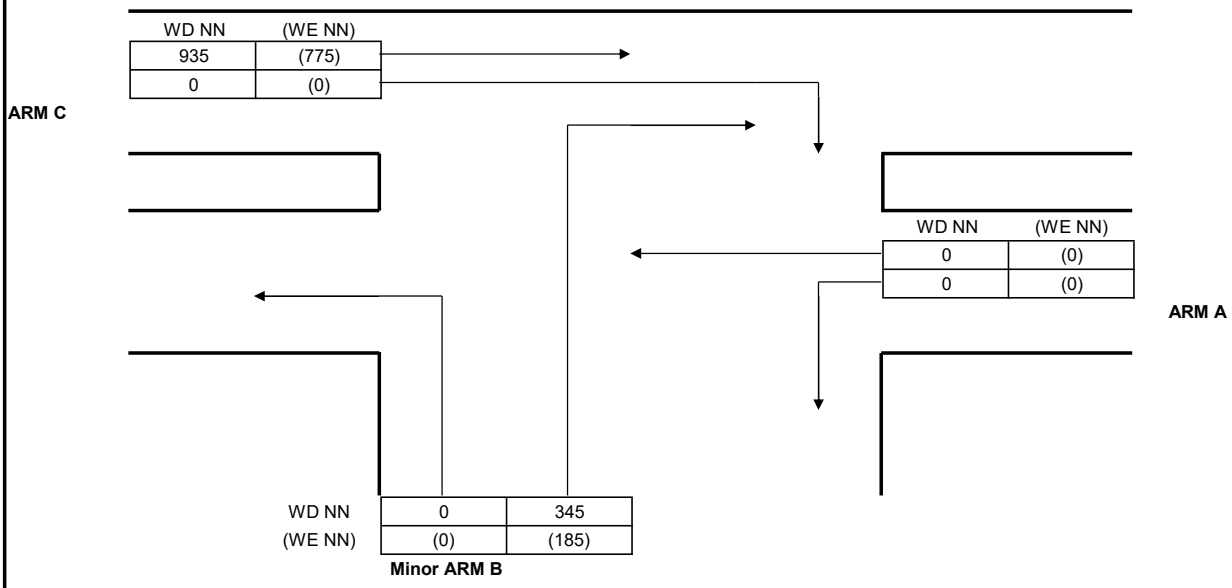
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2031 Reference Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD NN PEAK	(WE NN) PEAK
TRAFFIC FLOWS	q(c-a)		935	775
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		345	185
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	499	530
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	499	530
RFC's	b-a		0.691	0.349
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.691	0.349
Worst RFC			**0.691**	**0.349**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Year 2031 Design

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

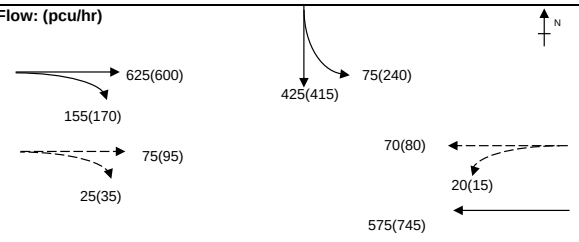
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	237	0.159		308	0.206	0.206
	←	A	1	3.700						2125	2125	338	0.159	0.159	437	0.206	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	20	0.011		15	0.008	
	←	A	1	3.000						2055	2055	70	0.034		80	0.039	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	199	0.207		191	0.199	
	→	B	1,2,3	3.000						2055	2055	426	0.207		409	0.199	
	↘	C	2,3	3.000		25				1940	1940	155	0.080	0.080	170	0.088	0.088
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	75	0.039		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	25	0.013		35	0.018	
Percival Street SB	↳	E	4	3.300	10					1690	1690	75	0.044		240	0.142	0.142
	↓	E	4	3.300						2085	2085	211	0.101		207	0.099	
	↓	E	4	3.500						2105	2105	214	0.102	0.102	208	0.099	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =	12	+	14	=	26								
		Gp	1	MIN GREEN + FLASH =	5	+	7	=	12								

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

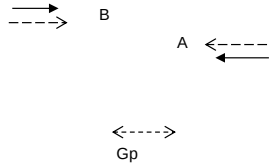
Flow: (pcu/hr)



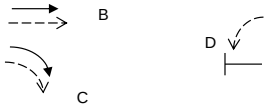
Group	A,C,Fp	A,C,E	Group	A,C,Fp	A,C,E
y	0.239	0.341	y	0.294	0.436
L (sec)	46	19	L (sec)	46	19
C (sec)	120	120	C (sec)	120	120
y pract.	0.555	0.758	y pract.	0.555	0.758
R.C. (%)	132%	122%	R.C. (%)	89%	74%

Stage / Phase Diagrams

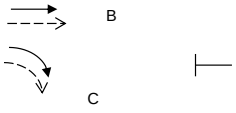
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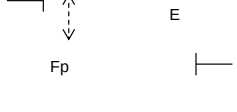
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3.



4.



5.

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

Date: FEB, 2022 **Junction:** (J1) Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

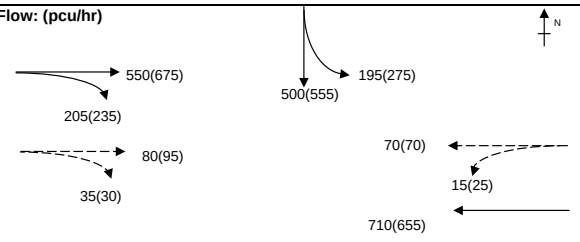
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	293	0.196		271	0.181	0.181
	←	A	1	3.700						2125	2125	417	0.196	0.196	384	0.181	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	15	0.008		25	0.014	
	←	A	1	3.000						2055	2055	70	0.034		70	0.034	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	175	0.182		215	0.224	
	→	B	1,2,3	3.000						2055	2055	375	0.182		460	0.224	
	↘	C	2,3	3.000		25				1940	1940	205	0.106	0.106	235	0.121	0.121
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	80	0.042		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	35	0.018		30	0.015	
Percival Street SB	↳	E	4	3.300	10					1690	1690	195	0.115		275	0.163	0.163
	↓	E	4	3.300						2085	2085	249	0.119		276	0.132	
	↓	E	4	3.500						2105	2105	251	0.119		279	0.133	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26			*			
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

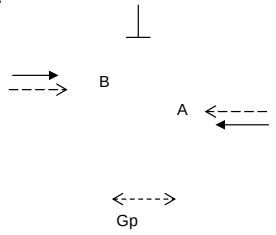
Flow: (pcu/hr)



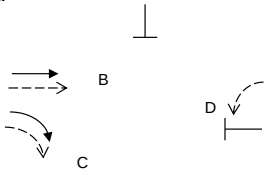
Group	A,C,E	A,C,Fp	Group	A,C,Fp	A,C,E
y	0.421	0.302	y	0.302	0.465
L (sec)	19	46	L (sec)	46	19
C (sec)	104	104	C (sec)	104	104
y pract.	0.736	0.502	y pract.	0.502	0.736
R.C. (%)	75%	66%	R.C. (%)	66%	58%

Stage / Phase Diagrams

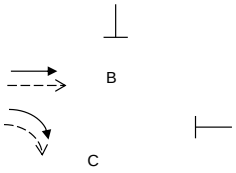
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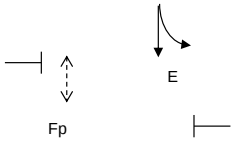
2.



3.



4.



5.

I/G= 4		I/G= 8		I/G=		I/G= 10	26
I/G= 6		I/G= 8		I/G=		I/G= 8	

I/G=	
I/G=	

Date: FEB, 2022 **Junction:** (J1) Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

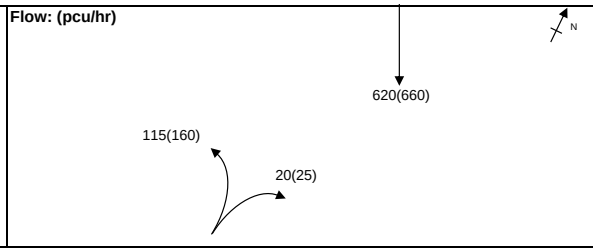
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Percival Street	↓	A	1	3.600						1975	1975	310	0.157	0.157	330	0.167	0.167
SB	↓	A	1	3.600						1975	1975	310	0.157		330	0.167	
Matheson Street	↰	B	2	3.300	10					1690	1690	67	0.040		91	0.054	
NB	↰↑	B	2	3.300	13.3	10		71% / 29%	73% / 27%	1730	1730	68	0.039		94	0.054	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 120s are adopted for AM and PM Peak

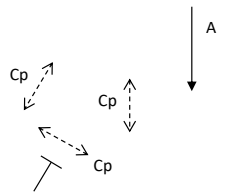
Flow: (pcu/hr)



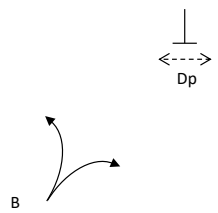
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.040	0.157	y	0.054	0.167
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	120	120
y pract.	0.643	0.703	y pract.	0.675	0.728
R.C. (%)	1522%	348%	R.C. (%)	1142%	335%

Stage / Phase Diagrams

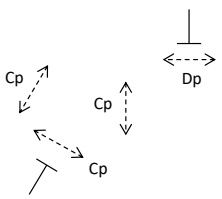
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

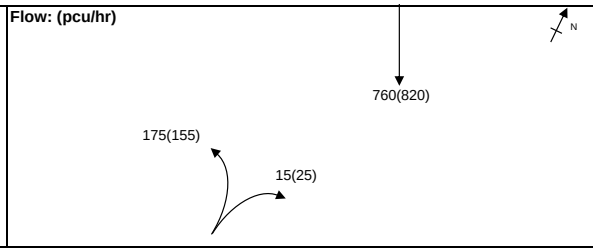
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Percival Street	↓	A	1	3.600						1975	1975	380	0.192	0.192	410	0.208	0.208
SB	↓	A	1	3.600						1975	1975	380	0.192		410	0.208	
Matheson Street	↰	B	2	3.300	10					1690	1690	94	0.056		89	0.053	
NB	↱	B	2	3.300	13.3	10		84% / 16%	73% / 27%	1740	1730	96	0.055		91	0.053	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 110s are adopted for WD and WE Noon

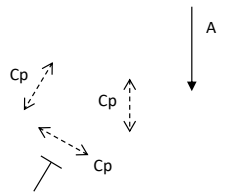
Flow: (pcu/hr)



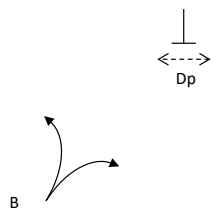
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.056	0.192	y	0.053	0.208
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	110	110
y pract.	0.643	0.703	y pract.	0.655	0.712
R.C. (%)	1056%	265%	R.C. (%)	1143%	243%

Stage / Phase Diagrams

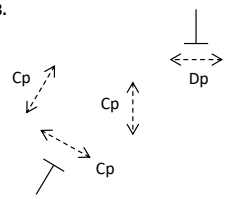
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** J2 Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	483	0.308		501	0.319	0.319
	← *	E	1	3.000						1645	1645	507	0.308		524	0.319	
Leighton Road EB	→ **	A	1	2.500						1120	1120	356	0.318		313	0.279	
	→ **	A	1	2.500						1205	1205	384	0.319	0.319	337	0.280	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	260	0.228	0.228	315	0.276	0.276
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	239	0.150		242	0.152	
	** ↲	C	2	3.500		20				1175	1175	176	0.150		178	0.151	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

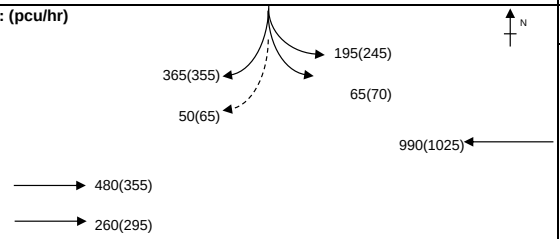
Notes:

TAC junction: Cycle time of 105s and 105s are adopted for AM and PM Peak

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

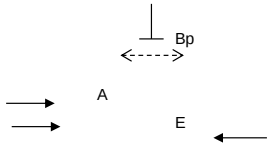
Flow: (pcu/hr)



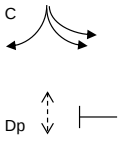
Group	E,C	A,C	Group	A,C	E,C
y	0.536	0.547	y	0.556	0.595
L (sec)	9	14	L (sec)	14	9
C (sec)	105	105	C (sec)	105	105
y pract.	0.823	0.780	y pract.	0.780	0.823
R.C. (%)	53%	43%	R.C. (%)	40%	38%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=	
I/G= 6		I/G= 5		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	486	0.310		508	0.324	
	← *	E	1	3.000						1645	1645	509	0.309		532	0.323	
Leighton Road EB	→ **	A	1	2.500						1120	1120	407	0.363		364	0.325	0.325
	→ **	A	1	2.500						1205	1205	438	0.363	0.363	391	0.324	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	310	0.272	0.272	380	0.333	0.333
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	294	0.184		268	0.168	
	** ↲	C	2	3.500		20				1175	1175	216	0.184		197	0.168	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

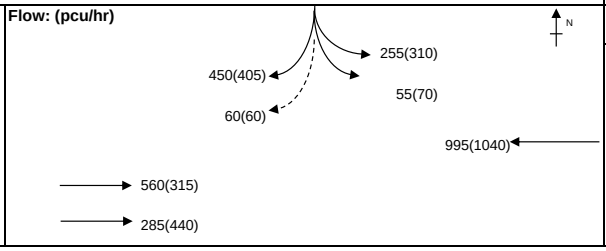
Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

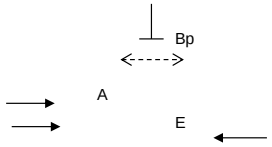
Flow: (pcu/hr)



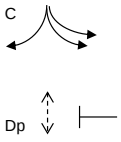
Group	E,C	A,C	Group	E,C	A,C
y	0.581	0.635	y	0.657	0.658
L (sec)	9	14	L (sec)	9	14
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.803	y pract.	0.838	0.803
R.C. (%)	44%	26%	R.C. (%)	28%	22%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

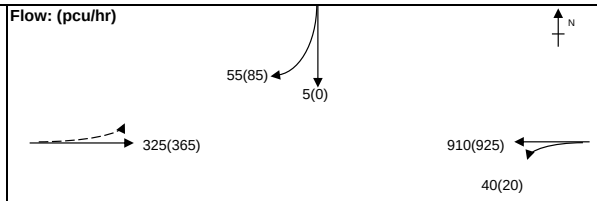
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	↓	B	2	3.500	5			9%	4%	1915	1940	456	0.238		457	0.236	
	←	B	2	3.200						2075	2075	494	0.238		488	0.235	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	325	0.165	0.165	365	0.186	0.186
Hysan Avenue SB	↓	C	3	3.300		17		84%	100%	1810	1785	32	0.018		45	0.025	
	↲	C	3	3.000		10				1585	1585	28	0.018		40	0.025	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 120s and 130s are adopted for AM and PM Peak

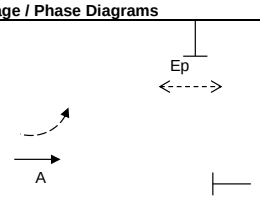
Flow: (pcu/hr)



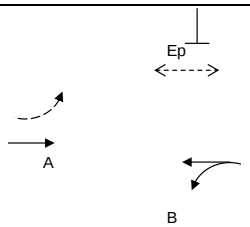
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.183	0.165	y	0.211	0.186
L (sec)	9	31	L (sec)	9	31
C (sec)	120	120	C (sec)	130	130
y pract.	0.833	0.668	y pract.	0.838	0.685
R.C. (%)	355%	304%	R.C. (%)	297%	269%

Stage / Phase Diagrams

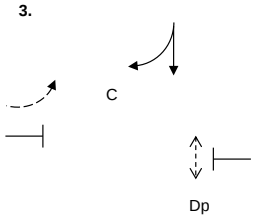
1.



2.



3.



4.

5.

I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

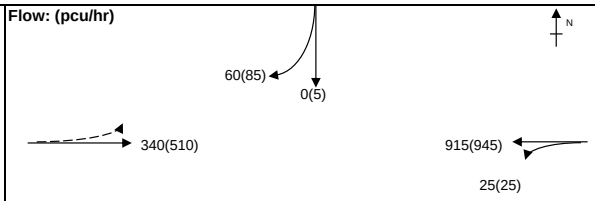
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	↓	B	2	3.500	5			6%	5%	1935	1935	453	0.234		468	0.242	
	←	B	2	3.200						2075	2075	487	0.235		502	0.242	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	340	0.173	0.173	510	0.260	0.260
Hysan Avenue SB	↓	C	3	3.300		17		100%	90%	1785	1805	32	0.018		48	0.027	
	↲	C	3	3.000		10				1585	1585	28	0.018		42	0.026	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

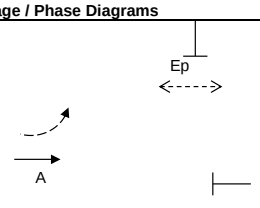
Flow: (pcu/hr)



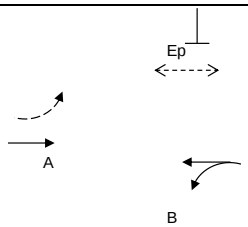
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.191	0.173	y	0.286	0.260
L (sec)	9	31	L (sec)	9	31
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.685	y pract.	0.838	0.685
R.C. (%)	339%	296%	R.C. (%)	193%	164%

Stage / Phase Diagrams

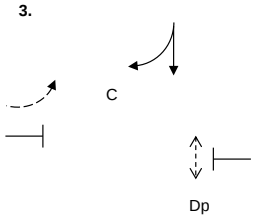
1.



2.



3.



4.

5.

I/G= 4		I/G=		I/G= 7	21	I/G=	I/G=
I/G= 4		I/G=		I/G= 7	21	I/G=	I/G=

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	*	A	1	3.500	20					730	730	143	0.196		122	0.167	
	^	A	1	3.500	25			68%	65%	1215	1215	239	0.197	0.197	204	0.168	0.168
		A	1	3.000						2055	2055	403	0.196		344	0.167	
Caroline Hill Road NB		B	2	3.500	65	25		91% / 9%	96% / 4%	1915	1920	435	0.227	0.227	453	0.236	0.236
		B	2	3.500		20				1960	1960	445	0.227		462	0.236	
Leighton Road EB		A	1	3.500						985	985	132	0.134		152	0.154	
		A	1	3.300						2085	2085	278	0.133		323	0.155	
Hoi Ping Road SB		C	3	3.500						1965	1965	335	0.170		297	0.151	
	*	C	3	3.500		12		60%	83%	730	710	125	0.171	0.171	108	0.152	0.152

Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

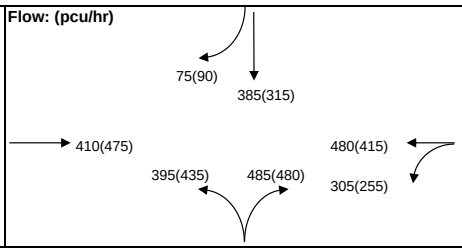
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

^Site Factor of 0.6 adopted due to merging traffic ahead

*Site factor of 0.4 applied due to flare lane

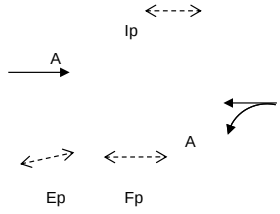
Flow: (pcu/hr)



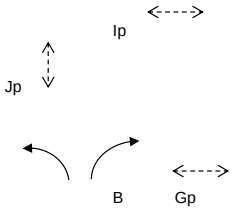
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.424	0.595	y	0.404	0.556
L (sec)	38	20	L (sec)	38	20
C (sec)	105	105	C (sec)	130	130
y pract.	0.574	0.729	y pract.	0.637	0.762
R.C. (%)	35%	22%	R.C. (%)	58%	37%

Stage / Phase Diagrams

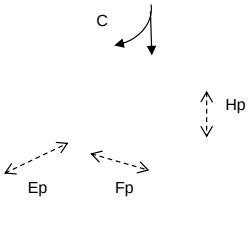
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	*	A	1	3.500	20					730	730	122	0.167		142	0.195	
	^	A	1	3.500	25			65%	69%	1215	1215	204	0.168	0.168	235	0.193	
		A	1	3.000						2055	2055	344	0.167		398	0.194	
Caroline Hill Road NB		B	2	3.500	65	25		88% / 12%	98% / 2%	1915	1920	430	0.225	0.225	418	0.218	
		B	2	3.500		20				1960	1960	440	0.224		427	0.218	0.218
Leighton Road EB		A	1	3.500						985	985	138	0.140		197	0.200	
		A	1	3.300						2085	2085	292	0.140		418	0.200	0.200
Hoi Ping Road SB		C	3	3.500						1965	1965	310	0.158		297	0.151	
	*	C	3	3.500		12		100%	83%	700	710	145	0.207	0.207	108	0.152	0.152

Pedestrian Crossing								
	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

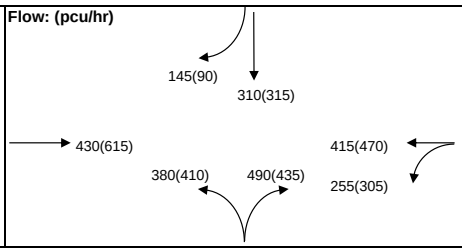
Notes:

TAC junction: Cycle time of 120s and 130s are adopted for WD and WE Noon Peak

^Site Factor of 0.6 adopted due to merging traffic ahead

*Site factor of 0.4 applied due to flare lane

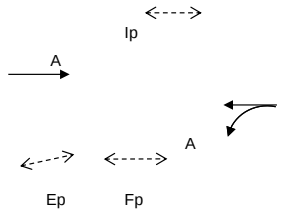
Flow: (pcu/hr)



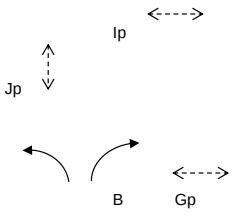
Group	Ep,B,C	A,B,C	Group	A,B,Hp	A,B,C
y	0.432	0.600	y	0.418	0.570
L (sec)	33	20	L (sec)	38	20
C (sec)	120	120	C (sec)	130	130
y pract.	0.653	0.750	y pract.	0.637	0.762
R.C. (%)	51%	25%	R.C. (%)	52%	33%

Stage / Phase Diagrams

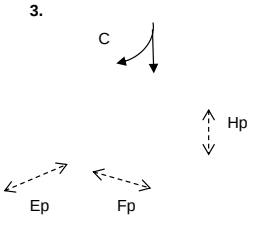
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I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

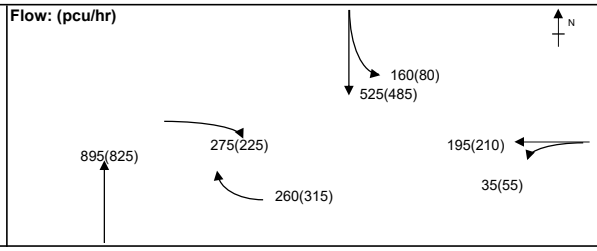
Junction: Caroline Hill Road (West) / Link Road / New Access Road Design Year: 2031

Description: 2031 Design Flows Under Signal Control Arrangement Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Link Road NB	↑	A	1,2	3.650						1980	1980	895	0.452	0.452	825	0.417	0.417
U-turn Slip Road EB	↱	B	2	5.000		5				1625	1625	275	0.169		225	0.138	
Access Road	←	C	3	3.650						2120	2120	195	0.092	0.092	210	0.099	
WB	↰	C	3	3.650	15					1800	1800	35	0.019		55	0.031	
Caroline Hill Road SB	↓	D	1	3.650	20			49%	30%	1910	1935	325	0.170		270	0.140	
		D	1	3.650						2120	2120	360	0.170		295	0.139	
U-turn Slip Road WB	←	E	3	5.000						2115	2115	260	0.123		315	0.149	0.149
Pedestrian Crossing		Fp	3	MIN GREEN + FLASH =			11	+	5	=	16						
		Gp	1,2	MIN GREEN + FLASH =			9	+	5	=	14						

Notes:

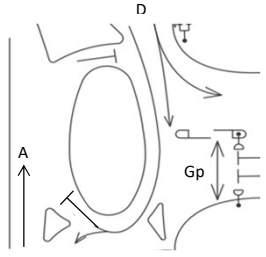
Flow: (pcu/hr)



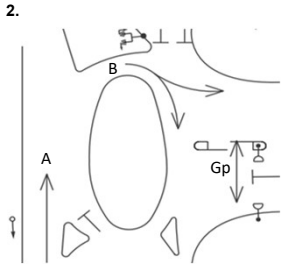
Group	A,E	A,C	Group	A,C	A,E
y	0.575	0.544	y	0.516	0.566
L (sec)	8	15	L (sec)	15	8
C (sec)	105	105	C (sec)	105	105
y pract.	0.831	0.771	y pract.	0.771	0.831
R.C. (%)	45%	42%	R.C. (%)	50%	47%

Stage / Phase Diagrams

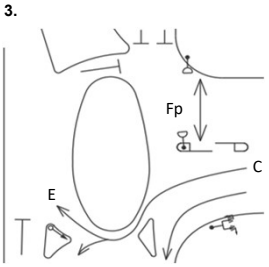
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I/G= 9		I/G=		I/G= 8		I/G=	I/G=
I/G= 5		I/G=		I/G= 5		I/G=	I/G=

Date: APR, 2022 **Junction:** J6R Caroline Hill Road (West) / Link Road / New Access Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

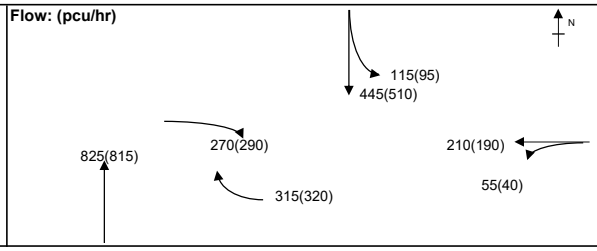
Junction: Caroline Hill Road (West) / Link Road / New Access Road Design Year: 2031

Description: 2031 Design Flows Under Signal Control Arrangement Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road NB	↑	A	1,2	3.650						1980	1980	825	0.417	0.417	815	0.412	0.412
U-turn Slip Road EB	↱	B	2	5.000		5				1625	1625	270	0.166		290	0.178	
Access Road	←	C	3	3.650						2120	2120	210	0.099		190	0.090	
WB	↰	C	3	3.650	15					1800	1800	55	0.031		40	0.022	
Caroline Hill Road	↓	D	1	3.650	20			43%	33%	1920	1930	266	0.139		288	0.149	
SB	↓	D	1	3.650						2120	2120	294	0.139		317	0.150	
U-turn Slip Road WB	←	E	3	5.000						2115	2115	315	0.149	0.149	320	0.151	0.151
Pedestrian Crossing		Fp	3	MIN GREEN + FLASH =			11	+	5	=	16						
		Gp	1,2	MIN GREEN + FLASH =			9	+	5	=	14						

Notes:

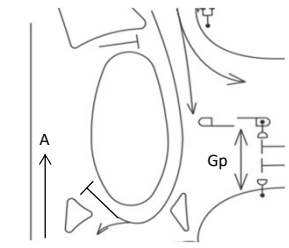
Flow: (pcu/hr)



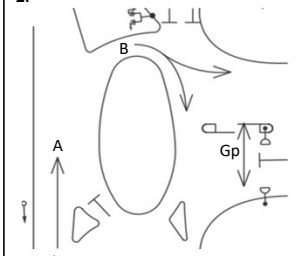
Group	A,C	A,E	Group	A,C	A,E
y	0.516	0.566	y	0.501	0.563
L (sec)	15	8	L (sec)	15	8
C (sec)	105	105	C (sec)	105	105
y pract.	0.771	0.831	y pract.	0.771	0.831
R.C. (%)	50%	47%	R.C. (%)	54%	48%

Stage / Phase Diagrams

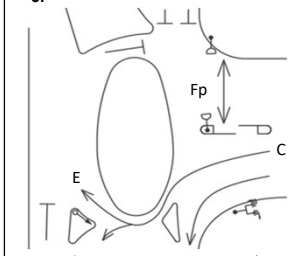
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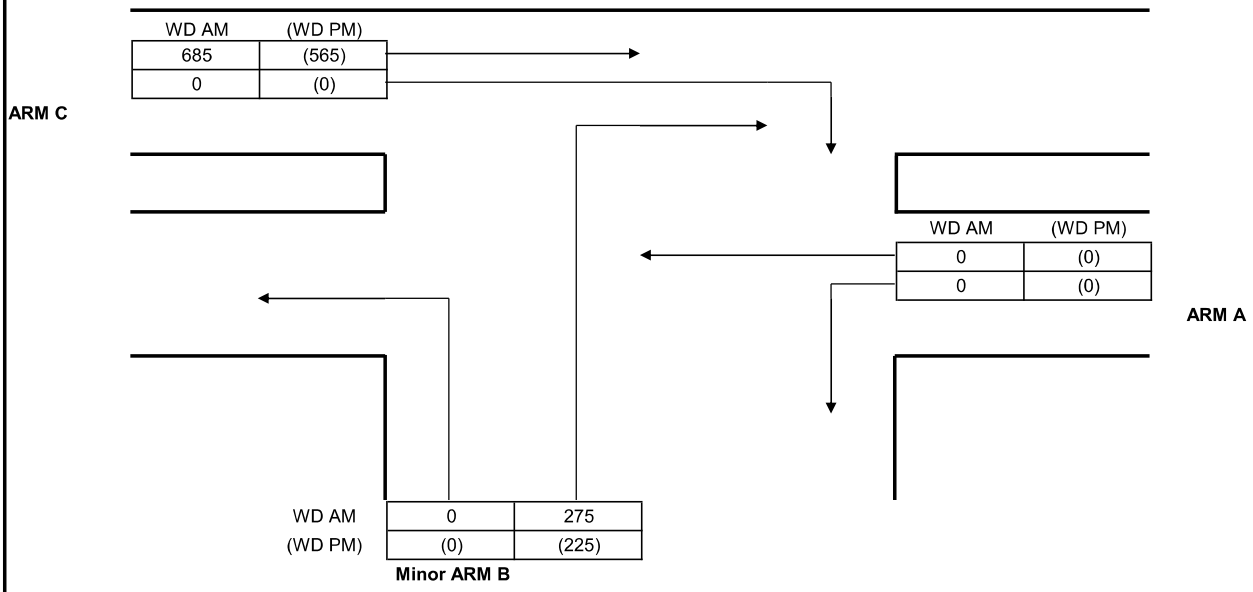
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I/G= 5		I/G=		I/G= 5		I/G=	I/G=
I/G= 5		I/G=		I/G= 5		I/G=	I/G=

Date: APR, 2022 **Junction:** J6R Caroline Hill Road (West) / Link Road / New Access Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / U-turn			Ref. No.:	J6A
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	U-turn Slip Road				
ARM C:	Caroline Hill Road SB				



GEOMETRY					
Major road width	W	7.00	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	100	Calculated	D	0.94
	Vl(b-a)	100		E	0.90
	Vr(b-c)	20		F	0.85
	Vr(c-b)	100		Y	0.76

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		685	565
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		275	225
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	0.8	382	397
	Q(b-c)	1	668	668
	Q(c-b)	1	632	632
	Q(b-ac)	1	382	397
RFC's	b-a		0.720	0.567
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.720	0.567
Worst RFC			**0.720**	**0.567**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

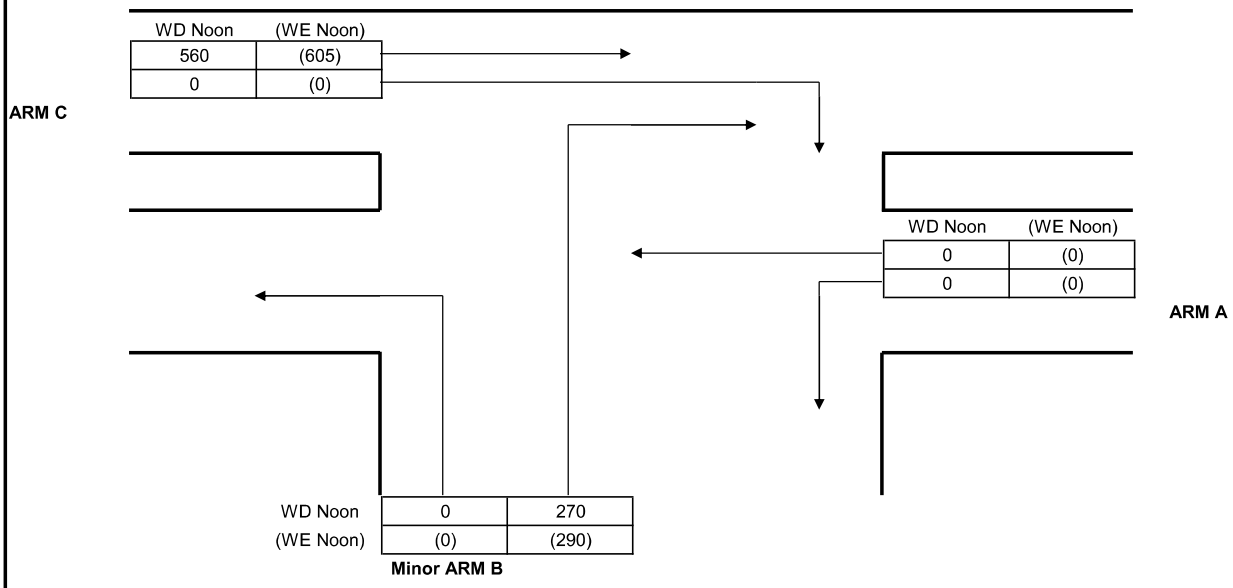
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / U-turn			Ref. No.:	J6A
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	U-turn Slip Road				
ARM C:	Caroline Hill Road SB				



GEOMETRY					
Major road width	W	7.00	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	100	Calculated	D	0.94
	Vl(b-a)	100		E	0.90
	Vr(b-c)	20		F	0.85
	Vr(c-b)	100		Y	0.76

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		560	605
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		270	290
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	0.8	398	392
	Q(b-c)	1	668	668
	Q(c-b)	1	632	632
	Q(b-ac)	1	398	392
RFC's	b-a		0.678	0.740
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.678	0.740
Worst RFC			**0.678**	**0.740**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

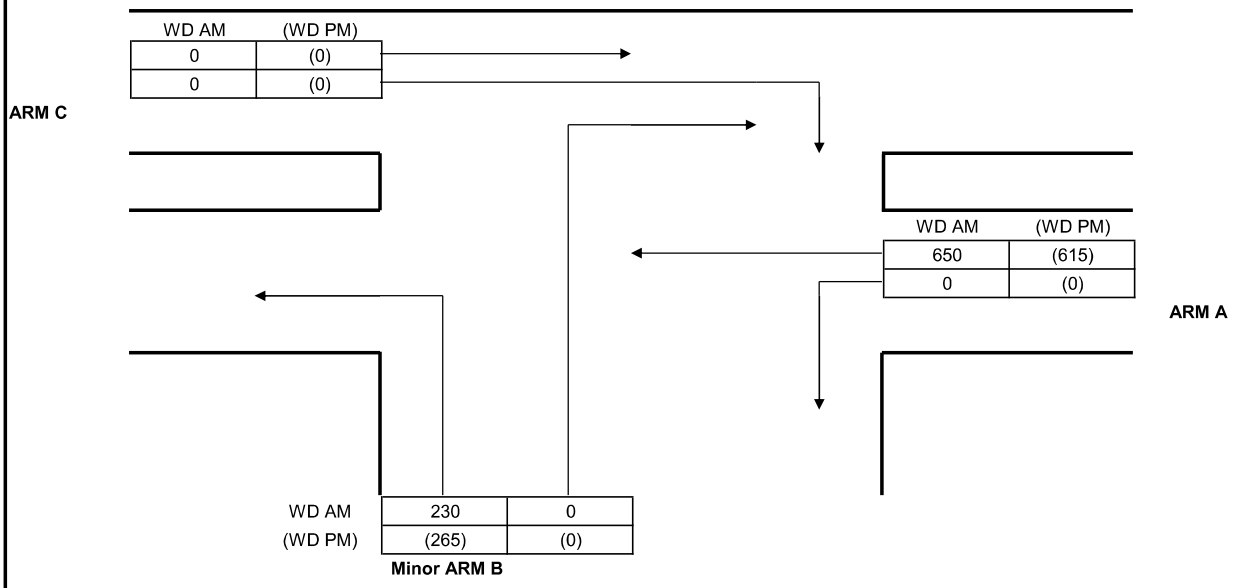
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / Access Road of CHR Site			Ref. No.:	J6B
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	Access Road				
ARM C:	Caroline Hill Road SB				



GEOMETRY					
Major road width	W	6.00	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	40	Calculated	D	0.81
	Vl(b-a)	40		E	0.92
	Vr(b-c)	100		F	0.85
	Vr(c-b)	100		Y	0.79

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		650	615
	q(b-a)		0	0
	q(b-c)		230	265
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	358	366
	Q(b-c)	1	514	523
	Q(c-b)	1	473	481
	Q(b-ac)	1	514	523
RFC's	b-a		0.000	0.000
	b-c		0.447	0.507
	c-b		0.000	0.000
	b-ac		0.447	0.507
Worst RFC			**0.447**	**0.507**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

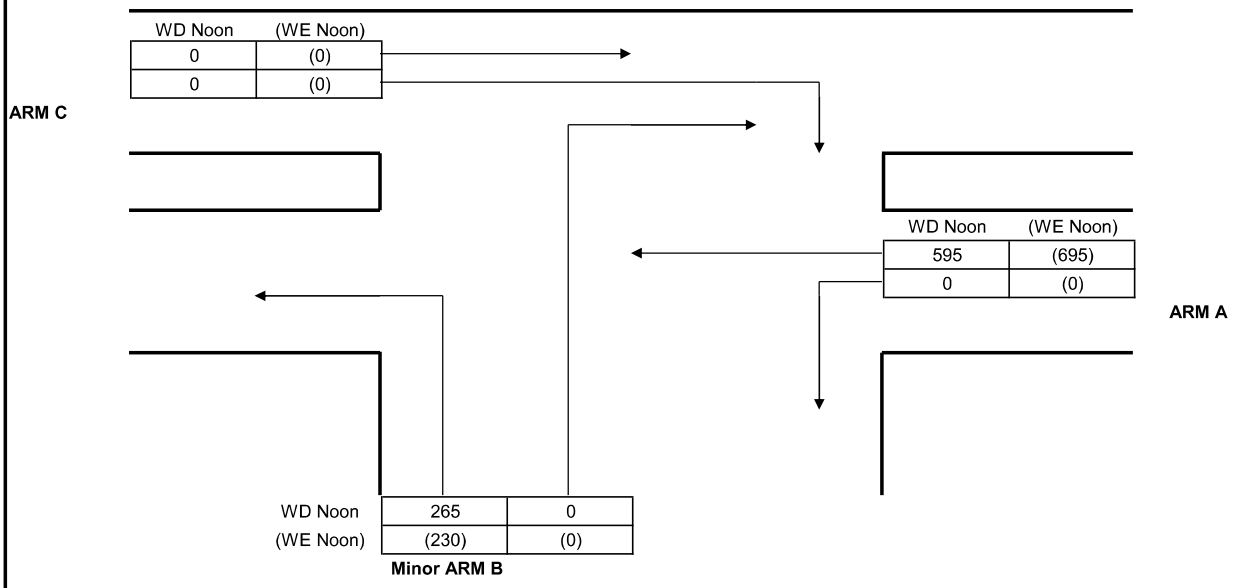
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / Access Road of CHR Site			Ref. No.:	J6B
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	Access Road				
ARM C:	Caroline Hill Road SB				



GEOMETRY					
Major road width	W	6.00	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	40	Calculated	D	0.81
	Vl(b-a)	40		E	0.92
	Vr(b-c)	100		F	0.85
	Vr(c-b)	100		Y	0.79

ANALYSIS				
			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		595	695
	q(b-a)		0	0
	q(b-c)		265	230
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	370	347
	Q(b-c)	1	529	502
	Q(c-b)	1	486	462
	Q(b-ac)	1	529	502
RFC's	b-a		0.000	0.000
	b-c		0.501	0.458
	c-b		0.000	0.000
	b-ac		0.501	0.458
Worst RFC			**0.501**	**0.458**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

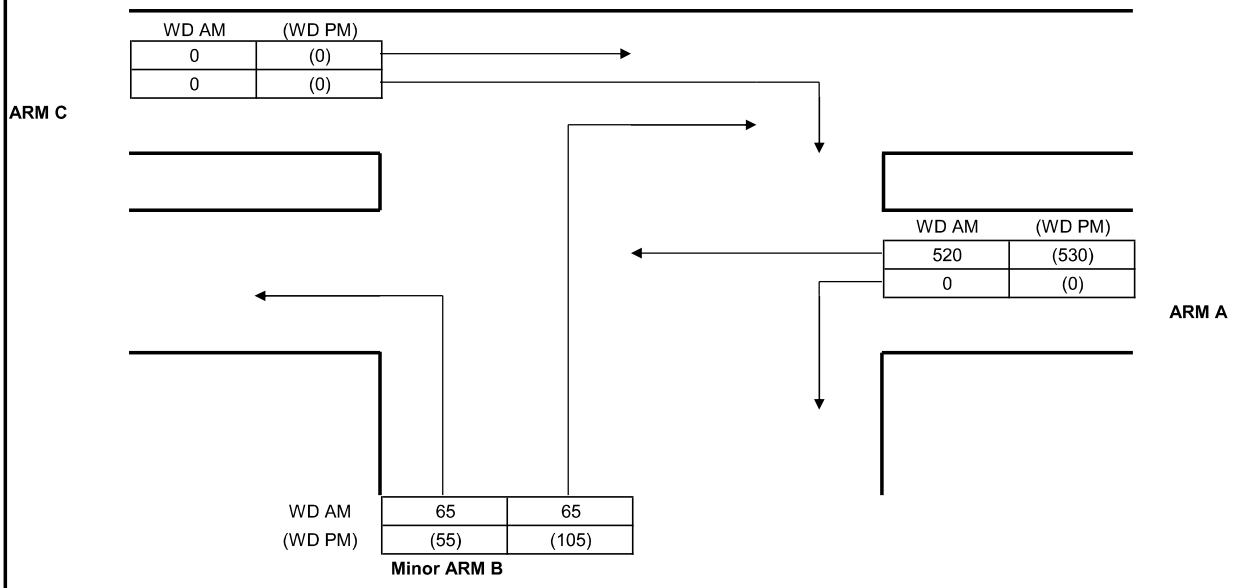
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / Caroline Hill Road (West) Northbound / Link Road Southbound			Ref. No.:	J6C
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	Caroline Hill Road NB				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	6.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.85
	Vr(b-c)	20		F	0.80
	Vr(c-b)	40		Y	0.79

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		520	530
	q(b-a)		65	105
	q(b-c)		65	55
	f		0.50	0.34
		Factor		
CAPACITIES	Q(b-a)	1	263	261
	Q(b-c)	1	508	506
	Q(c-b)	1	477	475
	Q(b-ac)	1	347	313
RFC's	b-a		0.247	0.402
	b-c		0.128	0.109
	c-b		0.000	0.000
	b-ac		0.375	0.511
Worst RFC			**0.375**	**0.511**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

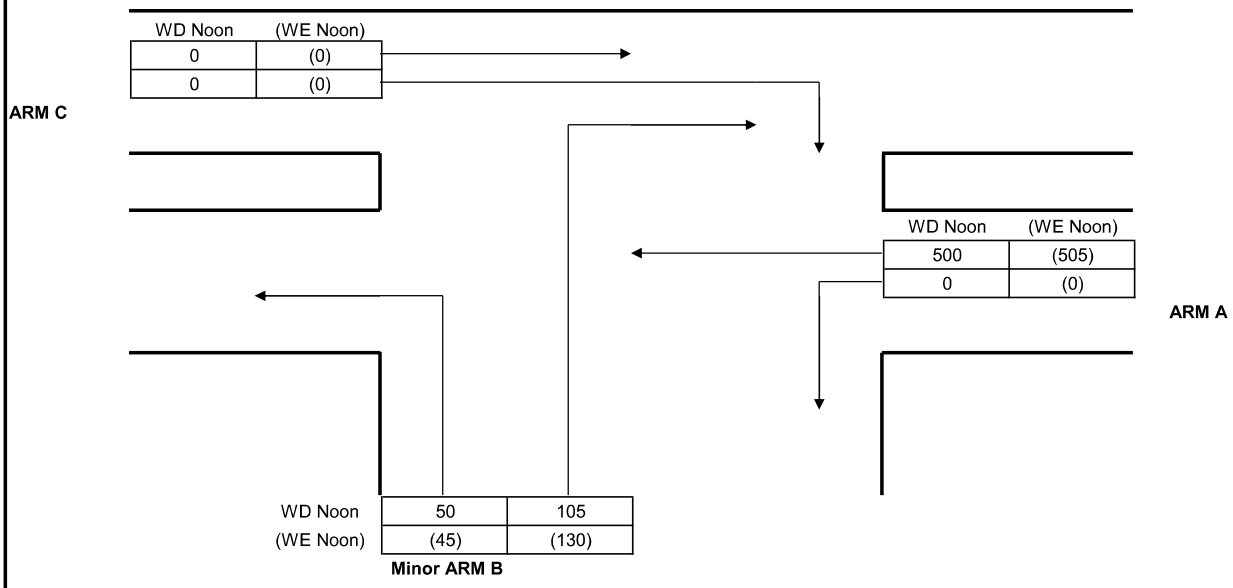
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road (West) Southbound / Caroline Hill Road (West) Northbound / Link Road Southbound			Ref. No.:	J6C
Scheme:	2031 Design Flows Under Priority Control Arrangement			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road SB				
ARM B:	Caroline Hill Road NB				
ARM C:	Link Road				



GEOMETRY					
Major road width	W	6.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	2.20
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.85
	Vr(b-c)	20		F	0.80
	Vr(c-b)	40		Y	0.79

ANALYSIS				
			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		500	505
	q(b-a)		105	130
	q(b-c)		50	45
	f		0.32	0.26
		Factor		
CAPACITIES	Q(b-a)	1	266	265
	Q(b-c)	1	513	512
	Q(c-b)	1	481	480
	Q(b-ac)	1	315	303
RFC's	b-a		0.395	0.491
	b-c		0.097	0.088
	c-b		0.000	0.000
	b-ac		0.492	0.578
Worst RFC			**0.492**	**0.578**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

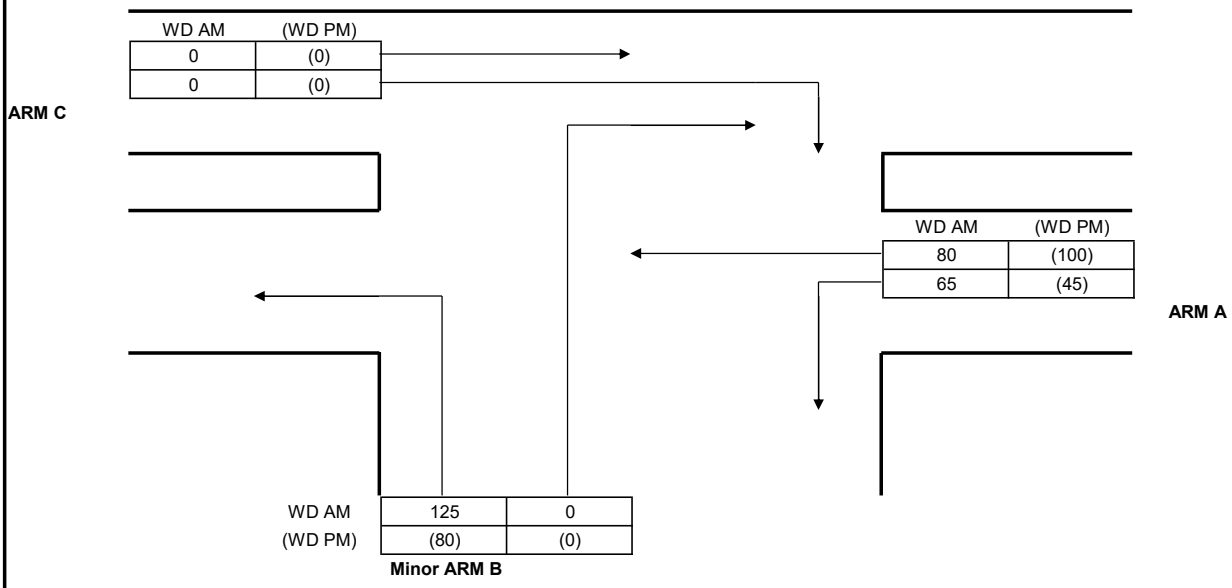
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Mar-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY					
Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		65	45
	q(a-c)		80	100
	q(b-a)		0	0
	q(b-c)		125	80
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	480	477
	Q(b-c)	1	550	547
	Q(c-b)	1	412	412
	Q(b-ac)	1	550	547
RFC's	b-a		0.000	0.000
	b-c		0.227	0.146
	c-b		0.000	0.000
	b-ac		0.227	0.146
Worst RFC			**0.227**	**0.146**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

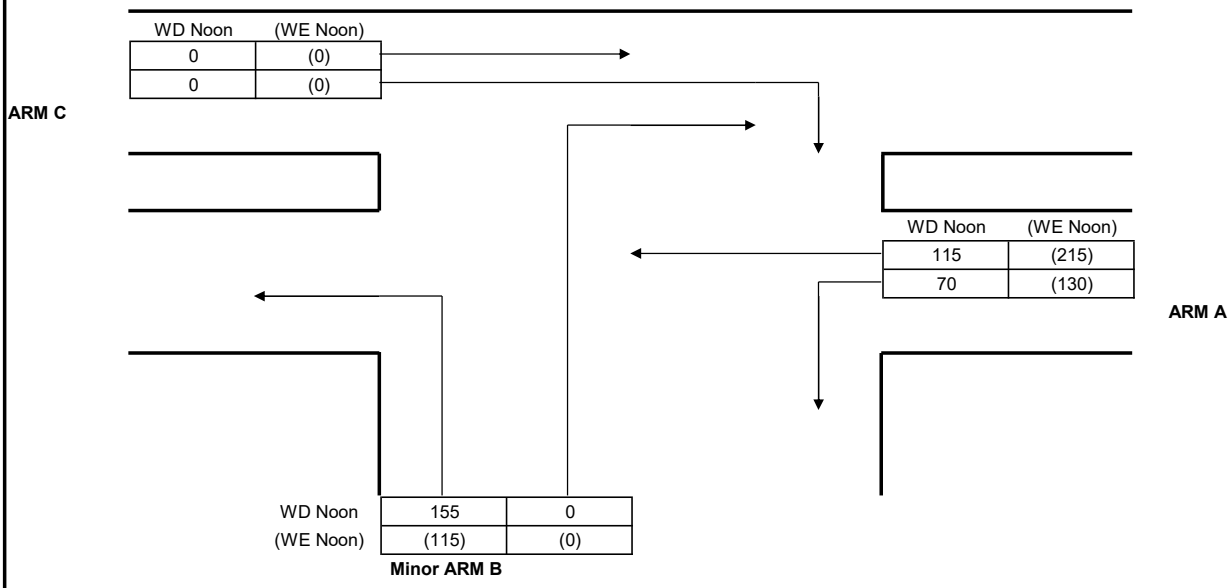
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		70	130
	q(a-c)		115	215
	q(b-a)		0	0
	q(b-c)		155	115
	f		1.00	1.00
CAPACITIES	Q(b-a)	1	472	443
	Q(b-c)	1	541	514
	Q(c-b)	1	406	379
	Q(b-ac)	1	541	514
RFC's	b-a		0.000	0.000
	b-c		0.287	0.224
	c-b		0.000	0.000
	b-ac		0.287	0.224
Worst RFC			**0.287**	**0.224**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	*	A	1	3.000	7			73%	56%	995	1025	300	0.302		242	0.236	
		A	1	2.500						2005	2005	605	0.302		473	0.236	
Leighton Road WE	**	C	2	3.500		9				1180	1180	280	0.237	0.237	290	0.246	0.246
Caroline Hill Road NB	*	C	2	4.000	5					930	930	100	0.108		90	0.097	
Leighton Road EB	**	A	1	3.000	15			76%	78%	1245	1245	480	0.386	0.386	545	0.438	0.438
	**	A	1	3.000						1440	1440	555	0.385		630	0.438	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

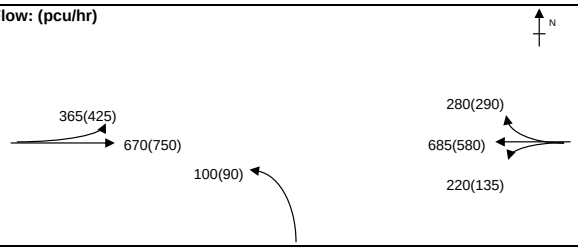
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

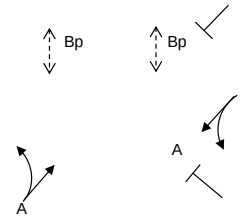
Flow: (pcu/hr)



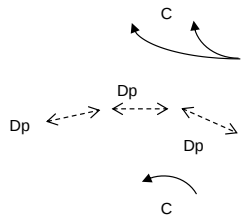
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.386	0.623	y	0.438	0.684
L (sec)	27	11	L (sec)	27	11
C (sec)	105	105	C (sec)	130	130
y pract.	0.669	0.806	y pract.	0.713	0.824
R.C. (%)	73%	29%	R.C. (%)	63%	21%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	*	A	1	3.000	7			92%	61%	960	1015	256	0.267		256	0.252	
		A	1	2.500						2005	2005	534	0.266		504	0.251	
Leighton Road WE	**	C	2	3.500		9				1180	1180	245	0.208	0.208	260	0.220	0.220
Caroline Hill Road NB	*	C	2	4.000	5					930	930	115	0.124		170	0.183	
Leighton Road EB	**	A	1	3.000	15			70%	71%	1255	1250	500	0.398		579	0.463	0.463
	**	A	1	3.000						1440	1440	575	0.399	0.399	666	0.463	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

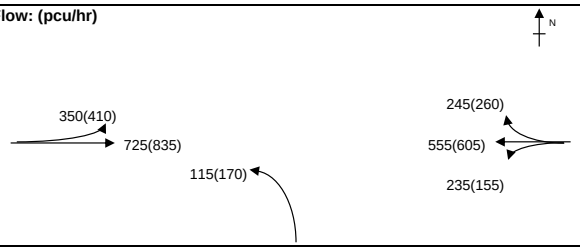
Notes:

TAC junction: Cycle time of 110s and 120s are adopted for WD and WE Noon

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

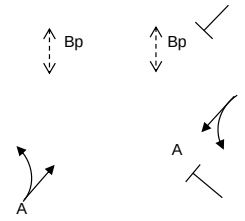
Flow: (pcu/hr)



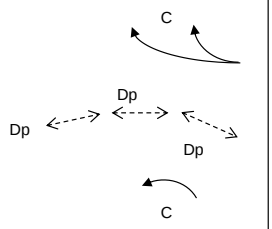
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.399	0.607	y	0.463	0.684
L (sec)	27	11	L (sec)	27	11
C (sec)	110	110	C (sec)	120	120
y pract.	0.679	0.810	y pract.	0.698	0.818
R.C. (%)	70%	33%	R.C. (%)	51%	20%

Stage / Phase Diagrams

1.



2.



