Appendix II

Traffic Impact Assessment

S.16 Planning Application for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lots in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

TRAFFIC IMPACT ASSESSMENT

Reference: 80115-R01-01
Date: May 2025
Prepared by: 8FM Consultancy Limited

Consultancy Limited

Content

List of Table

List of Figure

1 INTRODUCTION

1.1 Background

The Applicant intends to seek planning permission for the Section 16 Planning Application for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lot Nos. 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP (Part), 361 RP, 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories ("Project Site").

The location of the Project Site is shown in **Figure 1**.

8FM Consultancy Limited was commissioned as the traffic consultant to carry out a Traffic Impact Assessment (TIA) Study in support of this planning application.

1.2 Study Objectives

The objectives of this TIA are listed as follows:

- To review the existing traffic conditions in the vicinity of the Project Site;
- To present and evaluate the internal transport facilities;
- To estimate the traffic forecasts of the adopted design year and assess the future traffic situation in the surrounding network;
- To evaluate the potential traffic impact of the proposed development; and
- To suggest traffic improvement proposals, if necessary.

1.3 Report Structure

The report is structured as follows:

- Chapter 2 - Proposed Development

  Describing the project site, vehicular access arrangement, development schedule and the proposed internal transport facilities;
- Chapter 3 - Existing Traffic Situation

  Presenting the existing traffic context, the traffic survey, and the traffic assessment of the existing traffic conditions;
- Chapter 4 – Development Traffic Generation

  Estimating the traffic flows arising from the proposed development;
- Chapter 5 – Future Traffic Situation

Describing the traffic forecast methodology and presenting the traffic assessment results under reference and design scenarios;

- Chapter 6 - Summary and Conclusion

  Summarizing the findings and conclusion of this traffic impact assessment study.

2 PROPOSED DEVELOPMENT

2.1 The Site Location

The Project Site is located in Kong Nga Po, Sheung Shui, and it can be accessible from Kong Nga Po Road via a local track. The location of the Project Site is shown in **Figure 1**.

2.2 The Development Schedule

The project site is proposed to be utilised as warehouse, open storage for construction materials and equipment and ancillary office on a temporary basis of 3 years. Based on the planning statement, the operation hours of the proposed use are from 9:00 a.m. to 6:00 p.m. from Mondays to Saturdays, and there will be no operation on Sundays and public holidays.

In accordance with the planning statement, the project site has a total area of about 16,604m2, including (i). uncovered area for circulation/maneuvering space and provision of 10 parking spaces; and (ii). covered area with six single-storey temporary structures. The layout of the project site is shown in **Figure 2.1**. Key development parameters of the proposed use are tabulated in **Table 2.1**. The details of the temporary structures in the site are tabulated in **Table 2.2**.

Table 2.1 Key Development Parameters

Proposed Use	Temporary Open Storage of Construction Materials and Equipment and Ancillary Office
Operation Hours	9:00am - 6:00pm (Mondays – Saturdays, Except Sundays and Public Holidays)
Total Site Area	16,604m^2 (including about 6,886m^2 of Government land)
Covered Area	About 2,990m^2 (Warehouse and Ancillary Use)
Uncovered Area	About 13,614m^2 (Maneuvering space & Parking Space)

Table 2.2 Details of the Temporary Structures

Structure	Uses	Floor Area (about)	Building Height
Structure A	Warehouse	1,474 m^2	2 storey
Structure B	Ancillary Site Office/General Storage Uses	220m^2	1 storey
Structure C	Warehouse	2,400 m^2	2 storey
Structure D	Ancillary Site Office/General Storage Uses	220m^2	1 storey
Structure E	Ancillary Site Office/General Storage Uses	220m^2	1 storey
Structure F	Ancillary Site Office/General Storage Uses	393m^2	1 storey

2.3 Vehicle Access Arrangement

Access to the project site will be provided through an about 11m-wide ingress/egress point located at the northwestern boundary, which is connected to a local track leading to Kong Nga Po Road. The vehicle access arrangement is presented in **Figure 2.1** for reference.

Swept path analysis is also conducted for the access point and the access road. **Figure 2.2** demonstrates that the existing site access and parking space arrangement are adequate for maneuvering a 12m Large Fire Appliance.

2.4 Internal Transport Facilities

The internal transport facilities to be provided in the project site are summarized in **Table 2.3**. As there are no specific parking and loading/unloading requirements for temporary open storage development in accordance with HKPSG, ancillary transport facilities are provided based on the Applicant's requirements to meet operational needs.

Table 2.3 Internal Transport Facilities

Type of Ancillary Transport Facilities	Size	Provision based on Applicant's Operational Needs
Private Car Parking Spaces	5m(L) x 2.5m(W)	10
L/UL Bays for LGVs	7m(L) x 3.5m(W)	12
L/UL Bays for HGVs	11m(L) x 3.5m(W)	12

3 EXISTING TRAFFIC SITUATION

3.1 Existing Road Network

As indicated in **Figure 1**, the project site is located at the east of Kong Nga Po Road, and it can be accessible from Kong Nga Po Road via a local unnamed road. The existing condition of the connecting carriageways is summarized as follows:

- Unnamed Road 1 is a single-track access road connecting Kong Nga Po Road in the west to Ping Che Road in the east. It acts as a single carriageway with 1-lane 2-way operation.
- Kong Nga Po Road is a rural road acting as a single carriageway with 2-lane 2-way operation. It connects Man Kam To Road in the west and Kong Nga Po in the east.
- Man Kam To Road is a rural road with 3 to 4 lanes and 2-way operation. It connects Man Kam To Control Point in the north and Jockey Club Road in the south.

3.2 Public Transport Facilities

The project site cannot be immediately accessible by taking public transportation. The nearest franchised bus and GMB services are around 2.3km away from the site, operating along Man Kam To Road. Details of these public transport services are presented in **Table 3.1** and **Figure 3.1**.

Table 3.1 Franchised Bus and GMB Services Close to Project Site

Route	Routing	Peak Frequency (minutes)
KMB 73K	Sheung Shui ↔Man Kam To (San Uk Ling)	10-15
GMB 59K	Sheung Shui Station ↔Lin Ma Hang	15

3.3 Traffic Survey

In order to evaluate the existing traffic conditions in the vicinity, the classified traffic surveys were conducted on 7 May 2025 (Wednesday) from 7:00 to 10:00 in the morning and from 16:00 to 19:00 in the evening. The key junctions of the study area are indicated in **Figure 3.2.**

The traffic flows collected during the traffic surveys have been converted to passenger car units (PCU) based on the PCU factors as indicated in Volume 2 of the Transport Planning and Design Manual (TPDM).

The results of the traffic survey identified that the AM and PM peak hours occur during 7:30 to 8:30 and 16:45 to 17:45, respectively. The 2025 observed peak hours traffic flows in the study area are presented in **Figure 3.3**.

3.4 Existing Traffic Condition

Based on the observed traffic flows, the performance of the key junctions in the vicinity of the project site during the AM and PM peak hours was assessed.

3.4.1 <u>Existing Junction Capacity Assessment</u>

The results of junction performance are indicated in **Table 3.2** and detailed junction calculation sheets are given in **Appendix A**.

Table 3.2 Existing Junction Capacity Assessment

Jn No.	Junction Location	Type/ Capacity Index	AM Peak	PM Peak
A	Unnamed Rd 1 / Kong Nga Po Rd	Priority / DFC(i)	0.17	0.14
B	Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	Roundabout / DFC	0.20	0.14
C	Man Kam To Rd / Kong Nga Po Rd	Priority / DFC	0.62	0.60

**Notes:*

(i) DFC - Design Flow / Capacity Rati. The performance of a priority junction or roundabout is normally measured by its Design Flow / Capacity (DFC) ratio. A DFC ratio less than 1.0 indicates that the junction is operating within design capacity. A DFC ratio greater than 1.0 indicates that the junction is overloaded, resulting in traffic queues and longer delay time to the minor arm traffic.

As shown in Table 3.2, all of the surveyed junctions perform satisfactorily during peak hours with adequate reserve capacities.

4 DEVELOPMENT TRAFFIC GENERATION

4.1 Estimated Development Flows

With reference to the Planning Statement, the proposed development will make use of heavy goods vehicles (HGV), light goods vehicles (LGV), and private cars to travel to/from the application site.

As the proposed development will be operated as warehouses and ancillary site office/general storage uses, the trip generation & attraction arising from the operational needs will be estimated respectively based on the different land use.

4.1.1 Warehouse

With reference to **Table 2.2**, Structures A & C will be proposed as warehouse. The trip generation & attraction of warehouses in the proposed development is estimated with reference to the trip rates of industrial use under TPDM Vol 1, which are tabulated in **Table 4.1**. Mean level is adopted for a conservative estimation of trip assessment.

Table 4.1 Traffic Rates for Industrial Building

Land Use	Unit	Upper Limit/ Mean/ Lower Limit	AM Peak		PM Peak	
			Generation Rate	Attraction Rate	Generation Rate	Attraction Rate
Industrial Building	(pcu/hr/100 sqm GFA)	Upper Limit	0.1153	0.1727	0.1648	0.1260
		Mean	**0.0926**	**0.1386**	**0.1350**	**0.1049**
		Lower Limit	0.0698	0.1044	0.1053	0.0808

The calculated traffic generation & attraction arising from the operation of warehouses during the identified peak hours are estimated in **Table 4.2**.

Table 4.2 Estimated Traffic Generation & Attraction Arising from Warehouse

Land Use	Area	Unit	AM Peak		PM Peak	
			Generation	Attraction	Generation	Attraction
Warehouse	1,937m^2	pcu/hr	2	3	3	3

4.1.2 Ancillary Site Office/General Storage Uses

With reference to **Table 2.2**, Structures B, D, E & F will be proposed as ancillary site/general storage. The trip generation & attraction of the ancillary site office/general storage uses is estimated with reference to the trip rate for office in the TPDM Vol 1, which is tabulated in **Table 4.3**. The trip rates of both industrial/office uses under TPDM Vol 1 would be applicable as the structures serve two purposes. For a conservative approach, the mean level of trip rates for office use is adopted.

Table 4.3 Traffic Rates for Office Development

Land Use	Unit	Upper Limit/ Mean/ Lower Limit	AM Peak		PM Peak	
			Generation Rate	Attraction Rate	Generation Rate	Attraction Rate
Office	(pcu/hr/100 sqm GFA)	Upper Limit	0.2361	0.3257	0.1928	0.1510
		Mean	**0.1703**	**0.2452**	**0.1573**	**0.1175**
		Lower Limit	0.1045	0.1646	0.1217	0.084

The calculated traffic generation & attraction arsing from the operation of site office during the identified peak hours are esitmated in **Table 4.4**.

Table 4.4 Estimated Traffic Generation & Attraction Arising from Ancillary Site Office/General Storage Uses

Land Use	Area	Unit	AM Peak		PM Peak	
			Generation	Attraction	Generation	Attraction
Ancillary Site Office/General Storage Uses	1,053m^2	pcu/hr	2	3	2	2

4.1.3 Estimated Development Flow

With the trip generation & attraction estimated for different land use, the development flow is summarized in **Table 4.5.**

Table 4.5 Estimated Development Flow

Unit	AM Peak (pcu/hr)		PM Peak (pcu/hr)	
	Generation	Attraction	Generation	Attraction
pcu/hr	4	6	5	5
Total	10 pcu/hr		10 pcu/hr	

4.2 Traffic Routing for the Project Site

The anticipated routes for project-related vehicles travelling to and from the project site are indicated in **Figure 4.1** and described as follows:

4.2.1 Ingress route

The project vehicles are expected to travel to the project site from Man Kam To Control Point and various locations across the 18 districts. Considering operational needs and accessibility, the vehicle distribution from these origins is estimated to be 50/50.

4.2.2 Egress route

The project vehicles are expected to disperse from the project site and arrive at Man Kam To Control Point and various locations across the 18 districts. Considering operational needs and accessibility, the vehicle distribution to these destinations is estimated to be 50/50.

5 FUTURE TRAFFIC SITUATION

5.1 Design Year

The planning application for the Proposed Temporary Warehouse and Open Storage with Ancillary Facilities and Associated Filling of Land development involves a period of 3 years, it is assumed that the end year for the Project Site would be year 2028. Therefore, the year 2028 is adopted as the design year of this study.

5.2 Traffic Forecast Methodology

To conduct the traffic forecast on the road networks in the vicinity of the project site, the existing traffic flows will be adjusted with the following factors considered:

- Historical traffic data from Annual Traffic Census (ATC) by Transport Department;
- The forecast population and employment from the 2021-based Territorial Population and Employment Data Matrices (TPEDM) planning data by the Planning Department;
- Committed and planned developments adjacent to the project site.

