Appendix III

Traffic Impact Assessment

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

TRAFFIC IMPACT ASSESSMENT REPORT

Reference: 31048-R01-04
Date: April 2025

AXON
CONSULTANCY

Contents

1	**Introduction**		**1**
	1.1	Background	1
	1.2	Objectives	1
	1.3	Structure of Report	2
2	**The Proposed Development**		**3**
	2.1	The Application Site	3
	2.2	The Proposed Development	3
3	**Existing Traffic Situation**		**4**
	3.1	Existing Road Network	4
	3.2	Vehicular Ingress/Egress Arrangement	4
	3.3	Traffic Count Surveys	5
	3.4	Existing Junction Assessment	5
	3.5	Public Transport	7
4	**Future Traffic Situation**		**8**
	4.1	Design Year Road Network	8
	4.2	Development Traffic Generation	8
	4.3	Regional Traffic Growth	9
	4.4	Major Planned/ Committed Developments	10
	4.5	Reference and Design Flows	13
	4.6	Future Assessment	13
5	**Transport Provision**		**17**
	5.1	Vehicular Access Arrangement	17
	5.2	Internal Transport Provisions	17

6 Traffic Management Plan 19

6.1 Introduction 19
6.2 Operation Procedure 19
6.3 Realtime Positioning 20
6.4 Small Fleet Size 21
6.5 Junction Restriction Measures 21
6.6 Conclusion 22

7 Contingency Plan for Silo Malfunction 23

7.1 Introduction 23
7.2 Trigger and Activation 23
7.3 Temporary Reassignment of Excessive Trucks 23
7.4 Safety and Traffic Management Measures 23
7.5 Maintenance and Repair Response 24
7.6 Evaluation of Consequences and Mitigation Measures 24
7.7 Recovery and Resumption of Normal Operations 24

8 Chapter 8 – Non-Conformance, Incident Investigation and Auditing Mechanism 25

8.1 Introduction 25
8.2 Non-Conformance Management 25
8.3 Incident Investigation 26
8.4 Auditing Mechanism 26
8.5 Conclusion 27

9 Summary and Conclusions 28

9.1 Summary 28
9.2 Conclusions 29

Figures

Appendix A Juncton Analysis

Appendix B Loading / Unloading Bay Analysis

Appendix C Swept Path Analysis

1 Introduction

1.1 Background

The Applicant intends to seek Town Planning Board ("TPB") approval for a Proposed Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lots (TYTL) 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi (hereafter "the proposed development").

In the Approved Tsing Yi Outline Zoning Plan No. S/TY/32 (referred to as the "OZP"), the Application Site is zoned as "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses". According to the Schedule of Uses outlined in the OZP, the intended use of a Concrete Batching Plant falls under Column 2 uses. Consequently, obtaining planning permission from TPB is necessary for the proposed temporary concrete batching plant under Section 16 of the Town Planning Ordinance.

AXON Engineering & Consulting Limited was commissioned to carry out a Traffic Impact Assessment (TIA) report in support of the Section 16 planning application to facilitate the proposal for the proposed development.

1.2 Objectives

The objectives of the traffic impact study are as follows:

- to estimate the potential traffic generation/attraction due to the proposed development; and
- to assess the future traffic situation in the surrounding network; and
- to appraise the potential traffic impacts of the development; and
- to evaluate the internal transport facilities of the development; and
- to consider road improvement proposals, if required.

1.3 Structure of Report

Chapter 1 – Introduction, which covers the study's background, objectives, and report structure.

After this introductory chapter, there are the following chapters:

Chapter 2 – The Proposed Development, which describes the site location and development schedules;

Chapter 3 – Existing Traffic Situation, which presents the existing local road network within the vicinity of the proposed development, the details of the traffic count survey and the traffic assessment of the existing traffic conditions;

Chapter 4 – Future Traffic Situation, which presents the design year future traffic flows under reference and design scenarios based on the assumed annual growth rate considered the planned adjacent developments;

Chapter 5 – Transport Provisions, which presents the traffic arrangements and provisions of internal transport facilities for the proposed development;

Chapter 6 – Traffic Management Plan, which outlines procedures for coordinating truck movements via GPS tracking and walkie-talkie communication to prevent congestion;

Chapter 7 – Contingency Plan, which Specifies measures to manage silo malfunctions by rerouting excess trucks to a temporary waiting area;

Chapter 8 – Non-Conformance, Incident Investigation and Auditing Mechanism, which describes processes for managing deviations, investigating incidents, and conducting audits for continuous improvement; and

Chapter 9 – Summary and Conclusion, which summarizes the key findings and conclusions regarding traffic impacts and management measures.

2 The Proposed Development

2.1 The Application Site

The Application Site has an approximate area of 4,266 m^2 and is bounded by TYTL 14, TYTL 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi. It is bordered by Tam Kon Shan Road on the south. The site is situated to the west of Green Kwai Tsing and Tsing Yi Northeast Park. The site location is shown in **Figure 2.1**.

2.2 The Proposed Development

The proposed development involves constructing a Temporary Concrete Batching Plant for a period of five years. The site's strategic location along the coast enables the marine transportation of concrete ingredients, significantly reducing the potential traffic impact on the surrounding road network. Furthermore, the daily operations of the concrete batching plant requires certain raw materials, which will be transported overland to the proposed development for concrete manufacturing. Specifically, these materials include admixtures and pulverised fuel ashes. The delivery trucks carrying these raw materials will be scheduled to arrive at the plant during designated time intervals, particularly during off-peak hours, in order to mitigate any adverse traffic effects on the adjacent road networks.

The operational parameters and activities for the development are summarized in **Table 2.1** below:

Table 2.1 Development Operation Parameter and Activities

Design Parameter	Quantity of Proposed Development Parameter
Lot No.	TYTL 14, TYTL 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi
Application Area	About 4,335 m^2
Gross Floor Area	About 1,419.2 m^2
Zoning	"Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses"
Completion Year	2026
Activities	**Delivery Mode**
Ingredient Delivery	Barge + Truck
Final Product Delivery	Truck

3 Existing Traffic Situation

3.1 Existing Road Network

The major road networks in the vicinity of the Application Site are listed as follows:

Tsing Yi North Coastal Road, is a dual-two carriageway oriented in the east-west direction. This road connects Tsing Ma Control Area and Tsing Tsuen Road as a primary linkage, providing a major passageway for the commute of the motorists between Lantau Island, New Territories Northwest and Kowloon.

Tam Kon Shan Road, is a single-two carriageway oriented in an east-west direction. This road facilitates connections to the Tsing Yi North Coastal Road at both its termini and its midpoint. Additionally, Tam Kon Shan Road links to other local roads in Tsing Yi via the Tam Kon Shan Interchange.

3.2 Vehicular Ingress/Egress Arrangement

The proposed development benefits from well-established vehicular ingress and egress routes:

Ingress Route

Motorists traveling from New Territories, Kowloon, or Hong Kong Island primarily use the Tsing Yi North Coastal Road to access the site. The designated route includes a ramp to Tam Kon Shan Road, leading to the final approach via Tam Kon Shan Road.

Motorists traveling from Lantau Island typically utilize the Tsing Yi North Coastal Road to reach the site. The prescribed route involves making an u-turn at the Tam Kon Shan Interchange, followed by a ramp that connects to Tam Kon Shan Road, ultimately leading to the final approach via Tam Kon Shan Road.

Egress Route

Vehicles leaving the site follow the reverse route via Tam Kon Shan Road, merging onto the Tsing Yi North Coastal Road through the designated ramp, and then proceeding to their respective destinations in the New Territories, Kowloon, or Hong Kong Island.

Vehicles departing from the site utilize the reverse route along Tam Kon Shan Road, merging onto the Tsing Yi North Coastal Road via the designated ramp. They then execute a U-turn at the Tam Kon Shan Interchange before continuing to their respective destinations in the Lantau Island.

The detailed ingress/egress arrangement is illustrated in **Figure 3.1**.

3.3 Traffic Count Surveys

To appraise the existing traffic conditions, classified turning movement count surveys have been carried out at the key junctions of the surrounding road network, as shown in **Figure 3.2**, on a normal school day in October 2024 from 08:00 to 19:00.

The traffic counts were recorded in a 15-minute interval, and to be converted into passenger car unit (pcu) values. The highest consecutive 15-minute hourly traffic volume was adopted as the peak hour traffic flow.

The morning, noon and evening peak hours of the road network on school days have been identified as 08:15 to 09:15, 12:15 to 13:15 and 17:30 to 18:30 respectively. The observed traffic flows of the key junctions are presented in **Figure 3.3**.

3.4 Existing Junction Assessment

Junction capacity assessment

Junction capacity assessments have been conducted at major junctions along the vehicular ingress/egress route, following the guidelines set out in the Transport Planning and Design Manual ("TPDM") Volumes 2. The results of these assessments are summarized in **Table 3.1**, while the detailed junction calculation sheets can be found in **Appendix A**.

The performance of a priority junction or roundabout is indicated by its Design Flow / Capacity Ratio ("DFC"). A DFC value of 0.85 or below is considered within an acceptable level without causing undue delay to motorists passing through the concerned junctions.

Table 3.1 Existing Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	AM Peak	Noon Peak	PM Peak
Jn A	Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	Roundabout/ DFC	0.24	0.23	0.12
Jn B	Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	Priority/ DFC	0.35	0.34	0.22
Jn C	Tam Kon Shan Interchange	Roundabout/ DFC	0.64	0.66	0.70

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

As depicted in **Table 3.1**, all key junctions currently operate below their maximum capacities during the identified peak.

Link capacity assessment

Link Capacity Assessments are carried out at the key road links in accordance with Transport Planning and Design Manual ("TPDM") Volume 2. The results of the link capacity assessment are summarised in **Table 3.2.**

The performance of a link of carriageway is indicated by its Peak Hourly Flows/Design Flow Ratio (P/Df). A P/Df value of 0.85 or below is considered within an acceptable level without causing undue delay to motorists passing through the concerned link section.

Table 3.2 Existing Link Performance

Link No.	Section of Carriageway	Design Flow (pcus/hr)	Observed Scenario Peak Hourly Flows			Peak Hourly Flows/ Design Flow Ratio (P/Df)		
			AM Peak	Noon Peak	PM Peak	AM Peak	Noon Peak	PM Peak
L1	Tam Kon Shan Road eastbound (btwn. Jn A and Jn B)	810 (a)	325	303	178	0.40	0.37	0.22
L2	Tam Kon Shan Road westbound (btwn. Jn A and Jn B)	810 (a)	120	95	36	0.15	0.12	0.04
L3	Tsing Yi North Coastal Road Slip Road southbound	1,720 (b)	250	242	160	0.15	0.14	0.09
L4	Tsing Yi North Coastal Road Slip Road northbound	1,720 (b)	260	256	136	0.15	0.15	0.08
L5	Tsing Yi North Coastal Road Flyover eastbound	2,520 (c)	398	590	686	0.16	0.23	0.27
L6	Tsing Yi North Coastal Road Flyover westbound	2,520 (c)	701	603	658	0.28	0.24	0.26

Notes: (a) The design flow of Tam Kon Shan Road = 400 veh/hour/direction (capacity for local road) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 810 pcus/hour.
(b) The design flow of Tam Kon Shan Road = 850 veh/hour/direction (capacity for 2 lane district distributor) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 1,720 pcus/hour.
(c) The Design Flow of Tam Kon Shan Road = 2,000 veh/hour/direction (capacity for 4 lane district distributor) x 0.9 reduction factor of heavy vehicle x 1.4 pcu factor = 2,520 pcus/hour.

As depicted in **Table 3.2**, all key links currently operate below their maximum capacities during the identified peak.

3.5 Public Transport

As depicted in **Figure 3.4**, there are no public transport service stops within the desirable walking distance of 400 meters from the proposed development. However, GMB Route 88A provides service along Tam Kon Shan Road for the proposed development from 06:30 to 09:00 in morning period on normal week days.

4 Future Traffic Situation

4.1 Design Year Road Network

The design year will be determined as either three years following the completion year of 2026 or five years after the application year of 2024, depending on which period is longer. Both calculations yield a design year of 2029. Therefore, the year 2029 has been chosen as the design year for this study.

For the Design Year 2029, the Growth Factor Method is employed to forecast traffic. This method utilizes the historical data from Annual Traffic Census Data (ATC) and demographic trends from the "2021 – based Territorial Population and Employment Data Matrix" ("TPEDM") to predict future traffic volumes. The higher growth factor from these sources is chosen for a conservative traffic estimate.

A review of upcoming road and junction improvement projects reveals few expected changes to the current road network. The current and expected road network developments reinforce the suitability of using the Growth Factor Method. This approach effectively leverages existing traffic trends to project future traffic patterns, ensuring a robust and realistic forecast for the Design Year 2029.

4.2 Development Traffic Generation

The peak hour traffic trip generation and attraction are estimated based on the design production capacity of the proposed concrete batching plant and the information provided by the Applicant. There are typically 1 to 2 trucks daily for the delivery of pulverised fuel ash (PFA) and admixture. However, as these deliveries occur outside of peak hours, they are not included in the peak hour trip generation flows. The development trips are detailed in **Table 4.1**.

Table 4.1 Development Traffic Generation

Use	Generation			Attraction		
	AM Peak	Noon Peak	PM Peak	AM Peak	Noon Peak	PM Peak
Private Car Trips (pcus/ hour) [(a)]	2	2	2	2	2	2
Concrete Mixer Truck Trips (pcus/ hour) [(b)]	121	121	121	121	121	121
Total(pcus/ hour)	123	123	123	123	123	123

(a) Information provided by the Applicant.

(b) The no. of concrete mixer truck generated/attracted by plant = design production capacity / capacity of a concrete mixer truck x 2.8 pcu factor = (300 m^3 per hour / 7m^3) x 2.8 pcu = 121 pcus per hour.

As shown in **Table 4.1**, the proposed development would generate 123 pcus and attract 123 pcus in all AM, Noon and PM peak hours. The development traffic has been distributed and assigned to the existing road network.

4.3 Regional Traffic Growth

To estimate traffic flows for the design year 2029, it is proposed to adjust the existing traffic flows to reflect anticipated natural traffic growth.

Annual Traffic Census (ATC)

Reference has been made to the 2018 to 2023 Annual Traffic Census Reports, published by the Transport Department. The traffic data recorded at counting stations adjacent to the Application Site are shown in **Table 4.2**.

Table 4.2 Annual Traffic Census Data

No.	Link	From	To	Road Type*	2018	2019	2020	2021	2022	2023	Growth Rate p.a.
6108	Tsing Yi N Coastal Rd	Tam Kon Shan INT W End	Slip Rds to & from Tam Kon Shan Rd	PD	23,440	22,720	19,410	18,860	21,030	22,970	-0.40%
6221	Tsing Yi N Coastal Rd FO	Tsing Tsuen Rd	Tam Kon Shan INT W End	DD	14,400	14,270	14,330	13,750	13,480	14,820	+0.58%
Total					37,840	36,990	33,740	32,610	34,510	37,790	**-0.03%**

*Note: * PD= Primary Distributor & DD = district Distributor*

Table 4.2 presents traffic flow data spanning six years. The data indicates variable annual growth rates across different road links, with one link experiencing a decline and another link showing an increase in traffic volume. When considering all the links collectively, the compounded annual growth rate averages out to a decrease of **-0.03%**.

Projected Population Data

According to the report "2021 – based Territorial Population and Employment Data Matrix" ("TPEDM") published by the Planning Department, the population and employment growth data from year 2021 to 2031 in Kwai Tsing Planning Data District are presented in **Table 4.3**.

Table 4.3 2021-Based TPEDM Data

Planning Data District	Population		Employment		Population & Employment		Avg. Annual Growth
	2021	2031	2021	2031	2021	2031	
Kwai Tsing	495,800	483,050	226,350	227,800	722,150	710,850	**-0.16%**

The data indicate the growth in population and employment in Kwai Tsing District at an annual rate of **-0.16%** from 2021 to 2031.

Since the growth rates derived from both historical traffic data and future planning data are less than +1.00%, an annual growth rate of **+1.00%** has been adopted for conservative forecasting purposes. This growth factor will be applied to the traffic flows observed in 2024.

4.4 Major Planned/ Committed Developments

The forecast includes major planning applications or committed developments near the site, detailed in **Table 4.4** while the traffic generations/attractions of the those planned developments are depicted in **Table 4.5**.

Table 4.4 Major Planning Applications/ Committed Developments

Location	Type of Development	Development Parameters	Completion Year/ *Operation Year*	*Remarks (Source of Information)*
Public Housing Development at Ching Hong Road North	Residential Development	Phase 1: about 860 units Phase 2: about 510 units Phase 3: about 1680 units Phase 4: about 770 units	Phase 1: 2024 Phase 2: 2024 Phase 3: 2029 Phase 4: 2031	Ching Hong Road North, Tsing Yi Planning Brief and Kwai Tsing District Council District Facilities and Works Committee Paper No. 7/D/2024
	Retail	About 2,000m^2 GFA	2024-2029	
	Social Welfare Facility	About 3,765m^2 NOFA & 74m^2 IFA	2024-2029	
	Kindergarten	10 classrooms	2024-2029	
	Clinics and Polyclinics	About 3,100m^2 GFA	2029	
Public Housing Development at Tsing Yi Road West	Residential Development	About 3,400 units	2034-2035	

Location	Type of Development	Development Parameters	Completion Year/ *Operation Year*	***Remarks (Source of Information)***
To rezone the application site from "Industrial", "Other Specified Uses" annotated " Recreation and Tourism Related Uses" and "Green Belt" to "Residential (Group A)6", "Residential (Group A)7" and area shown as 'Road'; and to incorporate an area currently not covered by the approved Tsing Yi Outline Zoning Plan No. S/TY/32 (the OZP) into the OZP and rezone it to "Residential (Group A)6" and "Other Specified Uses" annotated "Marina Club" at Tsing Yi Town Lot 80 and 108 RP and adjoining Government land, Tsing Yi	Private Residential Development	Phase 1: About 5,048 units Phase 2: About 5,323 units	Phase 1: 2028 Phase 2: 2036	Planning Application No. Y/TY/2
	Public Residential Development	Phase 2 About 4,704 units		
	Retail/Commercial development	23,332m^2 GFA	On or before 2036	
	Kindergarten	About 3,570m^2 GFA		
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot 108 RP (Part)	Temporary Concrete Batching Plant	About 2,415.58m^2 GFA	*Under Operation (2020-2025)*	Planning Application No. A/TY/143
Renewal of Planning Approval for Temporary Asphalt Plant for a Period of 5 Years at Tsing Yi Town Lot 108 RP (Part)	Temporary Asphalt Plant	About 894.36m^2 GFA	*Under Operation (2020-2025)*	Planning Application No. A/TY/144
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot 98, Tsing Tim Street, Tsing Yi, New Territories	Temporary Concrete Batching Plant	About 980m^2 GFA	*Under Operation (2021-2026)*	Planning Application No. A/TY/145
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot No. 108 RP (Part), Sai Tso Wan Road, Tsing Yi	Temporary Concrete Batching Plant	About 2,691.36m^2 GFA	*Under Operation (2024-2029)*	Planning Application No. A/TY/147
Renewal of Planning Approval for Temporary Asphalt Plant for a Period of 5 Years at Tsing Yi Town Lot No. 108 RP (Part), Sai Tso Wan Road, Tsing Yi	Temporary Asphalt Plant	About 2,716.7m^2 GFA	*Under Operation (2024-2029)*	Planning Application No. A/TY/148
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot No. 108 RP (Part), Sai Tso Wan Road, Tsing Yi	Temporary Concrete Batching Plant	About 1,817m^2 GFA	*Under Operation (2024-2029)*	Planning Application No. A/TY/149
Tsing Yi - Lantau Link	Infrastructure	Road & bridge	2033	LC Paper No. PWSC(2022-23)38

