

Appendix III

Traffic Impact Assessment

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D. 51, Fanling, New Territories



TRAFFIC IMPACT ASSESSMENT REPORT

Reference: 31068-R01-03

Date: May 2026

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1 Introduction

1.1 Background

The Applicant intends to seek Town Planning Board ("TPB") approval for a Proposed Redevelopment of Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories, (hereafter "the proposed development").

In the Approved Fanling/Sheung Shui Outline Zoning Plan No. S/FSS/28 (referred to as the "OZP"), the Application Site is zoned as "Industrial". 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 concrete batching plant under Section 16 of the Town Planning Ordinance.

AXON Consultancy 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 propose practicable traffic management or minor improvement measures, where necessary, such that the proposed development would not cause unacceptable adverse impact on the surrounding road network

1.3 Structure of Report

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

After this introductory chapter, the report is organised as follows:

Chapter 2 – The Proposed Development, which describes the site location, proposed development details and implementation programme;

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

Chapter 4 – Future Traffic Situation, which presents the design year traffic forecasts under the Reference and Design Scenarios, taking into account the adopted traffic growth rate, planned adjacent developments, cumulative development flows, relevant road improvement projects and routeing assumptions;

Chapter 5 – Transport Provisions, which presents the proposed traffic arrangements, internal transport facilities, swept path assessment and sightline assessment for the proposed development;

Chapter 6 – Preliminary Traffic Management Plan, which outlines the preliminary traffic management and operational measures formulated to minimise the risk of vehicle queuing on On Kui Street and On Chuen Street; and

Chapter 7 – Summary and Conclusion, which summarises the key findings and conclusions regarding traffic impact, junction performance and proposed traffic management measures..

2 The Proposed Development

2.1 The Application Site

The application site has an approximate area of 1,721.4 m² and is bounded by Lot 4433 Section 90 RP and Section 89 RP in D.D. 51, Fanling, New Territories. It is bordered by On Chuen Street on the southeast and On Kui Street on the northwest. The site location is shown in **Figure 2.1**.

2.2 The Proposed Development

The proposed development will involve:

- The demolition of the existing concrete batching plant.
- Construction of a new concrete batching plant featuring one production line designed to produce approximately 120 m³ of concrete per hour.
- Rearrangement of existing parking and loading/unloading bays to facilitate operational requirements.
- Integration of a new ancillary substation to support increased power demand.

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.	Lot 4433, Sections 90/RP (On Kui Street) and 89/RP (On Chuen Street), Fanling.
Application Area	About 1,721.4 m ²
Gross Floor Area	About 366.3 m ²
Zoning	Industrial
Completion Year	2027

3 Existing Traffic Situation

3.1 Existing Road Network

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

Fanling Highway functions as an Expressway, featuring a dual-three carriageway that stretches in an east-west direction. This road is a primary route for the commute of the motorists between Tai Po and San Tin at its endpoints, passing through Fanling and Sheung Shui along the way. At the eastern end, the road links up with the Tolo Highway at the Lam Kam Interchange, which also connects with Tai Wo Service Road West, Lam Kam Road, and Tai Po Road. Towards the western end, the highway goes through the Kwu Tung area and succeeds the San Tin Highway.

Jockey Club Road, classified as a Primary Distributor with a dual-two carriageway configuration that stretches in an east-west direction, links many key roads in Sheung Shui and Fanling Districts, including So Kwun Po Road, San Wan Road and Sha Tau Kok Road - Lung Yeuk Tau.

So Kwun Po Road serves as a Primary Distributor, characterized by a dual-two carriageway that extends in a north-south orientation in its section between Fanling Highway and San Wan Road.

San Wan Road functions as a District Distributor, distinguished by a dual-two carriageway that runs in an east-west direction in the segment between So Kwun Po Road and Sha Tau Kok - Lung Yeuk Tau.

Sha Tau Kok Road - Lung Yeuk Tau serves as a District Distributor, characterized by a dual-two carriageway that extends in a north-south direction between San Wan Road and Jockey Club Road. Additionally, it operates as a Primary Distributor, also marked by a dual-two carriageway that runs in a north-south orientation between Jockey Club Road and Lok Yip Road.

Lok Yip Road, classified as a District Distributor with a dual-two carriageway configuration that extends in an east-west direction, links Jockey Club Road and Sha Tau Kok Road - Lung Yeuk Tau.

Pak Wo Road serves as a District Distributor, linking Fanling Highway via Wo Hop Shek Interchange and intersecting with Jockey Club Road in a north south direction.

On Chuen Road designated as a local distributor. This is a two-lane, one-way street that extends in a north-south orientation, with a one-way designation that directs all traffic towards the northeast.

On Kui Road, which is identified as a local distributor. This street is a two-lane, one-way street that runs in a north-south direction, with a one-way designation that channels all traffic towards the southwest.

So Kwun Po Interchange, as known as Kai Leng Roundabout, is the main transportation artery connecting Sheung Shui and Fanling with surrounding districts. It is constituted by the convergence of key roads: **Fanling Highway**, a segment of Route 9, runs in an east-west orientation and provides regional connectivity to Tai Po and San Tin. **So Kwun Po Road**, providing northbound access to Sheung Shui Town Centre and southbound connectivity to Pak Wo Road.

3.2 Vehicular Ingress/Egress Arrangement

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

Ingress Route

Motorists coming from New Territories West primarily access the site via Fanling Highway. The designated route includes turning off at Kai Leng Roundabout, proceeding onto the So Kwun Po Road Flyover, the ramp exiting onto San Wan Road, San Wan Road, Sha Tau Kok Road – Lung Yeuk Tau, Jockey Club Road and Lok Yip Road, before proceeding to the final access point via On Chuen Street.

Motorists traveling from Kowloon, Hong Kong Island, or New Territories East typically use Fanling Highway to reach the site. The designated route involves Pak Wo Road, turning off at the Wo Hop Shek Interchange, proceeding onto Pak Wo Road, then along Jockey Club Road and Lok Yip Road, ultimately accessing the site via On Chuen Street.

Egress Route

Vehicles exiting the site follow the reverse route via On Kui Street, merging onto Lok Yip Road, Jockey Club Road, Sha Tau Kok Road – Lung Yeuk Tau, San Wan Road, the ramp connecting to the So Kwun Po Road Flyover, So Kwun Po Road Flyover, turning off at Kai Leng Roundabout and proceeding onto Fanling Highway, before continuing to their respective destinations in New Territories West.

Vehicles departing the site take the reverse route along On Kui Street and merge onto Fanling Highway via the designated route. This route follows Lok Yip Road, Jockey Club Road and Fanling Highway, before proceeding to their respective destinations in Kowloon, Hong Kong Island, or New Territories East.

The detailed ingress/egress arrangement is illustrated in **Figure 3.1 - 3.2**.

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 3.3**, on a normal weekday in October 2025 from 07:00 to 10:00 in the morning and from 16:00 to 19:00 in the evening.

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 and evening peak hours of the road network on school days have been identified as 07:45 to 08:45 and 17:15 to 18:15 respectively. The observed traffic flows of the key junctions are presented in **Figure 3.4**.

3.4 Existing Junction 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 and 4. 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 traffic signalised junction is indicated by its reserve capacity ("RC"). A RC value of 15% or above is considered within acceptable level without causing undue delay to motorists passing through the concerned junctions.

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	PM Peak
Jn A	Lok Yip Road / On Kui Street	Priority / DFC	0.41	0.54
Jn B	Lok Yip Road / On Chuen Street	Priority / DFC	0.29	0.26
Jn C	Sha Tau Kok Road – Lung Yeuk Tau / Jockey Club Road	Roundabout / DFC	0.56	0.47
Jn D	Jockey Club Road / Lok Yip Road	Signalized / RC (%)	49.5%	45.5%

Jun No.	Junction Location	Type / Capacity Index *	AM Peak	PM Peak
Jn E	San Wan Road / So Kwun Po Road Slip Road	Signalized / RC (%)	49.3%	21.5%
Jn F	Sha Tau Kok Road – Lung Yeuk Tau / San Wan Road	Roundabout / DFC	0.41	0.39
Jn G	Fanling Highway / So Kwun Po Road Roundabout	Roundabout / DFC	0.69	0.64

Notes: * DFC - Design Flow / Capacity Ratio; RC = Reserve Capacity

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

3.5 Public Transport

Public transport services in the vicinity, encompassing franchised buses and green minibuses (GMB) are illustrated in **Figure 3.5**. Detailed summaries of these services are shown in **Table 3.2** and **Table 3.3**.

Table 3.2 Franchised Buses Services

Route No.	Destination
56A	Tuen Mun (Ching Tin and Wo Tin) ↔ Queen's Hill Fanling ^(a)
70K	Fanling (Wah Ming) → Ching Ho (Circular)
73B	Chuen On Road (Nethersole Hospital) → Sheung Shui (Circular)
78A	Queen's Hill ↔ Fanling Station (Circular)
78B	Sheung Shui (Choi Yuen) → Queen's Hill ^(b)
78K	Sha Tau Kok → Sheung Shui (Tai Ping)
	Sha Tau Kok → Fanling (Wah Ming) ^(c)
79K	Sheung Shui ↔ Ta Kwu Ling (Tsung Yuen Ha)
	Fanling Station → Ta Kwu Ling (Tsung Yuen Ha) ^(d)
	Ta Kwu Ling (Tsung Yuen Ha) → Fanling Station ^(c)
261	Fanling (Cheung Wah) ↔ Tuen Mun (Sam Shing Estate)
270C	Tsim Sha Tsui East (Mody Road) → Fanling (Luen Wo Hui) ^(b)
277A	Lam Tin Station → Sha Tau Kok ^(e)
	Sha Tau Kok → Lam Tin Station ^(f)
278A	Queen's Hill ↔ Tsuen Wan (Nina Tower)

Route No.	Destination
373	Central (Hong Kong Station) → Fanling (Luen Wo Hui) ^(b)
	Fanling (Luen Wo Hui) → Central (Hong Kong Station) ^(c)
673	Central (Hong Kong Station) ↔ Sheung Shui
673A	Central (Rumsey Street) → Sheung Shui ^(b)
	Sheung Shui → Central (Rumsey Street) ^(c)
673P	Sheung Shui → Central (Rumsey Street) ^(g)
A43	Airport (Ground Transportation Centre) ↔ Fanling (Luen Wo Hui)
A43P	Fanling (Luen Wo Hui) ↔ Airport (Ground Transportation Centre)
	Fanling (Queen's Hill) → Airport (Ground Transportation Centre) ^(h)
	Airport (Ground Transportation Centre) → Fanling (Queen's Hill) ⁽ⁱ⁾
N42A	Tung Chung Station → Fanling (Luen Wo Hui) ⁽ⁱ⁾
	Fanling (Luen Wo Hui) → Tung Chung Station ^(h)
NA43	HZMB Hong Kong Port ↔ Fanling (Luen Wo Hui) ⁽ⁱ⁾
N78	Sha Tau Kok → Sheung Shui ⁽ⁱ⁾

Notes: (a) Service Period: Mondays to Fridays except Public Holidays – Morning & Evening Service

(b) Service Period: Mondays to Fridays except Public Holidays – Evening Service

(c) Service Period: Mondays to Fridays except Public Holidays – Morning Service

(d) Service Period: Mondays to Fridays – Evening Service; Saturday, Sunday and Holidays – Morning Service & Extra Departures Subject to Demand

(e) Service Period: Mondays to Fridays – Evening Service; Saturday, Sunday and Holidays – Morning & Evening Service

(f) Service Period: Mondays to Fridays – Morning Service; Saturday, Sunday and Holidays – Morning, Noon & Evening Service

(g) Service Period: Mondays to Saturday except Public Holidays – Morning Service

(h) Service Period: Every day – Morning Service

(i) Service Period: Every day – Evening Service

(j) Service Period: Every day – Night Service

Table 3.3 Green Minibus (GMB) Services

Route No.	Destination
52B	Fanling Station ↔ Hok Tau
52K	Ping Che → Fanling Station
	Ping Yuen Road (near Ping Yeung Old Village Public Toilet) → Fanling Station ^(a)
	Kwan Tei (North) → Fanling Station ^(a)
54K	Fanling Station ↔ Lung Yeuk Tau (Circular)
	Sui Wan Road (Near Ma Wat Wai Tsuen) → Fanling Station Road (Near Galaxy Court, Fanling Town Center) ^(a)
56A	Fanling Station ↔ Luen Wo Hui
56B	Fanling Station ↔ Tan Chuk Hang
56C	Fanling Station → Siu Hang Tsuen
56K	Luk Keng ↔ Fanling Station
501A	Yung Shing Court → Luen Wo Hui (Circular) ^(a)
501C	Yung Shing Court → Luen Wo Hui (Circular)
501S (overnight)	Sheung Shui Station ↔ Yue Man Square
505	Sheung Shui Station ↔ Yu Chui Court
506	Chi Fuk Circuit ↔ Luen Wo Hui (Circular)
507	Ma Sik Road ↔ Fanling Station (Circular)

Notes: (a) Service Period: Mondays to Fridays – Morning Service

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 2027 or five years after the application year of 2025, depending on which period is longer. Both calculations yield a design year of 2030. Therefore, the year 2030 has been chosen as the design year for this study.