5.3 Regional Traffic Growth

5.3.1 Annual Traffic Census (ATC)

Reference has been made to the ATC reports from year 2019 to 2023. The historical traffic data of the surrounding road links are based on the Annual Average Daily Traffic (AADT) extracted from ATC issued by the Transport Department. The relevant AADT data from year 2019 to 2023 are summarized in **Table 5.1**.

Table 5.1 AADT Extracted from Annual Traffic Census

Station	Road	From	To	2019	2020	2021	2022	2023	Growth Rate p.a.
5465	Man Kam To Rd	Jockey Club Rd	Boundary	16,900	17,270	17,960	17,410	17,820	1.33%
					2.19	4.00	-3.06	2.35	
5218	Jockey Club Rd	Po Shek Wu Rd	Man Kam To Rd	26,450	25,180	26,400	25,230	22,510	-3.95%
					-4.80	4.85	-4.43	-10.78	
6018	Po Shek Wu Rd	Choi Yuen Rd	Jockey Club Rd	37,910	36,090	37,850	33,260	34,190	-2.55%
					-4.80	4.88	-12.13	2.80	
			Total	81,260	78,540	82,210	75,900	74,520	**-2.14%**

Table 5.1 indicates that the overall average annual growth rate of the adjacent road network is -2.14%.

5.3.2 Projected Population Data

Reference has been made to the 2021-based Territorial Population and Employment Data Matrices (TPEDM) planning data provided by the Planning Department. The population data in the North District for the years 2021, 2026, and 2031 are presented in **Table 5.2**.

Table 5.2 2021-Based TPDEM Data for North District

Item	TPDEM Estimation/Projection			Annual Growth Rate		
	2021	2026	2031	2021 to 2026	2026 to 2031	2021 to 2031
Population	309,650	352,000	435,550	2.60%	**4.35%**	3.47%

Source: 2021-based TPEDM by Planning Department

Table 5.2 indicates that the highest annual growth rate for population is 4.35%.

Based on the findings of the above two tables, a conservative growth rate of **4.35%** per annum was adopted to estimate the background traffic growth from 2025 to 2028.

5.4 Planned and Committed Development

Planned and committed developments in the vicinity of the Project Site, which are expected to be completed and in operation within the assessment period (up to 2028), have been identified and considered in the traffic forecast. A summary of the identified developments is presented in **Table 5.3**, and the locations of the planned developments are illustrated in **Figure 5.1**.

Table 5.3 Traffic Generation of Planned Developments

Land Use	GFA	AM Peak (pcu/hr)		PM Peak (pcu/hr)	
		Generation	Attraction	Generation	Attraction
Kong Nga Po Police Training Facilities	35,000m^2	60	86	55	41

Traffic generated by the above major planned and committed developments has been included in the traffic forecast for the design year 2028.

5.5 2028 Traffic Flows

The growth factor will be applied to the 2025 observed peak hours traffic flows to estimate the 2028 reference flows.

The reference and design flows of the design year 2028 are calculated from the following formula:

2028 Reference Flows (Fig. 5.1)	=	2025 Observed Flows (Fig 3.3) x (1+4.35%)^3
2028 Design Flows (Fig. 5.2)	=	2025 Reference Flows (Fig. 5.1) + Net Change in Development Traffic Flows

Figure 5.2 shows the 2028 Reference Peak Hours Flows in the area. By adding the net development traffic, **Figure 5.3** shows the 2028 Design Peak Hours Traffic Flows.

5.6 Future Traffic Impact Assessment

The traffic impact assessments for design year 2028 were conducted for the key junctions and road links in the vicinity of the project site for both the Reference and Design scenarios.

5.6.1 Future Year Junction Capacity Assessment

Based on the Reference Flows and Design Flows, junction capacity assessments for design year 2028 are carried out and the results are presented in **Table 5.4**, with detailed calculation sheets given in **Appendix A**.

Table 5.4 Future Year Junction Capacity Assessment

Jun No.	Junction Location	Type/ Capacity Index	2028 Reference Scenario		2028 Design Scenario	
			AM	PM	AM	PM
A	Unnamed Rd 1 / Kong Nga Po Rd	Priority / DFC(i)	0.22	0.18	0.23	0.19
B	Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	Roundabout / DFC	0.27	0.17	0.28	0.17
C	Man Kam To Rd / Kong Nga Po Rd	Priority / DFC	0.82	0.80	0.83	0.81

**Notes: DFC - Design Flow / Capacity Ratio*

(i) The performance of a priority junction or roundabout is normally measured by its Design Flow / Capacity (DFC) ratio. A DFC ratio less than 1.0 indicates that the junction is operating within design capacity. A DFC ratio greater than 1.0 indicates that the junction is overloaded, resulting in traffic queues and longer delay time to the minor arm traffic.

Table 5.4 reveals that all the junctions will operate satisfactorily with ample junction capacity in both the 2028 reference and 2028 design scenarios during peak hours.

6 Summary and Conclusion

6.1 Summary

The Applicant intends to seek the Town Planning Board permission to utilise the Project Site as temporary warehouse (excluding dangerous goods godown) and open storage of construction material and machineries with ancillary facilities for a period of 3 years and associated filling of land.

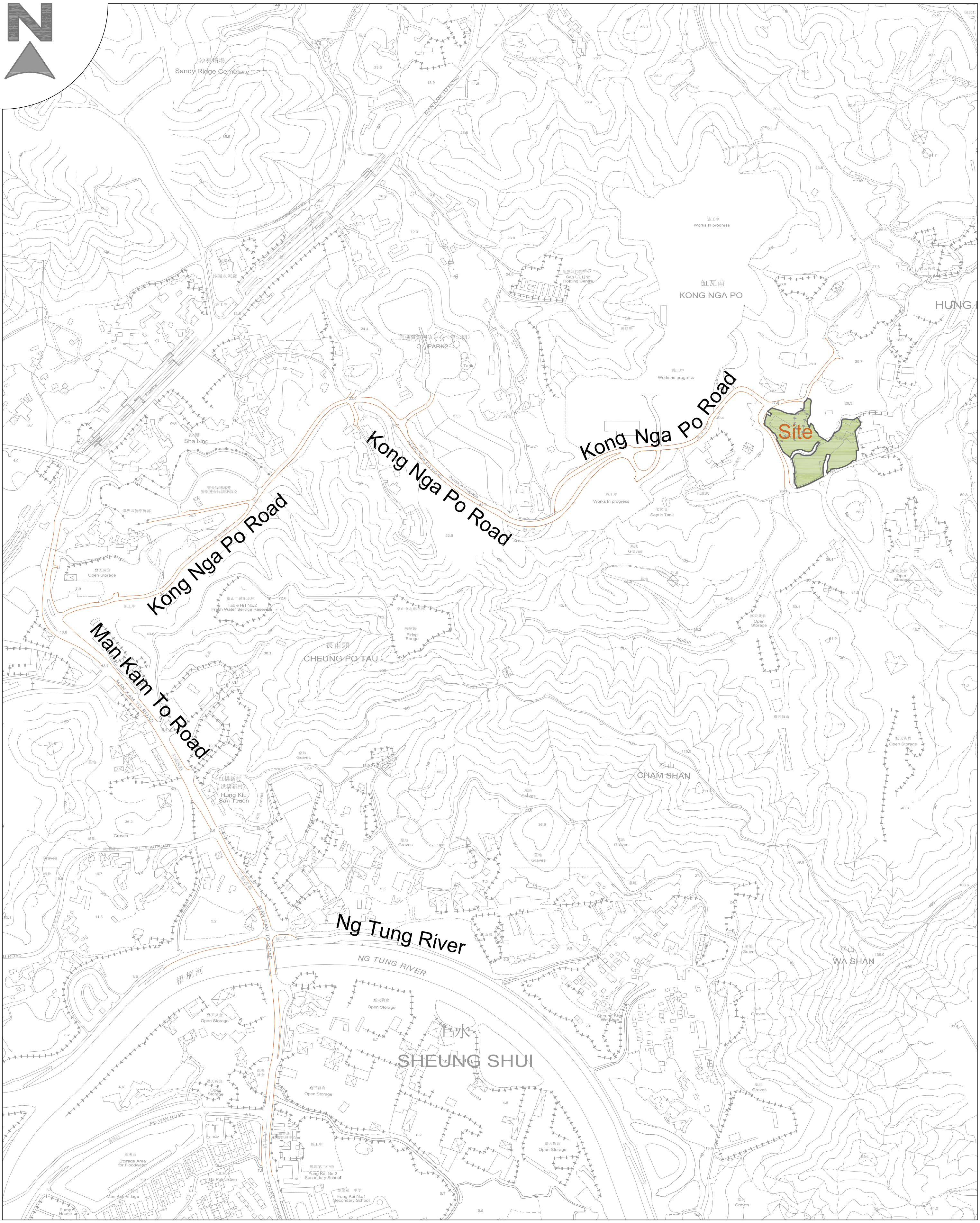
In order to appraise the existing traffic conditions, classified turning movement count surveys have been carried out at the key junctions and road links in the vicinity of project site on 7 May 2025 from 7:00 to 10:00 in the morning and 16:00 to 19:00 in the evening. The morning and evening peak hours of the road network have been identified as 7:30am to 8:30am and 16:45pm to 17:45pm, respectively.

Year 2028 is used as the design year for the traffic impact assessment. Based on the historical data and the future planning data, an annual growth rate of 4.35% was adopted for this study. This growth factor has been applied to the observed traffic flows in 2025 to determine the anticipated traffic flows in design year 2028.
The assessment results reveal that the key junctions identified are expected to operate satisfactorily with sufficient capacity in both 2028 reference and 2028 design scenarios during peak hours.

6.2 Conclusion

The findings of this study show that the development traffic will not cause adverse traffic impact onto the local road network. The proposed development is therefore supported from the traffic engineering point of view at this stage.

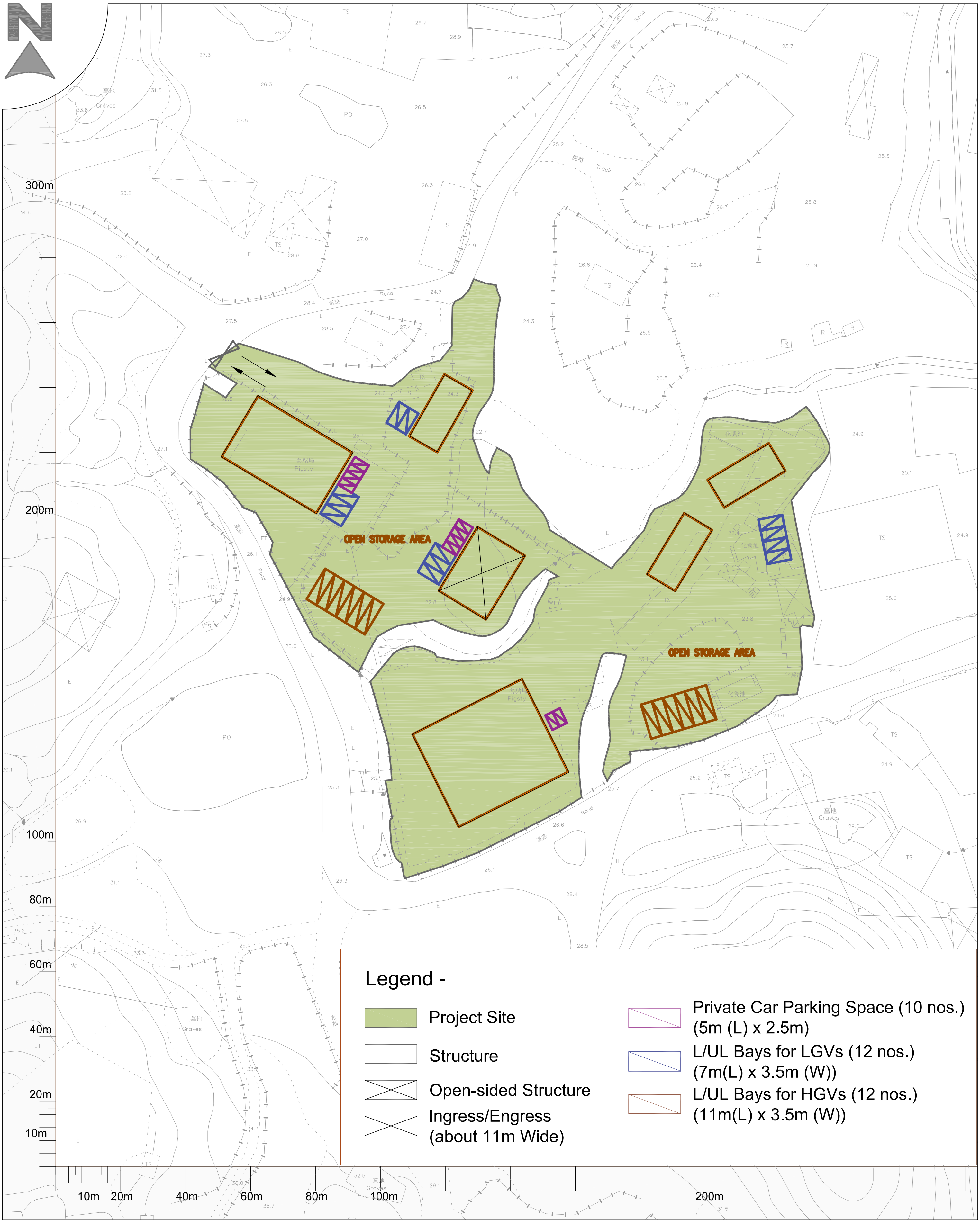
Figures



Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title -	Dwg No. - Figure 1	Rev. - ---	8FM CONSULTANCY LIMITED
Location of the Project Site	Scale - 1:10000@A4	Date - May 2025	