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5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

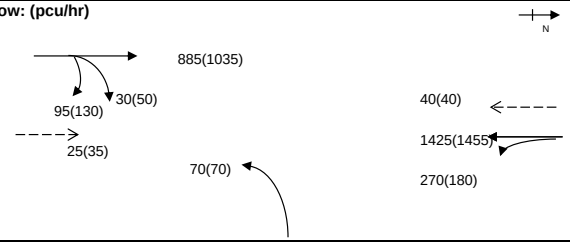
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	270	0.235		180	0.157	
Causeway Road WB	← *	A	1	3.000						1340	1340	350	0.261		358	0.267	0.267
	←	A	1	3.000						2055	2055	538	0.262	0.262	548	0.267	
	←	A	1	3.000						2055	2055	537	0.261		549	0.267	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	40	0.030		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	70	0.053		70	0.053	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↘ **	C	3	4.000		12				1255	1255	187	0.149	0.149	216	0.172	
	↘ **	C	3	4.500		8				1300	1300	193	0.148		224	0.172	0.172
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	25	0.019		35	0.026	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

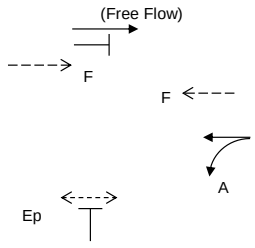
Flow: (pcu/hr)



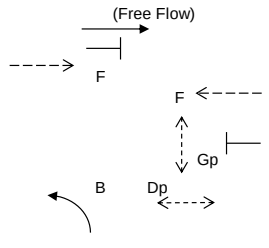
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.463	0.411	y	0.492	0.439
L (sec)	20	33	L (sec)	20	33
C (sec)	100	100	C (sec)	105	105
y pract.	0.720	0.603	y pract.	0.729	0.617
R.C. (%)	55%	47%	R.C. (%)	48%	40%

Stage / Phase Diagrams

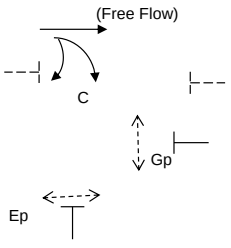
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

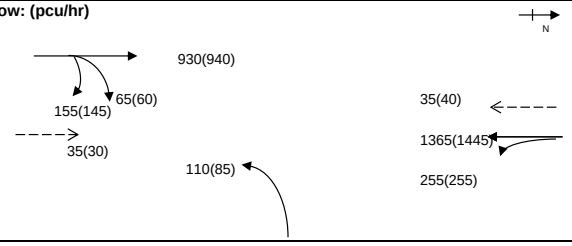
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	255	0.222		255	0.222	
Causeway Road WB	← *	A	1	3.000						1340	1340	336	0.251	0.251	355	0.265	
	←	A	1	3.000						2055	2055	514	0.250		545	0.265	0.265
	←	A	1	3.000						2055	2055	515	0.251		545	0.265	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	35	0.026		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	110	0.083		85	0.064	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↘ **	C	3	4.000		12				1255	1255	223	0.178		221	0.176	
	↘ **	C	3	4.500		8				1300	1300	232	0.178	0.178	229	0.176	0.176
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	35	0.026		30	0.022	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

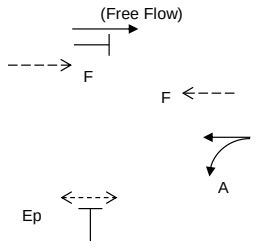
Flow: (pcu/hr)



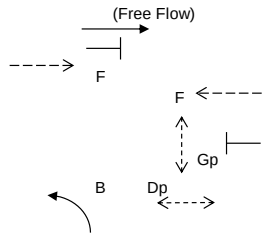
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.512	0.429	y	0.505	0.441
L (sec)	20	33	L (sec)	20	33
C (sec)	95	95	C (sec)	105	105
y pract.	0.711	0.587	y pract.	0.729	0.617
R.C. (%)	39%	37%	R.C. (%)	44%	40%

Stage / Phase Diagrams

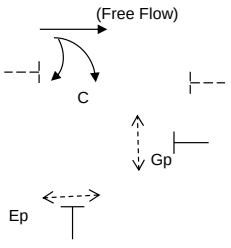
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

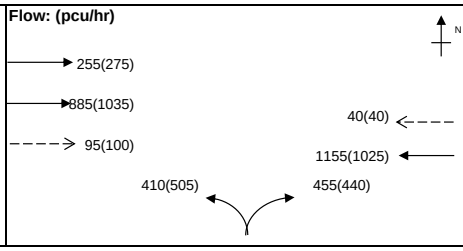
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	← *	C	1	3.700						795	795	311	0.391		276	0.347	
	←	C	1	4.000						2155	2155	844	0.392		749	0.348	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	40	0.021		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	264	0.157		289	0.172	
	↰↱	E	2	3.300	15	20		49% / 51%	66% / 34%	1920	1910	301	0.157	0.157	328	0.172	0.172
	↱	E	2	3.500		15				1915	1915	300	0.157		328	0.171	
Causeway Road WB	→	A	1	3.500						1965	1965	255	0.130		275	0.140	
	→	A	1	3.500						2105	2105	885	0.420	0.420	1035	0.492	0.492
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		100	0.052	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

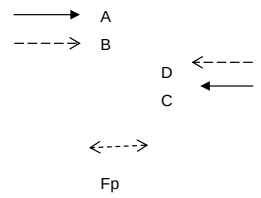
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.548	0.577	y	0.519	0.663
L (sec)	10	10	L (sec)	10	10
C (sec)	100	100	C (sec)	105	105
y pract.	0.810	0.810	y pract.	0.814	0.814
R.C. (%)	48%	40%	R.C. (%)	57%	23%

Stage / Phase Diagrams

1.



2.



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I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J10 Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

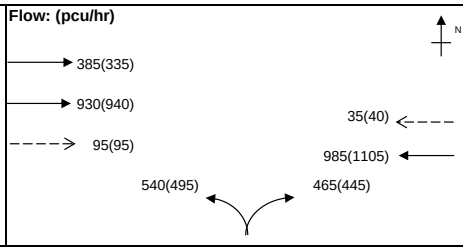
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD NN	Pro. Turning (%) WE NN	Revised Saturation Flow (pcu/hr) WD NN	Revised Saturation Flow (pcu/hr) WE NN	WD NN Flow (pcu/hr)	WD NN y Value	WD NN Critical y	WE NN Flow (pcu/hr)	WE NN y Value	WE NN Critical y
Causeway Road WB	← *	C	1	3.700						795	795	265	0.333		298	0.375	
	←	C	1	4.000						2155	2155	720	0.334		807	0.374	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	35	0.018		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	307	0.182		287	0.170	
	↰↱	E	2	3.300	15	20		67% / 33%	64% / 36%	1910	1910	349	0.183	0.183	326	0.171	
	↱	E	2	3.500		15				1915	1915	349	0.182		327	0.171	0.171
Causeway Road WB	→	A	1	3.500						1965	1965	385	0.196		335	0.170	
	→	A	1	3.500						2105	2105	930	0.442	0.442	940	0.447	0.447
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		95	0.050	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

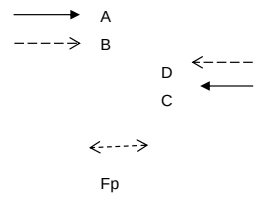
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.517	0.625	y	0.546	0.617
L (sec)	10	10	L (sec)	10	10
C (sec)	95	95	C (sec)	105	105
y pract.	0.805	0.805	y pract.	0.814	0.814
R.C. (%)	56%	29%	R.C. (%)	49%	32%

Stage / Phase Diagrams

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2.



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4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

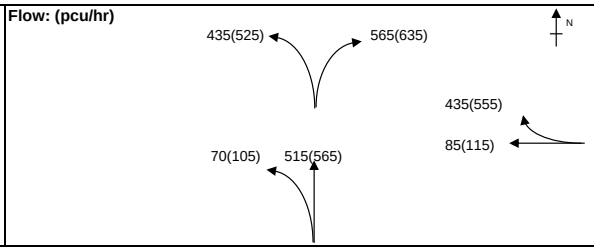
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	79	0.082	0.082	101	0.105	
	↖	A	1,4	3.000		16		96%	93%	1885	1890	154	0.082		200	0.106	0.106
	↖	A	1,4	3.000		13				1840	1840	151	0.082		194	0.105	
	↖	A	1,4	3.000		10				1665	1665	136	0.082		175	0.105	
Pennington Street	↑	B	2,3	3.800	5			25%	33%	1855	1815	282	0.152	0.152	319	0.176	
NB 1st stop line	↑	B	2,3	3.800						1995	1995	303	0.152		351	0.176	0.176
Pennington Street	↰	E	1,2,4	5.000	10					1840	1840	435	0.236		525	0.285	
NB 2nd stop line	↱	F	1,2,3	3.500		10				1830	1830	302	0.165		339	0.185	
	↱	F	1,2,3	3.500		6.5				1595	1595	263	0.165		296	0.186	

Pedestrian Crossing	Cp	1,4	MIN GREEN + FLASH =	8	+	8	=	16
	Dp	2,3	MIN GREEN + FLASH =	8	+	14	=	22
	Gp	4	MIN GREEN + FLASH =	7	+	7	=	14
	Hp	3	MIN GREEN + FLASH =	6	+	6	=	12

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

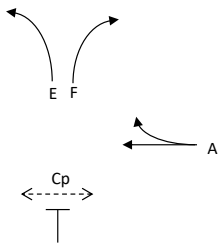
Flow: (pcu/hr)



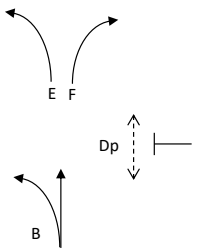
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.152	0.234	y	0.176	0.282
L (sec)	24	14	L (sec)	24	14
C (sec)	100	100	C (sec)	100	100
y pract.	0.684	0.774	y pract.	0.684	0.774
R.C. (%)	350%	230%	R.C. (%)	289%	175%

Stage / Phase Diagrams

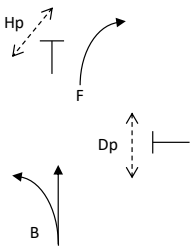
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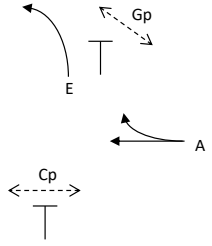
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=	
I/G=		I/G= 8		I/G=		I/G= 8		I/G=	

Date: FEB, 2022 **Junction:** (J11) Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

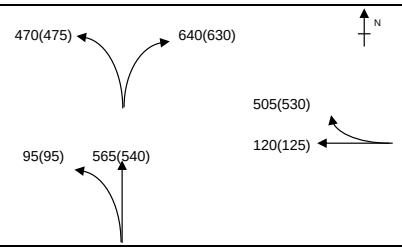
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	94	0.098		99	0.103	
	↑←	A	1,4	3.000		16		86%	87%	1900	1900	187	0.098		196	0.103	0.103
	↑←	A	1,4	3.000		13				1840	1840	180	0.098		189	0.103	
	↑←	A	1,4	3.000		10				1665	1665	164	0.098	0.098	171	0.103	
Pennington Street NB 1st stop line	↑*	B	2,3	3.800	5			30%	31%	1830	1825	316	0.173	0.173	303	0.166	
	↑	B	2,3	3.800						1995	1995	344	0.172		332	0.166	0.166
Pennington Street NB 2nd stop line	↰	E	1,2,4	5.000	10					1840	1840	470	0.255		475	0.258	
	↱	F	1,2,3	3.500		10				1830	1830	342	0.187		337	0.184	
	↱	F	1,2,3	3.500		6.5				1595	1595	298	0.187		293	0.184	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

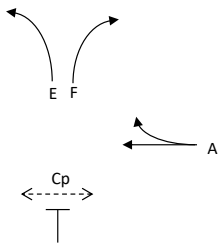
Flow: (pcu/hr)



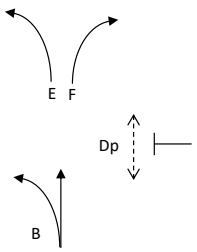
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.173	0.271	y	0.166	0.270
L (sec)	24	14	L (sec)	24	14
C (sec)	120	120	C (sec)	100	100
y pract.	0.720	0.795	y pract.	0.684	0.774
R.C. (%)	317%	193%	R.C. (%)	311%	187%

Stage / Phase Diagrams

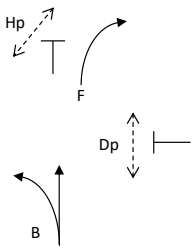
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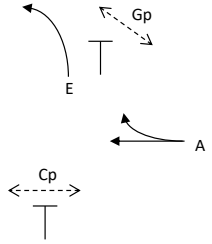
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** (J11) Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

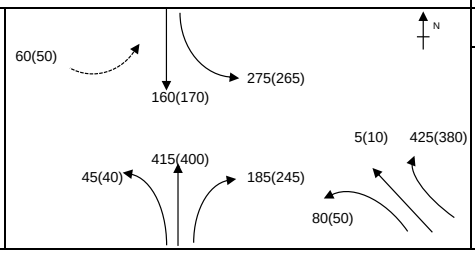
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Link Road		A	1	3.500	80			63%	61%	1940	1945	435	0.224	0.224	435	0.224	0.224
Broadwoord Road (E)		B	1,2	3.000	15			10%	9%	1895	1900	460	0.243		440	0.232	
		E	2	3.000		8				1730	1730	185	0.107	0.107	245	0.142	0.142
Broadwoord Road (W)		C	3	3.500	5	60		16% / 83%	11% / 86%	1840	1860	510	0.277	0.277	440	0.237	0.237
Leighton Hill Road	Priority Junction																
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

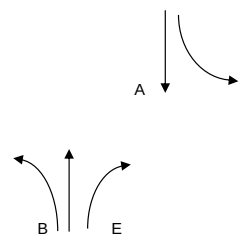
Notes:



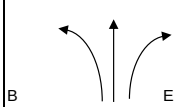
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.608	0.608	y	0.602	0.602
L (sec)	16	27	L (sec)	16	27
C (sec)	140	140	C (sec)	135	135
y pract.	0.797	0.726	y pract.	0.793	0.720
R.C. (%)	31%	19%	R.C. (%)	32%	20%

Stage / Phase Diagrams

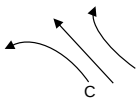
1.



2.



3.



4.



5.

I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

TRAFFIC SIGNALS CALCULATION

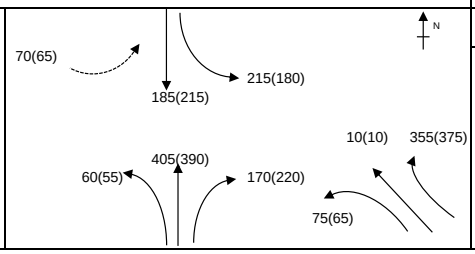
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road		A	1	3.500	80			54%	46%	1945	1950	400	0.206	0.206	395	0.203	0.203
Broadwoord Road (E)		B	1,2	3.000	15			13%	12%	1890	1890	465	0.246		445	0.235	
		E	2	3.000		8				1730	1730	170	0.098	0.098	220	0.127	0.127
Broadwoord Road (W)		C	3	3.500	5	60		17% / 81%	14% / 83%	1835	1845	440	0.240	0.240	450	0.244	0.244
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

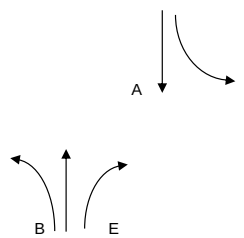
Notes:



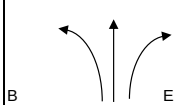
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.544	0.544	y	0.574	0.574
L (sec)	16	27	L (sec)	16	27
C (sec)	110	110	C (sec)	110	110
y pract.	0.769	0.679	y pract.	0.769	0.679
R.C. (%)	41%	25%	R.C. (%)	34%	18%

Stage / Phase Diagrams

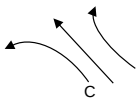
1.



2.



3.



4.



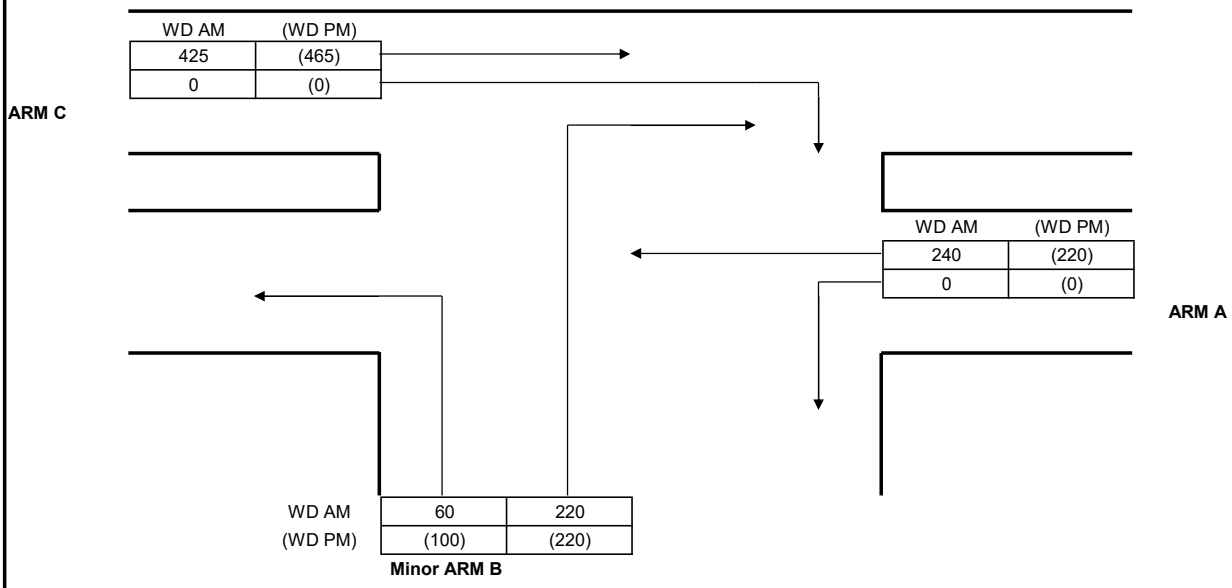
5.

I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12	I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		425	465
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		240	220
	q(b-a)		220	220
	q(b-c)		60	100
	f		0.21	0.31
		Factor		
CAPACITIES	Q(b-a)	1	378	377
	Q(b-c)	1	590	595
	Q(c-b)	1	715	721
	Q(b-ac)	1	410	426
RFC's	b-a		0.582	0.584
	b-c		0.102	0.168
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.582**	**0.584**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

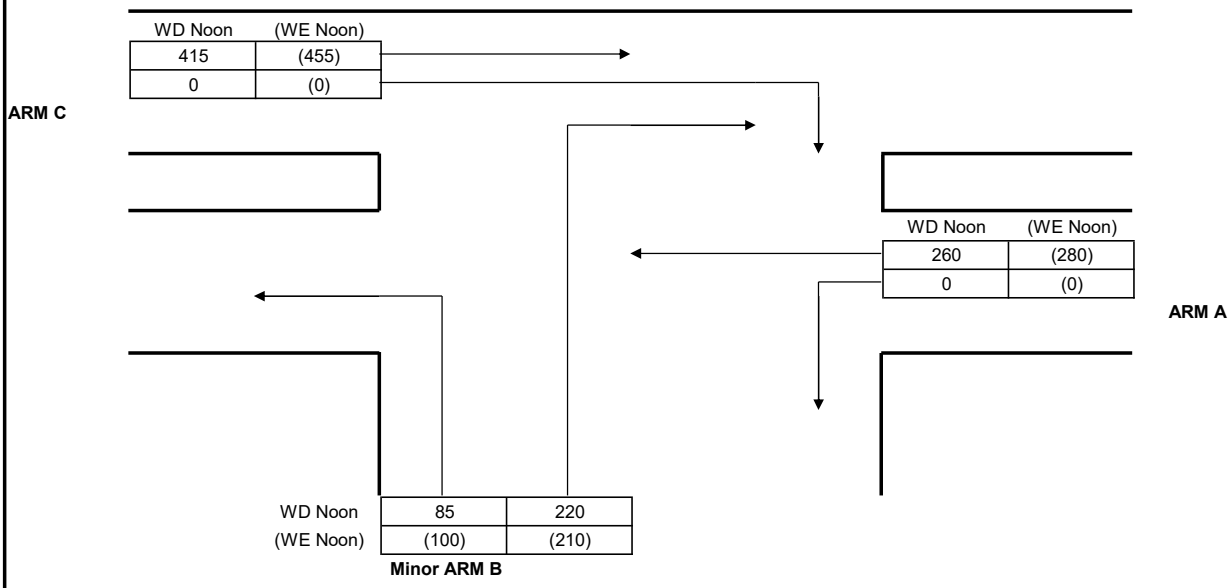
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		415	455
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		260	280
	q(b-a)		220	210
	q(b-c)		85	100
	f		0.28	0.32
		Factor		
CAPACITIES	Q(b-a)	1	375	365
	Q(b-c)	1	585	580
	Q(c-b)	1	709	703
	Q(b-ac)	1	417	415
RFC's	b-a		0.587	0.575
	b-c		0.145	0.172
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.587**	**0.575**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

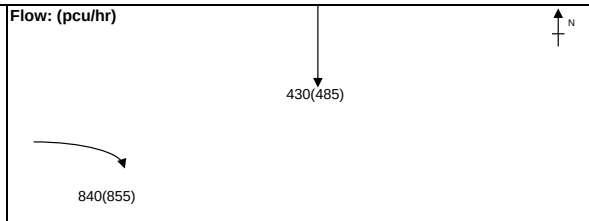
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Sports Road	→	A	1	3.800		10				1735	1735	399	0.230	0.230	406	0.234	0.234
EB	→	A	1	3.800		13.5				1920	1920	441	0.230		449	0.234	
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	140	0.073	0.073	158	0.083	0.083
	↓	B	2	3.000						2055	2055	150	0.073		169	0.082	
	↓	B	2	3.000						1915	1915	140	0.073		158	0.083	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

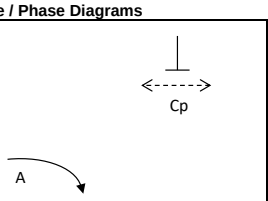
Flow: (pcu/hr)



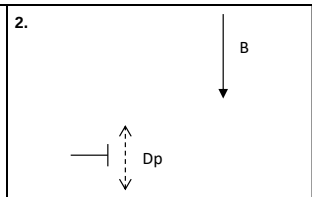
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.230	0.303	y	0.234	0.317
L (sec)	27	10	L (sec)	27	10
C (sec)	90	90	C (sec)	90	90
y pract.	0.630	0.800	y pract.	0.630	0.800
R.C. (%)	174%	164%	R.C. (%)	169%	153%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

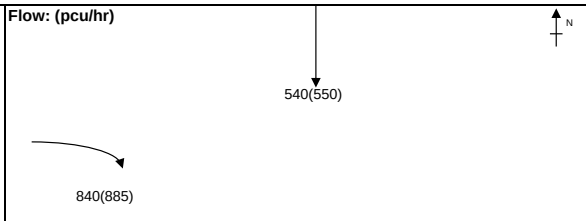
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Sports Road	→	A	1	3.800		10				1735	1735	399	0.230	0.230	420	0.242	
EB	→	A	1	3.800		13.5				1920	1920	441	0.230		465	0.242	0.242
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	176	0.092	0.092	179	0.093	0.093
	↓	B	2	3.000						2055	2055	188	0.091		192	0.093	
	↓	B	2	3.000						1915	1915	176	0.092		179	0.093	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

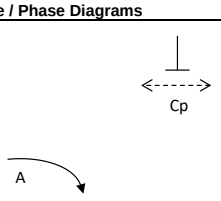
Flow: (pcu/hr)



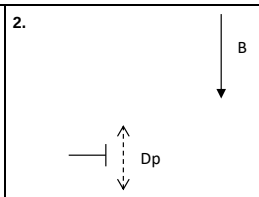
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.230	0.322	y	0.242	0.336
L (sec)	27	10	L (sec)	27	10
C (sec)	75	75	C (sec)	75	75
y pract.	0.576	0.780	y pract.	0.576	0.780
R.C. (%)	150%	142%	R.C. (%)	138%	132%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB		A	1	3.500	20					1830	1830	308	0.168		329	0.180	
	*	A	1	3.500	25					395	395	67	0.170		71	0.180	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	50	0.135	0.135	65	0.176	0.176
Leighton Road WB	***	A	1	3.000						1530	1530	769	0.503	0.503	785	0.513	0.513
	*	A	1	3.000						410	410	206	0.502		210	0.512	
Leighton Road EB	*	A	1	3.500						395	395	119	0.301		105	0.266	
	**	A	1	3.000						1030	1030	311	0.302		272	0.264	
	**	A	1	3.000						1030	1030	310	0.301		273	0.265	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Dp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

TAC junction: Cycle time of 130s and 120s are adopted for AM and PM Peak

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

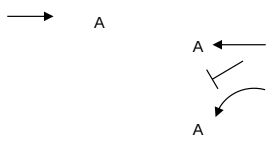
Flow: (pcu/hr)



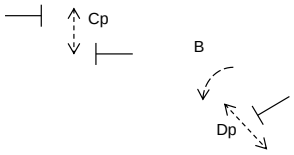
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.503	0.638	y	0.513	0.689
L (sec)	30	12	L (sec)	30	12
C (sec)	130	130	C (sec)	120	120
y pract.	0.692	0.817	y pract.	0.675	0.810
R.C. (%)	38%	28%	R.C. (%)	32%	18%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB		A	1	3.500	20					1830	1830	387	0.211		411	0.225	
	*	A	1	3.500	25					395	395	83	0.210		89	0.225	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	60	0.162	0.162	60	0.162	0.162
Leighton Road WB	***	A	1	3.000						1530	1530	785	0.513	0.513	753	0.492	
	*	A	1	3.000						410	410	210	0.512		202	0.493	0.493
Leighton Road EB	*	A	1	3.500						395	395	136	0.344		121	0.306	
	**	A	1	3.000						1030	1030	354	0.344		317	0.308	
	**	A	1	3.000						1030	1030	355	0.345		317	0.308	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =	10		+	9	=	19							
		Dp	2	MIN GREEN + FLASH =	7		+	7	=	14							

Notes:

TAC junction: Cycle time of 120s and 120s are adopted for WD and WE Noon

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

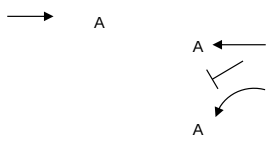
Flow: (pcu/hr)



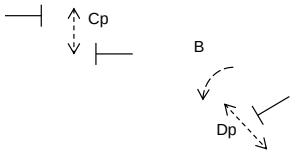
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.513	0.675	y	0.493	0.655
L (sec)	30	12	L (sec)	30	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.675	0.810	y pract.	0.675	0.810
R.C. (%)	32%	20%	R.C. (%)	37%	24%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

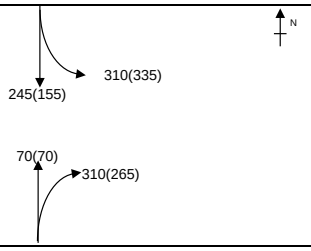
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road SB	*	A	1	3.300	25					1285	1285	215	0.167		191	0.149	
		A	1	3.000	30			28%	48%	2025	2005	340	0.168	0.168	299	0.149	0.149
Ka Ning Path NB		B	2	3.500		10		82%	79%	1750	1755	380	0.217	0.217	335	0.191	0.191
Pedestrian Crossing		Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
		Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

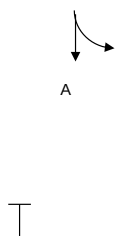
Flow: (pcu/hr)



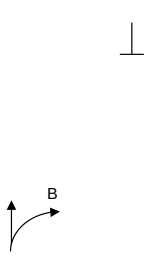
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.385	0.385	y	0.340	0.340
L (sec)	31	34	L (sec)	31	34
C (sec)	100	100	C (sec)	105	105
y pract.	0.621	0.594	y pract.	0.634	0.609
R.C. (%)	61%	54%	R.C. (%)	87%	79%

Stage / Phase Diagrams

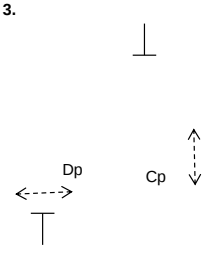
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I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=
I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

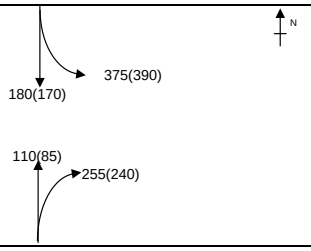
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road SB	*	A	1	3.300	25					1285	1285	217	0.169	0.169	219	0.170	0.170
		A	1	3.000	30			47%	50%	2010	2005	338	0.168		341	0.170	
Ka Ning Path NB		B	2	3.500		10		70%	74%	1780	1770	365	0.205	0.205	325	0.184	0.184
Pedestrian Crossing		Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
		Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

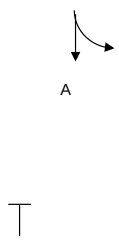
Flow: (pcu/hr)



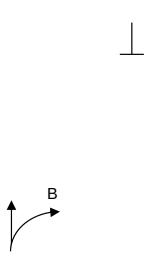
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.374	0.374	y	0.354	0.354
L (sec)	31	34	L (sec)	31	34
C (sec)	95	95	C (sec)	105	105
y pract.	0.606	0.578	y pract.	0.634	0.609
R.C. (%)	62%	55%	R.C. (%)	79%	72%

Stage / Phase Diagrams

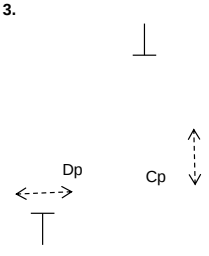
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I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=
I/G= 4		I/G= 5		I/G= 5	22	I/G=	I/G=

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

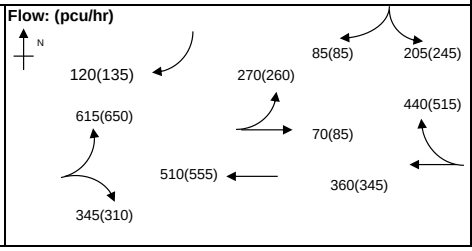
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	246	0.128		268	0.140	
	←	C	2	3.000						2055	2055	264	0.128		287	0.140	
Tung Lo Wan Road EB	↗	A	1	3.700	8					1670	1670	456	0.273		457	0.274	
	↑	A	1	3.500	13	35		32% / 68%	38% / 62%	1845	1835	504	0.273	0.273	503	0.274	0.274
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	120	0.060		135	0.067	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		345	0.174	
	↖	E	2,3	3.000		8		100%	100%	1535	1535	440	0.287	0.287	515	0.336	0.336
Tung Lo Wan Road EB	↗	E	2,3	5.000	13			79%	75%	1935	1945	340	0.176		345	0.177	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		71% / 29%	74% / 26%	1680	1675	290	0.173		330	0.197	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

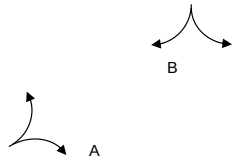
Flow: (pcu/hr)



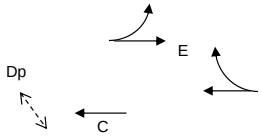
Group	A,C,F	A,E	Group	A,C,F	A,E
y	0.461	0.560	y	0.481	0.610
L (sec)	19	12	L (sec)	19	12
C (sec)	100	100	C (sec)	105	105
y pract.	0.729	0.792	y pract.	0.737	0.797
R.C. (%)	58%	41%	R.C. (%)	53%	31%

Stage / Phase Diagrams

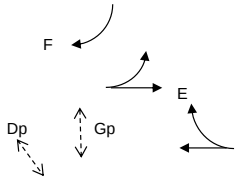
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I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J17) Tung Lo Wan Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

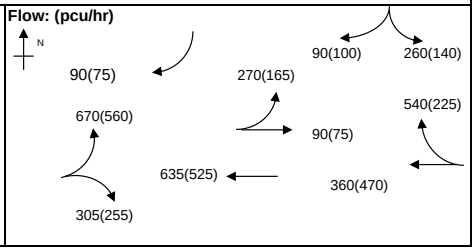
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	306	0.160		253	0.132	
	←	C	2	3.000						2055	2055	329	0.160		272	0.132	0.132
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	465	0.278	0.278	389	0.233	0.233
	↕	A	1	3.500	13	35		40% / 60%	40% / 60%	1835	1835	510	0.278		426	0.232	
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	90	0.045		75	0.037	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		384	0.193	
	↰	E	2,3	3.000		8		100%	72%	1535	1605	540	0.352	0.352	311	0.194	
Tung Lo Wan Road EB	↱	E	2,3	5.000	13			75%	69%	1945	1960	360	0.185		240	0.122	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		74% / 26%	58% / 42%	1675	1690	350	0.209		240	0.142	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						*

Notes:

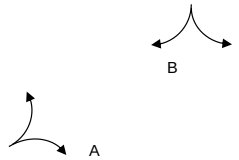
Flow: (pcu/hr)



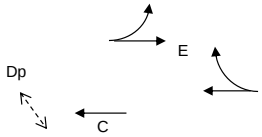
Group	A,C,Gp	A,E	Group	A,C,F	A,C,Gp
y	0.439	0.630	y	0.403	0.365
L (sec)	29	12	L (sec)	19	29
C (sec)	95	95	C (sec)	105	105
y pract.	0.625	0.786	y pract.	0.737	0.651
R.C. (%)	43%	25%	R.C. (%)	83%	78%

Stage / Phase Diagrams

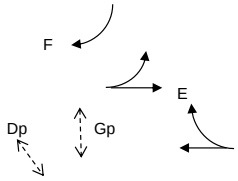
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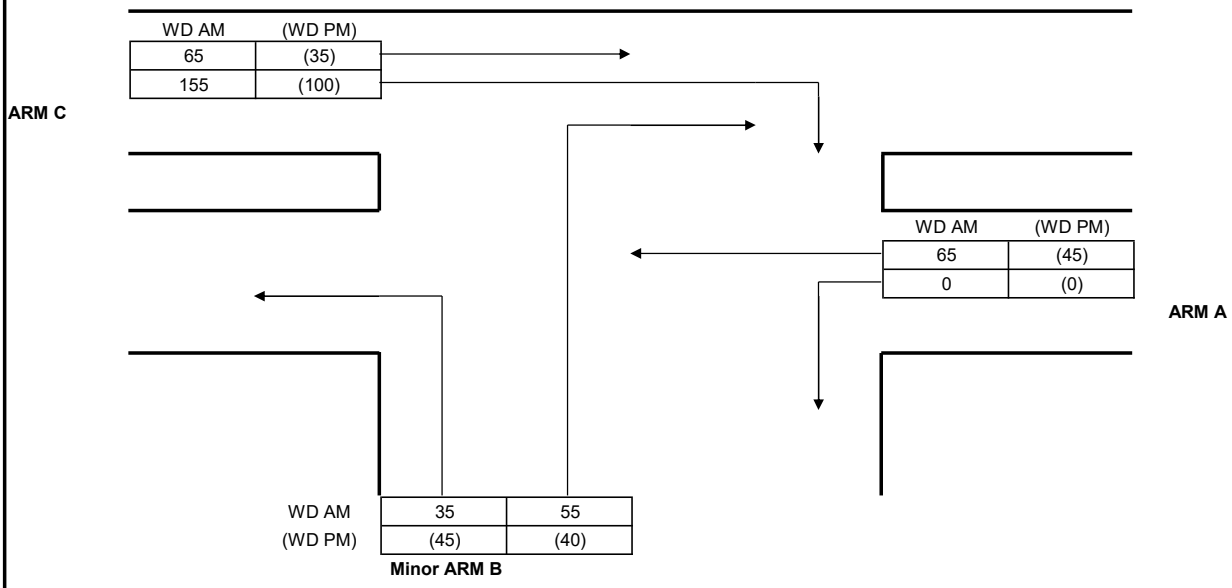
5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 2		I/G= 7		I/G= 5	17	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J17) Tung Lo Wan Road / Moreton Terrace

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Site Access			Ref. No.:	J18
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	7.25	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		Y		w(c-b)	3.00
Visibilities	Vr(b-a)	45	Calculated	D	0.86
	Vl(b-a)	35		E	0.92
	Vr(b-c)	50		F	0.92
	Vr(c-b)	100		Y	0.75

ANALYSIS

		Factor	WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		65	35
	q(c-b)		155	100
	q(a-b)		0	0
	q(a-c)		65	45
	q(b-a)		55	40
	q(b-c)		35	45
	f		0.39	0.53
CAPACITIES	Q(b-a)	1	460	488
	Q(b-c)	1	672	677
	Q(c-b)	1	671	676
	Q(b-ac)	1	524	573
RFC's	b-a		0.120	0.082
	b-c		0.052	0.066
	c-b		0.231	0.148
	b-ac		0.000	0.000
Worst RFC			**0.231**	**0.148**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

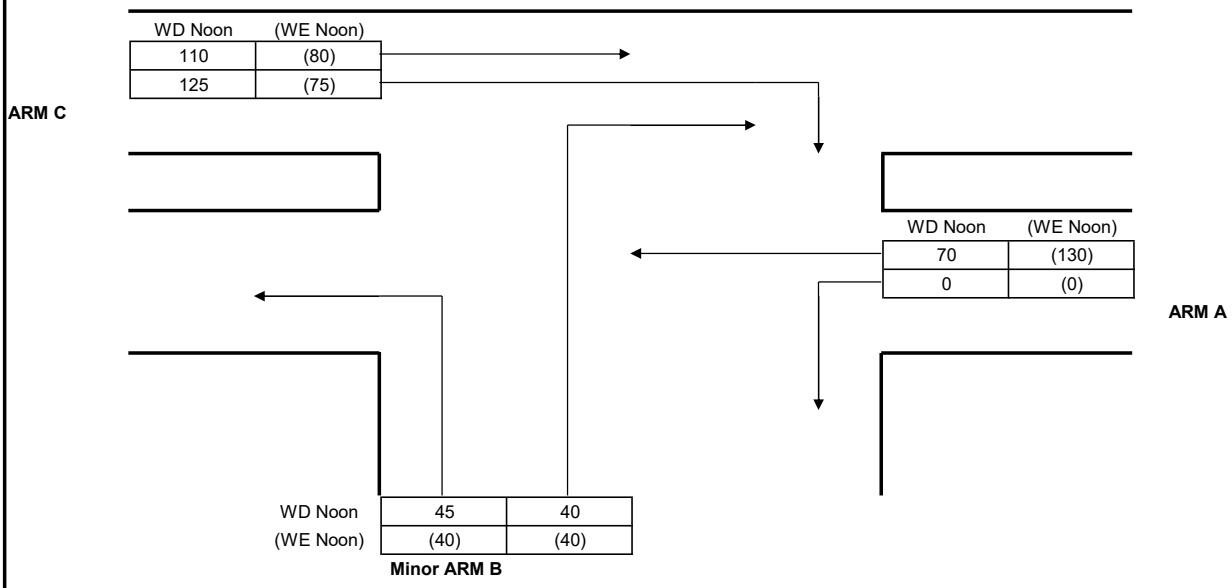
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	#N/A			Ref. No.:	J18
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY					
Major road width	W	7.25	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		Y		w(c-b)	3.00
Visibilities	Vr(b-a)	45	Calculated	D	0.86
	Vl(b-a)	35		E	0.92
	Vr(b-c)	50		F	0.92
	Vr(c-b)	100		Y	0.75

ANALYSIS			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		110	80
	q(c-b)		125	75
	q(a-b)		0	0
	q(a-c)		70	130
	q(b-a)		40	40
	q(b-c)		45	40
	f		0.53	0.50
		Factor		
CAPACITIES	Q(b-a)	1	462	469
	Q(b-c)	1	671	655
	Q(c-b)	1	669	654
	Q(b-ac)	1	553	547
RFC's	b-a		0.087	0.085
	b-c		0.067	0.061
	c-b		0.187	0.115
	b-ac		0.000	0.000
Worst RFC			**0.187**	**0.115**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

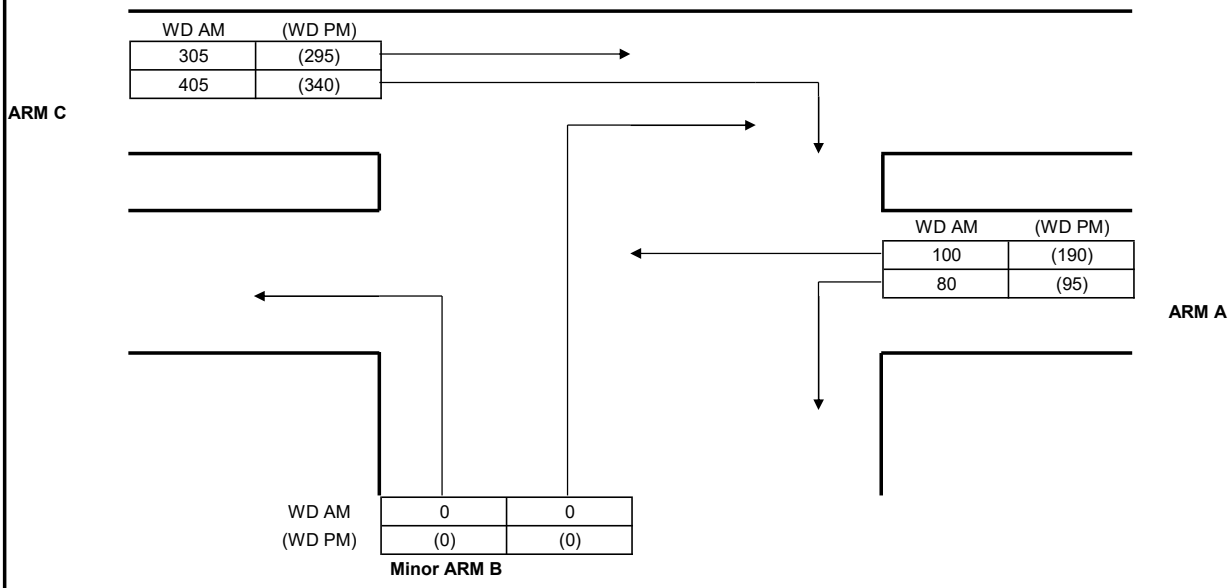
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		305	295
	q(c-b)		405	340
	q(a-b)		80	95
	q(a-c)		100	190
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	227	227
	Q(b-c)	1	427	413
	Q(c-b)	1	667	643
	Q(b-ac)	1	227	227
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.607	0.529
	b-ac		0.000	0.000
Worst RFC			**0.607**	**0.529**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

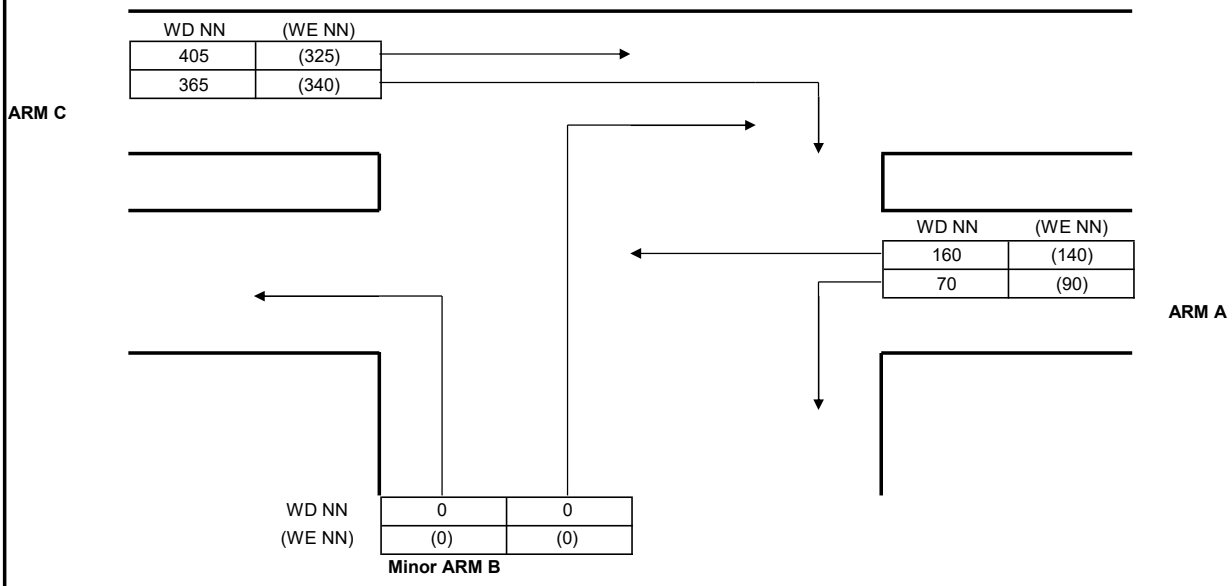
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD NN PEAK	(WE NN) PEAK
TRAFFIC FLOWS	q(c-a)		405	325
	q(c-b)		365	340
	q(a-b)		70	90
	q(a-c)		160	140
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	219	232
	Q(b-c)	1	419	420
	Q(c-b)	1	655	655
	Q(b-ac)	1	219	232
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.557	0.519
	b-ac		0.000	0.000
Worst RFC			**0.557**	**0.519**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

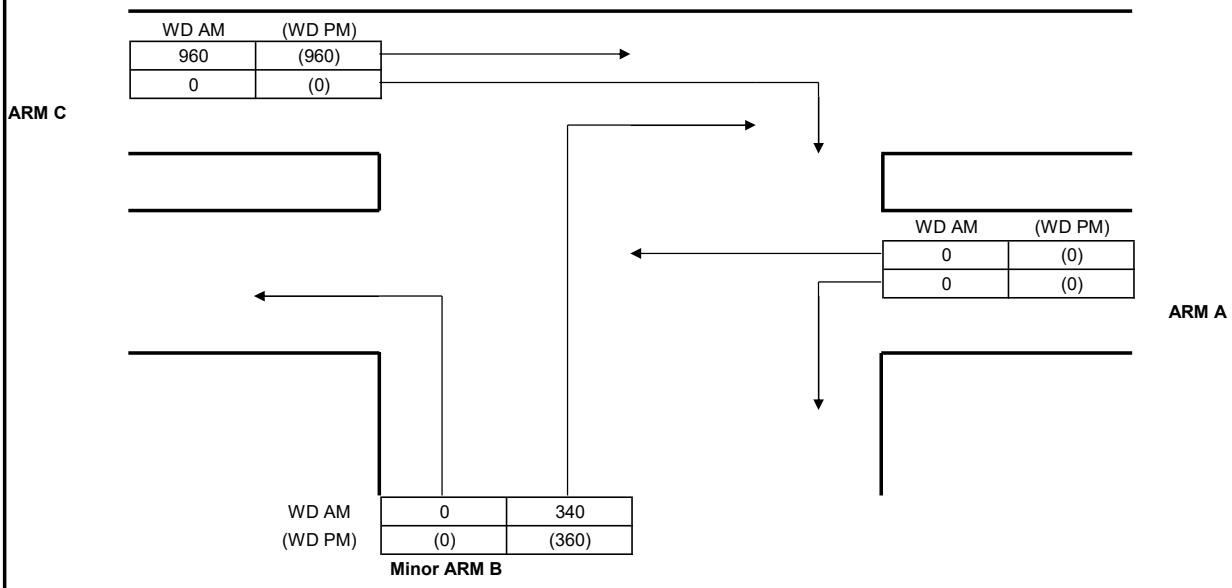
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY

Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS

		Factor	WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		960	960
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		340	360
	q(b-c)		0	0
	f		0.00	0.00
CAPACITIES	Q(b-a)	1	494	494
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	494	494
RFC's	b-a		0.688	0.729
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.688	0.729
Worst RFC			**0.688**	**0.729**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

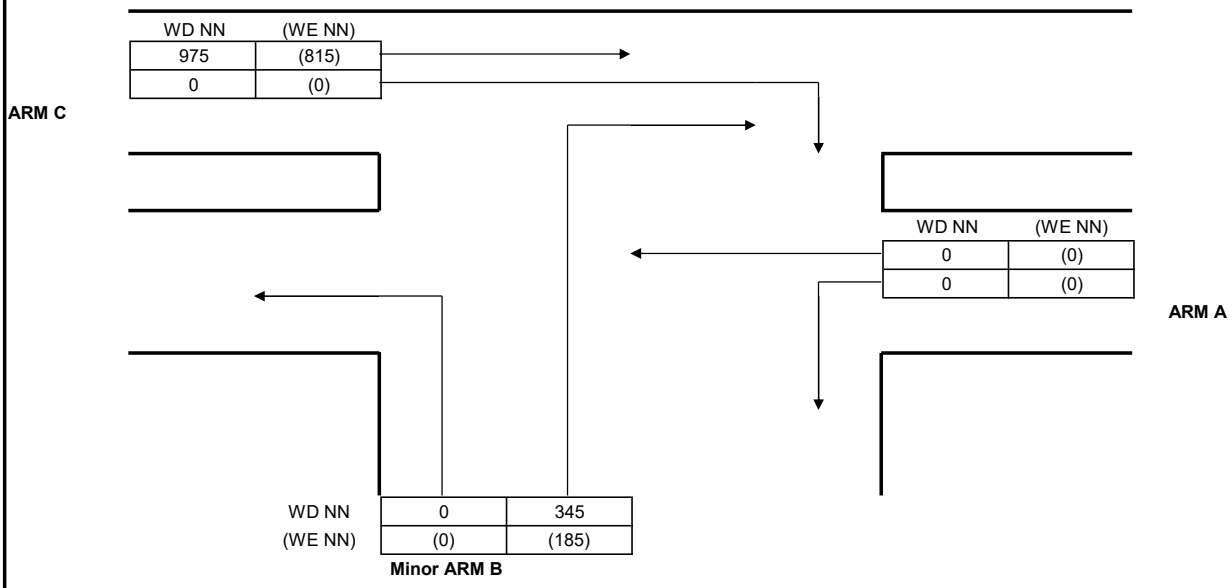
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD NN PEAK	(WE NN) PEAK
TRAFFIC FLOWS	q(c-a)		975	815
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		345	185
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	492	522
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	492	522
RFC's	b-a		0.701	0.354
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.701	0.354
Worst RFC			**0.701**	**0.354**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Year 2031 Design
with Hong Kong Stadium
(Sensitivity Test)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

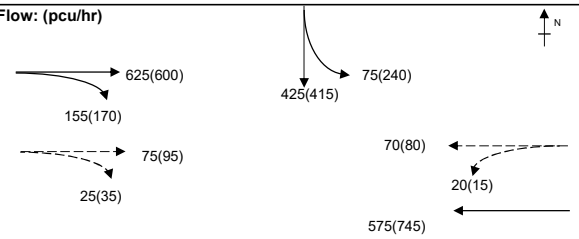
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	237	0.159		308	0.206	0.206
	←	A	1	3.700						2125	2125	338	0.159	0.159	437	0.206	
Hennessy Road WB (Tram)	↓	D	2	3.000	20					1780	1780	20	0.011		15	0.008	
	←	A	1	3.000						2055	2055	70	0.034		80	0.039	
Hennessy Road EB	→ **	B	1,2,3	3.000						960	960	199	0.207		191	0.199	
	→	B	1,2,3	3.000						2055	2055	426	0.207		409	0.199	
	↘	C	2,3	3.000		25				1940	1940	155	0.080	0.080	170	0.088	0.088
Hennessy Road EB (Tram)	→	B	1,2,3	3.000						1915	1915	75	0.039		95	0.050	
	↓	C	2,3	3.000		25				1940	1940	25	0.013		35	0.018	
Percival Street SB	↳	E	4	3.300	10					1690	1690	75	0.044		240	0.142	0.142
	↓	E	4	3.300						2085	2085	211	0.101		207	0.099	
	↓	E	4	3.500						2105	2105	214	0.102	0.102	208	0.099	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26						
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

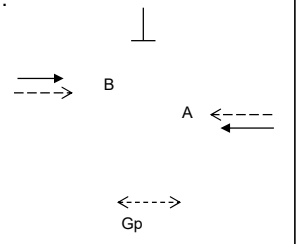
Flow: (pcu/hr)



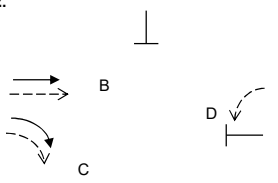
Group	A,C,Fp	A,C,E	Group	A,C,Fp	A,C,E
y	0.239	0.341	y	0.294	0.436
L (sec)	46	19	L (sec)	46	19
C (sec)	120	120	C (sec)	120	120
y pract.	0.555	0.758	y pract.	0.555	0.758
R.C. (%)	132%	122%	R.C. (%)	89%	74%

Stage / Phase Diagrams

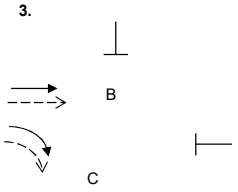
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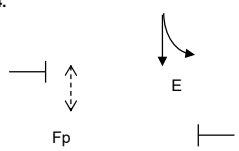
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3.



4.



5.

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

Date: FEB, 2022 **Junction:** (J1) Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Hennessy Road / Percival Street Design Year: 2031

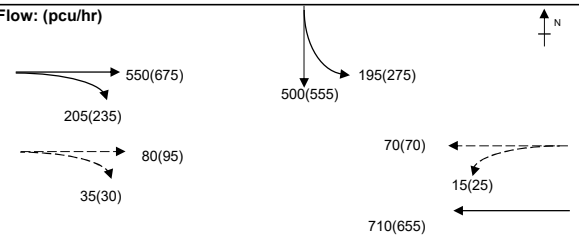
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Hennessy Road WB	← *	A	1	3.800						1495	1495	293	0.196		271	0.181	0.181
	←	A	1	3.700						2125	2125	417	0.196	0.196	384	0.181	
Hennessy Road WB (Tram)	⇃	D	2	3.000	20					1780	1780	15	0.008		25	0.014	
	⇐	A	1	3.000						2055	2055	70	0.034		70	0.034	
Hennessy Road EB	→**	B	1,2,3	3.000						960	960	175	0.182		215	0.224	
	→	B	1,2,3	3.000						2055	2055	375	0.182		460	0.224	
	↘	C	2,3	3.000		25				1940	1940	205	0.106	0.106	235	0.121	0.121
Hennessy Road EB (Tram)	⇒	B	1,2,3	3.000						1915	1915	80	0.042		95	0.050	
	↘	C	2,3	3.000		25				1940	1940	35	0.018		30	0.015	
Percival Street SB	↳	E	4	3.300	10					1690	1690	195	0.115		275	0.163	0.163
	↓	E	4	3.300						2085	2085	249	0.119		276	0.132	
	↓	E	4	3.500						2105	2105	251	0.119		279	0.133	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			12	+	14	=	26			*			
		Gp	1	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

* = Site factor of 0.75 has been adopted.
** = Site factor of 0.5 has been adopted.

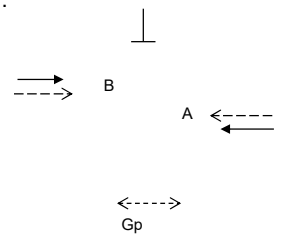
Flow: (pcu/hr)



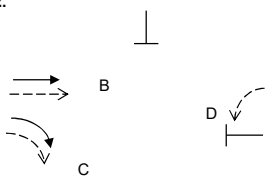
Group	A,C,E	A,C,Fp	Group	A,C,Fp	A,C,E
y	0.421	0.302	y	0.302	0.465
L (sec)	19	46	L (sec)	46	19
C (sec)	104	104	C (sec)	104	104
y pract.	0.736	0.502	y pract.	0.502	0.736
R.C. (%)	75%	66%	R.C. (%)	66%	58%

Stage / Phase Diagrams

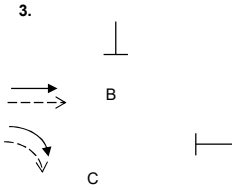
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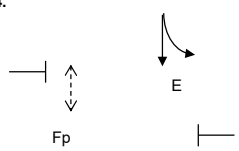
2.



3.



4.



5.

I/G= 4		I/G= 8		I/G=		I/G= 10	26
I/G= 6		I/G= 8		I/G=		I/G= 8	

I/G=			
I/G=			

Date: FEB, 2022 **Junction:** (J1) Hennessy Road / Percival Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

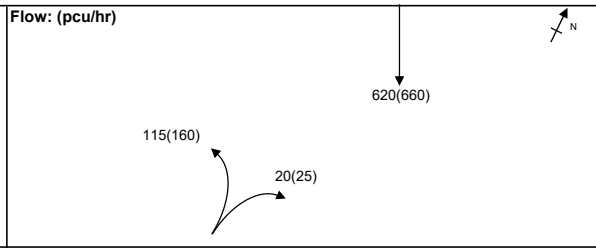
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Percival Street	↓	A	1	3.600						1975	1975	310	0.157	0.157	330	0.167	0.167
SB	↓	A	1	3.600						1975	1975	310	0.157		330	0.167	
Matheson Street	↰	B	2	3.300	10					1690	1690	67	0.040		91	0.054	
NB	↰↑	B	2	3.300	13.3	10		71% / 29%	73% / 27%	1730	1730	68	0.039		94	0.054	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 120s are adopted for AM and PM Peak

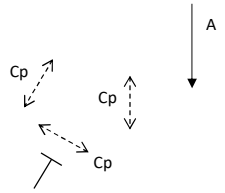
Flow: (pcu/hr)



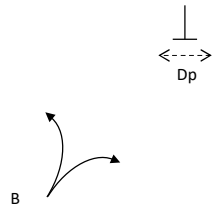
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.040	0.157	y	0.054	0.167
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	120	120
y pract.	0.643	0.703	y pract.	0.675	0.728
R.C. (%)	1522%	348%	R.C. (%)	1142%	335%

Stage / Phase Diagrams

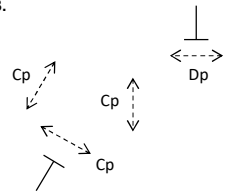
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** (J2) Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Matheson Street / Percival Street / Russell Street Design Year: 2031

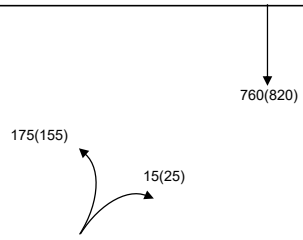
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Percival Street	↓	A	1	3.600						1975	1975	380	0.192	0.192	410	0.208	0.208
SB	↓	A	1	3.600						1975	1975	380	0.192		410	0.208	
Matheson Street	↰ ↑	B	2	3.300	10					1690	1690	94	0.056		89	0.053	
NB	↑ →	B	2	3.300	13.3	10		84% / 16%	73% / 27%	1740	1730	96	0.055		91	0.053	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	10	=	19						
		Dp	2,3	MIN GREEN + FLASH =			6	+	6	=	12			*			*

Notes:

TAC junction: Cycle time of 105s and 110s are adopted for WD and WE Noon

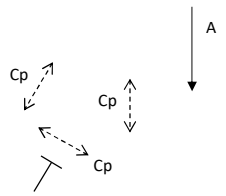
Flow: (pcu/hr)



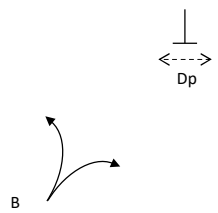
Group	Cp,B	A,Dp	Group	Cp,B	A,Dp
y	0.056	0.192	y	0.053	0.208
L (sec)	30	23	L (sec)	30	23
C (sec)	105	105	C (sec)	110	110
y pract.	0.643	0.703	y pract.	0.655	0.712
R.C. (%)	1056%	265%	R.C. (%)	1143%	243%

Stage / Phase Diagrams

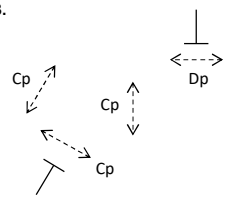
1.