For the Design Year 2030, 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, including Interchange Improvement to So Kwun Po Interchange (Kai Leng Roundabout) and Fanling Bypass (Eastern Section), reveals few expected changes to the current road network.

Interchange Improvement to So Kwun Po Interchange (Kai Leng Roundabout)

Improvement works for the So Kwun Po Interchange (also known as Kai Leng Roundabout) will include the construction of a new north-south carriageway, which is approximately 700 metres in total length, linking Pak Wo Road and San Wan Road. In addition, junction improvement works will be carried out at three locations: the roundabout underneath the new flyover, the Pak Wo Road/So Kwun Po Road junction, and the San Wan Road/So Kwun Po Road junction.

This initiative will establish the new carriageway as an alternative north-south route to the existing So Kwun Po Interchange (Kai Leng Roundabout), thereby alleviating traffic congestion at the interchange itself and other key junctions within Fanling/Shueng Shui district. The proposed improvement is expected to be completed in 2030/2031.

Fanling Bypass

The Fanling Bypass (Eastern Section) is a new approximately 4-kilometer dual-two-lane carriageway in North District. It plays a vital role in connecting the Fanling North New Development Area (NDA) to the Fanling Highway, thereby alleviating traffic congestion in Fanling town center.

This project also includes the construction of the Lung Yeuk Tau Interchange, which connects the Fanling Bypass Eastern Section to the existing Sha Tau Kok Road - Lung Yeuk Tau, along with junction improvement works in the North District to enhance traffic flow and safety. The proposed road work is expected to be completed soon and will be situated at a distance from the surrounding road network of the proposed development.

Considering the ongoing and planned infrastructure projects, it is evident that any significant developments influencing traffic patterns are either in the planning stages or already underway.

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 2030.

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. The development trips are detailed in **Table 4.1**.

Table 4.1 Development Traffic Generation

Use	Generation		Attraction	
	AM Peak	PM Peak	AM Peak	PM Peak
Ingredient Truck Trips (pcus/ hour) ^(a)	23	23	23	23
Concrete Mixer Truck Trips (pcus/ hour) ^(b)	34	34	34	34
Total(pcus/ hour)	57	57	57	57

(a) Information provided by the Applicant = 8 vehicles per hour x 2.8 pcu = 23 pcus per hour.

(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 = (120 m³ per hour / 10m³) x 2.8 pcu = 34 pcus per hour.

As shown in **Table 4.1**, the proposed development would generate 57 pcus and attract 57 pcus in all AM 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 2030, 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 2024 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	2024	Growth Rate p.a.
5003	Fanling Highway	So Kwun Po INT	Wo Hop Shek INT	EX	64,770	63,880	61,080	64,840	62,830	75,040	78,190	3.19%
5244	San Wan Rd	Sha Tau Kok Rd	So Kwun Po INT	DD	12,580	13,220	12,680	13,180	12,780	13,900	12,130	-0.61%
5246	On Kui St	Lok Yip Rd	Sha Tau Kok Rd - Lung Yuek Tau	DD	9,390	6,920	6,640	6,900	6,690	7,760	8,510	-1.63%
5423	So Kwun Po Rd	Fanling Highway	Slip rds to & from San Wan Rd	PD	56,610	51,830	58,760	61,620	58,890	62,580	52,400	-1.28%
5824	Sha Tau Kok Rd	Jockey Club Rd	Lok Yip Rd	PD	28,050	29,170	27,760	30,230	32,230	34,250	34,440	3.48%
6043	Lok Yip Rd	Jockey Club Rd	On Kui St	DD	25,850	25,670	24,610	25,570	23,210	23,660	23,730	-1.42%
6206	Jockey Club Rd	Lok Yip Rd	Wo Hop Shek INT	PD	41,730	37,440	36,370	37,380	36,240	34,840	32,860	-3.90%
Total					238,980	228,130	227,900	239,740	232,870	252,030	242,260	+0.23%

Note: * EX = Expressway, PD= Primary Distributor & DD = district Distributor

Table 4.2 presents traffic flow data spanning seven years. The data indicates variable annual growth rates across different road links, with some links experiencing decline and some links showing increase in traffic volume. When considering all the links collectively, the compounded annual growth rate averages out to an increase of **+0.23%**.

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 North 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	2019	2031	2019	2031	
North District	309,650	435,550	84,150	144,850	393,800	580,400	<u>3.9%</u>

The data indicate the growth in population and employment in North District at an annual rate of **+3.9%** from 2021 to 2031.

By comparing growth rates derived from both historical traffic data and future planning data, an annual growth rate of **+3.9%** has been adopted for conservative forecasting purposes. This growth factor will be applied to the traffic flows observed in 2025.

4.4 Major Planned/ Committed Developments

The forecast includes major planning applications or committed developments near the site, detailed in **Table 4.4**.

Table 4.4 Major Planning Applications/ Committed Developments

Location	Development Parameters	Type of Development	Completion Year
Private Residential Building at Yan Shing Lane (Application No.: Y/FSS/13)	About 300 units	Residential Development	Before 2030

Location	Development Parameters	Type of Development	Completion Year
- To rezone the application site from "Government, Institution or Community" to "Residential (Group A)4" at Lots 3261 S.A RP, 3262 S.A, 3263 S.A (Part), 3261 S.B RP (Part), 3262 S.B RP (Part), 3263 S.B (Part), 3262 S.B ss.1 (Part), 3262 S.C RP (Part), 3262 S.C ss.2 RP (Part), 3262 S.C ss.3 RP (Part), 3262 S.C ss.1 RP (Part), 3265 S.A RP (Part) and 3375 RP (Part) in D.D. 51 and Adjoining Government Land, Fanling, New Territories	About 3,092 m ² GFA	Retail Development	
Casa Sierra (Application No.: A/FSS/254) - Proposed Mixed Housing Development including 'Flat' (Public Rental	About 1,467 units	Residential Development	2025-2026
	About 6,500 m ² GFA	Retail Development	

Location	Development Parameters	Type of Development	Completion Year
and Subsidized Sale Flats), 'Residential Institution' (Elderly Flats under the Senior Citizen Residences Scheme), 'Shop and Services', 'Eating Place', 'Social Welfare Facility' (Residential Care Home for Elderly) and 'Public Vehicle Park') at Government Land in D.D. 51, Pak Wo Road, Fanling, New Territories	About 210 beds	RCHE	
Choi Shek Estate (Application No.: A/FSS/280) - Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Public Housing Development at Government Land in Areas 4 and 30, Sheung Shui, New Territories (Site 1)	About 2,088 units	Residential Development	2025 - 2029
	About 395 m ² GFA	Retail Development	
	About 6 classrooms	Kindergarten	
	About 10,513 m ² GFA	Social Welfare Facility	
Proposed Housing Development at San Wan Road, Sheung	About 1,556 units	Residential Development	2025-2029

Location	Development Parameters	Type of Development	Completion Year
Shui (Application No.: A/FSS/280) - Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Public Housing Development at Government Land in Areas 4 and 30, Sheung Shui, New Territories (Site 2)	About 700 m ² GFA	Retail	
Nexus Grand (Application No.: A/FSS/282) - Proposed Minor Relaxation of Domestic PR Restriction for Permitted Residential Development with Commercial Uses at Lot 5045 in D.D. 51, 1 Luen Fat Street, Fanling, New Territories	About 114 units	Residential Development	2026
Wholesale Conversion of C.K.K. Industrial Building (Application No.: A/FSS/283) - Proposed Shop and Services (Showroom) and Office (Wholesale Conversion of an Existing Industrial Building) at No. 5 Lok Yip Road, Fanling, New Territories	About 1,826 m ² GFA	Retail Development	Before 2030
	About 1,796 m ² GFA	Office Development	

Location	Development Parameters	Type of Development	Completion Year
Wholesale Conversion of On Tat Industrial Centre (Application No.: A/FSS/284) - Proposed Shop and Services, Eating Place and Other Uses (including Art Studio/ Office/ Information Technology and Telecommunications Industries/ Place of Recreation, Sports or Culture) (Wholesale Conversion of an Existing Industrial Building) at No. 33 On Lok Mun Street, Fanling, New Territories	About 2,392 m ² GFA	Retail Development	Before 2030
Application No.: A/FSS/294 - Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Flat Development with Social Welfare Facility at Various Lots in D.D. 51 and Adjoining Government Land, Ma Sik Road, Fanling, New Territories	About 1,898 units	Residential Development	2029
	About 120 beds	RCHE	2029

Location	Development Parameters	Type of Development	Completion Year
Public Housing Development at Fanling Area 48 (Application No.: A/FSS/295) - Proposed Minor Relaxation of Maximum Gross Floor Area and Building Height at Government Land in Area 48, Fanling, New Territories	About 4,200 units	Residential Development	2029
Public Housing Development at Po Shek Wu Road, Sheung Shui (Application No.: A/FSS/299) - Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Public Housing Development at Government Land at Po Shek Wu Road, Sheung Shui, New Territories	About 1,904 units	Residential Development	2029
Hemma Fab (Application No.: N/A) - Subsidized Sale Flats at 288 Jockey Club Road, Fanling, New Territories	About 644 units	Residential Development	2027
Public Housing Development at San Wan Road, Sheung Shui (HKHA Planning Brief) - Housing Development near Wong Kong Shan	About 450 units	Residential Development	2027-2028
New Territories East Cultural Centre in Area 11, Fanling [LC Paper No. CB(2)614/2022(01)]	About 2,460 units	G/IC	2027-2028

Location	Development Parameters	Type of Development	Completion Year
Public Housing Development at Choi Shun Street, Sheung Shui [LC Paper No. CB(1)274/2023(05)]	About 2,400 units	Residential Development	2029-2030
Public Housing Development At Queen's Hill Extension [LC Paper No. PWSC(2022-23)34]	About 4,000 units	Residential Development	2030-2031

4.5 Cumulative Development Traffic and Fanling North NDA Traffic

Apart from the general background traffic growth derived from the Growth Factor Method, a review has been carried out on the major planned and committed developments in the vicinity of the Site. These include Fanling North NDA, Kwu Tung North NDA, other planned housing developments in Fanling / Sheung Shui, and relevant road infrastructure projects. The cumulative traffic arising from these developments has been reviewed with regard to their likely routeing through the local road network.

To illustrate the cumulative effect of nearby developments, **Figure 4.1** shows the cumulative development flows will be provided in this report. The drawing will indicate the assumed traffic movements associated with the major developments near the Site, including their likely distribution through the key junctions within the study area.

In particular, traffic from Fanling North NDA travelling to Fanling Highway Yuen Long-bound may route via Kai Leng Roundabout. In the absence of publicly available detailed NDA traffic assignment data, a sensitivity allowance of 100 pcu/hr in the peak direction has been included in the 2030 reference flow for traffic travelling from Fanling North NDA to Fanling Highway Yuen Long-bound via Kai Leng Roundabout. This allowance is considered conservative, having regard to the partial population intake of Fanling North NDA before 2030 and the availability of Fanling Bypass as an alternative route for NDA traffic.

It should be noted that the increase of traffic is driven by the additional background NDA sensitivity flow, rather than by the traffic generated by the proposed concrete batching plant. The proposed development itself serves a local construction-support function by supplying concrete to nearby works areas, which can reduce reliance on longer-distance concrete delivery from more remote batching plants.

On this basis, the proposed development should not be regarded as the cause of the background junction loading issue; rather, it forms part of the local construction logistics required to support the planned development in the area.