Table 4.5 Traffic Generation/Attraction of Major Planning Applications/ Committed Developments

Location	Type of Development	Traffic Generation (pcus/ hour)		Traffic Attraction (pcus/ hour)	
		AM	PM	AM	PM
Public Housing Development at Ching Hong Road North	Residential Development[(b1)]	166	91	125	115
	Retail[(b2)]	5	7	5	8
	Social Welfare Facility Kindergarten[(b3)]	30	30	30	30
	Clinics and Polyclinics[(b4)]	23	17	23	17
Public Housing Development at Tsing Yi Road West	Residential Development[(c1)]	147	81	111	103
To rezone the application site from "Industrial", "Other Specified Uses" annotated " Recreation and Tourism Related Uses" and "Green Belt" to "Residential (Group A)6", "Residential (Group A)7" and area shown as 'Road'; and to incorporate an area currently not covered by the approved Tsing Yi Outline Zoning Plan No. S/TY/32 (the OZP) into the OZP and rezone it to "Residential (Group A)6" and "Other Specified Uses" annotated "Marina Club" at Tsing Yi Town Lot 80 and 108 RP and adjoining Government land, Tsing Yi [(d)]	Private Residential Development (Phase 1)	363	145	215	187
	Private Residential Development (Phase 2)	382	152	226	197
	Public Residential Development	203	408	594	526
	Retail/Commercial development	53	73	56	83
	Kindergarten	54	42	54	42
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot 108 RP (Part) [(e)]	Temporary Concrete Batching Plant	56	53	68	67
Renewal of Planning Approval for Temporary Asphalt Plant for a Period of 5 Years at Tsing Yi Town Lot 108 RP (Part) [(f)]	Temporary Asphalt Plant	25	33	29	23
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot 98, Tsing Tim Street, Tsing Yi, New Territories [(g)]	Temporary Concrete Batching Plant	38	38	38	38
Proposed Temporary Logistic Centre for a Period of 6 Years at Tsing Yi Town Lot 102 (Part), 98 Tam Kon Shan Road, Tsing Yi New Territories [(h)]	Temporary Logistic Centre	11	13	16	11
Renewal of Planning Approval for Temporary Asphalt Plant for a Period of 5 Years at Tsing Yi Town Lot No. 108 RP (Part), Sai Tso Wan Road, Tsing Yi [(j)]	Temporary Asphalt Plant	45	45	45	45
Renewal of Planning Approval for Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lot No. 108 RP (Part), Sai Tso Wan Road, Tsing Yi [(k)]	Temporary Concrete Batching Plant	51	51	51	51
Tsing Yi - Lantau Link [(l)]	Infrastructure	15	15	15	15

Notes: (b_1) The traffic generation/attraction is anticipated by the trip rates (mean limit) for subsidised housing public rental of average flat size 40m^2 listed in Table 1 of Annex C in T.P.D.M. Vol.1.
(b_2) The traffic generation/attraction is anticipated by the trip rates (mean limit) for retail land use listed in Table 2 of Annex C in T.P.D.M. Vol.1.
(b_3) The traffic generation/attraction of social welfare facilities and kindergartens is made refence to the approved Traffic Impact Assessment for Proposed Public Housing Development Sites 1 & 2 in Sheung Shui Areas 4 and 30.

(b_4) The traffic generation/attraction is anticipated by the trip rates for General Out-patient Clinic listed in the approved Traffic Impact Assessment Report for Proposed Tai Wai Government Complex Co-located with Public Housing Development at Tsuen Nam Road, Tai Wai.
(c_1) The traffic generation/attraction is anticipated by the trip rates (mean limit) for subsidised housing public rental of average flat size 40m^2 listed in Table 1 of Annex C in T.P.D.M. Vol.1.
(d) The generation/attraction is referred to the Traffic Impact Assessment of Planning Application No. Y/TY/2.
(e) The traffic generation/attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/143.
(f) The traffic generation /attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/144.
(g) The traffic generation /attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/145.
(h) The traffic generation /attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/146.
(j) The traffic generation /attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/148.
(k) The traffic generation /attraction is referred to the Traffic Impact Assessment of Approved Planning Application No. A/TY/149.
(l) An assumption of constriction generation/attraction rate (1 construction vehicle per 10 minutes with 2.5 pcu factor for each construction vehicle)

4.5 Reference and Design Flows

The growth factor will be applied to the traffic flows of 2024 Observed Peak Hours, to estimate the 2029 Reference Flows and 2029 Design Flows. The reference and design flows for year 2029 are calculated from the following formulae:

2029 Reference Flows	=	2024 Observed Flows x $(1+1.00\%)^5$ + Planned/ Committed Development Traffic
2029 Design Flows	=	2029 Reference Flows + Proposed Development Traffic

Figure 4.1 shows the 2029 Reference Peak Hours Flows in the. By adding the development traffic, **Figure 4.2** shows the 2029 Design Peak Hours Traffic.

4.6 Future Assessment

Junction capacity assessment

Junction capacity assessments were carried out for the major junctions in the local road network for both the Reference and Design scenarios. The results are summarised and presented in **Table 4.6** with detailed calculation sheets attached in **Appendix A**.

Table 4.6 Future Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario			Design Scenario		
			AM Peak	Noon Peak	PM Peak	AM Peak	Noon Peak	PM Peak
Jn A	Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	Roundabout/ DFC	0.26	0.25	0.13	0.38	0.37	0.24
Jn B	Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	Priority/ DFC	0.39	0.38	0.25	0.41	0.40	0.26
Jn C	Tam Kon Shan Interchange	Roundabout/ DFC	0.74	0.75	0.78	0.74	0.76	0.78

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

As shown in **Table 4.6**, the capacities of all key junctions are expected to perform satisfactorily during peak periods in both Reference and Design Scenarios.

Link capacity assessment

Link capacity assessments were carried out for the major road link in the local road network for both the Reference and Design scenarios. The results are summarised and presented in **Table 4.7** and **Table 4.8** respectively.

Table 4.7 Future Link Performance (Reference Scenario)

Link No.	Section of Carriageway	Design Flow (pcus/hr)	Reference Scenario Peak Hourly Flow			Peak Hourly Flows/ Design Flow Ratio (P/Df)		
			AM Peak	Noon Peak	PM Peak	AM Peak	Noon Peak	PM Peak
L1	Tam Kon Shan Road eastbound	810 (a)	354	332	201	0.44	0.41	0.25
L2	Tam Kon Shan Road westbound	810 (a)	127	100	38	0.16	0.12	0.05
L3	Tsing Yi North Coastal Road Slip Road southbound	1,720 (b)	275	268	182	0.16	0.16	0.11
L4	Tsing Yi North Coastal Road Slip Road northbound	1,720 (b)	290	283	154	0.17	0.16	0.09
L5	Tsing Yi North Coastal Road Flyover eastbound	2,520 (c)	427	628	727	0.17	0.25	0.29
L6	Tsing Yi North Coastal Road Flyover westbound	2,520 (c)	750	644	700	0.30	0.26	0.28

Notes: (a) The design flow of Tam Kon Shan Road = 400 veh/hour/direction (capacity for local road) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 810 pcus/hour.
(b) The design flow of Tam Kon Shan Road = 850 veh/hour/direction (capacity for 2 lane district distributor) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 1,720 pcus/hour.
(c) The Design Flow of Tam Kon Shan Road = 2,000 veh/hour/direction (capacity for 4 lane district distributor) x 0.9 reduction factor of heavy vehicle x 1.4 pcu factor = 2,520 pcus/hour.

Table 4.8 Future Link Performance (Design Scenario)

Link No.	Section of Carriageway	Design Flow (pcus/hr)	Reference Scenario Peak Hourly Flow			Peak Hourly Flows/ Design Flow Ratio (P/Df)		
			AM Peak	Noon Peak	PM Peak	AM Peak	Noon Peak	PM Peak
L1	Tam Kon Shan Road eastbound (btwn. Jn A and Jn B)	810 (a)	477	455	324	0.59	0.56	0.40
L2	Tam Kon Shan Road westbound (btwn. Jn A and Jn B)	810 (a)	127	100	38	0.16	0.12	0.05
L3	Tsing Yi North Coastal Road Slip Road southbound	1,720 (b)	398	391	305	0.23	0.23	0.18
L4	Tsing Yi North Coastal Road Slip Road northbound	1,720 (b)	413	406	277	0.24	0.24	0.16
L5	Tsing Yi North Coastal Road Flyover westbound	2,520 (c)	550	739	850	0.22	0.29	0.34
L6	Tsing Yi North Coastal Road Flyover westbound	2,520 (c)	873	755	823	0.35	0.30	0.33

Notes: (a) The design flow of Tam Kon Shan Road = 400 veh/hour/direction (capacity for local road) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 810 pcus/hour.
(b) The design flow of Tam Kon Shan Road = 850 veh/hour/direction (capacity for 2 lane district distributor) x 0.9 reduction factor of heavy vehicle x 2.25 pcu factor = 1,720 pcus/hour.
(c) The Design Flow of Tam Kon Shan Road = 2,000 veh/hour/direction (capacity for 4 lane distributor) x 0.9 reduction factor of heavy vehicle x 1.4 pcu factor = 2,520 pcus/hour.

As depicted in **Table 4.7** and **Table 4.8**, the capacities of all key links are expected to perform satisfactorily during peak periods in both Reference and Design Scenarios.

5 Transport Provision

5.1 Vehicular Access Arrangement

The proposed approximately 7.3m wide vehicular access will be located at Tam Kon Shan Road, as depicted in **Figure 5.1**. A pair of “No Left Turn” traffic sign will be erected at the access to guide concrete truck drivers to follow the egress route depicted in **Figure 3.1**.

5.2 Internal Transport Provisions

Under the Hong Kong Planning Standards and Guidelines (HKPSG), there are no specific standards for car parking and loading/unloading provisions for concrete batching plants. Therefore, the internal transport facilities have been carefully designed based on the operational requirements of the proposed development to ensure seamless and efficient site operations.

The internal transport provisions include designated parking spaces, loading/unloading bays, and waiting spaces, which serve the following critical purposes:

- Facilitating efficient vehicle manoeuvring within the site,
- Preventing congestion and queuing on public roads, and
- Ensuring vehicles are parked and unloaded in an organized manner.

The proposed internal transport provision is summarized in **Table 5.1**.

Table 5.1 Internal Transport Provisions

Type	Dimension	Proposed Provision
Private Car Parking Space	2.5m (W) x 5.0m (L) x 2.4m (H)	2*
Motorcycle Parking Space	1.0m (W) x 2.4m (L) x 2.4m (H)	2
Heavy Goods Vehicle Loading/Unloading Bay	3.5m (W) x 11.0m (L) x 4.7m (H)	3
Heavy Goods Vehicle Waiting Space	3.5m (W) x 11.0m (L) x 4.7m (H)	12

Note: The number of private car parking spaces is projected in accordance with the closest category, "Industrial Use," as outlined in HKPSG CH8. Referring to the Gross Floor Area (GFA) of 1,419.2m^2 mentioned in table 2.1 and the guidelines of HKPSG, it is determined that the number of private car parking should be established at a rate of one parking space for every 1,000 to 1,200 m² of GFA, necessitating the provision of two parking spaces.

The design includes 12 dedicated waiting spaces for heavy goods vehicles (HGVs), such as concrete mixer trucks, ensuring that vehicles can park within the site while awaiting their turn for loading or unloading operations. This provision is critical in maintaining traffic flow along the surrounding public roads, as it eliminates the risk of vehicles queuing or waiting on Tam Kon Shan Road or other access routes.

In addition, the internal layout has been optimized to accommodate the simultaneous presence of multiple vehicles, including those arriving, waiting, loading/unloading, and departing. This ensures that:

- Vehicles can manoeuvre efficiently without delays or bottlenecks.
- By confining all vehicle activities within the site, the design minimizes the likelihood of adverse impacts on public roads, including congestion or safety hazards.

A comprehensive queuing analysis has been conducted to evaluate the loading/unloading bays' functionality. The results, presented in **Appendix B**, confirm that the probability of queuing on public roads is negligible **(less than 0.003%)**. It indicates a **confidence level exceeding 99.9%** that there will be no traffic queuing on public roads. Consequently, the proposed internal transport provisions are deemed adequate for the proposed development.

Furthermore, a swept path analysis has been performed to ensure that there is sufficient space for vehicles entering and leaving the application site. The typical manoeuvrability of vehicles is shown in **Figures SP-01 to SP-06 (Appendix C)**.

6 Traffic Management Plan

6.1 Introduction

The Traffic Management Plan is designed to establish a coordinated framework that ensures safe, efficient, and orderly movement of vehicles, pedestrians, and equipment associated with the operation of the concrete batching plant. Its primary purpose is to minimize potential conflicts and disruptions by outlining clear procedures for vehicle ingress and egress, scheduling deliveries during off-peak hours, and implementing effective signage and control measures. This plan also assigns roles and responsibilities to staff and contractors, incorporates regular monitoring and auditing mechanisms, and ensures compliance with relevant local traffic and safety regulations, ultimately safeguarding both site operations and the surrounding community.

6.2 Operation Procedure

This procedure provides a structured framework for managing concrete truck operations within the batching plant, ensuring both efficiency and safety. The aim is to minimize congestion and potential hazards while maintaining consistent communication between drivers and site management. By following this procedure, all stakeholders can be assured that each truck operation is executed methodically and in compliance with the established traffic management and safety protocols. The procedure is listed below:

Arrival

Upon arrival at the plant, a concrete truck follows a designated access route and enters the site through a controlled entry point.

Assign to Waiting Space

Once on site, the truck is directed—via radio communication with plant management with assistance of the site manager—to a dedicated waiting space where it parks until its scheduled turn for loading.

Waiting

During this period, the driver maintains communication with the control centre to confirm the upcoming operation. When ready, the truck leaves the waiting area and proceeds to the loading zone adjacent to the silo.

Loading

Here, the truck aligns at the loading bay where concrete is dispensed from the silo into its mixer under controlled conditions, ensuring the proper flow and mix consistency.

Slump Test

Immediately following the loading, the truck is guided to a slump test station where a sample of the freshly loaded concrete is taken to assess its workability and quality.

Cleaning

Once the slump test confirms that the concrete meets the required specifications, the truck moves on to a designated cleaning area where any residual concrete is removed from the mixer.

Leaving

Finally, after these steps are completed, the truck exits the site via a predetermined egress route, ensuring the overall traffic flow remains smooth and safe.

6.3 Realtime Positioning

To ensure a smooth and efficient operation that prevents site overcrowding, continuous communication with truck drivers is maintained throughout their journey.

From the moment a truck departs for the site, its real-time location is monitored via GPS, and drivers are contacted via walkie talkie at key stages of their route. Initially, drivers receive instructions regarding the designated route and estimated arrival times.

As the truck proceeds, plant management uses the GPS data to proactively issue updates or adjustments, such as advising the driver to maintain a steady pace, slow down, or hold at a predetermined waiting area even before the truck is close to the site.

This ongoing dialogue allows management to coordinate arrivals, prevent congestion, and ensure that each truck proceeds to the loading zone at an optimal time.

Once the truck is near the loading area, further instructions guide the driver through the remaining steps—from entering the loading bay to completing the slump test and cleaning operations—until the truck finally exits the site.

This comprehensive, continuous communication strategy ensures that drivers are informed and responsive at all critical stages of the operation, thereby maintaining orderly flow and enhancing safety.

6.4 Small Fleet Size

At any given time, the concrete truck fleet operating at the plant is maintained at fewer than 20 vehicles. In conjunction with this modest fleet size, the facility is designed with 15 dedicated waiting spaces and loading bays. This configuration provides ample capacity, ensuring that trucks can be processed efficiently without forming queues.

Continuous GPS monitoring and proactive communication via walkie talkies enable the control centre to coordinate truck movements precisely, so that each truck is directed into an available space well in advance.

As a result, the likelihood of trucks queuing is nearly eliminated, supporting smooth, uninterrupted operations at the batching plant.

6.5 Junction Restriction Measures

To mitigate potential traffic impacts and ensure the safe and efficient movement of vehicles in Tsing Yi Town, specific access restrictions have been implemented for concrete mixer trucks associated with the proposed development. These measures are designed not only to reduce congestion during peak hours but also to enforce strict adherence to designated ingress/egress routes, as illustrated in **Figure 3.1**. In addition, certain junctions in Tsing Yi have been permanently restricted for concrete mixer truck passage, as detailed in **Table 6.1 and Figure 6.1**, with exceptions granted only under contingency or other circumstances evaluated by the Government Departments.

Enforcement measures have been integrated into the Traffic Management Plan, utilizing advanced GPS tracking to continuously monitor truck movements in real time. Further details on these enforcement protocols—including violation detection, automatic alerts, and the imposition of fines and penalty clauses—will be elaborated in **Chapter 8**.

Table 6.1 Restriction at Tsing Yi Junctions

Junction No.	Junction	AM Peak Period & PM Peak Period Restriction (07:30 – 09:30 & 16:30 – 18:30)	Full Time Restriction
C	Tam Kong Shan Interchange	X	
D	Tsing Yi Road West / Ching Hong Road Junction		X
E	Tsing Yi Interchange		X

Junction No.	Junction	AM Peak Period & PM Peak Period Restriction (07:30 – 09:30 & 16:30 – 18:30)	Full Time Restriction
F	Tsing Yi Road / Tsing Yi Hong Wan Road/ Tsing Sha Highway Roundabout		X
G	Tsing Yi Heung Sze Wui Road/ Fung Shue Wo Road / Tsing King Road Roundabout		X
H	Cheung Wan Street/ Tsing Yi Heung Sze Wui Road Junction		X

6.6 Conclusion

In summary, the integrated system of continuous GPS monitoring and proactive communication ensures that the operations remain smooth and efficient. With a fleet size of fewer than 20 trucks and 15 dedicated waiting spaces and loading bays, there is ample capacity to prevent any queuing, resulting in a well-coordinated, congestion-free process at the batching plant.

7 Contingency Plan for Silo Malfunction

7.1 Introduction

This contingency plan is designed to minimize disruption and ensure safety by diverting only the excessive trucks to the temporary waiting area, thereby maintaining a controlled and efficient flow of operations during a silo malfunction.

7.2 Trigger and Activation

If one or more of the three silo legs malfunction—disrupting the normal loading process and leading to an accumulation of concrete trucks—the control center will immediately activate the contingency plan. Monitoring systems will detect the malfunction, prompting plant management to notify maintenance personnel and relevant stakeholders via walkie talkie.

7.3 Temporary Reassignment of Excessive Trucks

In response to the malfunction, the control center will assess the current truck flow. Rather than redirecting every truck, only the excessive trucks—those arriving beyond the available capacity of the main loading area—will be directed to the temporary waiting area at the loading/unloading zone on Sai Tso Wan Road (Marshaling area of another Golik's concrete batching plant in Hongkong United Dockyard site). This approach ensures that trucks already in process or within the capacity limits continue operating normally, while only the surplus vehicles are diverted to prevent congestion.

7.4 Safety and Traffic Management Measures

Traffic Rerouting: On-site personnel will supply truck drivers with a detailed map to guide any excess vehicles safely to the temporary holding area, ensuring a smooth transition without affecting the main area's operations.

Continuous Monitoring: The control center will use real-time GPS tracking to monitor truck positions, ensuring that the temporary waiting area remains within its capacity limits and that no safety hazards develop from idling vehicles.

