Annex E

Replacement Pages of Traffic Impact Assessment

#	Vehicle Type	Required By		Parking Space Dimension
Lay- by				
1	Private Car / Taxi	HKPSG (CLINIC)		5m (L) X 2.5m (W) X 2.4m (H)
2	Medium Goods Vehicle	HKPSG (CLINIC)	C&AH/ DE/ HSMH/ IVRSC	11m (L) X 3.5m (W) X 4.7m (H)
3	Heavy Goods Vehicle	HKPSG (CLINIC)	C&AH/ DE/ HSMH/ IVRSC	11m (L) X 3.5m (W) X 4.7m (H)

Remarks: Parking Provision as per details provided by Client

2.2.3 The proposed parking spaces for private cars and the taxi/ private car lay-by will be provided at ground level. The proposed arrangement will ensure no traffic queue (if any) from the lay-by back to the main entrance at a minor access road even though the chance of a traffic queue at the elderly centre is very low.

2.2.4 The proposed loading/unloading bay for goods vehicles and ambulance lay-by will also be provided at ground level. The ground floor layout plan of the Application Site is shown in **Drawing No. 2.1**.

2.2.5 Given TPDM guidelines and recommendations from the Transport Department, it is advisable to have a 2m wide footpath in rural areas. Hence, a local setback from the site boundary is proposed for the narrower section of the northern footpath as illustrated in **Drawing No. 2.2**. The footpath will be accessible to the public after commencement of the application site. The implementation of a local setback is, however, subjected to a detailed design stage.

2.3 Development Access

2.3.1 The proposed run-in/out of the Application Site is at the Minor Access Road (Sha Chau Lei Tsuen). The existing major vehicular ingress/egress routings accessing the Application Site are shown in **Drawing Nos. 2.3** and **2.4** respectively.

2.3.2 As shown in **Drawing Nos. 2.3** and **2.4**, vehicles from the surrounding area will mainly travel via Ping Ha Road and Minor Access Road (Sha Chau Lei Tsuen) and leave the development before scattering into the surrounding area.

Reference Year- Pedestrian flows Condition

Table 6.3 Peak Hour Identified for Pedestrian Flows

Index	Pedestrian Location	Actual Width (m)	Effective Width[1] (m)	Peak Hourly Flow (ped/hr)		Peak Flow Rate (Ped/m/min)		LOS[2]	
				AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
P1	Minor access road	2.00	1.00	64	40	1.07	0.67	A	A

Note: (1) Effective width of footpath = Actual width – 1.0m dead width (0.5m dead width on one side of footpath)
(2) Referring to TPDM Volume 6 Section 10.4.2, the LOS of a footpath is classified into 6 levels (i.e. A to F).

Design Year- Pedestrian Flows Condition

Table 6.4 Peak Hour Identified for Pedestrian Flows

Index	Pedestrian Location	Actual Width (m)	Effective Width[1] (m)	Peak Hourly Flow (ped/hr)		Peak Flow Rate (Ped/m/min)		LOS[2]	
				AM PEAK	PM PEAK	AM PEAK	PM PEAK	AM PEAK	PM PEAK
P1	Minor access road	2.00	1.00	147	115	2.46	1.91	A	A

Note: (1) Effective width of footpath = Actual width – 1.0m dead width (0.5m dead width on one side of footpath)
(2) Referring to TPDM Volume 6 Section 10.4.2, the LOS of a footpath is classified into 6 levels (i.e. A to F).

6.1.5 As shown in **Tables 6.3** and **6.4**, all the assessed footpaths would operate at LOS A or better, which is a satisfactory walking environment, in the Year 2035, for both reference and design scenarios. Thus, no improvement to this pedestrian footpath is deemed necessary.

6.1.6 As explained in **Section 2.2**, as per TPDM guidelines and recommendations from the Transport Department, it is advisable to have a 2m wide footpath in rural areas. Hence, a local setback from the site boundary is proposed for the narrower section of the northern footpath. The footpath will be accessible to the public after the commencement of the application site. The implementation of a local setback is, however, subjected to a detailed design stage.

7. SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The Application Site is a proposed redevelopment of an existing 3-storey care and attention home for the elderly into the new block for the Pok Oi Hospital Yeung Chun Pui Care and Attention Home at 58 Sha Chau Lei Tsuen, Ha Tsuen, Ping Ha Road, Yuen Long at Lot No. 2273 and the Extension thereto in Demarcation District 125, bounded by Sha Chau Lei Road in the east, and a nullah running adjacent to Sha Chau Lei a rezoning site area of about 3,388.7 m^2 and a development site area (for calculation of plot ratio and site coverage) of about 3,090 m^2. The location plan is shown in **Drawing No. 2.1**.

7.1.2 In view of TPDM guidelines and recommendations from the Transport Department, it is advisable to have a 2m wide footpath in rural areas. Hence, a local setback from the site boundary is proposed for the narrower section of the northern footpath as illustrated in **Drawing No. 2.2**.

7.1.3 The Proposed redevelopment includes social welfare facilities, namely an elderly centre, rehabilitation, and childcare services. It is scheduled to be completed by the year 2032 tentatively, according to the approved Hung Shui Kiu and Ha Tsuen Outline Zoning Plan No. S/HSK/2, the existing site is zoned as "Government, Institution or Community" (G/IC).

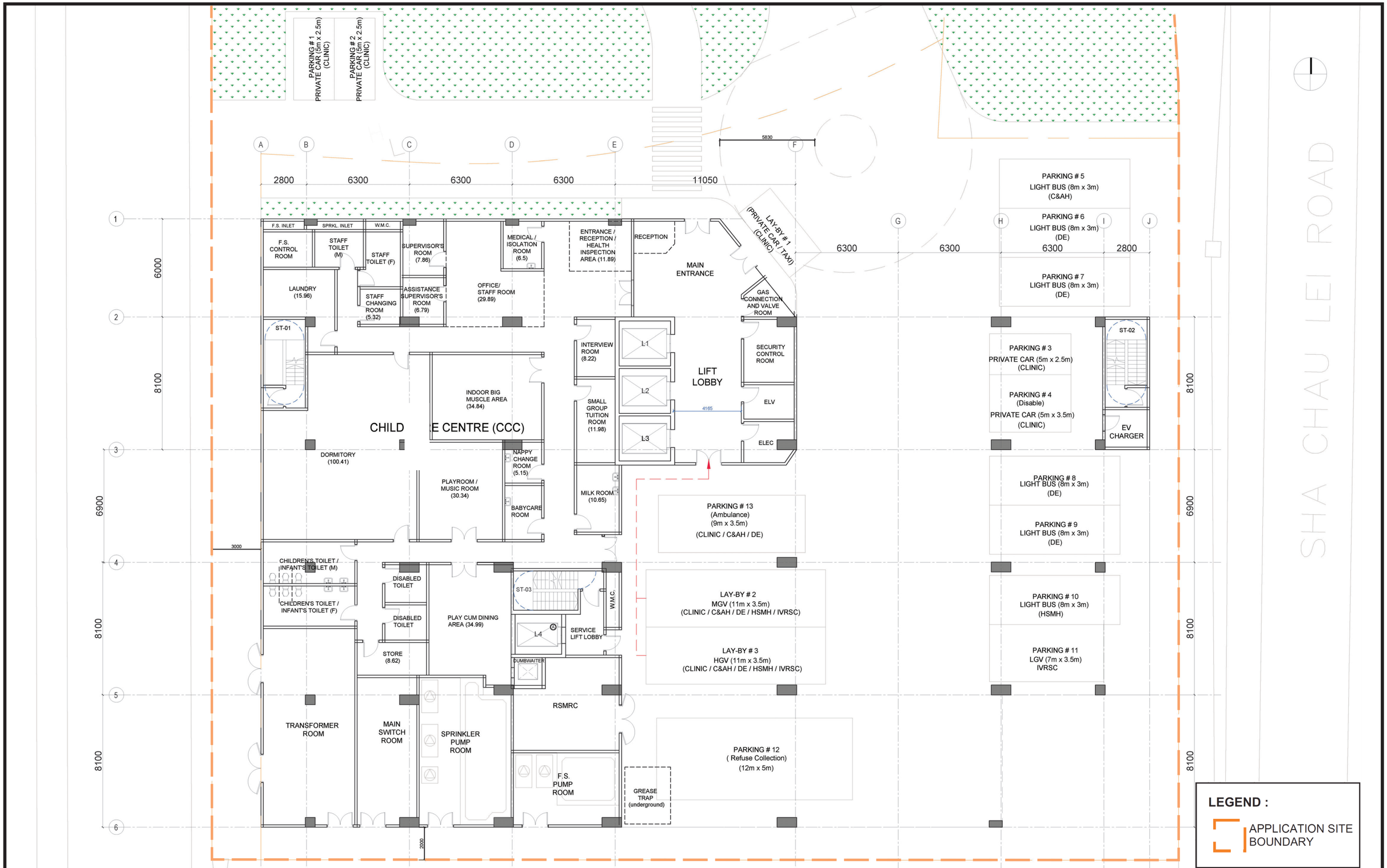
7.1.4 The Application Site is scheduled to be completed by the year 2032 tentatively, and thus year 2035 is adopted as a design year for assessment in this TIA study.

7.1.5 The traffic forecast for the design scenario is formulated by taking into consideration the background traffic growth as derived from TPEDM, the future traffic trips induced by the planned developments in the vicinity, as well as the anticipated traffic generations from the Application Site.

7.1.6 The vehicular access point of the Application Site will be located at an existing Minor Access Road (Sha Chau Lei Tsuen) and then connect to Ping Ha Road. The provision of the internal transport facilities is reviewed and proposed with reference to HKPSG. Since there is no related standard requirement in HKPSG for the Application Site, the provision of a carpark and L/UL facility is based on the daily operational needs.

7.1.7 The operational performance of the identified junctions is assessed based on the derived future traffic flows and the planned future road network in design years 2035. The results of the junction operational assessment indicated that all assessed junctions will be operating within their capacities during the morning and evening peak hour traffic. Therefore, no junction improvement is required.

7.1.8 The operational performance of the identified key footpath is assessed based on the derived future pedestrian flow in the design year. The results of the pedestrian assessment indicated that the identified key footpath will be operating within its capacity during the morning and evening peak hours. Therefore, no pedestrian footpath improvement is required.



