Annex D

Revised Report of the Traffic Impact Assessment

DOCUMENT STATUS CONTROL RECORD

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu Kai Sha Road, Ma On Shan, New Territories

Traffic Impact Assessment Report

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1 INTRODUCTION

1.1 Background

1.1.1 The project site comprises of Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and adjoining government land to the west of Wu Kai Sha Road, Ma On Shan, New Territories (hereinafter called "the Site"). The present rezoning application intends to utilize a piece of vacant land presently under "Government, Institution or Community" ("G/IC") zone into a "Residential (Group B)6" ("R(B)6") zone. The location of the Site is shown in **Figure 1.1**.

1.1.2 The Site falls within an area zoned as "Government, Institution or Community" ("G/IC") zone under the Draft Ma On Shan Outline Zoning Plan (OZP), Plan No. S/MOS/27. The site covers a total land area of about 4,255 m^2. The proposed rezoning scheme comprises a total of 4 building blocks (i.e. two 16-storey residential towers, one 2-storey clubhouse and one 7-storey residential care homes for the elderly cum day care centre for the elderly ("RCHE and DE") on top of 3 levels of basement car park (i.e., the upper level is planned to serve the proposed development above, and the lower two levels are for "public vehicle park" ("PVP") purpose.).

1.1.3 Upon completion by 2027, the proposed rezoning scheme will provide a total of 184 private residential units, to be accommodated a population of 534 persons, 162 RCHE places and 40 DE places, 124 public car parking spaces, 16 public motorcycle parking spaces, 72 ancillary car parking spaces, 3 loading/unloading bays ("L/UL"), 3 light bus/ambulance parking spaces, 2 motorcycle parking spaces and 8 bicycle parking spaces.

1.1.4 LLA Consultancy Limited has been commissioned by the applicant to undertake a Traffic Impact Assessment (TIA) study in support of this rezoning application. This report presents the findings of the study.

1.2 Objectives

1.2.1 The objectives of the traffic impact assessment study are as follows:

- to review the existing traffic conditions in the vicinity of the Site;
- to estimate the traffic generation and attraction of the proposed development;
- to project the future traffic situation in the surrounding road network;
- to appraise the potential traffic impact of the proposed development and to consider traffic improvement proposals, if required; and
- to quantify the internal transport facilities for the proposed development.

2 THE PROPOSED DEVELOPMENT

2.1 The Site

2.1.1 As shown in **Figure 1.1**, the Site is located at the west corner of the junction of Yiu Sha Road and Wu Kai Sha Road, Wu Kai Sha, Ma On Shan. The Site area is about 4,255 m^2.

2.1.2 At present, the Site is a temporary convenient vehicles' holding area. The Site can be accessed from/to Yiu Sha Road and Wu Kai Sha Road via a local access road.

2.2 The Proposed Development Parameters

2.2.1 **Table 2.1** summarizes the key development parameters of the proposed rezoning scheme.

Table 2.1 Key Development Parameters

Item	Parameter(s)
1. Site Area	Approx. 4,255 m^2
2. Plot Ratio	2.395
3. No. of Blocks	4
- Residential	2
- RCHE	1
- Clubhouse	1
4. Total No. of Flats	184
- Flat Size (FS)≤40m^2	116
- 40m^2<FS≤70m^2	8
- 70m^2<FS≤100 m^2	60
5. Average Flat Size	49
6. Anticipated Domestic Population	534
7. Residential Care Home for Elderly	162 places
8. Day Care Centre for the Elderly	40 places
9. Ancillary Parking Provision	
- Car Parking	72
- L/UL	1 bay for LGV, 2 bays for HGV
- Light bus bays	3
- Motorcycle	2
10. Public Vehicle Park	
- Car Parking	124
- Motorcycle	16

3 EXISTING TRAFFIC SITUATION

3.1 Existing Road Network

3.1.1 Yiu Sha Road is a dual 2-lane carriageway running east-west direction connecting with Wu Kai Sha Road and Lok Wo Sha Lane.

3.1.2 Wu Kai Sha Road is also dual 2-lane carriageway running north-south direction. It connects Yiu Sha Road to the north and Sai Sha Road to the south.

3.1.3 Sai Sha Road is a dual 2-lane carriageway (a district distributor road) running east-west direction. It connects Sha Tin and Sai Kung area. In Year 2021, the section of Sai Sha Road between Ma On Shan Bypass and Nai Chung carried an Annual Average Daily Traffic (AADT) of 25,120 vehicles.

3.2 Traffic Count Survey

3.2.1 A traffic count survey was carried out on 29 July 2022 (Friday) and 15 June 2023 (Thursday) each during the peak hour period from 07:00 to 9:00 and 17:00 to 19:00 and on 9 December 2023 (Saturday) from 12:00 to 19:00 at the following junctions as shown in **Table 3.1**. The locations of the key junctions and area of influence (AOI) are shown in **Figure 3.1**.

Table 3.1 Surveyed Junctions

No.	Junction	Junction Type/Capacity Index (1)
J1	Wu Kai Sha Road / Yiu Sha Road	Roundabout/DFC
J2	Sai Sha Road / Wu Kai Sha Road / Sha On Street	Roundabout/DFC
J3	Sai Sha Road / Kam Ying Road	Signalized/RC
J4	Sai Sha Road / Ma On Shan Road / On Chiu Street	Signalized/RC
J5	On Chun Street / On Chiu Street	Signalized/RC
J6	On Chun Street / Access of Villa Athena	Priority/DFC

Note: (1) DFC = Design Flow to Capacity;

3.2.2 The identified weekday morning (AM), weekday evening (PM) and weekend peak hours were 07:30 – 08:30, 18:00 – 19:00 and 17:00 – 18:00, respectively and the surveyed traffic flows are presented in **Figure 3.2**.

3.3 Existing Junction Capacity Assessment

3.3.1 Based on the surveyed traffic flows, the performance of the key junctions were assessed. The assessment results are tabulated in **Table 3.2** and detailed junction capacity calculation sheets are presented in **Appendix A**.

Table 3.2 Existing Junction Performance

No.	Junction	Junction Type/Index (1)	Weekday AM Peak	Weekday PM Peak	Weekend Peak
J1	Wu Kai Sha Road / Yiu Sha Road	Roundabout /DFC	0.11	0.16	0.16
J2	Sai Sha Road / Wu Kai Sha Road / Sha On Street	Roundabout /DFC	0.24	0.30	0.23
J3	Sai Sha Road / Kam Ying Road	Signalized /RC	82%	92%	120%
J4	Sai Sha Road / Ma On Shan Road / On Chiu Street	Signalized /RC	61%	62%	104%
J5	On Chun Street / On Chiu Street	Signalized /RC	254%	178%	188%
J6	On Chun Street / Access of Villa Athena	Priority/DFC	0.18	0.18	0.13

Note: (1) RC = Reserve Capacity for signalized junction; DFC = Design Flow to Capacity ratio for priority junction.

3.3.2 It can be seen from **Table 3.2** that all concerned junctions performed satisfactorily during weekday AM, weekday PM and weekend peak hours.

3.4 Existing Link Capacity Assessment

3.4.1 The Volume to Capacity (V/C) Ratios of Sai Sha Road and Ma On Shan Bypass were assessed and the results are presented in **Table 3.3**.

Table 3.4 Link Capacity Assessment

Direction	Bound	Capacity (pcu/hr) (1)	Traffic Flow (pcu/hr)			V/C Ratio		
			WD-AM	WD-PM	WE	WD-AM	WD-PM	WE
Sai Sha Road (between On Yuen Street and On Chiu Street)	WB	5,040	873	661	525	0.17	0.13	0.10
	EB	5,040	637	798	574	0.13	0.16	0.11
Sai Sha Road (between On Chiu Street and Kam Ying Street)	WB	5,040	843	626	470	0.17	0.12	0.09
	EB	5,040	601	794	618	0.12	0.16	0.12
Sai Sha Road (between Kam Ying Street and Wu Kai Sha Road)	WB	3,360	537	491	428	0.16	0.15	0.13
	EB	3,360	596	606	533	0.18	0.18	0.16
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Road)	NB	3,600	1,121	1,182	937	0.31	0.33	0.26
	SB	5,640	1,635	1,270	1,006	0.29	0.23	0.10
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Bypass)	EB	3,360	753	441	440	0.15	0.09	0.09
	WB	1,680	426	543	474	0.25	0.32	0.28

Note: WD – Weekday; WE - Weekend
(1) Capacity refers to TPDM Vol.2 Ch. 2.4. A factor of 1.2 (based on the traffic count survey result) is adopted to convert the capacity from veh/hr to pcu/hr.

3.4.2 As shown in **Table 3.3**, the concerned road sections are operating with spare capacity during weekday AM, weekday PM and weekend peak hours.

3.5 Existing Public Transport Facilities

3.5.1 At present, the Site has been served by 21 franchised bus and 4 scheduled minibus (GMB) routes operating along Wu Kai Sha Road and Sai Sha Road. MTR Wu Kai Sha Station is located approximately 700m walking distance from the Site. **Table 3.4 and Figure 3.3** shows the existing bus and minibus routes running in the vicinity of the Site.

Table 3.4 Existing Public Transport Services

Mode	Route No.	Origin-Destination	Frequency (min)
Bus	40E	Nai Chung – Kwai Chung (Kwai Fong Estate)	07:20, 07:40, 18:10, 18:30
	40X	Wu Kai Sha Station – Kwai Chung Estate	6 – 20
	85X	Wu Kai Sha Station – Hung Hom (Hung Luen Road) (Special Departure)	07:30
	87E	Nai Chung – Tsim Sha Tsui	07:40, 18:00
	89D	Wu Kai Sha Station – Lam Tin Station	6 – 20
	89S	Yuen Chau Kok – Wu Kai Sha Station (Circular)	20 – 30
	97	Wu Kai Sha Station – Hong Sing Garden	07:30, 18:00
	99	Heng On – Sai Kung	15 – 30
	274	Sheung Shui (Tai Ping) – Wu Kai Sha Station	06:40, 07:45
	274P	Wu Kai Sha Station – Tai Po Industrial Estate	07;15, 07:30, 07:45, 17:35, 17:50, 18:05
	680P	Wu Kai Sha Station – Admiralty Station (East)	07:10, 07;25, 07:40
	680X	Wu Kai Sha Station – Central (Macau Ferry)	07:05, 07:25, 07:45, 08:05, 17:55, 18:15, 18;40, 19:05
	682	Ma On Shan (Wu Kai Sha Station) – Chai Wan (East)	10 – 30
	682A	Nai Chung – Chai Wan (East)	07:10, 07:25, 07:40, 08:00, 08:20, 18:00, 18:20
	682P	Wu Kai Sha Station – Chai Wan (East)	07:20, 07:35, 08:00
	980X	Wu Kai Sha Station – Wan Chai (Fleming Road)	07:05, 07:13, 07:21, 07:29, 07:37, 07:45, 07:53, 08:01, 08:10, 08:20, 17:45, 17:53, 18:01, 18:09, 18:17, 18:25, 18:37, 18:49
	988	Nai Chung – Chai Wan (East)	07:20, 07:32, 07:44, 07:56, 08:08, 17:40, 18:00
	A41P	Wu Kai Sha Station – Airport (Ground Transportation Centre)	20 – 40
	N287	Tsim Sha Tsui East (Mody Road) – Wu Kai Sha Station	00:55, 01:25, 01:55
	X89D	Nai Chung – Kwun Tong Ferry	07:00, 07:10, 07:20, 07:29, 07:34, 07:47, 07:55, 17:40, 17:55, 18:10, 18:25
	NA40	Wu Kai Sha Station – HZMB Hong Kong Port	00:15, 00:35, 01:05, 01:35, 03:40, 04:10, 04:40
GMB	807B	Ma On Shan Station (Bayshore Towers Public Transport Interchange) – Wong Chuk Wan	12 – 15
	807K	Tseng Tau Tsuen – Ma On Shan Station (Bayshore Towers Public Transport Interchange) / Wu Kai Sha Station Public Transport Interchange (AM services)	15

Mode	Route No.	Origin-Destination	Frequency (min)
	807X	University Station – Wu Kai Sha Station (Circular)	5 – 10
	810A	White Head – Sha Tin Central	30

3.6 Existing Footpath Capacity Assessment

3.6.1 It is anticipated that most of the pedestrians to be generated and attracted by the proposed development will use the public transport services in its vicinity, i.e. MTR Wu Kai Sha Station and bus stops at Wu Kai Sha Road and Wu Kai Sha Station. The pedestrians to be generated by the proposed development are anticipated to access the public transport services on foot via the local footpath system as shown in **Figure 3.4**.

3.6.2 An assessment of the level-of-service (**LOS**) was conducted for the foregoing footpath sections to appraise their existing performances. **Table 3.5** is an extract of the definition of pedestrian walkway LOS according to the Highway Capacity Manual.

Table 3.5 Description of Level-of-service

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

Notes: (1) source: Highway Capacity Manual 2000 published by the US Transportation Research Board
(2) ped/m/min = pedestrians per metre per minute

3.6.3 Based on the collected data of pedestrian movements, the LOS of the footways in accommodating the existing pedestrian movements have been assessed and the results of the assessment are summarised in **Table 3.6**.

Table 3.6 Existing Capacity Analysis of the Concerned Footpaths

Ref.	Location	Actual Width (m)	Effective Width (m)(1)	Peak Hour flow (ped/hr)			Flow Rate(2) ped/m/min [LOS]		
				WD - AM	WD - AM	WE	WD - AM	WD - AM	WE
P1	Western footpath of Yiu Sha Road	2.4	1.4	43	47	82	0.5 [A]	0.6 [A]	1.0 [A]
P2	Northern footpath of Wu Kai Sha Road (west of Double Cove's vehicular access)	2.3	1.3	71	105	106	0.9 [A]	1.3 [A]	1.4 [A]
P3	Northern footpath of Wu Kai Sha Road (east of Double Cove's vehicular access)	2.5	1.5	92	110	154	1.0 [A]	1.2 [A]	1.7 [A]
P4	Staircase connecting northern footpath of Sai Sha Road and Wu Kai Sha Station	4.4	3.4	113	99	100	0.6 [A]	0.5 [A]	0.5 [A]
P5	24-hour Public Pedestrian Walkway within STTL 502	7.4	6.4	2,039	1,613	1,557	5.3 [A]	4.2 [A]	4.1 [A]

Notes: WD – Weekday; WE - Weekend
(1) A clearance zone of 0.5m on side with obstruction was adopted.
(2) For LOS "C" or above, flow volumes should be less than 33 ped/m/min.

3.6.4 The results of the assessment have indicated that the existing footpath conditions are satisfactory in both AM and PM Peak hours with LOS "A" according to the Highway Capacity Manual.

4 FUTURE TRAFFIC SITUATION

4.1 Design Year

4.1.1 The tentative completion year for the proposed development is 2027. The guideline from the Transport Department recommends that the traffic impact assessment should be conducted for whichever is later: (i) three years after the completion date (2027 + 3 = 2030), or (ii) five years after the submission (2023 + 5 = 2028). For the captioned project, the design year adopted for junction capacity analysis is 2030.

4.2 Traffic Forecast

Annual Traffic Census (ATC) – Historical Data

4.2.1 In order to establish the traffic growth rate in the vicinity of the Site, reference was made to the 2016 to 2021 Annual Traffic Census Reports published by the Transport Department, reporting on the AADT at the counting stations in the territory. The details of the counting stations in the study area and the corresponding counts are shown in **Table 4.1**.

Table 4.1 Annual Traffic Census Data

Stn. No.	Road Section			AADT(1)						Avg. Growth%
	Road	From	To	2016	2017	2018	2019	2020	2021	
5005	Ma On Shan Road	Ma On Shan Bypass	Hang Hong St RA	26,500	26,270 (-0.9%)	26,020 (-1%)	26,020 (0%)	24,340 (-6.5%)	25,520 (4.8%)	-0.8%
5467	Ma On Shan Road	Hang Hong Street	Sai Sha Road	17,530	17,420 (-0.6%)	17,700 (1.6%)	17,150 (-3.1%)	15,990 (-6.8%)	16,740 (4.7%)	-0.9%
5662	Sai Sha Road	Ma On Shan Bypass	Nai Chung	18,260	18,140 (-0.7%)	18,430 (1.6%)	18,300 (-0.7%)	22,480 (22.8%)	25,120 (11.7%)	6.6%
5683	Sai Sha Road	On Yuen Street	Sui Tai Road	23,210	23,060 (-0.6%)	23,440 (1.6%)	23,270 (-0.7%)	24,950 (7.2%)	27,860 (11.7%)	3.7%
5708	Ma On Shan Bypass	Ma On Shan Road	Sai Sha Road	21,790	21,850 (0.3%)	21,930 (0.4%)	21,900 (-0.1%)	23,160 (5.8%)	25,780 (11.3%)	3.4%
5877	Hang Hong St	Ma On Shan Rd	Sai Sha Rd	14,820	15,040 (1.5%)	15,280 (1.6%)	15,180 (-0.7%)	14,600 (-3.8%)	12,710 (-12.9%)	-3.0%
5883	On Yuen St	Sai Sha Rd	On Chun St	10,530	11,410 (8.4%)	11,590 (1.6%)	11,510 (-0.7%)	11,070 (-3.8%)	12,520 (13.1%)	3.5%
Total				**132,640**	**133,190 (0.4%)**	**134,390 (0.9%)**	**133,330 (-0.8%)**	**136,590 (2.4%)**	**146,250 (7.1%)**	**+2.0%**

Note: (1) Figures in bracket indicated the % increase between two years.

4.2.2 **Table 4.1** showed that the recorded average annual growth rate of the concerned counting stations is +2.0% between years 2016 to 2021.

Territorial Population and Employment Data Matrix (TPEDM) – Projection Data

4.2.3 Reference was also made to the 2019 based Territorial Population and Employment Data Matrix (TPEDM) published by the Planning Department. The population and employment data of year 2019 and 2031 are summarized in **Table 4.2**.

Table 4.2 TPEDM – Ma On Shan District

Year	Population	Employment	Total
2019	219,950	34,100	254,050
2031	229,800	35,100	264,900
		Average Annual Growth Rate	**0.35%**

4.2.4 As shown in **Table 4.2**, the average annual growth rate for both population and employment of Ma On Shan district is +0.35% between 2019 and 2031. Having considered the rates derived from ATC and TPEDM data, to be conservative, the larger growth rate of +2.0% will be adopted for the subsequent traffic forecasting.

4.3 Planned/Committed Developments

4.3.1 To estimate the future traffic flows, updated information are being obtained from available information regarding the planned and approved developments in the vicinity of the study area. The locations of these developments are shown in **Figure 4.0**, and the details of these developments are given in **Table 4.3**.

Table 4.3 Planned / Committed Developments

Ref.	Development	Proposed Use	Content	Anticipated Completion Year
1	STTL 600 – CDA(1) (1)	Student Hostel	2,236 units	2025
2	STTL 601 – R(C)5	Private Housing	547 units	2020
3	STTL 611 – R(C)3	Private Housing	160 units	2022
4	Sai Sha Development (2)	Private Housing	9,700 units	2025/2030
		Commercial	12,077 m^2 GFA	
		Recreation & Sport Centre	17,500 m^2 GFA	
		Social Welfare	5,560 m^2 GFA	
5	Proposed School Development at Various Lots and Adjoining Government Land in DD167, Nai Chung (3)	School	29 classes	2025
6	Cheung Muk Tau Tsuen West Housing Development Site 1 (4)	Public Residential	1,660 units	2029/2030
		Retail	1,550 m^2 GFA	
		Kindergarten	7 classes	
		Child Care Centre (CCC)	100 places	
7	Cheung Muk Tau East Housing Development Site 2 (4)	Public Residential	1,820 units	2029/2030
		Retail	1,700 m^2 GFA	
		Day Care Centre for the Elderly (DE)	80 places	
		Residential Care Home for Elderly (RCHE)	150 places	
8	Cheung Muk Tau Holiday	RCHE	200 places	2026

Ref.	Development	Proposed Use	Content	Anticipated Completion Year
	Centre Expansion			
9	29 On Chun Street, Ma On Shan (5)	Private Housing	758 units	2025
		Retail	5,543 m^2 GFA	
10	Public Housing Development at Ma On Shan Tsuen	Public Housing	2,700 units	2029/2030
11	Kam Chun Court	Public Housing	2,079 units	2023
12	Kam Pak Court	Public Housing	1,900 units	2024/2025

Notes: (1) Reference was made to Planning Application No. A/MOS/96, the proposed development will have a total of 2,236 units (2,168 hostel units and 68 overnight staff accommodation units).
(2) Reference was made to the TIA report of Planning Application No. A/NE-SSH/142.
(3) Reference was made to the gist of Planning Application No. A/MOS/125.
(4) Reference was made to the planning brief published by the Planning Department in April 2023.
(5) Reference was made to the gist of Planning Application No. Y/MOS/6.

4.3.2 The traffic flows that would be generated by these developments have been considered, by making reference to the trip generation rates in the Transport Planning and Design Manual ("TPDM"). The traffic generation and attraction numbers are shown in **Table 4.4**.

Table 4.4 Traffic Generation and Attraction of Planned / Committed Developments

Type / Development		Unit/Content	AM Peak Hour			PM Peak Hour		
			Gen.	Att.	2-way	Gen.	Att.	2-way
TPDM Trip Rates								
Subisidised: PRH (Mean)	PRH	pcu/hr/flat	0.0432	0.0326	-	0.0237	0.0301	-
Subisidised: PRH (Upper limit)	PRH(U)	pcu/hr/flat	0.0539	0.0439	-	0.0278	0.0339	-
Subisidised: HOS/PSPS (Upper limit)	HOS(U)	pcu/hr/flat	0.0761	0.0573	-	0.0350	0.0451	-
Private: High-Density/R(A): 60m^2 (Upper limit)	Rs60 (U)	pcu/hr/flat	0.1021	0.0709	-	0.0415	0.0464	-
Private: High-Density/R(A): 70m^2 (Mean)	Rs70	pcu/hr/flat	0.0888	0.0515	-	0.0356	0.0480	-
Private: Medium-Density/R(B): 120m^2 (Upper limit)	Rs120 (U)	pcu/hr/flat	0.2601	0.1469	-	0.1353	0.1862	-
Retail (Mean)	R	pcu/hr/100m^2	0.2296	0.2434	-	0.3100	0.3563	-
Kindergarten (1)	K	pcu/hr/class	2.3056	2.3056	-	0.0286	0.0286	-
Residential Care Home for Elderly (2)	RCHE	pcu/hr/10-place	0.3261	0.3261	-	0.0725	0.0725	-
Traffic Generation of the Planned Developments								
Site 1 (3)	Rs60 (U)	2,236 units	229	159	388	93	104	197

Type / Development		Unit/Content	AM Peak Hour			PM Peak Hour		
			Gen.	Att.	2-way	Gen.	Att.	2-way
Site 2	Rs70	547 units	49	29	78	20	27	47
Site 3 (3)	Rs120 (U)	160 units	42	24	66	22	30	52
Site 4	-	(see **Table 4.3**)	981(4)	707(4)	1,688(4)	738(4)	846(4)	1,584(4)
Site 5	-	29 classes	116(5)	131(5)	247	87(5)	81(5)	168
Site 6 (3)	PRH(U)	1,826 units(6)	99	81	180	51	62	113
	R	1,550 m^2 GFA	4	4	8	5	6	11
	K	7 classes	17	17	34	1	1	2
	CCC	100 places	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
Site 7 (3)	PRH(U)	2,002 units(6)	108	88	196	56	68	124
	R	1,700 m^2 GFA	4	5	9	6	7	13
	RCHE	80 places	3	3	6	1	1	2
	RCHE	150 places	5	5	10	2	2	4
Site 8	-	200 places	7(8)	8(8)	15	7(8)	7(8)	14
Site 9	-	(see **Table 4.3**)	68(9)	47(9)	115	40(9)	49(9)	89
Site 10	PRH(U)	2,970 units(6)	161	131	292	83	101	184
Site 11	HOS(U)	2,287 units(6)	175	132	307	81	104	185
Site 12	HOS(U)	2,090 units(6)	160	120	280	74	95	169

Notes: Gen. – Generation; Att. – Attraction

(1) Trip rates for Kindergarten from TGS – TD 05/2006 Traffic Generation Survey 2006 are adopted.

(2) Trip rates derived in **Table 4.5** are adopted.

(3) Due to the remoteness of the development, TPDM trip rates (upper limit) are adopted.

(4) Traffic Generation adopted in the TIA of application no. A/NE-SSH/142, the relevant page is extracted and enclosed in **Appendix B**.

(5) Traffic Generation adopted in the TIA of application no. A/MOS/125 , the relevant page is extracted and enclosed in **Appendix B**.

(6) An allowance of 10% increase of residential units is applied for planned public housing developments for conservative assessment purposes.

(7) As the child care centre is targeted for the local community, it is anticipated that the children will be brought to the Centre by the parents on foot and no traffic will be generated/attracted.

(8) Traffic Generation adopted in the TIA report, the relevant page is extracted and enclosed in **Appendix B**.

(9) Traffic Generation adopted in the TIA of application no. Y/MOS/6, the relevant page is extracted and enclosed in **Appendix B**.

4.3.3 As shown in **Table 4.4**, some developments have been completed but the population has not yet fully intake at the time of survey. However, to be conservative, the traffic flows to be generated by these developments are also included in the subsequent traffic forecast.

4.4 Proposed Development Traffic Generation

4.4.1 In order to examine the traffic impact of the proposed development, traffic generated/ attracted by the proposed development should be estimated based on the development parameters as outlined in **Table 2.1** and the trip rates documented in TPDM Volume 1 Chapter 3 – Transport Considerations of Town Plans.

4.4.2 As there is no established trip rates published in TPDM or other relevant guidelines for public vehicle park, trip generation surveys at existing RCHEs and public vehicle parks, were arranged to collect trip rates of carpark. The trip generation survey was conducted 8 December 2023 (Friday) during the AM and PM peak hour period. The survey results and the derived trip rates are presented in **Table 4.5**.

Table 4.5 Survey Results at the Existing Buildings

Name	Unit / Content	AM Peak			PM Peak		
		Gen.	Att.	2-way	Gen.	Att.	2-way
Traffic Generation of Existing RCHEs (pcu/hr)							
Caritas Harold H.W. LEE Care and Attention Home	276 places	9	9	18	2	2	4
SAGE Kwan Fong Nim Chee Home for the Elderly	204 places	1	3	4	1	1	2
Traffic Generation of Existing Vehicle Parks (pcu/hr)							
33 On Chun Street	31 spaces	3	3	6	2	2	4
STT2174 at On Chun Street	245 spaces	42	8	50	13	38	51
STT2125 at Ma Kam Street	252 spaces	52	10	62	15	50	65
Derived Trip Rates for RCHE (pcu/hr/space)							
Caritas Harold H.W. LEE Care and Attention Home		0.3261	0.3261	-	0.0725	0.0725	-
SAGE Kwan Fong Nim Chee Home for the Elderly		0.0490	0.1471	-	0.0490	0.0490	-
Adopted Trip Rates(1)		**0.3261**	**0.3261**	-	**0.0725**	**0.0725**	-
Derived Trip Rates for PVP (pcu/hr/space)							
33 On Chun Street		0.0968	0.0968	-	0.0645	0.0645	-
STT2174 at On Chun Street		0.1714	0.0327	-	0.0531	0.1551	-
STT2125 at Ma Kam Street		0.2063	0.0397	-	0.0595	0.1984	-
Adopted Trip Rates(1)		**0.2063**	**0.0968**	-	**0.0645**	**0.1984**	-

Note: Gen. – Generation; Att. – Attraction.
(1) The largest trip rates are adopted for conservative assessment purposes.

4.4.3 Based on the above, the traffic generation of the proposed development has been estimated and presented in **Table 4.6**.

Table 4.6 Development Traffic Generation

Proposed Use	Unit /Content	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Peak Hour(1)		
		Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
Adopted Trip rates										
Private Housing: Low-Density/ R(C) (Average Flat size 180 m^2)(2)	pcu/hr /flat	0.2772	0.1769	-	0.1635	0.2394	-	0.1635	0.2394	-
RCHE(3)	pcu/hr/ 10-place	0.2536	0.2536	-	0.0725	0.0725	-	0.0725	0.0725	-
Public Vehicle Carpark(3)	pcu/hr /space	0.2063	0.0968	-	0.0645	0.1984	-	0.0645	0.1984	-
Estimated Traffic Generation/Attraction										
Residential	184 flats	52	33	85	31	45	76	31	45	76
RCHE	162 places	5	5	10	2	2	4	2	2	4
DE(4)	40 places	2	2	4	1	1	2	1	1	2
Public Vehicle Carpark	140 spaces	29	14	43	10	28	38	10	28	38
Total		**89**	**55**	**144**	**44**	**76**	**120**	**44**	**76**	**120**

Note: (1) The rates for weekday PM peak are adopted for weekend peak.
(2) TPDM mean trip rates for private housing use with an average flat size of 180 m^2 is adopted.
(3) Trip rates derived in **Table 4.5**.
(4) Trip rates for RCHE are adopted for DE.

4.4.4 As shown in **Table 4.6**, the proposed development would generate two-way traffic flows of 144 pcu/hr in the weekday AM peak, 120 pcu/hr in the weekday PM peak and 120 pcu/hr in the weekend peak. The development traffic was distributed onto the road work with reference to "2021 Population Census" published by the Census and Statistics Department.

4.4.5 According to Table C204 of the census, working population in Shatin area who travelled by private car/passenger van is about 20,746, and 2,082 of them (2,082 / 20,746 = 10%) work in the same district, which implies 10% of them would travel within the local road network and 90% of them would travel to other districts via strategic roads, this modal split is adopted and the development traffic is presented in **Figure 4.1**.

4.5 Reference and Design Flows

4.5.1 The 2030 Reference Flows, i.e., the traffic flows in the vicinity **without** the traffic flows generated by the proposed development, were estimated based on the following equation.

2030 Reference Flows = 2022 Existing Flows x $(1 + 2.0\%)^8$ + Traffic Flows Generated by the Planned/Committed Developments

4.5.2 The 2030 Design Flows, i.e., the traffic flows in the vicinity **with** the traffic flows generated by the proposed development, were estimated based on the following equation:

2030 Design Flows = 2030 Reference Flows + Traffic Flows Generated by the Proposed Development

4.5.3 The 2030 Reference and Design Flows are shown in **Figures 4.2** and **4.3**, respectively.

4.6 Junction Capacity Assessment

4.6.1 Junction capacity analysis was carried out for the assessment year 2030. The assessment results are shown in **Table 4.7** and the detailed calculation sheets are presented in **Appendix C**.

Table 4.7 Year 2030 Junction Capacity Assessment

No.	Junction	Junction Type/Index (1)	2030 Reference			2030 Design		
			WD - AM	WD - PM	WE	WD - AM	WD - PM	WE
J1	Wu Kai Sha Road / Yiu Sha Road	Roundabout / DFC	0.21	0.25	0.25	0.23	0.28	0.28
J2	Sai Sha Road / Wu Kai Sha Road / Sha On Street	Roundabout / DFC	0.40	0.44	0.36	0.41	0.46	0.36
J3	Sai Sha Road / Kam Ying Road	Signalized/ RC	34%	36%	53%	33%	35%	53%
J4	Sai Sha Road / Ma On Shan Road / On Chiu Street	Signalized/ RC	32%	35%	61%	31%	34%	61%
J5	On Chun Street / On Chiu Street	Signalized /RC	203%	137%	146%	203%	137%	146%
J6	On Chun Street / Access of Villa Athena	Priority/DFC	0.21	0.21	0.15	0.21	0.21	0.15

Note: WD – Weekday; WE - Weekend
(1) RC = Reserve Capacity for signalized junction; DFC = Design Flow to Capacity ratio for priority junction.

4.6.2 As shown in **Table 4.7**, the assessed junctions will operate with capacities during the peak hours in 2030 with the expected traffic growth and the additional traffic flows generated by the proposed development.

4.7 Link Capacity Assessment

4.7.1 The V/C Ratios of Sai Sha Road and Ma On Shan Bypass were assessed and the results are presented in **Table 4.8**.

Table 4.8 Year 2030 Link Capacity Assessments

Direction	Bound	Capacity (pcu/hr) (1)	Traffic Flow (pcu/hr)			V/C Ratio		
			WD-AM	WD-PM	WE	WD-AM	WD-PM	WE
2030 Reference Scenario								
Sai Sha Road (between On Yuen Street and On Chiu Street)	WB	5,040	1,097	830	670	0.22	0.16	0.13
	EB	5,040	835	1,041	779	0.17	0.21	0.15
Sai Sha Road (between On Chiu Street and Kam Ying Street)	WB	5,040	1,111	826	642	0.22	0.16	0.13
	EB	5,040	792	1,036	829	0.16	0.21	0.16
Sai Sha Road (between Kam Ying Street and Wu Kai Sha Road)	WB	3,360	777	687	613	0.23	0.20	0.18
	EB	3,360	804	837	752	0.24	0.25	0.22
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Road)	NB	3,600	2,299	2,364	1,098	0.64	0.66	0.31
	SB	5,640	3,210	2,354	1,179	0.57	0.42	0.21
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Bypass)	EB	3,360	882	517	516	0.18	0.10	0.10
	WB	1,680	499	636	555	0.30	0.38	0.33
2030 Design Scenario								
Sai Sha Road (between On Yuen Street and On Chiu Street)	WB	5,040	1,106	834	674	0.22	0.17	0.13
	EB	5,040	840	1,049	787	0.17	0.21	0.16
Sai Sha Road (between On Chiu Street and Kam Ying Street)	WB	5,040	1,120	830	646	0.22	0.16	0.13
	EB	5,040	797	1,044	837	0.16	0.21	0.17
Sai Sha Road (between Kam Ying Street and Wu Kai Sha Road)	WB	3,360	777	687	613	0.23	0.20	0.18
	EB	3,360	809	845	760	0.24	0.25	0.23
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Road)	NB	3,600	2,340	2,421	1,155	0.65	0.67	0.32
	SB	5,640	3,277	2,387	1,212	0.58	0.42	0.21
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Bypass)	EB	3,360	949	550	549	0.19	0.11	0.11
	WB	1,680	540	693	612	0.32	0.41	0.36

Note: WD – Weekday; WE - Weekend
(1) Capacity refers to TPDM Vol.2 Ch. 2.4. A factor of 1.2 (based on the traffic count survey result) is adopted to convert the capacity from veh/hr to pcu/hr.

4.7.2 As shown in **Table 4.8**, all the concerned road sections will operate with capacity during AM and PM hours in both reference and design scenarios.

4.8 Pedestrian Traffic Generation

4.8.1 The pedestrian generation of the proposed residential development (excluding those persons using private vehicles to leave the Site) on the surrounding footpaths is estimated based on the tentative flat mix, the overall population of the development is about 534. Reference has been made to the published "Travel Characteristics Survey (TCS) 2011 Final Report".

4.8.2 According to the Report, the daily mechanized trip rate per population is 1.83 trips (two-way) and the morning and evening peak hour accounted for about 12% of the daily trips for the two-way trips. It is assumed that 90% of the trips are in outbound direction in the AM peak hour. Based on the above, the estimated outbound and inbound trips in AM peak hour are about 106 persons/hr (i.e. 534 x 1.83 x 0.12 x 0.9) and 12 persons/hr (i.e. 534 x 1.83 x 0.12 x 0.1), respectively. The outbound and inbound trips are swapped for PM peak hour, which about 12 persons/hr (i.e. 534 x 1.83 x 0.12 x 0.1) would be generated and 106 persons/hr (i.e. 534 x 1.83 x 0.12 x 0.9) would be attracted by the proposed development.

4.8.3 For the RCHE and public vehicle park component, since there is no established pedestrian trip rate in TPDM, in-house pedestrian trip rates are adopted. The pedestrian trip generation surveys were conducted on 8 December 2023 (Friday) to collect data for deriving the pedestrian trip rates for each type of development. The survey result and the derived trip rates are presented in **Table 4.8**.

Table 4.8 Pedestrian Trip Rates from Surveyed Buildings

Building (Type of Building)	Address	Unit/ Content	AM Peak Hour			PM Peak Hour		
			Gen.	Att.	2-way	Gen.	Att.	2-way
Pedestrian Generation – RCHE (persons/hr)								
Caritas Harold H.W. LEE Care and Attention Home	17 Kong Pui Street, Shatin	276 places	8	79	87	59	11	70
SAGE Kwan Fong Nim Chee Home for the Elderly	27 Chap Wai Kon Street, Shatin	204 places	9	27	36	49	9	58
Pedestrian Generation – Car Park (persons/hr)								
33 On Chun Street		31 spaces	8	4	12	2	5	7
STT2174 at On Chun Street		245 spaces	70	13	83	26	78	104
STT2125 at Ma Kam Street		252 spaces	123	25	148	30	110	140
Derived Trip Rates for RCHE (persons /hr/10 place)								
Caritas Harold H.W. LEE Care and Attention Home			0.29	2.86	–	2.14	0.40	–
SAGE Kwan Fong Nim Chee Home for the Elderly			0.44	1.32	–	2.40	0.44	–
Adopted Trip Rates (1)			**0.44**	**2.86**	–	**2.40**	**0.44**	–
Derived Trip Rates for Car Park (persons /hr/space)								
33 On Chun Street			0.26	0.13	–	0.06	0.16	–
STT2174 at On Chun Street			0.29	0.05	–	0.11	0.32	–
STT2125 at Ma Kam Street			0.49	0.10	–	0.12	0.44	–
Adopted Trip Rates (1)			**0.49**	**0.13**	–	**0.12**	**0.44**	–

Note: Gen. – Generation; Att. – Attraction.
(1) The largest rates are adopted for conservative assessment purpose.

4.8.4 By adopting the surveyed pedestrian trip rates as shown in **Table 4.8**, the additional pedestrian generation and attraction of the proposed development are also estimated and tabulated in **Table 4.9**.

Table 4.9 Estimated Pedestrian Traffic Generation of the Proposed Development

Use	Unit/ Content	Weekday AM Peak			Weekday PM Peak			Weekend Peak		
		Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
Adopted Pedestrian Trip Rates(1)										
RCHE	persons/hr /10 place	0.44	2.86	–	2.40	0.44	–	2.40(2)	0.44(2)	–
PVP	persons/hr /space	0.49	0.13	–	0.12	0.44	–	0.12(2)	0.44(2)	–
Estimated Pedestrian Generation of the Proposed Development										
Residential (3)	184 units	110	13	123	13	110	123	13	110	123
RCHE	162 places	8	47	55	39	8	47	39	8	47
DE (4)	40 places	2	12	14	10	2	12	10	2	12
PVP	140 spaces	69	19	88	17	62	79	17	62	79
Total		**189**	**91**	**280**	**79**	**182**	**261**	**79**	**182**	**261**

Notes: Gen. – Generation; Att. – Attraction.
(1) Pedestrian trip rates derived in **Table 4.7** are adopted.
(2) The rates for Weekday PM peak are adopted for Weekend peak.
(3) The methodology as described in **Section 4.8.2** is adopted for estimation of pedestrians.
(4) The trip rates for RCHE are adopted for DE.

4.8.5 The proposed development is estimated to generate 2-way pedestrian flows of 280, 261 and 261 persons/ hour during weekday AM, weekday PM and weekend peak hours respectively.

4.8.6 In order to establish the pedestrian flow pattern to the different public transport facilities, reference was made to the 2021 Population Census. Since the proposed development is located 700m away from the MTR Wu Kai Sha Station and it is anticipated that a large proportion residents would take MTR service for daily commuting. The modal split is therefore adjusted to suit the local condition. The modal split of the public transport for the proposed development was estimated as shown in **Table 4.10**.

Table 4.10 Estimated Modal Split for the Proposed Development

Mode	Working Population With Fixed Place of Work in Sha Tin District (1)		Adjusted Modal Split for the Proposed Development
	Number of Persons	%	
MTR (Local line)	106,720	43.07%	54.35%
Bus	75,614	30.52%	38.51%
On foot only	18,460	7.45%	N.A. (3)
Private car / Passenger van	20,746	8.37%	N.A. (3)
Public light bus	11,989	4.84%	6.11%

Mode	Working Population With Fixed Place of Work in Sha Tin District (1)		Adjusted Modal Split for the Proposed Development
	Number of Persons	%	
Company bus / van	6,758	2.73%	N.A. (3)
MTR (Light Rail)	--	--	N.A.(2)
Taxi	2,021	0.82%	1.03%
Residential coach service	2,054	0.83%	N.A. (3)
Ferry / Vessel	154	0.06%	N.A. (2)
Others	3,262	1.32%	N.A. (3)
Total	247,778	100.00%	**100%**

Notes: (1) Source: Table C204 in 2021 Population Census
(2) The transport mode is not applicable to the proposed development.
(3) For conservative approach, only public transport modes are considered for assessment.

4.8.7 The pedestrian generation to / from the MTR Wu Kai Sha Station, the bus / mini-bus stops and the taxi stands / the roadside available for taxi passenger pick-up & drop-off in the vicinity of the proposed development in the weekday AM, weekday PM and weekend peak hour is estimated in **Table 4.11**.

Table 4.11 Estimated Pedestrian Generation to the Public Transport Facilities in the Weekday AM, Weekday PM and Weekend Peak Hour

Public Transport Facilities	Modal Split (for the Proposed Development)	Estimated Peak Hour Pedestrian Flows (persons / hr)								
		Weekday AM Peak			Weekday PM Peak			Weekend Peak(1)		
		Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
MTR Station	54.35%	103	49	152	43	99	142	43	99	142
Bus / Mini-bus Stops	44.62%	84	41	125	35	81	116	35	81	116
Taxi Stand / Roadside	1.03%	2	1	3	1	2	3	1	2	3
Total	**100.00%**	**189**	**91**	**280**	**79**	**182**	**261**	**79**	**182**	**261**

Notes: Gen. – Generation; Att. – Attraction.
(1) The rates for Weekday PM peak are adopted for Weekend peak.

4.9 Pedestrian Traffic Generation of the Other Planned Developments

4.9.1 It is understood that there are some planned and committed developments in the vicinity of the proposed development. The pedestrian flows that would be induced by these developments have been considered. The pedestrian flows of these planned development are estimated by adopting the methodology described in **Section 4.8.2** and presented in **Table 4.12**.

Table 4.12 Estimated Pedestrian Generation/Attraction of Planned Developments

Use	Unit		Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Peak Hour		
			Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
Estimated Pedestrian Generation											
STTL 600 – CDA(1)	Student Hostel (1)(2)	2,236 places	442	50	492	50	442	492	442	50	492
STTL 601 – R(C)5	Residential (1)(3)	547 flats	325	37	362	37	325	362	37	325	362
STTL 611 – R(C)3	Residential (1)(3)	111 flats	66	8	74	8	66	74	8	66	74
		Total	**833**	**95**	**928**	**95**	**833**	**928**	**95**	**833**	**928**

Notes: Gen. – Generation; Att. – Attraction.
(1) The methodology as described in **Section 4.8.2** is adopted for estimation of pedestrians induced by planned developments.
(2) The population is assumed to be the same as the number of places.
(3) Reference was also made to Table D304 of the "2021 Population Census" published by the Census and Statistics Department, the average domestic household size in Wu Kai Sha area is 3.0 persons and this number is adopted for estimating the population of planned residential developments in the vicinity.

4.9.2 The planned developments are estimated to generate 2-way pedestrian flows of 928, 928 and 928 persons/ hour during weekday AM, weekday PM and weekend peak hours respectively.

4.10 Reference and Design Pedestrian Flows

4.10.1 The 2030 Reference Pedestrian Flows, i.e. the pedestrian flows in the local road without the proposed development, were estimated based on the following equation.

2030 Reference Pedestrian Flows = 2023 Existing Pedestrian Flows x $(1 + 2.0\%)^7$ + Additional Pedestrians Induced by Planned Developments in the vicinity

4.10.2 The 2030 Design Pedestrian Flows, i.e. the pedestrian flows in the local road network with the proposed development, were estimated based on the following equation:

2030 Design Pedestrian Flows = 2030 Reference Flows + Additional Pedestrians Induced by the proposed development

4.11 Footpath Capacity Assessment

4.11.1 Capacity analysis of the concerned footpath was carried out for the assessment year 2030. The pedestrians generated and attracted by the proposed development are distributed into the network with reference to the existing flow pattern. The assessment results are shown in **Table 4.13**.

Table 4.13 Year 2030 Capacity Analysis of the Concerned Footpaths

Ref.	Location	Actual Width (m)	Effective Width (m)(1)	Peak Hour flow (ped/hr)			Flow Rate(2) ped/m/min [LOS]		
				WD - AM	WD - AM	WE	WD - AM	WD - AM	WE
2030 Reference Scenario									
P1	Western footpath of Yiu Sha Road	2.4	1.4	49	54	94	0.6 [A]	0.6 [A]	1.1 [A]
P2	Northern footpath of Wu Kai Sha Road (west of Double Cove's vehicular access)	2.3	1.3	82	121	122	1.1 [A]	1.6 [A]	1.6 [A]
P3	Northern footpath of Wu Kai Sha Road (east of Double Cove's vehicular access)	2.5	1.5	106	126	177	1.2 [A]	1.4 [A]	2.0 [A]
P4	Staircase connecting northern footpath of Sai Sha Road and Wu Kai Sha Station	4.4	3.4	130	114	115	0.6 [A]	0.6 [A]	0.6 [A]
P5	24-hour Public Pedestrian Walkway within STTL 502	7.4	6.4	3,189	2,720	2,238	8.3 [A]	7.1 [A]	5.8 [A]
2030 Design Scenario									
P1	Western footpath of Yiu Sha Road	2.4	1.4	329	315	355	3.9 [A]	3.8 [A]	4.2 [A]
P2	Northern footpath of Wu Kai Sha Road (west of Double Cove's vehicular access)	2.3	1.3	362	382	383	4.6 [A]	4.9 [A]	4.9 [A]
P3	Northern footpath of Wu Kai Sha Road (east of Double Cove's vehicular access)	2.5	1.5	361	364	415	4.0 [A]	4.0 [A]	4.6 [A]
P4	Staircase connecting northern footpath of Sai Sha Road and Wu Kai Sha Station	4.4	3.4	385	352	353	1.9 [A]	1.7 [A]	1.7 [A]
P5	24-hour Public Pedestrian Walkway within STTL 502	7.4	6.4	3,189	2,720	2,238	8.3 [A]	7.1 [A]	5.8 [A]

Notes: WD – Weekday; WE – Weekend
(1) A clearance zone of 0.5m on side with obstruction was adopted.
(2) For LOS "C" or above, flow volumes should be less than 33 ped/m/min.

4.11.2 **Table 4.13** shows that the condition of the concerned footpaths will be satisfactory after accommodating the pedestrians generated and attracted by the proposed development in both AM and PM Peak hours with LOS "C" or above.

4.12 Railway Patronage Capacity

4.12.1 In order to ensure sufficient railway capacity will be able to accommodate for the proposed development, an assessment was conducted to review the rail patronage capacity. Since railway services in AM are generally busier than that in PM, AM peak hour is considered more than critical in conducting railway capacity assessment, the AM scenario is used for analysis purpose.

4.12.2 As shown in **Table 4.11**, 152 persons/hour will be induced by the proposed development and all of them are anticipated to use railway services during AM peak hour, which 103 persons/hour will be generated from the Proposed Development and 49 persons/hour will be attracted to the proposed development.

4.12.3 According to the Legislative Council Paper FCRI(2022-23)18 published in April 2023, the existing morning peak hour loading factor of Tuen Ma Line at critical section (Tsuen Wan West to Mei Foo) in 2022 is 61%, which the passenger demand and capacity (based on 6 passengers per square meter) are 36,100 persons/hour and 58,800 persons /hour, respectively.

4.12.4 In 2030, the passenger demand is projected to be increased to approximately 37,600 persons /hour. The 2030 railway capacity performance is then evaluated by considering the 2030 passenger demand and the additional passengers to be induced by the proposed development. The results are tabulated in **Table 4.14**.

Table 4.14 2030 Railway Capacity Performance

Items	Capacity (persons /hour /direction)	Reference Scenario (see Note 1)	Design Scenarios (see Notes 1, 2 and 3)
2030 Projected Morning Peak Hour Passenger Demand (persons/hour)	-	37,600	37,703 [+103]
Loading factor - Existing Peak Hour Capacity	58,800	64%	64%

Note 1: 2030 Reference Scenario = 2022 morning peak hour passenger demand x (1+1.0%)[8]
Note 2: 2030 Design Scenario = 2030 Reference Scenario + Additional passenger demand induced by the Proposed Development.
Note 3: Figures in square brackets indicate the increase in passengers due to the proposed development.

4.12.5 From **Table 4.14**, after accommodating the additional passengers induced by the proposed development, the 2030 morning peak hour loading factor of Tuen Ma Line at critical sections, based on existing peak hour capacity, will be 64% (6 passengers per square meter).

4.12.6 It should be noted that the increase in passenger during the morning peak hour at Tuen Ma Line due to the proposed development, are only 103 persons. The increase in passengers only constitute 0.3% of the passenger demand of Tuen Ma Line, which are considered insignificant.

4.13 Bus/Minibus Utilization Assessment

4.13.1 It is assumed that the additional bus / mini-bus passengers of the proposed development would use the stops at Wu Kai Sha Road near Double Cove and Wu Kai Sha Village. Bus/minibus utilization survey is therefore conducted on 8 December 2023 at these stops during AM and PM peak periods to review the existing condition. The bus utilization assessment results during AM and PM peak hour are summarized in **Table 4.15** and **Table 4.16**, respectively.

Table 4.15 Existing Bus/Minibus Occupancy Assessment – AM Peak Hour

Route No.	Observed Vehicular Trips (see Note 1)	Passenger Capacity	Passengers on Bus upon Arrival	Total No. of passengers		Passengers on Bus upon Leave	Occupancy
				Boarding	Alighting		
		[a]	[b]	[c]	[d]	[e] = [b]+[c]-[d]	[f] = [e] / [a]
Eastbound Stop at Wu Kai Sha Road near Double Cover							
40E	2	240	25	2	0	27	11%
87E	1	120	30	1	0	31	26%
988	3	360	20	0	0	20	6%
807X (GMB)	8	128	63	6	0	69	54%
810A (GMB)	3	48	25	3	0	28	58%
Total	**17**	**896**	**163**	**12**	**0**	**175**	**20%**
Westbound Stop at Wu Kai Sha Road near Wu Kai Sha Village							
807X (GMB)	7	112	42	2	5	39	35%
810A (GMB)	4	64	0	0	0	0	0%
Total	**11**	**176**	**42**	**2**	**5**	**39**	**22%**

Note: 1. No bus trip is observed during the survey period for "0" number.

Table 4.16 Existing Bus/Minibus Occupancy Assessment – PM Peak Hour

Route No.	Observed Vehicular Trips (see Note 1)	Passenger Capacity	Passengers on Bus upon Arrival	Total No. of passengers		Passengers on Bus upon Leave	Occupancy
				Boarding	Alighting		
		[a]	[b]	[c]	[d]	[e] = [b]+[c]-[d]	[f] = [e] / [a]
Eastbound Stop at Wu Kai Sha Road near Double Cover							
40E	0	0	0	0	0	0	0%
87E	0	0	0	0	0	0	0%
988	1	120	8	0	0	8	7%
807X (GMB)	5	80	64	0	1	63	79%
810A (GMB)	2	32	13	0	0	13	41%
Total	**8**	**232**	**85**	**0**	**1**	**84**	**36%**
Westbound Stop at Wu Kai Sha Road near Wu Kai Sha Village							
807X (GMB)	6	96	96	0	20	76	79%
810A (GMB)	1	16	3	0	0	3	19%
Total	**7**	**112**	**99**	**0**	**20**	**79**	**71%**

Note: 1. No bus trip is observed during the survey period for "0" number.

4.13.2 As shown in **Table 4.15 – 4.16**, the existing bus/minibus routes would have spare capacity to accommodate the additional passengers generated by the proposed development during AM and PM peak hour.

5 CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

5.1 Construction Traffic Generation and Attraction

5.1.1 It is anticipated a maximum daily traffic of 40 vehicles i.e. 5 vehicles per hour (5 veh/hr x a pcu factor of 2.5 = 12.5, say 13 pcu/hr) will be attracted during the peak construction stage.

5.1.2 For conservative assessment purpose, it is assumed the construction traffic occurs at both AM and PM peak hours.

5.2 2026 Traffic Forecast

5.2.1 As discussed in **Section 4.1**, the proposed development can be completed for occupation in 2027. So, the design year for the construction traffic impact assessment will be 2026, which the peak construction activity will be occurred.

5.2.2 The 2026 Reference Flows, i.e. the traffic flows in the vicinity without the proposed development, were estimated based on the following equation.

2026 Reference Flows = 2022 Existing Traffic Flows x $(1 + 2.0\%)^4$ + Traffic Flows Generated by the Planned and Approved Development

5.2.3 The 2026 Design Flows, i.e. the traffic flows in the local road network with the construction traffic generated by the proposed development, were estimated based on the following equation:

2026 Design Flows = 2026 Reference Flows + Construction Traffic Flows Generated by the Proposed Development (see **Figure 5.1**)

5.2.4 The 2026 Reference and Design Flows are shown in **Figures 5.2 and 5.3**, respectively.

5.3 Junction Capacity Assessment

5.3.1 Junction capacity analysis is carried out for the design year 2026. The assessment results are shown in **Table 5.1**. The detailed calculation sheets are attached in **Appendix D**.

Table 5.1 2026 Junction Capacity Assessment

No.	Junction	Junction Type/Index (1)	2026 Reference			2026 Design		
			WD - AM	WD - PM	WE	WD - AM	WD - PM	WE
J1	Wu Kai Sha Road / Yiu Sha Road	Roundabout / DFC	0.20	0.24	0.23	0.21	0.24	0.24
J2	Sai Sha Road / Wu Kai Sha Road / Sha On Street	Roundabout / DFC	0.37	0.41	0.34	0.38	0.42	0.34
J3	Sai Sha Road / Kam Ying Road	Signalized/ RC	43%	46%	63%	43%	45%	63%
J4	Sai Sha Road / Ma On Shan Road / On Chiu Street	Signalized/ RC	42%	45%	73%	41%	45%	73%
J5	On Chun Street / On Chiu Street	Signalized /RC	227%	156%	167%	227%	156%	167%
J6	On Chun Street / Access of Villa Athena	Priority/DFC	0.20	0.19	0.14	0.20	0.19	0.14

Note: WD – Weekday; WE - Weekend
(1) RC = Reserve Capacity for signalized junction; DFC = Design Flow to Capacity ratio for priority junction.

5.3.2 As shown in **Table 5.1**, all junctions will operate satisfactorily in both reference and design scenarios. Therefore, it can be concluded that the construction traffic will not induce significant adverse traffic impact on junctions.

5.4 Link Capacity Assessment

5.4.1 The V/C Ratios of Sai Sha Road and Ma On Shan Bypass were assessed and the results are presented in **Table 5.2**.

Table 5.2 Year 2026 Link Capacity Assessments

Direction	Bound	Capacity (pcu/hr) (1)	Traffic Flow (pcu/hr)			V/C Ratio		
			WD-AM	WD-PM	WE	WD-AM	WD-PM	WE
2026 Reference Scenario								
Sai Sha Road (between On Yuen Street and On Chiu Street)	WB	5,040	1,019	771	623	0.20	0.15	0.12
	EB	5,040	777	970	727	0.15	0.19	0.14
Sai Sha Road (between On Chiu Street and Kam Ying Street)	WB	5,040	1,035	769	601	0.21	0.15	0.12
	EB	5,040	739	965	776	0.15	0.19	0.15
Sai Sha Road (between Kam Ying Street and Wu Kai Sha Road)	WB	3,360	728	641	574	0.22	0.19	0.17
	EB	3,360	751	783	703	0.22	0.23	0.21
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Road)	NB	3,600	2,199	2,258	1,014	0.61	0.63	0.28
	SB	5,640	3,064	2,241	1,089	0.54	0.40	0.19
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Bypass)	EB	3,360	815	477	476	0.16	0.09	0.09
	WB	1,680	461	588	513	0.27	0.35	0.31
2026 Design Scenario								
Sai Sha Road (between On Yuen Street and On Chiu Street)	WB	5,040	1,022	774	626	0.2	0.15	0.12
	EB	5,040	780	973	730	0.15	0.19	0.14
Sai Sha Road (between On Chiu Street and Kam Ying Street)	WB	5,040	1,038	772	604	0.21	0.15	0.12
	EB	5,040	742	968	779	0.15	0.19	0.15
Sai Sha Road (between Kam Ying Street and Wu Kai Sha Road)	WB	3,360	728	641	574	0.22	0.19	0.17
	EB	3,360	754	786	706	0.22	0.23	0.21
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Road)	NB	3,600	2,209	2,268	1,024	0.61	0.63	0.28
	SB	5,640	3,074	2,251	1,099	0.55	0.4	0.19
Ma On Shan Bypass (between Sai Sha Road and Ma On Shan Bypass)	EB	3,360	825	487	486	0.16	0.1	0.1
	WB	1,680	471	598	523	0.28	0.36	0.31

Note: WD – Weekday; WE - Weekend
(1) Capacity refers to TPDM Vol.2 Ch. 2.4. A factor of 1.2 (based on the traffic count survey result) is adopted to convert the capacity from veh/hr to pcu/hr.

5.4.2 As shown in **Table 5.2**, all the concerned road sections will operate with capacity during weekday AM, weekday PM and weekend hours in both reference and design scenarios.

6 PROPOSED TRANSPORT FACILITIES PROVISIONS

6.1 Access Arrangement

6.1.1 The vehicular access of the proposed development will be located at the local access road at the southern side of the Site. The section of local access road connecting the Site and Wu Kai Sha Road will be widened to 7.3m. The proposed access arrangement is shown in **Figure 6.1**. Sightline analysis is also conducted to demonstrate sufficient visibility is provided for the proposed vehicular access and presented in **Figure 6.2**.

6.2 Internal Transport Facilities

6.2.1 The requirements of car parking and loading/unloading facilities for the proposed residential development should be provided in accordance with the latest Hong Kong Planning Standards and Guidelines (HKPSG) as listed out in **Table 6.1**. However, there is no specific parking requirement under HKPSG for RCHE use, car parking and loading/unloading facilities are proposed mainly to meet the operational needs.

