中華人民共和國香港特別行政區政府總部教育局
Education Bureau
Government Secretariat, The Government of the Hong Kong Special Administrative Region
The People's Republic of China

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25 April 2019

Clerk to Public Works Subcommittee
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn: Ms Doris LO)

Dear Ms LO,

Public Works Subcommittee
358EP – A 30-classroom primary school at Shui Chuen O, Sha Tin

Response to the enquiries from the Hon AU Nok-hin

The written enquiries raised by the Hon AU Nok-hin on matters related to the captioned works project were received by this Bureau on 12 February 2019. In consultation with relevant government departments, the consolidated reply is set out below:

1. The traffic review

The Architectural Services Department has conducted the traffic review for the captioned works project to confirm that the development would not cause any significant traffic impact to the area. The full report of the relevant review is enclosed at **Annex 1** for Members' reference. The Architectural Services Department will continue to liaise with the

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Transport Department and refine the details.

2. **The public housing developments under construction and the prevailing mechanism of site reservation and planning of school building programmes**

The names and expected completion of public housing developments under construction by the Hong Kong Housing Authority (including Public Rental Housing / Green Form Subsidised Home Ownership Scheme / Other Subsidised Sale Flats) are listed at **Annex 2** for Members' reference.

On reservation of sites for school development purpose, under the prevailing mechanism, the Planning Department (PlanD) will reserve sites for school development when preparing town plans and planning large-scale residential developments having regard to the planned population intake and on the basis of the needs for community services in accordance with the guidelines set out in the Hong Kong Planning Standards and Guidelines. In the process, the Education Bureau (EDB) will be consulted.

Insofar as planning of public sector primary and secondary school building projects is concerned, land is a scarce resource and construction of new school premises involves immense resources. EDB therefore has to consider with prudence if addition of a new operating school would commensurate with the long term sustainable development of the district concerned so as to avoid negative impacts on the steady development of the school sector as a whole. In this regard, EDB will take into account factors including the planned development of the area concerned, the school-age population projections which are compiled based on the population projections updated regularly by Census and Statistics Department and the projection of population distribution released by PlanD, the actual number of existing students and school places available at various levels, the prevailing education policies, other factors which may affect the supply and demand of school places, etc., in order to decide if a premises should be used for operating a new school or reprovisioning an existing school, and when to kick-start the relevant school building project. It is also worth noting that a new school building project, from

planning to completion, involves various stages. Variations and uncertainties may come into play during the process. In sum, EDB has to take into account various factors before initiating a school building project. Hence, the commencement date of a new school may not necessarily tie in with the population intake schedule of the nearby new housing development.

As at March 2019, there are a total of 22 reserved school sites in the territory having completed the relevant technical feasibility study and the timeframe for their school development would be subject to, among others, views of the District Councils, progress of technical works and funding approval. Project planning and preparation work for these school building projects are being carried out in accordance with the prevailing procedures. A breakdown of the 22 reserved school sites by districts with their location, planned use and progress, is set out at **Annex 3**. Among them, funding approval for projects on 3 reserved school sites was obtained from the Finance Committee (FC) of the Legislative Council (LegCo) in the 2015-16 LegCo Session with the school building works already underway; project on 1 reserved school site was approved in the 2016-17 LegCo Session with the school building works already commenced; project on 1 reserved school site was approved in the 2017-18 LegCo Session with the school building works commenced in 2018. In addition, funding approval for projects on 2 reserved school sites has just been obtained from the current LegCo Session with the school building works about to commence. The projects on another 2 reserved school sites will be submitted to the FC to seek funding approval in the current LegCo Session. For the remaining 13 sites, 4 fall within private development projects or site availability being affected by private development projects, while the rest are being deployed for temporary use, undergoing site formation work or with preliminary works/detailed design for school building project being undertaken in accordance with the existing mechanism and procedures.

EDB will continue to explore ways to improve the planning mechanism despite the unavoidable limitations of the population projections. To this end, EDB will enhance the communication with relevant departments so as to obtain timely updates on the relevant projected school-age population with reference to the latest programme and intake schedule of

major housing development as far as practicable, with a view to confirming the need for setting up new schools and kicking-start the relevant school building project timely.

Yours sincerely,

(Mrs Elina CHAN)
for Secretary for Education

c.c.
Secretary for Financial Services and the Treasury
(Attn: Ms KWONG Sin-hang, Terri)
Director of Housing
(Attn: Ms LAI Shin-kwan, Flora)
Director of Architectural Services
(Attn: Mr LI Ka-lun)

A 30-Classroom Primary School at Shui Chuen O, Sha Tin

Revised Traffic Review Report

April 2019

CTA Consultants Limited
志達顧問有限公司

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Appendix A Junction Calculation Sheets

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1. INTRODUCTION

1.1 Background

1.1.1 The subject site is located at Pok Chuen Street, Shui Chuen O, Sha Tin. The location of the subject site is shown in **Figure 1.1**.

1.1.2 To ensure the provision of sufficient public sector school places in Sha Tin District, Education Bureau (EDB) proposed to construct a 30-classrooms primary school at Shui Chuen O to satisfy the schooling demand in the area.

1.1.3 We, CTA Consultants Limited (CTA), are therefore commissioned by the Architectural Services Department (ArchSD) as the Traffic Consultant to prepare a Traffic Review study in supporting the proposed primary school from traffic engineering point of view.

1.2 Study Objectives

1.2.1 The main objectives of this study are as follows:

- To review the existing traffic conditions in the vicinity of the proposed primary school;
- To estimate the traffic generated/ attracted by the proposed primary school;
- To forecast the traffic demand on the adjacent road network for an appropriate design year;
- To assess the traffic impact induced by the proposed primary school on the adjacent road network; and
- To recommend improvement measures to the road junction adversely affected by the proposed primary school, wherever applicable.

1.3 Structure of Report

1.3.1 Following this introductory chapter, there are 9 further chapters:

- **Chapter 2 – THE DEVELOPMENT**, to present the proposed development schedule and internal transport facilities of the proposed primary school.
- **Chapter 3 – EXISTING TRAFFIC CONDITION**, to describe the existing local road network and public transport facilities, and review the existing traffic conditions in the vicinity of the proposed primary school;
- **Chapter 4 – FUTURE TRAFFIC CONDITION**, to describe the future road network in the vicinity and estimate the potential traffic generation and attraction of the proposed primary school and future traffic flows on the surrounding road network.
- **Chapter 5 – TRAFFIC IMPACT ASSESSMENT**, to present the findings of the traffic impact assessment in the future design year and recommends improvements measures, if necessary.
- **Chapter 6 – PUBLIC TRANSPORT DEMAND**, to present the occupancy level of current GMB 812A service and forecast future demand on GMB due to the new school premise.
- **Chapter 7 – ROAD IMPROVEMENT WORKS,** to describe the suggested road improvement work at Pok Chuen Street.
- **Chapter 8 – PEDESTRIAN FACILITIES**, to evaluate the need of pedestrian facilities so as to enhance the pedestrian walking environment and safety.
- **Chapter 9 – CONSTRUCTION TRAFFIC IMPACT ASSESSMENT**, to assess the traffic impacts induced by construction vehicles for the proposed primary school.
- **Chapter 10 - SUMMARY AND CONCLUSION**, to summarize the findings of the study and present the conclusion regarding the traffic issues associated with the proposed primary school.

2. THE DEVELOPMENT

2.1 Site Location

2.1.1 The subject site is located at the end of Pok Chuen Street which is illustrated diagrammatically in **Figure 1.1**. Shui Chuen O Estate is a public rental housing estate which was built along both sides of Pok Chuen Street.

2.2 Development Schedule

2.2.1 The development schedule for the proposed primary school is summarized in **Table 2.1**.

Table 2.1 Proposed Development Schedule

Site Location	Pok Chuen Street, Shui Chuen O, Sha Tin
Site Area	8,770 m^2
No. of Blocks	4
No. of Storeys	5-7 Storeys
No. of Classrooms	30

2.2.2 The construction of proposed primary school is anticipated to be completed by year 2022 tentatively.

2.3 Proposed Vehicular and Pedestrian Access

2.3.1 The proposed vehicular access is located at the south of the subject Site and also the end of Pok Chuen Street.

2.3.2 There are two proposed pedestrian accesses for the proposed primary school. The first one is located right next to the proposed vehicular access at the end of Pok Chuen Street while the second one is located at Po Chuen Street and to the southwest of the WSD Fresh Water Service Reservoir.

2.3.3 Proposed vehicular and pedestrian accesses of the proposed primary school are illustrated diagrammatically in **Figure 2.1**.

2.4 Internal Transport Facilities

2.4.1 The internal transport facilities provision of the proposed primary school is following the requirements as stipulated in the latest Hong Kong Planning Standards and Guidelines (HKPSG) published by Planning Department which is summarized in **Table 2.2**.

Table 2.2 Proposed Internal Transport Facilities Provision

Development Parameters For 30-Classroom Primary Schools	**Parking Requirement**	**Loading/Unloading Requirement**	
	Private Car Parking Space (5m x 2.5m x 2.4m(H))	**Taxis/ Private Car Lay-by (5m x 3.5m x 2.4m(H))**	**School Buses (12m x 3.5m x 3.8m (H))**
	1 car parking space for every 4 to 6 classrooms	1 lay-by for taxis and private cars for every 2 to 3 classrooms in primary schools	A minimum of 3 lay-bys within the school boundary for primary schools
Total Required	5 to 8	10 to 15	3
Proposed Provision	**8**(1)	**15**	**3**

Note: (1) Including 1 accessible car park space.

2.4.2 The layout of parking spaces and layby, and internal traffic arrangement are illustrated diagrammatically in **Figure 2.2**. Swept path analysis has also been conducted for critical parking spaces which are illustrated diagrammatically in **Figures SP** to **SP-3**.

2.5 Proposed Traffic Management Scheme within Proposed Primary School

2.5.1 Taking into consideration that the busiest traffic condition during AM and PM school peaks, traffic management scheme is formulated to ensure that smooth traffic circulation of vehicles inside proposed primary school and no traffic queue will be induced to the public road.

2.5.2 During school peak hours, it is proposed to segregate the traffic by school buses and the private vehicles/taxi so as to enhance a more effective pick-up/drop-off activities arrangement for students and ensure smooth circulation and operation inside the school. To achieve this, private vehicles/taxi will make use of the spaces to the west of the internal road and stop/queue instantly there so that students could pick-up/drop-off easily and access to/from school directly. Also, private vehicles/taxi could turnaround easily to leave the school. For school buses, it is proposed to use the school bus parking spaces and area to the east of the internal road so that students could be easily managed to queue and walk to/from the school. With the provision of adequate manoeuvring spaces inside proposed primary school and the long length of the internal road, sufficient buffer queuing length could still be able to cater and accommodate for surge of incoming school traffic.

2.5.3 The proposed traffic management scheme is illustrated diagrammatically in **Figure 2.3**.

2.5.4 Nevertheless, adequate school staff will be appointed at the vehicular access and inside the car park area to manage and regulate the traffic, and ensure the safety of the students. The school operator will also encourage the guardians of the students to make use of the public transport and school buses as much as possible to minimize the potential impact to the neighbours.

2.6 Existing Public Transport Services

2.6.1 As Shui Chuen O Estate is located uphill and far away from railway station (the closest MTR station is Sha Tin Wai Station which is located outside 500m-radius catchment area of Shui Chuen O Estate), accessibility of Shui Chuen O Estate is limited and mainly by means of franchised bus and green minibus (GMB). At present, there are franchised bus and GMB serving Shui Chuen O Estate and along Pok Chuen Street and To Shek Street. The details of existing public transport services serving Shui Chuen O Estate are summarized in **Table 2.3** and illustrated diagrammatically in **Figure 2.4**.

Table 2.3 Existing Public Transport Services serving Shui Chuen O Estate

Service	Route No.	Origin – Destination	Frequency (Minutes)
GMB	812	Shui Chuen O Estate – Hin Keng Estate	8 - 20
	812A	Shui Chuen O Estate – Sha Tin Wai MTR Station	5 - 10
	813	Shui Chuen O Estate – Shek Mun Estate, On Ming Street	10 - 25
	813A	Shui Chuen O Estate – Sha Tin Hospital (Circular)	15 - 25
Franchised Bus	47A	Shui Chuen O Bus Terminal – Kwai Fong	20 - 30
	83A(1)	Shui Chuen O Bus Terminal – Kwun Tong Ferry	20 - 30
	83X	Shui Chuen O Bus Terminal – Kwun Tong Ferry	9 - 20
	182X(2),(3)	Central (Macau Ferry) - Yu Chui Court	17:05, 17:20, 17:40, 18:00, 18:30, 19:05
	287X	Shui Chuen O Estate – Jordan (Circular)	8 - 25
	288	Shui Chuen O Estate – Sha Tin Town Centre (Circular)	6 - 15
	288A(1)	Shui Chuen O Estate – Sha Tin Town Centre (Circular)	7:25am & 7:45am
	288B(1)	Shui Chuen O Estate – Wo Che Estate	7:10am, 7:18am & 7:25am
	682B(1),(2),(3)	Shui Chuen O Estate - Chai Wan (East)	Every 20 mins
	982X (1),(2)	Wan Chai – Sha Tin (Yu Chui Court)	7 - 10
	N283 (1),(2)	Yu Chui Court - Wan Chai (Fleming Road)	0:45am, 1:15am &1:45am
	NA41	Sha Tin (Shui Chuen O) - HK-Zhuhai-Macao Bridge Hong Kong Port	1:15 am 4:10 am

Note: (1) AM Peak Service only.

(2) PM Peak Service only.

(3) Weekday Service only.

3. EXISTING TRAFFIC CONDITION

3.1 Existing Road Network

3.1.1 The proposed primary school is located at the end of Pok Chuen Street. Pok Chuen Street is a local road, two-way one-lane carriageway. In front of the proposed primary school is a cul-de-sac for turnaround of vehicles. Pok Chuen Street links to Shui Chuen Au Street and To Shek Street.

3.1.2 Shui Chuen Au Street links Sha Kok Street and Yat Tai Street with Pok Chuen Street and provides major accesses for Shui Chuen O Estate and numerous villages along Shui Chuen Au Street. To Shek Street is another road link connecting Shui Chuen O Estate to Shatin City One/Chap Wai Kon areas via the signalized junction with Shatin Wai Road and Ngan Shing Street. The existing road network is illustrated diagrammatically in **Figure 3.1**.

3.2 Existing Traffic Conditions

3.2.1 In order to acquire the existing traffic condition, manual classified traffic count survey was conducted at the identified critical junction on 26th June 2018 and 5th December 2018 during AM and PM peak hour periods from 07:00-09:00 hours and 17:00-19:00 hours respectively. The identified critical junctions are listed in **Table 3.1** and their existing junction layouts are illustrated diagrammatically in **Figures 3.2** to **3.5**.

Table 3.1 Identified Critical Junction

Ref.	Junction	Method of Control	Figure No.
A	Sha Kok Street/Shui Chuen Au Street	Signal	3.2
B	Pok Chuen Street/To Shek Street	Priority	3.3
C	To Shek Street/ Sha Tin Wai Road/ Ngan Shing Street	Signal	3.4
D	Pok Chuen Street	Roundabout	3.5

3.2.2 According to the traffic count survey results, the observed AM and PM peak hours were identified as 07:30am-08:30am and 17:00pm-18:00pm respectively. The observed traffic flows are illustrated diagrammatically in **Figure 3.6**.

3.2.3 Based on the observed traffic flows, existing performance of the identified critical junctions was assessed. The results are summarized in **Table 3.2** and the junction calculation sheets are attached in **Appendix A**.

Table 3.2 Existing Junction Performance of Identified Critical Junctions

Junction	Junction Location	RC/RFC (1)	
		AM	PM
A	Sha Kok Street/Shui Chuen Au Street	90%	153%
B	Pok Chuen Street/To Shek Street	0.38	0.28
C	To Shek Street/Sha Tin Wai Road/ Ngan Shing Street	39%	45%
D	Pok Chuen Street	0.06	0.07

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

3.2.4 From the results in **Table 3.2**, it is revealed that all critical junctions are currently operating with ample capacities.

4. FUTURE TRAFFIC CONDITION

4.1 Design Year

4.1.1 The proposed primary school is anticipated to be completed by year 2022 tentatively. In order to assess the possible impacts of the development to the local road network, year 2025 (i.e. 3 years after completion of the proposed development) is therefore adopted as the design year for this study.

4.2 Reference Traffic Flows

4.2.1 To estimate the 2025 reference traffic flows (without proposed primary school) in the local road network, an appropriate growth factor was identified for the area. The growth factor was determined by making reference to the historical traffic data from the Territory Population and Employment Data Matrices (TPEDM) planning data published by Planning Department.

Planning Data from Territory Population and Employment Data Matrices (TPEDM)

4.2.2 Reference was made to the population and employment data from the latest 2014-based TPEDM from Planning Department. Data for Sha Tin area was selected and summarized in **Table 4.1**.

Table 4.1 TPEDM Planning Data for Sha Tin

Area	Population		Avg. Annual Growth Rate	Employment		Avg. Annual Growth Rate
	2014	2026		2014	2026	
Sha Tin	447,550	488,400	+0.73%	196,750	190,050	-0.29%

Source: The quoted TPDEM data was obtained from "2014 – based Territorial Population and Employment Data Matrix" published by Planning Department, which could be available for public from Planning Department's website in the link below: https://www.pland.gov.hk/pland_en/info_serv/statistic/tpedm14.html

4.2.3 As shown in **Table 4.1**, the average annual growth rates of population and employment for the area from year 2014 to 2026 are +0.73% and -0.29% per annum respectively.

Historical Trend from Annual Traffic Census (ATC)

4.2.4 Taking into consideration that there is no traffic count station at Shui Chuen O Estate, traffic count stations in Sha Tin District reported in the Annual Traffic Census (ATC) over a period of 6 years, between 2012 and 2017 are selected and summarized in **Table 4.2**.

Table 4.2 Historical Traffic Data from Annual Traffic Census (ATC)

ATC Stn	Road Name	Annual Average Daily Traffic (AADT)						Avg. Annual Growth Rate
		2012	2013	2014	2015	2016	2017	
5417	Che Kung Miu Rd	35,330	36,080	35,750	38,760	39,340	39,450	+2.23%
5617	Mei Tin Rd	30,040	30,680	30,830	28,730	28,760	28,840	-0.81%
5813	Siu Lek Yuen Rd	12,380	12,350*	12,710*	13,000	12,040	12,570	+0.31%
5814	Fo Tan Rd	41,820	42,720	42,930*	43,920*	42,070	39,150	-1.31%
5815	Che Kung Miu Rd	21,270	21,720*	21,830*	22,330*	24,350	22,210	+0.87%
5816	Tai Chung Kiu Rd	45,040	46,000*	46,230*	47,290*	47,030	46,430	+0.61%
5817	Sha Tin Wai Rd	16,180	16,520*	16,610*	16,990*	18,240	18,360	+2.56%
5818	Sha Tin Rural Committee Rd	36,390	37,160*	37,350*	38,210*	37,270	37,950	+0.84%
5819	Tai Po Rd - Shatin	57,400	58,630*	58,920*	60,280*	72,560	70,520	+4.20%
6009	Siu Lek Yuen Rd	23,270	21,970	22,080*	22,590*	22,930*	24,240	+0.82%
6010	Fo Tan Rd	41,440	42,810	43,030*	44,020*	44,680*	41,960	+0.25%
6011	Tai Chung Kiu Rd	27,910	27,640	27,780*	28,410*	28,840*	31,930	+2.73%

6012	Hung Mui Kuk Rd	30,530	30,160	30,320*	31,010*	31,480*	32,240	+1.10%
6013	Sha Tin Wai Rd	23,070	22,230	22,340*	22,850*	23,200*	25,750	+2.22%
6014	Tai Po Rd - Shatin Heights & Tai Wai	25,220	22,980	23,100*	23,630*	23,990*	25,900	+0.53%
6015	Lion Rock Tunnel Rd	19,240	19,830	19,930*	20,380*	20,690*	20,900	+1.67%
6038	Ngan Shing St	6,720	6,800	6,700*	6,820*	6,900*	7,610	+2.52%
6039	Tin Sam St	17,120	16,230	16,020*	16,300*	16,490*	16,750	-0.44%
6102	On Ming St	6,670	7,530	7,430*	7,560*	7,640*	7,480	+2.32%
Total		**517,040**	**520,040**	**521,890**	**510,750**	**548,500**	**550,240**	**+1.25%**

*Note: *AADT estimated by growth factor as reported in the ATC.*

4.2.5 As shown in **Table 4.2**, the average annual growth rate determined from ATC is 1.25% per annum over the 6 years from 2012 to 2017.

Adopted Growth Rate

4.2.6 Since Sui Chuen O Estate is already well developed with full population intake and relatively isolated from other area, it is anticipated that there will not be any major growth/change in Sui Chuen O Estate. Nevertheless, as a conservative approach, the highest annual growth rate determined from TPEDM and ATC **(i.e. +1.25% per annum)** has been adopted to estimate the year 2025 traffic flows which is considered appropriate and sufficient to allow for unexpected future growth as a result of some changes in land use or new developments in the area, if any.

Adjacent New Developments

4.2.7 In order to assess the traffic impact in design year, major new developments in the vicinity of the proposed primary school are also required to be taken into account. Based on the available information, it is known that there will be a new residential development at To Shek Street (STTL609) with details summarized in **Table 4.3**.

Location of this new residential development is illustrated diagrammatically in **Figure 4.1**.

Table 4.3 Development Schedule of Major New Development in the Vicinity

Adjacent New Development	Type of Development	GFA	Tentative Occupation Year
Sha Tin Town Lot No. 609	Residential	40,320m^2	2022

4.2.8 Having consulted Planning Department and Buildings Department, no detailed development schedule such as no. of units per floor and the flat size could be provided at this stage. Nevertheless, scenarios on combination of different flat size and no. of units have been assumed and compared which are listed below:

Scenario 1 : 1/2 no. of units are 30 m^2 and 1/2 no. of units are 60 m^2
Scenario 2 : 1/3 no. of units are 60 m^2 and 2/3 of units are 30 m^2
Scenario 3 : 2/3 no. of units are 60 m^2 and 1/3 of units are 30 m^2

4.2.9 To estimate the traffic generations of this new residential development, appropriate trip rates were selected with reference to Transport Planning and Design Manual (TPDM) published by Transport Department, taking into account the development density, and accessibility level. The adopted trip rates are summarized in **Table 4.4**.

Table 4.4 Adopted Trip Generation Rates for Major New Development in the Vicinity

Type of Development	Assumed Average Flat Size (m^2)	Vehicular Trip Rates (pcu/hr/flat) (1)			
		AM		PM	
		Generation	Attraction	Generation	Attraction
Subsidized Housing	30	0.0242	0.0226	0.0177	0.0201
Private Housing	60	0.0718	0.0425	0.0286	0.0370

Note: (1) Refers to TPDM Vol.1 Ch.3 Appendix 1 Annex D.

4.2.10 The traffic generations of new residential development at STTL609 for the above-mentioned 3 development scenarios are estimated and summarized in **Tables 4.5** to **4.7** respectively.

Table 4.5 Estimated Traffic Generations of New Residential Development at STTL609 – 1st Development Scenario

No. of Units	Assumed Average Flat Size/GFA (sq.m)	Vehicular Trips (pcu/hr)			
		AM Generation	AM Attraction	PM Generation	PM Attraction
450	30	11	10	8	9
450	60	32	19	13	17
Total	**40,500**	**43**	**29**	**21**	**26**
		72		**47**	

Table 4.6 Estimated Traffic Generations of New Residential Development at STTL609 – 2nd Development Scenario

No. of Flats	Assumed Average Flat Size/GFA (sq.m)	Vehicular Trips (pcu/hr)			
		AM Generation	AM Attraction	PM Generation	PM Attraction
673	30	16	15	12	14
337	60	24	14	10	12
Total	**40,400**	**40**	**30**	**22**	**26**
		70		**48**	

Table 4.7 Estimated Traffic Generations of New Residential Development at STTL609 – 3rd Development Scenario

No. of Flats	Assumed Average Flat Size/GFA (sq.m)	Vehicular Trips (pcu/hr)			
		AM Generation	AM Attraction	PM Generation	PM Attraction
270	30	7	6	5	5
540	60	39	23	15	20
Total	**40,500**	**45**	**29**	**20**	**25**
		74		**45**	

4.2.11 Based on results as shown in above **Tables 4.5** to **4.7**, it is revealed that the traffic generation under the 3rd development scenario is the highest. Hence as a conservative approach, the estimated vehicular trips in **Table 4.7** have been adopted as the traffic generations of new residential development at STTL609.

Temporary Car Park at Pok Chuen Street

4.2.12 Moreover, a temporary open space car park is planned to be provided at Pok Chuen Street to alleviate the shortage of parking spaces in Shui Chuen O Estate.

4.2.13 Based on the information available, the site area of the temporary open space car park will be about 6,500m^2. At least 45 nos. parking spaces for LGV/MGV and 20 parking spaces for motorcycle will be provided. The remaining space will be used for parking of private cars. It is estimated that about 150-200 private car parking spaces could be accommodated in the remaining site area.

4.2.14 Due to the site constraint/restriction of the vehicular access, all vehicles entering/ leaving the temporary open space car park need to obey the right in/left out arrangement and turnaround by using the cul-de-sac in front of the proposed primary school.

4.2.15 In order to estimate the traffic generation of this temporary open space car park, traffic survey was conducted at the temporary open space car park at Man Lam Road, Shatin on 22nd February 2019, covering both AM and PM peak hour periods at 07:30-08:30 hour and 17:00-18:00 hour respectively.

4.2.16 Based on on-site observation, there are 75 nos. of private car parking spaces and 47 nos. of LGV/MGV parking spaces in the temporary open space car park at Man Lam Road. The temporary open space car park at Man Lam Road is considered adequate for reference since it is also surrounded by some residential developments such as Man Lai Court, Scenery Court and Hilton Plaza, etc. and also adjacent to Sha Tin Government Secondary School. Based on the traffic survey counting the total number of ingress and egress vehicles of the temporary open space car park at Man Lam Road during the AM and PM Peak hours, the trip attraction and generation rates are summarized in **Table 4.8**.

Table 4.8 Trip Generation Rates of the Temporary Carpark in Man Lam Road, Sha Tin

Open Space Car Park at Man Lam Road, Sha Tin	AM Peak		PM Peak	
	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
122 Spaces	18	10	3	24

4.2.17 Based on the scale of the temporary open space car park at Pok Chuen Street as detailed in **Para 4.2.13** and the trip generation rates as shown in **Table 4.8**, the estimated traffic generation rate of the temporary carpark at Pok Chuen Street are summarized in **Table 4.9**.

Table 4.9 Trip Generation Rates of the Proposed Temporary Carpark in Pok Chuen Street

Temporary Open Space Car Park at Pok Chuen Street, Shui Chuen O	AM Peak		PM Peak	
	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
265 Spaces	39	22	7	52

4.3 Traffic Generation of Proposed Primary School

4.3.1 It is noted that trip rates for both generation and attraction for proposed primary school are not specified in the latest Transport Planning & Design Manual (TPDM).

4.3.2 As such, questionnaires have been prepared and assisted by the school to distribute to P.1 students currently studying in TWGHs Shui Chuen O Primary School on 25th March, 2019 in order to understand their preferred transport mode between home and school assuming that the proposed primary school will be in Shui Chuen O Estate so as to determine the traffic generation and attraction of the proposed primary school.

4.3.3 The sample of the questionnaire is enclosed in **Appendix B**. Since it was under consideration to extend GMB/bus service to reach the proposed primary school, this option was also incorporated in the questionnaire.

4.3.4 A total of 137 questionnaires were finally received by the school for analysis. Taking into consideration that those students currently studying in P.1 will still continue their studies in the proposed primary school in Shui Chuen O (which is scheduled to be completed by year 2022), it is envisaged that the response from them could truly reflect their travelling behaviours in future and could directly apply for assessment purpose.

(A1) Students "NOT" living in Shui Chuen O Estate – AM School Peak

4.3.5 Out of the 137 respondents for the questionnaires, 63 students are not living Shui Chuen O. **Table 4.10** summarizes students' responses to the questionnaires and their preferred transport mode when they go to school in the AM school peak.