Rev.	Description	Checked	Date
-	-	-	-
C	AS PER TD'S COMMENTS	CYH	26SEP24
B	AS PER SWD COMMENTS	CYH	25JUL24
A	AS PER SWD COMMENTS	CYH	18JUN24

Project Title

ARCHITECTURAL AND ASSOCIATED CONSULTANCY SERVICES FOR TECHNICAL FEASIBILITY STUDY FOR PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title

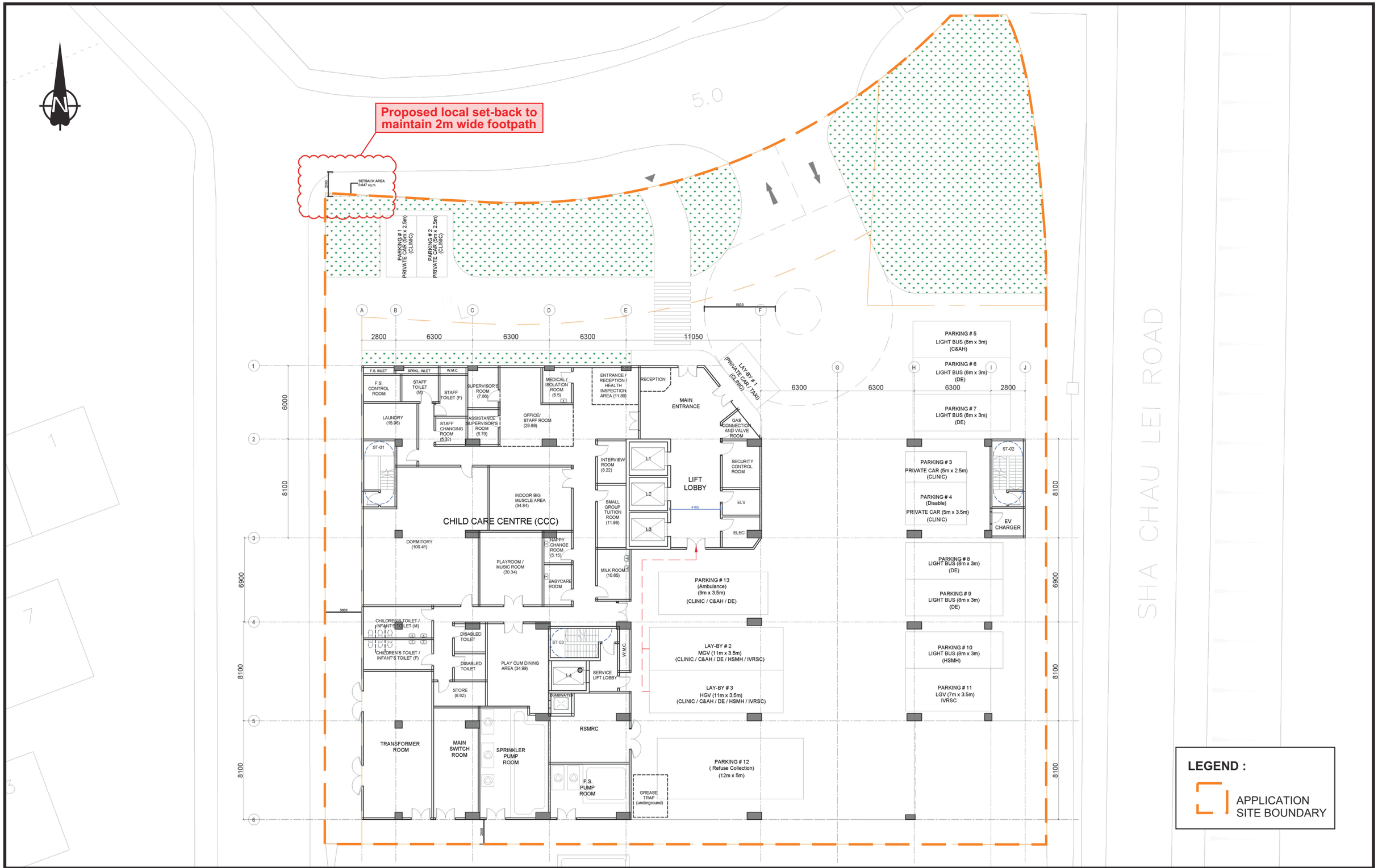
LAYOUT PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
TAT	CYH	NTS	FEB 20 42	2.1	C

SYSTRA MVA

C HK50 749010/TIA/F21-C.CDR/LLH/26SEP24

Original Size : A3



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

Project Title

ARCHITECTURAL AND ASSOCIATED CONSULTANCY SERVICES FOR TECHNICAL FEASIBILITY STUDY FOR PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title

SITE LOCATION PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
TAT	CYH	NTS	SEP 2024	2.2	-

SYSTRA MVA

CHK50749010/TIA/F22.CDR/LLH/25SEP24

Original Size : A3

Appendix A

Junction Calculation Sheets

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J1- Tin Ha Road/Ping Ha Road Design Year: 2023

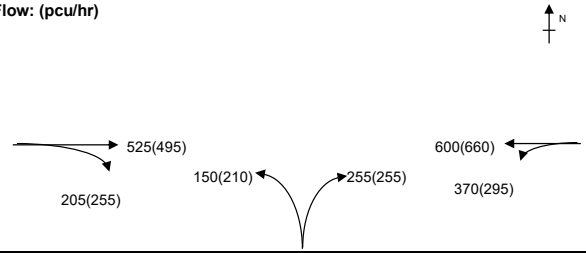
Description: 2023 Existing Flow Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha Road	↰↑	B	2	3.750	20			81%	66%	1875	1895	454	0.242	0.242	450	0.237	0.237
WB	↑	B	2	3.750						2130	2130	516	0.242		505	0.237	
Ping Ha Road	↑	A	1	3.200						1935	1935	357	0.184		368	0.190	0.190
EB	↑↱	A	1	3.200		30		55%	67%	2020	2010	373	0.185	0.185	382	0.190	
Tin Ha Road	↱	C	3	3.100		20				1920	1920	255	0.133	0.133	255	0.133	0.133
	↰	C	3	3.100	20					1790	1790	150	0.084		210	0.117	

Pedestrian Crossing									
	Dp	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Ep	3	MIN GREEN + FLASH =	5	+	11	=	16
	Fp	1,3	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	2	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Ip	1	MIN GREEN + FLASH =	5	+	9	=	14

Notes:

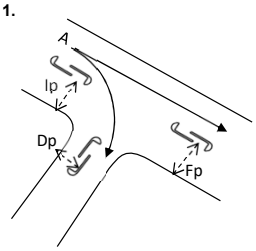
Flow: (pcu/hr)



Group	C,Ip,B	C,A,B	Group	C,Ip,B	C,A,B
y	0.375	0.560	y	0.370	0.560
L (sec)	28	21	L (sec)	28	21
C (sec)	136	136	C (sec)	120	120
y pract.	0.715	0.761	y pract.	0.690	0.743
R.C. (%)	91%	36%	R.C. (%)	86%	32%

Stage / Phase Diagrams

1.



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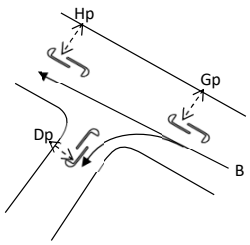
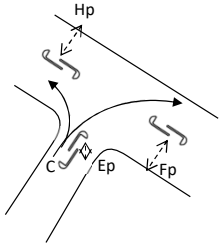


3.



4.

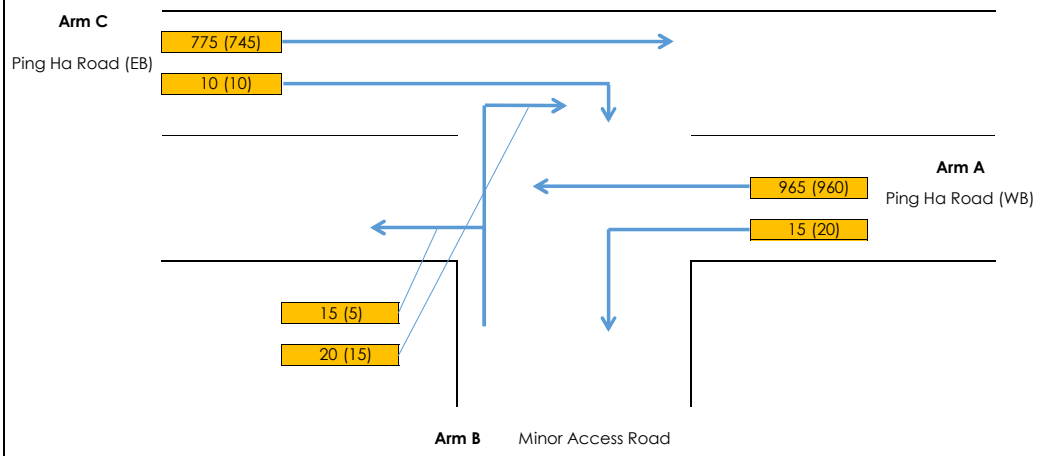
5.