4.6 Reference and Design Flows

The growth factor will be applied to the traffic flows of 2025 Observed Peak Hours, to estimate the 2030 Reference Flows and 2030 Design Flows. The reference and design flows for year 2030 are calculated from the following formulae:

$$\begin{aligned} \text{2030 Reference Flows} &= \text{2025 Observed Flows} \times (1+3.9\%)^5 + \\ &\quad \text{Planned/ Committed Development Traffic} \\ \text{2030 Design Flows} &= \text{2030 Reference Flows} + \\ &\quad \text{Proposed Development Traffic} \end{aligned}$$

Figure 4.2 shows the 2030 Reference Peak Hours Flows. By adding the development traffic, **Figure 4.3** shows the 2030 Design Peak Hours Traffic.

4.7 Future 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 4.5** with detailed calculation sheets attached in **Appendix A**.

Table 4.5 Future Junction Performance

Jn No.	Junction Location	Type / Capacity Index *	Reference Scenario		Design Scenario	
			AM Peak	PM Peak	AM Peak	PM Peak
Jn A	Lok Yip Road / On Kui Street	Priority / DFC	0.62	0.79	0.67	0.79
Jn B	Lok Yip Road / On Chuen Street	Priority / DFC	0.39	0.35	0.57	0.52
Jn C	Sha Tau Kok Road – Lung Yeuk Tau / Jockey Club Road	Roundabout / DFC	0.76	0.62	0.76	0.62
Jn D	Jockey Club Road / Lok Yip Road	Signalized / RC (%)	14.2%	13.6%	12.7%	12.2%
Jn E	San Wan Road / So Kwun Po Road Slip Road	Signalized / RC (%)	12.6%	-5.0%	12.6%	-5.0%

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario		Design Scenario	
			AM Peak	PM Peak	AM Peak	PM Peak
Jn F	Sha Tau Kok Road – Lung Yeuk Tau / San Wan Road	Roundabout / DFC	0.52	0.48	0.52	0.49
Jn G	Fanling Highway / So Kwun Po Road Roundabout	Roundabout / DFC	0.89	0.81	0.89	0.81

Notes: * DFC - Design Flow / Capacity Ratio

As shown in **Table 4.5**, all key junctions are expected to perform satisfactorily during peak periods in both Reference and Design Scenarios except Junction E which is overloaded in PM peak even without the proposed development.

4.8 Proposed Junction Improvements

As Junction E is projected to be overloaded during the 2030 peak hours, a local widening measure is proposed at the So Kwun Po Road southbound slip road by increasing the right-turn traffic lanes from one lane to two lanes. The proposed improvements is depicted in **Figure 4.4**.

The future junction performance under the 2030 Reference and Design Scenarios, with the proposed local widening at Junction E, is summarised in **Table 4.6**. The local widening involves increasing the right-turn traffic lanes at the So Kwun Po Road southbound slip road from one lane to two lanes.

Table 4.6 Future Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario		Design Scenario	
			AM Peak	PM Peak	AM Peak	PM Peak
Jn E	San Wan Road / So Kwun Po Road Slip Road	Signalized / RC (%)	66.5%	37.4%	66.5%	37.4%

As shown in **Table 4.6**, Junction E, i.e. San Wan Road / So Kwun Po Road Slip Road, would operate with reserve capacities of 66.5% and 37.4% during the AM and PM peak hours respectively under the Reference Scenario. The same reserve capacities are maintained under the Design Scenario, indicating that the proposed development would not impose additional traffic impact on this junction.

It should be noted that Junction E would already be overloaded under the 2030 reference scenario, even without traffic generated by the proposed development. The additional traffic contribution from the proposed development is limited and would not be the primary cause of the junction capacity issue. The capacity constraint is therefore primarily a background network issue associated with planned growth in the area.

On this basis, the required junction improvement should be taken forward by the Government as part of the wider road network enhancement for Fanling / Sheung Shui. To support the timely implementation of Fanling North NDA and other planned developments, the programme for the north-south bypass / So Kwun Po Interchange improvement should be expedited as far as practicable.

5 Transport Provision

5.1 Vehicular Access Arrangement

As shown in **Figure 5.1**, the site is bounded by On Kui Street to the north and On Chuen Street to the southeast. Both streets operate under one-way traffic control, with vehicles on On Kui Street travelling southbound and those on On Chuen Street travelling northbound. This arrangement defines the available movement patterns for site access and departure.

The current development was created by merging two originally separate lots, each with its own vehicular access. As a result, two existing access points are available, one along each road frontage, as shown in **Figure 5.2**. To make best use of this configuration and ensure efficient internal circulation, it is proposed to designate the access on On Chuen Street as the ingress point and the access on On Kui Street as the egress point.

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
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)	4

The design includes 4 dedicated waiting spaces and 3 loading/unloading bays 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 public roads 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 C**, confirm that the probability of queuing on public roads is negligible (**less than 0.001%**). 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.

5.3 Sightline at Site Egress onto On Kui Street

The proposed site egress is located on On Kui Street. On Kui Street is generally a straight road section in the vicinity of the proposed egress, and no significant horizontal curvature or physical obstruction is anticipated to affect the visibility of vehicles leaving the Site.

A sightline assessment has been carried out with reference to the TPDM requirement for an approaching vehicle speed of 50 km/h as shown in **Figure 5.1**. Based on TPDM, the required sightline distance is 70 m for this approach speed. The assessment confirms that a visibility splay of 70 m can be achieved from the proposed egress along On Kui Street in both directions where applicable.

The available sightline is therefore considered adequate for vehicles leaving the Site to observe approaching traffic along On Kui Street. The proposed egress arrangement would not give rise to adverse road safety concerns, subject to maintaining the visibility splay free from obstruction.

6 Preliminary Traffic Management Plan

6.1 Introduction

This Chapter sets out the preliminary Traffic Management Plan for the proposed concrete batching plant, with specific emphasis on avoiding any queuing of plant-related vehicles on On Kui Street and On Chuen Street. 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.

6.2 Operation Procedure

This procedure provides a structured framework for managing concrete truck operations within the batching plant, ensuring both efficiency and safety. By following this procedure, all stakeholders can be assured that each truck operation is executed 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 and 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 smooth and efficient operations that prevent 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 or telephone at key stages of their route, with initial instructions provided regarding the designated ingress route and estimated arrival time.

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 off-site waiting point before approaching the site. This ongoing dialogue allows management to coordinate arrivals, prevent on-site 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 exits the site. This continuous communication strategy ensures that drivers are informed and responsive at all critical stages of the operation, thereby maintaining orderly traffic flow and enhancing safety.

6.4 Small Fleet Size

The proposed concrete batching plant will be served by a small, dedicated fleet of concrete mixer trucks dispatched from within the site. With 3 loading bays and 4 on-site waiting spaces providing a total on-site holding capacity of 7 vehicles, together with centralised GPS-based dispatch to regulate truck arrivals, there is sufficient on-site capacity to accommodate all loading and unloading operations without vehicles being required to wait on the adjacent public roads. To further substantiate this conclusion, a queuing probability analysis has been carried out using the M/M/c queuing model presented in **Appendix C**, adopting a conservative peak arrival rate of 20 vehicles per hour and an average service time of 300 seconds per vehicle across 3 loading bays. The analysis demonstrates that the probability of more than 7 trucks being present in the loading system at any one time — the condition under which vehicles would be required to queue on On Kui Street or On Chuen Street — is **0.00001 (less than 0.001%)**, representing a confidence level exceeding 99.9% that no external queuing will occur. Consequently, the likelihood of concrete trucks queuing on public roads is expected to be negligible during the operation of the proposed development.

7 Summary and Conclusions

7.1 Summary

The Applicant intends to seek Town Planning Board (“TPB”) approval for a Proposed Redevelopment of Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D. 51, Fanling, New Territories, hereafter referred to as “the proposed development”.

In the Approved Fanling / Sheung Shui Outline Zoning Plan No. S/FSS/28, the Application Site is zoned “Industrial”. According to the Schedule of Uses under the OZP, “Concrete Batching Plant” is a Column 2 use. Planning permission from the TPB is therefore required under Section 16 of the Town Planning Ordinance.

To appraise the existing traffic conditions, classified turning movement count surveys were carried out at the key junctions of the surrounding road network on a normal weekday in October 2025 from 07:00 to 10:00 and from 16:00 to 19:00. The weekday AM and PM peak hours of the road network were identified as 07:45 to 08:45 and 17:15 to 18:15 respectively.

Year 2030 has been adopted as the design year of this TIA. For conservative assessment purposes, an annual traffic growth rate of +3.95% has been adopted with reference to the higher growth factor derived from the historical traffic trend and the latest 2021-based TPEDM. This growth factor has been applied to the observed 2025 traffic flows to derive the 2030 background traffic flows.

The junction capacity assessments indicate that the majority of the key junctions would operate within capacity under the 2030 Reference and Design Scenarios. For Junction E, the junction is projected to be overloaded under the 2030 Reference Scenario even without the proposed development. The capacity constraint is therefore a background road network issue rather than an impact primarily caused by the proposed development. A local widening measure at the So Kwun Po Road southbound slip road, increasing the right-turn traffic lanes from one lane to two lanes, has been proposed for consideration.

For Junction G / Kai Leng Roundabout, a conservative sensitivity allowance of 100 pcu/hr has been included for Fanling North NDA traffic travelling to Fanling Highway Yuen Long-bound via Kai Leng Roundabout. Under this sensitivity scenario, the DFC would increase to 0.89 during the AM peak. This sensitivity exceedance is associated with the assumed background NDA traffic, rather than the traffic generated by the proposed concrete batching plant.

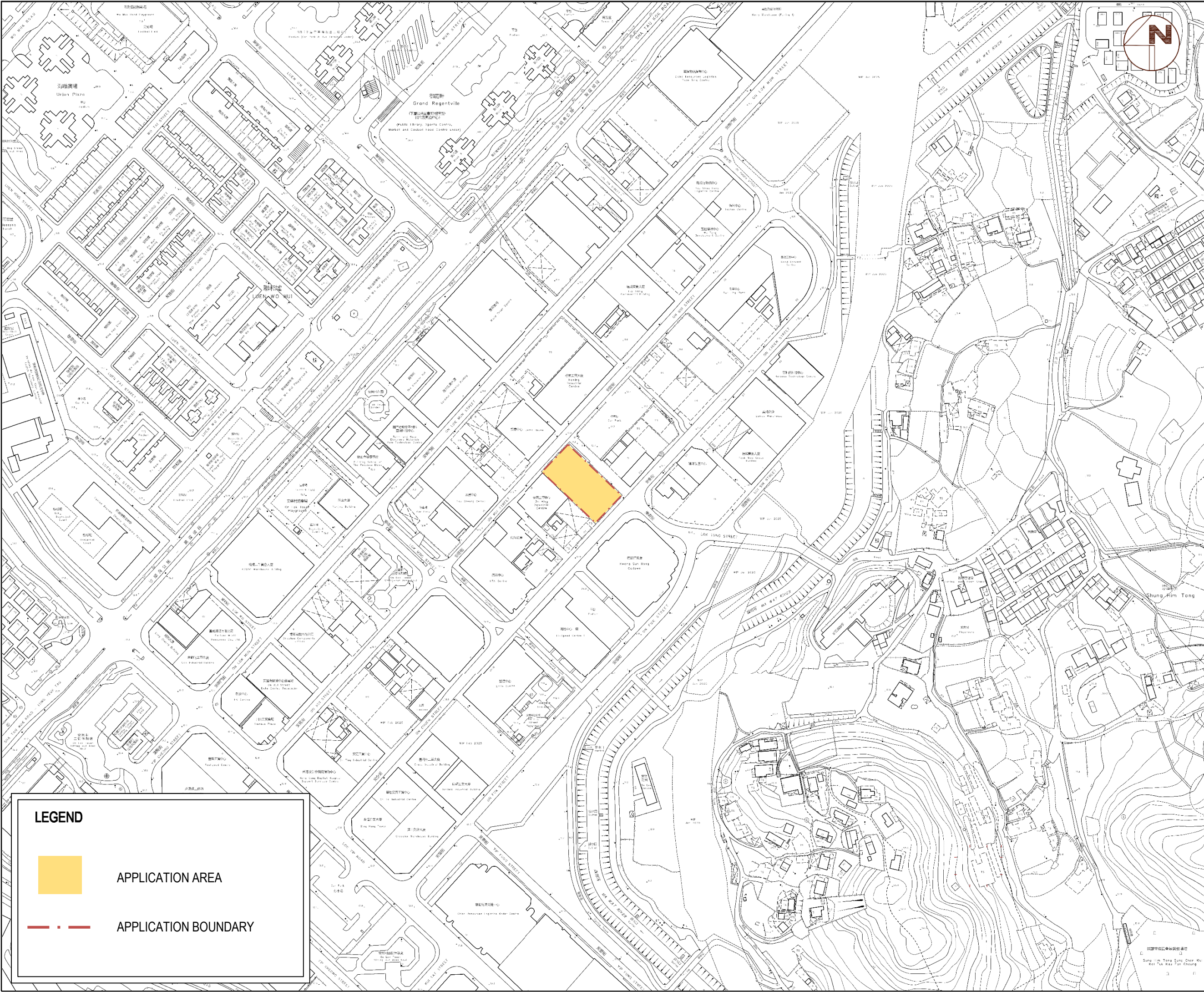
A comprehensive analysis of the loading and unloading facilities has demonstrated that the proposed facilities are sufficient to accommodate site operations without causing external traffic impacts. The probability of vehicles queuing onto public roads is calculated to be negligible. A preliminary Traffic Management Plan has also been formulated to regulate truck despatching, control fleet size and utilise real-time vehicle monitoring so as to minimise the risk of off-site queuing and localised congestion.