2.



3.



4.

5.

I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=
I/G= 4		I/G= 8	12	I/G=		I/G=	I/G=

Date: FEB, 2022 **Junction:** (J2) Matheson Street / Percival Street / Russell Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road	← *	E	1	3.500						1570	1570	491	0.313		510	0.325	
WB	← *	E	1	3.000						1645	1645	514	0.312		535	0.325	0.325
Leighton Road	→ **	A	1	2.500						1120	1120	361	0.322		318	0.284	
EB	→ **	A	1	2.500						1205	1205	389	0.323	0.323	342	0.284	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	260	0.228	0.228	315	0.276	0.276
Percival Street	* ↲	C	2	5.000		25				1595	1595	239	0.150		242	0.152	
SB	** ↲	C	2	3.500		20				1175	1175	176	0.150		178	0.151	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

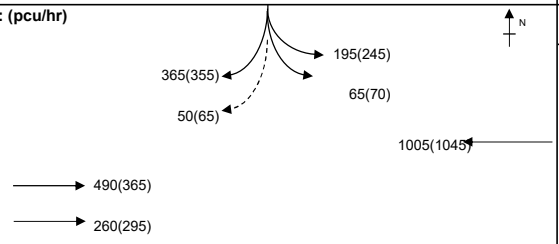
Notes:

TAC junction: Cycle time of 105s and 105s are adopted for AM and PM Peak

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

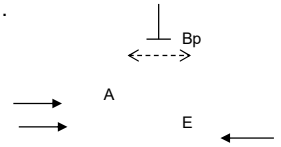
Flow: (pcu/hr)



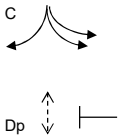
Group	E,C	A,C	Group	A,C	E,C
y	0.541	0.551	y	0.560	0.602
L (sec)	9	14	L (sec)	14	9
C (sec)	105	105	C (sec)	105	105
y pract.	0.823	0.780	y pract.	0.780	0.823
R.C. (%)	52%	42%	R.C. (%)	39%	37%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 6		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Percival Street / Hysan Avenue Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	← *	E	1	3.500						1570	1570	496	0.316		518	0.330	
	← *	E	1	3.000						1645	1645	519	0.316		542	0.329	
Leighton Road EB	→ **	A	1	2.500						1120	1120	412	0.368	0.368	369	0.329	0.329
	→ **	A	1	2.500						1205	1205	443	0.368		396	0.329	
Percival Street SB	↳ **	C	2	4.000	25					1140	1140	310	0.272	0.272	380	0.333	0.333
Percival Street SB	* ↲	C	2	5.000		25				1595	1595	294	0.184		268	0.168	
	** ↲	C	2	3.500		20				1175	1175	216	0.184		197	0.168	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			16	+	7	=	23						
		Dp	2	MIN GREEN + FLASH =			5	+	12	=	17						

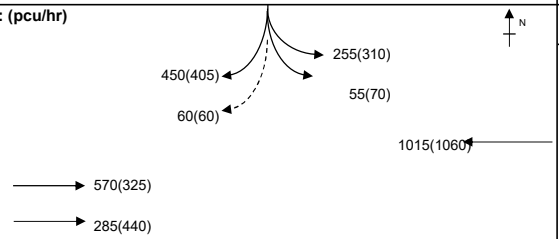
Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

** = Site Factor of 0.6 adopted

* = Site Factor of 0.8 adopted

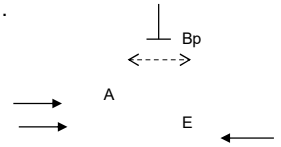
Flow: (pcu/hr)



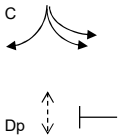
Group	E,C	A,C	Group	E,C	A,C
y	0.588	0.640	y	0.663	0.663
L (sec)	9	14	L (sec)	9	14
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.803	y pract.	0.838	0.803
R.C. (%)	43%	26%	R.C. (%)	26%	21%

Stage / Phase Diagrams

1.



2.



4.

5.

I/G= 8		I/G= 8		I/G=		I/G=		I/G=	
I/G= 8		I/G= 8		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J3) Leighton Road / Percival Street / Hysan Avenue

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

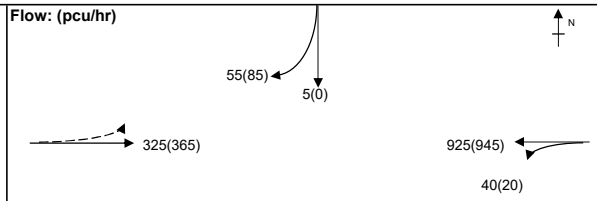
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	↓	B	2	3.500	5			9%	4%	1915	1940	463	0.242		466	0.240	
	←	B	2	3.200						2075	2075	502	0.242		499	0.240	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	325	0.165	0.165	365	0.186	0.186
Hysan Avenue	↓	C	3	3.300		17		84%	100%	1810	1785	32	0.018		45	0.025	
SB	↲	C	3	3.000		10				1585	1585	28	0.018		40	0.025	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

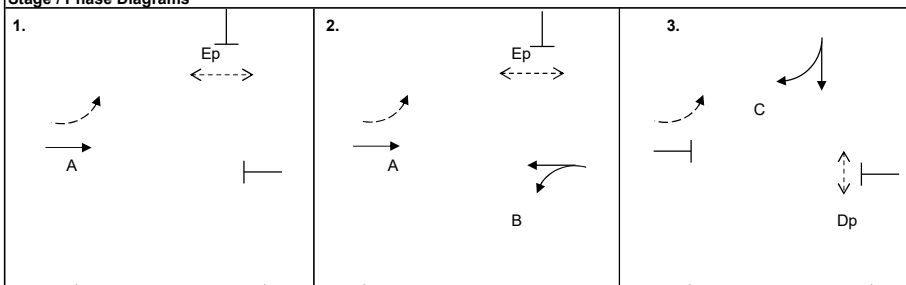
TAC junction: Cycle time of 120s and 130s are adopted for AM and PM Peak

Flow: (pcu/hr)



Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.183	0.165	y	0.211	0.186
L (sec)	9	31	L (sec)	9	31
C (sec)	120	120	C (sec)	130	130
y pract.	0.833	0.668	y pract.	0.838	0.685
R.C. (%)	355%	304%	R.C. (%)	297%	269%

Stage / Phase Diagrams



I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J4 Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Hysan Avenue / Leighton Lane Design Year: 2031

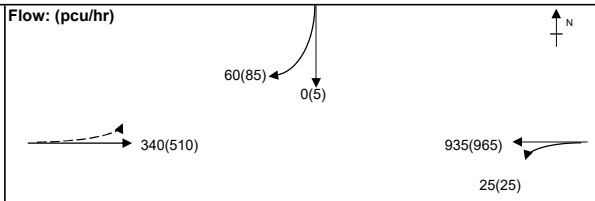
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	↰	B	2	3.500	5			5%	5%	1935	1935	463	0.239		478	0.247	
	←	B	2	3.200						2075	2075	497	0.240		512	0.247	
Leighton Road EB	↗	(free flow)															
	→	A	1,2	3.500						1965	1965	340	0.173	0.173	510	0.260	0.260
Hysan Avenue	↓	C	3	3.300		17		100%	90%	1785	1805	32	0.018		48	0.027	
SB	↲	C	3	3.000		10				1585	1585	28	0.018		42	0.026	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			11	+	10	=	21			*			*
		Ep	1,2	MIN GREEN + FLASH =			6	+	7	=	13						

Notes:

TAC junction: Cycle time of 130s and 130s are adopted for WD and WE Noon

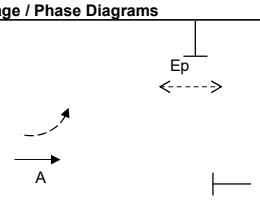
Flow: (pcu/hr)



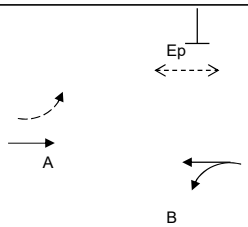
Group	A,C	A,Dp	Group	A,C	A,Dp
y	0.191	0.173	y	0.286	0.260
L (sec)	9	31	L (sec)	9	31
C (sec)	130	130	C (sec)	130	130
y pract.	0.838	0.685	y pract.	0.838	0.685
R.C. (%)	339%	296%	R.C. (%)	193%	164%

Stage / Phase Diagrams

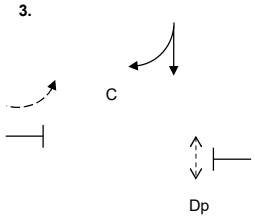
1.



2.



3.



4.

5.

I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	
I/G= 4		I/G=		I/G= 7	21	I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J4) Leighton Road / Hysan Avenue / Leighton Lane

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WB	*, ^,	A	1	3.500	20			69%	67%	730	730	144	0.197		123	0.168	
		A	1	3.500	25					1215	1215	240	0.198		205	0.169	
		A	1	3.000						2055	2055	406	0.198	0.198	347	0.169	0.169
Caroline Hill Road NB		B	2	3.500	65	25		92% / 8%	98% / 2%	1915	1920	447	0.233		465	0.242	
		B	2	3.500		20				1960	1960	458	0.234	0.234	475	0.242	0.242
Leighton Road EB		A	1	3.500						985	985	132	0.134		152	0.154	
		A	1	3.300						2085	2085	278	0.133		323	0.155	
Hoi Ping Road SB		C	3	3.500						1965	1965	342	0.174		304	0.155	
	*	C	3	3.500		12		59%	81%	730	715	128	0.175	0.175	111	0.155	0.155

Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

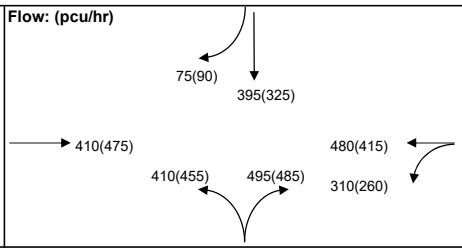
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

^Site Factor of 0.6 adopted due to merging traffic ahead

*Site factor of 0.4 applied due to flare lane

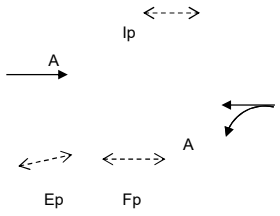
Flow: (pcu/hr)



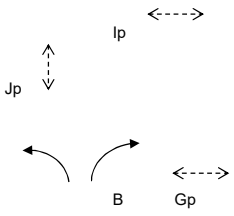
Group	A,B,Hp	A,B,C	Group	A,B,Hp	A,B,C
y	0.431	0.607	y	0.411	0.566
L (sec)	38	20	L (sec)	38	20
C (sec)	105	105	C (sec)	130	130
y pract.	0.574	0.729	y pract.	0.637	0.762
R.C. (%)	33%	20%	R.C. (%)	55%	34%

Stage / Phase Diagrams

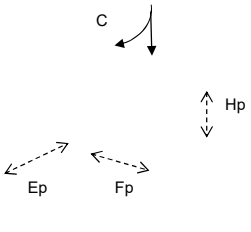
1.



2.



3.



4.

5.

I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Caroline Hill Road (West) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	*	A	1	3.500	20					730	730	123	0.168		142	0.195	
	^	A	1	3.500	25			67%	71%	1215	1210	205	0.169		237	0.196	
		A	1	3.000						2055	2055	347	0.169	0.169	401	0.195	
Caroline Hill Road NB		B	2	3.500	65	25		90% / 10%	100% / 0%	1915	1920	442	0.231		431	0.224	0.224
		B	2	3.500		20				1960	1960	453	0.231	0.231	439	0.224	
Leighton Road EB		A	1	3.500						985	985	138	0.140		197	0.200	
		A	1	3.300						2085	2085	292	0.140		418	0.200	0.200
Hoi Ping Road SB		C	3	3.500						1965	1965	320	0.163		304	0.155	
	*	C	3	3.500		12		100%	81%	700	715	145	0.207	0.207	111	0.155	0.155

Pedestrian Crossing	Ep	1	MIN GREEN + FLASH =	10	+	5	=	15
	Fp	1,3	MIN GREEN + FLASH =	14	+	5	=	19
	Gp	2	MIN GREEN + FLASH =	14	+	5	=	19
	Hp	3	MIN GREEN + FLASH =	10	+	7	=	17
	Ip	1,2	MIN GREEN + FLASH =	11	+	6	=	17
	Jp	2	MIN GREEN + FLASH =	10	+	7	=	17

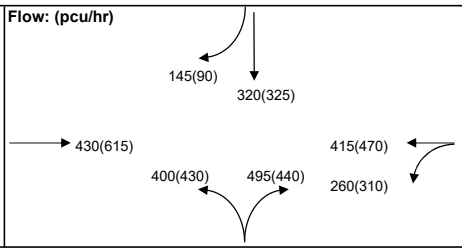
Notes:

TAC junction: Cycle time of 120s and 130s are adopted for WD and WE Noon Peak

^Site Factor of 0.6 adopted due to merging traffic ahead

*Site factor of 0.4 applied due to flare lane

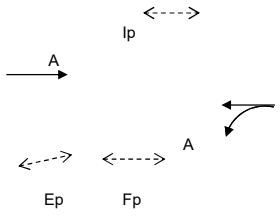
Flow: (pcu/hr)



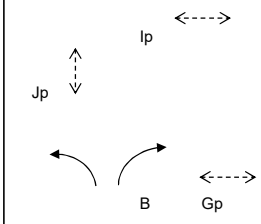
Group	Ep,B,C	A,B,C	Group	A,B,Hp	A,B,C
y	0.438	0.607	y	0.425	0.580
L (sec)	33	20	L (sec)	38	20
C (sec)	120	120	C (sec)	130	130
y pract.	0.653	0.750	y pract.	0.637	0.762
R.C. (%)	49%	24%	R.C. (%)	50%	31%

Stage / Phase Diagrams

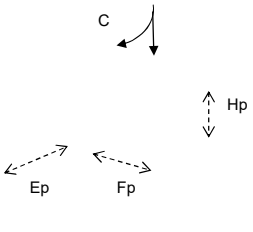
1.



2.



3.



4.

5.

I/G= 8		I/G= 8		I/G= 7		I/G=	
I/G= 8		I/G= 8		I/G= 7		I/G=	

Date: FEB, 2022 **Junction:** J5 Leighton Road / Caroline Hill Road (West)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

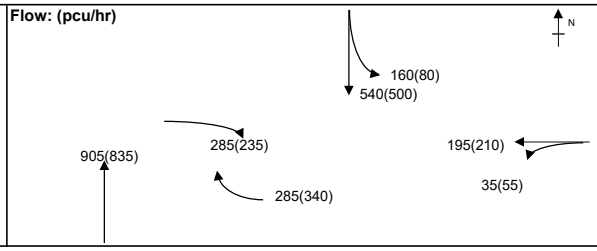
Junction: Caroline Hill Road (West) / Link Road / New Access Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Link Road NB	↑	A	1,2	3.650						1980	1980	905	0.457	0.457	835	0.422	0.422
U-turn Slip Road EB	↱	B	2	5.000		5				1625	1625	285	0.175		235	0.145	
Access Road	←	C	3	3.650						2120	2120	195	0.092		210	0.099	
WB	↰	C	3	3.650	15					1800	1800	35	0.019		55	0.031	
Caroline Hill Road	↓	D	1	3.650	20			48%	29%	1910	1940	332	0.174		277	0.143	
SB	↓	D	1	3.650						2120	2120	368	0.174		303	0.143	
U-turn Slip Road WB	←	E	3	5.000						2115	2115	285	0.135	0.135	340	0.161	0.161
Pedestrian Crossing		Fp	3	MIN GREEN + FLASH =			11	+	5	=	16						
		Gp	1,2	MIN GREEN + FLASH =			9	+	5	=	14						

Notes:

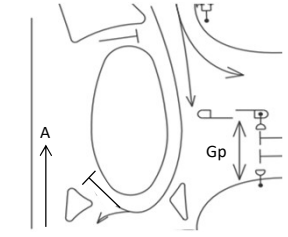
Flow: (pcu/hr)



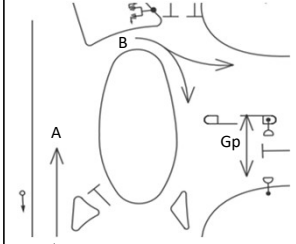
Group	A,C	A,E	Group	A,C	A,E
y	0.549	0.592	y	0.521	0.582
L (sec)	15	8	L (sec)	15	8
C (sec)	105	105	C (sec)	105	105
y pract.	0.771	0.831	y pract.	0.771	0.831
R.C. (%)	41%	40%	R.C. (%)	48%	43%

Stage / Phase Diagrams

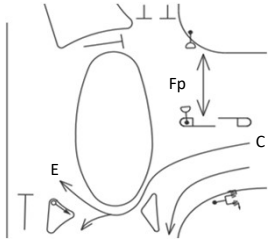
1.



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

Date: APR, 2022 **Junction:** J6R Caroline Hill Road (West) / Link Road / New Access Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

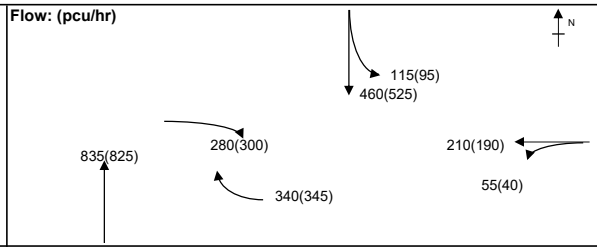
Junction: Caroline Hill Road (West) / Link Road / New Access Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road NB	↑	A	1,2	3.650						1980	1980	835	0.422	0.422	825	0.417	0.417
U-turn Slip Road EB	↱	B	2	5.000		5				1625	1625	280	0.172		300	0.185	
Access Road	←	C	3	3.650						2120	2120	210	0.099		190	0.090	
WB	↰	C	3	3.650	15					1800	1800	55	0.031		40	0.022	
Caroline Hill Road	↓	D	1	3.650	20			42%	32%	1920	1935	273	0.142		296	0.153	
SB	↓	D	1	3.650						2120	2120	302	0.142		324	0.153	
U-turn Slip Road WB	←	E	3	5.000						2115	2115	340	0.161	0.161	345	0.163	0.163
Pedestrian Crossing		Fp	3	MIN GREEN + FLASH =			11	+	5	=	16						
		Gp	1,2	MIN GREEN + FLASH =			9	+	5	=	14						

Notes:

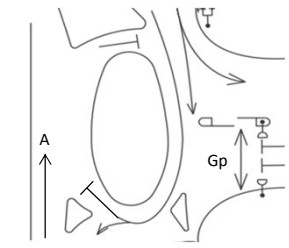
Flow: (pcu/hr)



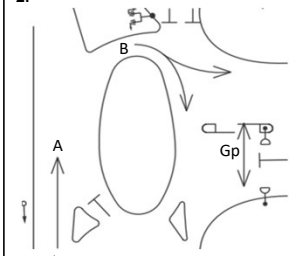
Group	A,C	A,E	Group	A,C	A,E
y	0.521	0.582	y	0.506	0.580
L (sec)	15	8	L (sec)	15	8
C (sec)	105	105	C (sec)	105	105
y pract.	0.771	0.831	y pract.	0.771	0.831
R.C. (%)	48%	43%	R.C. (%)	52%	43%

Stage / Phase Diagrams

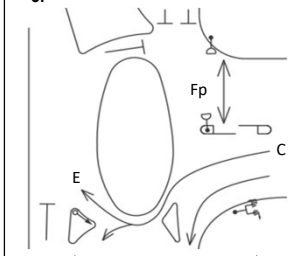
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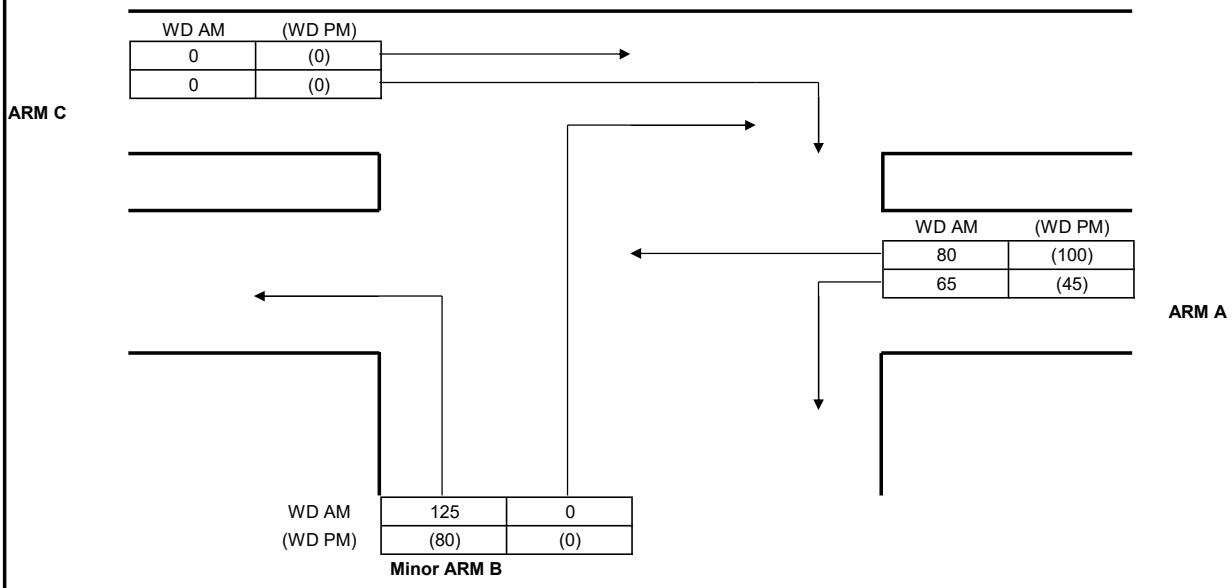
5.

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

Date: APR, 2022 **Junction:** J6R Caroline Hill Road (West) / Link Road / New Access Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY					
Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS				
			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		65	45
	q(a-c)		80	100
	q(b-a)		0	0
	q(b-c)		125	80
	f		1.00	1.00
		Factor		
CAPACITIES	Q(b-a)	1	480	477
	Q(b-c)	1	550	547
	Q(c-b)	1	412	412
	Q(b-ac)	1	550	547
RFC's	b-a		0.000	0.000
	b-c		0.227	0.146
	c-b		0.000	0.000
	b-ac		0.227	0.146
Worst RFC			**0.227**	**0.146**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

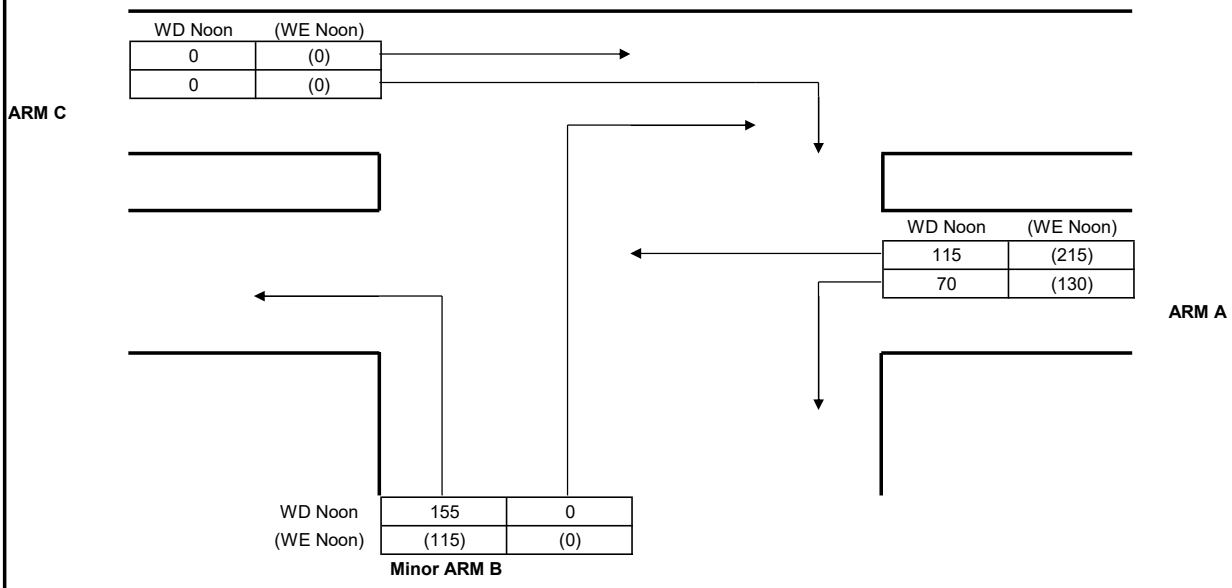
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Cotton Path			Ref. No.:	J7
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	6.20	Lane widths	w(b-a)	2.00
Central Reserve width	Wcr	0.00		w(b-c)	2.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	100	Calculated	D	0.80
	Vl(b-a)	100		E	0.77
	Vr(b-c)	20		F	0.59
	Vr(c-b)	0		Y	0.79

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		0	0
	q(c-b)		0	0
	q(a-b)		70	130
	q(a-c)		115	215
	q(b-a)		0	0
	q(b-c)		155	115
	f		1.00	1.00
CAPACITIES	Q(b-a)	1	472	443
	Q(b-c)	1	541	514
	Q(c-b)	1	406	379
	Q(b-ac)	1	541	514
RFC's	b-a		0.000	0.000
	b-c		0.287	0.224
	c-b		0.000	0.000
	b-ac		0.287	0.224
Worst RFC			**0.287**	**0.224**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Apr-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road WE	*	A	1	3.000	7			73%	55%	995	1025	302	0.304		244	0.238	
		A	1	2.500						2005	2005	608	0.303		476	0.237	
Leighton Road WE	**	C	2	3.500		9				1180	1180	280	0.237	0.237	290	0.246	0.246
Caroline Hill Road NB	*	C	2	4.000	5					930	930	100	0.108		90	0.097	
Leighton Road EB	**	A	1	3.000	15			75%	78%	1245	1245	485	0.390	0.390	547	0.439	
	**	A	1	3.000						1440	1440	560	0.389		633	0.440	0.440
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

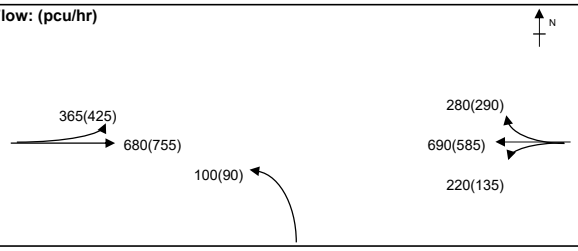
Notes:

TAC junction: Cycle time of 105s and 130s are adopted for AM and PM Peak

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

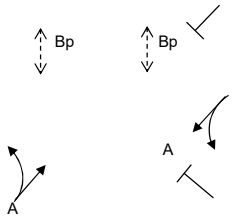
Flow: (pcu/hr)



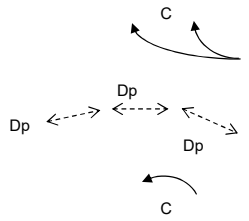
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.390	0.627	y	0.440	0.685
L (sec)	27	11	L (sec)	27	11
C (sec)	105	105	C (sec)	130	130
y pract.	0.669	0.806	y pract.	0.713	0.824
R.C. (%)	72%	29%	R.C. (%)	62%	20%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East) Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WE	*	A	1	3.000	7			91%	60%	960	1020	258	0.269		258	0.253	
		A	1	2.500						2005	2005	537	0.268		507	0.253	
Leighton Road WE	**	C	2	3.500		9				1180	1180	245	0.208	0.208	260	0.220	0.220
Caroline Hill Road NB	*	C	2	4.000	5					930	930	115	0.124		170	0.183	
Leighton Road EB	**	A	1	3.000	15			70%	70%	1255	1250	503	0.401	0.401	582	0.466	0.466
	**	A	1	3.000						1440	1440	577	0.401		668	0.464	
Pedestrian Crossing		Bp	1	MIN GREEN + FLASH =			5	+	8	=	13						
		Dp	2	MIN GREEN + FLASH =			10	+	8	=	18						

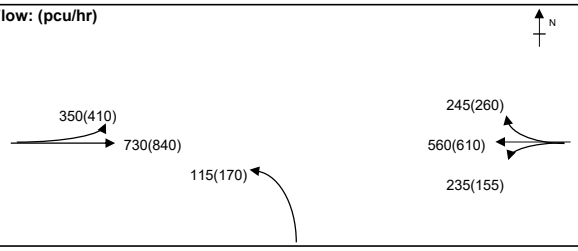
Notes:

TAC junction: Cycle time of 110s and 120s are adopted for WD and WE Noon

* = Site factor of 0.6 adopted

** = Site factor of 0.7 adopted

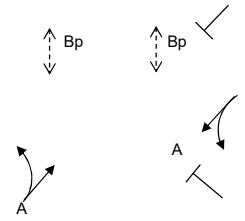
Flow: (pcu/hr)



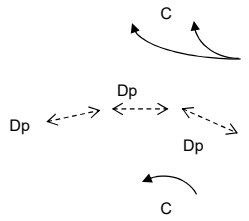
Group	A,Dp	A,C	Group	A,Dp	A,C
y	0.401	0.608	y	0.466	0.686
L (sec)	27	11	L (sec)	27	11
C (sec)	110	110	C (sec)	120	120
y pract.	0.679	0.810	y pract.	0.698	0.818
R.C. (%)	69%	33%	R.C. (%)	50%	19%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J8 Leighton Road / Yun Ping Road / Pennington Street / Caroline Hill

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

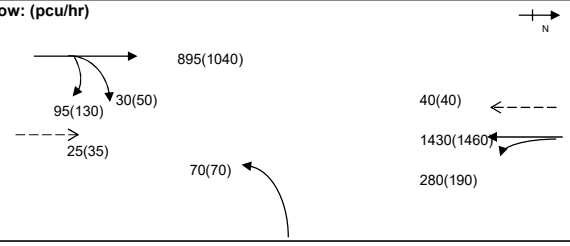
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	↙ *	A	1	3.000	9					1150	1150	280	0.243		190	0.165	
Causeway Road WB	← *	A	1	3.000						1340	1340	352	0.263	0.263	359	0.268	
	←	A	1	3.000						2055	2055	539	0.262		550	0.268	
	←	A	1	3.000						2055	2055	539	0.262		551	0.268	0.268
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	40	0.030		40	0.030	
Tung Lo Wan Road NB	↰ **	B	2	4.000	25					1330	1330	70	0.053		70	0.053	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↘ **	C	3	4.000		12				1255	1255	187	0.149	0.149	216	0.172	
	↘ **	C	3	4.500		8				1300	1300	193	0.148		224	0.172	0.172
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	25	0.019		35	0.026	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

* = Site factor of 0.7 is adopted for on street activities on Leighton Road
** = Site factor of 0.7 is adopted for traffic queue

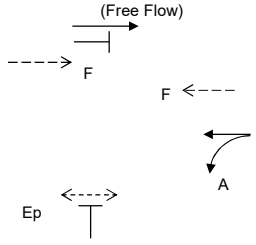
Flow: (pcu/hr)



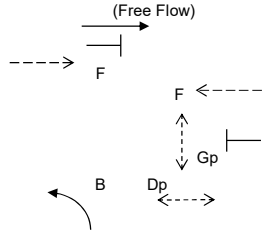
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.464	0.412	y	0.493	0.440
L (sec)	20	33	L (sec)	20	33
C (sec)	100	100	C (sec)	105	105
y pract.	0.720	0.603	y pract.	0.729	0.617
R.C. (%)	55%	46%	R.C. (%)	48%	40%

Stage / Phase Diagrams

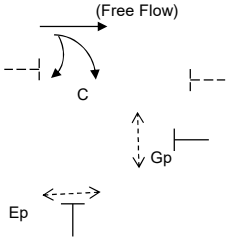
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** J9 Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street Design Year: 2031

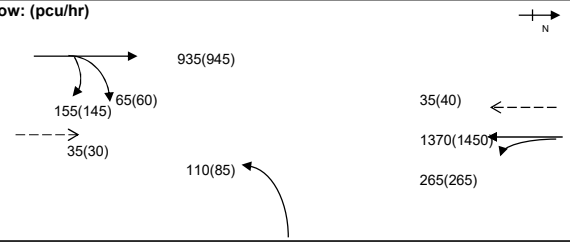
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Causeway Road WB	↓ *	A	1	3.000	9					1150	1150	265	0.230		265	0.230	
Causeway Road WB	← *	A	1	3.000						1340	1340	337	0.251		357	0.266	0.266
	←	A	1	3.000						2055	2055	516	0.251		546	0.266	
	←	A	1	3.000						2055	2055	517	0.252	0.252	547	0.266	
Causeway Road WB (Tram)	⇐ **	F	1,2	3.000						1340	1340	35	0.026		40	0.030	
Tung Lo Wan Road NB	↖ **	B	2	4.000	25					1330	1330	110	0.083		85	0.064	
Causeway Road EB	→ (free flow)																
Causeway Road EB	↓ **	C	3	4.000		12				1255	1255	223	0.178		221	0.176	
	↓ **	C	3	4.500		8				1300	1300	232	0.178	0.178	229	0.176	0.176
Causeway Road EB (Tram)	⇒ **	F	1,2	3.000						1340	1340	35	0.026		30	0.022	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			7	+	8	=	15			*			*
		Ep	1,3	MIN GREEN + FLASH =			10	+	5	=	15						
		Gp	2,3	MIN GREEN + FLASH =			9	+	11	=	20						

Notes:

TAC junction: Cycle time of 95s and 105s are adopted for WD and WE Noon Peak
** = Site factor of 0.7 is adopted for traffic queue

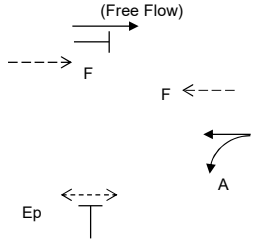
Flow: (pcu/hr)



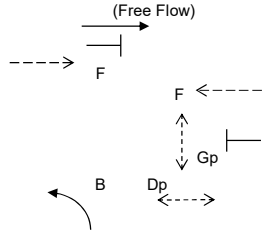
Group	A,B,C	A,Dp,C	Group	A,B,C	A,Dp,C
y	0.513	0.430	y	0.506	0.443
L (sec)	20	33	L (sec)	20	33
C (sec)	95	95	C (sec)	105	105
y pract.	0.711	0.587	y pract.	0.729	0.617
R.C. (%)	39%	37%	R.C. (%)	44%	39%

Stage / Phase Diagrams

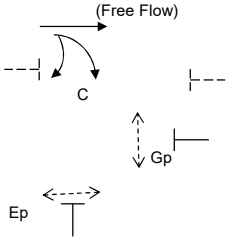
1.



2.



3.



4.

5.

I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=
I/G= 7		I/G= 9	15	I/G= 4		I/G=	I/G=

Date: FEB, 2022 **Junction:** (J9) Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Str

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

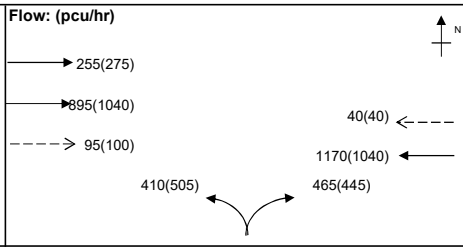
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Causeway Road WB	← *	C	1	3.700						795	795	315	0.396		280	0.352	
	←	C	1	4.000						2155	2155	855	0.397		760	0.353	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	40	0.021		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	267	0.158		290	0.172	
	↰↑	E	2	3.300	15	20		47% / 53%	65% / 35%	1920	1910	304	0.158		330	0.173	0.173
	↱	E	2	3.500		15				1915	1915	304	0.159	0.159	330	0.172	
Causeway Road WB	→	A	1	3.500						1965	1965	255	0.130		275	0.140	
	→	A	1	3.500						2105	2105	895	0.425	0.425	1040	0.494	0.494
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		100	0.052	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

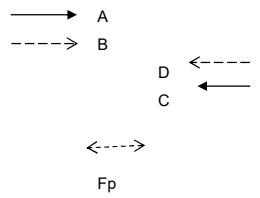
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.555	0.584	y	0.525	0.667
L (sec)	10	10	L (sec)	10	10
C (sec)	100	100	C (sec)	105	105
y pract.	0.810	0.810	y pract.	0.814	0.814
R.C. (%)	46%	39%	R.C. (%)	55%	22%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Causeway Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

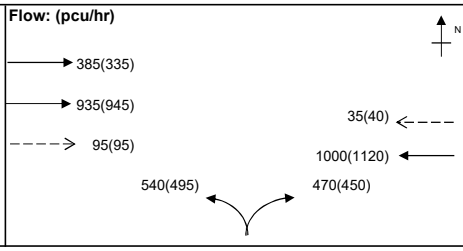
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD NN	Pro. Turning (%) WE NN	Revised Saturation Flow (pcu/hr) WD NN	Revised Saturation Flow (pcu/hr) WE NN	WD NN Flow (pcu/hr)	WD NN y Value	WD NN Critical y	WE NN Flow (pcu/hr)	WE NN y Value	WE NN Critical y
Causeway Road WB	← *	C	1	3.700						795	795	269	0.338		302	0.380	
	←	C	1	4.000						2155	2155	731	0.339		818	0.380	
Causeway Road - WB (Tram)	⇐	D	1	3.000						1915	1915	35	0.018		40	0.021	
Moreton Terrace - NB	↰ **	E	2	3.500	9					1685	1685	309	0.183	0.183	289	0.172	
	↰↑	E	2	3.300	15	20		66% / 34%	63% / 37%	1910	1910	350	0.183		328	0.172	0.172
	↱	E	2	3.500		15				1915	1915	351	0.183		328	0.171	
Causeway Road WB	→	A	1	3.500						1965	1965	385	0.196		335	0.170	
	→	A	1	3.500						2105	2105	935	0.444	0.444	945	0.449	0.449
Causeway Road - EB (Tram)	⇒	B	1	3.000						1915	1915	95	0.050		95	0.050	
Pedestrian Crossing		Fp	1	MIN GREEN + FLASH =			8	+	10	=	18						

Notes:

*Site Factor of 0.4 adopted due to bus stop near stop line

**Site Factor of 0.7 adopted due to bus stop near stop line

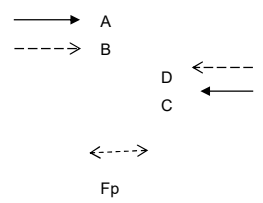
Flow: (pcu/hr)



Group	C,E	A,E	Group	C,E	A,E
y	0.523	0.628	y	0.552	0.621
L (sec)	10	10	L (sec)	10	10
C (sec)	95	95	C (sec)	105	105
y pract.	0.805	0.805	y pract.	0.814	0.814
R.C. (%)	54%	28%	R.C. (%)	48%	31%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 5		I/G=		I/G=		I/G=	
I/G= 7		I/G= 5		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J10) Causeway Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

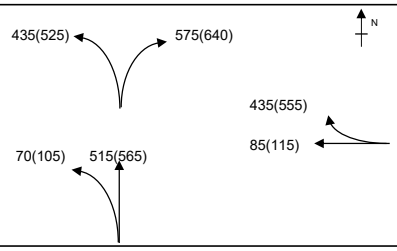
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	79	0.082	0.082	101	0.105	
	↖↑	A	1,4	3.000		16		96%	93%	1885	1890	154	0.082		200	0.106	0.106
	↖	A	1,4	3.000		13				1840	1840	151	0.082		194	0.105	
	↖	A	1,4	3.000		10				1665	1665	136	0.082		175	0.105	
Pennington Street	↑	B	2,3	3.800	5			25%	33%	1855	1815	282	0.152	0.152	319	0.176	
NB 1st stop line	↑	B	2,3	3.800						1995	1995	303	0.152		351	0.176	0.176
Pennington Street	↰	E	1,2,4	5.000	10					1840	1840	435	0.236		525	0.285	
NB 2nd stop line	↱	F	1,2,3	3.500		10				1830	1830	307	0.168		342	0.187	
	↱	F	1,2,3	3.500		6.5				1595	1595	268	0.168		298	0.187	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

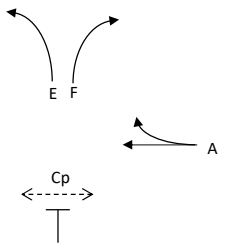
Flow: (pcu/hr)



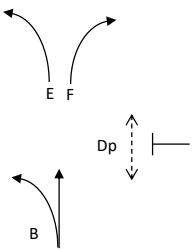
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.152	0.234	y	0.176	0.282
L (sec)	24	14	L (sec)	24	14
C (sec)	100	100	C (sec)	100	100
y pract.	0.684	0.774	y pract.	0.684	0.774
R.C. (%)	350%	230%	R.C. (%)	289%	175%

Stage / Phase Diagrams

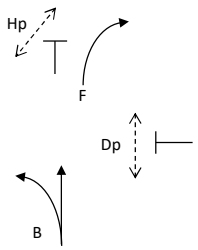
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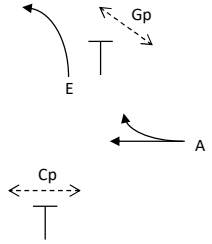
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** (J11) Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Pennington Street / Jardine's Bazaar / Irving Street Design Year: 2031

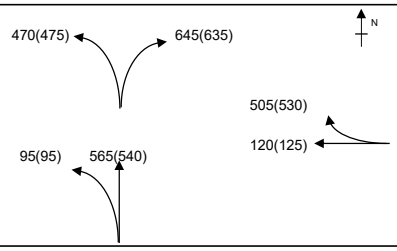
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Irving Street WB	*←	A	1,4	3.000						960	960	94	0.098		99	0.103	
	↖↑	A	1,4	3.000		16		86%	87%	1900	1900	187	0.098		196	0.103	0.103
	↖	A	1,4	3.000		13				1840	1840	180	0.098		189	0.103	
	↖	A	1,4	3.000		10				1665	1665	164	0.098	0.098	171	0.103	
Pennington Street NB 1st stop line	↑	B	2,3	3.800	5			30%	31%	1830	1825	316	0.173	0.173	303	0.166	
	↑	B	2,3	3.800						1995	1995	344	0.172		332	0.166	0.166
Pennington Street NB 2nd stop line	↰	E	1,2,4	5.000	10					1840	1840	470	0.255		475	0.258	
	↱	F	1,2,3	3.500		10				1830	1830	345	0.189		339	0.185	
	↱	F	1,2,3	3.500		6.5				1595	1595	300	0.188		296	0.186	
Pedestrian Crossing		Cp	1,4	MIN GREEN + FLASH =			8	+	8	=	16						
		Dp	2,3	MIN GREEN + FLASH =			8	+	14	=	22						
		Gp	4	MIN GREEN + FLASH =			7	+	7	=	14						
		Hp	3	MIN GREEN + FLASH =			6	+	6	=	12						

Notes:

* = Site factor of 0.5 is adopted for bus stop at upstream

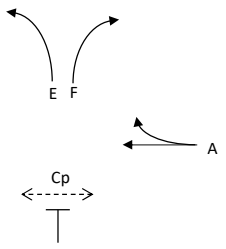
Flow: (pcu/hr)



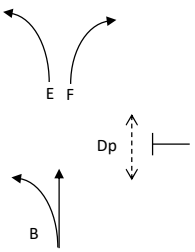
Group	Cp,B	A,B	Group	Cp,B	A,B
y	0.173	0.271	y	0.166	0.270
L (sec)	24	14	L (sec)	24	14
C (sec)	120	120	C (sec)	100	100
y pract.	0.720	0.795	y pract.	0.684	0.774
R.C. (%)	317%	193%	R.C. (%)	311%	187%

Stage / Phase Diagrams

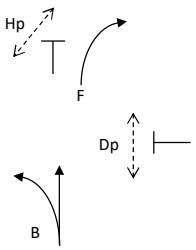
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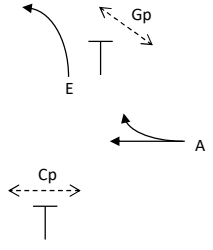
2.



3.



4.



5.

I/G=		I/G= 8		I/G=		I/G= 8		I/G=			
I/G=		I/G= 8		I/G=		I/G= 8		I/G=			

Date: FEB, 2022 **Junction:** (J11) Pennington Street / Jardine's Bazaar / Irving Street

TRAFFIC SIGNALS CALCULATION

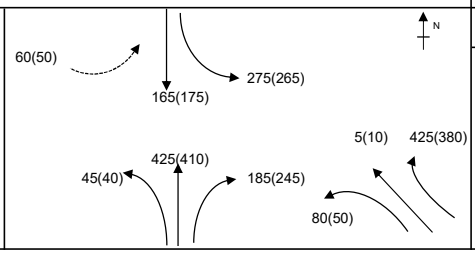
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Link Road		A	1	3.500	80			63%	60%	1940	1945	440	0.227	0.227	440	0.226	0.226
Broadwoord Road (E)		B	1,2	3.000	15			10%	9%	1895	1900	470	0.248		450	0.237	
		E	2	3.000		8				1730	1730	185	0.107	0.107	245	0.142	0.142
Broadwoord Road (W)		C	3	3.500	5	60		16% / 83%	11% / 86%	1840	1860	510	0.277	0.277	440	0.237	0.237
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =	5		+	7		=	12			*			*

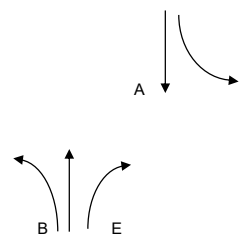
Notes:



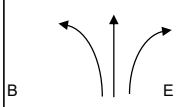
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.611	0.611	y	0.604	0.604
L (sec)	16	27	L (sec)	16	27
C (sec)	140	140	C (sec)	135	135
y pract.	0.797	0.726	y pract.	0.793	0.720
R.C. (%)	30%	19%	R.C. (%)	31%	19%

Stage / Phase Diagrams

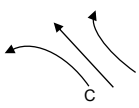
1.



2.



3.



4.



5.

I/G= 4		I/G= 3		I/G= 8		I/G= 3	12
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12

I/G=	
I/G=	

Date: FEB, 2022 **Junction:** (J12) Link Road / Broadwood Road

TRAFFIC SIGNALS CALCULATION

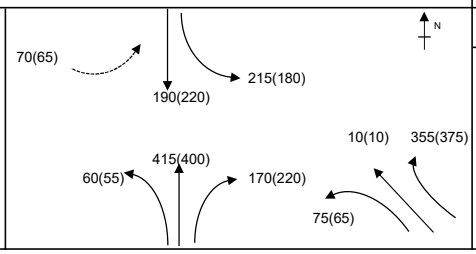
Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Link Road / Broadwood Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Link Road		A	1	3.500	80			53%	45%	1945	1950	405	0.208	0.208	400	0.205	0.205
Broadwoord Road (E)		B	1,2	3.000	15			13%	12%	1890	1890	475	0.251		455	0.241	
		E	2	3.000		8				1730	1730	170	0.098	0.098	220	0.127	0.127
Broadwoord Road (W)		C	3	3.500	5	60		17% / 81%	14% / 83%	1835	1845	440	0.240	0.240	450	0.244	0.244
Leighton Hill Road		Priority Junction															
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			5	+	7	=	12			*			*

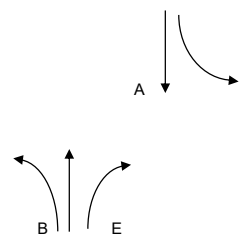
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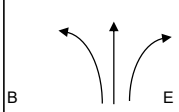
Group	A,E,C	A,E,C,Dp	Group	A,E,C	A,E,C,Dp
y	0.546	0.546	y	0.576	0.576
L (sec)	16	27	L (sec)	16	27
C (sec)	110	110	C (sec)	110	110
y pract.	0.769	0.679	y pract.	0.769	0.679
R.C. (%)	41%	24%	R.C. (%)	33%	18%

Stage / Phase Diagrams

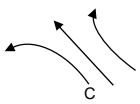
1.



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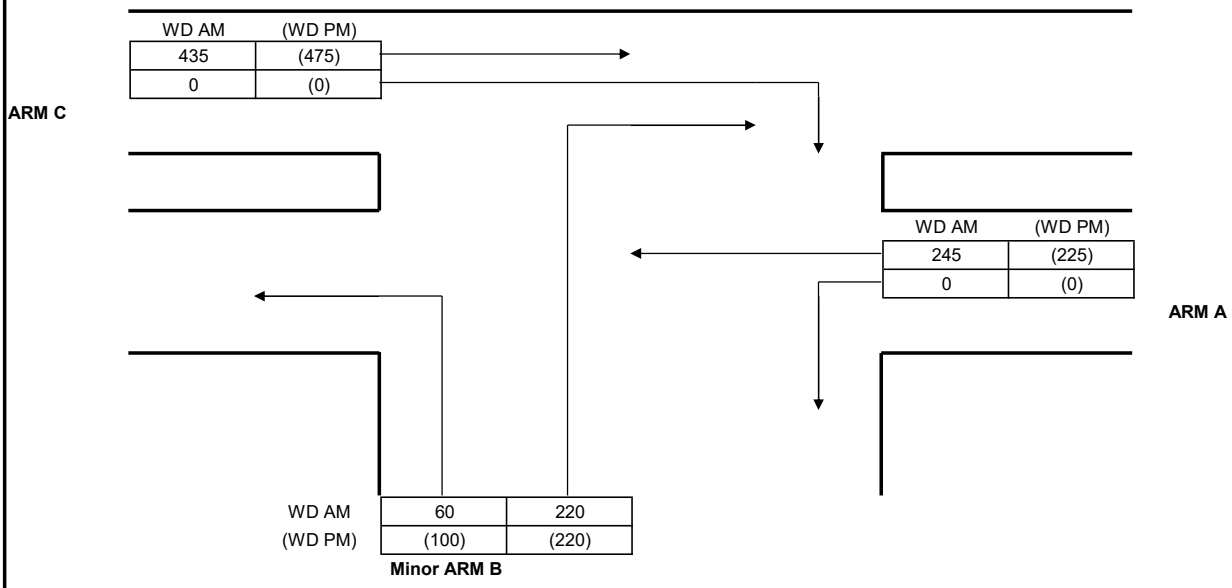
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12
I/G= 4		I/G= 3		I/G= 8		I/G= 3	12

I/G=	
I/G=	

Date: FEB, 2022 **Junction:** J12 Link Road / Broadwood Road

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY					
Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		435	475
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		245	225
	q(b-a)		220	220
	q(b-c)		60	100
	f		0.21	0.31
		Factor		
CAPACITIES	Q(b-a)	1	375	374
	Q(b-c)	1	589	594
	Q(c-b)	1	714	720
	Q(b-ac)	1	407	423
RFC's	b-a		0.587	0.588
	b-c		0.102	0.168
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.587**	**0.588**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

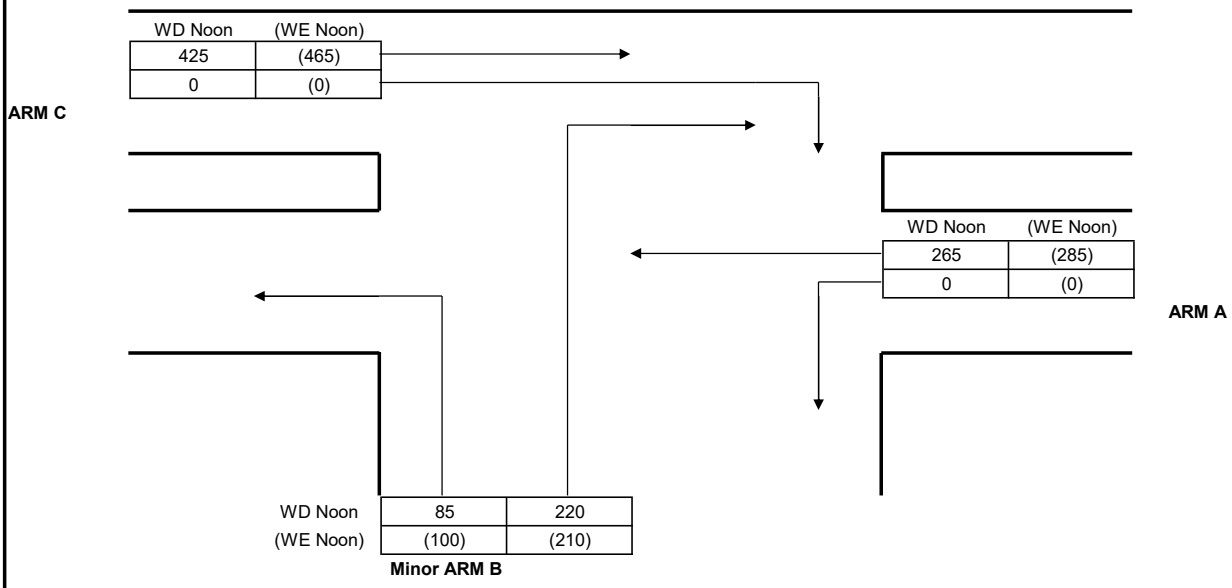
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Broadwood Road / Ventris Road			Ref. No.:	J13
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Broadwood Road				
ARM B:	Ventris Road				
ARM C:	Broadwood Road				



GEOMETRY

Major road width	W	6.50	Lane widths	w(b-a)	3.00
Central Reserve width	Wcr	0.00		w(b-c)	3.00
2 Lane Minor Arm (Y/N)		Y		w(c-b)	5.00
Visibilities	Vr(b-a)	15	Calculated	D	0.78
	Vl(b-a)	15		E	0.87
	Vr(b-c)	40		F	1.06
	Vr(c-b)	50		Y	0.78

ANALYSIS

			WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		425	465
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		265	285
	q(b-a)		220	210
	q(b-c)		85	100
	f		0.28	0.32
		Factor		
CAPACITIES	Q(b-a)	1	372	362
	Q(b-c)	1	584	579
	Q(c-b)	1	708	702
	Q(b-ac)	1	414	412
RFC's	b-a		0.591	0.580
	b-c		0.146	0.173
	c-b		0.000	0.000
	b-ac		0.000	0.000
Worst RFC			**0.591**	**0.580**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

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

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

Calculated by:	LYK	Date:	Apr-22	Checked by:	CHC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

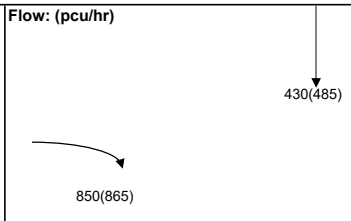
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Sports Road	→	A	1	3.800		10				1735	1735	403	0.232		411	0.237	0.237
EB	→	A	1	3.800		13.5				1920	1920	447	0.233	0.233	454	0.236	
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	140	0.073	0.073	158	0.083	0.083
	↓	B	2	3.000						2055	2055	150	0.073		169	0.082	
	↓	B	2	3.000						1915	1915	140	0.073		158	0.083	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

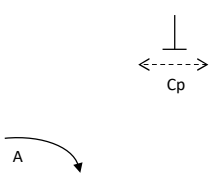
Flow: (pcu/hr)



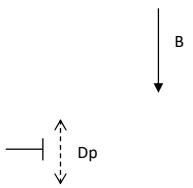
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.233	0.306	y	0.237	0.319
L (sec)	27	10	L (sec)	27	10
C (sec)	90	90	C (sec)	90	90
y pract.	0.630	0.800	y pract.	0.630	0.800
R.C. (%)	171%	162%	R.C. (%)	166%	150%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

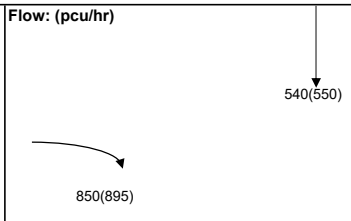
Junction: Wong Nai Chung Road / Sports Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Sports Road	→	A	1	3.800		10				1735	1735	403	0.232		425	0.245	0.245
EB	→	A	1	3.800		13.5				1920	1920	447	0.233	0.233	470	0.245	
Wong Nai Chung Road SB	↓	B	2	3.000						1915	1915	176	0.092	0.092	179	0.093	0.093
	↓	B	2	3.000						2055	2055	188	0.091		192	0.093	
	↓	B	2	3.000						1915	1915	176	0.092		179	0.093	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			8	+	9	=	17						
		Dp	2	MIN GREEN + FLASH =			8	+	9	=	17						

Notes:

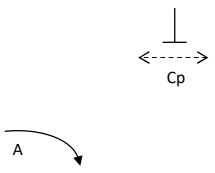
Flow: (pcu/hr)



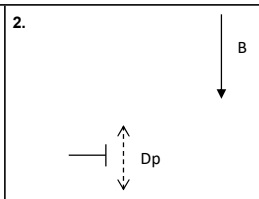
Group	A,Dp	A,B	Group	A,Dp	A,B
y	0.233	0.325	y	0.245	0.338
L (sec)	27	10	L (sec)	27	10
C (sec)	75	75	C (sec)	75	75
y pract.	0.576	0.780	y pract.	0.576	0.780
R.C. (%)	147%	140%	R.C. (%)	135%	130%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

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

Date: FEB, 2022 **Junction:** J14 Wong Nai Chung Road / Sports Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Leighton Road		A	1	3.500	20					1830	1830	308	0.168		329	0.180	
WB	*	A	1	3.500	25					395	395	67	0.170		71	0.180	
Leighton Road WB (Tram)	*	B	2	3.000	40					370	370	50	0.135	0.135	65	0.176	0.176
Leighton Road	***	A	1	3.000						1530	1530	781	0.510	0.510	800	0.523	
WB	*	A	1	3.000						410	410	209	0.510		215	0.524	0.524
Leighton Road	*	A	1	3.500						395	395	121	0.306		106	0.268	
EB	**	A	1	3.000						1030	1030	314	0.305		277	0.269	
	**	A	1	3.000						1030	1030	315	0.306		277	0.269	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Dp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

TAC junction: Cycle time of 130s and 120s are adopted for AM and PM Peak

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

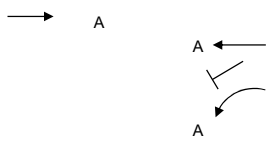
Flow: (pcu/hr)



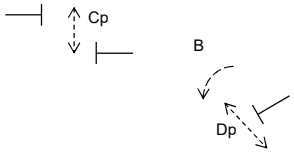
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.510	0.646	y	0.524	0.700
L (sec)	30	12	L (sec)	30	12
C (sec)	130	130	C (sec)	120	120
y pract.	0.692	0.817	y pract.	0.675	0.810
R.C. (%)	36%	27%	R.C. (%)	29%	16%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J15 Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Leighton Road / Wong Nai Chung Road Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Leighton Road WB	↰	A	1	3.500	20					1830	1830	387	0.211		411	0.225	
	↰ *	A	1	3.500	25					395	395	83	0.210		89	0.225	
Leighton Road WB (Tram)	↰ *	B	2	3.000	40					370	370	60	0.162	0.162	60	0.162	0.162
Leighton Road WB	←***	A	1	3.000						1530	1530	800	0.523		769	0.503	0.503
	← *	A	1	3.000						410	410	215	0.524	0.524	206	0.502	
Leighton Road EB	→ *	A	1	3.500						395	395	138	0.349		123	0.311	
	→**	A	1	3.000						1030	1030	358	0.348		321	0.312	
	→**	A	1	3.000						1030	1030	359	0.349		321	0.312	
Pedestrian Crossing	Cp	2	MIN GREEN + FLASH =		10	+	9	=	19								
	Dp	2	MIN GREEN + FLASH =		7	+	7	=	14								

Notes:

TAC junction: Cycle time of 120s and 120s are adopted for WD and WE Noon

* = Site Factor of 0.2 has been adopted.