I/G= 7		I/G= 8		I/G= 9		I/G=		I/G=	
I/G= 7		I/G= 8		I/G= 9		I/G=		I/G=	

Date: SEP, 2024 **Junction:** J1 J1- Tin Ha Road/Ping Ha Road

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J2 (Ping Ha Road/ Minor Access Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2023	Existing Flow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Minor Access Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	16.50	Lane widths (m)	w(b-a)	4.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	N		w(c-b)	4.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.895
	Vl(b-a)	40	Parameters	E	0.986
	Vr(b-c)	70		F	0.974
	Vr(c-b)	38		Y	0.431

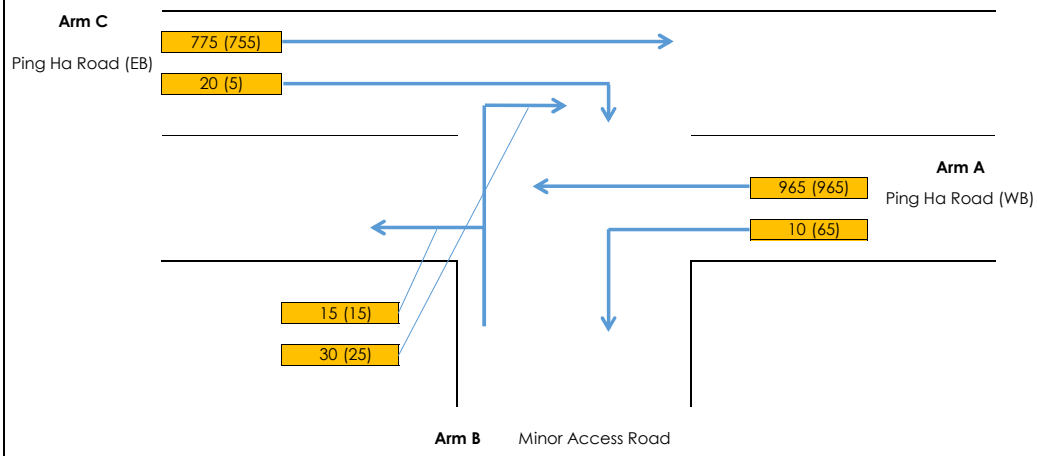
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	775	745
	q(c-b)	10	10
	q(a-b)	15	20
	q(a-c)	965	960
	q(b-a)	20	15
	q(b-c)	15	5
	f	0.43	0.25
CAPACITIES (pcu/hr)	Q(b-ac)	427	396
	Q(c-b)	576	576
RFC's	c-b	0.02	0.02
	b-ac	0.08	0.05
RFC		**0.08**	**0.05**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J3 (Ping Ha Road/ Sah Chau Lei Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2023	Existing Flow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Minor Access Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	16.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.879
	Vl(b-a)	40	Parameters	E	0.968
	Vr(b-c)	70		F	1.037
	Vr(c-b)	100		Y	0.448

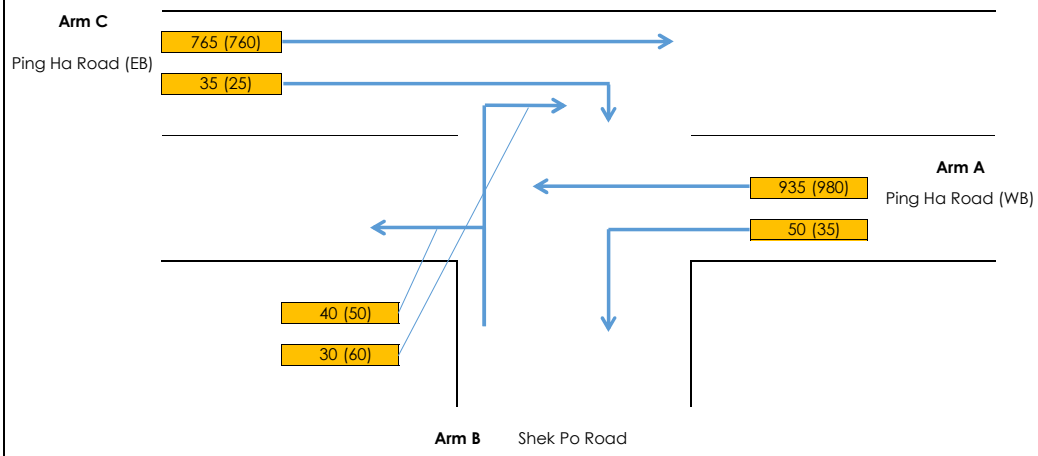
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	775	755
	q(c-b)	20	5
	q(a-b)	10	65
	q(a-c)	965	965
	q(b-a)	30	25
	q(b-c)	15	15
	f	0	0
CAPACITIES (pcu/hr)	Q(b-ac)	391	400
	Q(c-b)	608	599
RFC's	c-b	0.03	0.01
	b-ac	0.12	0.10
RFC		**0.12**	**0.10**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J4 (Ping Ha Road/ Shek Po Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2023	Existing Flow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Shek Po Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	15.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated	D	0.865
	Vl(b-a)	30	Parameters	E	0.947
	Vr(b-c)	46		F	1.037
	Vr(c-b)	100		Y	0.483

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	765	760
	q(c-b)	35	25
	q(a-b)	50	35
	q(a-c)	935	980
	q(b-a)	30	60
	q(b-c)	40	50
	f	1	0
CAPACITIES (pcu/hr)	Q(b-ac)	417	387
	Q(c-b)	593	588
RFC's	c-b	0.06	0.04
	b-ac	0.17	0.28
RFC		**0.17**	**0.28**

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

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road Design Year: 2023

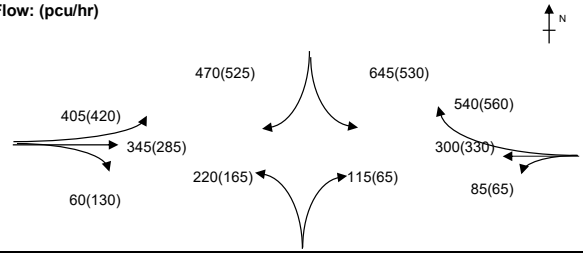
Description: 2023 Existing Flow Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha	↰	B	1	3.500	20					1460	1460	41	0.028		31	0.021	
	↰	B	1	3.500	25					1590	1590	44	0.028		34	0.021	
Road	↑	B	1	3.500						2105	2105	150	0.071		165	0.078	
	↑	1	1	3.500						2105	2105	150	0.071		165	0.078	
WB	↱	A	1,3,4	3.500		15				1915	1915	540	0.282	0.282	560	0.292	0.292
Hung Tin	↰	C	2	3.300	10					1690	1690	220	0.130		165	0.098	
Road	↱	D	3,4	3.500		25				1855	1855	56	0.030		32	0.017	
NB	↱	D	3,4	3.500		20				1960	1960	59	0.030		33	0.017	
Ping Ha	↑	E	2	3.500						1965	1965	167	0.085		138	0.070	
Road	↑↱	E	2	3.500		50		0%	0%	2105	2105	178	0.085		147	0.070	
	↱	E	2	3.500		45				2035	2035	60	0.029		130	0.064	
EB	↰	E	2	3.300	10					1690	1690	405	0.240	0.240	420	0.249	0.249
Tin Ying Road	↰	F	1	3.500	20					1460	1460	309	0.212		254	0.174	
	↰	F	1	3.500	25					1590	1590	336	0.211		276	0.174	
SB	↱	G	4	3.500		15				1915	1915	470	0.245		525	0.274	

Pedestrian Crossing	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	2	MIN GREEN + FLASH =	5	+	8	=	13
	Lp	1,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Mp	1	MIN GREEN + FLASH =	5	+	8	=	13
	Np	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Op	1,3,4	MIN GREEN + FLASH =	5	+	5	=	10

Notes:

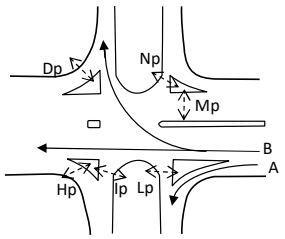
Flow: (pcu/hr)



Group	G,B,C	A,E	Group	G,B,C	A,E
y	0.447	0.522	y	0.450	0.541
L (sec)	13	12	L (sec)	13	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.803	0.810	y pract.	0.803	0.810
R.C. (%)	80%	55%	R.C. (%)	78%	50%

Stage / Phase Diagrams

1.



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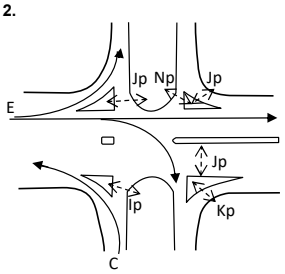

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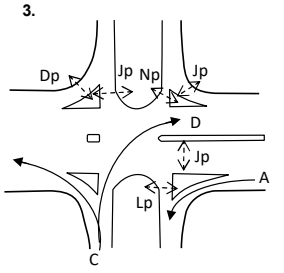

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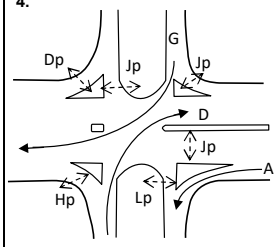


5.

I/G=		I/G= 5		I/G= 9		I/G=		I/G=	
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	

Date: FEB, 2024 **Junction:** J5 J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J1- Tin Ha Road/Ping Ha Road Design Year: 2035

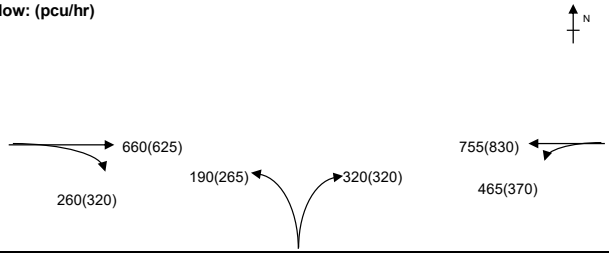
Description: 2035 Reference Flow (Without Future Road Network) Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha Road	↰↑	B	2	3.750	20			81%	65%	1875	1895	571	0.305		565	0.298	
WB	↑	B	2	3.750						2130	2130	649	0.305	0.305	635	0.298	0.298
Ping Ha Road	↑	A	1	3.200						1935	1935	450	0.233	0.233	464	0.240	0.240
EB	↑↱	A	1	3.200		30		55%	67%	2020	2010	470	0.233		481	0.239	
Tin Ha Road	↱	C	3	3.100		20				1920	1920	320	0.167	0.167	320	0.167	0.167
	↰	C	3	3.100	20					1790	1790	190	0.106		265	0.148	

Pedestrian Crossing	Dp	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Ep	3	MIN GREEN + FLASH =	5	+	11	=	16
	Fp	1,3	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	2	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Ip	1	MIN GREEN + FLASH =	5	+	9	=	14

Notes:

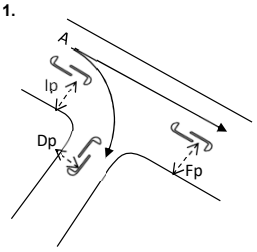
Flow: (pcu/hr)



Group	C,Ip,B	C,A,B	Group	C,Ip,B	C,A,B
y	0.471	0.704	y	0.465	0.705
L (sec)	28	22	L (sec)	28	22
C (sec)	136	136	C (sec)	120	120
y pract.	0.715	0.754	y pract.	0.690	0.735
R.C. (%)	52%	7%	R.C. (%)	48%	4%

Stage / Phase Diagrams

1.



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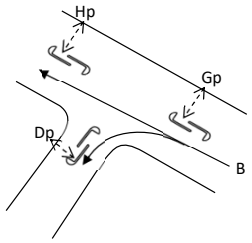

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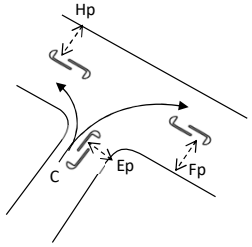


4.