Table 4.10 Student's Transport Mode to School in AM School Peak (Students "NOT" Living in Shui Chuen O Estate)

Student's Transport Mode to School	No. of Respondents (Not living in Shui Chuen O Estate)	Percentage
Walk	6	9%
GMB/Bus	30	48%
Private Vehicles/Taxi	5	9%
School Bus	22	34%
Total	**63**	**100%**

(A2) Students "NOT" living in Shui Chuen O Estate – PM School Peak

4.3.6 **Table 4.11** summarizes students' responses in the questionnaires and their preferred transport mode when they leave school in the PM school peak.

Table 4.11 Student's Transport Mode from School in PM School Peak (Students "NOT" Living in Shui Chuen O Estate)

Student's Transport Mode from School	No. of Respondents (Not living in Shui Chuen O Estate)	Percentage
Walk	6	10%
GMB/Bus	28	44%
Private Vehicles/Taxi	4	6%
School Bus	25	40%
Total	**63**	**100%**

(B1) Students Living in Shui Chuen O Estate – AM School Peak

4.3.7 Out of 137 respondents, 74 students live in Shui Chuen O Estate. **Table 4.12** summarizes students' responses in the questionnaires and their preferred transport mode when they go to school in AM school peak.

Table 4.12 Student's Transport Mode to School in AM School Peak (Students Living in Shui Chuen O Estate)

Student's Transport Mode to School	No. of Respondents (Living in Shui Chuen O Estate)	Percentage
Walk	15	20%
GMB/Bus	48	66%
Private Vehicles/Taxi	1	1%
School Bus	10	13%
Total	**74**	**100%**

(B2) Students Living in Shui Chuen O Estate – PM School Peak

4.3.8 **Table 4.13** summarizes students' responses in the questionnaires and their preferred transport mode when they leave school in PM school peak.

Table 4.13 Student's Transport Mode from School in PM School Peak (Students Living in Shui Chuen O Estate)

Student's Transport Mode from School	No. of Respondents (Living in Shui Chuen O Estate)	Percentage
Walk	20	27%
GMB/Bus	44	59%
Private Vehicles/Taxi	0	0%
School Bus	10	14%
Total	**74**	**100%**

4.3.9 According to information given by EDB (refer to **Appendix C**), the proposed primary school will provide about 765 school places in which 50% of the students (i.e. 383 nos.) will be the residents of Shui Chuen O Estate.

4.3.10 Based on the findings of the questionnaire from students as detailed above **Tables 4.10** to **4.13**, the estimated traffic generation and attraction due to different transport modes to/from proposed primary school for students living and "NOT" living in Shui Chuen O Estate are calculated in below **Tables 4.14** to **4.17**.

Table 4.14 Student's Transport Mode to School in AM School Peak (Students "NOT" Living in Shui Chuen O Estate)

Student's Transport Mode to/from School	No. of Students ("Not" living in Shui Chuen O Estate)	AM Peak Attraction		No. of Students ("Not" living in Shui Chuen O Estate)	AM Peak Generation	
		(veh/ hr)	(pcu/ hr)		(veh/ hr)	(pcu/ hr)
Walk	383 x 9% = 34	0	0	383 x 9% = 34	0	0
GMB/Bus	383 x 48% = 184	23(1)	34	383 x 48% =183	12(3)	18
Private Vehicles/ Taxi	383 x 9% = 34	34	34	383 x 9% = 34	34	34
School Bus	383 x 34% = 131	5(2)	10	383 x 34% = 131	5(2)	10
Total	**383**	**62**	**78**	**383**	**51**	**62**

Note: (1) It is assumed that each student is accompanied by one guardian and 16-seat minibus is adopted. The AM Peak attraction is derived from (183 x 2)/16 = 23 GMB.

(2) 28-seat school bus is adopted. The AM Peak attraction and generation are derived from 131/28 = 5 school buses.

(3) It is assumed that each guardian will take GMB to leave school and 16-seat minibus is adopted. The AM Peak generation is derived from 183/16 = 12 GMB.

Table 4.15 Student's Transport Mode from School in PM Peak (Students "NOT" Living in Shui Chuen O Estate)

Student's Transport Mode to/from School	No. of Students ("Not" living in Shui Chuen O Estate)	PM Peak Attraction		No. of Students ("Not" living in Shui Chuen O Estate)	PM Peak Generation	
		(veh/ hr)	(pcu/ hr)		(veh/ hr)	(pcu/ hr)
Walk	383 x 10% = 36	0	0	383 x 10% = 39	0	0
GMB/Bus	383 x 44% = 170	11(1)	16	383 x 44% = 169	22(3)	33
Private Vehicles/ Taxi	383 x 6% = 24	24	24	383 x 6% = 23	23	23
School Bus	383 x 40% = 152	6(2)	12	383 x 40% = 152	6(2)	12
Total	**383**	**40**	**52**	**383**	**51**	**68**

Note: (1) It is assumed that each guardian will take GMB to go to school and 16-seat minibus is adopted. The PM Peak attraction is derived from 169/16 = 11 GMB.

(2) 28-seat school bus is adopted. The PM Peak attraction and generation are derived from 152/28 = 6 school buses.

(3) It is assumed that each student is accompanied by one guardian and 16-seat minibus is adopted. The PM Peak generation is derived from (169 x 2)/16 = 22 GMB.

Table 4.16 Student's Transport Mode to School in AM Peak (Students Living in Shui Chuen O Estate)

Student's Transport Mode to/from School	No. of Students (Living in Shui Chuen O Estate)	AM Peak Attraction		No. of Students (Living in Shui Chuen O Estate)	AM Peak Generation	
		(veh/ hr)	(pcu/ hr)		(veh/ hr)	(pcu/ hr)
Walk	383 x 20% =77	0	0	383 x 20% = 77	0	0
GMB/Bus	383 x 66% = 253	32(1)	48	383 x 66% = 253	16(3)	24
Private Vehicles/ Taxi	383 x1% = 4	4	4	383 x 1% = 4	4	4
School Bus	383 x 13% = 49	2(2)	4	383 x 13% = 49	2(2)	4
Total	**383**	**38**	**56**	**383**	**22**	**32**

Note: (1) It is assumed that each student is accompanied by one guardian and 16-seat minibus is adopted. The AM Peak attraction is derived from (252 x 2)/16 = 32 GMB.

(2) 28-seat school bus is adopted. The AM Peak attraction and generation are derived from 50/28 = 2 school buses.

(3) It is assumed that each guardian will take GMB to leave school and 16-seat minibus is adopted. The AM Peak generation is derived from 252/16 = 16 GMB.

Table 4.17 Student's Transport Mode from School in PM Peak (Students Living in Shui Chuen O Estate)

Student's Transport Mode to/from School	No. of Students (Living in Shui Chuen O Estate)	PM Peak Attraction		No. of Students (Living in Shui Chuen O Estate)	PM Peak Generation	
		(veh/ hr)	(pcu/ hr)		(veh/ hr)	(pcu/ hr)
Walk	383 x 27% = 104	0	0	383 x 27% = 104	0	0
GMB/Bus	383 x 59% = 225	15(1)	23	383 x 59% = 225	29(3)	44
Private Vehicles/ Taxi	383 x 0% =0	0	0	383 x 0% = 0	0	0
School Bus	383 x 14% = 54	2(2)	4	383 x 14% = 54	2(2)	4
Total	**383**	**17**	**27**	**383**	**31**	**48**

Note: (1) It is assumed that each guardian will take GMB to go to school and 16-seat minibus is adopted. The PM Peak attraction is derived from 225/16 = 15 GMB.

(2) 28-seat school bus is adopted. The PM Peak attraction and generation are derived from 54/28 = 2 school buses.

(3) It is assumed that each student is accompanied by one guardian and 16-seat minibus is adopted. The PM Peak generation is derived from (225 x 2)/16 = 29 GMB.

School Staff

4.3.11 As advised by the school operator, there will be around 70 school staff (including teachers) for normal operation of the proposed primary school. Assuming that all those 8 nos. of car parking spaces in the proposed primary school will be used by the school staff, the remaining 62 nos. school staff will make use of public transport to go to or leave the proposed primary school.

Table 4.18 School Staff's Transport Mode during School Peak Hour

	Number of staff	AM Generation (pcu/hr)	AM Attraction (pcu/hr)	PM Generation (pcu/hr)	PM Attraction (pcu/hr)
Private Vehicles	8	0	8	8	0
GMB/Bus	62	0	6(1)	6(1)	0
Total	**70**	**0**	**14**	**14**	**0**

Note: (1) 16-seat minibus is adopted. Note that PCU factor of GMB is 1.5, thus the calculation is 62/16 x 1.5 = 6 pcu/hr.

4.3.12 Based on **Table 4.18**, transportation of school staff will attract 14 pcu/hr during AM school peak and generate 14 pcu/hr during PM school peak.

4.3.13 Taking into account all estimated traffic as detailed above, the total estimated trip generation of the proposed primary school is summarized in **Table 4.18**

.

Table 4.19 Trip Generation and Attraction Rate of the Proposed Primary School

Proposed Primary School	AM Generation (pcu/hr)	AM Attraction (pcu/hr)	PM Generation (pcu/hr)	PM Attraction (pcu/hr)
Students "NOT" living in Shui Chuen O Estate	62(1)	78(1)	68(2)	52(2)
Students living in Shui Chuen O Estate	32(3)	56(3)	48(4)	27(4)
Private vehicles of school staff	0(5)	14(5)	14(5)	0(5)
Total	**94**	**148**	**130**	**79**

Notes: (1) AM Generation and AM Attraction for students "NOT" living in Shui Chuen O Estate extracted from above Table 4.14.

(2) PM Generation and PM Attraction for students "NOT" living in Shui Chuen O Estate extracted from above Table 4.15.

(3) AM Generation and AM Attraction for students living in Shui Chuen O Estate extracted from above Table 4.16.

(4) PM Generation and PM Attraction for students living in Shui Chuen O Estate extracted from above Table 4.17.

(5) AM Generation and AM Attraction and PM Generation and PM Attraction for school staff extracted from above Table 4.18.

4.3.14 It is estimated that the proposed primary school will generate 94 pcu/hr and attract 148 pcu/hr during the AM school peak and generate 130 pcu/hr and attract 79 pcu/hr during the PM school peak.

4.4 Year 2025 Reference and Design Traffic Forecasts

4.4.1 The 2025 reference traffic flows (without proposed primary school) are calculated as follows and presented in **Figure 4.2**.

2025 Reference Flows (Without Proposed Primary School)	=	**2018 Observed Flows**	**x**	**Adopted Growth Factor (i.e. +1.25% for 7 year)**	**+**	**Traffic Flows of Adjacent Development Projects (Incl. New Residential Development at STTL609 & Temporary Carpark at Pok Chuen Street)**

4.4.2 The future traffic generations of the proposed primary school were then assigned onto the road network and superimposed onto the 2025 reference traffic flows (without proposed primary school) to derive the 2025 design traffic forecasts (with proposed primary school). The 2025 design traffic flows (with proposed primary school) are calculated as follows and presented in **Figure 4.3**.

2025 Design Flows (With Proposed Primary School)	=	**2025 Reference Flows (Without Proposed Primary School)**	**+**	**Proposed Primary School Traffic**

5. TRAFFIC IMPACT ASSESSMENT

5.1 Operational Assessment

5.1.1 To assess the potential traffic impact due to the proposed primary school, capacity analysis of the identified critical junctions for both reference and design scenarios in year 2025 were carried out. The results are summarized in **Table 5.1** and the junction calculation sheets are attached in **Appendix A**.

Table 5.1 Junction Performance of Identified Critical Junction in Year 2025

Junction	Junction Location	RC/RFC (1)			
		Year 2025 Reference		Year 2025 Design	
		AM	PM	AM	PM
A	Sha Kok Street/ Shui Chuen Au Street	65%	123%	50%	99%
B	Pok Chuen Street/ To Shek Street	0.48	0.38	0.52	0.43
C	To Shek Street/ Sha Tin Wai Road/ Ngan Shing Street	23%	29%	21%	27%
D	Pok Chuen Street	0.11	0.13	0.19	0.18

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

5.1.2 The results in **Table 5.1** reveal that all critical junctions will still operate with ample capacities even with proposed primary school in design year 2025.

6. PUBLIC TRANSPORT DEMAND

6.1 Survey on Existing Public Transport Service

6.1.1 Another traffic survey was carried out to investigate the occupancy rate of current service of GMB Route No. 812A. The survey was conducted on 2nd April 2019, covering both AM and PM school peak hour periods at 07:15-08:15 hours and 13:00-15:00 hours respectively. Surveys were conducted at 6 locations along Pok Chuen Street as follows:

i. Shing Chuen House (Uphill Direction)
ii. Shou Chuen House (Uphill Direction)
iii. Shan Chuen House (Uphill Direction)
iv. Yan Chuen House (Downhill Direction)
v. Long Chuen House (Downhill Direction)
vi. Yuet Chuen House (Downhill Direction)

6.1.2 From the survey result, **Table 6.1** summarizes the average number of occupied and vacant seats, no. of GMB per hour, and surplus capacity of existing GMB Route No. 812A at both AM and PM school peak hours.

Table 6.1 Surplus Capacity of Existing GMB Route No. 812A

Existing GMB Route No. 812A	AM School Peak Attraction Rate	AM School Peak Generation Rate	PM School Peak Attraction Rate	PM School Peak Generation Rate
	Shing Chuen House (Uphill Direction)	Yan Chuen House (Downhill Direction)	Shing Chuen House (Uphill Direction)	Yan Chuen House (Downhill Direction)
Average No. of Seats Occupied	3	13	13	3
Average No. of Seats Unoccupied	13	3	3	13
No. of GMBs Observed per Hour	35	35	27	27
Total No. of Seats Unoccupied	13 x 35 = 455	3 x 35 = 105	3 x 27 = 105	13 x 27 = 455

6.1.3 According to the questionnaire result mentioned in **Chapter 4**, **Table 6.2** summarizes the forecast demand of students and their parents choosing GMB/Bus service to go to and leave from proposed primary school.

Table 6.2 Forecast Demand of Students and Their Parents Choosing GMB/Bus service

No. of passengers choosing GMB/Bus	AM School Peak Attraction Rate	AM School Peak Generation Rate	PM School Peak Attraction Rate	PM School Peak Generation Rate
Total [(1)]	874	436	395	788

Note: (1) The forecast demand is based on the questionnaire result and assumed that each student is accompanied by one guardian.

6.1.4 Based on the distribution of boarding by transport mode as stipulated in the Travel Characteristics Survey 2011 published by Transport Department, 24% of the Home Based Study trip (HBS) was franchised bus while 15% of the HBS trip was PLB. Hence it is estimated that forecasts demand of students and their parents choosing

Table 6.3 Forecast Demand of Students and Their Parents Choosing GMB/Bus service

No. of passengers choosing GMB/Bus	AM School Peak Attraction Rate	AM School Peak Generation Rate	PM School Peak Attraction Rate	PM School Peak Generation Rate
Franchised Bus	538	268	243	485
GMB	336	168	152	303
Total [(1)]	874	436	395	788

Note: (1) The forecast demand is based on the questionnaire result and assumed that each student is accompanied by one guardian.

6.1.5 Taking into account the surplus capacity of existing GMB No. 812A as summarized in **Table 6.1** and the forecast demand of students and their parents choosing GMB service as summarized in **Table 6.3**, the number of surplus and shortage seats of GMB Route No. 812A to satisfy demand from future students and parents of the primary school are calculated and summarized in **Table 6.4**.

Table 6.4 Surplus/Shortage of seats of GMB Route No. 812A and the Number of Additional GMB needed

No. of passengers	AM School Peak Attraction	AM School Peak Generation	PM School Peak Attraction	PM School Peak Generation
Forecast Demand choosing GMB (A)	336	168	152	303
Total No. of Seats Unoccupied (B)	455	105	105	455
Surplus/Shortage of GMB seats (B) – (A)	+119	-63	-47	+152
Number of Additional 16-seater GMB required	-	63/16 = 4	4716 = 3	-

6.1.6 By making use of the surplus seats available of the existing service of GMB Route No. 812A for uphill direction during AM school peak and downhill direction during PM school peak of the existing service of GMB Route No. 812A, it is revealed that 4 additional GMBs could cope with the anticipated GMB demand of the primary school. In order not to affect the work trip of the residents, special GMB circular route between Shui Chuen O Estate PTI and proposed primary school could also be considered during AM and PM school peaks.

6.1.7 Also, similar to GMB service, franchised bus service (either by mean of existing bus routes such as Route Nos. 288, 288A and 288B or providing special franchised bus circular route between Shui Chuen O Estate PTI and proposed primary school) should be considered during AM and PM school peaks.

6.1.8 Due to higher carrying capacity of franchised buses, it is revealed that 5 nos. special franchised buses (assuming 80 passengers each bus) could be able to cope with the demand. However, owing to the existing road width and configuration, it is not feasible for 12.8m long double-deck bus to turnaround through Pok Chuen Street cul-de-sac. Nevertheless, 12m long double-deck buses or single-deck buses would be feasible option.

6.1.9 Alternatively, the school operator will review the demand of students using school bus services. Circular school bus service could be provided which passes through Sha Tin Wai MTR station, Shui Chuen O Estate and the proposed primary school. As such, students NOT living in Shui Chuen O Estate can board at the MTR station while students living in Shui Chuen O Estate can board at the designated intermediate stops within Shui Chuen O Estate.

6.1.10 With the proposed provision of school bus services, students could go to and leave from proposed primary school directly and safely such that parents/guardians are not required to travel to and from proposed primary school which could further minimize the travelling trips of GMB and franchised buses.

7. PROPOSED ROAD IMPROVEMENT WORKS

7.1 Road Improvement work at Pok Chuen Street

7.1.1 Taking into consideration the existing traffic arrangement at Pok Chuen Street, all vehicles are required to turnaround at the existing cul-de-sac at the end of the Pok Chuen Street. In order to minimize the turnaround route of vehicles and reduce those non-school traffic passing through the section of Pok Chuen Street outside the proposed primary school, it is proposed to modify the existing road markings and make use of the existing layby at Pok Chuen Street such that a simple one-way gyratory system could be formed. The works will only involve minor road marking works and modification/erection of some traffic signs such that it could be implemented easily. Also, without any major civil works required, original traffic arrangement could easily be resumed if considered necessary.

7.1.2 In order to facilitate two-way access of 12m coach to/from proposed primary school, road improvement work by changing the existing road markings is proposed to be carried out at Pok Chuen Street cul-de-sac which is illustrated diagrammatically in **Figures 7.1** and **7.2**. Under this proposal, a mini-roundabout will be formed at the existing cul-de-sac. In addition, to provide adequate space for manoeuvring of 12m coach via the proposed vehicular access of the proposed primary school, the existing vehicular access of Water Supplies Department (WSD) Fresh Water Service Reservoir will also need to be relocated. Agreement and approval from WSD and LandsD had already been sought.

7.1.3 As mentioned in **Chapter 6**, it is proposed to extend GMB Route No. 812A during school peak periods to the proposed primary school by providing a stop in front of the proposed primary school so as to provide convenient and safe transport means for students and school staff which is illustrated diagrammatically in **Figure 7.3**.

7.1.4 As advised by WSD, ingress and egress of their vehicles via the access to the reservoir is minimal and mainly during off-peak hour. However, it will be more frequent if there is routine maintenance works at the reservoir. In order to avoid potential disruption to the access of WSD reservoir, the GMB stop is therefore proposed to be located to the southern kerbside of Pok Chuen Street with a slight distance way from vehicular access. With the rapid pick-up/drop-off activities of the GMBs there, it is revealed that smooth circulation at the mini-roundabout could still be maintained. Passengers could queue along the footpath in downhill direction with adequate footpath space. Nevertheless, school staff will also manage the school traffic at the vehicular access of the proposed primary school during the school peak hour periods to ensure safety of the students and parents.

7.1.5 It is envisaged that the above-mentioned road improvement works are all be implemented to cope with the proposed primary school and hence ArchSD will be responsible to carry out the works.

8. PEDESTRIAN ASSESSMENT AND FACILITIES

8.1 Pedestrian Traffic

8.1.1 In order to acquire the existing pedestrian condition around the proposed primary school, a pedestrian headcount survey was conducted at Pok Chuen Street on a typical weekday in December 2018. The survey results indicated that the peak pedestrian flow occurs in the morning between 07:30am to 08:30am. Pedestrian routing and critical sections of footpath in the vicinity are identified based on on-site observation and illustrated diagrammatically in **Figure 8.1**.

8.1.2 The related assessment is based on Level-of-Service (LOS) approach, which is stipulated in T.P.D.M. (Volume 6, Chapter 10, Section 10.4.2), defines the service level of walkway. The standard with relevant descriptions is summarized in **Table 8.1**.

8.1.3 **Table 8.1** shows how LOS A is the most comfortable while LOS F is the most crowded and unsatisfactory environment for pedestrians.

Table 8.1 Descriptions of Level-of-Service (LOS)

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

8.1.4 Existing pedestrian assessment of the above-mentioned critical section of footpath on LOS Criteria has been conducted and the results are summarized in **Table 8.2**.

Table 8.2 LOS at Identified Critical Section of Footpaths at Pok Chuen Street – Existing Scenario

	Critical Section	Total Footpath Width (m)[1]	Effective Width (m)[2]	2018 Existing		
				Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m)[3]	LOS
AM School Peak	A	2.83	1.83	10	0.09	A
PM School Peak	A	2.83	1.83	10	0.09	A

Notes: (1) Total Footpath Width = Footpath Width between wall of buildings and road kerb, and the critical section of footpath has been adopted.

(2) Effective Width = Clear Width – Death Width (no railings or walls).

(3) Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

8.1.5 The result in **Table 8.2** indicates that the identified footpath section along Pok Chuen Street is currently operating with adequate capacities.

8.1.6 In order to forecast the pedestrian flows in design year 2025, same annual growth rate as traffic (i.e. +1.25% p.a.) has been adopted and applied to the observed pedestrian counts to forecast the reference pedestrian flows in year 2025 which are summarized in below **Table 8.3**.

Table 8.3 LOS at Identified Critical Section of Footpaths at Pok Chuen Street in Design Year 2025 – Reference Scenario (Without Proposed Primary School)

	Critical Section	Total Footpath Width (m)(1)	Effective Width (m)(2)	2025 Reference Year		
				Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m)(3)	LOS
AM School Peak	A	2.83	1.83	15	0.14	A
PM School Peak	A	2.83	1.83	15	0.14	A

Notes: (1) Total Footpath Width = Footpath Width between wall of buildings and road kerb, and the critical section of footpath has been adopted

(2) Effective Width = Clear Width – Death Width (0.5m from proposed railings).

(3) Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

8.1.7 Based on the results of the modal split as mentioned in **Section 4.3**, the estimated number of students and parents who walk to or leave the proposed primary school is summarized in **Table 8.4**. It was estimated that the two-way pedestrian flows would be 333 ped/hr during AM Peak and 429 ped/hr during PM Peak.

Table 8.4 Estimated Number of Students and Parents Walking To and From School

No. of person who choose to walk	AM Attraction	AM Generation	PM Attraction	PM Generation
Students & Parents "NOT" Living in Shui Chuen O Estate	69	34	39	79
Students & Parents Living in Shui Chuen O Estate	153	77	104	207
Total	**222**	**111**	**143**	**286**
	333		**429**	

8.1.8 Pedestrian assessment of the above-mentioned critical section of footpath based on LOS criteria has been reassessed with the estimated pedestrian flows in deign year 2025 and the results are summarized in **Table 8.5**.

Table 8.5 LOS at Identified Critical Section of Footpaths at Pok Chuen Street in Design Year 2025 – Design Scenario (With Proposed Primary School)

	Critical Section	Total Footpath Width (m)(1)	Effective Width (m)(2)	2025 Design Year		
				Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m)(3)	LOS
AM School Peak	A	2.83	1.33	343	4.30	A
PM School Peak	A	2.83	1.33	439	5.50	A

Notes: (1) Total Footpath Width = Footpath Width between wall of buildings and road kerb, and the critical section of footpath has been adopted

(2) Effective Width = Clear Width – Death Width (0.5m from proposed railings).

(3) Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

8.1.9 The result in **Table 8.5** indicates that the identified footpath section along Pok Chuen Street will still operate with adequate capacities in design year 2025.

8.2 Proposed Railings/G.I. Bollards

8.2.1 It is envisaged that the pedestrian flows along Pok Chuen Street especially the footpath adjacent to the proposed primary school will be increased due to the hikers, temporary open car park goers, students and parents, etc. As a result, there would be a need to install additional Type II railings/G.I. bollards along the footpath adjacent to the proposed primary school to enhance safety along the desired routeing for the pedestrians which is illustrated diagrammatically in **Figure SF-01**.

8.2.2 As the above-mentioned additional Type II railings/G.I. bollards are all be implemented to safeguard the public and hence TD and HyD will be responsible to carry out the works.

8.3 Necessity of Covered Walkway

8.3.1 The provision of covered walkways could shield pedestrians from rainfall and sunshine. As stipulated in TPDM Vol. 2 Chapter 3.4, there are 3 criteria in deciding whether the cover is required which is summarized below:

i. The walkway should be a main pedestrian link, connecting the major public transport facilities including railway terminals/stations, ferry terminals and major public transport interchanges, and the nearest developed or development areas or existing covered pedestrian facilities, etc.;

ii. The pedestrian flow using the walkway should be at least 4,000 ped/hr for not less than 3 hours per weekday;

iii. The provision of cover may be considered when the length of walkway does not exceed 500m taking account of the general acceptable walking distance, steepness of the walkway and the cost of the provision.

8.3.2 Having reviewed the traffic condition of proposed primary school, it is revealed that those 3 criteria as mentioned above could not be complied with. Hence it is considered that provision of covered walkway along Pok Chuen Street is not justified from traffic engineering point of view.

9. CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

9.1 Proposed Routing of Construction Vehicles

9.1.1 Two possible routes for construction vehicles commuting to the subject Site for construction works have been identified and shown in **Figure 9.1**. In order to minimize the potential disruption to the locals, it is proposed that the construction vehicles should adopt the "**Alternative Route 1**" to access the proposed primary school site (i.e. via Sha Tin Wai Road, To Shek Street and Pok Chuen Street) where traffic there is comparatively lesser.

9.1.2 The estimated trip generation of construction traffic has been made reference to the record of other ArchSD's projects for 30-classroom Primary School at Site KT2b and Development at Anderson Road, Kwun Tong which took place in years 2017 and 2018 respectively. Taking into consideration similar characteristics of these projects such as size of primary school, length of construction and construction method, it is revealed that the trip generation of construction traffic will also be similar for proposed primary school and adequate to be adopted for proposed primary school. Through the record of these school projects, it is found that 10 construction vehicles per hour (per direction) would be required for normal operation/transportation need of construction waste and soil, etc.

9.1.3 Similarly, same annual growth rate for traffic (i.e. +1.25% p.a.) has been adopted and applied to the observed traffic flows to forecast the reference traffic flows in year 2022 which is the final year of the entire construction project and is illustrated diagrammatically in **Figure 9.2**. The junction calculation sheets are attached in **Appendix A**.

9.1.4 The future traffic generations of construction vehicles of the proposed primary school were then assigned onto the road network and superimposed onto the 2022 reference traffic flows to derive the 2022 design traffic forecasts with construction vehicles of the proposed primary school which is illustrated diagrammatically in **Figure 9.3**.

2022 Design Traffic Flows = **2022 Reference Traffic Flows** + **Construction Traffic of the Proposed Primary School**

9.1.5 To assess underlying traffic impact due to the construction works of the proposed primary school, operational performance assessment of the critical junctions along the proposed "Alternative Route 1" has been carried out for both reference (without construction vehicles) and design (with construction vehicles) scenarios in year 2022, which is the final year of the entire construction project. The results are summarized in **Table 9.1** and the junction calculation sheets are attached in **Appendix A**.

Table 9.1 Operational Performance of Critical Junctions in Year 2022

Junction	Junction Location	RC/RFC (1)			
		Year 2022 Reference Scenario		Year 2022 Design Scenario	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Sha Kok Street/ Shui Chuen Au Street	68%	130%	68%	130%
B	Pok Chuen Street/ To Shek Street	0.44	0.34	0.50	0.40
C	To Shek Street/ Sha Tin Wai Road/ Ngan Shing Street	26%	31%	22%	28%
D	Pok Chuen Street	0.08	0.11	0.10	0.13

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

9.1.6 As shown in **Table 9.1**, all identified critical junctions would still operate with ample capacities in year 2022 even with the construction traffic.

10. SUMMARY AND CONCLUSION

10.1 Summary

10.1.1 The subject site is located at Pok Chuen Street, Shui Chuen O, Sha Tin, New Territories. To ensure the provision of sufficient public sector school places in Sha Tin District, Education Bureau (EDB) proposed to construct a 30-classrooms primary school at Shui Chuen O to satisfy the schooling demand in the area. This Traffic Review has been conducted to investigate the traffic impacts induced by the proposed primary school on the adjacent road network.