** = Site Factor of 0.5 has been adopted.

*** = Site Factor of 0.8 has been adopted.

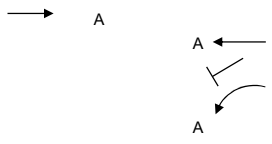
Flow: (pcu/hr)



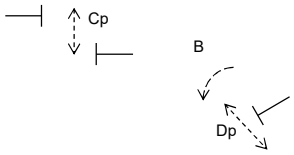
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.524	0.687	y	0.503	0.665
L (sec)	30	12	L (sec)	30	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.675	0.810	y pract.	0.675	0.810
R.C. (%)	29%	18%	R.C. (%)	34%	22%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** (J15) Leighton Road / Wong Nai Chung Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

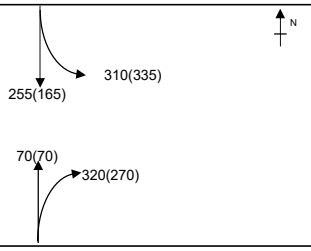
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road SB		*	A	1	3.300	25					1285	1285	219	0.170		195	0.152	0.152
			A	1	3.000	30			26%	46%	2030	2010	346	0.170	0.170	305	0.152	
Ka Ning Path NB			B	2	3.500		10		82%	79%	1750	1755	390	0.223	0.223	340	0.194	0.194
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

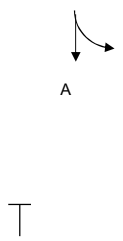
Flow: (pcu/hr)



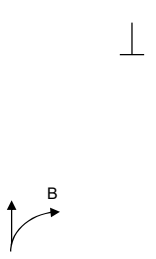
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.393	0.393	y	0.345	0.345
L (sec)	31	34	L (sec)	31	34
C (sec)	100	100	C (sec)	105	105
y pract.	0.621	0.594	y pract.	0.634	0.609
R.C. (%)	58%	51%	R.C. (%)	84%	76%

Stage / Phase Diagrams

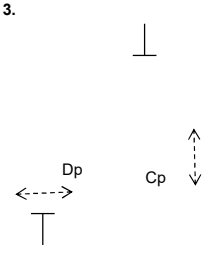
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I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	
I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

Junction: Tung Lo Wan Road / Eastern Hospital Road Design Year: 2031

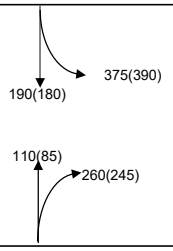
Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements		Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road SB	↳	*	A	1	3.300	25					1285	1285	220	0.171		223	0.174	0.174
	↓		A	1	3.000	30			45%	48%	2010	2005	345	0.172	0.172	347	0.173	
Ka Ning Path NB	↑		B	2	3.500		10		70%	74%	1780	1770	370	0.208	0.208	330	0.186	0.186
Pedestrian Crossing			Cp	3	MIN GREEN + FLASH =			7	+	8	=	15						
			Dp	3	MIN GREEN + FLASH =			8	+	14	=	22			*			*

Notes:

* = Site factor of 0.7 is adopted for the bus stop at downstream

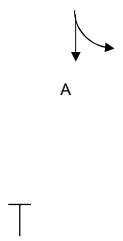
Flow: (pcu/hr)



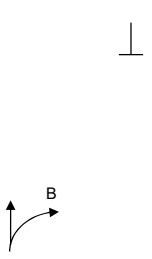
Group	A,B,Cp	A,B,Dp	Group	A,B,Cp	A,B,Dp
y	0.380	0.380	y	0.360	0.360
L (sec)	31	34	L (sec)	31	34
C (sec)	95	95	C (sec)	105	105
y pract.	0.606	0.578	y pract.	0.634	0.609
R.C. (%)	60%	52%	R.C. (%)	76%	69%

Stage / Phase Diagrams

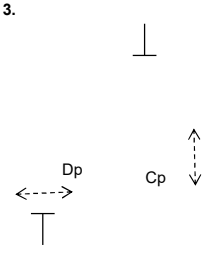
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I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	
I/G= 4		I/G= 5		I/G= 5	22	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J16 Tung Lo Wan Road / Eastern Hospital Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

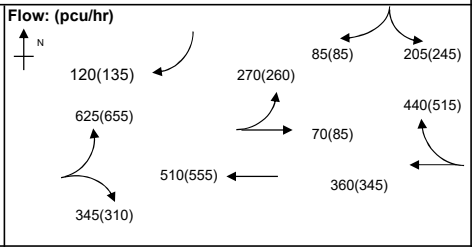
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD AM	Pro. Turning (%) WD PM	Revised Saturation Flow (pcu/hr) WD AM	Revised Saturation Flow (pcu/hr) WD PM	WD AM Flow (pcu/hr)	WD AM y Value	WD AM Critical y	WD PM Flow (pcu/hr)	WD PM y Value	WD PM Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	246	0.128		268	0.140	
	←	C	2	3.000						2055	2055	264	0.128		287	0.140	
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	461	0.276	0.276	460	0.275	0.275
	↑	A	1	3.500	13	35		32% / 68%	39% / 61%	1845	1835	509	0.276		505	0.275	
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	120	0.060		135	0.067	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		345	0.174	
	↰	E	2,3	3.000		8		100%	100%	1535	1535	440	0.287	0.287	515	0.336	0.336
Tung Lo Wan Road EB	↱	E	2,3	5.000	13			79%	75%	1935	1945	340	0.176		345	0.177	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		71% / 29%	74% / 26%	1680	1675	290	0.173		330	0.197	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

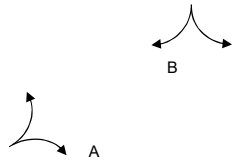
Flow: (pcu/hr)



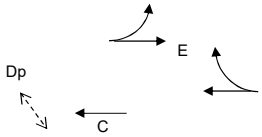
Group	A,C,F	A,E	Group	A,C,F	A,E
y	0.464	0.563	y	0.483	0.611
L (sec)	19	12	L (sec)	19	12
C (sec)	100	100	C (sec)	105	105
y pract.	0.729	0.792	y pract.	0.737	0.797
R.C. (%)	57%	41%	R.C. (%)	53%	30%

Stage / Phase Diagrams

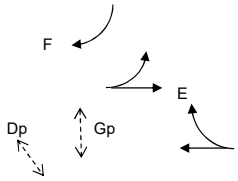
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I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 7		I/G= 7		I/G=		I/G=		I/G=	

Date: FEB, 2022 **Junction:** J17 Tung Lo Wan Road / Moreton Terrace

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50603110 **MVA HONG KONG LIMITED**

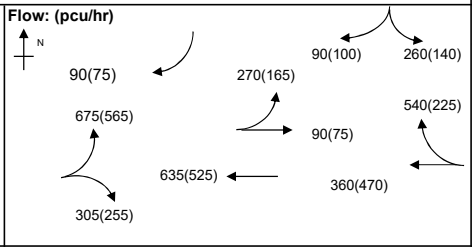
Junction: Tung Lo Wan Road / Moreton Terrace Design Year: 2031

Description: 2031 Design Flows Designed By: LYK Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) WD Noon	Pro. Turning (%) WE Noon	Revised Saturation Flow (pcu/hr) WD Noon	Revised Saturation Flow (pcu/hr) WE Noon	WD Noon Flow (pcu/hr)	WD Noon y Value	WD Noon Critical y	WE Noon Flow (pcu/hr)	WE Noon y Value	WE Noon Critical y
Tung Lo Wan Road WB	←	C	2	3.000						1915	1915	306	0.160		253	0.132	
	←	C	2	3.000						2055	2055	329	0.160		272	0.132	0.132
Tung Lo Wan Road EB	↱	A	1	3.700	8					1670	1670	467	0.280	0.280	391	0.234	0.234
	↑	A	1	3.500	13	35		41% / 59%	41% / 59%	1835	1835	513	0.280		429	0.234	
Moreton Terrace PTI	↲	F	3	5.000		27				2005	2005	90	0.045		75	0.037	
Tung Lo Wan Road WB	←	E	2,3	3.700						1985	1985	360	0.181		384	0.193	
	↖	E	2,3	3.000		8		100%	72%	1535	1605	540	0.352	0.352	311	0.194	
Tung Lo Wan Road EB	↱	E	2,3	5.000	13			75%	69%	1945	1960	360	0.185		240	0.122	
Tung Lo Wan Drive SB	↳	B	1	3.500	8	12		74% / 26%	58% / 42%	1675	1690	350	0.209		240	0.142	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Gp	3	MIN GREEN + FLASH =			9	+	8	=	17						*

Notes:

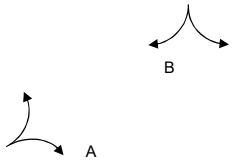
Flow: (pcu/hr)



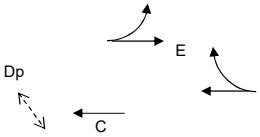
Group	A,C,Gp	A,E	Group	A,C,F	A,C,Gp
y	0.440	0.631	y	0.404	0.366
L (sec)	29	12	L (sec)	19	29
C (sec)	95	95	C (sec)	105	105
y pract.	0.625	0.786	y pract.	0.737	0.651
R.C. (%)	42%	25%	R.C. (%)	83%	78%

Stage / Phase Diagrams

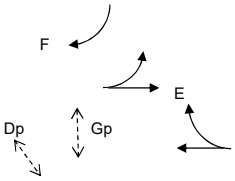
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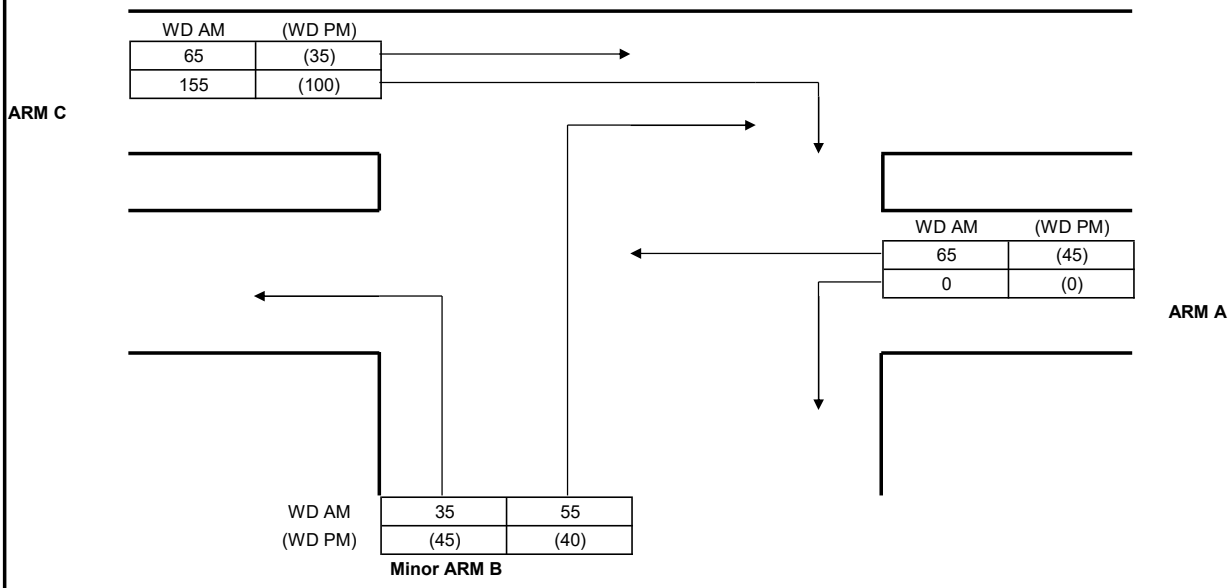
5.

I/G= 7		I/G= 7		I/G=		I/G=		I/G=	
I/G= 2		I/G= 7		I/G= 5	17	I/G=		I/G=	

Date: FEB, 2022 **Junction:** J17 Tung Lo Wan Road / Moreton Terrace

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Site Access			Ref. No.:	J18
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	7.25	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		Y		w(c-b)	3.00
Visibilities	Vr(b-a)	45	Calculated	D	0.86
	Vl(b-a)	35		E	0.92
	Vr(b-c)	50		F	0.92
	Vr(c-b)	100		Y	0.75

ANALYSIS

		Factor	WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		65	35
	q(c-b)		155	100
	q(a-b)		0	0
	q(a-c)		65	45
	q(b-a)		55	40
	q(b-c)		35	45
	f		0.39	0.53
CAPACITIES	Q(b-a)	1	460	488
	Q(b-c)	1	672	677
	Q(c-b)	1	671	676
	Q(b-ac)	1	524	573
RFC's	b-a		0.120	0.082
	b-c		0.052	0.066
	c-b		0.231	0.148
	b-ac		0.000	0.000
Worst RFC			**0.231**	**0.148**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

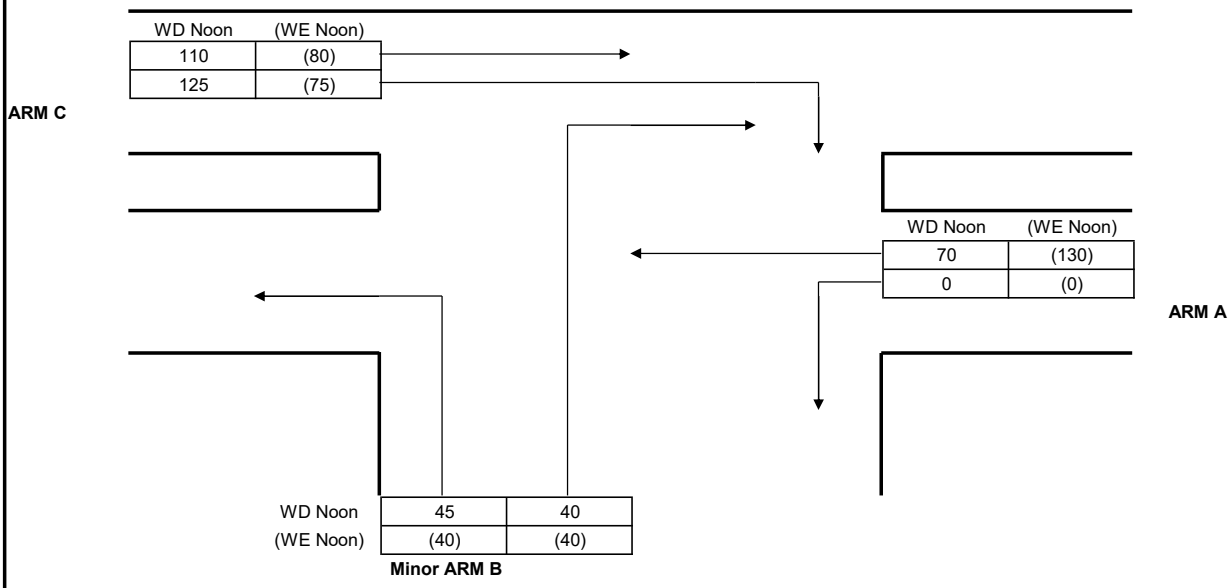
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Caroline Hill Road / Site Access			Ref. No.:	J18
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Caroline Hill Road				
ARM B:	Caroline Hill Road				
ARM C:	Cotton Path				



GEOMETRY

Major road width	W	7.25	Lane widths	w(b-a)	3.50
Central Reserve width	Wcr	0.00		w(b-c)	3.50
2 Lane Minor Arm (Y/N)		Y		w(c-b)	3.00
Visibilities	Vr(b-a)	45	Calculated	D	0.86
	Vl(b-a)	35		E	0.92
	Vr(b-c)	50		F	0.92
	Vr(c-b)	100		Y	0.75

ANALYSIS

		Factor	WD Noon PEAK	(WE Noon) PEAK
TRAFFIC FLOWS	q(c-a)		110	80
	q(c-b)		125	75
	q(a-b)		0	0
	q(a-c)		70	130
	q(b-a)		40	40
	q(b-c)		45	40
	f		0.53	0.50
CAPACITIES	Q(b-a)	1	462	469
	Q(b-c)	1	671	655
	Q(c-b)	1	669	654
	Q(b-ac)	1	553	547
RFC's	b-a		0.087	0.085
	b-c		0.067	0.061
	c-b		0.187	0.115
	b-ac		0.000	0.000
Worst RFC			**0.187**	**0.115**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

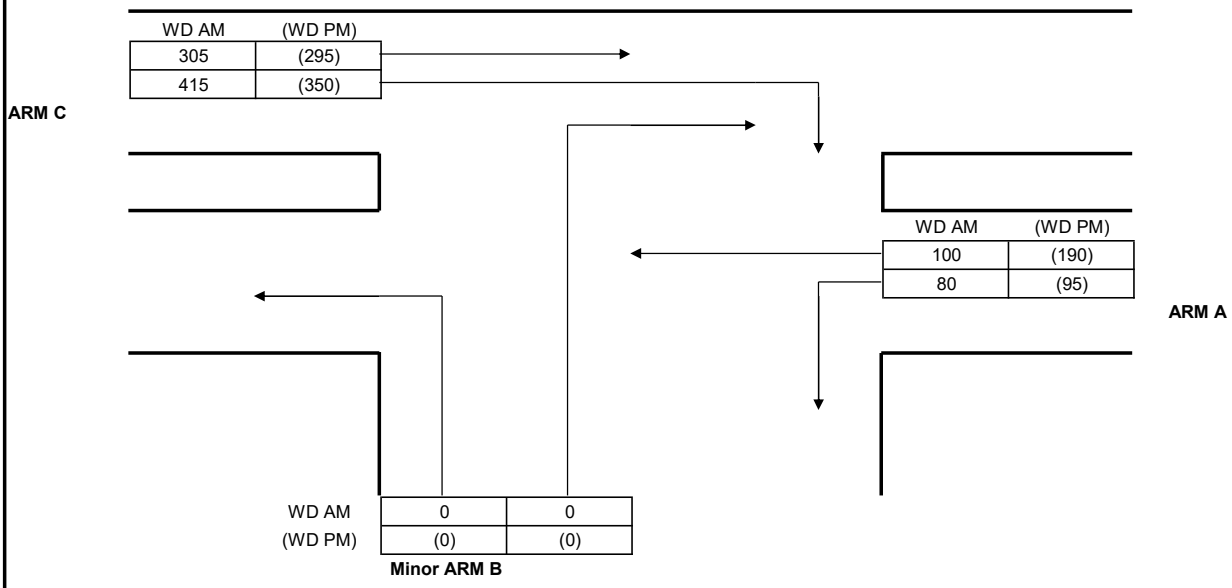
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Apr-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Hysan Avenue / Hoi Ping Road			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		305	295
	q(c-b)		415	350
	q(a-b)		80	95
	q(a-c)		100	190
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	225	226
	Q(b-c)	1	427	413
	Q(c-b)	1	667	643
	Q(b-ac)	1	225	226
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.622	0.544
	b-ac		0.000	0.000
Worst RFC			**0.622**	**0.544**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

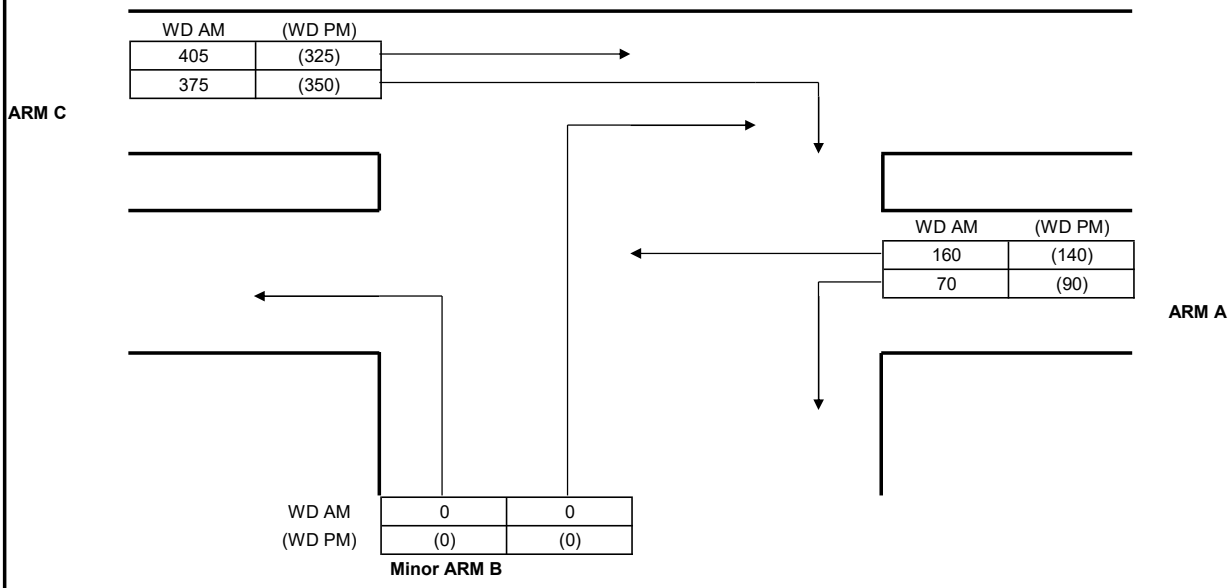
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	#N/A			Ref. No.:	J19
Scheme:	2021 Observed Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Hysan Avenue				
ARM B:	Hoi Ping Road				
ARM C:	Hysan Avenue				



GEOMETRY					
Major road width	W	10.00	Lane widths	w(b-a)	0.00
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	3.30
Visibilities	Vr(b-a)	20	Calculated	D	0.55
	Vl(b-a)	20		E	0.60
	Vr(b-c)	20		F	0.95
	Vr(c-b)	100		Y	0.66

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		405	325
	q(c-b)		375	350
	q(a-b)		70	90
	q(a-c)		160	140
	q(b-a)		0	0
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	217	230
	Q(b-c)	1	419	420
	Q(c-b)	1	655	655
	Q(b-ac)	1	217	230
RFC's	b-a		0.000	0.000
	b-c		0.000	0.000
	c-b		0.573	0.534
	b-ac		0.000	0.000
Worst RFC			**0.573**	**0.534**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

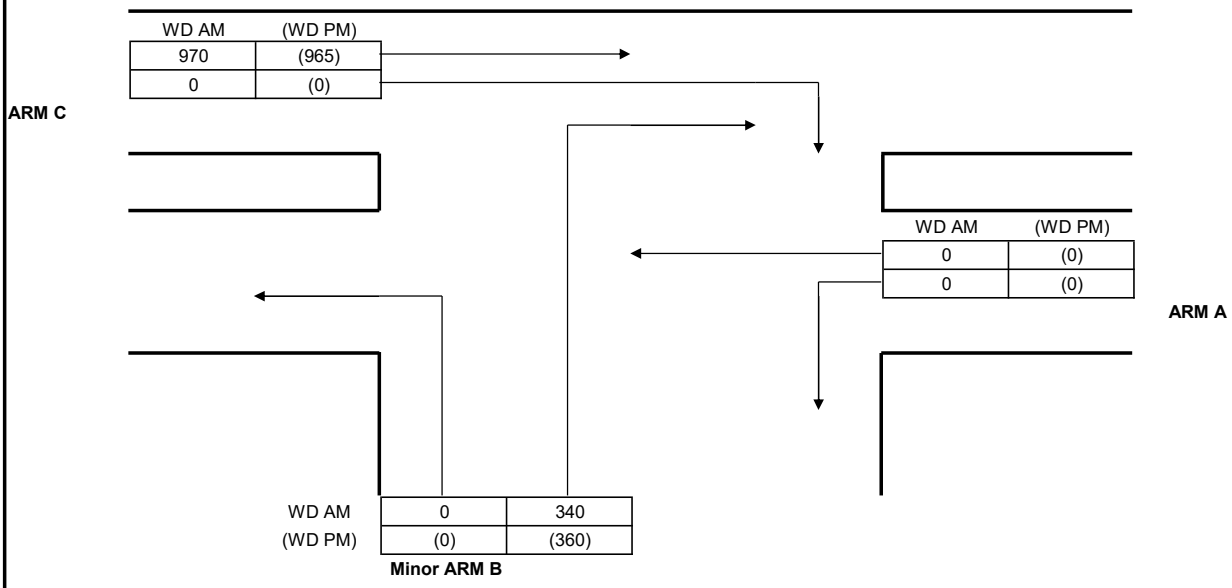
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Apr-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	Tung Lo Wan Road / Tai Hang Road			Ref. No.:	J20
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		970	965
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		340	360
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	493	493
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	493	493
RFC's	b-a		0.690	0.730
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.690	0.730
Worst RFC			**0.690**	**0.730**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

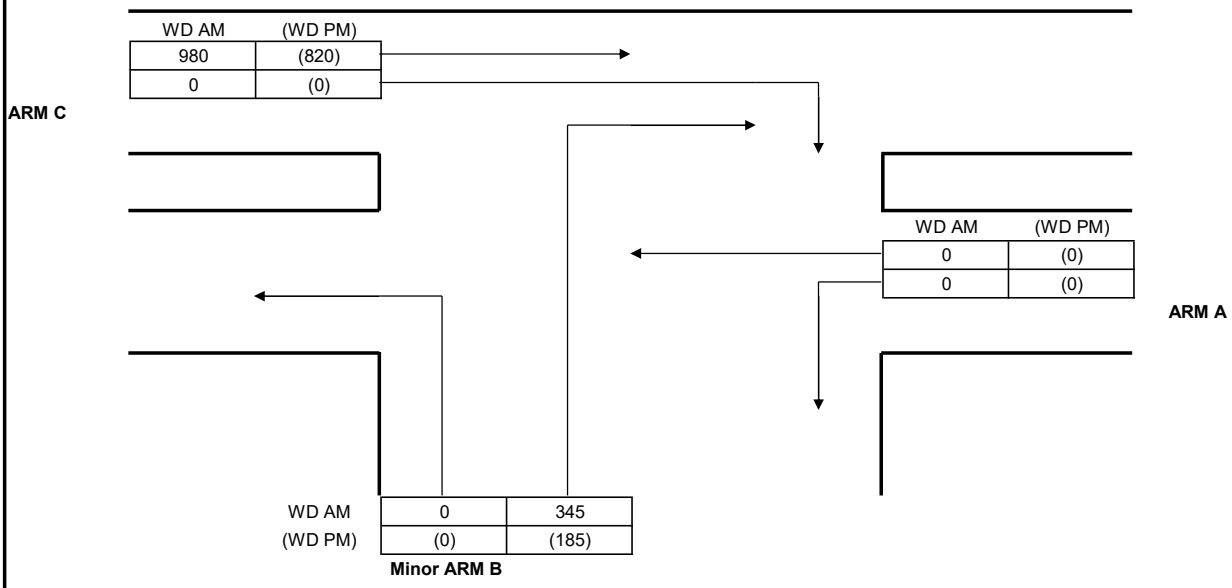
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Feb-22	Checked by:	CHC

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Commercial Development on IL No. 8945, Causeway Bay, Hong Kong				
Junction:	#N/A			Ref. No.:	J20
Scheme:	2031 Design Flows			Ref. No.:	
Year:	2031	Job No.:	CHK50603110	Rev.:	-
ARM A:	Tung Lo Wan Road				
ARM B:	Tai Hang Road				
ARM C:	Tung Lo Wan Road				



GEOMETRY					
Major road width	W	6.70	Lane widths	w(b-a)	6.70
Central Reserve width	Wcr	0.00		w(b-c)	0.00
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	20	Calculated	D	1.08
	Vl(b-a)	20		E	0.60
	Vr(b-c)	30		F	0.59
	Vr(c-b)	10		Y	0.77

ANALYSIS			WD AM PEAK	(WD PM) PEAK
TRAFFIC FLOWS	q(c-a)		980	820
	q(c-b)		0	0
	q(a-b)		0	0
	q(a-c)		0	0
	q(b-a)		345	185
	q(b-c)		0	0
	f		0.00	0.00
		Factor		
CAPACITIES	Q(b-a)	1	491	521
	Q(b-c)	1	450	450
	Q(c-b)	1	441	441
	Q(b-ac)	1	491	521
RFC's	b-a		0.703	0.355
	b-c		0.000	0.000
	c-b		0.000	0.000
	b-ac		0.703	0.355
Worst RFC			**0.703**	**0.355**

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

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

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

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

Y = 1-0.0345W

f = proportion of minor traffic turning left

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

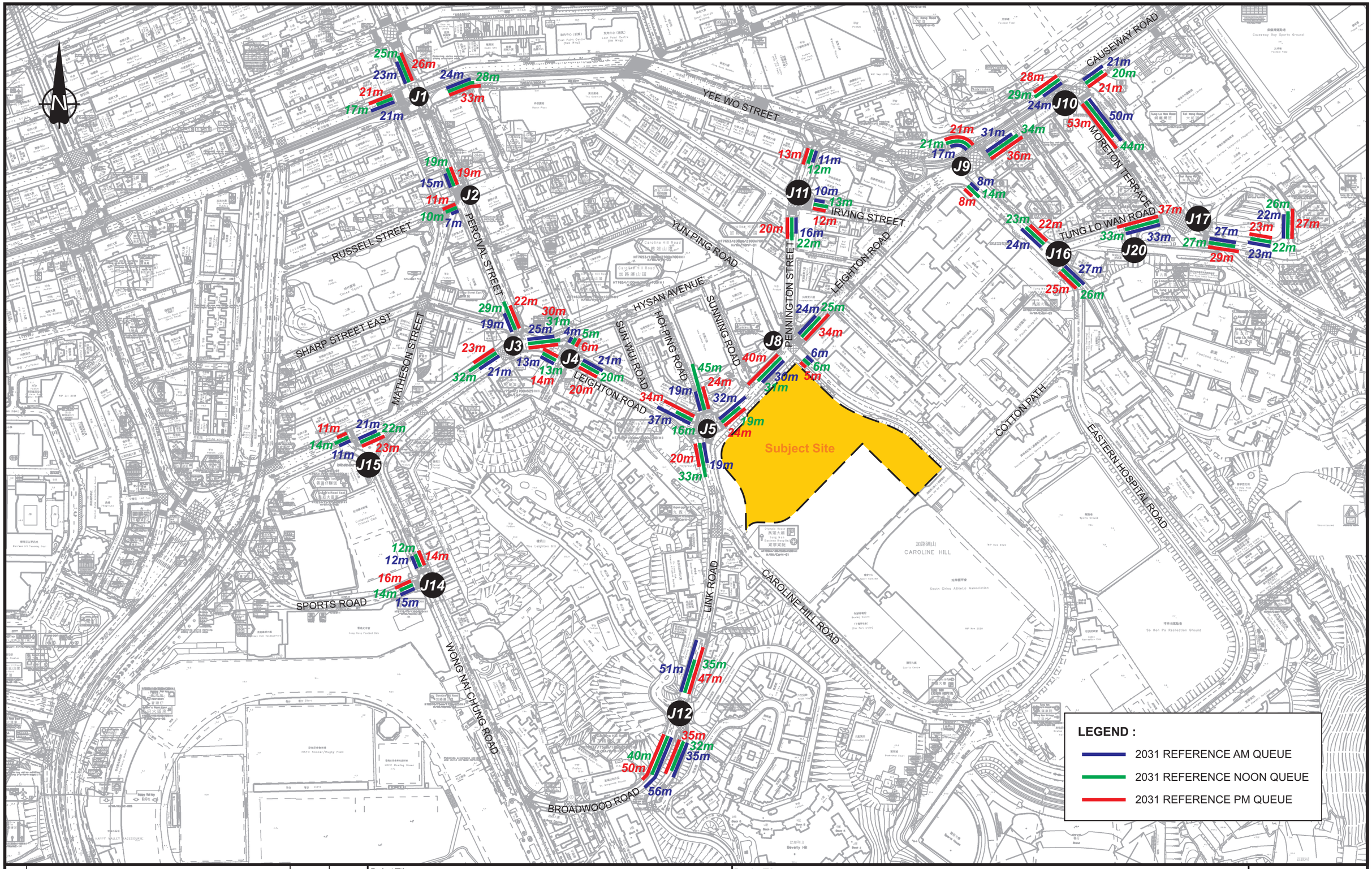
T.P.D.M.V.2.4
Appendix 1

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

Calculated by:	LYK	Date:	Apr-22	Checked by:	CHC

APPENDIX E – Estimated Queue Length at Signal Junctions and Worksheets

Year 2021 Observed



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

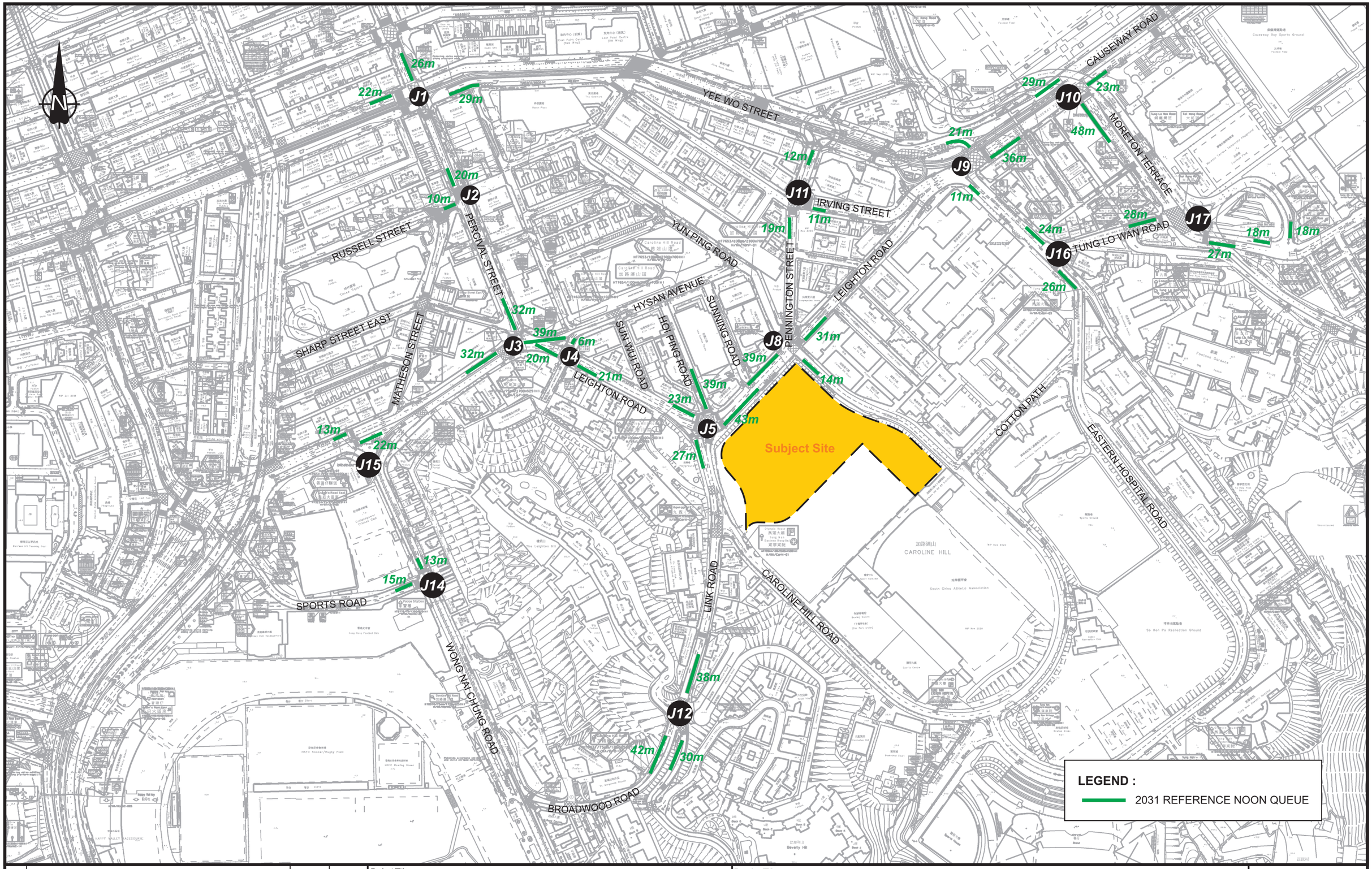
ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKDAY UNDER YEAR 2021 EXISTING SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E1	A

SYSTRA MVA

CHK50603110/TIA/E1-A.CDR/LLH/13APR22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKEND UNDER YEAR 2021 EXISTING SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E2	A