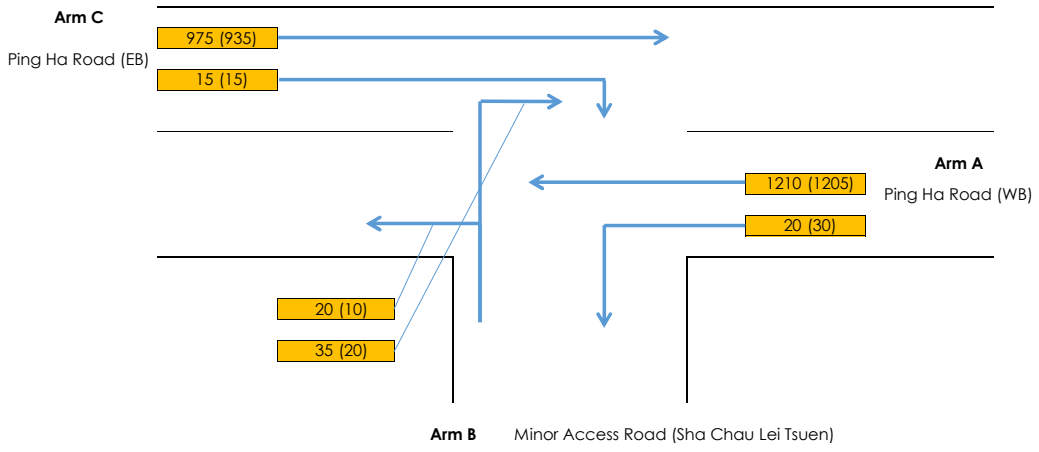
5.

I/G= 7		I/G= 8		I/G= 10		I/G=	I/G=
I/G= 7		I/G= 8		I/G= 10		I/G=	I/G=

Date: SEP, 2024 **Junction:** J1- Tin Ha Road/Ping Ha Road (J1)

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall		
Junction:	J2 (Ping Ha Road/ Minor Access Road)		Designed by: TAT
Scheme:			Checked by: CYH
Design Year:	2035 Reference Flow (Without Future Road Network)	Job No.: CHK50749010	Date: Feb-24
Arm A:	Ping Ha Road (WB)		
Arm B:	Minor Access Road (Sha Chau Lei Tsuen)		
Arm C:	Ping Ha Road (EB)		



GEOMETRY

Major Road Width (m)	W	16.50	Lane widths (m)	w(b-a)	4.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	N		w(c-b)	4.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.895
	Vl(b-a)	40	Parameters	E	0.986
	Vr(b-c)	70		F	1.033
	Vr(c-b)	100		Y	0.431

ANALYSIS

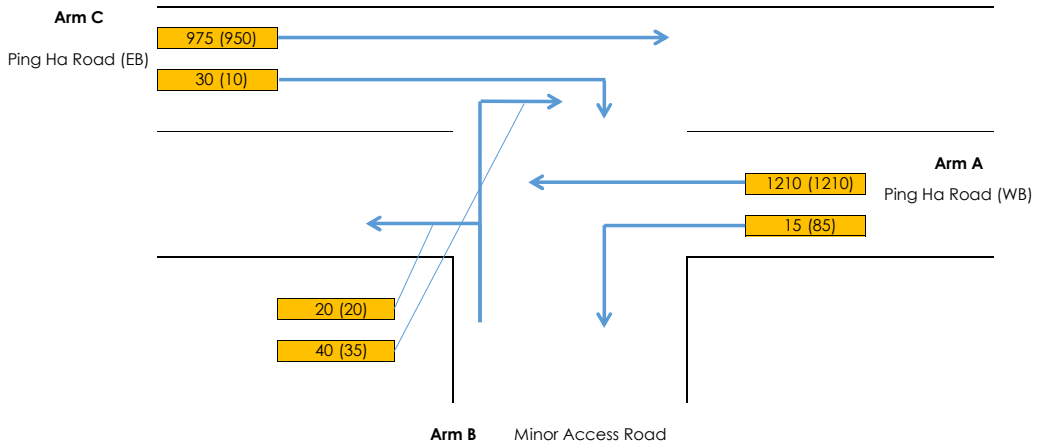
		AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)	975	935
	q(c-b)	15	15
	q(a-b)	20	30
	q(a-c)	1210	1205
	q(b-a)	35	20
	q(b-c)	20	10
	f	0	0
CAPACITIES (pcu/hr)	Q(b-ac)	360	358
	Q(c-b)	570	569
RFC's	c-b	0.03	0.03
	b-ac	0.15	0.08
RFC		**0.15**	**0.08**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J3 (Ping Ha Road/ Sah Chau Lei Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2035 Reference Flow (Without Future Road Network)	Job No.:	CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Minor Access Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	16.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.879
	Vl(b-a)	40	Parameters	E	0.968
	Vr(b-c)	70		F	1.037
	Vr(c-b)	100		Y	0.448

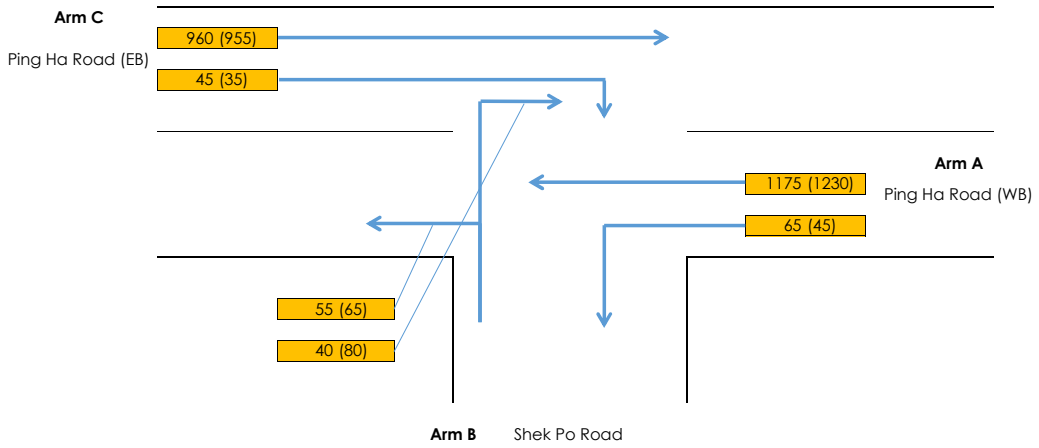
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	975	950
	q(c-b)	30	10
	q(a-b)	15	85
	q(a-c)	1210	1210
	q(b-a)	40	35
	q(b-c)	20	20
	f	0	0
CAPACITIES (pcu/hr)	Q(b-ac)	335	342
	Q(c-b)	566	554
RFC's	c-b	0.05	0.02
	b-ac	0.18	0.16
RFC		**0.18**	**0.16**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall		
Junction:	J4 (Ping Ha Road/ Shek Po Road)		Designed by: TAT
Scheme:			Checked by: CYH
Design Year:	2035 Reference Flow (Without Future Road Network)	Job No.: CHK50749010	Date: Feb-24
Arm A:	Ping Ha Road (WB)		
Arm B:	Shek Po Road		
Arm C:	Ping Ha Road (EB)		



GEOMETRY

Major Road Width (m)	W	15.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated	D	0.865
	Vl(b-a)	30	Parameters	E	0.947
	Vr(b-c)	46		F	1.037
	Vr(c-b)	100		Y	0.483

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	960	955
	q(c-b)	45	35
	q(a-b)	65	45
	q(a-c)	1175	1230
	q(b-a)	40	80
	q(b-c)	55	65
	f	1	0
CAPACITIES (pcu/hr)	Q(b-ac)	360	325
	Q(c-b)	547	541
RFC's	c-b	0.08	0.06
	b-ac	0.26	0.45
RFC		**0.26**	**0.45**

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

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road Design Year: 2035

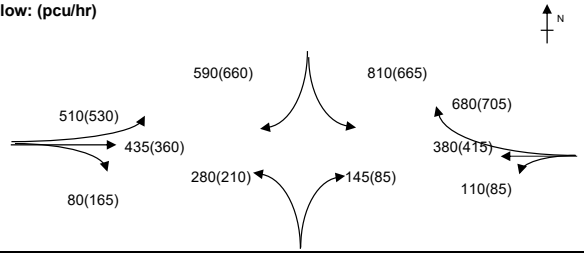
Description: 2035 Reference Flow (Without Future Road Network) Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha	↰	B	1	3.500	20					1460	1460	53	0.036		41	0.028	
	↰	B	1	3.500	25					1590	1590	57	0.036		44	0.028	
Road	↑	B	1	3.500						2105	2105	190	0.090		208	0.099	
	↑	1	1	3.500						2105	2105	190	0.090		207	0.098	
WB	↱	A	1,3,4	3.500		15				1915	1915	680	0.355	0.355	705	0.368	0.368
Hung Tin	↰	C	2	3.300	10					1690	1690	280	0.166		210	0.124	
Road	↱	D	3,4	3.500		25				1855	1855	71	0.038		41	0.022	
NB	↱	D	3,4	3.500		20				1960	1960	74	0.038		44	0.022	
Ping Ha	↑	E	2	3.500						1965	1965	210	0.107		174	0.089	
Road	↑↱	E	2	3.500		50		0%	0%	2105	2105	225	0.107		186	0.088	
	↱	E	2	3.500		45				2035	2035	80	0.039		165	0.081	
EB	↰	E	2	3.300	10					1690	1690	510	0.302	0.302	530	0.314	0.314
Tin Ying Road	↰	F	1	3.500	20					1460	1460	388	0.266		318	0.218	
	↰	F	1	3.500	25					1590	1590	422	0.265		347	0.218	
SB	↱	G	4	3.500		15				1915	1915	590	0.308		660	0.345	

Pedestrian Crossing									
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	2	MIN GREEN + FLASH =	5	+	8	=	13
	Lp	1,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Mp	1	MIN GREEN + FLASH =	5	+	8	=	13
	Np	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Op	1,3,4	MIN GREEN + FLASH =	5	+	5	=	10

Notes:

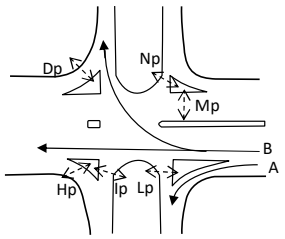
Flow: (pcu/hr)



Group	G,B,C	A,E	Group	G,B,C	A,E
y	0.564	0.657	y	0.568	0.682
L (sec)	13	12	L (sec)	13	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.803	0.810	y pract.	0.803	0.810
R.C. (%)	42%	23%	R.C. (%)	41%	19%

Stage / Phase Diagrams

1.