Communication Protocol: Drivers of the excessive trucks will receive timely updates via walkie talkie, informing them about the expected waiting times and subsequent instructions for re-entry into the main loading area once normal operations resume.

7.5 Maintenance and Repair Response

Immediate Inspection: Maintenance teams will promptly assess the malfunctioning silo legs to determine the extent of the issue.

Prioritization of Repairs: Urgent repairs will be initiated, with interim measures—such as manual or alternative loading processes—being considered if feasible.

Risk Assessment: A detailed risk assessment will be conducted to ensure that temporary operations in the waiting area do not introduce additional hazards.

7.6 Evaluation of Consequences and Mitigation Measures

Operational Delays: The primary impact is a reduction in concrete output, potentially delaying production and delivery schedules.

- *Mitigation:* The temporary waiting area is used to control truck flow, and proactive communication with clients will outline revised timelines.

Safety Risks: Accumulation of excessive trucks may increase the risk of collisions or on-site congestion.

- *Mitigation:* Strict traffic control measures, clear signage, and additional safety personnel in the temporary waiting area will help mitigate these risks.

Driver Inconvenience: Extended waiting periods for the excessive trucks might lead to driver fatigue and operational inefficiencies.

- *Mitigation:* Consistent communication will manage driver expectations, and periodic updates regarding repair progress will reduce uncertainty.

7.7 Recovery and Resumption of Normal Operations

After repairs restore the silo legs to full functionality, the maintenance team will verify that the system is stable. The control center will then gradually redirect the excessive trucks from the temporary waiting area back to the main loading area, carefully monitoring truck flow to avoid further congestion. A post-incident review will follow to refine the contingency procedures and address any shortcomings.

8 Chapter 8 – Non-Conformance, Incident Investigation and Auditing Mechanism

8.1 Introduction

This chapter outlines the procedures for managing non-conformance, investigating incidents, and auditing operations to ensure continuous compliance with the Traffic Management and Contingency Plans. By establishing a clear framework for monitoring deviations, analyzing incidents, and implementing corrective actions, the plant can maintain high standards of safety and operational efficiency.

8.2 Non-Conformance Management

Any deviation from established procedures – including lapses in communication, failure to adhere to scheduled truck movements, or unauthorized transit through restricted junctions, or issues in redirecting excessive trucks to the temporary holding area – will be treated as a non-conformance. When a non-conformance is identified, it must be immediately documented using a standardized report form. The report will detail the nature of the deviation, the time and location of occurrence, and any potential safety or operational impacts. The control center will review these reports and assign corrective actions, ensuring that any recurring issues are addressed through updates to procedures or additional training for on-site personnel.

Enforcement Measures: In addition to corrective actions, specific enforcement measures will be applied to any significant non-conformance or traffic violation to strengthen compliance and deter future violations. These measures include:

- **Fines for Non-Compliance:** Individuals who violate the Traffic Management Plan's restrictions (for example, by taking unauthorized routes or operating during prohibited hours) will be subject to monetary fines. The fines will be commensurate with the severity of the offense and are intended to immediately penalize non-compliance.
- **Penalty Clauses in Contracts:** Contractual agreements with drivers and transport contractors will incorporate penalty clauses triggered by repeated or serious violations. If an individual or entity is found in violation of the traffic restrictions, this record will be considered during contract renewal. Consequences can range from financial penalties at the time of renewal to suspension or non-renewal of contracts for persistent offenders.

All enforcement actions are documented alongside the non-conformance reports. This dual approach of corrective action and penalty ensures a strong deterrent effect against violating the proposed traffic restrictions. Compliance with the Traffic Management Plan will be closely monitored in real time (using GPS tracking data and communication logs), so that any breach can be swiftly identified. Upon detecting a violation, the control center or designated safety officer will promptly enforce the appropriate measure, issuing the fine or initiating contract penalty procedures, and record the outcome. This clear enforcement mechanism leaves no ambiguity about the consequences of non-compliance and encourages all personnel and contractors to adhere strictly to the traffic rules in place.

8.3 Incident Investigation

In the event of an incident, such as a near-miss, collision, or any safety-related event, the investigation process will be initiated without delay. The investigation procedure includes:

- **Immediate Response:** Secure the area and provide assistance, if necessary, while ensuring that all safety measures are in place to prevent further incidents.
- **Data Collection:** Gather information via GPS tracking records, walkie talkie communication logs, on-site surveillance (if available), and witness statements from drivers and personnel.
- **Root Cause Analysis:** Utilize structured methodologies (e.g., the “5 Whys” or fishbone diagrams) to determine underlying causes, whether they are process-related, human error, or equipment malfunction.
- **Corrective Action Implementation:** Develop and execute a plan to address the identified issues. The corrective action plan is then reviewed for effectiveness during subsequent operations.
- **Reporting:** Document the investigation findings and share lessons learned with all stakeholders to enhance future safety and operational performance. If the investigation reveals that a violation of traffic restrictions or other non-compliance contributed to the incident, the report will also note any enforcement actions (such as fines or contract penalties) imposed on the responsible parties. This ensures that incidents caused by non-compliance are met with appropriate disciplinary measures in addition to corrective steps.

8.4 Auditing Mechanism

To ensure ongoing compliance and continuous improvement, regular audits of the traffic management system and contingency measures will be conducted. These audits include:

- **Scheduled Audits:** Periodic reviews (monthly or quarterly) performed by a designated safety officer to verify adherence to procedures, check the condition of monitoring equipment (GPS, communication systems), and review non-conformance and incident reports.
- **Random Inspections:** Unannounced spot-checks during operations to ensure that procedures are being followed in real time.
- **Audit Reporting:** Each audit will generate a report summarizing observations, identifying areas of concern, and recommending improvements. The findings will be discussed in regular safety meetings, and corrective measures will be tracked until resolved.
- **Feedback Loop:** Audit outcomes, incident investigations, and non-conformance reports will be integrated into the training and operational review processes to promote a culture of continuous improvement and accountability.
- **Enforcement Review:** As part of each audit, records of traffic violations and the corresponding enforcement measures (fines issued or contract penalties applied) will be examined. The audit will verify that these measures are being applied consistently and fairly. It will also assess their effectiveness in deterring non-compliance, with auditors recommending any adjustments to the enforcement approach if current measures are found lacking.

Through this auditing mechanism, not only is procedural compliance checked, but the efficacy of the enforcement program itself is regularly evaluated. This ensures that the monitoring and penalty system remains robust and credible over time.

8.5 Conclusion

By implementing this comprehensive Non-Conformance, Incident Investigation, and Auditing Mechanism, the plant ensures that any deviations or safety incidents are promptly addressed, corrected, and learned from, while future violations are actively discouraged. The inclusion of fines for non-compliance and penalty clauses in contracts provides tangible consequences for breaking traffic rules, creating a strong deterrent effect across all levels of operation. Overall, this mechanism supports the overall objective of maintaining a safe, efficient, and compliant operational environment, thereby reinforcing the reliability of both the Traffic Management Plan and the Contingency Plan.

9 Summary and Conclusions

9.1 Summary

The Applicant intends to seek Town Planning Board ("TPB") approval for a Proposed Temporary Concrete Batching Plant for a Period of 5 Years at Tsing Yi Town Lots (TYTL) 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi (hereafter "the proposed development").

In the Approved Tsing Yi Outline Zoning Plan No. S/TY/32 (referred to as the "OZP"), the Applicant Site is zoned as "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses". According to the Schedule of Uses outlined in the OZP, the intended use of a Concrete Batching Plant fall under Column 2 uses. Consequently, obtaining planning permission from TPB is necessary for the proposed temporary concrete batching plant under Section 16 of the Town Planning Ordinance.

To appraise the existing traffic conditions, classified turning movement count surveys have been carried out at the key junctions of the surrounding road network on a normal school day in October 2024 from 08:00 to 19:00. The morning, noon and evening peak hours of the road network on weekday have been identified as 08:15 to 09:15, 12:15 to 13:15 and 17:30 to 18:30 respectively.

Year 2029 is used as the design year of the traffic impact assessment. After the comparison between the historical data and the future planning data, for conservative purposes, an annual growth rate of +1.00% is adopted. This growth factor has been applied to the observed traffic flows in 2024 to determine the 2029 anticipated traffic flows.

The capacities of all the key junctions are expected to be performing satisfactorily during the peak periods for both the Reference and Design Scenarios.

A comprehensive analysis of the loading and unloading bays demonstrated that the proposed facilities are sufficient to accommodate site operations without creating external traffic impacts. The probability of vehicles queuing on public roads was calculated to be negligible (<0.003%).

A swept path analysis has been performed to ensure that there is sufficient manoeuvring space for vehicles entering and leaving the application site.

The Traffic Management Plan ensures smooth, safe vehicle movement at the batching plant using continuous GPS tracking and proactive walkie talkie communication. With a fleet of fewer than 20 trucks and 15 dedicated waiting/loading spaces, only excess trucks are diverted to a temporary holding area, preventing congestion and maintaining efficient operations.

The contingency plan provides clear procedures during silo malfunctions by rerouting trucks beyond the main loading area's capacity to a designated holding area at Sai Tso Wan Road. Immediate notifications established safety protocols, and ongoing driver communication further enhance resilience, ensuring safe, uninterrupted operations during unexpected disruptions and reliability.

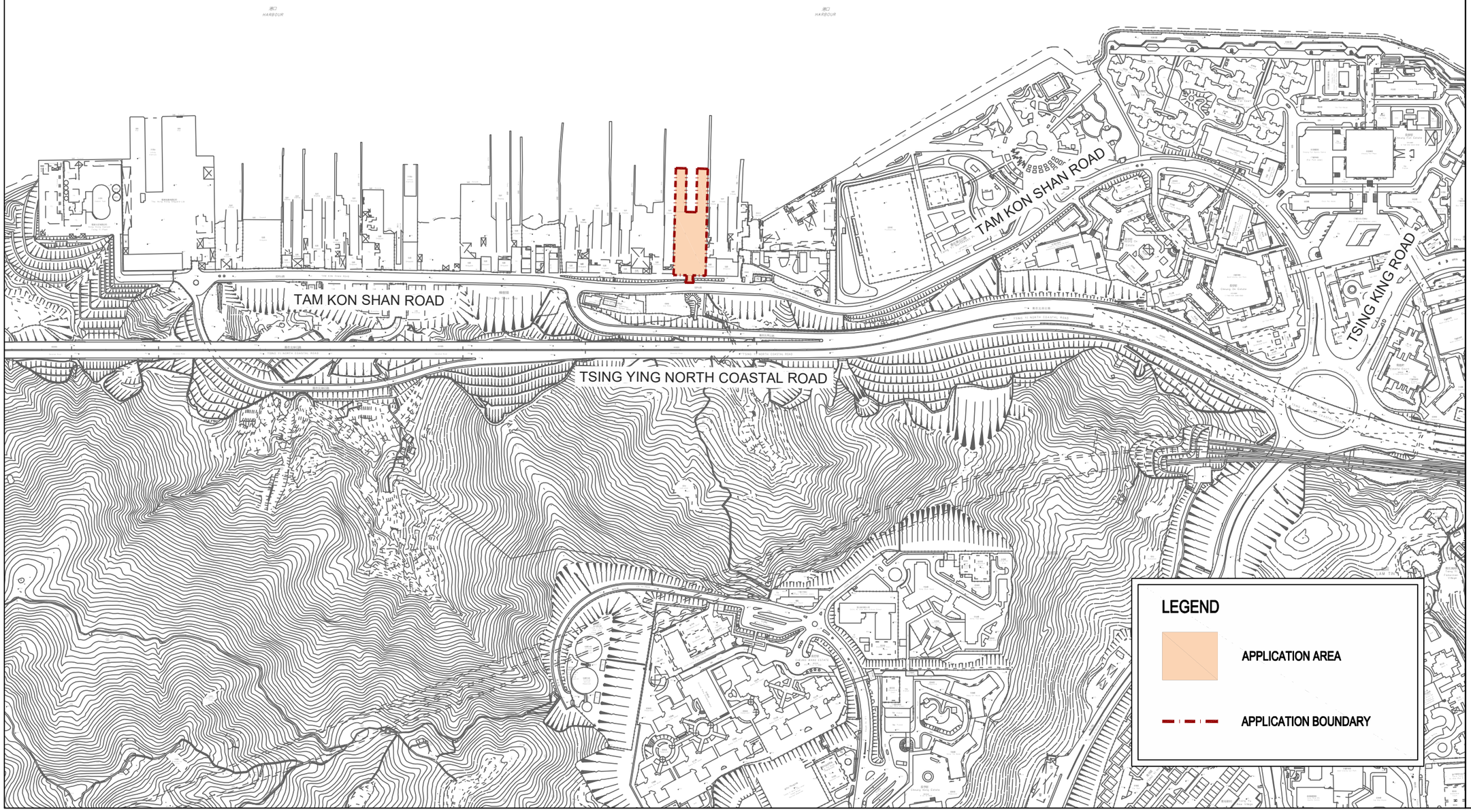
A comprehensive framework for managing non-conformances, investigating incidents, and auditing operations has been established. Deviations are documented and resolved via data collection and root cause analysis. Scheduled and random audits ensure continuous improvement. Enforcement measures, including fines and contract penalties, deter violations and ensure strict adherence to traffic restrictions.

9.2 Conclusions

The findings of the traffic impact assessment confirm that the road network in the vicinity of the proposed development has sufficient capacity to accommodate the additional traffic generated, ensuring smooth traffic flow and no adverse impacts. The proposed development is therefore acceptable from a traffic perspective, with its design incorporating adequate measures to support efficient site operations while minimizing impacts on the surrounding road network.

Figures

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories



SITE LOCATION

FIGURE 2.1

Scale : 1:5000 (A3)

Date : FEB 2025

Rev. : A

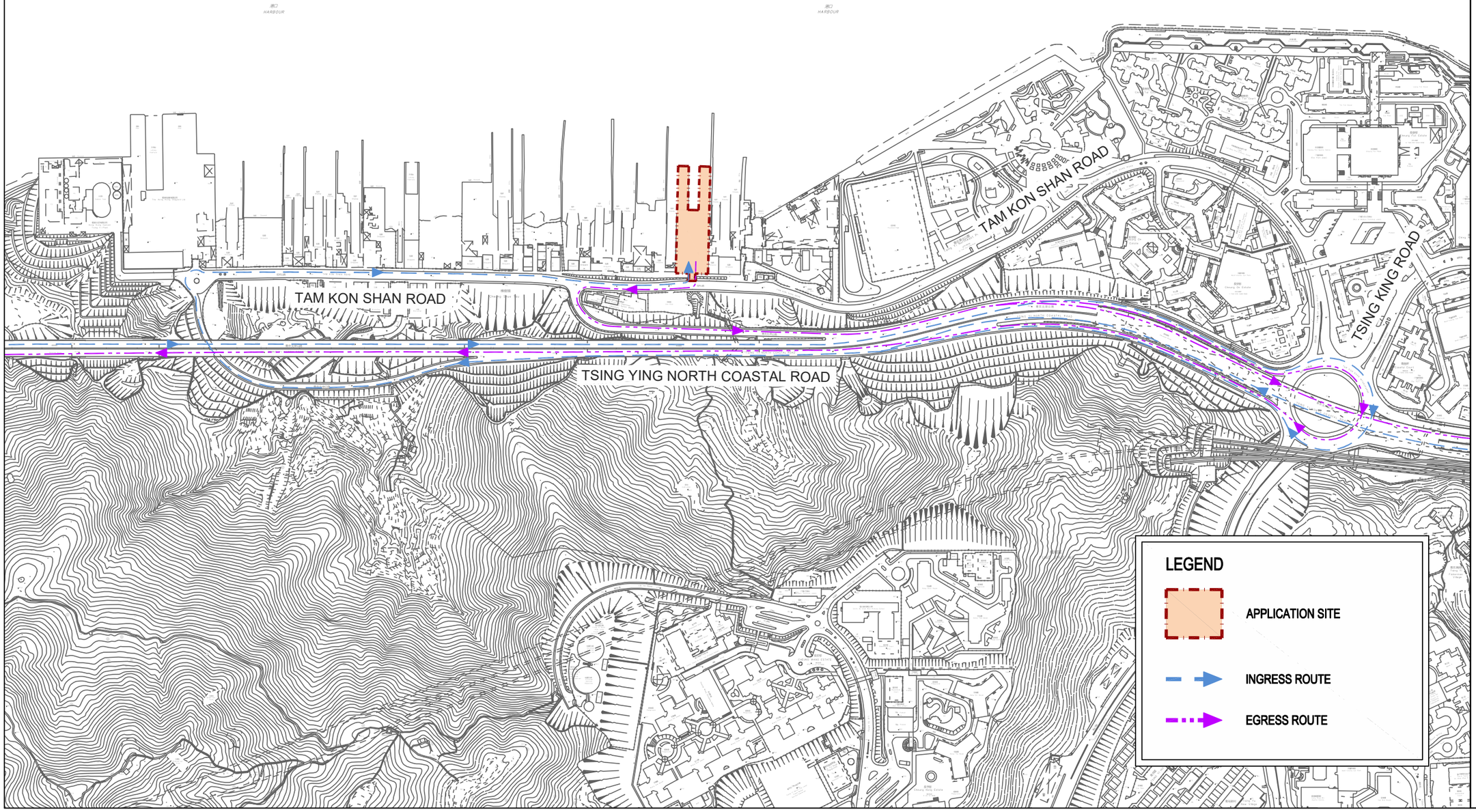
AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-2-1.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

VEHICULAR INGRESS AND EGRESS ROUTE

FIGURE 3.1



Scale : 1:5000 (A3)

Date : FEB 2025

Rev. : A

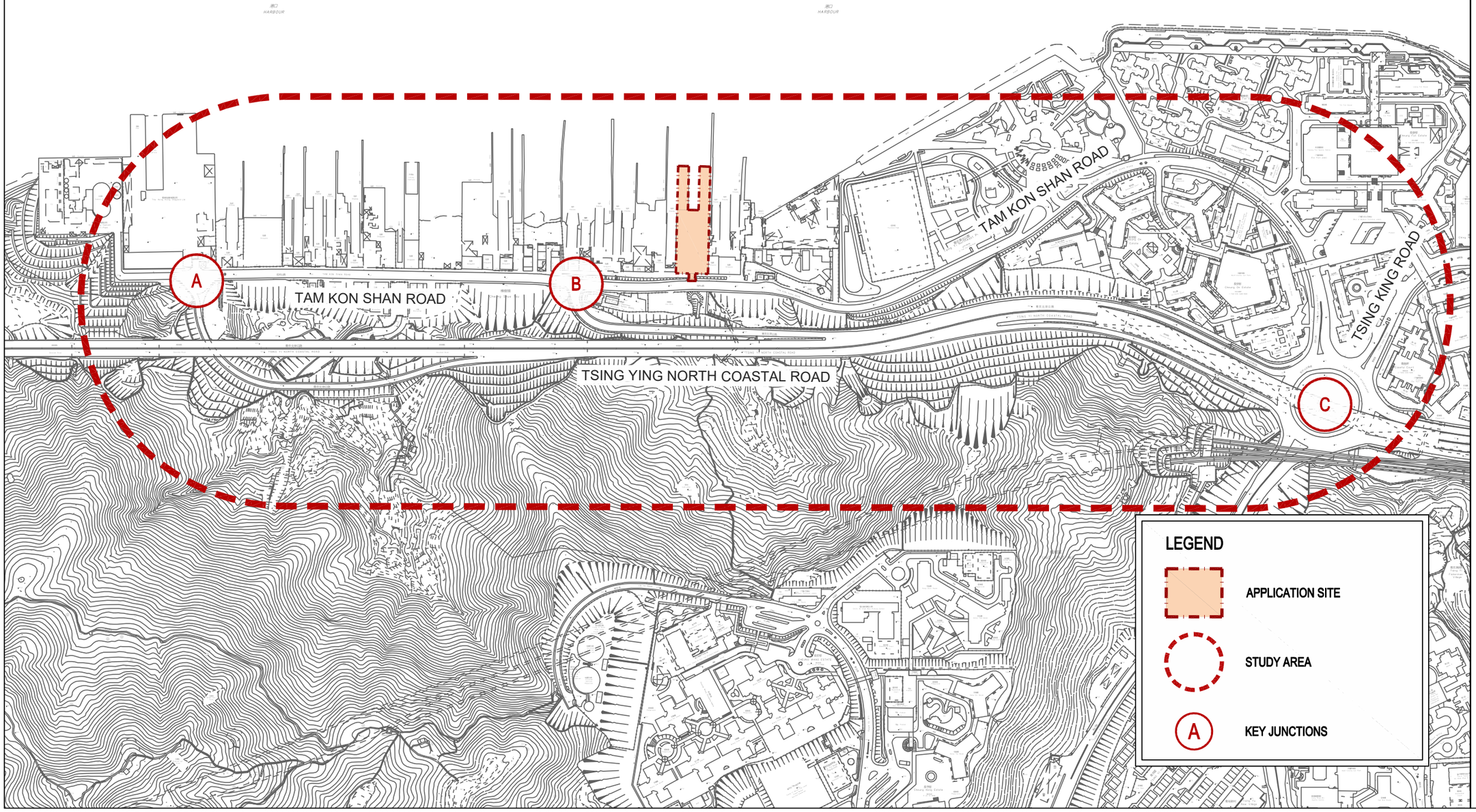
AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-3.1.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