SYSTRA MVA

CHK50603110/TIA/E2-A.CDR/LLH/13APR22

Original Size : A3

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	D	A	B	C	B	C	E	E	A	D	A	B	C	B	C
			Weekday AM									Weekday Noon						
		Unit	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT
Cycle time	c	sec	120	120	120	120	120	120	120	120	120	104	104	104	104	104	104	104
Effective green time	g	sec	53	19	53	66	15	66	15	33	33	43	21	43	59	17	59	17
		pcu/hr	570	20	70	615	90	75	25	75	415	705	15	70	540	155	80	35
Design flow	q	veh/sec	0.122	0.004	0.015	0.131	0.019	0.016	0.005	0.016	0.089	0.151	0.003	0.015	0.115	0.033	0.017	0.007
		pcu/hr	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940	1915	1940
Saturation flow	Q	veh/sec	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	1	1	1	1	2	2	1	1	2	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.442	0.158	0.442	0.550	0.125	0.550	0.125	0.275	0.275	0.413	0.202	0.413	0.567	0.163	0.567	0.163
Degree of saturation	x		0.357	0.071	0.077	0.371	0.371	0.071	0.103	0.161	0.360	0.471	0.042	0.082	0.316	0.489	0.074	0.110
	M		14.615	0.513	1.795	15.769	2.308	1.923	0.641	1.923	10.641	15.667	0.333	1.556	12.000	3.444	1.778	0.778
	y		0.157	0.011	0.034	0.204	0.046	0.039	0.013	0.044	0.099	0.195	0.008	0.034	0.179	0.080	0.042	0.018
	Qt	veh/sec	204.979	36.132	116.362	212.596	31.090	135.032	31.090	59.583	147.724	191.889	46.080	108.931	219.286	40.656	139.281	40.656
	x<1																	
	A	sec/veh	0.185	0.358	0.161	0.127	0.401	0.105	0.388	0.275	0.292	0.214	0.321	0.178	0.114	0.380	0.098	0.356
	B	sec/veh	0.099	0.003	0.003	0.109	0.110	0.003	0.006	0.016	0.101	0.210	0.001	0.004	0.073	0.234	0.003	0.007
	C	sec/veh	0.170	0.075	0.001	0.112	3.311	0.000	0.270	0.107	0.514	0.505	0.010	0.002	0.049	3.945	0.000	0.161
Average Queue Delay	D	sec/veh	23	44	20	16	51	13	47	34	36	23	34	19	12	43	10	38
	x>x'																	
	Z		-0.643	-0.929	-0.923	-0.629	-0.629	-0.929	-0.897	-0.839	-0.640	-0.529	-0.958	-0.918	-0.684	-0.511	-0.926	-0.890
	X'		0.738	0.682	0.709	0.741	0.680	0.715	0.680	0.690	0.719	0.725	0.683	0.701	0.733	0.682	0.710	0.682
	No	veh	-0.902	-1.053	-1.047	-0.894	-0.804	-1.058	-1.044	-0.984	-0.857	-0.732	-1.055	-1.033	-0.927	-0.601	-1.048	-1.021
Average Queue Delay	D	sec/veh	20	26	14	13	33	8	26	23	32	20	20	13	9	31	6	22
Average Delay		**sec/veh**	**23**	**44**	**20**	**16**	**51**	**13**	**47**	**34**	**36**	**23**	**34**	**19**	**12**	**43**	**10**	**38**
Average Queue	N = q(r/2+d)	veh	6.862	0.402	0.794	5.649	1.982	0.638	0.534	1.240	7.017	8.075	0.241	0.737	4.032	2.854	0.561	0.608
Average Queue Length	NL/n	metre	21	2	5	17	12	4	3	7	21	24	1	4	12	17	3	4
Average Queue	N=qr	veh	8.160	0.432	1.002	7.096	2.019	0.865	0.561	1.394	7.715	9.189	0.266	0.912	5.192	2.881	0.769	0.651
Average Queue Length	NL/n	metre	24	3	6	21	12	5	3	8	23	28	2	5	16	17	5	4
Average Queue	N=qr+No	veh	7.258	-0.621	-0.045	6.202	1.216	-0.192	-0.483	0.410	6.857	8.457	-0.789	-0.121	4.265	2.280	-0.279	-0.370
Average Queue Length	NL/n	metre	22	-4	0	19	7	-1	-3	2	21	25	-5	-1	13	14	-2	-2
Average Queue Length		**metre**	**24**	**3**	**6**	**21**	**12**	**5**	**3**	**8**	**23**	**28**	**2**	**5**	**16**	**17**	**5**	**4**
Maximum Queue Length		**metre**	**53**	**36**	**33**	**41**	**37**	**26**	**37**	**32**	**41**	**53**	**37**	**31**	**33**	**44**	**25**	**38**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	E	A	D	A	B	C	B	C	E	E	A	D	A	B	C
			Weekday Noon		**Weekday PM**									**Weekend Noon**				
		Unit	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT
Cycle time	c	sec	104	104	120	120	120	120	120	120	120	120	120	104	104	104	104	104
Effective green time	g	sec	25	25	50	21	50	66	17	66	17	34	34	35	23	35	59	19
		pcu/hr	195	490	745	15	80	600	140	95	35	240	415	655	25	70	675	200
Design flow	q	veh/sec	0.042	0.105	0.159	0.003	0.017	0.128	0.030	0.020	0.007	0.051	0.089	0.140	0.005	0.015	0.144	0.043
		pcu/hr	1690	4190	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940
Saturation flow	Q	veh/sec	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	2	2	1	1	2	1	1	1	1	2	2	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.240	0.240	0.417	0.175	0.417	0.550	0.142	0.550	0.142	0.283	0.283	0.337	0.221	0.337	0.567	0.183
Degree of saturation	x		0.480	0.486	0.494	0.048	0.093	0.362	0.509	0.090	0.127	0.501	0.350	0.538	0.064	0.101	0.395	0.564
	M		4.333	10.889	19.103	0.385	2.051	15.385	3.590	2.436	0.897	6.154	10.641	14.556	0.556	1.556	15.000	4.444
	y		0.115	0.117	0.206	0.008	0.039	0.199	0.072	0.050	0.018	0.142	0.099	0.181	0.014	0.034	0.224	0.103
	Qt	veh/sec	52.083	129.130	193.376	39.936	109.776	212.596	35.235	135.032	35.235	61.389	152.201	156.188	50.468	88.665	219.286	45.439
	x<1																	
	A	sec/veh	0.326	0.327	0.214	0.343	0.177	0.126	0.397	0.107	0.375	0.299	0.285	0.269	0.308	0.228	0.121	0.372
	B	sec/veh	0.222	0.230	0.241	0.001	0.005	0.103	0.264	0.004	0.009	0.252	0.094	0.313	0.002	0.006	0.129	0.365
	C	sec/veh	2.425	1.370	0.613	0.024	0.003	0.101	5.354	0.000	0.316	2.193	0.444	1.154	0.019	0.011	0.124	4.722
Average Queue Delay	D	sec/veh	37	35	27	42	22	16	51	13	46	39	35	29	32	24	13	43
	x>x'																	
	Z		-0.520	-0.514	-0.506	-0.952	-0.907	-0.638	-0.491	-0.910	-0.873	-0.499	-0.650	-0.462	-0.936	-0.899	-0.605	-0.436
	X'		0.685	0.707	0.734	0.683	0.707	0.741	0.682	0.715	0.682	0.690	0.721	0.715	0.685	0.696	0.733	0.683
	No	veh	-0.620	-0.658	-0.724	-1.060	-1.036	-0.903	-0.564	-1.048	-1.021	-0.592	-0.871	-0.585	-1.041	-1.018	-0.850	-0.428
Average Queue Delay	D	sec/veh	27	31	23	25	16	13	38	8	28	30	31	26	20	17	10	33
Average Delay		**sec/veh**	**37**	**35**	**27**	**42**	**22**	**16**	**51**	**13**	**46**	**39**	**35**	**29**	**32**	**24**	**13**	**43**
Average Queue	N = q(r/2+d)	veh	3.180	7.780	9.807	0.292	0.966	5.496	3.070	0.812	0.729	4.186	6.901	8.891	0.389	0.876	5.165	3.635
Average Queue Length	NL/n	metre	19	23	29	2	6	16	18	5	4	25	21	27	2	5	15	22
Average Queue	N=qr	veh	3.292	8.271	11.143	0.317	1.197	6.923	3.081	1.096	0.770	4.410	7.626	9.657	0.433	1.032	6.490	3.632
Average Queue Length	NL/n	metre	20	25	33	2	7	21	18	7	5	26	23	29	3	6	19	22
Average Queue	N=qr+No	veh	2.672	7.613	10.420	-0.743	0.160	6.020	2.517	0.048	-0.250	3.818	6.755	9.072	-0.608	0.014	5.640	3.205
Average Queue Length	NL/n	metre	16	23	31	-4	1	18	15	0	-2	23	20	27	-4	0	17	19
Average Queue Length		**metre**	**20**	**25**	**33**	**2**	**7**	**21**	**18**	**7**	**5**	**26**	**23**	**29**	**3**	**6**	**19**	**22**
Maximum Queue Length		**metre**	**39**	**40**	**59**	**51**	**387**	**49**	**44**	**49**	**44**	**49**	**44**	**63**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	C	E	E
			Weekend Noon			
		Unit	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead
Cycle time	c	sec	104	104	104	104
Effective green time	g	sec	59	19	31	31
		pcu/hr	95	30	275	555
Design flow	q	veh/sec	0.020	0.006	0.059	0.119
		pcu/hr	1915	1940	1690	4190
Saturation flow	Q	veh/sec	0.409	0.415	0.361	0.895
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	2
Length of a vehicle	L	metre	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.567	0.183	0.298	0.298
Degree of saturation	x		0.087	0.085	0.546	0.444
	M		2.111	0.667	6.111	12.333
	y		0.050	0.015	0.163	0.132
	Qt	veh/sec	139.281	45.439	64.583	160.121
	x<1					
	A	sec/veh	0.098	0.339	0.294	0.284
	B	sec/veh	0.004	0.004	0.328	0.178
	C	sec/veh	0.000	0.067	2.445	0.747
Average Queue Delay	D	sec/veh	10	36	34	30
	x>x'					
	Z		-0.913	-0.915	-0.454	-0.556
	X'		0.710	0.683	0.689	0.716
	No	veh	-1.041	-1.032	-0.488	-0.747
Average Queue Delay	D	sec/veh	6	22	26	27
Average Delay		**sec/veh**	**10**	**36**	**34**	**30**
Average Queue	N = q(r/2+d)	veh	0.669	0.502	4.127	7.920
Average Queue Length	NL/n	metre	4	3	25	24
Average Queue	N=qr	veh	0.913	0.545	4.290	8.657
Average Queue Length	NL/n	metre	5	3	26	26
Average Queue	N=qr+No	veh	-0.127	-0.487	3.802	7.911
Average Queue Length	NL/n	metre	-1	-3	23	24
Average Queue Length		**metre**	**5**	**3**	**26**	**26**
Maximum Queue Length		**metre**	**41**	**37**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Matheson Street / Percival Street / Russell Street (J2)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB
Cycle time	c	sec	105	105	105	105	120	120	110	110
Effective green time	g	sec	63	18	62	19	72	24	68	18
		pcu/hr	545	130	700	190	620	180	760	175
Design flow	q	veh/sec	0.116	0.028	0.150	0.041	0.132	0.038	0.162	0.037
		pcu/hr	3950	3425	3950	3430	3950	3425	3950	3425
Saturation flow	Q	veh/sec	0.844	0.732	0.844	0.733	0.844	0.732	0.844	0.732
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	2	2	2	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.600	0.171	0.590	0.181	0.600	0.200	0.618	0.164
Degree of saturation	x		0.230	0.221	0.300	0.306	0.262	0.263	0.311	0.312
	M		12.228	2.917	15.705	4.263	15.897	4.615	17.863	4.113
	y		0.138	0.038	0.177	0.055	0.157	0.053	0.192	0.051
	Qt	veh/sec	303.846	75.275	299.023	79.573	303.846	87.821	313.054	71.853
	x<1									
	A	sec/veh	0.093	0.357	0.102	0.355	0.095	0.338	0.090	0.369
	B	sec/veh	0.034	0.031	0.064	0.068	0.046	0.047	0.070	0.071
	C	sec/veh	0.008	0.450	0.028	0.834	0.015	0.511	0.027	1.048
Average Queue Delay	D	sec/veh	10	38	11	38	12	41	10	41
	x>x'									
	Z		-0.770	-0.779	-0.700	-0.694	-0.738	-0.737	-0.689	-0.688
	X'		0.759	0.692	0.757	0.693	0.771	0.699	0.766	0.692
	No	veh	-1.039	-0.936	-0.989	-0.864	-1.045	-0.914	-0.999	-0.858
Average Queue Delay	D	sec/veh	8	30	9	31	9	34	8	33
Average Delay		**sec/veh**	**10**	**38**	**11**	**38**	**12**	**41**	**10**	**41**
Average Queue	N = q(r/2+d)	veh	3.614	2.268	4.877	3.293	4.732	3.432	5.088	3.268
Average Queue Length	NL/n	metre	11	7	15	10	14	10	15	10
Average Queue	N=qr	veh	4.891	2.417	6.432	3.491	6.359	3.692	6.821	3.440
Average Queue Length	NL/n	metre	15	7	19	10	19	11	20	10
Average Queue	N=qr+No	veh	3.852	1.480	5.443	2.628	5.314	2.778	5.822	2.582
Average Queue Length	NL/n	metre	12	4	16	8	16	8	17	8
Average Queue Length		**metre**	**15**	**7**	**19**	**10**	**19**	**11**	**20**	**10**
Maximum Queue Length		**metre**	**32**	**19**	**39**	**20**	**38**	**21**	**41**	**20**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J3)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	A	C	C	E	A	C	C	E	A	C	C	E	A	C	C
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT
Cycle time	c	sec	105	105	105	105	130	130	130	130	105	105	105	105	130	130	130	130
Effective green time	g	sec	60	55	36	36	72	67	49	49	51	46	45	45	63	58	58	58
		pcu/hr	865	660	210	385	840	780	275	490	860	600	290	405	910	700	345	445
Design flow	q	veh/sec	0.185	0.141	0.045	0.082	0.179	0.167	0.059	0.105	0.184	0.128	0.062	0.087	0.194	0.150	0.074	0.095
		pcu/hr	3215	2325	1140	2770	3215	2325	1140	2760	3215	2325	1140	2770	3215	2325	1140	2760
Saturation flow	Q	veh/sec	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.590	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.590
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	2	2	2	1	2	2	2	1	2	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.571	0.524	0.343	0.343	0.554	0.515	0.377	0.377	0.486	0.438	0.429	0.429	0.485	0.446	0.446	0.446
Degree of saturation	x		0.471	0.542	0.537	0.405	0.472	0.651	0.640	0.471	0.551	0.589	0.594	0.341	0.584	0.675	0.678	0.361
	M		19.407	14.808	4.712	8.638	23.333	21.667	7.639	13.611	19.295	13.462	6.506	9.087	25.278	19.444	9.583	12.361
	y		0.269	0.284	0.184	0.139	0.261	0.335	0.241	0.178	0.267	0.258	0.254	0.146	0.283	0.301	0.303	0.161
	Qt	veh/sec	235.531	156.136	50.110	121.758	228.284	153.624	55.089	133.373	200.201	130.586	62.637	152.198	199.749	132.988	65.207	157.870
	x<1																	
	A	sec/veh	0.126	0.158	0.265	0.251	0.135	0.177	0.256	0.236	0.181	0.213	0.219	0.191	0.185	0.219	0.220	0.183
	B	sec/veh	0.209	0.321	0.312	0.138	0.211	0.607	0.569	0.210	0.338	0.422	0.433	0.088	0.410	0.700	0.715	0.102
	C	sec/veh	0.244	0.668	2.417	0.567	0.288	1.524	3.848	0.796	0.676	1.313	2.256	0.182	0.909	2.213	3.625	0.213
Average Queue Delay	D	sec/veh	14	18	32	27	18	25	39	32	20	24	28	21	25	31	35	25
	x>x'																	
	Z		-0.529	-0.458	-0.463	-0.595	-0.528	-0.349	-0.360	-0.529	-0.449	-0.411	-0.406	-0.659	-0.416	-0.325	-0.322	-0.639
	X'		0.739	0.716	0.685	0.706	0.752	0.725	0.690	0.718	0.728	0.708	0.688	0.714	0.742	0.718	0.694	0.727
	No	veh	-0.769	-0.578	-0.499	-0.774	-0.808	-0.324	-0.212	-0.715	-0.601	-0.442	-0.360	-0.865	-0.578	-0.201	-0.072	-0.874
Average Queue Delay	D	sec/veh	11	14	22	23	15	22	31	27	17	20	20	17	22	28	28	20
Average Delay		**sec/veh**	**14**	**18**	**32**	**27**	**18**	**25**	**39**	**32**	**20**	**24**	**28**	**21**	**25**	**31**	**35**	**25**
Average Queue	N = q(r/2+d)	veh	6.761	6.096	2.999	5.096	8.508	9.432	4.677	7.579	8.658	6.900	3.577	4.406	11.430	10.021	5.209	5.765
Average Queue Length	NL/n	metre	20	18	18	15	26	28	28	23	26	21	21	13	34	30	31	17
Average Queue	N=qr	veh	8.317	7.051	3.096	5.676	10.410	10.500	4.760	8.481	9.923	7.564	3.718	5.192	13.028	10.769	5.308	6.846
Average Queue Length	NL/n	metre	25	21	19	17	31	32	29	25	30	23	22	16	39	32	32	21
Average Queue	N=qr+No	veh	7.549	6.473	2.597	4.903	9.602	10.176	4.547	7.765	9.322	7.122	3.358	4.328	12.450	10.568	5.236	5.972
Average Queue Length	NL/n	metre	23	19	16	15	29	31	27	23	28	21	20	13	37	32	31	18
Average Queue Length		**metre**	**25**	**21**	**19**	**17**	**31**	**32**	**29**	**25**	**30**	**23**	**22**	**16**	**39**	**32**	**32**	**21**
Maximum Queue Length		**metre**	**46**	**41**	**42**	**37**	**54**	**54**	**62**	**48**	**46**	**38**	**66**	**37**	**63**	**56**	**67**	**41**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Leighton Road / Hysan Avenue / Leighton Lane (J4)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	A	C	B	A	C	B	A	C	B	A	C
			Weekday AM			**Weekday Noon**			**Weekday PM**			**Weekend Noon**		
		Unit	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB
Cycle time	c	sec	120	120	120	130	130	130	130	130	130	130	130	130
Effective green time	g	sec	80	89	22	90	99	22	90	99	22	90	99	22
		pcu/hr	820	320	60	775	335	70	775	360	90	830	500	90
Design flow	q	veh/sec	0.175	0.068	0.013	0.166	0.072	0.015	0.166	0.077	0.019	0.177	0.107	0.019
		pcu/hr	3990	1965	3395	4000	1965	3370	4010	1965	3370	4020	1965	3390
Saturation flow	Q	veh/sec	0.853	0.420	0.725	0.855	0.420	0.720	0.857	0.420	0.720	0.859	0.420	0.724
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	2	1	2	2	1	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.667	0.742	0.183	0.692	0.762	0.169	0.692	0.762	0.169	0.692	0.762	0.169
Degree of saturation	x		0.308	0.220	0.096	0.280	0.224	0.123	0.279	0.241	0.158	0.298	0.334	0.157
	M		21.026	8.205	1.538	21.528	9.306	1.944	21.528	10.000	2.500	23.056	13.889	2.500
	y		0.206	0.163	0.018	0.194	0.170	0.021	0.193	0.183	0.027	0.206	0.254	0.027
	Qt	veh/sec	341.026	186.843	79.797	355.030	191.849	73.116	355.917	191.849	73.116	356.805	191.849	73.550
	x<1													
	A	sec/veh	0.070	0.040	0.339	0.059	0.034	0.352	0.059	0.035	0.355	0.060	0.038	0.355
	B	sec/veh	0.069	0.031	0.005	0.054	0.032	0.009	0.054	0.038	0.015	0.063	0.084	0.015
	C	sec/veh	0.019	0.003	0.064	0.010	0.003	0.138	0.010	0.005	0.240	0.014	0.025	0.236
Average Queue Delay	D	sec/veh	9	5	41	8	5	46	8	5	47	8	6	47
	x>x'													
	Z		-0.692	-0.780	-0.904	-0.720	-0.776	-0.877	-0.721	-0.759	-0.842	-0.702	-0.666	-0.843
	X'		0.784	0.732	0.697	0.798	0.739	0.696	0.799	0.739	0.696	0.799	0.739	0.697
	No	veh	-1.040	-0.999	-1.026	-1.089	-1.010	-1.013	-1.090	-0.999	-0.991	-1.079	-0.926	-0.992
Average Queue Delay	D	sec/veh	7	2	33	6	1	38	6	1	38	6	2	38
Average Delay		**sec/veh**	**9**	**5**	**41**	**8**	**5**	**46**	**8**	**5**	**47**	**8**	**6**	**47**
Average Queue	N = q(r/2+d)	veh	5.040	1.418	1.155	4.629	1.461	1.499	4.628	1.578	1.935	4.983	2.267	1.935
Average Queue Length	NL/n	metre	15	9	3	14	9	4	14	9	6	15	14	6
Average Queue	N=qr	veh	7.009	2.120	1.256	6.624	2.219	1.615	6.624	2.385	2.077	7.094	3.312	2.077
Average Queue Length	NL/n	metre	21	13	4	20	13	5	20	14	6	21	20	6
Average Queue	N=qr+No	veh	5.968	1.121	0.231	5.535	1.209	0.603	5.534	1.386	1.086	6.015	2.386	1.085
Average Queue Length	NL/n	metre	18	7	1	17	7	2	17	8	3	18	14	3
Average Queue Length		**metre**	**21**	**13**	**4**	**20**	**13**	**5**	**20**	**14**	**6**	**21**	**20**	**6**
Maximum Queue Length		**metre**	**41**	**36**	**18**	**39**	**38**	**18**	**39**	**40**	**18**	**40**	**48**	**18**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J5)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	D	B	A	C	A	D	B	A	C	A	D	B	A	C	A
			Weekday AM					**Weekday Noon**					**Weekday PM**					
		Unit	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB
Cycle time	c	sec	105	105	105	105	105	120	120	120	120	120	130	130	130	130	130	130
Effective green time	g	sec	33	59	33	33	19	32	75	39	32	29	40	77	46	40	24	46
		pcu/hr	690	315	385	405	335	585	280	410	425	345	595	325	400	465	330	715
Design flow	q	veh/sec	0.147	0.067	0.082	0.087	0.072	0.125	0.060	0.088	0.091	0.074	0.127	0.069	0.085	0.099	0.071	0.153
		pcu/hr	3165	1920	1665	3655	2630	3165	1920	1665	3655	2630	3165	1920	1665	3655	2630	3165
Saturation flow	Q	veh/sec	0.676	0.410	0.356	0.781	0.562	0.676	0.410	0.356	0.781	0.562	0.676	0.410	0.356	0.781	0.562	0.676
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	2	2	1	1	2	2	2	1	1	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.314	0.562	0.314	0.314	0.181	0.267	0.625	0.325	0.267	0.242	0.308	0.592	0.354	0.308	0.185	0.354
Degree of saturation	x		0.694	0.292	0.736	0.353	0.704	0.693	0.233	0.758	0.436	0.543	0.611	0.286	0.679	0.413	0.680	0.638
	M		15.481	7.067	8.638	9.087	7.516	15.000	7.179	10.513	10.897	8.846	16.528	9.028	11.111	12.917	9.167	19.861
	y		0.218	0.164	0.231	0.111	0.127	0.185	0.146	0.246	0.116	0.131	0.188	0.169	0.240	0.127	0.125	0.226
	Qt	veh/sec	127.527	138.315	67.088	147.271	61.013	108.205	153.846	69.375	124.957	81.485	124.852	145.799	75.533	144.181	62.249	143.580
	x<1																	
	A	sec/veh	0.301	0.115	0.306	0.264	0.384	0.330	0.082	0.302	0.304	0.331	0.295	0.100	0.275	0.275	0.380	0.270
	B	sec/veh	0.785	0.060	1.024	0.096	0.837	0.783	0.036	1.185	0.169	0.322	0.480	0.057	0.718	0.146	0.721	0.564
	C	sec/veh	2.976	0.050	5.418	0.379	6.415	3.779	0.012	5.944	0.998	2.568	2.278	0.039	3.943	0.674	6.240	2.123
Average Queue Delay	D	sec/veh	34	13	39	28	46	42	10	44	37	42	40	14	40	36	53	37
	x>x'																	
	Z		-0.306	-0.708	-0.264	-0.647	-0.296	-0.307	-0.767	-0.242	-0.564	-0.457	-0.389	-0.714	-0.321	-0.587	-0.320	-0.362
	X'		0.707	0.710	0.690	0.713	0.688	0.706	0.721	0.693	0.712	0.697	0.715	0.723	0.697	0.722	0.692	0.722
	No	veh	-0.066	-0.903	0.255	-0.850	0.081	-0.063	-0.971	0.382	-0.749	-0.521	-0.408	-0.934	-0.086	-0.805	-0.060	-0.351
Average Queue Delay	D	sec/veh	31	8	34	24	41	39	6	40	33	36	36	9	35	32	49	34
Average Delay		**sec/veh**	**34**	**13**	**34**	**28**	**41**	**42**	**10**	**40**	**37**	**42**	**40**	**14**	**40**	**36**	**53**	**37**
Average Queue	N = q(r/2+d)	veh	10.309	2.416	6.182	5.581	6.345	10.758	1.972	7.389	7.389	6.415	10.789	2.798	7.024	8.097	7.503	12.012
Average Queue Length	NL/n	metre	31	14	37	17	19	32	12	44	22	19	32	17	42	24	23	36
Average Queue	N=qr	veh	10.615	3.096	5.923	6.231	6.156	11.000	2.692	7.096	7.991	6.708	11.442	3.681	7.179	8.942	7.474	12.833
Average Queue Length	NL/n	metre	32	19	36	19	18	33	16	43	24	20	34	22	43	27	22	39
Average Queue	N=qr+No	veh	10.549	2.193	6.178	5.381	6.237	10.937	1.722	7.478	7.242	6.187	11.034	2.746	7.093	8.138	7.414	12.483
Average Queue Length	NL/n	metre	32	13	37	16	19	33	10	45	22	19	33	16	43	24	22	37
Average Queue Length		**metre**	**32**	**19**	**37**	**19**	**19**	**33**	**16**	**45**	**24**	**20**	**34**	**22**	**43**	**27**	**23**	**39**
Maximum Queue Length		**metre**	**56**	**44**	**79**	**37**	**37**	**58**	**39**	**91**	**45**	**40**	**59**	**51**	**83**	**49**	**44**	**63**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J5)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			D	B	A	C
			Weekend Noon			
		Unit	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SE
Cycle time	c	sec	130	130	130	130
Effective green time	g	sec	71	41	46	23
		pcu/hr	305	375	610	320
Design flow	q	veh/sec	0.065	0.080	0.130	0.068
		pcu/hr	1920	1665	3655	2630
Saturation flow	Q	veh/sec	0.410	0.356	0.781	0.562
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	2	2
Length of a vehicle	L	metre	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.546	0.315	0.354	0.177
Degree of saturation	x		0.291	0.714	0.472	0.688
	M		8.472	10.417	16.944	8.889
	y		0.159	0.225	0.167	0.122
	Qt	veh/sec	134.438	67.322	165.809	59.655
	x<1					
	A	sec/veh	0.122	0.302	0.251	0.386
	B	sec/veh	0.060	0.892	0.211	0.757
	C	sec/veh	0.059	5.313	0.754	6.688
Average Queue Delay	D	sec/veh	17	45	33	55
	x>x'					
	Z		-0.709	-0.286	-0.528	-0.312
	X'		0.719	0.694	0.730	0.692
	No	veh	-0.923	0.103	-0.746	-0.018
Average Queue Delay	D	sec/veh	12	40	30	50
Average Delay		**sec/veh**	**17**	**40**	**33**	**55**
Average Queue	N = q(r/2+d)	veh	3.016	7.183	9.833	7.386
Average Queue Length	NL/n	metre	18	43	29	22
Average Queue	N=qr	veh	3.845	7.131	10.949	7.316
Average Queue Length	NL/n	metre	23	43	33	22
Average Queue	N=qr+No	veh	2.923	7.234	10.203	7.298
Average Queue Length	NL/n	metre	18	43	31	22
Average Queue Length		**metre**	**23**	**43**	**33**	**22**
Maximum Queue Length		**metre**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	hton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	C	C	A	A	C	C	A	A	C	C	A	A	C	C	A
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB
Cycle time	c	sec	105	105	105	105	110	110	110	110	130	130	130	130	120	120	120	120
Effective green time	g	sec	55	39	39	55	61	38	38	61	72	47	47	72	71	38	38	71
		pcu/hr	695	285	65	930	630	265	70	990	590	310	45	1075	660	275	130	1170
Design flow	q	veh/sec	0.149	0.061	0.014	0.199	0.135	0.057	0.015	0.212	0.126	0.066	0.010	0.230	0.141	0.059	0.028	0.250
		pcu/hr	3085	1180	930	2695	3035	1180	930	2695	3110	1180	930	2685	3080	1180	930	2695
Saturation flow	Q	veh/sec	0.659	0.252	0.199	0.576	0.649	0.252	0.199	0.576	0.665	0.252	0.199	0.574	0.658	0.252	0.199	0.576
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.524	0.371	0.371	0.524	0.555	0.345	0.345	0.555	0.554	0.362	0.362	0.554	0.592	0.317	0.317	0.592
Degree of saturation	x		0.430	0.650	0.188	0.659	0.374	0.650	0.218	0.662	0.343	0.727	0.134	0.723	0.362	0.736	0.441	0.734
	M		15.593	6.394	1.458	20.865	14.808	6.229	1.645	23.269	16.389	8.611	1.250	29.861	16.923	7.051	3.333	30.000
	y		0.225	0.242	0.070	0.345	0.208	0.225	0.075	0.367	0.190	0.263	0.048	0.400	0.214	0.233	0.140	0.434
	Qt	veh/sec	207.173	56.190	44.286	180.983	215.775	52.261	41.189	191.603	220.828	54.694	43.107	190.651	233.632	47.906	37.756	204.428
	x<1																	
	A	sec/veh	0.146	0.260	0.212	0.173	0.125	0.276	0.232	0.157	0.123	0.276	0.214	0.166	0.106	0.304	0.271	0.147
	B	sec/veh	0.162	0.605	0.022	0.636	0.112	0.604	0.030	0.650	0.089	0.966	0.010	0.943	0.103	1.026	0.174	1.011
	C	sec/veh	0.222	3.767	0.084	1.310	0.109	4.242	0.175	1.229	0.079	5.963	0.034	1.868	0.077	7.071	1.866	1.741
Average Queue Delay	D	sec/veh	16	34	24	20	14	37	27	19	17	45	29	24	13	47	37	20
	x>x'																	
	Z		-0.570	-0.350	-0.812	-0.341	-0.626	-0.350	-0.782	-0.338	-0.657	-0.273	-0.866	-0.277	-0.638	-0.264	-0.559	-0.266
	X'		0.730	0.686	0.683	0.723	0.736	0.686	0.683	0.729	0.750	0.690	0.686	0.739	0.748	0.686	0.683	0.738
	No	veh	-0.801	-0.157	-0.966	-0.284	-0.878	-0.156	-0.947	-0.297	-0.941	0.197	-1.010	-0.087	-0.918	0.272	-0.693	-0.025
Average Queue Delay	D	sec/veh	13	26	9	17	11	29	12	16	13	38	14	21	10	40	22	18
Average Delay		**sec/veh**	**16**	**34**	**24**	**20**	**14**	**37**	**27**	**19**	**17**	**38**	**29**	**24**	**13**	**40**	**37**	**20**
Average Queue	N = q(r/2+d)	veh	6.124	4.050	0.789	8.956	5.249	4.123	0.947	9.222	5.748	5.700	0.677	12.132	5.343	5.166	2.166	11.121
Average Queue Length	NL/n	metre	18	24	5	27	16	25	6	28	17	34	4	36	16	31	13	33
Average Queue	N=qr	veh	7.425	4.019	0.917	9.936	6.596	4.077	1.077	10.365	7.312	5.498	0.798	13.323	6.910	4.818	2.278	12.250
Average Queue Length	NL/n	metre	22	24	6	30	20	24	6	31	22	33	5	40	21	29	14	37
Average Queue	N=qr+No	veh	6.624	3.862	-0.049	9.652	5.718	3.920	0.130	10.069	6.371	5.695	-0.212	13.236	5.992	5.091	1.585	12.225
Average Queue Length	NL/n	metre	20	23	0	29	17	24	1	30	19	34	-1	40	18	31	10	37
Average Queue Length		**metre**	**22**	**24**	**6**	**30**	**20**	**25**	**6**	**31**	**22**	**34**	**5**	**40**	**21**	**31**	**14**	**37**
Maximum Queue Length		**metre**	**44**	**58**	**30**	**54**	**39**	**57**	**31**	**55**	**43**	**75**	**31**	**68**	**41**	**71**	**35**	**64**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	A	F	B	C	F	A	A	F	B	C	F	A	A	F	B
			Weekday AM						**Weekday Noon**						**Weekday PM**			
		Unit	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB
Cycle time	c	sec	100	100	100	100	100	100	100	100	100	100	100	100	105	105	105	105
Effective green time	g	sec	42	42	63	13	25	63	35	35	56	13	27	56	43	43	64	13
		pcu/hr	265	1240	40	70	350	25	250	1225	35	110	450	35	180	1350	40	70
Design flow	q	veh/sec	0.057	0.265	0.009	0.015	0.075	0.005	0.053	0.262	0.007	0.024	0.096	0.007	0.038	0.288	0.009	0.015
		pcu/hr	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330
Saturation flow	Q	veh/sec	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	3	1	1	2	1	1	3	1	1	2	1	1	3	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.420	0.420	0.630	0.130	0.250	0.630	0.350	0.350	0.560	0.130	0.270	0.560	0.410	0.410	0.610	0.124
Degree of saturation	x		0.549	0.542	0.047	0.405	0.548	0.030	0.621	0.642	0.047	0.636	0.652	0.047	0.382	0.605	0.049	0.425
	M		5.662	26.496	0.855	1.496	7.479	0.534	5.342	26.175	0.748	2.350	9.615	0.748	4.038	30.288	0.897	1.571
	y		0.230	0.228	0.030	0.053	0.137	0.019	0.217	0.225	0.026	0.083	0.176	0.026	0.157	0.248	0.030	0.053
	Qt	veh/sec	61.923	293.462	108.231	22.167	81.891	108.231	51.603	244.551	96.205	22.167	88.442	96.205	60.379	286.142	104.713	21.111
	x<1																	
	A	sec/veh	0.219	0.218	0.071	0.399	0.326	0.070	0.270	0.273	0.099	0.413	0.323	0.099	0.207	0.232	0.079	0.405
	B	sec/veh	0.333	0.320	0.001	0.138	0.332	0.000	0.509	0.576	0.001	0.556	0.612	0.001	0.118	0.463	0.001	0.157
	C	sec/veh	1.746	0.592	0.000	4.526	2.406	0.000	3.566	1.401	0.000	11.092	3.436	0.000	0.549	0.918	0.000	5.375
Average Queue Delay	D	sec/veh	26	22	7	45	35	7	33	28	10	54	35	10	24	25	8	48
	x>x'																	
	Z		-0.451	-0.458	-0.953	-0.595	-0.452	-0.970	-0.379	-0.358	-0.953	-0.364	-0.348	-0.953	-0.618	-0.395	-0.951	-0.575
	X'		0.687	0.752	0.700	0.676	0.693	0.700	0.684	0.738	0.697	0.676	0.695	0.697	0.688	0.753	0.701	0.676
	No	veh	-0.477	-0.694	-1.049	-0.775	-0.494	-1.058	-0.257	-0.405	-1.047	-0.172	-0.184	-1.047	-0.774	-0.570	-1.050	-0.747
Average Queue Delay	D	sec/veh	17	20	1	19	29	1	24	26	3	37	31	3	14	23	2	21
Average Delay		**sec/veh**	**26**	**22**	**7**	**45**	**35**	**7**	**33**	**28**	**10**	**54**	**35**	**10**	**24**	**25**	**8**	**48**
Average Queue	N = q(r/2+d)	veh	3.114	13.616	0.220	1.318	5.394	0.137	3.497	15.849	0.240	2.288	6.901	0.240	2.124	16.159	0.247	1.401
Average Queue Length	NL/n	metre	19	27	1	8	16	1	21	32	1	14	21	1	13	32	1	8
Average Queue	N=qr	veh	3.284	15.368	0.316	1.301	5.609	0.198	3.472	17.014	0.329	2.045	7.019	0.329	2.385	17.885	0.350	1.376
Average Queue Length	NL/n	metre	20	31	2	8	17	1	21	34	2	12	21	2	14	36	2	8
Average Queue	N=qr+No	veh	2.807	14.674	-0.733	0.526	5.115	-0.860	3.215	16.609	-0.718	1.873	6.835	-0.718	1.611	17.315	-0.699	0.629
Average Queue Length	NL/n	metre	17	29	-4	3	15	-5	19	33	-4	11	21	-4	10	35	-4	4
Average Queue Length		**metre**	**20**	**31**	**2**	**8**	**17**	**1**	**21**	**34**	**2**	**14**	**21**	**2**	**14**	**36**	**2**	**8**
Maximum Queue Length		**metre**	**48**	**50**	**23**	**38**	**35**	**23**	**50**	**53**	**25**	**42**	**41**	**25**	**37**	**55**	**24**	**35**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	F	A	A	F	B	C	F
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	29	64	43	43	64	13	29	64
		pcu/hr	425	35	250	1360	40	85	440	30
Design flow	q	veh/sec	0.091	0.007	0.053	0.291	0.009	0.018	0.094	0.006
		pcu/hr	2555	1340	1150	5450	1340	1330	2555	1340
Saturation flow	Q	veh/sec	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	3	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.276	0.610	0.410	0.410	0.610	0.124	0.276	0.610
Degree of saturation	x		0.602	0.043	0.531	0.609	0.049	0.516	0.624	0.037
	M		9.535	0.785	5.609	30.513	0.897	1.907	9.872	0.673
	y		0.166	0.026	0.217	0.250	0.030	0.064	0.172	0.022
	Qt	veh/sec	90.470	104.713	60.379	286.142	104.713	21.111	90.470	104.713
	x<1									
	A	sec/veh	0.314	0.078	0.223	0.232	0.079	0.410	0.316	0.078
	B	sec/veh	0.456	0.001	0.300	0.475	0.001	0.275	0.516	0.001
	C	sec/veh	2.733	0.000	1.666	0.941	0.000	7.853	3.003	0.000
Average Queue Delay	D	sec/veh	35	8	27	25	8	50	36	8
	x>x'									
	Z		-0.398	-0.957	-0.469	-0.391	-0.951	-0.484	-0.376	-0.963
	X'		0.696	0.701	0.688	0.753	0.701	0.676	0.696	0.701
	No	veh	-0.362	-1.053	-0.520	-0.559	-1.050	-0.557	-0.295	-1.056
Average Queue Delay	D	sec/veh	31	2	18	23	2	27	31	2
Average Delay		**sec/veh**	**35**	**8**	**27**	**25**	**8**	**50**	**36**	**8**
Average Queue	N = q(r/2+d)	veh	6.655	0.216	3.117	16.298	0.247	1.750	6.931	0.185
Average Queue Length	NL/n	metre	20	1	19	33	1	11	21	1
Average Queue	N=qr	veh	6.902	0.307	3.312	18.017	0.350	1.671	7.145	0.263
Average Queue Length	NL/n	metre	21	2	20	36	2	10	21	2
Average Queue	N=qr+No	veh	6.539	-0.746	2.792	17.458	-0.699	1.114	6.850	-0.793
Average Queue Length	NL/n	metre	20	-4	17	35	-4	7	21	-5
Average Queue Length		**metre**	**21**	**2**	**20**	**36**	**2**	**11**	**21**	**2**
Maximum Queue Length		**metre**	**41**	**59**	**63**	**52**	**67**	**41**	**37**	**63**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	D	E	E	A	B	C	D	E	E	A	B	C	D	E	E
			Weekday AM						Weekday Noon						Weekday PM			
		Unit	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT
Cycle time	c	sec	100	100	100	100	100	100	95	95	95	95	95	95	105	105	105	105
Effective green time	g	sec	66	64	23	23	66	64	59	54	25	25	59	57	70	68	24	24
		pcu/hr	975	40	405	395	1085	95	850	35	535	420	1250	95	930	40	500	395
Design flow	q	veh/sec	0.208	0.009	0.087	0.084	0.232	0.020	0.182	0.007	0.114	0.090	0.267	0.020	0.199	0.009	0.107	0.084
		pcu/hr	2950	1915	3600	1915	4070	1915	2950	1915	3590	1915	4070	1915	2950	1915	3590	1915
Saturation flow	Q	veh/sec	0.630	0.409	0.769	0.409	0.870	0.409	0.630	0.409	0.767	0.409	0.870	0.409	0.630	0.409	0.767	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.660	0.640	0.230	0.230	0.660	0.640	0.621	0.568	0.263	0.263	0.621	0.600	0.667	0.648	0.229	0.229
Degree of saturation	x		0.501	0.033	0.489	0.897	0.404	0.078	0.464	0.032	0.566	0.833	0.495	0.083	0.473	0.032	0.609	0.902
	M		20.833	0.855	8.654	8.440	23.184	2.030	17.254	0.710	10.860	8.526	25.374	1.928	20.865	0.897	11.218	8.862
	y		0.331	0.021	0.113	0.206	0.267	0.050	0.288	0.018	0.149	0.219	0.307	0.050	0.315	0.021	0.139	0.206
	Qt	veh/sec	249.615	157.128	106.154	56.468	344.385	157.128	234.885	139.555	121.120	64.609	324.062	147.308	252.137	158.999	105.201	56.117
	x<1																	
	A	sec/veh	0.086	0.066	0.334	0.373	0.079	0.068	0.101	0.095	0.319	0.348	0.104	0.084	0.081	0.063	0.346	0.375
	B	sec/veh	0.251	0.001	0.234	3.897	0.137	0.003	0.201	0.001	0.370	2.085	0.242	0.004	0.212	0.001	0.475	4.173
	C	sec/veh	0.220	0.000	1.621	11.126	0.065	0.000	0.183	0.000	1.911	8.086	0.196	0.000	0.166	0.000	2.871	11.541
Average Queue Delay	D	sec/veh	10	7	34	72	8	7	11	9	32	48	11	8	9	7	38	77
	x>x'																	
	Z		-0.499	-0.967	-0.511	-0.103	-0.596	-0.922	-0.536	-0.968	-0.434	-0.167	-0.505	-0.917	-0.527	-0.968	-0.391	-0.098
	X'		0.739	0.714	0.699	0.686	0.766	0.714	0.732	0.707	0.702	0.687	0.756	0.709	0.744	0.716	0.701	0.686
	No	veh	-0.725	-1.071	-0.632	1.869	-0.919	-1.050	-0.759	-1.062	-0.478	1.095	-0.782	-1.040	-0.779	-1.075	-0.357	1.943
Average Queue Delay	D	sec/veh	7	3	30	57	6	3	8	4	28	43	8	4	7	3	34	60
Average Delay		**sec/veh**	**10**	**7**	**34**	**57**	**8**	**7**	**11**	**9**	**32**	**43**	**11**	**8**	**9**	**7**	**38**	**60**
Average Queue	N = q(r/2+d)	veh	5.546	0.211	6.316	9.360	5.890	0.507	5.177	0.221	7.617	7.465	7.627	0.552	5.350	0.216	8.373	9.939
Average Queue Length	NL/n	metre	17	1	19	56	18	3	16	1	23	45	23	3	16	1	25	60
Average Queue	N=qr	veh	7.083	0.308	6.663	6.499	7.882	0.731	6.538	0.307	8.002	6.282	9.615	0.771	6.955	0.316	8.654	6.837
Average Queue Length	NL/n	metre	21	2	20	39	24	4	20	2	24	38	29	5	21	2	26	41
Average Queue	N=qr+No	veh	6.358	-0.763	6.031	8.368	6.964	-0.319	5.779	-0.756	7.524	7.377	8.833	-0.269	6.176	-0.759	8.297	8.779
Average Queue Length	NL/n	metre	19	-5	18	50	21	-2	17	-5	23	44	27	-2	19	-5	25	53
Average Queue Length		**metre**	**21**	**2**	**20**	**50**	**24**	**4**	**20**	**2**	**24**	**44**	**29**	**5**	**21**	**2**	**26**	**53**
Maximum Queue Length		**metre**	**48**	**25**	**35**	**71**	**51**	**25**	**42**	**25**	**43**	**76**	**54**	**25**	**44**	**24**	**45**	**82**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	C	D	E	E	A	B
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	70	68	68	66	26	26	68	66
		pcu/hr	1255	100	990	40	490	400	1220	95
Design flow	q	veh/sec	0.268	0.021	0.212	0.009	0.105	0.085	0.261	0.020
		pcu/hr	4070	1915	2950	1915	3595	1915	4070	1915
Saturation flow	Q	veh/sec	0.870	0.409	0.630	0.409	0.768	0.409	0.870	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.667	0.648	0.648	0.629	0.248	0.248	0.648	0.629
Degree of saturation	x		0.463	0.081	0.518	0.033	0.550	0.844	0.463	0.079
	M		28.157	2.244	22.212	0.897	10.994	8.974	27.372	2.131
	y		0.308	0.052	0.336	0.021	0.136	0.209	0.300	0.050
	Qt	veh/sec	347.863	158.999	244.933	154.322	114.127	60.794	337.924	154.322
	x<1									
	A	sec/veh	0.080	0.066	0.093	0.070	0.328	0.358	0.089	0.073
	B	sec/veh	0.199	0.004	0.279	0.001	0.337	2.274	0.199	0.003
	C	sec/veh	0.121	0.000	0.276	0.000	1.997	9.110	0.133	0.000
Average Queue Delay	D	sec/veh	9	7	11	7	36	55	10	8
	x>x'									
	Z		-0.537	-0.919	-0.482	-0.967	-0.450	-0.156	-0.537	-0.921
	X'		0.771	0.716	0.741	0.715	0.703	0.688	0.769	0.715
	No	veh	-0.870	-1.052	-0.703	-1.073	-0.521	1.194	-0.862	-1.051
Average Queue Delay	D	sec/veh	7	3	8	3	32	49	8	4
Average Delay		**sec/veh**	**9**	**7**	**11**	**7**	**36**	**49**	**10**	**8**
Average Queue	N = q(r/2+d)	veh	7.121	0.546	6.209	0.230	7.866	8.082	7.414	0.554
Average Queue Length	NL/n	metre	21	3	19	1	24	48	22	3
Average Queue	N=qr	veh	9.386	0.791	7.827	0.333	8.271	6.752	9.645	0.792
Average Queue Length	NL/n	metre	28	5	23	2	25	41	29	5
Average Queue	N=qr+No	veh	8.515	-0.262	7.124	-0.740	7.751	7.946	8.783	-0.260
Average Queue Length	NL/n	metre	26	-2	21	-4	23	48	26	-2
Average Queue Length		**metre**	**28**	**5**	**23**	**2**	**25**	**48**	**29**	**5**
Maximum Queue Length		**metre**	**54**	**44**	**63**	**52**	**67**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Pennington Street / Jardine's Bazaar / Irving Street (J11)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	F	A	B	E	F	A	B	E	F	A	B	E	F
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT
Cycle time	c	sec	100	100	100	100	120	120	120	120	100	100	100	100	100	100	100	100
Effective green time	g	sec	31	55	80	78	39	67	100	98	33	53	80	78	33	53	80	78
		pcu/hr	430	565	430	495	500	645	465	585	550	655	520	580	525	625	470	585
Design flow	q	veh/sec	0.092	0.121	0.092	0.106	0.107	0.138	0.099	0.125	0.118	0.140	0.111	0.124	0.112	0.134	0.100	0.125
		pcu/hr	6350	3845	1840	3425	6365	3820	1840	3425	6355	3805	1840	3425	6365	3815	1840	3425
Saturation flow	Q	veh/sec	1.357	0.822	0.393	0.732	1.360	0.816	0.393	0.732	1.358	0.813	0.393	0.732	1.360	0.815	0.393	0.732
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	4	2	1	2	4	2	1	2	4	2	1	2	4	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.310	0.550	0.800	0.780	0.325	0.558	0.833	0.817	0.330	0.530	0.800	0.780	0.330	0.530	0.800	0.780
Degree of saturation	x		0.218	0.267	0.292	0.185	0.242	0.302	0.303	0.209	0.262	0.325	0.353	0.217	0.250	0.309	0.319	0.219
	M		9.188	12.073	9.188	10.577	12.821	16.538	11.923	15.000	11.752	13.996	11.111	12.393	11.218	13.355	10.043	12.500
	y		0.068	0.147	0.234	0.145	0.079	0.169	0.253	0.171	0.087	0.172	0.283	0.169	0.082	0.164	0.255	0.171
	Qt	veh/sec	252.372	271.122	188.718	342.500	265.208	273.440	196.581	358.600	268.865	258.545	188.718	342.500	269.288	259.224	188.718	342.500
	x<1																	
	A	sec/veh	0.255	0.119	0.026	0.028	0.247	0.117	0.019	0.020	0.246	0.133	0.028	0.029	0.245	0.132	0.027	0.029
	B	sec/veh	0.031	0.049	0.060	0.021	0.039	0.066	0.066	0.028	0.047	0.078	0.096	0.030	0.042	0.069	0.075	0.031
	C	sec/veh	0.067	0.023	0.009	0.001	0.083	0.039	0.010	0.001	0.095	0.060	0.025	0.001	0.082	0.049	0.015	0.002
Average Queue Delay	D	sec/veh	26	12	3	3	30	15	3	3	25	14	4	3	25	14	3	3
	x>x'																	
	Z		-0.782	-0.733	-0.708	-0.815	-0.758	-0.698	-0.697	-0.791	-0.738	-0.675	-0.647	-0.783	-0.750	-0.691	-0.681	-0.781
	X'		0.740	0.745	0.722	0.765	0.758	0.761	0.736	0.790	0.745	0.742	0.722	0.765	0.745	0.742	0.722	0.765
	No	veh	-1.012	-0.989	-0.925	-1.076	-1.033	-0.997	-0.944	-1.109	-0.991	-0.936	-0.869	-1.058	-1.000	-0.950	-0.901	-1.057
Average Queue Delay	D	sec/veh	23	10	0	1	27	12	-1	1	22	11	0	1	22	11	0	1
Average Delay		**sec/veh**	**26**	**12**	**3**	**3**	**30**	**15**	**3**	**3**	**25**	**14**	**4**	**3**	**25**	**14**	**3**	**3**
Average Queue	N = q(r/2+d)	veh	5.540	4.195	1.218	1.484	7.526	5.653	1.280	1.707	6.860	5.226	1.515	1.754	6.535	4.965	1.347	1.770
Average Queue Length	NL/n	metre	8	13	7	4	11	17	8	5	10	16	9	5	10	15	8	5
Average Queue	N=qr	veh	6.340	5.433	1.838	2.327	8.654	7.304	1.987	2.750	7.874	6.578	2.222	2.726	7.516	6.277	2.009	2.750
Average Queue Length	NL/n	metre	10	16	11	7	13	22	12	8	12	20	13	8	11	19	12	8
Average Queue	N=qr+No	veh	5.328	4.444	0.913	1.251	7.621	6.308	1.044	1.641	6.883	5.642	1.354	1.668	6.516	5.327	1.108	1.693
Average Queue Length	NL/n	metre	8	13	5	4	11	19	6	5	10	17	8	5	10	16	7	5
Average Queue Length		**metre**	**10**	**16**	**11**	**7**	**13**	**22**	**12**	**8**	**12**	**20**	**13**	**8**	**11**	**19**	**12**	**8**
Maximum Queue Length		**metre**	**19**	**34**	**34**	**20**	**24**	**42**	**36**	**22**	**22**	**38**	**38**	**22**	**21**	**37**	**36**	**22**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Link Road / Broadwood Road (J12)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	C	A	B	E	C	A	B	E	C	A	B	E	C
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB
Cycle time	c	sec	140	140	140	140	110	110	110	110	135	135	135	135	110	110	110	110
Effective green time	g	sec	38	58	61	54	28	43	46	39	36	62	65	45	28	46	49	36
		pcu/hr	380	335	185	505	330	375	170	435	365	370	245	435	355	365	220	435
Design flow	q	veh/sec	0.081	0.072	0.040	0.108	0.071	0.080	0.036	0.093	0.078	0.079	0.052	0.093	0.076	0.078	0.047	0.093
		pcu/hr	1940	1890	1730	1840	1945	1885	1730	1835	1940	1895	1730	1860	1945	1885	1730	1845
Saturation flow	Q	veh/sec	0.415	0.404	0.370	0.393	0.416	0.403	0.370	0.392	0.415	0.405	0.370	0.397	0.416	0.403	0.370	0.394
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.271	0.414	0.436	0.386	0.255	0.391	0.418	0.355	0.267	0.459	0.481	0.333	0.255	0.418	0.445	0.327
Degree of saturation	x		0.722	0.428	0.245	0.712	0.667	0.509	0.235	0.669	0.706	0.425	0.294	0.702	0.717	0.463	0.285	0.720
	M		11.368	10.021	5.534	15.107	7.756	8.814	3.996	10.224	10.529	10.673	7.067	12.548	8.344	8.579	5.171	10.224
	y		0.196	0.177	0.107	0.274	0.170	0.199	0.098	0.237	0.188	0.195	0.142	0.234	0.183	0.194	0.127	0.236
	Qt	veh/sec	67.509	100.385	96.639	90.989	63.473	94.470	92.751	83.409	66.325	111.576	106.790	79.487	63.473	101.061	98.800	77.413
	x<1																	
	A	sec/veh	0.330	0.208	0.178	0.260	0.335	0.232	0.188	0.273	0.331	0.182	0.157	0.290	0.340	0.210	0.176	0.296
	B	sec/veh	0.935	0.160	0.040	0.878	0.666	0.264	0.036	0.675	0.845	0.157	0.061	0.825	0.909	0.200	0.057	0.928
	C	sec/veh	6.021	0.617	0.082	3.911	4.838	1.159	0.076	3.324	5.711	0.459	0.108	4.432	5.852	0.731	0.119	4.606
Average Queue Delay	D	sec/veh	52	31	26	41	41	28	22	34	50	26	22	44	44	25	20	38
	x>x'																	
	Z		-0.278	-0.572	-0.755	-0.288	-0.333	-0.491	-0.765	-0.331	-0.294	-0.575	-0.706	-0.298	-0.283	-0.537	-0.715	-0.280
	X'		0.696	0.709	0.708	0.705	0.689	0.699	0.698	0.695	0.695	0.712	0.710	0.700	0.689	0.701	0.700	0.694
	No	veh	0.135	-0.757	-0.943	0.032	-0.104	-0.595	-0.933	-0.123	0.054	-0.766	-0.906	0.009	0.144	-0.682	-0.893	0.142
Average Queue Delay	D	sec/veh	47	25	19	37	36	22	15	29	45	20	16	39	39	19	14	34
Average Delay		**sec/veh**	**47**	**31**	**26**	**37**	**41**	**28**	**22**	**34**	**45**	**26**	**22**	**39**	**39**	**25**	**20**	**34**
Average Queue	N = q(r/2+d)	veh	8.340	5.140	2.585	9.024	5.812	4.896	1.946	6.457	7.748	4.946	2.995	8.235	6.411	4.439	2.396	6.966
Average Queue Length	NL/n	metre	50	31	16	54	35	29	12	39	46	30	18	49	38	27	14	42
Average Queue	N=qr	veh	8.282	5.870	3.123	9.280	5.782	5.369	2.325	6.599	7.721	5.771	3.665	8.365	6.220	4.991	2.868	6.878
Average Queue Length	NL/n	metre	50	35	19	56	35	32	14	40	46	35	22	50	37	30	17	41
Average Queue	N=qr+No	veh	8.417	5.112	2.180	9.312	5.678	4.773	1.392	6.477	7.775	5.005	2.759	8.374	6.364	4.310	1.974	7.020
Average Queue Length	NL/n	metre	51	31	13	56	34	29	8	39	47	30	17	50	38	26	12	42
Average Queue Length		**metre**	**51**	**35**	**19**	**56**	**35**	**32**	**14**	**40**	**47**	**35**	**22**	**50**	**38**	**30**	**17**	**42**
Maximum Queue Length		**metre**	**94**	**72**	**43**	**101**	**71**	**66**	**36**	**78**	**89**	**71**	**49**	**93**	**76**	**63**	**40**	**84**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Wong Nai Chung Road / Sports Road (J14)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB
Cycle time	c	sec	90	90	75	75	90	90	75	75
Effective green time	g	sec	58	22	45	20	58	22	46	19
		pcu/hr	710	420	750	525	785	475	805	540
Design flow	q	veh/sec	0.152	0.090	0.160	0.112	0.168	0.101	0.172	0.115
		pcu/hr	3655	5885	3655	5885	3655	5885	3655	5885
Saturation flow	Q	veh/sec	0.781	1.257	0.781	1.257	0.781	1.257	0.781	1.257
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	3	2	3	2	3	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.644	0.244	0.600	0.267	0.644	0.244	0.613	0.253
Degree of saturation	x		0.301	0.292	0.342	0.335	0.333	0.330	0.359	0.362
	M		13.654	8.077	12.019	8.413	15.096	9.135	12.901	8.654
	y		0.194	0.071	0.205	0.089	0.215	0.081	0.220	0.092
	Qt	veh/sec	301.980	184.430	281.154	201.197	301.980	184.430	287.402	191.137
	x<1									
	A	sec/veh	0.078	0.307	0.101	0.295	0.080	0.310	0.096	0.307
	B	sec/veh	0.065	0.060	0.089	0.084	0.083	0.081	0.101	0.103
	C	sec/veh	0.020	0.275	0.043	0.306	0.031	0.377	0.049	0.419
Average Queue Delay	D	sec/veh	7	28	8	23	8	28	8	23
	x>x'									
	Z		-0.699	-0.708	-0.658	-0.665	-0.667	-0.670	-0.641	-0.638
	X'		0.745	0.716	0.729	0.712	0.745	0.716	0.730	0.710
	No	veh	-0.962	-0.911	-0.890	-0.862	-0.936	-0.877	-0.876	-0.829
Average Queue Delay	D	sec/veh	5	25	6	20	5	25	5	20
Average Delay		**sec/veh**	**7**	**28**	**8**	**23**	**8**	**28**	**8**	**23**
Average Queue	N = q(r/2+d)	veh	3.561	5.569	3.696	5.619	3.977	6.330	3.823	5.941
Average Queue Length	NL/n	metre	11	11	11	11	12	13	11	12
Average Queue	N=qr	veh	4.855	6.103	4.808	6.170	5.368	6.902	4.988	6.462
Average Queue Length	NL/n	metre	15	12	14	12	16	14	15	13
Average Queue	N=qr+No	veh	3.892	5.191	3.918	5.308	4.431	6.025	4.112	5.633
Average Queue Length	NL/n	metre	12	10	12	11	13	12	12	11
Average Queue Length		**metre**	**15**	**12**	**14**	**12**	**16**	**14**	**15**	**13**
Maximum Queue Length		**metre**	**32**	**19**	**39**	**20**	**38**	**21**	**41**	**20**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Leigthon Road / Wong Nai Chung Road (J15)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	A	A	B	A	A	A	B	A	A	A	B	A	A
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB
Cycle time	c	sec	130	130	130	130	120	120	120	120	120	120	120	120	120	120	120	120
Effective green time	g	sec	90	28	90	90	78	30	78	78	76	32	76	76	78	30	78	78
		pcu/hr	365	50	835	660	455	60	815	780	390	65	810	600	490	60	805	700
Design flow	q	veh/sec	0.078	0.011	0.178	0.141	0.097	0.013	0.174	0.167	0.083	0.014	0.173	0.128	0.105	0.013	0.172	0.150
		pcu/hr	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455
Saturation flow	Q	veh/sec	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	3	2	1	2	3	2	1	2	3	2	1	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.692	0.215	0.692	0.692	0.650	0.250	0.650	0.650	0.633	0.267	0.633	0.633	0.650	0.250	0.650	0.650
Degree of saturation	x		0.237	0.627	0.622	0.388	0.315	0.649	0.646	0.489	0.277	0.659	0.659	0.386	0.339	0.649	0.638	0.439
	M		10.139	1.389	23.194	18.333	11.667	1.538	20.897	20.000	10.000	1.667	20.769	15.385	12.564	1.538	20.641	17.949
	y		0.164	0.135	0.430	0.269	0.204	0.162	0.420	0.318	0.175	0.176	0.418	0.244	0.220	0.162	0.415	0.285
	Qt	veh/sec	197.485	10.217	172.189	217.899	185.417	11.859	161.667	204.583	180.662	12.650	157.521	199.338	185.417	11.859	161.667	204.583
	x<1																	
	A	sec/veh	0.057	0.356	0.083	0.065	0.077	0.336	0.106	0.090	0.082	0.326	0.115	0.089	0.079	0.336	0.105	0.086
	B	sec/veh	0.037	0.528	0.511	0.123	0.072	0.599	0.591	0.234	0.053	0.636	0.638	0.121	0.087	0.599	0.563	0.171
	C	sec/veh	0.007	16.175	0.775	0.069	0.035	14.335	1.040	0.247	0.022	13.804	1.199	0.092	0.049	14.335	0.982	0.150
Average Queue Delay	D	sec/veh	8	80	13	9	10	73	15	12	10	71	16	12	10	73	15	11
	x>x'																	
	Z		-0.763	-0.373	-0.378	-0.612	-0.685	-0.351	-0.354	-0.511	-0.723	-0.341	-0.341	-0.614	-0.661	-0.351	-0.362	-0.561
	X'		0.741	0.674	0.732	0.749	0.732	0.674	0.724	0.738	0.730	0.674	0.723	0.736	0.732	0.674	0.724	0.738
	No	veh	-1.005	-0.209	-0.444	-0.896	-0.927	-0.114	-0.333	-0.742	-0.954	-0.070	-0.281	-0.869	-0.905	-0.114	-0.359	-0.812
Average Queue Delay	D	sec/veh	4	34	9	6	6	34	11	9	7	36	13	8	6	34	11	8
Average Delay		**sec/veh**	**8**	**80**	**13**	**9**	**10**	**73**	**15**	**12**	**10**	**71**	**16**	**12**	**10**	**73**	**15**	**11**
Average Queue	N = q(r/2+d)	veh	2.170	1.395	5.869	4.121	3.009	1.508	6.274	5.488	2.700	1.599	6.635	4.299	3.267	1.508	6.168	4.828
Average Queue Length	NL/n	metre	7	8	18	8	9	9	19	11	8	10	20	9	10	9	19	10
Average Queue	N=qr	veh	3.120	1.090	7.137	5.641	4.083	1.154	7.314	7.000	3.667	1.222	7.615	5.641	4.397	1.154	7.224	6.282
Average Queue Length	NL/n	metre	9	7	21	11	12	7	22	14	11	7	23	11	13	7	22	13
Average Queue	N=qr+No	veh	2.115	0.880	6.693	4.745	3.157	1.040	6.981	6.258	2.712	1.152	7.334	4.772	3.493	1.040	6.865	5.470
Average Queue Length	NL/n	metre	6	5	20	9	9	6	21	13	8	7	22	10	10	6	21	11
Average Queue Length		**metre**	**9**	**8**	**21**	**11**	**12**	**9**	**22**	**14**	**11**	**10**	**23**	**11**	**13**	**9**	**22**	**13**
Maximum Queue Length		**metre**	**23**	**40**	**41**	**23**	**28**	**40**	**42**	**27**	**26**	**40**	**44**	**23**	**29**	**39**	**42**	**25**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2021 Existing Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2021
Junction Name	Tung Lo Wan Road / Eastern Hospital Road (J16)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB
Cycle time	c	sec	100	100	95	95	105	105	105	105
Effective green time	g	sec	31	35	29	32	33	38	36	35
		pcu/hr	545	320	550	325	480	295	550	285
Design flow	q	veh/sec	0.116	0.068	0.118	0.069	0.103	0.063	0.118	0.061
		pcu/hr	3310	1760	3295	1790	3290	1765	3290	1780
Saturation flow	Q	veh/sec	0.707	0.376	0.704	0.382	0.703	0.377	0.703	0.380
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.310	0.350	0.305	0.337	0.314	0.362	0.343	0.333
Degree of saturation	x		0.531	0.519	0.547	0.539	0.464	0.462	0.488	0.480
	M		11.645	6.838	11.165	6.597	10.769	6.619	12.340	6.394
	y		0.165	0.182	0.167	0.182	0.146	0.167	0.167	0.160
	Qt	veh/sec	131.551	78.974	128.954	77.301	132.564	81.893	144.615	76.068
	x<1									
	A	sec/veh	0.285	0.258	0.290	0.269	0.275	0.244	0.259	0.265
	B	sec/veh	0.301	0.281	0.330	0.315	0.201	0.198	0.232	0.222
	C	sec/veh	1.339	1.548	1.471	1.801	0.903	1.020	0.887	1.347
Average Queue Delay	D	sec/veh	30	28	29	28	30	28	28	30
	x>x'									
	Z		-0.469	-0.481	-0.453	-0.461	-0.536	-0.538	-0.512	-0.520
	X'		0.707	0.692	0.704	0.690	0.709	0.694	0.712	0.692
	No	veh	-0.572	-0.555	-0.530	-0.507	-0.698	-0.667	-0.670	-0.632
Average Queue Delay	D	sec/veh	26	22	25	22	26	21	24	23
Average Delay		**sec/veh**	**30**	**28**	**29**	**28**	**30**	**28**	**28**	**30**
Average Queue	N = q(r/2+d)	veh	7.481	4.163	7.269	4.150	6.765	3.863	7.381	3.963
Average Queue Length	NL/n	metre	22	25	22	25	20	23	22	24
Average Queue	N=qr	veh	8.035	4.444	7.756	4.375	7.385	4.223	8.109	4.263
Average Queue Length	NL/n	metre	24	27	23	26	22	25	24	26
Average Queue	N=qr+No	veh	7.463	3.890	7.226	3.868	6.687	3.556	7.439	3.631
Average Queue Length	NL/n	metre	22	23	22	23	20	21	22	22
Average Queue Length		**metre**	**24**	**27**	**23**	**26**	**22**	**25**	**24**	**26**
Maximum Queue Length		**metre**	**45**	**56**	**44**	**54**	**42**	**52**	**45**	**52**

*Note: SG = Signal Group

Queue Length Analysis

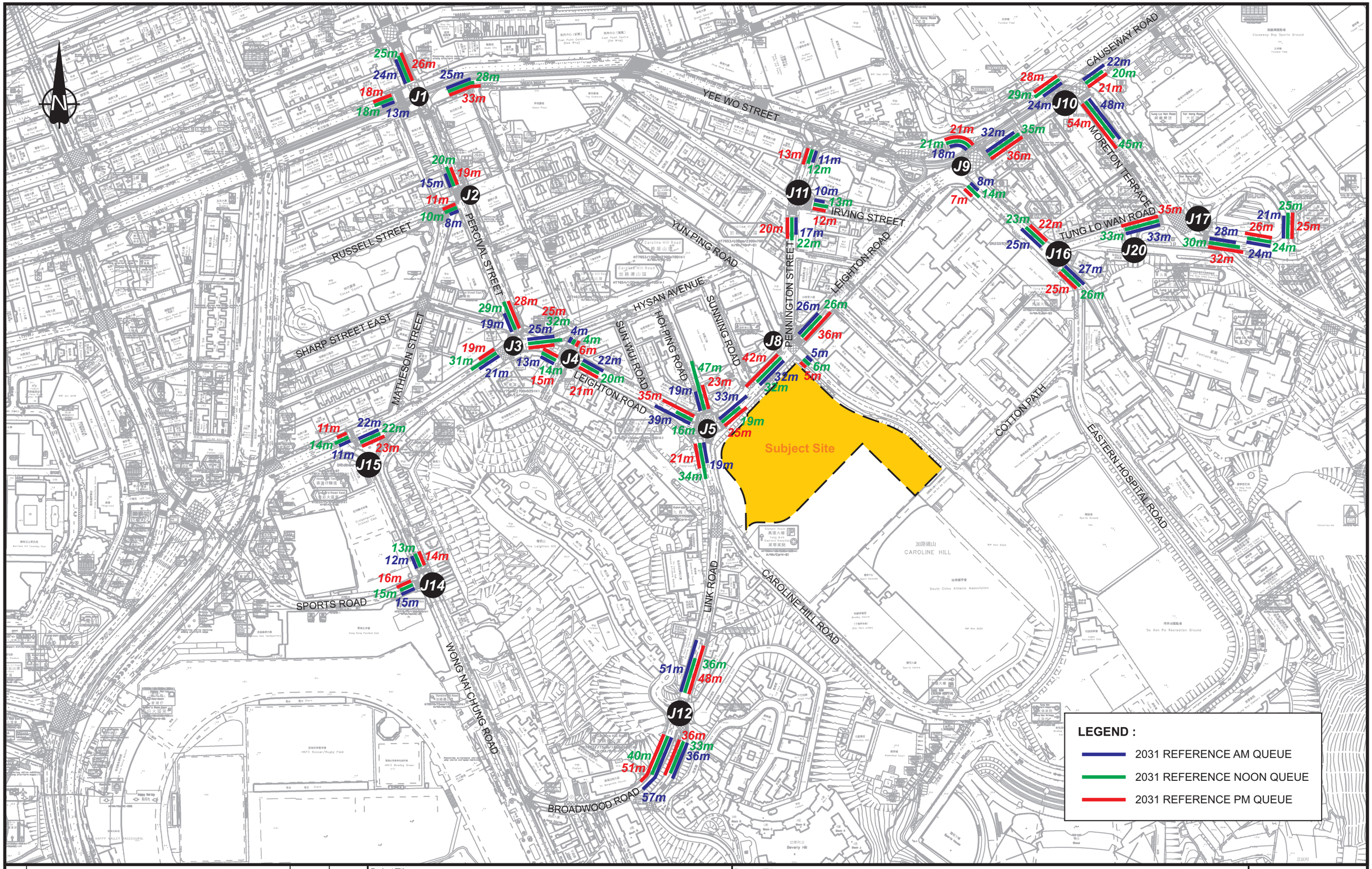
SYSTRA MVA Hong Kong Ltd.