F:\8FM\8FM PROJECT\P80115 PLG10315_LOT NOS 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP, 366 RP IN D.D. 87 AND ADJOINING GOVERNMENT LAND, PING CHE, HUNG LUNG HANG, NT\DATA\DRAWING\FIGURE 1.DWG



F:\8FM\8FM PROJECT\P80115 PLG10315_LOT NOS 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP, 366 RP IN D.D. 87 AND ADJOINING GOVERNMENT LAND, PING CHE, HUNG LUNG HANG, NT\DATA\DRAWING\FIGURE 2.1.DWG

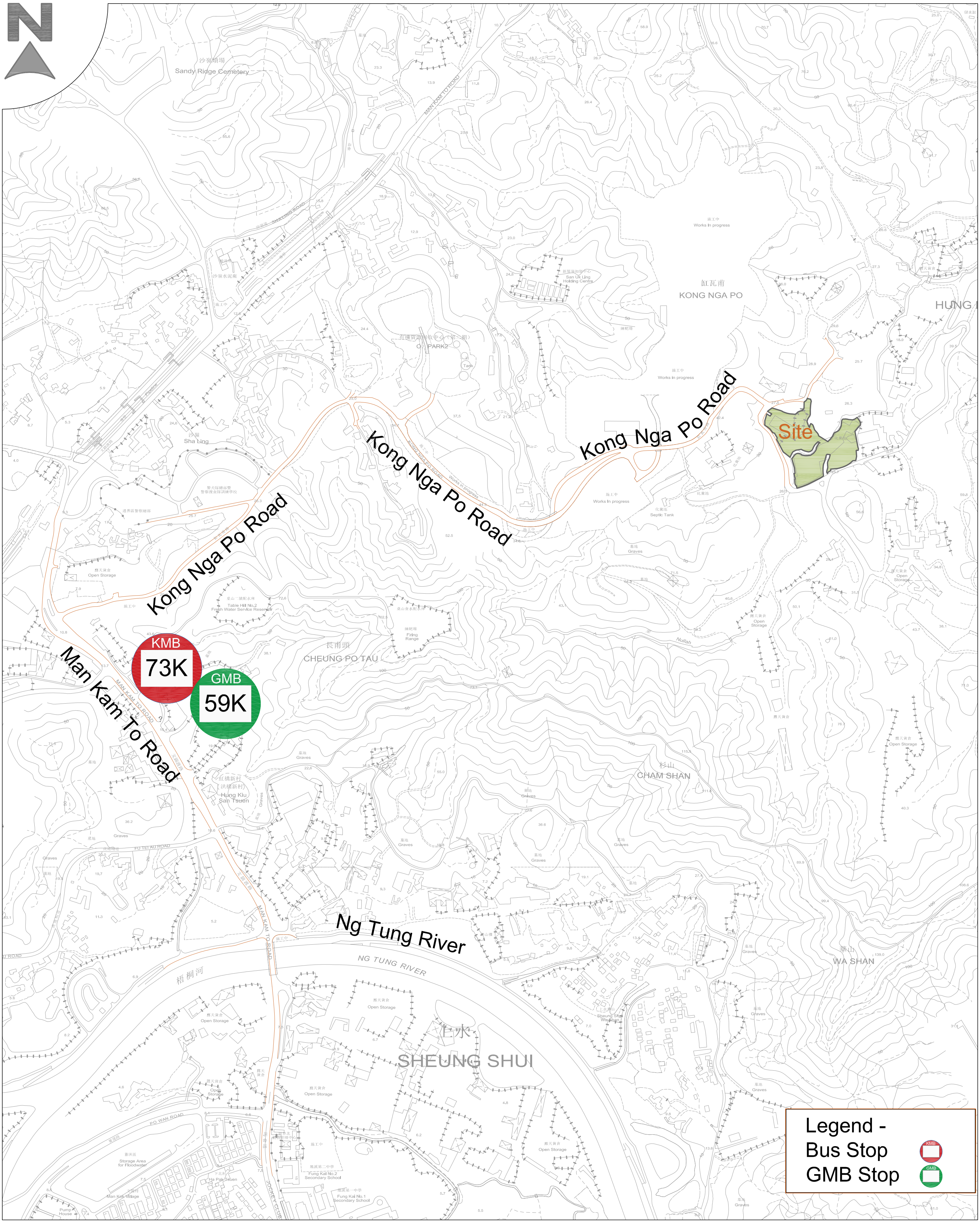
Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title -	Dwg No. - Figure 2.1	Rev. - ---	8FM CONSULTANCY LIMITED
Layout of Project Site	Scale - 1:1500@A4	Date - May 2025	

F:\8FM\8FM PROJECT\P80115 PLG10315_LOT NOS 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP, 366 RP IN D.D. 87 AND ADJOINING GOVERNMENT LAND, PING CHE, HUNG LUNG HANG, NT\DATA\DRAWING\FIGURE 2.2.DWG

Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

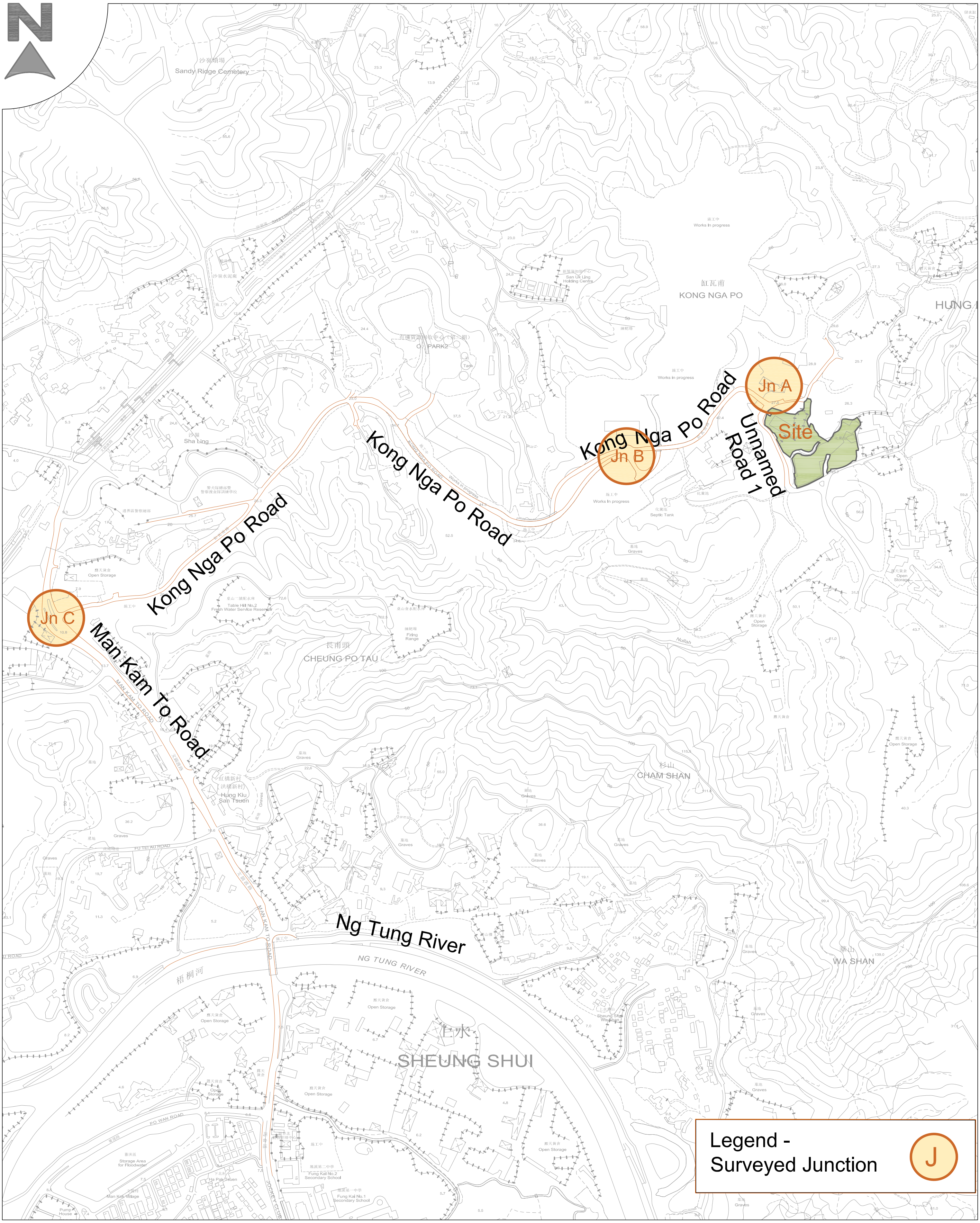
Drawing Title - Swept Path Analysis for 12m Large Fire Appliance	Dwg No. - Figure 2.2	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - 1:1500@A4	Date - May 2025	



F:\8FM\8FM PROJECT\P80115 PLG10315_LOT NOS 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP, 366 RP IN D.D. 87 AND ADJOINING GOVERNMENT LAND, PING CHE, HUNG LUNG HANG, NT\DATA\DRAWING\FIGURE 3.1.DWG

Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

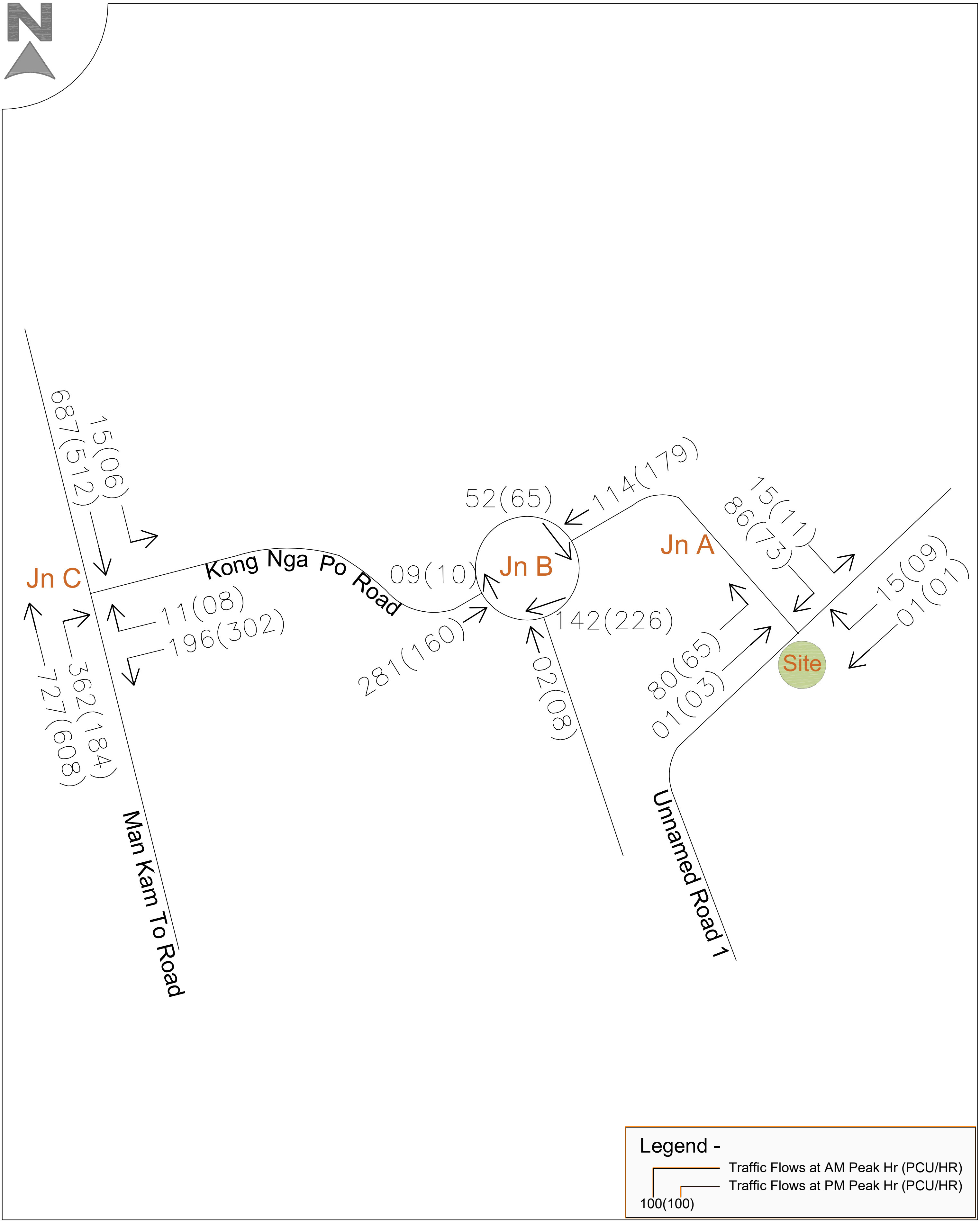
Drawing Title - Public Transport Facilities	Dwg No. - Figure 3.1	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - 1:10000@A4	Date - May 2025	