The proposed concrete batching plant would support local construction activities in Fanling North and the surrounding area by providing a local concrete supply. This can reduce reliance on longer-distance concrete delivery from more remote batching plants and help contain construction-related traffic movements within the district..

7.2 Conclusions

The findings of the traffic impact assessment confirm that the proposed development would not cause unacceptable traffic impact on the surrounding road network. While certain background capacity constraints are identified in the 2030 assessment, these are associated with the wider planned growth and road network conditions in Fanling / Sheung Shui, rather than being primarily caused by the proposed development..

Figures



Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

SITE LOCATION

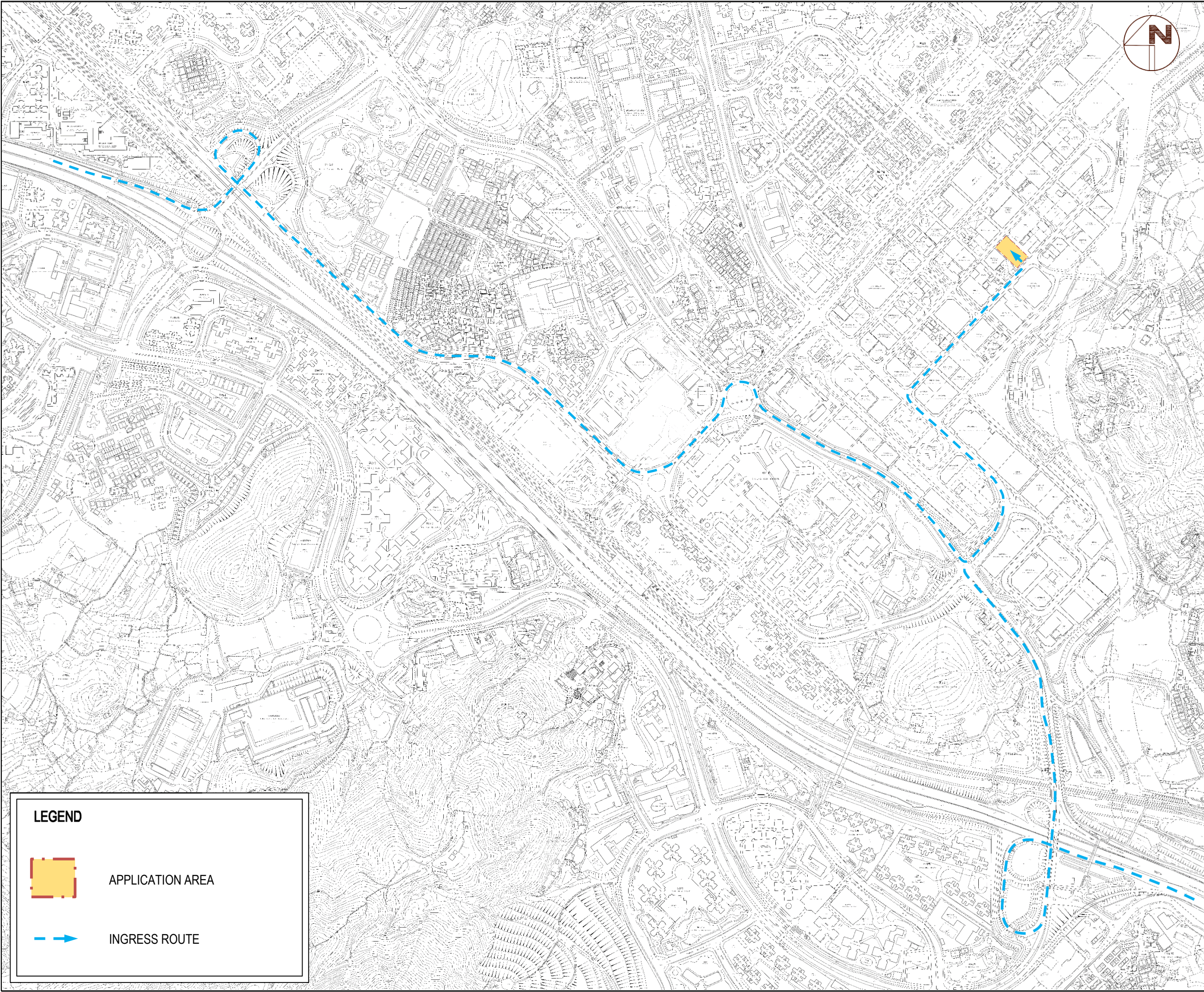
FIGURE 2.1

Scale : NTS

Date : JAN 2026

Rev. :





Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

VEHICULAR
INGRESS
ROUTE

FIGURE 3.1

LEGEND



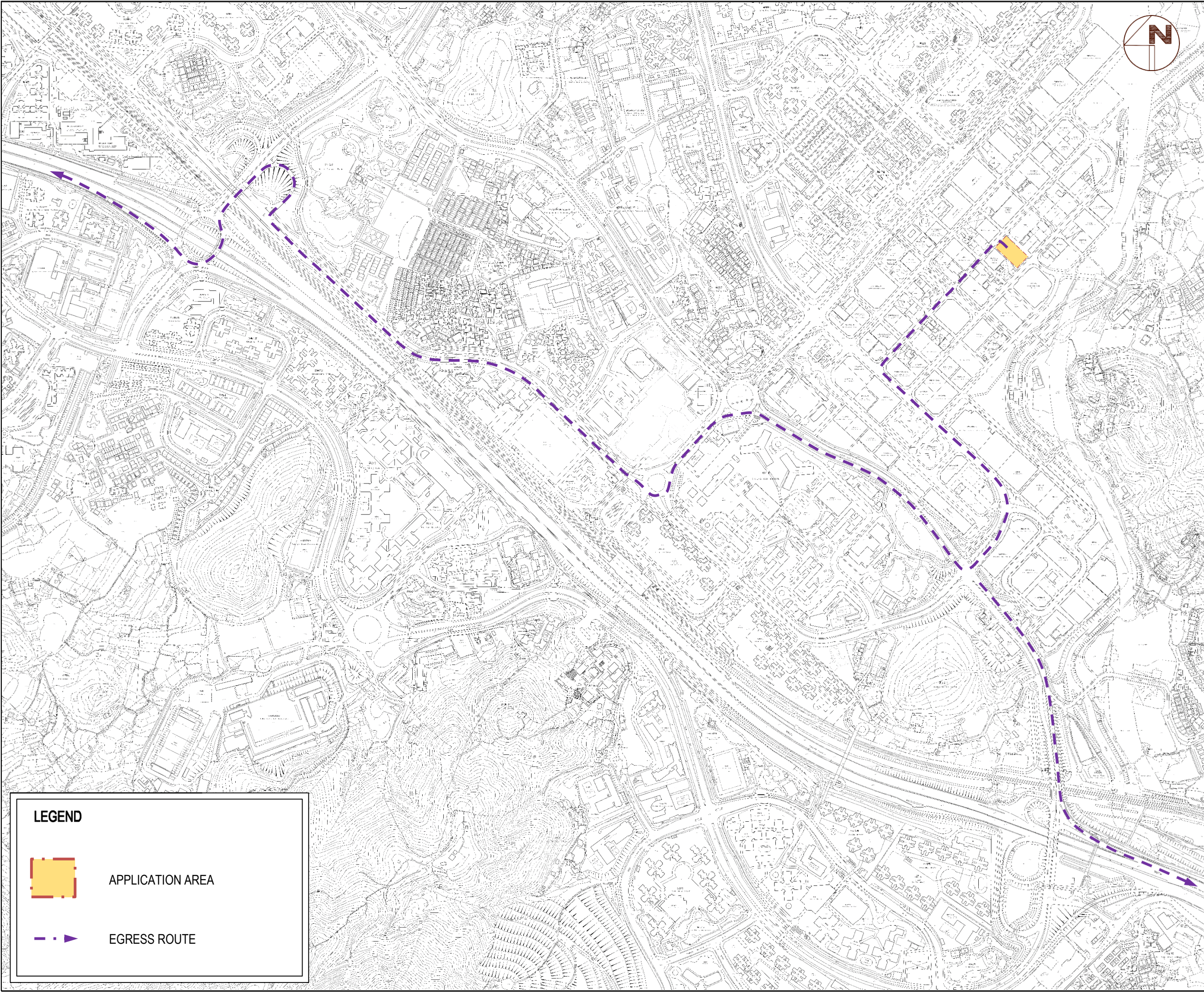
APPLICATION AREA



INGRESS ROUTE

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Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

VEHICULAR
EGRESS
ROUTE

FIGURE 3.2

LEGEND



APPLICATION AREA

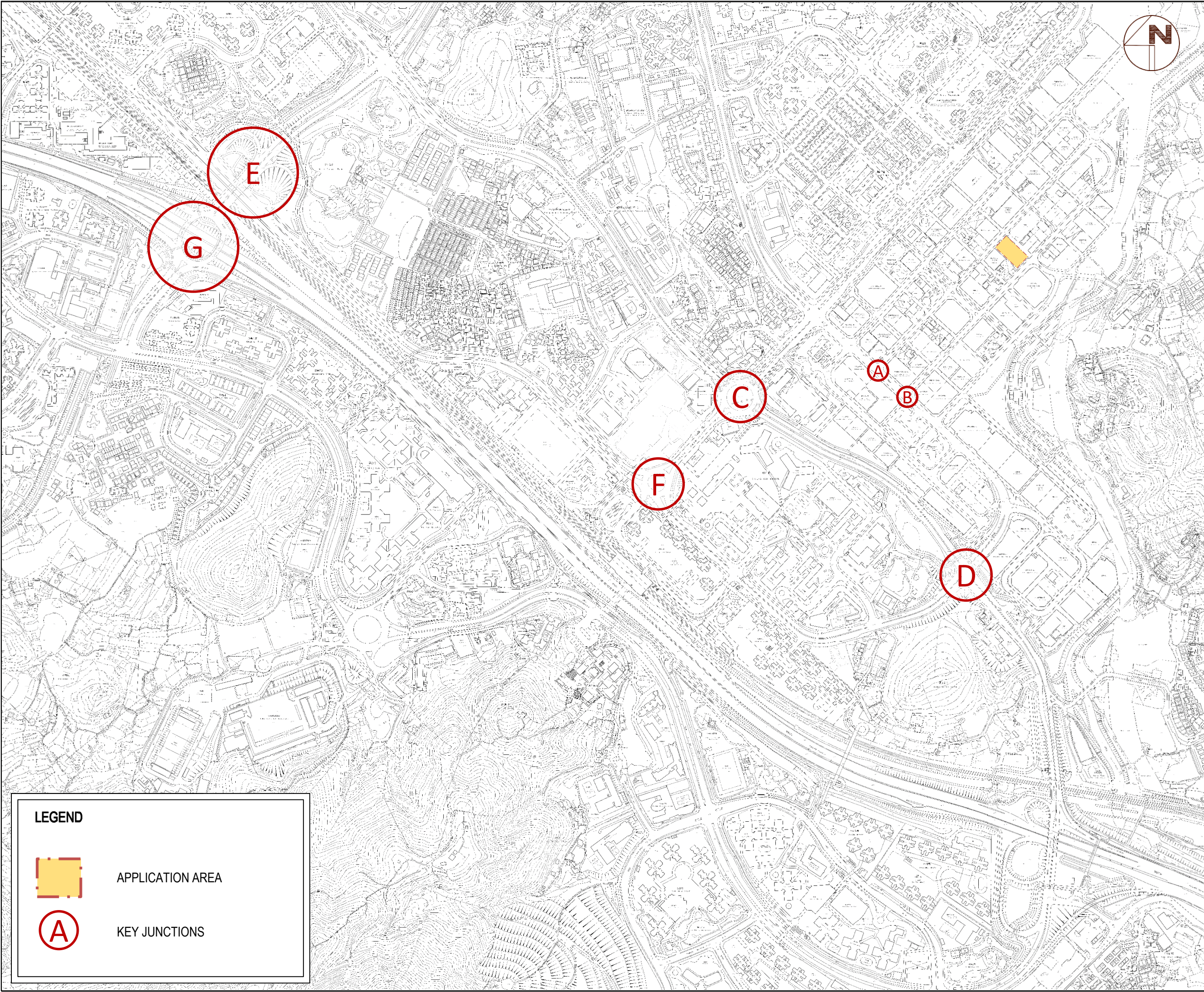


EGRESS ROUTE

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Rev. :



Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

KEY
JUNCTIONS

FIGURE 3.3

LEGEND



APPLICATION AREA



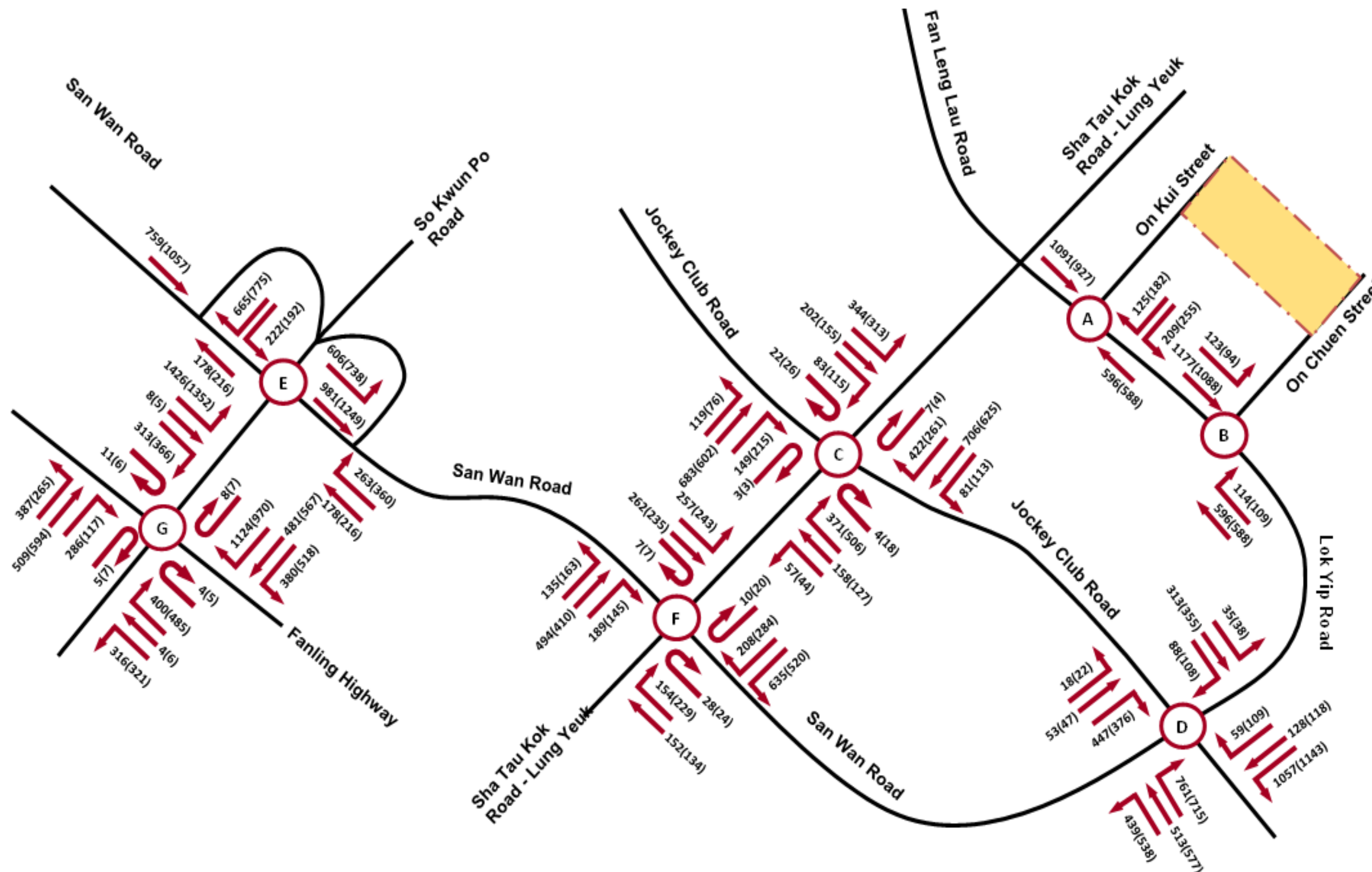
KEY JUNCTIONS

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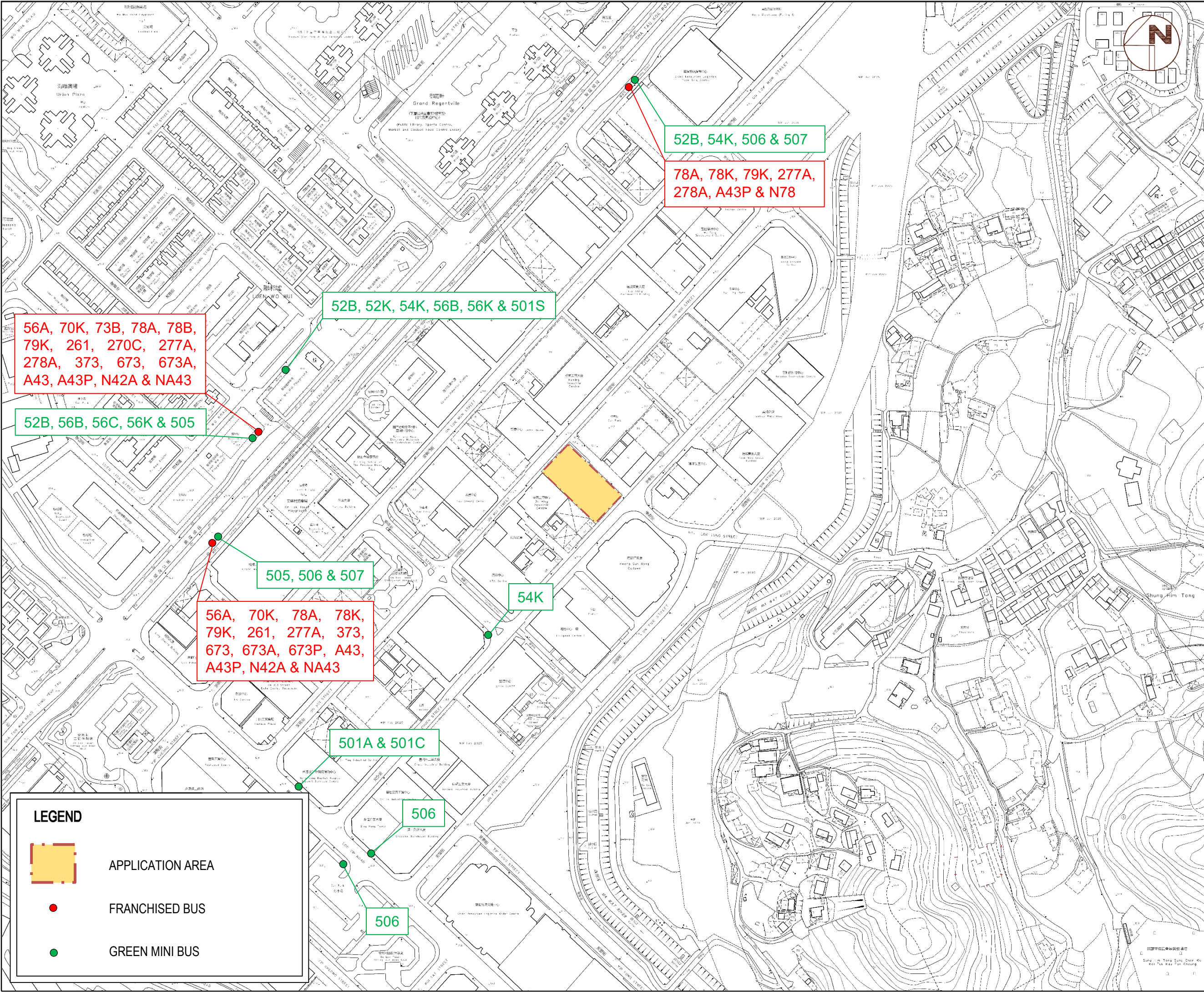
2025
OBSERVED
TRAFFIC FLOW

FIGURE 3.4

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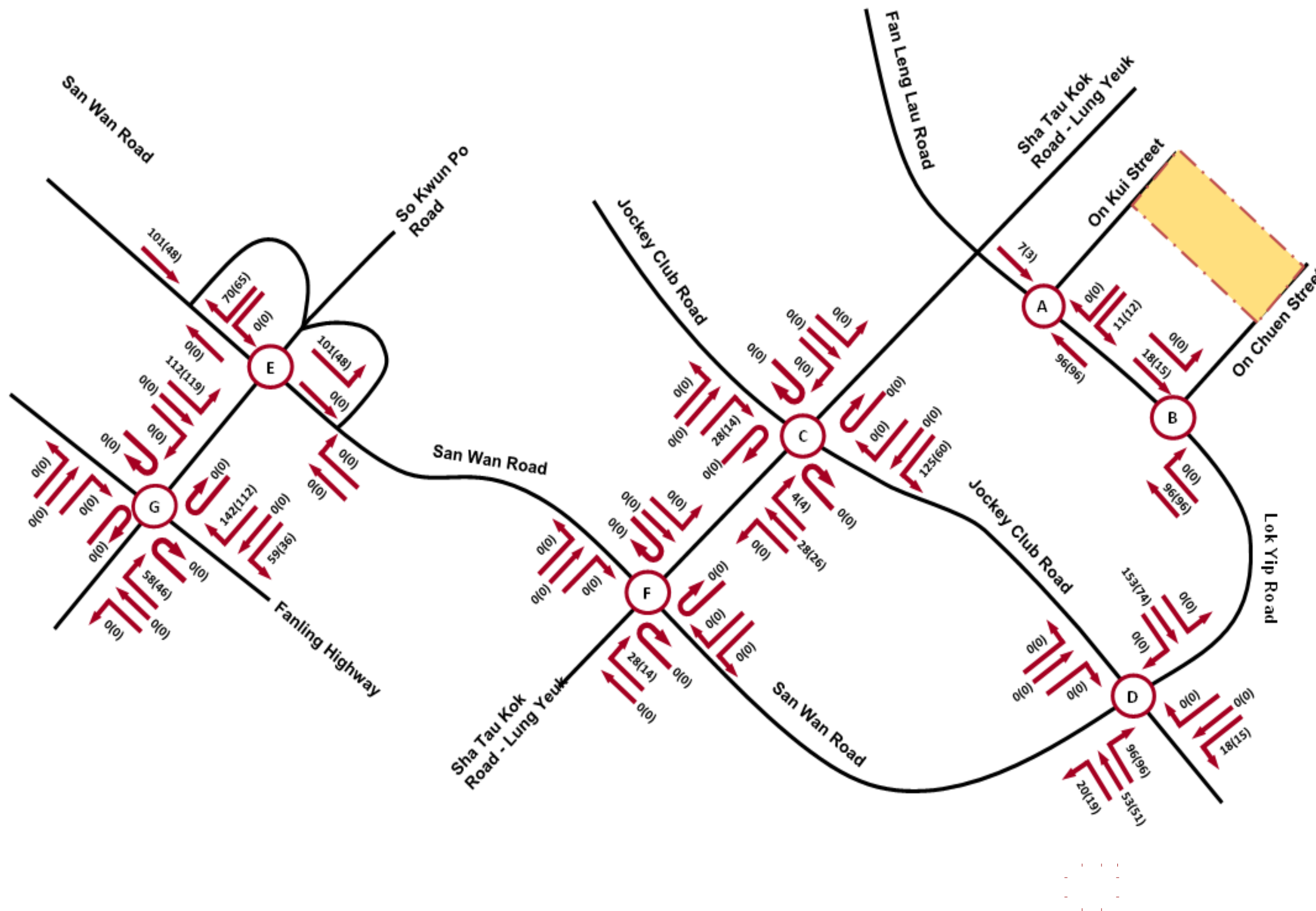
Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