Table 6.1 Proposed Transport Facilities Provisions

Type	HKPSG's Requirements					Required Provision	Proposed Provision
Proposed Residential Development – 184 units (92 units per block)							
Car Parking Space	Parking Requirements = GPS x R1 x R2 x R3 where GPS = 1 space per 4 – 7 units						
	Flat Size (FS)	No. of Unit	R1	R2	R3		
	FS ≤ 40m^2	116	0.5			9 – 15	
	40m^2 < FS ≤ 70m^2	8	1.2	1.0	1.0	2 – 3	
	70m^2 < FS ≤ 100m^2	60	2.4			21 – 36	
					Sub-total	32 – 54	54
	For Visitors (2 blocks) 5 spaces per block with more than 75 units					10	10
					TOTAL	**42 – 64**	**64**
Loading / Unloading Bay	1 bay per residential block					2	2
Motorcycle Parking Space	1 space per 100 – 150 flats					2	2
Bicycle Parking Space	1 bicycle parking space for every 15 flats with flat size smaller than 70m^2					8	8
Proposed RCHE (162 places) and DE (40 places)							
Car Parking Space	No specific requirements under HKPSG.					-	8
Loading / Unloading Bay	No specific requirements under HKPSG.					-	1
Light Bus / Ambulance Parking Space	No specific requirements under HKPSG.					-	3

Type	HKPSG's Requirements	Required Provision	Proposed Provision
Proposed Public Vehicle Park (PVP)			
Car Parking Spaces	No specific requirements under HKPSG.	-	124
Motorcycle Parking Space	No specific requirements under HKPSG.	-	16

6.2.2 In formulating the building layout, three levels of basement are proposed to cater for the car parking and loading/unloading facilities. The upper level is planned for the proposed development in accordance with the requirements set out in HKPSG. The lower 2 levels will be used as a public carpark. The proposed space numbers for the proposed residential development are also listed out in **Table 6.2**.

6.2.3 An occupancy survey was carried out at the night-time on 29 July 2022 (Friday) at the existing temporary convenient vehicles' holding area. A total of 120 private cars was observed to stay overnight at the existing temporary convenient vehicles' holding area. According to the operator, about 50 private cars are idling vehicles which the vehicles are stored under long-term parking mode. As a result, the provision of 124 spaces can meet the parking demand for frequently-use vehicles as shown in **Table 6.2**.

6.2.4 **Table 6.2** lists out the dimensions required for each type of spaces to follow. The proposed car park layout plan is enclosed in **Appendix E**.

Table 6.2 Summary of Overall Transport Facilities Provisions

Facilities	Dimensions	Proposed Provision			
		Residential	RCHE	Public Vehicle Park	Total
Car Parking Space	2.5m (W) x 5.0m (L) x 2.4 (H)	62	6	124	**192**
Disabled Car Parking Space	3.5m (W) x 5.0m (L) x 2.4 (H)	2	2	2	**6**
Motorcycle Parking Space	1.0m (W) x 2.4m (L) x 2.4 (H)	2	-	16	**18**
Goods Vehicle Loading / Unloading Bay	3.5m (W) x 11.0m (L) x 4.7m (H)	2	-	0	**2**
	3.5m (W) x 7.0m (L) x 3.6m (H)	-	1	0	**1**
Light Bus/ Ambulance Parking Space	3.0m (W) x 9.0m (L) x 3.3m (H)	-	3	-	**3**
Bicycle Parking Space	-	8	-	-	**8**

7 SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The project site comprises of Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and adjoining government land to the west of Yiu Sha Road, Ma On Shan, New Territories. The present rezoning application intends to utilize a piece of land presently under "Government, Institution or Community" ("G/IC") zone into a "Residential (Group B)6" ("R(B)6") including a RCHE cum DE complex and a public vehicle park (PVP).

7.1.2 The Site falls within an area zoned as "Government, Institution or Community" ("G/IC") zone under the Draft Ma On Shan Outline Zoning Plan (OZP), Plan No. S/MOS/27. The site covers a total land area of about 4,255 m^2. The proposed rezoning scheme comprises a total of 4 building blocks (i.e. two 16-storey residential towers, one 2-storey clubhouse and one 7-storey residential care homes for the elderly cum day care centre for the elderly ("RCHE and DE") on top of 3 levels of basement car park (i.e., the upper level is planned to serve the proposed development above, and the lower two levels are for "public vehicle park" ("PVP") purpose.).

7.1.3 A traffic count survey was carried out on 29 July 2022 (Friday) and 15 June 2023 (Thursday) during the peak hour period from 07:00 to 9:00 and 17:00 to 19:00 and on 9 December 2023 (Saturday) from 12:00 to 19:00 at the identified key junctions, and the weekday AM, weekday PM and weekend peak hours were found to be 07:30 – 08:30 , 18:00 – 19:00 and 17:00 – 18:00, respectively. The capacity of the key junctions in the vicinity of the Site was analysed and they are operating satisfactorily.

7.1.4 The proposed development would generate two-way traffic flows of 144 pcu/hr in the weekday AM peak, 120 pcu/hr in the weekday PM peak and 120 pcu/hr in the weekend peak. By assigning the additional development traffic to the 2030 Reference Flows, the 2030 Design Flows were obtained.

7.1.5 Junction and road link capacity assessments were carried out at the key junctions in the vicinity for the year 2030. The results have indicated that all junctions and road links will operate satisfactorily for both reference and design scenarios. Therefore, it is anticipated that the proposed development will not induce significant traffic impact to the surrounding road network.

7.1.6 Footpath capacity assessment and railway patronage capacity assessment were also carried out. The results show that the pedestrian and railway service can accommodate the future demand to be induced by the proposed development.

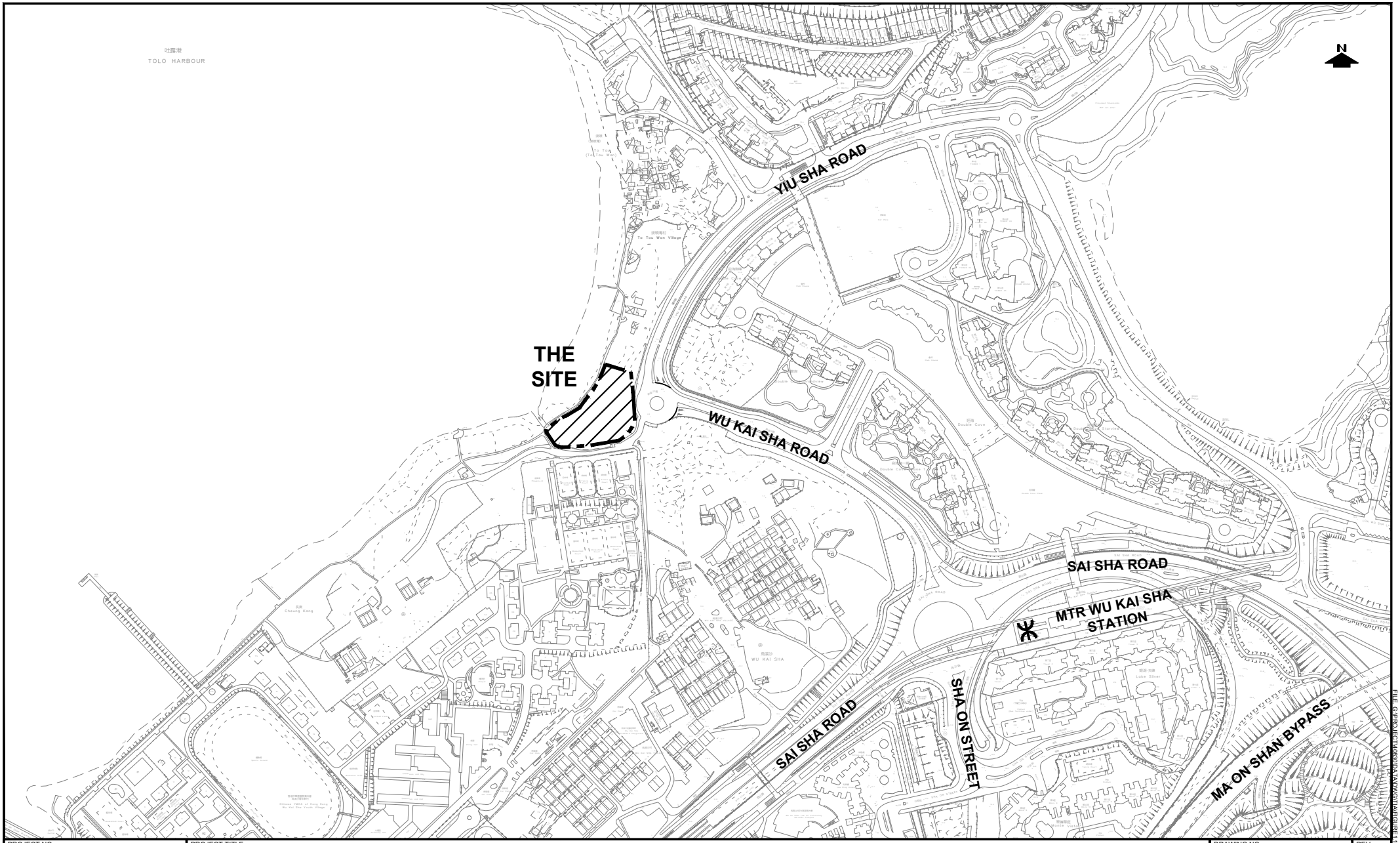
7.1.7 It is anticipated a maximum daily traffic of 40 vehicles i.e. 5 vehicles per hour will be attracted during the peak construction stage. The proposed development is planned to complete in 2027. So, the design year for the construction traffic impact assessment will be 2026, which the peak construction activity will be occurred. Junction capacity assessment is conducted based on the 2026 reference and design Flows. The results show that the construction traffic induced by the proposed development will not induce adverse traffic impact onto the adjacent road network.

7.1.8 The vehicular access of the proposed development will be located at the local access road at the south of the Site. The section of local access road connecting the Site and Wu Kai Sha Road will be widened to 7.3m.

7.1.9 It is proposed to provide a total of 72 car parking spaces (including 62 for ancillary car parking spaces and 10 for visitor parking spaces), 3 loading/unloading spaces, 3 light bus/ambulance parking spaces, 2 motorcycle parking spaces and 8 bicycle parking spaces within the proposed development. The internal transport facilities of the proposed development can meet the requirements as set out in the latest HKPSG. Also, it is proposed to provide a public car park of 124 parking spaces and 16 motorcycle parking spaces to accommodate the parking demand in the vicinity.

7.2 Conclusion

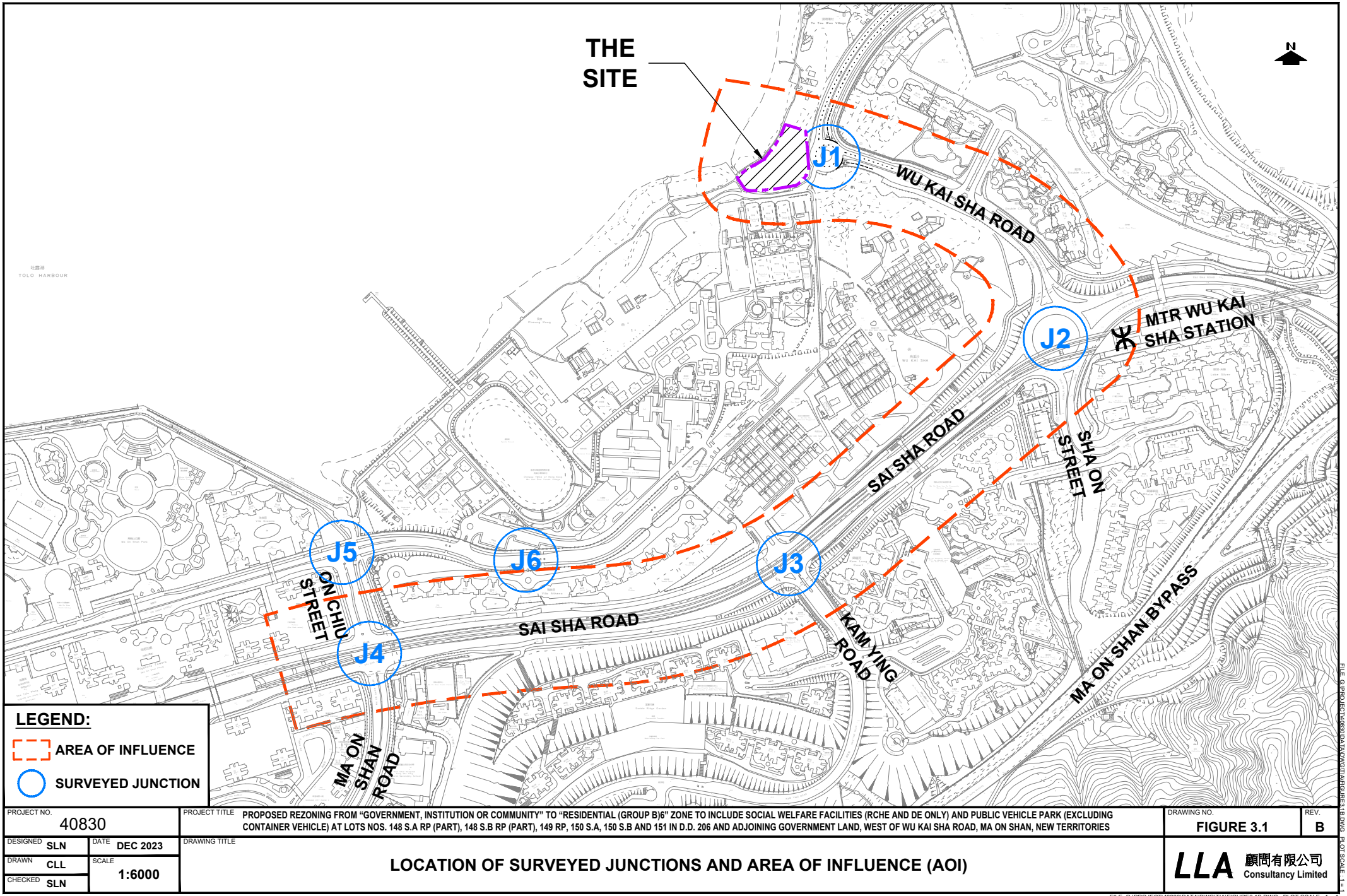
7.2.1 From the assessment results, it can be concluded that the proposed development will have no significant adverse traffic impact on the surrounding road network. The development proposal is considered acceptable from the traffic engineering point of view.



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 1.1	REV. A
DESIGNED SLN / DRAWN CLL / CHECKED SLN; DATE DEC 2023; SCALE 1:5000	DRAWING TITLE LOCATION PLAN	LLA 顧問有限公司 Consultancy Limited	

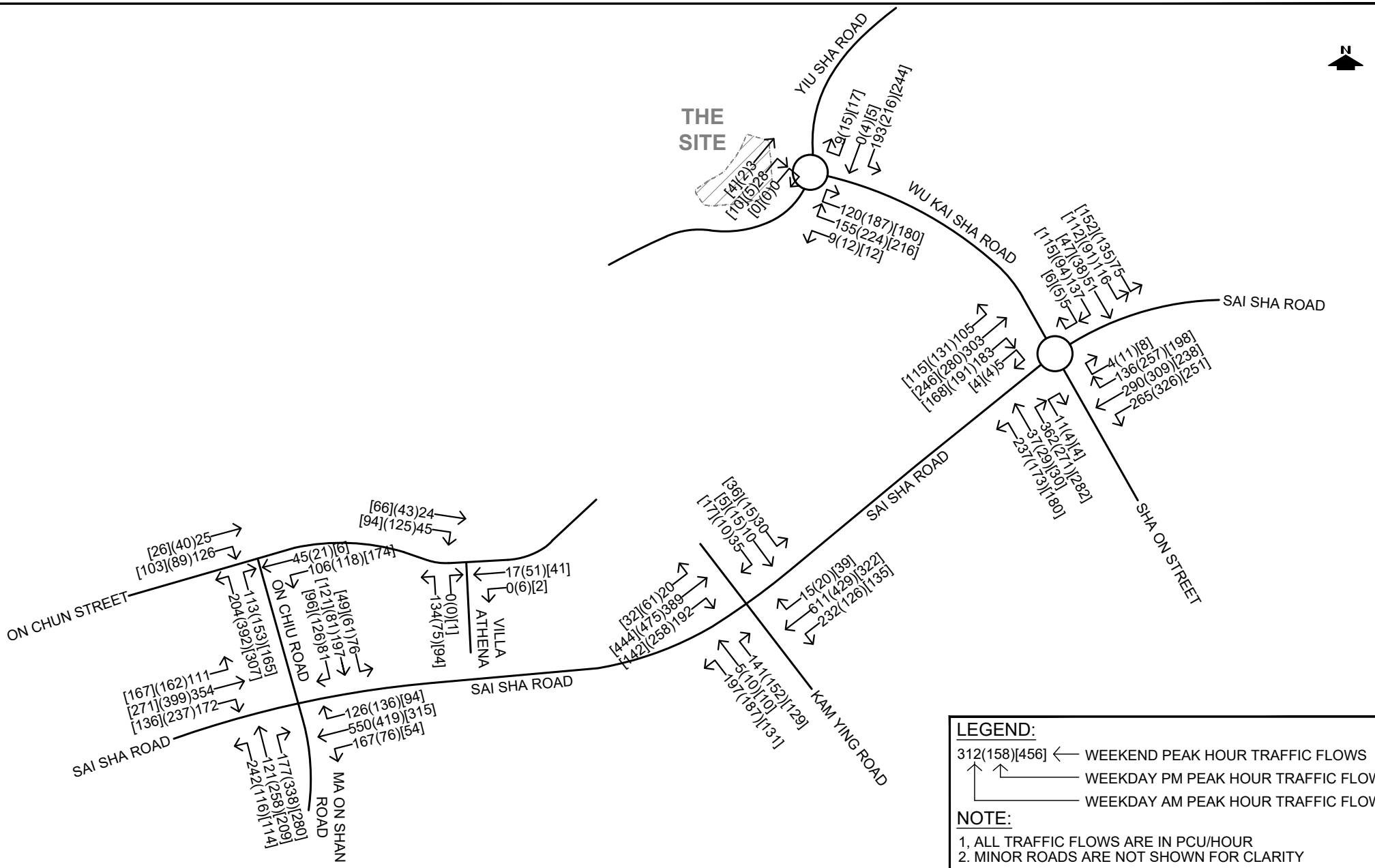
FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE1.1A.DWG PLOT SCALE : 1 = 1

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE1.1A.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE: PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 3.1	REV. B
DESIGNED SLN / DRAWN CLL / CHECKED SLN; DATE DEC 2023; SCALE 1:6000	DRAWING TITLE: LOCATION OF SURVEYED JUNCTIONS AND AREA OF INFLUENCE (AOI)	LLA 顧問有限公司 Consultancy Limited	

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE3.1B.DWG PLOT SCALE : 1 = 1



LEGEND:

312(158)[456] ← WEEKEND PEAK HOUR TRAFFIC FLOWS

WEEKDAY PM PEAK HOUR TRAFFIC FLOWS

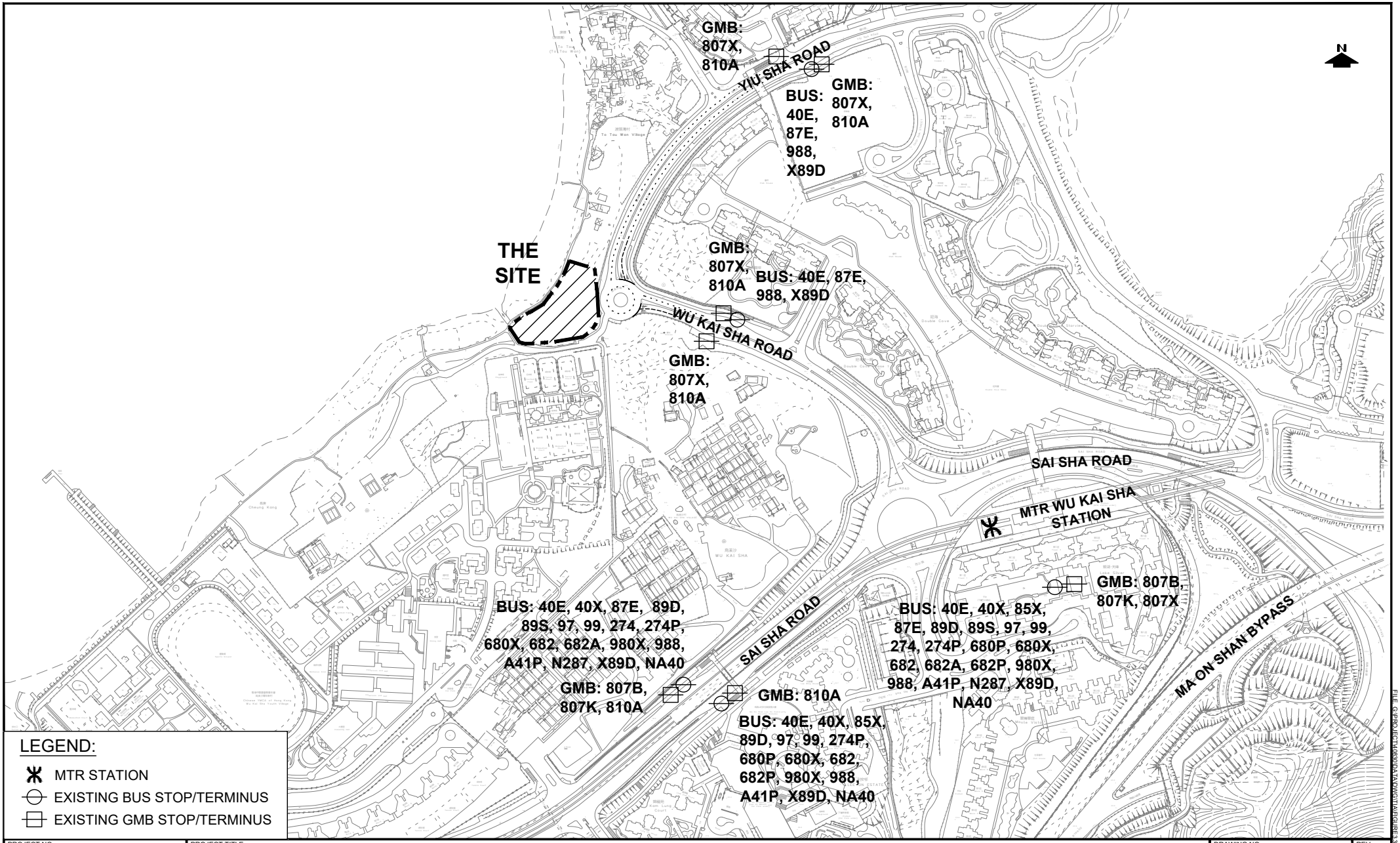
WEEKDAY AM PEAK HOUR TRAFFIC FLOWS

NOTE:

1, ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY

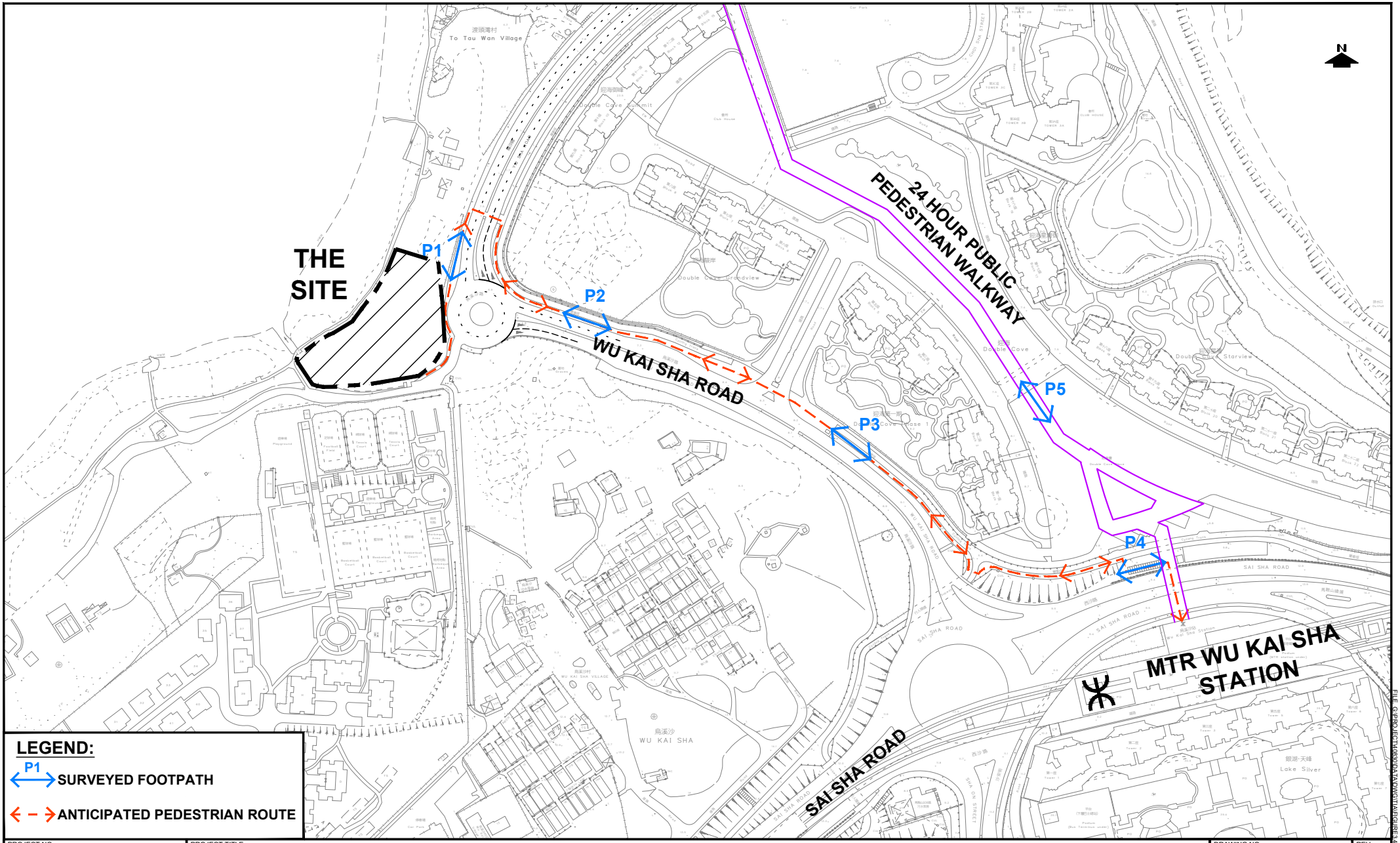
PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 3.2	REV. B
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE 2022 EXISTING TRAFFIC FLOWS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE3.2B.DWG PLOT SCALE : 1 = 1



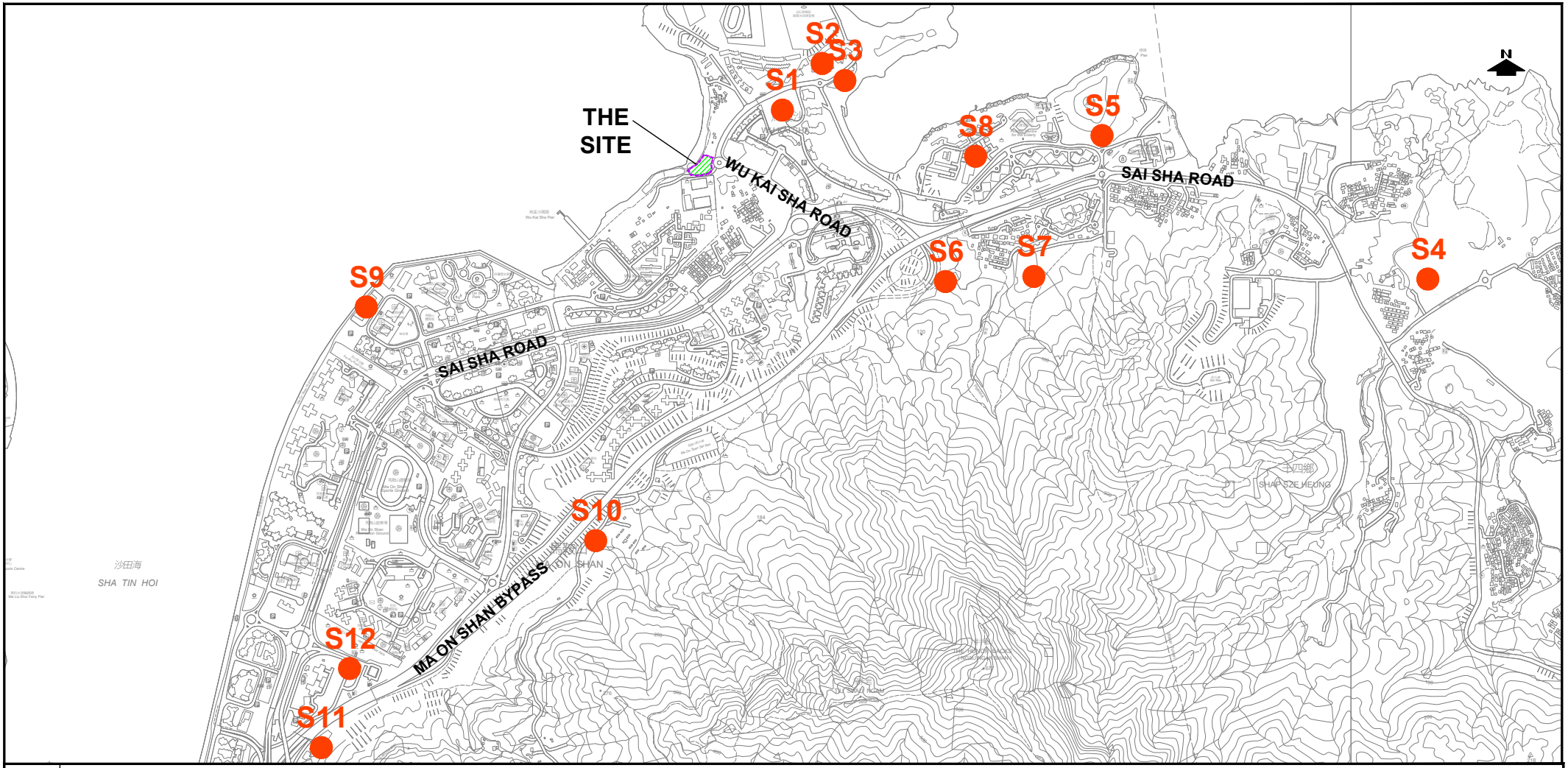
PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 3.3	REV. A
DESIGNED SLN / DATE DEC 2023	DRAWING TITLE PUBLIC TRANSPORT SERVICES IN THE VICINITY OF THE SITE	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE 1:5000			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE3.3A.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 3.4	REV. A
DESIGNED SLN / DRAWN CLL / CHECKED SLN	DATE DEC 2023 / SCALE 1:3000	DRAWING TITLE ANTICIPATED PEDESTRIAN ROUTINGS AND LOCATION OF SURVEYED FOOTPATHS	LLA 顧問有限公司 Consultancy Limited

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE3.4A.DWG PLOT SCALE : 1 = 1



REF.	LOCATIONS OF PLANNED/COMMITTED DEVELOPMENTS		
S1	STTL 600 – CDA(1)	S7	CHEUNG MUK TAU TSUEN EAST HOUSING DEVELOPMENT SITE 2
S2	STTL 601 – R(C)5	S8	CHEUNG MUK TAU HOLIDAY CENTRE EXPANSION
S3	STTL 611 – R(C)3	S9	29 ON CHUN STREET, MA ON SHAN
S4	SAI SHA DEVELOPMENT	S10	PUBLIC HOUSING DEVELOPMENT AT MA ON SHAN TSUEN
S5	PROPOSED SCHOOL DEVELOPMENT IN DD167, NAI CHUNG	S11	KAM CHUN COURT
S6	CHEUNG MUK TAU TSUEN WEST HOUSING DEVELOPMENT SITE 1	S12	KAM PAK COURT

PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITY (RCHE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 4.0	REV. ·
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE LOCATION OF PLANNED/COMMITTED DEVELOPMENTS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE 1:20000			
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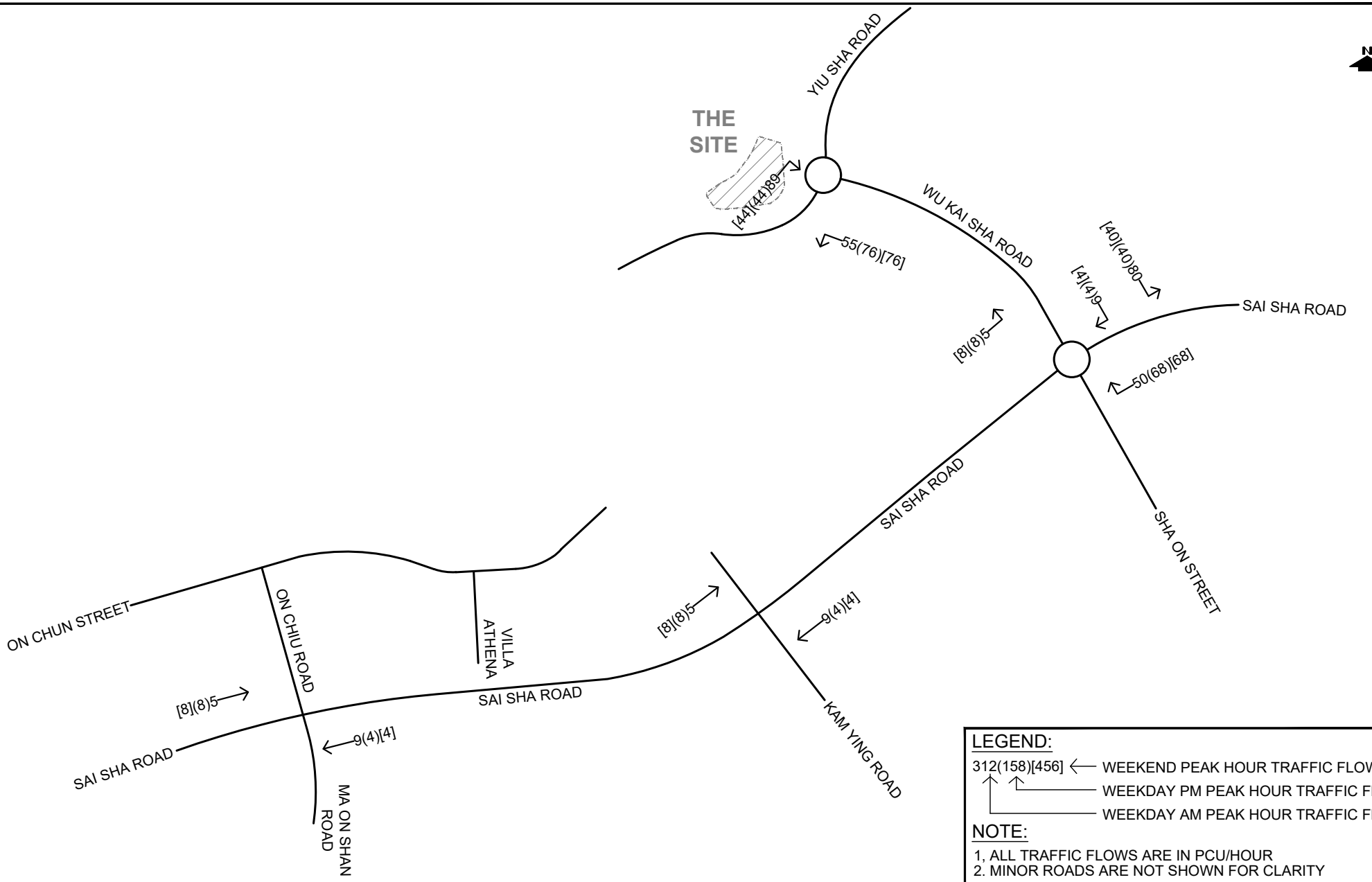
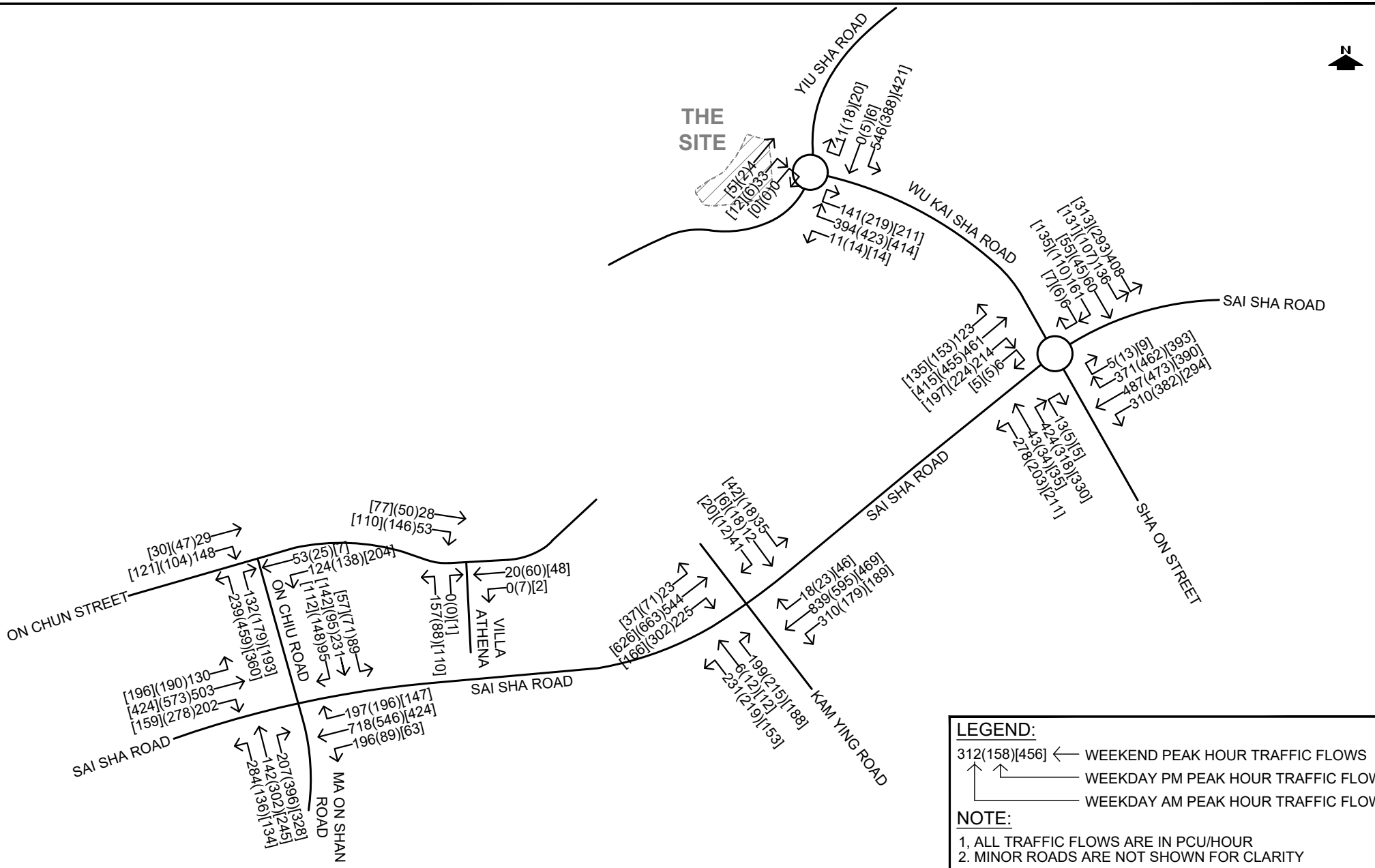
FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE4.0.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 4.1	REV. B
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE DEVELOPMENT TRAFFIC FLOWS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE4.1B.DWG PLOT SCALE : 1 = 1



LEGEND:

312(158)[456] ← WEEKEND PEAK HOUR TRAFFIC FLOWS

WEEKDAY PM PEAK HOUR TRAFFIC FLOWS

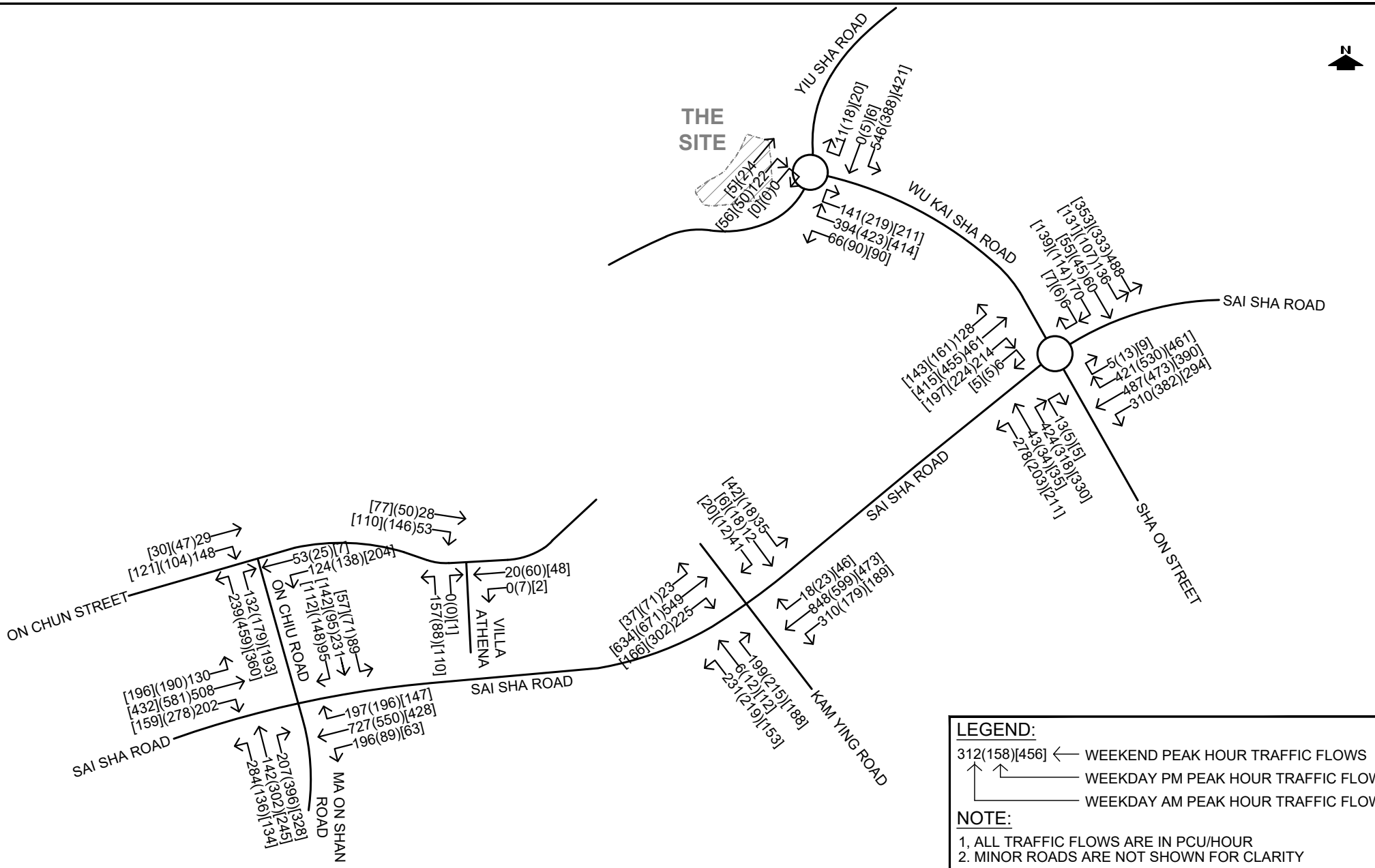
WEEKDAY AM PEAK HOUR TRAFFIC FLOWS

NOTE:

1, ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY

PROJECT NO. 40830	PROJECT TITLE: PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 4.2	REV. B
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE: 2030 REFERENCE TRAFFIC FLOWS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE4.2B.DWG PLOT SCALE : 1 = 1



LEGEND:

312(158)[456] ← WEEKEND PEAK HOUR TRAFFIC FLOWS

WEEKDAY PM PEAK HOUR TRAFFIC FLOWS

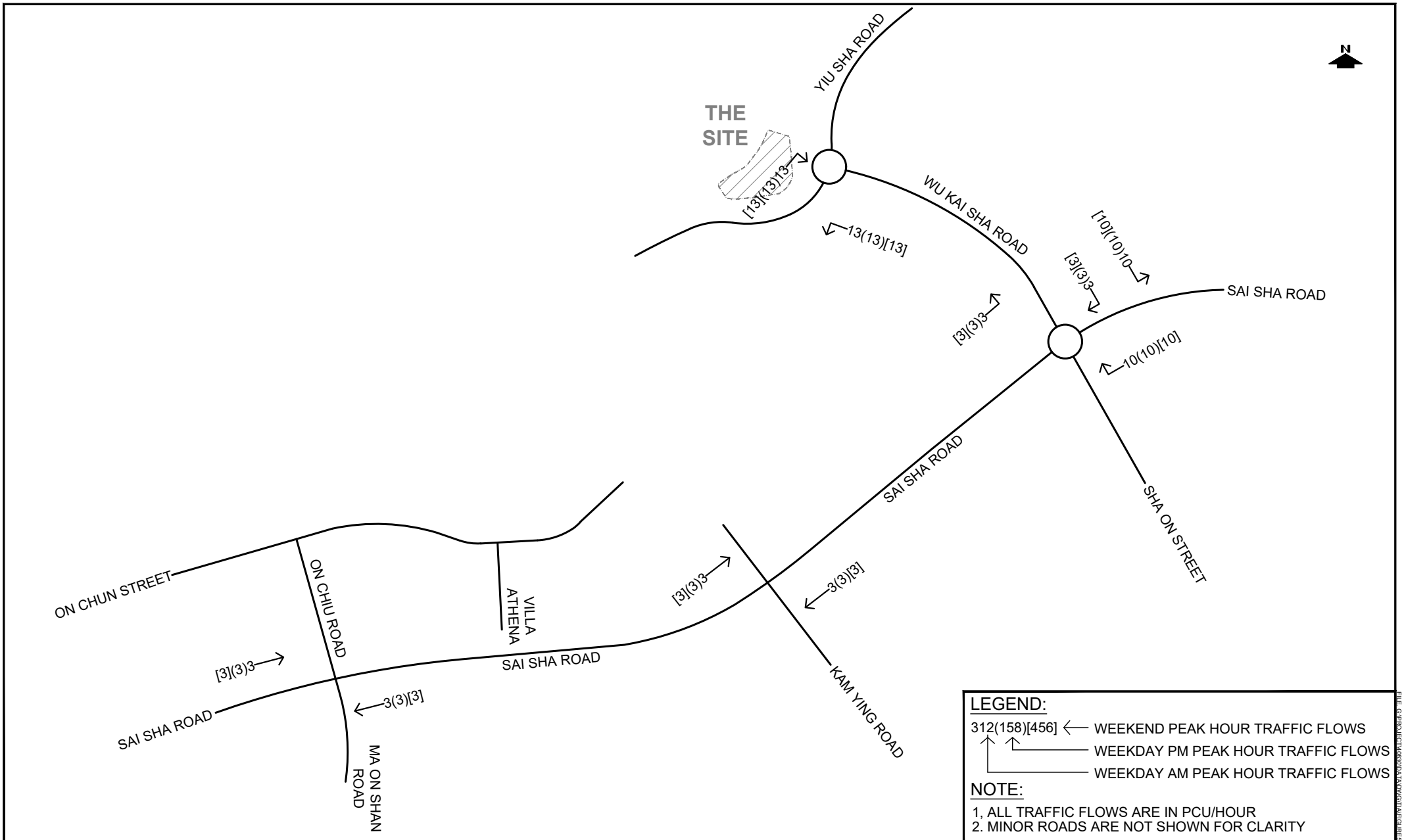
WEEKDAY AM PEAK HOUR TRAFFIC FLOWS

NOTE:

1, ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY

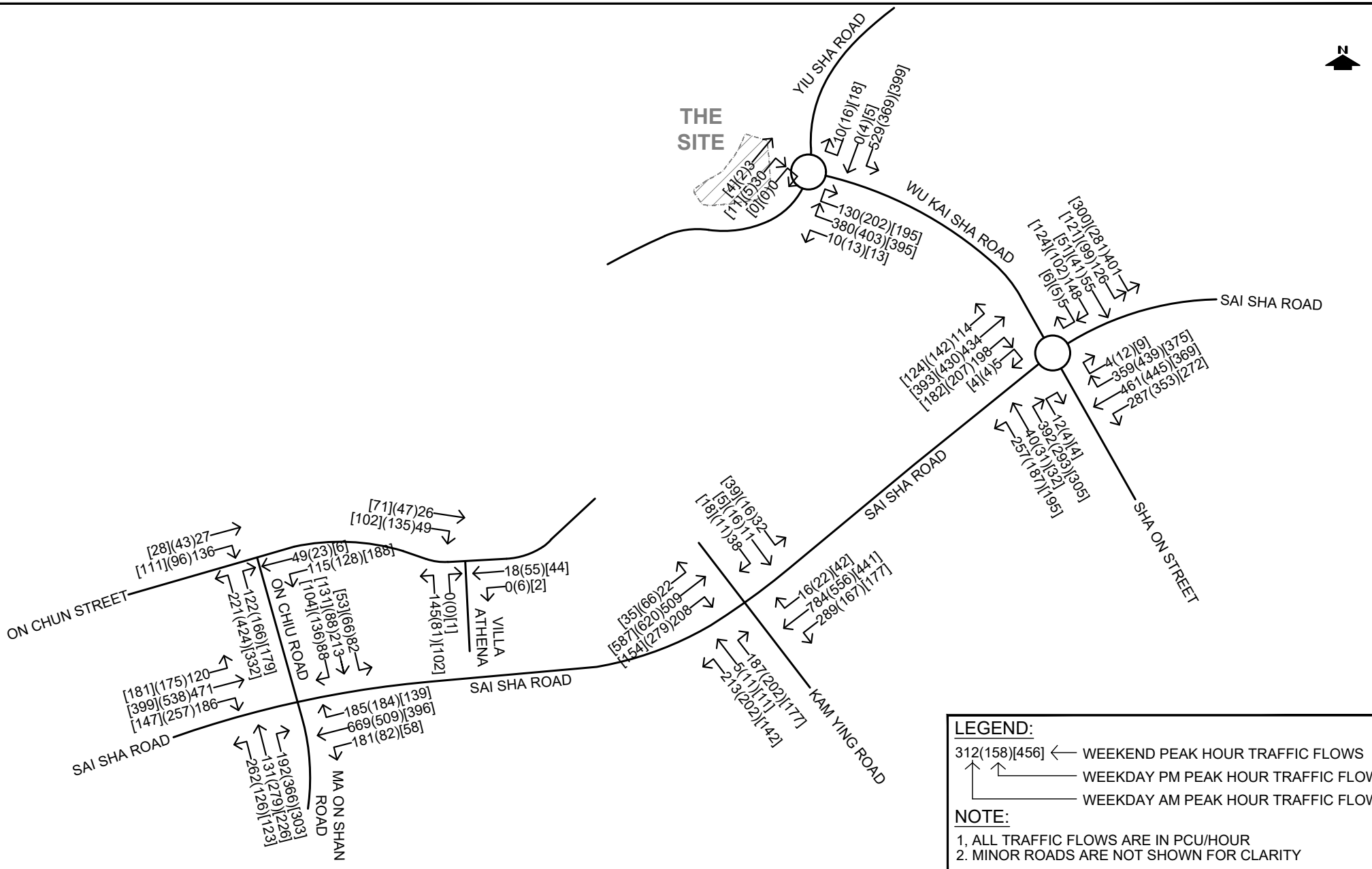
PROJECT NO. 40830	PROJECT TITLE: PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 4.3	REV. B
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE: 2030 DESIGN TRAFFIC FLOWS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE4.3B.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 5.1	REV. B
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE CONSTRUCTION TRAFFIC FLOWS	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE5.1B.DWG PLOT SCALE : 1 = 1



LEGEND:

312(158)[456] ← WEEKEND PEAK HOUR TRAFFIC FLOWS

WEEKDAY PM PEAK HOUR TRAFFIC FLOWS

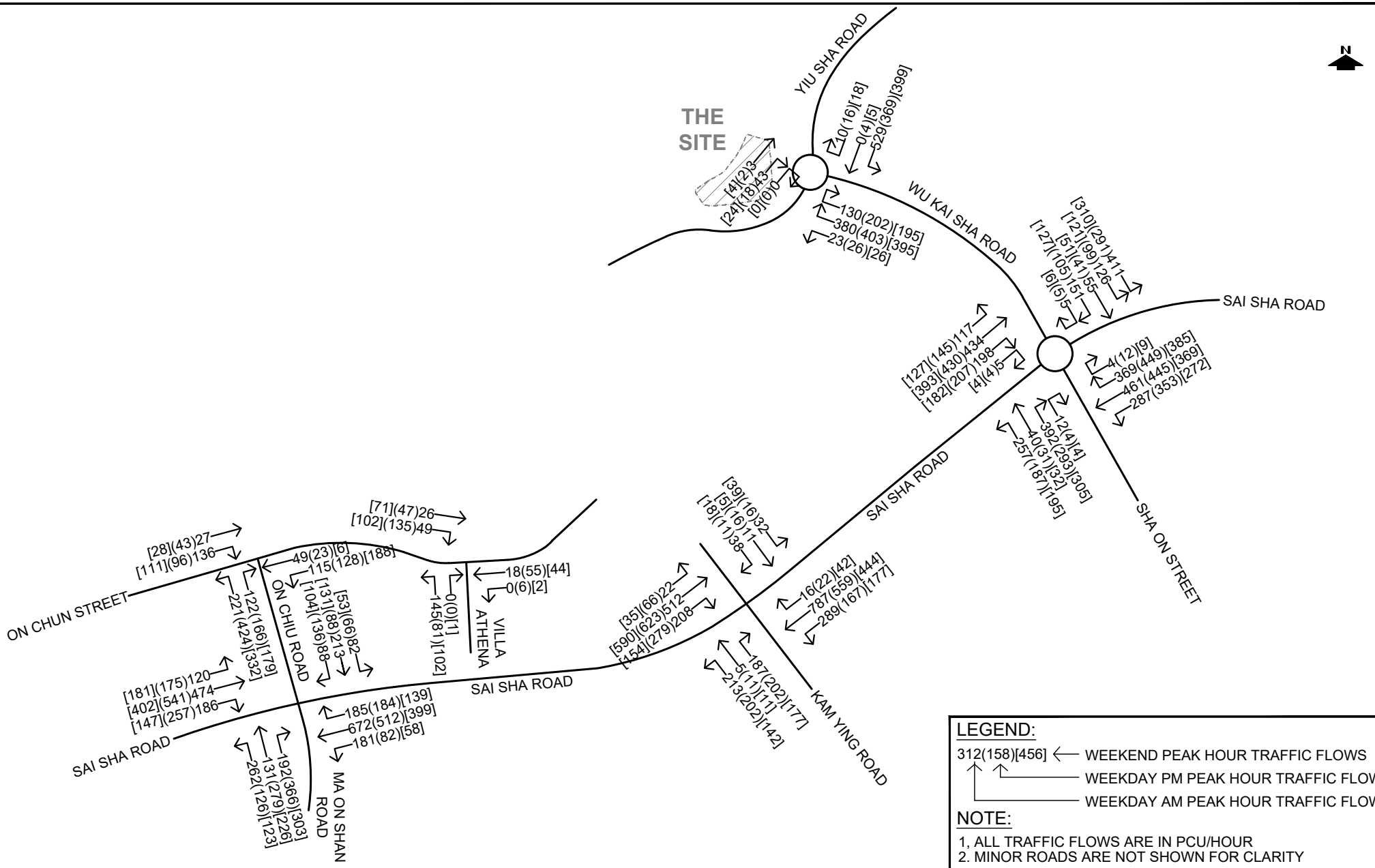
WEEKDAY AM PEAK HOUR TRAFFIC FLOWS

NOTE:

1, ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY

PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 5.2	REV. A
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE 2026 REFERENCE TRAFFIC FLOWS (CONSTRUCTION)	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE5.2A.DWG PLOT SCALE : 1 = 1



LEGEND:

312(158)[456] ← WEEKEND PEAK HOUR TRAFFIC FLOWS

WEEKDAY PM PEAK HOUR TRAFFIC FLOWS

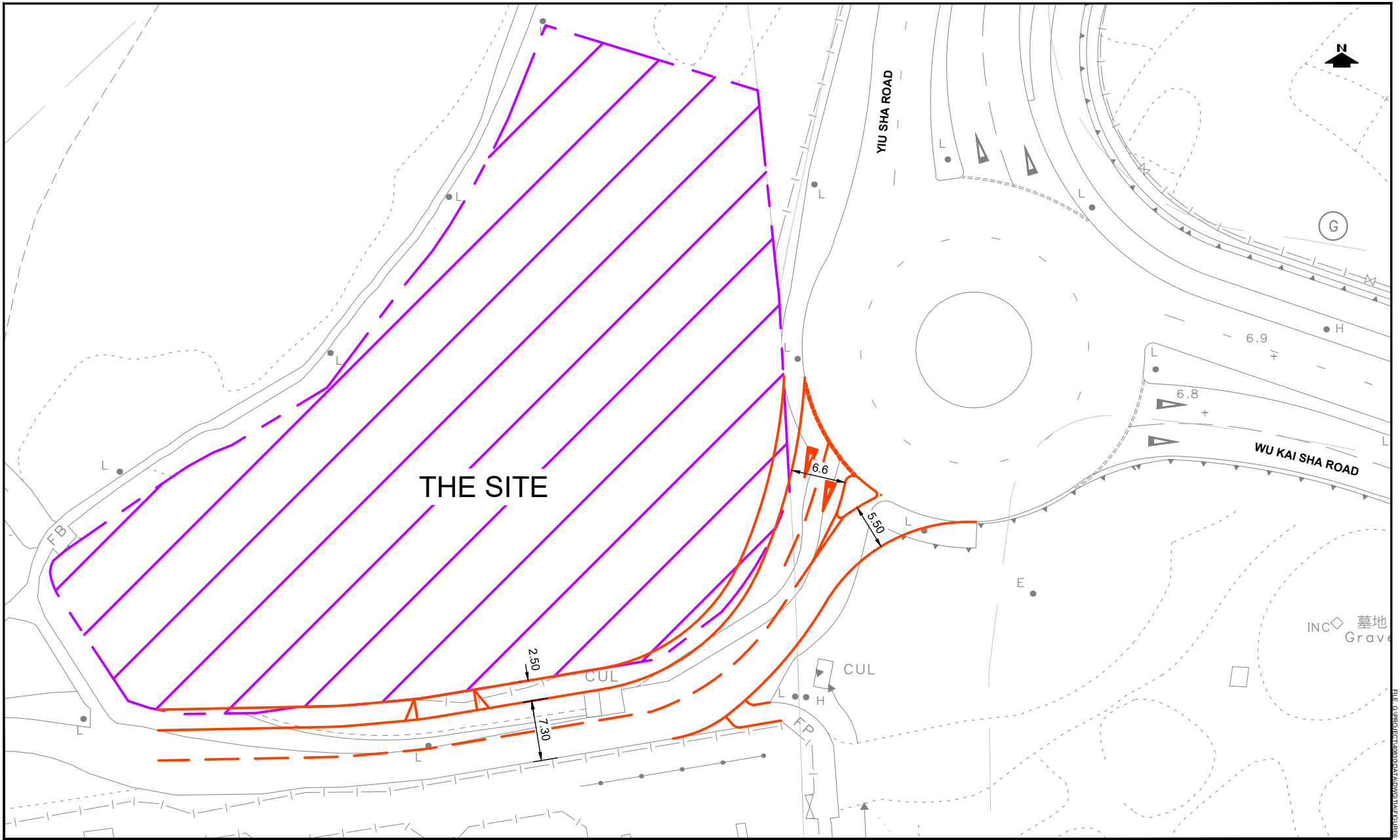
WEEKDAY AM PEAK HOUR TRAFFIC FLOWS

NOTE:

1, ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY

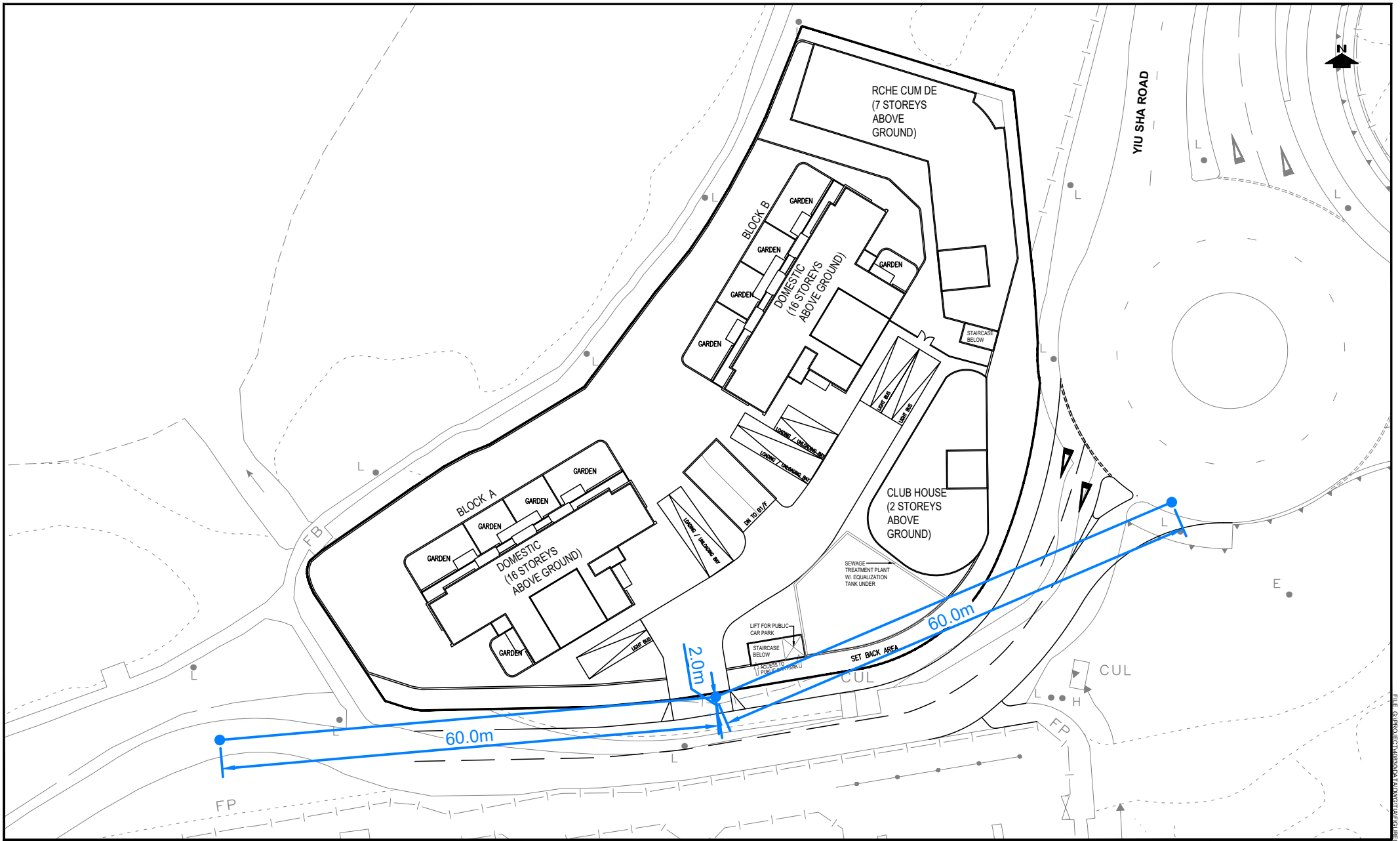
PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 5.3	REV. A
DESIGNED SLN / DATE JAN 2024	DRAWING TITLE 2026 DESIGN TRAFFIC FLOWS (CONSTRUCTION)	LLA 顧問有限公司 Consultancy Limited	
DRAWN CLL / SCALE N.T.S.			
CHECKED SLN			

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE5.3A.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 6.1	REV. C
DESIGNED SLN / DRAWN CLL / CHECKED SLN	DATE DEC 2023 / SCALE 1:600@A4	DRAWING TITLE PROPOSED ACCESS ARRANGEMENT	LLA 顧問有限公司 Consultancy Limited

FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE6.1C.DWG PLOT SCALE : 1 = 1



PROJECT NO. 40830	PROJECT TITLE PROPOSED REZONING FROM "GOVERNMENT, INSTITUTION OR COMMUNITY" TO "RESIDENTIAL (GROUP B)6" ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES	DRAWING NO. FIGURE 6.2	REV. -
DESIGNED SLN / DRAWN CLL / CHECKED SLN	DATE JAN 2024 / SCALE 1:600@A4	DRAWING TITLE **SIGHTLINE ANALYSIS OF THE PROPOSED VEHICULAR ACCESS**	LLA 顧問有限公司 Consultancy Limited

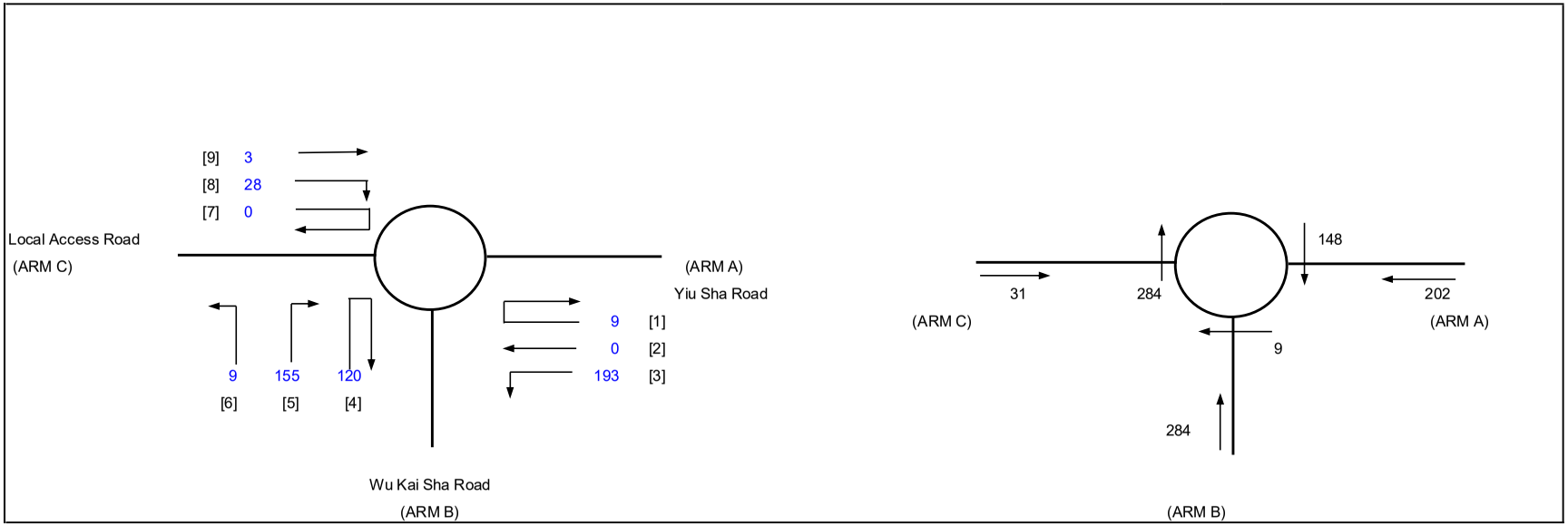
FILE: G:\PROJECT\40830\DATA\DWG\TIA\FIGURE6.2.DWG PLOT SCALE : 1 = 1

Appendix A

Junction Capacity Assessments

- Existing Scenario

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu Kai Sha Road,	**2022 Existing AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Sep-23
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Sep-23
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Sep-23

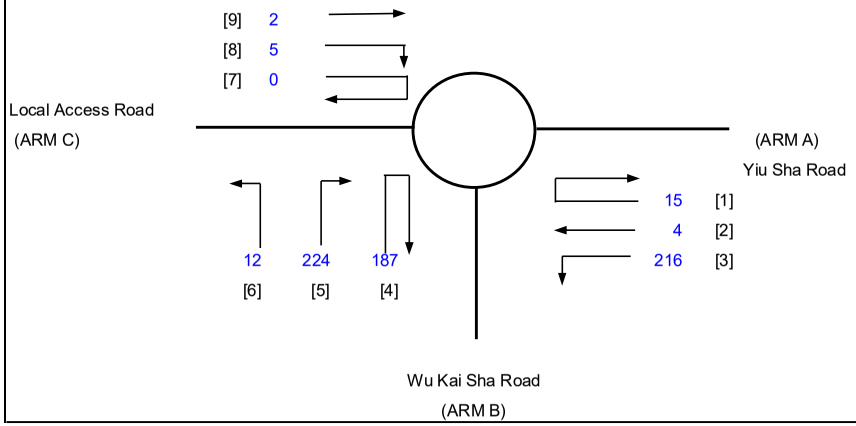


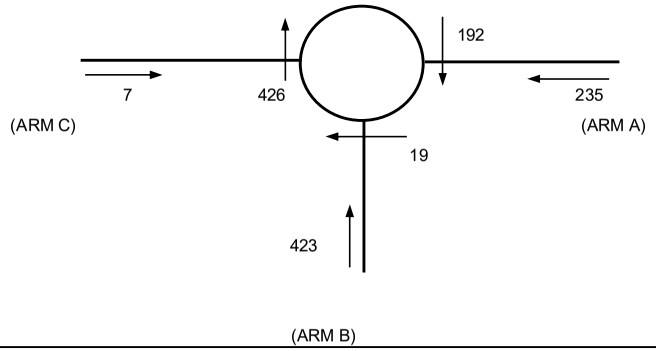
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	202	284	31
Qc	=	Circulating flow across entry (pcu/h)	148	9	284
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2802	2594	491
DFC	=	Design flow/Capacity = Q/Qe	0.07	0.11	0.06

Total In Sum = 514 PCU

DFC of Critical Approach = 0.11

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu Kai Sha Road,	**2022 Existing PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Sep-23
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Sep-23
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Sep-23



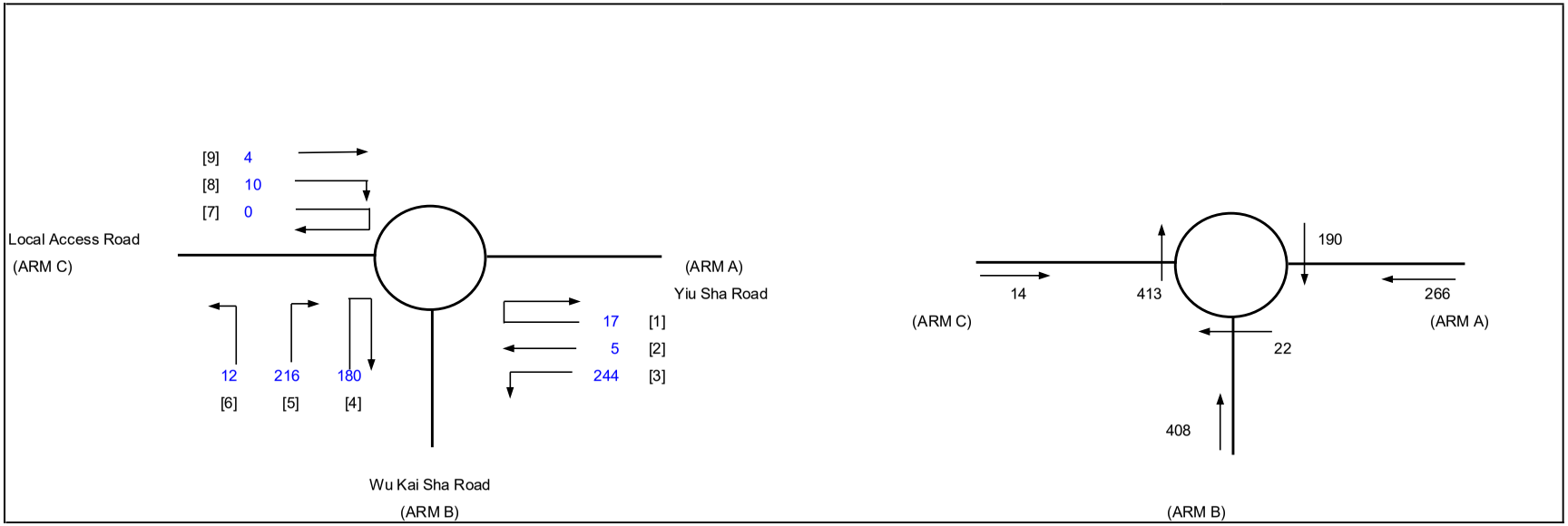


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	235	423	7
Qc	=	Circulating flow across entry (pcu/h)	192	19	426
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2762	2586	442
DFC	=	Design flow/Capacity = Q/Qe	0.09	0.16	0.02

Total In Sum = 659 PCU

DFC of Critical Approach = 0.16

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2022 Existing Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

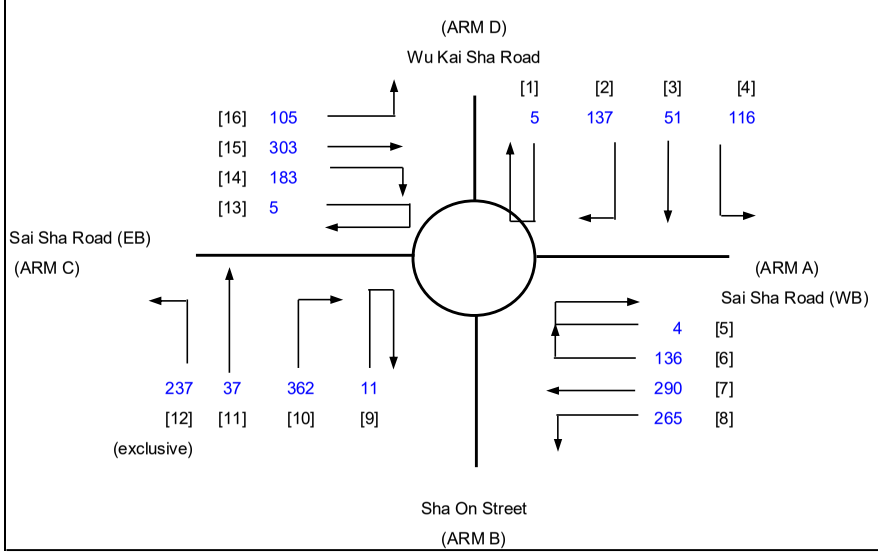


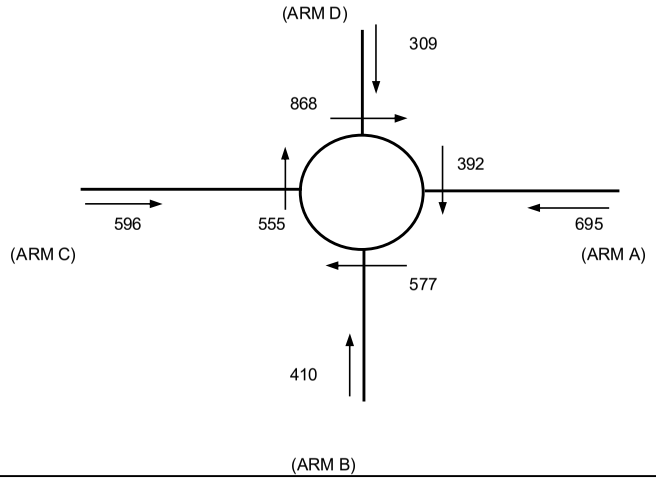
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	266	408	14
Qc	=	Circulating flow across entry (pcu/h)	190	22	413
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2764	2583	447
DFC	=	Design flow/Capacity = Q/Qe	0.10	0.16	0.03

Total In Sum = 679 PCU

DFC of Critical Approach = 0.16

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION				INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu Kai Sha Road,	**2022 Existing AM**	PROJECT NO.:	40830	PREPARED BY:	SKL	Sep-23
		FILENAME :	J2_SSR_WKSR_S(	CHECKED BY:	SLN	Sep-23
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:		REVIEWED BY:	SLN	Sep-23



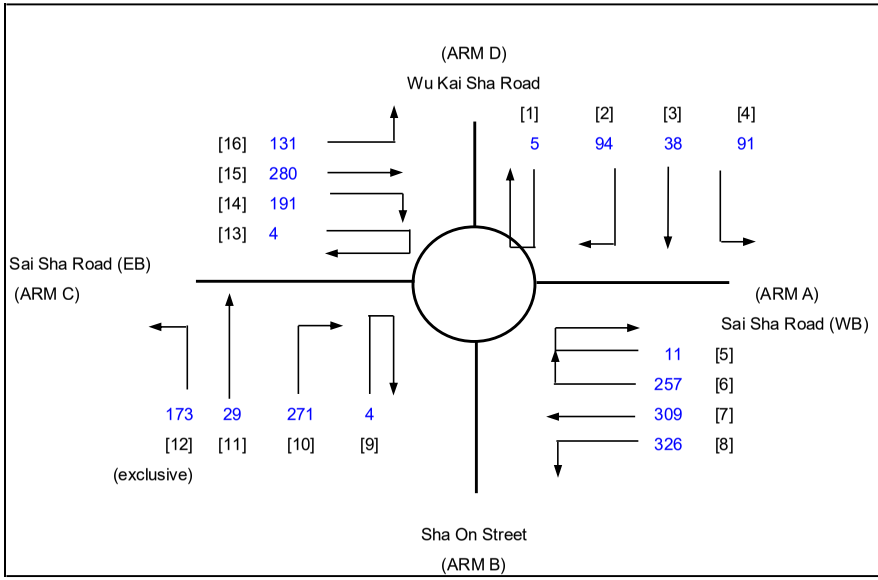


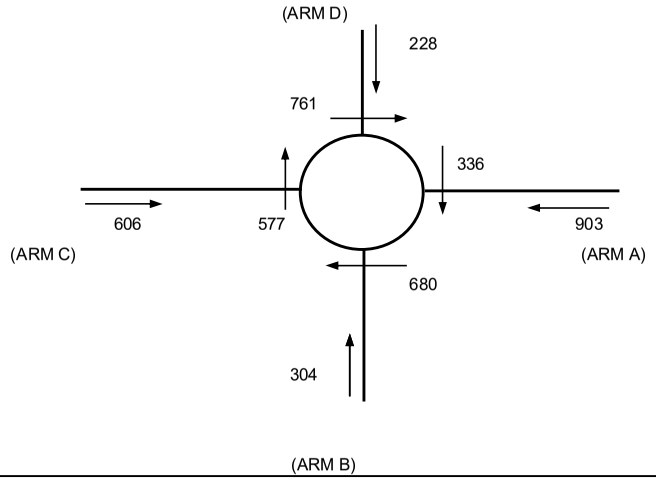
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	695	410	596	309
Qc	=	Circulating flow across entry (pcu/h)	392	577	555	868
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3012	2300	2437	1953
DFC	=	Design flow/Capacity = Q/Qe	0.23	0.18	0.24	0.16

Total In Sum = 1203 PCU

DFC of Critical Approach = 0.24

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu Kai Sha Road,	**2022 Existing PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Sep-23
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Sep-23
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Sep-23



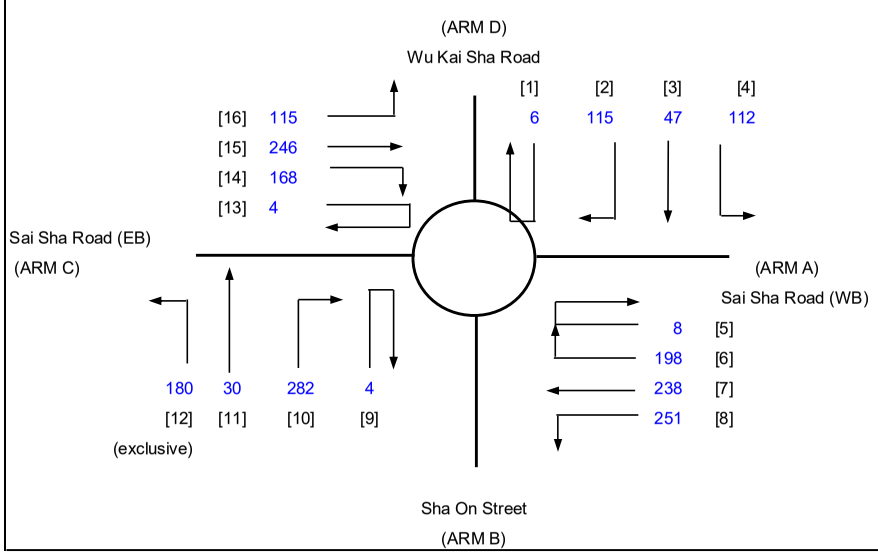


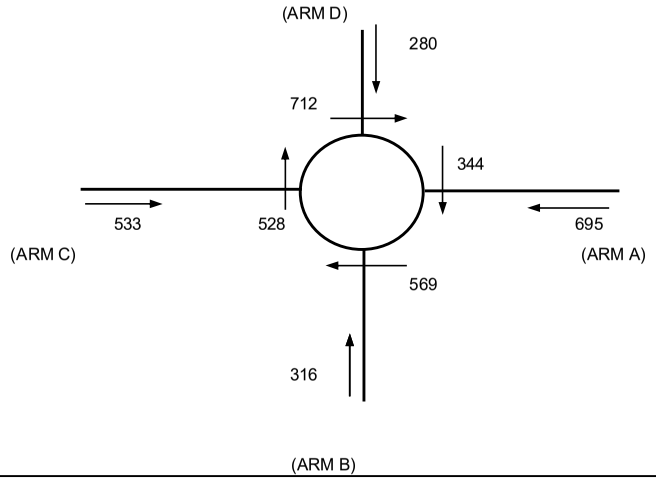
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	903	304	606	228
Qc	=	Circulating flow across entry (pcu/h)	336	680	577	761
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3051	2240	2423	2014
DFC	=	Design flow/Capacity = Q/Qe	0.30	0.14	0.25	0.11

Total In Sum = 1179 PCU

DFC of Critical Approach = 0.30

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2022 Existing Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24





ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	695	316	533	280
Qc	=	Circulating flow across entry (pcu/h)	344	569	528	712
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3045	2305	2454	2042
DFC	=	Design flow/Capacity = Q/Qe	0.23	0.14	0.22	0.14

Total In Sum = 1028 PCU

DFC of Critical Approach = 0.23

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

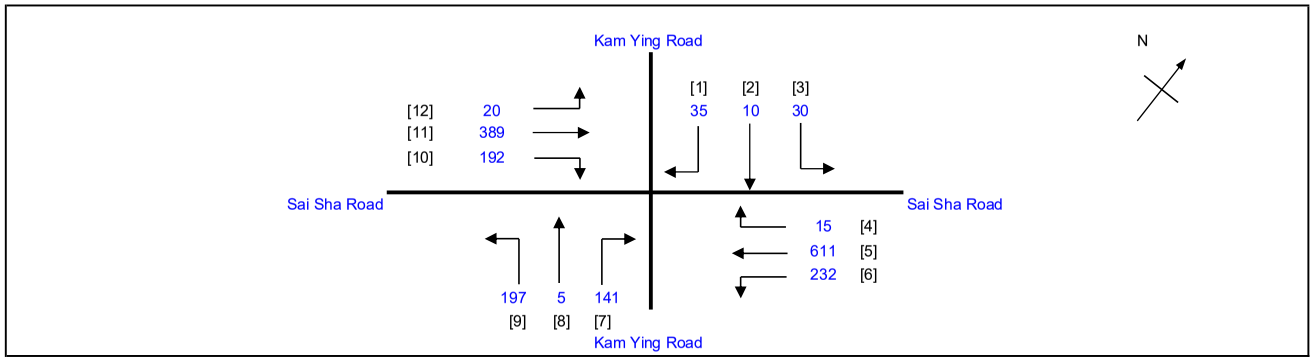
	INITIALS	DATE
Prepared By:	SKL	Sep-23
Checked By:	SLN	Sep-23
Reviewed By:	SLN	Sep-23

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.

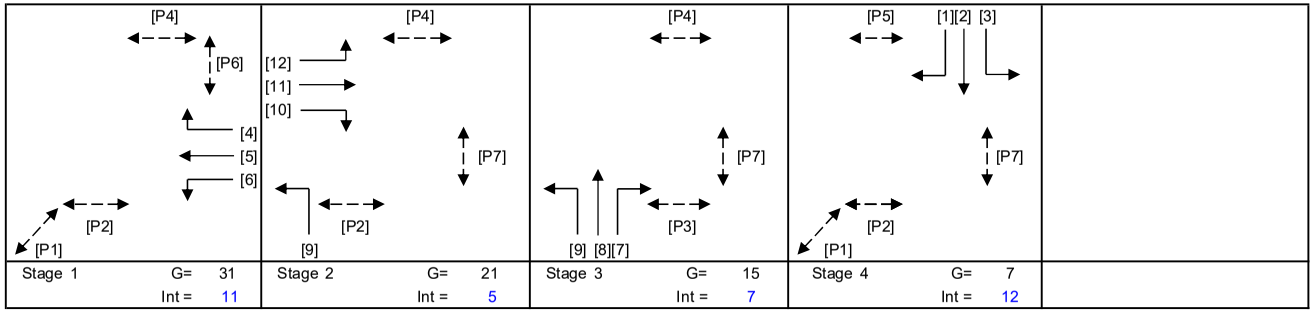
J3 Sai Sha Road / Kam Ying Road

2022 Existing AM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsm



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.355
Loss time		L =	31 sec
Total Flow		=	1877 pcu
Co	= (1.5*L+5)/(1-Y)	=	79.8 sec
Cm	= L/(1-Y)	=	48.1 sec
Yult		=	0.668
R.C.ult	= (Yult-Y)/Y*100%	=	88.1 %
Cp	= 0.9*L/(0.9-Y)	=	51.2 sec
Ymax	= 1-L/C	=	0.718
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**82 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	54	6
P2	1,2,4	5	5	0	83	5
P3	3	5	8	7	7	8
P4	1,2,3	5	5	0	86	5
P5	4	5	6	6	7	6
P6	1	5	7	5	30	7
P7	2,3,4	5	12	0	56	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	232			232	1.00	1786							1786	0.130			29	32	0.494	30	34
5	1	3.50	2				4210		611		611	0.00	4210							4210	0.145	0.145		32	32	0.494	39	30
4	1	3.50	1	25			2105			15	15	1.00	1986							1986	0.008			2	32	0.494	0	101
11,12	2	4.00	1	15		N	2015	20	177		197	0.10	1995							1995	0.099	0.099		22	22	0.494	24	39
11	2	4.00	1				2155		212		212	0.00	2155							2155	0.098			22	22	0.494	30	39
10	2	3.50	1	25			2105			192	192	1.00	1986							1986	0.097			22	22	0.494	24	40
9	2,3	4.50	1	25		N	2065	197			197	1.00	1948							1948	0.101			23	38	0.494	24	39
7,8	3	3.50	1	25			2105		5	141	146	0.97	1990							1990	0.073	0.073		16	16	0.494	18	44
1,2,3	4	5.50	1	15		N	2165	30	10	35	75	0.87	1992							1992	0.038	0.038		8	8	0.494	12	54

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

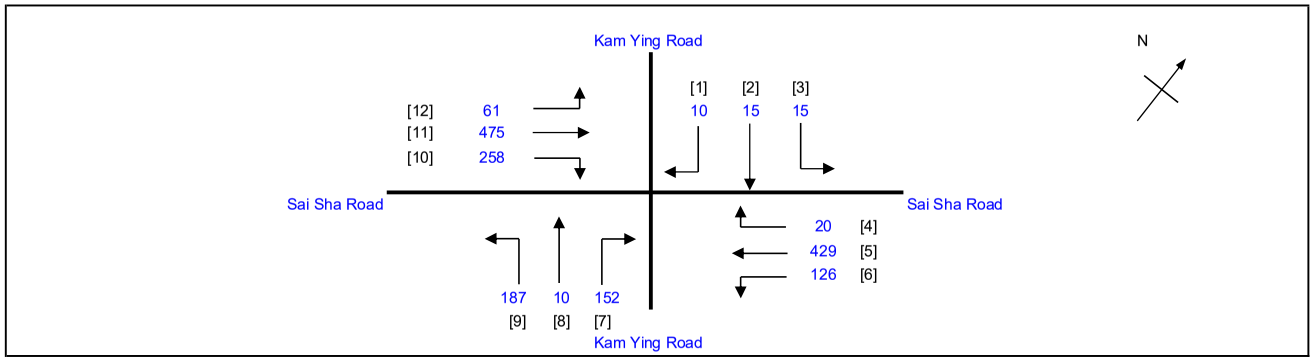
	INITIALS	DATE
Prepared By:	SKL	Sep-23
Checked By:	SLN	Sep-23
Reviewed By:	SLN	Sep-23

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.

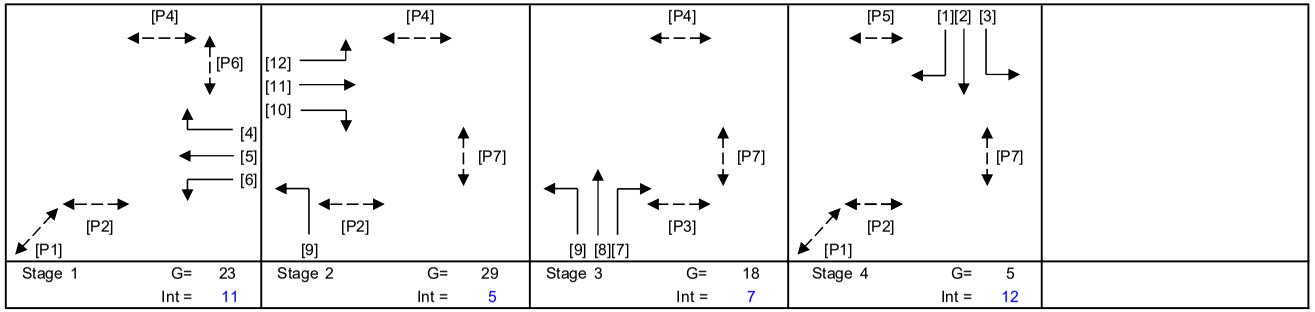
J3 Sai Sha Road / Kam Ying Road

2022 Existing PM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsm



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.333
Loss time		L =	32 sec
Total Flow		=	1758 pcu
Co	= (1.5*L+5)/(1-Y)	=	79.4 sec
Cm	= L/(1-Y)	=	48.0 sec
Yult		=	0.660
R.C.ult	= (Yult-Y)/Y*100%	=	98.3 %
Cp	= 0.9*L/(0.9-Y)	=	50.8 sec
Ymax	= 1-L/C	=	0.709
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**92 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	42	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	88	5
P5	4	5	6	6	5	6
P6	1	5	7	5	22	7
P7	2,3,4	5	12	0	64	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	126			126	1.00	1786							1786	0.071			17	24	0.469	18	44
5	1	3.50	2				4210		429		429	0.00	4210							4210	0.102	0.102		24	24	0.469	30	35
4	1	3.50	1	25			2105			20	20	1.00	1986							1986	0.010			2	24	0.469	0	82
11,12	2	4.00	1	15		N	2015	61	195		256	0.24	1968							1968	0.130	0.130		30	30	0.469	30	32
11	2	4.00	1				2155		280		280	0.00	2155							2155	0.130			30	30	0.469	36	32
10	2	3.50	1	25			2105			258	258	1.00	1986							1986	0.130			30	30	0.469	30	32
9	2,3	4.50	1	25		N	2065	187			187	1.00	1948							1948	0.096			22	50	0.469	24	38
7,8	3	3.50	1	25			2105		10	152	162	0.94	1993							1993	0.081	0.081		19	19	0.469	24	41
1,2,3	4	5.50	1	15		N	2165	15	15	10	40	0.63	2038							2038	0.020	0.020	1	5	6	0.469	6	63

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

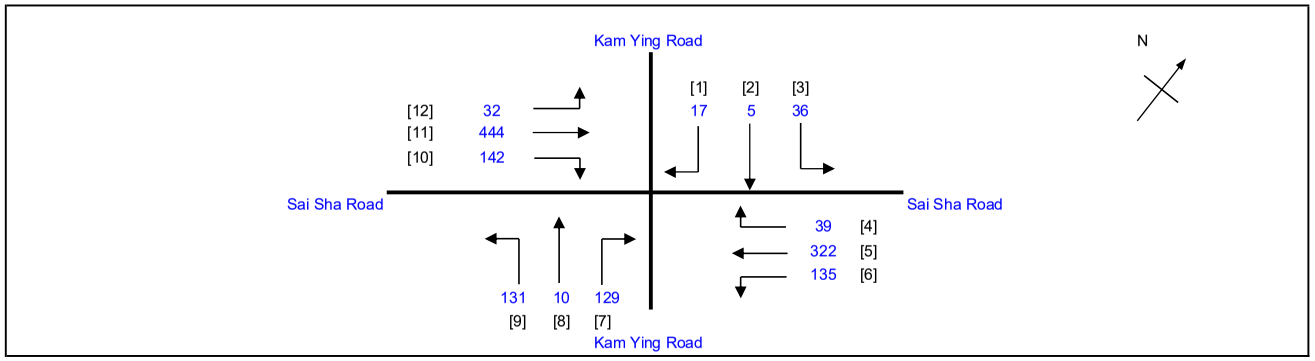
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

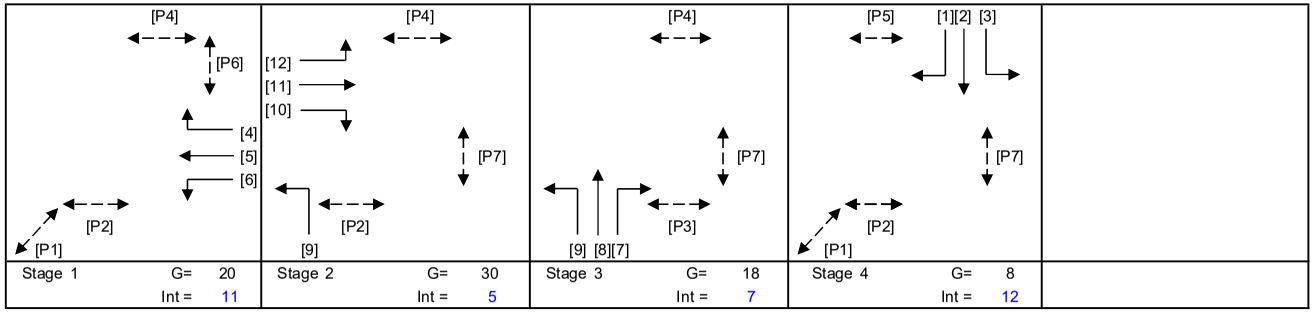
J3 Sai Sha Road / Kam Ying Road

2022 Existing Weekend

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.291
Loss time		L =	32 sec
Total Flow		=	1442 pcu
Co	= (1.5*L+5)/(1-Y)	=	74.7 sec
Cm	= L/(1-Y)	=	45.1 sec
Yult		=	0.660
R.C.ult	= (Yult-Y)/Y*100%	=	127.1 %
Cp	= 0.9*L/(0.9-Y)	=	47.3 sec
Ymax	= 1-L/C	=	0.709
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**120 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	42	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	85	5
P5	4	5	6	6	8	6
P6	1	5	7	5	19	7
P7	2,3,4	5	12	0	67	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	135			135	1.00	1786							1786	0.076			20	21	0.410	18	39
5	1	3.50	2				4210		322		322	0.00	4210							4210	0.076	0.076		21	21	0.410	24	37
4	1	3.50	1	25			2105			39	39	1.00	1986							1986	0.020			5	21	0.410	6	58
11,12	2	4.00	1	15		N	2015	32	197		229	0.14	1987							1987	0.115	0.115		31	31	0.410	30	31
11	2	4.00	1				2155		247		247	0.00	2155							2155	0.115			31	31	0.410	30	31
10	2	3.50	1	25			2105			142	142	1.00	1986							1986	0.072			19	31	0.410	18	40
9	2,3	4.50	1	25		N	2065	131			131	1.00	1948							1948	0.067			18	50	0.410	18	41
7,8	3	3.50	1	25			2105		10	129	139	0.93	1994							1994	0.070	0.070		19	19	0.410	18	40
1,2,3	4	5.50	1	15		N	2165	36	5	17	58	0.91	1984							1984	0.029	0.029	1	8	9	0.410	6	52

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Sep-23
Checked By:	SLN	Sep-23
Reviewed By:	SLN	Sep-23

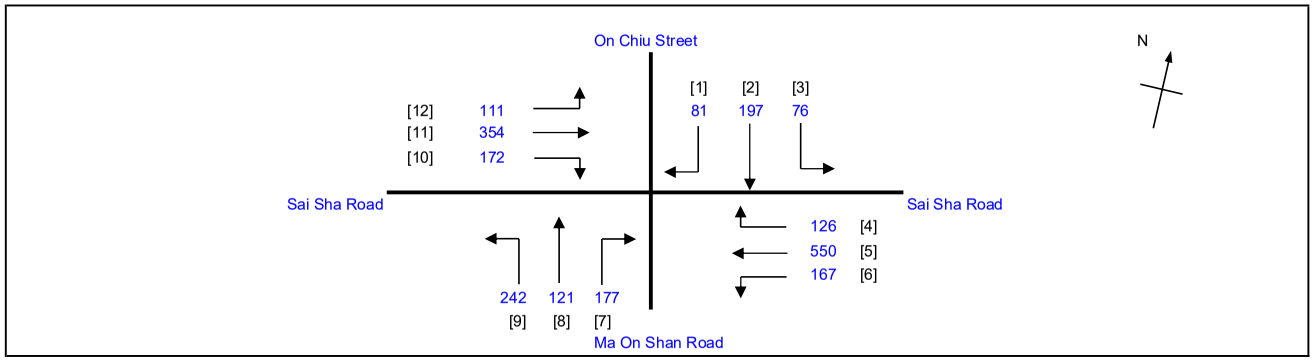
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.

J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

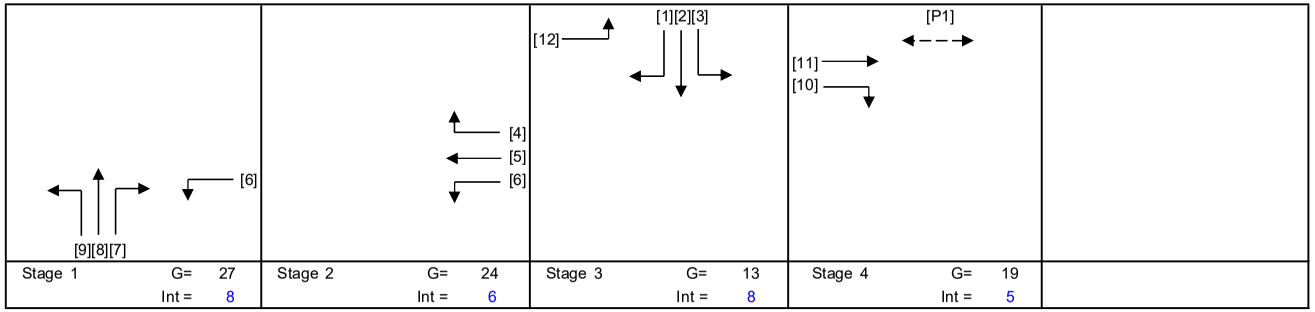
2022 Existing AM

PROJECT NO.: 40830

FILENAME : J4_SSR_MOSR_OCR.xlsm



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.426
Loss time	L =	26 sec
Total Flow	=	2374 pcu
Co = (1.5*L+5)/(1-Y)	=	76.6 sec
Cm = L/(1-Y)	=	45.3 sec
Yult	=	0.705
R.C.ult = (Yult-Y)/Y*100%	=	65.6 %
Cp = 0.9*L/(0.9-Y)	=	49.3 sec
Ymax = 1-L/C	=	0.764
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**61 %**



Stage 1	G= 27	Int = 8
Stage 2	G= 24	Int = 6
Stage 3	G= 13	Int = 8
Stage 4	G= 19	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							23					
8,9	1	3.70	1	10		N	1985	242	0		242	1.00	1726							1726	0.140	0.140		28	28	0.558	30	37
7,8	1	3.70	1	30			2125		121	32	153	0.21	2103							2103	0.073			14	28	0.558	24	48
7	1	3.70	1	25			2125			145	145	1.00	2005							2005	0.072			14	28	0.558	18	48
6	1,2	3.75	1	15		N	1990	167			167	1.00	1809							1809	0.092			18	53	0.558	24	45
5	2	3.75	2				4260		550		550	0.00	4260							4260	0.129	0.129		25	25	0.558	36	36
4	2	3.75	1	25			2130			126	126	1.00	2009							2009	0.063			12	25	0.558	18	51
2,3	3	3.50	1	15		N	1965	76	52		128	0.59	1855							1855	0.069	0.069		14	14	0.558	18	50
1,2	3	3.50	1	30			2105		145	0	145	0.00	2105							2105	0.069			14	14	0.558	18	49
1	3	3.00	1	25			2055			81	81	1.00	1939							1939	0.042			8	14	0.558	12	58
12	3	3.30	1	10		N	1945	111			111	1.00	1691							1691	0.066			13	14	0.558	18	51
11	4	3.30	2				4170		354		354	0.00	4170							4170	0.085			17	20	0.558	27	42
10	4	3.30	1	25			2085			172	172	1.00	1967							1967	0.087	0.087	3	17	20	0.558	24	45

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

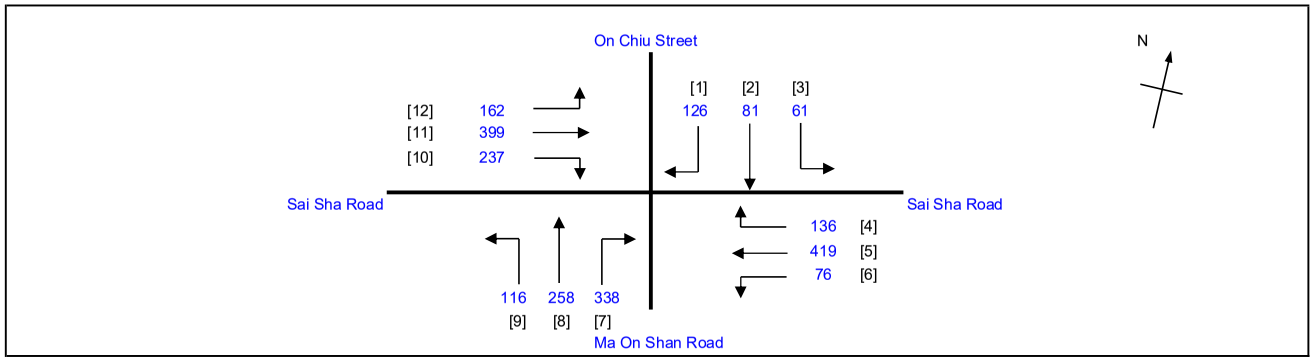
	INITIALS	DATE
Prepared By:	SKL	Sep-23
Checked By:	SLN	Sep-23
Reviewed By:	SLN	Sep-23

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facility (RCHE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.

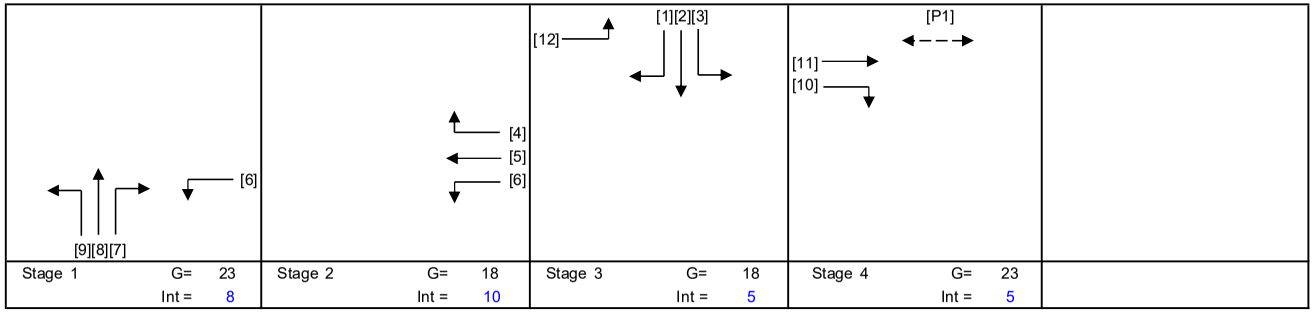
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2022 Existing PM

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsm



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.435
Loss time		L =	24 sec
Total Flow		=	2409 pcu
Co	= (1.5*L+5)/(1-Y)	=	72.5 sec
Cm	= L/(1-Y)	=	42.5 sec
Yult		=	0.720
R.C.ult	= (Yult-Y)/Y*100%	=	65.6 %
Cp	= 0.9*L/(0.9-Y)	=	46.4 sec
Ymax	= 1-L/C	=	0.782
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**62 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	15	9

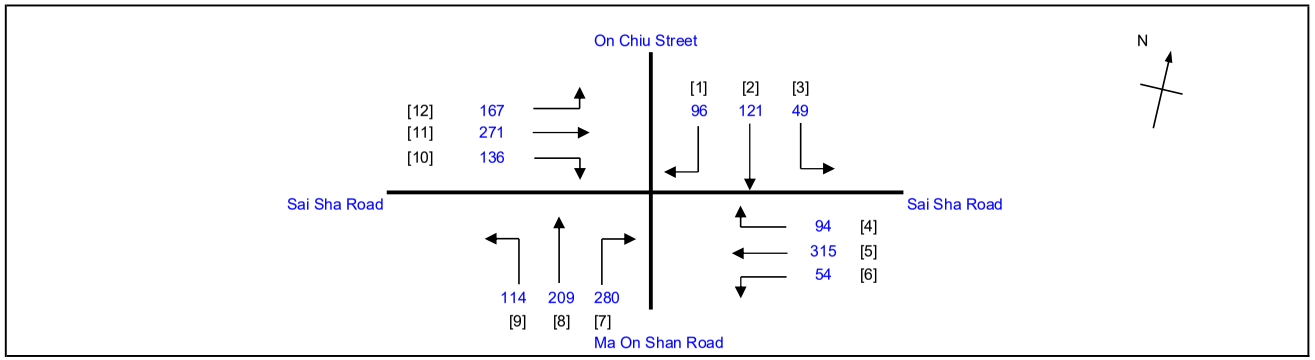
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	116	105		221	0.52	1840							1840	0.120			24	24	0.556	30	40
7,8	1	3.70	1	30			2125		153	97	250	0.39	2085							2085	0.120			24	24	0.556	30	39
7	1	3.70	1	25			2125			241	241	1.00	2005							2005	0.120	0.120		24	24	0.556	30	39
6	1,2	3.75	1	15		N	1990	76			76	1.00	1809							1809	0.042			8	43	0.556	12	59
5	2	3.75	2				4260		419		419	0.00	4260							4260	0.098	0.098		19	19	0.556	30	40
4	2	3.75	1	25			2130			136	136	1.00	2009							2009	0.068			13	19	0.556	18	49
2,3	3	3.50	1	15		N	1965	61	23		84	0.73	1832							1832	0.046			9	19	0.556	12	57
1,2	3	3.50	1	30			2105		58	37	95	0.39	2065							2065	0.046			9	19	0.556	12	56
1	3	3.00	1	25			2055			89	89	1.00	1939							1939	0.046			9	19	0.556	12	56
12	3	3.30	1	10		N	1945	162			162	1.00	1691							1691	0.096	0.096		19	19	0.556	24	44
11	4	3.30	2				4170		399		399	0.00	4170							4170	0.096			19	24	0.556	30	40
10	4	3.30	1	25			2085			237	237	1.00	1967							1967	0.120	0.120		24	24	0.556	30	39

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

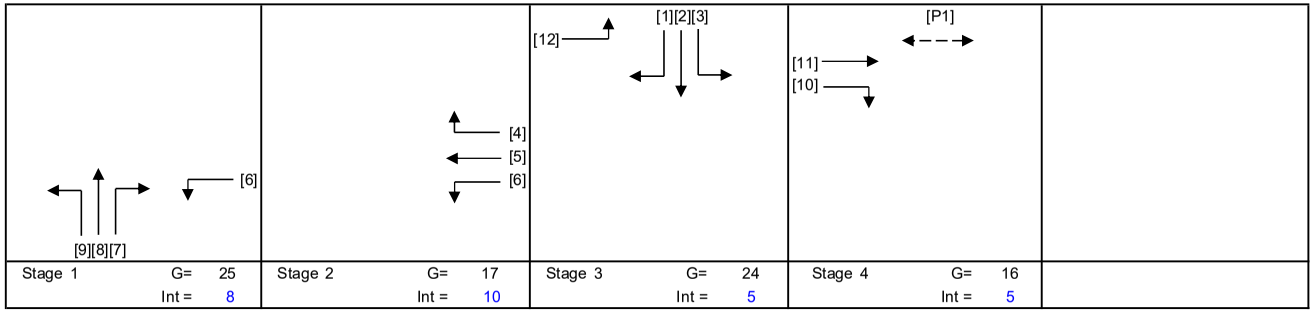
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street	**2022 Existing Weekend**		
	PROJECT NO.: 40830	Prepared By:	SKL Jan-24
	FILENAME : J4_SSR_MOSR_OCR.xlsx	Checked By:	SLN Jan-24
		Reviewed By:	SLN Jan-24



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.344
Loss time	L =	24 sec
Total Flow	=	1906 pcu
Co = (1.5*L+5)/(1-Y)	=	62.5 sec
Cm = L/(1-Y)	=	36.6 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	109.3 %
Cp = 0.9*L/(0.9-Y)	=	38.9 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**104 %**



Stage 1	G= 25	Int = 8
Stage 2	G= 17	Int = 10
Stage 3	G= 24	Int = 5
Stage 4	G= 16	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	8	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	114	71		185	0.62	1817							1817	0.102			25	26	0.440	24	36
7,8	1	3.70	1	30			2125		138	75	213	0.35	2088							2088	0.102			25	26	0.440	24	35
7	1	3.70	1	25			2125			205	205	1.00	2005							2005	0.102	0.102		26	26	0.440	24	35
6	1,2	3.75	1	15		N	1990	54			54	1.00	1809							1809	0.030			7	44	0.440	6	55
5	2	3.75	2				4260		315		315	0.00	4260							4260	0.074	0.074		18	18	0.440	24	39
4	2	3.75	1	25			2130			94	94	1.00	2009							2009	0.047			12	18	0.440	12	47
2,3	3	3.50	1	15		N	1965	49	35		84	0.58	1857							1857	0.045			11	25	0.440	12	48
1,2	3	3.50	1	30			2105		86	8	94	0.09	2096							2096	0.045			11	25	0.440	12	48
1	3	3.00	1	25			2055			88	88	1.00	1939							1939	0.045			11	25	0.440	12	48
12	3	3.30	1	10		N	1945	167			167	1.00	1691							1691	0.099	0.099		25	25	0.440	18	36
11	4	3.30	2				4170		271		271	0.00	4170							4170	0.065			16	17	0.440	21	41
10	4	3.30	1	25			2085			136	136	1.00	1967							1967	0.069	0.069		17	17	0.440	18	42

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

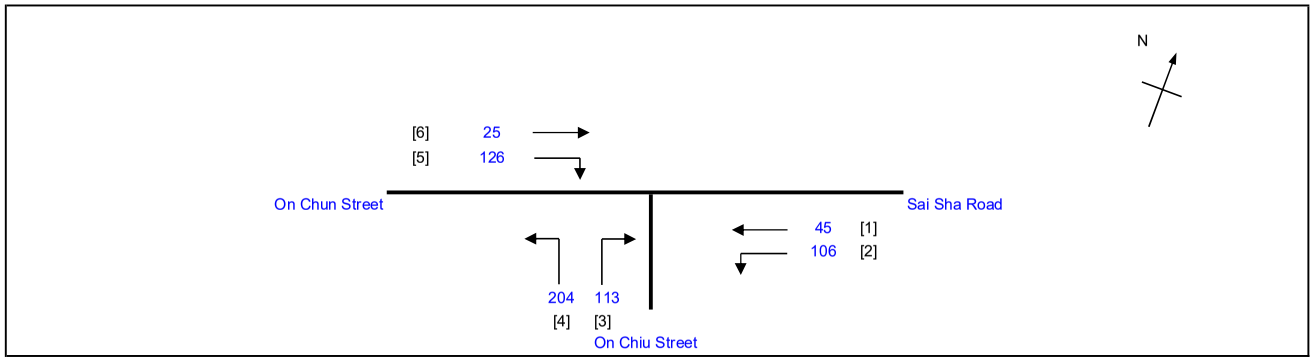
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

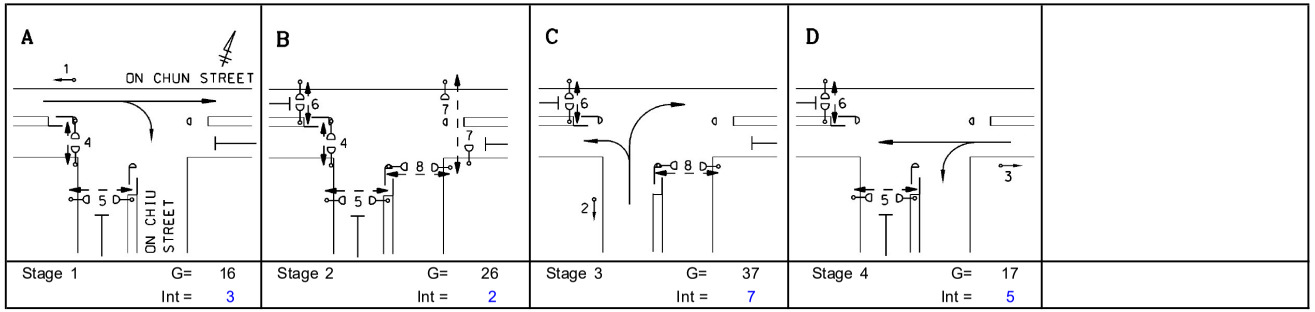
J5 On Chun Street / On Chiu Street

2022 Existing AM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	113 sec
Sum(y)		Y =	0.164
Loss time		L =	40 sec
Total Flow		=	619 pcu
Co	= (1.5*L+5)/(1-Y)	=	77.8 sec
Cm	= L/(1-Y)	=	47.9 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	265.2 %
Cp	= 0.9*L/(0.9-Y)	=	48.9 sec
Ymax	= 1-L/C	=	0.646
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**254 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	31	10
P5	1,2,4	5	9	3	57	9
P6	2,3,4	5	6	3	85	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	51	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		25	49	74	0.66	1880							1880	0.039	0.039		17	17	0.254	6	40
5	1	3.50	1	22			2105			77	77	1.00	1971							1971	0.039			17	17	0.254	12	40
4	3	3.65	1	15		N	1980	152			152	1.00	1800							1800	0.084	0.084		38	38	0.254	18	26
3,4	3	3.65	1	20			2120	52		113	165	1.00	1972							1972	0.084			37	38	0.254	18	26
2	4	3.40	1	13		N	1955	71			71	1.00	1753							1753	0.041	0.041		18	18	0.254	6	39
1,2	4	3.40	1	13			2095	35	45		80	0.44	1994							1994	0.040			18	18	0.254	12	39
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

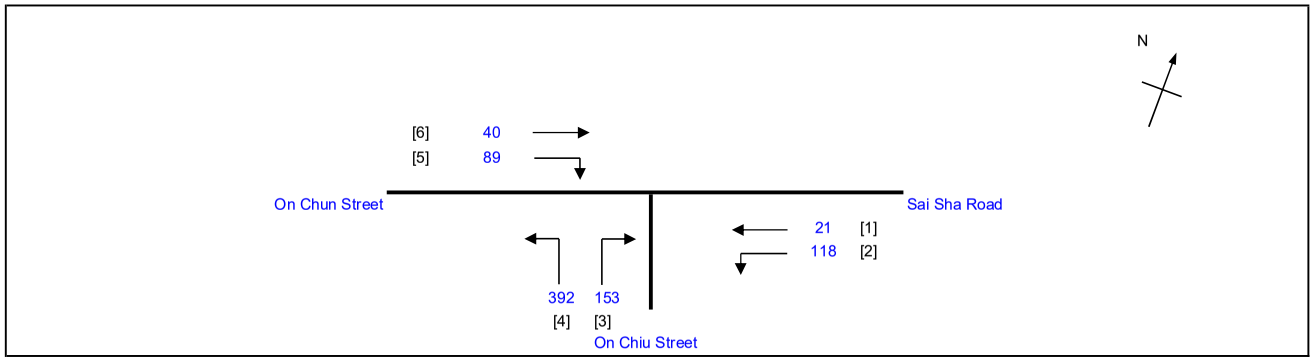
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