F:\8FM\8FM PROJECT\P80115 PLG10315_LOT NOS 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP, 366 RP IN D.D. 87 AND ADJOINING GOVERNMENT LAND, PING CHE, HUNG LUNG HANG, NT\DATA\DRAWING\FIGURE 3.2.DWG

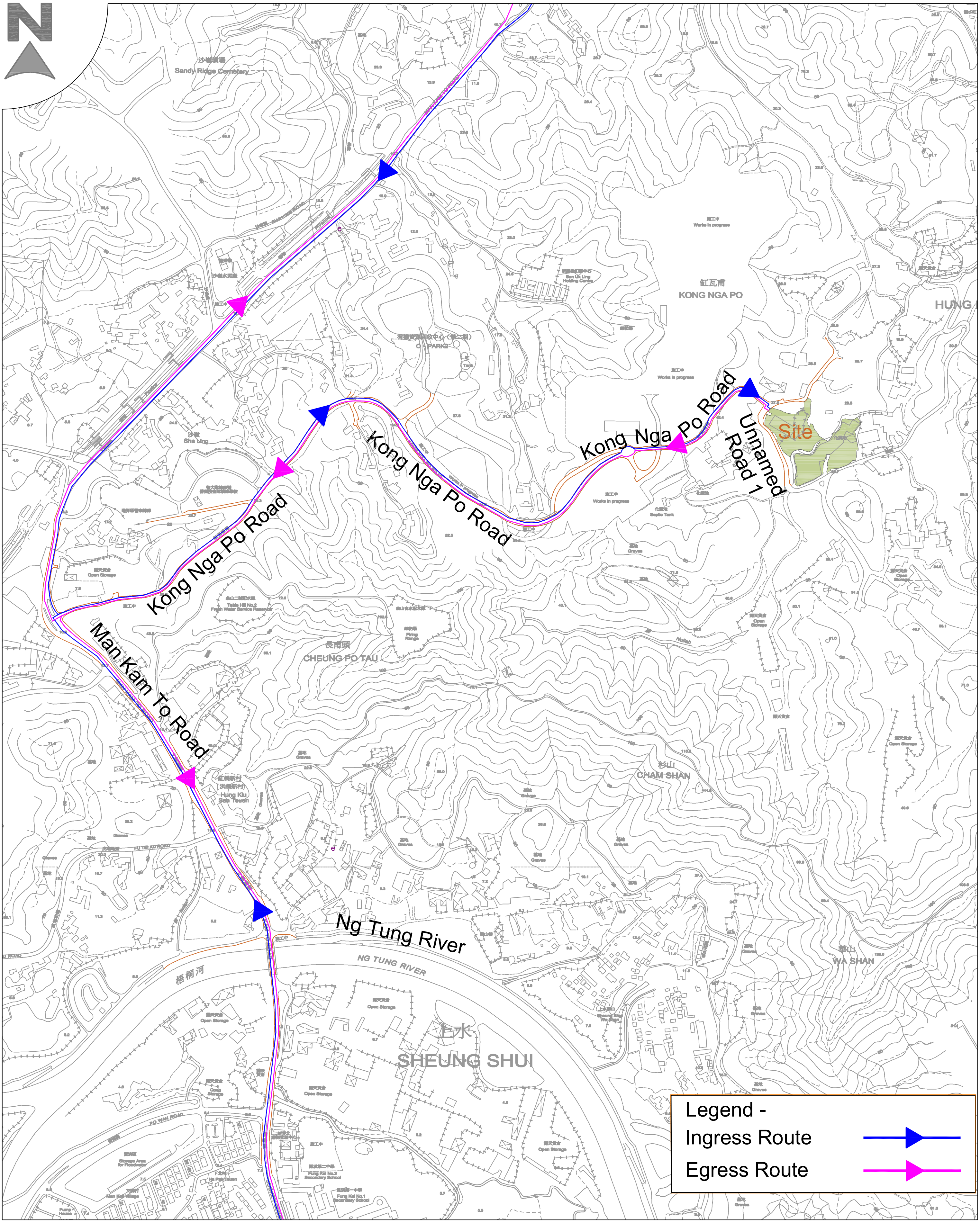
Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title - Key Junction	Dwg No. - Figure 3.2	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - 1:10000@A4	Date - May 2025	



Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

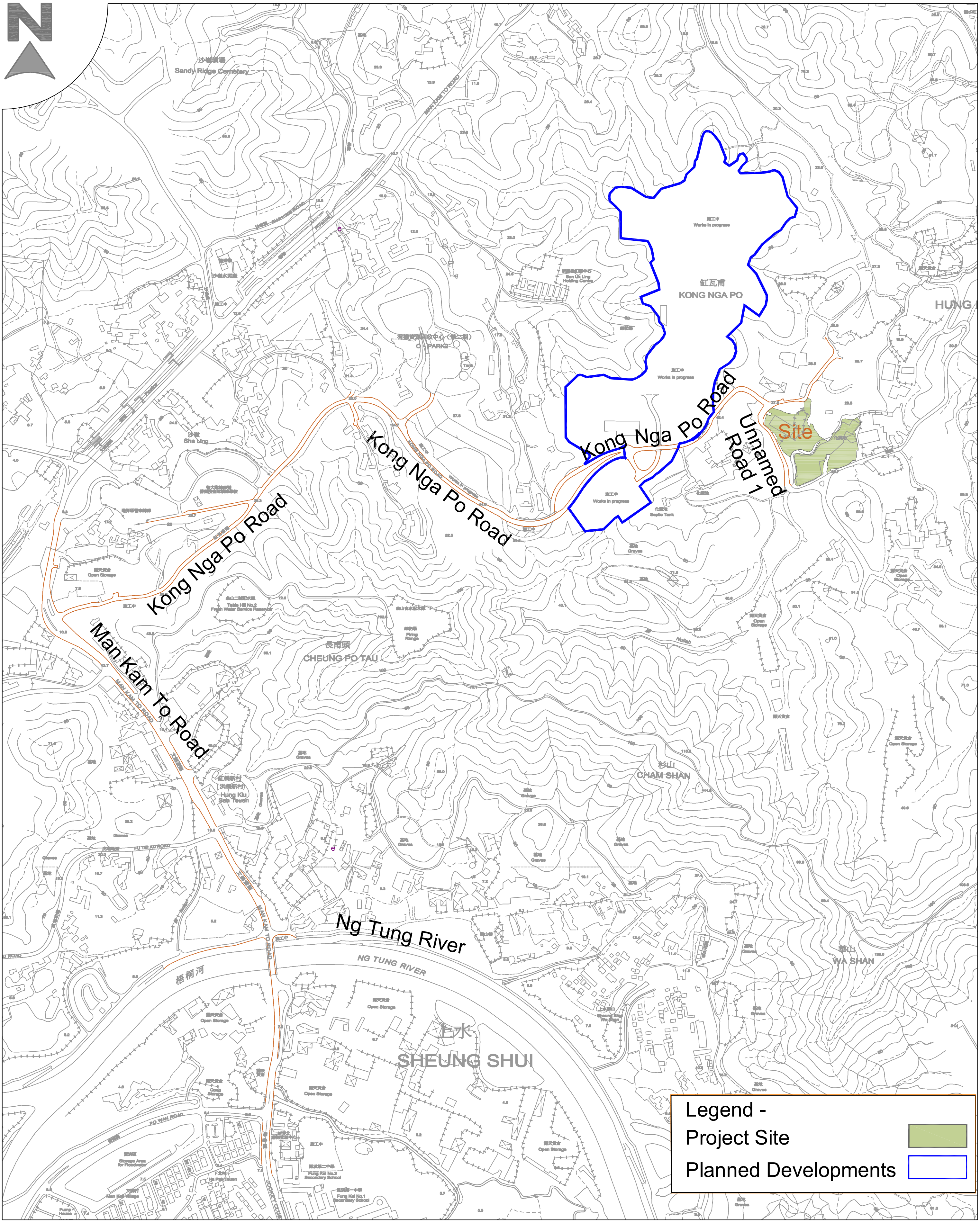
Drawing Title - Observed Flows during AM & PM Peak Hours	Dwg No. - Figure 3.3	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - ---	Date - May 2025	



C:\USERS\BILLY\DOCUMENTS\WORK\P80115\DATA\DRAWING\FIGURE 4.2.DWG

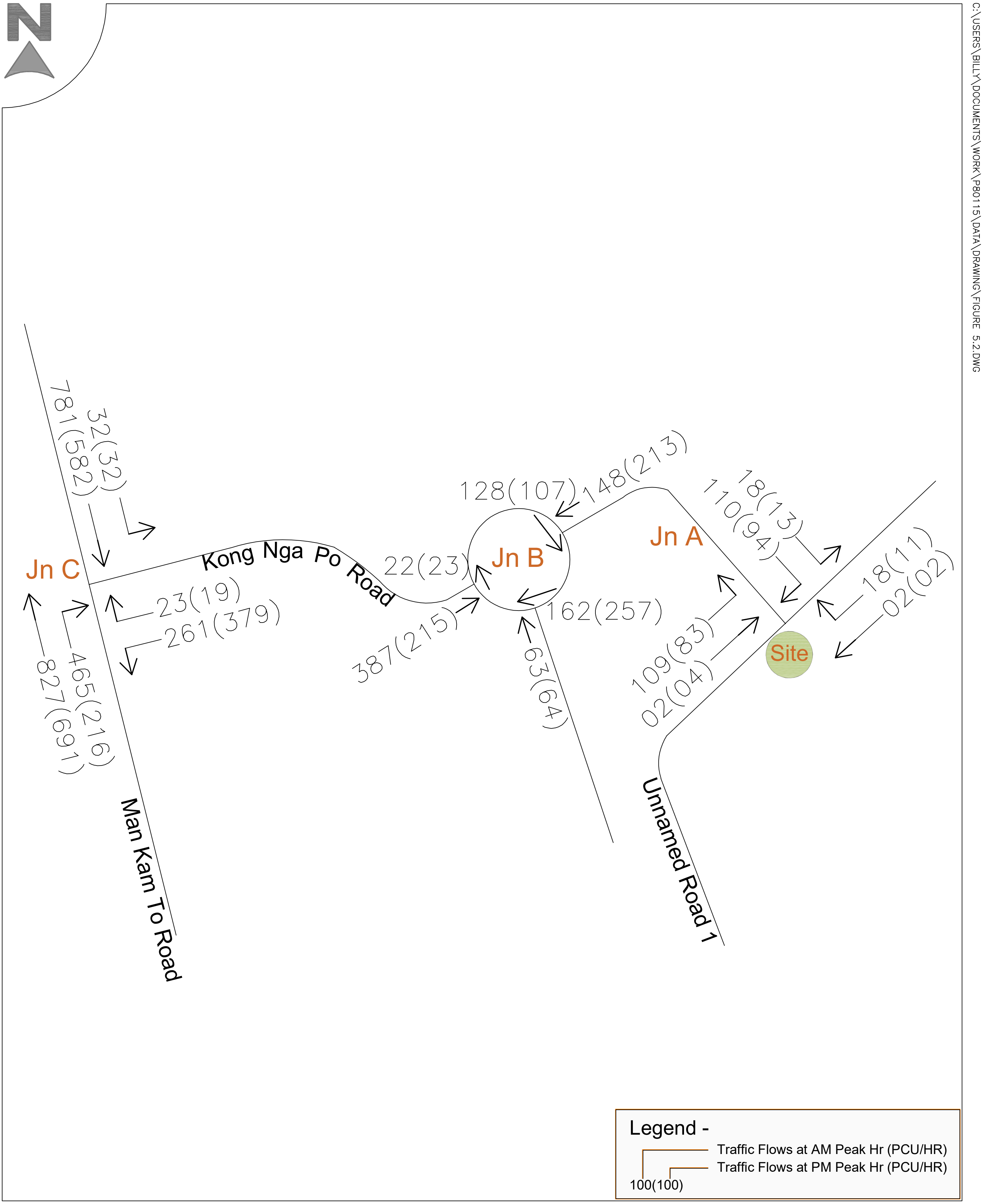
Proposal - Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title - Vehicular Ingress and Egress Route	Dwg No. - Figure 4.1	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - 1:10000@A4	Date - May 2025	