PUBLIC
TRANSPORT
FACILITIES

FIGURE 3.5

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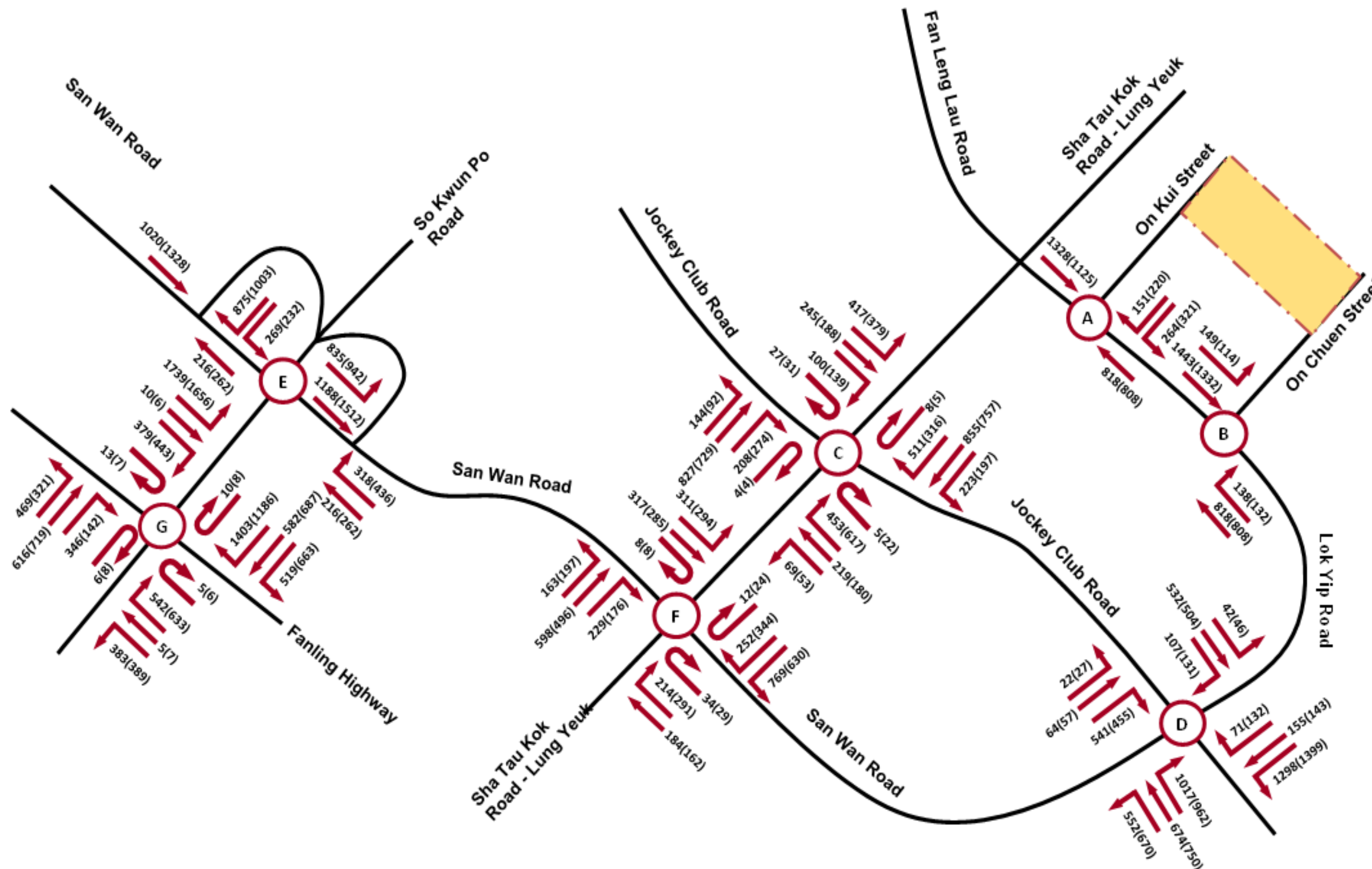
2030 ADJACENT
DEVELOPMENT
TRAFFIC FLOW

FIGURE 4.1

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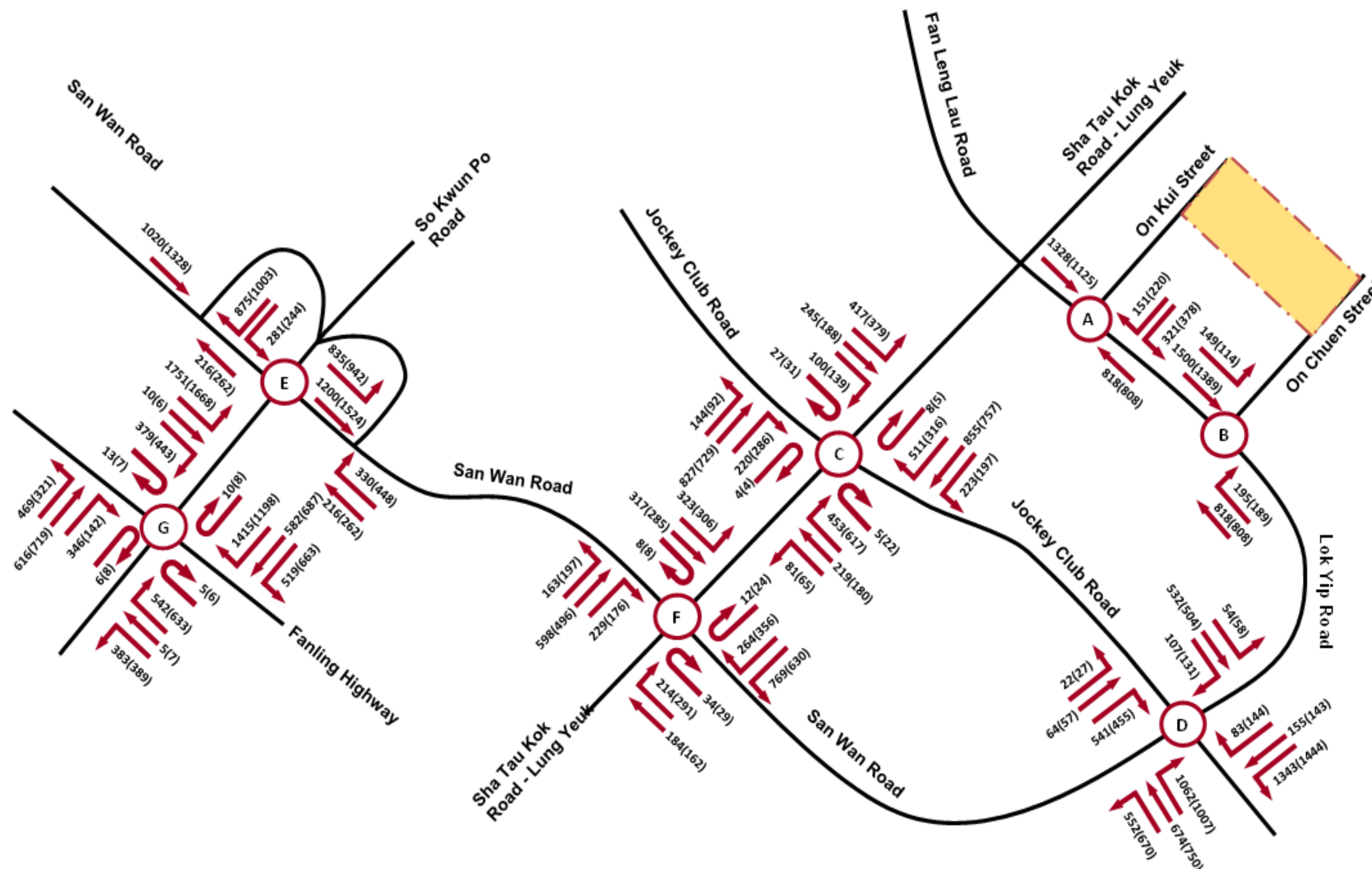
2030
REFERENCE
TRAFFIC FLOW

FIGURE 4.2

Scale : NTS

Date : JAN 2026

Rev. :



2030 DESIGN
TRAFFIC FLOW

FIGURE 4.3

Scale : NTS

Date : JAN 2026

Rev. :

FIGURE 4.4

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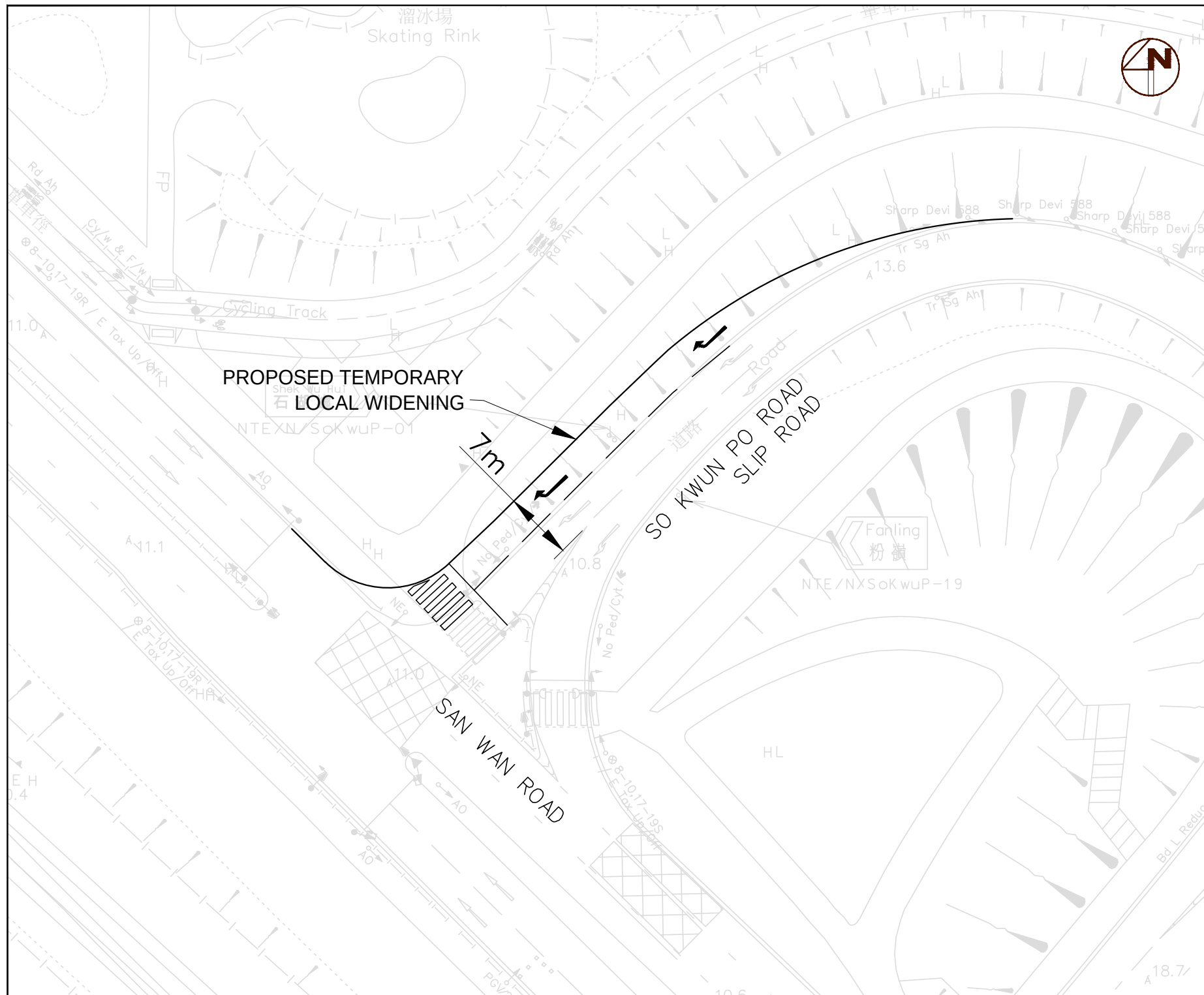