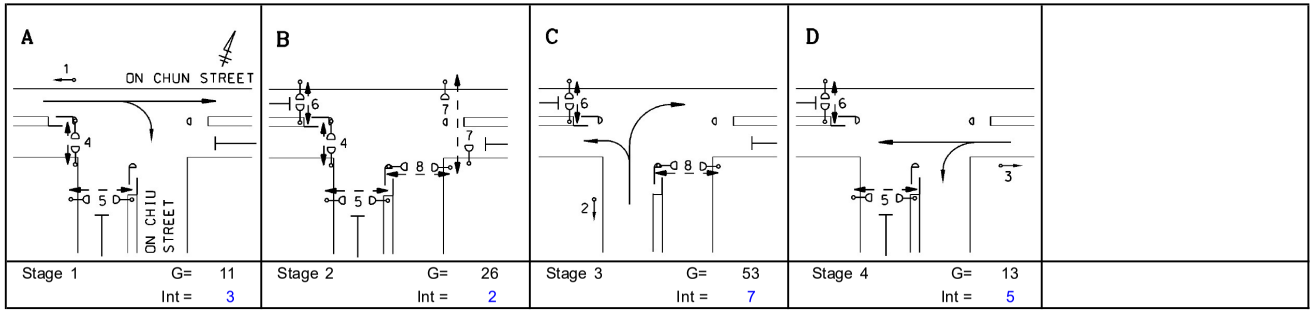
J5 On Chun Street / On Chiu Street

2022 Existing PM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.216
Loss time		L =	40 sec
Total Flow		=	813 pcu
Co	= (1.5*L+5)/(1-Y)	=	82.9 sec
Cm	= L/(1-Y)	=	51.0 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	177.6 %
Cp	= 0.9*L/(0.9-Y)	=	52.6 sec
Ymax	= 1-L/C	=	0.667
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**178 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	26	10
P5	1,2,4	5	9	3	48	9
P6	2,3,4	5	6	3	97	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	67	11

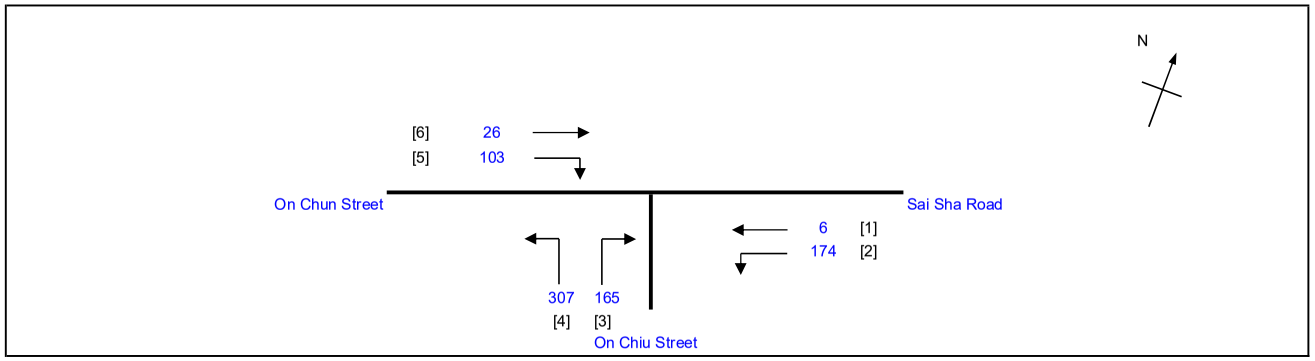
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		40	24	64	0.38	1916							1916	0.033	0.033		12	12	0.324	6	49
5	1	3.50	1	22			2105			65	65	1.00	1971							1971	0.033			12	12	0.324	6	49
4	3	3.65	1	15		N	1980	261			261	1.00	1800							1800	0.145	0.145		54	54	0.324	24	20
3,4	3	3.65	1	20			2120	131		153	284	1.00	1972							1972	0.144			53	54	0.324	30	20
2	4	3.40	1	13		N	1955	66			66	1.00	1753							1753	0.038			14	14	0.324	6	48
1,2	4	3.40	1	13			2095	52	21		73	0.71	1936							1936	0.038	0.038		14	14	0.324	12	47
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

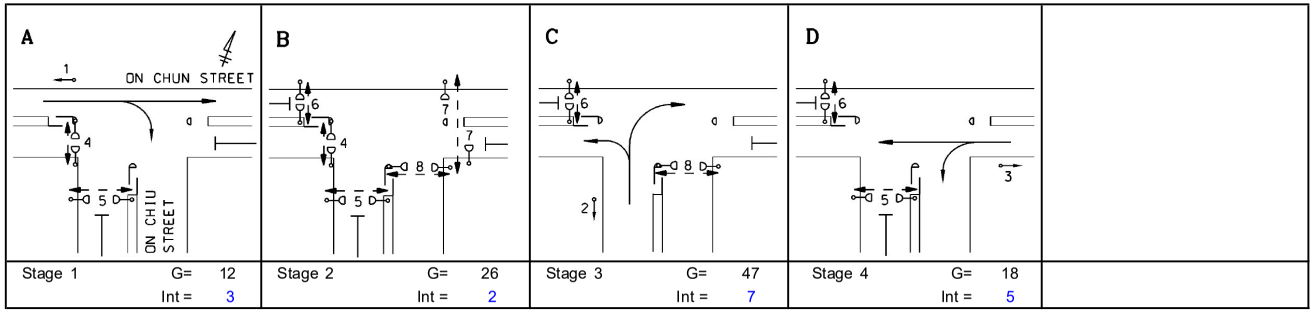
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
J5 On Chun Street / On Chiu Street	**2022 Existing Weekend**		
	PROJECT NO.: 40830	Prepared By:	SKL Jan-24
	FILENAME : J5_OCS_OCS.xlsx	Checked By:	SLN Jan-24
		Reviewed By:	SLN Jan-24



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.208
Loss time		L =	40 sec
Total Flow		=	781 pcu
Co	= (1.5*L+5)/(1-Y)	=	82.1 sec
Cm	= L/(1-Y)	=	50.5 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	187.9 %
Cp	= 0.9*L/(0.9-Y)	=	52.1 sec
Ymax	= 1-L/C	=	0.667
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**188 %**

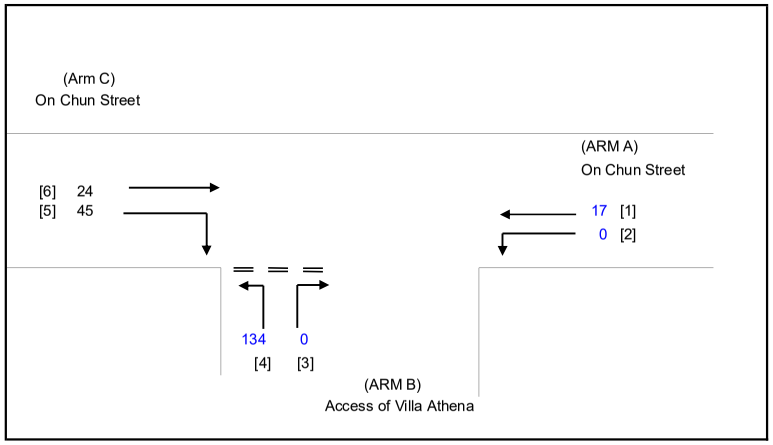


Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	27	10
P5	1,2,4	5	9	3	54	9
P6	2,3,4	5	6	3	96	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	61	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		26	37	63	0.59	1889							1889	0.033			13	13	0.313	6	48
5	1	3.50	1	22			2105			66	66	1.00	1971							1971	0.033	0.033		13	13	0.313	6	48
4	3	3.65	1	15		N	1980	225			225	1.00	1800							1800	0.125			48	48	0.313	24	23
3,4	3	3.65	1	20			2120	82		165	247	1.00	1972							1972	0.125	0.125		48	48	0.313	24	23
2	4	3.40	1	13		N	1955	87			87	1.00	1753							1753	0.050	0.050		19	19	0.313	12	43
1,2	4	3.40	1	13			2095	87	6		93	0.94	1891							1891	0.049			19	19	0.313	12	43
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2022 Existing AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	17	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	24	(pcu/hr)
q c-b	=	45	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	134	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

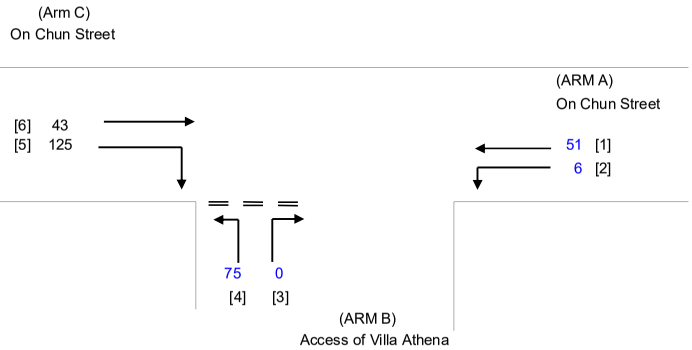
Q b-a	=	573		
Q b-c	=	736	Q b-c (O) =	736
Q c-b	=	723		
Q b-ac	=	736		
TOTAL FLOW	=	220	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1821
DFC c-b	=	0.0622
DFC b-c (share lane)	=	0.1821

CRITICAL DFC = 0.18

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2022 Existing PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	6	(pcu/hr)
q a-c	=	51	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	43	(pcu/hr)
q c-b	=	125	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	75	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

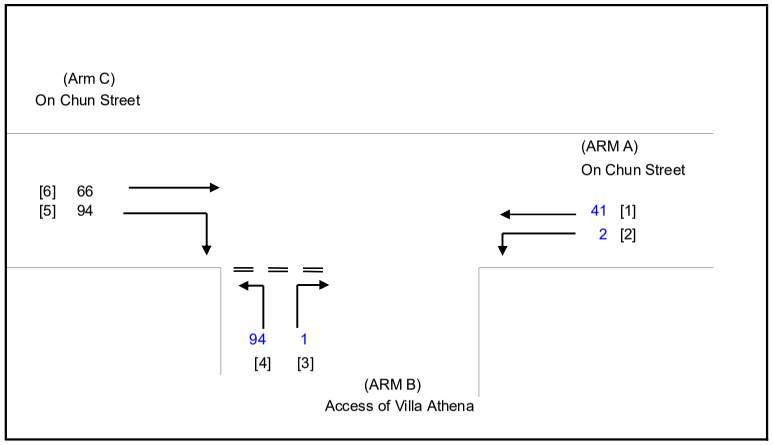
Q b-a	=	527		
Q b-c	=	725	Q b-c (O) =	725
Q c-b	=	711		
Q b-ac	=	725		
TOTAL FLOW	=	300	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1034
DFC c-b	=	0.1758
DFC b-c (share lane)	=	0.1034

CRITICAL DFC = 0.18

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2022 Existing Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	2	(pcu/hr)
q a-c	=	41	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	66	(pcu/hr)
q c-b	=	94	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	1	(pcu/hr)
q b-c	=	94	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	0.98947368

THE CAPACITY OF MOVEMENT :

Q b-a	=	539		
Q b-c	=	728	Q b-c (O) =	727.7
Q c-b	=	715		
Q b-ac	=	725		
TOTAL FLOW	=	298	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0019
DFC b-c	=	0.1291
DFC c-b	=	0.1315
DFC b-c (share lane)	=	0.1296

CRITICAL DFC = 0.13

Appendix B

Traffic Generation of Planned Developments

Extracted from Corresponding TIA Reports

Extracted from TIA Report of
Planning Application No. A/NE-SSH/142

Table 4.8 Development Traffic Flows (Sports & Recreation Centres)

Facilities	Approved Scheme				Current Scheme			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)
Golf Driving(1) Range	11	42	66	34	9	34	54	28
Tennis Court(2)	-	-	3	3	-	-	5	5
Football Court(3)	-	-	-	-	-	-	10	10
Lacrosse(4)	-	-	-	-	-	-	8	8
Surfing Pool(5)	-	-	-	-	-	-	2	2
Training Path(6) for cycling	-	-	-	-	-	-	8	8
Ball Court(7)	-	-	14	46	-	-	14	46
Cinema(8)	-	-	16	16	-	-	16	16
Ancillary Facilities for Sports & Recreation Centre	16	17	22	25	16	17	22	25
Retail & F&B Facilities	8	9	11	12	8	9	11	12
Total	**35**	**68**	**132**	**136**	**33**	**60**	**150**	**160**
Change (Current Scheme – Approved Scheme)					***-2***	***-8***	***+18***	***+24***

Notes :
(1) Based on the adopted trip rates as given in **Table 4.7**.
(2) Referring to **Table 2.2**, the tennis court are anticipated to attract 15 persons/hr (in approved scheme) and 25 persons/hr (current scheme) during PM peak. Based on the observed modal split in **Table 2.9** (40% for private car / taxi) and the occupancy of 2 passenger per car / taxi, the tennis court would induce a traffic generation / attraction of 3 pcu/hr (i.e. 15 x 40% / 2) in the approved scheme and 5 pcu/hr (i.e. 25 x 40% / 2) in the current scheme.
(3) Referring to **Table 2.2**, the football court are anticipated to attract 30 persons/hr (current scheme) during PM peak. Based on the observed modal split in **Table 2.9** (40% for private car / taxi) and the occupancy of 2 passenger per car / taxi, the football court would induce a traffic generation / attraction of 10 pcu/hr (i.e. 50 x 40% / 2) in the current scheme.
(4) Referring to **Table 2.2**, the Lacrosse court are anticipated to attract 15 persons/hr (current scheme) during PM peak. Based on the observed model split in **Table 2.9** (73% for private car / taxi) and the occupancy of 1.5 passenger per car / taxi, the Lacrosse court would induce a traffic generation of 8 pcu/hr (i.e. 15 x 40% / 1.5)
(5) Assumed all use private cars.
(6) Referring to **Table 2.2**, the cycling path are anticipated to attract 30 persons/hr (current scheme) during PM peak. Based on the observed model split in **Table 2.9** (100% for private car / taxi) and the occupancy of 4 passenger per car / taxi, the cycling path would induce a traffic generation of 8 pcu/hr (ie 30 x 100% / 4)
(7) Based on the observed trip rates at Lai King Sports Centre (i.e. PM in = 5.2 pcu/100 seats and PM out = 1.6 pcu/100 seats)
(8) Based on number of provided car parking spaces (i.e. 16 spaces).
(9) Based on trip rates of Retail as stated in TPDM.

4.4.6 As shown in **Table 4.8**, the analysis reveals that the change in trip ends due to the proposed amendment to the Approved Scheme is minimal.

4.4.7 Based on the development traffic generation as given **Table 4.5** and **Table 4.8**, the overall traffic generation of the proposed development in the Approved Scheme and Current Scheme are summarised and listed in **Table 4.9**.

Table 4.9 Overall Development Traffic Flows

	Approved Scheme				Current Scheme			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)
Development Traffic Flow (Exclude Sports & Recreation Centres)	948	647	588	686	948	647	588	686
Development Traffic Flow (Sports & Recreation Centres)	35	68	132	136	33	60	150	160
Total	**983**	**715**	**720**	**822**	**981**	**707**	**738**	**846**

4.5 2028 Reference and Design Traffic Flows

4.5.1 The 2028 reference traffic flows were produced by adding the additional trips to be generated by the Proposed Development in the approved scheme in **Table 4.9** to the 2028 background traffic flows. The directional distribution of the development traffic of the Application Site is illustrated in **Figure 4.2**. The resultant 2028 reference traffic flows (approved scheme) are shown in **Figures 4.3 - 4.4**.

4. 5. 2 The 2028 design traffic flows were produced by adding the additional trips to be generated by the Proposed Development in current scheme in **Table 4.9** to the 2028 background traffic flows. The resultant 2028 design traffic flows (current scheme) are shown in **Figures 4.5 - 4.6**.

4.6 Sensitivity Test – Potential School at Sai Keng

4.6.1 A recent submission was made to Town Planning Board for a proposed private school at Sai Keng (Application A/NE-SSH/139). Its location is indicated in **Figure 4.1.** The potential school will be operated as a private school with a total of 1,226 students ranging from early year learning, primary to secondary education.

4.6.2 It is anticipated that the AM peak traffic generation of the potential school in Sai Keng would be critical as it would overlap with the commuting AM peak. However, its PM peak traffic generation should occur earlier than the commuting PM peak which shall not be critical. The current scheme would generate less traffic than the approved scheme during AM peak as demonstrated in **Table 4.9.** In view of the above, the TIA of Potential School in Sai Keng in design year 2031 (under the Application A/NE-SSH/139) would be more critical. In conclusion, the current proposal in Site C would not affect the TIA findings under the Application A/NE-SSH/139.

Table D 4.6 **Estimated Transport Mode of Surveyed Schools / Kindergarten**

	Transport Mode		
	Car / Taxi	School Bus	Public Transport / Walk
Renaissance College	11%	49%	40%
Shatin College / Shatin Junior School	12%	58%	30%
Anchors Kindergarten & International Nursery	25%	70%	5%

4.5.5 By applying the adopted trip generation rates as given in **Table D4.5** and the proposed development scheme as listed in **Table D2.1**, the development traffic of Proposed School was calculated and summarised in **Table D4.7**.

Table D 4.7 **Traffic Generations of Proposed School (Proposed Scheme)**

	Trip Ends (pcu/hr)			
	AM Peak		Mid-Afternoon Peak	
	Generation	Attraction	Generation	Attraction
Primary / Secondary School (672 students)	100	114	71	65
Early Year Learning (50 students)	16	17	16	16
Total	116	131	87	81

4.5.6 **Table D4.4** and **Table D 4.7** shows the development traffic generations of both the Approved Scheme and the Proposed Scheme in the AM peak and mid-afternoon peak. The mid-afternoon peak (i.e. school dismissal period) falls between around 3pm – 4pm and does not coincide with the normal PM peak period. As a conservative approach, it is assumed that 50% of development traffic at mid-afternoon peak would occur at the normal PM Peak period.

Table D 4.8 **Traffic Generations of Approved Scheme and Proposed Scheme**

	Trip Ends (pcu)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Private School (Approved Scheme)	90	100	30	25
Proposed School (Proposed Scheme)	116	131	44	41
Difference	**+26**	**+31**	**+14**	**+16**

4.5.7 As shown in **Table D 4.8**, the overall traffic generation of Proposed School under the previously Approved Scheme and the current Proposed Scheme would be similar. The two-way development traffic to be induced by the Proposed School would only be slightly increased by 57 pcu/hr and by 30 pcu/hr in AM and PM peak respectively.

4.3.4 As shown in **Table 4.3**, the Proposed RCHE will generate an additional two-way traffic of 10 veh/hr, equivalent to 14 pcu/hr, during both the AM and PM peak hours.

Estimated Development Traffic Generation based on Trip Generation Survey

4.3.5 To verify the adopted traffic generation of proposed RCHE is conservative, additional trip generation surveys at other existing RCHEs in the area were arranged to collect trip rates of RCHE. The traffic trip generation surveys were conducted on 23 November 2021 (Tuesday) during the peak hour period from 07:30 to 09:30 and 17:00 to 19:00. The trip generations at the identified highway peak are adopted and summarized in **Table 4.4**.

Table 4.4 Trip Rates of Surveyed RCHE

Name	Location	Capacity	Recorded Trips (pcu/hr) [Trip Rates (pcu/hr/10 bed]			
			AM Peak		PM Peak	
			Gen.	Att.	Gen.	Att.
Caritas Harold H.W. LEE Care and Attention Home	17 Kong Pui Street, Shatin	276 beds	9 [0.3261]	11 [0.3986]	9 [0.3261]	9 [0.3261]
SAGE Kwan Fong Nim Chee Home for the Elderly	27 Chap Wai Kon Street, Shatin	204 beds	7 [0.3431]	8 [0.3922]	7 [0.3431]	7 [0.3431]
Estimated Trip Rates(1)			0.3431	0.3986	0.3431	0.3431

Note: (1) The larger trip rates are adopted.

4.3.6 Taking into consideration of the above, the traffic generation and attraction of the proposed development is estimated in **Table 4.5**.

Table 4.5 Proposed RCHE Traffic Generation Estimated by Trip Generation Survey

Proposed RCHE – 200 beds	Unit/Content	AM Peak Hour			PM Peak Hour		
		Gen.	Att.	2-way	Gen.	Att.	2-way
Adopted Trip Rates	pcu/10 bed	0.3431	0.3986	-	0.3431	0.3431	-
Traffic Generations	pcu/hr/10 bed	7	8	15	7	7	14

4.3.7 As shown in **Table 4.5**, the Proposed RCHE will generate additional two-way traffic of 15 pcu/hr and 14 pcu/hr, during AM and PM peak hour, respectively.

4.3.8 The traffic generations of the proposed RCHE estimated by trip characteristics and trip generation survey are similar. However, to be conservative, the larger values are adopted for the subsequent assessment. The estimated additional development traffic was assigned onto the future road network based on the observed traffic pattern. **Figure 4.1** shows the additional development traffic generation pattern.

4.3.2 **Table 4.3** shows that the proposed development will generate a two-way traffic of 115 pcu/hour and 89 pcu/hour during both AM peak hour and PM peak hour, respectively. As compared with the existing hotel use in **Table 4.2**, the net change of proposed development traffic is shown in **Table 4.4**.

Table 4.3 Traffic Generation of the Proposed Development

Type	Unit/Content	AM Peak Hour			PM Peak Hour		
		Gen.	Att.	2-way	Gen.	Att.	2-way
Adopted Trip Rates							
Hotel (1)	pcu/hr/room	0.0722	0.0517	-	0.0457	0.0542	-
Office (2)	pcu/hr/100m^2	0.1703	0.2452	-	0.1573	0.1175	-
Retail (3)	pcu/hr/100m^2	0.2296	0.2434	-	0.3100	0.3563	-
Traffic Generation of the Existing Hotel							
Hotel [A]	831 rooms	60	43	103	38	45	83
Retail [B]	4,776m^2	11	12	23	15	18	33
Sub-Total [A]+[B]		**71**	**55**	**126**	**53**	**63**	**116**
Traffic Generation of the Proposed Development							
Residential [C]	758 flats	55	33	88	22	29	51
Retail [D]	5,543m^2	13	14	27	18	20	38
Sub-Total [C]+[D]		**68**	**47**	**115**	**40**	**49**	**89**

Notes: (1) Surveyed trip rates for hotel are adopted.
(2) Mean trip rates for office are adopted from TPDM, Transport Department
(3) Mean trip rates for retail are adopted from TPDM, Transport Department

Table 4.4 Net Change in Development Traffic Generation

Use	AM Peak Hour			PM Peak Hour		
	Gen.	Att.	Total	Gen.	Att.	Total
Existing Hotel **(A)**	71	55	126	53	63	116
Proposed Development **(B)**	68	47	115	40	49	89
Net Increase **(B) – (A)**	**-3**	**-8**	**-11**	**-13**	**-14**	**-27**

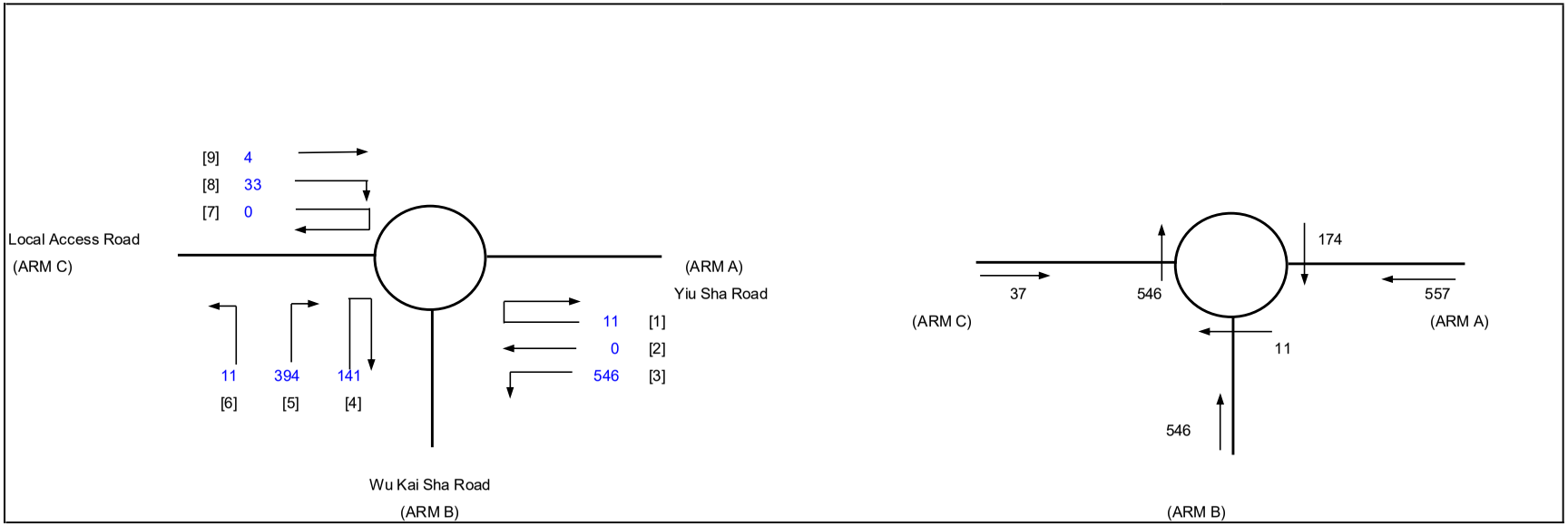
4.3.3 As shown in **Table 4.4**, there would be a decrease in traffic generation of 11 pcu/hour and 27 pcu/hour in the AM and PM peak hour, respectively. The change in development traffic flows are assigned onto the road network based on the observed traffic pattern for future assessment. The estimated distribution pattern of the development traffic is shown in **Figure 4.1**.

Appendix C

Junction Capacity Assessments

- Reference & Design Scenarios

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Reference AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

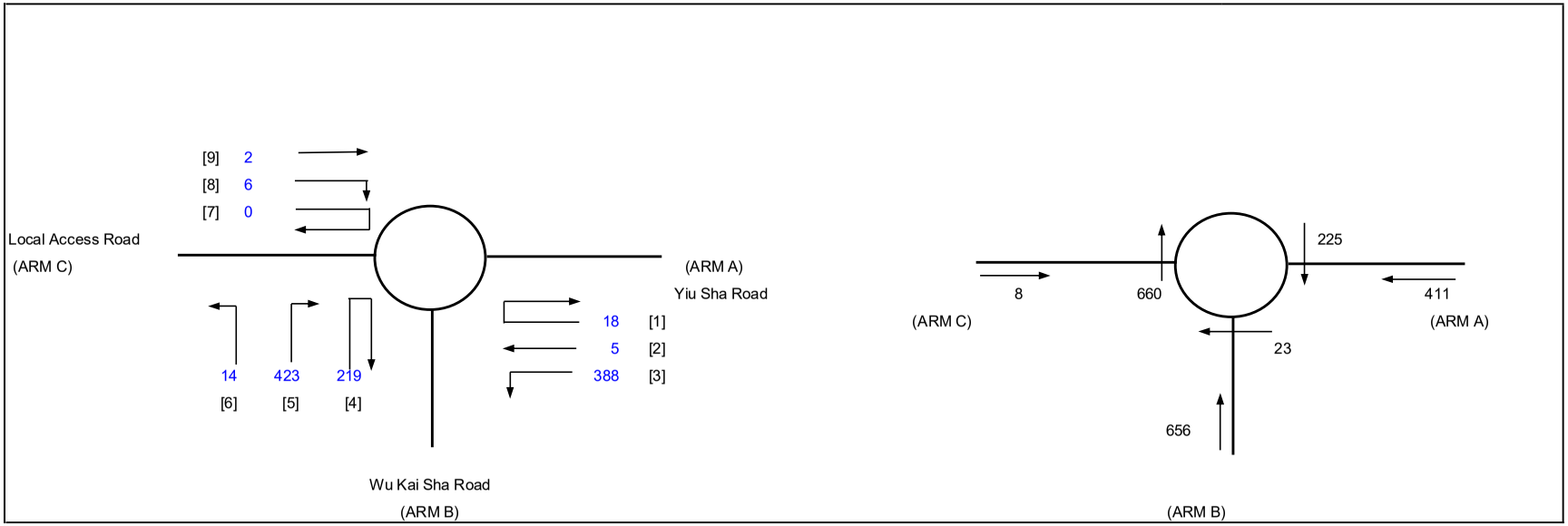


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	557	546	37
Qc	=	Circulating flow across entry (pcu/h)	174	11	546
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2778	2592	400
DFC	=	Design flow/Capacity = Q/Qe	0.20	0.21	0.09

Total In Sum = 1136 PCU

DFC of Critical Approach = 0.21

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Reference PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

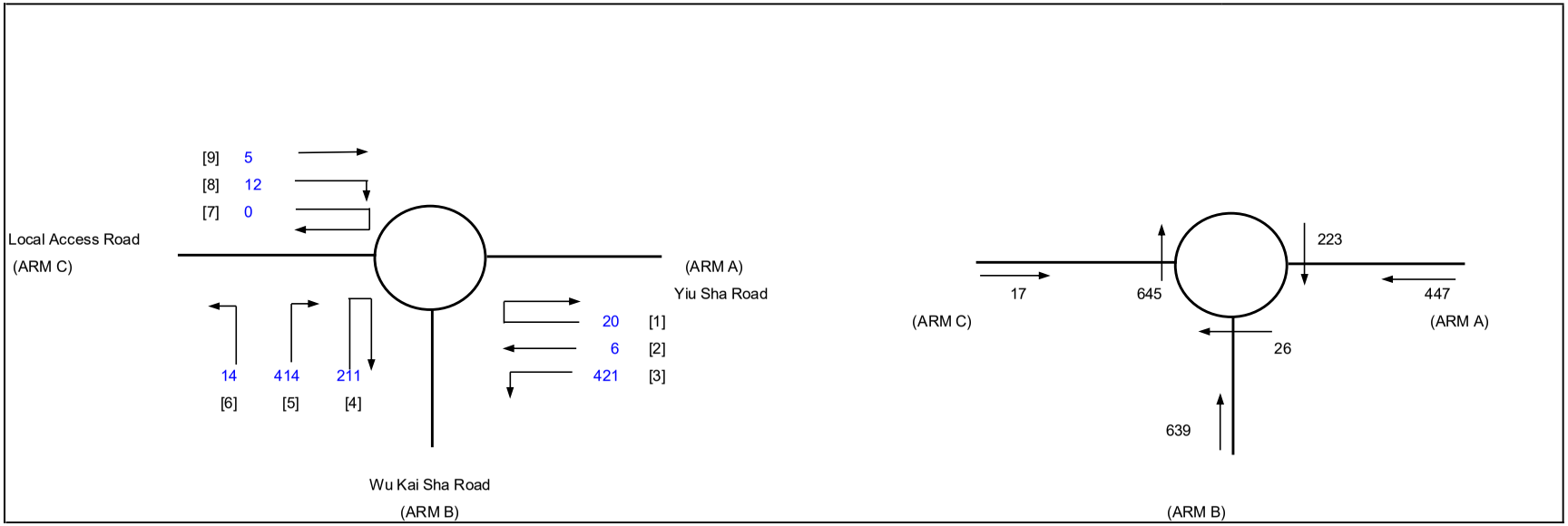


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	411	656	8
Qc	=	Circulating flow across entry (pcu/h)	225	23	660
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2733	2583	360
DFC	=	Design flow/Capacity = Q/Qe	0.15	0.25	0.02

Total In Sum = 1068 PCU

DFC of Critical Approach = 0.25

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**030 Reference Weeken**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

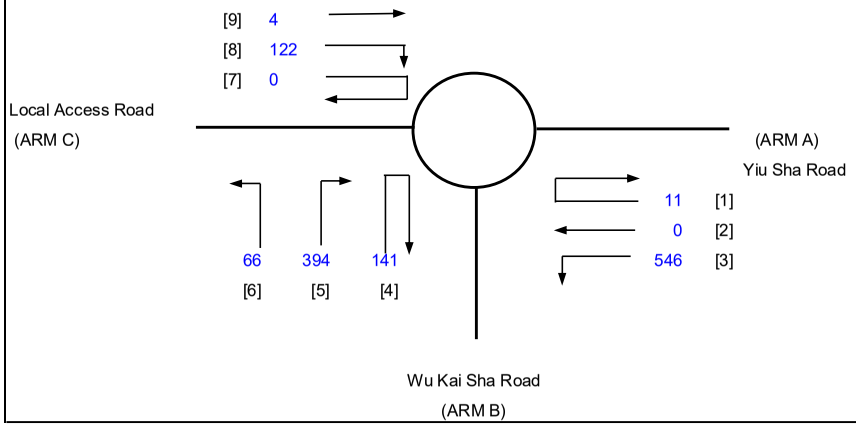


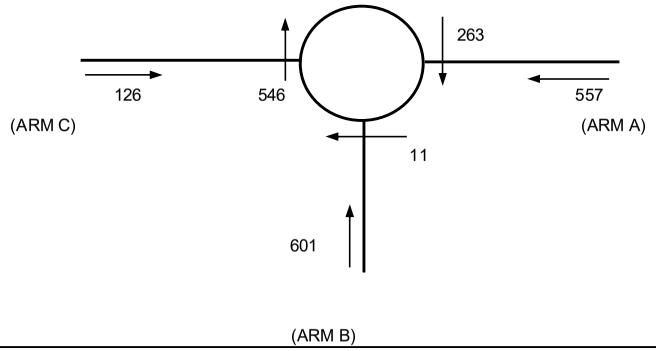
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	447	639	17
Qc	=	Circulating flow across entry (pcu/h)	223	26	645
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2734	2580	366
DFC	=	Design flow/Capacity = Q/Qe	0.16	0.25	0.05

Total In Sum = 1092 PCU

DFC of Critical Approach = 0.25

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



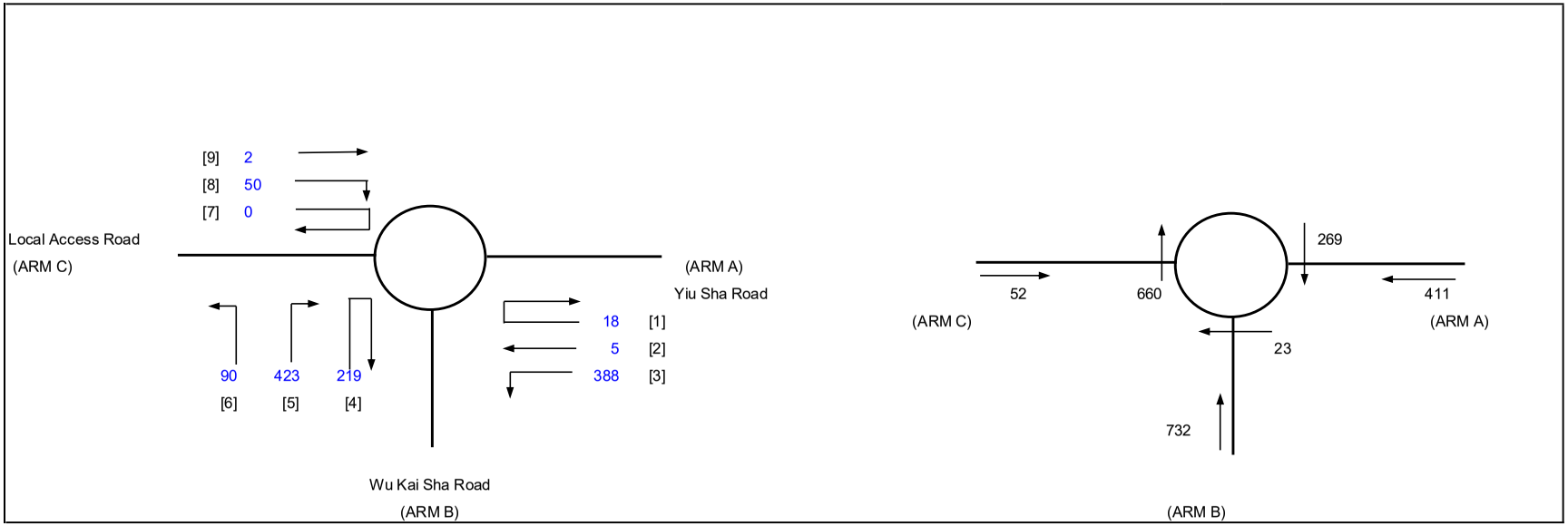


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	3.65
E	=	Entry width (m)	10.00	9.00	6.60
L	=	Effective length of flare (m)	12.50	11.00	12.00
R	=	Entry radius (m)	35.00	35.00	64.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	32.00
Q	=	Entry flow (pcu/h)	557	601	126
Qc	=	Circulating flow across entry (pcu/h)	263	11	546
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.39
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	1.03
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	5.30
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	1606
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.61
Qe	=	K(F-Fc*Qc)	2699	2592	1306
DFC	=	Design flow/Capacity = Q/Qe	0.21	0.23	0.10

Total In Sum = 1280 PCU

DFC of Critical Approach = 0.23

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

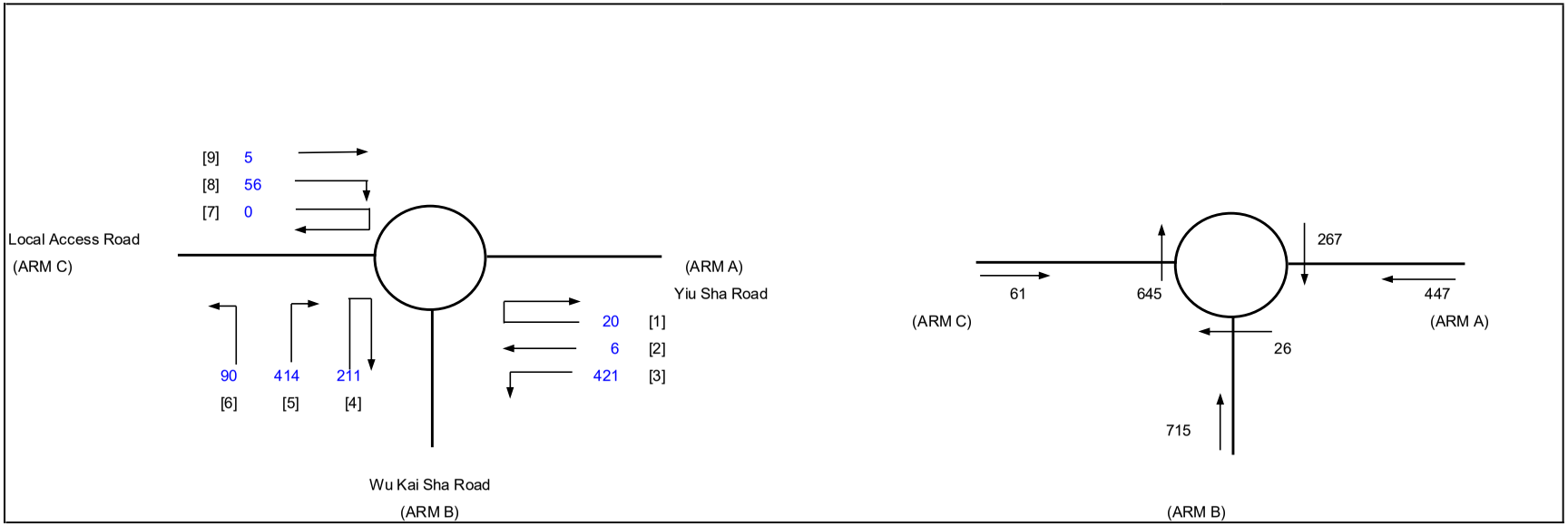


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	3.65
E	=	Entry width (m)	10.00	9.00	6.60
L	=	Effective length of flare (m)	12.50	11.00	12.00
R	=	Entry radius (m)	35.00	35.00	64.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	32.00
Q	=	Entry flow (pcu/h)	411	732	52
Qc	=	Circulating flow across entry (pcu/h)	269	23	660
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.39
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	1.03
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	5.30
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	1606
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.61
Qe	=	K(F-Fc*Qc)	2693	2583	1234
DFC	=	Design flow/Capacity = Q/Qe	0.15	0.28	0.04

Total In Sum = 1188 PCU

DFC of Critical Approach = 0.28

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

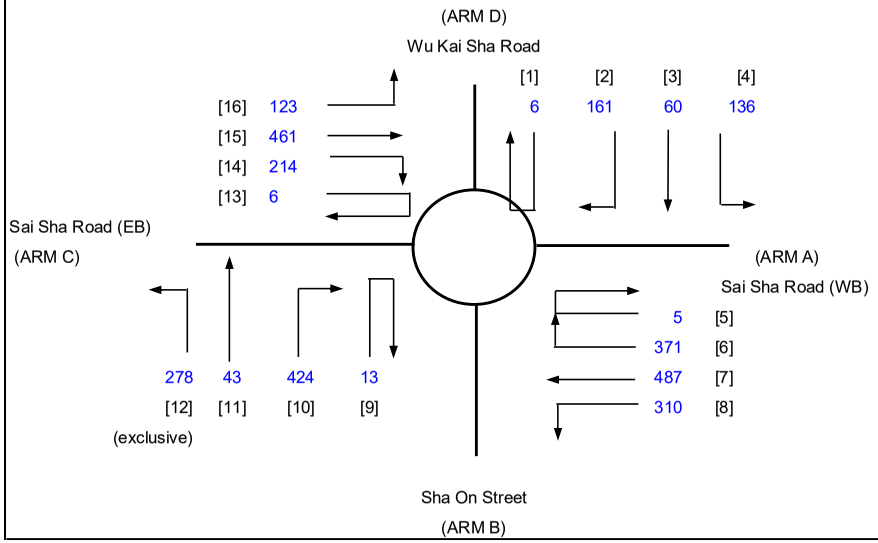


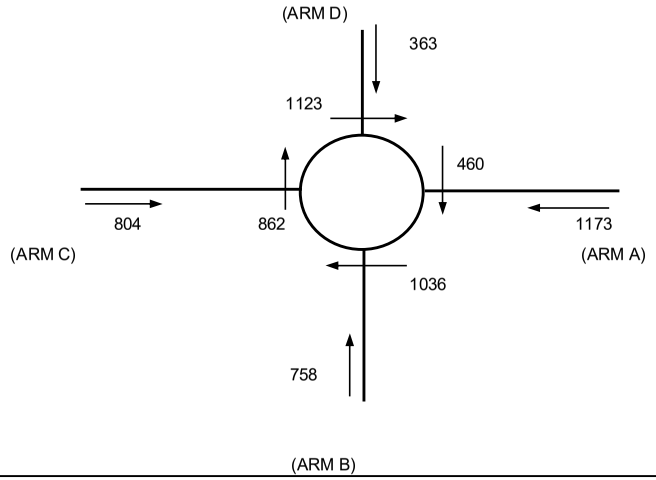
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	3.65
E	=	Entry width (m)	10.00	9.00	6.60
L	=	Effective length of flare (m)	12.50	11.00	12.00
R	=	Entry radius (m)	35.00	35.00	64.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	32.00
Q	=	Entry flow (pcu/h)	447	715	61
Qc	=	Circulating flow across entry (pcu/h)	267	26	645
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.39
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	1.03
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	5.30
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	1606
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.61
Qe	=	K(F-Fc*Qc)	2695	2580	1243
DFC	=	Design flow/Capacity = Q/Qe	0.17	0.28	0.05

Total In Sum = 1212 PCU

DFC of Critical Approach = 0.28

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Reference AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



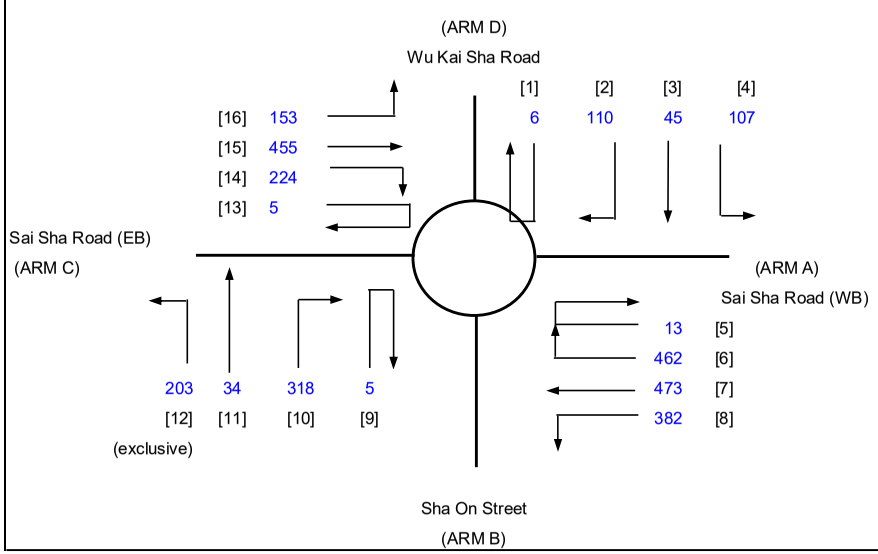


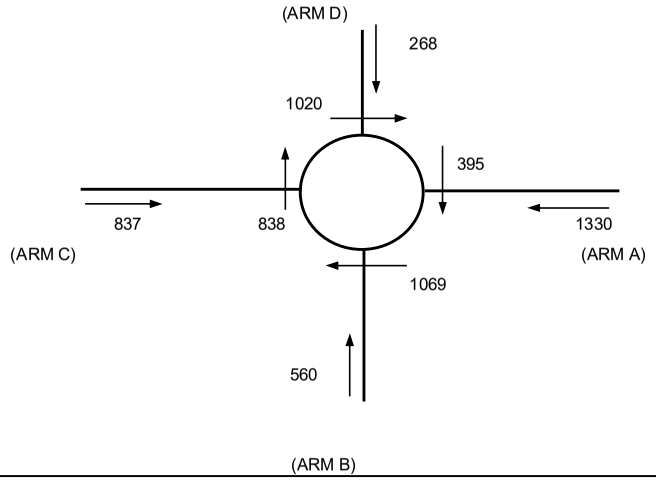
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1173	758	804	363
Qc	=	Circulating flow across entry (pcu/h)	460	1036	862	1123
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	2965	2031	2246	1809
DFC	=	Design flow/Capacity = Q/Qe	0.40	0.37	0.36	0.20

Total In Sum = 1556 PCU

DFC of Critical Approach = 0.40

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Reference PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



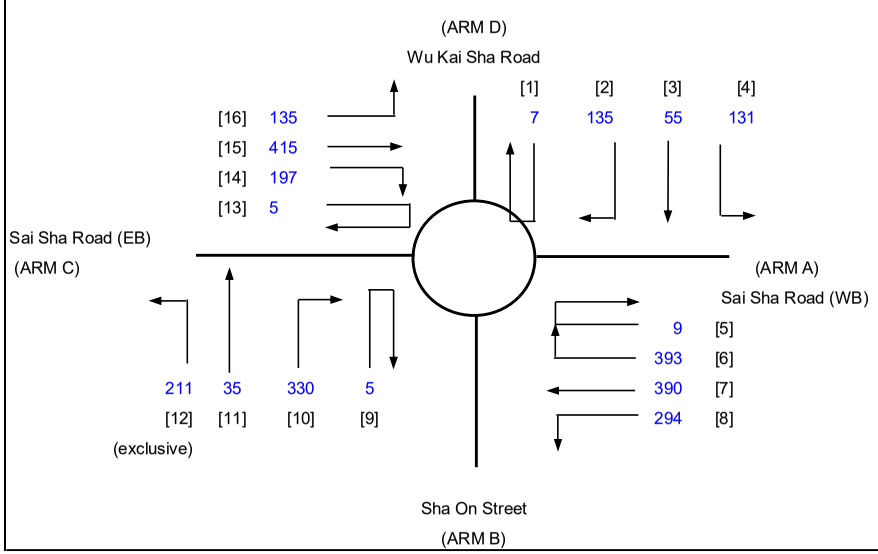


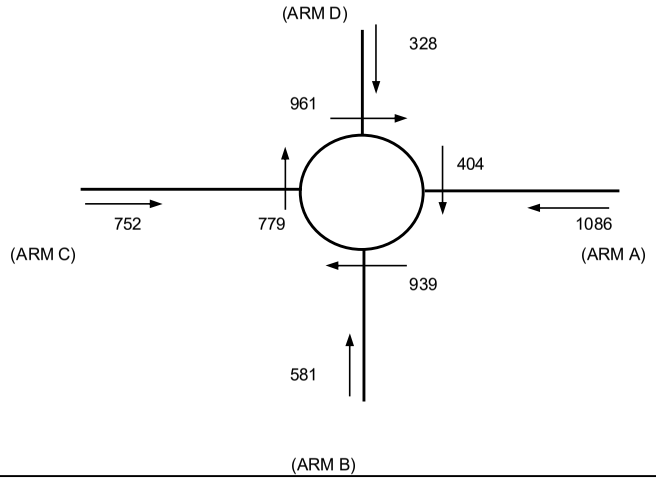
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1330	560	837	268
Qc	=	Circulating flow across entry (pcu/h)	395	1069	838	1020
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3010	2012	2261	1867
DFC	=	Design flow/Capacity = Q/Qe	0.44	0.28	0.37	0.14

Total In Sum = 1494 PCU

DFC of Critical Approach = 0.44

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**030 Reference Weeken**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



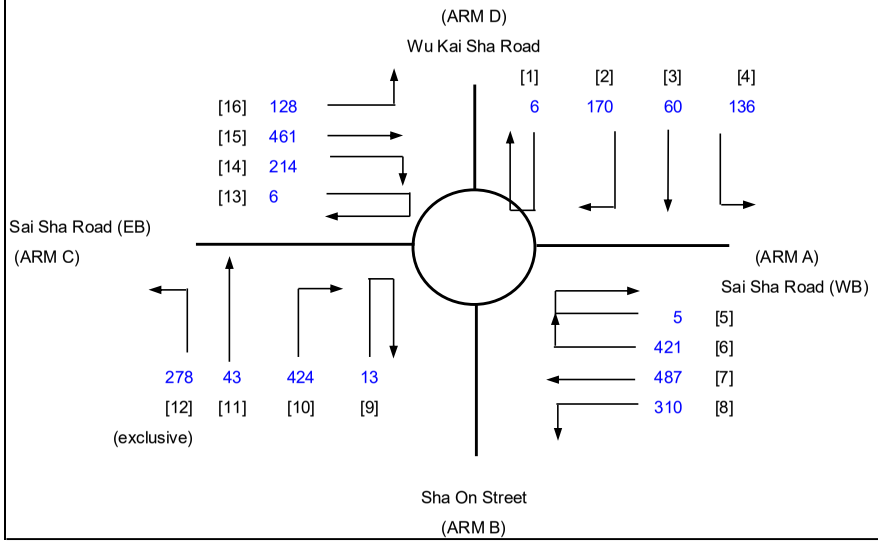


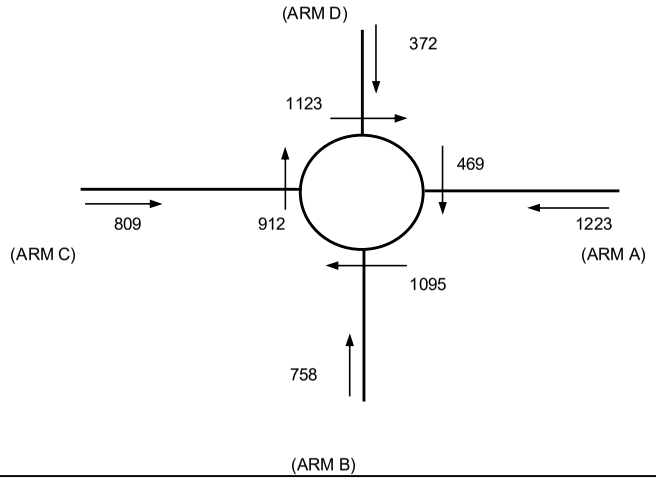
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1086	581	752	328
Qc	=	Circulating flow across entry (pcu/h)	404	939	779	961
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3004	2088	2298	1900
DFC	=	Design flow/Capacity = Q/Qe	0.36	0.28	0.33	0.17

Total In Sum = 1315 PCU

DFC of Critical Approach = 0.36

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



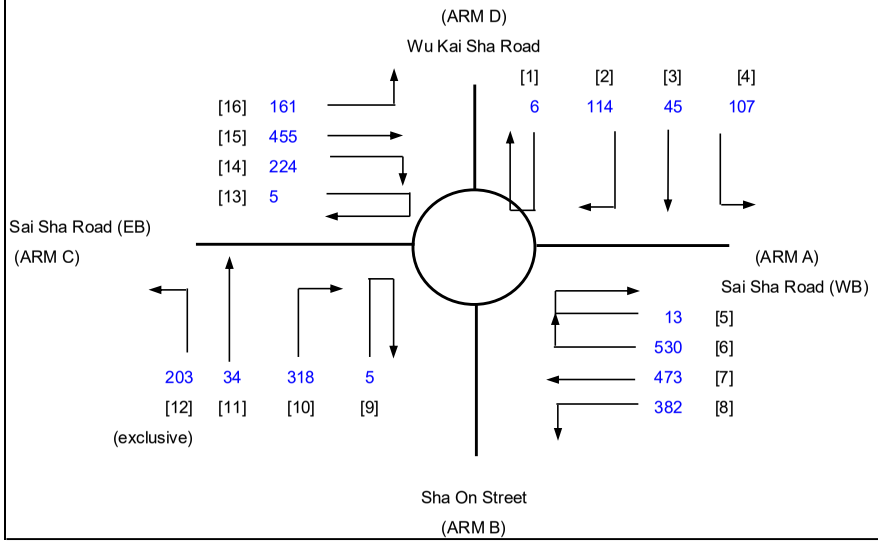


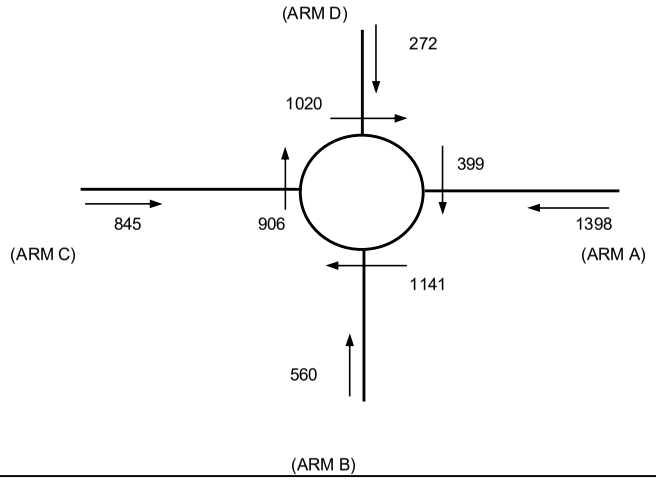
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1223	758	809	372
Qc	=	Circulating flow across entry (pcu/h)	469	1095	912	1123
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	2959	1996	2215	1809
DFC	=	Design flow/Capacity = Q/Qe	0.41	0.38	0.37	0.21

Total In Sum = 1556 PCU

DFC of Critical Approach = 0.41

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



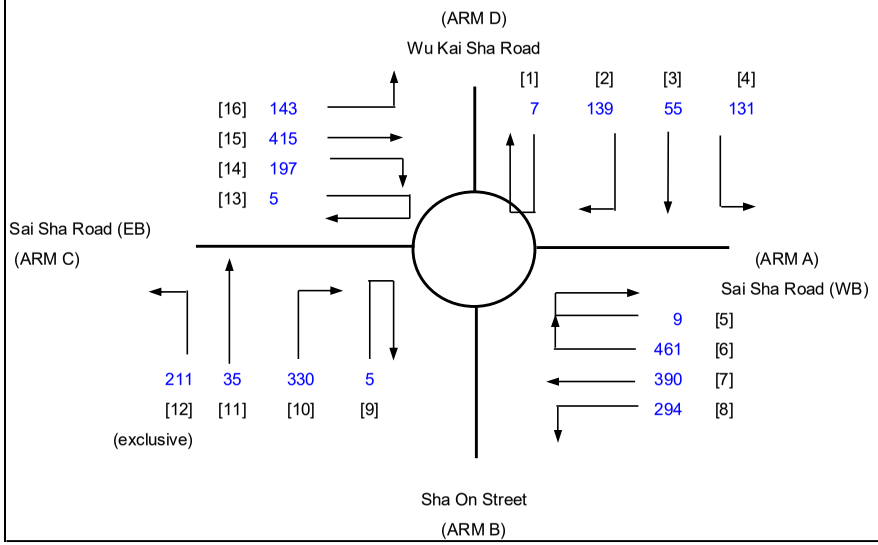


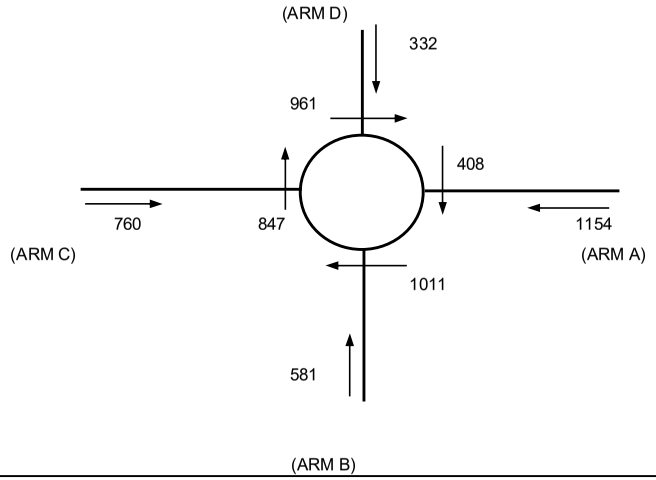
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1398	560	845	272
Qc	=	Circulating flow across entry (pcu/h)	399	1141	906	1020
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3007	1969	2219	1867
DFC	=	Design flow/Capacity = Q/Qe	0.46	0.28	0.38	0.15

Total In Sum = 1494 PCU

DFC of Critical Approach = 0.46

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2030 Design Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24





ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1154	581	760	332
Qc	=	Circulating flow across entry (pcu/h)	408	1011	847	961
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3001	2046	2255	1900
DFC	=	Design flow/Capacity = Q/Qe	0.38	0.28	0.34	0.17

Total In Sum = 1315 PCU

DFC of Critical Approach = 0.38

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

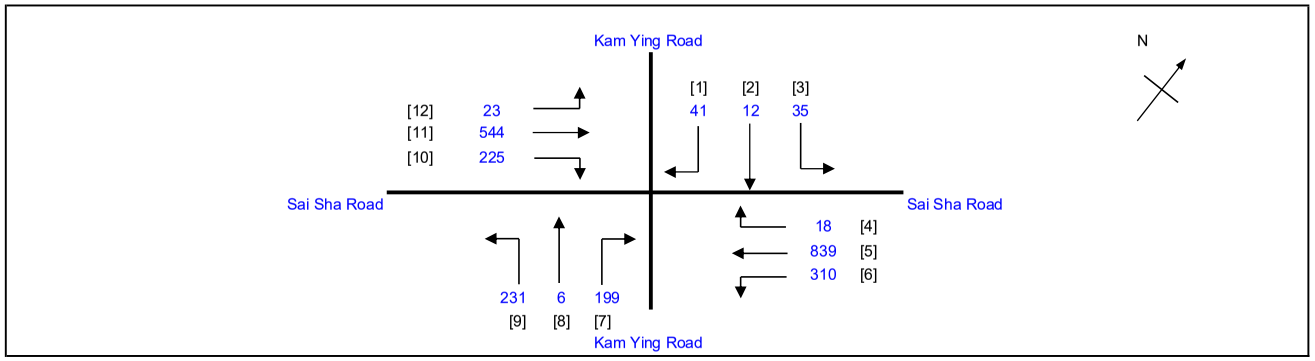
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

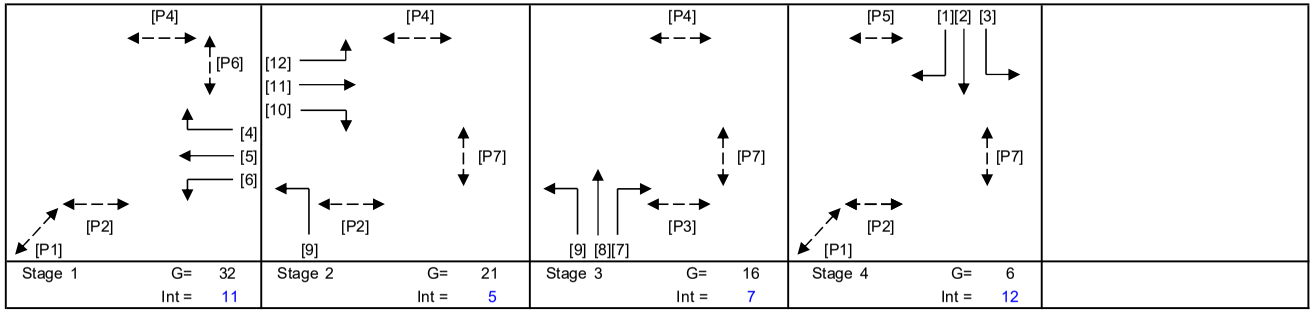
J3 Sai Sha Road / Kam Ying Road

2030 Reference AM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.483
Loss time		L =	31 sec
Total Flow		=	2483 pcu
Co	= (1.5*L+5)/(1-Y)	=	99.6 sec
Cm	= L/(1-Y)	=	60.0 sec
Yult		=	0.668
R.C.ult	= (Yult-Y)/Y*100%	=	38.2 %
Cp	= 0.9*L/(0.9-Y)	=	66.9 sec
Ymax	= 1-L/C	=	0.718
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**34 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	53	6
P2	1,2,4	5	5	0	82	5
P3	3	5	8	7	8	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	31	7
P7	2,3,4	5	12	0	55	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	310			310	1.00	1786							1786	0.174			28	33	0.673	42	40
5	1	3.50	2				4210		839		839	0.00	4210							4210	0.199	0.199		33	33	0.673	54	33
4	1	3.50	1	25			2105			18	18	1.00	1986							1986	0.009			1	33	0.673	6	173
11,12	2	4.00	1	15		N	2015	23	250		273	0.08	1998							1998	0.137	0.137		22	22	0.673	36	45
11	2	4.00	1				2155		294		294	0.00	2155							2155	0.136			22	22	0.673	42	44
10	2	3.50	1	25			2105			225	225	1.00	1986							1986	0.113			19	22	0.673	30	49
9	2,3	4.50	1	25		N	2065	231			231	1.00	1948							1948	0.119			19	39	0.673	30	48
7,8	3	3.50	1	25			2105		6	199	205	0.97	1989							1989	0.103	0.103		17	17	0.673	30	51
1,2,3	4	5.50	1	15		N	2165	35	12	41	88	0.86	1993							1993	0.044	0.044		7	7	0.673	12	71

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

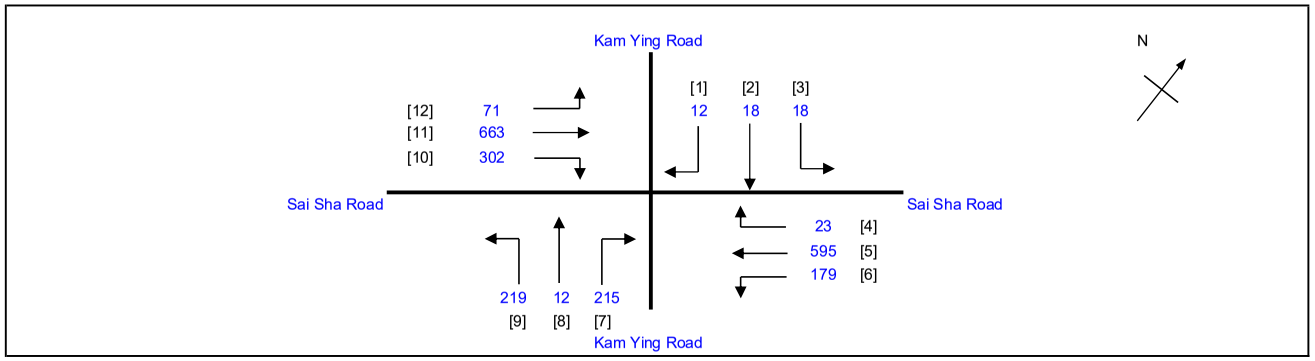
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

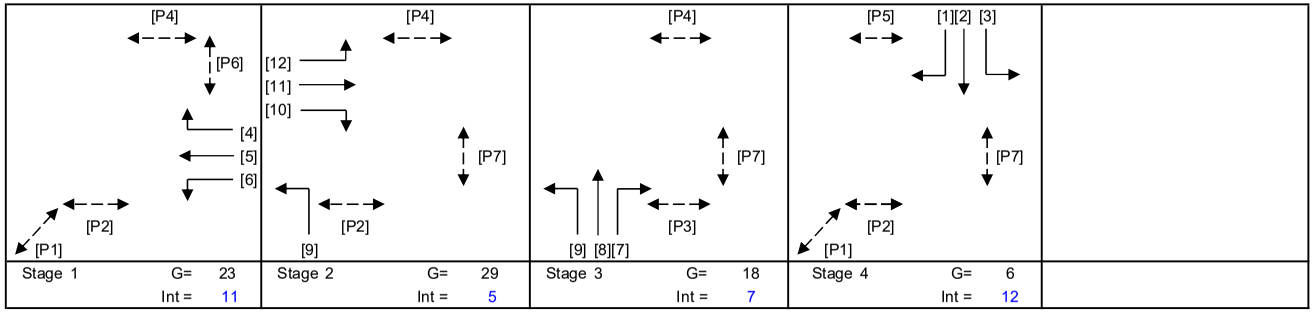
J3 Sai Sha Road / Kam Ying Road

2030 Reference PM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.457
Loss time		L =	34 sec
Total Flow		=	2327 pcu
Co	= (1.5*L+5)/(1-Y)	=	103.1 sec
Cm	= L/(1-Y)	=	62.6 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	41.3 %
Cp	= 0.9*L/(0.9-Y)	=	69.0 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**36 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	22	7
P7	2,3,4	5	12	0	64	12

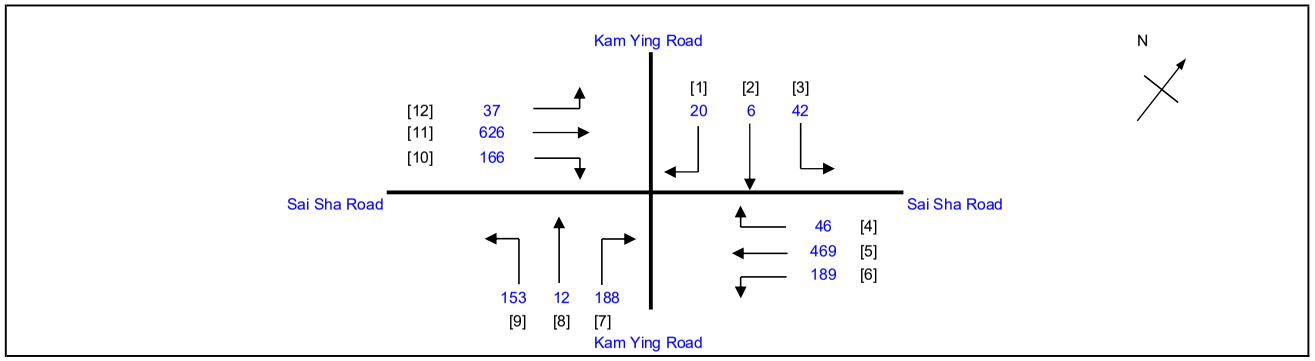
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	179			179	1.00	1786							1786	0.100			17	24	0.661	24	51
5	1	3.50	2				4210		595		595	0.00	4210							4210	0.141	0.141		24	24	0.661	42	39
4	1	3.50	1	25			2105			23	23	1.00	1986							1986	0.012			2	24	0.661	6	139
11,12	2	4.00	1	15		N	2015	71	280		351	0.20	1975							1975	0.178			30	30	0.661	42	38
11	2	4.00	1				2155		383		383	0.00	2155							2155	0.178	0.178		30	30	0.661	48	38
10	2	3.50	1	25			2105			302	302	1.00	1986							1986	0.152			25	30	0.661	42	42
9	2,3	4.50	1	25		N	2065	219			219	1.00	1948							1948	0.112			19	49	0.661	30	48
7,8	3	3.50	1	25			2105		12	215	227	0.95	1992							1992	0.114	0.114		19	19	0.661	30	47
1,2,3	4	5.50	1	15		N	2165	18	18	12	48	0.63	2038							2038	0.024	0.024	3	4	7	0.661	6	91

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

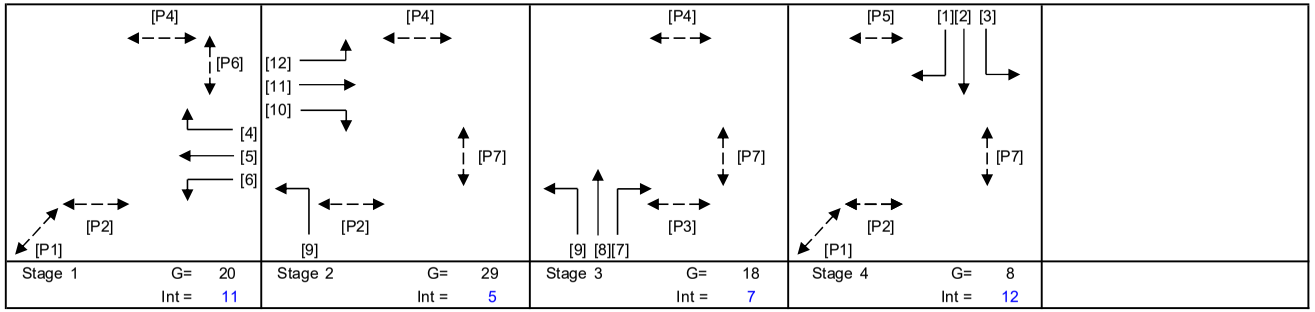
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
J3 Sai Sha Road / Kam Ying Road	**2030 Reference Weekend**	PROJECT NO.: 40830	Prepared By: SKL Jan-24
		FILENAME : J3_SSR_KYR.xlsx	Checked By: SLN Jan-24
			Reviewed By: SLN Jan-24



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.406
Loss time	L =	34 sec
Total Flow	=	1954 pcu
Co = (1.5*L+5)/(1-Y)	=	94.3 sec
Cm = L/(1-Y)	=	57.3 sec
Yult	=	0.645
R.C.ult = (Yult-Y)/Y*100%	=	58.8 %
Cp = 0.9*L/(0.9-Y)	=	62.0 sec
Ymax = 1-L/C	=	0.691
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**53 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	85	5
P5	4	5	6	6	8	6
P6	1	5	7	5	19	7
P7	2,3,4	5	12	0	67	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	189			189	1.00	1786							1786	0.106			20	21	0.588	24	44
5	1	3.50	2				4210		469		469	0.00	4210							4210	0.111	0.111		21	21	0.588	33	39
4	1	3.50	1	25			2105			46	46	1.00	1986							1986	0.023			4	21	0.588	6	76
11,12	2	4.00	1	15		N	2015	37	282		319	0.12	1992							1992	0.160	0.160		30	30	0.588	42	35
11	2	4.00	1				2155		344		344	0.00	2155							2155	0.160			30	30	0.588	42	35
10	2	3.50	1	25			2105			166	166	1.00	1986							1986	0.084			16	30	0.588	24	48
9	2,3	4.50	1	25		N	2065	153			153	1.00	1948							1948	0.079			15	49	0.588	24	49
7,8	3	3.50	1	25			2105		12	188	200	0.94	1993							1993	0.100	0.100		19	19	0.588	30	45
1,2,3	4	5.50	1	15		N	2165	42	6	20	68	0.91	1984							1984	0.034	0.034	3	6	9	0.588	12	65

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

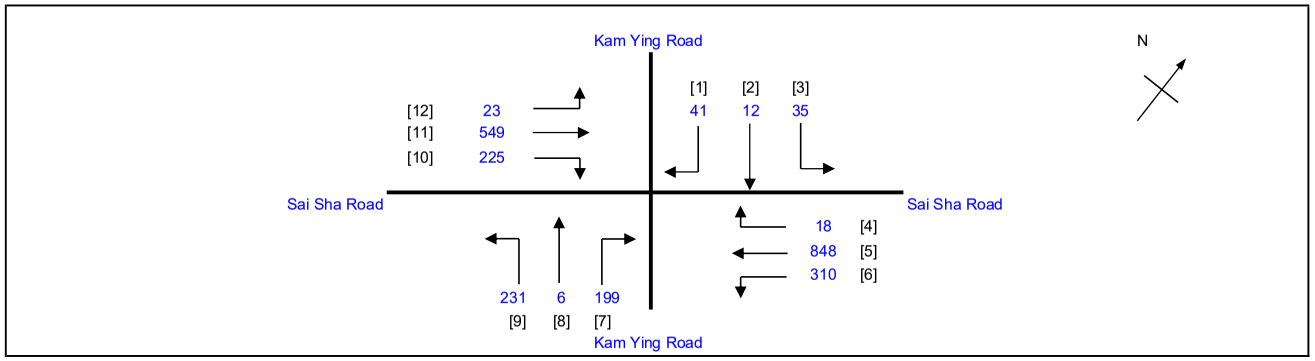
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

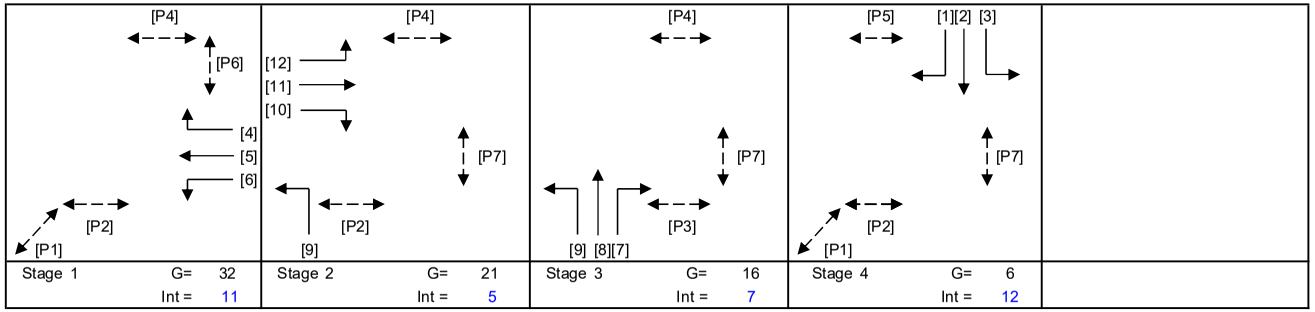
J3 Sai Sha Road / Kam Ying Road

2030 Design AM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.486
Loss time		L =	31 sec
Total Flow		=	2497 pcu
Co	= (1.5*L+5)/(1-Y)	=	100.3 sec
Cm	= L/(1-Y)	=	60.4 sec
Yult		=	0.668
R.C.ult	= (Yult-Y)/Y*100%	=	37.2 %
Cp	= 0.9*L/(0.9-Y)	=	67.5 sec
Ymax	= 1-L/C	=	0.718
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**33 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	53	6
P2	1,2,4	5	5	0	82	5
P3	3	5	8	7	8	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	31	7
P7	2,3,4	5	12	0	55	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	310			310	1.00	1786							1786	0.174			28	33	0.677	42	41
5	1	3.50	2				4210		848		848	0.00	4210							4210	0.201	0.201		33	33	0.677	54	33
4	1	3.50	1	25			2105			18	18	1.00	1986							1986	0.009			1	33	0.677	6	177
11,12	2	4.00	1	15		N	2015	23	252		275	0.08	1998							1998	0.138			22	22	0.677	36	45
11	2	4.00	1				2155		297		297	0.00	2155							2155	0.138	0.138		22	22	0.677	42	44
10	2	3.50	1	25			2105			225	225	1.00	1986							1986	0.113			18	22	0.677	30	49
9	2,3	4.50	1	25		N	2065	231			231	1.00	1948							1948	0.119			19	39	0.677	36	48
7,8	3	3.50	1	25			2105		6	199	205	0.97	1989							1989	0.103	0.103		17	17	0.677	30	51
1,2,3	4	5.50	1	15		N	2165	35	12	41	88	0.86	1993							1993	0.044	0.044		7	7	0.677	18	71

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

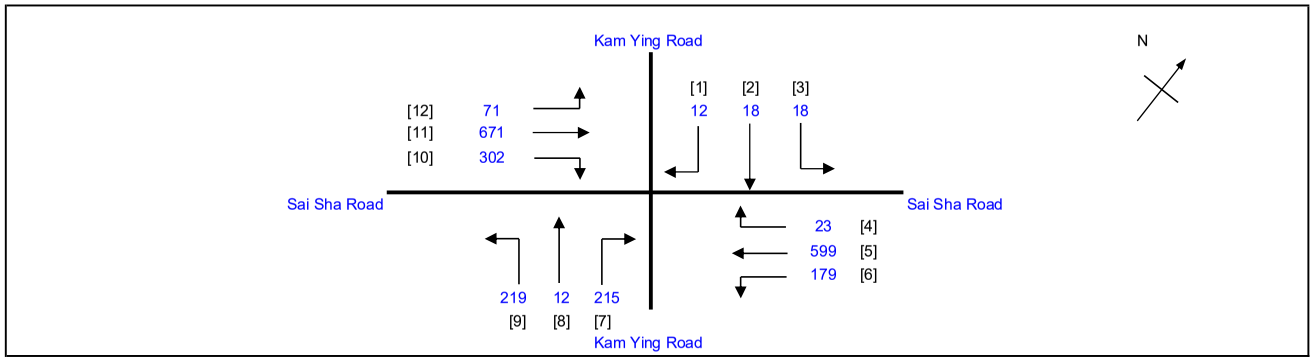
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

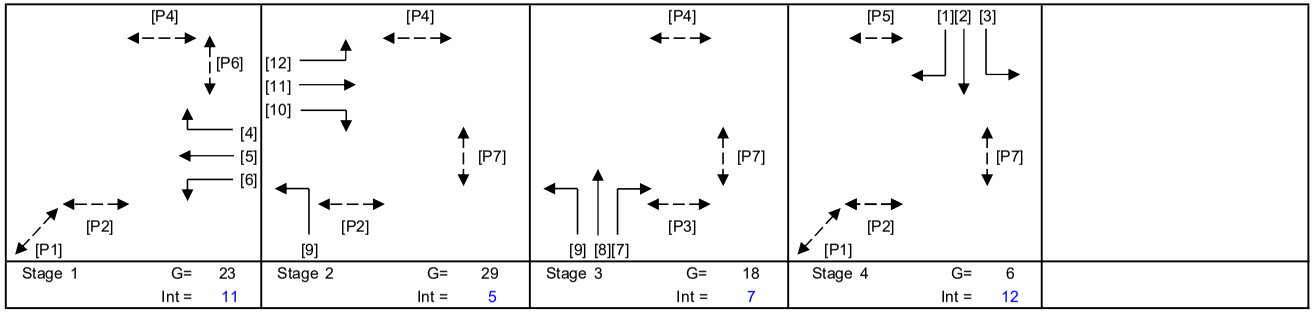
J3 Sai Sha Road / Kam Ying Road

2030 Design PM

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.460
Loss time		L =	34 sec
Total Flow		=	2339 pcu
Co	= (1.5*L+5)/(1-Y)	=	103.6 sec
Cm	= L/(1-Y)	=	62.9 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	40.4 %
Cp	= 0.9*L/(0.9-Y)	=	69.5 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**35 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	22	7
P7	2,3,4	5	12	0	64	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	179			179	1.00	1786							1786	0.100			17	24	0.665	24	52
5	1	3.50	2				4210		599		599	0.00	4210							4210	0.142	0.142		24	24	0.665	42	39
4	1	3.50	1	25			2105			23	23	1.00	1986							1986	0.012			2	24	0.665	6	141
11,12	2	4.00	1	15		N	2015	71	284		355	0.20	1975							1975	0.180	0.180		30	30	0.665	42	38
11	2	4.00	1				2155		387		387	0.00	2155							2155	0.180			30	30	0.665	48	38
10	2	3.50	1	25			2105			302	302	1.00	1986							1986	0.152			25	30	0.665	42	42
9	2,3	4.50	1	25		N	2065	219			219	1.00	1948							1948	0.112			19	49	0.665	30	48
7,8	3	3.50	1	25			2105		12	215	227	0.95	1992							1992	0.114	0.114		19	19	0.665	30	48
1,2,3	4	5.50	1	15		N	2165	18	18	12	48	0.63	2038							2038	0.024	0.024	3	4	7	0.665	6	92

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

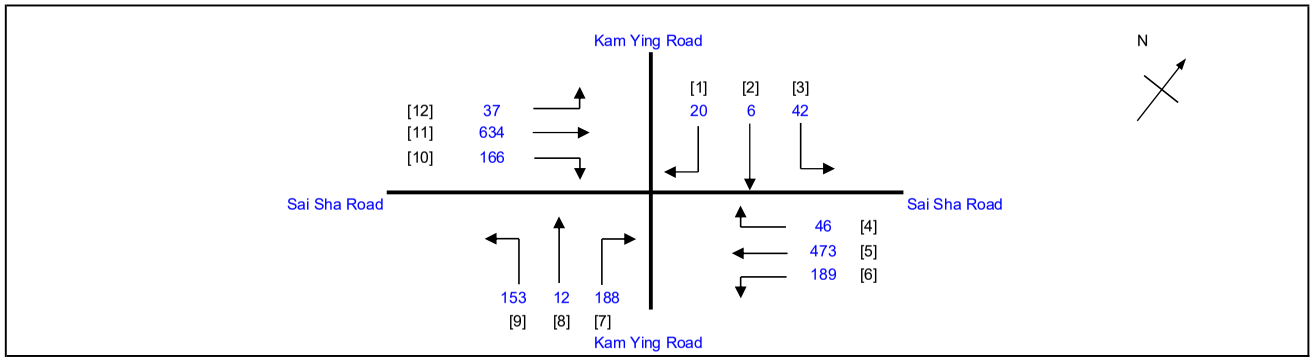
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

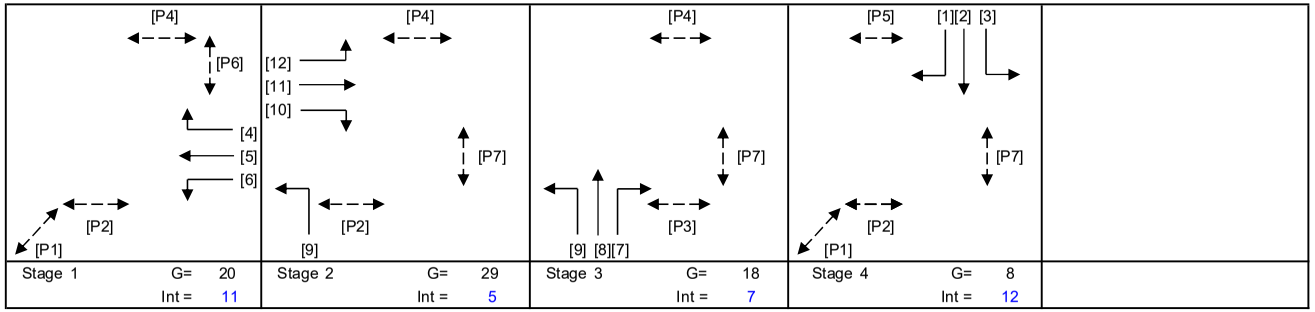
J3 Sai Sha Road / Kam Ying Road

2030 Design Weekend

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.409
Loss time		L =	34 sec
Total Flow		=	1966 pcu
Co	= (1.5*L+5)/(1-Y)	=	94.7 sec
Cm	= L/(1-Y)	=	57.5 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	57.7 %
Cp	= 0.9*L/(0.9-Y)	=	62.3 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**52 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	85	5
P5	4	5	6	6	8	6
P6	1	5	7	5	19	7
P7	2,3,4	5	12	0	67	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	189			189	1.00	1786							1786	0.106			20	21	0.592	24	45
5	1	3.50	2				4210		473		473	0.00	4210							4210	0.112	0.112		21	21	0.592	33	40
4	1	3.50	1	25			2105			46	46	1.00	1986							1986	0.023			4	21	0.592	6	77
11,12	2	4.00	1	15		N	2015	37	285		322	0.11	1992							1992	0.162			30	30	0.592	42	36
11	2	4.00	1				2155		349		349	0.00	2155							2155	0.162	0.162		30	30	0.592	42	35
10	2	3.50	1	25			2105			166	166	1.00	1986							1986	0.084			16	30	0.592	24	48
9	2,3	4.50	1	25		N	2065	153			153	1.00	1948							1948	0.079			15	49	0.592	24	49
7,8	3	3.50	1	25			2105		12	188	200	0.94	1993							1993	0.100	0.100		19	19	0.592	30	45
1,2,3	4	5.50	1	15		N	2165	42	6	20	68	0.91	1984							1984	0.034	0.034	3	6	9	0.592	12	66

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

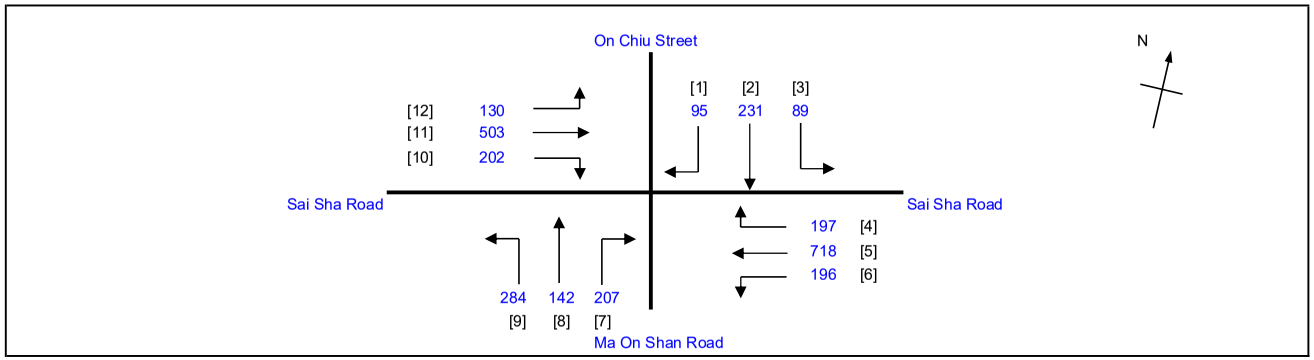
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

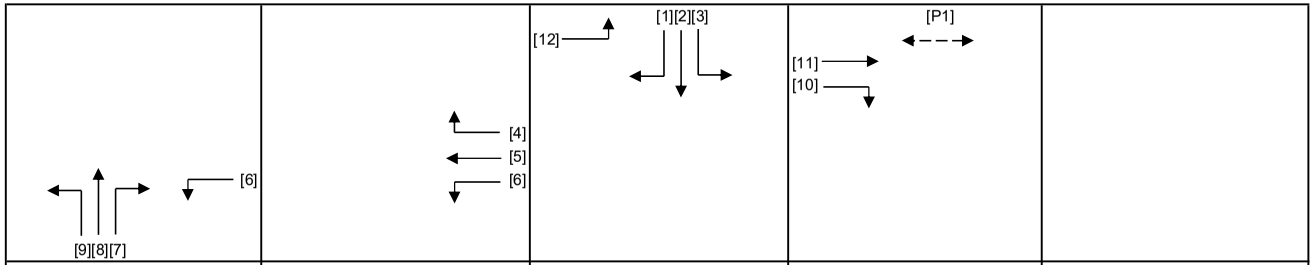
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2030 Reference AM

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.535
Loss time	L =	24 sec
Total Flow	=	2994 pcu
Co = (1.5*L+5)/(1-Y)	=	88.1 sec
Cm = L/(1-Y)	=	51.6 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	34.7 %
Cp = 0.9*L/(0.9-Y)	=	59.1 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**32 %**



Stage 1	G= 25	Int = 8
Stage 2	G= 26	Int = 6
Stage 3	G= 12	Int = 8
Stage 4	G= 19	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							23					
8,9	1	3.70	1	10		N	1985	284	0		284	1.00	1726							1726	0.165	0.165		26	26	0.684	36	43
7,8	1	3.70	1	30			2125		142	37	179	0.21	2103							2103	0.085			14	26	0.684	30	55
7	1	3.70	1	25			2125			170	170	1.00	2005							2005	0.085			14	26	0.684	24	56
6	1,2	3.75	1	15		N	1990	196			196	1.00	1809							1809	0.108			17	54	0.684	30	52
5	2	3.75	2				4260		718		718	0.00	4260							4260	0.169	0.169		27	27	0.684	48	37
4	2	3.75	1	25			2130			197	197	1.00	2009							2009	0.098			16	27	0.684	30	52
2,3	3	3.50	1	15		N	1965	89	61		150	0.59	1855							1855	0.081	0.081		13	13	0.684	24	58
1,2	3	3.50	1	30			2105		170	0	170	0.00	2105							2105	0.081			13	13	0.684	24	56
1	3	3.00	1	25			2055			95	95	1.00	1939							1939	0.049			8	13	0.684	18	70
12	3	3.30	1	10		N	1945	130			130	1.00	1691							1691	0.077			12	13	0.684	18	61
11	4	3.30	2				4170		503		503	0.00	4170							4170	0.121	0.121	1	19	20	0.684	36	43
10	4	3.30	1	25			2085			202	202	1.00	1967							1967	0.103			17	20	0.684	30	52

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

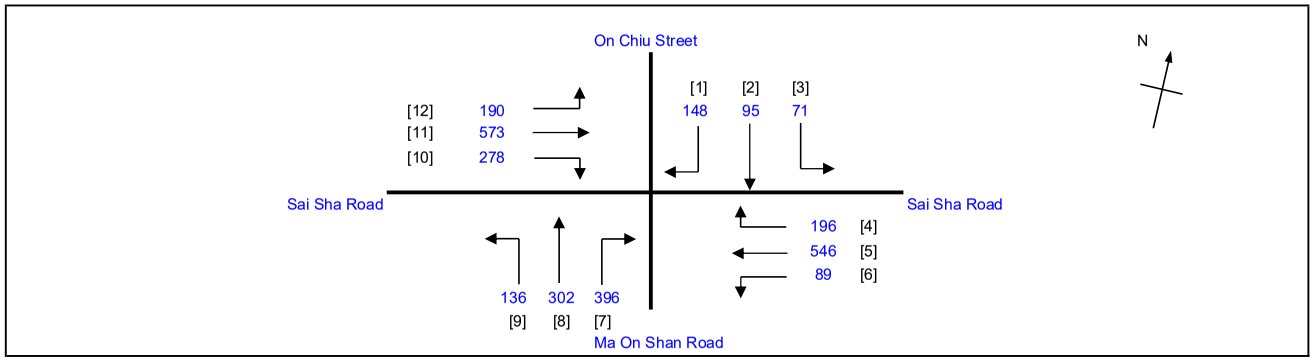
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

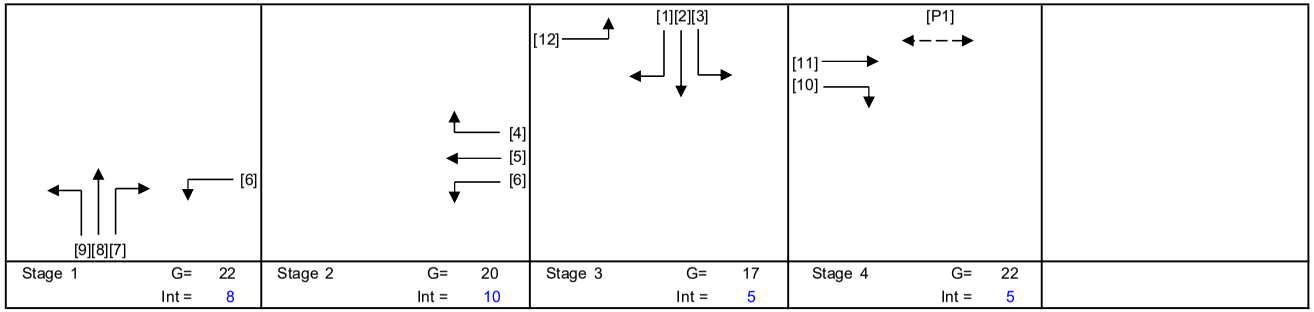
2030 Reference PM

PROJECT NO.: 40830

FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.523
Loss time		L =	24 sec
Total Flow		=	3020 pcu
Co	= (1.5*L+5)/(1-Y)	=	85.9 sec
Cm	= L/(1-Y)	=	50.3 sec
Yult		=	0.720
R.C.ult	= (Yult-Y)/Y*100%	=	37.8 %
Cp	= 0.9*L/(0.9-Y)	=	57.2 sec
Ymax	= 1-L/C	=	0.782
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**35 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	14	9

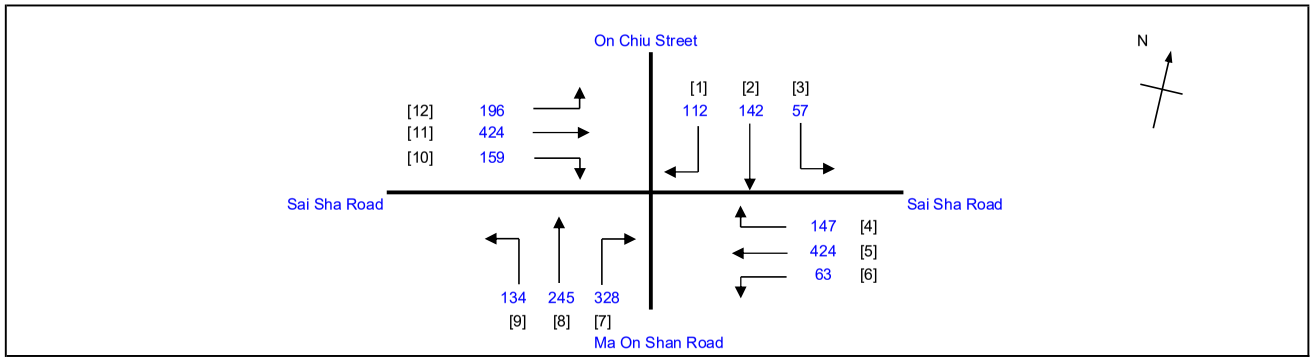
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	136	123		259	0.53	1840							1840	0.141	0.141		23	23	0.668	36	44
7,8	1	3.70	1	30			2125		179	114	293	0.39	2084							2084	0.141			23	23	0.668	42	43
7	1	3.70	1	25			2125			282	282	1.00	2005							2005	0.141			23	23	0.668	36	44
6	1,2	3.75	1	15		N	1990	89			89	1.00	1809							1809	0.049			8	44	0.668	12	69
5	2	3.75	2				4260		546		546	0.00	4260							4260	0.128	0.128		21	21	0.668	39	41
4	2	3.75	1	25			2130			196	196	1.00	2009							2009	0.098			16	21	0.668	30	51
2,3	3	3.50	1	15		N	1965	71	28		99	0.72	1834							1834	0.054			9	18	0.668	18	66
1,2	3	3.50	1	30			2105		67	44	111	0.40	2064							2064	0.054			9	18	0.668	18	64
1	3	3.00	1	25			2055			104	104	1.00	1939							1939	0.054			9	18	0.668	18	65
12	3	3.30	1	10		N	1945	190			190	1.00	1691							1691	0.112	0.112		18	18	0.668	30	50
11	4	3.30	2				4170		573		573	0.00	4170							4170	0.137			23	23	0.668	39	40
10	4	3.30	1	25			2085			278	278	1.00	1967							1967	0.141	0.141		23	23	0.668	36	44

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

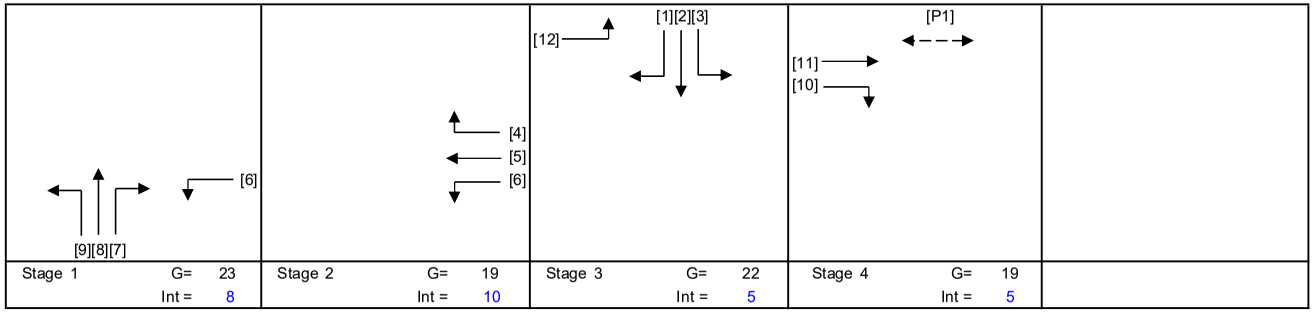
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
2030 Reference Weekend	PROJECT NO.: 40830	Prepared By:	SKL	Jan-24
	FILENAME : J4_SSR_MOSR_OCR.xlsx	Checked By:	SLN	Jan-24
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street		Reviewed By:	SLN	Jan-24



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.437
Loss time	L =	24 sec
Total Flow	=	2431 pcu
Co = (1.5*L+5)/(1-Y)	=	72.8 sec
Cm = L/(1-Y)	=	42.6 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	64.7 %
Cp = 0.9*L/(0.9-Y)	=	46.7 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**61 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	134	84		218	0.61	1817							1817	0.120	0.120		24	24	0.559	30	40
7,8	1	3.70	1	30			2125		161	88	249	0.35	2088							2088	0.119			23	24	0.559	30	39
7	1	3.70	1	25			2125			240	240	1.00	2005							2005	0.120			24	24	0.559	30	40
6	1,2	3.75	1	15		N	1990	63			63	1.00	1809							1809	0.035			7	43	0.559	12	63
5	2	3.75	2				4260		424		424	0.00	4260							4260	0.100	0.100		20	20	0.559	30	40
4	2	3.75	1	25			2130			147	147	1.00	2009							2009	0.073			14	20	0.559	18	48
2,3	3	3.50	1	15		N	1965	57	41		98	0.58	1857							1857	0.053			10	23	0.559	12	55
1,2	3	3.50	1	30			2105		101	10	111	0.09	2096							2096	0.053			10	23	0.559	18	53
1	3	3.00	1	25			2055			102	102	1.00	1939							1939	0.053			10	23	0.559	12	54
12	3	3.30	1	10		N	1945	196			196	1.00	1691							1691	0.116	0.116		23	23	0.559	24	41
11	4	3.30	2				4170		424		424	0.00	4170							4170	0.102	0.102		20	20	0.559	30	40
10	4	3.30	1	25			2085			159	159	1.00	1967							1967	0.081			16	20	0.559	24	47

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

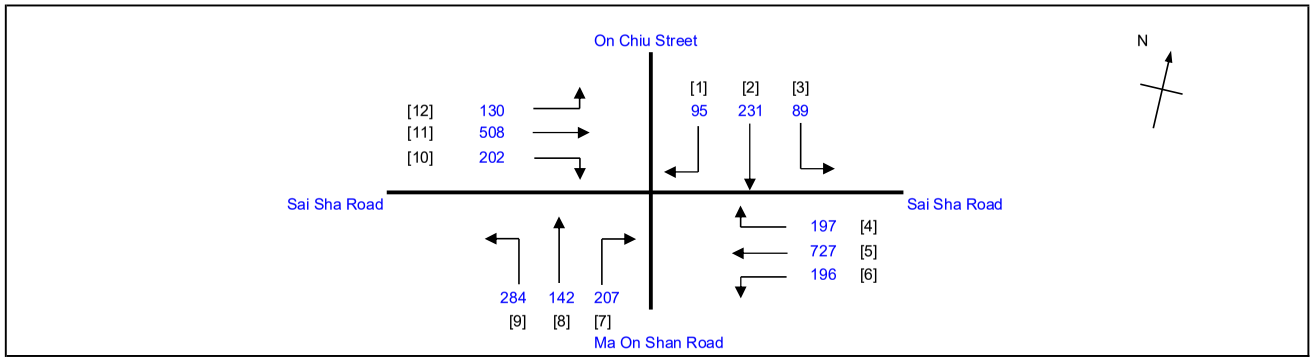
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

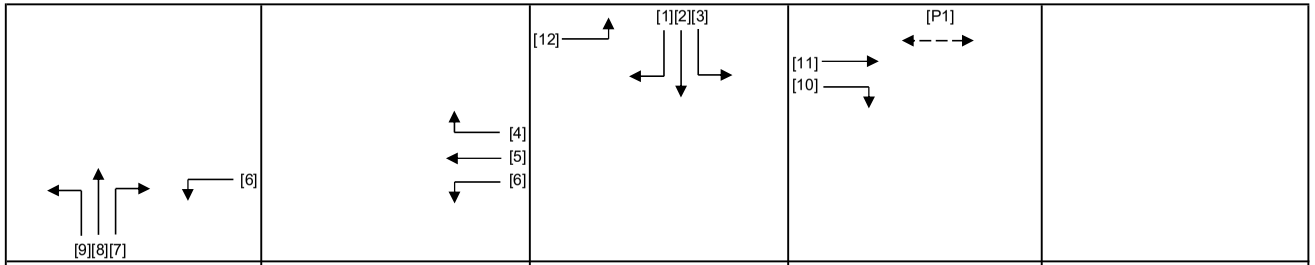
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2030 Design AM

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.538
Loss time	L =	24 sec
Total Flow	=	3008 pcu
Co = (1.5*L+5)/(1-Y)	=	88.7 sec
Cm = L/(1-Y)	=	51.9 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	33.9 %
Cp = 0.9*L/(0.9-Y)	=	59.6 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**31 %**



Stage 1	G= 25	Int = 8
Stage 2	G= 26	Int = 6
Stage 3	G= 12	Int = 8
Stage 4	G= 19	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							23					
8,9	1	3.70	1	10		N	1985	284	0		284	1.00	1726							1726	0.165	0.165		26	26	0.688	36	43
7,8	1	3.70	1	30			2125		142	37	179	0.21	2103							2103	0.085			14	26	0.688	30	55
7	1	3.70	1	25			2125			170	170	1.00	2005							2005	0.085			14	26	0.688	24	56
6	1,2	3.75	1	15		N	1990	196			196	1.00	1809							1809	0.108			17	54	0.688	30	52
5	2	3.75	2				4260		727		727	0.00	4260							4260	0.171	0.171		27	27	0.688	48	37
4	2	3.75	1	25			2130			197	197	1.00	2009							2009	0.098			16	27	0.688	30	53
2,3	3	3.50	1	15		N	1965	89	61		150	0.59	1855							1855	0.081	0.081		13	13	0.688	24	58
1,2	3	3.50	1	30			2105		170	0	170	0.00	2105							2105	0.081			13	13	0.688	24	56
1	3	3.00	1	25			2055			95	95	1.00	1939							1939	0.049			8	13	0.688	18	71
12	3	3.30	1	10		N	1945	130			130	1.00	1691							1691	0.077			12	13	0.688	18	61
11	4	3.30	2				4170		508		508	0.00	4170							4170	0.122	0.122	1	19	20	0.688	36	43
10	4	3.30	1	25			2085			202	202	1.00	1967							1967	0.103			16	20	0.688	30	52

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

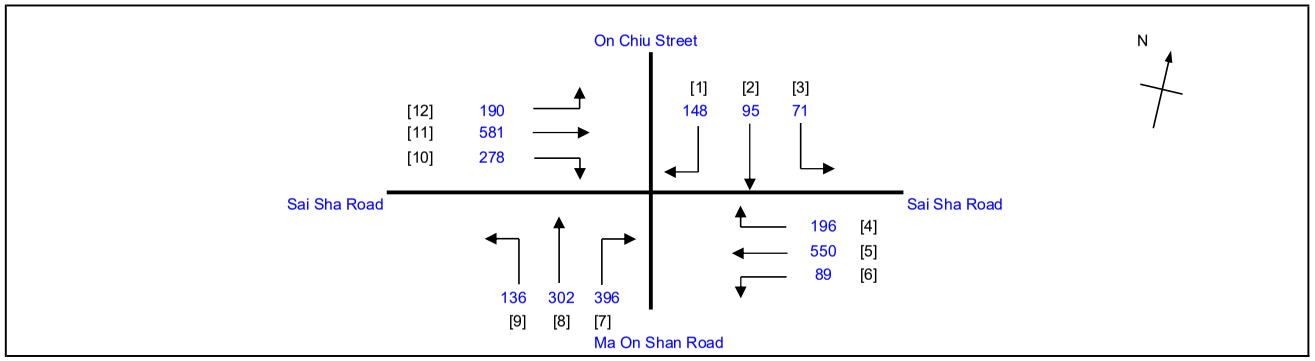
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

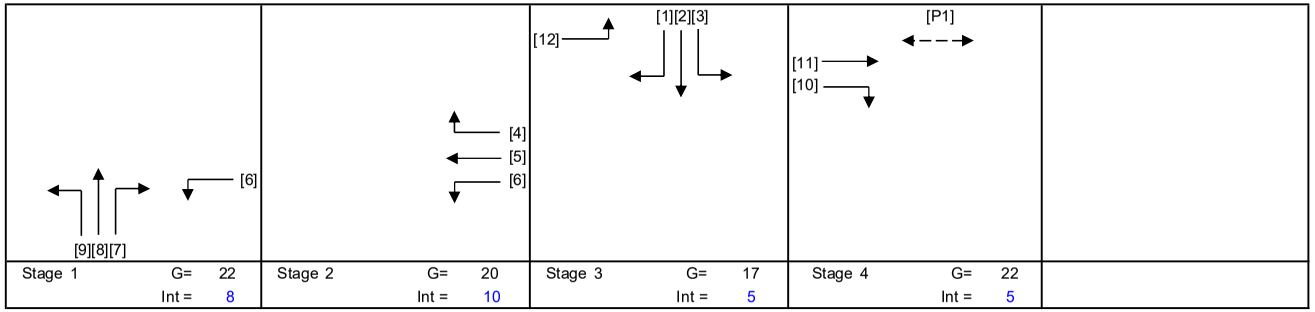
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2030 Design PM

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.524
Loss time	L =	24 sec
Total Flow	=	3032 pcu
Co = (1.5*L+5)/(1-Y)	=	86.1 sec
Cm = L/(1-Y)	=	50.4 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	37.5 %
Cp = 0.9*L/(0.9-Y)	=	57.4 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**34 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	14	9

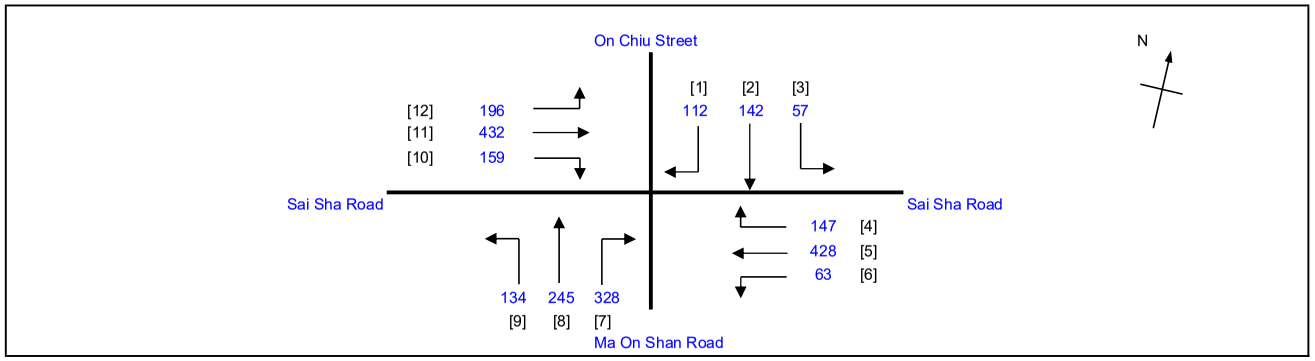
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	136	123		259	0.53	1840							1840	0.141	0.141		23	23	0.670	36	44
7,8	1	3.70	1	30			2125		179	114	293	0.39	2084							2084	0.141			23	23	0.670	42	43
7	1	3.70	1	25			2125			282	282	1.00	2005							2005	0.141			23	23	0.670	36	44
6	1,2	3.75	1	15		N	1990	89			89	1.00	1809							1809	0.049			8	44	0.670	12	69
5	2	3.75	2				4260		550		550	0.00	4260							4260	0.129	0.129		21	21	0.670	39	41
4	2	3.75	1	25			2130			196	196	1.00	2009							2009	0.098			16	21	0.670	30	51
2,3	3	3.50	1	15		N	1965	71	28		99	0.72	1834							1834	0.054			9	18	0.670	18	66
1,2	3	3.50	1	30			2105		67	44	111	0.40	2064							2064	0.054			9	18	0.670	18	64
1	3	3.00	1	25			2055			104	104	1.00	1939							1939	0.054			9	18	0.670	18	65
12	3	3.30	1	10		N	1945	190			190	1.00	1691							1691	0.112	0.112		18	18	0.670	30	50
11	4	3.30	2				4170		581		581	0.00	4170							4170	0.139			23	23	0.670	42	40
10	4	3.30	1	25			2085			278	278	1.00	1967							1967	0.141	0.141		23	23	0.670	36	44

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

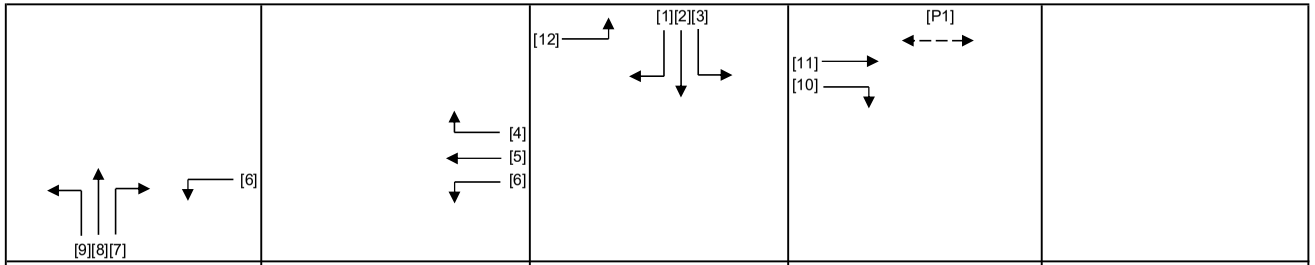
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street	**2030 Design Weekend**	PROJECT NO.: 40830	Prepared By: SKL Jan-24
		FILENAME : J4_SSR_MOSR_OCR.xlsx	Checked By: SLN Jan-24
			Reviewed By: SLN Jan-24



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.440
Loss time	L =	24 sec
Total Flow	=	2443 pcu
Co = (1.5*L+5)/(1-Y)	=	73.2 sec
Cm = L/(1-Y)	=	42.8 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	63.7 %
Cp = 0.9*L/(0.9-Y)	=	46.9 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**60 %**



Stage 1	G= 22	Stage 2	G= 19	Stage 3	G= 22	Stage 4	G= 19
	Int = 8		Int = 10		Int = 5		Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	134	84		218	0.61	1817							1817	0.120	0.120		23	23	0.563	30	40
7,8	1	3.70	1	30			2125		161	88	249	0.35	2088							2088	0.119			23	23	0.563	30	40
7	1	3.70	1	25			2125			240	240	1.00	2005							2005	0.120			23	23	0.563	30	40
6	1,2	3.75	1	15		N	1990	63			63	1.00	1809							1809	0.035			7	43	0.563	12	64
5	2	3.75	2				4260		428		428	0.00	4260							4260	0.100	0.100		20	20	0.563	30	40
4	2	3.75	1	25			2130			147	147	1.00	2009							2009	0.073			14	20	0.563	18	48
2,3	3	3.50	1	15		N	1965	57	41		98	0.58	1857							1857	0.053			10	23	0.563	12	55
1,2	3	3.50	1	30			2105		101	10	111	0.09	2096							2096	0.053			10	23	0.563	18	53
1	3	3.00	1	25			2055			102	102	1.00	1939							1939	0.053			10	23	0.563	12	54
12	3	3.30	1	10		N	1945	196			196	1.00	1691							1691	0.116	0.116		23	23	0.563	24	41
11	4	3.30	2				4170		432		432	0.00	4170							4170	0.104	0.104		20	20	0.563	30	39
10	4	3.30	1	25			2085			159	159	1.00	1967							1967	0.081			16	20	0.563	24	47

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

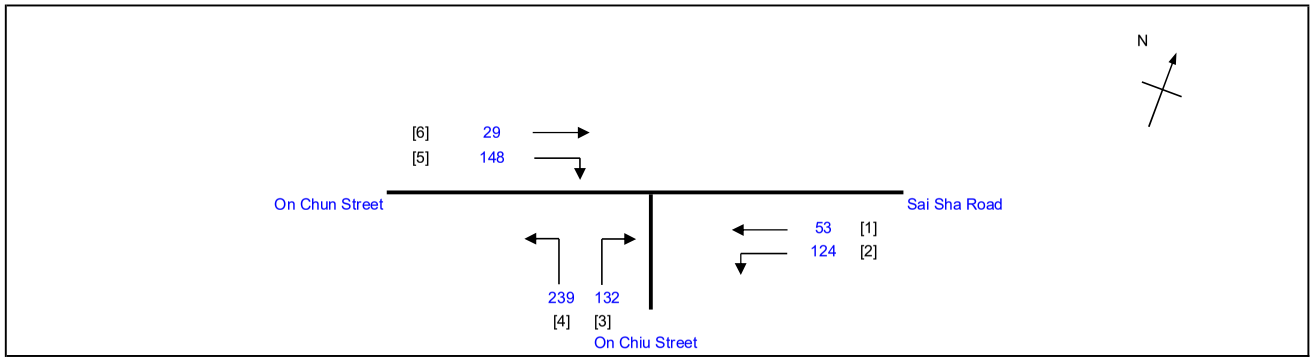
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

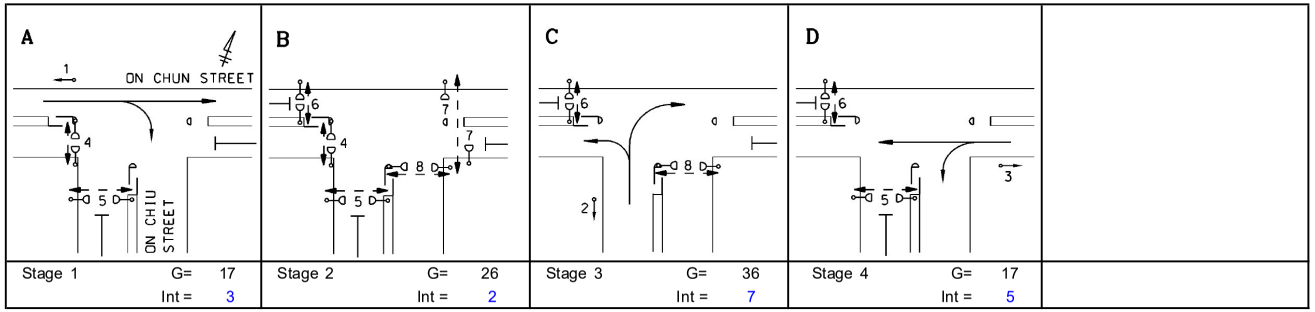
J5 On Chun Street / On Chiu Street

2030 Reference AM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	113 sec
Sum(y)	Y =	0.192
Loss time	L =	40 sec
Total Flow	=	725 pcu
Co = (1.5*L+5)/(1-Y)	=	80.4 sec
Cm = L/(1-Y)	=	49.5 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	212.7 %
Cp = 0.9*L/(0.9-Y)	=	50.8 sec
Ymax = 1-L/C	=	0.646
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**203 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	32	10
P5	1,2,4	5	9	3	58	9
P6	2,3,4	5	6	3	84	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	50	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		29	57	86	0.66	1880							1880	0.046			17	18	0.297	12	41
5	1	3.50	1	22			2105			91	91	1.00	1971							1971	0.046	0.046		18	18	0.297	12	40
4	3	3.65	1	15		N	1980	177			177	1.00	1800							1800	0.098			37	37	0.297	18	26
3,4	3	3.65	1	20			2120	62		132	194	1.00	1972							1972	0.098	0.098		37	37	0.297	24	26
2	4	3.40	1	13		N	1955	83			83	1.00	1753							1753	0.047	0.047		18	18	0.297	12	40
1,2	4	3.40	1	13			2095	41	53		94	0.44	1995							1995	0.047			18	18	0.297	12	40
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