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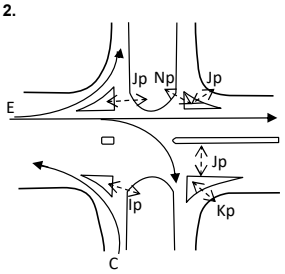

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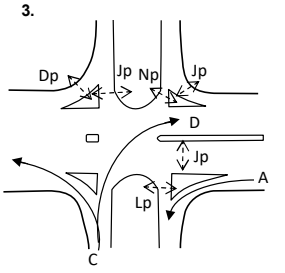

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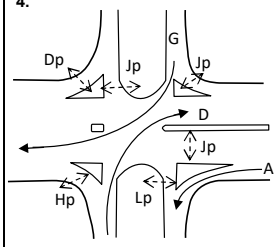


5.

I/G=		I/G= 5		I/G= 9		I/G=		I/G=	
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	

Date: FEB, 2024

Junction: (J5) J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J1- Tin Ha Road/Ping Ha Road Design Year: 2035

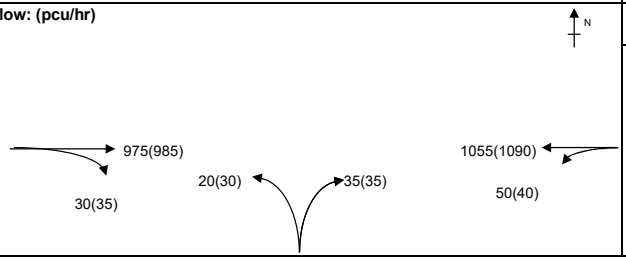
Description: 2035 Reference Flow (With Future Road Network) Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha Road	↑	B	2	3.750	20			9%	7%	1975	1980	532	0.269	0.269	544	0.275	
WB	↰↑	B	2	3.750						2130	2130	573	0.269		586	0.275	0.275
Ping Ha Road	↑	A	1	3.200						1935	1935	486	0.251	0.251	493	0.255	0.255
EB	↑↱	A	1	3.200		30		6%	7%	2070	2070	519	0.251		527	0.255	
Tin Ha Road	↱	C	3	3.100		20				1920	1920	35	0.018		35	0.018	
	↰	C	3	3.100	20					1790	1790	20	0.011		30	0.017	

Pedestrian Crossing	Dp	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Ep	3	MIN GREEN + FLASH =	5	+	11	=	16
	Fp	1,3	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	2	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Ip	1	MIN GREEN + FLASH =	5	+	9	=	14

Notes:

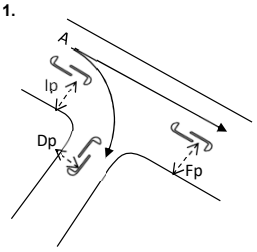
Flow: (pcu/hr)



Group	C,Ip,B	C,A,B	Group	C,Ip,B	C,A,B
y	0.288	0.521	y	0.275	0.530
L (sec)	28	28	L (sec)	34	28
C (sec)	136	136	C (sec)	120	120
y pract.	0.715	0.715	y pract.	0.645	0.690
R.C. (%)	149%	37%	R.C. (%)	134%	30%

Stage / Phase Diagrams

1.



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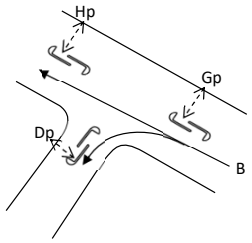

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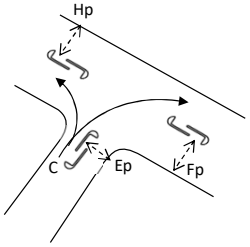


5.

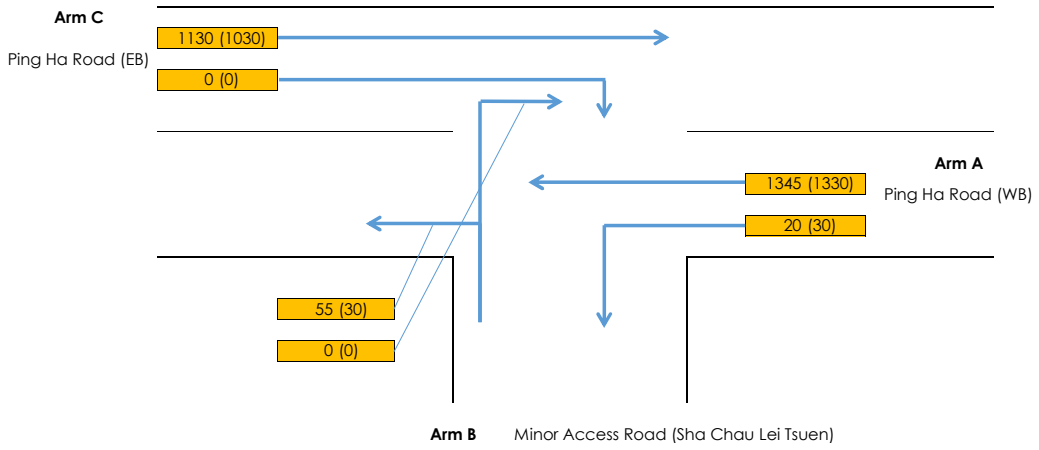
I/G= 7		I/G= 8		I/G= 10	5	I/G=		I/G=	
I/G= 7		I/G= 8		I/G= 10	5	I/G=		I/G=	

Date: SEP, 2024

Junction: J1- Tin Ha Road/Ping Ha Road (J1)

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall		
Junction:	J2 (Ping Ha Road/ Minor Access Road)		Designed by: TAT
Scheme:			Checked by: CYH
Design Year:	2035 Reference Flow (With Future Road Network)	Job No.: CHK50749010	Date: Feb-24
Arm A:	Ping Ha Road (WB)		
Arm B:	Minor Access Road (Sha Chau Lei Tsuen)		
Arm C:	Ping Ha Road (EB)		



GEOMETRY

Major Road Width (m)	W	16.50	Lane widths (m)	w(b-a)	4.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	N		w(c-b)	4.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.895
	Vl(b-a)	40	Parameters	E	0.986
	Vr(b-c)	70		F	1.033
	Vr(c-b)	100		Y	0.431

ANALYSIS

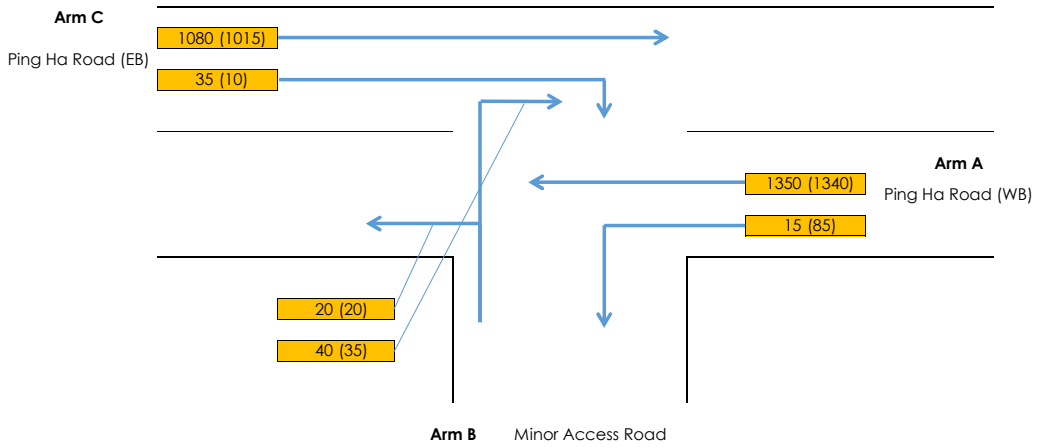
		AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1130	1030
	q(c-b)	0	0
	q(a-b)	20	30
	q(a-c)	1345	1330
	q(b-a)	0	0
	q(b-c)	55	30
	f	1	1
CAPACITIES (pcu/hr)	Q(b-ac)	526	527
	Q(c-b)	548	549
RFC's	c-b	0.00	0.00
	b-ac	0.10	0.06
RFC		**0.10**	**0.06**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall		
Junction:	J3 (Ping Ha Road/ Sah Chau Lei Road)		Designed by: TAT
Scheme:			Checked by: CYH
Design Year:	2035 Reference Flow (With Future Road Network)	Job No.: CHK50749010	Date: Feb-24
Arm A:	Ping Ha Road (WB)		
Arm B:	Minor Access Road		
Arm C:	Ping Ha Road (EB)		



GEOMETRY

Major Road Width (m)	W	16.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.879
	Vl(b-a)	40	Parameters	E	0.968
	Vr(b-c)	70		F	1.037
	Vr(c-b)	100		Y	0.448

ANALYSIS

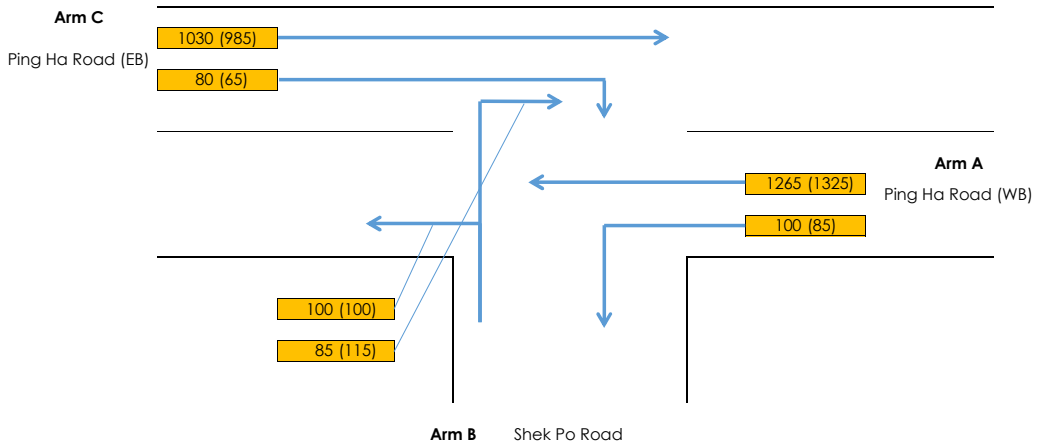
		AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1080	1015
	q(c-b)	35	10
	q(a-b)	15	85
	q(a-c)	1350	1340
	q(b-a)	40	35
	q(b-c)	20	20
	f	0	0
CAPACITIES (pcu/hr)	Q(b-ac)	303	316
	Q(c-b)	542	532
RFC's	c-b	0.06	0.02
	b-ac	0.20	0.17
RFC		**0.20**	**0.17**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall		
Junction:	J4 (Ping Ha Road/ Shek Po Road)		Designed by: TAT
Scheme:			Checked by: CYH
Design Year:	2035 Reference Flow (With Future Road Network)	Job No.: CHK50749010	Date: Feb-24
Arm A:	Ping Ha Road (WB)		
Arm B:	Shek Po Road		
Arm C:	Ping Ha Road (EB)		