KEY JUNCTIONS

FIGURE 3.2



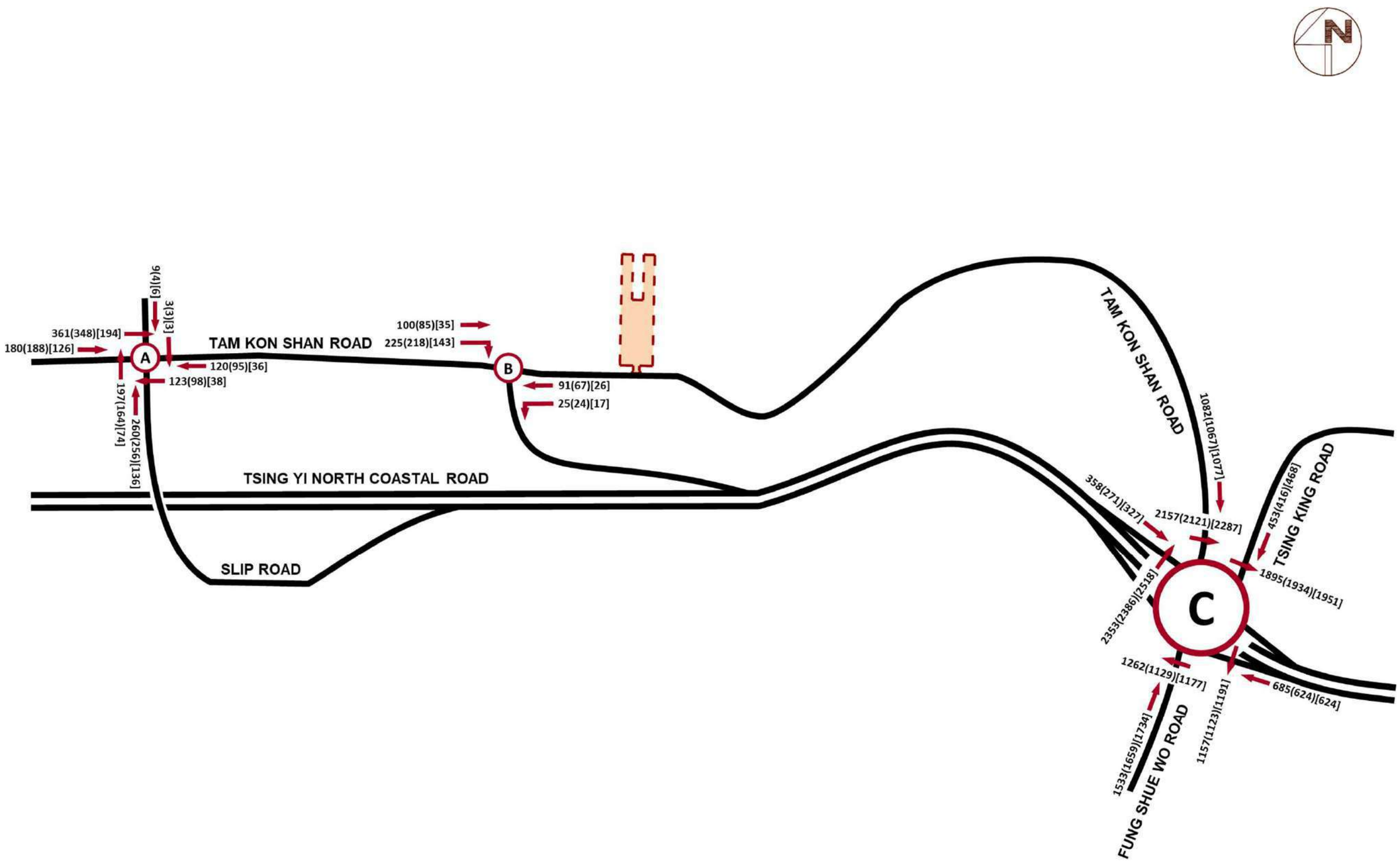
Scale : 1:5000 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-3.2.DWG



LEGEND

	APPLICATION SITE
100(100)[100]	PEAK HOURLY TRAFFIC FLOW AM(NOON)[PM]

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

YEAR 2024 OBSERVED TRAFFIC FLOW

FIGURE 3.3

Scale : N.T.S

Date : FEB 2025

Rev. : A

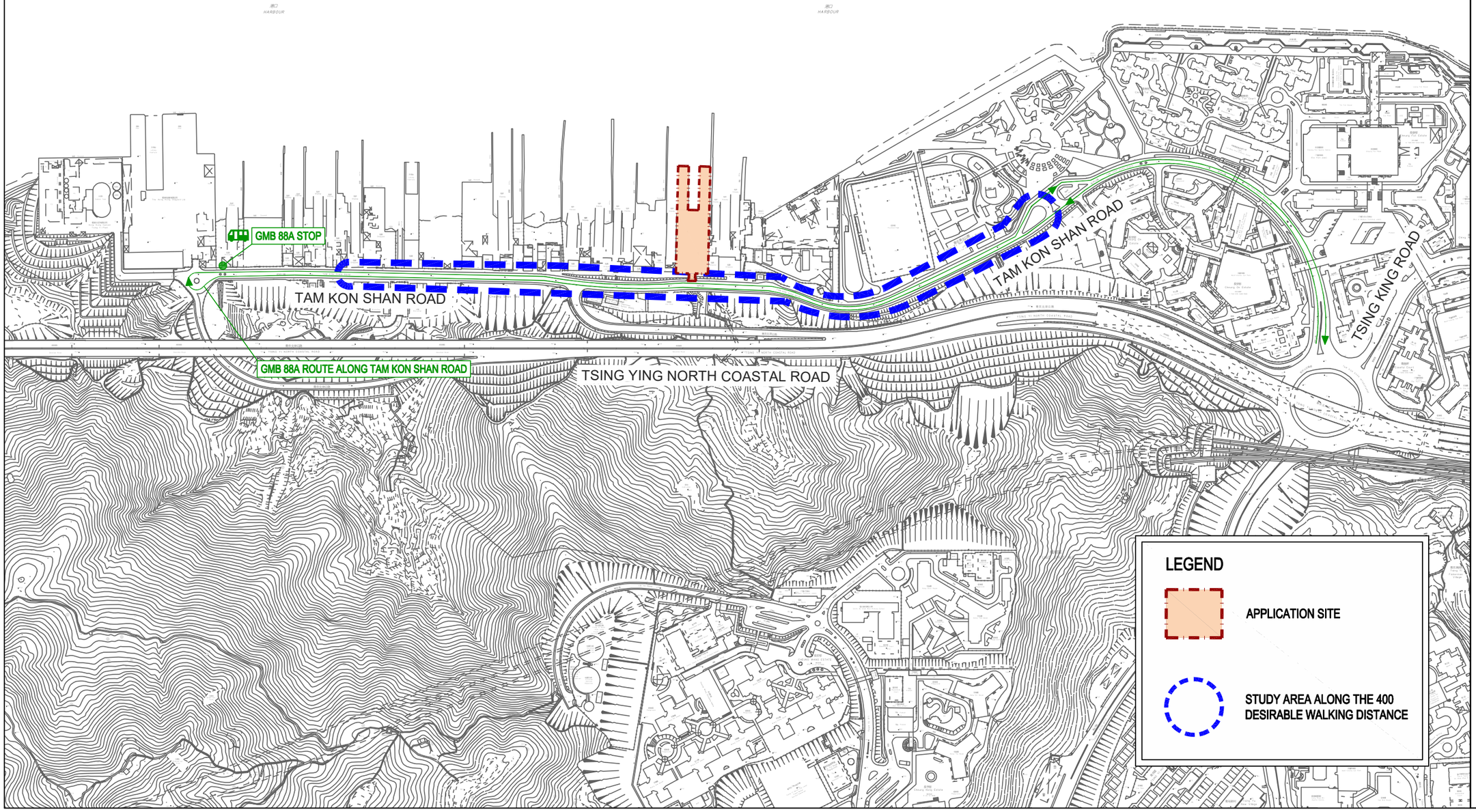
AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\910408\DATA\DRAWING\FIGURE 3.3.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

PUBLIC TRANSPORT SERVICES

FIGURE 3.4



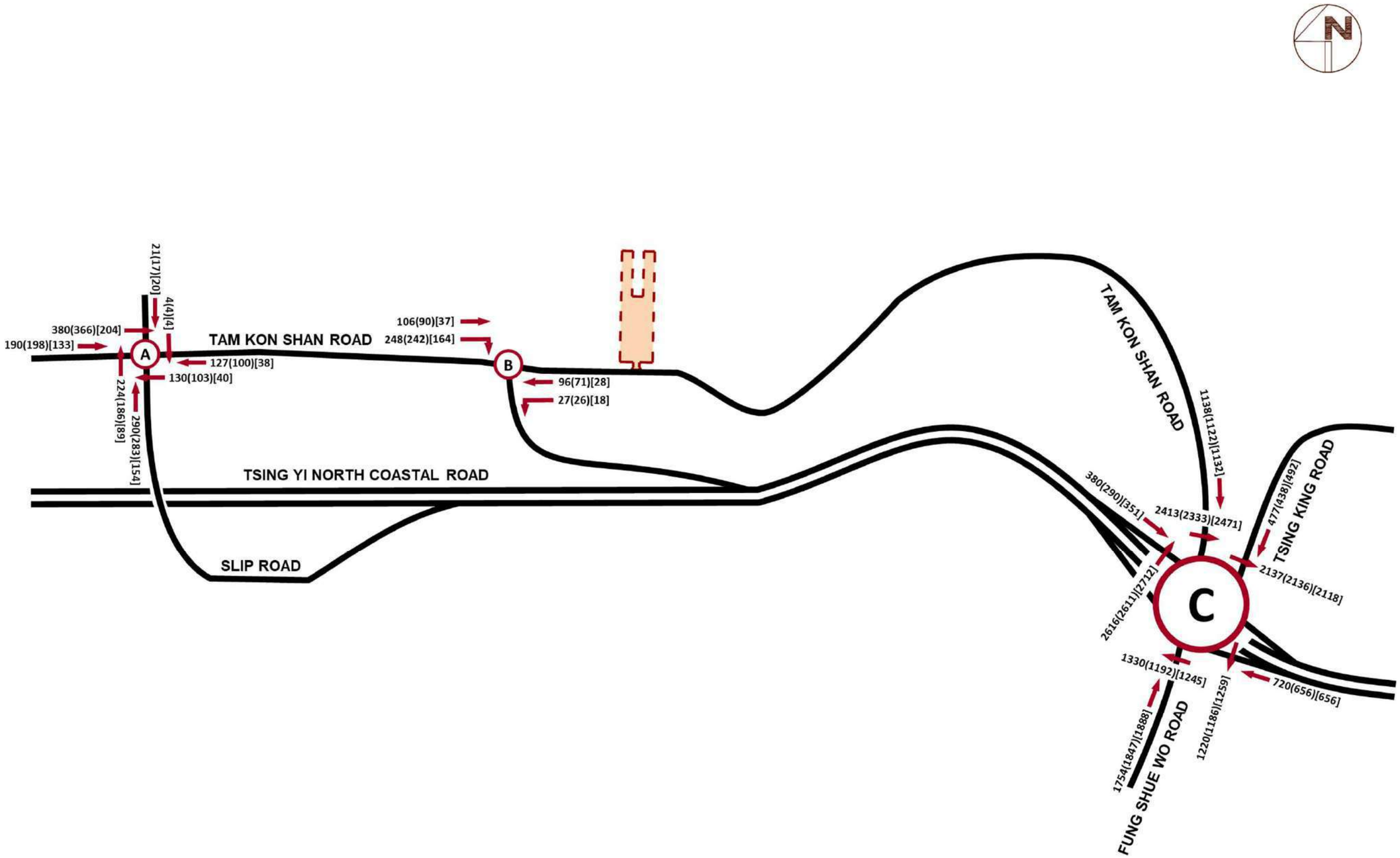
Scale : 1:5000 (A3)

Date : FEB 2025

Rev. :

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-3.4.DWG



LEGEND

	APPLICATION SITE
100(100)[100]	PEAK HOURLY TRAFFIC FLOW AM(NOON)[PM]

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

YEAR 2029 REFERENCE TRAFFIC FLOW

FIGURE 4.1

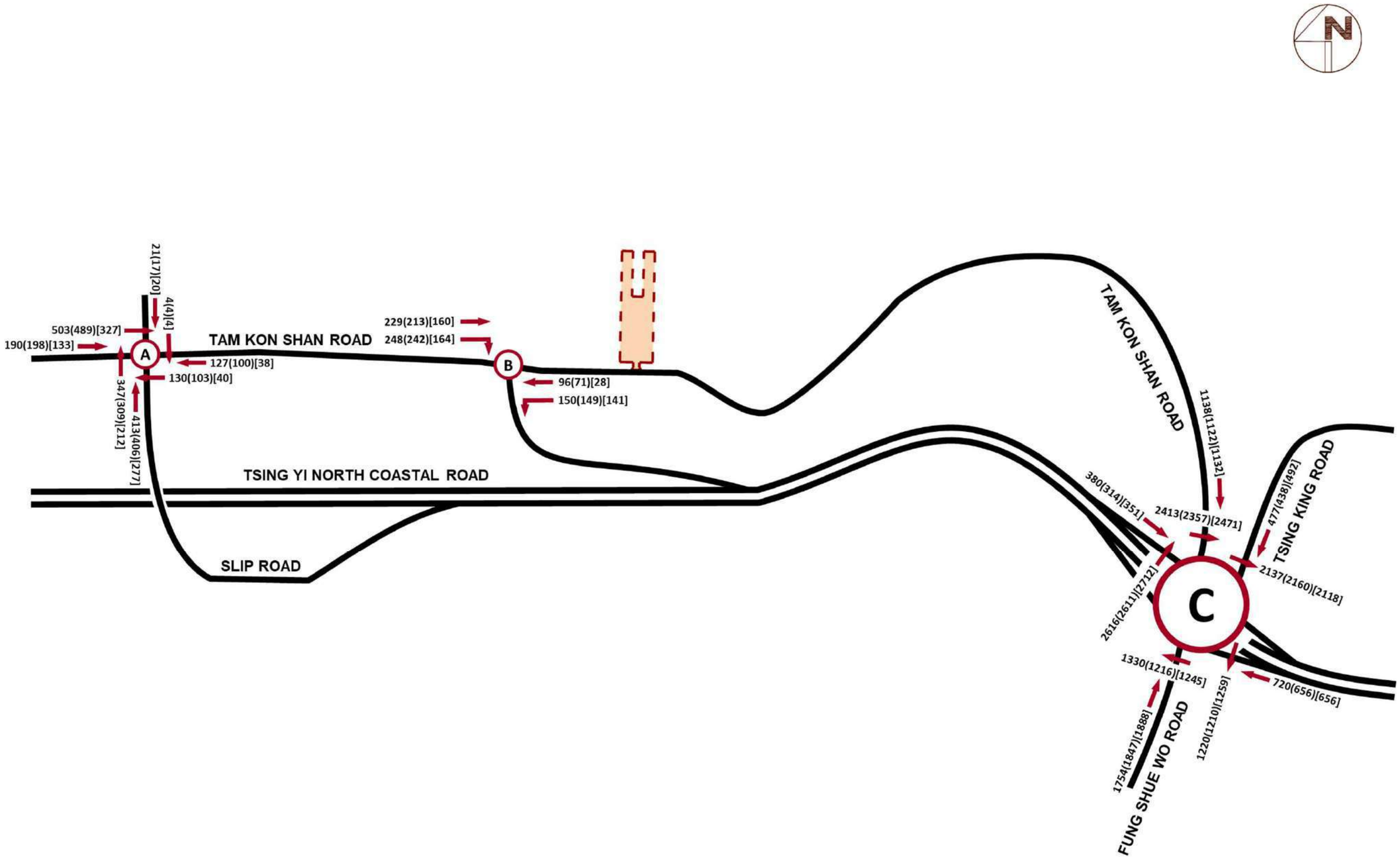
Scale : N.T.S

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\3104\DATA\DRAWING\FIGURE 3.1.DWG



LEGEND

	APPLICATION SITE
100(100)[100]	PEAK HOURLY TRAFFIC FLOW AM(NOON)[PM]

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

YEAR 2029 DESIGN TRAFFIC FLOW

FIGURE 4.2

Scale : N.T.S

Date : FEB 2025

Rev. : B

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\91048\DATA\DRAWING\FIGURE 3.3.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