10.1.2 The internal transport facilities provision for the proposed primary school will be provided in accordance with the latest Hong Kong Planning Standards and Guidelines (HKPSG) requirements including 8 nos. private car parking spaces, 15 nos. lay-by for private cars and taxis, and 3 nos. lay-by for school buses.

10.1.3 Based on the target completion year of 2022 for the proposed primary school, the forecast year of traffic assessment was set at 2025 (3 years after completion). The traffic forecast was derived by means of growth factor applied to the observed traffic flows obtained from recent traffic survey, with consideration of major new developments in the vicinity.

10.1.4 The annual growth rate was determined by referring to the population and employment projections from Territory Population and Employment Data Matrices (TPEDM) by Planning Department and the Annual Traffic Census (ATC) by Transport Department. A conservative growth rate of +1.25% p.a. was adopted for projecting the 2018 observed traffic flows to 2025 reference background traffic flows.

10.1.5 There will be three major adjacent developments. First, there will be a residential development at To Shek Street. Second, a minibus stop would be set up close to the entry of school site to facilitate students' transportation. Third, a temporary carpark for motorcycles, private cars and goods vehicles has been proposed near the WSD reservoir, the proposal is still at the circulation stage and has not yet been submitted to the approving authority for consideration. Trip generation rates of the aforementioned developments are added to derive the 2025 reference traffic flow.

10.1.6 Questionnaires were distributed to Primary 1 students of TWGHs Shui Chuen O Primary School in Tai Wai in order to understand their preferred transport mode between home and school. It is estimated that the proposed Site will generate 94 pcu/hr and attract 148/hr during the AM peak and generate 130 pcu/hr and attract 79 pcu/hr during the PM peak.

10.1.7 The estimated traffic generation due to the proposed school site was then superimposed onto the 2025 reference traffic flow to derive the 2025 design traffic flow.

10.1.8 Assessment of operational performance of the critical junctions revealed that all critical junctions would still operate within their capacities in design year 2025.

10.1.9 Survey was conducted to investigate the public transport demand of the proposed primary school. It is revealed that the existing GMB Route No. 812A will not have sufficient surplus to cope with the demand of both students and parents/guardians. It is envisaged that additional GMBs and franchised bus service (either extending the existing service is needed to cope with the increased demand due to the proposed development.

10.1.10 Taking into consideration the existing traffic arrangement at Pok Chuen Street, all vehicles are required to turnaround at the existing cul-de-sac at the end of the Pok Chuen Street. In order to minimize the turnaround route of vehicles and reduce those non-school traffic passing through the section of Pok Chuen Street outside the proposed primary school, it is proposed to modify the existing road markings and make use of the existing layby at Pok Chuen Street such that a simple one-way gyratory system could be formed. The works will only involve minor road marking works and modification/erection of some traffic signs such that it could be implemented easily. Also, without any major civil works required, original traffic arrangement could easily be resumed if considered necessary.

10.1.11 In order to facilitate two-way access of 12m coach to/from proposed primary school, road improvement work by changing the existing road markings is proposed to be carried out at Pok Chuen Street cul-de-sac. Under this proposal, a mini-roundabout will be formed at the existing cul-de-sac. In addition, to provide adequate space for manoeuvring of 12m coach via the proposed vehicular access of the proposed primary school, the existing vehicular access of Water Supplies Department (WSD) Fresh Water Service Reservoir will also need to be relocated. Agreement and approval from WSD and LandsD had already been sought.

10.1.12 It is proposed to extend GMB Route No. 812A during school peak periods to the proposed primary school by providing a stop in front of the proposed primary school so as to provide convenient and safe transport means for students and school staff. As advised by WSD, ingress and egress of their vehicles via the access to the reservoir is minimal and mainly during off-peak hour. However, it will be more frequent if there is routine maintenance works at the reservoir. In order to avoid potential disruption to the access of WSD reservoir, the GMB stop is therefore proposed to be located to the southern kerbside of Pok Chuen Street with a slight distance way from vehicular access. With the rapid pick-up/drop-off activities of the GMBs there, it is revealed that smooth circulation at the mini-roundabout could still be maintained. Passengers could queue along the footpath in downhill direction with adequate footpath space. Nevertheless, school staff will also manage the school traffic at the vehicular access of the proposed primary school during the school peak hour periods to ensure safety of the students and parents.

10.1.13 It is envisaged that the above-mentioned road improvement works are all be implemented to cope with the proposed primary school and hence ArchSD will be responsible to carry out the works.

10.1.14 Pedestrian assessment was carried out to evaluate if the footpath is able to cope with the expected future pedestrian flow. It is revealed that critical sections of footpath at Pok Chuen Street will operate with adequate capacities during peak hour in design year 2025. Nevertheless, it is envisaged that the pedestrian flows along Pok Chuen Street especially the footpath adjacent to the proposed primary school will be increased due to the hikers, temporary open car park goers, students and parents, etc. As a result, there would be a need to install additional Type II railings/G.I. bollards along the footpath adjacent to the proposed primary school to enhance safety along the desired routeing for the pedestrians. As the above-mentioned additional Type II railings/G.I. bollards are all be implemented to safeguard the public and hence TD and HyD will be responsible to carry out the works.

10.1.15 Having reviewed the traffic condition of proposed primary school, it is revealed that criteria as stipulated in TPDM for provision of covered walkways to shield pedestrians from rainfall and sunshine could not be complied with. Hence it is considered that provision of covered walkway along Pok Chuen Street is not justified from traffic engineering point of view

10.1.16 Construction Traffic Impact Assessment was also carried out to assess the traffic impacts caused by construction works of the proposed development. Assessment results reveal that all critical junctions will operate with ample capacities in 2022.

10.2 Conclusion

10.2.1 In conclusion, the Traffic Review report has demonstrated that the traffic generated by the proposed primary school on the surrounding road network can be absorbed by the surrounding road network and no significant traffic impact will be induced.

10.2.2 Hence, it can be concluded that the proposed primary school is supported from traffic engineering point of view.

FIGURE NO.: 1.1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: SITE LOCATION PLAN
SCALE: 1 : 8000 @ A4	DATE: 04 APR 2019

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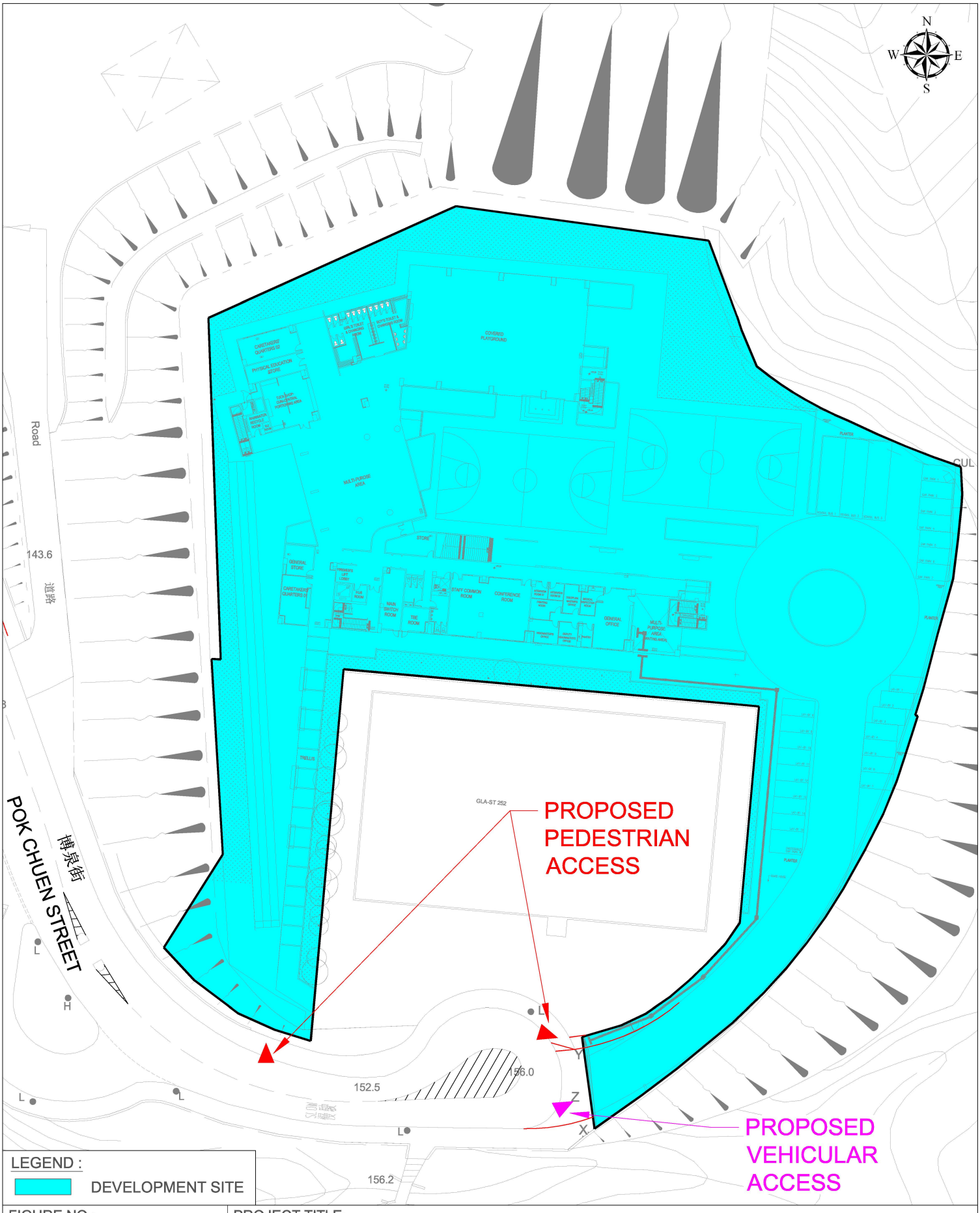

FIGURE NO.: 2.1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: PROPOSED PEDESTRIAN AND VEHICULAR ACCESS
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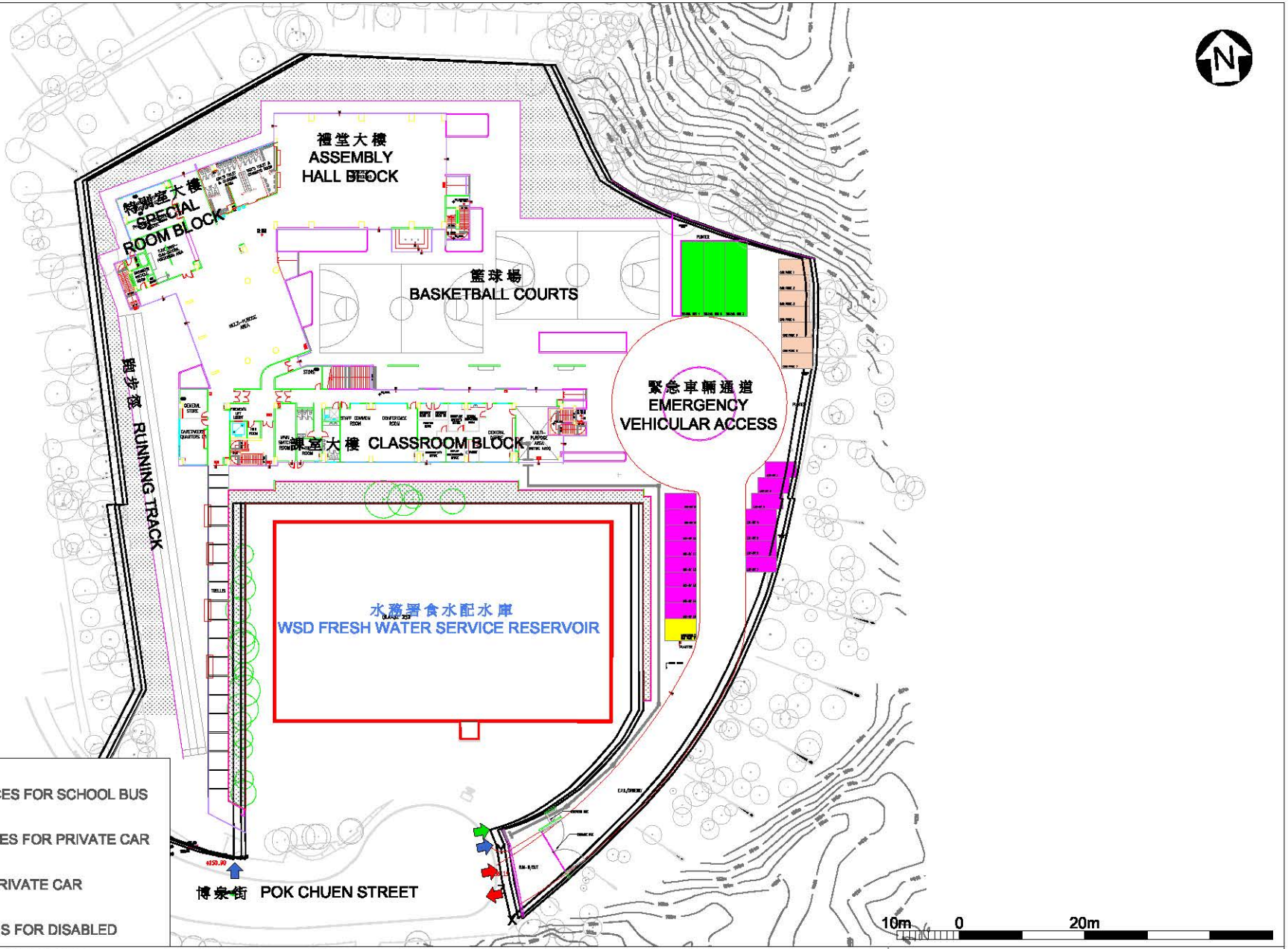

LEGEND :

- 3 Nos. PARKING SPACES FOR SCHOOL BUS
- 7 Nos. PARKING SPACES FOR PRIVATE CAR
- 15 Nos. LAY-BY FOR PRIVATE CAR
- 1 No. PARKING SPACES FOR DISABLED

FIGURE NO.: 2.2	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: CAR PARK LAYOUT
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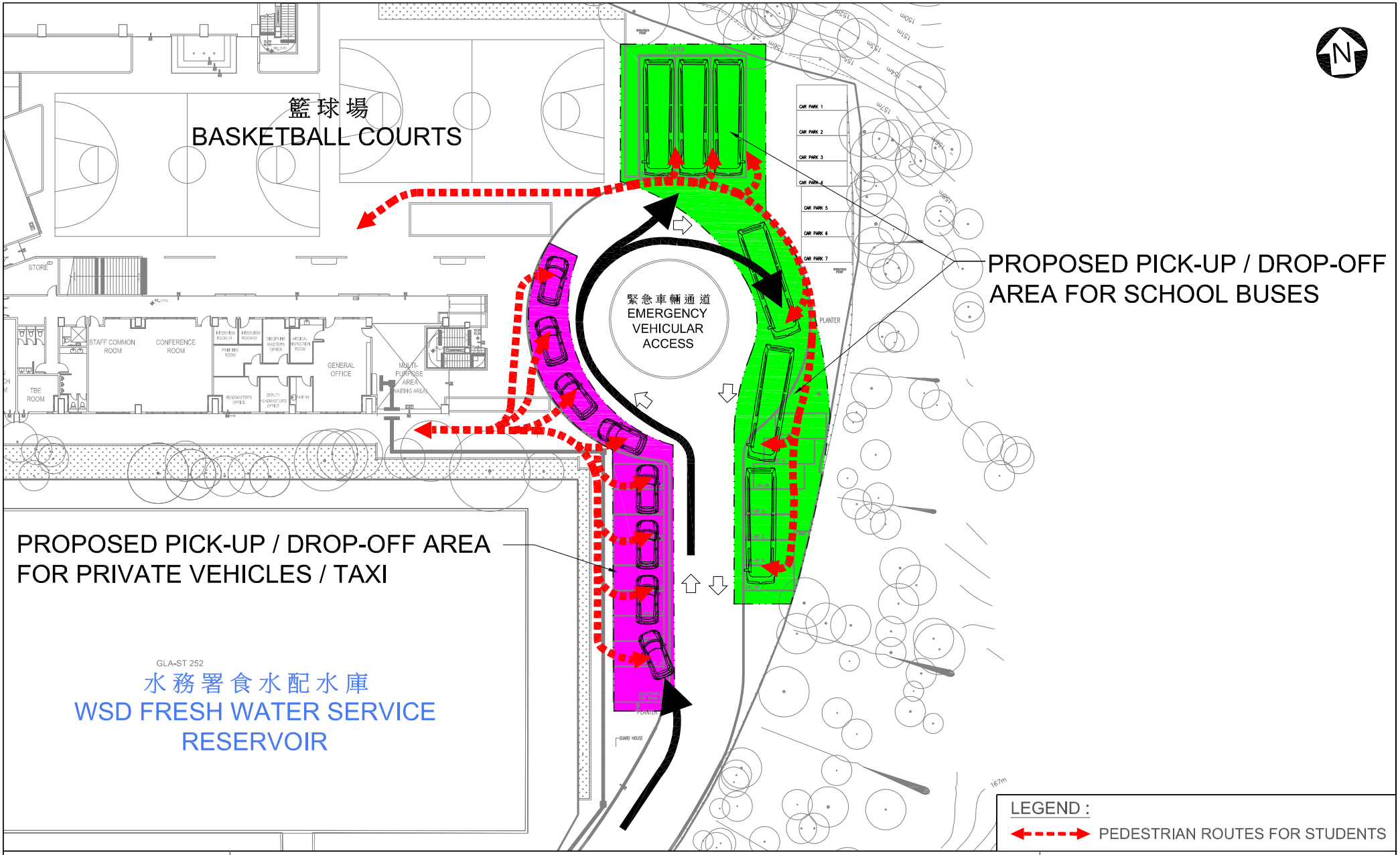

FIGURE NO.: 2.3	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: PROPOSED TRAFFIC MANAGE SCHEME DURING AM & PM SCHOOL PEAKS
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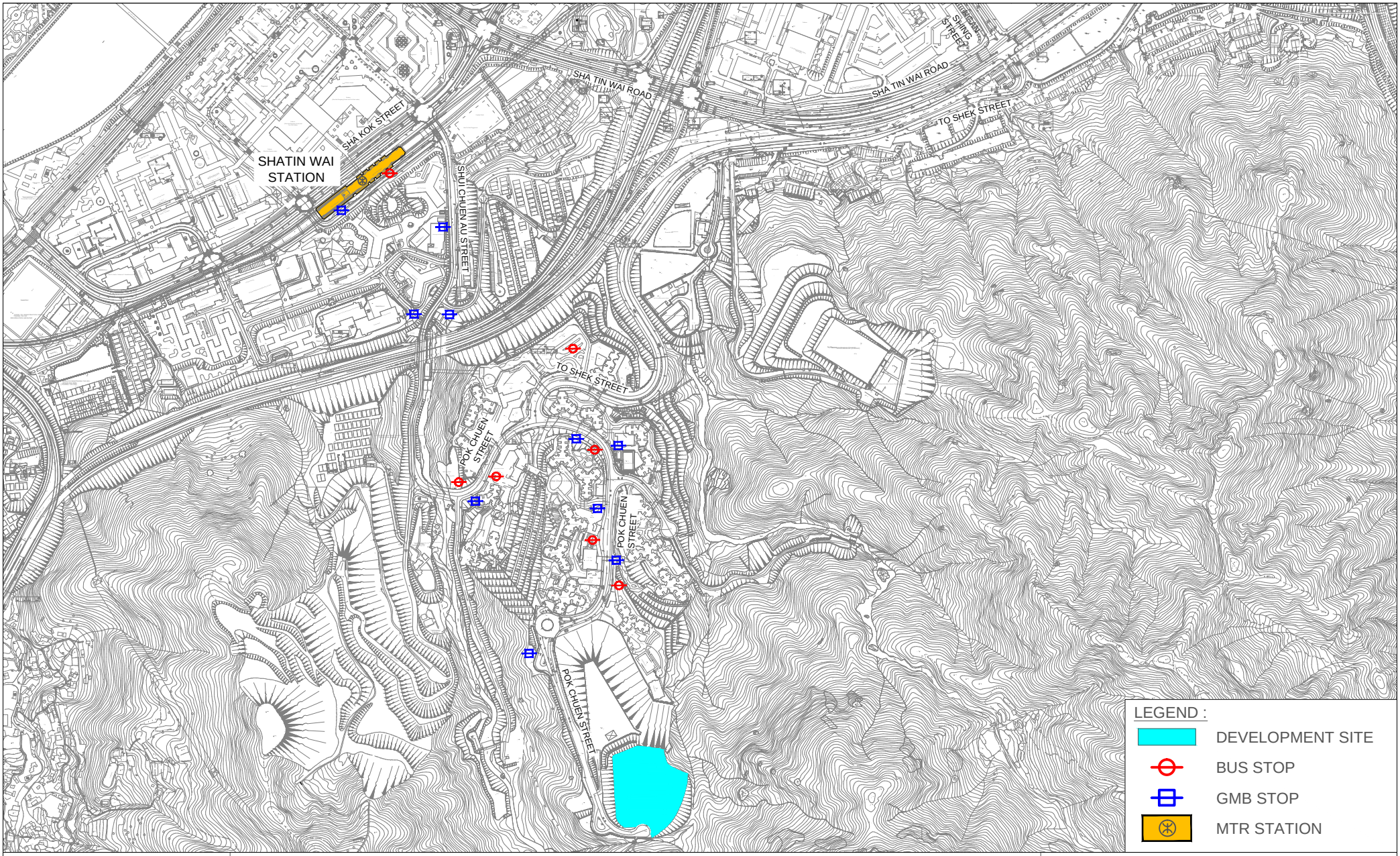

FIGURE NO.: 2.4	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: EXISTING PUBLIC TRANSPORT FACILITIES
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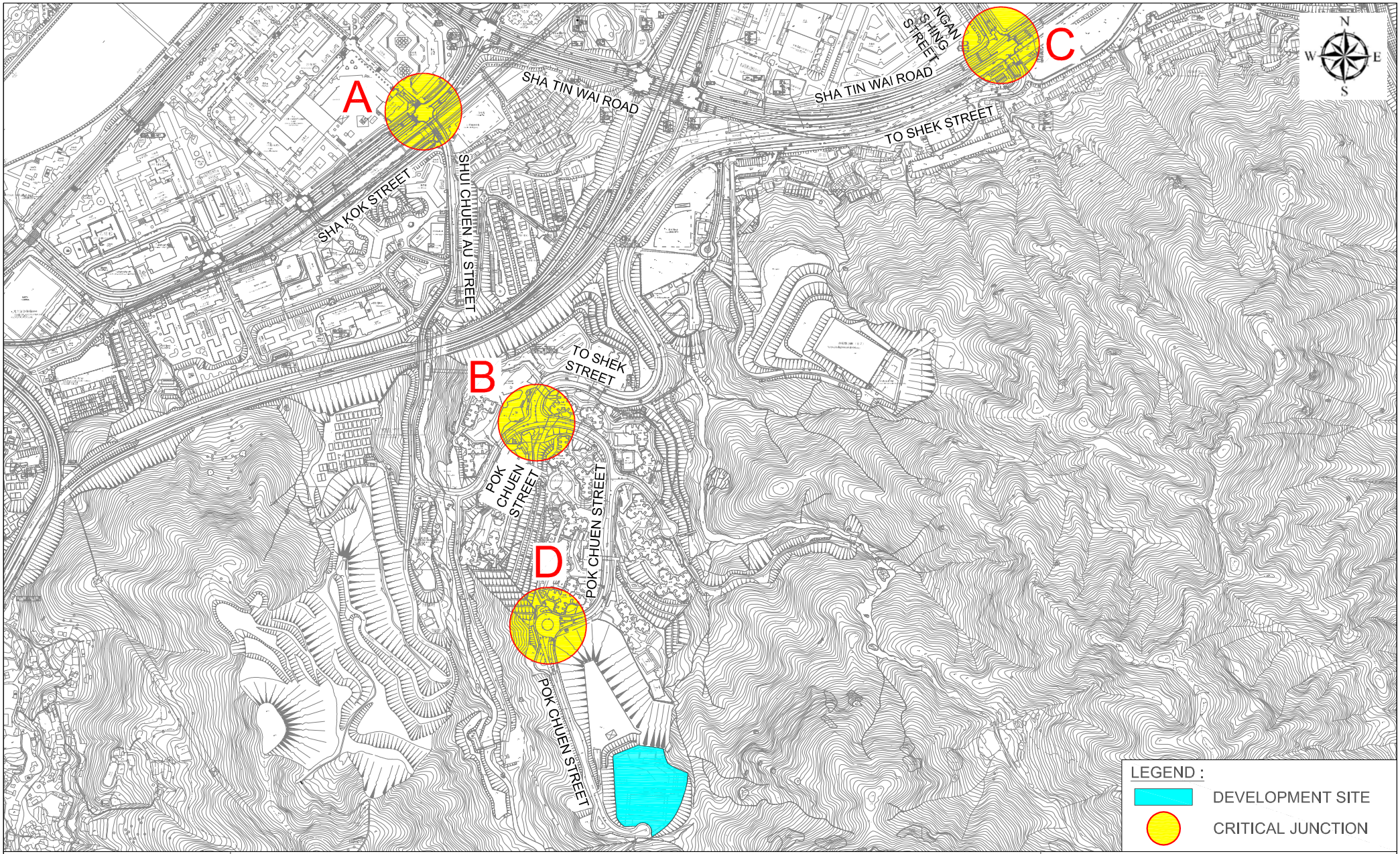

FIGURE NO.: 3.1 (REV A)	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: KEY JUNCTION AND EXISTING ROAD NETWORK
SCALE: 1 : 8000 @ A4	DATE: 04 APR 2019

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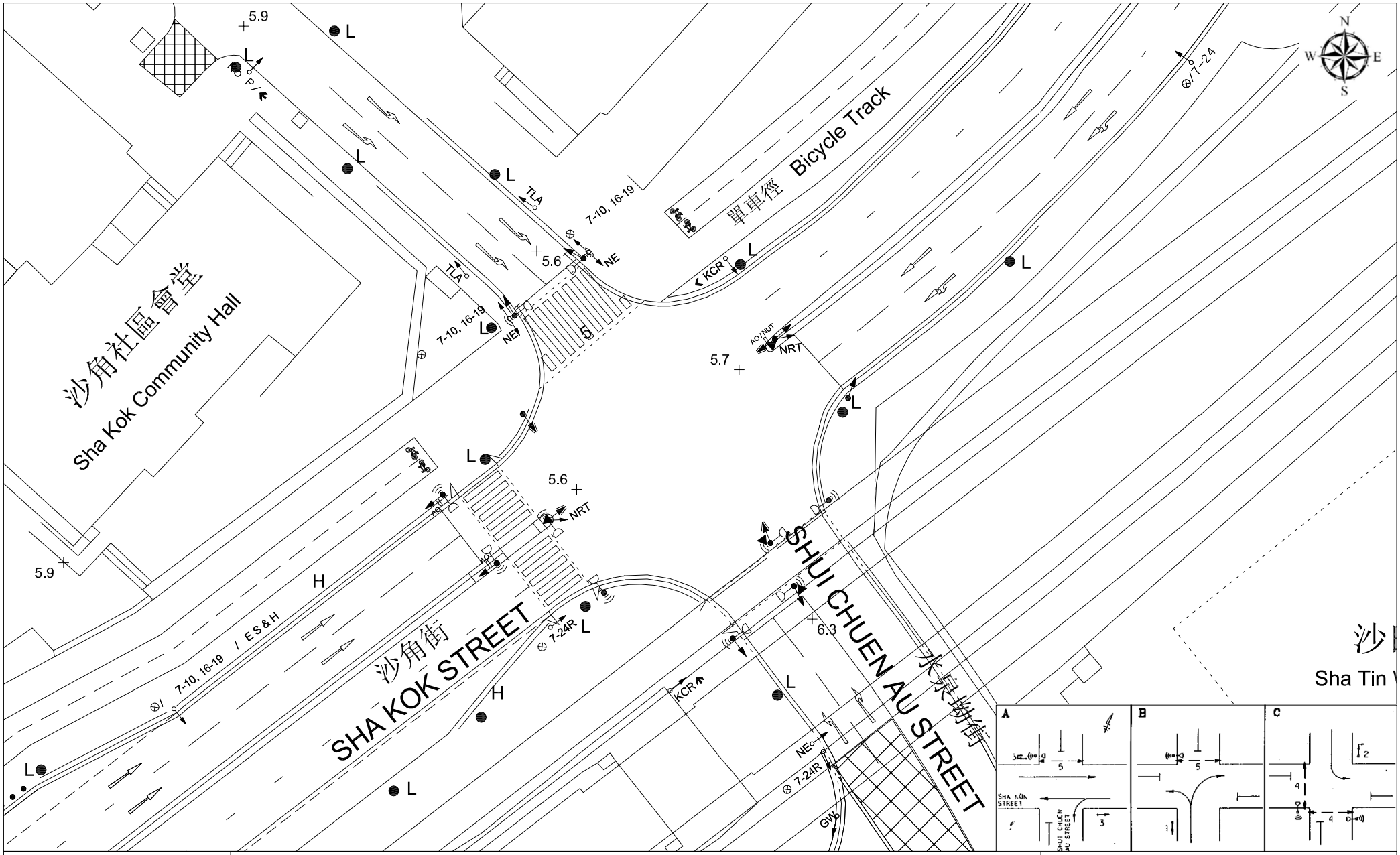