GEOMETRY

Major Road Width (m)	W	15.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.865
	Vl(b-a)	30		E	0.947
	Vr(b-c)	46		F	1.037
	Vr(c-b)	100		Y	0.483

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1030	985
	q(c-b)	80	65
	q(a-b)	100	85
	q(a-c)	1265	1325
	q(b-a)	85	115
	q(b-c)	100	100
	f	1	0
CAPACITIES (pcu/hr)	Q(b-ac)	321	301
	Q(c-b)	524	516
RFC's	c-b	0.15	0.13
	b-ac	0.58	0.71
RFC		**0.58**	**0.71**

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

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road Design Year: 2035

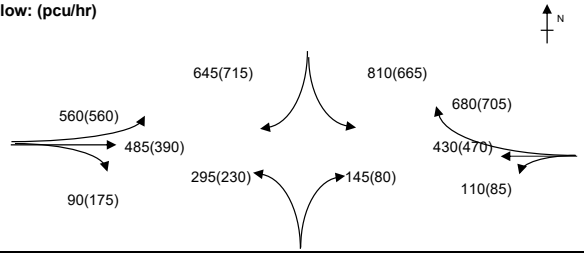
Description: 2035 Reference Flow (With Future Road Network) Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha	↰	B	1	3.500	20					1460	1460	53	0.036		41	0.028	
	↰	B	1	3.500	25					1590	1590	57	0.036		44	0.028	
Road	↑	B	1	3.500						2105	2105	215	0.102		235	0.112	
	↑	1	1	3.500						2105	2105	215	0.102		235	0.112	
WB	↱	A	1,3,4	3.500		15				1915	1915	680	0.355	0.355	705	0.368	0.368
Hung Tin	↰	C	2	3.300	10					1690	1690	295	0.175		230	0.136	
Road	↱	D	3,4	3.500		25				1855	1855	71	0.038		39	0.021	
NB	↱	D	3,4	3.500		20				1960	1960	74	0.038		41	0.021	
Ping Ha	↑	E	2	3.500						1965	1965	234	0.119		188	0.096	
Road	↑	E	2	3.500		50		0%	0%	2105	2105	251	0.119		202	0.096	
	↱	E	2	3.500		45				2035	2035	90	0.044		175	0.086	
EB	↰	E	2	3.300	10					1690	1690	560	0.331	0.331	560	0.331	0.331
Tin Ying Road	↰	F	1	3.500	20					1460	1460	388	0.266		318	0.218	
	↰	F	1	3.500	25					1590	1590	422	0.265		347	0.218	
SB	↱	G	4	3.500		15				1915	1915	645	0.337		715	0.373	

Pedestrian Crossing									
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	2	MIN GREEN + FLASH =	5	+	8	=	13
	Lp	1,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Mp	1	MIN GREEN + FLASH =	5	+	8	=	13
	Np	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Op	1,3,4	MIN GREEN + FLASH =	5	+	5	=	10

Notes:

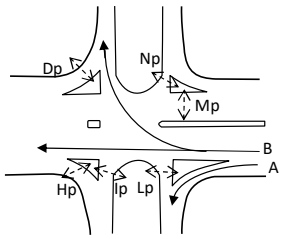
Flow: (pcu/hr)



Group	G,B,C	A,E	Group	G,B,C	A,E
y	0.614	0.686	y	0.621	0.700
L (sec)	13	12	L (sec)	13	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.803	0.810	y pract.	0.803	0.810
R.C. (%)	31%	18%	R.C. (%)	29%	16%

Stage / Phase Diagrams

1.



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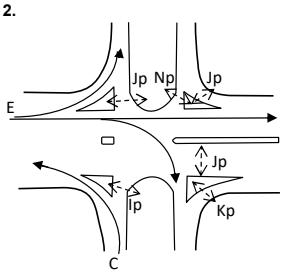

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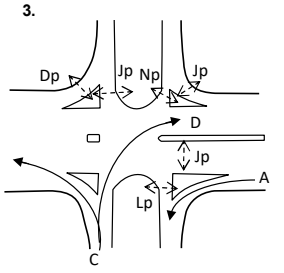

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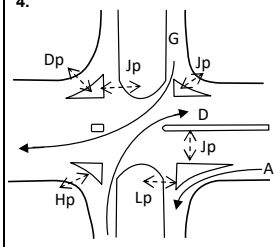


5.

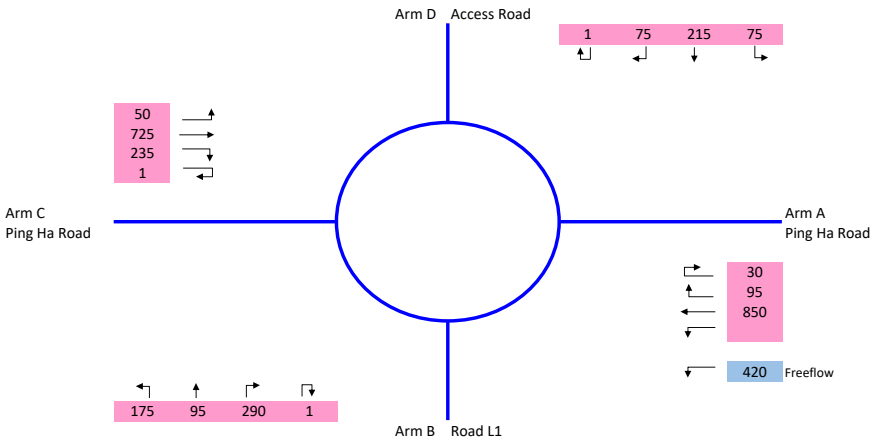
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	

Date: FEB, 2024

Junction: J5 — J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road

Roundabout Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospital			
Junction:	J6- Ping Ha Road New Planned Roundabout		Designed by:	TAT
Scheme:			Checked by:	CYH
Design Year:	2035 Reference Flow-With Future Road Network (AM Peak)	Job No.: CHK50749010	Date:	16 Feb 2024
Arm A	Ping Ha Road			
Arm B	Road L1			
Arm C	Ping Ha Road			
Arm D	Access Road			
Arm E				

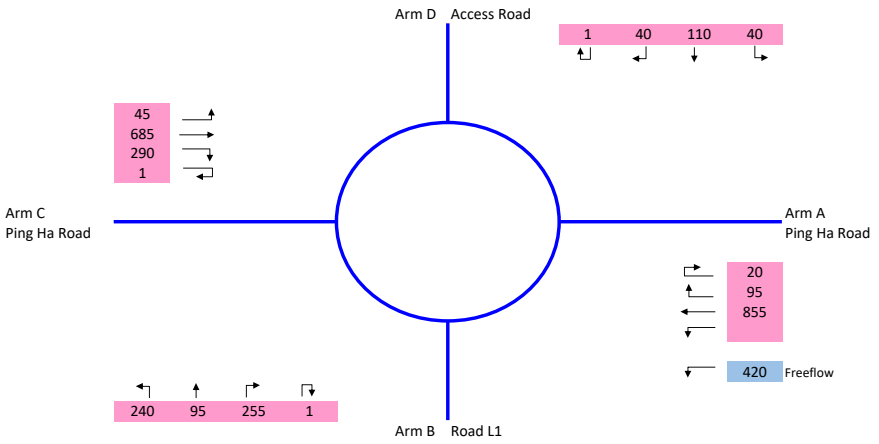


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		7.00	4.00	7.00	5.00
E	Entry Width (m)		12.00	6.00	7.00	5.00
L	Effective Length of Flare (m)		10.00	10.00	0.00	0.00
R	Entry Radius (m)		20.00	20.00	20.00	20.00
D	Inscribed Circle Diameter (m)		50.00	50.00	50.00	50.00
A	Entry Angle (degree)		30.00	30.00	35.00	25.00
Q	Entry Flow (pcu/hour)		975	561	1,011	366
Qc	Circulating Flow Across Entry (pcu/hour)		528	1,052	512	1,282
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.80	0.32	0.00	0.00
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	1.00	0.98	1.02
X2	= V + ((E-V) / (1+2S))		8.92	5.22	7.00	5.00
M	= EXP ((D-60) /10)		0.37	0.37	0.37	0.37
F	= 303 * X2		2704	1582	2121	1515
Td	= 1 + (0.5 / (1+M))		1.37	1.37	1.37	1.37
Fc	= 0.21*Td (1 + 0.2*X2)		0.80	0.59	0.69	0.57
Qe	= K (F - Fc*Qc)		2282	965	1738	793
DFC	= Q / Qe	Design Flow / Capacity 0.58	0.43	0.58	**0.58**	0.46
		Total Entry Flows 2,913				

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

Roundabout Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospital				
Junction:	J6- Ping Ha Road New Planned Roundabout			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2035 Reference Flow-With Future Road Network (PM Peak)	Job No.:	CHK50749010	Date:	16 Feb 2024
Arm A	Ping Ha Road				
Arm B	Road L1				
Arm C	Ping Ha Road				
Arm D	Access Road				
Arm E					



		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		7.00	4.00	7.00	5.00
E	Entry Width (m)		12.00	6.00	7.00	5.00
L	Effective Length of Flare (m)		10.00	10.00	0.00	0.00
R	Entry Radius (m)		20.00	20.00	20.00	20.00
D	Inscribed Circle Diameter (m)		50.00	50.00	50.00	50.00
A	Entry Angle (degree)		30.00	30.00	35.00	25.00
Q	Entry Flow (pcu/hour)		970	591	1,021	191
Qc	Circulating Flow Across Entry (pcu/hour)		443	1,012	467	1,252
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.80	0.32	0.00	0.00
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	1.00	0.98	1.02
X2	= V + ((E-V) / (1+2S))		8.92	5.22	7.00	5.00
M	= EXP ((D-60) /10)		0.37	0.37	0.37	0.37
F	= 303 * X2		2704	1582	2121	1515
Td	= 1 + (0.5 / (1+M))		1.37	1.37	1.37	1.37
Fc	= 0.21*Td (1 + 0.2*X2)		0.80	0.59	0.69	0.57
Qe	= K (F - Fc*Qc)		2350	988	1768	811
DFC	= Q / Qe	Design Flow / Capacity	0.41	**0.60**	0.58	0.24
		Total Entry Flows	2,773			