VEHICULAR ACCESS POINT

FIGURE 5.1

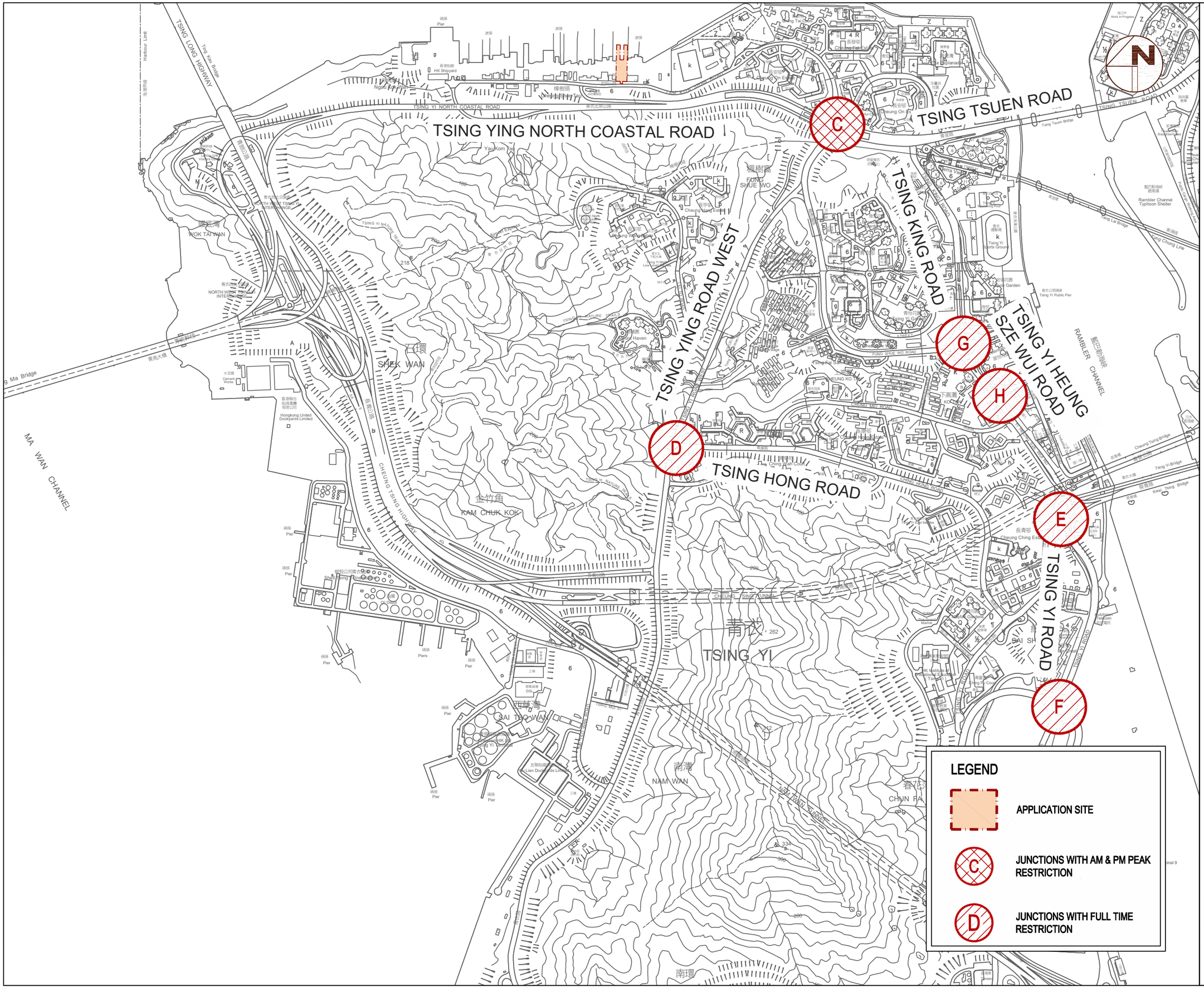
Scale : 1:1000 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-5.1.DWG



Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

ACCESS RESTRICTIONS AT TSING YI JUNCTIONS

FIGURE 6.1

Scale : 1:12000 (A3)

Date : MAR 2025

Rev. :

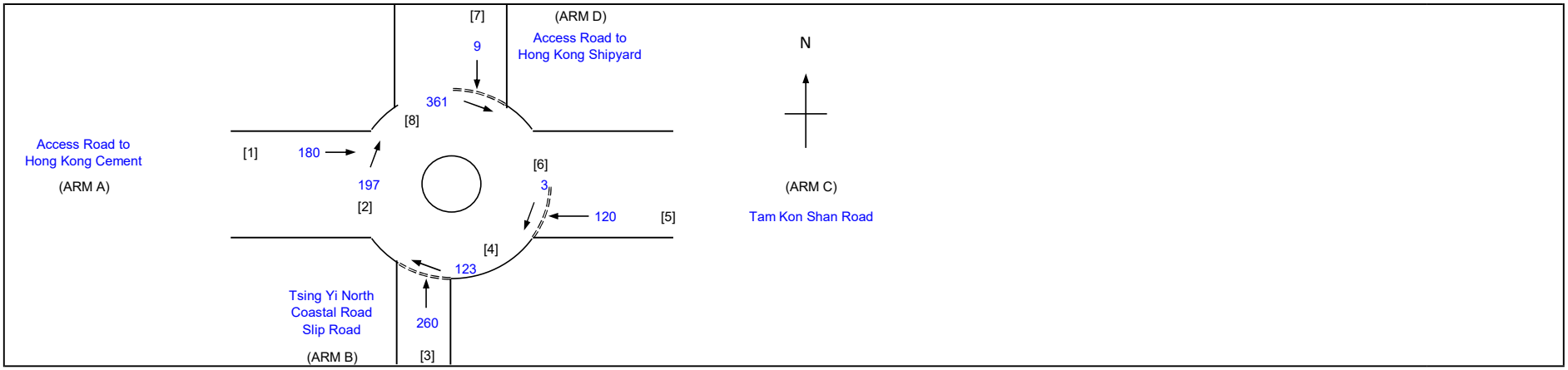
AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-6.1.DWG

Appendix A

Junction Analysis

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2024 Observed Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025

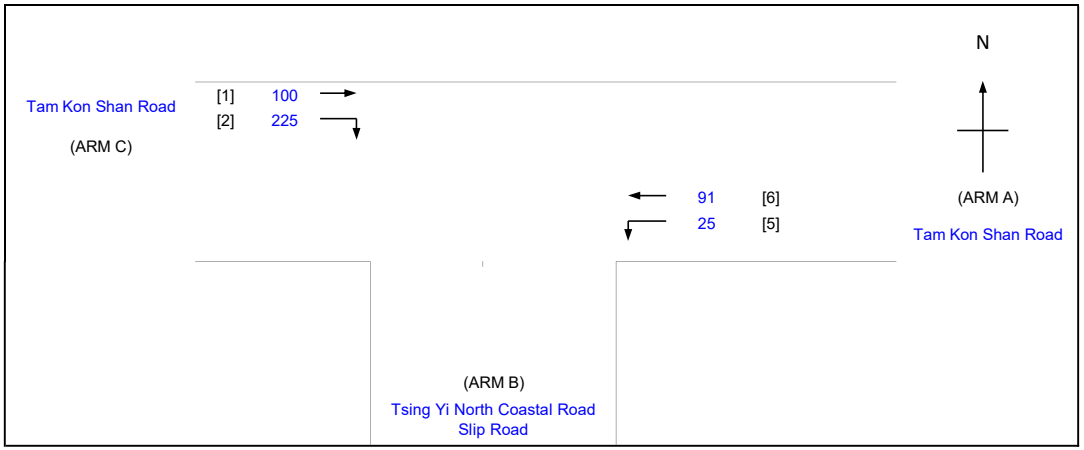


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		180	260	120	9
Qc	=	Circulating flow across entry (pcu/h)		197	123	3	361
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1189	1101	1481	1059
DFC	=	Design flow/Capacity = Q/Qe		0.15	0.24	0.08	0.01

TOTAL FLOW = 1253 (pcu/hr)

CRITICAL DFC = 0.24

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2024 Observed Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	25	(pcu/hr)
q a-c	=	91	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	100	(pcu/hr)
q c-b	=	225	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

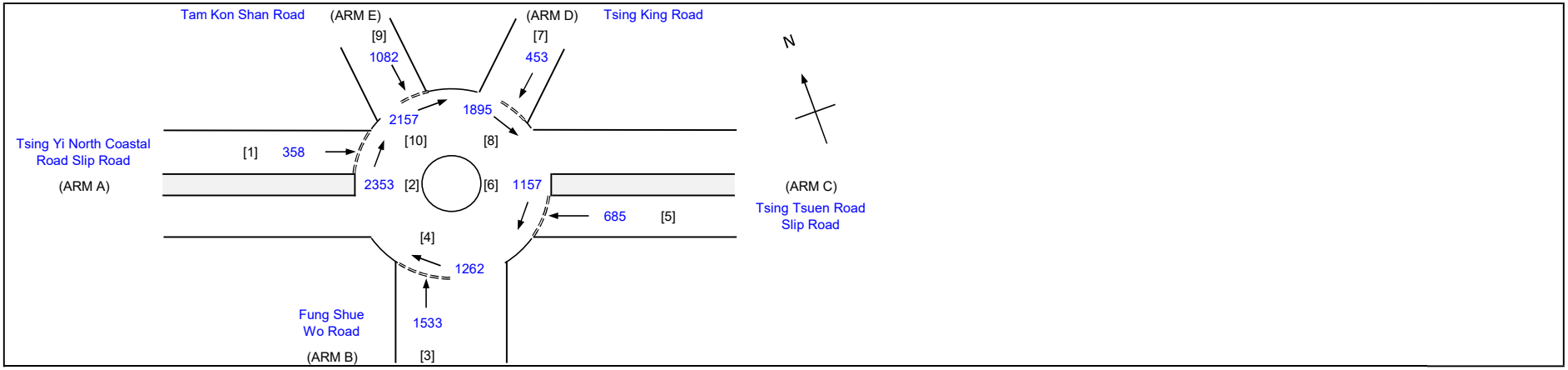
Q b-a	=	263	(pcu/hr)
Q b-c	=	420	(pcu/hr)
Q c-b	=	634	(pcu/hr)
TOTAL FLOW	=	441	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.3549

CRITICAL DFC = 0.35

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2024 Observed Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025

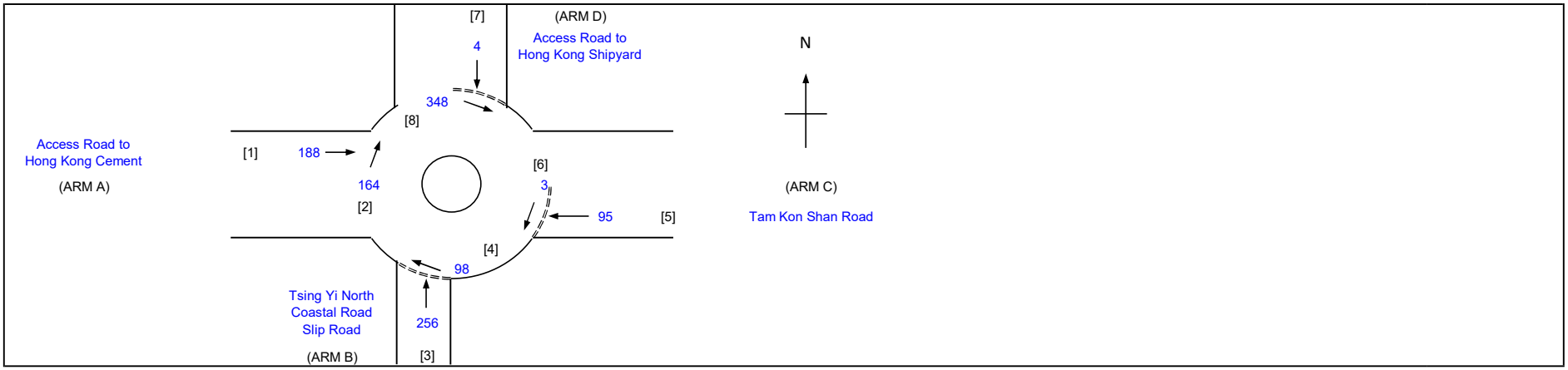


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		358	1533	685	453	1082
Qc	=	Circulating flow across entry (pcu/h)		2353	1262	1157	1895	2157
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		1061	2413	1698	965	1758
DFC	=	Design flow/Capacity = Q/Qe		0.34	0.64	0.40	0.47	0.62

TOTAL FLOW = 12935 (pcu/hr)

CRITICAL DFC = 0.64

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2024 Observed Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025

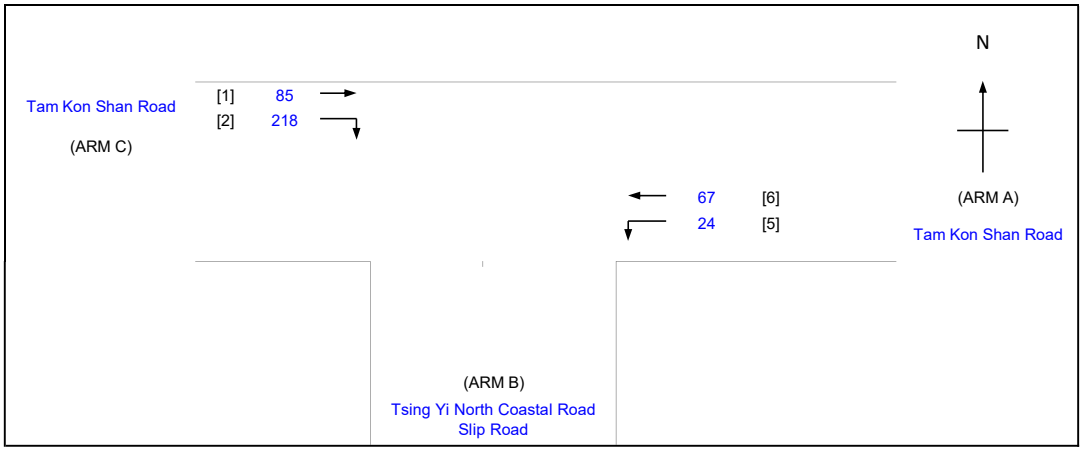


GEOMETRIC DETAILS:			ARM	A	B	C	D
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		188	256	95	4
Qc	=	Circulating flow across entry (pcu/h)		164	98	3	348
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1207	1115	1481	1066
DFC	=	Design flow/Capacity = Q/Qe		0.16	0.23	0.06	0.00

TOTAL FLOW = 1156 (pcu/hr)

CRITICAL DFC = 0.23

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2024 Observed Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	24	(pcu/hr)
q a-c	=	67	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	85	(pcu/hr)
q c-b	=	218	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

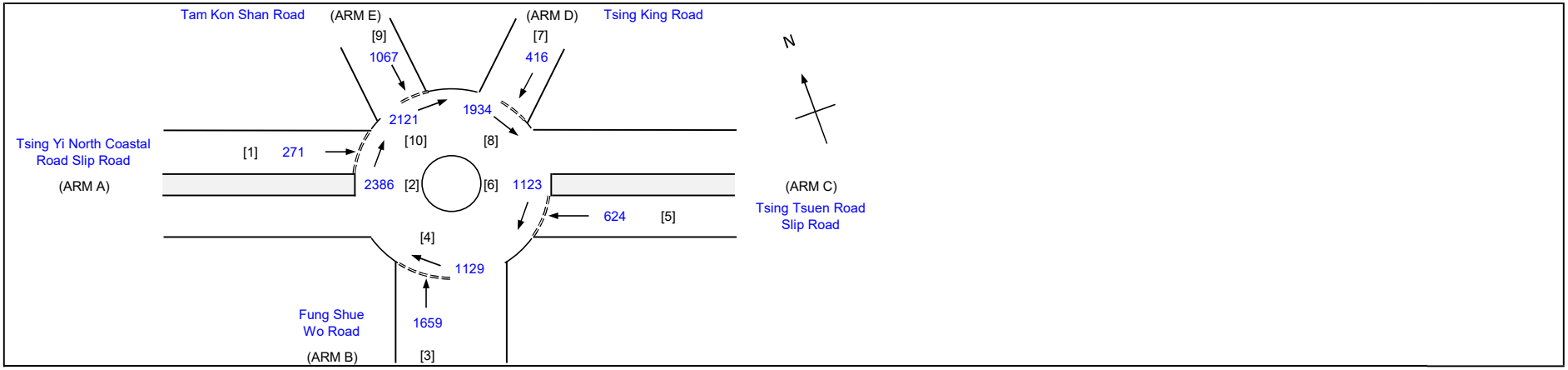
Q b-a	=	269	(pcu/hr)
Q b-c	=	424	(pcu/hr)
Q c-b	=	640	(pcu/hr)
TOTAL FLOW	=	394	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.3406

CRITICAL DFC = 0.34

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2024 Observed Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025

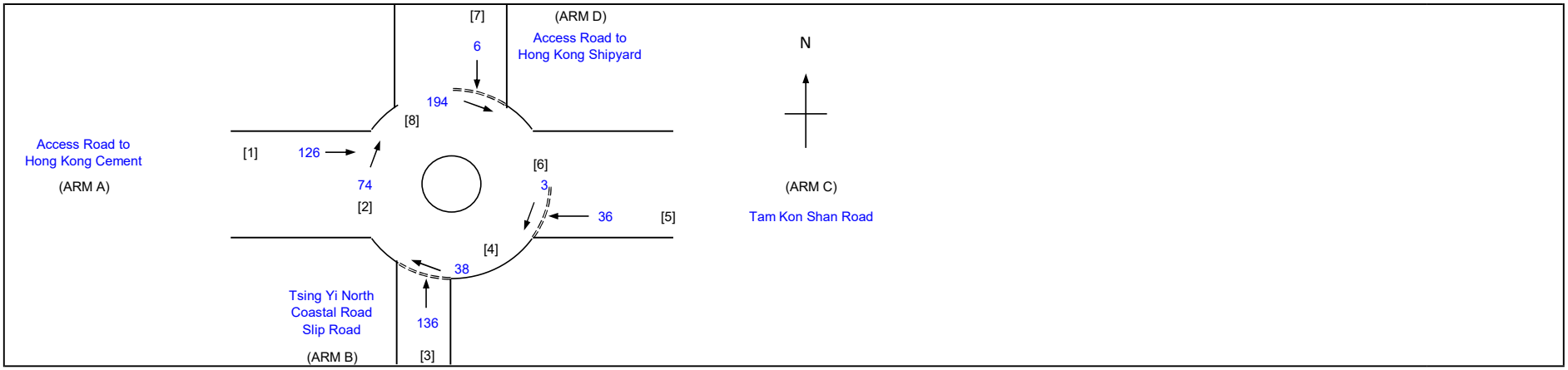


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		271	1659	624	416	1067
Qc	=	Circulating flow across entry (pcu/h)		2386	1129	1123	1934	2121
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		1043	2502	1717	946	1781
DFC	=	Design flow/Capacity = Q/Qe		0.26	0.66	0.36	0.44	0.60

TOTAL FLOW = 12730 (pcu/hr)

CRITICAL DFC = 0.66

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2024 Observed Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025

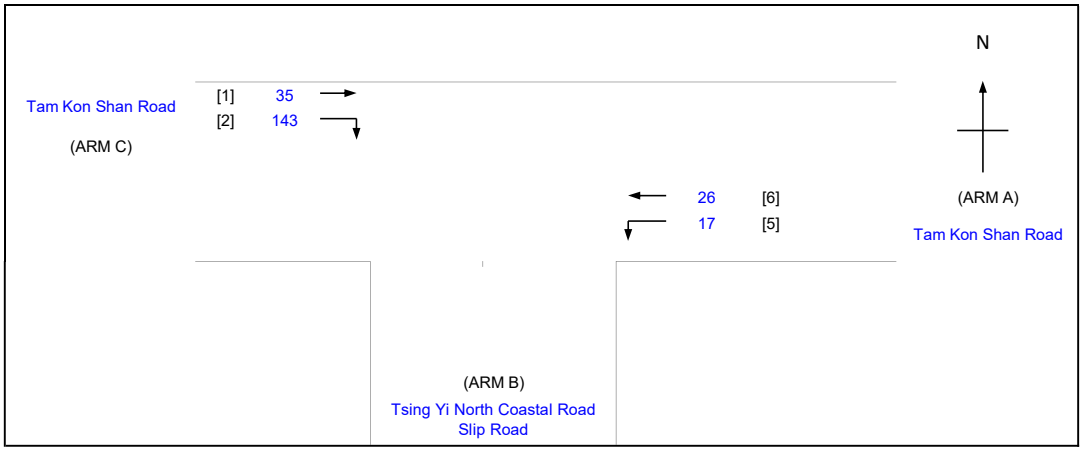


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		126	136	36	6
Qc	=	Circulating flow across entry (pcu/h)		74	38	3	194
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1255	1148	1481	1147
DFC	=	Design flow/Capacity = Q/Qe		0.10	0.12	0.02	0.01