Job No.	CHK50603110
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B
Junction Name	Tung Lo Wan Road / Moreton Terrace (J17)
Approach	
Probability(1% / 5%)?	5%
Description	2021 Existing Flows
Design Year	2021
Designed By	LYK
Checked By	CHC

			A	E	E	B	A	E	E	B	A	E	E	B	A	E	E	B
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB
Cycle time	c	sec	100	100	100	100	95	95	95	95	105	105	105	105	105	105	105	105
Effective green time	g	sec	42	46	46	42	36	47	47	36	41	52	52	41	48	45	45	48
		pcu/hr	895	790	335	290	920	890	355	345	910	850	340	330	765	690	240	240
Design flow	q	veh/sec	0.191	0.169	0.072	0.062	0.197	0.190	0.076	0.074	0.194	0.182	0.073	0.071	0.163	0.147	0.051	0.051
		pcu/hr	3520	3520	1940	1680	3505	3520	1945	1680	3510	3520	1945	1675	3505	3590	1960	1690
Saturation flow	Q	veh/sec	0.752	0.752	0.415	0.359	0.749	0.752	0.416	0.359	0.750	0.752	0.416	0.358	0.749	0.767	0.419	0.361
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.420	0.460	0.460	0.420	0.379	0.495	0.495	0.379	0.390	0.495	0.495	0.390	0.457	0.429	0.429	0.457
Degree of saturation	x		0.605	0.488	0.375	0.411	0.693	0.511	0.369	0.542	0.664	0.488	0.353	0.505	0.477	0.448	0.286	0.311
	M		19.124	16.880	7.158	6.197	18.675	18.066	7.206	7.003	20.417	19.071	7.628	7.404	17.163	15.481	5.385	5.385
	y		0.254	0.224	0.173	0.173	0.262	0.253	0.183	0.205	0.259	0.241	0.175	0.197	0.218	0.192	0.122	0.142
	Qt	veh/sec	189.538	207.590	114.410	90.462	170.283	223.266	123.367	81.619	175.714	223.492	123.492	83.852	205.421	197.253	107.692	99.048
	x<1																	
	A	sec/veh	0.226	0.188	0.176	0.203	0.261	0.171	0.156	0.243	0.251	0.168	0.154	0.231	0.188	0.202	0.186	0.172
	B	sec/veh	0.464	0.232	0.113	0.143	0.781	0.267	0.108	0.321	0.656	0.232	0.096	0.257	0.218	0.182	0.057	0.070
	C	sec/veh	1.161	0.451	0.259	0.503	2.099	0.445	0.191	1.552	1.811	0.384	0.167	1.203	0.432	0.396	0.124	0.148
Average Queue Delay	D	sec/veh	24	20	19	22	27	17	16	26	28	19	17	27	21	22	21	19
	x>x'																	
	Z		-0.395	-0.512	-0.625	-0.589	-0.307	-0.489	-0.631	-0.458	-0.336	-0.512	-0.647	-0.495	-0.523	-0.552	-0.714	-0.689
	X'		0.723	0.728	0.702	0.695	0.715	0.729	0.703	0.692	0.721	0.735	0.706	0.694	0.730	0.728	0.701	0.699
	No	veh	-0.451	-0.712	-0.802	-0.744	-0.109	-0.677	-0.810	-0.504	-0.258	-0.734	-0.836	-0.592	-0.735	-0.770	-0.894	-0.867
Average Queue Delay	D	sec/veh	21	17	13	15	24	14	11	19	25	16	12	20	18	19	15	13
Average Delay		**sec/veh**	**24**	**20**	**19**	**22**	**27**	**17**	**16**	**26**	**28**	**19**	**17**	**27**	**21**	**22**	**21**	**19**
Average Queue	N = q(r/2+d)	veh	10.102	7.887	3.288	3.169	11.050	7.833	3.039	4.080	11.646	8.178	3.187	4.141	8.041	7.676	2.591	2.449
Average Queue Length	NL/n	metre	30	24	20	19	33	23	18	24	35	25	19	25	24	23	16	15
Average Queue	N=qr	veh	11.092	9.115	3.865	3.594	11.598	9.128	3.641	4.349	12.444	9.626	3.850	4.513	9.317	8.846	3.077	2.923
Average Queue Length	NL/n	metre	33	27	23	22	35	27	22	26	37	29	23	27	28	27	18	18
Average Queue	N=qr+No	veh	10.641	8.404	3.064	2.850	11.489	8.451	2.831	3.846	12.186	8.892	3.014	3.921	8.583	8.076	2.183	2.056
Average Queue Length	NL/n	metre	32	25	18	17	34	25	17	23	37	27	18	24	26	24	13	12
Average Queue Length		**metre**	**33**	**27**	**23**	**22**	**35**	**27**	**22**	**26**	**37**	**29**	**23**	**27**	**28**	**27**	**18**	**18**
Maximum Queue Length		**metre**	**56**	**50**	**52**	**47**	**56**	**53**	**53**	**54**	**58**	**55**	**55**	**44**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Year 2031 Reference



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

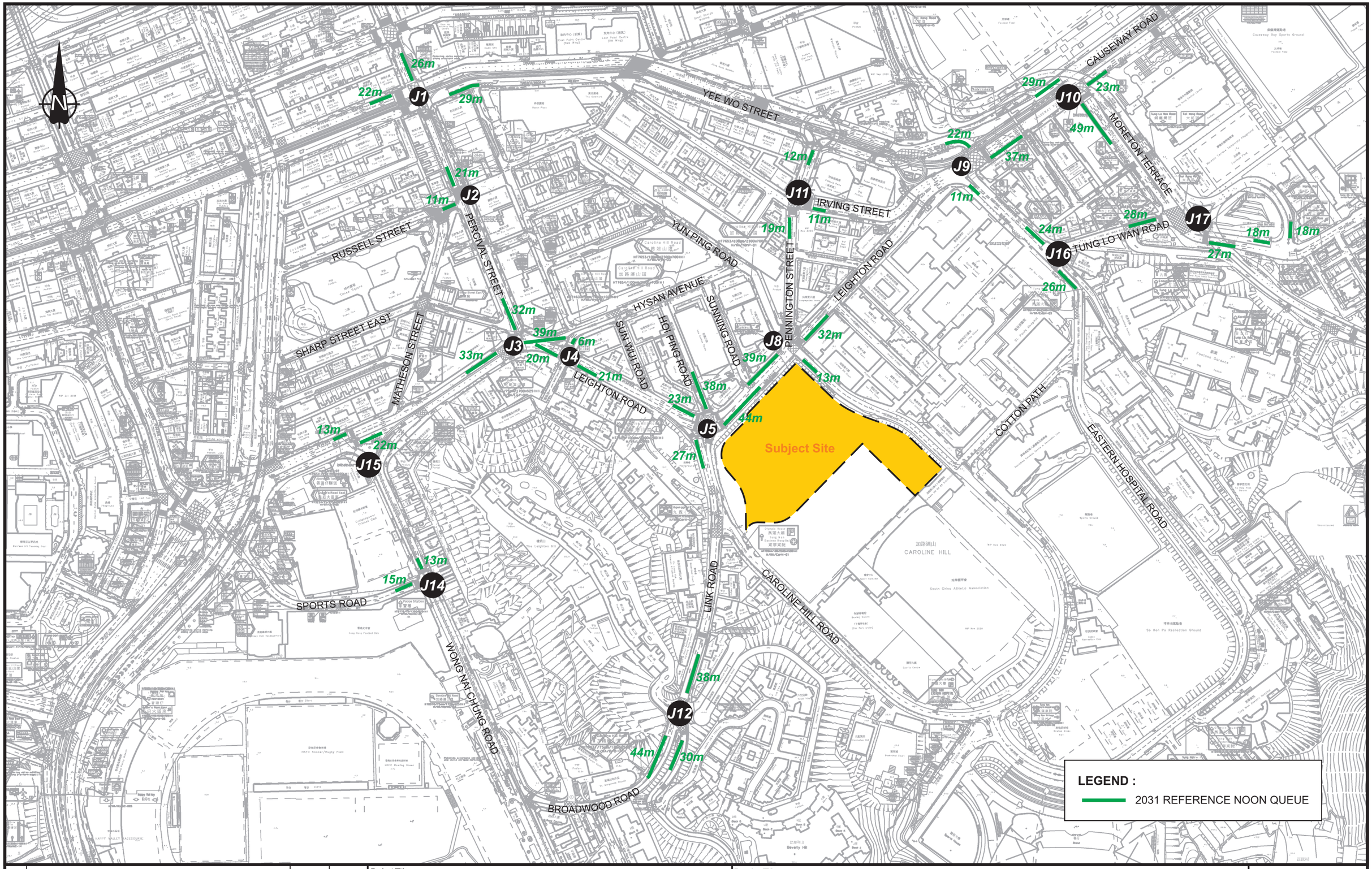
ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKDAY UNDER YEAR 2031 REFERENCE SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E3	A

SYSTRA MVA

CHK50603110/TIA/E3-A.CDR/LLH/13APR22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKEND UNDER YEAR 2031 REFERENCE SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E4	A

SYSTRA MVA

CHK50603110/TIA/E4-A.CDR/LLH/13APR22

Original Size : A3

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	D	A	B	C	B	C	E	E	A	D	A	B	C	B	C
			Weekday AM									Weekday Noon						
		Unit	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT
Cycle time	c	sec	120	120	120	120	120	120	120	120	120	104	104	104	104	104	104	104
Effective green time	g	sec	52	21	52	75	17	75	17	32	32	42	22	42	67	18	67	18
		pcu/hr	575	20	70	625	100	75	25	75	425	710	15	70	550	165	80	35
Design flow	q	veh/sec	0.123	0.004	0.015	0.134	0.021	0.016	0.005	0.016	0.091	0.152	0.003	0.015	0.118	0.035	0.017	0.007
		pcu/hr	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940	1915	1940
Saturation flow	Q	veh/sec	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	1	1	1	1	2	2	1	1	2	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.433	0.175	0.433	0.625	0.142	0.625	0.142	0.267	0.267	0.404	0.212	0.404	0.644	0.173	0.644	0.173
Degree of saturation	x		0.367	0.064	0.079	0.332	0.364	0.063	0.091	0.166	0.380	0.486	0.040	0.084	0.283	0.491	0.065	0.104
	M		14.744	0.513	1.795	16.026	2.564	1.923	0.641	1.923	10.897	15.778	0.333	1.556	12.222	3.667	1.778	0.778
	y		0.159	0.011	0.034	0.207	0.052	0.039	0.013	0.044	0.101	0.196	0.008	0.034	0.182	0.085	0.042	0.018
	Qt	veh/sec	201.111	39.936	114.167	241.587	35.235	153.446	35.235	57.778	143.248	187.426	48.274	106.398	249.020	43.047	158.167	43.047
	x<1																	
	A	sec/veh	0.191	0.344	0.166	0.089	0.388	0.073	0.373	0.281	0.299	0.221	0.313	0.184	0.077	0.374	0.066	0.348
	B	sec/veh	0.106	0.002	0.003	0.082	0.104	0.002	0.005	0.017	0.117	0.229	0.001	0.004	0.056	0.237	0.002	0.006
	C	sec/veh	0.198	0.045	0.001	0.043	2.694	0.000	0.159	0.128	0.633	0.590	0.007	0.002	0.018	3.712	0.000	0.123
Average Queue Delay	D	sec/veh	24	42	20	11	49	9	45	35	37	24	33	19	9	42	7	37
	x>x'																	
	Z		-0.633	-0.936	-0.921	-0.668	-0.636	-0.937	-0.909	-0.834	-0.620	-0.514	-0.960	-0.916	-0.717	-0.509	-0.935	-0.896
	X'		0.737	0.683	0.708	0.751	0.682	0.721	0.682	0.689	0.718	0.724	0.684	0.701	0.742	0.682	0.716	0.682
	No	veh	-0.890	-1.052	-1.046	-0.951	-0.808	-1.070	-1.043	-0.981	-0.832	-0.706	-1.054	-1.032	-0.971	-0.596	-1.059	-1.022
Average Queue Delay	D	sec/veh	20	26	14	8	33	5	27	24	32	21	19	13	6	31	3	22
Average Delay		**sec/veh**	**24**	**42**	**20**	**11**	**49**	**9**	**45**	**35**	**37**	**24**	**33**	**19**	**9**	**42**	**7**	**37**
Average Queue	N = q(r/2+d)	veh	7.073	0.390	0.810	4.503	2.143	0.503	0.518	1.261	7.316	8.331	0.237	0.754	3.174	2.993	0.436	0.598
Average Queue Length	NL/n	metre	21	2	5	14	13	3	3	8	22	25	1	5	10	18	3	4
Average Queue	N=qr	veh	8.355	0.423	1.017	6.010	2.201	0.721	0.550	1.410	7.991	9.406	0.263	0.927	4.348	3.032	0.632	0.643
Average Queue Length	NL/n	metre	25	3	6	18	13	4	3	8	24	28	2	6	13	18	4	4
Average Queue	N=qr+No	veh	7.465	-0.628	-0.028	5.058	1.393	-0.349	-0.493	0.429	7.159	8.700	-0.791	-0.104	3.378	2.436	-0.427	-0.379
Average Queue Length	NL/n	metre	22	-4	0	15	8	-2	-3	3	21	26	-5	-1	10	15	-3	-2
Average Queue Length		**metre**	**25**	**3**	**6**	**18**	**13**	**4**	**3**	**8**	**24**	**28**	**2**	**6**	**13**	**18**	**4**	**4**
Maximum Queue Length		**metre**	**53**	**36**	**33**	**41**	**37**	**26**	**37**	**32**	**41**	**53**	**37**	**31**	**33**	**44**	**25**	**38**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	E	A	D	A	B	C	B	C	E	E	A	D	A	B	C
			Weekday Noon		**Weekday PM**									**Weekend Noon**				
		Unit	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT
Cycle time	c	sec	104	104	120	120	120	120	120	120	120	120	120	104	104	104	104	104
Effective green time	g	sec	25	25	50	21	50	74	17	74	17	34	34	34	24	34	61	20
		pcu/hr	195	500	745	15	80	600	140	95	35	240	415	655	25	70	675	200
Design flow	q	veh/sec	0.042	0.107	0.159	0.003	0.017	0.128	0.030	0.020	0.007	0.051	0.089	0.140	0.005	0.015	0.144	0.043
		pcu/hr	1690	4190	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940
Saturation flow	Q	veh/sec	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	2	2	1	1	2	1	1	1	1	2	2	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.240	0.240	0.417	0.175	0.417	0.617	0.142	0.617	0.142	0.283	0.283	0.327	0.231	0.327	0.587	0.192
Degree of saturation	x		0.480	0.496	0.494	0.048	0.093	0.323	0.509	0.080	0.127	0.501	0.350	0.553	0.061	0.104	0.382	0.536
	M		4.333	11.111	19.103	0.385	2.051	15.385	3.590	2.436	0.897	6.154	10.641	14.556	0.556	1.556	15.000	4.444
	y		0.115	0.119	0.206	0.008	0.039	0.199	0.072	0.050	0.018	0.142	0.099	0.181	0.014	0.034	0.224	0.103
	Qt	veh/sec	52.083	129.130	193.376	39.936	109.776	238.365	35.235	151.400	35.235	61.389	152.201	151.726	52.663	86.132	226.720	47.830
	x<1																	
	A	sec/veh	0.326	0.328	0.214	0.343	0.177	0.092	0.397	0.077	0.375	0.299	0.285	0.277	0.300	0.235	0.110	0.364
	B	sec/veh	0.222	0.245	0.241	0.001	0.005	0.077	0.264	0.004	0.009	0.252	0.094	0.343	0.002	0.006	0.118	0.310
	C	sec/veh	2.425	1.442	0.613	0.024	0.003	0.040	5.354	0.000	0.316	2.193	0.444	1.321	0.015	0.014	0.096	3.946
Average Queue Delay	D	sec/veh	37	35	27	42	22	12	51	9	46	39	35	30	32	25	12	41
	x>x'																	
	Z		-0.520	-0.504	-0.506	-0.952	-0.907	-0.677	-0.491	-0.920	-0.873	-0.499	-0.650	-0.447	-0.939	-0.896	-0.618	-0.464
	X'		0.685	0.707	0.734	0.683	0.707	0.749	0.682	0.720	0.682	0.690	0.721	0.714	0.685	0.695	0.735	0.684
	No	veh	-0.620	-0.641	-0.724	-1.060	-1.036	-0.956	-0.564	-1.060	-1.021	-0.592	-0.871	-0.548	-1.041	-1.016	-0.869	-0.500
Average Queue Delay	D	sec/veh	27	31	23	25	16	9	38	5	28	30	31	27	19	17	9	32
Average Delay		**sec/veh**	**37**	**35**	**27**	**42**	**22**	**12**	**51**	**9**	**46**	**39**	**35**	**30**	**32**	**25**	**12**	**41**
Average Queue	N = q(r/2+d)	veh	3.180	7.951	9.807	0.292	0.966	4.432	3.070	0.659	0.729	4.186	6.901	9.082	0.382	0.894	4.857	3.552
Average Queue Length	NL/n	metre	19	24	29	2	6	13	18	4	4	25	21	27	2	5	15	21
Average Queue	N=qr	veh	3.292	8.440	11.143	0.317	1.197	5.897	3.081	0.934	0.770	4.410	7.626	9.797	0.427	1.047	6.202	3.590
Average Queue Length	NL/n	metre	20	25	33	2	7	18	18	6	5	26	23	29	3	6	19	22
Average Queue	N=qr+No	veh	2.672	7.799	10.420	-0.743	0.160	4.941	2.517	-0.126	-0.250	3.818	6.755	9.249	-0.614	0.031	5.333	3.090
Average Queue Length	NL/n	metre	16	23	31	-4	1	15	15	-1	-2	23	20	28	-4	0	16	19
Average Queue Length		**metre**	**20**	**25**	**33**	**2**	**7**	**18**	**18**	**6**	**5**	**26**	**23**	**29**	**3**	**6**	**19**	**22**
Maximum Queue Length		**metre**	**39**	**40**	**59**	**51**	**387**	**49**	**44**	**49**	**44**	**49**	**44**	**63**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	C	E	E
			Weekend Noon			
		Unit	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead
Cycle time	c	sec	104	104	104	104
Effective green time	g	sec	61	20	31	31
		pcu/hr	95	30	275	555
Design flow	q	veh/sec	0.020	0.006	0.059	0.119
		pcu/hr	1915	1940	1690	4190
Saturation flow	Q	veh/sec	0.409	0.415	0.361	0.895
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	2
Length of a vehicle	L	metre	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.587	0.192	0.298	0.298
Degree of saturation	x		0.085	0.080	0.546	0.444
	M		2.111	0.667	6.111	12.333
	y		0.050	0.015	0.163	0.132
	Qt	veh/sec	144.003	47.830	64.583	160.121
	x<1					
	A	sec/veh	0.090	0.331	0.294	0.284
	B	sec/veh	0.004	0.004	0.328	0.178
	C	sec/veh	0.000	0.051	2.445	0.747
Average Queue Delay	D	sec/veh	10	35	34	30
	x>x'					
	Z		-0.915	-0.920	-0.454	-0.556
	X'		0.712	0.684	0.689	0.716
	No	veh	-1.044	-1.033	-0.488	-0.747
Average Queue Delay	D	sec/veh	5	22	26	27
Average Delay		**sec/veh**	**10**	**35**	**34**	**30**
Average Queue	N = q(r/2+d)	veh	0.630	0.493	4.127	7.920
Average Queue Length	NL/n	metre	4	3	25	24
Average Queue	N=qr	veh	0.873	0.538	4.290	8.657
Average Queue Length	NL/n	metre	5	3	26	26
Average Queue	N=qr+No	veh	-0.171	-0.494	3.802	7.911
Average Queue Length	NL/n	metre	-1	-3	23	24
Average Queue Length		**metre**	**5**	**3**	**26**	**26**
Maximum Queue Length		**metre**	**41**	**37**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Matheson Street / Percival Street / Russell Street (J2)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB
Cycle time	c	sec	105	105	105	105	120	120	110	110
Effective green time	g	sec	63	18	62	19	72	24	68	18
		pcu/hr	565	135	720	190	630	185	785	180
Design flow	q	veh/sec	0.121	0.029	0.154	0.041	0.135	0.040	0.168	0.038
		pcu/hr	3950	3420	3950	3430	3950	3420	3950	3420
Saturation flow	Q	veh/sec	0.844	0.731	0.844	0.733	0.844	0.731	0.844	0.731
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	2	2	2	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.600	0.171	0.590	0.181	0.600	0.200	0.618	0.164
Degree of saturation	x		0.238	0.230	0.309	0.306	0.266	0.270	0.321	0.322
	M		12.676	3.029	16.154	4.263	16.154	4.744	18.451	4.231
	y		0.143	0.039	0.182	0.055	0.159	0.054	0.199	0.053
	Qt	veh/sec	303.846	75.165	299.023	79.573	303.846	87.692	313.054	71.748
	x<1									
	A	sec/veh	0.093	0.357	0.103	0.355	0.095	0.338	0.091	0.369
	B	sec/veh	0.037	0.034	0.069	0.068	0.048	0.050	0.076	0.076
	C	sec/veh	0.010	0.491	0.032	0.834	0.016	0.547	0.032	1.118
Average Queue Delay	D	sec/veh	10	38	11	38	12	41	10	41
	x>x'									
	Z		-0.762	-0.770	-0.691	-0.694	-0.734	-0.730	-0.679	-0.678
	X'		0.759	0.692	0.757	0.693	0.771	0.699	0.766	0.692
	No	veh	-1.034	-0.930	-0.983	-0.864	-1.042	-0.907	-0.991	-0.848
Average Queue Delay	D	sec/veh	8	30	9	31	9	34	8	34
Average Delay		**sec/veh**	**10**	**38**	**11**	**38**	**12**	**41**	**10**	**41**
Average Queue	N = q(r/2+d)	veh	3.755	2.358	5.028	3.293	4.814	3.531	5.272	3.364
Average Queue Length	NL/n	metre	11	7	15	10	14	11	16	10
Average Queue	N=qr	veh	5.071	2.510	6.615	3.491	6.462	3.795	7.045	3.538
Average Queue Length	NL/n	metre	15	8	20	10	19	11	21	11
Average Queue	N=qr+No	veh	4.037	1.580	5.633	2.628	5.419	2.888	6.054	2.690
Average Queue Length	NL/n	metre	12	5	17	8	16	9	18	8
Average Queue Length		**metre**	**15**	**8**	**20**	**10**	**19**	**11**	**21**	**11**
Maximum Queue Length		**metre**	**32**	**19**	**39**	**20**	**38**	**21**	**41**	**20**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J3)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	A	C	C	E	A	C	C	E	A	C	C	E	A	C	C
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT
Cycle time	c	sec	105	105	105	105	130	130	130	130	105	105	105	105	130	130	130	130
Effective green time	g	sec	61	56	35	35	72	69	47	47	61	56	35	35	64	59	57	57
		pcu/hr	885	680	205	415	850	800	270	510	880	620	285	420	915	720	345	465
Design flow	q	veh/sec	0.189	0.145	0.044	0.089	0.182	0.171	0.058	0.109	0.188	0.132	0.061	0.090	0.196	0.154	0.074	0.099
		pcu/hr	3215	2325	1140	2770	3215	2325	1140	2770	3215	2325	1140	2770	3215	2325	1140	2770
Saturation flow	Q	veh/sec	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	2	2	2	1	2	2	2	1	2	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.581	0.533	0.333	0.333	0.554	0.531	0.362	0.362	0.581	0.533	0.333	0.333	0.492	0.454	0.438	0.438
Degree of saturation	x		0.474	0.548	0.539	0.449	0.477	0.648	0.655	0.509	0.471	0.500	0.750	0.455	0.578	0.682	0.690	0.383
	M		19.856	15.256	4.599	9.311	23.611	22.222	7.500	14.167	19.744	13.910	6.394	9.423	25.417	20.000	9.583	12.917
	y		0.275	0.292	0.180	0.150	0.264	0.344	0.237	0.184	0.274	0.267	0.250	0.152	0.285	0.310	0.303	0.168
	Qt	veh/sec	239.457	158.974	48.718	118.376	228.284	158.210	52.840	128.393	239.457	158.974	48.718	118.376	202.919	135.281	64.083	155.710
	x<1																	
	A	sec/veh	0.121	0.154	0.271	0.261	0.135	0.168	0.267	0.250	0.121	0.148	0.296	0.262	0.180	0.216	0.226	0.189
	B	sec/veh	0.213	0.333	0.316	0.183	0.218	0.597	0.622	0.264	0.210	0.250	1.125	0.190	0.396	0.733	0.769	0.119
	C	sec/veh	0.239	0.672	2.568	0.822	0.302	1.422	4.406	1.105	0.233	0.465	6.899	0.852	0.848	2.243	3.958	0.274
Average Queue Delay	D	sec/veh	14	18	33	29	18	24	41	34	14	17	43	29	25	31	36	26
	x>x'																	
	Z		-0.526	-0.452	-0.461	-0.551	-0.523	-0.352	-0.345	-0.491	-0.529	-0.500	-0.250	-0.545	-0.422	-0.318	-0.310	-0.617
	X'		0.740	0.716	0.684	0.705	0.752	0.727	0.689	0.716	0.740	0.716	0.684	0.705	0.743	0.719	0.693	0.726
	No	veh	-0.768	-0.567	-0.493	-0.710	-0.800	-0.340	-0.150	-0.646	-0.771	-0.660	0.372	-0.702	-0.596	-0.174	-0.014	-0.850
Average Queue Delay	D	sec/veh	11	14	22	24	15	21	33	29	11	13	36	24	22	27	29	21
Average Delay		**sec/veh**	**14**	**18**	**33**	**29**	**18**	**24**	**41**	**34**	**14**	**17**	**36**	**29**	**25**	**31**	**36**	**26**
Average Queue	N = q(r/2+d)	veh	6.734	6.143	2.983	5.648	8.625	9.298	4.765	8.205	6.690	5.500	4.731	5.723	11.261	10.170	5.334	6.165
Average Queue Length	NL/n	metre	20	18	18	17	26	28	29	25	20	16	28	17	34	31	32	18
Average Queue	N=qr	veh	8.321	7.120	3.066	6.207	10.534	10.427	4.788	9.045	8.274	6.491	4.263	6.282	12.904	10.923	5.381	7.253
Average Queue Length	NL/n	metre	25	21	18	19	32	31	29	27	25	19	26	19	39	33	32	22
Average Queue	N=qr+No	veh	7.553	6.553	2.573	5.497	9.734	10.087	4.638	8.399	7.502	5.831	4.635	5.580	12.308	10.749	5.367	6.404
Average Queue Length	NL/n	metre	23	20	15	16	29	30	28	25	23	17	28	17	37	32	32	19
Average Queue Length		**metre**	**25**	**21**	**18**	**19**	**32**	**31**	**29**	**27**	**25**	**19**	**28**	**19**	**39**	**33**	**32**	**22**
Maximum Queue Length		**metre**	**46**	**41**	**42**	**37**	**54**	**54**	**62**	**48**	**46**	**38**	**66**	**37**	**63**	**56**	**67**	**41**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Hysan Avenue / Leighton Lane (J4)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	A	C	B	A	C	B	A	C	B	A	C
			Weekday AM			**Weekday Noon**			**Weekday PM**			**Weekend Noon**		
		Unit	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB
Cycle time	c	sec	120	120	120	130	130	130	130	130	130	130	130	130
Effective green time	g	sec	80	89	22	90	99	22	90	99	22	90	99	22
		pcu/hr	845	325	60	795	340	60	800	365	85	835	510	90
Design flow	q	veh/sec	0.181	0.069	0.013	0.170	0.073	0.013	0.171	0.078	0.018	0.178	0.109	0.019
		pcu/hr	3985	1965	3395	4000	1965	3370	4010	1965	3370	4020	1965	3390
Saturation flow	Q	veh/sec	0.851	0.420	0.725	0.855	0.420	0.720	0.857	0.420	0.720	0.859	0.420	0.724
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	2	1	2	2	1	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.667	0.742	0.183	0.692	0.762	0.169	0.692	0.762	0.169	0.692	0.762	0.169
Degree of saturation	x		0.318	0.223	0.096	0.287	0.227	0.105	0.288	0.244	0.149	0.300	0.341	0.157
	M		21.667	8.333	1.538	22.083	9.444	1.667	22.222	10.139	2.361	23.194	14.167	2.500
	y		0.212	0.165	0.018	0.199	0.173	0.018	0.200	0.186	0.025	0.208	0.260	0.027
	Qt	veh/sec	340.598	186.843	79.797	355.030	191.849	73.116	355.917	191.849	73.116	356.805	191.849	73.550
	x<1													
	A	sec/veh	0.071	0.040	0.339	0.059	0.034	0.351	0.059	0.035	0.354	0.060	0.038	0.355
	B	sec/veh	0.074	0.032	0.005	0.058	0.033	0.006	0.058	0.039	0.013	0.064	0.088	0.015
	C	sec/veh	0.022	0.004	0.064	0.012	0.003	0.099	0.012	0.005	0.211	0.014	0.028	0.236
Average Queue Delay	D	sec/veh	9	5	41	8	5	46	8	5	47	8	6	47
	x>x'													
	Z		-0.682	-0.777	-0.904	-0.713	-0.773	-0.895	-0.712	-0.756	-0.851	-0.700	-0.659	-0.843
	X'		0.784	0.732	0.697	0.798	0.739	0.696	0.799	0.739	0.696	0.799	0.739	0.697
	No	veh	-1.033	-0.997	-1.026	-1.085	-1.008	-1.023	-1.085	-0.996	-0.997	-1.078	-0.920	-0.992
Average Queue Delay	D	sec/veh	7	2	33	6	1	37	6	1	38	6	2	38
Average Delay		**sec/veh**	**9**	**5**	**41**	**8**	**5**	**46**	**8**	**5**	**47**	**8**	**6**	**47**
Average Queue	N = q(r/2+d)	veh	5.209	1.441	1.155	4.758	1.484	1.283	4.789	1.602	1.826	5.016	2.318	1.935
Average Queue Length	NL/n	metre	16	9	3	14	9	4	14	10	5	15	14	6
Average Queue	N=qr	veh	7.222	2.153	1.256	6.795	2.252	1.385	6.838	2.418	1.962	7.137	3.378	2.077
Average Queue Length	NL/n	metre	22	13	4	20	14	4	21	15	6	21	20	6
Average Queue	N=qr+No	veh	6.189	1.156	0.231	5.710	1.245	0.362	5.753	1.421	0.965	6.059	2.458	1.085
Average Queue Length	NL/n	metre	19	7	1	17	7	1	17	9	3	18	15	3
Average Queue Length		**metre**	**22**	**13**	**4**	**20**	**14**	**4**	**21**	**15**	**6**	**21**	**20**	**6**
Maximum Queue Length		**metre**	**41**	**36**	**18**	**39**	**38**	**18**	**39**	**40**	**18**	**40**	**48**	**18**

*Note: SG = Signal Group

Queue Length Analysis

MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J5)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	D	B	A	C	A	D	B	A	C	A	D	B	A	C	A
			Weekday AM					**Weekday Noon**					**Weekday PM**					**Weekend Noon**
		Unit	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB
Cycle time	c	sec	105	105	105	105	105	120	120	120	120	120	130	130	130	130	130	130
Effective green time	g	sec	33	59	33	33	19	31	76	38	31	31	40	77	46	40	24	46
		pcu/hr	710	325	395	410	335	595	280	415	430	365	605	335	405	475	340	710
Design flow	q	veh/sec	0.152	0.069	0.084	0.088	0.072	0.127	0.060	0.089	0.092	0.078	0.129	0.072	0.087	0.101	0.073	0.152
		pcu/hr	3165	1920	1665	3655	2630	3165	1920	1665	3655	2630	3165	1920	1665	3655	2630	3165
Saturation flow	Q	veh/sec	0.676	0.410	0.356	0.781	0.562	0.676	0.410	0.356	0.781	0.562	0.676	0.410	0.356	0.781	0.562	0.676
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	2	2	1	1	2	2	2	1	1	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.314	0.562	0.314	0.314	0.181	0.258	0.633	0.317	0.258	0.258	0.308	0.592	0.354	0.308	0.185	0.354
Degree of saturation	x		0.714	0.301	0.755	0.357	0.704	0.728	0.230	0.787	0.455	0.537	0.621	0.295	0.687	0.422	0.700	0.634
	M		15.929	7.292	8.862	9.199	7.516	15.256	7.179	10.641	11.026	9.359	16.806	9.306	11.250	13.194	9.444	19.722
	y		0.224	0.169	0.237	0.112	0.127	0.188	0.146	0.249	0.118	0.139	0.191	0.174	0.243	0.130	0.129	0.224
	Qt	veh/sec	127.527	138.315	67.088	147.271	61.013	104.824	155.897	67.596	121.052	87.105	124.852	145.799	75.533	144.181	62.249	143.580
	x<1																	
	A	sec/veh	0.303	0.116	0.308	0.265	0.384	0.339	0.079	0.311	0.312	0.319	0.296	0.101	0.276	0.275	0.382	0.269
	B	sec/veh	0.890	0.065	1.162	0.099	0.837	0.972	0.034	1.455	0.190	0.312	0.510	0.062	0.756	0.154	0.818	0.549
	C	sec/veh	3.233	0.057	5.837	0.392	6.415	4.454	0.011	6.837	1.182	2.272	2.390	0.044	4.098	0.717	6.674	2.077
Average Queue Delay	D	sec/veh	34	13	40	29	46	44	10	47	38	40	40	14	40	37	54	37
	x>x'																	
	Z		-0.286	-0.699	-0.245	-0.643	-0.296	-0.272	-0.770	-0.213	-0.545	-0.463	-0.379	-0.705	-0.313	-0.578	-0.300	-0.366
	X'		0.707	0.710	0.690	0.713	0.688	0.705	0.722	0.693	0.710	0.699	0.715	0.723	0.697	0.722	0.692	0.722
	No	veh	0.034	-0.895	0.382	-0.846	0.081	0.124	-0.974	0.614	-0.718	-0.539	-0.378	-0.927	-0.047	-0.793	0.039	-0.365
Average Queue Delay	D	sec/veh	32	8	36	24	41	41	6	43	34	35	37	9	35	33	50	33
Average Delay		**sec/veh**	**32**	**13**	**36**	**29**	**41**	**41**	**10**	**43**	**38**	**40**	**40**	**14**	**40**	**37**	**50**	**37**
Average Queue	N = q(r/2+d)	veh	10.689	2.501	6.439	5.654	6.345	11.231	1.915	7.794	7.607	6.594	10.997	2.892	7.139	8.283	7.789	11.914
Average Queue Length	NL/n	metre	32	15	39	17	19	34	11	47	23	20	33	17	43	25	23	36
Average Queue	N=qr	veh	10.923	3.194	6.077	6.308	6.156	11.315	2.632	7.271	8.177	6.941	11.635	3.794	7.269	9.135	7.701	12.744
Average Queue Length	NL/n	metre	33	19	36	19	18	34	16	44	25	21	35	23	44	27	23	38
Average Queue	N=qr+No	veh	10.957	2.300	6.459	5.462	6.237	11.440	1.658	7.885	7.460	6.402	11.257	2.867	7.222	8.341	7.740	12.378
Average Queue Length	NL/n	metre	33	14	39	16	19	34	10	47	22	19	34	17	43	25	23	37
Average Queue Length		**metre**	**33**	**19**	**39**	**19**	**19**	**34**	**16**	**47**	**25**	**21**	**35**	**23**	**44**	**27**	**23**	**38**
Maximum Queue Length		**metre**	**56**	**44**	**79**	**37**	**37**	**58**	**39**	**91**	**45**	**40**	**59**	**51**	**83**	**49**	**44**	**63**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J5)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			D	B	A	C
			Weekend Noon			
		Unit	CHR NB - LT	CHR NB - RT	Leighton Rd EB	Hoi Ping Rd SE
Cycle time	c	sec	130	130	130	130
Effective green time	g	sec	71	41	46	23
		pcu/hr	315	375	615	320
Design flow	q	veh/sec	0.067	0.080	0.131	0.068
		pcu/hr	1920	1665	3655	2630
Saturation flow	Q	veh/sec	0.410	0.356	0.781	0.562
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	2	2
Length of a vehicle	L	metre	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.546	0.315	0.354	0.177
Degree of saturation	x		0.300	0.714	0.476	0.688
	M		8.750	10.417	17.083	8.889
	y		0.164	0.225	0.168	0.122
	Qt	veh/sec	134.438	67.322	165.809	59.655
	x<1					
	A	sec/veh	0.123	0.302	0.251	0.386
	B	sec/veh	0.064	0.892	0.216	0.757
	C	sec/veh	0.067	5.313	0.773	6.688
Average Queue Delay	D	sec/veh	17	45	33	55
	x>x'					
	Z		-0.700	-0.286	-0.524	-0.312
	X'		0.719	0.694	0.730	0.692
	No	veh	-0.914	0.103	-0.740	-0.018
Average Queue Delay	D	sec/veh	12	40	30	50
Average Delay		**sec/veh**	**17**	**40**	**33**	**55**
Average Queue	N = q(r/2+d)	veh	3.124	7.183	9.921	7.386
Average Queue Length	NL/n	metre	19	43	30	22
Average Queue	N=qr	veh	3.971	7.131	11.038	7.316
Average Queue Length	NL/n	metre	24	43	33	22
Average Queue	N=qr+No	veh	3.057	7.234	10.298	7.298
Average Queue Length	NL/n	metre	18	43	31	22
Average Queue Length		**metre**	**24**	**43**	**33**	**22**
Maximum Queue Length		**metre**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	hton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	C	C	A	A	C	C	A	A	C	C	A	A	C	C	A
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB
Cycle time	c	sec	105	105	105	105	110	110	110	110	130	130	130	130	120	120	120	120
Effective green time	g	sec	53	41	41	53	60	39	39	60	71	48	48	71	69	40	40	69
		pcu/hr	715	315	65	945	640	280	70	1000	600	325	45	1100	655	295	130	1180
Design flow	q	veh/sec	0.153	0.067	0.014	0.202	0.137	0.060	0.015	0.214	0.128	0.069	0.010	0.235	0.140	0.063	0.028	0.252
		pcu/hr	3090	1180	930	2690	3035	1180	930	2695	3110	1180	930	2685	3080	1180	930	2695
Saturation flow	Q	veh/sec	0.660	0.252	0.199	0.575	0.649	0.252	0.199	0.576	0.665	0.252	0.199	0.574	0.658	0.252	0.199	0.576
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.505	0.390	0.390	0.505	0.545	0.355	0.355	0.545	0.546	0.369	0.369	0.546	0.575	0.333	0.333	0.575
Degree of saturation	x		0.458	0.684	0.179	0.696	0.387	0.669	0.212	0.680	0.353	0.746	0.131	0.750	0.370	0.750	0.419	0.761
	M		16.042	7.067	1.458	21.202	15.043	6.581	1.645	23.504	16.667	9.028	1.250	30.556	16.795	7.564	3.333	30.256
	y		0.231	0.267	0.070	0.351	0.211	0.237	0.075	0.371	0.193	0.275	0.048	0.410	0.213	0.250	0.140	0.438
	Qt	veh/sec	199.963	59.072	46.557	174.078	212.238	53.636	42.273	188.462	217.761	55.858	44.024	188.003	227.051	50.427	39.744	198.670
	x<1																	
	A	sec/veh	0.160	0.253	0.200	0.189	0.131	0.273	0.225	0.164	0.128	0.275	0.209	0.174	0.115	0.296	0.258	0.161
	B	sec/veh	0.194	0.739	0.020	0.797	0.122	0.677	0.029	0.724	0.096	1.095	0.010	1.126	0.109	1.125	0.151	1.215
	C	sec/veh	0.315	4.122	0.059	1.729	0.131	4.475	0.148	1.410	0.094	6.312	0.029	2.219	0.093	7.049	1.444	2.128
Average Queue Delay	D	sec/veh	18	33	22	22	15	37	27	20	17	45	28	25	14	46	35	22
	x>x'																	
	Z		-0.542	-0.316	-0.821	-0.304	-0.613	-0.331	-0.788	-0.320	-0.647	-0.254	-0.869	-0.250	-0.630	-0.250	-0.581	-0.239
	X'		0.728	0.687	0.684	0.721	0.735	0.686	0.683	0.728	0.749	0.690	0.686	0.738	0.746	0.687	0.683	0.736
	No	veh	-0.758	-0.017	-0.971	-0.123	-0.863	-0.078	-0.950	-0.224	-0.929	0.315	-1.011	0.073	-0.906	0.359	-0.728	0.158
Average Queue Delay	D	sec/veh	14	26	8	19	12	29	11	17	14	39	13	23	11	40	20	20
Average Delay		**sec/veh**	**18**	**33**	**22**	**22**	**15**	**37**	**27**	**20**	**17**	**39**	**28**	**23**	**14**	**40**	**35**	**20**
Average Queue	N = q(r/2+d)	veh	6.678	4.406	0.754	9.706	5.492	4.331	0.928	9.625	5.993	5.983	0.665	12.869	5.591	5.443	2.084	11.969
Average Queue Length	NL/n	metre	20	26	5	29	16	26	6	29	18	36	4	39	17	33	13	36
Average Queue	N=qr	veh	7.944	4.308	0.889	10.500	6.838	4.248	1.062	10.684	7.564	5.694	0.788	13.868	7.138	5.043	2.222	12.859
Average Queue Length	NL/n	metre	24	26	5	32	21	25	6	32	23	34	5	42	21	30	13	39
Average Queue	N=qr+No	veh	7.186	4.291	-0.082	10.377	5.975	4.170	0.112	10.460	6.635	6.010	-0.223	13.941	6.232	5.401	1.495	13.017
Average Queue Length	NL/n	metre	22	26	0	31	18	25	1	31	20	36	-1	42	19	32	9	39
Average Queue Length		**metre**	**24**	**26**	**5**	**32**	**21**	**26**	**6**	**32**	**23**	**36**	**5**	**42**	**21**	**32**	**13**	**39**
Maximum Queue Length		**metre**	**44**	**58**	**30**	**54**	**39**	**57**	**31**	**55**	**43**	**75**	**31**	**68**	**41**	**71**	**35**	**64**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	A	F	B	C	F	A	A	F	B	C	F	A	A	F	B
			Weekday AM						**Weekday Noon**						**Weekday PM**			
		Unit	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB
Cycle time	c	sec	100	100	100	100	100	100	100	100	100	100	100	100	105	105	105	105
Effective green time	g	sec	41	41	62	13	26	62	35	35	56	13	27	56	43	43	64	23
		pcu/hr	270	1270	40	70	380	25	255	1250	35	110	455	35	180	1375	40	70
Design flow	q	veh/sec	0.058	0.271	0.009	0.015	0.081	0.005	0.054	0.267	0.007	0.024	0.097	0.007	0.038	0.294	0.009	0.015
		pcu/hr	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330
Saturation flow	Q	veh/sec	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	3	1	1	2	1	1	3	1	1	2	1	1	3	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.410	0.410	0.620	0.130	0.260	0.620	0.350	0.350	0.560	0.130	0.270	0.560	0.410	0.410	0.610	0.219
Degree of saturation	x		0.573	0.568	0.048	0.405	0.572	0.030	0.634	0.655	0.047	0.636	0.660	0.047	0.382	0.616	0.049	0.240
	M		5.769	27.137	0.855	1.496	8.120	0.534	5.449	26.709	0.748	2.350	9.722	0.748	4.038	30.849	0.897	1.571
	y		0.235	0.233	0.030	0.053	0.149	0.019	0.222	0.229	0.026	0.083	0.178	0.026	0.157	0.252	0.030	0.053
	Qt	veh/sec	60.449	286.474	106.513	22.167	85.167	106.513	51.603	244.551	96.205	22.167	88.442	96.205	60.379	286.142	104.713	37.350
	x<1																	
	A	sec/veh	0.227	0.227	0.074	0.399	0.322	0.074	0.271	0.274	0.099	0.413	0.324	0.099	0.207	0.233	0.079	0.322
	B	sec/veh	0.384	0.374	0.001	0.138	0.382	0.000	0.548	0.623	0.001	0.556	0.639	0.001	0.118	0.494	0.001	0.038
	C	sec/veh	2.113	0.730	0.000	4.526	2.547	0.000	3.791	1.491	0.000	11.092	3.539	0.000	0.549	0.977	0.000	0.612
Average Queue Delay	D	sec/veh	27	23	8	45	34	7	33	28	10	54	35	10	24	25	8	36
	x>x'																	
	Z		-0.427	-0.432	-0.952	-0.595	-0.428	-0.970	-0.366	-0.345	-0.953	-0.364	-0.340	-0.953	-0.618	-0.384	-0.951	-0.760
	X'		0.687	0.750	0.700	0.676	0.694	0.700	0.684	0.738	0.697	0.676	0.695	0.697	0.688	0.753	0.701	0.681
	No	veh	-0.414	-0.636	-1.048	-0.775	-0.437	-1.057	-0.213	-0.363	-1.047	-0.172	-0.156	-1.047	-0.774	-0.542	-1.050	-0.931
Average Queue Delay	D	sec/veh	19	21	2	19	29	1	25	27	3	37	31	3	14	23	2	19
Average Delay		**sec/veh**	**27**	**23**	**8**	**45**	**34**	**7**	**33**	**28**	**10**	**54**	**35**	**10**	**24**	**25**	**8**	**36**
Average Queue	N = q(r/2+d)	veh	3.276	14.340	0.227	1.318	5.791	0.141	3.591	16.227	0.240	2.288	6.995	0.240	2.124	16.508	0.247	1.148
Average Queue Length	NL/n	metre	20	29	1	8	17	1	22	32	1	14	21	1	13	33	1	7
Average Queue	N=qr	veh	3.404	16.011	0.325	1.301	6.009	0.203	3.542	17.361	0.329	2.045	7.097	0.329	2.385	18.216	0.350	1.226
Average Queue Length	NL/n	metre	20	32	2	8	18	1	21	35	2	12	21	2	14	36	2	7
Average Queue	N=qr+No	veh	2.990	15.374	-0.723	0.526	5.572	-0.854	3.329	16.998	-0.718	1.873	6.941	-0.718	1.611	17.674	-0.699	0.295
Average Queue Length	NL/n	metre	18	31	-4	3	17	-5	20	34	-4	11	21	-4	10	35	-4	2
Average Queue Length		**metre**	**20**	**32**	**2**	**8**	**18**	**1**	**22**	**35**	**2**	**14**	**21**	**2**	**14**	**36**	**2**	**7**
Maximum Queue Length		**metre**	**48**	**50**	**23**	**38**	**35**	**23**	**50**	**53**	**25**	**42**	**41**	**25**	**37**	**55**	**24**	**35**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	F	A	A	F	B	C	F
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	29	64	42	42	63	13	30	63
		pcu/hr	440	35	255	1375	40	85	450	30
Design flow	q	veh/sec	0.094	0.007	0.054	0.294	0.009	0.018	0.096	0.006
		pcu/hr	2555	1340	1150	5450	1340	1330	2555	1340
Saturation flow	Q	veh/sec	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	3	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.276	0.610	0.400	0.400	0.600	0.124	0.286	0.600
Degree of saturation	x		0.624	0.043	0.554	0.631	0.050	0.516	0.616	0.037
	M		9.872	0.785	5.721	30.849	0.897	1.907	10.096	0.673
	y		0.172	0.026	0.222	0.252	0.030	0.064	0.176	0.022
	Qt	veh/sec	90.470	104.713	58.974	279.487	103.077	21.111	93.590	103.077
	x<1									
	A	sec/veh	0.316	0.078	0.231	0.241	0.082	0.410	0.310	0.082
	B	sec/veh	0.516	0.001	0.345	0.539	0.001	0.275	0.495	0.001
	C	sec/veh	3.003	0.000	2.015	1.098	0.000	7.853	2.782	0.000
Average Queue Delay	D	sec/veh	36	8	29	26	9	50	35	9
	x>x'									
	Z		-0.376	-0.957	-0.446	-0.369	-0.950	-0.484	-0.384	-0.963
	X'		0.696	0.701	0.687	0.752	0.700	0.676	0.697	0.700
	No	veh	-0.295	-1.053	-0.464	-0.495	-1.049	-0.557	-0.322	-1.055
Average Queue Delay	D	sec/veh	31	2	20	24	3	27	30	2
Average Delay		**sec/veh**	**36**	**8**	**29**	**26**	**9**	**50**	**35**	**9**
Average Queue	N = q(r/2+d)	veh	6.931	0.216	3.275	16.897	0.255	1.750	6.960	0.190
Average Queue Length	NL/n	metre	21	1	20	34	2	11	21	1
Average Queue	N=qr	veh	7.145	0.307	3.433	18.510	0.359	1.671	7.212	0.269
Average Queue Length	NL/n	metre	21	2	21	37	2	10	22	2
Average Queue	N=qr+No	veh	6.850	-0.746	2.969	18.014	-0.690	1.114	6.890	-0.786
Average Queue Length	NL/n	metre	21	-4	18	36	-4	7	21	-5
Average Queue Length		**metre**	**21**	**2**	**21**	**37**	**2**	**11**	**22**	**2**
Maximum Queue Length		**metre**	**41**	**59**	**63**	**52**	**67**	**41**	**37**	**63**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	D	E	E	A	B	C	D	E	E	A	B	C	D	E	E
			Weekday AM						Weekday Noon						Weekday PM			
		Unit	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT
Cycle time	c	sec	100	100	100	100	100	100	95	95	95	95	95	95	105	105	105	105
Effective green time	g	sec	66	64	24	24	66	64	60	58	25	25	60	58	71	69	24	24
		pcu/hr	1000	40	410	400	1110	95	870	35	540	425	1275	95	945	40	505	400
Design flow	q	veh/sec	0.214	0.009	0.088	0.085	0.237	0.020	0.186	0.007	0.115	0.091	0.272	0.020	0.202	0.009	0.108	0.085
		pcu/hr	2950	1915	3075	1915	4070	1915	2950	1915	3075	1915	4070	1915	2950	1915	3075	1915
Saturation flow	Q	veh/sec	0.630	0.409	0.657	0.409	0.870	0.409	0.630	0.409	0.657	0.409	0.870	0.409	0.630	0.409	0.657	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.660	0.640	0.240	0.240	0.660	0.640	0.632	0.611	0.263	0.263	0.632	0.611	0.676	0.657	0.229	0.229
Degree of saturation	x		0.514	0.033	0.556	0.870	0.413	0.078	0.467	0.030	0.667	0.843	0.496	0.081	0.474	0.032	0.718	0.914
	M		21.368	0.855	8.761	8.547	23.718	2.030	17.660	0.710	10.962	8.627	25.881	1.928	21.202	0.897	11.330	8.974
	y		0.339	0.021	0.133	0.209	0.273	0.050	0.295	0.018	0.176	0.222	0.313	0.050	0.320	0.021	0.164	0.209
	Qt	veh/sec	249.615	157.128	94.615	58.923	344.385	157.128	238.866	149.892	103.745	64.609	329.555	149.892	255.739	161.337	90.110	56.117
	x<1																	
	A	sec/veh	0.087	0.066	0.333	0.365	0.079	0.068	0.096	0.077	0.329	0.349	0.099	0.080	0.077	0.060	0.356	0.376
	B	sec/veh	0.271	0.001	0.347	2.921	0.146	0.003	0.205	0.000	0.669	2.270	0.244	0.004	0.213	0.001	0.917	4.846
	C	sec/veh	0.247	0.000	2.332	9.970	0.073	0.000	0.179	0.000	3.273	8.344	0.190	0.000	0.160	0.000	4.787	11.907
Average Queue Delay	D	sec/veh	10	7	35	61	8	7	10	7	34	50	10	8	9	6	41	84
	x>x'																	
	Z		-0.486	-0.967	-0.444	-0.130	-0.587	-0.922	-0.533	-0.970	-0.333	-0.157	-0.504	-0.919	-0.526	-0.968	-0.282	-0.086
	X'		0.739	0.714	0.696	0.686	0.766	0.714	0.733	0.710	0.697	0.687	0.757	0.710	0.745	0.717	0.696	0.686
	No	veh	-0.704	-1.071	-0.486	1.522	-0.909	-1.050	-0.758	-1.067	-0.137	1.208	-0.784	-1.042	-0.781	-1.076	0.117	2.113
Average Queue Delay	D	sec/veh	7	3	30	52	6	3	7	3	30	44	8	3	6	2	38	62
Average Delay		**sec/veh**	**10**	**7**	**35**	**52**	**8**	**7**	**10**	**7**	**34**	**44**	**10**	**8**	**9**	**6**	**38**	**62**
Average Queue	N = q(r/2+d)	veh	5.719	0.211	6.391	8.436	6.045	0.507	5.124	0.194	7.940	7.701	7.518	0.533	5.249	0.208	8.804	10.665
Average Queue Length	NL/n	metre	17	1	19	51	18	3	15	1	24	46	23	3	16	1	26	64
Average Queue	N=qr	veh	7.265	0.308	6.658	6.496	8.064	0.731	6.506	0.277	8.077	6.357	9.535	0.751	6.865	0.308	8.740	6.923
Average Queue Length	NL/n	metre	22	2	20	39	24	4	20	2	24	38	29	5	21	2	26	42
Average Queue	N=qr+No	veh	6.561	-0.763	6.172	8.017	7.155	-0.319	5.749	-0.790	7.940	7.565	8.751	-0.290	6.084	-0.769	8.858	9.036
Average Queue Length	NL/n	metre	20	-5	19	48	21	-2	17	-5	24	45	26	-2	18	-5	27	54
Average Queue Length		**metre**	**22**	**2**	**20**	**48**	**24**	**4**	**20**	**2**	**24**	**45**	**29**	**5**	**21**	**2**	**27**	**54**
Maximum Queue Length		**metre**	**48**	**25**	**35**	**71**	**51**	**25**	**42**	**25**	**43**	**76**	**54**	**25**	**44**	**24**	**45**	**82**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	C	D	E	E	A	B
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	71	69	69	67	26	26	69	67
		pcu/hr	1280	100	1010	40	495	405	1240	95
Design flow	q	veh/sec	0.274	0.021	0.216	0.009	0.106	0.087	0.265	0.020
		pcu/hr	4070	1915	2950	1915	3075	1915	4070	1915
Saturation flow	Q	veh/sec	0.870	0.409	0.630	0.409	0.657	0.409	0.870	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.676	0.657	0.657	0.638	0.248	0.248	0.657	0.638
Degree of saturation	x		0.465	0.079	0.521	0.033	0.650	0.854	0.464	0.078
	M		28.718	2.244	22.660	0.897	11.106	9.087	27.821	2.131
	y		0.314	0.052	0.342	0.021	0.161	0.211	0.305	0.050
	Qt	veh/sec	352.833	161.337	248.535	156.661	97.619	60.794	342.894	156.661
	x<1									
	A	sec/veh	0.076	0.062	0.089	0.067	0.337	0.359	0.085	0.069
	B	sec/veh	0.202	0.003	0.283	0.001	0.604	2.500	0.200	0.003
	C	sec/veh	0.118	0.000	0.272	0.000	3.400	9.405	0.128	0.000
Average Queue Delay	D	sec/veh	9	7	10	7	38	57	10	7
	x>x'									
	Z		-0.535	-0.921	-0.479	-0.967	-0.350	-0.146	-0.536	-0.922
	X'		0.773	0.717	0.742	0.716	0.698	0.688	0.770	0.716
	No	veh	-0.871	-1.054	-0.702	-1.074	-0.210	1.318	-0.865	-1.053
Average Queue Delay	D	sec/veh	7	3	8	3	34	51	7	3
Average Delay		**sec/veh**	**9**	**7**	**10**	**7**	**38**	**51**	**10**	**7**
Average Queue	N = q(r/2+d)	veh	7.016	0.527	6.135	0.223	8.169	8.366	7.287	0.536
Average Queue Length	NL/n	metre	21	3	18	1	25	50	22	3
Average Queue	N=qr	veh	9.299	0.769	7.769	0.325	8.356	6.837	9.538	0.771
Average Queue Length	NL/n	metre	28	5	23	2	25	41	29	5
Average Queue	N=qr+No	veh	8.428	-0.285	7.067	-0.750	8.146	8.155	8.674	-0.282
Average Queue Length	NL/n	metre	25	-2	21	-4	24	49	26	-2
Average Queue Length		**metre**	**28**	**5**	**23**	**2**	**25**	**49**	**29**	**5**
Maximum Queue Length		**metre**	**54**	**44**	**63**	**52**	**67**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Pennington Street / Jardine's Bazaar / Irving Street (J11)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	F	A	B	E	F	A	B	E	F	A	B	E	F
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT
Cycle time	c	sec	100	100	100	100	120	120	120	120	100	100	100	100	100	100	100	100
Effective green time	g	sec	30	56	80	78	39	67	100	98	32	54	80	78	33	53	80	78
		pcu/hr	435	585	435	515	505	660	470	600	555	670	525	595	530	635	475	595
Design flow	q	veh/sec	0.093	0.125	0.093	0.110	0.108	0.141	0.100	0.128	0.119	0.143	0.112	0.127	0.113	0.136	0.101	0.127
		pcu/hr	6350	3850	1840	3425	6365	3825	1840	3425	6355	3810	1840	3425	6365	3820	1840	3425
Saturation flow	Q	veh/sec	1.357	0.823	0.393	0.732	1.360	0.817	0.393	0.732	1.358	0.814	0.393	0.732	1.360	0.816	0.393	0.732
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	4	2	1	2	4	2	1	2	4	2	1	2	4	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.300	0.560	0.800	0.780	0.325	0.558	0.833	0.817	0.320	0.540	0.800	0.780	0.330	0.530	0.800	0.780
Degree of saturation	x		0.228	0.271	0.296	0.193	0.244	0.309	0.307	0.215	0.273	0.326	0.357	0.223	0.252	0.314	0.323	0.223
	M		9.295	12.500	9.295	11.004	12.949	16.923	12.051	15.385	11.859	14.316	11.218	12.714	11.325	13.568	10.150	12.714
	y		0.069	0.152	0.236	0.150	0.079	0.173	0.255	0.175	0.087	0.176	0.285	0.174	0.083	0.166	0.258	0.174
	Qt	veh/sec	244.231	276.410	188.718	342.500	265.208	273.798	196.581	358.600	260.718	263.769	188.718	342.500	269.288	259.564	188.718	342.500
	x<1																	
	A	sec/veh	0.263	0.114	0.026	0.028	0.247	0.118	0.019	0.020	0.253	0.128	0.028	0.029	0.245	0.132	0.027	0.029
	B	sec/veh	0.034	0.051	0.062	0.023	0.039	0.069	0.068	0.029	0.051	0.079	0.099	0.032	0.043	0.072	0.077	0.032
	C	sec/veh	0.084	0.023	0.010	0.001	0.085	0.043	0.010	0.001	0.117	0.057	0.027	0.002	0.085	0.052	0.016	0.002
Average Queue Delay	D	sec/veh	27	12	3	3	30	15	3	3	26	13	4	3	25	14	3	3
	x>x'																	
	Z		-0.772	-0.729	-0.704	-0.807	-0.756	-0.691	-0.693	-0.785	-0.727	-0.674	-0.643	-0.777	-0.748	-0.686	-0.677	-0.777
	X'		0.738	0.747	0.722	0.765	0.758	0.761	0.736	0.790	0.742	0.743	0.722	0.765	0.745	0.742	0.722	0.765
	No	veh	-1.001	-0.988	-0.922	-1.072	-1.031	-0.992	-0.941	-1.107	-0.979	-0.939	-0.865	-1.055	-0.998	-0.946	-0.898	-1.055
Average Queue Delay	D	sec/veh	24	9	0	1	27	12	-1	1	23	11	0	1	22	11	0	1
Average Delay		**sec/veh**	**27**	**12**	**3**	**3**	**30**	**15**	**3**	**3**	**26**	**13**	**4**	**3**	**25**	**14**	**3**	**3**
Average Queue	N = q(r/2+d)	veh	5.724	4.224	1.234	1.547	7.605	5.795	1.296	1.753	7.074	5.201	1.532	1.803	6.600	5.051	1.364	1.803
Average Queue Length	NL/n	metre	9	13	7	5	11	17	8	5	11	16	9	5	10	15	8	5
Average Queue	N=qr	veh	6.506	5.500	1.859	2.421	8.740	7.474	2.009	2.821	8.064	6.585	2.244	2.797	7.588	6.377	2.030	2.797
Average Queue Length	NL/n	metre	10	17	11	7	13	22	12	8	12	20	13	8	11	19	12	8
Average Queue	N=qr+No	veh	5.505	4.512	0.937	1.349	7.709	6.482	1.068	1.714	7.085	5.647	1.378	1.742	6.590	5.431	1.132	1.742
Average Queue Length	NL/n	metre	8	14	6	4	12	19	6	5	11	17	8	5	10	16	7	5
Average Queue Length		**metre**	**10**	**17**	**11**	**7**	**13**	**22**	**12**	**8**	**12**	**20**	**13**	**8**	**11**	**19**	**12**	**8**
Maximum Queue Length		**metre**	**19**	**34**	**34**	**20**	**24**	**42**	**36**	**22**	**22**	**38**	**38**	**22**	**21**	**37**	**36**	**22**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Link Road / Broadwood Road (J12)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	C	A	B	E	C	A	B	E	C	A	B	E	C
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB
Cycle time	c	sec	140	140	140	140	110	110	110	110	135	135	135	135	110	110	110	110
Effective green time	g	sec	38	58	61	54	28	43	46	39	36	62	65	45	28	46	49	36
		pcu/hr	385	345	185	510	335	380	170	440	370	380	245	440	355	370	220	445
Design flow	q	veh/sec	0.082	0.074	0.040	0.109	0.072	0.081	0.036	0.094	0.079	0.081	0.052	0.094	0.076	0.079	0.047	0.095
		pcu/hr	1940	1890	1730	1840	1945	1885	1730	1835	1940	1895	1730	1860	1945	1885	1730	1845
Saturation flow	Q	veh/sec	0.415	0.404	0.370	0.393	0.416	0.403	0.370	0.392	0.415	0.405	0.370	0.397	0.416	0.403	0.370	0.394
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.271	0.414	0.436	0.386	0.255	0.391	0.418	0.355	0.267	0.459	0.481	0.333	0.255	0.418	0.445	0.327
Degree of saturation	x		0.731	0.441	0.245	0.719	0.677	0.516	0.235	0.676	0.715	0.437	0.294	0.710	0.717	0.469	0.285	0.737
	M		11.517	10.321	5.534	15.256	7.874	8.932	3.996	10.342	10.673	10.962	7.067	12.692	8.344	8.697	5.171	10.459
	y		0.198	0.183	0.107	0.277	0.172	0.202	0.098	0.240	0.191	0.201	0.142	0.237	0.183	0.196	0.127	0.241
	Qt	veh/sec	67.509	100.385	96.639	90.989	63.473	94.470	92.751	83.409	66.325	111.576	106.790	79.487	63.473	101.061	98.800	77.413
	x<1																	
	A	sec/veh	0.331	0.210	0.178	0.261	0.336	0.232	0.188	0.274	0.332	0.183	0.157	0.291	0.340	0.211	0.176	0.298
	B	sec/veh	0.994	0.174	0.040	0.918	0.708	0.275	0.036	0.707	0.898	0.169	0.061	0.867	0.909	0.208	0.057	1.032
	C	sec/veh	6.236	0.682	0.082	4.039	5.031	1.211	0.076	3.444	5.922	0.506	0.108	4.586	5.852	0.766	0.119	4.928
Average Queue Delay	D	sec/veh	52	31	26	41	42	28	22	34	50	26	22	44	44	25	20	39
	x>x'																	
	Z		-0.269	-0.559	-0.755	-0.281	-0.323	-0.484	-0.765	-0.324	-0.285	-0.563	-0.706	-0.290	-0.283	-0.531	-0.715	-0.263
	X'		0.696	0.709	0.708	0.705	0.689	0.699	0.698	0.695	0.695	0.712	0.710	0.700	0.689	0.701	0.700	0.694
	No	veh	0.191	-0.739	-0.943	0.070	-0.059	-0.582	-0.933	-0.089	0.106	-0.751	-0.906	0.051	0.144	-0.671	-0.893	0.241
Average Queue Delay	D	sec/veh	48	25	19	37	36	22	15	29	46	21	16	40	39	19	14	35
Average Delay		**sec/veh**	**48**	**31**	**26**	**37**	**42**	**28**	**22**	**34**	**46**	**26**	**22**	**40**	**39**	**25**	**20**	**35**
Average Queue	N = q(r/2+d)	veh	8.490	5.311	2.585	9.146	5.926	4.971	1.946	6.554	7.890	5.096	2.995	8.361	6.411	4.508	2.396	7.201
Average Queue Length	NL/n	metre	51	32	16	55	36	30	12	39	47	31	18	50	38	27	14	43
Average Queue	N=qr	veh	8.391	6.045	3.123	9.372	5.870	5.440	2.325	6.675	7.827	5.927	3.665	8.462	6.220	5.060	2.868	7.036
Average Queue Length	NL/n	metre	50	36	19	56	35	33	14	40	47	36	22	51	37	30	17	42
Average Queue	N=qr+No	veh	8.582	5.306	2.180	9.442	5.810	4.858	1.392	6.586	7.933	5.177	2.759	8.512	6.364	4.389	1.974	7.278
Average Queue Length	NL/n	metre	51	32	13	57	35	29	8	40	48	31	17	51	38	26	12	44
Average Queue Length		**metre**	**51**	**36**	**19**	**57**	**36**	**33**	**14**	**40**	**48**	**36**	**22**	**51**	**38**	**30**	**17**	**44**
Maximum Queue Length		**metre**	**94**	**72**	**43**	**101**	**71**	**66**	**36**	**78**	**89**	**71**	**49**	**93**	**76**	**63**	**40**	**84**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Wong Nai Chung Road / Sports Road (J14)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB
Cycle time	c	sec	90	90	75	75	90	90	75	75
Effective green time	g	sec	58	22	45	20	58	22	46	19
		pcu/hr	725	430	755	540	795	485	815	550
Design flow	q	veh/sec	0.155	0.092	0.161	0.115	0.170	0.104	0.174	0.118
		pcu/hr	3655	5885	3655	5885	3655	5885	3655	5885
Saturation flow	Q	veh/sec	0.781	1.257	0.781	1.257	0.781	1.257	0.781	1.257
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	3	2	3	2	3	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.644	0.244	0.600	0.267	0.644	0.244	0.613	0.253
Degree of saturation	x		0.308	0.299	0.344	0.344	0.338	0.337	0.364	0.369
	M		13.942	8.269	12.099	8.654	15.288	9.327	13.061	8.814
	y		0.198	0.073	0.207	0.092	0.218	0.082	0.223	0.093
	Qt	veh/sec	301.980	184.430	281.154	201.197	301.980	184.430	287.402	191.137
	x<1									
	A	sec/veh	0.079	0.308	0.101	0.296	0.081	0.311	0.096	0.307
	B	sec/veh	0.068	0.064	0.090	0.090	0.086	0.086	0.104	0.108
	C	sec/veh	0.021	0.292	0.045	0.330	0.033	0.397	0.052	0.440
Average Queue Delay	D	sec/veh	8	28	8	23	8	28	8	24
	x>x'									
	Z		-0.692	-0.701	-0.656	-0.656	-0.662	-0.663	-0.636	-0.631
	X'		0.745	0.716	0.729	0.712	0.745	0.716	0.730	0.710
	No	veh	-0.957	-0.905	-0.888	-0.852	-0.932	-0.870	-0.872	-0.821
Average Queue Delay	D	sec/veh	5	25	6	20	5	25	5	20
Average Delay		**sec/veh**	**8**	**28**	**8**	**23**	**8**	**28**	**8**	**24**
Average Queue	N = q(r/2+d)	veh	3.643	5.707	3.723	5.787	4.033	6.469	3.876	6.057
Average Queue Length	NL/n	metre	11	11	11	12	12	13	12	12
Average Queue	N=qr	veh	4.957	6.248	4.840	6.346	5.436	7.047	5.050	6.581
Average Queue Length	NL/n	metre	15	12	15	13	16	14	15	13
Average Queue	N=qr+No	veh	4.000	5.343	3.952	5.494	4.503	6.177	4.179	5.760
Average Queue Length	NL/n	metre	12	11	12	11	14	12	13	12
Average Queue Length		**metre**	**15**	**12**	**15**	**13**	**16**	**14**	**15**	**13**
Maximum Queue Length		**metre**	**32**	**19**	**39**	**20**	**38**	**21**	**41**	**20**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leigthon Road / Wong Nai Chung Road (J15)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	A	A	B	A	A	A	B	A	A	A	B	A	A
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB
Cycle time	c	sec	130	130	130	130	120	120	120	120	120	120	120	120	120	120	120	120
Effective green time	g	sec	91	27	91	91	79	29	79	79	77	31	77	77	78	30	78	78
		pcu/hr	375	50	870	680	470	60	850	800	400	65	850	620	500	60	830	720
Design flow	q	veh/sec	0.080	0.011	0.186	0.145	0.100	0.013	0.182	0.171	0.085	0.014	0.182	0.132	0.107	0.013	0.177	0.154
		pcu/hr	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455
Saturation flow	Q	veh/sec	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	3	2	1	2	3	2	1	2	3	2	1	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.700	0.208	0.700	0.700	0.658	0.242	0.658	0.658	0.642	0.258	0.642	0.642	0.650	0.250	0.650	0.650
Degree of saturation	x		0.241	0.651	0.641	0.396	0.321	0.671	0.666	0.495	0.280	0.680	0.683	0.394	0.346	0.649	0.658	0.451
	M		10.417	1.389	24.167	18.889	12.051	1.538	21.795	20.513	10.256	1.667	21.795	15.897	12.821	1.538	21.282	18.462
	y		0.169	0.135	0.448	0.277	0.211	0.162	0.438	0.326	0.180	0.176	0.438	0.253	0.225	0.162	0.428	0.293
	Qt	veh/sec	199.679	9.852	174.103	220.321	187.794	11.464	163.739	207.206	183.040	12.254	159.594	201.960	185.417	11.859	161.667	204.583
	x<1																	
	A	sec/veh	0.054	0.363	0.082	0.062	0.074	0.343	0.104	0.087	0.078	0.334	0.114	0.086	0.079	0.336	0.107	0.087
	B	sec/veh	0.038	0.606	0.571	0.130	0.076	0.684	0.662	0.243	0.055	0.723	0.735	0.128	0.091	0.599	0.634	0.185
	C	sec/veh	0.007	18.391	0.873	0.073	0.036	16.273	1.159	0.252	0.022	15.594	1.370	0.096	0.054	14.335	1.130	0.171
Average Queue Delay	D	sec/veh	8	86	13	9	10	78	15	12	10	76	16	11	10	73	15	11
	x>x'																	
	Z		-0.759	-0.349	-0.359	-0.604	-0.679	-0.329	-0.334	-0.505	-0.720	-0.320	-0.317	-0.606	-0.654	-0.351	-0.342	-0.549
	X'		0.742	0.674	0.733	0.750	0.733	0.674	0.725	0.739	0.731	0.674	0.723	0.737	0.732	0.674	0.724	0.738
	No	veh	-1.004	-0.105	-0.390	-0.890	-0.923	-0.013	-0.267	-0.735	-0.953	0.028	-0.192	-0.862	-0.898	-0.114	-0.291	-0.796
Average Queue Delay	D	sec/veh	4	41	9	6	6	41	11	8	6	41	13	8	7	34	12	8
Average Delay		**sec/veh**	**8**	**86**	**13**	**9**	**10**	**78**	**15**	**12**	**10**	**41**	**16**	**11**	**10**	**73**	**15**	**11**
Average Queue	N = q(r/2+d)	veh	2.164	1.464	6.005	4.128	3.023	1.587	6.439	5.480	2.693	1.680	6.881	4.329	3.342	1.508	6.436	4.990
Average Queue Length	NL/n	metre	6	9	18	8	9	10	19	11	8	10	21	9	10	9	19	10
Average Queue	N=qr	veh	3.125	1.100	7.250	5.667	4.118	1.167	7.447	7.009	3.675	1.236	7.810	5.697	4.487	1.154	7.449	6.462
Average Queue Length	NL/n	metre	9	7	22	11	12	7	22	14	11	7	23	11	13	7	22	13
Average Queue	N=qr+No	veh	2.121	0.996	6.860	4.776	3.195	1.154	7.179	6.273	2.722	1.264	7.617	4.834	3.589	1.040	7.157	5.666
Average Queue Length	NL/n	metre	6	6	21	10	10	7	22	13	8	8	23	10	11	6	21	11
Average Queue Length		**metre**	**9**	**9**	**22**	**11**	**12**	**10**	**22**	**14**	**11**	**8**	**23**	**11**	**13**	**9**	**22**	**13**
Maximum Queue Length		**metre**	**23**	**40**	**41**	**23**	**28**	**40**	**42**	**27**	**26**	**40**	**44**	**23**	**29**	**39**	**42**	**25**