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J1- Tin Ha Road/Ping Ha Road Design Year: 2035

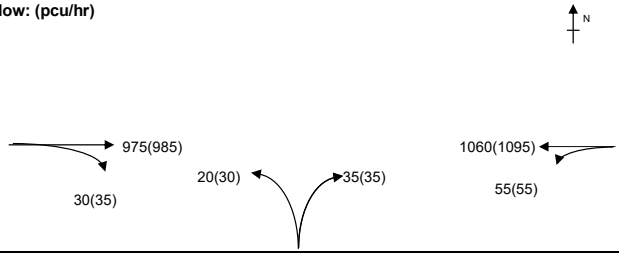
Description: 2035 Design Flow Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha Road	↑	B	2	3.750	20			10%	10%	1975	1975	536	0.271		553	0.280	
WB	↰↑	B	2	3.750						2130	2130	579	0.272	0.272	597	0.280	0.280
Ping Ha Road	↑	A	1	3.200						1935	1935	486	0.251	0.251	493	0.255	0.255
EB	↑↱	A	1	3.200		30		6%	7%	2070	2070	519	0.251		527	0.255	
Tin Ha Road	↱	C	3	3.100		20				1920	1920	35	0.018		35	0.018	
	↰	C	3	3.100	20					1790	1790	20	0.011		30	0.017	

Pedestrian Crossing	Dp	1,2	MIN GREEN + FLASH =	5	+	8	=	13
	Ep	3	MIN GREEN + FLASH =	5	+	11	=	16
	Fp	1,3	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	2	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Ip	1	MIN GREEN + FLASH =	5	+	9	=	14

Notes:

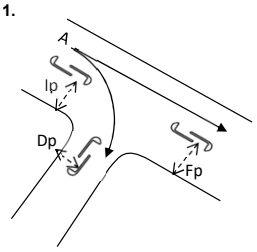
Flow: (pcu/hr)



Group	C,Ip,B	C,A,B	Group	C,Ip,B	C,A,B
y	0.290	0.523	y	0.280	0.535
L (sec)	28	28	L (sec)	34	28
C (sec)	136	136	C (sec)	120	120
y pract.	0.715	0.715	y pract.	0.645	0.690
R.C. (%)	146%	37%	R.C. (%)	130%	29%

Stage / Phase Diagrams

1.



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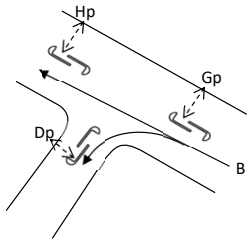
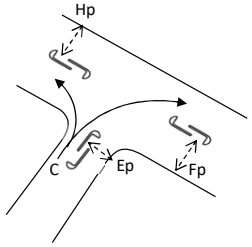


3.



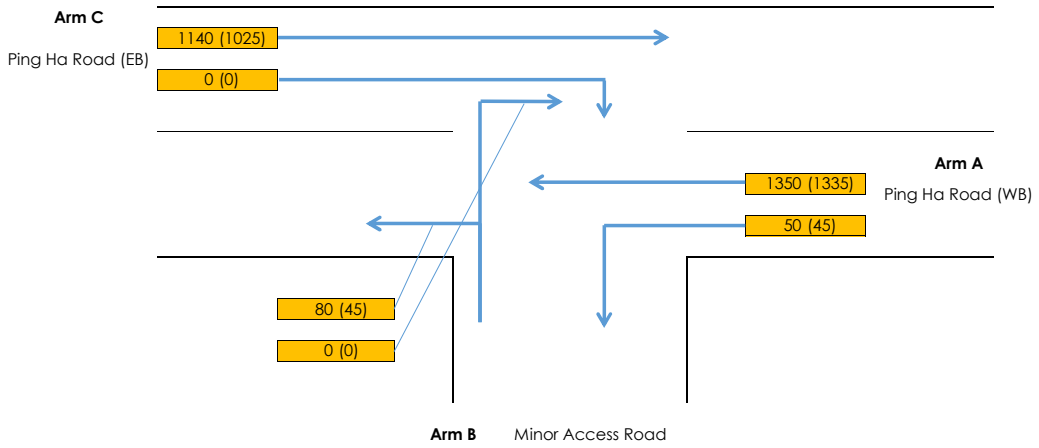
5.

I/G= 7		I/G= 8		I/G= 10	5	I/G=		I/G=	
I/G= 7		I/G= 8		I/G= 10	5	I/G=		I/G=	

Date: SEP, 2024 **Junction:** J1- Tin Ha Road/Ping Ha Road (J1)

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J2 (Ping Ha Road/ Minor Access Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2035	DesignFlow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Minor Access Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	16.50	Lane widths (m)	w(b-a)	4.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	N		w(c-b)	4.20
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.895
	Vl(b-a)	40	Parameters	E	0.986
	Vr(b-c)	70		F	1.033
	Vr(c-b)	100		Y	0.431

ANALYSIS

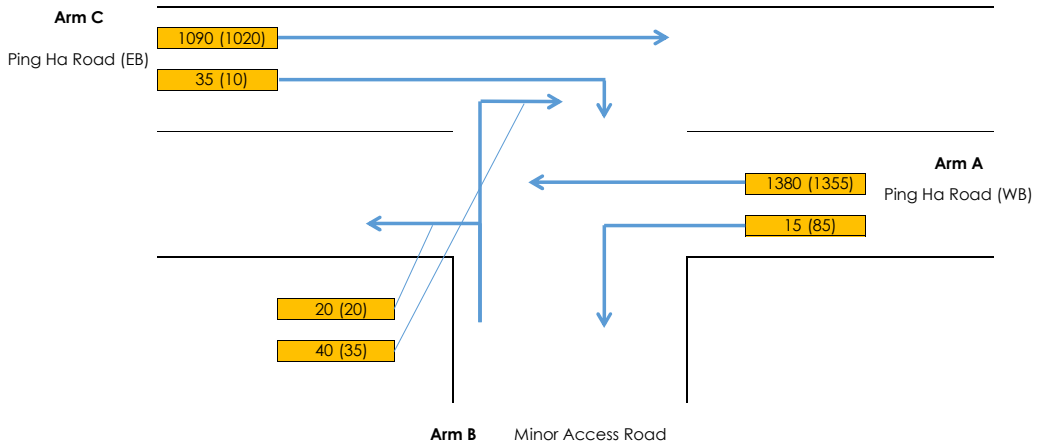
		AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1140	1025
	q(c-b)	0	0
	q(a-b)	50	45
	q(a-c)	1350	1335
	q(b-a)	0	0
	q(b-c)	80	45
	f	1	1
CAPACITIES (pcu/hr)	Q(b-ac)	523	526
	Q(c-b)	543	546
RFC's	c-b	0.00	0.00
	b-ac	0.15	0.09
RFC		**0.15**	**0.09**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J3 (Ping Ha Road/ Sah Chau Lei Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2035	DesignFlow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Minor Access Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	16.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	40	Calculated	D	0.879
	Vl(b-a)	40	Parameters	E	0.968
	Vr(b-c)	70		F	1.037
	Vr(c-b)	100		Y	0.448

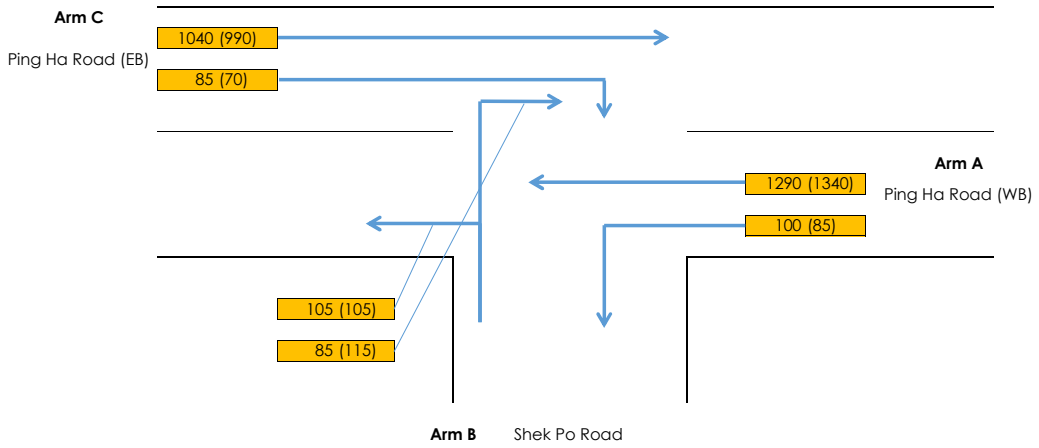
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1090	1020
	q(c-b)	35	10
	q(a-b)	15	85
	q(a-c)	1380	1355
	q(b-a)	40	35
	q(b-c)	20	20
	f	0	0
CAPACITIES (pcu/hr)	Q(b-ac)	297	313
	Q(c-b)	537	529
RFC's	c-b	0.07	0.02
	b-ac	0.20	0.18
RFC		**0.20**	**0.18**

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

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

Simplified Priority Junction Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospitall				
Junction:	J4 (Ping Ha Road/ Shek Po Road)			Designed by:	TAT
Scheme:				Checked by:	CYH
Design Year:	2035	DesignFlow	Job No.: CHK50749010	Date:	Feb-24
Arm A:	Ping Ha Road (WB)				
Arm B:	Shek Po Road				
Arm C:	Ping Ha Road (EB)				



GEOMETRY

Major Road Width (m)	W	15.00	Lane widths (m)	w(b-a)	3.80
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn	Y/N?	N		w(c-b)	4.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	30	Calculated	D	0.865
	Vl(b-a)	30	Parameters	E	0.947
	Vr(b-c)	46		F	1.037
	Vr(c-b)	100		Y	0.483

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	1040	990
	q(c-b)	85	70
	q(a-b)	100	85
	q(a-c)	1290	1340
	q(b-a)	85	115
	q(b-c)	105	105
	f	1	0
CAPACITIES (pcu/hr)	Q(b-ac)	317	300
	Q(c-b)	520	513
RFC's	c-b	0.16	0.14
	b-ac	0.60	0.73
RFC		**0.60**	**0.73**