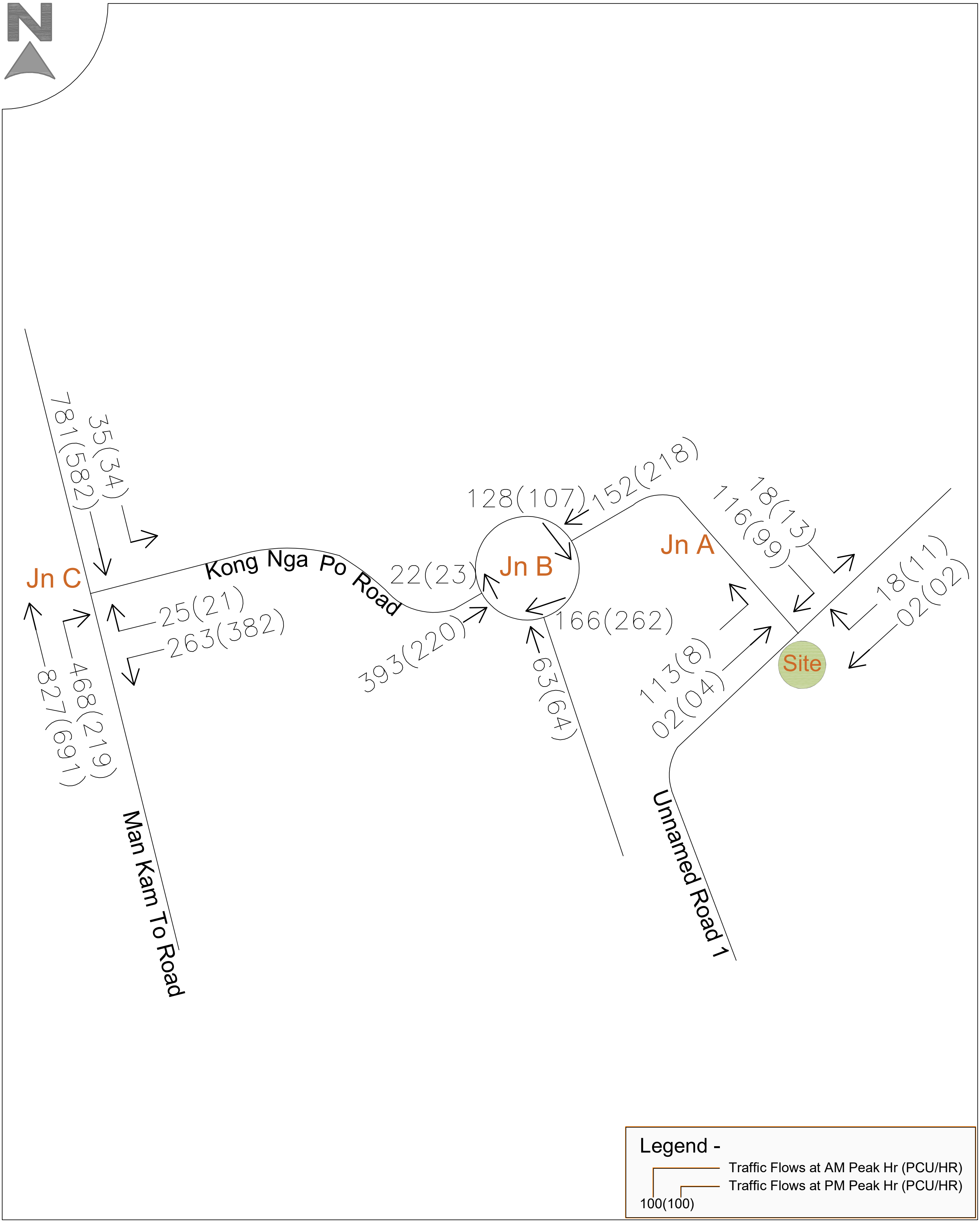
Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title -	Dwg No. - Figure 4.1	Rev. - ---	8FM CONSULTANCY LIMITED
Location of Planned Developments	Scale - 1:10000@A4	Date - May 2025	



Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title - 2028 Reference Traffic Flows during Peak Hours	Dwg No. - Figure 5.2	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - ---	Date - May 2025	



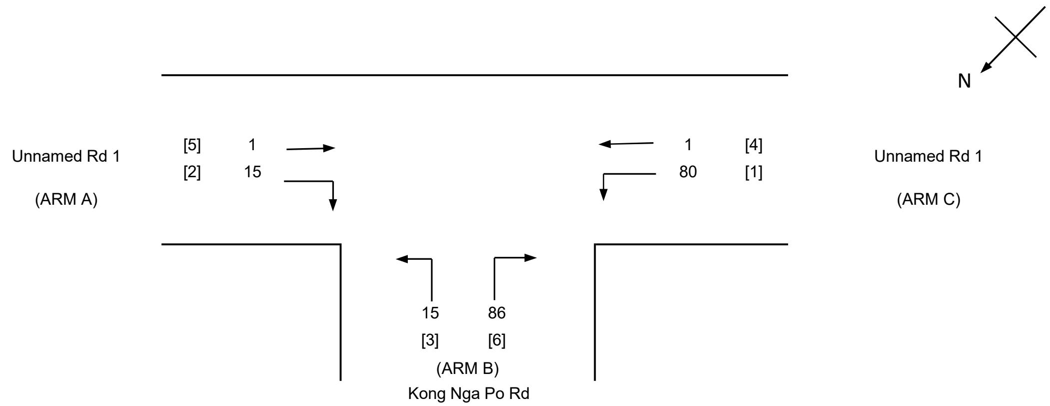
Proposal -	Lot Nos 346, 347 S.A, 347 S.B, 347 RP, 348 RP, 349 RP, 351 RP, 352 S.B RP, 361 RP (Part), 366 RP in D.D. 87 and Adjoining Government Land, Kong Nga Po, Sheung Shui, New Territories

Drawing Title - 2028 Design Traffic Flows during Peak Hours	Dwg No. - Figure 5.3	Rev. - ---	8FM CONSULTANCY LIMITED
	Scale - ---	Date - May 2025	

Appendix A

Junction Calculation Sheets

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2025 Observed - AM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	8.0	(metres)
W cr	=	0	(metres)
q a-b	=	15	(pcu/hr)
q a-c	=	1	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.4	(metres)
Vr c-b	=	24.8	(metres)
q c-a	=	1	(pcu/hr)
q c-b	=	80	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.6	(metres)
W b-c	=	2.5	(metres)
Vl b-a	=	25.4	(metres)
Vr b-a	=	47.3	(metres)
Vr b-c	=	47.3	(metres)
q b-a	=	15	(pcu/hr)
q b-c	=	86	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.779
E	=	0.834
F	=	0.895
Y	=	0.724
F for (Qb-ac)	=	0.85

THE CAPACITY OF MOVEMENT :

Q b-a	=	464	(pcu/hr)
Q b-c	=	619	(pcu/hr)
Q c-b	=	663	(pcu/hr)
Q b-ac	=	589	(pcu/hr)
Q c-a	=	1583	(pcu/hr)
TOTAL FLOW	=	198	(pcu/hr)

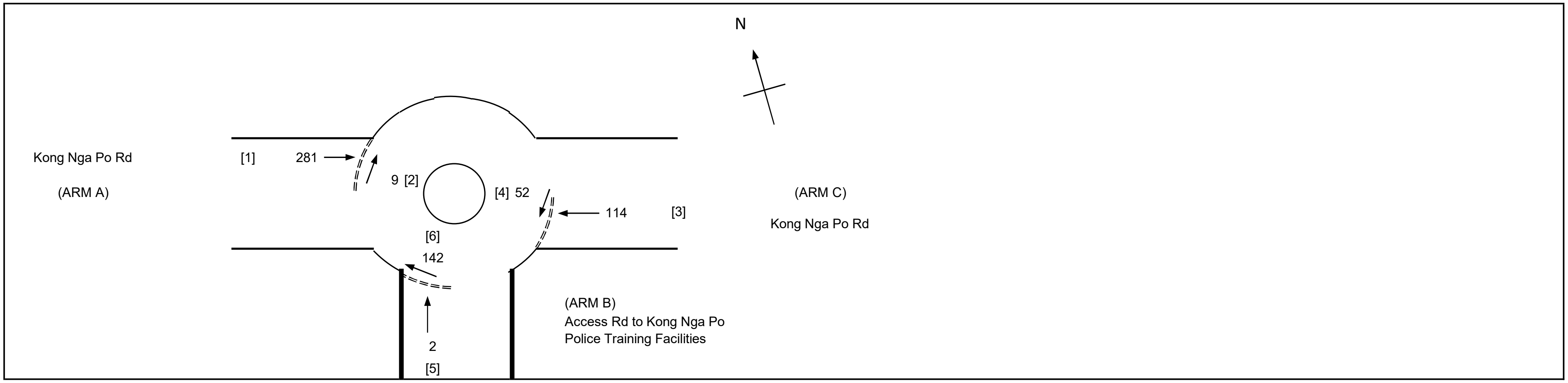
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0328
DFC b-c	=	0.1386
DFC c-b	=	0.1204
DFC b-ac (Share Lane)	=	0.1714
DFC c-a	=	0.0006

CRITICAL DFC = 0.17

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - OBS-AM.xls]A

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2025 Observed - AM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025

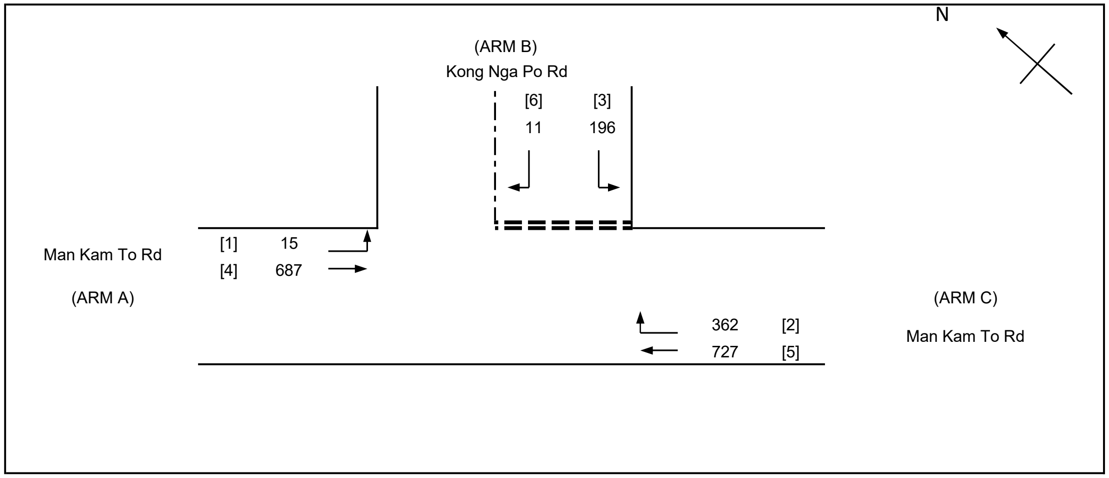


GEOMETRIC DETAILS:		**ARM**	**A**	**B**	**C**
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	281	2	114
Qc	=	Circulating flow across entry (pcu/h)	9	142	52
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1417	1338	1308
DFC	=	Design flow/Capacity = Q/Qe	0.20	0.00	0.09

TOTAL FLOW	**=**	**599**	**(pcu/hr)**
CRITICAL DFC	**=**	**0.20**	

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - OBS-AM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2025 Observed - AM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	15	(pcu/hr)
q a-c	=	687	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	727	(pcu/hr)
q c-b	=	362	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	11	(pcu/hr)
q b-c	=	196	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.949