*Note: SG = Signal Group

Queue Length Analysis

MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Reference Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Tung Lo Wan Road / Eastern Hospital Road (J16)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB
Cycle time	c	sec	100	100	95	95	105	105	105	105
Effective green time	g	sec	31	35	29	32	34	37	37	34
		pcu/hr	555	325	555	325	490	290	560	285
Design flow	q	veh/sec	0.119	0.069	0.119	0.069	0.105	0.062	0.120	0.061
		pcu/hr	3310	1760	3295	1790	3290	1760	3290	1780
Saturation flow	Q	veh/sec	0.707	0.376	0.704	0.382	0.703	0.376	0.703	0.380
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.310	0.350	0.305	0.337	0.324	0.352	0.352	0.324
Degree of saturation	x		0.541	0.528	0.552	0.539	0.460	0.468	0.483	0.494
	M		11.859	6.944	11.266	6.597	10.994	6.506	12.564	6.394
	y		0.168	0.185	0.168	0.182	0.149	0.165	0.170	0.160
	Qt	veh/sec	131.551	78.974	128.954	77.301	136.581	79.512	148.632	73.895
	x<1									
	A	sec/veh	0.286	0.259	0.290	0.269	0.269	0.251	0.253	0.272
	B	sec/veh	0.319	0.295	0.340	0.315	0.196	0.205	0.226	0.242
	C	sec/veh	1.411	1.624	1.509	1.801	0.831	1.122	0.818	1.549
Average Queue Delay	D	sec/veh	30	29	29	28	29	29	28	31
	x>x'									
	Z		-0.459	-0.472	-0.448	-0.461	-0.540	-0.532	-0.517	-0.506
	X'		0.707	0.692	0.704	0.690	0.710	0.693	0.713	0.692
	No	veh	-0.551	-0.537	-0.519	-0.507	-0.708	-0.656	-0.680	-0.604
Average Queue Delay	D	sec/veh	26	22	25	22	25	21	24	24
Average Delay		**sec/veh**	**30**	**29**	**29**	**28**	**29**	**29**	**28**	**31**
Average Queue	N = q(r/2+d)	veh	7.634	4.238	7.344	4.150	6.779	3.876	7.371	4.050
Average Queue Length	NL/n	metre	23	25	22	25	20	23	22	24
Average Queue	N=qr	veh	8.183	4.514	7.827	4.375	7.434	4.214	8.137	4.324
Average Queue Length	NL/n	metre	25	27	23	26	22	25	24	26
Average Queue	N=qr+No	veh	7.631	3.977	7.308	3.868	6.726	3.558	7.456	3.719
Average Queue Length	NL/n	metre	23	24	22	23	20	21	22	22
Average Queue Length		**metre**	**25**	**27**	**23**	**26**	**22**	**25**	**24**	**26**
Maximum Queue Length		**metre**	**45**	**56**	**44**	**54**	**42**	**52**	**45**	**52**

*Note: SG = Signal Group

Queue Length Analysis

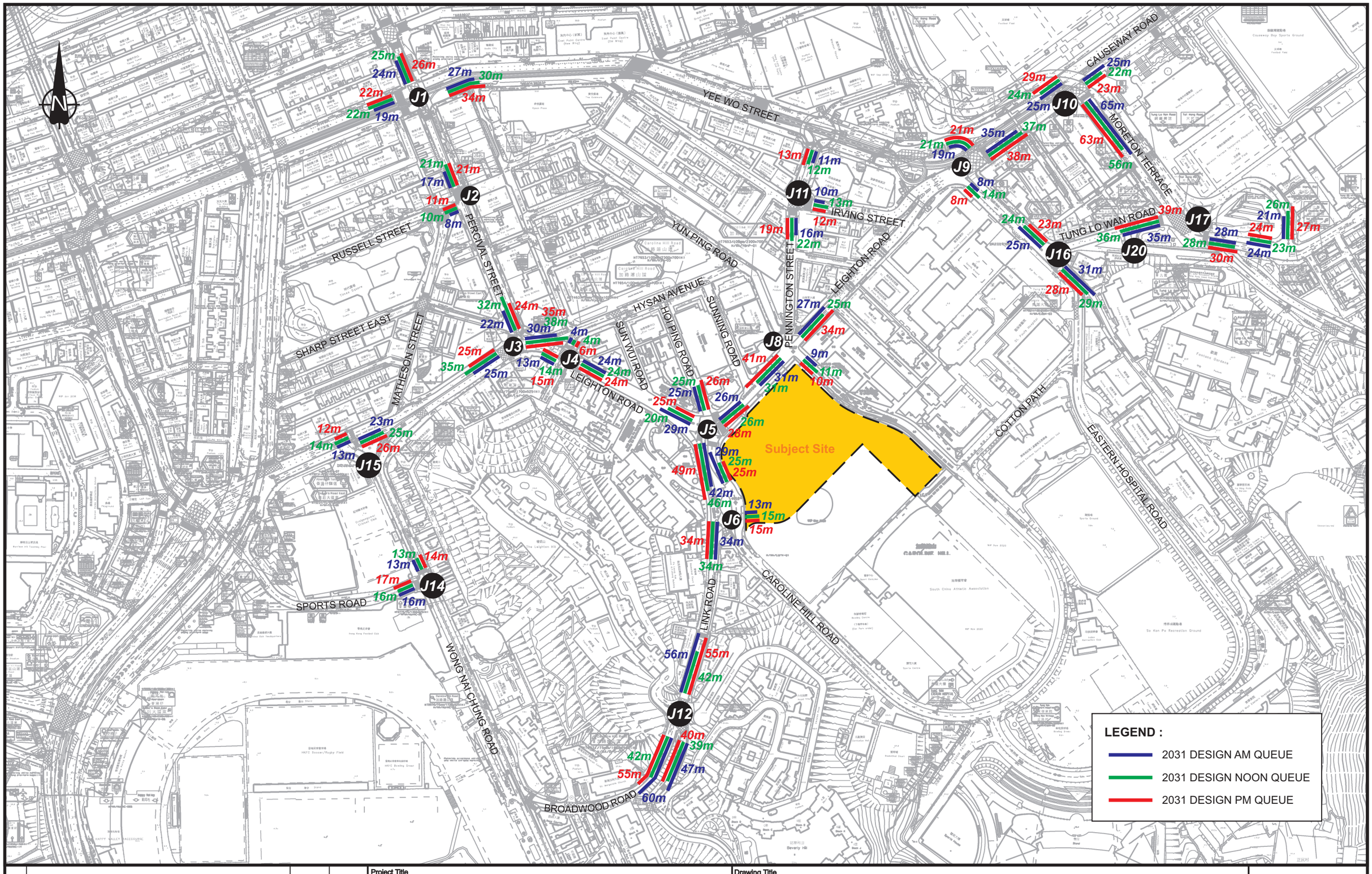
SYSTRA MVA Hong Kong Ltd.

Job No.	CHK50603110
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B
Junction Name	Tung Lo Wan Road / Moreton Terrace (J17)
Approach	
Probability(1% / 5%)?	5%
Description	2031 Reference Flows
Design Year	2031
Designed By	LYK
Checked By	CHC

			A	E	E	B	A	E	E	B	A	E	E	B	A	E	E	B
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB
Cycle time	c	sec	100	100	100	100	95	95	95	95	105	105	105	105	105	105	105	105
Effective green time	g	sec	43	45	45	43	40	43	43	40	46	47	47	46	48	45	45	48
		pcu/hr	905	800	340	290	930	910	365	355	920	860	345	330	775	695	240	240
Design flow	q	veh/sec	0.193	0.171	0.073	0.062	0.199	0.194	0.078	0.076	0.197	0.184	0.074	0.071	0.166	0.149	0.051	0.051
		pcu/hr	3520	3520	1935	1680	3505	3520	1945	1675	3510	3520	1945	1675	3505	3590	1960	1690
Saturation flow	Q	veh/sec	0.752	0.752	0.413	0.359	0.749	0.752	0.416	0.358	0.750	0.752	0.416	0.358	0.749	0.767	0.419	0.361
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.430	0.450	0.450	0.430	0.421	0.453	0.453	0.421	0.438	0.448	0.448	0.438	0.457	0.429	0.429	0.457
Degree of saturation	x		0.598	0.505	0.390	0.401	0.630	0.571	0.415	0.503	0.598	0.546	0.396	0.450	0.484	0.452	0.286	0.311
	M		19.338	17.094	7.265	6.197	18.878	18.472	7.409	7.206	20.641	19.295	7.740	7.404	17.388	15.593	5.385	5.385
	y		0.257	0.227	0.176	0.173	0.265	0.259	0.188	0.212	0.262	0.244	0.177	0.197	0.221	0.194	0.122	0.142
	Qt	veh/sec	194.051	203.077	111.635	92.615	189.204	204.265	112.868	90.418	197.143	202.002	111.618	94.078	205.421	197.253	107.692	99.048
	x<1																	
	A	sec/veh	0.219	0.196	0.183	0.196	0.228	0.202	0.184	0.213	0.214	0.202	0.185	0.197	0.189	0.202	0.186	0.172
	B	sec/veh	0.445	0.258	0.125	0.135	0.537	0.380	0.147	0.255	0.446	0.328	0.130	0.184	0.227	0.186	0.057	0.070
	C	sec/veh	1.067	0.537	0.318	0.436	1.308	0.812	0.381	0.988	1.054	0.729	0.345	0.631	0.452	0.406	0.124	0.148
Average Queue Delay	D	sec/veh	23	21	20	21	23	20	19	23	24	22	21	23	21	22	21	19
	x>x'																	
	Z		-0.402	-0.495	-0.610	-0.599	-0.370	-0.429	-0.585	-0.497	-0.402	-0.454	-0.604	-0.550	-0.516	-0.548	-0.714	-0.689
	X'		0.724	0.726	0.701	0.696	0.720	0.724	0.700	0.694	0.728	0.729	0.703	0.697	0.730	0.728	0.701	0.699
	No	veh	-0.476	-0.680	-0.782	-0.758	-0.368	-0.541	-0.748	-0.591	-0.488	-0.613	-0.779	-0.694	-0.725	-0.765	-0.894	-0.867
Average Queue Delay	D	sec/veh	20	18	14	15	21	18	14	16	21	19	15	16	18	19	15	13
Average Delay		**sec/veh**	**23**	**21**	**20**	**21**	**23**	**20**	**19**	**23**	**24**	**22**	**21**	**23**	**21**	**22**	**21**	**19**
Average Queue	N = q(r/2+d)	veh	9.978	8.213	3.433	3.090	10.048	9.010	3.511	3.799	10.454	9.418	3.678	3.675	8.161	7.738	2.591	2.449
Average Queue Length	NL/n	metre	30	25	21	19	30	27	21	23	31	28	22	22	24	23	16	15
Average Queue	N=qr	veh	11.022	9.402	3.996	3.532	10.929	10.111	4.056	4.172	11.598	10.658	4.276	4.160	9.439	8.910	3.077	2.923
Average Queue Length	NL/n	metre	33	28	24	21	33	30	24	25	35	32	26	25	28	27	18	18
Average Queue	N=qr+No	veh	10.547	8.722	3.214	2.774	10.562	9.570	3.308	3.581	11.110	10.045	3.497	3.466	8.714	8.145	2.183	2.056
Average Queue Length	NL/n	metre	32	26	19	17	32	29	20	21	33	30	21	21	26	24	13	12
Average Queue Length		**metre**	**33**	**28**	**24**	**21**	**33**	**30**	**24**	**25**	**35**	**32**	**26**	**25**	**28**	**27**	**18**	**18**
Maximum Queue Length		**metre**	**56**	**50**	**52**	**47**	**56**	**53**	**53**	**54**	**58**	**55**	**55**	**44**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Year 2031 Design



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG TRAFFIC REVIEW REPORT

Drawing Title

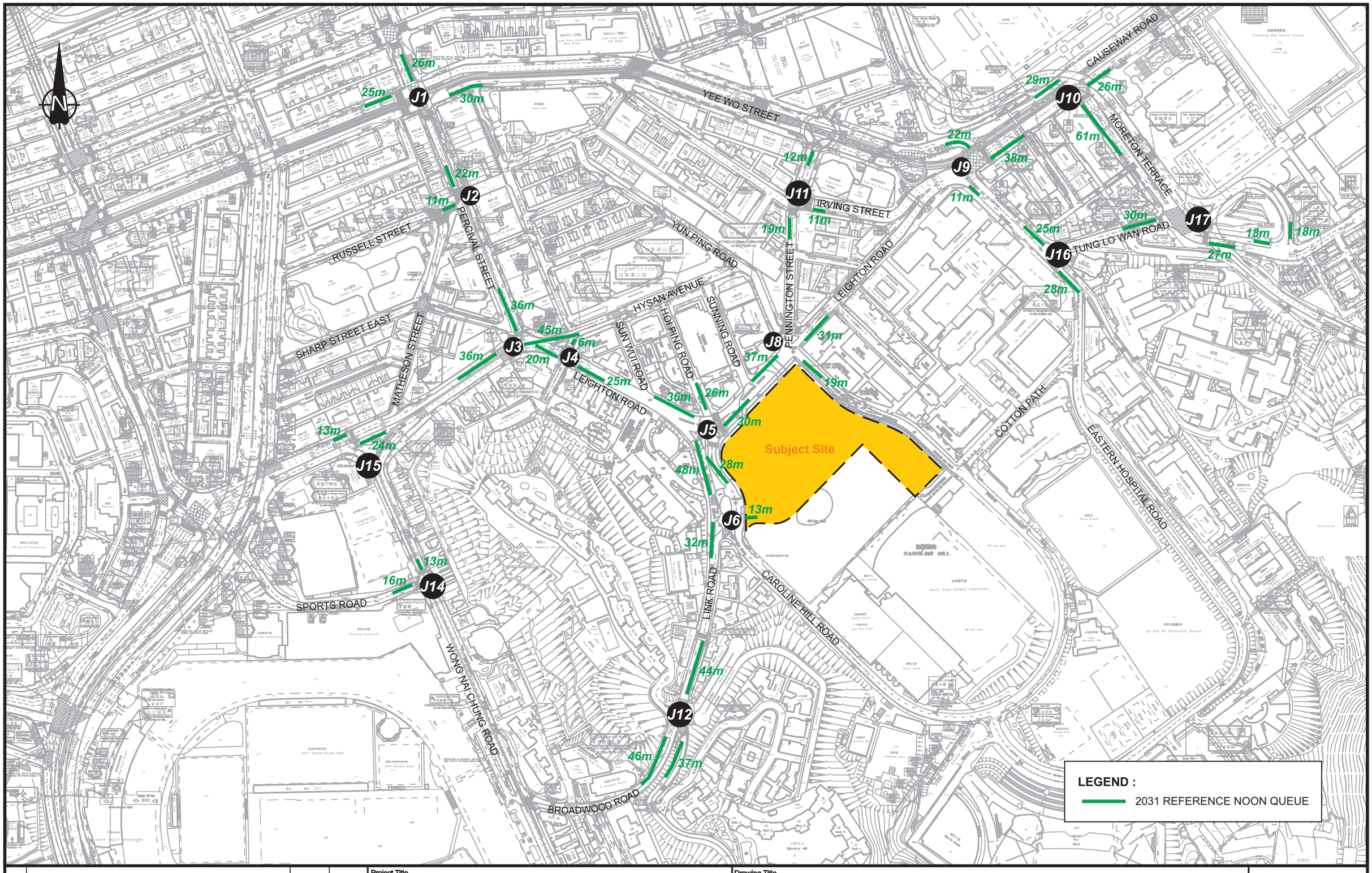
ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKDAY UNDER YEAR 2031 DESIGN SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E5	A

SYSTRA MVA

CHK50603110/TIA/E5-A.CDR/LLH/13APR22

Original Size : A3



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	MINOR AMENDMENT	CHC	13APR22