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

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

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50749010 **MVA HONG KONG LIMITED**

Junction: J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road Design Year: 2035

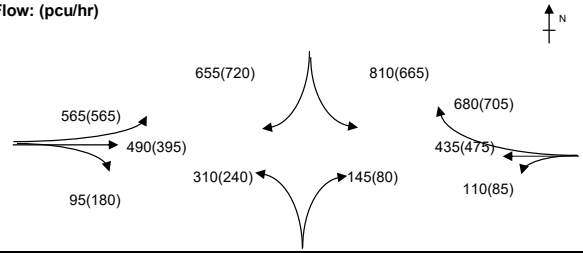
Description: 2035 Design Flow Designed By: TAT Checked By: CYH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Ping Ha	↰	B	1	3.500	20					1460	1460	53	0.036		41	0.028	
	↰	B	1	3.500	25					1590	1590	57	0.036		44	0.028	
Road	↑	B	1	3.500						2105	2105	218	0.104		238	0.113	
	↑	1	1	3.500						2105	2105	217	0.103		237	0.113	
WB	↱	A	1,3,4	3.500		15				1915	1915	680	0.355	0.355	705	0.368	0.368
Hung Tin	↰	C	2	3.300	10					1690	1690	310	0.183		240	0.142	
Road	↱	D	3,4	3.500		25				1855	1855	71	0.038		39	0.021	
NB	↱	D	3,4	3.500		20				1960	1960	74	0.038		41	0.021	
Ping Ha	↑	E	2	3.500						1965	1965	237	0.121		191	0.097	
Road	↑↱	E	2	3.500		50		0%	0%	2105	2105	253	0.120		204	0.097	
	↱	E	2	3.500		45				2035	2035	95	0.047		180	0.088	
EB	↰	E	2	3.300	10					1690	1690	565	0.334	0.334	565	0.334	0.334
Tin Ying Road	↰	F	1	3.500	20					1460	1460	388	0.266		318	0.218	
	↰	F	1	3.500	25					1590	1590	422	0.265		347	0.218	
SB	↱	G	4	3.500		15				1915	1915	655	0.342		720	0.376	

Pedestrian Crossing	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13		
	Ip	1,2	MIN GREEN + FLASH =	5	+	8	=	13		
	Jp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Kp	2	MIN GREEN + FLASH =	5	+	8	=	13		
	Lp	1,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Mp	1	MIN GREEN + FLASH =	5	+	8	=	13		
	Np	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10		
	Op	1,3,4	MIN GREEN + FLASH =	5	+	5	=	10		

Notes:

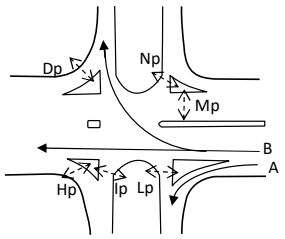
Flow: (pcu/hr)



Group	G,B,C	A,E	Group	G,B,C	A,E
y	0.629	0.689	y	0.631	0.702
L (sec)	13	12	L (sec)	13	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.803	0.810	y pract.	0.803	0.810
R.C. (%)	28%	17%	R.C. (%)	27%	15%

Stage / Phase Diagrams

1.



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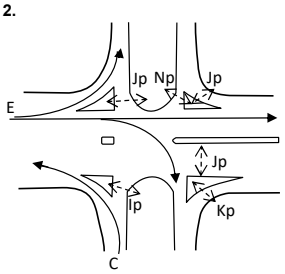
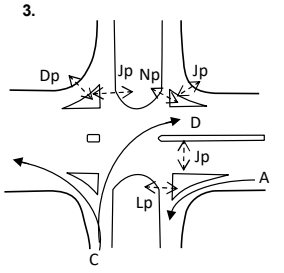


3.



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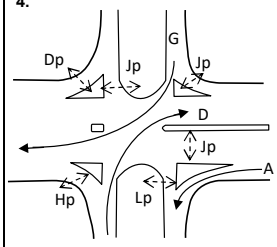


5.

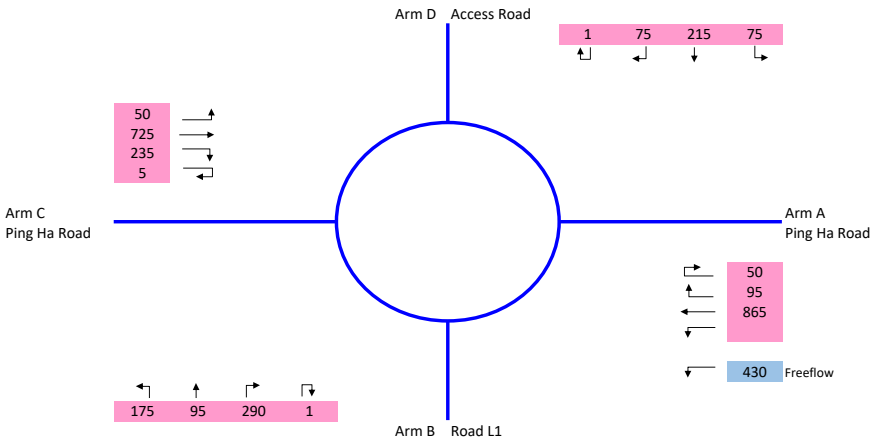
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	
I/G=		I/G= 5		I/G= 9		I/G=		I/G=	

Date: FEB, 2024

Junction: (J5) J5-Ping Ha Road/ Tin Ying Road/Hung Tin Road

Roundabout Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospital			
Junction:	J6- Ping Ha Road New Planned Roundabout		Designed by:	TAT
Scheme:			Checked by:	CYH
Design Year:	2035 Design Flow (AM Peak)	Job No.: CHK50749010	Date:	16 Feb 2024
Arm A	Ping Ha Road			
Arm B	Road L1			
Arm C	Ping Ha Road			
Arm D	Access Road			
Arm E				

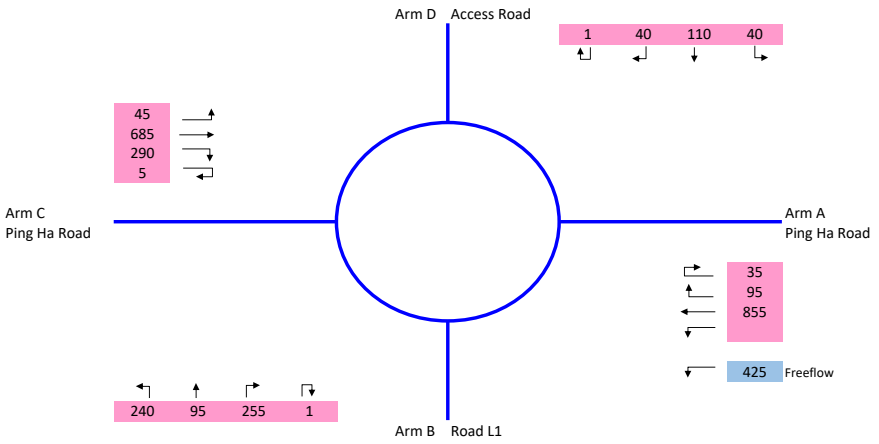


		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		7.00	4.00	7.00	5.00
E	Entry Width (m)		12.00	6.00	7.00	5.00
L	Effective Length of Flare (m)		10.00	10.00	0.00	0.00
R	Entry Radius (m)		20.00	20.00	20.00	20.00
D	Inscribed Circle Diameter (m)		50.00	50.00	50.00	50.00
A	Entry Angle (degree)		30.00	30.00	35.00	25.00
Q	Entry Flow (pcu/hour)		1,010	561	1,015	366
Qc	Circulating Flow Across Entry (pcu/hour)		532	1,091	532	1,306
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.80	0.32	0.00	0.00
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	1.00	0.98	1.02
X2	= V + ((E-V) / (1+2S))		8.92	5.22	7.00	5.00
M	= EXP ((D-60) /10)		0.37	0.37	0.37	0.37
F	= 303 * X2		2704	1582	2121	1515
Td	= 1 + (0.5 / (1+M))		1.37	1.37	1.37	1.37
Fc	= 0.21*Td (1 + 0.2*X2)		0.80	0.59	0.69	0.57
Qe	= K (F - Fc*Qc)		2279	942	1724	779
DFC	= Q / Qe	Design Flow / Capacity	0.44	**0.60**	0.59	0.47
		Total Entry Flows 2,952				

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

Roundabout Capacity Calculation

Job Title:	TFS for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home In Yuen Long by Pok Oi Hospital			
Junction:	J6- Ping Ha Road New Planned Roundabout		Designed by:	TAT
Scheme:			Checked by:	CYH
Design Year:	2035 Design Flow (PM Peak)	Job No.: CHK50749010	Date:	16 Feb 2024
Arm A	Ping Ha Road			
Arm B	Road L1			
Arm C	Ping Ha Road			
Arm D	Access Road			
Arm E				



		ENTRY ARM	A	B	C	D
INPUT PARAMETERS						
V	Approach Half Width (m)		7.00	4.00	7.00	5.00
E	Entry Width (m)		12.00	6.00	7.00	5.00
L	Effective Length of Flare (m)		10.00	10.00	0.00	0.00
R	Entry Radius (m)		20.00	20.00	20.00	20.00
D	Inscribed Circle Diameter (m)		50.00	50.00	50.00	50.00
A	Entry Angle (degree)		30.00	30.00	35.00	25.00
Q	Entry Flow (pcu/hour)		985	591	1,025	191
Qc	Circulating Flow Across Entry (pcu/hour)		447	1,031	482	1,271
OUTPUT PARAMETERS						
S	= 1.6 (E - V) / L	Sharpness of flare	0.80	0.32	0.00	0.00
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)		1.00	1.00	0.98	1.02
X2	= V + ((E-V) / (1+2S))		8.92	5.22	7.00	5.00
M	= EXP ((D-60) /10)		0.37	0.37	0.37	0.37
F	= 303 * X2		2704	1582	2121	1515
Td	= 1 + (0.5 / (1+M))		1.37	1.37	1.37	1.37
Fc	= 0.21*Td (1 + 0.2*X2)		0.80	0.59	0.69	0.57
Qe	= K (F - Fc*Qc)		2347	977	1758	800
DFC	= Q / Qe	Design Flow / Capacity	0.42	**0.60**	0.58	0.24
		Total Entry Flows 2,792				

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