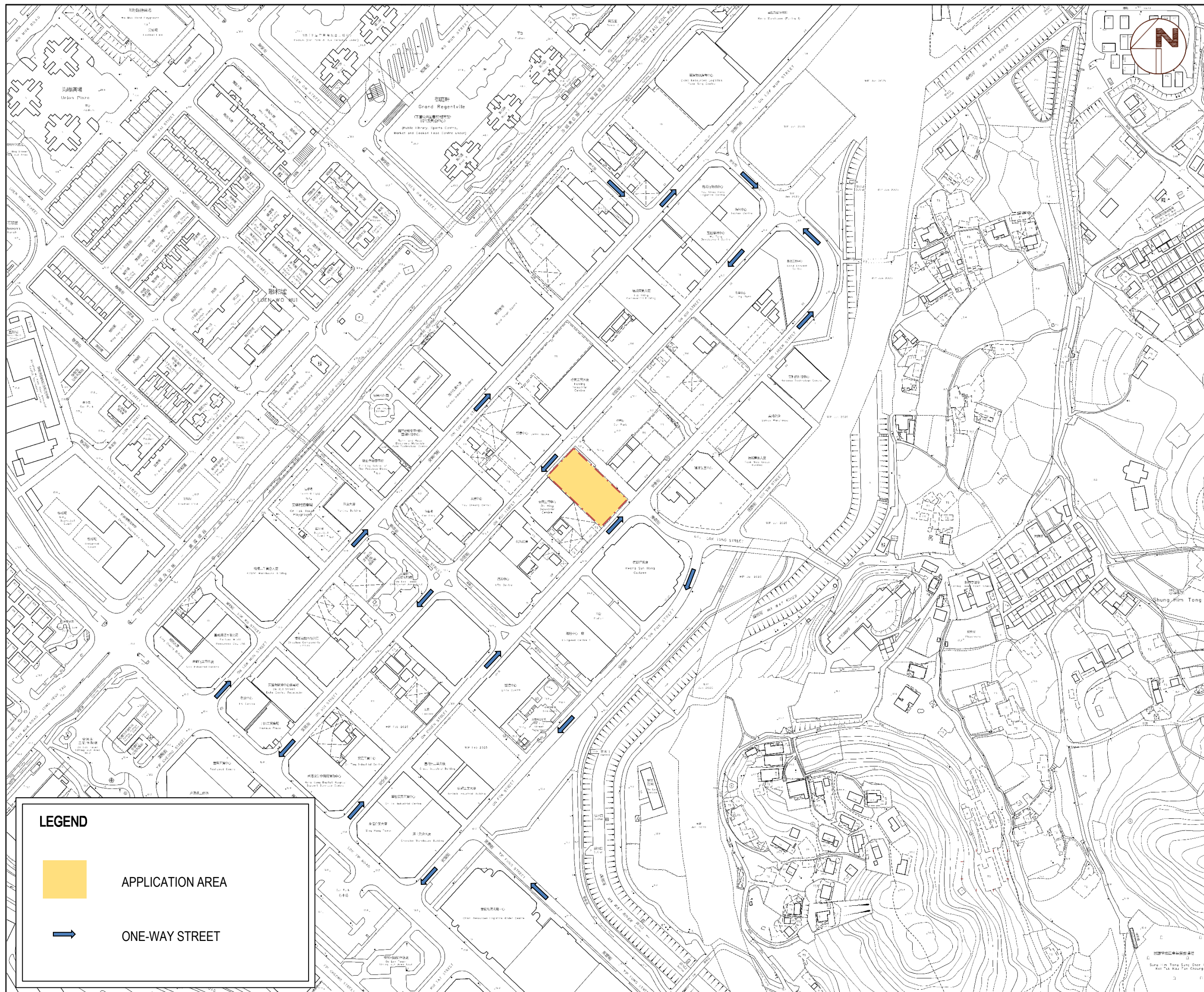
FIGURE 5.1

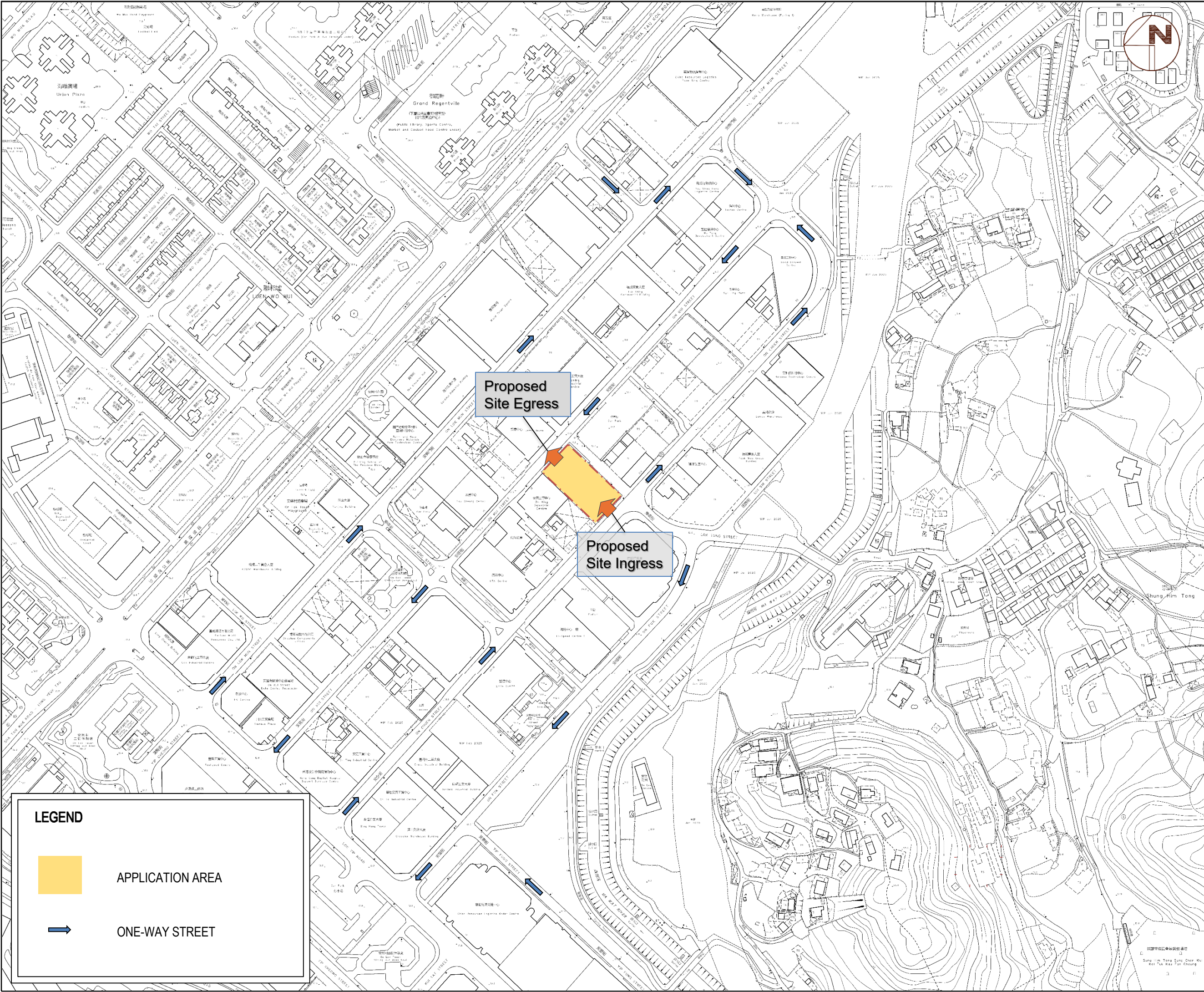
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C:\USER\USER\DESKTOP\31048\DATA\DRAWING\FIGURE-3.3.DWG





Traffic Impact Assessment
for Section 16 Planning
Application of Proposed
Concrete Batching Plant at
DD51 Lot 4433 Section 89
RP (S89) and Section 90 RP
(S90), Fanling

PROPOSED
VEHICULAR
ACCESSES

FIGURE 5.2

Scale : NTS
Date : JAN 2026
Rev. :



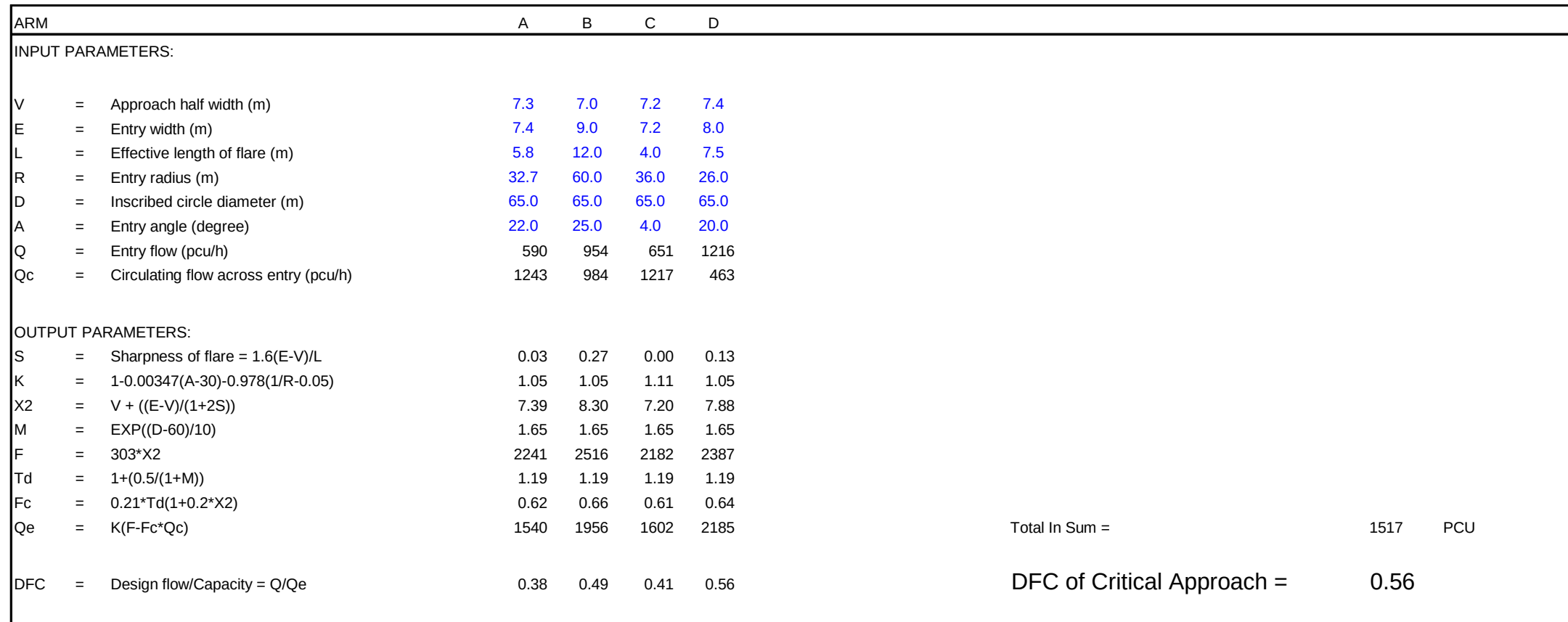
FIGURE 5.3

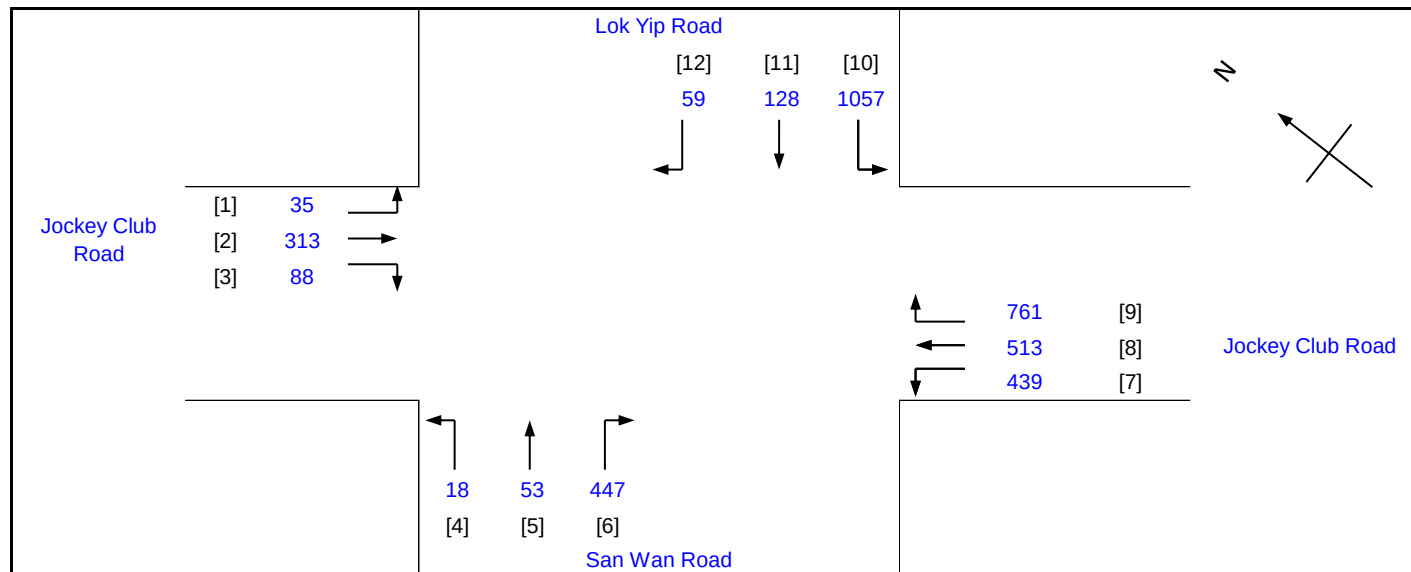
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Appendix A