FIGURE NO.: 3.2	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF SHUI CHUEN AU STREET / SHA KOK STREET (A)
SCALE: 1 : 500 @ A4	DATE: 04 APR 2019

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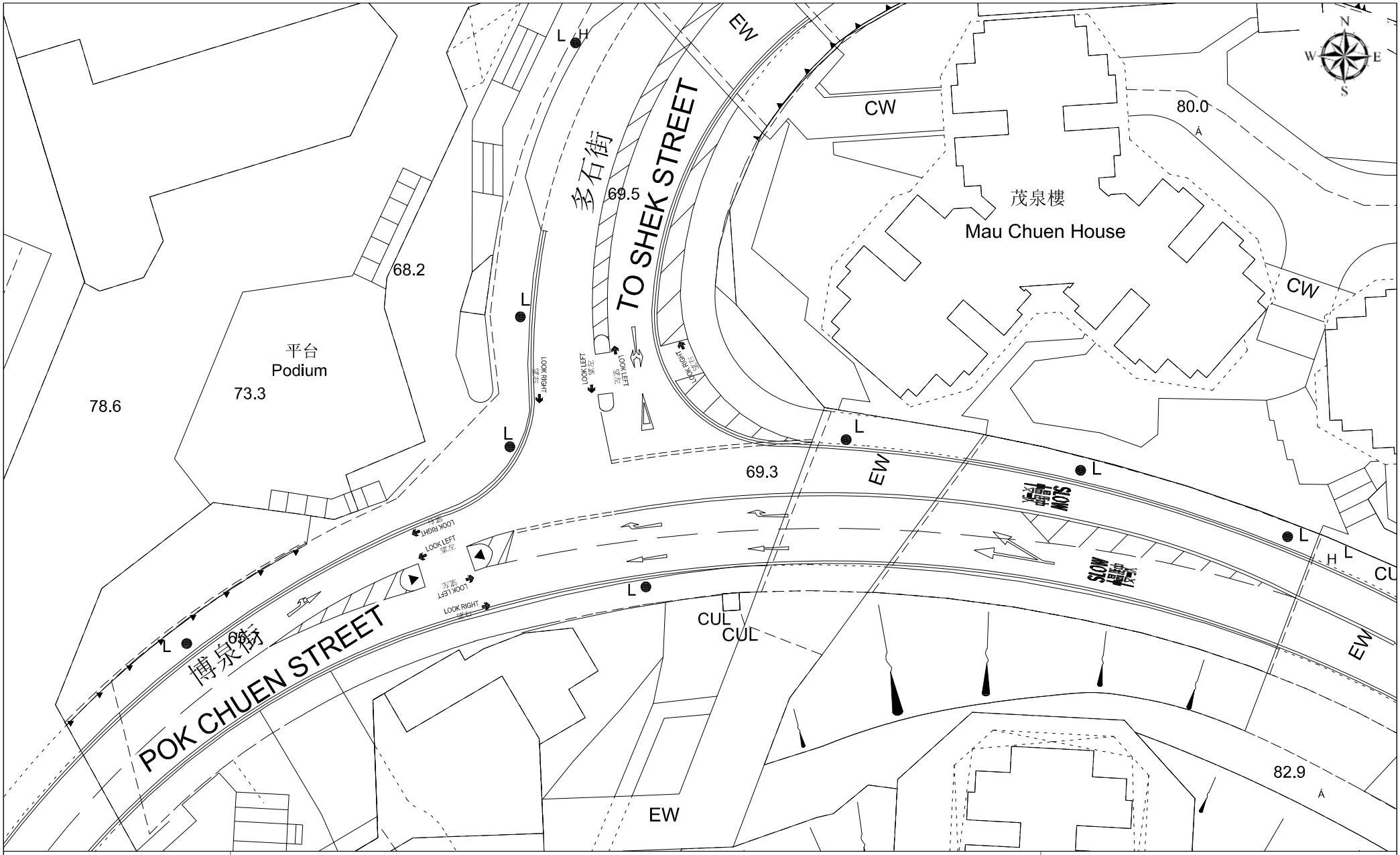

FIGURE NO.: 3.3	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF POK CHUEN STREET / TO SHEK STREET (B)
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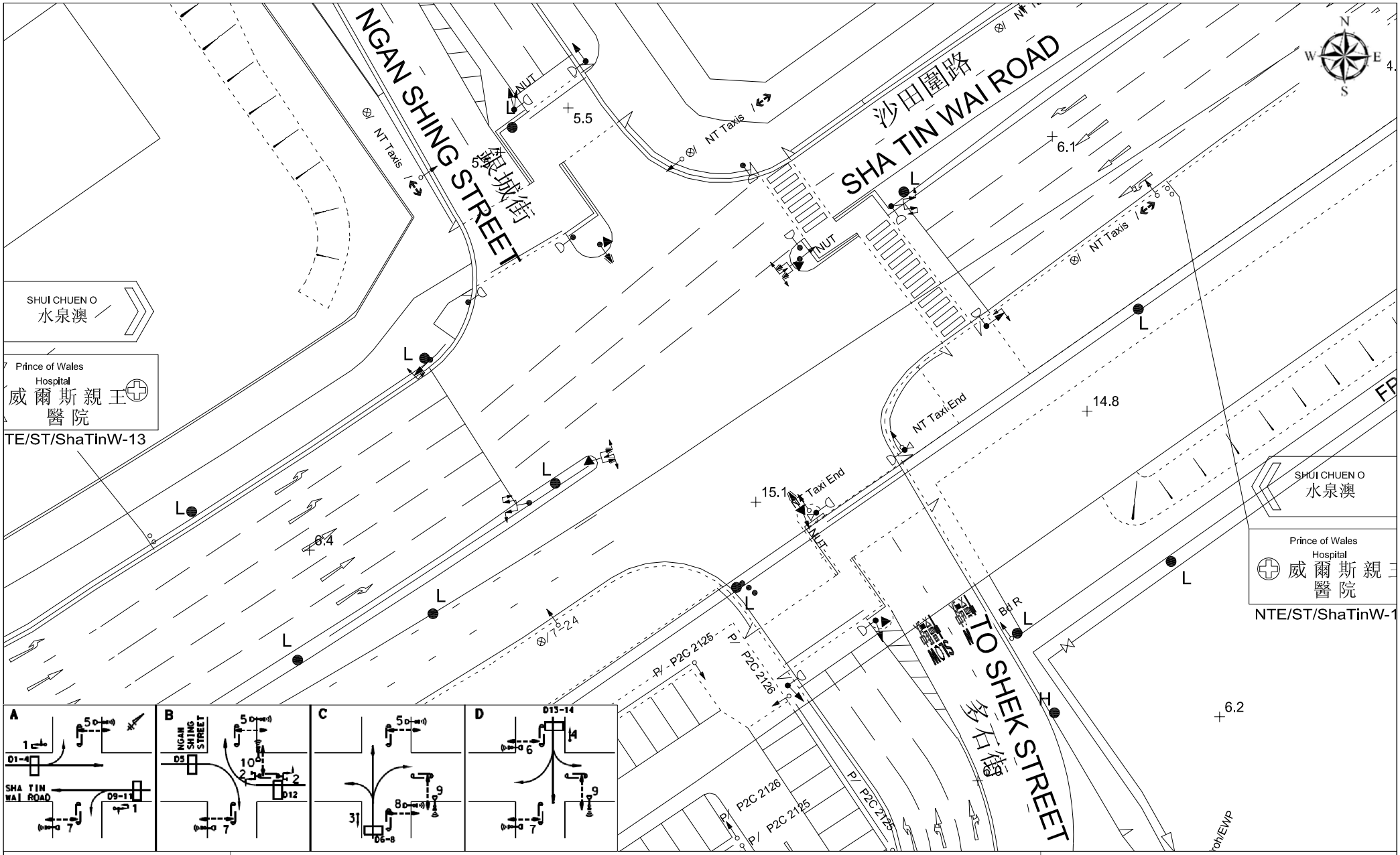

FIGURE NO.: 3.4	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF SHA TIN WAI ROAD / TO SHEK STREET / NGAN SHING STREET (C)
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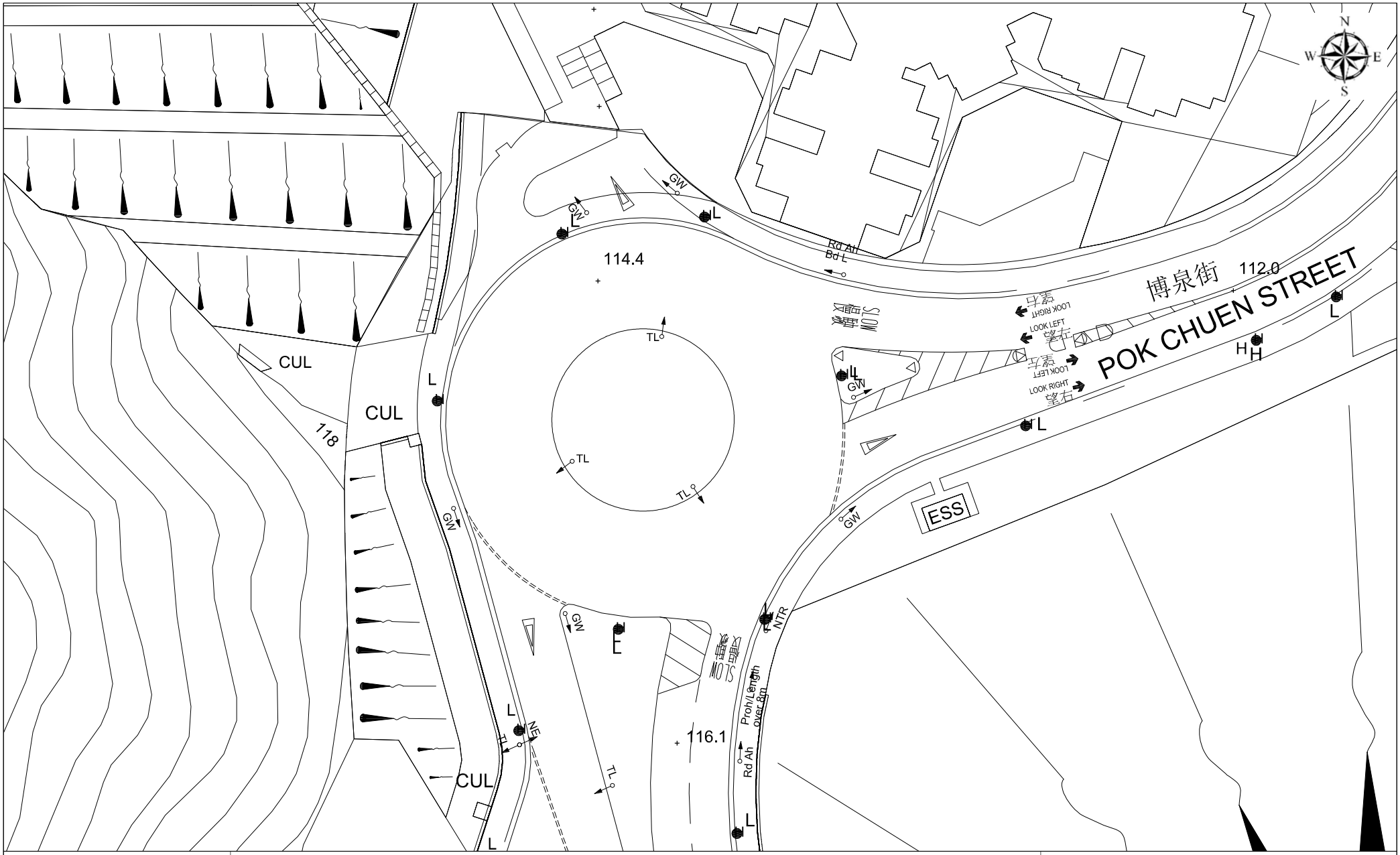

FIGURE NO.: 3.5	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: EXISTING JUNCTION ROUNDABOUT LAYOUT OF POK CHUEN STREET (D)
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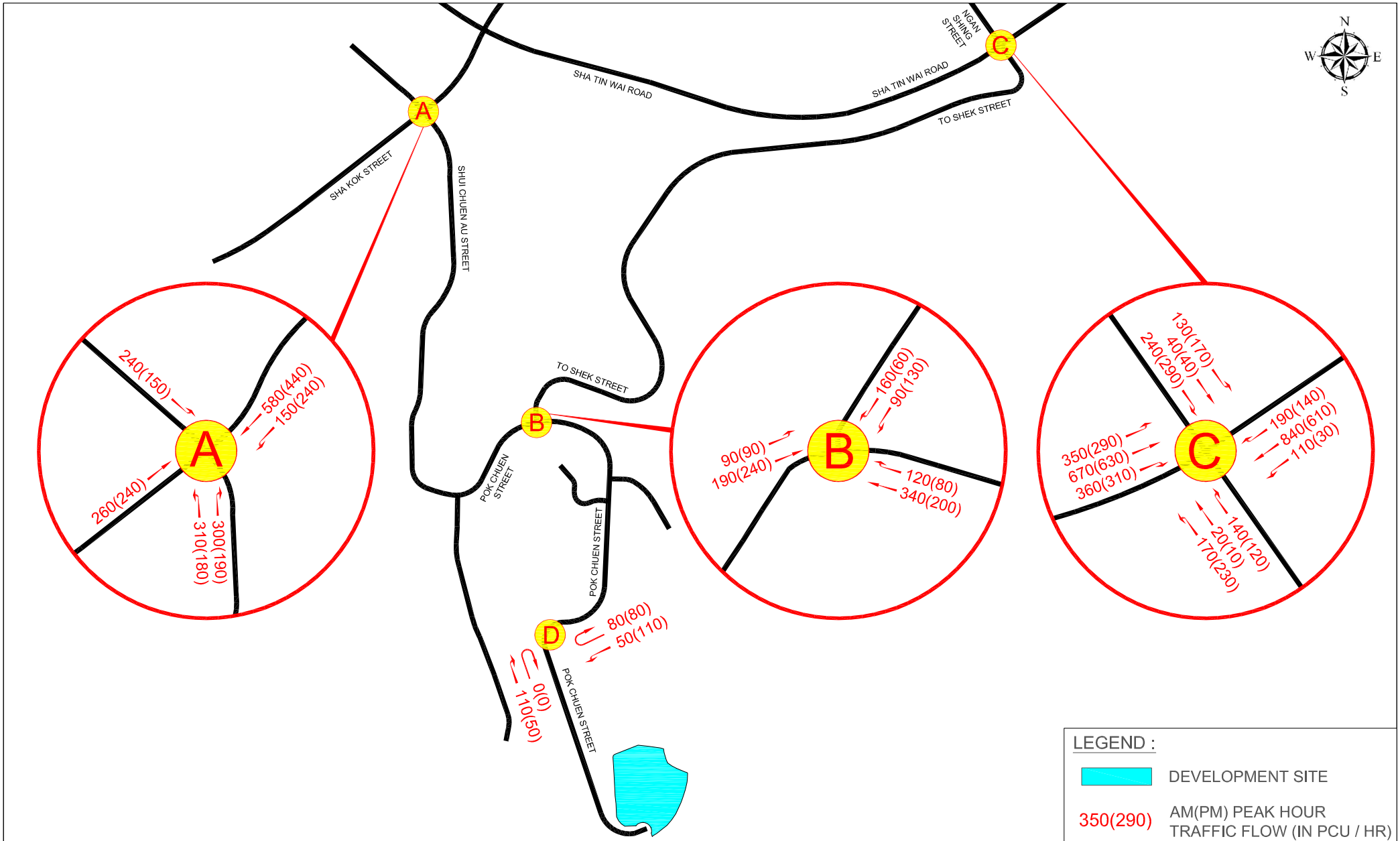

FIGURE NO.: 3.6	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: 2018 OBSERVED TRAFFIC FLOWS
SCALE: N. T. S. @ A4	DATE: 09 APR 2019

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FIGURE NO.: 4.1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: NEW RESIDENTIAL DEVELOPMENT AT TO SHEK STREET
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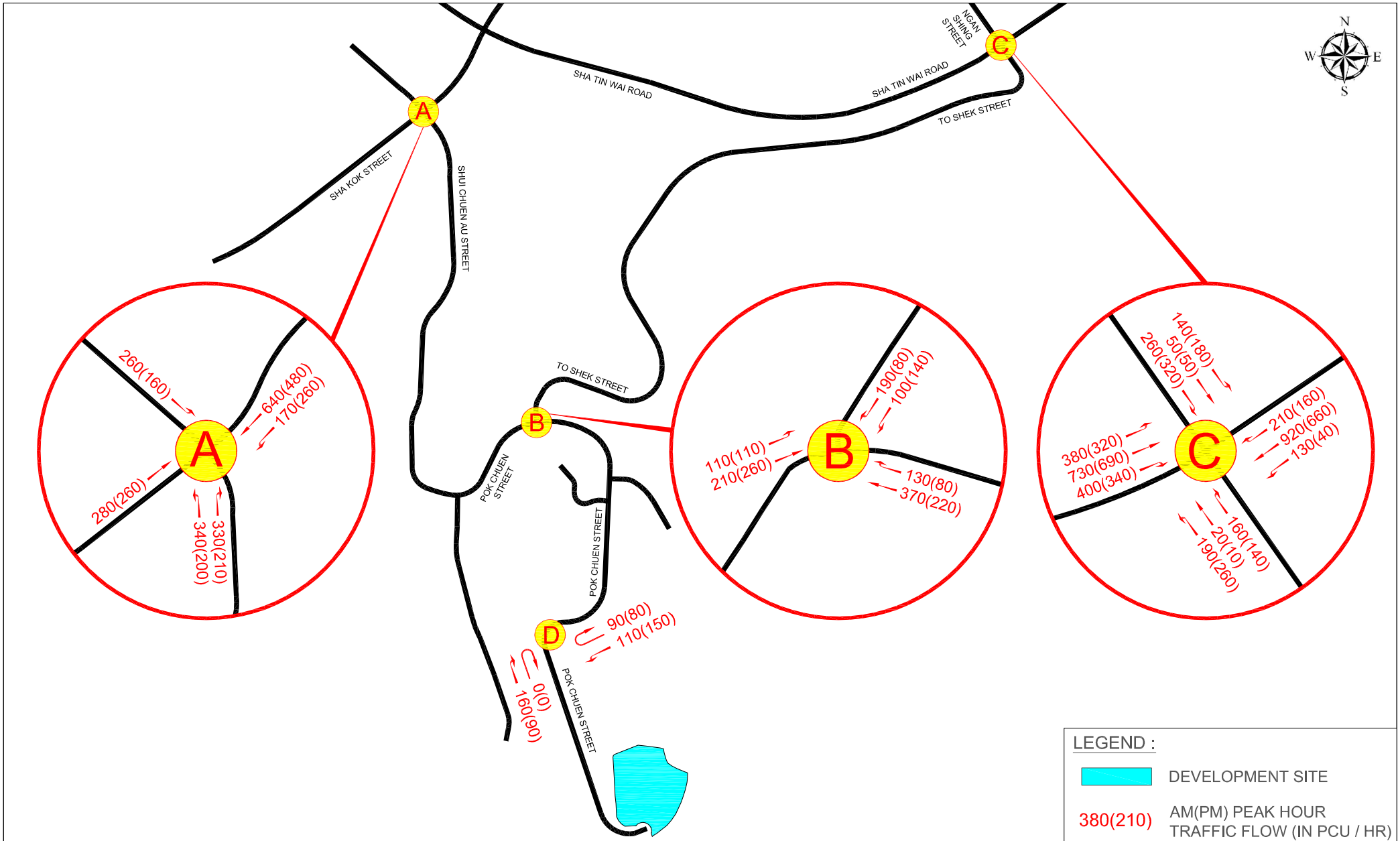

FIGURE NO.: 4.2	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: 2025 REFERENCE TRAFFIC FLOWS
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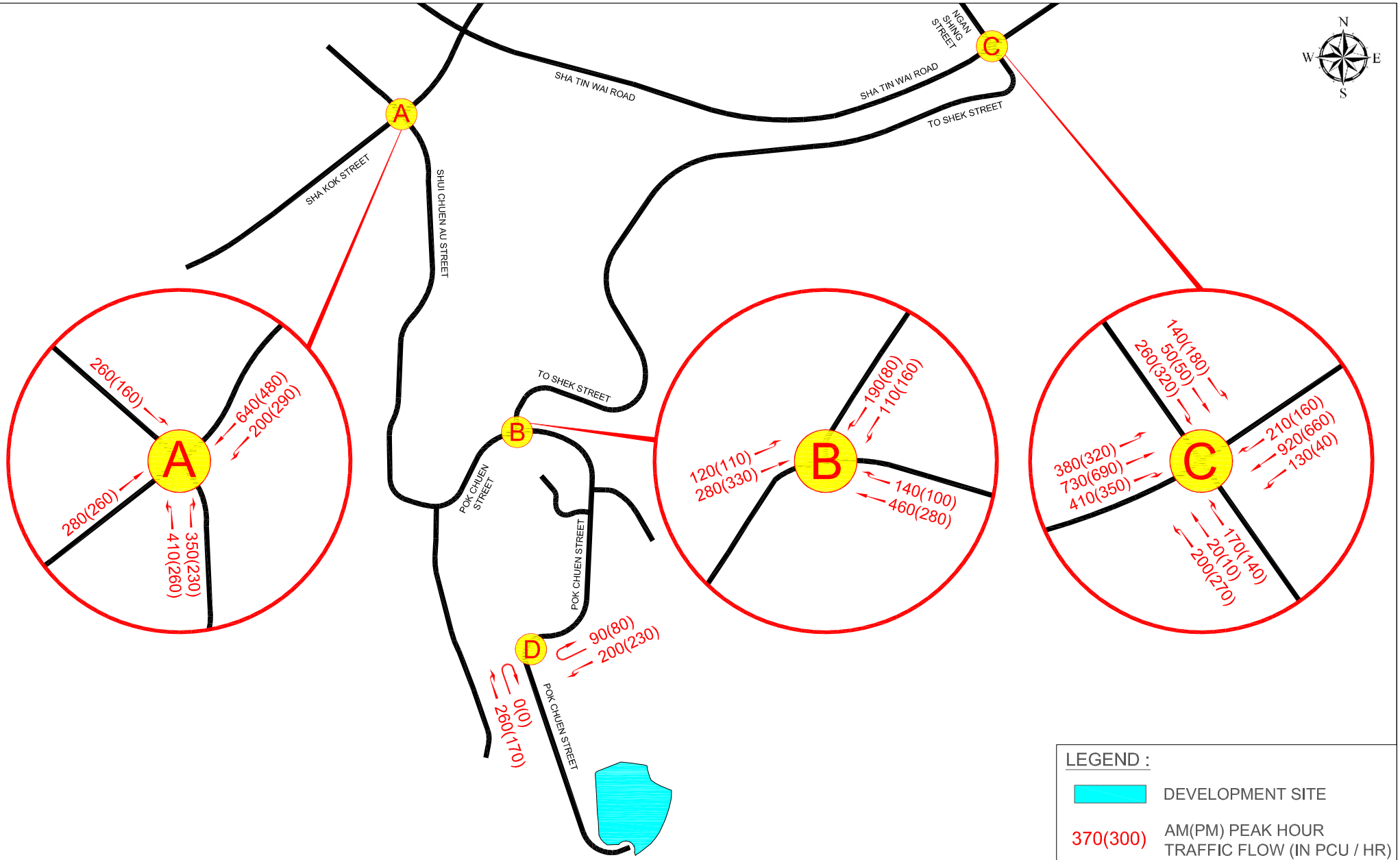

FIGURE NO.: 4.3	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: 2025 DESIGN TRAFFIC FLOWS
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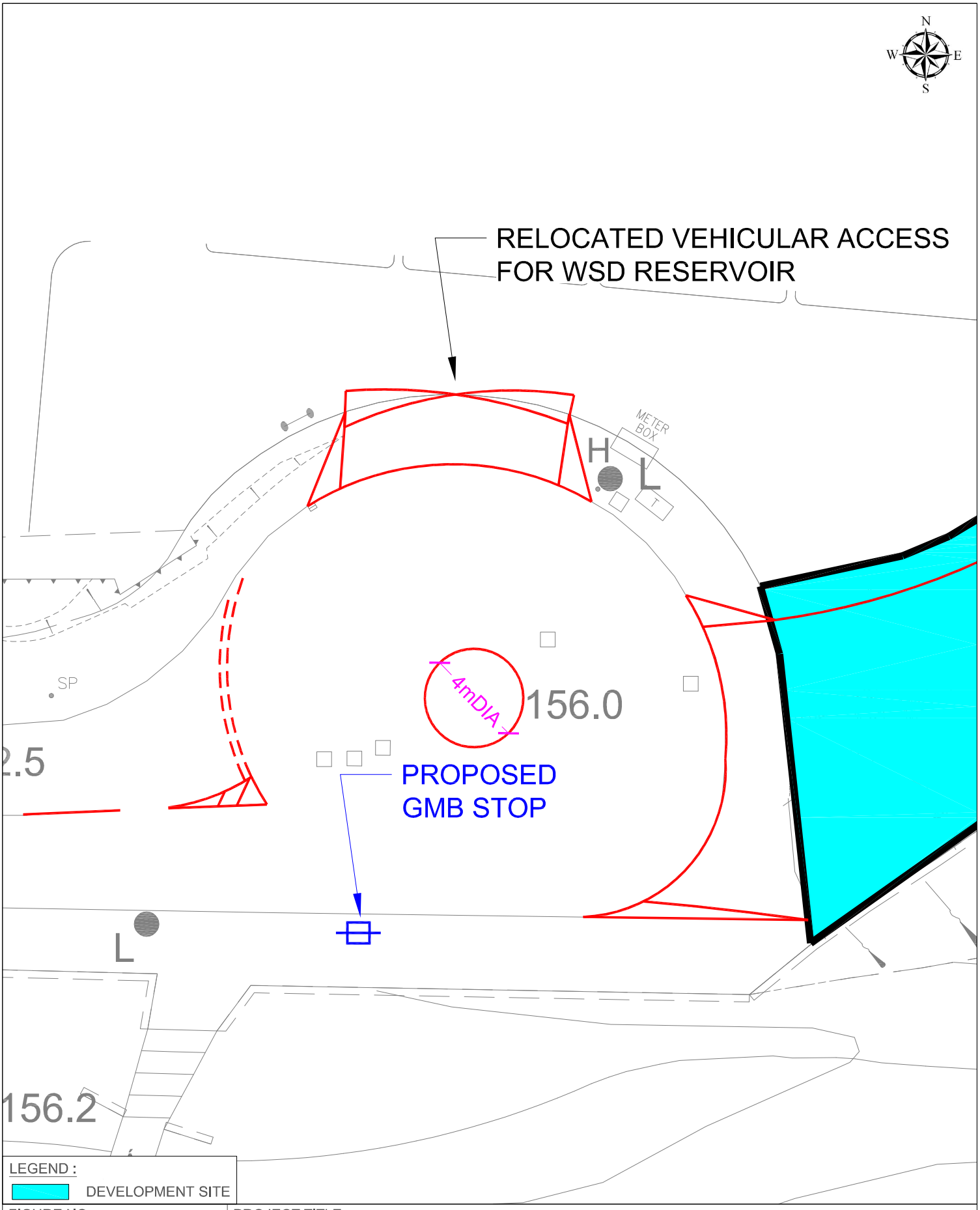

LEGEND :