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

ESTIMATED AVERAGE QUEUE LENGTH FOR WEEKEND UNDER YEAR 2031 DESIGN SCENARIO

Designed	Checked	Scale	Date	Drawing No.	Rev.
LYK	CHC	NTS	FEB 2022	E6	A

SYSTRA MVA

CHK50603110/TIA/E6-A.CDR/LLH/13APR22

Original Size : A3

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	D	A	B	C	B	C	E	E	A	D	A	B	C	B	C
			Weekday AM									Weekday Noon						
		Unit	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT
Cycle time	c	sec	120	120	120	120	120	120	120	120	120	104	104	104	104	104	104	104
Effective green time	g	sec	47	27	47	75	23	75	23	32	32	39	25	39	67	21	67	21
		pcu/hr	575	20	70	625	155	75	25	75	425	710	15	70	550	205	80	35
Design flow	q	veh/sec	0.123	0.004	0.015	0.134	0.033	0.016	0.005	0.016	0.091	0.152	0.003	0.015	0.118	0.044	0.017	0.007
		pcu/hr	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940	1915	1940
Saturation flow	Q	veh/sec	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	1	1	1	1	2	2	1	1	2	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.392	0.225	0.392	0.625	0.192	0.625	0.192	0.267	0.267	0.375	0.240	0.375	0.644	0.202	0.644	0.202
Degree of saturation	x		0.406	0.050	0.087	0.332	0.417	0.063	0.067	0.166	0.380	0.523	0.035	0.091	0.283	0.523	0.065	0.089
	M		14.744	0.513	1.795	16.026	3.974	1.923	0.641	1.923	10.897	15.778	0.333	1.556	12.222	4.556	1.778	0.778
	y		0.159	0.011	0.034	0.207	0.080	0.039	0.013	0.044	0.101	0.196	0.008	0.034	0.182	0.106	0.042	0.018
	Qt	veh/sec	181.774	51.346	103.189	241.587	47.671	153.446	47.671	57.778	143.248	174.038	54.857	98.798	249.020	50.222	158.167	50.222
	x<1																	
	A	sec/veh	0.220	0.304	0.192	0.089	0.355	0.073	0.331	0.281	0.299	0.243	0.291	0.202	0.077	0.356	0.066	0.324
	B	sec/veh	0.138	0.001	0.004	0.082	0.149	0.002	0.002	0.017	0.117	0.287	0.001	0.005	0.056	0.287	0.002	0.004
	C	sec/veh	0.364	0.010	0.003	0.043	2.335	0.000	0.036	0.128	0.633	0.872	0.003	0.005	0.018	3.504	0.000	0.056
Average Queue Delay	D	sec/veh	27	37	23	11	45	9	40	35	37	26	30	21	9	40	7	34
	x>x'																	
	Z		-0.594	-0.950	-0.913	-0.668	-0.583	-0.937	-0.933	-0.834	-0.620	-0.477	-0.965	-0.909	-0.717	-0.477	-0.935	-0.911
	X'		0.731	0.687	0.704	0.751	0.686	0.721	0.686	0.689	0.718	0.720	0.686	0.699	0.742	0.685	0.716	0.685
	No	veh	-0.833	-1.051	-1.037	-0.951	-0.730	-1.070	-1.044	-0.981	-0.832	-0.630	-1.054	-1.026	-0.971	-0.531	-1.059	-1.026
Average Queue Delay	D	sec/veh	24	24	17	8	33	5	27	24	32	23	19	15	6	31	3	21
Average Delay		**sec/veh**	**27**	**37**	**23**	**11**	**45**	**9**	**40**	**35**	**37**	**26**	**30**	**21**	**9**	**40**	**7**	**34**
Average Queue	N = q(r/2+d)	veh	7.821	0.356	0.894	4.503	3.089	0.503	0.473	1.261	7.316	8.918	0.224	0.805	3.174	3.574	0.436	0.567
Average Queue Length	NL/n	metre	23	2	5	14	19	3	3	8	22	27	1	5	10	21	3	3
Average Queue	N=qr	veh	8.969	0.397	1.092	6.010	3.213	0.721	0.518	1.410	7.991	9.861	0.253	0.972	4.348	3.636	0.632	0.621
Average Queue Length	NL/n	metre	27	2	7	18	19	4	3	8	24	30	2	6	13	22	4	4
Average Queue	N=qr+No	veh	8.136	-0.654	0.055	5.058	2.482	-0.349	-0.526	0.429	7.159	9.231	-0.800	-0.054	3.378	3.105	-0.427	-0.406
Average Queue Length	NL/n	metre	24	-4	0	15	15	-2	-3	3	21	28	-5	0	10	19	-3	-2
Average Queue Length		**metre**	**27**	**2**	**7**	**18**	**19**	**4**	**3**	**8**	**24**	**30**	**2**	**6**	**13**	**22**	**4**	**4**
Maximum Queue Length		**metre**	**46**	**37**	**29**	**36**	**38**	**23**	**38**	**34**	**44**	**50**	**36**	**30**	**29**	**39**	**23**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	E	A	D	A	B	C	B	C	E	E	A	D	A	B	C
			Weekday Noon		**Weekday PM**									**Weekend Noon**				
		Unit	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead	Hennessy Rd WB	Hennessy Rd WB (Tram) - LT	Hennessy Rd WB (Tram) - Ahead	Hennessy Rd EB -Ahead	Hennessy Rd EB - RT
Cycle time	c	sec	104	104	120	120	120	120	120	120	120	120	120	104	104	104	104	104
Effective green time	g	sec	25	25	48	24	48	74	20	74	20	34	34	33	26	33	61	22
		pcu/hr	195	500	745	15	80	600	170	95	35	240	415	655	25	70	675	235
Design flow	q	veh/sec	0.042	0.107	0.159	0.003	0.017	0.128	0.036	0.020	0.007	0.051	0.089	0.140	0.005	0.015	0.144	0.050
		pcu/hr	1690	4190	3620	1780	2055	3015	1940	1915	1940	1690	4190	3620	1780	2055	3015	1940
Saturation flow	Q	veh/sec	0.361	0.895	0.774	0.380	0.439	0.644	0.415	0.409	0.415	0.361	0.895	0.774	0.380	0.439	0.644	0.415
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	2	2	1	1	2	1	1	1	1	2	2	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.240	0.240	0.400	0.200	0.400	0.617	0.167	0.617	0.167	0.283	0.283	0.317	0.250	0.317	0.587	0.212
Degree of saturation	x		0.480	0.496	0.515	0.042	0.097	0.323	0.526	0.080	0.108	0.501	0.350	0.570	0.056	0.107	0.382	0.573
	M		4.333	11.111	19.103	0.385	2.051	15.385	4.359	2.436	0.897	6.154	10.641	14.556	0.556	1.556	15.000	5.222
	y		0.115	0.119	0.206	0.008	0.039	0.199	0.088	0.050	0.018	0.142	0.099	0.181	0.014	0.034	0.224	0.121
	Qt	veh/sec	52.083	129.130	185.641	45.641	105.385	238.365	41.453	151.400	41.453	61.389	152.201	147.263	57.051	83.598	226.720	52.613
	x<1																	
	A	sec/veh	0.326	0.328	0.227	0.323	0.187	0.092	0.381	0.077	0.354	0.299	0.285	0.285	0.285	0.241	0.110	0.354
	B	sec/veh	0.222	0.245	0.273	0.001	0.005	0.077	0.291	0.004	0.007	0.252	0.094	0.378	0.002	0.006	0.118	0.384
	C	sec/veh	2.425	1.442	0.765	0.011	0.004	0.040	4.729	0.000	0.154	2.193	0.444	1.512	0.009	0.017	0.096	4.084
Average Queue Delay	D	sec/veh	37	35	28	39	23	12	49	9	43	39	35	31	30	26	12	40
	x>x'																	
	Z		-0.520	-0.504	-0.485	-0.958	-0.903	-0.677	-0.474	-0.920	-0.892	-0.499	-0.650	-0.430	-0.944	-0.893	-0.618	-0.427
	X'		0.685	0.707	0.732	0.685	0.705	0.749	0.684	0.720	0.684	0.690	0.721	0.713	0.686	0.694	0.735	0.685
	No	veh	-0.620	-0.641	-0.682	-1.058	-1.032	-0.956	-0.528	-1.060	-1.025	-0.592	-0.871	-0.505	-1.042	-1.014	-0.869	-0.410
Average Queue Delay	D	sec/veh	27	31	25	25	17	9	38	5	28	30	31	28	19	18	9	32
Average Delay		**sec/veh**	**37**	**35**	**28**	**39**	**23**	**12**	**49**	**9**	**43**	**39**	**35**	**31**	**30**	**26**	**12**	**40**
Average Queue	N = q(r/2+d)	veh	3.180	7.951	10.211	0.279	1.005	4.432	3.595	0.659	0.697	4.186	6.901	9.276	0.368	0.912	4.857	4.084
Average Queue Length	NL/n	metre	19	24	31	2	6	13	22	4	4	25	21	28	2	5	15	25
Average Queue	N=qr	veh	3.292	8.440	11.462	0.308	1.231	5.897	3.632	0.934	0.748	4.410	7.626	9.937	0.417	1.062	6.202	4.118
Average Queue Length	NL/n	metre	20	25	34	2	7	18	22	6	4	26	23	30	3	6	19	25
Average Queue	N=qr+No	veh	2.672	7.799	10.780	-0.751	0.198	4.941	3.104	-0.126	-0.277	3.818	6.755	9.432	-0.625	0.048	5.333	3.707
Average Queue Length	NL/n	metre	16	23	32	-5	1	15	19	-1	-2	23	20	28	-4	0	16	22
Average Queue Length		**metre**	**20**	**25**	**34**	**2**	**7**	**18**	**22**	**6**	**4**	**26**	**23**	**30**	**3**	**6**	**19**	**25**
Maximum Queue Length		**metre**	**40**	**40**	**59**	**51**	**387**	**49**	**44**	**49**	**44**	**49**	**44**	**63**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA — MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Hennessy Road / Percival Street (J1)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	C	E	E
			Weekend Noon			
		Unit	Hennessy Rd EB (Tram) - Ahead	Hennessy Rd EB (Tram) - RT	Percival St SB - LT	Percival St SB - Ahead
Cycle time	c	sec	104	104	104	104
Effective green time	g	sec	61	22	31	31
		pcu/hr	95	30	275	555
Design flow	q	veh/sec	0.020	0.006	0.059	0.119
		pcu/hr	1915	1940	1690	4190
Saturation flow	Q	veh/sec	0.409	0.415	0.361	0.895
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	2
Length of a vehicle	L	metre	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.587	0.212	0.298	0.298
Degree of saturation	x		0.085	0.073	0.546	0.444
	M		2.111	0.667	6.111	12.333
	y		0.050	0.015	0.163	0.132
	Qt	veh/sec	144.003	52.613	64.583	160.121
	x<1					
	A	sec/veh	0.090	0.316	0.294	0.284
	B	sec/veh	0.004	0.003	0.328	0.178
	C	sec/veh	0.000	0.030	2.445	0.747
Average Queue Delay	D	sec/veh	10	33	34	30
	x>x'					
	Z		-0.915	-0.927	-0.454	-0.556
	X'		0.712	0.685	0.689	0.716
	No	veh	-1.044	-1.034	-0.488	-0.747
Average Queue Delay	D	sec/veh	5	21	26	27
Average Delay		**sec/veh**	**10**	**33**	**34**	**30**
Average Queue	N = q(r/2+d)	veh	0.630	0.476	4.127	7.920
Average Queue Length	NL/n	metre	4	3	25	24
Average Queue	N=qr	veh	0.873	0.526	4.290	8.657
Average Queue Length	NL/n	metre	5	3	26	26
Average Queue	N=qr+No	veh	-0.171	-0.509	3.802	7.911
Average Queue Length	NL/n	metre	-1	-3	23	24
Average Queue Length		**metre**	**5**	**3**	**26**	**26**
Maximum Queue Length		**metre**	**41**	**37**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Matheson Street / Percival Street / Russell Street (J2)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB	Percival St SB	Matheson St NB
Cycle time	c	sec	105	105	105	105	120	120	110	110
Effective green time	g	sec	63	18	62	19	71	24	68	18
		pcu/hr	620	135	760	190	660	185	820	180
Design flow	q	veh/sec	0.132	0.029	0.162	0.041	0.141	0.040	0.175	0.038
		pcu/hr	3950	3420	3950	3430	3950	3420	3950	3420
Saturation flow	Q	veh/sec	0.844	0.731	0.844	0.733	0.844	0.731	0.844	0.731
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	2	2	2	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.600	0.171	0.590	0.181	0.592	0.200	0.618	0.164
Degree of saturation	x		0.262	0.230	0.326	0.306	0.282	0.270	0.336	0.322
	M		13.910	3.029	17.051	4.263	16.923	4.744	19.274	4.231
	y		0.157	0.039	0.192	0.055	0.167	0.054	0.208	0.053
	Qt	veh/sec	303.846	75.165	299.023	79.573	299.626	87.692	313.054	71.748
	x<1									
	A	sec/veh	0.095	0.357	0.104	0.355	0.100	0.338	0.092	0.369
	B	sec/veh	0.046	0.034	0.079	0.068	0.056	0.050	0.085	0.076
	C	sec/veh	0.014	0.491	0.040	0.834	0.022	0.547	0.038	1.118
Average Queue Delay	D	sec/veh	10	38	11	38	12	41	11	41
	x>x'									
	Z		-0.738	-0.770	-0.674	-0.694	-0.718	-0.730	-0.664	-0.678
	X'		0.759	0.692	0.757	0.693	0.770	0.699	0.766	0.692
	No	veh	-1.019	-0.930	-0.969	-0.864	-1.029	-0.907	-0.980	-0.848
Average Queue Delay	D	sec/veh	8	30	9	31	10	34	8	34
Average Delay		**sec/veh**	**10**	**38**	**11**	**38**	**12**	**41**	**11**	**41**
Average Queue	N = q(r/2+d)	veh	4.146	2.358	5.334	3.293	5.201	3.531	5.531	3.364
Average Queue Length	NL/n	metre	12	7	16	10	16	11	17	10
Average Queue	N=qr	veh	5.564	2.510	6.983	3.491	6.910	3.795	7.359	3.538
Average Queue Length	NL/n	metre	17	8	21	10	21	11	22	11
Average Queue	N=qr+No	veh	4.545	1.580	6.014	2.628	5.881	2.888	6.379	2.690
Average Queue Length	NL/n	metre	14	5	18	8	18	9	19	8
Average Queue Length		**metre**	**17**	**8**	**21**	**10**	**21**	**11**	**22**	**11**
Maximum Queue Length		**metre**	**32**	**19**	**39**	**20**	**39**	**21**	**41**	**20**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J3)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			E	A	C	C	E	A	C	C	E	A	C	C	E	A	C	C
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT	Leighton Rd WB	Leighton Road EB	Percival St SB - LT	Percival St SB - RT
Cycle time	c	sec	105	105	105	105	130	130	130	130	105	105	105	105	130	130	130	130
Effective green time	g	sec	58	53	38	38	71	66	50	50	51	46	45	45	62	57	59	59
		pcu/hr	990	740	260	415	995	845	310	510	1025	650	315	420	1040	755	380	465
Design flow	q	veh/sec	0.212	0.158	0.056	0.089	0.213	0.181	0.066	0.109	0.219	0.139	0.067	0.090	0.222	0.161	0.081	0.099
		pcu/hr	3215	2325	1140	2770	3215	2325	1140	2770	3215	2325	1140	2770	3215	2325	1140	2770
Saturation flow	Q	veh/sec	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592	0.687	0.497	0.244	0.592
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	2	2	2	1	2	2	2	1	2	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.552	0.505	0.362	0.362	0.546	0.508	0.385	0.385	0.486	0.438	0.429	0.429	0.477	0.438	0.454	0.454
Degree of saturation	x		0.557	0.631	0.630	0.414	0.567	0.716	0.707	0.479	0.656	0.638	0.645	0.354	0.678	0.741	0.734	0.370
	M		22.212	16.603	5.833	9.311	27.639	23.472	8.611	14.167	22.997	14.583	7.067	9.423	28.889	20.972	10.556	12.917
	y		0.308	0.318	0.228	0.150	0.309	0.363	0.272	0.184	0.319	0.280	0.276	0.152	0.323	0.325	0.333	0.168
	Qt	veh/sec	227.680	150.458	52.894	128.523	225.113	151.331	56.213	136.588	200.201	130.586	62.637	152.198	196.578	130.695	66.331	161.174
	x<1																	
	A	sec/veh	0.145	0.180	0.264	0.239	0.149	0.190	0.260	0.232	0.194	0.219	0.226	0.192	0.202	0.233	0.224	0.179
	B	sec/veh	0.351	0.538	0.537	0.146	0.371	0.902	0.853	0.220	0.627	0.563	0.585	0.097	0.715	1.057	1.016	0.109
	C	sec/veh	0.534	1.302	3.627	0.536	0.629	2.261	5.162	0.802	1.308	1.741	3.008	0.207	1.636	3.155	4.703	0.220
Average Queue Delay	D	sec/veh	16	21	34	26	21	27	42	31	22	25	29	21	28	34	37	24
	x>x'																	
	Z		-0.443	-0.369	-0.370	-0.586	-0.433	-0.284	-0.293	-0.521	-0.344	-0.362	-0.355	-0.646	-0.322	-0.259	-0.266	-0.630
	X'		0.736	0.714	0.685	0.707	0.751	0.725	0.690	0.719	0.728	0.708	0.688	0.714	0.741	0.717	0.694	0.728
	No	veh	-0.614	-0.343	-0.229	-0.767	-0.648	-0.046	0.085	-0.706	-0.317	-0.294	-0.187	-0.852	-0.295	0.134	0.223	-0.868
Average Queue Delay	D	sec/veh	14	18	25	22	18	25	35	27	19	22	22	17	25	31	31	20
Average Delay		**sec/veh**	**16**	**21**	**34**	**26**	**21**	**27**	**35**	**31**	**22**	**25**	**29**	**21**	**28**	**31**	**31**	**24**
Average Queue	N = q(r/2+d)	veh	8.424	7.430	3.735	5.299	10.631	10.740	5.400	7.779	10.719	7.614	3.996	4.584	13.749	11.333	5.878	5.929
Average Queue Length	NL/n	metre	25	22	22	16	32	32	32	23	32	23	24	14	41	34	35	18
Average Queue	N=qr	veh	9.942	8.222	3.722	5.941	12.544	11.556	5.299	8.718	11.827	8.194	4.038	5.385	15.111	11.777	5.765	7.054
Average Queue Length	NL/n	metre	30	25	22	18	38	35	32	26	35	25	24	16	45	35	35	21
Average Queue	N=qr+No	veh	9.328	7.880	3.493	5.174	11.896	11.509	5.384	8.012	11.510	7.901	3.852	4.533	14.816	11.911	5.988	6.187
Average Queue Length	NL/n	metre	28	24	21	16	36	35	32	24	35	24	23	14	44	36	36	19
Average Queue Length		**metre**	**30**	**25**	**22**	**18**	**38**	**35**	**32**	**26**	**35**	**25**	**24**	**16**	**45**	**36**	**36**	**21**
Maximum Queue Length		**metre**	**46**	**43**	**45**	**38**	**56**	**56**	**64**	**50**	**57**	**45**	**53**	**34**	**68**	**59**	**70**	**42**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Hysan Avenue / Leighton Lane (J4)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			B	A	C	B	A	C	B	A	C	B	A	C
			Weekday AM			**Weekday Noon**			**Weekday PM**			**Weekend Noon**		
		Unit	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB	Leigthon Rd WB	Leighton Rd EB	Hysan Avenue SB
Cycle time	c	sec	120	120	120	130	130	130	130	130	130	130	130	130
Effective green time	g	sec	80	89	22	90	99	22	90	99	22	90	99	22
		pcu/hr	950	325	60	940	340	60	945	365	85	970	510	90
Design flow	q	veh/sec	0.203	0.069	0.013	0.201	0.073	0.013	0.202	0.078	0.018	0.207	0.109	0.019
		pcu/hr	3990	1965	3395	4010	1965	3370	4015	1965	3370	4010	1965	3390
Saturation flow	Q	veh/sec	0.853	0.420	0.725	0.857	0.420	0.720	0.858	0.420	0.720	0.857	0.420	0.724
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	2	1	2	2	1	2	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.667	0.742	0.183	0.692	0.762	0.169	0.692	0.762	0.169	0.692	0.762	0.169
Degree of saturation	x		0.357	0.223	0.096	0.339	0.227	0.105	0.340	0.244	0.149	0.349	0.341	0.157
	M		24.359	8.333	1.538	26.111	9.444	1.667	26.250	10.139	2.361	26.944	14.167	2.500
	y		0.238	0.165	0.018	0.234	0.173	0.018	0.235	0.186	0.025	0.242	0.260	0.027
	Qt	veh/sec	341.026	186.843	79.797	355.917	191.849	73.116	356.361	191.849	73.116	355.917	191.849	73.550
	x<1													
	A	sec/veh	0.073	0.040	0.339	0.062	0.034	0.351	0.062	0.035	0.354	0.062	0.038	0.355
	B	sec/veh	0.099	0.032	0.005	0.087	0.033	0.006	0.088	0.039	0.013	0.094	0.088	0.015
	C	sec/veh	0.038	0.004	0.064	0.026	0.003	0.099	0.026	0.005	0.211	0.030	0.028	0.236
Average Queue Delay	D	sec/veh	9	5	41	8	5	46	8	5	47	9	6	47
	x>x'													
	Z		-0.643	-0.777	-0.904	-0.661	-0.773	-0.895	-0.660	-0.756	-0.851	-0.651	-0.659	-0.843
	X'		0.784	0.732	0.697	0.799	0.739	0.696	0.799	0.739	0.696	0.799	0.739	0.697
	No	veh	-1.004	-0.997	-1.026	-1.052	-1.008	-1.023	-1.052	-0.996	-0.997	-1.045	-0.920	-0.992
Average Queue Delay	D	sec/veh	7	2	33	6	1	37	6	1	38	6	2	38
Average Delay		**sec/veh**	**9**	**5**	**41**	**8**	**5**	**46**	**8**	**5**	**47**	**9**	**6**	**47**
Average Queue	N = q(r/2+d)	veh	5.927	1.441	1.155	5.713	1.484	1.283	5.746	1.602	1.826	5.915	2.318	1.935
Average Queue Length	NL/n	metre	18	9	3	17	9	4	17	10	5	18	14	6
Average Queue	N=qr	veh	8.120	2.153	1.256	8.034	2.252	1.385	8.077	2.418	1.962	8.291	3.378	2.077
Average Queue Length	NL/n	metre	24	13	4	24	14	4	24	15	6	25	20	6
Average Queue	N=qr+No	veh	7.115	1.156	0.231	6.982	1.245	0.362	7.025	1.421	0.965	7.246	2.458	1.085
Average Queue Length	NL/n	metre	21	7	1	21	7	1	21	9	3	22	15	3
Average Queue Length		**metre**	**24**	**13**	**4**	**24**	**14**	**4**	**24**	**15**	**6**	**25**	**20**	**6**
Maximum Queue Length		**metre**	**44**	**36**	**18**	**44**	**38**	**18**	**44**	**40**	**18**	**45**	**48**	**18**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leighton Road / Percival Street / Hysan Avenue (J5)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	C	A	B	A	C	A	B	A	C	A	B	A	C
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Leighton Rd WB	CHR NB	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB	Leighton Rd EB	Hoi Ping Rd SB	Leighton Rd WB	CHR NB	Leighton Rd EB	Hoi Ping Rd SB
Cycle time	c	sec	105	105	105	105	120	120	120	120	130	130	130	130	130	130	130	130
Effective green time	g	sec	28	32	28	24	28	37	28	35	33	47	34	30	38	42	39	29
		pcu/hr	785	880	410	460	670	870	430	455	670	915	475	405	775	845	615	405
Design flow	q	veh/sec	0.168	0.188	0.088	0.098	0.143	0.186	0.092	0.097	0.143	0.196	0.101	0.087	0.166	0.181	0.131	0.087
		pcu/hr	4000	3875	3070	2695	4000	3875	3070	2665	4000	3840	3070	2675	4000	3880	3070	2675
Saturation flow	Q	veh/sec	0.855	0.828	0.656	0.576	0.855	0.828	0.656	0.569	0.855	0.821	0.656	0.572	0.855	0.829	0.656	0.572
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	3	2	2	2	3	2	2	2	3	2	2	2	3	2	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.267	0.305	0.267	0.229	0.233	0.308	0.233	0.292	0.254	0.362	0.262	0.231	0.292	0.323	0.300	0.223
Degree of saturation	x		0.736	0.745	0.501	0.747	0.718	0.728	0.600	0.585	0.660	0.659	0.592	0.656	0.663	0.674	0.668	0.679
	M		17.612	19.744	9.199	10.321	17.179	22.308	11.026	11.667	18.611	25.417	13.194	11.250	21.528	23.472	17.083	11.250
	y		0.196	0.227	0.134	0.171	0.168	0.225	0.140	0.171	0.168	0.238	0.155	0.151	0.194	0.218	0.200	0.151
	Qt	veh/sec	136.752	151.404	104.957	78.974	119.658	153.178	91.838	99.653	130.178	177.988	102.939	79.142	149.901	160.710	118.077	76.504
	x<1																	
	A	sec/veh	0.335	0.313	0.310	0.359	0.353	0.308	0.342	0.303	0.334	0.268	0.323	0.349	0.311	0.293	0.306	0.356
	B	sec/veh	1.026	1.089	0.251	1.101	0.913	0.975	0.451	0.413	0.640	0.637	0.428	0.626	0.652	0.697	0.671	0.717
	C	sec/veh	3.628	3.314	1.551	5.751	4.101	3.200	3.128	2.379	3.091	1.998	2.666	4.454	2.630	2.477	3.100	5.031
Average Queue Delay	D	sec/veh	38	35	34	43	45	39	43	38	45	36	43	48	42	39	42	49
	x>x'																	
	Z		-0.264	-0.255	-0.499	-0.253	-0.282	-0.272	-0.400	-0.415	-0.340	-0.341	-0.408	-0.344	-0.337	-0.326	-0.332	-0.321
	X'		0.710	0.714	0.701	0.693	0.710	0.721	0.701	0.703	0.717	0.734	0.707	0.699	0.724	0.728	0.713	0.698
	No	veh	0.147	0.181	-0.615	0.309	0.042	0.039	-0.385	-0.436	-0.255	-0.335	-0.433	-0.188	-0.276	-0.251	-0.205	-0.089
Average Queue Delay	D	sec/veh	36	34	29	40	43	37	38	34	42	34	39	44	39	37	39	46
Average Delay		**sec/veh**	**36**	**34**	**34**	**40**	**43**	**37**	**43**	**38**	**45**	**36**	**43**	**48**	**42**	**39**	**42**	**49**
Average Queue	N = q(r/2+d)	veh	12.767	13.503	6.343	8.219	12.976	14.976	8.158	7.843	13.364	15.161	9.286	8.489	14.520	15.069	11.477	8.653
Average Queue Length	NL/n	metre	26	41	19	25	26	45	24	24	27	45	28	25	29	45	34	26
Average Queue	N=qr	veh	12.916	13.726	6.746	7.962	13.171	15.429	8.453	8.264	13.887	16.228	9.744	8.654	15.235	15.889	11.958	8.740
Average Queue Length	NL/n	metre	26	41	20	24	26	46	25	25	28	49	29	26	30	48	36	26
Average Queue	N=qr+No	veh	13.062	13.907	6.131	8.270	13.213	15.469	8.068	7.828	13.632	15.893	9.310	8.466	14.959	15.638	11.754	8.651
Average Queue Length	NL/n	metre	26	42	18	25	26	46	24	23	27	48	28	25	30	47	35	26
Average Queue Length		**metre**	**26**	**42**	**20**	**25**	**26**	**46**	**25**	**25**	**28**	**49**	**29**	**26**	**30**	**48**	**36**	**26**
Maximum Queue Length		**metre**	**43**	**67**	**39**	**46**	**43**	**73**	**47**	**46**	**45**	**75**	**52**	**47**	**48**	**75**	**60**	**48**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway Ba	Design Year	2031
Junction Name	Caroline Hill Road (Wes) / Link Road (J6)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	C	D	A	C	D	A	C	D	A	C	D
			Weekday AM			**Weekday Noon**			**Weekday PM**			**Weekend Noon**		
		Unit	Link Road NB	Access Road WB	Caroline Hill Road SB	Link Road NB	Access Road WB	Caroline Hill Road SB	Link Road NB	Access Road WB	Caroline Hill Road SB	Link Road NB	Access Road WB	Caroline Hill Road SB
Cycle time	c	sec	105	105	105	105	105	105	105	105	105	105	105	105
Effective green time	g	sec	75	15	38	71	19	33	71	19	36	71	19	33
		pcu/hr	895	230	685	825	265	560	825	265	565	815	230	605
Design flow	q	veh/sec	0.191	0.049	0.146	0.176	0.057	0.120	0.176	0.057	0.121	0.174	0.049	0.129
		pcu/hr	1980	3920	4030	1980	3920	4040	1980	3920	4055	1980	3920	4050
Saturation flow	Q	veh/sec	0.423	0.838	0.861	0.423	0.838	0.863	0.423	0.838	0.866	0.423	0.838	0.865
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	2	2	1	2	2	1	2	2	1	2	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.714	0.143	0.362	0.676	0.181	0.314	0.676	0.181	0.343	0.676	0.181	0.314
Degree of saturation	x		0.633	0.411	0.470	0.616	0.374	0.441	0.616	0.374	0.406	0.609	0.324	0.475
	M		20.080	5.160	15.369	18.510	5.946	12.564	18.510	5.946	12.676	18.285	5.160	13.574
	y		0.452	0.059	0.170	0.417	0.068	0.139	0.417	0.068	0.139	0.412	0.059	0.149
	Qt	veh/sec	181.319	71.795	186.984	171.648	90.940	162.784	171.648	90.940	178.242	171.648	90.940	163.187
	x<1													
	A	sec/veh	0.074	0.390	0.245	0.090	0.360	0.273	0.090	0.360	0.251	0.089	0.356	0.276
	B	sec/veh	0.545	0.143	0.208	0.495	0.111	0.174	0.495	0.111	0.139	0.474	0.078	0.215
	C	sec/veh	0.722	2.042	0.620	0.721	1.191	0.679	0.721	1.191	0.443	0.680	0.867	0.842
Average Queue Delay	D	sec/veh	10	42	27	12	39	29	12	39	27	11	38	30
	x>x'													
	Z		-0.367	-0.589	-0.530	-0.384	-0.626	-0.559	-0.384	-0.626	-0.594	-0.391	-0.676	-0.525
	X'		0.723	0.691	0.725	0.720	0.697	0.717	0.720	0.697	0.722	0.720	0.697	0.718
	No	veh	-0.372	-0.739	-0.732	-0.411	-0.796	-0.754	-0.411	-0.796	-0.810	-0.432	-0.850	-0.704
Average Queue Delay	D	sec/veh	7	35	23	8	33	26	8	33	24	8	32	26
Average Delay		**sec/veh**	**10**	**42**	**27**	**12**	**39**	**29**	**12**	**39**	**27**	**11**	**38**	**30**
Average Queue	N = q(r/2+d)	veh	4.772	4.268	8.790	5.028	4.618	7.830	5.028	4.618	7.431	4.945	3.987	8.512
Average Queue Length	NL/n	metre	29	13	26	30	14	23	30	14	22	30	12	26
Average Queue	N=qr	veh	5.737	4.423	9.807	5.994	4.870	8.615	5.994	4.870	8.330	5.921	4.226	9.308
Average Queue Length	NL/n	metre	34	13	29	36	15	26	36	15	25	36	13	28
Average Queue	N=qr+No	veh	5.365	3.684	9.075	5.583	4.074	7.861	5.583	4.074	7.520	5.489	3.377	8.603
Average Queue Length	NL/n	metre	32	11	27	33	12	24	33	12	23	33	10	26
Average Queue Length		**metre**	**34**	**13**	**29**	**36**	**15**	**26**	**36**	**15**	**25**	**36**	**13**	**28**
Maximum Queue Length		**metre**	**70**	**22**	**52**	**72**	**26**	**47**	**72**	**26**	**46**	**72**	**22**	**50**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	hton Road / Yun Ping Road / Pennington Street / Caroline Hill Road (East)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	C	C	A	A	C	C	A	A	C	C	A	A	C	C	A
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB	Leighton Rd WB - RT	Leighton Rd WB - Ahead & LT	CHR NB	Leighton Rd EB
Cycle time	c	sec	105	105	105	105	110	110	110	110	130	130	130	130	120	120	120	120
Effective green time	g	sec	58	36	36	58	65	34	34	65	76	43	43	76	74	35	35	74
		pcu/hr	905	280	100	1035	790	245	115	1075	715	290	90	1175	760	260	170	1245
Design flow	q	veh/sec	0.193	0.060	0.021	0.221	0.169	0.052	0.025	0.230	0.153	0.062	0.019	0.251	0.162	0.056	0.036	0.266
		pcu/hr	3000	1180	930	2685	2965	1180	930	2695	3030	1180	930	2685	3020	1180	930	2690
Saturation flow	Q	veh/sec	0.641	0.252	0.199	0.574	0.634	0.252	0.199	0.576	0.647	0.252	0.199	0.574	0.645	0.252	0.199	0.575
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.552	0.343	0.343	0.552	0.591	0.309	0.309	0.591	0.585	0.331	0.331	0.585	0.617	0.292	0.292	0.617
Degree of saturation	x		0.546	0.692	0.314	0.698	0.451	0.672	0.400	0.675	0.404	0.743	0.293	0.749	0.408	0.755	0.627	0.751
	M		20.304	6.282	2.244	23.221	18.568	5.759	2.703	25.267	19.861	8.056	2.500	32.639	19.487	6.667	4.359	31.923
	y		0.302	0.237	0.108	0.385	0.266	0.208	0.124	0.399	0.236	0.246	0.097	0.438	0.252	0.220	0.183	0.463
	Qt	veh/sec	212.454	51.868	40.879	190.147	224.621	46.760	36.853	204.167	227.101	50.039	39.438	201.243	238.761	44.124	34.776	212.671
	x<1																	
	A	sec/veh	0.143	0.283	0.242	0.163	0.114	0.301	0.272	0.139	0.113	0.297	0.248	0.153	0.098	0.322	0.307	0.137
	B	sec/veh	0.329	0.778	0.072	0.806	0.185	0.687	0.133	0.701	0.137	1.074	0.061	1.114	0.141	1.167	0.526	1.129
	C	sec/veh	0.514	5.109	0.537	1.512	0.197	5.430	1.431	1.185	0.132	7.103	0.514	1.988	0.113	8.349	5.809	1.802
Average Queue Delay	D	sec/veh	16	38	28	19	13	41	34	17	15	49	35	22	13	51	46	19
	x>x'																	
	Z		-0.454	-0.308	-0.686	-0.302	-0.549	-0.328	-0.600	-0.325	-0.596	-0.257	-0.707	-0.251	-0.592	-0.245	-0.373	-0.249
	X'		0.732	0.685	0.682	0.725	0.739	0.684	0.681	0.732	0.752	0.688	0.684	0.743	0.750	0.685	0.682	0.741
	No	veh	-0.622	0.034	-0.857	-0.138	-0.796	-0.058	-0.755	-0.267	-0.888	0.306	-0.887	0.035	-0.876	0.404	-0.229	0.058
Average Queue Delay	D	sec/veh	13	30	13	17	10	32	18	15	12	42	19	20	10	44	33	17
Average Delay		**sec/veh**	**16**	**30**	**28**	**19**	**13**	**41**	**34**	**17**	**15**	**42**	**35**	**20**	**13**	**44**	**46**	**17**
Average Queue	N = q(r/2+d)	veh	7.686	4.315	1.340	9.454	6.068	4.127	1.768	9.115	6.484	5.721	1.507	12.401	5.771	5.209	3.197	11.134
Average Queue Length	NL/n	metre	23	26	8	28	18	25	11	27	19	34	9	37	17	31	19	33
Average Queue	N=qr	veh	9.089	4.128	1.474	10.394	7.596	3.979	1.868	10.337	8.250	5.391	1.673	13.558	7.470	4.722	3.088	12.237
Average Queue Length	NL/n	metre	27	25	9	31	23	24	11	31	25	32	10	41	22	28	19	37
Average Queue	N=qr+No	veh	8.466	4.162	0.617	10.256	6.800	3.921	1.113	10.070	7.362	5.697	0.786	13.593	6.594	5.126	2.859	12.295
Average Queue Length	NL/n	metre	25	25	4	31	20	24	7	30	22	34	5	41	20	31	17	37
Average Queue Length		**metre**	**27**	**25**	**9**	**31**	**23**	**25**	**11**	**31**	**25**	**34**	**10**	**41**	**22**	**31**	**19**	**37**
Maximum Queue Length		**metre**	**47**	**57**	**32**	**54**	**42**	**54**	**33**	**54**	**45**	**73**	**32**	**66**	**43**	**70**	**45**	**62**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	A	F	B	C	F	A	A	F	B	C	F	A	A	F	B
			Weekday AM						**Weekday Noon**						**Weekday PM**			
		Unit	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB
Cycle time	c	sec	100	100	100	100	100	100	100	100	100	100	100	100	105	105	105	105
Effective green time	g	sec	43	43	53	13	24	53	36	36	57	13	26	57	44	44	65	13
		pcu/hr	270	1425	40	70	380	25	255	1365	35	110	455	35	180	1455	40	70
Design flow	q	veh/sec	0.058	0.304	0.009	0.015	0.081	0.005	0.054	0.292	0.007	0.024	0.097	0.007	0.038	0.311	0.009	0.015
		pcu/hr	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330	2555	1340	1150	5450	1340	1330
Saturation flow	Q	veh/sec	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286	0.246	1.165	0.286	0.284
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	3	1	1	2	1	1	3	1	1	2	1	1	3	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.430	0.430	0.530	0.130	0.240	0.530	0.360	0.360	0.570	0.130	0.260	0.570	0.419	0.419	0.619	0.124
Degree of saturation	x		0.546	0.608	0.056	0.405	0.620	0.035	0.616	0.696	0.046	0.636	0.685	0.046	0.374	0.637	0.048	0.425
	M		5.769	30.449	0.855	1.496	8.120	0.534	5.449	29.167	0.748	2.350	9.722	0.748	4.038	32.644	0.897	1.571
	y		0.235	0.261	0.030	0.053	0.149	0.019	0.222	0.250	0.026	0.083	0.178	0.026	0.157	0.267	0.030	0.053
	Qt	veh/sec	63.397	300.449	91.051	22.167	78.615	91.051	53.077	251.538	97.923	22.167	85.167	97.923	61.783	292.796	106.349	21.111
	x<1																	
	A	sec/veh	0.212	0.220	0.114	0.399	0.339	0.113	0.263	0.273	0.095	0.413	0.333	0.095	0.200	0.230	0.075	0.405
	B	sec/veh	0.328	0.472	0.002	0.138	0.505	0.001	0.494	0.795	0.001	0.556	0.744	0.001	0.111	0.559	0.001	0.157
	C	sec/veh	1.640	0.846	0.000	4.526	3.480	0.000	3.329	1.728	0.000	11.092	4.093	0.000	0.477	1.055	0.000	5.375
Average Queue Delay	D	sec/veh	25	23	12	45	37	11	32	28	10	54	37	10	23	25	8	48
	x>x'																	
	Z		-0.454	-0.392	-0.944	-0.595	-0.380	-0.965	-0.384	-0.304	-0.954	-0.364	-0.315	-0.954	-0.626	-0.363	-0.952	-0.575
	X'		0.688	0.753	0.695	0.676	0.692	0.695	0.685	0.740	0.697	0.676	0.694	0.697	0.688	0.755	0.701	0.676
	No	veh	-0.484	-0.562	-1.041	-0.775	-0.290	-1.051	-0.276	-0.219	-1.047	-0.172	-0.042	-1.047	-0.785	-0.494	-1.051	-0.747
Average Queue Delay	D	sec/veh	17	21	5	19	32	4	23	27	3	37	33	3	13	23	2	21
Average Delay		**sec/veh**	**25**	**23**	**12**	**45**	**37**	**11**	**32**	**28**	**10**	**54**	**37**	**10**	**23**	**25**	**8**	**48**
Average Queue	N = q(r/2+d)	veh	3.103	15.590	0.300	1.318	6.062	0.186	3.490	17.594	0.233	2.288	7.182	0.233	2.074	17.229	0.239	1.401
Average Queue Length	NL/n	metre	19	31	2	8	18	1	21	35	1	14	22	1	12	34	1	8
Average Queue	N=qr	veh	3.288	17.356	0.402	1.301	6.171	0.251	3.487	18.667	0.322	2.045	7.194	0.322	2.346	18.965	0.342	1.376
Average Queue Length	NL/n	metre	20	35	2	8	19	2	21	37	2	12	22	2	14	38	2	8
Average Queue	N=qr+No	veh	2.804	16.794	-0.639	0.526	5.881	-0.800	3.211	18.448	-0.726	1.873	7.153	-0.726	1.561	18.471	-0.709	0.629
Average Queue Length	NL/n	metre	17	34	-4	3	18	-5	19	37	-4	11	21	-4	9	37	-4	4
Average Queue Length		**metre**	**20**	**35**	**2**	**8**	**19**	**2**	**21**	**37**	**2**	**14**	**22**	**2**	**14**	**38**	**2**	**8**
Maximum Queue Length		**metre**	**53**	**52**	**26**	**38**	**36**	**26**	**55**	**55**	**25**	**42**	**41**	**25**	**39**	**56**	**23**	**38**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Leighton Road / Tung Lo Wan Road / Irving Street (J9)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	F	A	A	F	B	C	F
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB - LT	Causeway Rd WB - Ahead	Causeway Rd WB (Tram)	Tung Lo Wan Rd NB	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	28	65	43	43	64	13	29	64
		pcu/hr	440	35	255	1445	40	85	450	30
Design flow	q	veh/sec	0.094	0.007	0.054	0.309	0.009	0.018	0.096	0.006
		pcu/hr	2555	1340	1150	5450	1340	1330	2555	1340
Saturation flow	Q	veh/sec	0.546	0.286	0.246	1.165	0.286	0.284	0.546	0.286
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	1	3	1	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.267	0.619	0.410	0.410	0.610	0.124	0.276	0.610
Degree of saturation	x		0.646	0.042	0.541	0.647	0.049	0.516	0.638	0.037
	M		9.872	0.785	5.721	32.420	0.897	1.907	10.096	0.673
	y		0.172	0.026	0.222	0.265	0.030	0.064	0.176	0.022
	Qt	veh/sec	87.350	106.349	60.379	286.142	104.713	21.111	90.470	104.713
	x<1									
	A	sec/veh	0.325	0.075	0.224	0.237	0.079	0.410	0.318	0.078
	B	sec/veh	0.589	0.001	0.320	0.594	0.001	0.275	0.561	0.001
	C	sec/veh	3.453	0.000	1.781	1.155	0.000	7.853	3.192	0.000
Average Queue Delay	D	sec/veh	37	8	28	26	8	50	36	8
	x>x'									
	Z		-0.354	-0.958	-0.459	-0.353	-0.951	-0.484	-0.362	-0.963
	X'		0.695	0.701	0.688	0.753	0.701	0.676	0.696	0.701
	No	veh	-0.213	-1.054	-0.496	-0.455	-1.050	-0.557	-0.247	-1.056
Average Queue Delay	D	sec/veh	33	2	19	24	2	27	32	2
Average Delay		**sec/veh**	**37**	**8**	**28**	**26**	**8**	**50**	**36**	**8**
Average Queue	N = q(r/2+d)	veh	7.090	0.209	3.193	17.500	0.247	1.750	7.118	0.185
Average Queue Length	NL/n	metre	21	1	19	35	1	11	21	1
Average Queue	N=qr	veh	7.239	0.299	3.378	19.143	0.350	1.671	7.308	0.263
Average Queue Length	NL/n	metre	22	2	20	38	2	10	22	2
Average Queue	N=qr+No	veh	7.026	-0.754	2.882	18.688	-0.699	1.114	7.061	-0.793
Average Queue Length	NL/n	metre	21	-5	17	37	-4	7	21	-5
Average Queue Length		**metre**	**22**	**2**	**20**	**38**	**2**	**11**	**22**	**2**
Maximum Queue Length		**metre**	**42**	**59**	**63**	**52**	**67**	**41**	**37**	**63**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			C	D	E	E	A	B	C	D	E	E	A	B	C	D	E	E
			Weekday AM						Weekday Noon						Weekday PM			
		Unit	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT
Cycle time	c	sec	100	100	100	100	100	100	95	95	95	95	95	95	105	105	105	105
Effective green time	g	sec	66	64	24	24	66	64	60	58	25	25	66	64	70	68	25	25
		pcu/hr	1155	40	410	455	1140	95	985	35	540	465	1315	95	1025	40	505	440
Design flow	q	veh/sec	0.247	0.009	0.088	0.097	0.244	0.020	0.210	0.007	0.115	0.099	0.281	0.020	0.219	0.009	0.108	0.094
		pcu/hr	2950	1915	3605	1915	4070	1915	2950	1915	3595	1915	4070	1915	2950	1915	3595	1915
Saturation flow	Q	veh/sec	0.630	0.409	0.770	0.409	0.870	0.409	0.630	0.409	0.768	0.409	0.870	0.409	0.630	0.409	0.768	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.660	0.640	0.240	0.240	0.660	0.640	0.632	0.611	0.263	0.263	0.695	0.674	0.667	0.648	0.238	0.238
Degree of saturation	x		0.593	0.033	0.474	0.990	0.424	0.078	0.529	0.030	0.571	0.923	0.465	0.074	0.521	0.032	0.590	0.965
	M		24.679	0.855	8.761	9.722	24.359	2.030	19.995	0.710	10.962	9.439	26.693	1.928	22.997	0.897	11.330	9.872
	y		0.392	0.021	0.114	0.238	0.280	0.050	0.334	0.018	0.150	0.243	0.323	0.050	0.347	0.021	0.140	0.230
	Qt	veh/sec	249.615	157.128	110.923	58.923	344.385	157.128	238.866	149.892	121.289	64.609	362.510	165.398	252.137	158.999	109.737	58.455
	x<1																	
	A	sec/veh	0.095	0.066	0.326	0.379	0.080	0.068	0.102	0.077	0.319	0.359	0.069	0.056	0.085	0.063	0.338	0.377
	B	sec/veh	0.433	0.001	0.213	48.962	0.156	0.003	0.296	0.000	0.380	5.508	0.202	0.003	0.284	0.001	0.424	13.309
	C	sec/veh	0.482	0.000	1.402	13.817	0.082	0.000	0.313	0.000	1.949	10.589	0.105	0.000	0.261	0.000	2.513	13.238
Average Queue Delay	D	sec/veh	11	7	34	528	9	7	11	7	32	79	7	5	10	7	37	168
	x>x'																	
	Z		-0.407	-0.967	-0.526	-0.010	-0.576	-0.922	-0.471	-0.970	-0.429	-0.077	-0.535	-0.926	-0.479	-0.968	-0.410	-0.035
	X'		0.739	0.714	0.701	0.686	0.766	0.714	0.733	0.710	0.702	0.687	0.766	0.714	0.744	0.716	0.702	0.687
	No	veh	-0.545	-1.071	-0.662	3.519	-0.897	-1.050	-0.658	-1.067	-0.467	2.354	-0.850	-1.051	-0.705	-1.075	-0.418	3.017
Average Queue Delay	D	sec/veh	8	3	29	74	6	3	8	3	28	56	5	2	7	3	33	71
Average Delay		**sec/veh**	**11**	**7**	**34**	**74**	**9**	**7**	**11**	**7**	**32**	**56**	**7**	**5**	**10**	**7**	**37**	**71**
Average Queue	N = q(r/2+d)	veh	6.854	0.211	6.274	54.995	6.233	0.507	5.951	0.194	7.695	11.318	6.084	0.426	6.017	0.216	8.296	19.545
Average Queue Length	NL/n	metre	21	1	19	330	19	3	18	1	23	68	18	3	18	1	25	117
Average Queue	N=qr	veh	8.391	0.308	6.658	7.389	8.282	0.731	7.366	0.277	8.077	6.955	8.149	0.629	7.666	0.316	8.632	7.521
Average Queue Length	NL/n	metre	25	2	20	44	25	4	22	2	24	42	24	4	23	2	26	45
Average Queue	N=qr+No	veh	7.846	-0.763	5.996	10.907	7.385	-0.319	6.708	-0.790	7.610	9.309	7.298	-0.421	6.961	-0.759	8.215	10.538
Average Queue Length	NL/n	metre	24	-5	18	65	22	-2	20	-5	23	56	22	-3	21	-5	25	63
Average Queue Length		**metre**	**25**	**2**	**20**	**65**	**25**	**4**	**22**	**2**	**24**	**56**	**24**	**4**	**23**	**2**	**26**	**63**
Maximum Queue Length		**metre**	**54**	**25**	**35**	**82**	**53**	**25**	**47**	**25**	**42**	**84**	**56**	**25**	**47**	**24**	**45**	**92**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Causeway Road / Moreton Terrace (J10)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	C	D	E	E	A	B
			Weekday PM		**Weekend Noon**					
		Unit	Causeway Rd EB	Causeway Rd EB (Tram)	Causeway Rd WB	Causeway Rd WB (Tram)	Moreton Terrace NB-LT	Moreton Terrace NB-RT	Causeway Rd EB	Causeway Rd EB (Tram)
Cycle time	c	sec	105	105	105	105	105	105	105	105
Effective green time	g	sec	70	68	69	67	26	26	69	67
		pcu/hr	1310	100	1105	40	495	445	1275	95
Design flow	q	veh/sec	0.280	0.021	0.236	0.009	0.106	0.095	0.272	0.020
		pcu/hr	4070	1915	2950	1915	3595	1915	4070	1915
Saturation flow	Q	veh/sec	0.870	0.409	0.630	0.409	0.768	0.409	0.870	0.409
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.667	0.648	0.657	0.638	0.248	0.248	0.657	0.638
Degree of saturation	x		0.483	0.081	0.570	0.033	0.556	0.938	0.477	0.078
	M		29.391	2.244	24.792	0.897	11.106	9.984	28.606	2.131
	y		0.322	0.052	0.375	0.021	0.138	0.232	0.313	0.050
	Qt	veh/sec	347.863	158.999	248.535	156.661	114.127	60.794	342.894	156.661
	x<1									
	A	sec/veh	0.082	0.066	0.094	0.067	0.328	0.369	0.086	0.069
	B	sec/veh	0.225	0.004	0.378	0.001	0.348	7.153	0.217	0.003
	C	sec/veh	0.147	0.000	0.411	0.000	2.050	11.983	0.145	0.000
Average Queue Delay	D	sec/veh	9	7	11	7	36	102	10	7
	x>x'									
	Z		-0.517	-0.919	-0.430	-0.967	-0.444	-0.062	-0.523	-0.922
	X'		0.771	0.716	0.742	0.716	0.703	0.688	0.770	0.716
	No	veh	-0.845	-1.052	-0.609	-1.074	-0.508	2.572	-0.849	-1.053
Average Queue Delay	D	sec/veh	7	3	8	3	32	64	8	3
Average Delay		**sec/veh**	**9**	**7**	**11**	**7**	**36**	**64**	**10**	**7**
Average Queue	N = q(r/2+d)	veh	7.490	0.546	6.861	0.223	7.955	13.451	7.530	0.536
Average Queue Length	NL/n	metre	22	3	21	1	24	81	23	3
Average Queue	N=qr	veh	9.797	0.791	8.500	0.325	8.356	7.512	9.808	0.771
Average Queue Length	NL/n	metre	29	5	26	2	25	45	29	5
Average Queue	N=qr+No	veh	8.952	-0.262	7.891	-0.750	7.848	10.084	8.959	-0.282
Average Queue Length	NL/n	metre	27	-2	24	-4	24	61	27	-2
Average Queue Length		**metre**	**29**	**5**	**26**	**2**	**25**	**61**	**29**	**5**
Maximum Queue Length		**metre**	**56**	**44**	**63**	**52**	**67**	**67**	**41**	**37**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Pennington Street / Jardine's Bazaar / Irving Street (J11)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	F	A	B	E	F	A	B	E	F	A	B	E	F
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT	Irving St WB	Pennington St NB 1st stop	Pennington St NB 2nd stop - LT	Pennington St NB 2nd stop - RT
Cycle time	c	sec	100	100	100	100	120	120	120	120	100	100	100	100	100	100	100	100
Effective green time	g	sec	30	57	80	78	39	68	100	98	32	55	80	78	33	54	80	78
		pcu/hr	435	585	435	565	505	660	470	640	555	670	525	635	530	635	475	630
Design flow	q	veh/sec	0.093	0.125	0.093	0.121	0.108	0.141	0.100	0.137	0.119	0.143	0.112	0.136	0.113	0.136	0.101	0.135
		pcu/hr	6350	3850	1840	3425	6365	3825	1840	3425	6355	3810	1840	3425	6365	3820	1840	3425
Saturation flow	Q	veh/sec	1.357	0.823	0.393	0.732	1.360	0.817	0.393	0.732	1.358	0.814	0.393	0.732	1.360	0.816	0.393	0.732
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	4	2	1	2	4	2	1	2	4	2	1	2	4	2	1	2
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.300	0.570	0.800	0.780	0.325	0.567	0.833	0.817	0.320	0.550	0.800	0.780	0.330	0.540	0.800	0.780
Degree of saturation	x		0.228	0.267	0.296	0.211	0.244	0.304	0.307	0.229	0.273	0.320	0.357	0.238	0.252	0.308	0.323	0.236
	M		9.295	12.500	9.295	12.073	12.949	16.923	12.051	16.410	11.859	14.316	11.218	13.568	11.325	13.568	10.150	13.462
	y		0.069	0.152	0.236	0.165	0.079	0.173	0.255	0.187	0.087	0.176	0.285	0.185	0.083	0.166	0.258	0.184
	Qt	veh/sec	244.231	281.346	188.718	342.500	265.208	277.885	196.581	358.600	260.718	268.654	188.718	342.500	269.288	264.462	188.718	342.500
	x<1																	
	A	sec/veh	0.263	0.109	0.026	0.029	0.247	0.113	0.019	0.021	0.253	0.123	0.028	0.030	0.245	0.127	0.027	0.030
	B	sec/veh	0.034	0.048	0.062	0.028	0.039	0.067	0.068	0.034	0.051	0.075	0.099	0.037	0.043	0.068	0.077	0.036
	C	sec/veh	0.084	0.020	0.010	0.001	0.085	0.038	0.010	0.002	0.117	0.049	0.027	0.002	0.085	0.045	0.016	0.002
Average Queue Delay	D	sec/veh	27	11	3	3	30	14	3	3	26	13	4	3	25	13	3	3
	x>x'																	
	Z		-0.772	-0.733	-0.704	-0.789	-0.756	-0.696	-0.693	-0.771	-0.727	-0.680	-0.643	-0.762	-0.748	-0.692	-0.677	-0.764
	X'		0.738	0.748	0.722	0.765	0.758	0.763	0.736	0.790	0.742	0.745	0.722	0.765	0.745	0.743	0.722	0.765
	No	veh	-1.001	-0.995	-0.922	-1.062	-1.031	-0.998	-0.941	-1.099	-0.979	-0.947	-0.865	-1.046	-0.998	-0.954	-0.898	-1.047
Average Queue Delay	D	sec/veh	24	9	0	1	27	11	-1	1	23	10	0	1	22	11	0	1
Average Delay		**sec/veh**	**27**	**11**	**3**	**3**	**30**	**14**	**3**	**3**	**26**	**13**	**4**	**3**	**25**	**13**	**3**	**3**
Average Queue	N = q(r/2+d)	veh	5.724	4.096	1.234	1.706	7.605	5.648	1.296	1.877	7.074	5.048	1.532	1.932	6.600	4.905	1.364	1.916
Average Queue Length	NL/n	metre	9	12	7	5	11	17	8	6	11	15	9	6	10	15	8	6
Average Queue	N=qr	veh	6.506	5.375	1.859	2.656	8.740	7.333	2.009	3.009	8.064	6.442	2.244	2.985	7.588	6.241	2.030	2.962
Average Queue Length	NL/n	metre	10	16	11	8	13	22	12	9	12	19	13	9	11	19	12	9
Average Queue	N=qr+No	veh	5.505	4.380	0.937	1.594	7.709	6.335	1.068	1.909	7.085	5.496	1.378	1.939	6.590	5.287	1.132	1.914
Average Queue Length	NL/n	metre	8	13	6	5	12	19	6	6	11	16	8	6	10	16	7	6
Average Queue Length		**metre**	**10**	**16**	**11**	**8**	**13**	**22**	**12**	**9**	**12**	**19**	**13**	**9**	**11**	**19**	**12**	**9**
Maximum Queue Length		**metre**	**19**	**33**	**34**	**21**	**24**	**42**	**36**	**23**	**22**	**38**	**38**	**22**	**21**	**37**	**36**	**22**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Link Road / Broadwood Road (J12)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	E	C	A	B	E	C	A	B	E	C	A	B	E	C
			Weekday AM				Weekday Noon				Weekday PM				Weekend Noon			
		Unit	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB	Link Rd SB	Broadwood Road (E) NB - Ahead & LT	Broadwood Road (E) NB - RT	Broadwood Road (W) NB
Cycle time	c	sec	140	140	140	140	110	110	110	110	135	135	135	135	110	110	110	110
Effective green time	g	sec	42	61	64	51	31	45	48	37	40	64	67	42	29	46	49	35
		pcu/hr	435	460	185	510	400	465	170	440	435	440	245	440	395	445	220	450
Design flow	q	veh/sec	0.093	0.098	0.040	0.109	0.085	0.099	0.036	0.094	0.093	0.094	0.052	0.094	0.084	0.095	0.047	0.096
		pcu/hr	1940	1895	1730	1840	1945	1890	1730	1835	1945	1900	1730	1860	1950	1890	1730	1845
Saturation flow	Q	veh/sec	0.415	0.405	0.370	0.393	0.416	0.404	0.370	0.392	0.416	0.406	0.370	0.397	0.417	0.404	0.370	0.394
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.300	0.436	0.457	0.364	0.282	0.409	0.436	0.336	0.296	0.474	0.496	0.311	0.264	0.418	0.445	0.318
Degree of saturation	x		0.747	0.557	0.234	0.761	0.730	0.601	0.225	0.713	0.755	0.488	0.285	0.760	0.768	0.563	0.285	0.767
	M		13.013	13.761	5.534	15.256	9.402	10.929	3.996	10.342	12.548	12.692	7.067	12.692	9.284	10.459	5.171	10.577
	y		0.224	0.243	0.107	0.277	0.206	0.246	0.098	0.240	0.224	0.232	0.142	0.237	0.203	0.235	0.127	0.244
	Qt	veh/sec	74.615	105.856	101.392	85.934	70.274	99.126	96.783	79.132	73.884	115.480	110.076	74.188	65.909	101.329	98.800	75.262
	x<1																	
	A	sec/veh	0.316	0.210	0.165	0.280	0.325	0.232	0.176	0.290	0.319	0.180	0.148	0.311	0.340	0.221	0.176	0.307
	B	sec/veh	1.106	0.350	0.036	1.210	0.985	0.454	0.033	0.885	1.162	0.233	0.057	1.206	1.274	0.363	0.057	1.259
	C	sec/veh	5.938	1.375	0.058	5.206	5.483	1.856	0.056	4.332	6.103	0.704	0.086	6.089	6.752	1.426	0.119	5.712
Average Queue Delay	D	sec/veh	50	32	24	45	42	28	20	37	49	26	21	49	46	27	20	41
	x>x'																	
	Z		-0.253	-0.443	-0.766	-0.239	-0.270	-0.399	-0.775	-0.287	-0.245	-0.512	-0.715	-0.240	-0.232	-0.437	-0.715	-0.233
	X'		0.699	0.711	0.709	0.703	0.691	0.700	0.700	0.694	0.698	0.713	0.711	0.698	0.690	0.701	0.700	0.693
	No	veh	0.279	-0.534	-0.955	0.349	0.208	-0.379	-0.942	0.097	0.337	-0.675	-0.915	0.376	0.477	-0.484	-0.893	0.450
Average Queue Delay	D	sec/veh	46	26	17	42	37	23	14	33	46	21	15	45	42	21	14	37
Average Delay		**sec/veh**	**46**	**32**	**24**	**42**	**37**	**28**	**20**	**33**	**46**	**26**	**21**	**45**	**42**	**27**	**20**	**37**
Average Queue	N = q(r/2+d)	veh	9.218	6.991	2.449	9.757	6.945	6.029	1.861	6.905	9.012	5.789	2.877	8.951	7.279	5.585	2.396	7.567
Average Queue Length	NL/n	metre	55	42	15	59	42	36	11	41	54	35	17	54	44	34	14	45
Average Queue	N=qr	veh	9.109	7.765	3.004	9.699	6.752	6.458	2.252	6.863	8.830	6.675	3.560	8.744	6.837	6.085	2.868	7.212
Average Queue Length	NL/n	metre	55	47	18	58	41	39	14	41	53	40	21	52	41	37	17	43
Average Queue	N=qr+No	veh	9.388	7.231	2.050	10.047	6.960	6.079	1.310	6.960	9.167	6.001	2.645	9.119	7.313	5.601	1.974	7.661
Average Queue Length	NL/n	metre	56	43	12	60	42	36	8	42	55	36	16	55	44	34	12	46
Average Queue Length		**metre**	**56**	**47**	**18**	**60**	**42**	**39**	**14**	**42**	**55**	**40**	**21**	**55**	**44**	**37**	**17**	**46**
Maximum Queue Length		**metre**	**101**	**86**	**42**	**106**	**82**	**76**	**35**	**81**	**99**	**77**	**47**	**99**	**86**	**73**	**40**	**89**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Wong Nai Chung Road / Sports Road (J14)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB	Sports Rd EB	Wong Nai Chung Rd SB
Cycle time	c	sec	90	90	75	75	90	90	75	75
Effective green time	g	sec	61	19	46	19	59	21	47	18
		pcu/hr	840	430	840	540	855	485	885	550
Design flow	q	veh/sec	0.179	0.092	0.179	0.115	0.183	0.104	0.189	0.118
		pcu/hr	3655	5885	3655	5885	3655	5885	3655	5885
Saturation flow	Q	veh/sec	0.781	1.257	0.781	1.257	0.781	1.257	0.781	1.257
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	3	2	3	2	3	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.678	0.211	0.613	0.253	0.656	0.233	0.627	0.240
Degree of saturation	x		0.339	0.346	0.375	0.362	0.357	0.353	0.386	0.389
	M		16.154	8.269	13.462	8.654	16.442	9.327	14.183	8.814
	y		0.230	0.073	0.230	0.092	0.234	0.082	0.242	0.093
	Qt	veh/sec	317.600	159.281	287.402	191.137	307.187	176.047	293.650	181.077
	x<1									
	A	sec/veh	0.067	0.336	0.097	0.307	0.077	0.320	0.092	0.319
	B	sec/veh	0.087	0.092	0.112	0.103	0.099	0.096	0.122	0.124
	C	sec/veh	0.027	0.559	0.060	0.419	0.039	0.489	0.063	0.559
Average Queue Delay	D	sec/veh	7	31	8	23	7	29	7	24
	x>x'									
	Z		-0.661	-0.654	-0.625	-0.638	-0.643	-0.647	-0.614	-0.611
	X'		0.749	0.710	0.730	0.710	0.747	0.714	0.731	0.708
	No	veh	-0.940	-0.848	-0.860	-0.829	-0.918	-0.849	-0.851	-0.793
Average Queue Delay	D	sec/veh	4	27	5	20	5	26	5	21
Average Delay		**sec/veh**	**7**	**31**	**8**	**23**	**7**	**29**	**7**	**24**
Average Queue	N = q(r/2+d)	veh	3.774	6.078	4.011	5.941	4.197	6.608	4.061	6.216
Average Queue Length	NL/n	metre	11	12	12	12	13	13	12	12
Average Queue	N=qr	veh	5.205	6.524	5.205	6.462	5.663	7.151	5.295	6.699
Average Queue Length	NL/n	metre	16	13	16	13	17	14	16	13
Average Queue	N=qr+No	veh	4.265	5.675	4.345	5.633	4.745	6.301	4.444	5.905
Average Queue Length	NL/n	metre	13	11	13	11	14	13	13	12
Average Queue Length		**metre**	**16**	**13**	**16**	**13**	**17**	**14**	**16**	**13**
Maximum Queue Length		**metre**	**32**	**24**	**32**	**25**	**34**	**27**	**33**	**25**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Leigthon Road / Wong Nai Chung Road (J15)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	A	A	B	A	A	A	B	A	A	A	B	A	A
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB	Leighton Rd WB - LT	Leighton Rd WB (Tram)	Leighton Rd WB - Ahead	Leighton Rd EB
Cycle time	c	sec	130	130	130	130	120	120	120	120	120	120	120	120	120	120	120	120
Effective green time	g	sec	93	25	93	93	82	26	82	82	80	28	80	80	81	27	81	81
		pcu/hr	375	50	975	740	470	60	995	845	400	65	995	650	500	60	955	755
Design flow	q	veh/sec	0.080	0.011	0.208	0.158	0.100	0.013	0.213	0.181	0.085	0.014	0.213	0.139	0.107	0.013	0.204	0.161
		pcu/hr	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455	2225	370	1940	2455
Saturation flow	Q	veh/sec	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525	0.475	0.079	0.415	0.525
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	3	2	1	2	3	2	1	2	3	2	1	2	3
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.715	0.192	0.715	0.715	0.683	0.217	0.683	0.683	0.667	0.233	0.667	0.667	0.675	0.225	0.675	0.675
Degree of saturation	x		0.236	0.703	0.703	0.421	0.309	0.748	0.751	0.504	0.270	0.753	0.769	0.397	0.333	0.721	0.729	0.456
	M		10.417	1.389	27.083	20.556	12.051	1.538	25.513	21.667	10.256	1.667	25.513	16.667	12.821	1.538	24.487	19.359
	y		0.169	0.135	0.503	0.301	0.211	0.162	0.513	0.344	0.180	0.176	0.513	0.265	0.225	0.162	0.492	0.308
	Qt	veh/sec	204.068	9.122	177.929	225.163	194.925	10.278	169.957	215.075	190.171	11.068	165.812	209.829	192.548	10.673	167.885	212.452
	x<1																	
	A	sec/veh	0.049	0.377	0.081	0.058	0.064	0.366	0.103	0.076	0.068	0.357	0.114	0.076	0.068	0.358	0.104	0.076
	B	sec/veh	0.036	0.830	0.830	0.153	0.069	1.113	1.129	0.256	0.050	1.147	1.283	0.131	0.083	0.930	0.982	0.191
	C	sec/veh	0.006	23.876	1.308	0.091	0.026	23.953	1.902	0.245	0.015	22.587	2.223	0.087	0.039	21.033	1.695	0.158
Average Queue Delay	D	sec/veh	7	103	13	8	8	107	16	10	9	103	17	10	9	95	16	10
	x>x'																	
	Z		-0.764	-0.297	-0.297	-0.579	-0.691	-0.252	-0.249	-0.496	-0.730	-0.247	-0.231	-0.603	-0.667	-0.279	-0.271	-0.544
	X'		0.744	0.673	0.734	0.751	0.735	0.673	0.727	0.742	0.733	0.674	0.725	0.740	0.734	0.674	0.726	0.741
	No	veh	-1.010	0.135	-0.161	-0.867	-0.938	0.352	0.143	-0.729	-0.966	0.377	0.282	-0.865	-0.915	0.221	0.018	-0.797
Average Queue Delay	D	sec/veh	3	58	10	5	5	64	13	7	5	63	15	7	5	55	13	7
Average Delay		**sec/veh**	**7**	**58**	**13**	**8**	**8**	**64**	**13**	**10**	**9**	**63**	**15**	**10**	**9**	**55**	**13**	**10**
Average Queue	N = q(r/2+d)	veh	2.026	1.660	6.617	4.256	2.741	1.972	7.390	5.299	2.453	2.066	7.972	4.156	3.036	1.808	7.163	4.787
Average Queue Length	NL/n	metre	6	10	20	9	8	12	22	11	7	12	24	8	9	11	21	10
Average Queue	N=qr	veh	2.965	1.122	7.708	5.850	3.816	1.205	8.079	6.861	3.419	1.278	8.504	5.556	4.167	1.192	7.958	6.292
Average Queue Length	NL/n	metre	9	7	23	12	11	7	24	14	10	8	26	11	13	7	24	13
Average Queue	N=qr+No	veh	1.955	1.257	7.547	4.984	2.879	1.557	8.222	6.132	2.453	1.655	8.787	4.691	3.251	1.413	7.977	5.495
Average Queue Length	NL/n	metre	6	8	23	10	9	9	25	12	7	10	26	9	10	8	24	11
Average Queue Length		**metre**	**9**	**8**	**23**	**12**	**11**	**9**	**25**	**14**	**10**	**10**	**26**	**11**	**13**	**8**	**24**	**13**
Maximum Queue Length		**metre**	**22**	**43**	**43**	**25**	**26**	**47**	**46**	**27**	**24**	**47**	**48**	**23**	**28**	**44**	**45**	**26**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	ancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Tung Lo Wan Road / Eastern Hospital Road (J16)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	B	A	B	A	B	A	B
			Weekday AM		**Weekday Noon**		**Weekday PM**		**Weekend Noon**	
		Unit	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB	Tung Lo Wan Rd SB	Ka Ning Path NB
Cycle time	c	sec	100	100	95	95	105	105	105	105
Effective green time	g	sec	29	37	28	33	31	40	34	37
		pcu/hr	555	380	555	365	490	335	560	325
Design flow	q	veh/sec	0.119	0.081	0.119	0.078	0.105	0.072	0.120	0.069
		pcu/hr	3310	1750	3295	1780	3290	1755	3290	1770
Saturation flow	Q	veh/sec	0.707	0.374	0.704	0.380	0.703	0.375	0.703	0.378
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	1	2	1	2	1	2	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.290	0.370	0.295	0.347	0.295	0.381	0.324	0.352
Degree of saturation	x		0.578	0.587	0.571	0.590	0.504	0.501	0.526	0.521
	M		11.859	8.120	11.266	7.409	10.994	7.516	12.564	7.292
	y		0.168	0.217	0.168	0.205	0.149	0.191	0.170	0.184
	Qt	veh/sec	123.064	83.013	124.507	79.271	124.530	85.714	136.581	79.963
	x<1									
	A	sec/veh	0.303	0.253	0.299	0.268	0.292	0.237	0.276	0.257
	B	sec/veh	0.396	0.417	0.381	0.425	0.257	0.252	0.291	0.283
	C	sec/veh	1.888	2.068	1.759	2.267	1.279	1.198	1.232	1.563
Average Queue Delay	D	sec/veh	32	28	30	29	32	27	30	29
	x>x'									
	Z		-0.422	-0.413	-0.429	-0.410	-0.496	-0.499	-0.474	-0.479
	X'		0.704	0.693	0.703	0.691	0.706	0.695	0.710	0.693
	No	veh	-0.456	-0.395	-0.468	-0.377	-0.624	-0.600	-0.593	-0.556
Average Queue Delay	D	sec/veh	28	22	26	23	28	21	26	23
Average Delay		**sec/veh**	**32**	**28**	**30**	**29**	**32**	**27**	**30**	**29**
Average Queue	N = q(r/2+d)	veh	7.973	4.865	7.515	4.651	7.205	4.272	7.853	4.409
Average Queue Length	NL/n	metre	24	29	23	28	22	26	24	26
Average Queue	N=qr	veh	8.420	5.115	7.946	4.835	7.748	4.653	8.496	4.722
Average Queue Length	NL/n	metre	25	31	24	29	23	28	25	28
Average Queue	N=qr+No	veh	7.964	4.721	7.477	4.458	7.124	4.053	7.902	4.167
Average Queue Length	NL/n	metre	24	28	22	27	21	24	24	25
Average Queue Length		**metre**	**25**	**31**	**24**	**29**	**23**	**28**	**25**	**28**
Maximum Queue Length		**metre**	**48**	**64**	**46**	**61**	**44**	**58**	**47**	**59**

*Note: SG = Signal Group

Queue Length Analysis

SYSTRA MVA Hong Kong Ltd.

Job No.	CHK50603110	Description	2031 Design Flows
Job Title	tancy Services for Commercial Development on IL No. 8945, Causeway B	Design Year	2031
Junction Name	Tung Lo Wan Road / Moreton Terrace (J17)	Designed By	LYK
Approach		Checked By	CHC
Probability(1% / 5%)?	5%		

			A	E	E	B	A	E	E	B	A	E	E	B	A	E	E	B
			Weekday AM				**Weekday Noon**				**Weekday PM**				**Weekend Noon**			
		Unit	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB	Tung Lo Wan Rd EB (Section	Tung Lo Wan Rd WB (Section	Tung Lo Wan Rd EB (West of Tung Lo	Tung Lo Wan Drive SB
Cycle time	c	sec	100	100	100	100	95	95	95	95	105	105	105	105	105	105	105	105
Effective green time	g	sec	43	45	45	43	37	46	46	37	42	51	51	42	48	45	45	48
		pcu/hr	960	800	340	290	975	900	360	350	960	860	345	330	815	695	240	240
Design flow	q	veh/sec	0.205	0.171	0.073	0.062	0.208	0.192	0.077	0.075	0.205	0.184	0.074	0.071	0.174	0.149	0.051	0.051
		pcu/hr	3515	3520	1935	1680	3505	3520	1945	1675	3505	3520	1945	1675	3505	3590	1960	1690
Saturation flow	Q	veh/sec	0.751	0.752	0.413	0.359	0.749	0.752	0.416	0.358	0.749	0.752	0.416	0.358	0.749	0.767	0.419	0.361
PCU factor	f	pcu/veh	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
No. of lanes	n	lane	2	2	1	1	2	2	1	1	2	2	1	1	2	2	1	1
Length of a vehicle	L	metre	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Queue duration	t	hr	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667	0.1667
Ratio of effective green	g/c		0.430	0.450	0.450	0.430	0.389	0.484	0.484	0.389	0.400	0.486	0.486	0.400	0.457	0.429	0.429	0.457
Degree of saturation	x		0.635	0.505	0.390	0.401	0.714	0.528	0.382	0.537	0.685	0.503	0.365	0.493	0.509	0.452	0.286	0.311
	M		20.513	17.094	7.265	6.197	19.792	18.269	7.308	7.105	21.538	19.295	7.740	7.404	18.285	15.593	5.385	5.385
	y		0.273	0.227	0.176	0.173	0.278	0.256	0.185	0.209	0.274	0.244	0.177	0.197	0.233	0.194	0.122	0.142
	Qt	veh/sec	193.776	203.077	111.635	92.615	175.013	218.516	120.742	83.637	179.744	219.194	121.117	85.897	205.421	197.253	107.692	99.048
	x<1																	
	A	sec/veh	0.223	0.196	0.183	0.196	0.258	0.179	0.163	0.236	0.248	0.175	0.161	0.224	0.192	0.202	0.186	0.172
	B	sec/veh	0.553	0.258	0.125	0.135	0.893	0.295	0.118	0.311	0.744	0.255	0.105	0.239	0.263	0.186	0.057	0.070
	C	sec/veh	1.319	0.537	0.318	0.436	2.235	0.529	0.234	1.430	1.938	0.452	0.201	1.057	0.543	0.406	0.124	0.148
Average Queue Delay	D	sec/veh	24	21	20	21	27	18	17	25	28	19	18	26	21	22	21	19
	x>x'																	
	Z		-0.365	-0.495	-0.610	-0.599	-0.286	-0.472	-0.618	-0.463	-0.315	-0.497	-0.635	-0.507	-0.491	-0.548	-0.714	-0.689
	X'		0.724	0.726	0.701	0.696	0.716	0.728	0.702	0.692	0.722	0.734	0.705	0.695	0.730	0.728	0.701	0.699
	No	veh	-0.368	-0.680	-0.782	-0.758	-0.010	-0.642	-0.793	-0.517	-0.180	-0.706	-0.821	-0.616	-0.685	-0.765	-0.894	-0.867
Average Queue Delay	D	sec/veh	21	18	14	15	24	15	12	19	25	16	13	19	18	19	15	13
Average Delay		**sec/veh**	**24**	**21**	**20**	**21**	**27**	**18**	**17**	**25**	**28**	**19**	**18**	**26**	**21**	**22**	**21**	**19**
Average Queue	N = q(r/2+d)	veh	10.713	8.213	3.433	3.090	11.579	8.170	3.178	4.046	12.147	8.510	3.325	4.045	8.642	7.738	2.591	2.449
Average Queue Length	NL/n	metre	32	25	21	19	35	25	19	24	36	26	20	24	26	23	16	15
Average Queue	N=qr	veh	11.692	9.402	3.996	3.532	12.083	9.423	3.769	4.338	12.923	9.923	3.981	4.442	9.926	8.910	3.077	2.923
Average Queue Length	NL/n	metre	35	28	24	21	36	28	23	26	39	30	24	27	30	27	18	18
Average Queue	N=qr+No	veh	11.324	8.722	3.214	2.774	12.073	8.781	2.976	3.820	12.743	9.217	3.160	3.826	9.242	8.145	2.183	2.056
Average Queue Length	NL/n	metre	34	26	19	17	36	26	18	23	38	28	19	23	28	24	13	12
Average Queue Length		**metre**	**35**	**28**	**24**	**21**	**36**	**28**	**23**	**26**	**39**	**30**	**24**	**27**	**30**	**27**	**18**	**18**
Maximum Queue Length		**metre**	**59**	**50**	**52**	**47**	**58**	**53**	**53**	**54**	**60**	**55**	**55**	**44**	**52**	**67**	**41**	**37**

*Note: SG = Signal Group

APPENDIX F – Surveyed Trip Rates at Reference Sites

APPENDIX F – SURVEYED TRIP RATES AT REFERENCE SITES

F.1 Surveyed Vehicular Trips Rates at Reference Sites

	Weekday						Weekend	
	AM Peak		Noon Peak		PM Peak		Noon Peak	
	GEN	ATT	GEN	ATT	GEN	ATT	GEN	ATT
Survey at Jao Tsung-I Academy (Approx. 32,000m²), Kwai Tsing Theatre (Approx. 25,000m²) & M+ (Approx. 65,000m²) for GIC – Performing Arts and Cultural Facilities								
Surveyed Trips at Jao Tsung-I Academy (pcu/hr)	12	14	14	14	12	9	25	29
Surveyed Trips at Kwai Tsing Theatre (pcu/hr)	15	23	15	15	11	10	10	15
Surveyed Trips at M+ (1) (pcu/hr)	N/A	N/A	41	67	107	37	97	112
Derived Trip Rates of Jao Tsung-I Academy (pcu/hr/100m²)	0.0381	0.0444	0.0422	0.0422	0.0388	0.0291	0.0781	0.0906
Derived Trip Rates of Kwai Tsing Theatre (pcu/hr/100m²)	0.0600	0.0920	0.0600	0.0600	0.0440	0.0400	0.0400	0.0600
Derived Trip Rates of M+ (pcu/hr/100m²)	N/A	N/A	0.0626	0.1024	0.1644	0.0569	0.1492	0.1723
Survey at Hong Kong Society for the Protection of Children SIA Shaukiwan Day Creche (Approx. 1,060m²) for Child Care Centre								
Surveyed Trips (pcu/hr)	10	11	6	7	3	3	1	1
Derived Trip Rates (pcu/hr/100m²)	0.9434	1.0377	0.5660	0.6604	0.2830	0.2830	0.0943	0.0943
Survey at T.W.G.Hs. Anita Mui Day Care Centre (Approx. 530m²) for the Elderly for Day Care Centre for the Elderly								
Surveyed Trips (pcu/hr)	8	3	1.5	6	6	7	2	3
Derived Trip Rates (pcu/hr/100m²)	1.5094	0.5660	0.2830	1.1321	1.1321	1.3208	0.3774	0.5660
Survey at Central District Health Centre (Approx. 1,130m²) for District Health Centre								
Surveyed Trips (pcu/hr)	2	4	6	9	1	1	1	1
Derived Trip Rates (pcu/hr/100m²)	0.1770	0.3540	0.5310	0.7965	0.0973	0.0973	0.0885	0.0885
Survey at ex-Murray Road Multi-storey Carpark (Provision of 210 parking spaces) For Public Vehicle Park								
Surveyed Trips (pcu/hr)	20	124	49	42	97	32	126	68
Derived Trip Rates (pcu/hr/Parking space)	0.0929	0.5897	0.2340	0.2000	0.4619	0.1500	0.6000	0.3220
Survey at Wan Chai Tower & Lands Tribunal (Approx. 48,000m²) For Court Site								
Surveyed Trips (pcu/hr) (2)	87	132	70	65	67	63	N/A	N/A
Derived Trip Rates (pcu/hr/100m²)	0.1818	0.2754	0.1448	0.1350	0.1398	0.1312	N/A	N/A

Survey at Po Leung Kuk Headquarters (451 quota) For Redevelopment of Po Leung Kuk Headquarters								
Surveyed Trips (pcu/hr)	22	9	9	11	8	10	7	9
Derived Trip Rates (pcu/hr/quota)	0.0487	0.0200	0.0200	0.0243	0.0177	0.0222	0.0155	0.0200

Notes:
(1) M+ opens at 10:00 am which is later than communal morning peak hour
(2) The existing Wan Chai Tower and Lands Tribunal do not open on the weekend

F.2 Surveyed Pedestrian Trips Rates at Reference Sites

	Weekday						**Weekend**	
	AM Peak		**Noon Peak**		**PM Peak**		**Noon Peak**	
	GEN	**ATT**	**GEN**	**ATT**	**GEN**	**ATT**	**GEN**	**ATT**
Survey at Jao Tsung-I Academy (Approx. 32,000m²), Kwai Tsing Theatre (Approx. 25,000m²) & M+ (Approx. 65,000m²) for GIC – Performing Arts and Cultural Facilities								
Surveyed Trips at Jao Tsung-I Academy (ped/hr)	28	57	41	57	52	26	12	88
Surveyed Trips at Kwai Tsing Theatre (ped/hr)	142	237	189	251	135	431	373	322
Surveyed Trips at M+ (1) (ped/hr)	N/A	N/A	139	323	433	15	167	163
Derived Trip Rates of Jao Tsung-I Academy (ped/hr/100m²)	0.09	0.18	0.13	0.18	0.16	0.08	0.04	0.28
Derived Trip Rates of Kwai Tsing Theatre (ped/hr/100m²)	0.57	0.95	0.76	1.00	0.54	1.72	1.49	1.29
Derived Trip Rates of M+ (ped/hr/100m²)	N/A	N/A	0.21	0.50	0.67	0.02	0.26	0.25
Survey at Hong Kong Society for the Protection of Children SIA Shaukiwan Day Creche (Approx. 1,060m²) for Child Care Centre								
Surveyed Trips (ped/hr)	4	7	7	2	4	2	34	17
Derived Trip Rates (ped/hr/100m²)	0.35	0.68	0.66	0.19	0.41	0.15	3.21	1.60
Survey at T.W.G.Hs. Anita Mui Day Care Centre (Approx. 530m²) for the Elderly for Day Care Centre for the Elderly								
Surveyed Trips (ped/hr)	1	3	6	5	3	1	2	2
Derived Trip Rates (ped/hr/100m²)	0.09	0.66	1.13	0.94	0.57	0.09	0.38	0.38
Survey at Central District Health Centre (Approx. 1,130m²) for District Health Centre								
Surveyed Trips (ped/hr)	27	74	9	13	24	14	21	24
Derived Trip Rates (ped/hr/100m²)	2.39	6.52	0.80	1.15	2.13	1.20	1.86	2.12
Survey at ex-Murray Road Multi-storey Carpark (Provision of 210 parking spaces) For Public Vehicle Park								
Surveyed Trips (ped/hr)	124	21	76	71	57	141	122	183

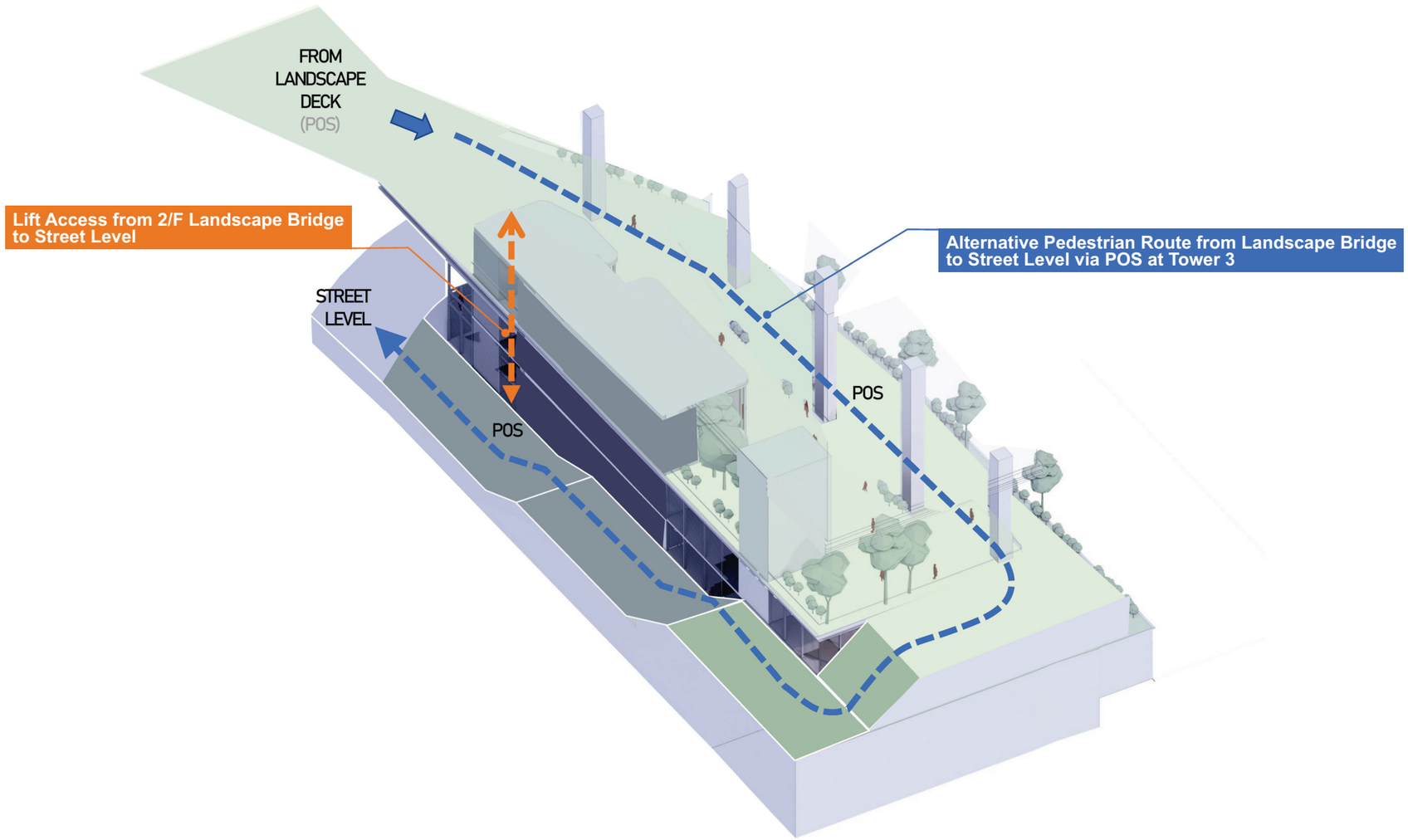
Derived Trip Rates (ped/hr/Parking space)	0.59	0.10	0.36	0.34	0.27	0.67	0.58	0.87
Survey at Wan Chai Tower & Lands Tribunal (Approx. 48,000m²) ***For Court Site***								
Surveyed Trips (ped/hr) (2)	120	1304	817	406	587	208	N/A	N/A
Derived Trip Rates (ped/hr/100m²)	0.25	2.71	1.70	0.84	1.22	0.43	N/A	N/A
Survey at Po Leung Kuk Headquarters (451 quota) ***For Redevelopment of Po Leung Kuk Headquarters***								
Surveyed Trips (ped/hr)	140	235	230	108	266	36	77	23
Derived Trip Rates (ped/hr/quota)	0.31	0.52	0.51	0.24	0.59	0.08	0.17	0.05

Notes:

(1) M+ opens at 10:00 am which is later than communal morning peak hour

(2) The existing Wan Chai Tower and Lands Tribunal do not open on the weekend

APPENDIX G – Alternative Pedestrian Route via POS at Tower 3



Note :
Images on the drawing are shown for reference only and subject to detail design

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

Project Title

PROPOSED COMMERCIAL DEVELOPMENT ON
INLAND LOT NO. 8945, CAUSEWAY BAY, HONG KONG
TRAFFIC REVIEW REPORT

Drawing Title

ALTERNATIVE PEDESTRIAN ROUTE VIA POS AT TOWER 3

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	APR 2022	G1	-

SYSTRA MVA

CHK50603110/TIA/G1.CDR/LLH/14APR22

Original Size : A3