TOTAL FLOW = 613 (pcu/hr)

CRITICAL DFC = 0.12

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2024 Observed Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	17	(pcu/hr)
q a-c	=	26	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	35	(pcu/hr)
q c-b	=	143	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

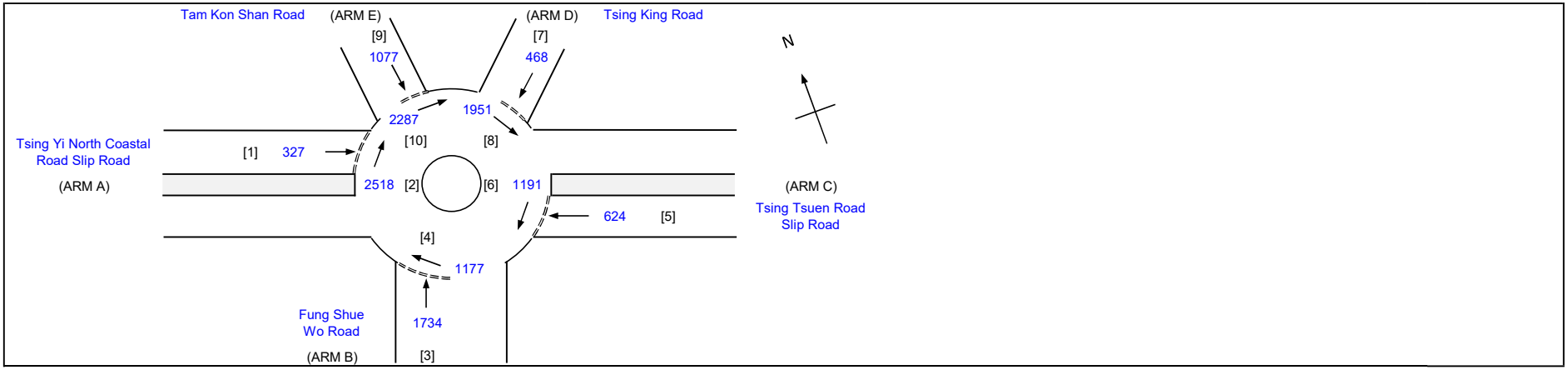
Q b-a	=	296	(pcu/hr)
Q b-c	=	431	(pcu/hr)
Q c-b	=	652	(pcu/hr)
TOTAL FLOW	=	221	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.2193

CRITICAL DFC = 0.22

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2024 Observed Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025

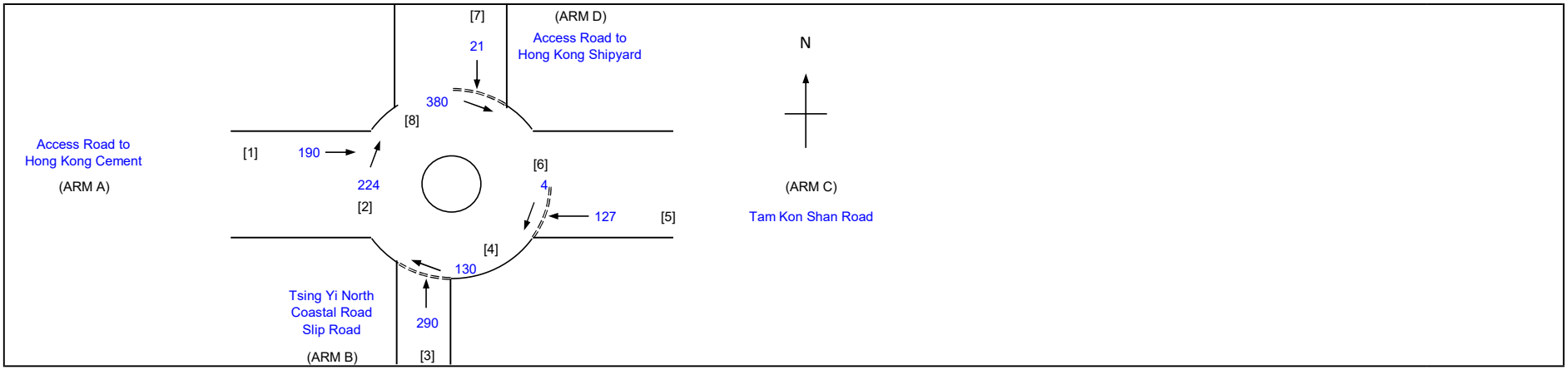


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		327	1734	624	468	1077
Qc	=	Circulating flow across entry (pcu/h)		2518	1177	1191	1951	2287
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		971	2470	1679	938	1674
DFC	=	Design flow/Capacity = Q/Qe		0.34	0.70	0.37	0.50	0.64

TOTAL FLOW = 13354 (pcu/hr)

CRITICAL DFC = 0.70

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Reference Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025

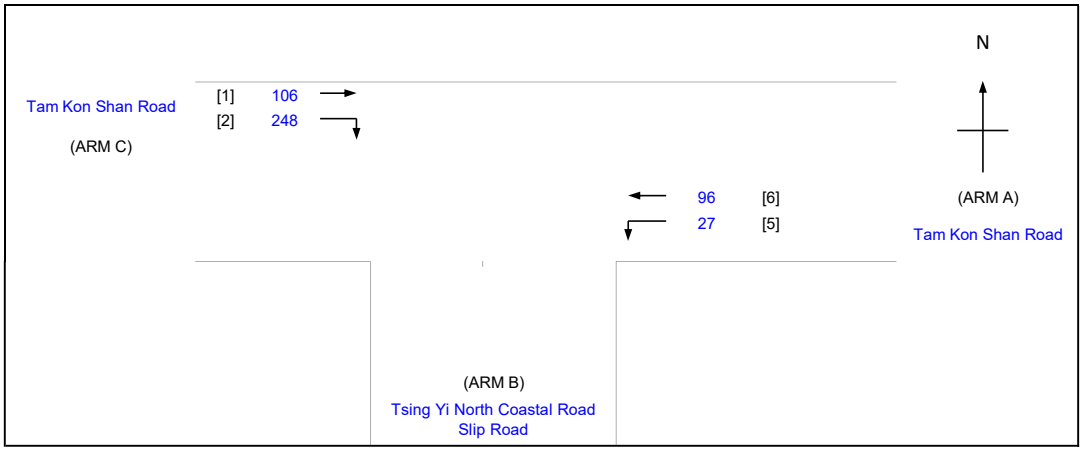


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		190	290	127	21
Qc	=	Circulating flow across entry (pcu/h)		224	130	4	380
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1174	1097	1480	1049
DFC	=	Design flow/Capacity = Q/Qe		0.16	0.26	0.09	0.02

TOTAL FLOW = 1366 (pcu/hr)

CRITICAL DFC = 0.26

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Reference Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	27	(pcu/hr)
q a-c	=	96	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	106	(pcu/hr)
q c-b	=	248	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

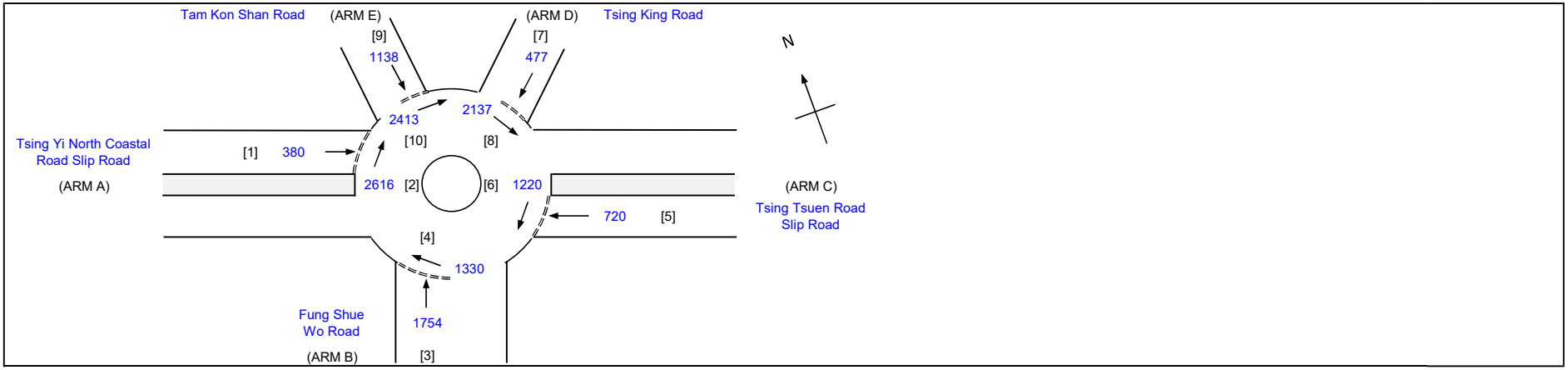
Q b-a	=	257	(pcu/hr)
Q b-c	=	419	(pcu/hr)
Q c-b	=	632	(pcu/hr)
TOTAL FLOW	=	477	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.3924

CRITICAL DFC = 0.39

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2029 Reference Traffic Flow - AM Peak		Reviewed By:	AW	7/2/2025

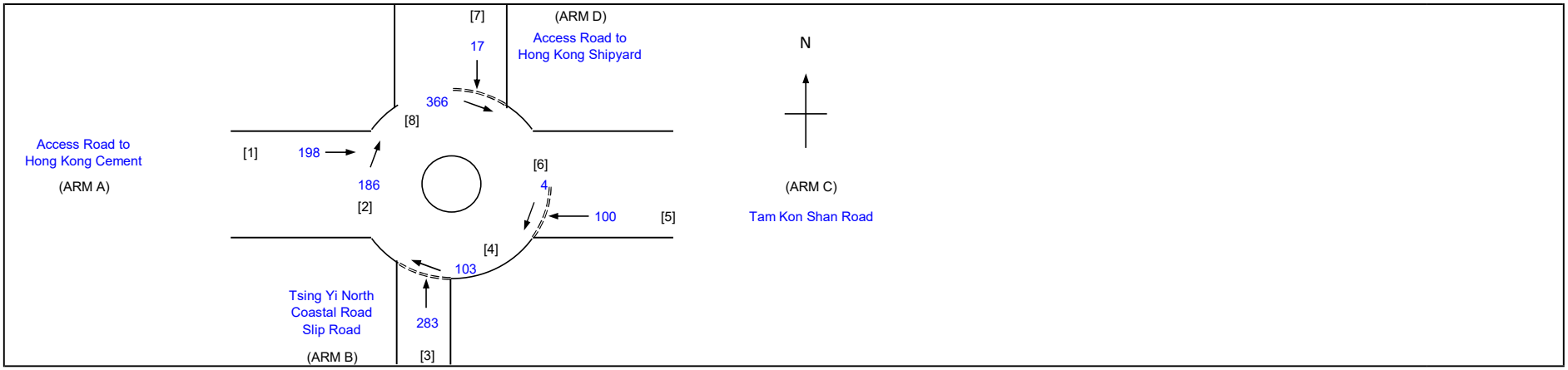


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		380	1754	720	477	1138
Qc	=	Circulating flow across entry (pcu/h)		2616	1330	1220	2137	2413
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(1.11F-1.4Fc*Qc)		917	2367	1662	850	1592
DFC	=	Design flow/Capacity = Q/Qe		0.41	0.74	0.43	0.56	0.71

TOTAL FLOW = 14185 (pcu/hr)

CRITICAL DFC = 0.74

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Reference Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025

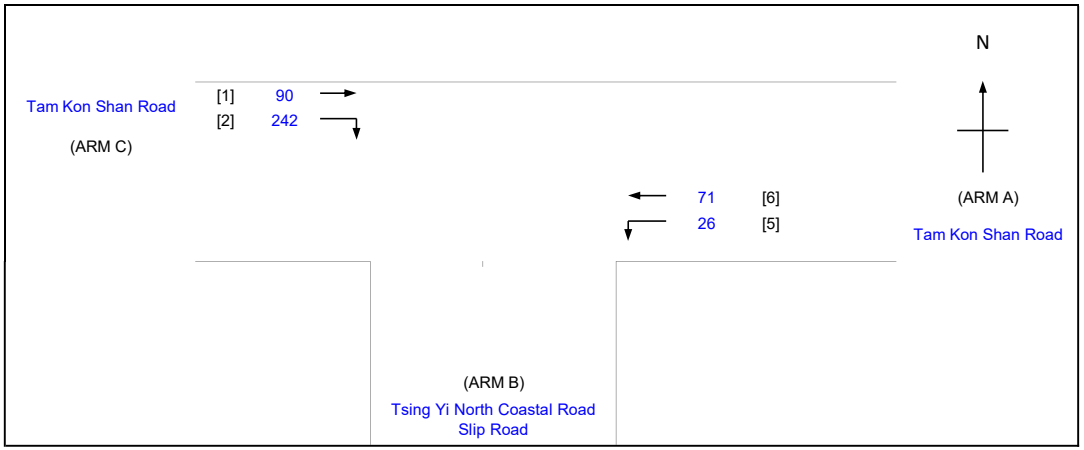


GEOMETRIC DETAILS:			ARM	A	B	C	D
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		198	283	100	17
Qc	=	Circulating flow across entry (pcu/h)		186	103	4	366
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1195	1112	1480	1056
DFC	=	Design flow/Capacity = Q/Qe		0.17	0.25	0.07	0.02

TOTAL FLOW = 1257 (pcu/hr)

CRITICAL DFC = 0.25

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Reference Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	26	(pcu/hr)
q a-c	=	71	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	90	(pcu/hr)
q c-b	=	242	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

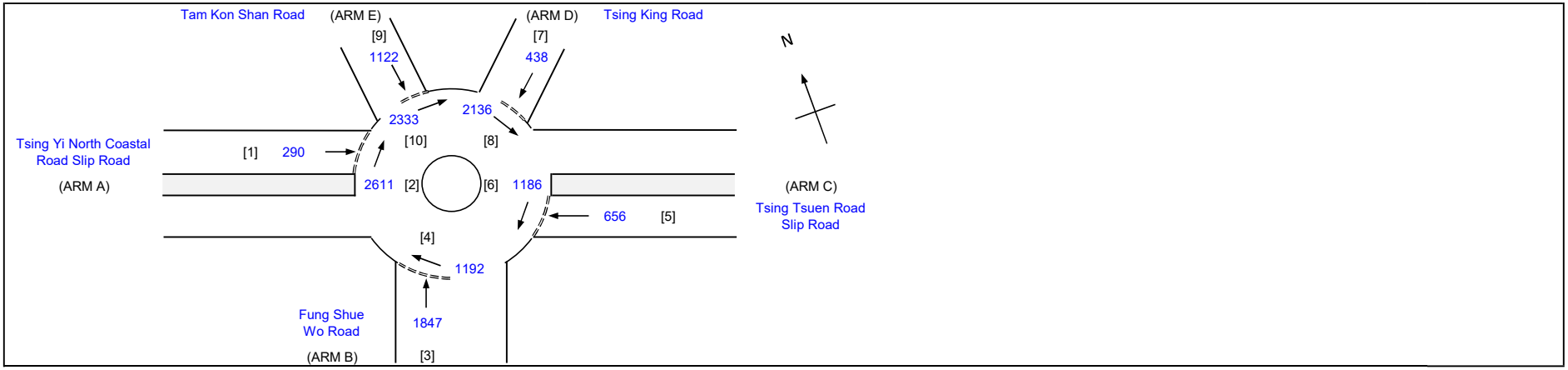
Q b-a	=	263	(pcu/hr)
Q b-c	=	423	(pcu/hr)
Q c-b	=	638	(pcu/hr)
TOTAL FLOW	=	429	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.3793

CRITICAL DFC = 0.38

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2029 Reference Traffic Flow - Noon Peak		Reviewed By:	AW	7/2/2025

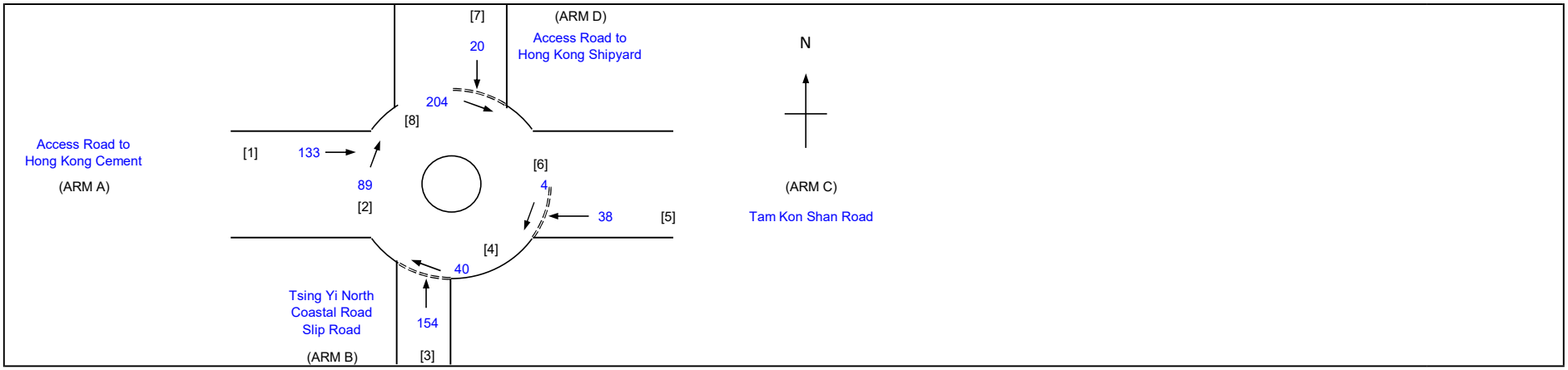


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		290	1847	656	438	1122
Qc	=	Circulating flow across entry (pcu/h)		2611	1192	1186	2136	2333
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		920	2460	1681	851	1644
DFC	=	Design flow/Capacity = Q/Qe		0.32	0.75	0.39	0.51	0.68

TOTAL FLOW = 13811 (pcu/hr)

CRITICAL DFC = 0.75

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Reference Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025

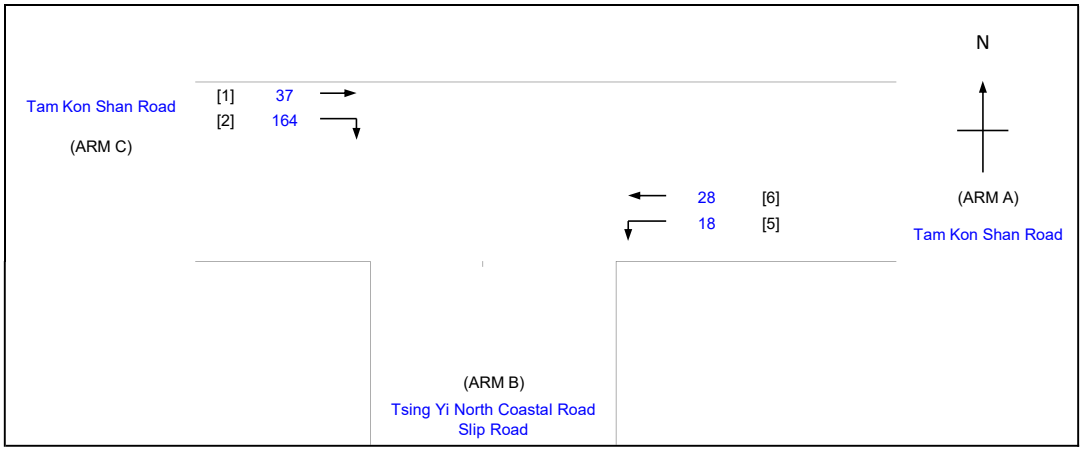


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		133	154	38	20
Qc	=	Circulating flow across entry (pcu/h)		89	40	4	204
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1247	1146	1480	1142
DFC	=	Design flow/Capacity = Q/Qe		0.11	0.13	0.03	0.02