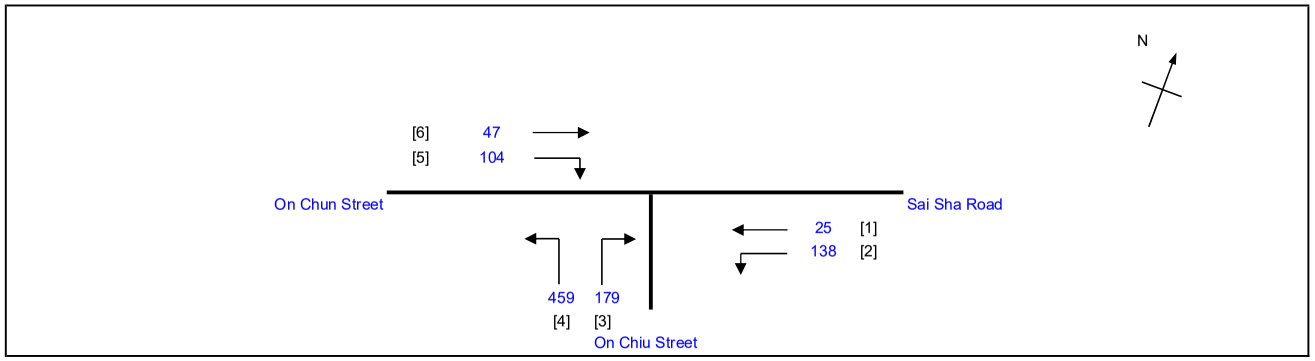
		INITIALS	DATE
Prepared By:		SKL	Jan-24
Checked By:		SLN	Jan-24
Reviewed By:		SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

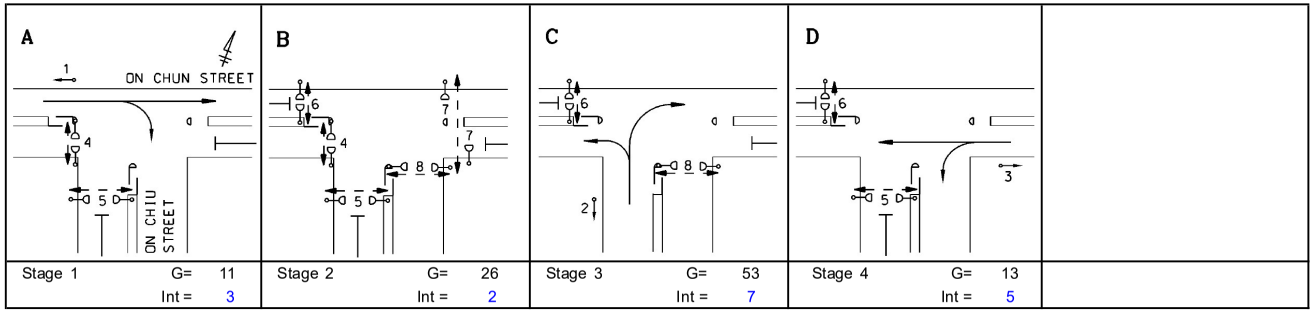
J5 On Chun Street / On Chiu Street

2030 Reference PM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.253
Loss time		L =	40 sec
Total Flow		=	952 pcu
Co	= (1.5*L+5)/(1-Y)	=	87.0 sec
Cm	= L/(1-Y)	=	53.5 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	137.3 %
Cp	= 0.9*L/(0.9-Y)	=	55.6 sec
Ymax	= 1-L/C	=	0.667
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**137 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	26	10
P5	1,2,4	5	9	3	48	9
P6	2,3,4	5	6	3	97	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	67	11

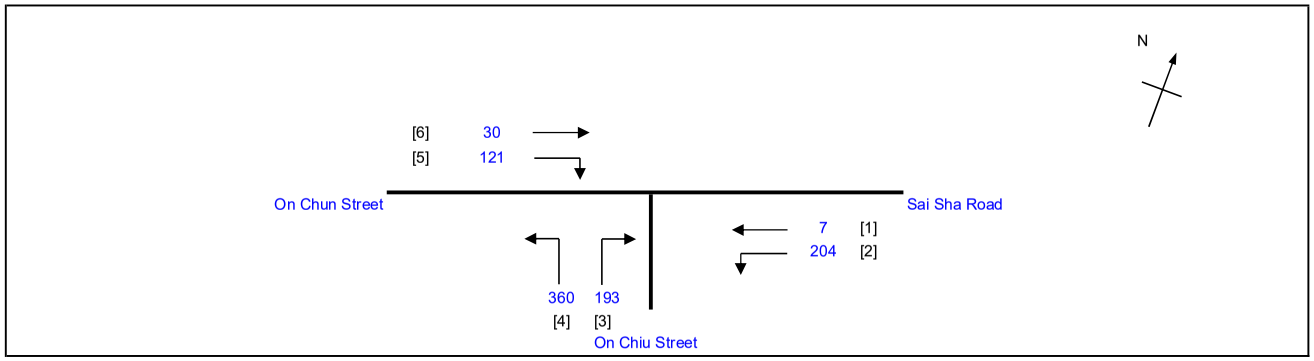
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		47	27	74	0.36	1917							1917	0.039			12	12	0.379	12	50
5	1	3.50	1	22			2105			77	77	1.00	1971							1971	0.039	0.039		12	12	0.379	12	50
4	3	3.65	1	15		N	1980	304			304	1.00	1800							1800	0.169			53	54	0.379	30	21
3,4	3	3.65	1	20			2120	155		179	334	1.00	1972							1972	0.169	0.169		54	54	0.379	36	21
2	4	3.40	1	13		N	1955	77			77	1.00	1753							1753	0.044			14	14	0.379	12	49
1,2	4	3.40	1	13			2095	61	25		86	0.71	1937							1937	0.044	0.044		14	14	0.379	12	48
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

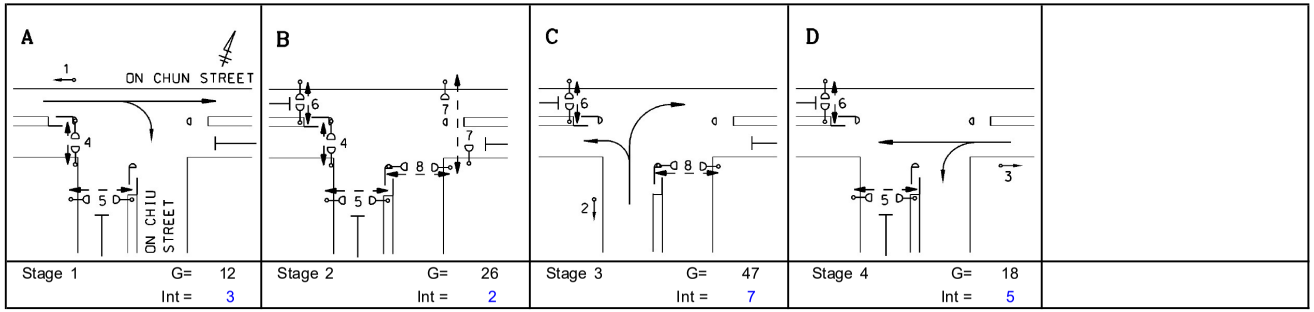
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
2030 Reference Weekend	PROJECT NO.: 40830	Prepared By:	SKL	Jan-24
	FILENAME : J5_OCS_OCS.xlsx	Checked By:	SLN	Jan-24
J5 On Chun Street / On Chiu Street		Reviewed By:	SLN	Jan-24



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.244
Loss time		L =	40 sec
Total Flow		=	915 pcu
Co	= (1.5*L+5)/(1-Y)	=	86.0 sec
Cm	= L/(1-Y)	=	52.9 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	145.9 %
Cp	= 0.9*L/(0.9-Y)	=	54.9 sec
Ymax	= 1-L/C	=	0.667
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**146 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	27	10
P5	1,2,4	5	9	3	54	9
P6	2,3,4	5	6	3	96	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	61	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		30	44	74	0.59	1888							1888	0.039	0.039		13	13	0.366	12	49
5	1	3.50	1	22			2105			77	77	1.00	1971							1971	0.039			13	13	0.366	12	49
4	3	3.65	1	15		N	1980	264			264	1.00	1800							1800	0.147	0.147		48	48	0.366	30	24
3,4	3	3.65	1	20			2120	96		193	289	1.00	1972							1972	0.147			48	48	0.366	30	24
2	4	3.40	1	13		N	1955	102			102	1.00	1753							1753	0.058	0.058		19	19	0.366	12	44
1,2	4	3.40	1	13			2095	102	7		109	0.94	1891							1891	0.058			19	19	0.366	18	44
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

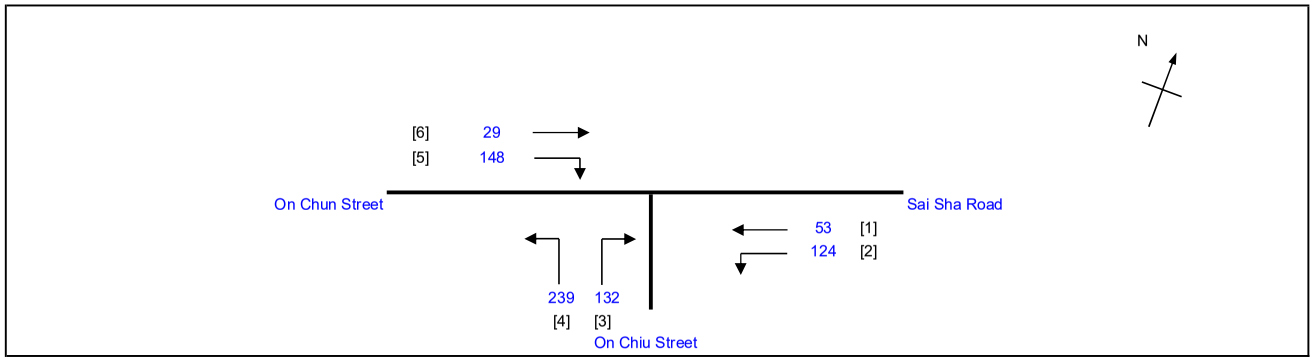
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

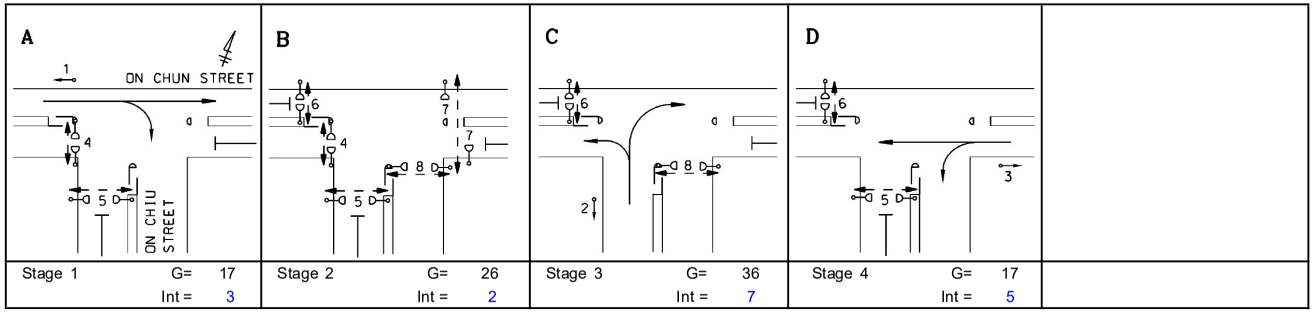
J5 On Chun Street / On Chiu Street

2030 Design AM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	113 sec
Sum(y)		Y =	0.192
Loss time		L =	40 sec
Total Flow		=	725 pcu
Co	= (1.5*L+5)/(1-Y)	=	80.4 sec
Cm	= L/(1-Y)	=	49.5 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	212.7 %
Cp	= 0.9*L/(0.9-Y)	=	50.8 sec
Ymax	= 1-L/C	=	0.646
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**203 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	32	10
P5	1,2,4	5	9	3	58	9
P6	2,3,4	5	6	3	84	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	50	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		29	57	86	0.66	1880							1880	0.046			17	18	0.297	12	41
5	1	3.50	1	22			2105			91	91	1.00	1971							1971	0.046	0.046		18	18	0.297	12	40
4	3	3.65	1	15		N	1980	177			177	1.00	1800							1800	0.098			37	37	0.297	18	26
3,4	3	3.65	1	20			2120	62		132	194	1.00	1972							1972	0.098	0.098		37	37	0.297	24	26
2	4	3.40	1	13		N	1955	83			83	1.00	1753							1753	0.047	0.047		18	18	0.297	12	40
1,2	4	3.40	1	13			2095	41	53		94	0.44	1995							1995	0.047			18	18	0.297	12	40
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

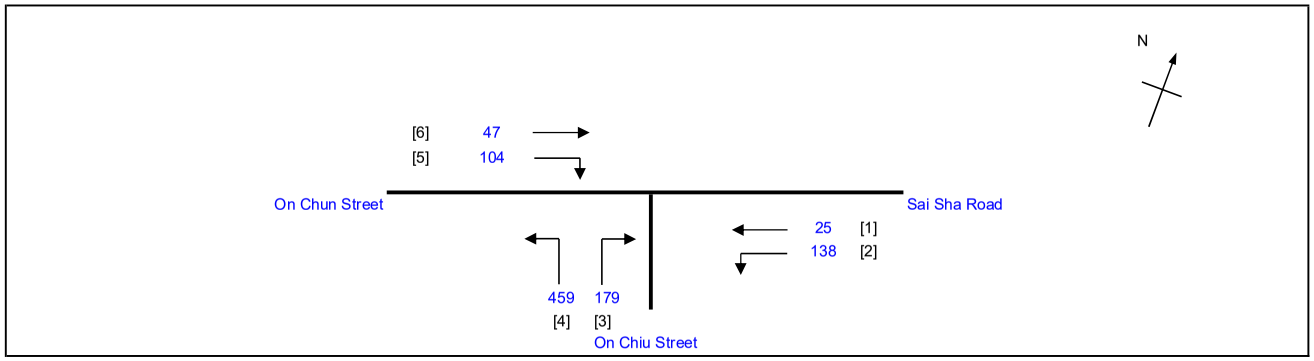
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

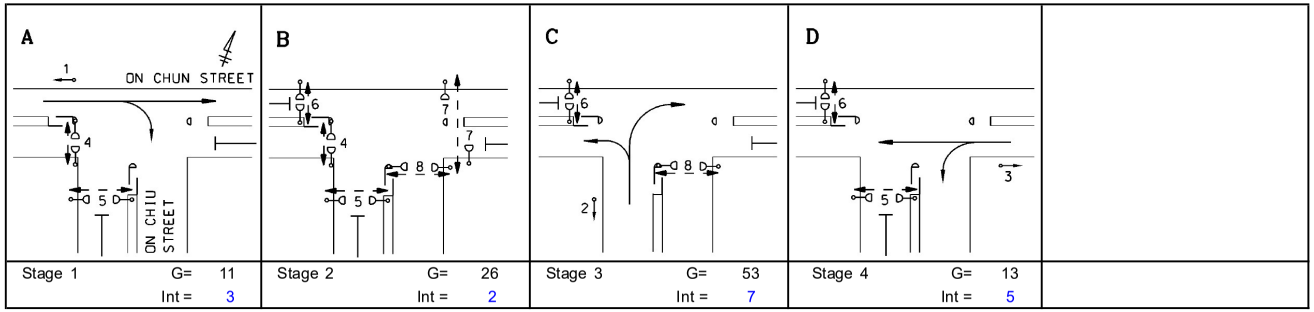
J5 On Chun Street / On Chiu Street

2030 Design PM

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.253
Loss time	L =	40 sec
Total Flow	=	952 pcu
Co = (1.5*L+5)/(1-Y)	=	87.0 sec
Cm = L/(1-Y)	=	53.5 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	137.3 %
Cp = 0.9*L/(0.9-Y)	=	55.6 sec
Ymax = 1-L/C	=	0.667
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**137 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	26	10
P5	1,2,4	5	9	3	48	9
P6	2,3,4	5	6	3	97	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	67	11

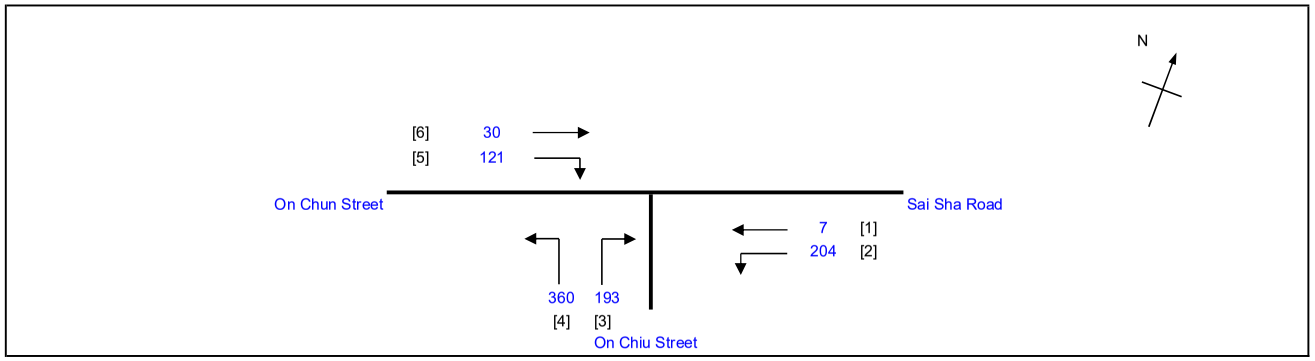
Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		47	27	74	0.36	1917							1917	0.039			12	12	0.379	12	50
5	1	3.50	1	22			2105			77	77	1.00	1971							1971	0.039	0.039		12	12	0.379	12	50
4	3	3.65	1	15		N	1980	304			304	1.00	1800							1800	0.169			53	54	0.379	30	21
3,4	3	3.65	1	20			2120	155		179	334	1.00	1972							1972	0.169	0.169		54	54	0.379	36	21
2	4	3.40	1	13		N	1955	77			77	1.00	1753							1753	0.044			14	14	0.379	12	49
1,2	4	3.40	1	13			2095	61	25		86	0.71	1937							1937	0.044	0.044		14	14	0.379	12	48
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

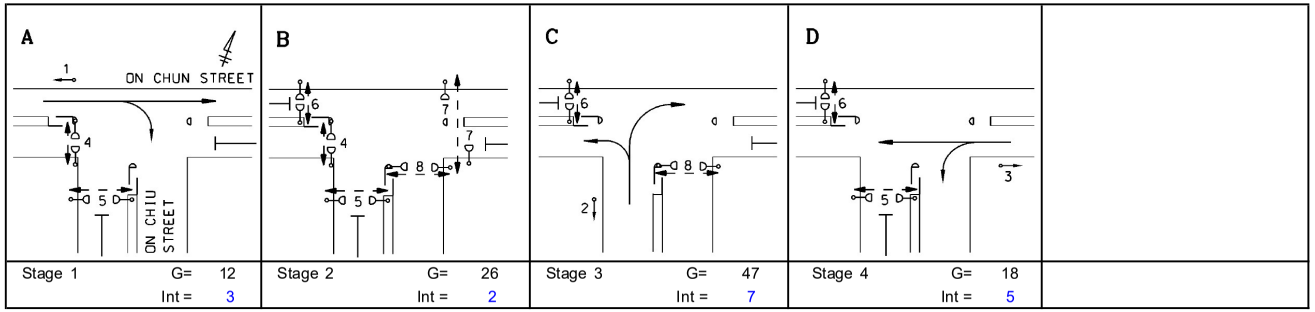
LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

		INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and			
J5 On Chun Street / On Chiu Street	**2030 Design Weekend**	PROJECT NO.: 40830 — Prepared By:	SKL	Jan-24
		FILENAME : J5_OCS_OCS.xlsx — Checked By:	SLN	Jan-24
		Reviewed By:	SLN	Jan-24



No. of stages per cycle		N =	4
Cycle time		C =	120 sec
Sum(y)		Y =	0.244
Loss time		L =	40 sec
Total Flow		=	915 pcu
Co	= (1.5*L+5)/(1-Y)	=	86.0 sec
Cm	= L/(1-Y)	=	52.9 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	145.9 %
Cp	= 0.9*L/(0.9-Y)	=	54.9 sec
Ymax	= 1-L/C	=	0.667
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**146 %**

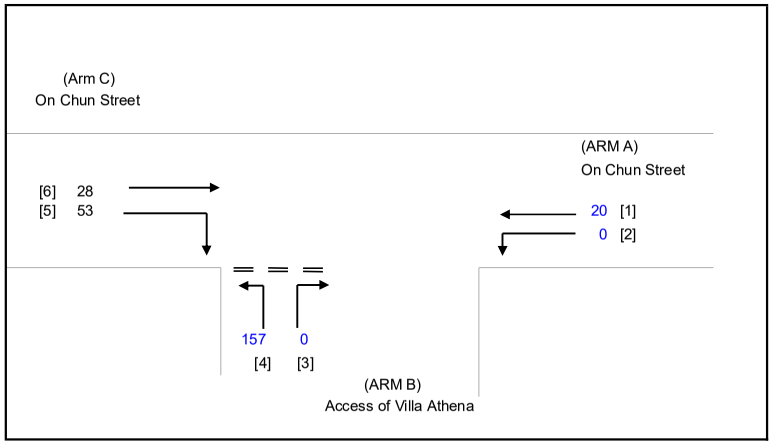


Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	27	10
P5	1,2,4	5	9	3	54	9
P6	2,3,4	5	6	3	96	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	61	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		30	44	74	0.59	1888							1888	0.039	0.039		13	13	0.366	12	49
5	1	3.50	1	22			2105			77	77	1.00	1971							1971	0.039			13	13	0.366	12	49
4	3	3.65	1	15		N	1980	264			264	1.00	1800							1800	0.147	0.147		48	48	0.366	30	24
3,4	3	3.65	1	20			2120	96		193	289	1.00	1972							1972	0.147			48	48	0.366	30	24
2	4	3.40	1	13		N	1955	102			102	1.00	1753							1753	0.058	0.058		19	19	0.366	12	44
1,2	4	3.40	1	13			2095	102	7		109	0.94	1891							1891	0.058			19	19	0.366	18	44
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Reference AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	28	(pcu/hr)
q c-b	=	53	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	157	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

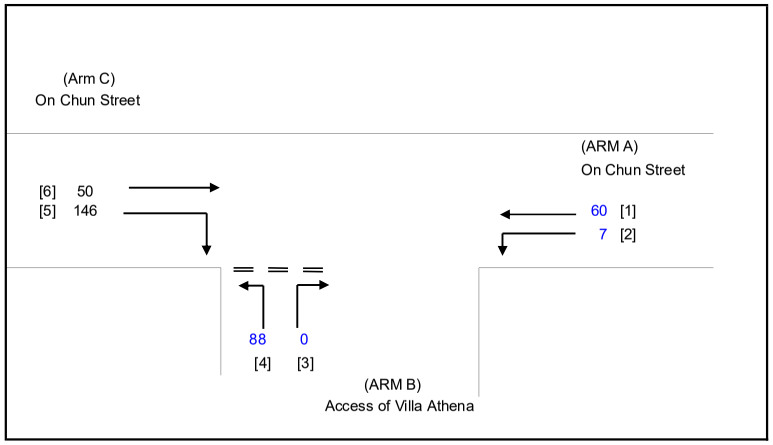
Q b-a	=	568		
Q b-c	=	735	Q b-c (O) =	735
Q c-b	=	722		
Q b-ac	=	735		
TOTAL FLOW	=	258	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2136
DFC c-b	=	0.0734
DFC b-c (share lane)	=	0.2136

CRITICAL DFC = 0.21

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Reference PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	7	(pcu/hr)
q a-c	=	60	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	50	(pcu/hr)
q c-b	=	146	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	88	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

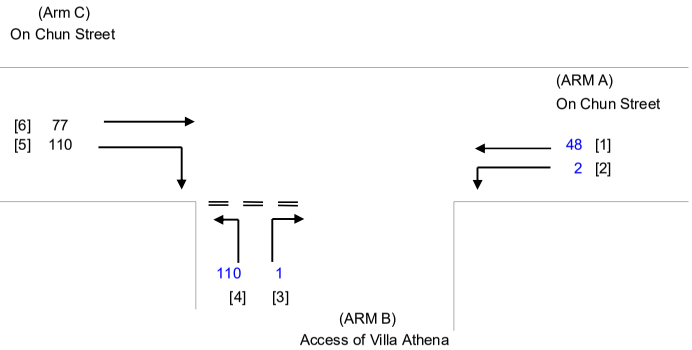
Q b-a	=	515		
Q b-c	=	722	Q b-c (O) =	722
Q c-b	=	708		
Q b-ac	=	722		
TOTAL FLOW	=	351	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1219
DFC c-b	=	0.2062
DFC b-c (share lane)	=	0.1219

CRITICAL DFC = 0.21

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Reference Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	2	(pcu/hr)
q a-c	=	48	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	77	(pcu/hr)
q c-b	=	110	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	1	(pcu/hr)
q b-c	=	110	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	0.99099099

THE CAPACITY OF MOVEMENT :

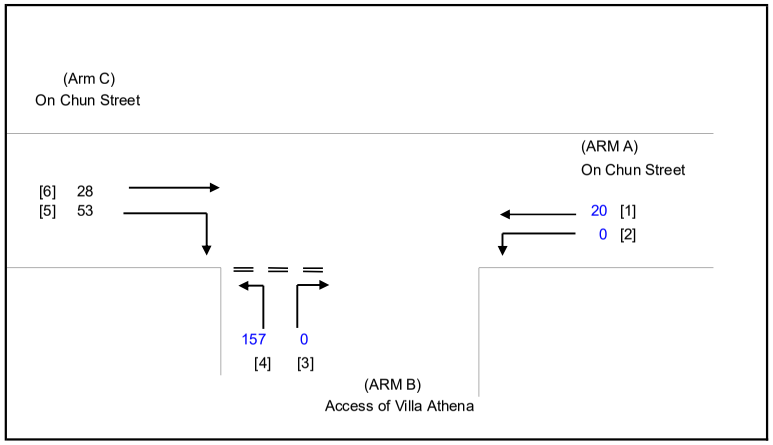
Q b-a	=	528		
Q b-c	=	726	Q b-c (O) =	725.7
Q c-b	=	713		
Q b-ac	=	724		
TOTAL FLOW	=	348	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0019
DFC b-c	=	0.1515
DFC c-b	=	0.1543
DFC b-c (share lane)	=	0.1520

CRITICAL DFC = 0.15

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Design AM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	20	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	28	(pcu/hr)
q c-b	=	53	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	157	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

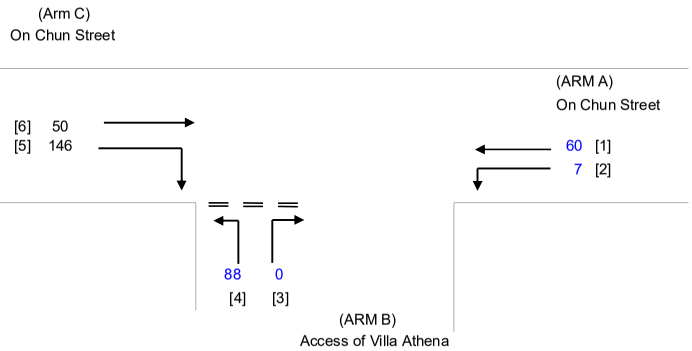
Q b-a	=	568		
Q b-c	=	735	Q b-c (O) =	735
Q c-b	=	722		
Q b-ac	=	735		
TOTAL FLOW	=	258	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2136
DFC c-b	=	0.0734
DFC b-c (share lane)	=	0.2136

CRITICAL DFC = 0.21

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Design PM**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	7	(pcu/hr)
q a-c	=	60	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	50	(pcu/hr)
q c-b	=	146	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	88	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

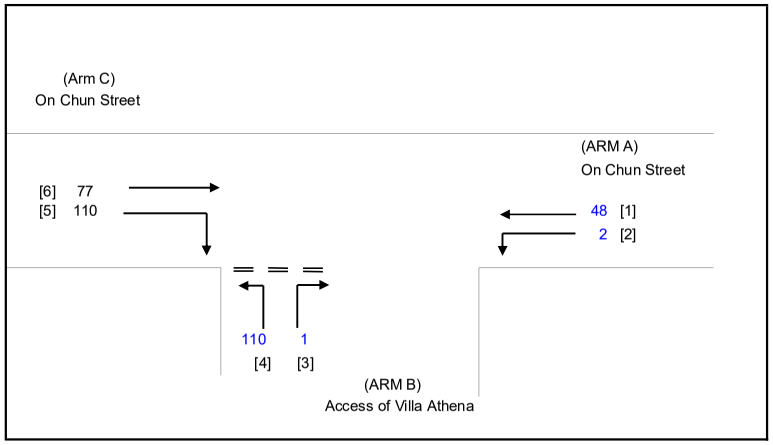
Q b-a	=	515		
Q b-c	=	722	Q b-c (O) =	722
Q c-b	=	708		
Q b-ac	=	722		
TOTAL FLOW	=	351	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1219
DFC c-b	=	0.2062
DFC b-c (share lane)	=	0.1219

CRITICAL DFC = 0.21

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2030 Design Weekend**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	2	(pcu/hr)
q a-c	=	48	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	77	(pcu/hr)
q c-b	=	110	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	1	(pcu/hr)
q b-c	=	110	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	0.99099099

THE CAPACITY OF MOVEMENT :

Q b-a	=	528		
Q b-c	=	726	Q b-c (O) =	725.7
Q c-b	=	713		
Q b-ac	=	724		
TOTAL FLOW	=	348	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0019
DFC b-c	=	0.1515
DFC c-b	=	0.1543
DFC b-c (share lane)	=	0.1520

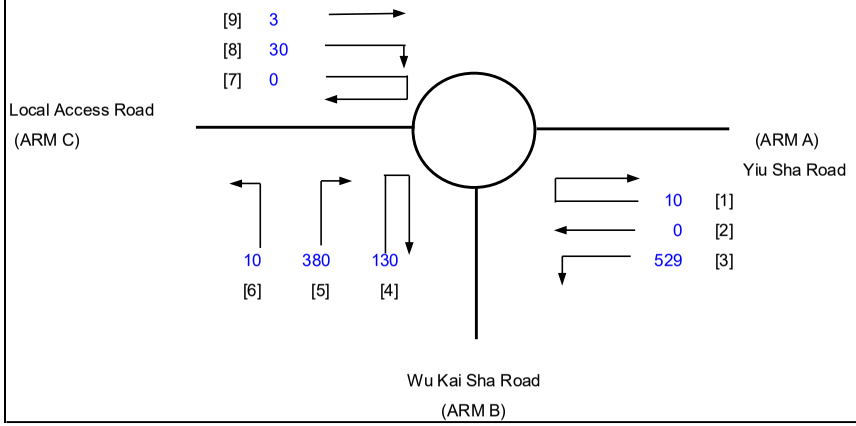
CRITICAL DFC = 0.15

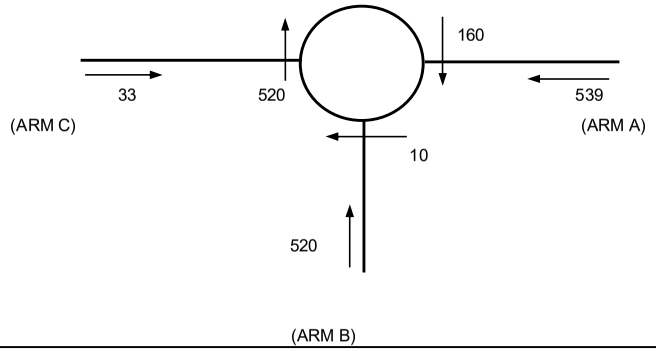
Appendix D

Junction Capacity Assessments

- Reference & Design Scenarios (Construction)

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference AM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



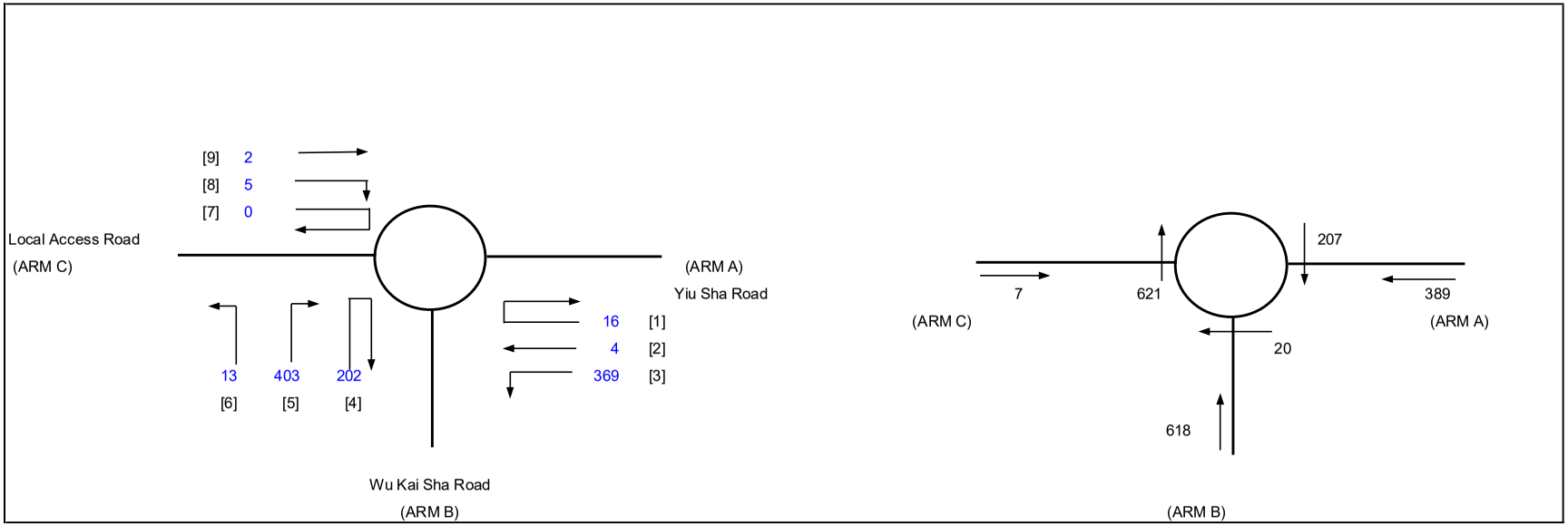


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	539	520	33
Qc	=	Circulating flow across entry (pcu/h)	160	10	520
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2791	2593	409
DFC	=	Design flow/Capacity = Q/Qe	0.19	0.20	0.08

Total In Sum = 1089 PCU

DFC of Critical Approach = 0.20

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

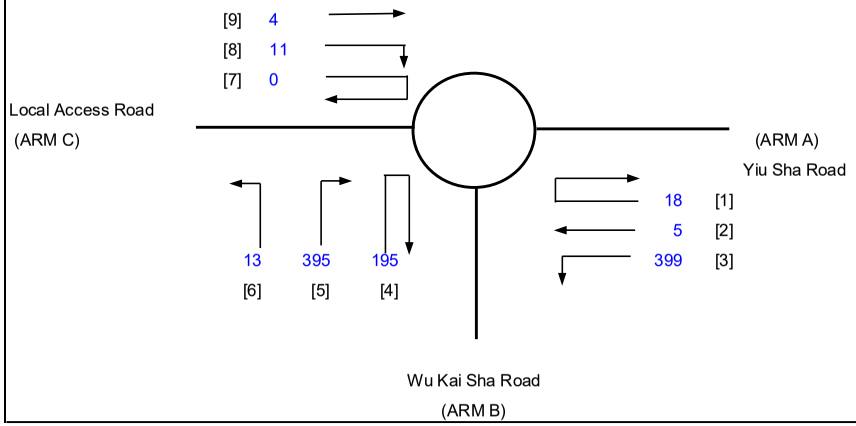


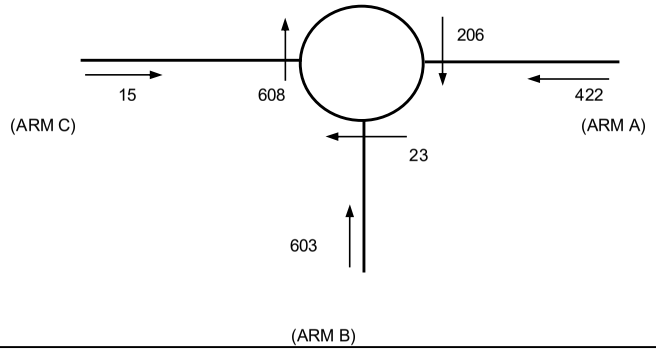
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	389	618	7
Qc	=	Circulating flow across entry (pcu/h)	207	20	621
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2749	2585	374
DFC	=	Design flow/Capacity = Q/Qe	0.14	0.24	0.02

Total In Sum = 1008 PCU

DFC of Critical Approach = 0.24

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



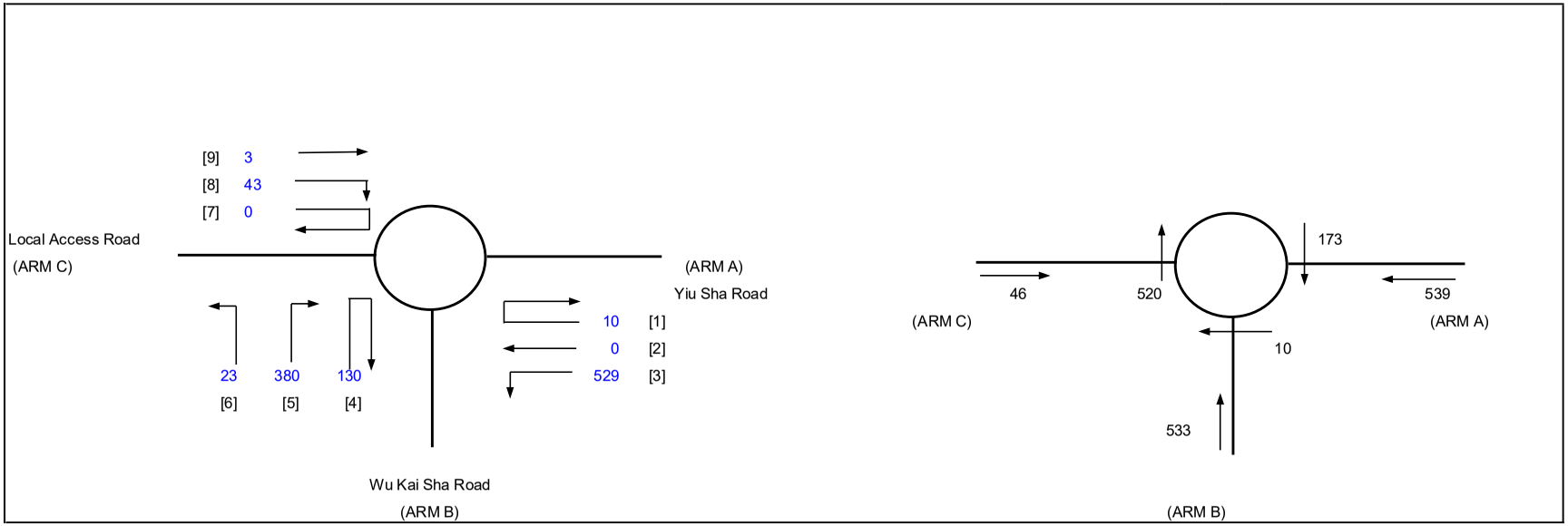


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	422	603	15
Qc	=	Circulating flow across entry (pcu/h)	206	23	608
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2750	2583	379
DFC	=	Design flow/Capacity = Q/Qe	0.15	0.23	0.04

Total In Sum = 1031 PCU

DFC of Critical Approach = 0.23

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design AM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

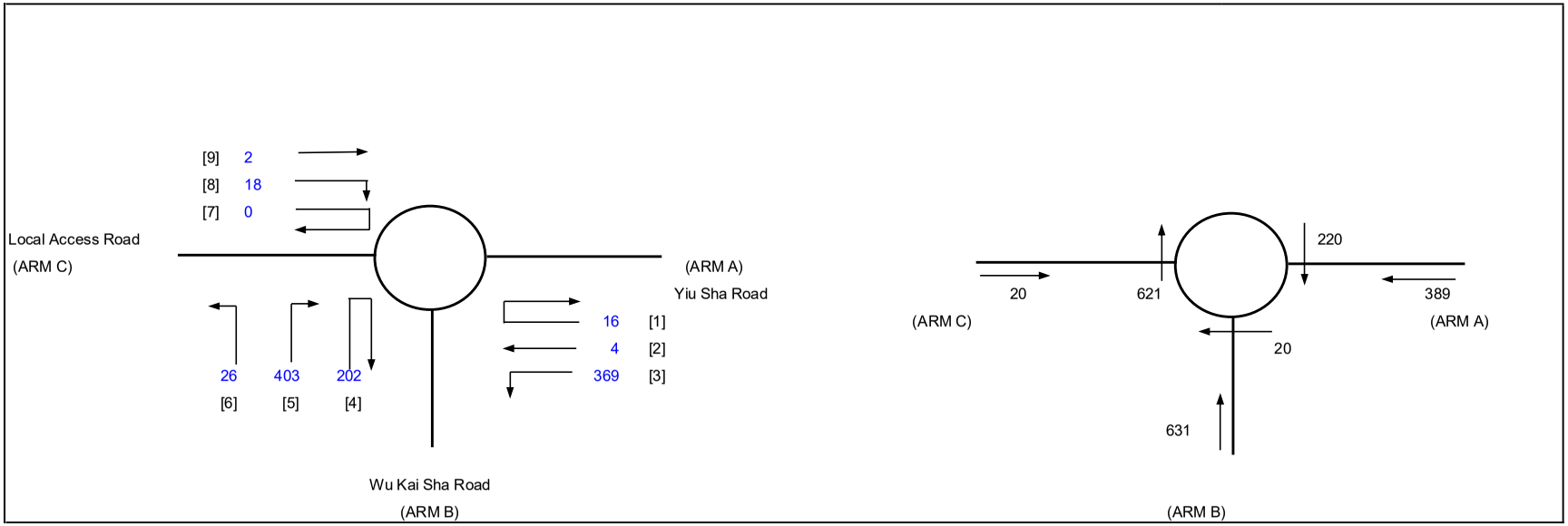


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	539	533	46
Qc	=	Circulating flow across entry (pcu/h)	173	10	520
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2779	2593	409
DFC	=	Design flow/Capacity = Q/Qe	0.19	0.21	0.11

Total In Sum = 1115 PCU

DFC of Critical Approach = 0.21

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

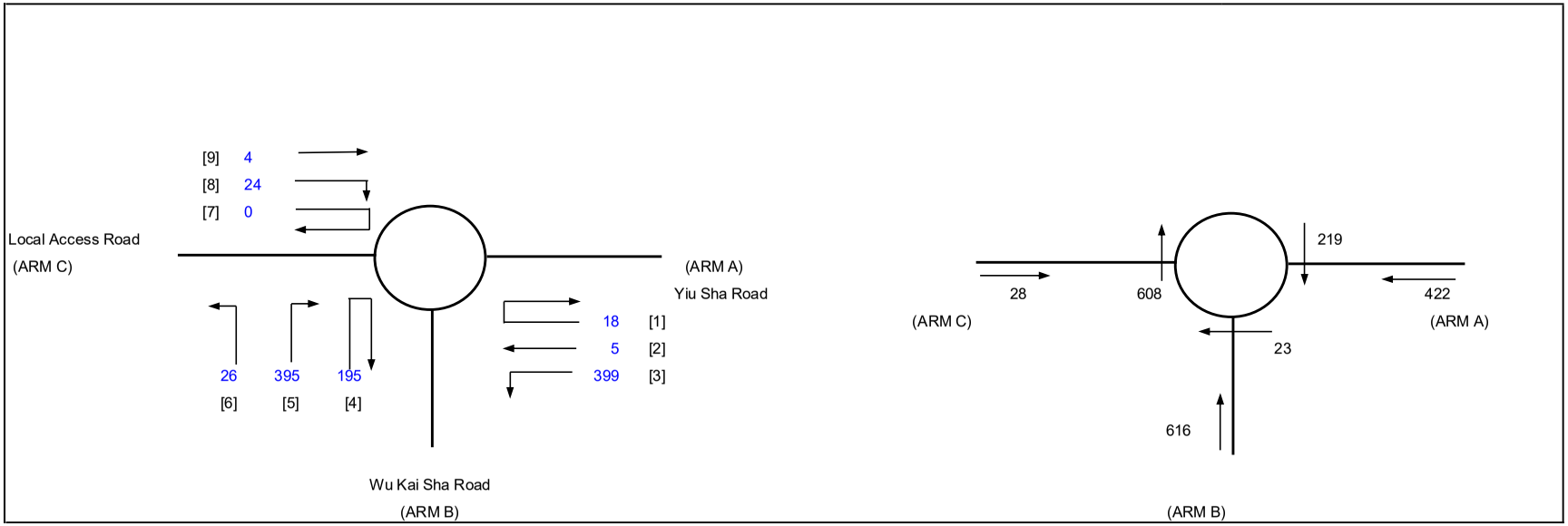


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	389	631	20
Qc	=	Circulating flow across entry (pcu/h)	220	20	621
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2737	2585	374
DFC	=	Design flow/Capacity = Q/Qe	0.14	0.24	0.05

Total In Sum = 1034 PCU

DFC of Critical Approach = 0.24

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J1_WKSR_YSR.xls	CHECKED BY:	SLN	Jan-24
J1 Wu Kai Sha Road / Yiu Sha Road		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24

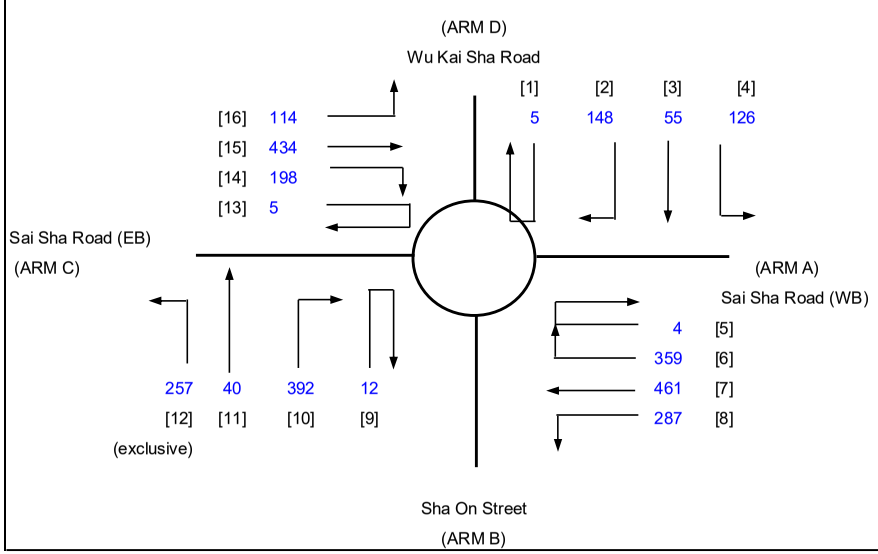


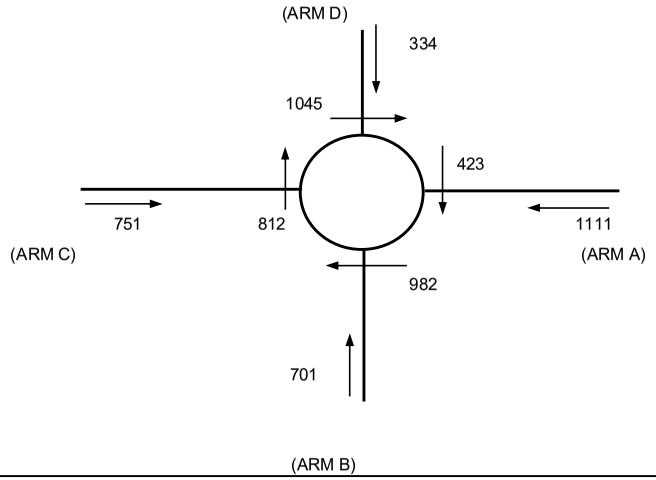
ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	7.50	7.30	2.30
E	=	Entry width (m)	10.00	9.00	2.80
L	=	Effective length of flare (m)	12.50	11.00	1.00
R	=	Entry radius (m)	35.00	35.00	6.00
D	=	Inscribed circle diameter (m)	44.00	44.00	44.00
A	=	Entry angle (degree)	15.00	31.00	60.00
Q	=	Entry flow (pcu/h)	422	616	28
Qc	=	Circulating flow across entry (pcu/h)	219	23	608
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.32	0.25	0.80
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.02	0.78
X2	=	V + ((E-V)/(1+2S))	9.02	8.44	2.49
M	=	EXP((D-60)/10)	0.20	0.20	0.20
F	=	303*X2	2734	2557	755
Td	=	1+(0.5/(1+M))	1.42	1.42	1.42
Fc	=	0.21*Td(1+0.2*X2)	0.83	0.80	0.45
Qe	=	K(F-Fc*Qc)	2738	2583	379
DFC	=	Design flow/Capacity = Q/Qe	0.15	0.24	0.07

Total In Sum = 1057 PCU

DFC of Critical Approach = 0.24

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference AM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



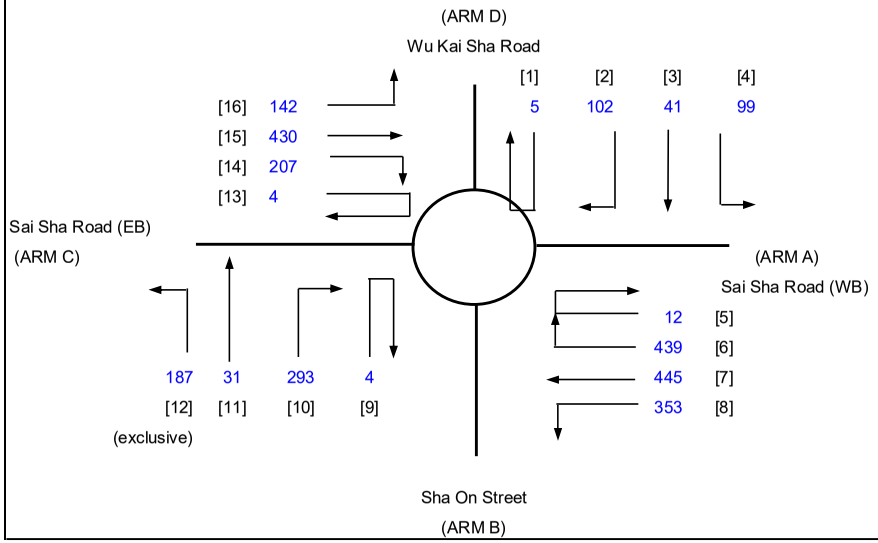


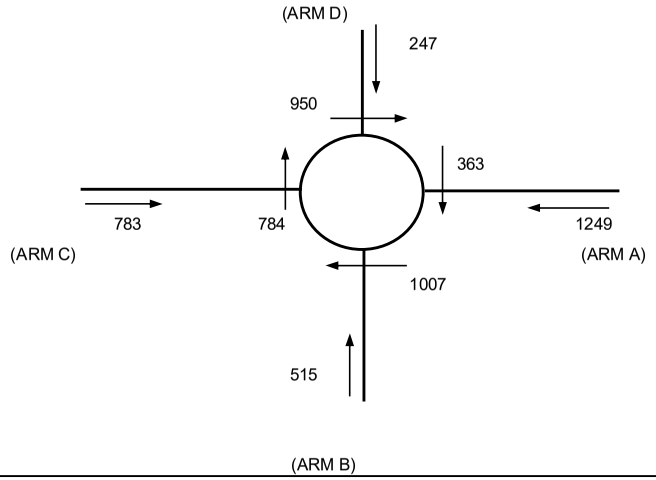
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1111	701	751	334
Qc	=	Circulating flow across entry (pcu/h)	423	982	812	1045
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	2991	2063	2277	1853
DFC	=	Design flow/Capacity = Q/Qe	0.37	0.34	0.33	0.18

Total In Sum = 1449 PCU

DFC of Critical Approach = 0.37

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



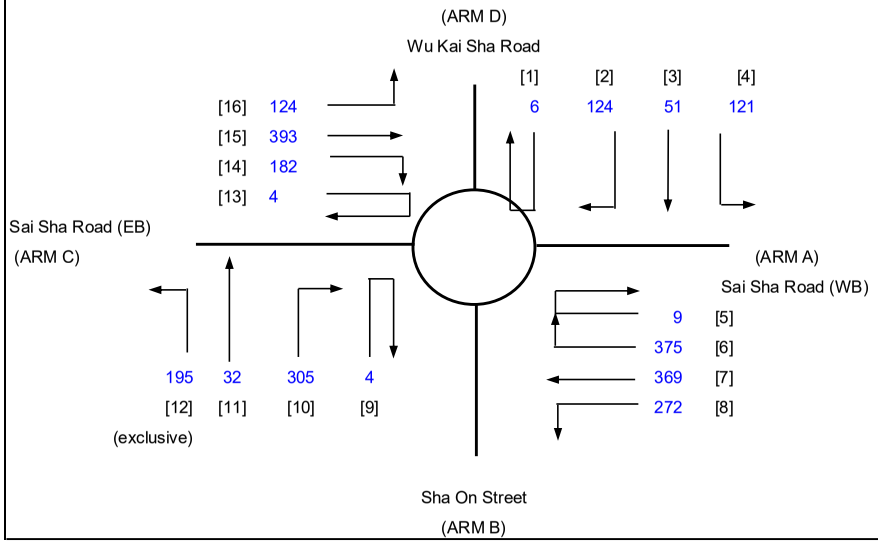


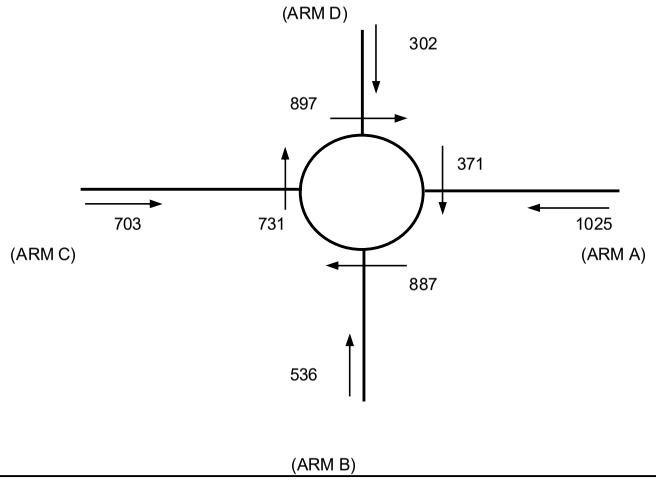
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1249	515	783	247
Qc	=	Circulating flow across entry (pcu/h)	363	1007	784	950
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3032	2048	2294	1907
DFC	=	Design flow/Capacity = Q/Qe	0.41	0.25	0.34	0.13

Total In Sum = 1386 PCU

DFC of Critical Approach = 0.41

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Reference Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



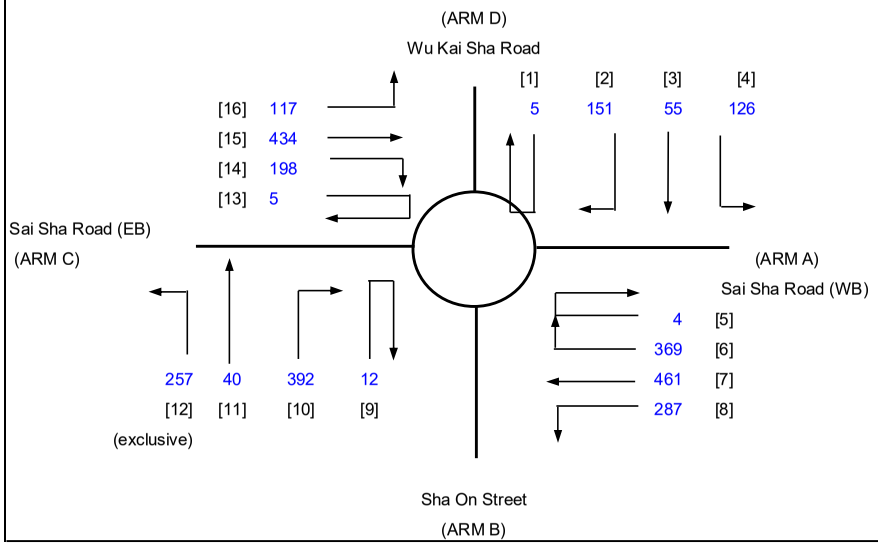


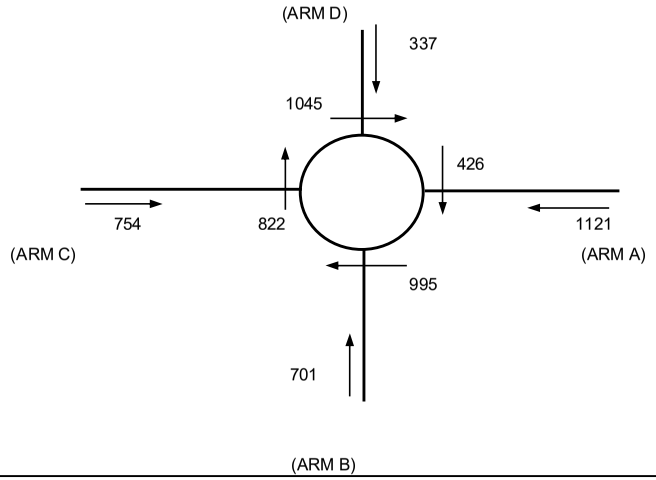
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1025	536	703	302
Qc	=	Circulating flow across entry (pcu/h)	371	887	731	897
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3027	2118	2327	1937
DFC	=	Design flow/Capacity = Q/Qe	0.34	0.25	0.30	0.16