DEVELOPMENT SITE

FIGURE NO.: 7.1	PROJECT TITLE: Proposed Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: PROPOSED ROAD IMPROVEMENT WORK AT POK CHUEN STREET ROUNDABOUT
SCALE: 1 : 200 @ A4	DATE: 18 APR 2019

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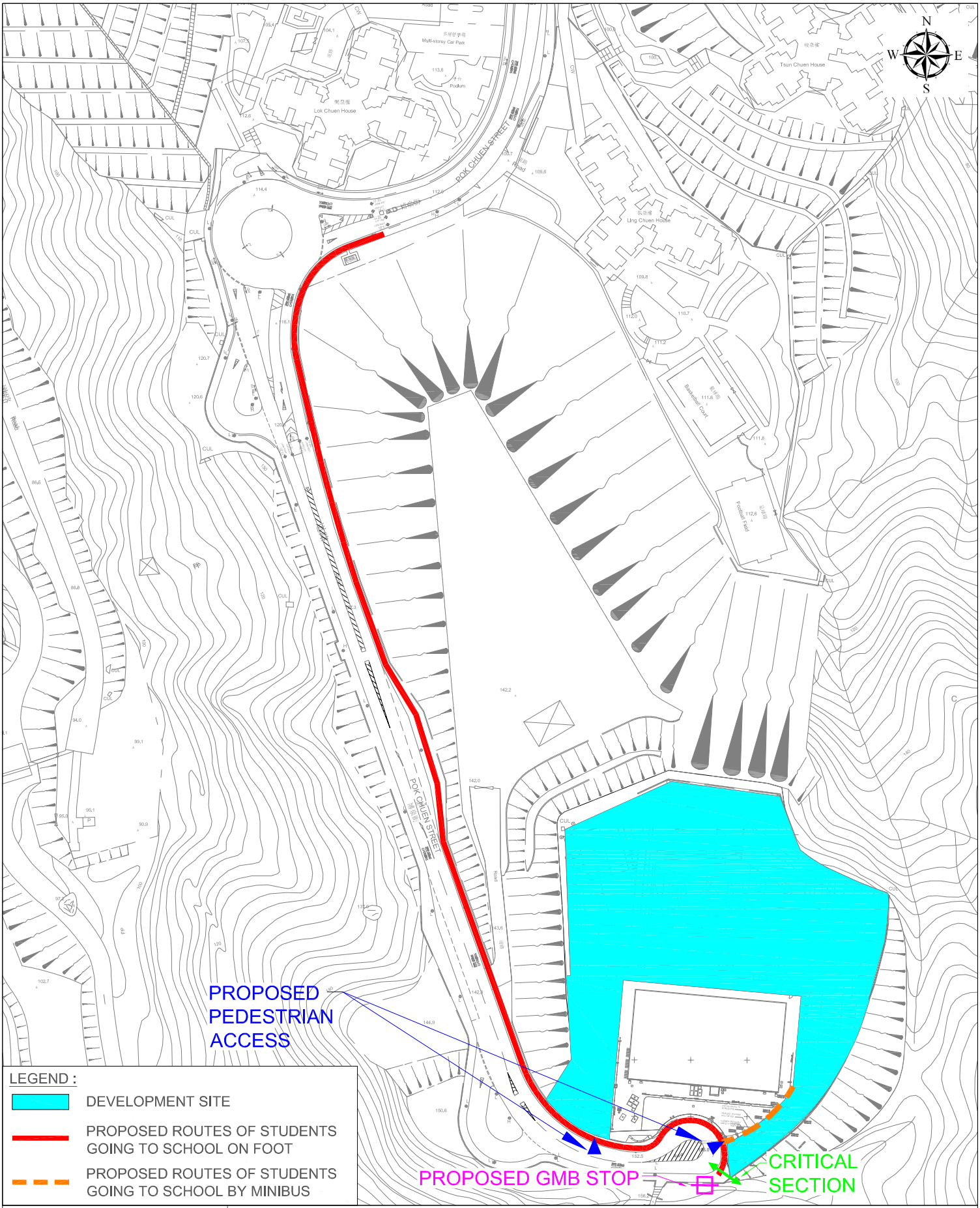

FIGURE NO.: 8.1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: PEDESTRIAN ROUTES
SCALE: 1 : 1750 @ A4	DATE: 09 APR 2019

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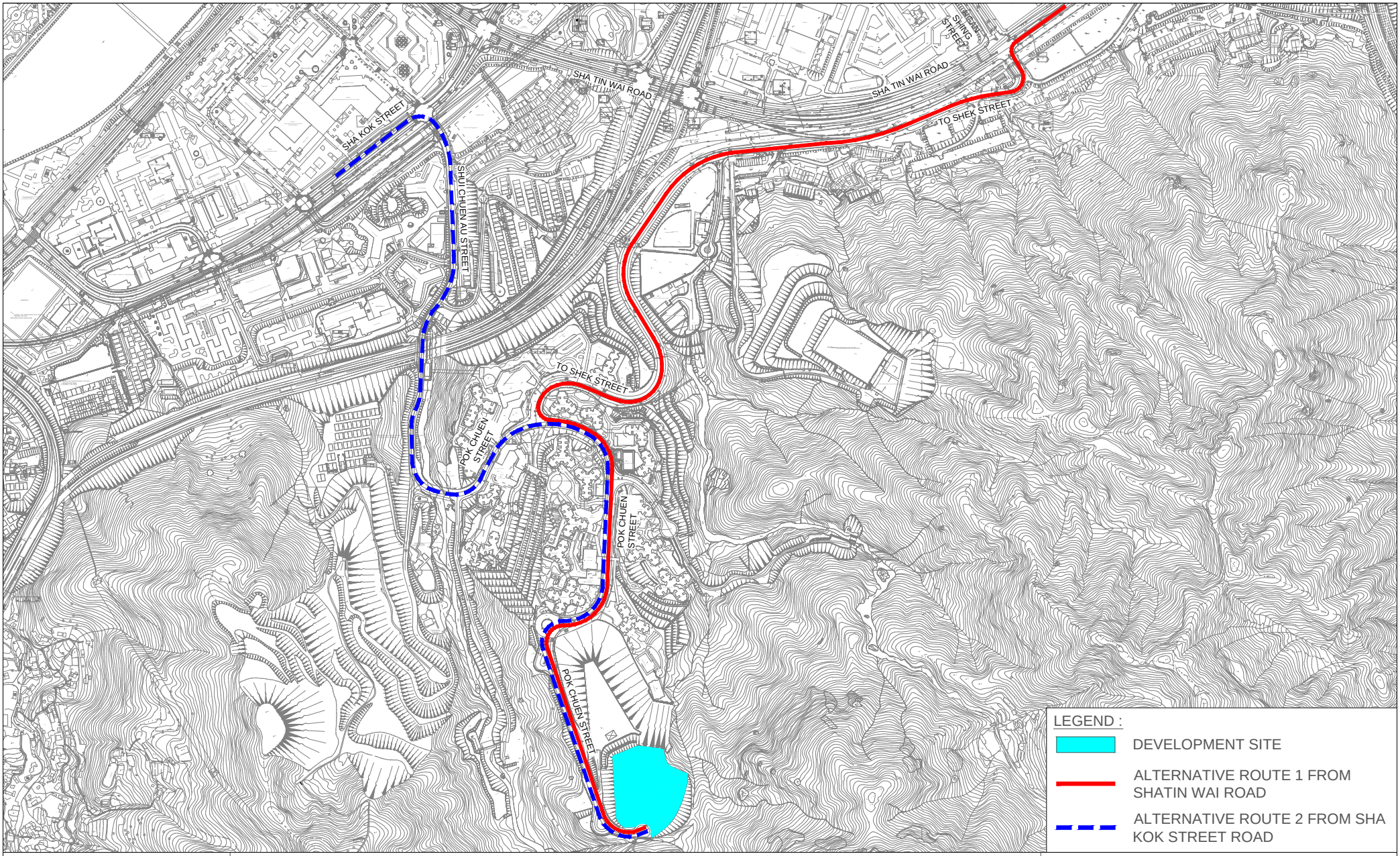


FIGURE NO.: 9.1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: ROUTING OF CONSTRUCTION VEHICLES
SCALE: 1 : 8000 @ A4	DATE: 09 APR 2019

CTA Consultants Limited
志達顧問有限公司

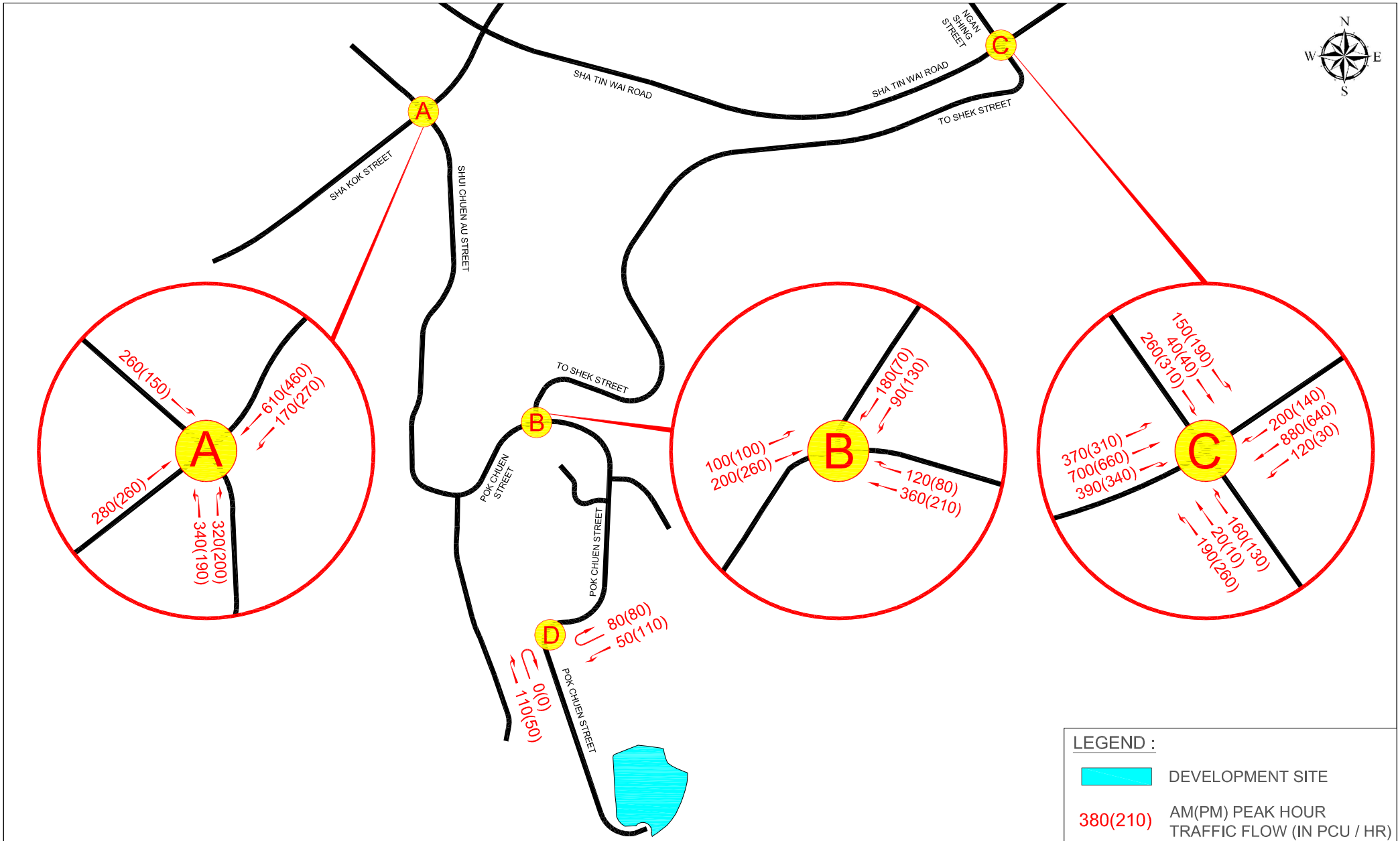


FIGURE NO.: 9.2	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: 2022 REFERENCE TRAFFIC FLOWS - FOR CONSTRUCTION TRAFFIC IMPACT ASSESSMENT
SCALE: N. T. S. @ A4 / DATE: 18 APR 2019	CTA Consultants Limited 志達顧問有限公司

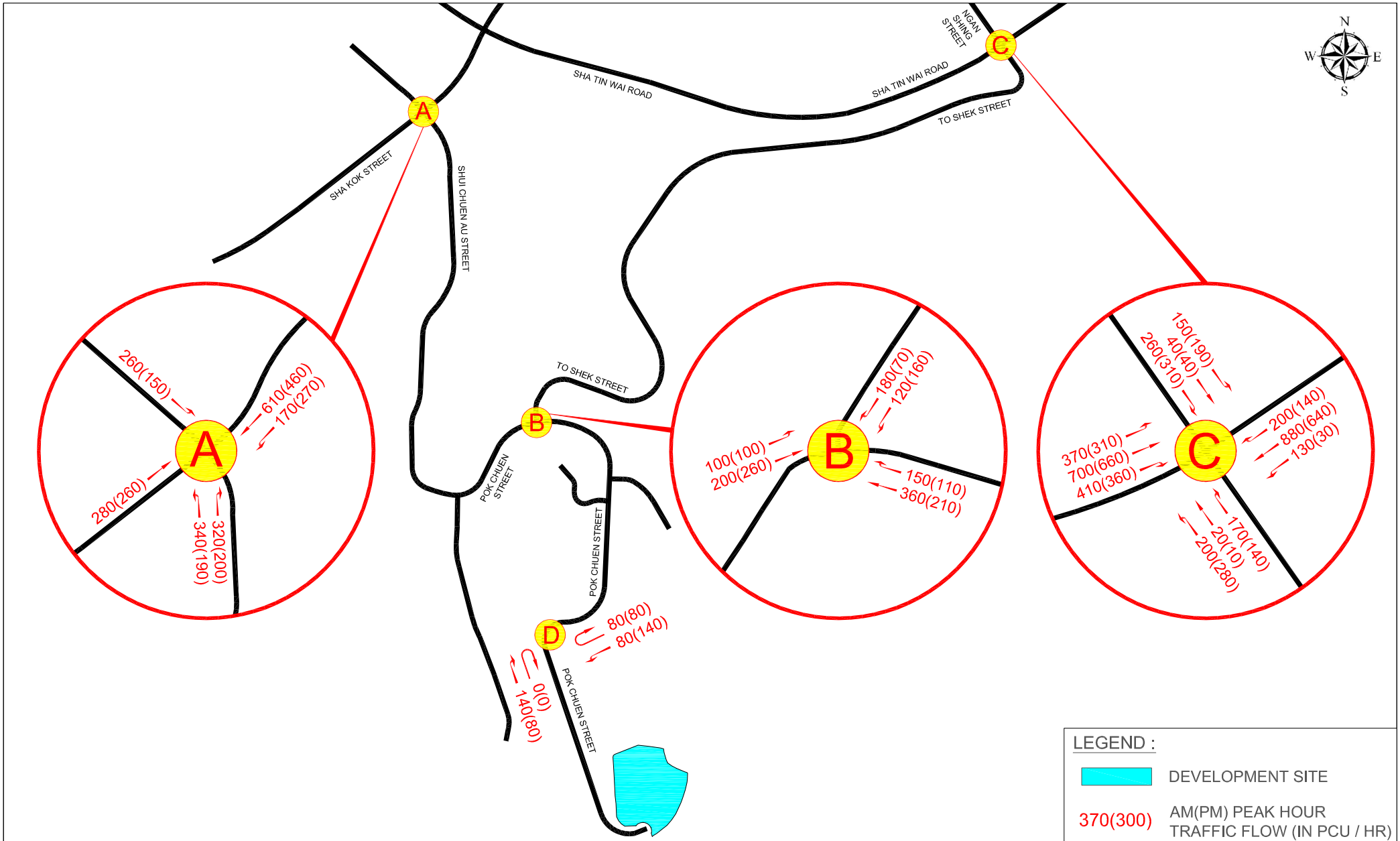
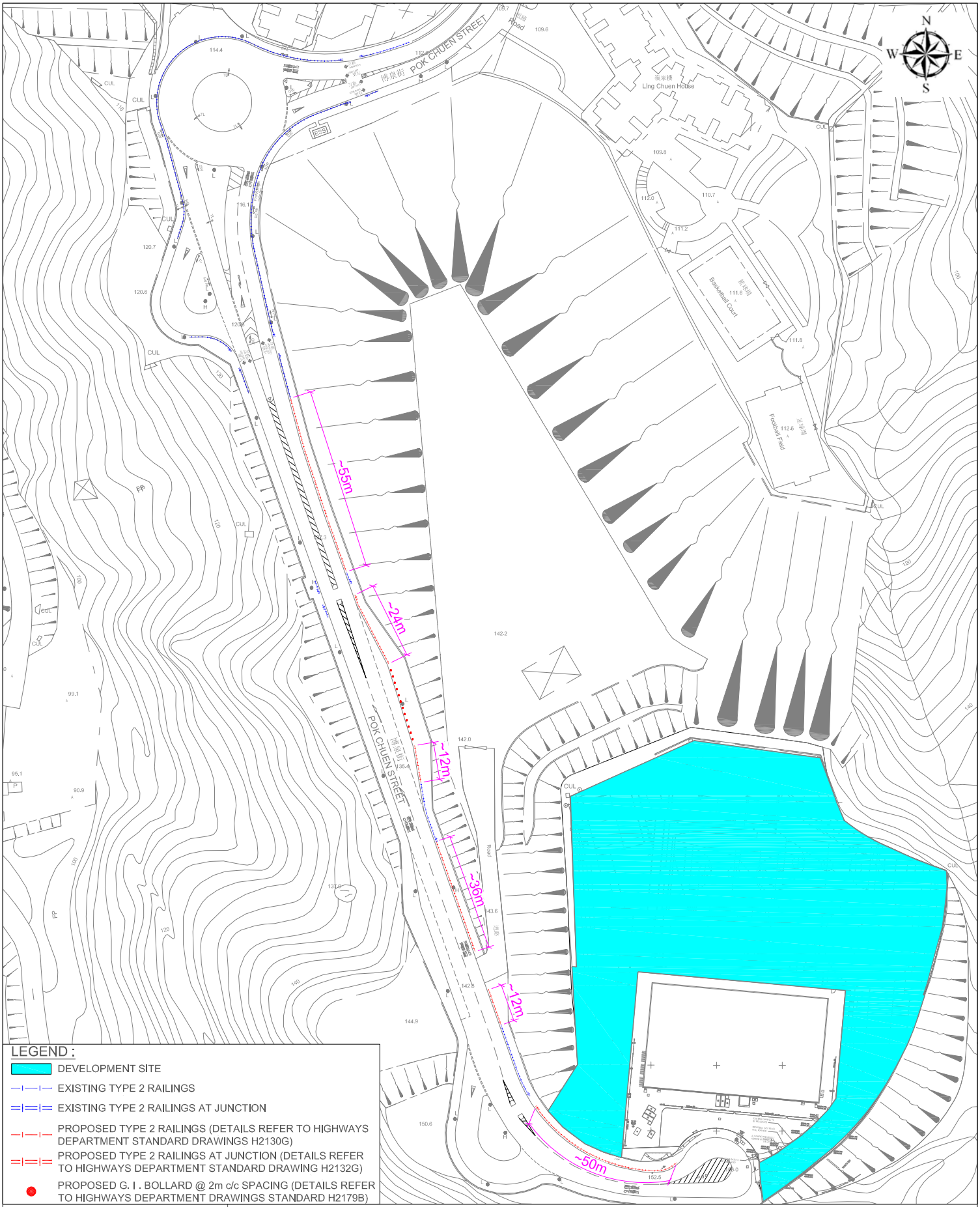


FIGURE NO.: 9.3	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: 2022 DESIGN TRAFFIC FLOWS FOR CONSTRUCTION TRAFFIC IMPACT ASSESSMENT
SCALE: N. T. S. @ A4 / DATE: 18 APR 2019	

CTA Consultants Limited
志達顧問有限公司

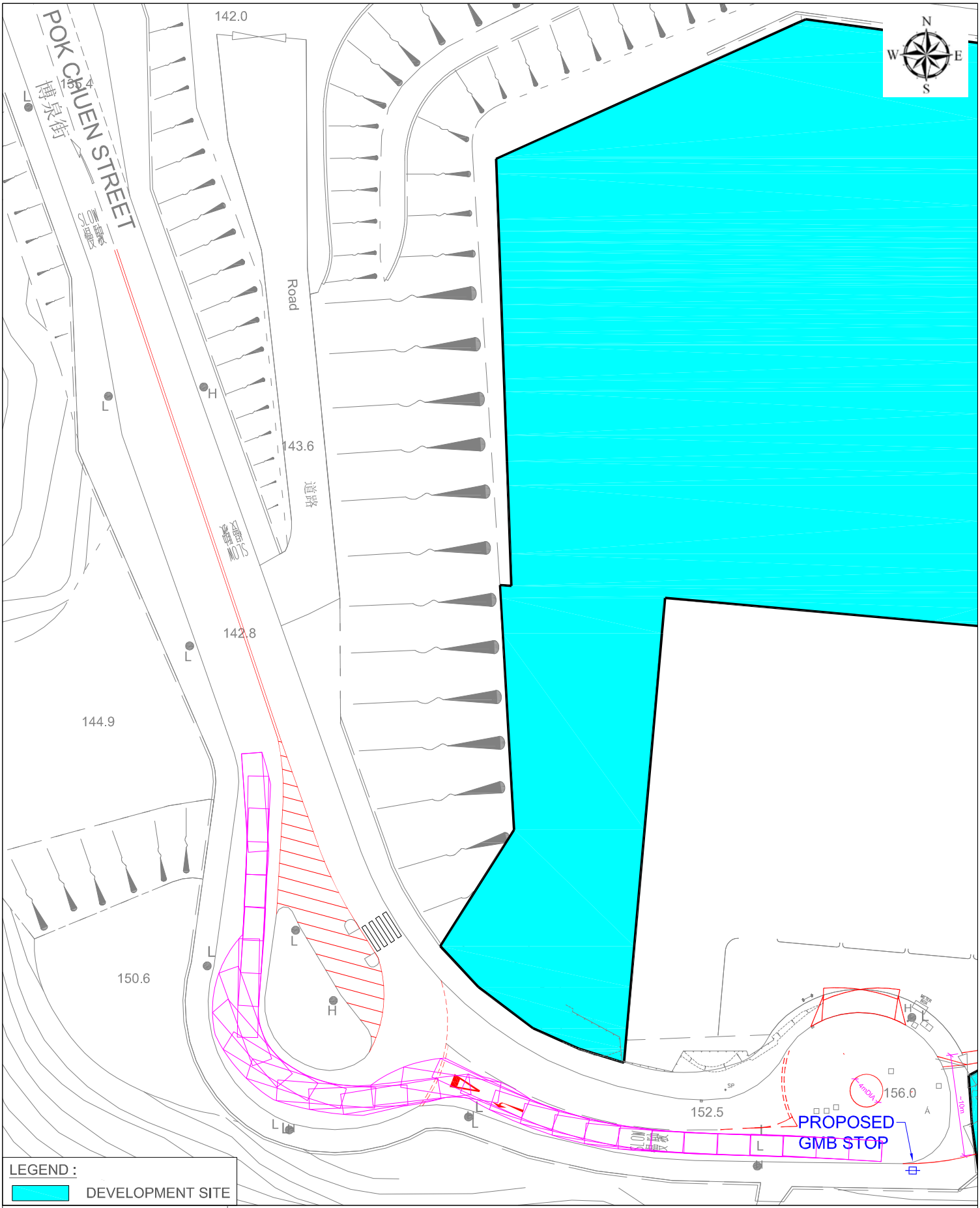


LEGEND :

- DEVELOPMENT SITE
- EXISTING TYPE 2 RAILINGS
- EXISTING TYPE 2 RAILINGS AT JUNCTION
- PROPOSED TYPE 2 RAILINGS (DETAILS REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWINGS H2130G)
- PROPOSED TYPE 2 RAILINGS AT JUNCTION (DETAILS REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING H2132G)
- PROPOSED G. I . BOLLARD @ 2m c/c SPACING (DETAILS REFER TO HIGHWAYS DEPARTMENT DRAWINGS STANDARD H2179B)

FIGURE NO.: SF-01	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: STREET FURNITURES TO BE REPLACED / PROPOSED ALONG POK CHUEN STREET
SCALE: 1 : 1500 @ A4	DATE: 04 APR 2019

CTA Consultants Limited
志達顧問有限公司



LEGEND :

DEVELOPMENT SITE

FIGURE NO.: SP	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: ROAD IMPROVEMENT WORK AT POK CHUEN STREET CUL-DE-SAC (WITH SWEPT PATH ANALYSIS OF 12m VEHICLE)
SCALE: 1 : 600 @ A4 / DATE: 04 APR 2019	CTA Consultants Limited 志達顧問有限公司

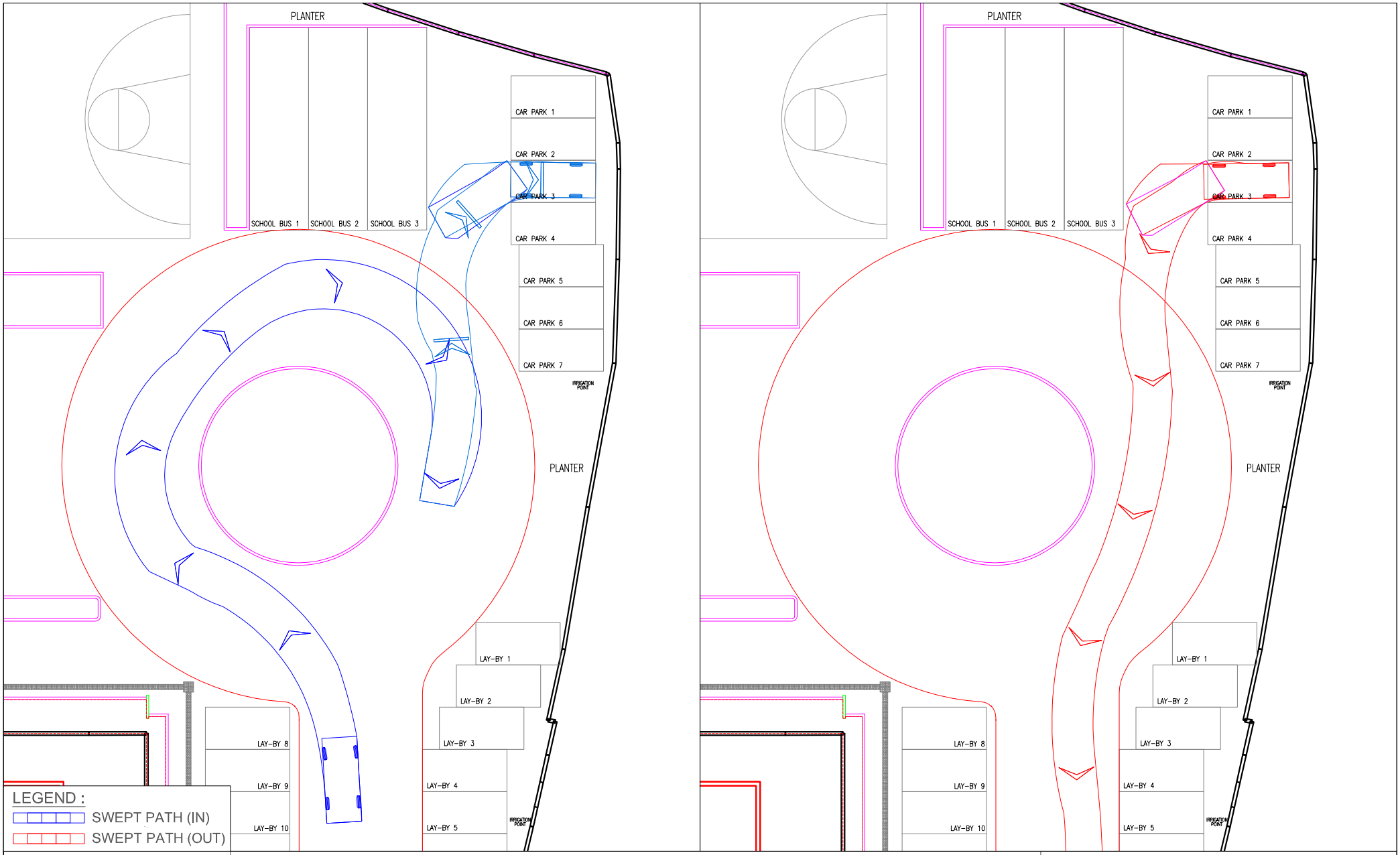


FIGURE NO.: SP-1	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF PRIVATE CAR
SCALE: 1 : 300 @ A4	DATE: 04 APR 2019