TOTAL FLOW = **682** **(pcu/hr)**

CRITICAL DFC = **0.13**

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Reference Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	18	(pcu/hr)
q a-c	=	28	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	37	(pcu/hr)
q c-b	=	164	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

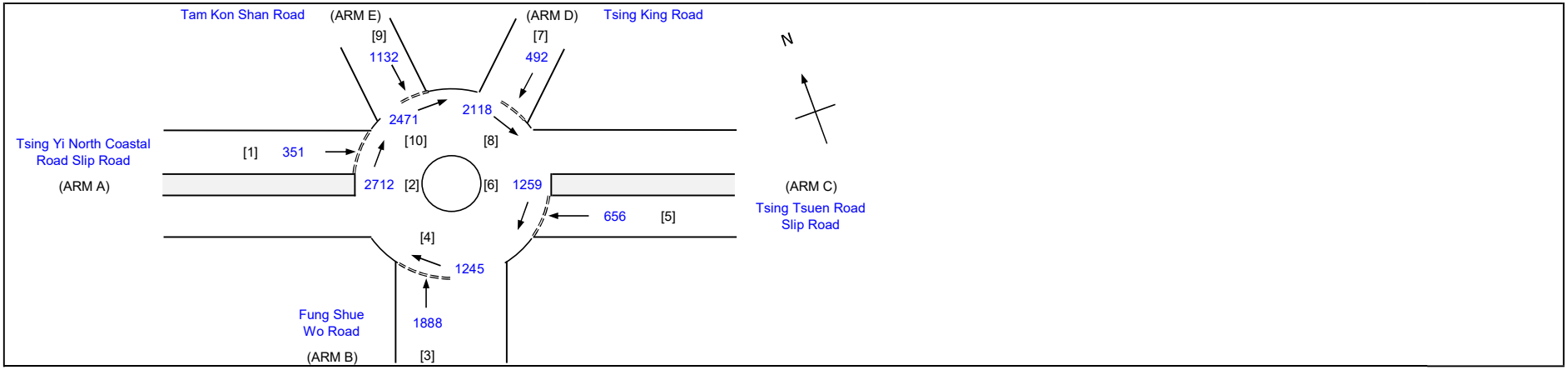
Q b-a	=	291	(pcu/hr)
Q b-c	=	431	(pcu/hr)
Q c-b	=	651	(pcu/hr)
TOTAL FLOW	=	247	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.2519

CRITICAL DFC = 0.25

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	7/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	7/2/2025
JnC - Tam Kon Shan Interchange	2029 Reference Traffic Flow - PM Peak		Reviewed By:	AW	7/2/2025

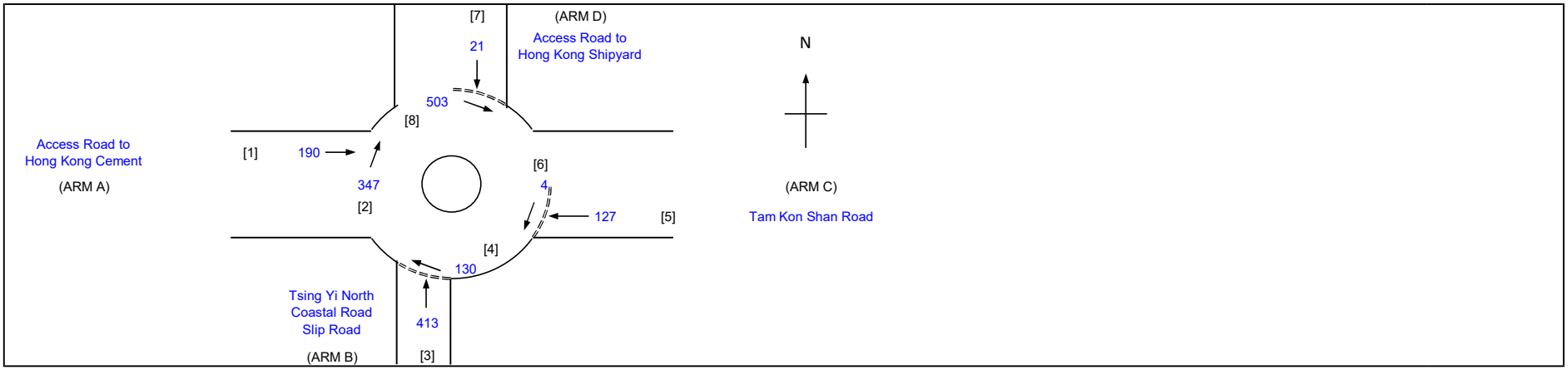


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		351	1888	656	492	1132
Qc	=	Circulating flow across entry (pcu/h)		2712	1245	1259	2118	2471
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		864	2424	1641	859	1555
DFC	=	Design flow/Capacity = Q/Qe		0.41	0.78	0.40	0.57	0.73

TOTAL FLOW = 14324 (pcu/hr)

CRITICAL DFC = 0.78

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Design Traffic Flow - AM Peak		Reviewed By:	AW	27/2/2025

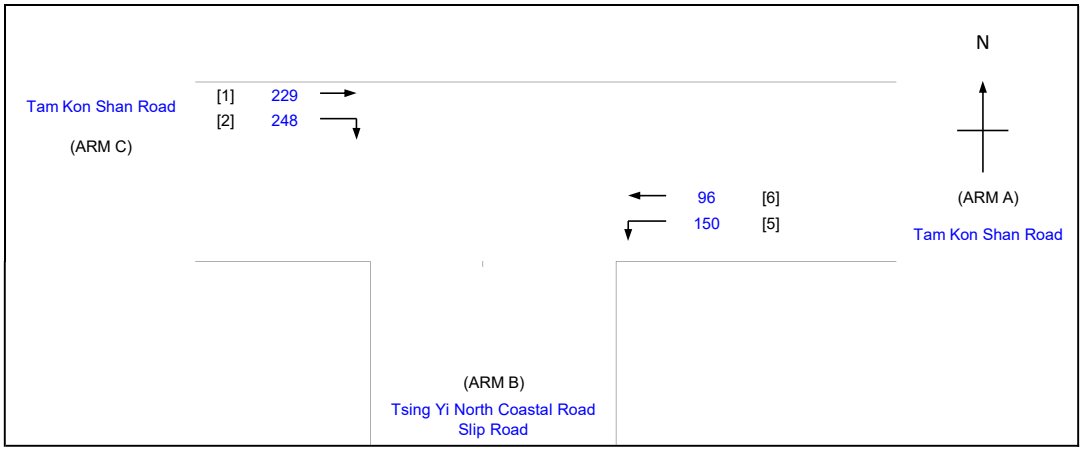


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		190	413	127	21
Qc	=	Circulating flow across entry (pcu/h)		347	130	4	503
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1108	1097	1480	983
DFC	=	Design flow/Capacity = Q/Qe		0.17	0.38	0.09	0.02

TOTAL FLOW = 1735 (pcu/hr)

CRITICAL DFC = 0.38

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Design Traffic Flow - AM Peak		Reviewed By:	AW	27/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	150	(pcu/hr)
q a-c	=	96	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	229	(pcu/hr)
q c-b	=	248	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

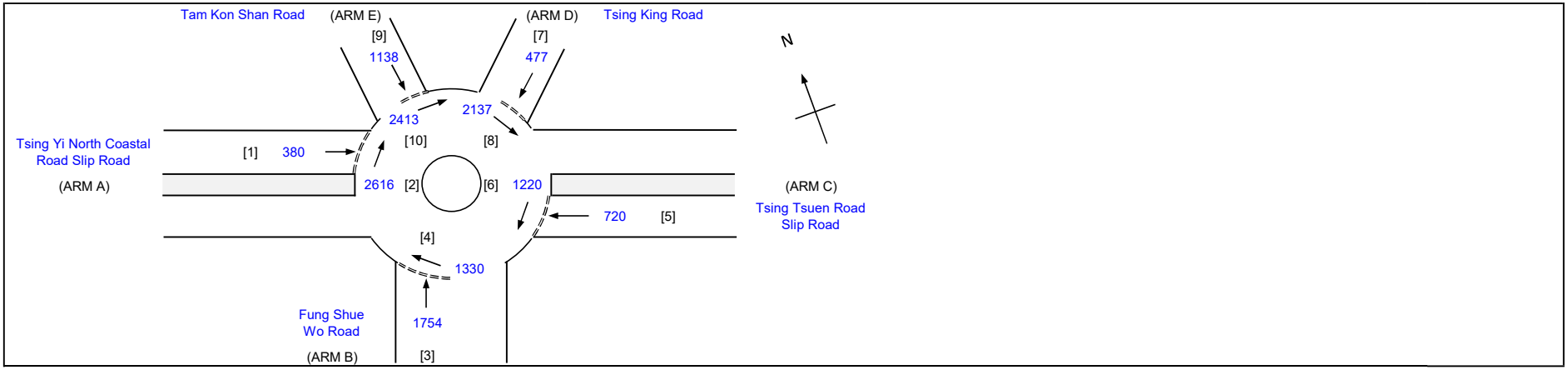
Q b-a	=	238	(pcu/hr)
Q b-c	=	411	(pcu/hr)
Q c-b	=	602	(pcu/hr)
TOTAL FLOW	=	723	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.4120

CRITICAL DFC = 0.41

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnC - Tam Kon Shan Interchange	2029 Design Traffic Flow - AM Peak		Reviewed By:	AW	27/2/2025

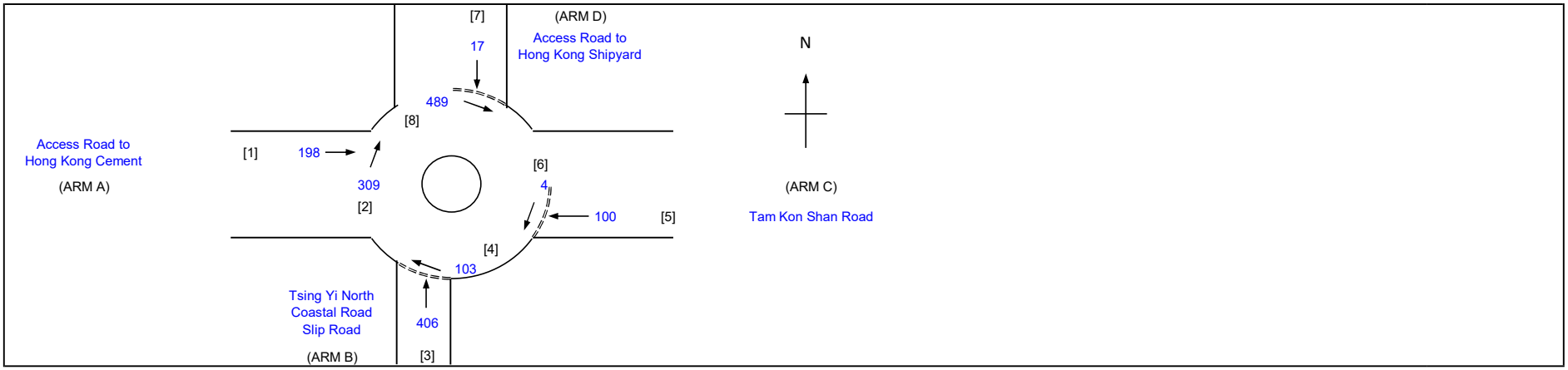


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		380	1754	720	477	1138
Qc	=	Circulating flow across entry (pcu/h)		2616	1330	1220	2137	2413
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		917	2367	1662	850	1592
DFC	=	Design flow/Capacity = Q/Qe		0.41	0.74	0.43	0.56	0.71

TOTAL FLOW = 14185 (pcu/hr)

CRITICAL DFC = 0.74

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Design Traffic Flow - Noon Peak		Reviewed By:	AW	27/2/2025

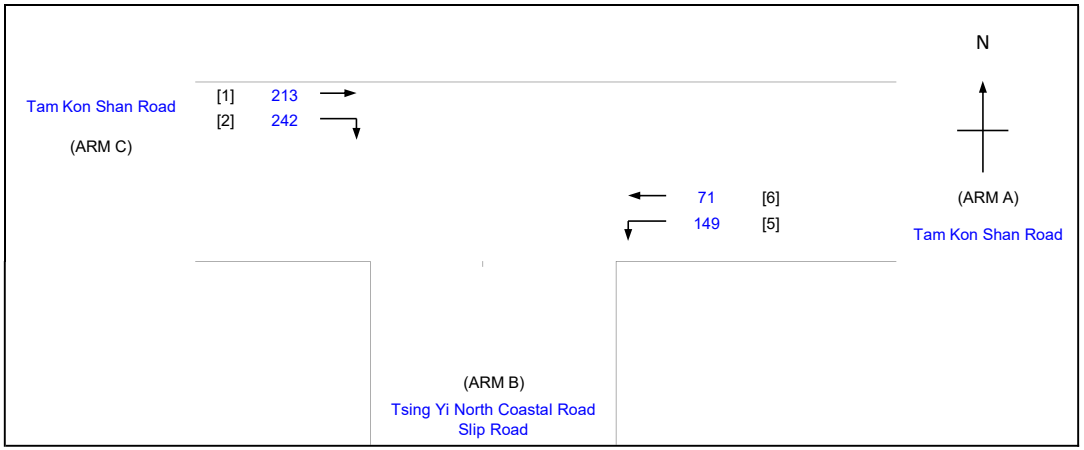


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		198	406	100	17
Qc	=	Circulating flow across entry (pcu/h)		309	103	4	489
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1128	1112	1480	991
DFC	=	Design flow/Capacity = Q/Qe		0.18	0.37	0.07	0.02

TOTAL FLOW = 1626 (pcu/hr)

CRITICAL DFC = 0.37

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Design Traffic Flow - Noon Peak		Reviewed By:	AW	27/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	149	(pcu/hr)
q a-c	=	71	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	213	(pcu/hr)
q c-b	=	242	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

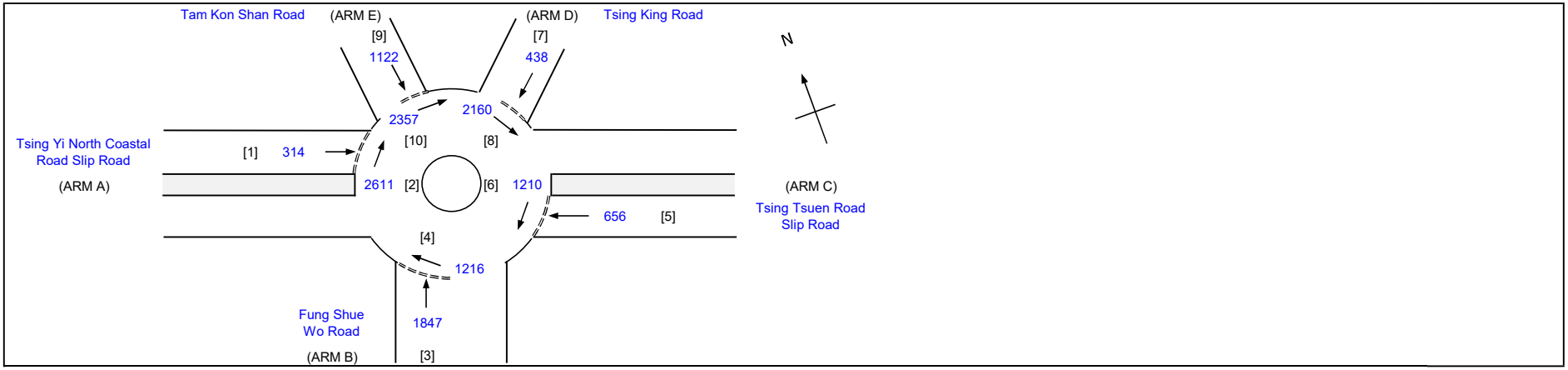
Q b-a	=	245	(pcu/hr)
Q b-c	=	416	(pcu/hr)
Q c-b	=	608	(pcu/hr)
TOTAL FLOW	=	675	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.3980

CRITICAL DFC = 0.40

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnC - Tam Kon Shan Interchange	2029 Design Traffic Flow - Noon Peak		Reviewed By:	AW	27/2/2025

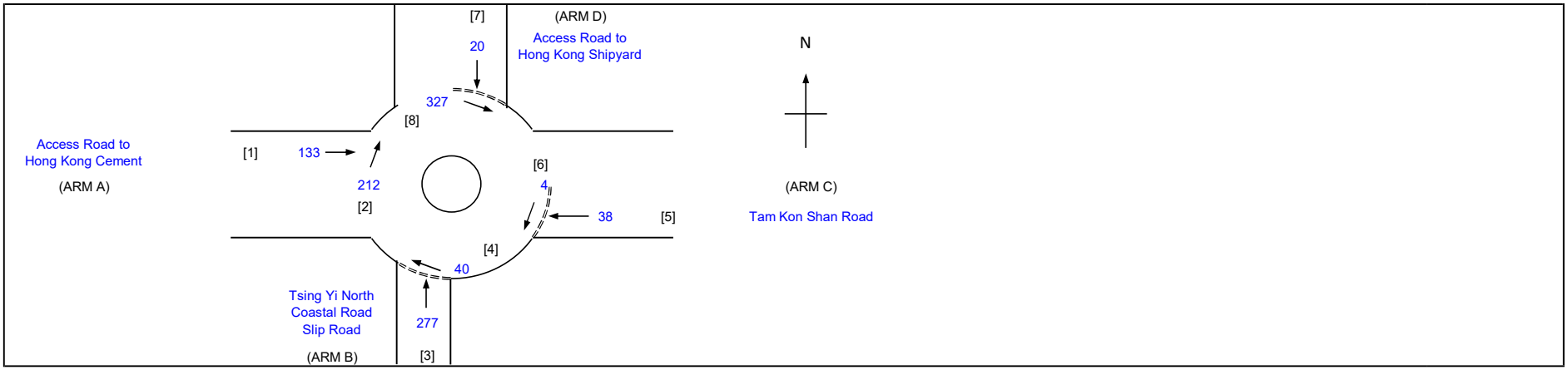


GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		314	1847	656	438	1122
Qc	=	Circulating flow across entry (pcu/h)		2611	1216	1210	2160	2357
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		920	2444	1668	839	1629
DFC	=	Design flow/Capacity = Q/Qe		0.34	0.76	0.39	0.52	0.69

TOTAL FLOW = 13931 (pcu/hr)

CRITICAL DFC = 0.76

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnA - Tam Kon Shan Road / Tsing Yi North Coastal Road Slip Road (West)	2029 Design Traffic Flow - PM Peak		Reviewed By:	AW	27/2/2025