Total In Sum = 1224 PCU

DFC of Critical Approach = 0.34

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION				INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design AM (Construction)**	PROJECT NO.:	40830	PREPARED BY:	SKL	Jan-24
		FILENAME :	J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:		REVIEWED BY:	SLN	Jan-24



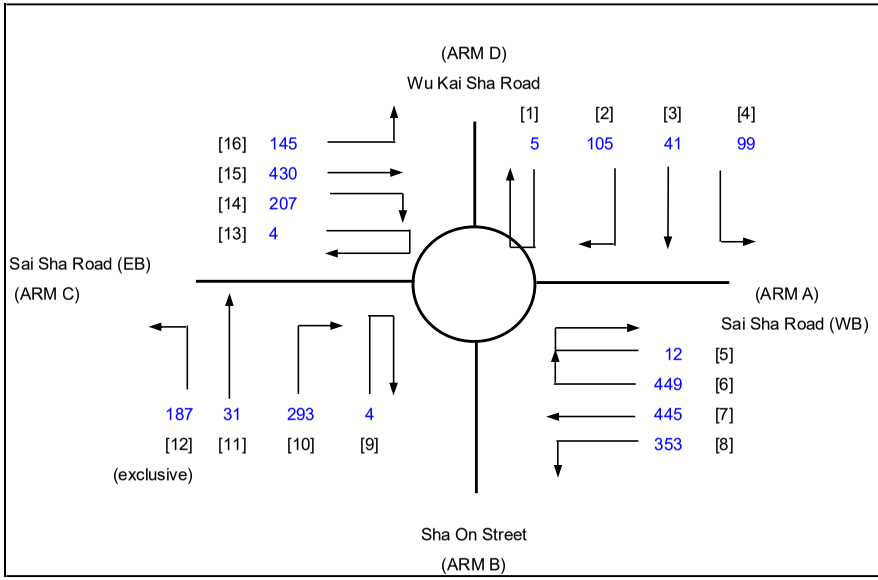


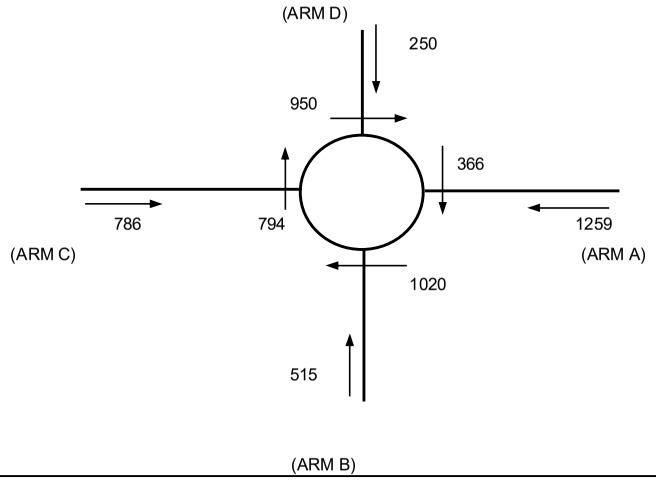
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1121	701	754	337
Qc	=	Circulating flow across entry (pcu/h)	426	995	822	1045
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	2989	2055	2271	1853
DFC	=	Design flow/Capacity = Q/Qe	0.38	0.34	0.33	0.18

Total In Sum = 1449 PCU

DFC of Critical Approach = 0.38

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



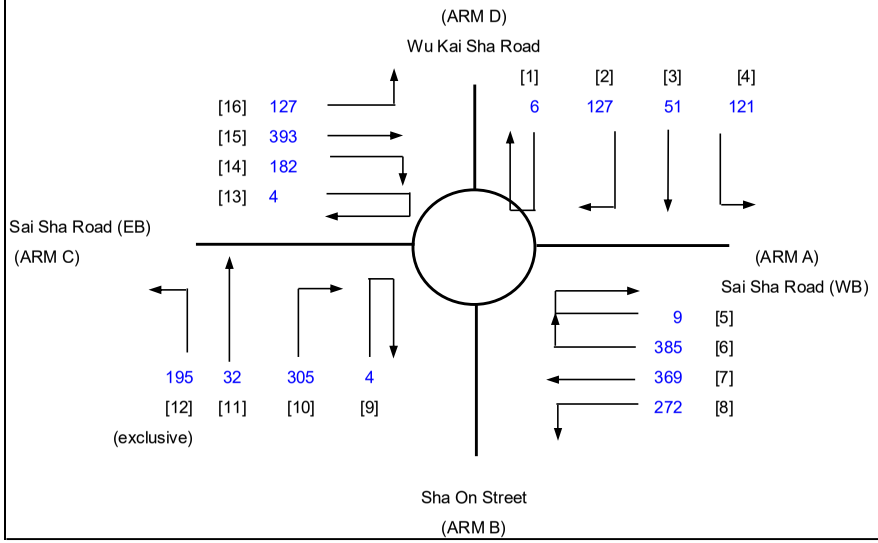


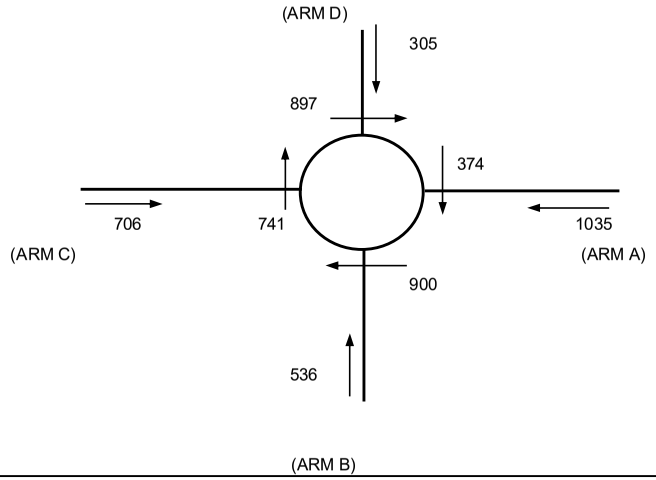
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1259	515	786	250
Qc	=	Circulating flow across entry (pcu/h)	366	1020	794	950
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3030	2040	2288	1907
DFC	=	Design flow/Capacity = Q/Qe	0.42	0.25	0.34	0.13

Total In Sum = 1386 PCU

DFC of Critical Approach = 0.42

LLA CONSULTANCY LIMITED	ROUNDABOUT CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D. 206 and Adjoining Government Land, West of Wu	**2026 Design Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J2_SSR_WKSR_S(	CHECKED BY:	SLN	Jan-24
J2 Sai Sha Road / Wu Kai Sha Road / Sha On Street		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24





ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	8.50	3.20	7.00	7.50
E	=	Entry width (m)	10.50	12.00	9.00	8.00
L	=	Effective length of flare (m)	40.00	50.00	35.00	5.00
R	=	Entry radius (m)	160.00	35.00	100.00	40.00
D	=	Inscribed circle diameter (m)	90.00	90.00	90.00	90.00
A	=	Entry angle (degree)	25.00	40.00	25.00	30.00
Q	=	Entry flow (pcu/h)	1035	536	706	305
Qc	=	Circulating flow across entry (pcu/h)	374	900	741	897
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.08	0.28	0.09	0.16
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.06	0.99	1.06	1.02
X2	=	V + ((E-V)/(1+2S))	10.22	8.83	8.69	7.88
M	=	EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	=	303*X2	3098	2675	2633	2387
Td	=	1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.59	0.59	0.55
Qe	=	K(F-Fc*Qc)	3025	2111	2321	1937
DFC	=	Design flow/Capacity = Q/Qe	0.34	0.25	0.30	0.16

Total In Sum = 1224 PCU

DFC of Critical Approach = 0.34

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

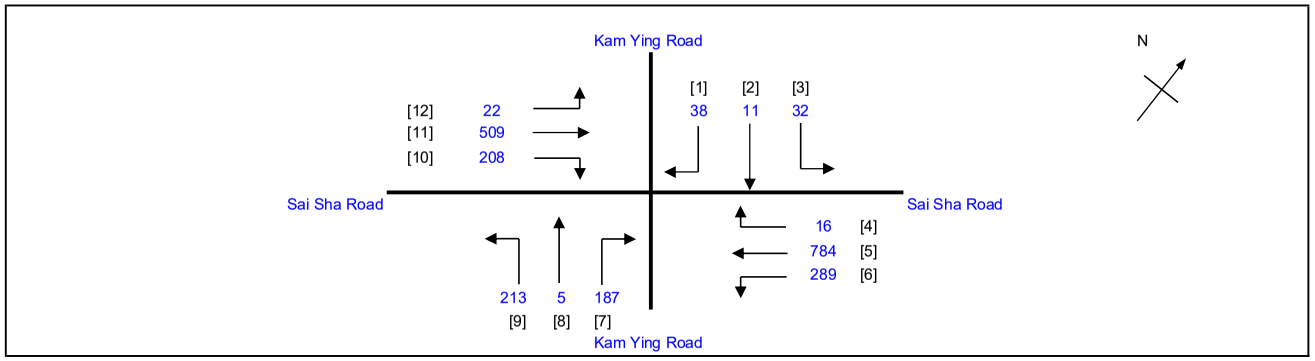
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

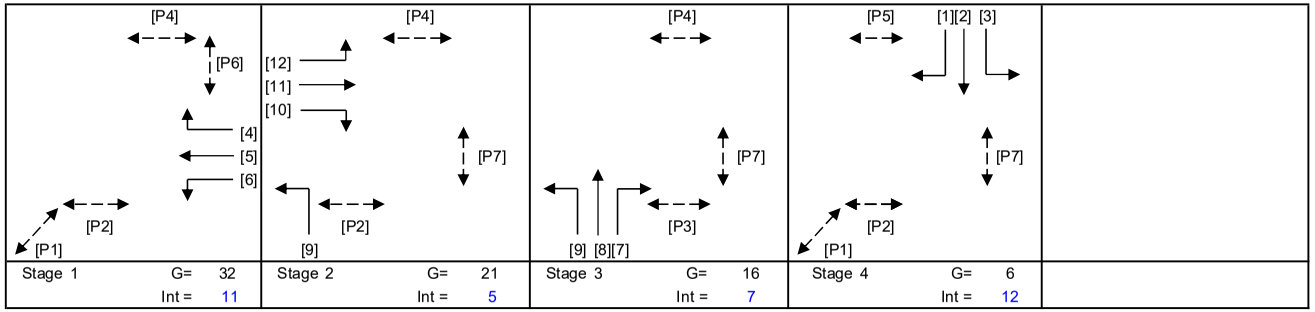
J3 Sai Sha Road / Kam Ying Road

2026 Reference AM (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.452
Loss time		L =	31 sec
Total Flow		=	2314 pcu
Co	= (1.5*L+5)/(1-Y)	=	93.9 sec
Cm	= L/(1-Y)	=	56.5 sec
Yult		=	0.668
R.C.ult	= (Yult-Y)/Y*100%	=	47.8 %
Cp	= 0.9*L/(0.9-Y)	=	62.2 sec
Ymax	= 1-L/C	=	0.718
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**43 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	53	6
P2	1,2,4	5	5	0	82	5
P3	3	5	8	7	8	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	31	7
P7	2,3,4	5	12	0	55	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	289			289	1.00	1786							1786	0.162			28	33	0.629	36	39
5	1	3.50	2				4210		784		784	0.00	4210							4210	0.186	0.186		33	33	0.629	48	32
4	1	3.50	1	25			2105			16	16	1.00	1986							1986	0.008			1	33	0.629	0	156
11,12	2	4.00	1	15		N	2015	22	234		256	0.09	1998							1998	0.128	0.128		22	22	0.629	36	43
11	2	4.00	1				2155		275		275	0.00	2155							2155	0.128			22	22	0.629	36	42
10	2	3.50	1	25			2105			208	208	1.00	1986							1986	0.105			18	22	0.629	30	47
9	2,3	4.50	1	25		N	2065	213			213	1.00	1948							1948	0.109			19	39	0.629	30	46
7,8	3	3.50	1	25			2105		5	187	192	0.97	1989							1989	0.097	0.097		17	17	0.629	30	48
1,2,3	4	5.50	1	15		N	2165	32	11	38	81	0.86	1993							1993	0.041	0.041		7	7	0.629	12	66

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

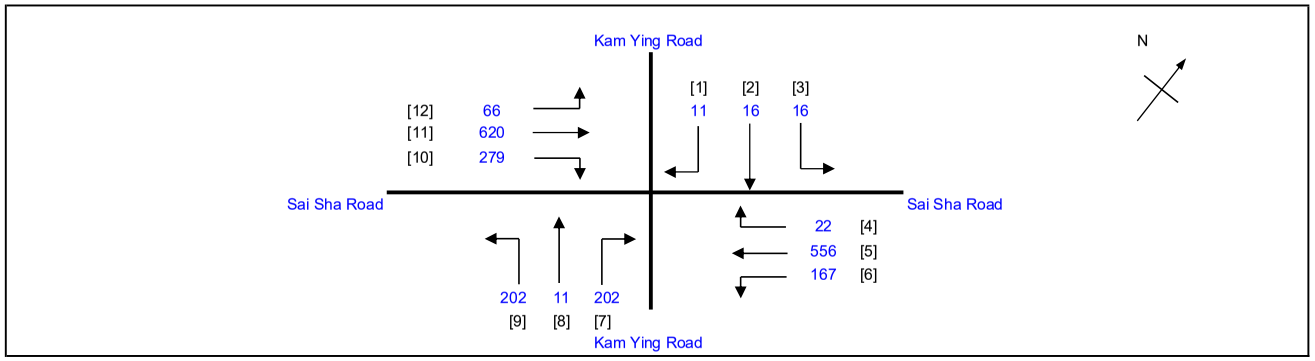
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

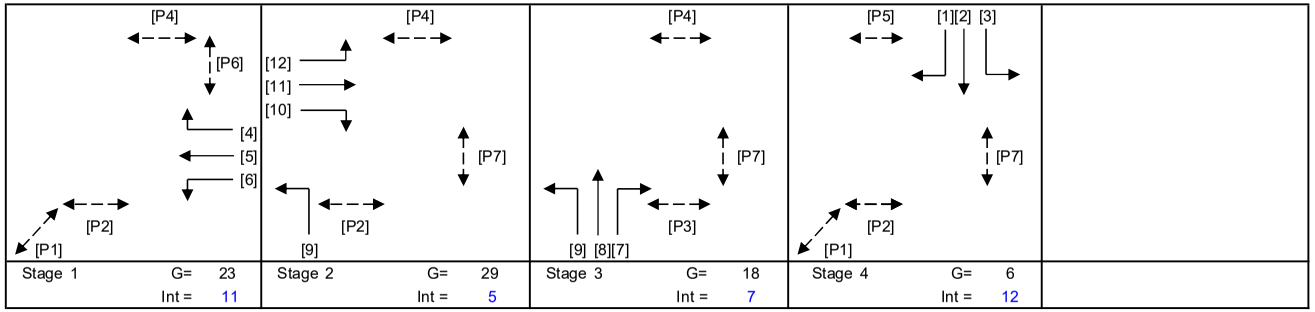
J3 Sai Sha Road / Kam Ying Road

2026 Reference PM (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.426
Loss time		L =	34 sec
Total Flow		=	2168 pcu
Co	= (1.5*L+5)/(1-Y)	=	97.6 sec
Cm	= L/(1-Y)	=	59.3 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	51.3 %
Cp	= 0.9*L/(0.9-Y)	=	64.6 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**46 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	22	7
P7	2,3,4	5	12	0	64	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	167			167	1.00	1786							1786	0.093			17	24	0.617	24	49
5	1	3.50	2				4210		556		556	0.00	4210							4210	0.132	0.132		24	24	0.617	39	38
4	1	3.50	1	25			2105			22	22	1.00	1986							1986	0.011			2	24	0.617	6	121
11,12	2	4.00	1	15		N	2015	66	262		328	0.20	1975							1975	0.166			30	30	0.617	42	37
11	2	4.00	1				2155		358		358	0.00	2155							2155	0.166	0.166		30	30	0.617	42	36
10	2	3.50	1	25			2105			279	279	1.00	1986							1986	0.140			25	30	0.617	36	40
9	2,3	4.50	1	25		N	2065	202			202	1.00	1948							1948	0.104			18	49	0.617	30	46
7,8	3	3.50	1	25			2105		11	202	213	0.95	1992							1992	0.107	0.107		19	19	0.617	30	45
1,2,3	4	5.50	1	15		N	2165	16	16	11	43	0.63	2037							2037	0.021	0.021	3	4	7	0.617	6	85

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

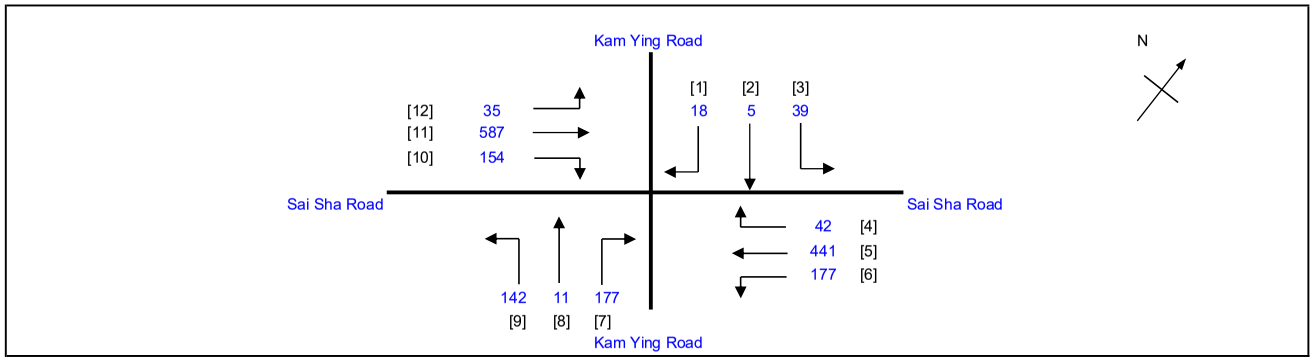
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

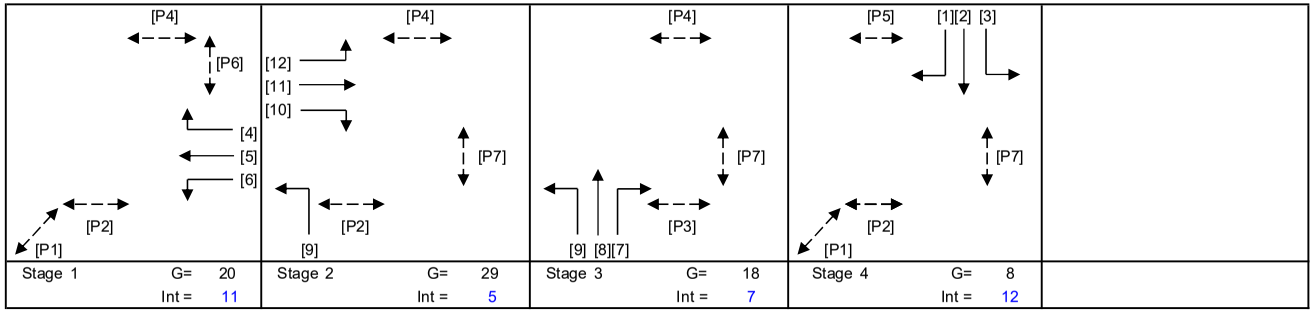
J3 Sai Sha Road / Kam Ying Road

2026 Reference Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.381
Loss time		L =	34 sec
Total Flow		=	1828 pcu
Co	= (1.5*L+5)/(1-Y)	=	90.4 sec
Cm	= L/(1-Y)	=	54.9 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	69.5 %
Cp	= 0.9*L/(0.9-Y)	=	58.9 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**63 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	85	5
P5	4	5	6	6	8	6
P6	1	5	7	5	19	7
P7	2,3,4	5	12	0	67	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	177			177	1.00	1786							1786	0.099			20	21	0.551	24	43
5	1	3.50	2				4210		441		441	0.00	4210							4210	0.105	0.105		21	21	0.551	30	39
4	1	3.50	1	25			2105			42	42	1.00	1986							1986	0.021			4	21	0.551	6	73
11,12	2	4.00	1	15		N	2015	35	264		299	0.12	1992							1992	0.150	0.150		30	30	0.551	36	34
11	2	4.00	1				2155		323		323	0.00	2155							2155	0.150			30	30	0.551	42	34
10	2	3.50	1	25			2105			154	154	1.00	1986							1986	0.078			15	30	0.551	24	47
9	2,3	4.50	1	25		N	2065	142			142	1.00	1948							1948	0.073			15	49	0.551	18	48
7,8	3	3.50	1	25			2105		11	177	188	0.94	1992							1992	0.094	0.094		19	19	0.551	24	43
1,2,3	4	5.50	1	15		N	2165	39	5	18	62	0.92	1983							1983	0.031	0.031	3	6	9	0.551	6	63

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

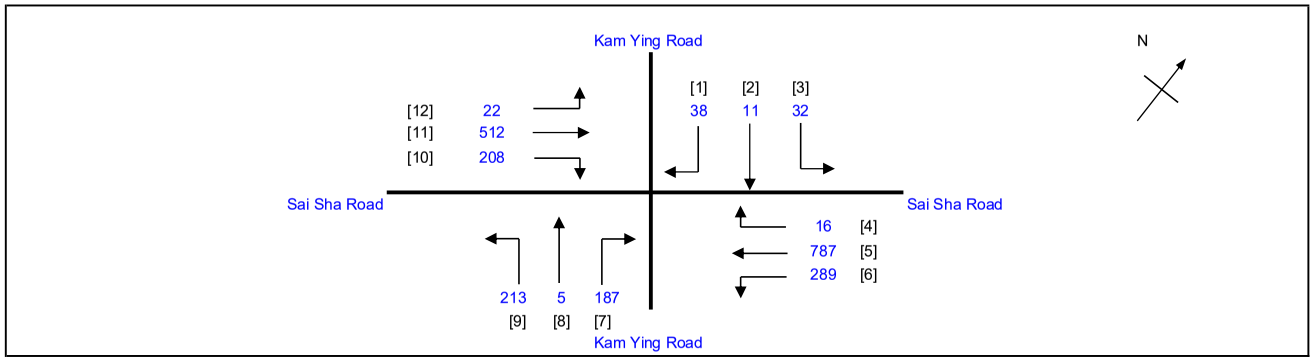
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

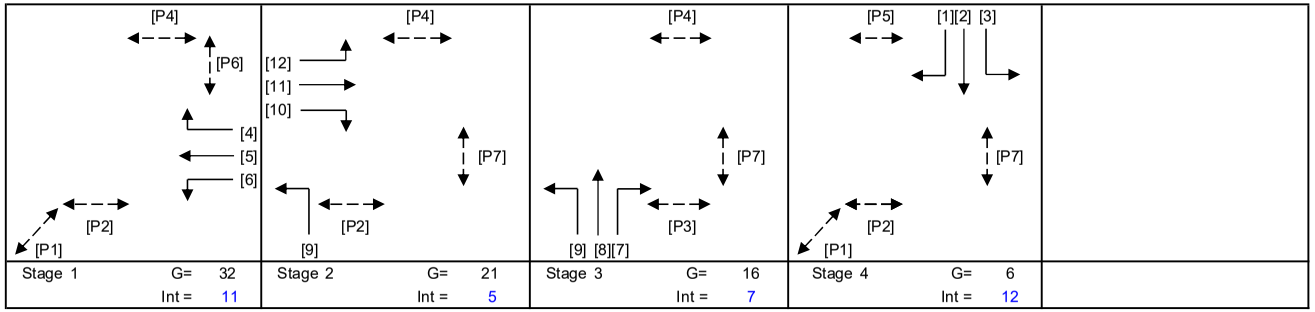
J3 Sai Sha Road / Kam Ying Road

2026 Design AM (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.453
Loss time		L =	31 sec
Total Flow		=	2320 pcu
Co	= (1.5*L+5)/(1-Y)	=	94.1 sec
Cm	= L/(1-Y)	=	56.6 sec
Yult		=	0.668
R.C.ult	= (Yult-Y)/Y*100%	=	47.4 %
Cp	= 0.9*L/(0.9-Y)	=	62.4 sec
Ymax	= 1-L/C	=	0.718
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**43 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	53	6
P2	1,2,4	5	5	0	82	5
P3	3	5	8	7	8	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	31	7
P7	2,3,4	5	12	0	55	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	289			289	1.00	1786							1786	0.162			28	33	0.630	36	39
5	1	3.50	2				4210		787		787	0.00	4210							4210	0.187	0.187		33	33	0.630	48	32
4	1	3.50	1	25			2105			16	16	1.00	1986							1986	0.008			1	33	0.630	0	158
11,12	2	4.00	1	15		N	2015	22	235		257	0.09	1998							1998	0.129	0.129		22	22	0.630	36	43
11	2	4.00	1				2155		277		277	0.00	2155							2155	0.129			22	22	0.630	36	42
10	2	3.50	1	25			2105			208	208	1.00	1986							1986	0.105			18	22	0.630	30	47
9	2,3	4.50	1	25		N	2065	213			213	1.00	1948							1948	0.109			19	39	0.630	30	46
7,8	3	3.50	1	25			2105		5	187	192	0.97	1989							1989	0.097	0.097		17	17	0.630	30	48
1,2,3	4	5.50	1	15		N	2165	32	11	38	81	0.86	1993							1993	0.041	0.041		7	7	0.630	12	67

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

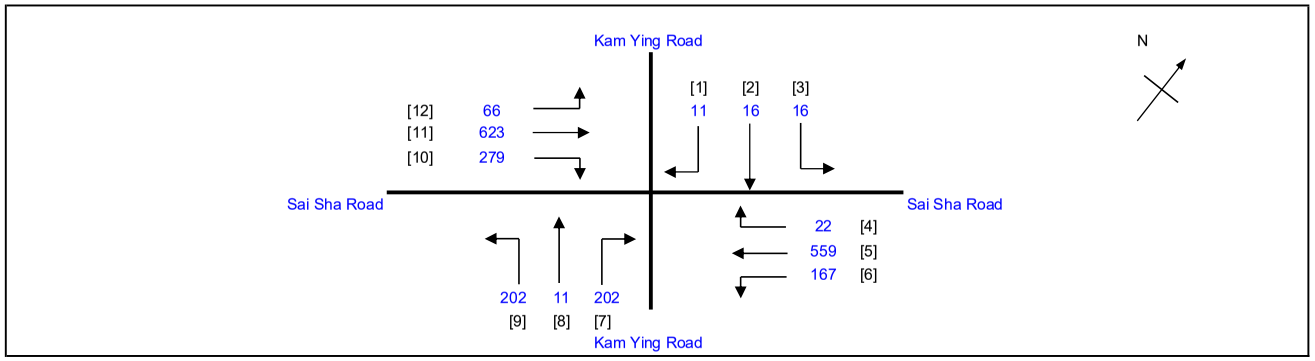
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

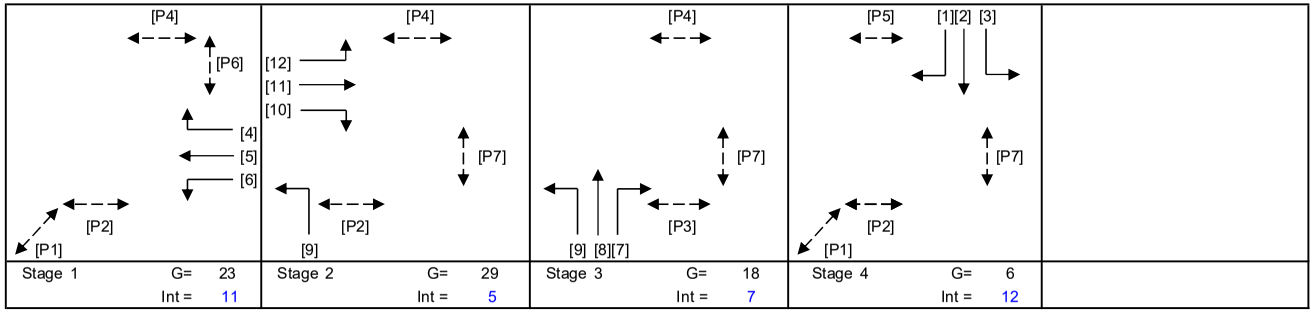
J3 Sai Sha Road / Kam Ying Road

2026 Design PM (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.428
Loss time		L =	34 sec
Total Flow		=	2174 pcu
Co	= (1.5*L+5)/(1-Y)	=	97.9 sec
Cm	= L/(1-Y)	=	59.4 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	50.7 %
Cp	= 0.9*L/(0.9-Y)	=	64.8 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**45 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	87	5
P5	4	5	6	6	6	6
P6	1	5	7	5	22	7
P7	2,3,4	5	12	0	64	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	167			167	1.00	1786							1786	0.093			17	24	0.619	24	49
5	1	3.50	2				4210		559		559	0.00	4210							4210	0.133	0.133		24	24	0.619	39	38
4	1	3.50	1	25			2105			22	22	1.00	1986							1986	0.011			2	24	0.619	6	122
11,12	2	4.00	1	15		N	2015	66	264		330	0.20	1975							1975	0.167	0.167		30	30	0.619	42	37
11	2	4.00	1				2155		359		359	0.00	2155							2155	0.167			30	30	0.619	48	36
10	2	3.50	1	25			2105			279	279	1.00	1986							1986	0.140			25	30	0.619	36	40
9	2,3	4.50	1	25		N	2065	202			202	1.00	1948							1948	0.104			18	49	0.619	30	46
7,8	3	3.50	1	25			2105		11	202	213	0.95	1992							1992	0.107	0.107		19	19	0.619	30	46
1,2,3	4	5.50	1	15		N	2165	16	16	11	43	0.63	2037							2037	0.021	0.021	3	4	7	0.619	6	85

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

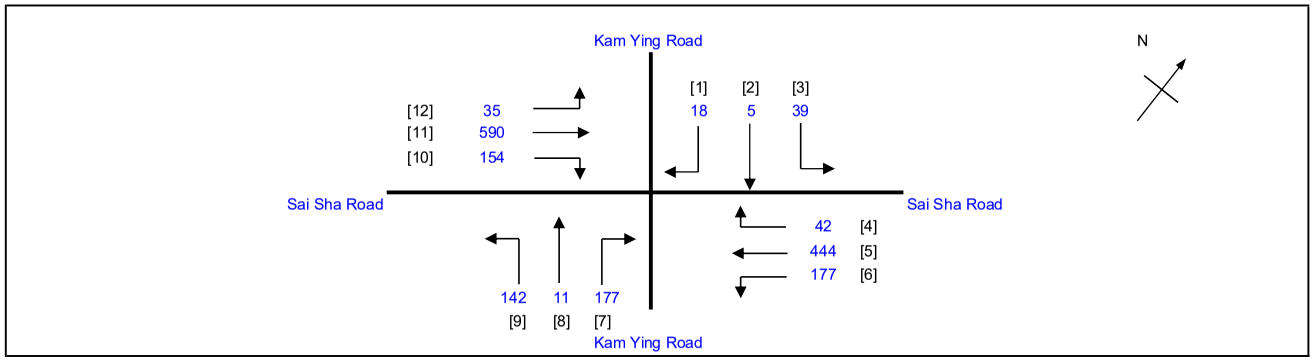
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

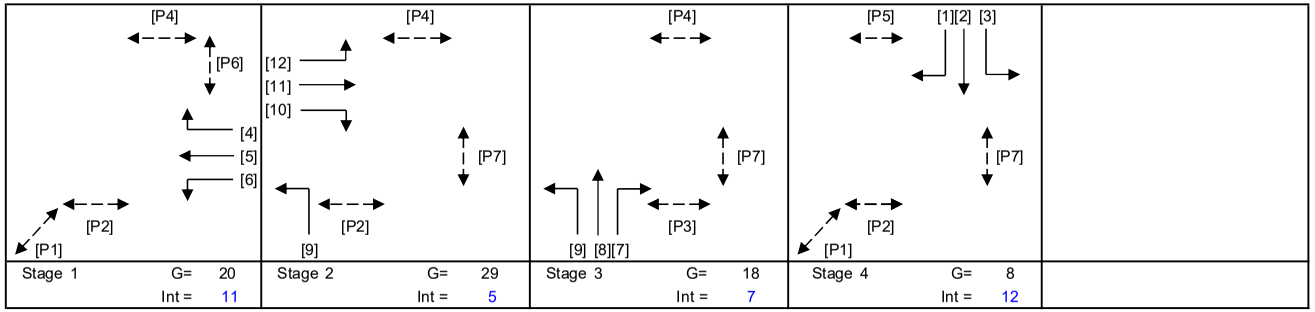
J3 Sai Sha Road / Kam Ying Road

2026 Design Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J3_SSR_KYR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.382
Loss time		L =	34 sec
Total Flow		=	1834 pcu
Co	= (1.5*L+5)/(1-Y)	=	90.6 sec
Cm	= L/(1-Y)	=	55.0 sec
Yult		=	0.645
R.C.ult	= (Yult-Y)/Y*100%	=	68.9 %
Cp	= 0.9*L/(0.9-Y)	=	59.1 sec
Ymax	= 1-L/C	=	0.691
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	=	**63 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	1,4	5	6	2	43	6
P2	1,2,4	5	5	0	80	5
P3	3	5	8	7	10	8
P4	1,2,3	5	5	0	85	5
P5	4	5	6	6	8	6
P6	1	5	7	5	19	7
P7	2,3,4	5	12	0	67	12

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							31					
6	1	3.50	1	15		N	1965	177			177	1.00	1786							1786	0.099			20	21	0.553	24	43
5	1	3.50	2				4210		444		444	0.00	4210							4210	0.105	0.105		21	21	0.553	30	39
4	1	3.50	1	25			2105			42	42	1.00	1986							1986	0.021			4	21	0.553	6	73
11,12	2	4.00	1	15		N	2015	35	265		300	0.12	1992							1992	0.151			30	30	0.553	36	35
11	2	4.00	1				2155		325		325	0.00	2155							2155	0.151	0.151		30	30	0.553	42	34
10	2	3.50	1	25			2105			154	154	1.00	1986							1986	0.078			15	30	0.553	24	47
9	2,3	4.50	1	25		N	2065	142			142	1.00	1948							1948	0.073			15	49	0.553	18	48
7,8	3	3.50	1	25			2105		11	177	188	0.94	1992							1992	0.094	0.094		19	19	0.553	24	43
1,2,3	4	5.50	1	15		N	2165	39	5	18	62	0.92	1983							1983	0.031	0.031	3	6	9	0.553	6	63

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

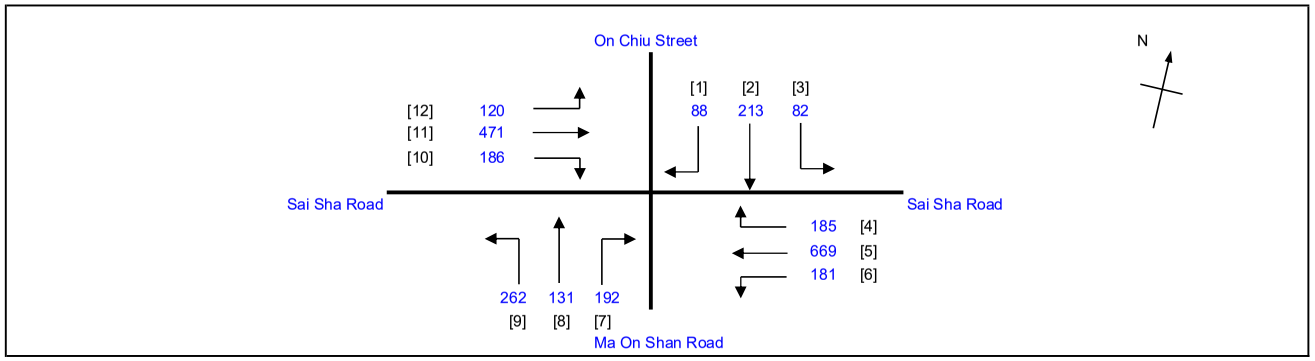
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

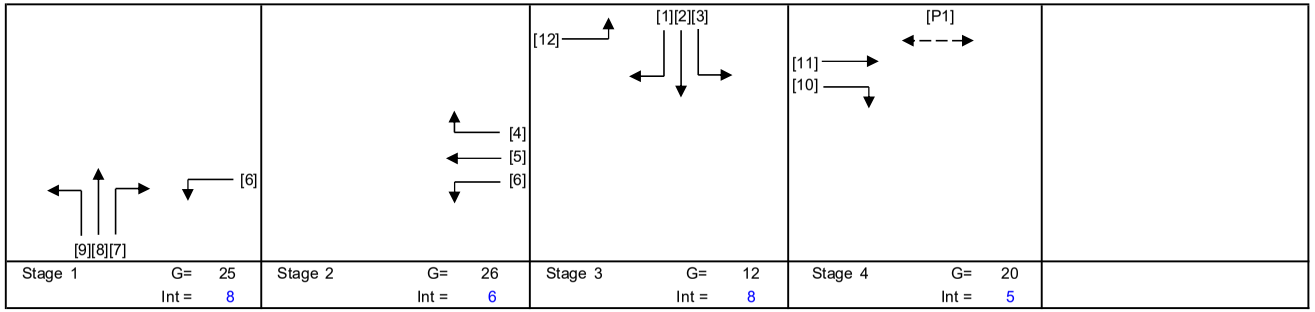
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2026 Reference AM (Construction)

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.496
Loss time	L =	24 sec
Total Flow	=	2780 pcu
Co = (1.5*L+5)/(1-Y)	=	81.4 sec
Cm = L/(1-Y)	=	47.7 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	45.1 %
Cp = 0.9*L/(0.9-Y)	=	53.5 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**42 %**



Pedestrian Phase	Stage	Green Time Required SG	Green Time Required FG	Green Time Required Delay	Green Time Provided SG	Green Time Provided FG
P1	4	11	9	4	12	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Movement Straight pcu/h	Movement Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																						23					
8,9	1	3.70	1	10		N	1985	262	0		262	1.00	1726							1726	0.152	0.152		26	26	0.635	36	41
7,8	1	3.70	1	30			2125		131	35	166	0.21	2103							2103	0.079			14	26	0.635	24	52
7	1	3.70	1	25			2125			157	157	1.00	2005							2005	0.078			14	26	0.635	24	53
6	1,2	3.75	1	15		N	1990	181			181	1.00	1809							1809	0.100			17	54	0.635	24	49
5	2	3.75	2				4260		669		669	0.00	4260							4260	0.157	0.157		27	27	0.635	45	36
4	2	3.75	1	25			2130			185	185	1.00	2009							2009	0.092			16	27	0.635	24	50
2,3	3	3.50	1	15		N	1965	82	56		138	0.59	1855							1855	0.074			13	13	0.635	18	55
1,2	3	3.50	1	30			2105		157	0	157	0.00	2105							2105	0.075	0.075		13	13	0.635	24	53
1	3	3.00	1	25			2055			88	88	1.00	1939							1939	0.045			8	13	0.635	12	65
12	3	3.30	1	10		N	1945	120			120	1.00	1691							1691	0.071			12	13	0.635	18	57
11	4	3.30	2				4170		471		471	0.00	4170							4170	0.113	0.113	1	20	21	0.635	33	42
10	4	3.30	1	25			2085			186	186	1.00	1967							1967	0.095			16	21	0.635	24	49

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

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J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2026 Reference PM (Construction)

PROJECT NO.: 40830
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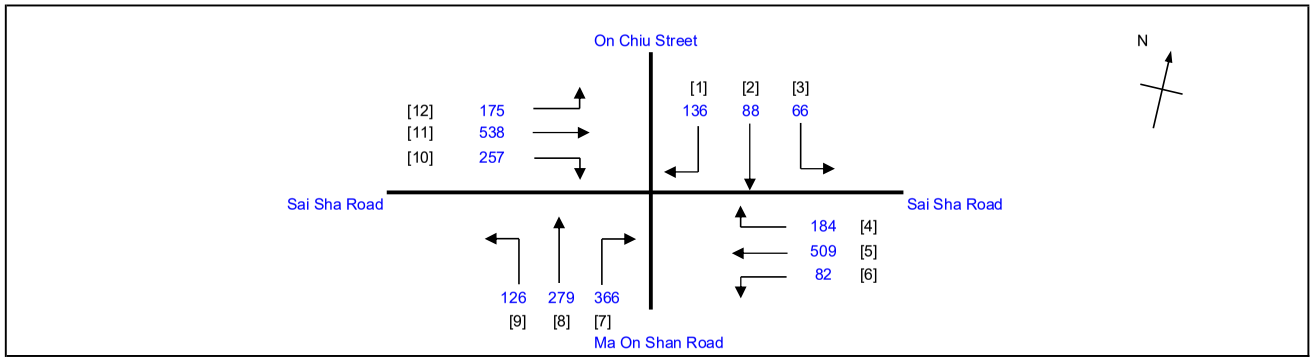
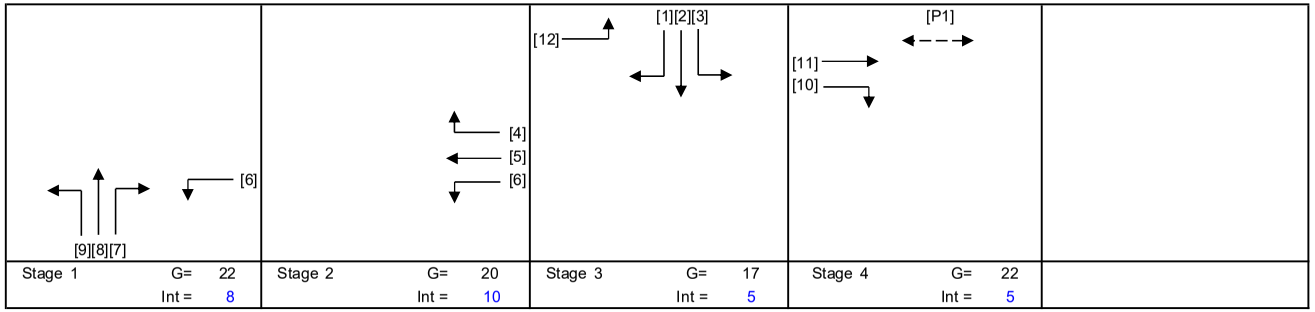


No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.484
Loss time		L =	24 sec
Total Flow		=	2806 pcu
Co	= (1.5*L+5)/(1-Y)	=	79.4 sec
Cm	= L/(1-Y)	=	46.5 sec
Yult		=	0.720
R.C.ult	= (Yult-Y)/Y*100%	=	48.8 %
Cp	= 0.9*L/(0.9-Y)	=	51.9 sec
Ymax	= 1-L/C	=	0.782
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**45 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	14	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	126	113		239	0.53	1840							1840	0.130			23	23	0.619	30	42
7,8	1	3.70	1	30			2125		166	105	271	0.39	2085							2085	0.130			23	23	0.619	36	42
7	1	3.70	1	25			2125			261	261	1.00	2005							2005	0.130	0.130		23	23	0.619	36	42
6	1,2	3.75	1	15		N	1990	82			82	1.00	1809							1809	0.045			8	44	0.619	12	64
5	2	3.75	2				4260		509		509	0.00	4260							4260	0.119	0.119		21	21	0.619	36	40
4	2	3.75	1	25			2130			184	184	1.00	2009							2009	0.092			16	21	0.619	24	48
2,3	3	3.50	1	15		N	1965	66	25		91	0.73	1832							1832	0.050			9	18	0.619	12	62
1,2	3	3.50	1	30			2105		63	40	103	0.39	2065							2065	0.050			9	18	0.619	18	60
1	3	3.00	1	25			2055			96	96	1.00	1939							1939	0.050			9	18	0.619	12	61
12	3	3.30	1	10		N	1945	175			175	1.00	1691							1691	0.103	0.103		18	18	0.619	24	48
11	4	3.30	2				4170		538		538	0.00	4170							4170	0.129			23	23	0.619	39	39
10	4	3.30	1	25			2085			257	257	1.00	1967							1967	0.131	0.131		23	23	0.619	36	42

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

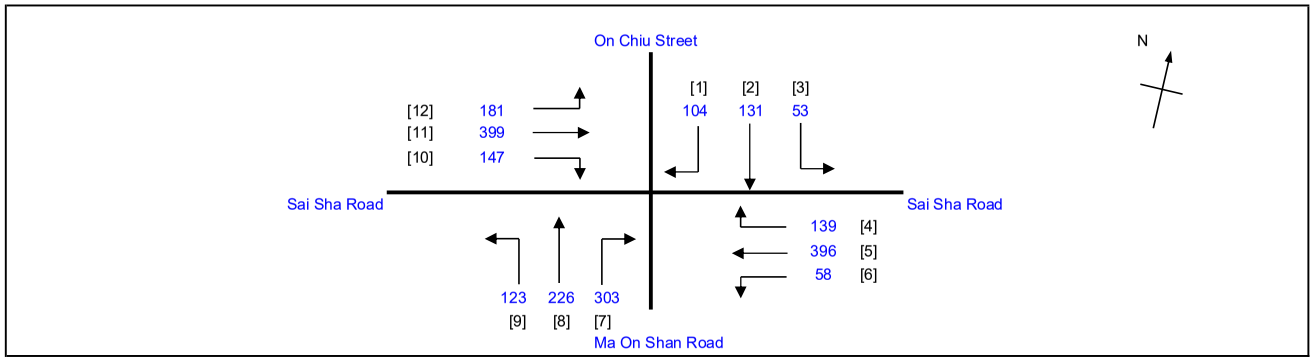
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

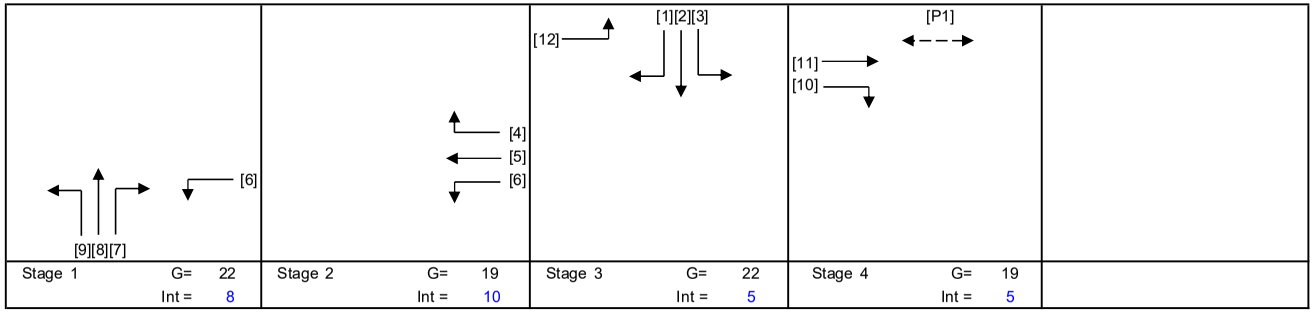
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2026 Reference Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.406
Loss time	L =	24 sec
Total Flow	=	2260 pcu
Co = (1.5*L+5)/(1-Y)	=	69.0 sec
Cm = L/(1-Y)	=	40.4 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	77.2 %
Cp = 0.9*L/(0.9-Y)	=	43.7 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**73 %**



Stage 1	G= 22	Int = 8
Stage 2	G= 19	Int = 10
Stage 3	G= 22	Int = 5
Stage 4	G= 19	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	123	78		201	0.61	1818							1818	0.111	0.111		23	23	0.520	24	39
7,8	1	3.70	1	30			2125		148	82	230	0.36	2088							2088	0.110			23	23	0.520	30	38
7	1	3.70	1	25			2125			221	221	1.00	2005							2005	0.110			23	23	0.520	30	39
6	1,2	3.75	1	15		N	1990	58			58	1.00	1809							1809	0.032			7	43	0.520	6	61
5	2	3.75	2				4260		396		396	0.00	4260							4260	0.093	0.093		20	20	0.520	27	39
4	2	3.75	1	25			2130			139	139	1.00	2009							2009	0.069			15	20	0.520	18	47
2,3	3	3.50	1	15		N	1965	53	38		91	0.58	1857							1857	0.049			10	23	0.520	12	53
1,2	3	3.50	1	30			2105		93	9	102	0.09	2096							2096	0.049			10	23	0.520	12	52
1	3	3.00	1	25			2055			95	95	1.00	1939							1939	0.049			10	23	0.520	12	52
12	3	3.30	1	10		N	1945	181			181	1.00	1691							1691	0.107	0.107		23	23	0.520	24	40
11	4	3.30	2				4170		399		399	0.00	4170							4170	0.096	0.096		20	20	0.520	27	39
10	4	3.30	1	25			2085			147	147	1.00	1967							1967	0.075			16	20	0.520	18	45

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

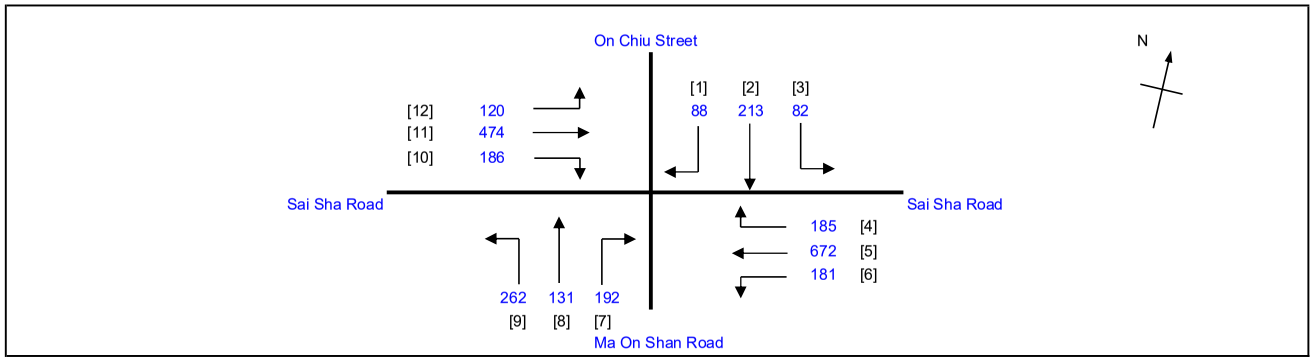
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

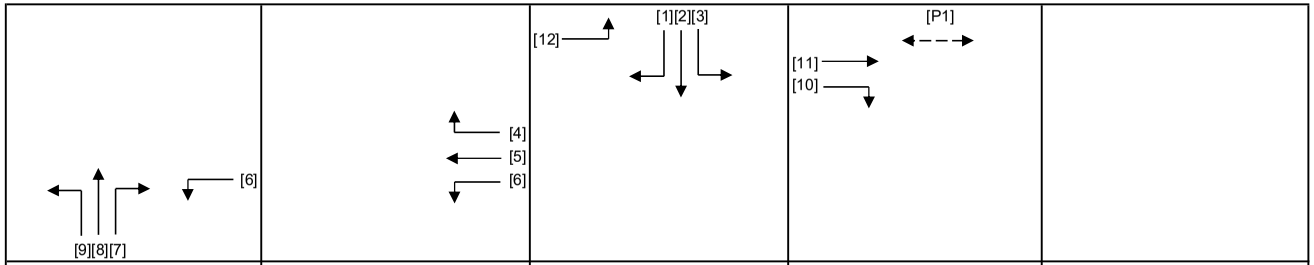
2026 Design AM (Construction)

PROJECT NO.: 40830

FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.498
Loss time	L =	24 sec
Total Flow	=	2786 pcu
Co = (1.5*L+5)/(1-Y)	=	81.6 sec
Cm = L/(1-Y)	=	47.8 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	44.6 %
Cp = 0.9*L/(0.9-Y)	=	53.7 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**41 %**



Stage 1	G= 25	Int = 8
Stage 2	G= 26	Int = 6
Stage 3	G= 12	Int = 8
Stage 4	G= 20	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	Green Time Required FG	Green Time Required Delay	Green Time Provided SG	Green Time Provided FG
P1	4	11	9	4	12	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Movement Straight pcu/h	Movement Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																						23					
8,9	1	3.70	1	10		N	1985	262	0		262	1.00	1726							1726	0.152	0.152		26	26	0.637	36	41
7,8	1	3.70	1	30			2125		131	35	166	0.21	2103							2103	0.079			14	26	0.637	24	52
7	1	3.70	1	25			2125			157	157	1.00	2005							2005	0.078			14	26	0.637	24	53
6	1,2	3.75	1	15		N	1990	181			181	1.00	1809							1809	0.100			17	53	0.637	24	49
5	2	3.75	2				4260		672		672	0.00	4260							4260	0.158	0.158		27	27	0.637	45	36
4	2	3.75	1	25			2130			185	185	1.00	2009							2009	0.092			16	27	0.637	24	50
2,3	3	3.50	1	15		N	1965	82	56		138	0.59	1855							1855	0.074			13	13	0.637	18	55
1,2	3	3.50	1	30			2105		157	0	157	0.00	2105							2105	0.075	0.075		13	13	0.637	24	53
1	3	3.00	1	25			2055			88	88	1.00	1939							1939	0.045			8	13	0.637	12	65
12	3	3.30	1	10		N	1945	120			120	1.00	1691							1691	0.071			12	13	0.637	18	57
11	4	3.30	2				4170		474		474	0.00	4170							4170	0.114	0.114	1	20	21	0.637	33	42
10	4	3.30	1	25			2085			186	186	1.00	1967							1967	0.095			16	21	0.637	24	49

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

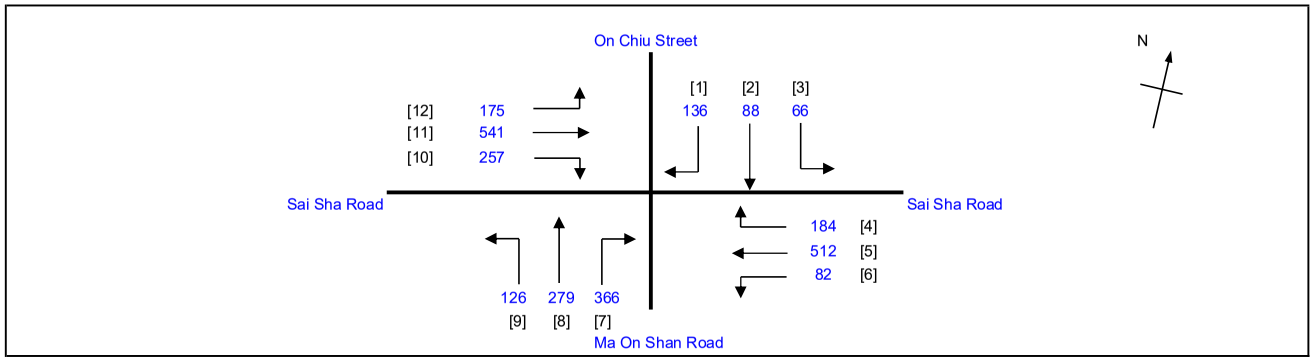
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

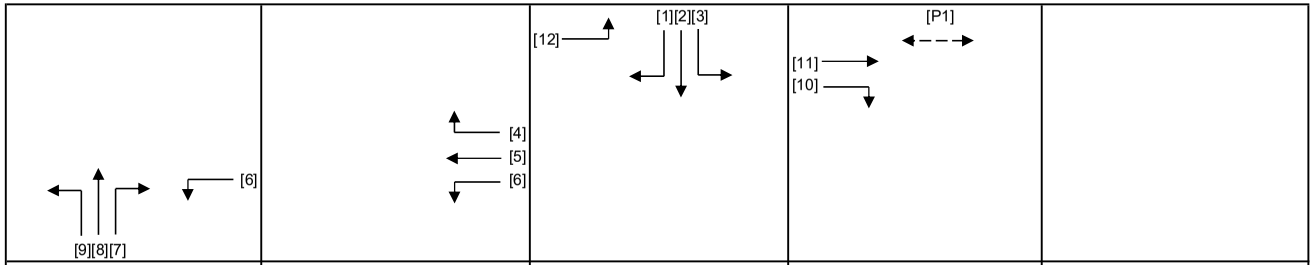
2026 Design PM (Construction)

PROJECT NO.: 40830

FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	110 sec
Sum(y)	Y =	0.485
Loss time	L =	24 sec
Total Flow	=	2812 pcu
Co = (1.5*L+5)/(1-Y)	=	79.5 sec
Cm = L/(1-Y)	=	46.6 sec
Yult	=	0.720
R.C.ult = (Yult-Y)/Y*100%	=	48.6 %
Cp = 0.9*L/(0.9-Y)	=	52.0 sec
Ymax = 1-L/C	=	0.782
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**45 %**



Stage 1	G= 22	Int = 8
Stage 2	G= 20	Int = 10
Stage 3	G= 17	Int = 5
Stage 4	G= 22	Int = 5

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	14	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	126	113		239	0.53	1840							1840	0.130			23	23	0.620	30	42
7,8	1	3.70	1	30			2125		166	105	271	0.39	2085							2085	0.130			23	23	0.620	36	42
7	1	3.70	1	25			2125			261	261	1.00	2005							2005	0.130	0.130		23	23	0.620	36	42
6	1,2	3.75	1	15		N	1990	82			82	1.00	1809							1809	0.045			8	44	0.620	12	64
5	2	3.75	2				4260		512		512	0.00	4260							4260	0.120	0.120		21	21	0.620	36	40
4	2	3.75	1	25			2130			184	184	1.00	2009							2009	0.092			16	21	0.620	24	48
2,3	3	3.50	1	15		N	1965	66	25		91	0.73	1832							1832	0.050			9	18	0.620	12	62
1,2	3	3.50	1	30			2105		63	40	103	0.39	2065							2065	0.050			9	18	0.620	18	60
1	3	3.00	1	25			2055			96	96	1.00	1939							1939	0.050			9	18	0.620	12	61
12	3	3.30	1	10		N	1945	175			175	1.00	1691							1691	0.103	0.103		18	18	0.620	24	48
11	4	3.30	2				4170		541		541	0.00	4170							4170	0.130			23	23	0.620	39	39
10	4	3.30	1	25			2085			257	257	1.00	1967							1967	0.131	0.131		23	23	0.620	36	42