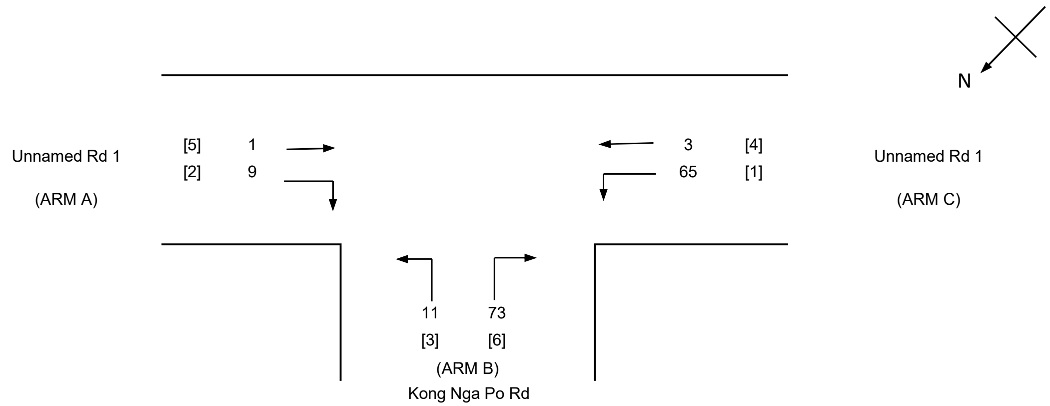
THE CAPACITY OF MOVEMENT :

Q b-a	=	306	(pcu/hr)
Q b-c	=	496	(pcu/hr)
Q c-b	=	587	(pcu/hr)
Q b-ac	=	481	(pcu/hr)
TOTAL FLOW	=	1997	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0346
DFC b-c	=	0.3948
DFC c-b	=	0.6160
DFC b-ac (Share Lane)	=	0.4294
CRITICAL DFC	**=**	**0.62**

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2025 Observed - PM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	8.0	(metres)
W cr	=	0	(metres)
q a-b	=	9	(pcu/hr)
q a-c	=	1	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.4	(metres)
Vr c-b	=	24.8	(metres)
q c-a	=	3	(pcu/hr)
q c-b	=	65	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.6	(metres)
W b-c	=	2.5	(metres)
Vl b-a	=	25.4	(metres)
Vr b-a	=	47.3	(metres)
Vr b-c	=	47.3	(metres)
q b-a	=	11	(pcu/hr)
q b-c	=	73	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.779
E	=	0.834
F	=	0.895
Y	=	0.724
F for (Qb-ac)	=	0.865

THE CAPACITY OF MOVEMENT :

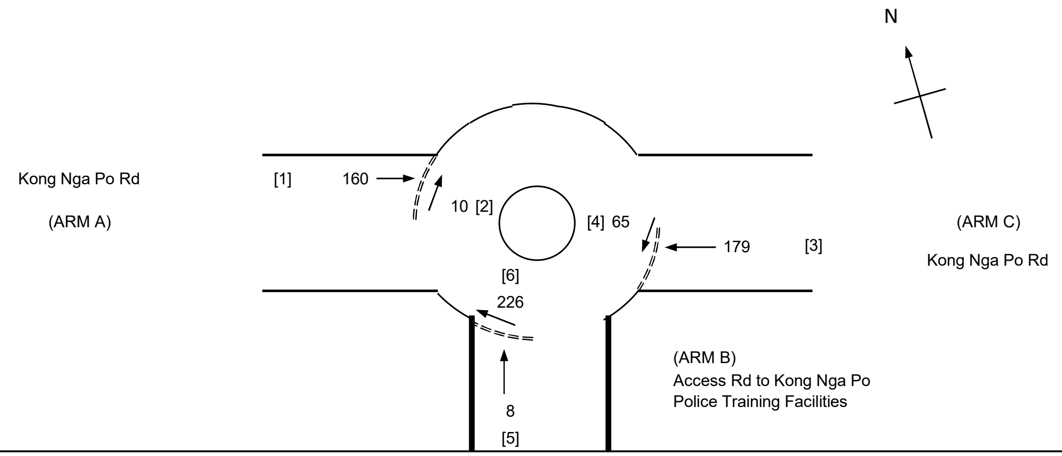
Q b-a	=	468	(pcu/hr)
Q b-c	=	620	(pcu/hr)
Q c-b	=	664	(pcu/hr)
Q b-ac	=	594	(pcu/hr)
Q c-a	=	1625	(pcu/hr)
TOTAL FLOW	=	162	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0244
DFC b-c	=	0.1177
DFC c-b	=	0.0973
DFC b-ac (Share Lane)	=	0.1421
DFC c-a	=	0.0017

CRITICAL DFC = 0.14

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2025 Observed - PM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025

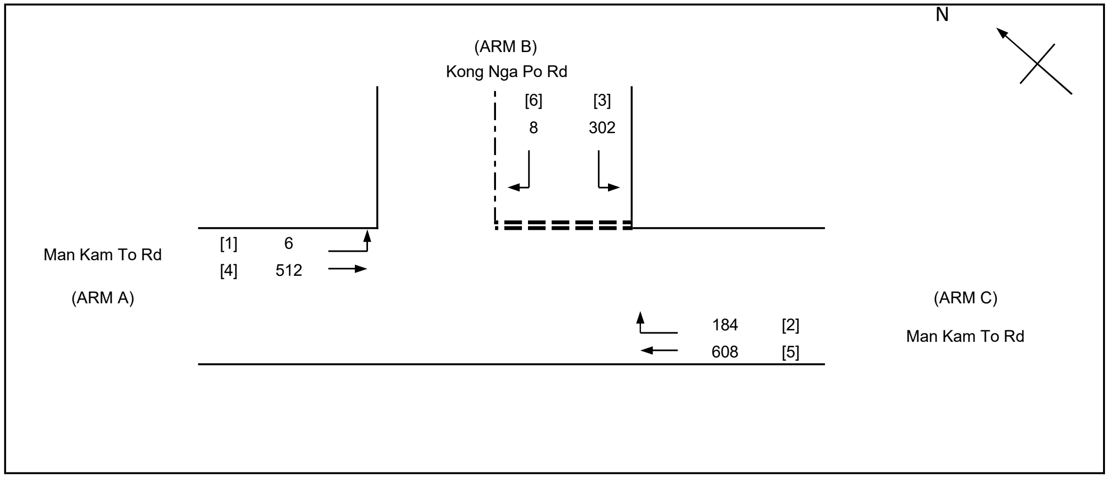


GEOMETRIC DETAILS:		**ARM**	**A**	**B**	**C**
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	160	8	179
Qc	=	Circulating flow across entry (pcu/h)	10	226	65
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1416	1287	1300
DFC	=	Design flow/Capacity = Q/Qe	0.11	0.01	0.14

TOTAL FLOW = **648** **(pcu/hr)**
CRITICAL DFC = **0.14**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - OBS-PM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2025 Observed - PM Peak	Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	6	(pcu/hr)
q a-c	=	512	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	608	(pcu/hr)
q c-b	=	184	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	8	(pcu/hr)
q b-c	=	302	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.974

THE CAPACITY OF MOVEMENT :

Q b-a	=	380	(pcu/hr)
Q b-c	=	523	(pcu/hr)
Q c-b	=	621	(pcu/hr)
Q b-ac	=	518	(pcu/hr)
TOTAL FLOW	=	1620	(pcu/hr)

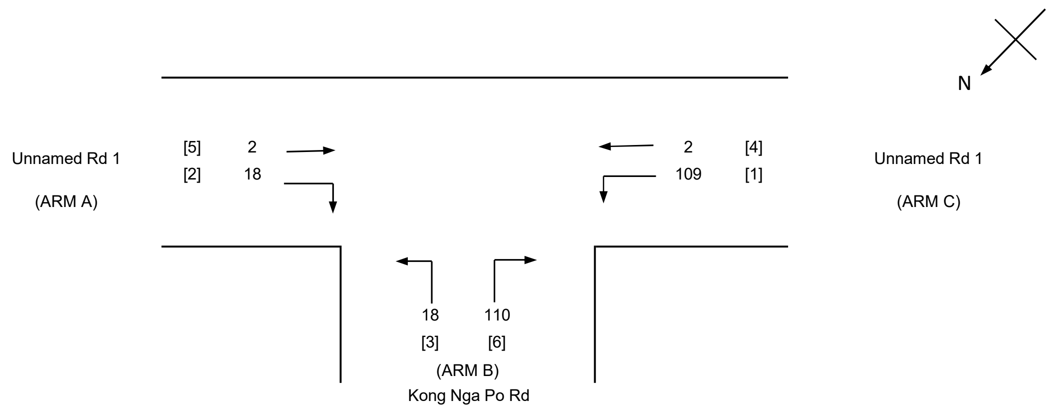
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0211
DFC b-c	=	0.5782
DFC c-b	=	0.2960
DFC b-ac (Share Lane)	=	0.5993

CRITICAL DFC = 0.60

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - OBS-PM.xls]C

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2028 Reference - AM Peak / Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025

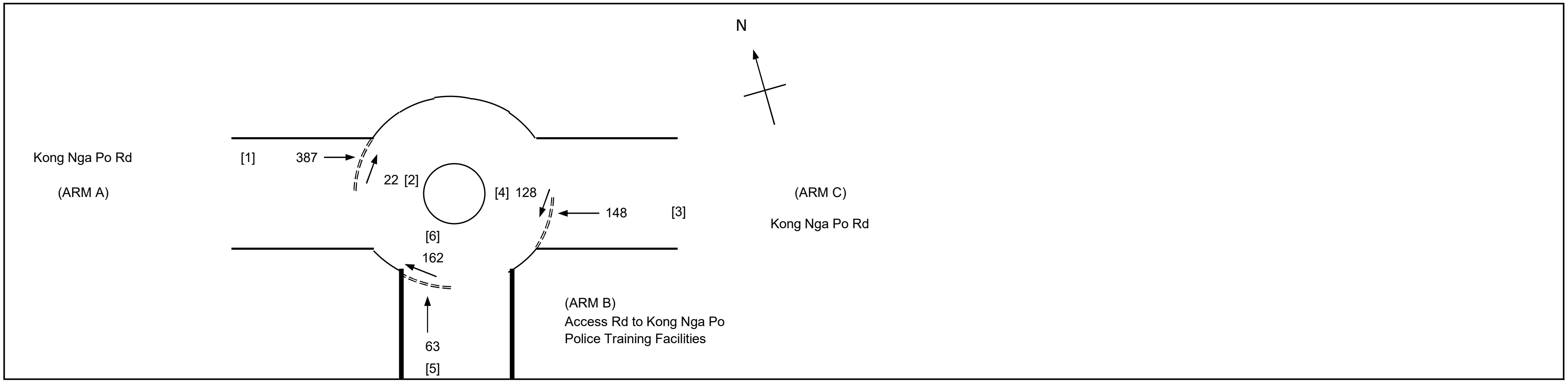


NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:				GEOMETRIC FACTORS :			THE CAPACITY OF MOVEMENT :				COMPARISION OF DESIGN FLOW TO CAPACITY:		
MAJOR ROAD (ARM A)													
W	=	8.0	(metres)	D	=	0.779	Q b-a	=	455	(pcu/hr)	DFC b-a	=	0.0396
W cr	=	0	(metres)	E	=	0.834	Q b-c	=	619	(pcu/hr)	DFC b-c	=	0.1777
q a-b	=	18	(pcu/hr)	F	=	0.895	Q c-b	=	662	(pcu/hr)	DFC c-b	=	0.1647
q a-c	=	2	(pcu/hr)	Y	=	0.724	Q b-ac	=	589	(pcu/hr)	DFC b-ac	=	0.2173
							Q c-a	=	1504	(pcu/hr)	(Share Lane)		
MAJOR ROAD (ARM C)				F for (Qb-ac)	=	0.859	TOTAL FLOW	=	259	(pcu/hr)	DFC c-a	=	0.0013
W c-b	=	3.4	(metres)										
Vr c-b	=	24.8	(metres)										
q c-a	=	2	(pcu/hr)										
q c-b	=	109	(pcu/hr)										
											CRITICAL DFC	**=**	**0.22**
MINOR ROAD (ARM B)													
W b-a	=	2.6	(metres)										
W b-c	=	2.5	(metres)										
Vl b-a	=	25.4	(metres)										
Vr b-a	=	47.3	(metres)										
Vr b-c	=	47.3	(metres)										
q b-a	=	18	(pcu/hr)										
q b-c	=	110	(pcu/hr)										

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2028 Reference - AM Peak	Project No.: 80115		
		Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025