CTA Consultants Limited
志達顧問有限公司

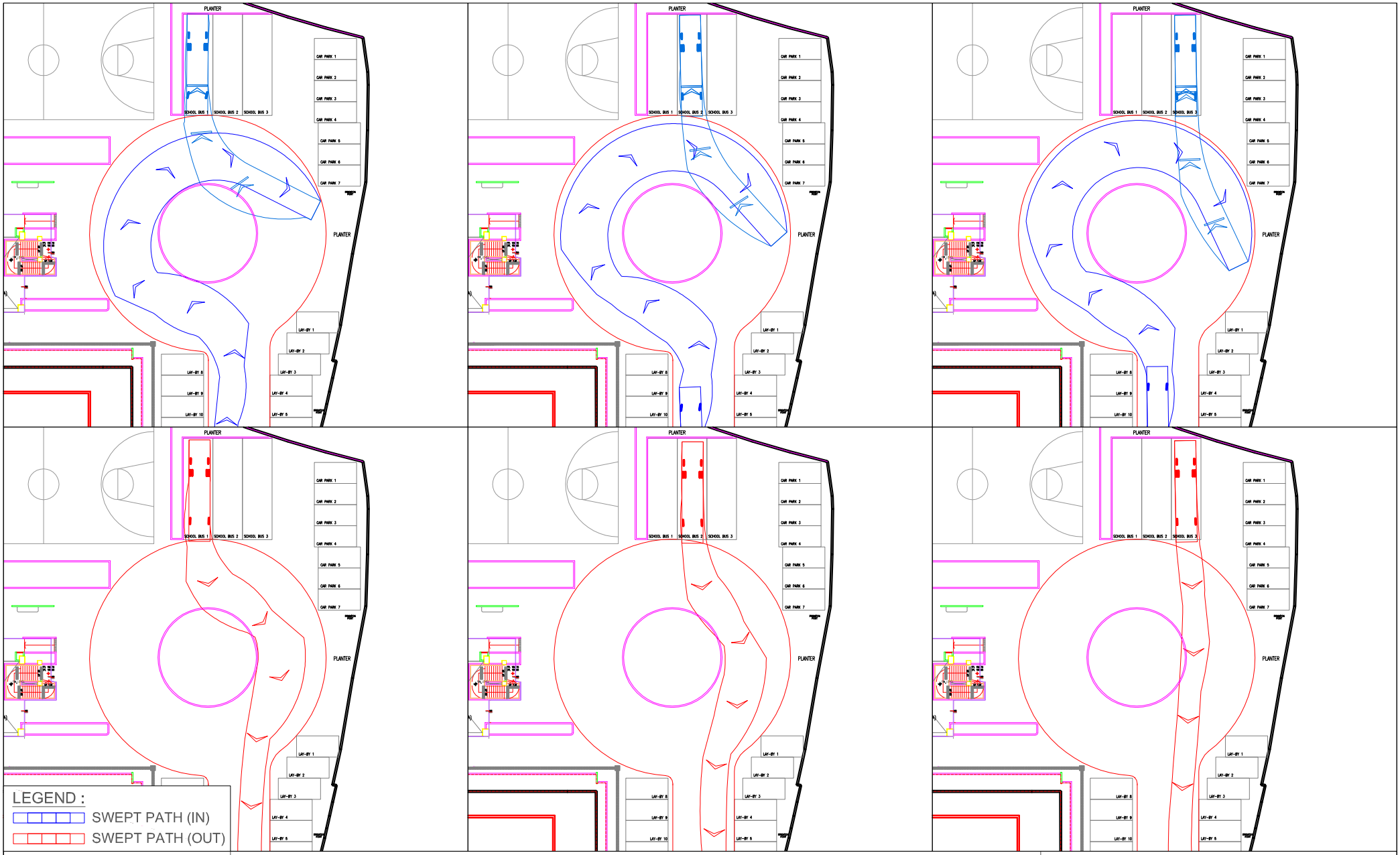


FIGURE NO.: SP-2	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF 12m COACH
SCALE: 1 : 600 @ A4	DATE: 04 APR 2019

CTA Consultants Limited
志達顧問有限公司

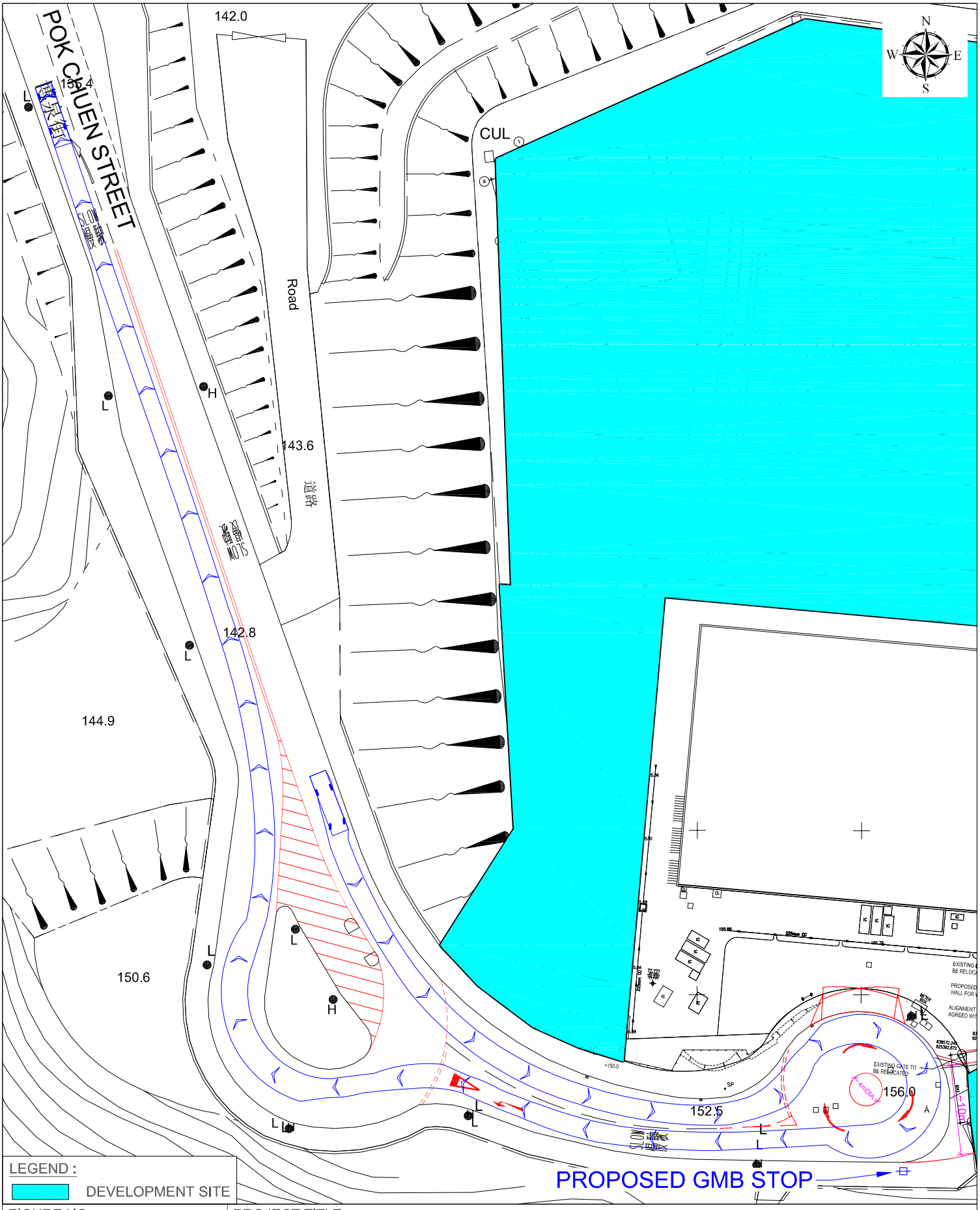


FIGURE NO.: SP-3	PROJECT TITLE: Traffic Review of 30-Classrooms Primary School at Shui Chuen O, Shatin, N.T.
PROJECT NO.: P2018031601HK	DRAWING TITLE: ROAD IMPROVEMENT WORK AT POK CHUEN STREET CUL-DE-SAC (WITH SWEPT PATH ANALYSIS OF 7.7m VAN)
SCALE: N. T. S. @ A4 / DATE: 09 APR 2019	CTA Consultants Limited 志達顧問有限公司

APPENDIX A

JUNCTION CALCULATION SHEETS

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2018

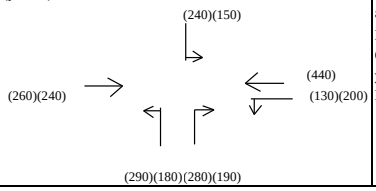
Description: **2018 Existing Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	115	0.063	0.063	72	0.039	0.039
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	125	0.063		78	0.039	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	125	0.065		116	0.060	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	135	0.065		124	0.060	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	290	0.172	0.172	180	0.107	0.107
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	280	0.145		190	0.099	
Sha Kok Street	W		3	A	3.2	10.0	0	1	40%	69%	1935	4050	1825	1755	3940	3870	329	0.180	0.180	290	0.165	0.165
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	381	0.180		350	0.165	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

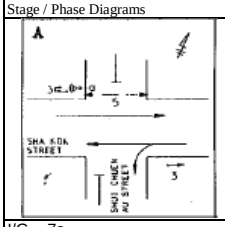
Traffic Flow (pcu / hr)



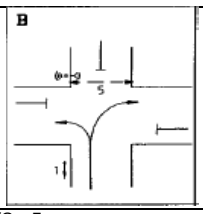
AM Peak Check Phase	
εy	0.415
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	90%

PM Peak Check Phase	
εy	0.312
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	153%

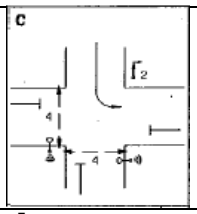
Stage / Phase Diagrams



I/G = 7s



I/G = 7s



I/G = 5s

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2025

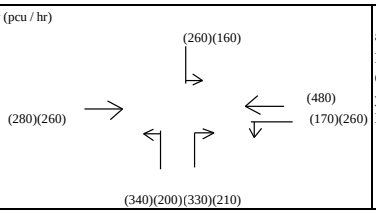
Description: **2025 Reference Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	125	0.068	0.068	77	0.042	0.042
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	135	0.068		83	0.042	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	135	0.069		125	0.065	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	145	0.069		135	0.065	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	340	0.202	0.202	200	0.119	0.119
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	330	0.171		210	0.109	
Sha Kok Street	W		3	A	3.2	10.0	0	1	45%	78%	1935	4050	1810	1730	3925	3845	374	0.206	0.206	333	0.193	0.193
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	436	0.206		407	0.192	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

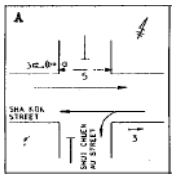
Traffic Flow (pcu / hr)

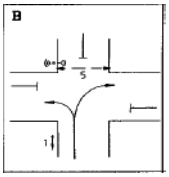


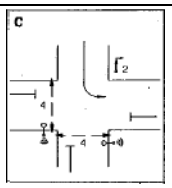
AM Peak Check Phase	
εy	0.476
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	65%

PM Peak Check Phase	
εy	0.353
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	123%

Stage / Phase Diagrams







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

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2025

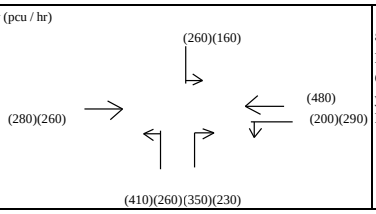
Description: **2025 Design Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	125	0.068	0.068	77	0.042	0.042
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	135	0.068		83	0.042	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	135	0.069		125	0.065	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	145	0.069		135	0.065	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	410	0.243	0.243	260	0.154	0.154
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	350	0.182		230	0.119	
Sha Kok Street	W		3	A	3.2	10.0	0	1	52%	84%	1935	4050	1795	1720	3910	3835	386	0.215	0.215	345	0.201	0.201
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	454	0.215		425	0.201	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

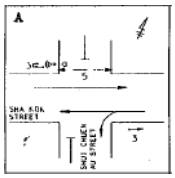
Traffic Flow (pcu / hr)

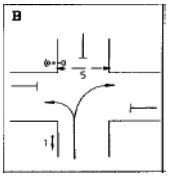


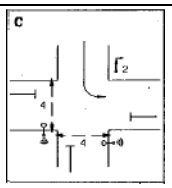
AM Peak Check Phase	
εy	0.526
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	50%

PM Peak Check Phase	
εy	0.397
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	99%

Stage / Phase Diagrams







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

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: JUNCTION B.arc8
Path: \\PROJSRV\Project\CTA Consultants Limited\CTA - Proposal\P2018031601HK - TCS for 30-Classrooms Primary School at Shui Chuen O (9AE101)\Calculation\2019-04-18 (growth rate increased)\TIA
Report generation date: 18/4/2019 19:23:37

» Junction B - OBSERVED, AM
» Junction B - OBSERVED, PM
» Junction B - REFERENCE, AM
» Junction B - REFERENCE, PM
» Junction B - DESIGN, AM
» Junction B - DESIGN, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Junction B - DESIGN							
Stream B-AC	1.09	13.18	0.52	B	0.76	11.38	0.43	B
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.29	9.35	0.22	A	0.26	8.48	0.21	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Junction B - OBSERVED							
Stream B-AC	0.62	9.28	0.38	A	0.39	8.38	0.28	A
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.21	8.23	0.17	A	0.19	7.75	0.16	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Junction B - REFERENCE							
Stream B-AC	0.92	11.45	0.48	B	0.60	9.87	0.38	A
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.27	8.93	0.21	A	0.25	8.20	0.20	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - OBSERVED, AM " model duration: 8:00 - 9:30
"D2 - OBSERVED, PM" model duration: 8:00 - 9:30
"D3 - REFERENCE, AM" model duration: 8:00 - 9:30
"D4 - REFERENCE, PM" model duration: 8:00 - 9:30
"D5 - DESIGN, AM" model duration: 8:00 - 9:30
"D6 - DESIGN, PM" model duration: 8:00 - 9:30

Run using Junctions 8.0.5.523 at 18/4/2019 19:23:34

File summary

Title	Junction B
Location	Pok Chuen Street/ To Shek Street
Site Number	
Date	14/12/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ITADMIN
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Junction B - OBSERVED, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, AM	OBSERVED	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	8.99	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	420.00	100.000
B	FLAT	✓	240.00	100.000
C	FLAT	✓	260.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	110.000	310.000
	B	80.000	0.000	160.000
	C	170.000	90.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.33	0.00	0.67
	C	0.65	0.35	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.38	9.28	0.62	A
C-A	-	-	-	-
C-B	0.17	8.23	0.21	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	237.57	0.00	628.03	0.382	0.61	9.164	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	89.19	0.00	527.43	0.171	0.20	8.200	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	239.98	0.00	627.91	0.382	0.61	9.278	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	527.43	0.171	0.20	8.229	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	239.99	0.00	627.91	0.382	0.62	9.280	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	527.43	0.171	0.20	8.229	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	240.00	0.00	627.91	0.382	0.62	9.280	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	527.43	0.171	0.21	8.229	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	240.00	0.00	627.91	0.382	0.62	9.280	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	527.43	0.171	0.21	8.229	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	240.00	0.00	627.91	0.382	0.62	9.280	A
C-A	170.00	170.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	527.43	0.171	0.21	8.229	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	310.00	310.00	0.00	-	-	-	-	-

Junction B - OBSERVED, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, PM	OBSERVED	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	8.16	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	270.00	100.000
B	FLAT	✓	170.00	100.000
C	FLAT	✓	300.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	80.000	190.000
	B	110.000	0.000	60.000
	C	210.000	90.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.30	0.70
	B	0.65	0.00	0.35
	C	0.70	0.30	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	8.38	0.39	A
C-A	-	-	-	-
C-B	0.16	7.75	0.19	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	168.44	0.00	599.87	0.283	0.39	8.315	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	89.23	0.00	554.39	0.162	0.19	7.727	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	169.99	0.00	599.68	0.283	0.39	8.377	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	554.39	0.162	0.19	7.751	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	170.00	0.00	599.68	0.283	0.39	8.377	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	554.39	0.162	0.19	7.751	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	170.00	0.00	599.68	0.283	0.39	8.378	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	554.39	0.162	0.19	7.751	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	170.00	0.00	599.68	0.283	0.39	8.378	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	554.39	0.162	0.19	7.751	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	170.00	170.00	0.00	599.68	0.283	0.39	8.378	A
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	554.39	0.162	0.19	7.751	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	190.00	190.00	0.00	-	-	-	-	-

Junction B - REFERENCE, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, AM	REFERENCE	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	10.76	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	500.00	100.000
B	FLAT	✓	290.00	100.000
C	FLAT	✓	320.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	130.000	370.000
	B	100.000	0.000	190.000
	C	210.000	110.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.34	0.00	0.66
	C	0.66	0.34	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

	To			
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.48	11.45	0.92	B
C-A	-	-	-	-
C-B	0.21	8.93	0.27	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	286.40	0.00	604.47	0.480	0.90	11.196	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	108.92	0.00	513.05	0.214	0.27	8.886	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	289.96	0.00	604.30	0.480	0.91	11.448	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	109.99	0.00	513.05	0.214	0.27	8.931	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	289.99	0.00	604.30	0.480	0.92	11.451	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	513.05	0.214	0.27	8.931	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	289.99	0.00	604.30	0.480	0.92	11.453	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	513.05	0.214	0.27	8.931	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	290.00	0.00	604.30	0.480	0.92	11.453	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	513.05	0.214	0.27	8.931	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	290.00	290.00	0.00	604.30	0.480	0.92	11.453	B
C-A	210.00	210.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	513.05	0.214	0.27	8.931	A
A-B	130.00	130.00	0.00	-	-	-	-	-
A-C	370.00	370.00	0.00	-	-	-	-	-

Junction B - REFERENCE, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, PM	REFERENCE	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	9.32	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	300.00	100.000
B	FLAT	✓	220.00	100.000
C	FLAT	✓	370.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	80.000	220.000
	B	140.000	0.000	80.000
	C	260.000	110.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.27	0.73
	B	0.64	0.00	0.36
	C	0.70	0.30	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.38	9.87	0.60	A
C-A	-	-	-	-
C-B	0.20	8.20	0.25	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	217.63	0.00	584.78	0.376	0.59	9.745	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	109.01	0.00	549.00	0.200	0.25	8.164	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	219.98	0.00	584.54	0.376	0.60	9.872	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	109.99	0.00	549.00	0.200	0.25	8.200	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	219.99	0.00	584.54	0.376	0.60	9.874	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	549.00	0.200	0.25	8.200	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	220.00	0.00	584.54	0.376	0.60	9.874	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	549.00	0.200	0.25	8.200	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	220.00	0.00	584.54	0.376	0.60	9.874	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	549.00	0.200	0.25	8.200	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	220.00	220.00	0.00	584.54	0.376	0.60	9.874	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	549.00	0.200	0.25	8.200	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	220.00	220.00	0.00	-	-	-	-	-

Junction B - DESIGN, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, AM	DESIGN	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	12.15	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	600.00	100.000
B	FLAT	✓	300.00	100.000
C	FLAT	✓	390.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	140.000	460.000
	B	110.000	0.000	190.000
	C	280.000	110.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.23	0.77
	B	0.37	0.00	0.63
	C	0.72	0.28	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.52	13.18	1.09	B
C-A	-	-	-	-
C-B	0.22	9.35	0.29	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	295.74	0.00	573.39	0.523	1.07	12.781	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	108.87	0.00	495.08	0.222	0.28	9.295	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.93	0.00	573.20	0.523	1.08	13.166	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	109.99	0.00	495.08	0.222	0.28	9.348	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.98	0.00	573.20	0.523	1.09	13.171	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	495.08	0.222	0.28	9.348	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.99	0.00	573.20	0.523	1.09	13.173	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	495.08	0.222	0.28	9.348	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.99	0.00	573.20	0.523	1.09	13.173	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	495.08	0.222	0.28	9.348	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	300.00	0.00	573.20	0.523	1.09	13.176	B
C-A	280.00	280.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	495.08	0.222	0.29	9.348	A
A-B	140.00	140.00	0.00	-	-	-	-	-
A-C	460.00	460.00	0.00	-	-	-	-	-

Junction B - DESIGN, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, PM	DESIGN	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	10.47	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	380.00	100.000
B	FLAT	✓	240.00	100.000
C	FLAT	✓	440.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	100.000	280.000
	B	160.000	0.000	80.000
	C	330.000	110.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.67	0.00	0.33
	C	0.75	0.25	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.43	11.38	0.76	B
C-A	-	-	-	-
C-B	0.21	8.48	0.26	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	237.03	0.00	556.60	0.431	0.74	11.165	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	108.98	0.00	534.62	0.206	0.26	8.438	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	239.97	0.00	556.34	0.431	0.75	11.375	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	109.99	0.00	534.62	0.206	0.26	8.477	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	239.99	0.00	556.34	0.431	0.75	11.377	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	534.62	0.206	0.26	8.477	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	239.99	0.00	556.34	0.431	0.75	11.379	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	534.62	0.206	0.26	8.477	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	240.00	0.00	556.34	0.431	0.76	11.379	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	534.62	0.206	0.26	8.477	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	240.00	240.00	0.00	556.34	0.431	0.76	11.379	B
C-A	330.00	330.00	0.00	-	-	-	-	-
C-B	110.00	110.00	0.00	534.62	0.206	0.26	8.477	A
A-B	100.00	100.00	0.00	-	-	-	-	-
A-C	280.00	280.00	0.00	-	-	-	-	-

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2018

Description: **2018 Observed Traffic Flow**

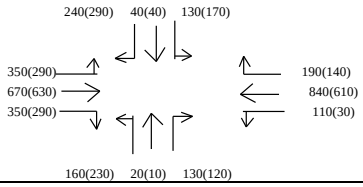
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	56% / 14%	71% / 13%	1925	4020	1835	1835	3810	3810	198	0.108	0.108	241	0.131	0.131
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	212	0.108		259	0.131	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	166	0.094		137	0.078	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	184	0.094		153	0.078	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	320	0.163	0.163	300	0.153	0.153
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	350	0.163		330	0.153	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	350	0.187	0.187	290	0.155	0.155
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5490	5470	84	0.050	0.069	111	0.066	0.066
	N		3	C	3.1	15.0	0	0	79%	96%	2065	0	1915	1885	0	0	96	0.050		124	0.066	
	N		3	C	3.2	0.0	15	0	100%	96%	2075	0	1885	1895	0	0	130	0.069		125	0.066	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	190	0.100		140	0.073	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	331	0.158		221	0.105	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	331	0.158		221	0.105	
	W		1	A	3.1	10.0	0	1	38%	15%	1925	6115	1820	1880	6010	6070	288	0.158		198	0.106	

Pedestrian Crossing		
5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

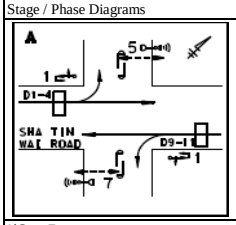
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.526
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	39%

PM Peak Check Phase	
εy	0.505
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	45%

Stage / Phase Diagrams



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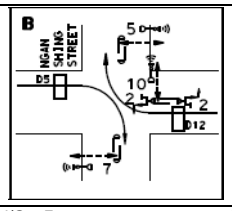

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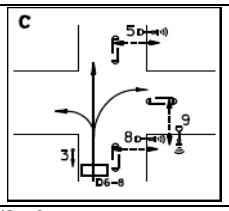

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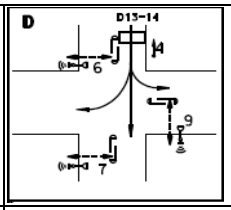


I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2025

Description: **2025 Reference Traffic Flow**

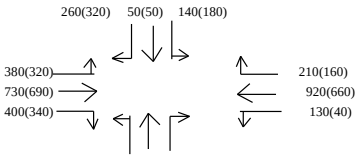
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	55% / 12%	68% / 13%	1925	4020	1840	1835	3815	3810	217	0.118	0.118	265	0.144	0.144
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	233	0.118		285	0.144	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	180	0.102		151	0.086	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	200	0.102		169	0.086	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	348	0.177	0.177	329	0.167	0.167
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	382	0.177		361	0.167	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	400	0.214	0.214	340	0.182	0.182
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5485	5465	99	0.058	0.085	127	0.075	0.075
	N		3	C	3.1	15.0	0	0	82%	94%	2065	0	1910	1885	0	0	111	0.058		142	0.075	
	N		3	C	3.2	0.0	15	0	100%	99%	2075	0	1885	1890	0	0	160	0.085		142	0.075	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	210	0.110		160	0.084	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	366	0.175		242	0.115	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	366	0.175		242	0.115	
	W		1	A	3.1	10.0	0	1	41%	18%	1925	6115	1815	1875	6005	6065	317	0.175		216	0.115	

Pedestrian Crossing			
	5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
	6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
	7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
	8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
	9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
	10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

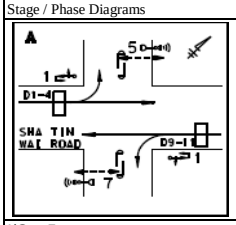
Traffic Flow (pcu / hr)

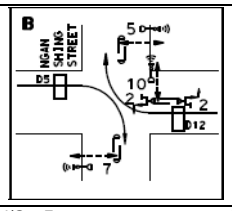


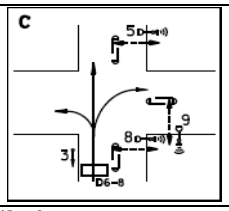
AM Peak Check Phase	
εy	0.594
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	23%

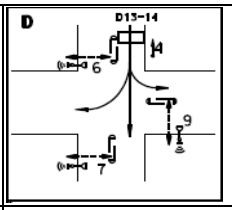
PM Peak Check Phase	
εy	0.569
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	29%

Stage / Phase Diagrams









I/G = 5 | I/G = 7 | I/G = 8s | I/G = 7s

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2025

Description: **2025 Design Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	55% / 12%	68% / 13%	1925	4020	1840	1835	3815	3810	217	0.118	0.118	265	0.144	0.144
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	233	0.118		285	0.144	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	180	0.102		151	0.086	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	200	0.102		169	0.086	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	348	0.177	0.177	329	0.167	0.167
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	382	0.177		361	0.167	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	410	0.219	0.219	350	0.187	0.187
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5480	5470	103	0.061	0.090	130	0.077	0.077
	N		3	C	3.1	15.0	0	0	83%	97%	2065	0	1905	1885	0	0	117	0.061		145	0.077	
	N		3	C	3.2	0.0	15	0	100%	96%	2075	0	1885	1895	0	0	170	0.090		145	0.077	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	210	0.110		160	0.084	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	366	0.175		242	0.115	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	366	0.175		242	0.115	
	W		1	A	3.1	10.0	0	1	41%	18%	1925	6115	1815	1875	6005	6065	317	0.175		216	0.115	

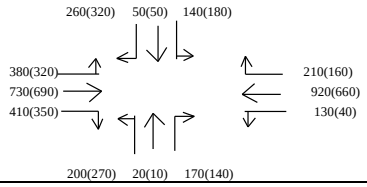
Pedestrian Crossing

5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

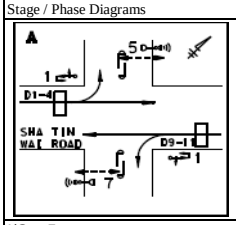
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.605
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	21%

PM Peak Check Phase	
εy	0.576
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	27%

Stage / Phase Diagrams



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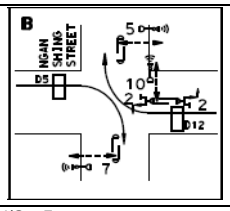
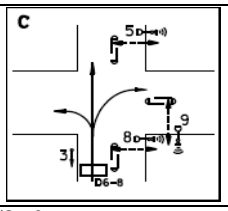
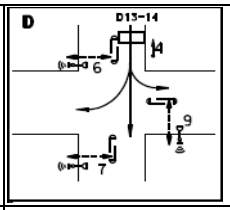