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

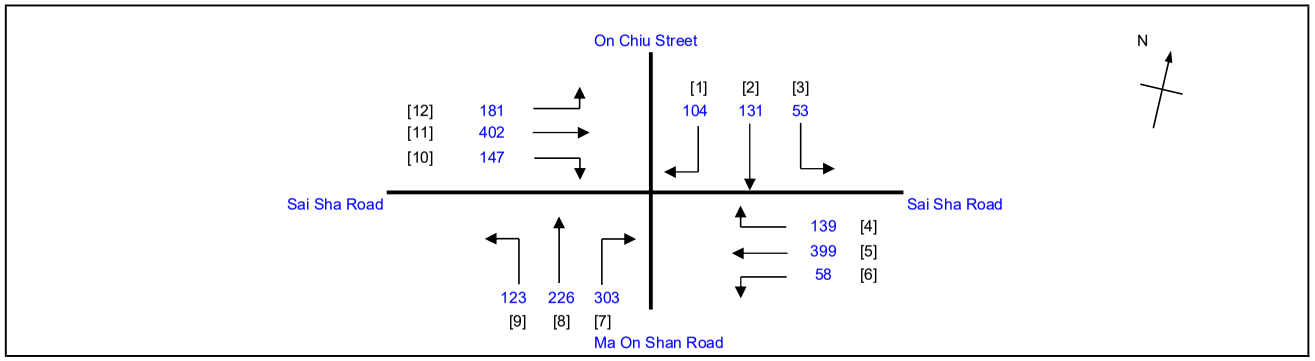
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

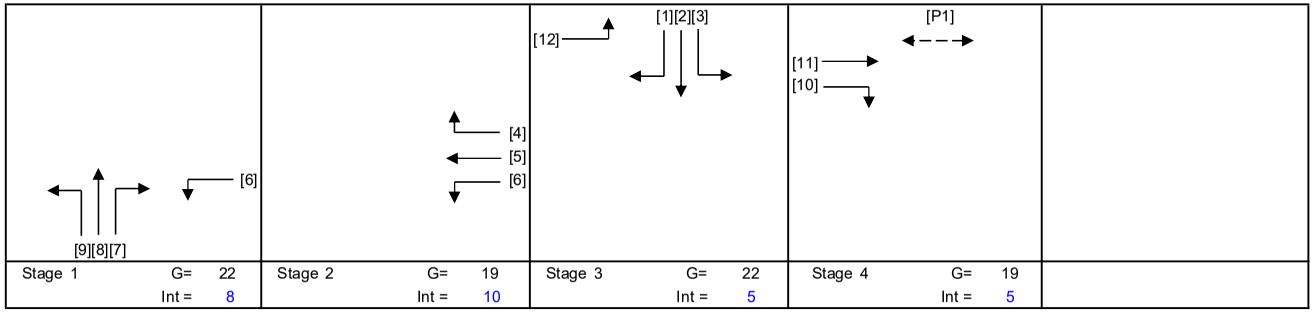
J4 Sai Sha Road / Ma On Shan Road / On Chiu Street

2026 Design Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J4_SSR_MOSR_OCR.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	110 sec
Sum(y)		Y =	0.408
Loss time		L =	24 sec
Total Flow		=	2266 pcu
Co	= (1.5*L+5)/(1-Y)	=	69.2 sec
Cm	= L/(1-Y)	=	40.5 sec
Yult		=	0.720
R.C.ult	= (Yult-Y)/Y*100%	=	76.6 %
Cp	= 0.9*L/(0.9-Y)	=	43.9 sec
Ymax	= 1-L/C	=	0.782
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**73 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P1	4	11	9	4	11	9

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							24					
8,9	1	3.70	1	10		N	1985	123	78		201	0.61	1818							1818	0.111	0.111		23	23	0.521	24	39
7,8	1	3.70	1	30			2125		148	82	230	0.36	2088							2088	0.110			23	23	0.521	30	39
7	1	3.70	1	25			2125			221	221	1.00	2005							2005	0.110			23	23	0.521	30	39
6	1,2	3.75	1	15		N	1990	58			58	1.00	1809							1809	0.032			7	43	0.521	6	61
5	2	3.75	2				4260		399		399	0.00	4260							4260	0.094	0.094		20	20	0.521	30	39
4	2	3.75	1	25			2130			139	139	1.00	2009							2009	0.069			15	20	0.521	18	47
2,3	3	3.50	1	15		N	1965	53	38		91	0.58	1857							1857	0.049			10	23	0.521	12	53
1,2	3	3.50	1	30			2105		93	9	102	0.09	2096							2096	0.049			10	23	0.521	12	52
1	3	3.00	1	25			2055			95	95	1.00	1939							1939	0.049			10	23	0.521	12	52
12	3	3.30	1	10		N	1945	181			181	1.00	1691							1691	0.107	0.107		23	23	0.521	24	40
11	4	3.30	2				4170		402		402	0.00	4170							4170	0.096	0.096		20	20	0.521	30	39
10	4	3.30	1	25			2085			147	147	1.00	1967							1967	0.075			16	20	0.521	18	46

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

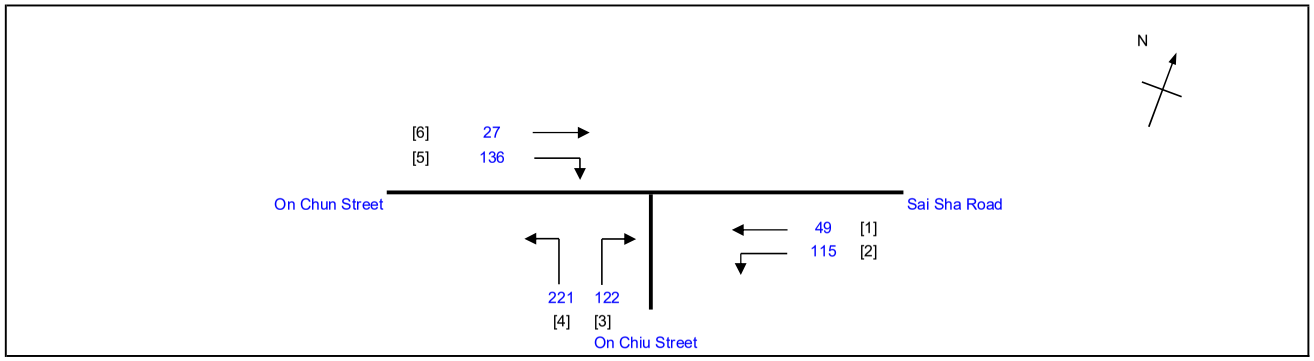
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

J5 On Chun Street / On Chiu Street

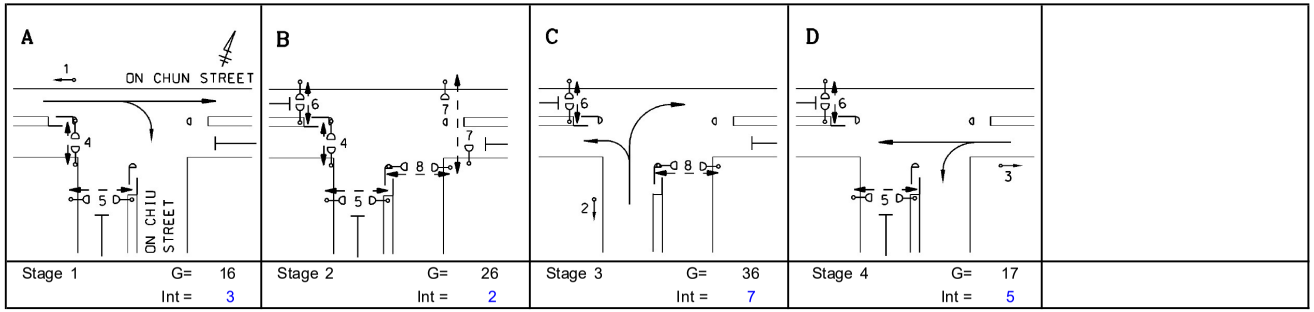
2026 Reference AM (Construction)

PROJECT NO.: 40830

FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle		N =	4
Cycle time		C =	113 sec
Sum(y)		Y =	0.178
Loss time		L =	40 sec
Total Flow		=	670 pcu
Co	= (1.5*L+5)/(1-Y)	=	79.0 sec
Cm	= L/(1-Y)	=	48.6 sec
Yult		=	0.600
R.C.ult	= (Yult-Y)/Y*100%	=	237.9 %
Cp	= 0.9*L/(0.9-Y)	=	49.8 sec
Ymax	= 1-L/C	=	0.646
R.C.(C)	**= (0.9*Ymax-Y)/Y*100%**	**=**	**227 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	31	10
P5	1,2,4	5	9	3	58	9
P6	2,3,4	5	6	3	85	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	50	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		27	53	80	0.66	1880							1880	0.043	0.043		17	17	0.275	12	40
5	1	3.50	1	22			2105			83	83	1.00	1971							1971	0.042			17	17	0.275	12	40
4	3	3.65	1	15		N	1980	164			164	1.00	1800							1800	0.091	0.091		37	37	0.275	18	26
3,4	3	3.65	1	20			2120	57		122	179	1.00	1972							1972	0.091			37	37	0.275	18	26
2	4	3.40	1	13		N	1955	77			77	1.00	1753							1753	0.044	0.044		18	18	0.275	12	40
1,2	4	3.40	1	13			2095	38	49		87	0.44	1994							1994	0.044			18	18	0.275	12	40
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

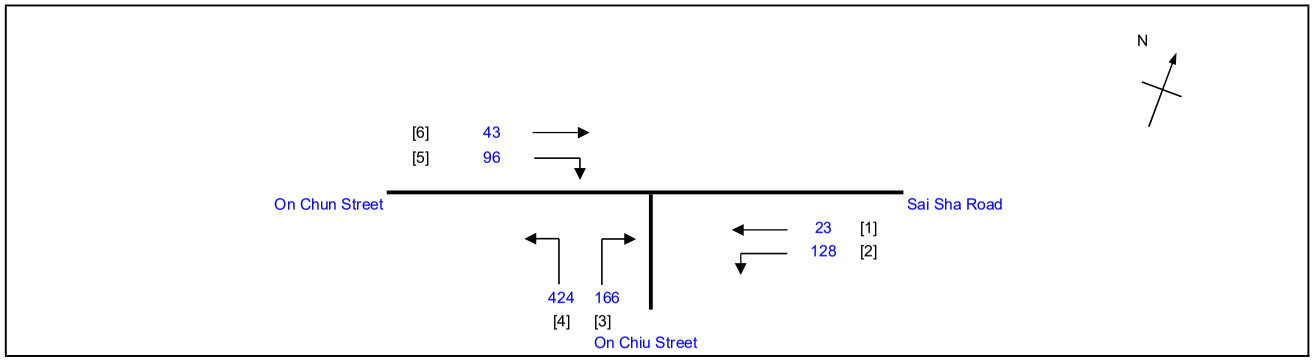
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

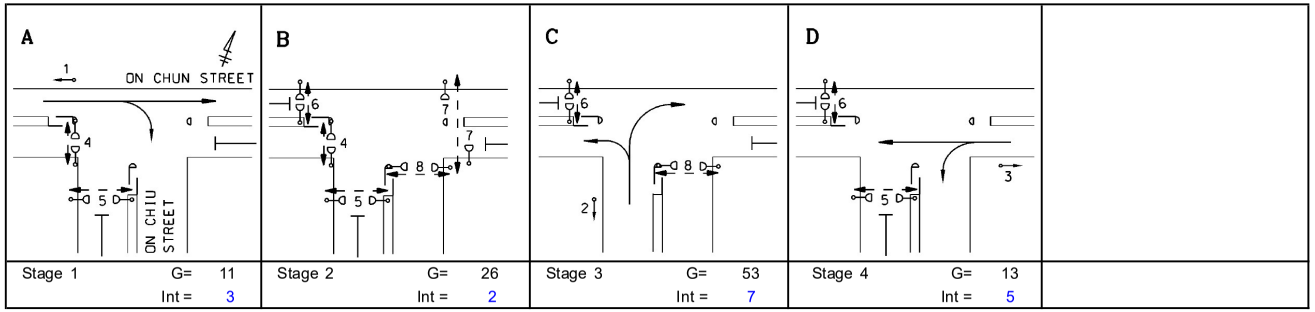
J5 On Chun Street / On Chiu Street

2026 Reference PM (Construction)

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.234
Loss time	L =	40 sec
Total Flow	=	880 pcu
Co = (1.5*L+5)/(1-Y)	=	84.9 sec
Cm = L/(1-Y)	=	52.2 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	156.4 %
Cp = 0.9*L/(0.9-Y)	=	54.1 sec
Ymax = 1-L/C	=	0.667
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**156 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	26	10
P5	1,2,4	5	9	3	48	9
P6	2,3,4	5	6	3	97	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	67	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		43	26	69	0.38	1916							1916	0.036	0.036		12	12	0.351	12	50
5	1	3.50	1	22			2105			70	70	1.00	1971							1971	0.036			12	12	0.351	12	50
4	3	3.65	1	15		N	1980	282			282	1.00	1800							1800	0.157	0.157		54	54	0.351	30	21
3,4	3	3.65	1	20			2120	142		166	308	1.00	1972							1972	0.156			53	54	0.351	30	21
2	4	3.40	1	13		N	1955	71			71	1.00	1753							1753	0.041			14	14	0.351	12	48
1,2	4	3.40	1	13			2095	57	23		80	0.71	1936							1936	0.041	0.041		14	14	0.351	12	48
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

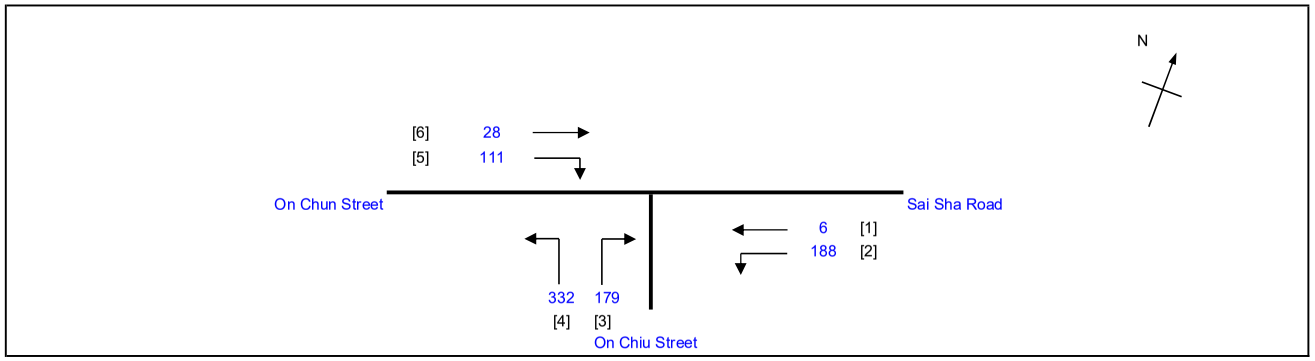
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

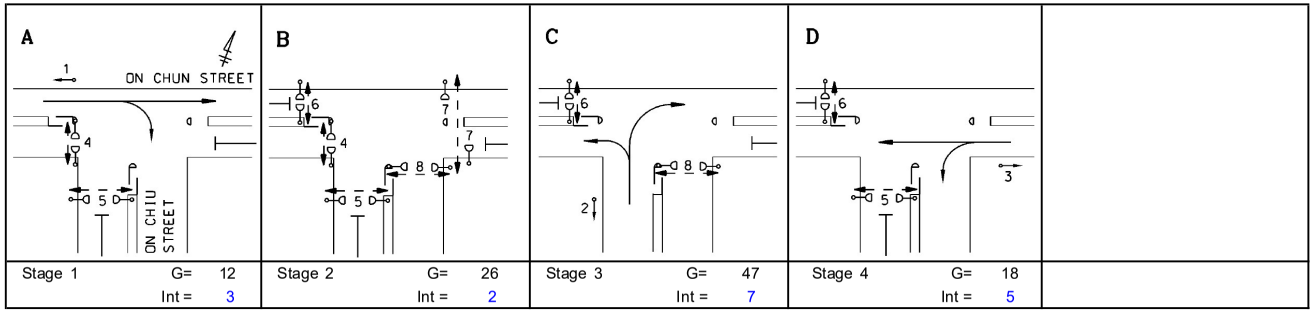
J5 On Chun Street / On Chiu Street

2026 Reference Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.225
Loss time	L =	40 sec
Total Flow	=	844 pcu
Co = (1.5*L+5)/(1-Y)	=	83.9 sec
Cm = L/(1-Y)	=	51.6 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	166.6 %
Cp = 0.9*L/(0.9-Y)	=	53.3 sec
Ymax = 1-L/C	=	0.667
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	**167 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	27	10
P5	1,2,4	5	9	3	54	9
P6	2,3,4	5	6	3	96	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	61	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		28	40	68	0.59	1889							1889	0.036			13	13	0.338	12	49
5	1	3.50	1	22			2105			71	71	1.00	1971							1971	0.036	0.036		13	13	0.338	12	49
4	3	3.65	1	15		N	1980	244			244	1.00	1800							1800	0.136	0.136		48	48	0.338	24	24
3,4	3	3.65	1	20			2120	88		179	267	1.00	1972							1972	0.135			48	48	0.338	30	23
2	4	3.40	1	13		N	1955	93			93	1.00	1753							1753	0.053			19	19	0.338	12	44
1,2	4	3.40	1	13			2095	95	6		101	0.94	1890							1890	0.053	0.053		19	19	0.338	12	43
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

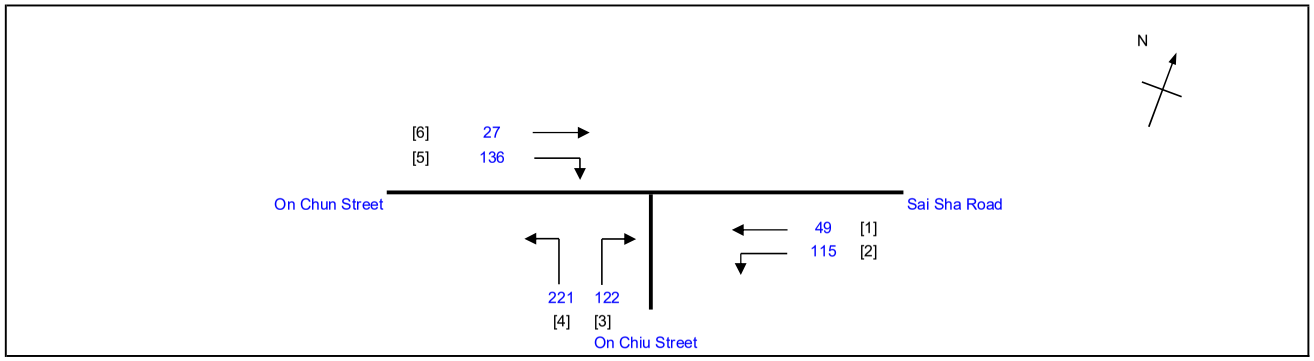
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

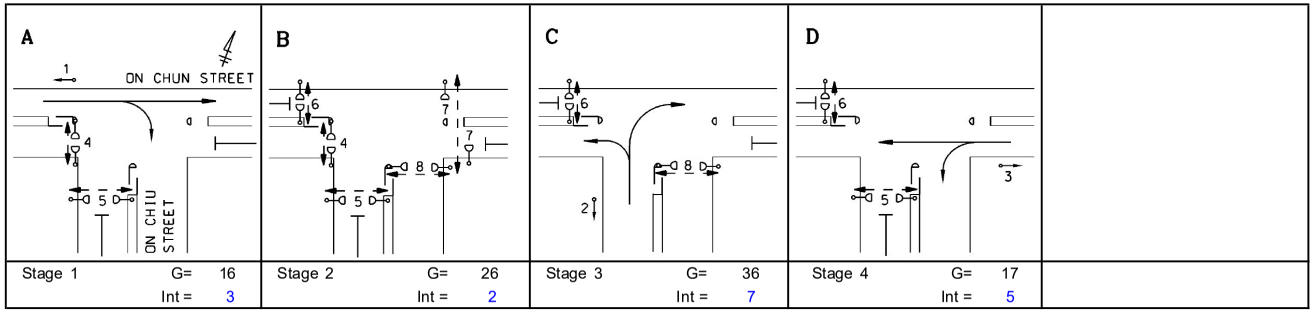
J5 On Chun Street / On Chiu Street

2026 Design AM (Construction)

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	113 sec
Sum(y)	Y =	0.178
Loss time	L =	40 sec
Total Flow	=	670 pcu
Co = (1.5*L+5)/(1-Y)	=	79.0 sec
Cm = L/(1-Y)	=	48.6 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	237.9 %
Cp = 0.9*L/(0.9-Y)	=	49.8 sec
Ymax = 1-L/C	=	0.646
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**227 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	31	10
P5	1,2,4	5	9	3	58	9
P6	2,3,4	5	6	3	85	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	50	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		27	53	80	0.66	1880							1880	0.043	0.043		17	17	0.275	12	40
5	1	3.50	1	22			2105			83	83	1.00	1971							1971	0.042			17	17	0.275	12	40
4	3	3.65	1	15		N	1980	164			164	1.00	1800							1800	0.091	0.091		37	37	0.275	18	26
3,4	3	3.65	1	20			2120	57		122	179	1.00	1972							1972	0.091			37	37	0.275	18	26
2	4	3.40	1	13		N	1955	77			77	1.00	1753							1753	0.044	0.044		18	18	0.275	12	40
1,2	4	3.40	1	13			2095	38	49		87	0.44	1994							1994	0.044			18	18	0.275	12	40
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

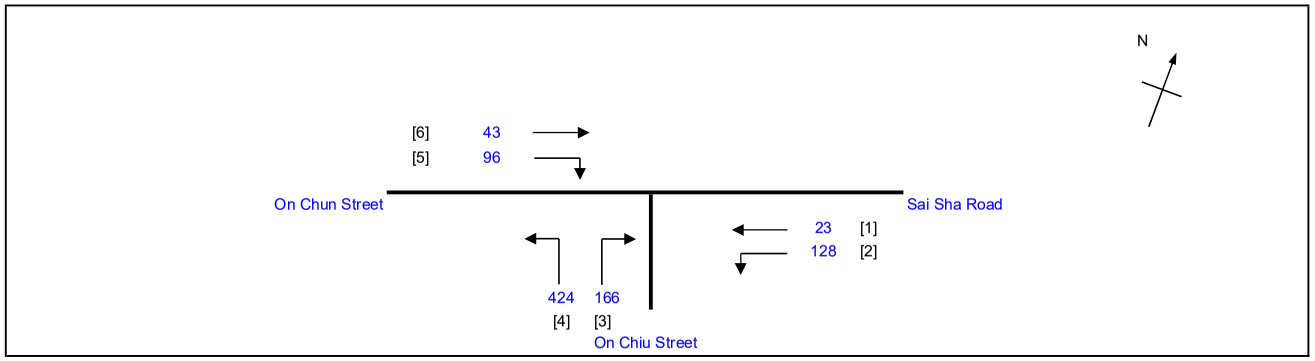
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

J5 On Chun Street / On Chiu Street

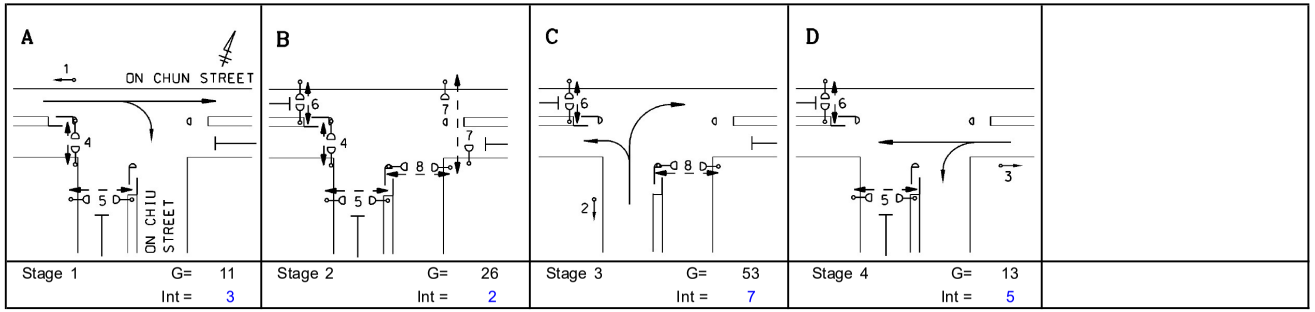
2026 Design PM (Construction)

PROJECT NO.: 40830

FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.234
Loss time	L =	40 sec
Total Flow	=	880 pcu
Co = (1.5*L+5)/(1-Y)	=	84.9 sec
Cm = L/(1-Y)	=	52.2 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	156.4 %
Cp = 0.9*L/(0.9-Y)	=	54.1 sec
Ymax = 1-L/C	=	0.667
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**156 %**



Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	26	10
P5	1,2,4	5	9	3	48	9
P6	2,3,4	5	6	3	97	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	67	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		43	26	69	0.38	1916							1916	0.036	0.036		12	12	0.351	12	50
5	1	3.50	1	22			2105			70	70	1.00	1971							1971	0.036			12	12	0.351	12	50
4	3	3.65	1	15		N	1980	282			282	1.00	1800							1800	0.157	0.157		54	54	0.351	30	21
3,4	3	3.65	1	20			2120	142		166	308	1.00	1972							1972	0.156			53	54	0.351	30	21
2	4	3.40	1	13		N	1955	71			71	1.00	1753							1753	0.041			14	14	0.351	12	48
1,2	4	3.40	1	13			2095	57	23		80	0.71	1936							1936	0.041	0.041		14	14	0.351	12	48
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

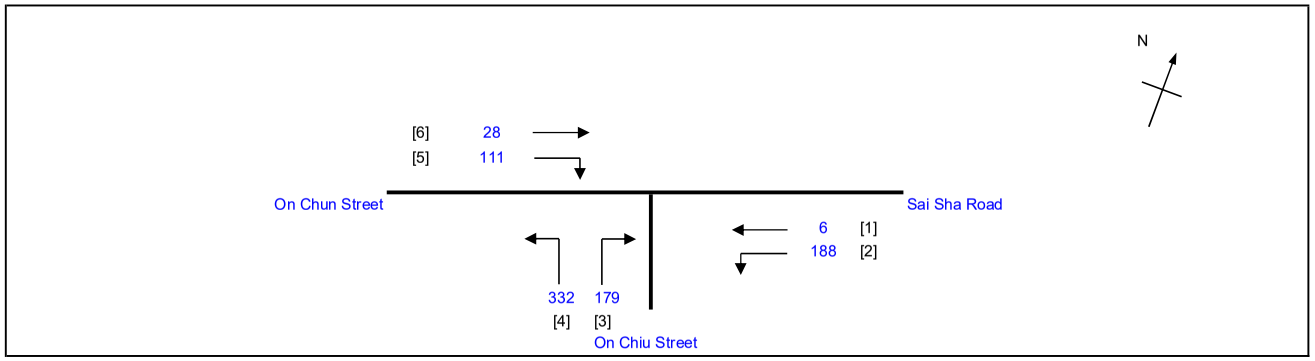
	INITIALS	DATE
Prepared By:	SKL	Jan-24
Checked By:	SLN	Jan-24
Reviewed By:	SLN	Jan-24

Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and

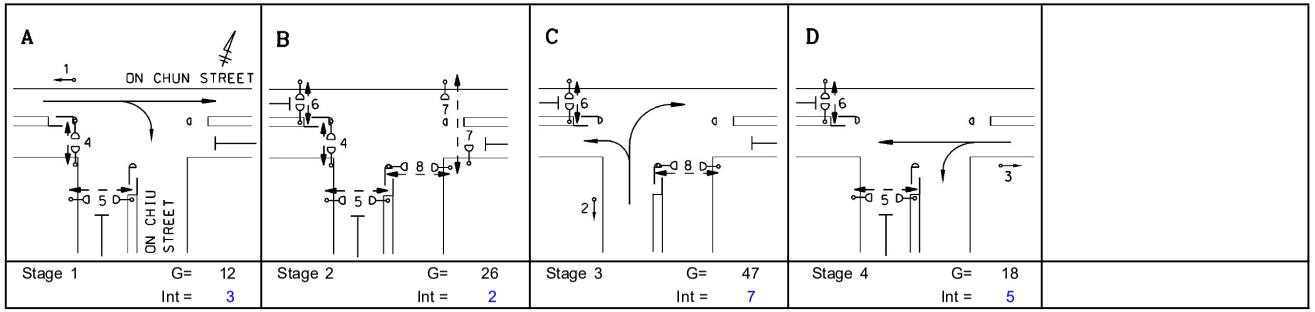
J5 On Chun Street / On Chiu Street

2026 Design Weekend (Construction)

PROJECT NO.: 40830
FILENAME : J5_OCS_OCS.xlsx



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.225
Loss time	L =	40 sec
Total Flow	=	844 pcu
Co = (1.5*L+5)/(1-Y)	=	83.9 sec
Cm = L/(1-Y)	=	51.6 sec
Yult	=	0.600
R.C.ult = (Yult-Y)/Y*100%	=	166.6 %
Cp = 0.9*L/(0.9-Y)	=	53.3 sec
Ymax = 1-L/C	=	0.667
R.C.(C) = (0.9*Ymax-Y)/Y*100%	**=**	**167 %**



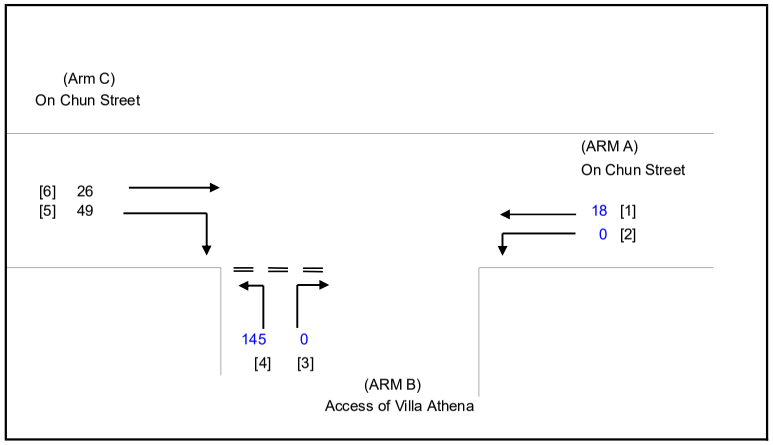
Stage 1	G= 12	Stage 2	G= 26	
	Int = 3		Int = 2	
Stage 3	G= 47	Stage 4	G= 18	
	Int = 7		Int = 5	

Pedestrian Phase	Stage	Green Time Required SG	FG	Delay	Green Time Provided SG	FG
P4	1,2	5	10	6	27	10
P5	1,2,4	5	9	3	54	9
P6	2,3,4	5	6	3	96	6
P7	2	10	7	7	14	7
P8	2,3	5	11	10	61	11

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																							14					
5,6	1	3.50	1	22		N	1965		28	40	68	0.59	1889							1889	0.036			13	13	0.338	12	49
5	1	3.50	1	22			2105			71	71	1.00	1971							1971	0.036	0.036		13	13	0.338	12	49
4	3	3.65	1	15		N	1980	244			244	1.00	1800							1800	0.136	0.136		48	48	0.338	24	24
3,4	3	3.65	1	20			2120	88		179	267	1.00	1972							1972	0.135			48	48	0.338	30	23
2	4	3.40	1	13		N	1955	93			93	1.00	1753							1753	0.053			19	19	0.338	12	44
1,2	4	3.40	1	13			2095	95	6		101	0.94	1890							1890	0.053	0.053		19	19	0.338	12	43
PED	2																						26					

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Reference AM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	18	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	26	(pcu/hr)
q c-b	=	49	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	145	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

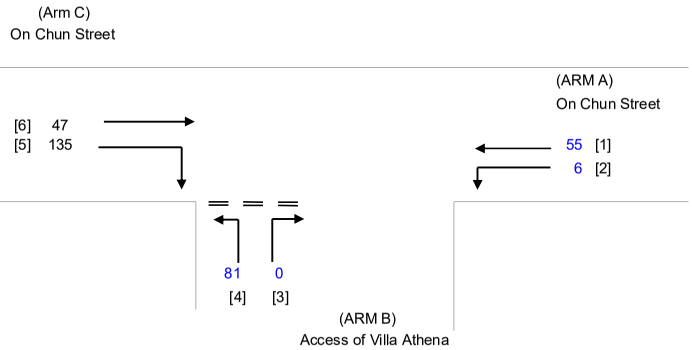
Q b-a	=	571		
Q b-c	=	736	Q b-c (O) =	736
Q c-b	=	723		
Q b-ac	=	736		
TOTAL FLOW	=	238	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1970
DFC c-b	=	0.0678
DFC b-c (share lane)	=	0.1970

CRITICAL DFC = 0.20

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Reference PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	6	(pcu/hr)
q a-c	=	55	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	47	(pcu/hr)
q c-b	=	135	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	81	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

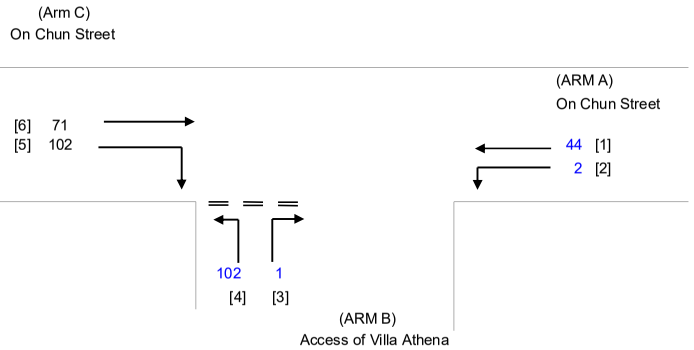
Q b-a	=	521		
Q b-c	=	724	Q b-c (O) =	724
Q c-b	=	710		
Q b-ac	=	724		
TOTAL FLOW	=	324	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1119
DFC c-b	=	0.1901
DFC b-c (share lane)	=	0.1119

CRITICAL DFC = 0.19

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Reference Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	2	(pcu/hr)
q a-c	=	44	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	71	(pcu/hr)
q c-b	=	102	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	1	(pcu/hr)
q b-c	=	102	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	0.99029126

THE CAPACITY OF MOVEMENT :

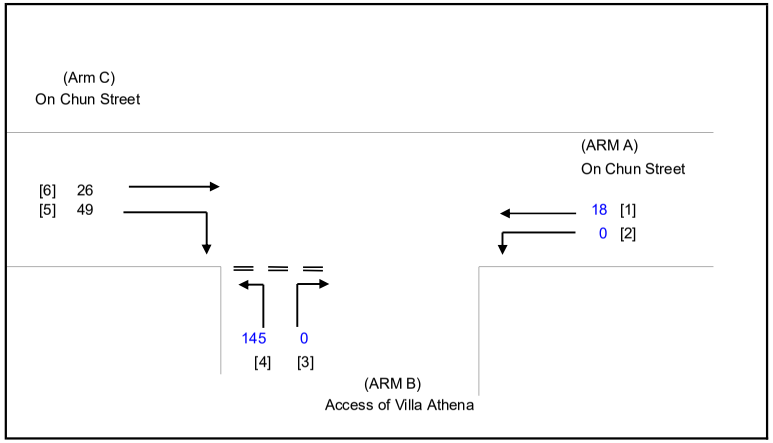
Q b-a	=	534		
Q b-c	=	727	Q b-c (O) =	726.7
Q c-b	=	714		
Q b-ac	=	724		
TOTAL FLOW	=	322	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0019
DFC b-c	=	0.1403
DFC c-b	=	0.1429
DFC b-c (share lane)	=	0.1408

CRITICAL DFC = 0.14

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Design AM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	0	(pcu/hr)
q a-c	=	18	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	26	(pcu/hr)
q c-b	=	49	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	145	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

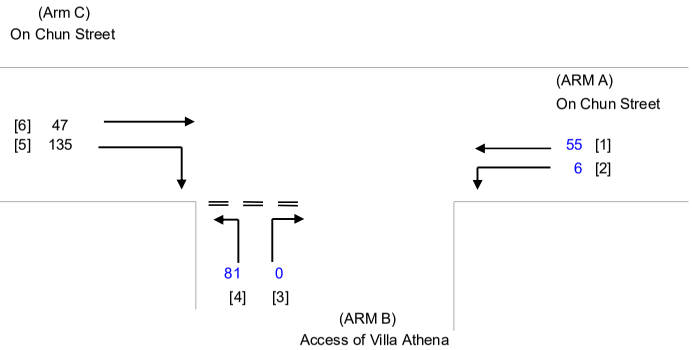
Q b-a	=	571		
Q b-c	=	736	Q b-c (O) =	736
Q c-b	=	723		
Q b-ac	=	736		
TOTAL FLOW	=	238	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1970
DFC c-b	=	0.0678
DFC b-c (share lane)	=	0.1970

CRITICAL DFC = 0.20

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Design PM (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	6	(pcu/hr)
q a-c	=	55	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	47	(pcu/hr)
q c-b	=	135	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	81	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

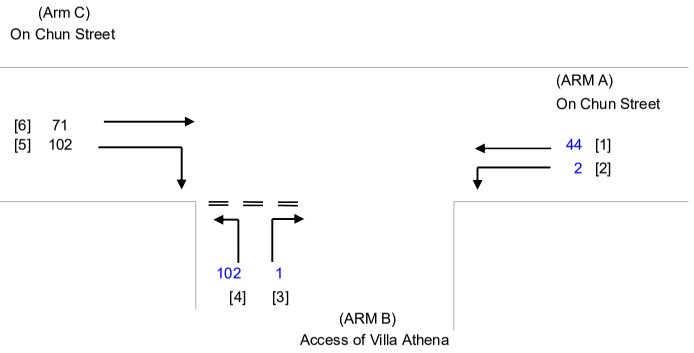
Q b-a	=	521		
Q b-c	=	724	Q b-c (O) =	724
Q c-b	=	710		
Q b-ac	=	724		
TOTAL FLOW	=	324	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1119
DFC c-b	=	0.1901
DFC b-c (share lane)	=	0.1119

CRITICAL DFC = 0.19

LLA CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Proposed Rezoning from "Government, Institution or Community" to "Residential (Group B)6" Zone to Include Social Welfare Facilities (RCHE and DE only) and Public Vehicle Park (excluding container vehicle) at Lots Nos. 148 S.A RP (Part), 148 S.B RP (Part), 149 RP, 150 S.A, 150 S.B and 151 in D.D.	**2026 Design Weekend (Construction)**	PROJECT NO.: 40830	PREPARED BY:	SKL	Jan-24
		FILENAME : J6_OCS_AVA	CHECKED BY:	SLN	Jan-24
J6 On Chun Street / Access of Villa Athena		REFERENCE NO.:	REVIEWED BY:	SLN	Jan-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	4.50	(metres)
W cr	=	1.90	(metres)
q a-b	=	2	(pcu/hr)
q a-c	=	44	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.60	(metres)
Vr c-b	=	100	(metres)
q c-a	=	71	(pcu/hr)
q c-b	=	102	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.70	(metres)
W b-c	=	4.70	(metres)
Vl b-a	=	22	(metres)
Vr b-a	=	15	(metres)
Vr b-c	=	15	(metres)
q b-a	=	1	(pcu/hr)
q b-c	=	102	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.91847
E	=	0.99487
F	=	0.97738
Y	=	0.84475
F for (Qb-ac)	=	0.99029126

THE CAPACITY OF MOVEMENT :

Q b-a	=	534		
Q b-c	=	727	Q b-c (O) =	726.7
Q c-b	=	714		
Q b-ac	=	724		
TOTAL FLOW	=	322	(PCU/HR)	

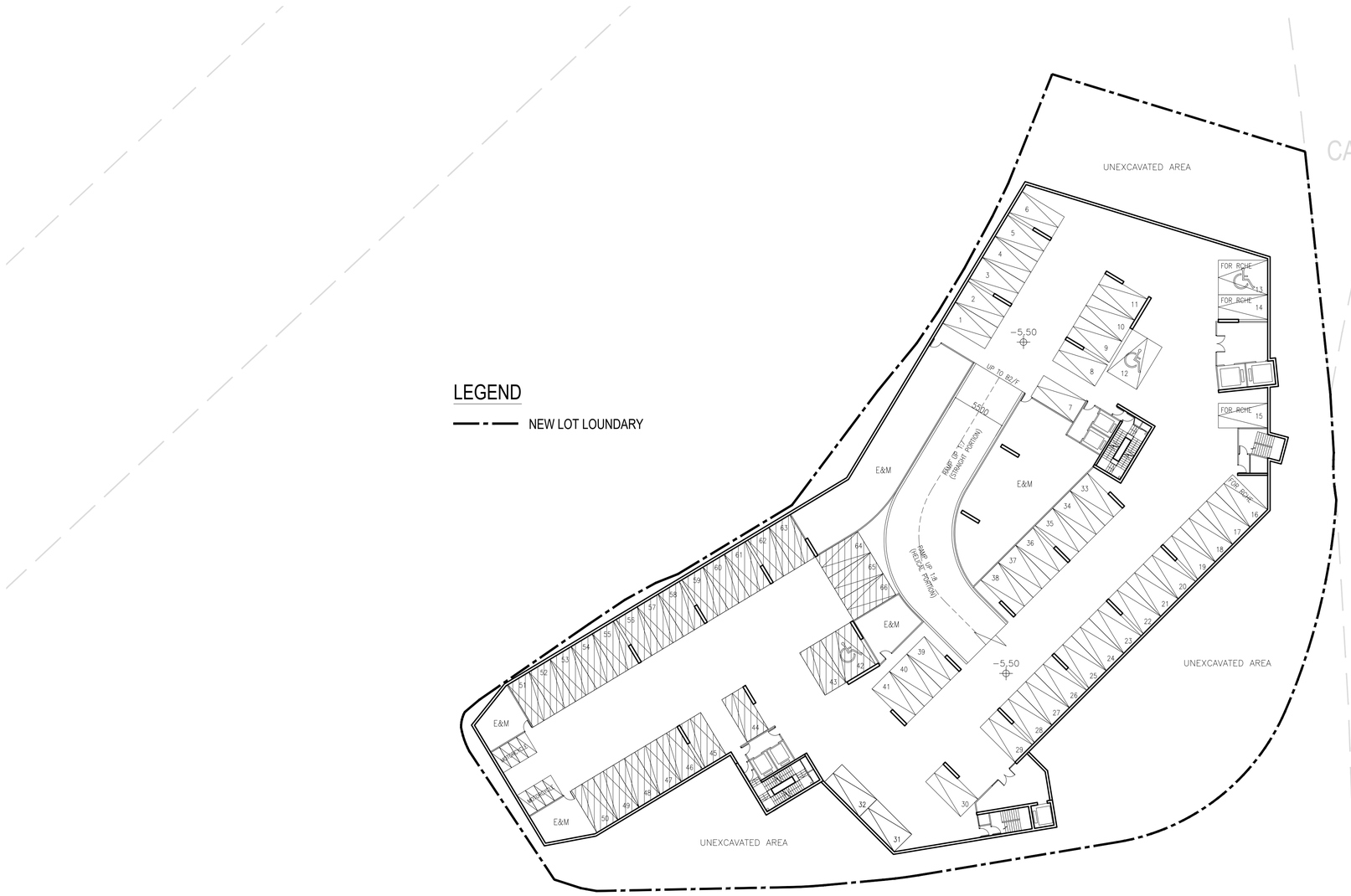
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0019
DFC b-c	=	0.1403
DFC c-b	=	0.1429
DFC b-c (share lane)	=	0.1408

CRITICAL DFC = 0.14

Appendix E

Proposed Layout Plan



EV CHARGING-ENABLINGS

NO. OF PUBLIC CARPARKS : 62 (INCLUDING 2 ACCESSIBLE CARPARKS AND 25 EV CHARGING-ENABLINGS)
NO. OF RHCE CARPARKS : 4 (INCLUDING 1 ACCESSIBLE CARPARK)
NO. OF MOTORCYCLES: 8

NORTH

0 5 10 15 20 25M

2024.1.12

GENERAL NOTES
1. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK.
4. ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.

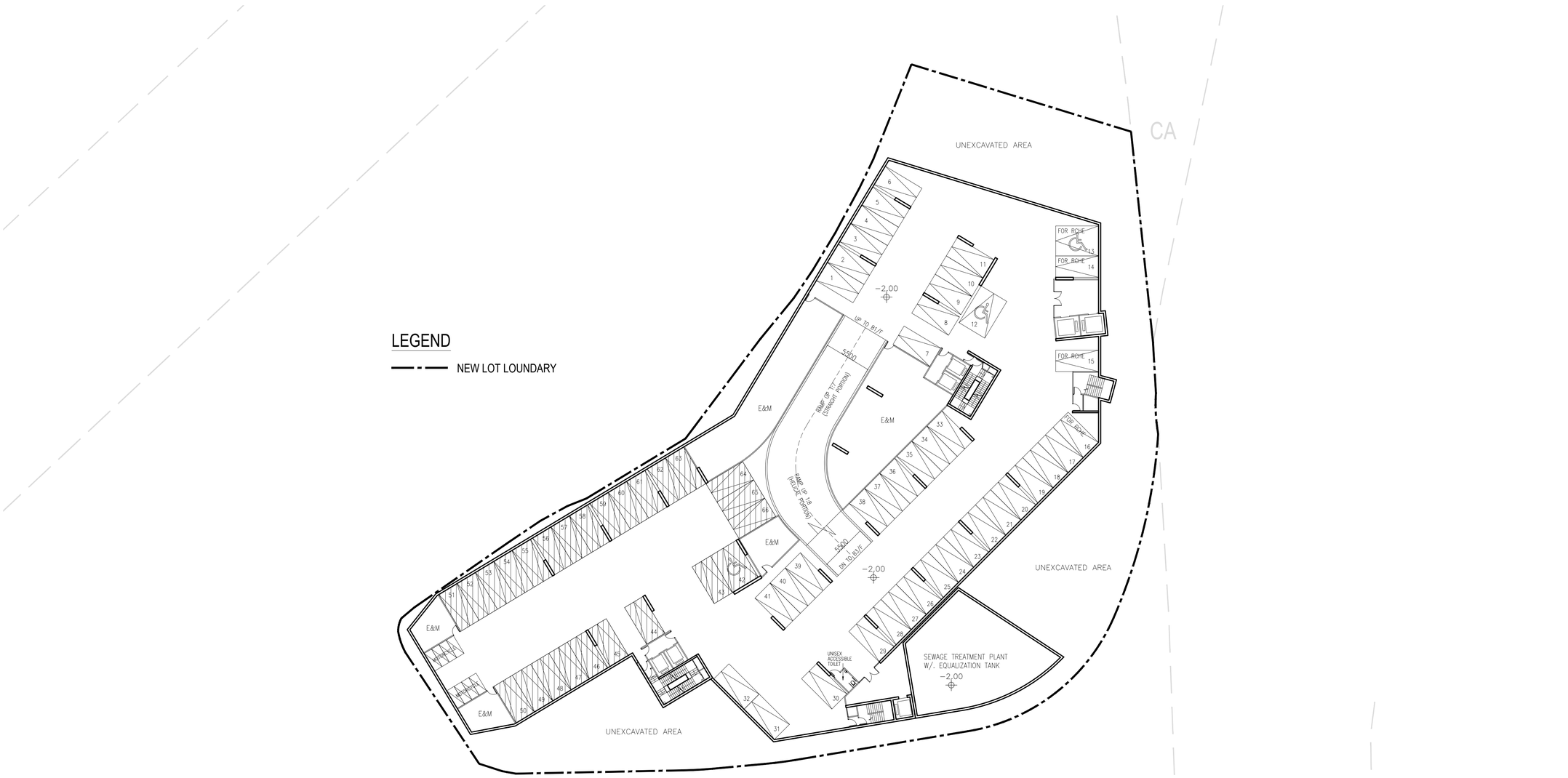
Project:
REZONING APPLICATION FROM “GOVERNMENT, INSTITUTION OR COMMUNITY” TO “RESIDENTIAL (GROUP B)6” ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES

Drawing Title:
B3/F PLAN

Drawing No.:
GP-01

Architect:

樑安建築師有限公司
L&N Architects Ltd.
Rooms 1203-1204, 12/F Belgian Bank Building,
721-725 Nathan Road, Kowloon
Tel: (852) 3422 3082, Fax: (852) 3428 2269



EV CHARGING-ENABLINGS

NO. OF PUBLIC CARPARKS : 62 (INCLUDING 2 ACCESSIBLE CARPARKS AND 25 EV CHARGING-ENABLINGS)
NO. OF RHCE CARPARKS : 4 (INCLUDING 1 ACCESSIBLE CARPARK)
NO. OF MOTORCYCLES: 8

NORTH

0 5 10 15 20 25M

2024.1.12

GENERAL NOTES
1. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK.
4. ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.

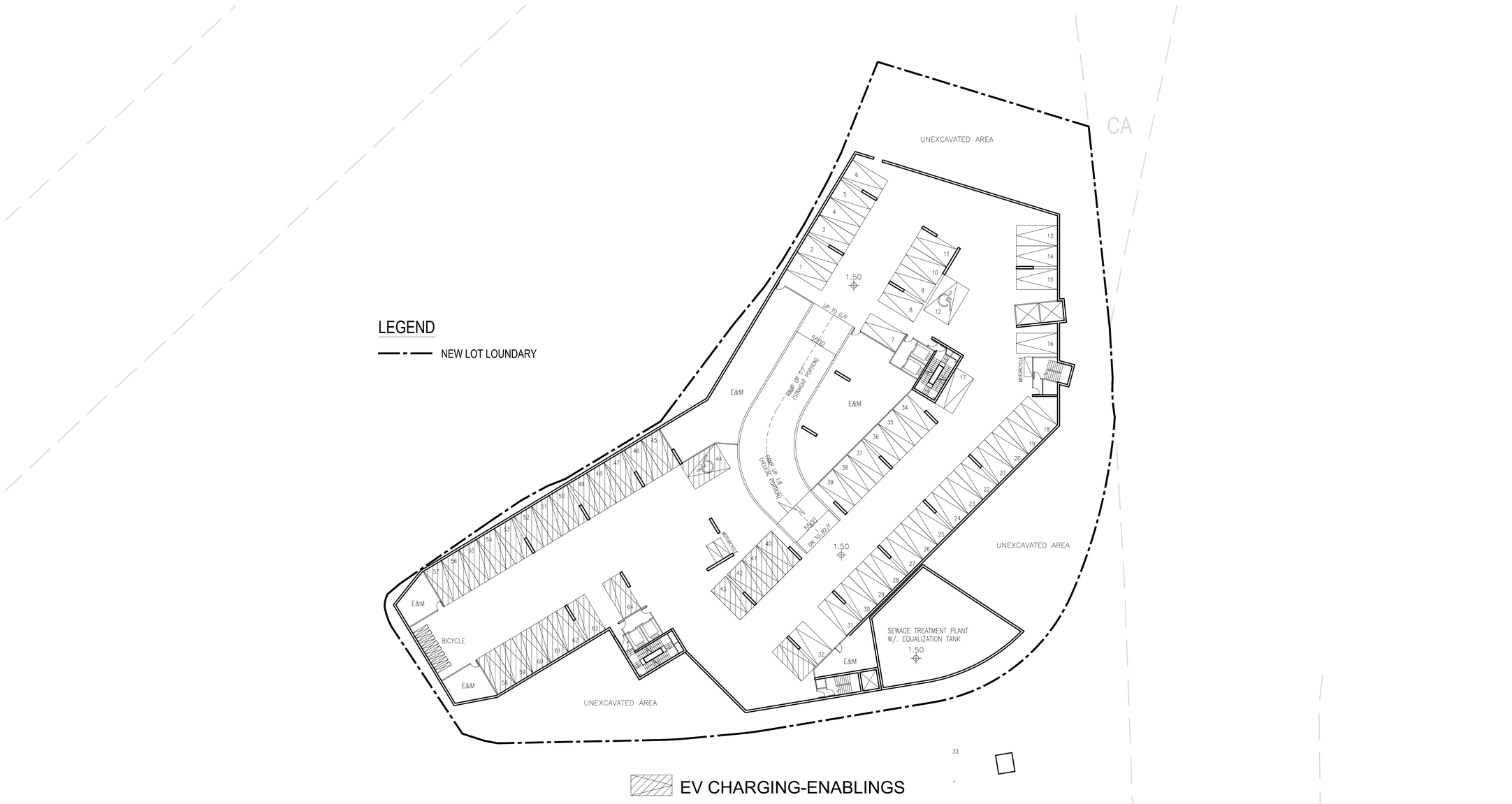
Project:
REZONING APPLICATION FROM “GOVERNMENT, INSTITUTION OR COMMUNITY” TO “RESIDENTIAL (GROUP B)6” ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES

Drawing Title:
B2/F PLAN

Drawing No.:
GP-02

Architect:

樑安建築師有限公司
L&N Architects Ltd.
Rooms 1203-1204, 12/F Belgian Bank Building,
721-725 Nathan Road, Kowloon
Tel: (852) 3422 3082, Fax: (852) 3428 2269



NO. OF CARPARK: 54 (INCLUDING 2 ACCESSIBLE CARPARKS AND 26 EV CHARGING-ENABLINGS)
NO. OF VISITOR CARPARK: 10
NO. OF MOTORCYCLES: 2
NO. OF BICYCLE: 8

NORTH

0 5 10 15 20 25M

2024.1.12

GENERAL NOTES
1. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK.
4. ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.

Project:
REZONING APPLICATION FROM “GOVERNMENT, INSTITUTION OR COMMUNITY” TO “RESIDENTIAL (GROUP B)6” ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES

Drawing Title:
B1/F PLAN

Drawing No.:
GP-03

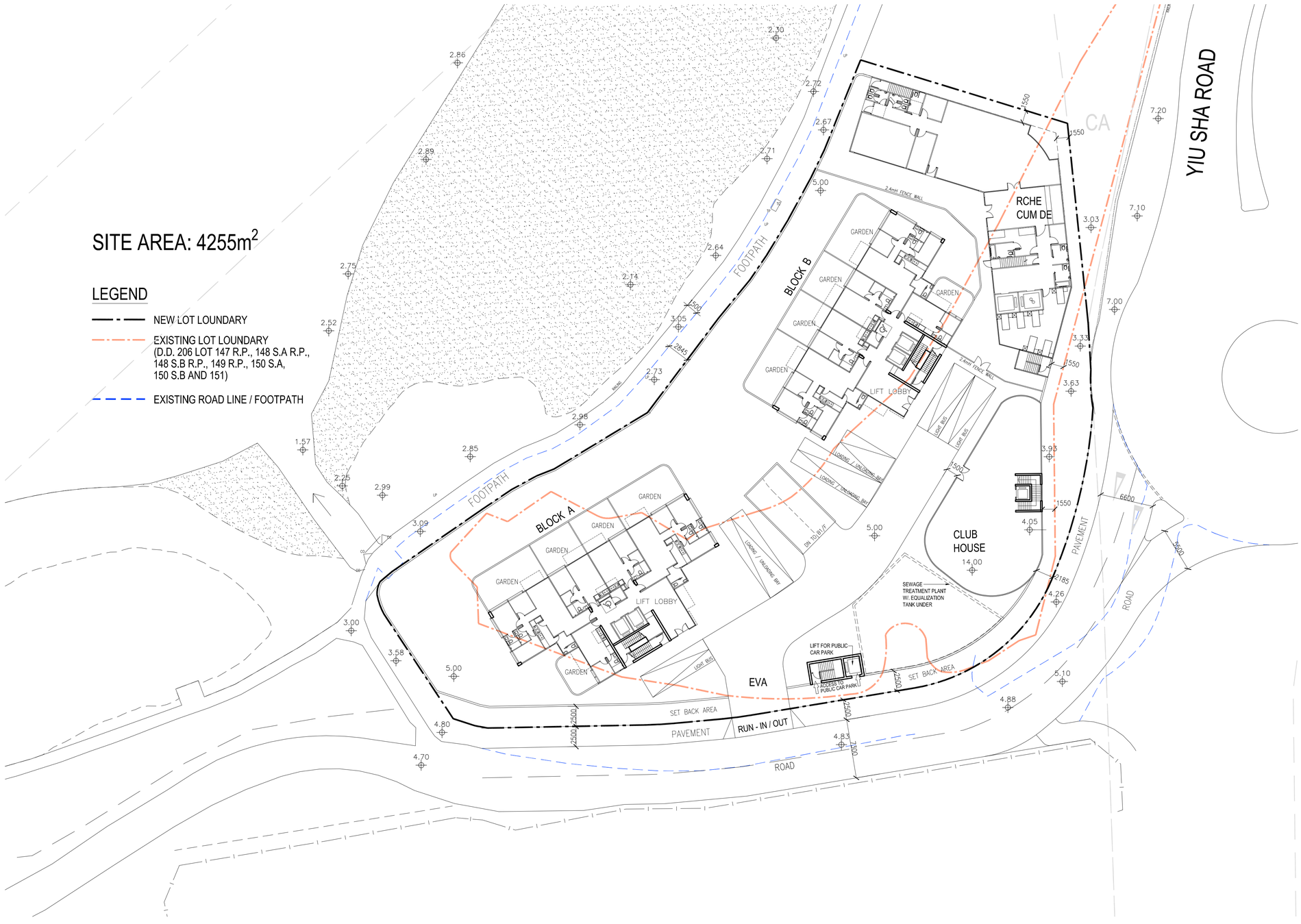
Architect:

樑安建築師有限公司
L&N Architects Ltd.
Rooms 1203-1204, 12/F Belgian Bank Building,
721-725 Nathan Road, Kowloon
Tel: (852) 3422 3082, Fax: (852) 3428 2269

SITE AREA: 4255m^2

LEGEND

- NEW LOT LOUNDARY
- EXISTING LOT LOUNDARY (D.D. 206 LOT 147 R.P., 148 S.A R.P., 148 S.B R.P., 149 R.P., 150 S.A, 150 S.B AND 151)
- EXISTING ROAD LINE / FOOTPATH



0 5 10 15 20 25M

NORTH

2024.2.5

GENERAL NOTES
1. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK.
4. ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.

Project:
REZONING APPLICATION FROM “GOVERNMENT, INSTITUTION OR COMMUNITY” TO “RESIDENTIAL (GROUP B)6” ZONE TO INCLUDE SOCIAL WELFARE FACILITIES (RCHE AND DE ONLY) AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) AT LOTS NOS. 148 S.A RP (PART), 148 S.B RP (PART), 149 RP, 150 S.A, 150 S.B AND 151 IN D.D. 206 AND ADJOINING GOVERNMENT LAND, WEST OF WU KAI SHA ROAD, MA ON SHAN, NEW TERRITORIES

Drawing Title:
G/F PLAN

Drawing No.:
GP-04

Architect:

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