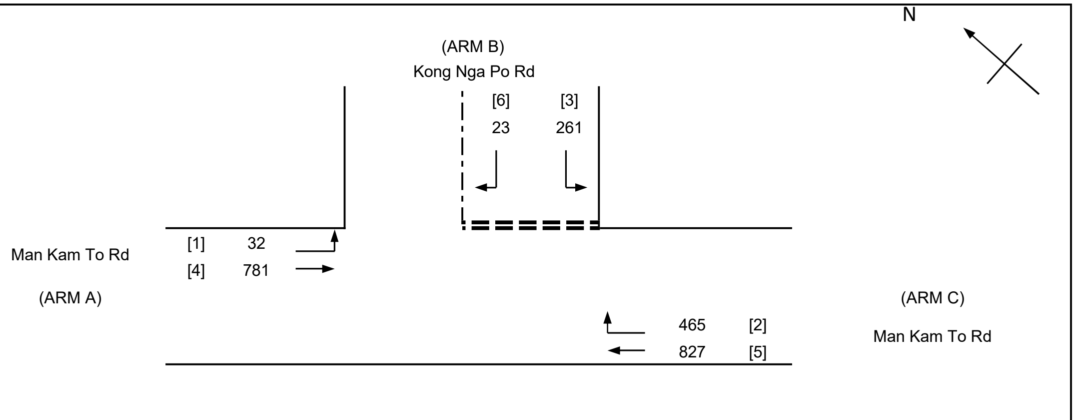


GEOMETRIC DETAILS:		**ARM**	**A**	**B**	**C**
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	387	63	148
Qc	=	Circulating flow across entry (pcu/h)	22	162	128
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1409	1326	1264
DFC	=	Design flow/Capacity = Q/Qe	0.27	0.05	0.12

TOTAL FLOW = **910** **(pcu/hr)**
CRITICAL DFC = **0.27**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - REF-AM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo			Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2028 Reference - AM Peak	Project No.: 80115	Checked By:	MM	May-2025
			Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	32	(pcu/hr)
q a-c	=	781	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	827	(pcu/hr)
q c-b	=	465	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	23	(pcu/hr)
q b-c	=	261	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.919

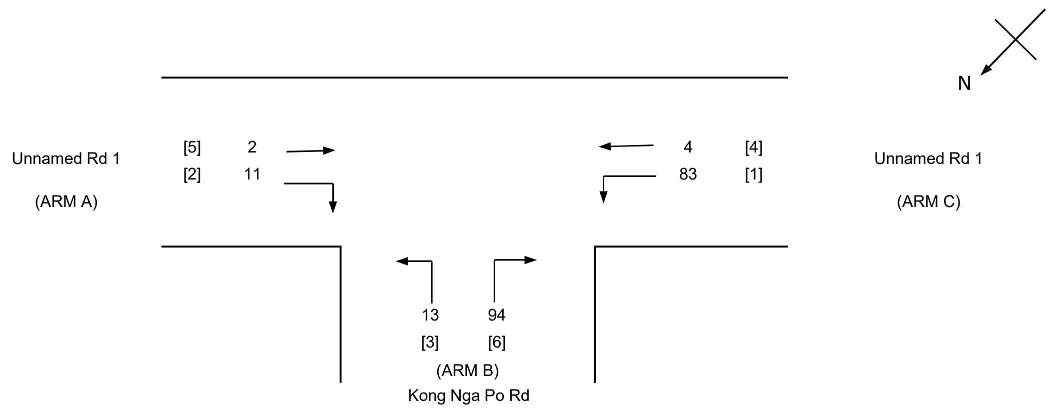
THE CAPACITY OF MOVEMENT :

Q b-a	=	261	(pcu/hr)
Q b-c	=	481	(pcu/hr)
Q c-b	=	567	(pcu/hr)
Q b-ac	=	450	(pcu/hr)
TOTAL FLOW	=	2389	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0881
DFC b-c	=	0.5426
DFC c-b	=	0.8201
DFC b-ac (Share Lane)	=	0.6307
CRITICAL DFC	**=**	**0.82**

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2028 Reference - PM Peak	Project No.: 80115 / Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	8.0	(metres)
W cr	=	0	(metres)
q a-b	=	11	(pcu/hr)
q a-c	=	2	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.4	(metres)
Vr c-b	=	24.8	(metres)
q c-a	=	4	(pcu/hr)
q c-b	=	83	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.6	(metres)
W b-c	=	2.5	(metres)
Vl b-a	=	25.4	(metres)
Vr b-a	=	47.3	(metres)
Vr b-c	=	47.3	(metres)
q b-a	=	13	(pcu/hr)
q b-c	=	94	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.779
E	=	0.834
F	=	0.895
Y	=	0.724
F for (Qb-ac)	=	0.879

THE CAPACITY OF MOVEMENT :

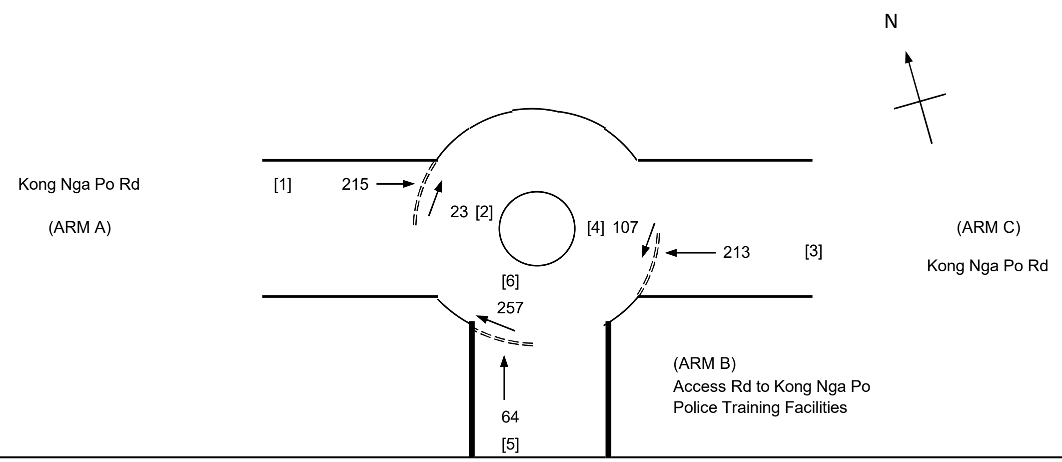
Q b-a	=	462	(pcu/hr)
Q b-c	=	620	(pcu/hr)
Q c-b	=	663	(pcu/hr)
Q b-ac	=	595	(pcu/hr)
Q c-a	=	1575	(pcu/hr)
TOTAL FLOW	=	207	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0281
DFC b-c	=	0.1516
DFC c-b	=	0.1252
DFC b-ac (Share Lane)	=	0.1798
DFC c-a	=	0.0025

CRITICAL DFC = 0.18

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2028 Reference - PM Peak	Project No.: 80115	Checked By: MM	May-2025
			Reviewed By: FM	May-2025



GEOMETRIC DETAILS:		ARM	A	B	C
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	215	64	213
Qc	=	Circulating flow across entry (pcu/h)	23	257	107

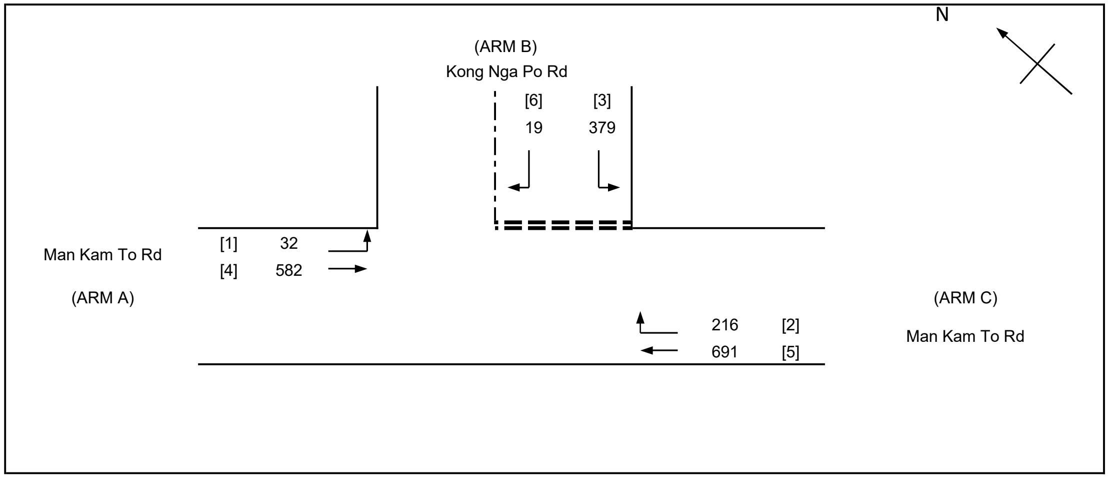
OUTPUT PARAMETERS:

			A	B	C
S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1408	1269	1276
DFC	=	Design flow/Capacity = Q/Qe	0.15	0.05	0.17

TOTAL FLOW = 879 (pcu/hr)
CRITICAL DFC = 0.17

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - REF-PM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2028 Reference - PM Peak / Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	32	(pcu/hr)
q a-c	=	582	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	691	(pcu/hr)
q c-b	=	216	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	19	(pcu/hr)
q b-c	=	379	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.952

THE CAPACITY OF MOVEMENT :

Q b-a	=	354	(pcu/hr)
Q b-c	=	511	(pcu/hr)
Q c-b	=	603	(pcu/hr)
Q b-ac	=	500	(pcu/hr)
TOTAL FLOW	=	1919	(pcu/hr)

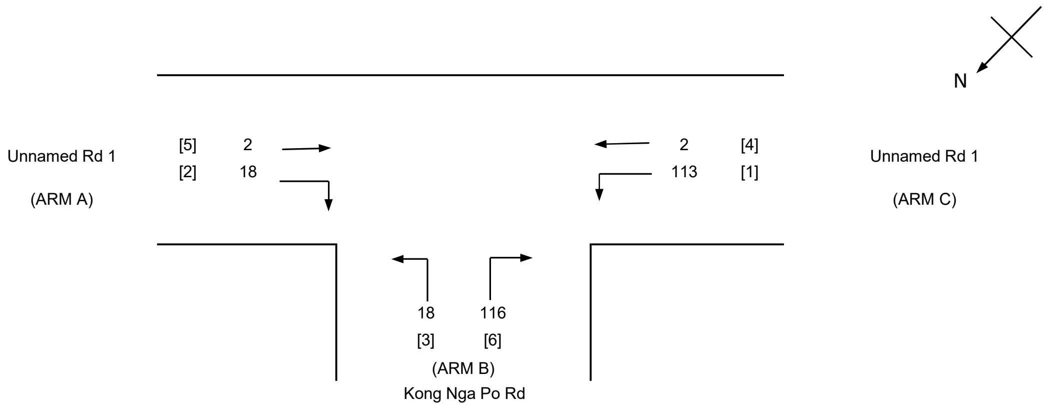
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0537
DFC b-c	=	0.7417
DFC c-b	=	0.3582
DFC b-ac (Share Lane)	=	0.7954

CRITICAL DFC = 0.80

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - REF-PM.xls]C

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2028 Design - AM Peak; Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			
W	=	8.0	(metres)
W cr	=	0	(metres)
q a-b	=	18	(pcu/hr)
q a-c	=	2	(pcu/hr)
MAJOR ROAD (ARM C)			
W c-b	=	3.4	(metres)
Vr c-b	=	24.8	(metres)
q c-a	=	2	(pcu/hr)
q c-b	=	113	(pcu/hr)
MINOR ROAD (ARM B)			
W b-a	=	2.6	(metres)
W b-c	=	2.5	(metres)
Vl b-a	=	25.4	(metres)
Vr b-a	=	47.3	(metres)
Vr b-c	=	47.3	(metres)
q b-a	=	18	(pcu/hr)
q b-c	=	116	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.779
E	=	0.834
F	=	0.895
Y	=	0.724
F for (Qb-ac)	=	0.866

THE CAPACITY OF MOVEMENT :