I/G = 7



I/G = 8s



I/G = 7s

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.5.523 [19102,19/06/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: JUNCTION D (ROUNDABOUT).arc8
Path: \\PROJSRV\Project\CTA Consultants Limited\CTA - Proposal\P2018031601HK - TCS for 30-Classrooms Primary School at Shui Chuen O (9AE101)\Calculation\2019-04-18 (growth rate increased)\TIA
Report generation date: 18/4/2019 19:27:19

» Junction D - OBSERVED, AM
» Junction D - OBSERVED, PM
» Junction D - REFERENCE, AM
» Junction D - REFERENCE, PM
» Junction D - DESIGN, AM
» Junction D - DESIGN, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Junction D - DESIGN							
Arm 1	0.22	3.01	0.18	A	0.13	2.79	0.12	A
Arm 2	0.20	2.47	0.17	A	0.22	2.50	0.18	A
	Junction D - OBSERVED							
Arm 1	0.04	2.57	0.04	A	0.03	2.53	0.03	A
Arm 2	0.07	2.20	0.06	A	0.08	2.22	0.07	A
	Junction D - REFERENCE							
Arm 1	0.12	2.78	0.11	A	0.07	2.63	0.06	A
Arm 2	0.13	2.32	0.11	A	0.15	2.37	0.13	A

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - OBSERVED, AM " model duration: 8:00 - 9:30
"D2 - OBSERVED, PM" model duration: 8:00 - 9:30
"D3 - REFERENCE, AM" model duration: 8:00 - 9:30
"D4 - REFERENCE, PM" model duration: 8:00 - 9:30
"D5 - DESIGN, AM" model duration: 8:00 - 9:30
"D6 - DESIGN, PM" model duration: 8:00 - 9:30

Run using Junctions 8.0.5.523 at 18/4/2019 19:27:18

File summary

Title	Junction D
Location	Pok Chuen Street
Site Number	
Date	14/12/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ITADMIN
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Junction D - OBSERVED, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, AM	OBSERVED	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.33	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	60.00	100.000
2	FLAT	✓	110.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	60.000
	2	30.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.27	0.73

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.04	2.57	0.04	A
2	0.06	2.20	0.07	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	59.83	79.81	0.00	1461.84	0.041	0.04	2.567	A
2	110.00	109.73	0.00	0.00	1748.34	0.063	0.07	2.196	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	60.00	80.00	0.00	1461.73	0.041	0.04	2.567	A
2	110.00	110.00	0.00	0.00	1748.34	0.063	0.07	2.196	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	60.00	80.00	0.00	1461.73	0.041	0.04	2.567	A
2	110.00	110.00	0.00	0.00	1748.34	0.063	0.07	2.196	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	60.00	80.00	0.00	1461.73	0.041	0.04	2.567	A
2	110.00	110.00	0.00	0.00	1748.34	0.063	0.07	2.196	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	60.00	80.00	0.00	1461.73	0.041	0.04	2.567	A
2	110.00	110.00	0.00	0.00	1748.34	0.063	0.07	2.196	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	60.00	60.00	80.00	0.00	1461.73	0.041	0.04	2.567	A
2	110.00	110.00	0.00	0.00	1748.34	0.063	0.07	2.196	A

Junction D - OBSERVED, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, PM	OBSERVED	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.30	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	40.00	100.000
2	FLAT	✓	130.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	40.000
	2	50.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.38	0.62

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.03	2.53	0.03	A
2	0.07	2.22	0.08	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	39.89	79.80	0.00	1461.84	0.027	0.03	2.531	A
2	130.00	129.68	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	40.00	80.00	0.00	1461.73	0.027	0.03	2.531	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	40.00	80.00	0.00	1461.73	0.027	0.03	2.531	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	40.00	80.00	0.00	1461.73	0.027	0.03	2.531	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	40.00	80.00	0.00	1461.73	0.027	0.03	2.531	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	40.00	40.00	80.00	0.00	1461.73	0.027	0.03	2.531	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Junction D - REFERENCE, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, AM	REFERENCE	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.52	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	160.00	100.000
2	FLAT	✓	200.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	160.000
	2	110.000	90.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.55	0.45

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.11	2.78	0.12	A
2	0.11	2.32	0.13	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	159.51	89.77	0.00	1456.46	0.110	0.12	2.776	A
2	200.00	199.48	0.00	0.00	1748.34	0.114	0.13	2.324	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	160.00	90.00	0.00	1456.33	0.110	0.12	2.776	A
2	200.00	200.00	0.00	0.00	1748.34	0.114	0.13	2.324	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	160.00	90.00	0.00	1456.33	0.110	0.12	2.776	A
2	200.00	200.00	0.00	0.00	1748.34	0.114	0.13	2.324	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	160.00	90.00	0.00	1456.33	0.110	0.12	2.776	A
2	200.00	200.00	0.00	0.00	1748.34	0.114	0.13	2.324	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	160.00	90.00	0.00	1456.33	0.110	0.12	2.776	A
2	200.00	200.00	0.00	0.00	1748.34	0.114	0.13	2.324	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	160.00	160.00	90.00	0.00	1456.33	0.110	0.12	2.776	A
2	200.00	200.00	0.00	0.00	1748.34	0.114	0.13	2.324	A

Junction D - REFERENCE, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, PM	REFERENCE	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.44	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	90.00	100.000
2	FLAT	✓	230.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	90.000
	2	150.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.65	0.35

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.06	2.63	0.07	A
2	0.13	2.37	0.15	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	89.74	79.79	0.00	1461.85	0.062	0.07	2.623	A
2	230.00	229.40	0.00	0.00	1748.34	0.132	0.15	2.368	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	90.00	80.00	0.00	1461.73	0.062	0.07	2.623	A
2	230.00	230.00	0.00	0.00	1748.34	0.132	0.15	2.370	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	90.00	80.00	0.00	1461.73	0.062	0.07	2.623	A
2	230.00	230.00	0.00	0.00	1748.34	0.132	0.15	2.370	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	90.00	80.00	0.00	1461.73	0.062	0.07	2.623	A
2	230.00	230.00	0.00	0.00	1748.34	0.132	0.15	2.370	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	90.00	80.00	0.00	1461.73	0.062	0.07	2.623	A
2	230.00	230.00	0.00	0.00	1748.34	0.132	0.15	2.370	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	90.00	90.00	80.00	0.00	1461.73	0.062	0.07	2.625	A
2	230.00	230.00	0.00	0.00	1748.34	0.132	0.15	2.370	A

Junction D - DESIGN, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, AM	DESIGN	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.72	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	260.00	100.000
2	FLAT	✓	290.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	260.000
	2	200.000	90.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.69	0.31

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.18	3.01	0.22	A
2	0.17	2.47	0.20	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	259.13	89.75	0.00	1456.47	0.179	0.22	3.005	A
2	290.00	289.21	0.00	0.00	1748.34	0.166	0.20	2.466	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	260.00	90.00	0.00	1456.33	0.179	0.22	3.008	A
2	290.00	290.00	0.00	0.00	1748.34	0.166	0.20	2.468	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	260.00	90.00	0.00	1456.33	0.179	0.22	3.008	A
2	290.00	290.00	0.00	0.00	1748.34	0.166	0.20	2.468	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	260.00	90.00	0.00	1456.33	0.179	0.22	3.008	A
2	290.00	290.00	0.00	0.00	1748.34	0.166	0.20	2.468	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	260.00	90.00	0.00	1456.33	0.179	0.22	3.008	A
2	290.00	290.00	0.00	0.00	1748.34	0.166	0.20	2.468	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	260.00	260.00	90.00	0.00	1456.33	0.179	0.22	3.008	A
2	290.00	290.00	0.00	0.00	1748.34	0.166	0.20	2.468	A

Junction D - DESIGN, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, PM	DESIGN	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.60	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	170.00	100.000
2	FLAT	✓	310.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	170.000
	2	230.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.74	0.26

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.12	2.79	0.13	A
2	0.18	2.50	0.22	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	169.48	79.78	0.00	1461.85	0.116	0.13	2.783	A
2	310.00	309.14	0.00	0.00	1748.34	0.177	0.21	2.500	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	170.00	80.00	0.00	1461.73	0.116	0.13	2.786	A
2	310.00	310.00	0.00	0.00	1748.34	0.177	0.22	2.502	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	170.00	80.00	0.00	1461.73	0.116	0.13	2.786	A
2	310.00	310.00	0.00	0.00	1748.34	0.177	0.22	2.502	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	170.00	80.00	0.00	1461.73	0.116	0.13	2.786	A
2	310.00	310.00	0.00	0.00	1748.34	0.177	0.22	2.502	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	170.00	80.00	0.00	1461.73	0.116	0.13	2.786	A
2	310.00	310.00	0.00	0.00	1748.34	0.177	0.22	2.502	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	170.00	170.00	80.00	0.00	1461.73	0.116	0.13	2.786	A
2	310.00	310.00	0.00	0.00	1748.34	0.177	0.22	2.502	A

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2018

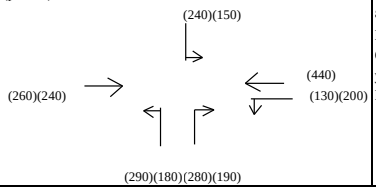
Description: **2018 Existing Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	115	0.063	0.063	72	0.039	0.039
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	125	0.063		78	0.039	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	125	0.065		116	0.060	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	135	0.065		124	0.060	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	290	0.172	0.172	180	0.107	0.107
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	280	0.145		190	0.099	
Sha Kok Street	W		3	A	3.2	10.0	0	1	40%	69%	1935	4050	1825	1755	3940	3870	329	0.180	0.180	290	0.165	0.165
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	381	0.180		350	0.165	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

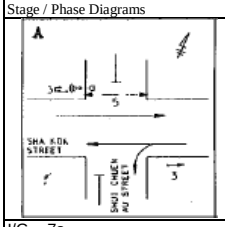
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.415
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	90%

PM Peak Check Phase	
εy	0.312
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	153%

Stage / Phase Diagrams



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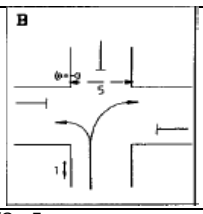
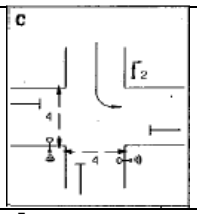


I/G = 7s



I/G = 5s

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2025

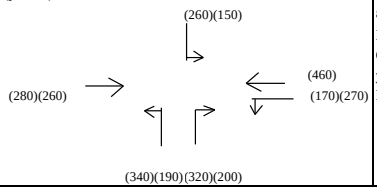
Description: **2025 Reference Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	125	0.068	0.068	72	0.039	0.039
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	135	0.068		78	0.039	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	135	0.069		125	0.065	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	145	0.069		135	0.065	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	340	0.202	0.202	190	0.113	0.113
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	320	0.166		200	0.104	
Sha Kok Street	W		3	A	3.2	10.0	0	1	47%	82%	1935	4050	1805	1720	3920	3835	359	0.199	0.199	328	0.190	0.190
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	421	0.199		402	0.190	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

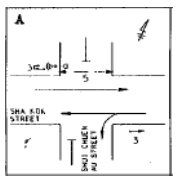
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.469
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	68%

PM Peak Check Phase	
εy	0.343
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	130%

Stage / Phase Diagrams



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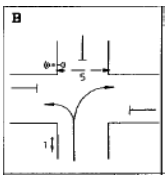

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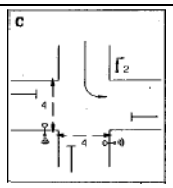


I/G = 5s

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction A - Shui Chuen Au Street/ Sha Kok Street** Year: 2025

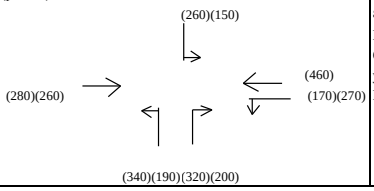
Description: **2025 Design Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shui Chuen Au Street	S		2	C	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	125	0.068	0.068	72	0.039	0.039
	S		2	C	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	135	0.068		78	0.039	
Sha Kok Street	E		3	A	3.3	0.0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	135	0.069		125	0.065	
	E		3	A	3.3	0.0	0	0	0%	0%	2085	0	2085	2085	0	0	145	0.069		135	0.065	
Shui Chuen Au Street	N		1	B	3.2	10.0	0	1	100%	100%	1935	1935	1685	1685	1685	1685	340	0.202	0.202	190	0.113	0.113
	N		1	B	3.6	0.0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	320	0.166		200	0.104	
Sha Kok Street	W		3	A	3.2	10.0	0	1	47%	82%	1935	4050	1805	1720	3920	3835	359	0.199	0.199	328	0.190	0.190
	W		3	A	3.6	0.0	0	0	0%	0%	2115	0	2115	2115	0	0	421	0.199		402	0.190	
Pedestrian Crossing			4p	C		Min. Crossing Time = 5Gm + 15FGm =20s																
			5p	A,B		Min. Crossing Time = 6Gm + 12FGm =18s																

Notes:

(Nil)

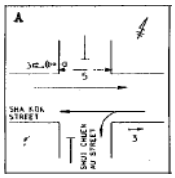
Traffic Flow (pcu / hr)

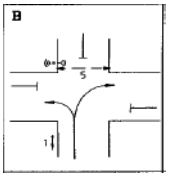


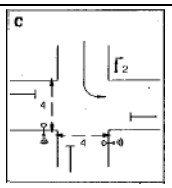
AM Peak Check Phase	
εy	0.469
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	68%

PM Peak Check Phase	
εy	0.343
L (sec)	16
C (sec)	129
y pract.	0.788
R.C. (%)	130%

Stage / Phase Diagrams







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

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.5.523 [19102,19/06/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: JUNCTION B (CTIA).arc8
Path: \\PROJSRV\Project\CTA Consultants Limited\CTA - Proposal\P2018031601HK - TCS for 30-Classrooms Primary School at Shui Chuen O (9AE101)\Calculation\2019-04-18 (growth rate increased)\CTIA
Report generation date: 18/4/2019 18:46:05

» Junction B - OBSERVED, AM
» Junction B - OBSERVED, PM
» Junction B - REFERENCE, AM
» Junction B - REFERENCE, PM
» Junction B - DESIGN, AM
» Junction B - DESIGN, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Junction B - DESIGN							
Stream B-AC	1.01	12.14	0.50	B	0.66	10.39	0.40	B
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.24	8.75	0.20	A	0.22	8.08	0.18	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Junction B - OBSERVED							
Stream B-AC	0.69	9.89	0.41	A	0.48	9.04	0.32	A
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.21	8.37	0.17	A	0.19	7.78	0.16	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Junction B - REFERENCE							
Stream B-AC	0.79	10.52	0.44	B	0.52	9.30	0.34	A
Stream C-A	-	-	-	-	-	-	-	-
Stream C-B	0.24	8.64	0.19	A	0.22	7.99	0.18	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - OBSERVED, AM " model duration: 8:00 - 9:30
"D2 - OBSERVED, PM" model duration: 8:00 - 9:30
"D3 - REFERENCE, AM" model duration: 8:00 - 9:30
"D4 - REFERENCE, PM" model duration: 8:00 - 9:30
"D5 - DESIGN, AM" model duration: 8:00 - 9:30
"D6 - DESIGN, PM" model duration: 8:00 - 9:30

Run using Junctions 8.0.5.523 at 18/4/2019 18:46:02

File summary

Title	Junction B
Location	Pok Chuen Street/ To Shek Street
Site Number	
Date	14/12/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ITADMIN
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Junction B - OBSERVED, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, AM	OBSERVED	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	9.49	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	460.00	100.000
B	FLAT	✓	250.00	100.000
C	FLAT	✓	280.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	120.000	340.000
	B	90.000	0.000	160.000
	C	190.000	90.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.26	0.74
	B	0.36	0.00	0.64
	C	0.68	0.32	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.41	9.89	0.69	A
C-A	-	-	-	-
C-B	0.17	8.37	0.21	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	247.30	0.00	613.92	0.407	0.67	9.750	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	89.17	0.00	520.24	0.173	0.21	8.336	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	249.97	0.00	613.79	0.407	0.68	9.893	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	520.24	0.173	0.21	8.367	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	249.99	0.00	613.79	0.407	0.68	9.895	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	520.24	0.173	0.21	8.367	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	250.00	0.00	613.79	0.407	0.68	9.895	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	520.24	0.173	0.21	8.367	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	250.00	0.00	613.79	0.407	0.68	9.895	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	520.24	0.173	0.21	8.367	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	250.00	250.00	0.00	613.79	0.407	0.69	9.895	A
C-A	190.00	190.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	520.24	0.173	0.21	8.367	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	340.00	340.00	0.00	-	-	-	-	-

Junction B - OBSERVED, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, PM	OBSERVED	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	8.64	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	280.00	100.000
B	FLAT	✓	190.00	100.000
C	FLAT	✓	330.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	80.000	200.000
	B	130.000	0.000	60.000
	C	240.000	90.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.29	0.71
	B	0.68	0.00	0.32
	C	0.73	0.27	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.32	9.04	0.48	A
C-A	-	-	-	-
C-B	0.16	7.78	0.19	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	188.12	0.00	588.34	0.323	0.47	8.954	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	89.23	0.00	552.59	0.163	0.19	7.757	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	189.99	0.00	588.15	0.323	0.47	9.041	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	552.59	0.163	0.19	7.781	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	190.00	0.00	588.15	0.323	0.47	9.041	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	552.59	0.163	0.19	7.781	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	190.00	0.00	588.15	0.323	0.48	9.041	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	552.59	0.163	0.19	7.781	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	190.00	0.00	588.15	0.323	0.48	9.041	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	552.59	0.163	0.19	7.781	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	190.00	190.00	0.00	588.15	0.323	0.48	9.041	A
C-A	240.00	240.00	0.00	-	-	-	-	-
C-B	90.00	90.00	0.00	552.59	0.163	0.19	7.781	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	200.00	200.00	0.00	-	-	-	-	-

Junction B - REFERENCE, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, AM	REFERENCE	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	10.02	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	480.00	100.000
B	FLAT	✓	270.00	100.000
C	FLAT	✓	300.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	120.000	360.000
	B	90.000	0.000	180.000
	C	200.000	100.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.33	0.00	0.67
	C	0.67	0.33	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.44	10.52	0.79	B
C-A	-	-	-	-
C-B	0.19	8.64	0.24	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	266.91	0.00	612.16	0.441	0.77	10.337	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	99.05	0.00	516.64	0.194	0.24	8.602	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	269.97	0.00	612.02	0.441	0.78	10.523	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	99.99	0.00	516.64	0.194	0.24	8.640	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	269.99	0.00	612.02	0.441	0.78	10.525	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	516.64	0.194	0.24	8.640	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	269.99	0.00	612.01	0.441	0.79	10.525	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	516.64	0.194	0.24	8.640	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	270.00	0.00	612.01	0.441	0.79	10.525	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	516.64	0.194	0.24	8.640	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	270.00	270.00	0.00	612.01	0.441	0.79	10.525	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	516.64	0.194	0.24	8.640	A
A-B	120.00	120.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Junction B - REFERENCE, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, PM	REFERENCE	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	8.86	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	290.00	100.000
B	FLAT	✓	200.00	100.000
C	FLAT	✓	360.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	80.000	210.000
	B	130.000	0.000	70.000
	C	260.000	100.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.28	0.72
	B	0.65	0.00	0.35
	C	0.72	0.28	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.34	9.30	0.52	A
C-A	-	-	-	-
C-B	0.18	7.99	0.22	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	197.97	0.00	587.12	0.341	0.51	9.204	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	99.12	0.00	550.79	0.182	0.22	7.955	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	199.98	0.00	586.91	0.341	0.51	9.304	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	550.79	0.182	0.22	7.985	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	199.99	0.00	586.91	0.341	0.51	9.304	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	550.79	0.182	0.22	7.985	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	200.00	0.00	586.91	0.341	0.51	9.304	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	550.79	0.182	0.22	7.985	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	200.00	0.00	586.91	0.341	0.52	9.304	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	550.79	0.182	0.22	7.985	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.00	200.00	0.00	586.91	0.341	0.52	9.304	A
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	550.79	0.182	0.22	7.985	A
A-B	80.00	80.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Junction B - DESIGN, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, AM	DESIGN	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	11.29	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	510.00	100.000
B	FLAT	✓	300.00	100.000
C	FLAT	✓	300.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	150.000	360.000
	B	120.000	0.000	180.000
	C	200.000	100.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.29	0.71
	B	0.40	0.00	0.60
	C	0.67	0.33	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.50	12.14	1.01	B
C-A	-	-	-	-
C-B	0.20	8.75	0.24	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	296.06	0.00	596.78	0.503	0.98	11.823	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	99.04	0.00	511.25	0.196	0.24	8.714	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.95	0.00	596.61	0.503	1.00	12.129	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	99.99	0.00	511.25	0.196	0.24	8.753	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.98	0.00	596.61	0.503	1.00	12.134	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	511.25	0.196	0.24	8.753	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.99	0.00	596.61	0.503	1.00	12.134	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	511.25	0.196	0.24	8.753	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	299.99	0.00	596.61	0.503	1.01	12.136	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	511.25	0.196	0.24	8.753	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	300.00	300.00	0.00	596.61	0.503	1.01	12.136	B
C-A	200.00	200.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	511.25	0.196	0.24	8.753	A
A-B	150.00	150.00	0.00	-	-	-	-	-
A-C	360.00	360.00	0.00	-	-	-	-	-

Junction B - DESIGN, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction B	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, PM	DESIGN	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	JUNCTION B	T-Junction	Two-way	A,B,C	9.69	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	(untitled)		Major
B	B	(untitled)		Minor
C	C	(untitled)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	11.30	✓	2.90		2.20	50.00		

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	652.074	0.086	0.217	0.136	0.310
1	B-C	779.094	0.092	0.232	-	-
1	C-B	602.919	0.180	0.180	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	FLAT	✓	320.00	100.000
B	FLAT	✓	230.00	100.000
C	FLAT	✓	360.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	110.000	210.000
	B	160.000	0.000	70.000
	C	260.000	100.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.34	0.66
	B	0.70	0.00	0.30
	C	0.72	0.28	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.40	10.39	0.66	B
C-A	-	-	-	-
C-B	0.18	8.08	0.22	A
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	227.40	0.00	576.82	0.399	0.65	10.229	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	99.11	0.00	545.40	0.183	0.22	8.050	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	229.97	0.00	576.60	0.399	0.66	10.384	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	545.40	0.183	0.22	8.082	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	229.99	0.00	576.59	0.399	0.66	10.386	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	545.40	0.183	0.22	8.082	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	230.00	0.00	576.59	0.399	0.66	10.386	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	545.40	0.183	0.22	8.082	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	230.00	0.00	576.59	0.399	0.66	10.386	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	545.40	0.183	0.22	8.082	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	230.00	230.00	0.00	576.59	0.399	0.66	10.386	B
C-A	260.00	260.00	0.00	-	-	-	-	-
C-B	100.00	100.00	0.00	545.40	0.183	0.22	8.082	A
A-B	110.00	110.00	0.00	-	-	-	-	-
A-C	210.00	210.00	0.00	-	-	-	-	-

TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2018

Description: **2018 Observed Traffic Flow**

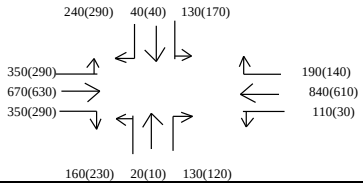
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	56% / 14%	71% / 13%	1925	4020	1835	1835	3810	3810	198	0.108	0.108	241	0.131	0.131
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	212	0.108		259	0.131	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	166	0.094		137	0.078	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	184	0.094		153	0.078	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	320	0.163	0.163	300	0.153	0.153
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	350	0.163		330	0.153	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	350	0.187	0.187	290	0.155	0.155
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5490	5470	84	0.050	0.069	111	0.066	0.066
	N		3	C	3.1	15.0	0	0	79%	96%	2065	0	1915	1885	0	0	96	0.050		124	0.066	
	N		3	C	3.2	0.0	15	0	100%	96%	2075	0	1885	1895	0	0	130	0.069		125	0.066	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	190	0.100		140	0.073	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	331	0.158		221	0.105	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	331	0.158		221	0.105	
	W		1	A	3.1	10.0	0	1	38%	15%	1925	6115	1820	1880	6010	6070	288	0.158		198	0.106	

Pedestrian Crossing		
5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

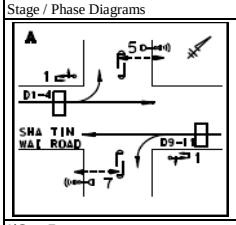
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.526
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	39%

PM Peak Check Phase	
εy	0.505
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	45%

Stage / Phase Diagrams



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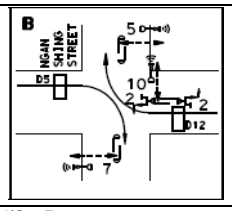

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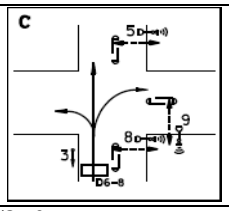

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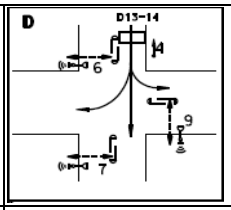

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TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2025

Description: **2025 Reference Traffic Flow**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	59% / 12%	73% / 11%	1925	4020	1835	1830	3810	3805	217	0.118	0.118	260	0.142	0.142
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	233	0.118		280	0.142	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	175	0.099		147	0.083	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	195	0.099		163	0.083	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	334	0.170	0.170	315	0.160	0.160
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	366	0.170		345	0.160	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	390	0.209	0.209	340	0.182	0.182
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5485	5465	99	0.058	0.085	124	0.073	0.073
	N		3	C	3.1	15.0	0	0	82%	99%	2065	0	1910	1880	0	0	111	0.058		137	0.073	
	N		3	C	3.2	0.0	15	0	100%	94%	2075	0	1885	1895	0	0	160	0.085		139	0.073	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	200	0.105		140	0.073	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	349	0.166		231	0.110	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	349	0.166		231	0.110	
	W		1	A	3.1	10.0	0	1	40%	14%	1925	6115	1815	1885	6005	6075	302	0.167		208	0.110	

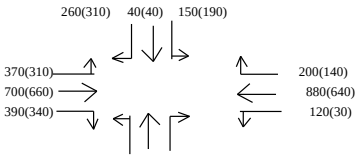
Pedestrian Crossing

5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

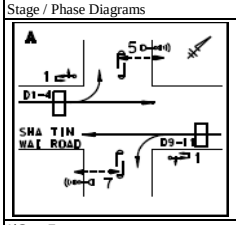
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.581
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	26%

PM Peak Check Phase	
εy	0.557
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	31%

Stage / Phase Diagrams



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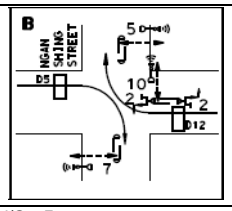

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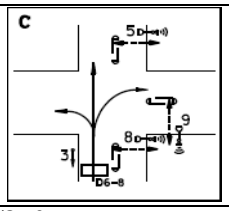

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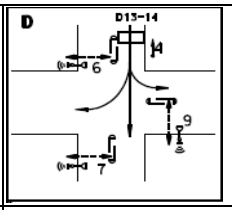

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TRAFFIC SIGNALS CALCULATION Job No: P2018031601HK **CTA Consultants Ltd.**

Junction: **Junction C - Ngan Shing Road/ Sha Tin Wai Road/ To Shek Road** Year: 2025

Description: **2025 Design Traffic Flow**

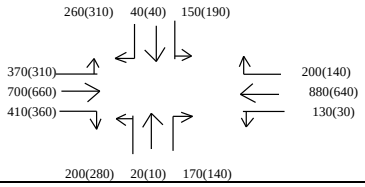
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Ngan Shing Street	S		4	D	3.1	25.0	25	1	59% / 12%	73% / 11%	1925	4020	1835	1830	3810	3805	217	0.118	0.118	260	0.142	0.142
	S		4	D	3.4	0.0	25	0	100%	100%	2095	0	1975	1975	0	0	233	0.118		280	0.142	
Sha Tin Wai Road	E		1	A	2.8	20.0	0	1	100%	100%	1895	3980	1765	1765	3730	3730	175	0.099		147	0.083	
	E		1	A	3.3	25.0	0	0	100%	100%	2085	0	1965	1965	0	0	195	0.099		163	0.083	
	E		1	A	3.5	0.0	0	1	0%	0%	1965	4120	1965	1965	4120	4120	334	0.170	0.170	315	0.160	0.160
	E		1	A	4.0	0.0	0	0	0%	0%	2155	0	2155	2155	0	0	366	0.170		345	0.160	
	E		2	B	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	410	0.219	0.219	360	0.193	0.193
To Shek Street	N		3	C	2.7	13.0	0	1	100%	100%	1885	6025	1690	1690	5480	5465	103	0.061	0.090	133	0.079	0.079
	N		3	C	3.1	15.0	0	0	83%	99%	2065	0	1905	1880	0	0	117	0.061		148	0.079	
	N		3	C	3.2	0.0	15	0	100%	94%	2075	0	1885	1895	0	0	170	0.090		149	0.079	
Sha Tin Wai Road	W		2	B	3.4	0.0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	200	0.105		140	0.073	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	353	0.168		231	0.110	
	W		1	A	3.4	0.0	0	0	0%	0%	2095	0	2095	2095	0	0	353	0.168		231	0.110	
	W		1	A	3.1	10.0	0	1	43%	14%	1925	6115	1810	1885	6000	6075	305	0.168		208	0.110	