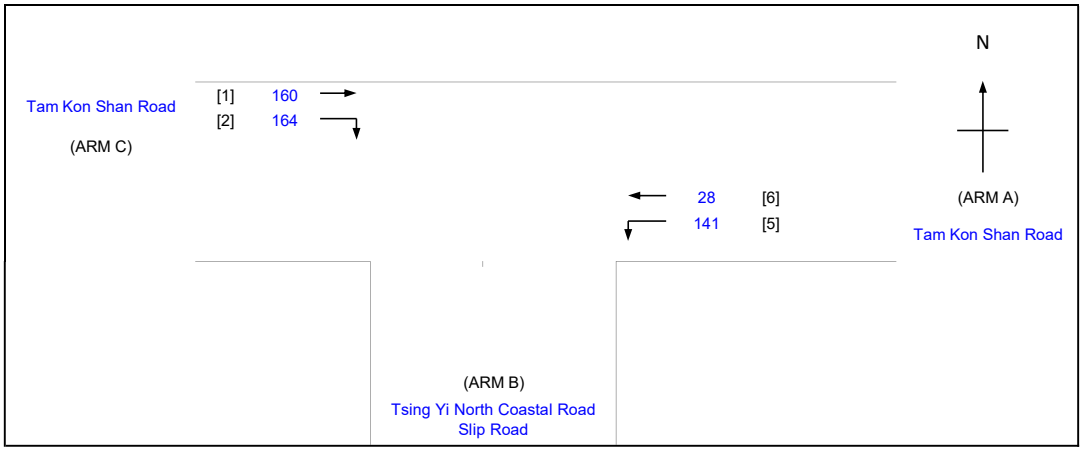


GEOMETRIC DETAILS:			**ARM**	**A**	**B**	**C**	**D**
V	=	Approach half width (m)		4.1	3.7	4.1	4.2
E	=	Entry width (m)		5.3	4.0	7.3	6.3
L	=	Effective length of flare (m)		6.0	1.0	6.0	2.0
R	=	Entry radius (m)		9.0	26.0	9.0	7.0
D	=	Inscribed circle diameter (m)		28.0	28.0	28.0	28.0
A	=	Entry angle (degree)		46.0	33.0	34.0	38.0
Q	=	Entry flow (pcu/h)		133	277	38	20
Qc	=	Circulating flow across entry (pcu/h)		212	40	4	327
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L		0.32	0.48	0.85	1.68
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		0.88	1.00	0.93	0.88
X2	=	V + ((E-V)/(1+2S))		4.83	3.85	5.28	4.68
M	=	EXP((D-60)/10)		0.04	0.04	0.04	0.04
F	=	303*X2		1464	1167	1601	1419
Td	=	1+(0.5/(1+M))		1.48	1.48	1.48	1.48
Fc	=	0.21*Td(1+0.2*X2)		0.61	0.55	0.64	0.60
Qe	=	K(F-Fc*Qc)		1181	1146	1480	1077
DFC	=	Design flow/Capacity = Q/Qe		0.11	0.24	0.03	0.02

TOTAL FLOW = 1051 (pcu/hr)

CRITICAL DFC = 0.24

AXON CONSULTANCY LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnB - Tam Kon Shan Road/ Tsing Yi North Coastal Road Slip Road (East)	2029 Design Traffic Flow - PM Peak		Reviewed By:	AW	27/2/2025



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	=	7.0	(metres)
W cr	=	0	(metres)
q a-b	=	141	(pcu/hr)
q a-c	=	28	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.3	(metres)
Vr c-b	=	30.0	(metres)
q c-a	=	160	(pcu/hr)
q c-b	=	164	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	0.0	(metres)
W b-c	=	0.0	(metres)
Vl b-a	=	0.0	(metres)
Vr b-a	=	0.0	(metres)
Vr b-c	=	0.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	0	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.533
E	=	0.586
F	=	0.889
Y	=	0.759

THE CAPACITY OF MOVEMENT :

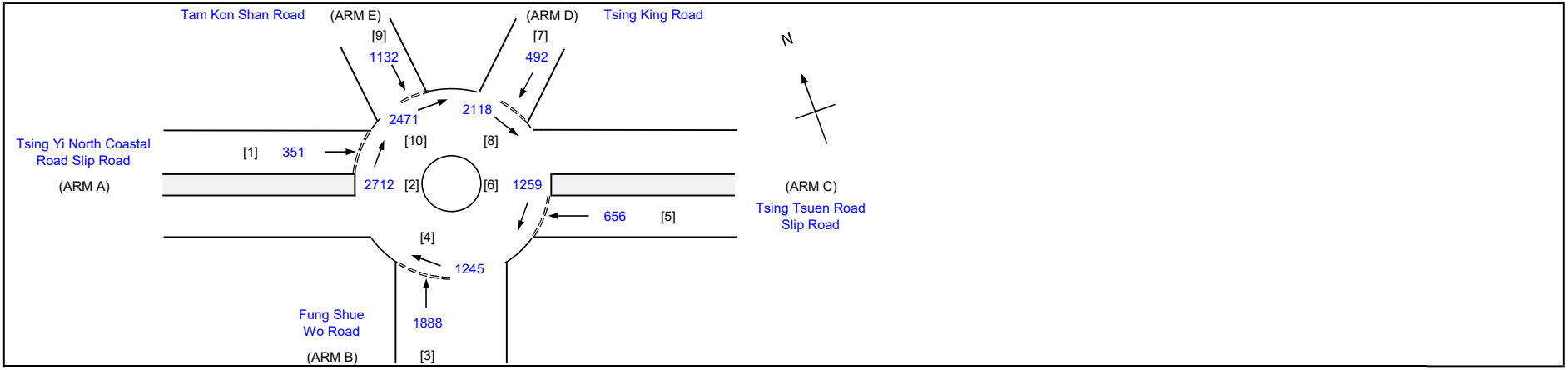
Q b-a	=	273	(pcu/hr)
Q b-c	=	423	(pcu/hr)
Q c-b	=	621	(pcu/hr)
TOTAL FLOW	=	493	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0000
DFC c-b	=	0.2641

CRITICAL DFC = 0.26

AXON CONSULTANCY LIMITED	ROUNDABOUT JUNCTION ANALYSIS			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated		Project No.: 31048	Prepared By:	JK	27/2/2025
Boatyard and Marine-oriented Industrial Uses Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories			Checked By:	SY	27/2/2025
JnC - Tam Kon Shan Interchange	2029 Design Traffic Flow - PM Peak		Reviewed By:	AW	27/2/2025



GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		6.0	7.7	6.8	3.8	5.6
E	=	Entry width (m)		8.3	14.0	8.4	7.6	14.2
L	=	Effective length of flare (m)		13.7	15.9	1.0	18.8	40.9
R	=	Entry radius (m)		40.0	40.0	45.0	39.0	34.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		27.0	29.0	10.0	35.0	45.0
Q	=	Entry flow (pcu/h)		351	1888	656	492	1132
Qc	=	Circulating flow across entry (pcu/h)		2712	1245	1259	2118	2471
OUTPUT PARAMETERS:								
S	=	Sharpness of flare = 1.6(E-V)/L		0.27	0.63	2.56	0.32	0.34
K	=	1-0.00347(A-30)-0.978(1/R-0.05)		1.03	1.03	1.10	1.01	0.97
X2	=	V + ((E-V)/(1+2S))		7.50	10.48	7.06	6.11	10.74
M	=	EXP((D-60)/10)		54.60	54.60	54.60	54.60	54.60
F	=	303*X2		2271	3175	2140	1851	3254
Td	=	1+(0.5/(1+M))		1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)		0.53	0.66	0.51	0.47	0.67
Qe	=	K(F-Fc*Qc)		864	2424	1641	859	1555
DFC	=	Design flow/Capacity = Q/Qe		0.41	0.78	0.40	0.57	0.73

TOTAL FLOW = 14324 (pcu/hr)

CRITICAL DFC = 0.78

Appendix B

Loading/unloading Bay Analysis

AXON CONSULTANCY LIMITED

LOADING/UNLOADING BAY ASSESSMENT (3 BAYS & 12 WAITING SPACES)

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

Arrival Rate Estimate

Max. Trip Attraction Rate	=	**43**	veh/hr
Peak 15 Minutes Arrival Rate	=	10.75	veh/15mins
Peak Arrival Rate (A)	=	0.72	veh/min
Total Concrete Loading Time (say)	=	**360**	s
Average Servicing Rate (S)	=	60s / 360 x 3	veh/min
	=	0.50	veh/min

The probability that there are n units in the concrete loading system

P(n) = p^n x P(0) = p^n x (1-p)

$$P(n) = \frac{1}{\sum_{n=0}^{N-1}(\frac{p^n}{n!}) + \frac{p^N}{N!(1-\frac{p}{N})}} \quad \text{for } n = 0$$

$$P(n) = \frac{p^n}{n!}P(0) \qquad \text{for } 0 < n \leq N$$

$$P(n) = \frac{p^n}{N^{n-N}N!}P(0) \qquad \text{for } n > N$$

where n = number of units in the system

p = A/S = 1.43333

P(n) = probability of the system being at state n

Probability of an idle bay

P(0) = 1 / [(1 + p + p^2 / 2) + p^3 / (6 - 2p)]

= 1 / [(1 + 1.43333 + 1.43333^2 /2) + 1.43333^3 / (6 - 2 x 1.43333)]

= 22.725%

Probability of 1 bay is in use

P(1) = 1.43333^1 (0.22725) / 1! = 32.573%

Probability of 2 bays are in use

P(2) = 1.43333^2 (0.22725) / 2! = 23.344%

Probability of 3 bays are in use

P(3) = 1.43333^3 (0.22725) / 3! = 11.153%

Probability of 3 bays are in use and 1 waiting space are occupied

P(4) = 1.43333^4 (0.22725) / 3! (3^1) = 5.329%

Probability of 3 bays are in use and 2 waiting spaces are occupied

P(5) = 1.43333^5 (0.22725) / 3! (3^2) = 2.546%

Probability of 3 bays are in use and 3 waiting spaces are occupied

P(6) = 1.43333^6 (0.22725) / 3! (3^3) = 1.216%

Probability of 3 bays are in use and 4 waiting spaces are occupied

P(7) = 1.43333^7 (0.22725) / 3! (3^4) = 0.581%

Probability of 3 bays are in use and 5 waiting spaces are occupied

P(8) = 1.43333^8 (0.22725) / 3! (3^5) = 0.278%

Probability of 3 bays are in use and 6 waiting spaces are occupied

P(9) = 1.43333^9 (0.22725) / 3! (3^6) = 0.133%

Probability of 3 bays are in use and 7 waiting spaces are occupied

P(10) = 1.43333^{10} (0.22725) / 3! (3^7) = 0.063%

Probability of 3 bays are in use and 8 waiting spaces are occupied

P(11) = 1.43333^{11} (0.22725) / 3! (3^8) = 0.030%

Probability of 3 bays are in use and 9 waiting spaces are occupied

P(12) = 1.43333^{12} (0.22725) / 3! (3^9) = 0.014%

Probability of 3 bays are in use and 10 waiting spaces are occupied

P(13) = 1.43333^{13} (0.22725) / 3! (3^{10}) = 0.007%

Probability of 3 bays are in use and 11 waiting spaces are occupied

P(14) = 1.43333^{14} (0.22725) / 3! (3^{11}) = 0.003%

Probability of 3 bays are in use and 12 waiting spaces are occupied

P(15) = 1.43333^{15} (0.22725) / 3! (3^{12}) = 0.002%

Probability of 15 or less trucks in the system

= P(0) + P(1) + P(2) + P(3) + P(4) + P(5) + P(6) + P(7) + P(8) + P(9) + P(10) + P(11) + P(12) + P(13) + P(14) + P(15)

= 0.22725 + 0.32573 + 0.23344 + 0.11153 + 0.05329 + 0.02546 + 0.01216 + 0.00581 + 0.00278 + 0.00133 + 0.00063 + 0.0003 + 0.00014 + 0.00007 + 0.00003 + 0.00002

= 99.997%

Probability of more than 15 trucks in the system

= 1 - 0.99997

= 0.00003

The chances that traffic will queue up is less than **0.003%**

Appendix C

Swept Path Analysis

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 12m FIRE ENGINE

FIGURE SP-01

Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\SWEPT PATH_A.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 5m PRIVATE CAR

FIGURE SP-02

Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\SWEPT PATH_A.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 9.88m CONCRETE MIXER TRUCK
FIGURE SP-03

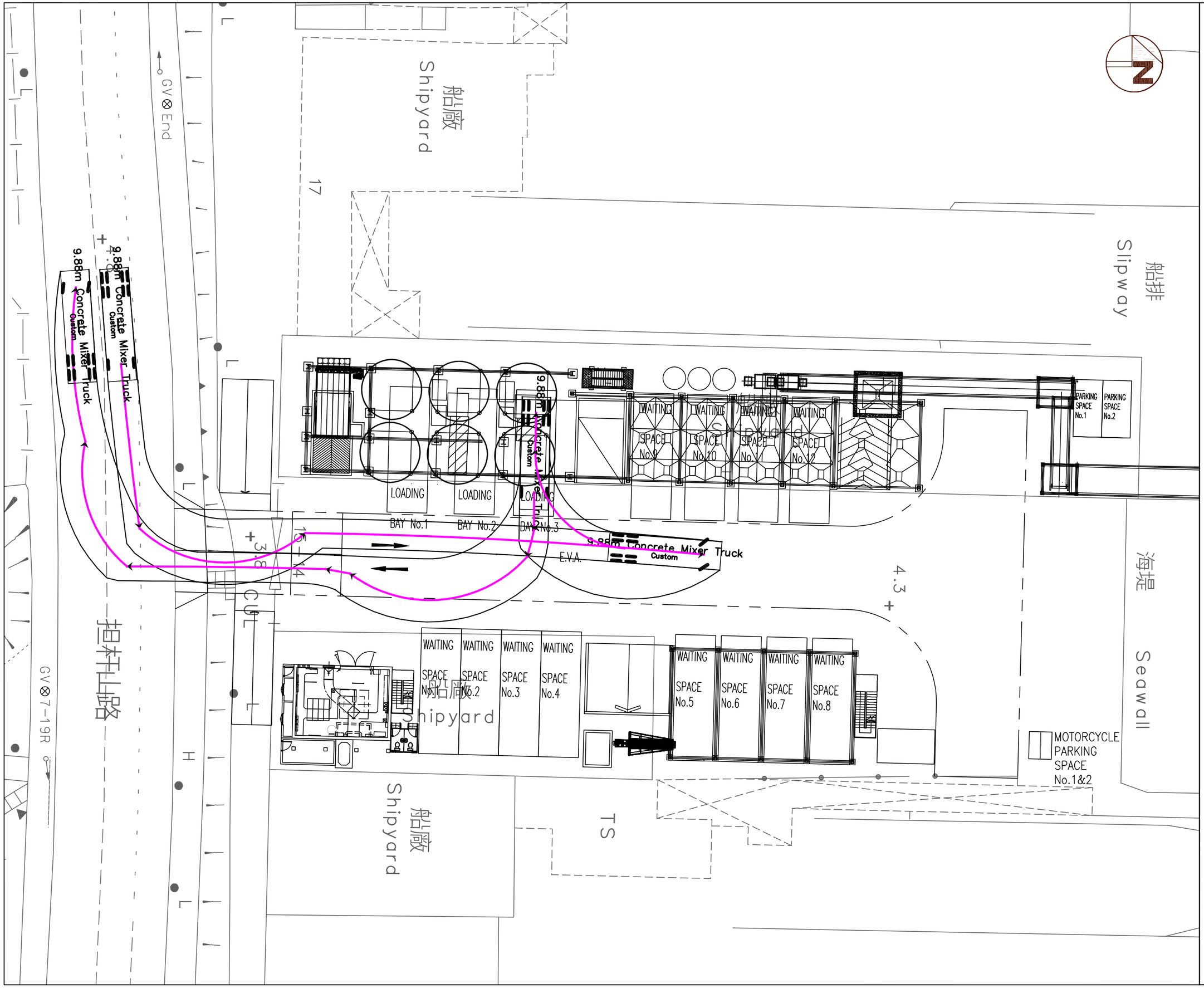
Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\SWEPT PATH_A.DWG



Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 9.88m CONCRETE MIXER TRUCK
FIGURE SP-04

Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\SWEPT PATH_A.DWG

Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 9.88m CONCRETE MIXER TRUCK
FIGURE SP-05

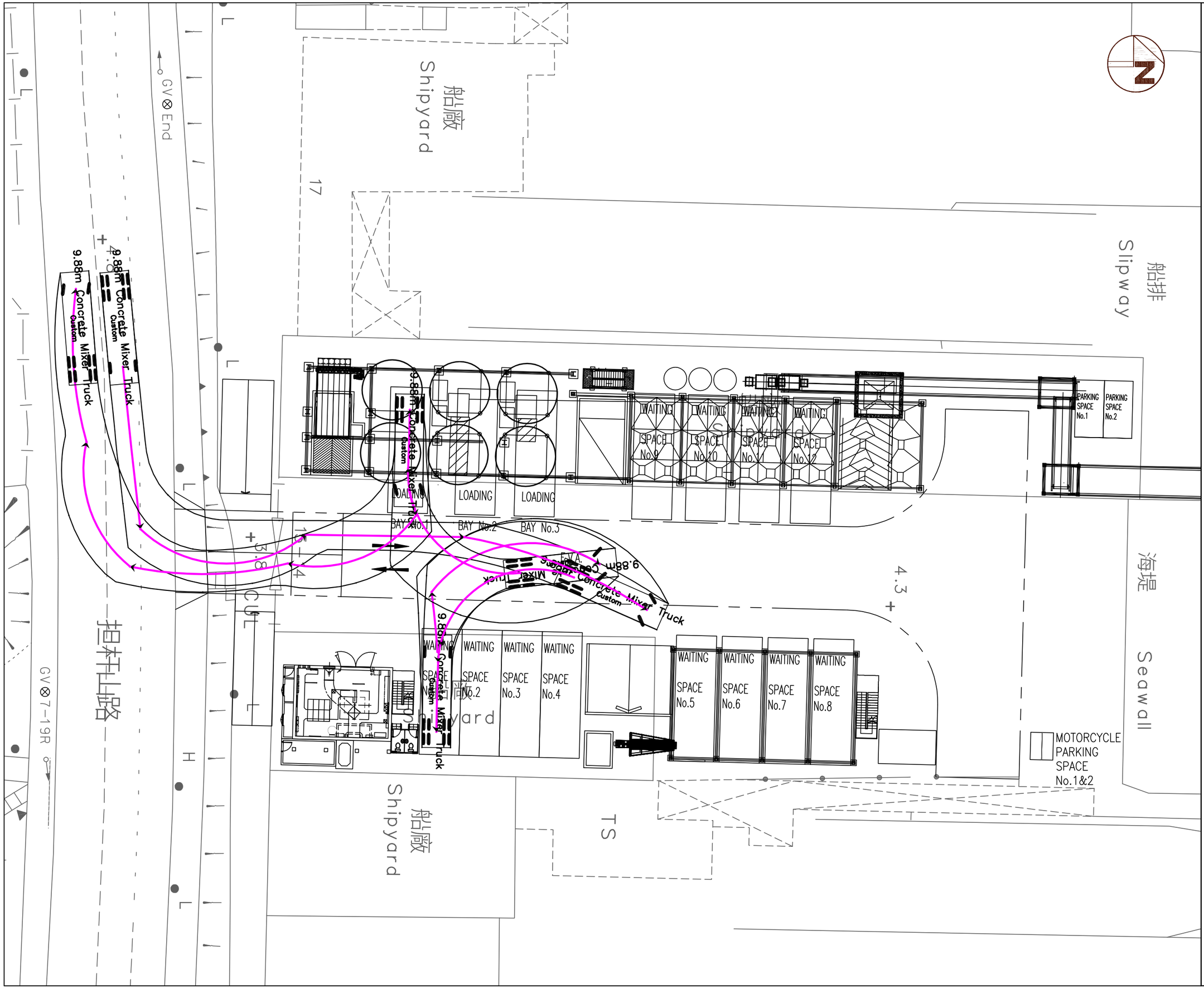
Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\SWEPT PATH_A.DWG



Traffic Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

SWEPT PATH ANALYSIS OF 9.88m CONCRETE MIXER TRUCK
FIGURE SP-06

Scale : 1:300 (A3)

Date : FEB 2025

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWINGS\WEPT PATH_A.DWG