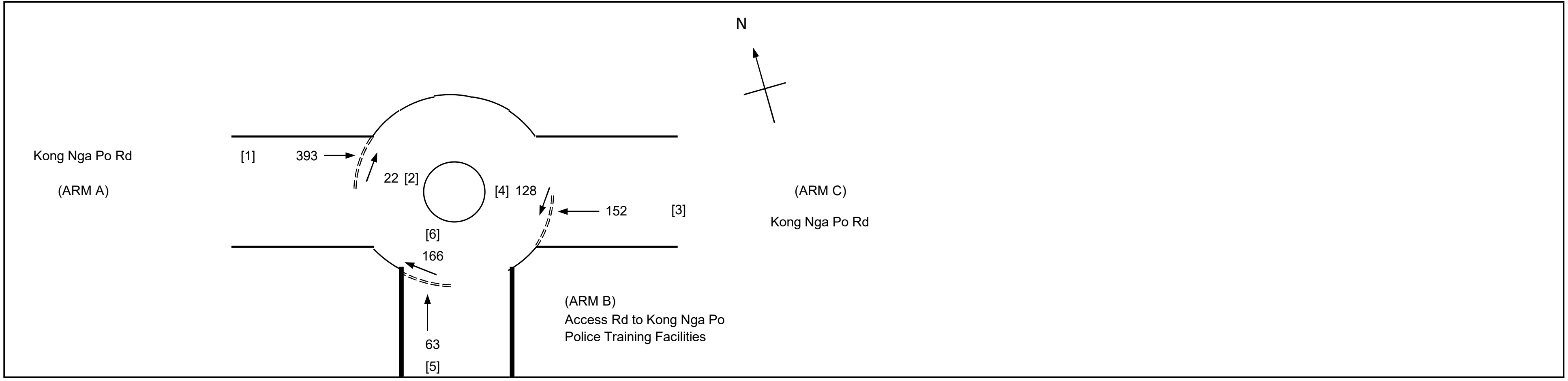
Q b-a	=	453	(pcu/hr)
Q b-c	=	619	(pcu/hr)
Q c-b	=	662	(pcu/hr)
Q b-ac	=	590	(pcu/hr)
Q c-a	=	1493	(pcu/hr)
TOTAL FLOW	=	269	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0397
DFC b-c	=	0.1874
DFC c-b	=	0.1707
DFC b-ac (Share Lane)	=	0.2271
DFC c-a	=	0.0013
CRITICAL DFC	=	**0.23**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - DES-AM.xls]A

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2028 Design - AM Peak	Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



GEOMETRIC DETAILS:		**ARM**	**A**	**B**	**C**
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	393	63	152
Qc	=	Circulating flow across entry (pcu/h)	22	166	128

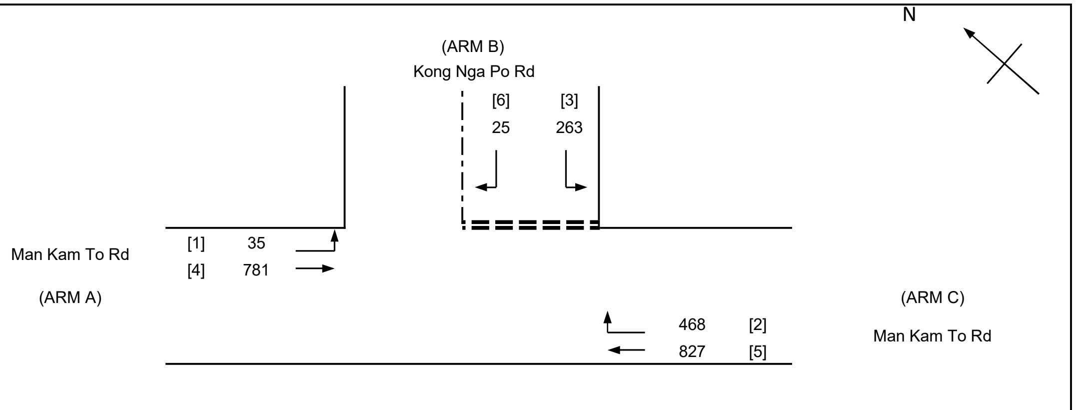
OUTPUT PARAMETERS:

S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1409	1324	1264
DFC	=	Design flow/Capacity = Q/Qe	0.28	0.05	0.12

TOTAL FLOW = **924** **(pcu/hr)**
CRITICAL DFC = **0.28**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - DES-AM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2028 Design - AM Peak; Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	35	(pcu/hr)
q a-c	=	781	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	827	(pcu/hr)
q c-b	=	468	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	25	(pcu/hr)
q b-c	=	263	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.913

THE CAPACITY OF MOVEMENT :

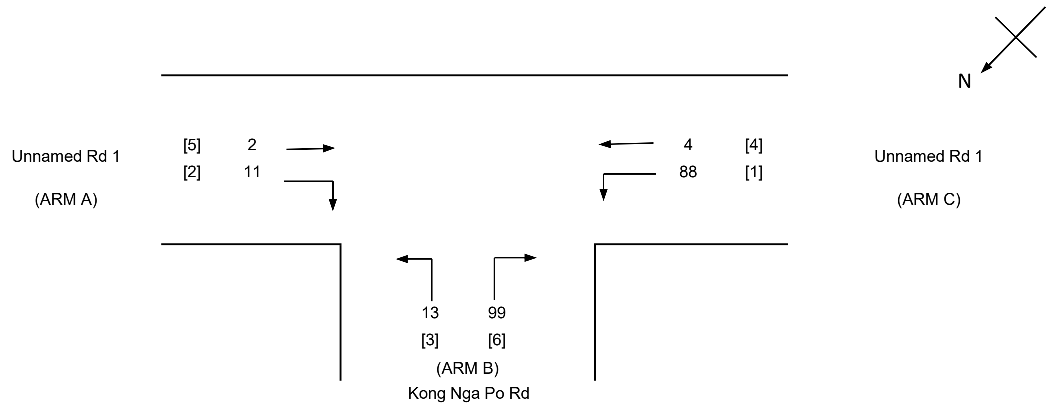
Q b-a	=	260	(pcu/hr)
Q b-c	=	480	(pcu/hr)
Q c-b	=	567	(pcu/hr)
Q b-ac	=	447	(pcu/hr)
TOTAL FLOW	=	2399	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0962
DFC b-c	=	0.5479
DFC c-b	=	0.8254
DFC b-ac (Share Lane)	=	0.6441
CRITICAL DFC	**=**	**0.83**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - DES-AM.xls]C

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn A - Unnamed Rd 1 / Kong Nga Po Rd	2028 Design - PM Peak / Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			
W	=	8.0	(metres)
W cr	=	0	(metres)
q a-b	=	11	(pcu/hr)
q a-c	=	2	(pcu/hr)
MAJOR ROAD (ARM C)			
W c-b	=	3.4	(metres)
Vr c-b	=	24.8	(metres)
q c-a	=	4	(pcu/hr)
q c-b	=	88	(pcu/hr)
MINOR ROAD (ARM B)			
W b-a	=	2.6	(metres)
W b-c	=	2.5	(metres)
Vl b-a	=	25.4	(metres)
Vr b-a	=	47.3	(metres)
Vr b-c	=	47.3	(metres)
q b-a	=	13	(pcu/hr)
q b-c	=	99	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.779
E	=	0.834
F	=	0.895
Y	=	0.724
F for (Qb-ac)	=	0.884

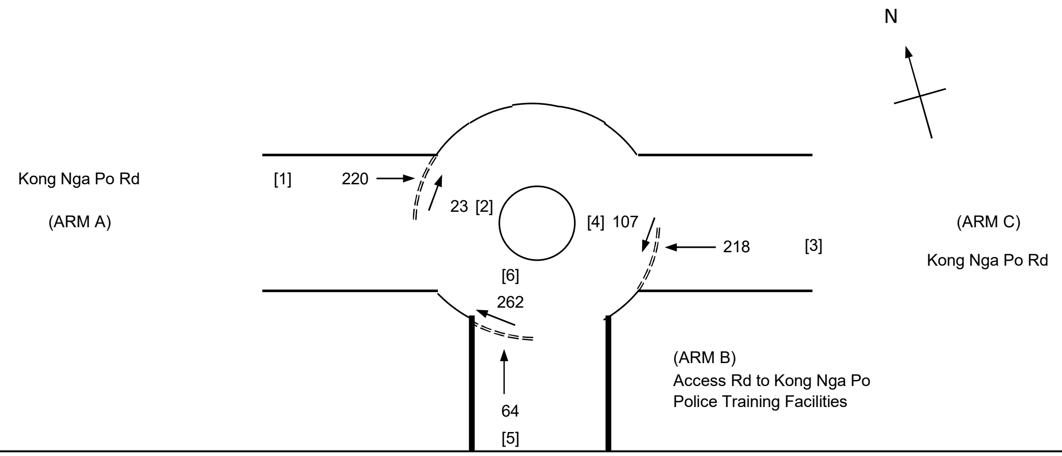
THE CAPACITY OF MOVEMENT :

Q b-a	=	461	(pcu/hr)
Q b-c	=	620	(pcu/hr)
Q c-b	=	663	(pcu/hr)
Q b-ac	=	596	(pcu/hr)
Q c-a	=	1561	(pcu/hr)
TOTAL FLOW	=	217	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0282
DFC b-c	=	0.1597
DFC c-b	=	0.1327
DFC b-ac	=	0.1879
(Share Lane)		
DFC c-a	=	0.0026
CRITICAL DFC	**=**	**0.19**

8FM CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn B - Kong Nga Po Rd / Access Rd to Kong Nga Po Police Training Facilities	2028 Design - PM Peak; Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025

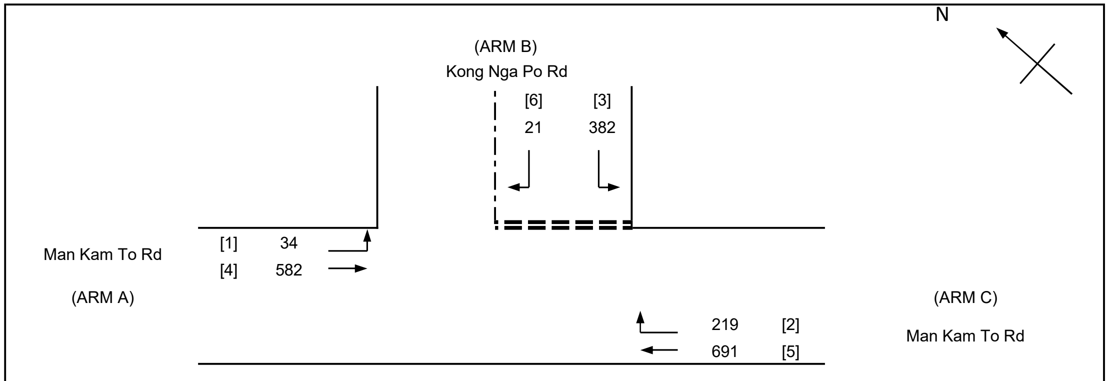


GEOMETRIC DETAILS:		**ARM**	**A**	**B**	**C**
V	=	Approach half width (m)	3.7	4.1	3.9
E	=	Entry width (m)	7.3	5.9	5.5
L	=	Effective length of flare (m)	4.0	3.7	4.9
R	=	Entry radius (m)	25.1	18.5	12.3
D	=	Inscribed circle diameter (m)	13.4	13.4	13.4
A	=	Entry angle (degree)	31.0	34.0	37.0
Q	=	Entry flow (pcu/h)	220	64	218
Qc	=	Circulating flow across entry (pcu/h)	23	262	107
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	1.42	0.77	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.01	0.98	0.95
X2	=	V + ((E-V)/(1+2S))	4.66	4.78	4.67
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1413	1450	1415
Td	=	1+(0.5/(1+M))	1.50	1.50	1.50
Fc	=	0.21*Td(1+0.2*X2)	0.61	0.61	0.61
Qe	=	K(F-Fc*Qc)	1408	1266	1276
DFC	=	Design flow/Capacity = Q/Qe	0.16	0.05	0.17

TOTAL FLOW = **894** **(pcu/hr)**
CRITICAL DFC = **0.17**

C:\Users\billy\Documents\Work\P80115\Data\Calculation\[80115-Junctions - DES-PM.xls]B

8FM CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Proposed Temporary Warehouse (excluding Dangerous Goods Godown) and Open Storage of Construction Material and Machineries with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Various Lo		Prepared By:	FF	May-2025
Jn C - Man Kam To Rd / Kong Nga Po Rd	2028 Design - PM Peak Project No.: 80115	Checked By:	MM	May-2025
		Reviewed By:	FM	May-2025



NOTES : (GEOMETRIC INPUT DATA)

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

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	14.0	(metres)
W cr	=	5.9	(metres)
q a-b	=	34	(pcu/hr)
q a-c	=	582	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	4.0	(metres)
Vr c-b	=	40	(metres)
q c-a	=	691	(pcu/hr)
q c-b	=	219	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	2.3	(metres)
W b-c	=	2.3	(metres)
Vl b-a	=	80	(metres)
Vr b-a	=	35.8	(metres)
Vr b-c	=	35.8	(metres)
q b-a	=	21	(pcu/hr)
q b-c	=	382	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.773
E	=	0.807
F	=	0.959
Y	=	0.517
F for (Qb-ac)	=	0.948

THE CAPACITY OF MOVEMENT :

Q b-a	=	353	(pcu/hr)
Q b-c	=	511	(pcu/hr)
Q c-b	=	603	(pcu/hr)
Q b-ac	=	499	(pcu/hr)
TOTAL FLOW	=	1929	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0595
DFC b-c	=	0.7476
DFC c-b	=	0.3632
DFC b-ac (Share Lane)	=	0.8070

CRITICAL DFC = 0.81