Pedestrian Crossing	5p	A,B,C	Min. Crossing Time = 5Gm + 6FGm =11s
	6p	D	Min. Crossing Time = 5Gm + 11FGm =16s
	7p	A,B	Min. Crossing Time = 5Gm + 8FGm =13s
	8p	C	Min. Crossing Time = 5Gm + 8FGm =13s
	9p	C,D	Min. Crossing Time = 5Gm + 12FGm =17s
	10p	B	Min. Crossing Time = 5Gm + 7FGm =12s

Notes:

(Nil)

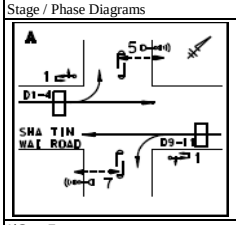
Traffic Flow (pcu / hr)



AM Peak Check Phase	
εy	0.597
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	22%

PM Peak Check Phase	
εy	0.573
L (sec)	23
C (sec)	123
y pract.	0.732
R.C. (%)	28%

Stage / Phase Diagrams



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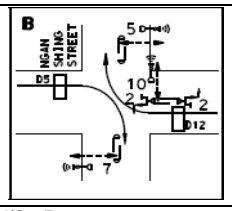

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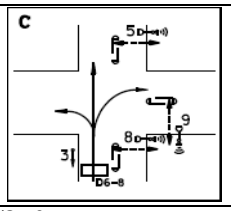

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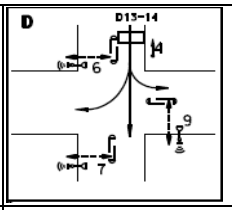

I/G = 7s

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.5.523 [19102,19/06/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: JUNCTION D (ROUNDABOUT)(CTIA).arc8
Path: \\PROJSRV\Project\CTA Consultants Limited\CTA - Proposal\P2018031601HK - TCS for 30-Classrooms Primary School at Shui Chuen O (9AE101)\Calculation\2019-04-18 (growth rate increased)\CTIA
Report generation date: 18/4/2019 18:50:52

» Junction D - OBSERVED, AM
» Junction D - OBSERVED, PM
» Junction D - REFERENCE, AM
» Junction D - REFERENCE, PM
» Junction D - DESIGN, AM
» Junction D - DESIGN, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Junction D - DESIGN							
Arm 1	0.11	2.72	0.10	A	0.06	2.61	0.05	A
Arm 2	0.10	2.27	0.09	A	0.14	2.35	0.13	A
	Junction D - OBSERVED							
Arm 1	0.08	2.66	0.08	A	0.04	2.55	0.03	A
Arm 2	0.08	2.22	0.07	A	0.12	2.31	0.11	A
	Junction D - REFERENCE							
Arm 1	0.08	2.66	0.08	A	0.04	2.55	0.03	A
Arm 2	0.08	2.22	0.07	A	0.12	2.31	0.11	A

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - OBSERVED, AM " model duration: 8:00 - 9:30
"D2 - OBSERVED, PM" model duration: 8:00 - 9:30
"D3 - REFERENCE, AM" model duration: 8:00 - 9:30
"D4 - REFERENCE, PM" model duration: 8:00 - 9:30
"D5 - DESIGN, AM" model duration: 8:00 - 9:30
"D6 - DESIGN, PM" model duration: 8:00 - 9:30

Run using Junctions 8.0.5.523 at 18/4/2019 18:50:50

File summary

Title	Junction D
Location	Pok Chuen Street
Site Number	
Date	14/12/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ITADMIN
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Junction D - OBSERVED, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, AM	OBSERVED	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.42	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	110.00	100.000
2	FLAT	✓	130.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	110.000
	2	50.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.38	0.62

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.08	2.66	0.08	A
2	0.07	2.22	0.08	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	109.68	79.80	0.00	1461.84	0.075	0.08	2.662	A
2	130.00	129.68	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Junction D - OBSERVED, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
OBSERVED, PM	OBSERVED	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.36	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	50.00	100.000
2	FLAT	✓	190.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	50.000
	2	110.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.58	0.42

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.03	2.55	0.04	A
2	0.11	2.31	0.12	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	49.86	79.80	0.00	1461.84	0.034	0.04	2.549	A
2	190.00	189.51	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Junction D - REFERENCE, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, AM	REFERENCE	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.42	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	110.00	100.000
2	FLAT	✓	130.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	110.000
	2	50.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.38	0.62

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.08	2.66	0.08	A
2	0.07	2.22	0.08	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	109.68	79.80	0.00	1461.84	0.075	0.08	2.662	A
2	130.00	129.68	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	110.00	110.00	80.00	0.00	1461.73	0.075	0.08	2.662	A
2	130.00	130.00	0.00	0.00	1748.34	0.074	0.08	2.224	A

Junction D - REFERENCE, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
REFERENCE, PM	REFERENCE	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.36	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	50.00	100.000
2	FLAT	✓	190.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	50.000
	2	110.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.58	0.42

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.03	2.55	0.04	A
2	0.11	2.31	0.12	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	49.86	79.80	0.00	1461.84	0.034	0.04	2.549	A
2	190.00	189.51	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	50.00	50.00	80.00	0.00	1461.73	0.034	0.04	2.549	A
2	190.00	190.00	0.00	0.00	1748.34	0.109	0.12	2.309	A

Junction D - DESIGN, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, AM	DESIGN	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.48	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	140.00	100.000
2	FLAT	✓	160.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	140.000
	2	80.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.50	0.50

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.10	2.72	0.11	A
2	0.09	2.27	0.10	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	139.58	79.80	0.00	1461.84	0.096	0.11	2.722	A
2	160.00	159.60	0.00	0.00	1748.34	0.092	0.10	2.266	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	140.00	80.00	0.00	1461.73	0.096	0.11	2.723	A
2	160.00	160.00	0.00	0.00	1748.34	0.092	0.10	2.266	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	140.00	80.00	0.00	1461.73	0.096	0.11	2.723	A
2	160.00	160.00	0.00	0.00	1748.34	0.092	0.10	2.266	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	140.00	80.00	0.00	1461.73	0.096	0.11	2.723	A
2	160.00	160.00	0.00	0.00	1748.34	0.092	0.10	2.266	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	140.00	80.00	0.00	1461.73	0.096	0.11	2.723	A
2	160.00	160.00	0.00	0.00	1748.34	0.092	0.10	2.267	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	140.00	140.00	80.00	0.00	1461.73	0.096	0.11	2.723	A
2	160.00	160.00	0.00	0.00	1748.34	0.092	0.10	2.267	A

Junction D - DESIGN, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction D	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
DESIGN, PM	DESIGN	PM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2			2.42	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	5.90	6.80	2.00	3.00	40.00	10.00	
2	5.60	6.30	2.00	8.20	40.00	17.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	1504.944
2		(calculated)	(calculated)	0.643	1748.344

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	80.00	100.000
2	FLAT	✓	220.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.000	80.000
	2	140.000	80.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To	
		1	2
From	1	0.00	1.00
	2	0.64	0.36

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To	
		1	2
From	1	1.000	1.000
	2	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To	
		1	2
From	1	0.0	0.0
	2	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.05	2.61	0.06	A
2	0.13	2.35	0.14	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	79.77	79.79	0.00	1461.85	0.055	0.06	2.604	A
2	220.00	219.43	0.00	0.00	1748.34	0.126	0.14	2.355	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	80.00	80.00	0.00	1461.73	0.055	0.06	2.604	A
2	220.00	220.00	0.00	0.00	1748.34	0.126	0.14	2.355	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	80.00	80.00	0.00	1461.73	0.055	0.06	2.604	A
2	220.00	220.00	0.00	0.00	1748.34	0.126	0.14	2.355	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	80.00	80.00	0.00	1461.73	0.055	0.06	2.604	A
2	220.00	220.00	0.00	0.00	1748.34	0.126	0.14	2.355	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	80.00	80.00	0.00	1461.73	0.055	0.06	2.604	A
2	220.00	220.00	0.00	0.00	1748.34	0.126	0.14	2.355	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	80.00	80.00	80.00	0.00	1461.73	0.055	0.06	2.606	A
2	220.00	220.00	0.00	0.00	1748.34	0.126	0.14	2.355	A

APPENDIX B

QUESTIONNAIRE SAMPLE

致水泉澳小學一年級家長:

水泉澳小學交通問卷調查
(水泉澳邨居民填寫。如"非"水泉澳邨居民，請填寫另一頁。)

教育局計劃於沙田水泉澳博泉街興建一所設有 30 間課室的全新資助小學，擬建校舍的位置請參閱附件。為了調查家長、學生的往返學校模式，請　貴家長以不記名形式填妥以下問卷，在合適的方格上填上✓，並交回學校轉交建築署。

1. 你住在水泉澳邨那一幢樓宇? (單選)
   □ 嶺泉樓　□樂泉樓　□ 山泉樓　□ 峻泉樓　□ 喜泉樓　□欣泉樓

   □崇泉樓　□ 朗泉樓　□竹泉樓　□ 修泉樓　□清泉樓　□林泉樓

   □ 明泉樓　□茂泉樓　□河泉樓　□ 城泉樓　□月泉樓　□映泉樓

2. 現時，請問你和　貴子女如何**前往**大圍美林邨的校址?
   □ 小巴　□ 巴士　□ 的士　□ 私家車　□ 校巴　□ 地鐵　□ 其他:_____

3. 現時，請問你和　貴子女如何**離開**大圍美林邨的校址?
   □ 小巴　□ 巴士　□ 的士　□ 私家車　□ 校巴　□ 地鐵　□ 其他:_____

4. 將來，校舍將會搬到水泉澳博泉街。假設屆時將有小巴/ 巴士經水泉澳邨直接到達校門，你和　貴子女將如何**前往**學校?
   □ 步行　□ 的士　□ 直接到達校門之小巴/ 巴士

   □ 私家車　□ 校巴　□ 其他:_____

5. 將來，校舍將會搬到水泉澳博泉街。假設屆時將有小巴/ 巴士經學校直接到達水泉澳邨，你和　貴子女將如何**離開**學校?
   □ 步行　□ 的士　□直接到達水泉澳邨之小巴/ 巴士

   □ 私家車　□ 校巴　□ 其他:_____

問卷完，謝謝

致水泉澳小學一年級家長:

水泉澳小學交通問卷調查
("非"水泉澳邨居民填寫。如水泉澳邨居民，請填寫另一頁。)

教育局計劃於沙田水泉澳博泉街興建一所設有 30 間課室的全新資助小學，擬建校舍的位置請參閱附件。為了調查家長、學生的往返學校模式，請　貴家長以不記名形式填妥以下問卷，在合適的方格上填上✓，並交回學校轉交建築署。

1. 請問你居住在那一區? (單選)
   □ 沙田區　□ 大埔區　□ 西貢區　□ 上水區　□ 粉嶺區　□ 其他:_____

2. 現時，請問你和　貴子女如何**前往**大圍美林邨的校址? 如需轉車，請在**最後一項**選用的交通模式填上✓。例: 先乘搭地鐵，再轉巴士的話，只需要✓巴士一欄。
   □ 小巴　□ 巴士　□ 的士　□ 私家車　□ 校巴　□ 地鐵　□ 其他:_____

3. 現時，請問你和　貴子女如何**離開**大圍美林邨的校址? 如需轉車，請在**第一項**選用的交通模式填上✓。例: 先乘搭巴士，再轉地鐵的話，只需要✓巴士一欄。
   □ 小巴　□ 巴士　□ 的士　□ 私家車　□ 校巴　□ 地鐵　□ 其他:_____

4. 將來，校舍將會搬到水泉澳博泉街。假設屆時將有小巴/ 巴士經第一城或沙田圍直接到達校門，你和　貴子女將如何**前往**學校? 如需轉車，請在**最後一項**選用的交通模式填上✓。例: 先乘搭地鐵，再轉直達校門之小巴/ 巴士，只需要✓直達校門之交通工具一欄。乘搭任何交通工具到水泉澳邨，然後步行至學校者，只需要✓步行一欄。
   □ 步行　□直達校門之小巴/ 巴士　□ 的士　□ 私家車　□ 校巴　□ 其他:_____

5. 將來，校舍將會搬到水泉澳博泉街。假設屆時將有小巴/ 巴士經學校前往第一城或沙田圍，你和　貴子女將如何**離開**學校? 如需轉車，請在**第一項**選用的交通模式填上✓。例: 先乘搭經學校及第一城或沙田圍之小巴/ 巴士，再轉地鐵的話，只需要✓先乘搭經學校前往第一城或沙田圍之小巴/ 巴士一欄。步行至水泉澳邨， 然後乘搭任何交通工具者，只需要✓步行一欄。
   □ 步行　□經學校前往第一城或沙田圍之小巴/ 巴士　□ 的士　□ 私家車　□ 校巴　□ 其他:_____

問卷完，謝謝

APPENDIX C

INFORMATION FROM EDB

Horace Mak

寄件者: fpwong@edb.gov.hk
寄件日期: 2018年12月7日星期五 14:58
收件者: jimho@td.gov.hk; poonwinghong@td.gov.hk
副本: mcyuen@td.gov.hk; alanhu@td.gov.hk; likl@archsd.gov.hk; pangpy@archsd.gov.hk; 'Billy Tam'; 'Calvin Kwok'; Horace Mak; seosb@edb.gov.hk; apmsb32@edb.gov.hk; posb42@edb.gov.hk; fpwong@edb.gov.hk
主旨: Fw: 3358EP - A 30-classroom primary school at Shui Chuen O, Sha Tin (2nd inter-departmental meeting)
附件: 臨時動議 - WONG Fu-sang (with EDB's remarks).docx; 臨時動議 - YAU Man-chun (with EDB's remarks).docx; SL 01 - PROPOSED MINI-BUS STOP - OPTION 1 (item 2).pdf; SL 02 - PROPOSED MINI-BUS STOP - OPTION 2 (item 2).pdf; SCO_S108_REVISED WIDENING EXTENT_a.pdf; SL 03 - PROPOSED ROAD MARKING (Item 3).pdf

重要性: 高

Dear Mr Ho, Mr Poon and Mr Hu,

As a follow-up to last inter-departmental meeting, we provide the following information for your perusal, please.

(1) Proposed Green Minibus layby Arrangement (2 Options)

(2) Pedestrian flow to be generated by the new school premises at Pok Chuen Street

- Pending completion of the new 30-classroom primary school premises at Pok Chuen Street, the new aided primary school (i.e. the TWGHs Shui Chuen O Primary School)("the School") has commenced operation **at a vacant school premises at Mei Lam Estate**, Sha Tin, with effect from the 2018/19 school year. As at 4 Oct 2018, the School is operating five P.1 classes, one P.4 class and one P.5 class, with a total of 202 students. About 50% of the students reside in Shui Chuen O Estate. School bus services are provided for about 140 students and the school bus routes cover Shui Chuen O Estate and other areas in Sha Tin including town centre, Sui Wo Court, Yu Chui Court,City One Shatin, Lee On Estate, etc. to cater for students' need.
- The School may operate up to 30 classes **at the new premises at Pok Chuen Street**. According to the Hong Kong Planning Standards and Guidelines, the provision of primary schools should be based on a standard of one whole-day classroom for 25.5 persons in the 6-11 age group. Based on such standard for planning purpose, a 30-classroom primary school could provide about 765 school places.
- Making reference to the School's student background in 2018/19 at Mei Lam premises, it is roughly projected that when the School operates in the Shui Chuen O premises tentatively starting from Sep 2022, about 383 students (50%)

may be residing the Shui Chuen O Estate. And these students may choose to go to school on foot, usually in the accompany of their parents or guardians.

- For the rest, they may take public transport or private cars. While the Transport Department is exploring the setting up of a green-minibus stop near the pedestrian entrance to the School, students taking buses may have to walk from the Public Transport Interchange (PTI) or the bus stop near Ling Chuen House of the Estate to the school premises along Pok Chuen Street.

(3) Proposed vehicular ingress taking into account 12m bus school

- The traffic consultant will present sketch showing swept path for turning of 12m school bus at the meeting next Tuesday.

Thank you. See you at the meeting.

Regards,
FP Wong
PM(SB)3, EDB
Tel: 3509 8432

----- Forwarded by FP WONG/EDB/HKSARG on 07/12/2018 14:25 -----

From: Jim MY HO/TD/HKSARG@TD
To: FP WONG/EDB/HKSARG@EDB
Cc: &EDB/APM[SB]32@EDB, &EDB/PO[SB]42@EDB, Wing Hong POON/TD/HKSARG@TD, Christine MC YUEN/TD/HKSARG@TD
Date: 05/12/2018 11:34
Subject: Re: Fw: 3358EP - A 30-classroom primary school at Shui Chuen O, Sha Tin (traffic issues)

Dear Ms. Wong,

I will attend the meeting on 11 Dec. However, as far as I am concerned, in our last inter-departmental meeting, the traffic consultant was requested to follow up on a number of issues for the school site at Shui Chuen O, such as identifying a proper location for the GMB stand and providing a proposal to modify the road markings to facilitate the traffic flow, etc. I believe the meeting will be more fruitful if the consultant can provide us their assessment/drawings to us asap.

Regards,
Jim Ho
Transport Department
tel: 2399 2180

From: FP WONG/EDB/HKSARG@EDB
To: jimho@td.gov.hk,
Cc: &EDB/APM[SB]32@EDB, &EDB/PO[SB]42@EDB, FP WONG/EDB/HKSARG@EDB
Date: 30/11/2018 18:29
Subject: Fw: 3358EP - A 30-classroom primary school at Shui Chuen O, Sha Tin (traffic issues)

Dear Mr Ho,

Grateful to know whether you would be available for the meeting scheduled for 10:00 a.m. on 11 Dec. Thanks.

Regards,
FP Wong
PM(SB)3, EDB
Tel: 3509 8432

----- Forwarded by FP WONG/EDB/HKSARG on 30/11/2018 18:27 -----

From: FP WONG/EDB/HKSARG
To: Wing Hong POON/TD/HKSARG@TD, jimho@td.gov.hk, alanhu@td.gov.hk, ssgt-dtt-stdist@police.gov.hk, ip-sip-psu-3-tsdiv@police.gov.hk
Cc: advc-ops-tsdiv@police.gov.hk, &EDB/SEO[SB]@EDB, &EDB/APM[SB]32@EDB, &EDB/PO[SB]42@EDB, FP WONG/EDB/HKSARG@EDB
Date: 26/11/2018 19:02
Subject: Fw: 3358EP - A 30-classroom primary school at Shui Chuen O, Sha Tin (traffic issues)

Dear Mr Poon, Mr Ho & Mr Hu of TD and Lam Sir & Chiang Sir of HKPF,

Thanks for your attendance at the inter-department meeting held on 22 Oct and your contributions to the paper and Q&As for the DC consultation on the captioned project.

2. We consulted the STDC Education and Welfare Committee (EWC) on the project on 8 Nov. The Committee supported the project and requested EDB to continue liaising with the relevant departments on the commuting arrangements for students at the proposed school premises. The two motions passed at the EWC meeting are attached below. You may also refer to the recording of the meeting which has been uploaded to STDC website: (https://www.districtcouncils.gov.hk/st/tc_chi/meetings/committees/dc_committees_meetings_audio.php?meeting_id=13869).

3. To follow up Members' concern and prepare written replies to the motions on items related to the proposed school premises, we would like to schedule the second inter-departmental meeting as follows, subject to your availability.

Date: 11 Dec 2018 (Tuesday)
Time: 10:00 a.m.
Venue: Room 604, East Wing, Central Government Offices, 2 Tim Mei Avenue, Tamar, Hong Kong

4. If your are not available for the meeting, kindly propose two to three dates/time convenient to you or you may consider sending a representative to the meeting. To facilitate discussion at the meeting, please provide your initial response to the motions in advance for our consolidation.

5. Please let me know your attendance by 29 Nov (this Thursday). Also, most grateful if I could have your input on the motions by 4 Dec (next Tuesday). Many thanks for your assistance.

Regards,
FP Wong
PM(SB)3, EDB
Tel: 3509 8432

----- Forwarded by FP WONG/EDB/HKSARG on 26/11/2018 17:54 -----
----- Forwarded by FP WONG/EDB/HKSARG on 18/10/2018 15:39 -----

From: FP WONG/EDB/HKSARG
To: Wing Hong POON/TD/HKSARG@TD, jimho@td.gov.hk, advc-ops-tsdiv@police.gov.hk, ssgt-dtt-stdist@police.gov.hk
Cc: alanhu@td.gov.hk, Ka Lun LI/ARCHSD/HKSARG@ARCHSD, Ping Yiu PANG/ARCHSD/HKSARG@ARCHSD, Calvin Kwok <calvinkwok@thomaschow.com.hk>, &EDB/SEO[SB]@EDB, &EDB/APM[SB]32@EDB, &EDB/PO[SB]42@EDB, FP WONG/EDB/HKSARG@EDB
Date: 18/10/2018 15:29
Subject: 3358EP - A 30-classroom primary school at Shui Chuen O, Sha Tin (traffic issues)

Dear Mr Poon (TD), Mr Ho (TD), Mok Sir (HKPF) and Lam Sir (HKPF),

I refer to my phone conversations with you respectively. As discussed, the inter-departmental meeting between TD, HKPF, ArchSD and EDB on the captioned subject has been scheduled as follows:

Date: 22 Oct 2018 (next Monday)
Time: 3:30 p.m.
Venue: Room 1112, 11/F, East Wing, Central Government Offices, 2 Tim Mei Avenue, Tamar, Hong Kong
Attendance list: [attachment "Attendance list.docx" deleted by FP WONG/EDB/HKSARG]
Agenda:
1) Existing traffic assessment of the area (and whether the proposed 30-classroom primary school at Pok Chuen Street has been taken into account)
2) Setting up a green mini-bus stop at the cul-de-sac or the layby near the school premises
3) Provision of safety railing along Pok Chuen Street
4) Widening of Pok Chuen Street at the road section/cul-de-sac near Lok Chuen House
5) Illegal parking along Pok Chuen Street
6) Permit for 12m-long school buses to enter Pok Chuen Street provided that they make turning within the school site (technical views, administrative procedures required etc.)

Since we plan to consult the Sha Tin District Council Education and Welfare Committee (EWC) on the project "A 30-classroom primary school at Shui Chuen O, Sha Tin" on 8 Nov 2018 and the discussion paper has to be submitted to the DC Secretariat as soon as possible, we wish that the meeting can arrive at resolutions/LTT to address the above-mentioned issues. Two location maps are attached below for your reference. Please let me know if further information is needed to facilitate your study into the various issues prior to the meeting. Thank you.
[attachment "location map (1).pdf" deleted by FP WONG/EDB/HKSARG] [attachment "location map (2).pdf" deleted by FP WONG/EDB/HKSARG]

Regards,

FP Wong
PM(SB)3, EDB
Tel: 3509 8432

Annex 2

Public Rental Housing (PRH) / Green Form Subsidised Home Ownership Scheme (GSH) developments under construction by the Hong Kong Housing Authority

Expected Year of Completion	District	Project
2019-20	Sham Shui Po	Shek Kip Mei Phase 6
		Northwest Kowloon Reclamation Site 6 Phase 1
		Pak Tin Phase 7
		Pak Tin Phase 8
		Pak Tin Phase 11
	Wong Tai Sin	Tung Tau Estate Phase 8
		Fung Shing Street, Wong Tai Sin
	Sha Tin	Fo Tan
	North	Choi Yuen Road
		Fanling Area 49
2020-21	Eastern	Wing Tai Road, Chai Wan
	Kwun Tong	Choi Wing Road
	Sham Shui Po	Northwest Kowloon Reclamation Site 6 Phase 2
	Wong Tai Sin	Diamond Hill Phase 1
	Tai Po	Chung Nga Road East, Tai Po
	North	Queen's Hill Phase 1
		Queen's Hill Phase 2
		Queen's Hill Phase 5
2021-22	Eastern	Chai Wan Road#
	Sham Shui Po	Northwest Kowloon Reclamation Site 6 Phase 3
	Kwai Tsing	Near Lai King Hill Road
	Tuen Mun	Tuen Mun Area 54 Sites 3 & 4 (East)
		Tuen Mun Area 54 Sites 1 & 1A
	North	Queen's Hill Phase 1
2022-23	Sham Shui Po	Pak Tin Phase 10
	Wong Tai Sin	Diamond Hill Phase 2
	Kwai Tsing	Tsing Hung Road, Tsing Yi#
		Lai Cho Road

Expected Year of Completion	District	Project
	Tai Po	Tai Po Area 9

(Based on Hong Kong Housing Authority's Housing Construction Programme as at December 2018)

The project was announced as GSH in or before March 2019.

Other Subsidised Sale Flats under construction by the Hong Kong Housing Authority

Expected Year of Completion	District	Project
2019-20	Sham Shui Po	Cheung Sha Wan Wholesale Food Market Site 5 Phase 2
		Fat Tseung Street West
	Kwai Tsing	Texaco Road
	Sai Kung	Tseung Kwan O Area 65C2 Phase 1
2020-21	Sha Tin	Au Pui Wan Street
		Hang Kin Street, Ma On Shan
		Wo Sheung Tun Street, Fo Tan
	Islands	Tung Chung Area 27
	North	Queen's Hill Phase 3
2021-22	Sha Tin	Ma On Shan Road
	Islands	Tung Chung Area 54
2022-23	Wong Tai Sin	Diamond Hill Phase 3
	Sha Tin	On Muk Street Phase 1

(Based on Hong Kong Housing Authority's Housing Construction Programme as at December 2018)

Annex 3

The school sites having completed the relevant technical feasibility study as reserved by the Education Bureau

No.	District	Location	Planned Use	Number of classrooms	Remark
1	Kowloon City	Kai Tak Development	Secondary School	30	(i)
2	Kowloon City	To Kwa Wan	Secondary School	30	(iii)
3	Kowloon City	Ho Man Tin	Primary School	24	(iii)
4	Kowloon City	Kowloon Tong	2 Special Schools	12 and 24 respectively	(iii)
5	Kowloon City	Kai Tak Development	Primary School	30	(iii)
6	Kwun Tong	Anderson Road	Secondary School	30	(ii)
7	Kwun Tong	Anderson Road	Primary School	30	(i)
8	Kwun Tong	Anderson Road	Primary School	30	(iii)
9	Kwun Tong	Anderson Road	Primary School	30	(iii)
10	North	Fanling	Primary School	30	(i)
11	North	Fanling	Primary School	30	(i)
12	Sham Shui Po	Cheung Sha Wan	Primary School	30	(i)
13	Sham Shui Po	Cheung Sha Wan	Primary School	30	(iii)
14	Sai Kung	Tseung Kwan O	Primary School	30	(iv)
15	Sai Kung	Tseung Kwan O	Secondary School	30	(iv)
16	Sai Kung	Tseung Kwan O	Secondary School	30	(iii)
17	Tuen Mun	Tuen Mun West	Special School	16	(i)
18	Islands	Tung Chung	Special School	18	(i)
19	Sha Tin	Shui Chuen O	Primary School	30	(ii)
20	Sha Tin	Fo Tan	Primary School	24	(iv)
21	Tai Po	Area 9	Primary School	36	(iii)
22	Tsuen Wan	Tsuen Wan West	Primary School	30	(iv)

Remarks:

(i) Funding approval has been obtained from the Finance Committee (FC) of LegCo for the school building project.

(ii) Funding approval will be sought from the FC of LegCo in the 2018-19 LegCo Session for the school building project.

(iii) The site is being deployed for temporary use, undergoing site formation work or with preliminary works/detailed design for school building project being undertaken in accordance with the existing mechanism and procedures.

(iv) The site falls within a private development project and is not regarded as Government land or the site availability is affected by a private development project.