Junction Analysis





No. of critical vehicular phase per cycle:	N =	4	
Intergreen Period	Stage A - B	I =	9 sec
	Stage B - C	I =	8 sec
	Stage C - D	I =	7 sec
	Stage D - A	I =	8 sec
Cycle time	C =	120	sec
Sum(y)	Y =	0.462	
Loss time	L =	28	sec
Total Flow		=	3911 pcu
Co = $(1.5 \cdot L + 5) / (1 - Y)$		=	87.3 sec
Cm = $L / (1 - Y)$		=	52.0 sec
Yult = $0.9 - 0.0075L$		=	0.690
R.C.ult = $(Yult - Y) / Y \cdot 100\%$		=	49.5 %
Cp = $0.9 \cdot L / (0.9 - Y)$		=	57.5 sec
Ymax = $1 - L / C$		=	0.767
R.C.(C) = $(0.9 \cdot Ymax - Y) / Y \cdot 100\%$		=	49.5 %

Existing Method of Control

The figure consists of four panels, A, B, C, and D, each showing a different traffic control method for the intersection of Jockey Club Road, Lok Yip Road, and San Wan Road. Panel A shows a T-junction with a roundabout. Panel B shows a T-junction with a roundabout. Panel C shows a T-junction with a roundabout. Panel D shows a T-junction with a roundabout.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B,C	7	9	90	9	OK
7		D	6	12	26	12	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
	1,2	A	3.3	1	1	15			2085	35	110		145	0.24	2036			2036	0.071	0.071		14	14	0.611	22	55
	2	A	3.3	1	1				2085		149		149	0.00	2085			2085	0.071			14	14	0.611	22	55
	2,3	A	3.3	1	1	20			2085		54	88	142	0.62	1992			1992	0.071			14	14	0.611	21	55
	9	B	3.5	2	1	25			2105			424	424	1.00	1986			1986	0.214			43	43	0.596	45	33
	8,9	B	3.5	2	1	30			2105		96	337	433	0.78	2026			2026	0.214			43	43	0.596	46	33
	7,8	B	3.5	2	1	20			2105	30	417		447	0.07	2094			2094	0.214			43	43	0.596	48	33
	7	B	3.5	2	1	15			2105	409			409	1.00	1914			1914	0.214	0.214		43	43	0.596	44	33
	12	C	3.2	4	1	20			2075	59			59	1.00	1930			1930	0.031			6	12	0.306	9	52
	11	C	3.2	4	1				2075		128		128	0.00	2075			2075	0.062	0.062		12	12	0.617	20	57
	10	B,C	3.2	3,4	2	15			4150			1057	1057	1.00	3773			3773	0.280			56	63	0.534	42	19
	4,5	D	3.2	5	1	15			2075	18	53		71	0.25	2024			2024	0.035			7	23	0.183	10	41
	5,6	D	3.2	5	1	25			2075		0	225	225	1.00	1958			1958	0.115	0.115		23	23	0.600	30	47
	6	D	3.2	5	1	20			2075			222	222	1.00	1930			1930	0.115			23	23	0.600	30	47

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NOTE: O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

$$\text{QUEUING LENGTH} = \text{AVERAGE QUEUE} * 6m$$

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Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories															Prepared By:		JK		2026/5/27																																																																																																																																																																																																																																															
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Jn E - San Wan Road / So Kwun Po Road Slip Road										2025 Observed Traffic Flow (AM Peak)					Project No.: 31068		Reviewed By:		AW		2026/5/27																																																																																																																																																																																																																																													
															No. of critical vehicular phase per cycle: N = 2 Intergreen Period Stage A - B I = 0 sec Stage B - C I = 7 sec Stage C - D I = 0 sec Stage D - A I = 7 sec Cycle time C = 88 sec Sum(y) Y = 0.521 Loss time L = 12 sec Total Flow = 3852 pcu Co = (1.5*L+5)/(1-Y) = 48.0 sec Cm = L/(1-Y) = 25.0 sec Yult = 0.9-0.0075L = 0.810 R.C.ult = (Yult-Y)/Y*100% = 55.5 % Cp = 0.9*L/(0.9-Y) = 28.5 sec Ymax = 1-L/C = 0.864 R.C.(C) = (0.9*Ymax-Y)/Y*100% = 49.3 %																																																																																																																																																																																																																																																			
Existing Method of Control															<table><tr><th rowspan="2">Pedestrian Phase</th><th rowspan="2">Width (m)</th><th rowspan="2">Stage no.</th><th colspan="2">Green Time Required (s)</th><th colspan="2">Green Time Provided (s)</th><th rowspan="2">Check</th></tr><tr><th>SG</th><th>FG</th><th>SG</th><th>FG</th></tr><tr><td>6</td><td></td><td>A,B</td><td>7</td><td>5</td><td>23</td><td>5</td><td>OK</td></tr><tr><td>7</td><td></td><td>B,C</td><td>7</td><td>6</td><td>38</td><td>6</td><td>OK</td></tr><tr><td>8</td><td></td><td>D,A</td><td>7</td><td>5</td><td>28</td><td>5</td><td>OK</td></tr><tr><td>9</td><td></td><td>D</td><td>6</td><td>7</td><td>9</td><td>7</td><td>OK</td></tr></table>										Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check	SG	FG	SG	FG	6		A,B	7	5	23	5	OK	7		B,C	7	6	38	6	OK	8		D,A	7	5	28	5	OK	9		D	6	7	9	7	OK																																																																																																																																																																																														
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<table><tr><th>Movement</th><th>Stage</th><th>Lane Width m.</th><th>Phase</th><th>No. of lane</th><th>Radius m.</th><th>O</th><th>N</th><th>Straight-Ahead Sat. Flow</th><th>Left Flow pcu/h</th><th>Straight Flow pcu/h</th><th>Right Flow pcu/h</th><th>Total Flow pcu/h</th><th>Proportion of Turning Vehicles</th><th>Sat. Flow pcu/h</th><th>Flare lane Length m.</th><th>Flare lane Effect</th><th>Revised Sat. Flow pcu/h</th><th>y</th><th>Greater y</th><th>L sec</th><th>g (required) sec</th><th>g (input) sec</th><th>Degree of Saturation X</th><th>Queue Length (m/lane)</th><th>Average Delay (sec)</th></tr><tr><td>→ 1</td><td>1</td><td>A,B</td><td>3.4</td><td>2</td><td></td><td></td><td></td><td>4190</td><td></td><td>759</td><td></td><td>759</td><td>0.00</td><td>4190</td><td></td><td></td><td>4190</td><td>0.181</td><td>0.181</td><td></td><td>26</td><td>26</td><td>0.613</td><td>33</td><td>27</td></tr><tr><td>← 2</td><td>2</td><td>A,B</td><td>3.7</td><td>2</td><td></td><td></td><td></td><td>4250</td><td></td><td>178</td><td></td><td>178</td><td>0.00</td><td>4250</td><td></td><td></td><td>4250</td><td>0.042</td><td></td><td></td><td>6</td><td>26</td><td>0.142</td><td>8</td><td>23</td></tr><tr><td>↙ 3</td><td>3</td><td>C,D</td><td>3.5</td><td>1</td><td>20</td><td></td><td></td><td>2105</td><td></td><td></td><td>665</td><td>665</td><td>1.00</td><td>1958</td><td></td><td></td><td>1958</td><td>0.340</td><td>0.340</td><td></td><td>50</td><td>50</td><td>0.598</td><td>35</td><td>14</td></tr><tr><td>↘ 4</td><td>4</td><td>C,D</td><td>3.7</td><td>1</td><td>15</td><td></td><td></td><td>2125</td><td>222</td><td></td><td></td><td>222</td><td>1.00</td><td>1932</td><td></td><td></td><td>1932</td><td>0.115</td><td></td><td></td><td>17</td><td>50</td><td>0.202</td><td>12</td><td>10</td></tr><tr><td>↗ 5</td><td>5</td><td>B,C</td><td>3.7</td><td>1</td><td>15</td><td></td><td></td><td>2125</td><td></td><td></td><td>606</td><td>606</td><td>1.00</td><td>1932</td><td></td><td></td><td>1932</td><td>0.314</td><td></td><td></td><td>46</td><td>46</td><td>0.600</td><td>35</td><td>16</td></tr><tr><td>→ 6</td><td>6</td><td>B,C</td><td>3.7</td><td>2</td><td></td><td></td><td></td><td>4250</td><td></td><td>981</td><td></td><td>981</td><td>0.00</td><td>4250</td><td></td><td></td><td>4250</td><td>0.231</td><td></td><td></td><td>34</td><td>46</td><td>0.442</td><td>29</td><td>14</td></tr><tr><td>↖ 8</td><td>8</td><td>D,A</td><td>3.5</td><td>1</td><td>20</td><td></td><td></td><td>2105</td><td></td><td>263</td><td></td><td>263</td><td>0.00</td><td>2105</td><td></td><td></td><td>2105</td><td>0.125</td><td></td><td></td><td>18</td><td>31</td><td>0.355</td><td>21</td><td>22</td></tr><tr><td>← 7</td><td>7</td><td>A,B,C</td><td>3.5</td><td>2</td><td></td><td></td><td></td><td>4210</td><td></td><td>178</td><td></td><td>178</td><td>0.00</td><td>4210</td><td></td><td></td><td>4210</td><td>0.042</td><td></td><td></td><td>6</td><td>61</td><td>0.061</td><td>3</td><td>4</td></tr></table>															Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)	→ 1	1	A,B	3.4	2				4190		759		759	0.00	4190			4190	0.181	0.181		26	26	0.613	33	27	← 2	2	A,B	3.7	2				4250		178		178	0.00	4250			4250	0.042			6	26	0.142	8	23	↙ 3	3	C,D	3.5	1	20			2105			665	665	1.00	1958			1958	0.340	0.340		50	50	0.598	35	14	↘ 4	4	C,D	3.7	1	15			2125	222			222	1.00	1932			1932	0.115			17	50	0.202	12	10	↗ 5	5	B,C	3.7	1	15			2125			606	606	1.00	1932			1932	0.314			46	46	0.600	35	16	→ 6	6	B,C	3.7	2				4250		981		981	0.00	4250			4250	0.231			34	46	0.442	29	14	↖ 8	8	D,A	3.5	1	20			2105		263		263	0.00	2105			2105	0.125			18	31	0.355	21	22	← 7	7	A,B,C	3.5	2				4210		178		178	0.00	4210			4210	0.042			6	61	0.061	3	4	C:\D\Axon\Project\31068 Concrete Batching Plant at DD51 Lot 4433, Fanling\Data\Calculation\31068 - Junction_OBS_AM.xlsx\J									
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)																																																																																																																																																																																																																																									
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NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road

2025 Observed Traffic Flow (AM Peak)

PROJECT NO.: 31068

PREPARED BY:

May-26

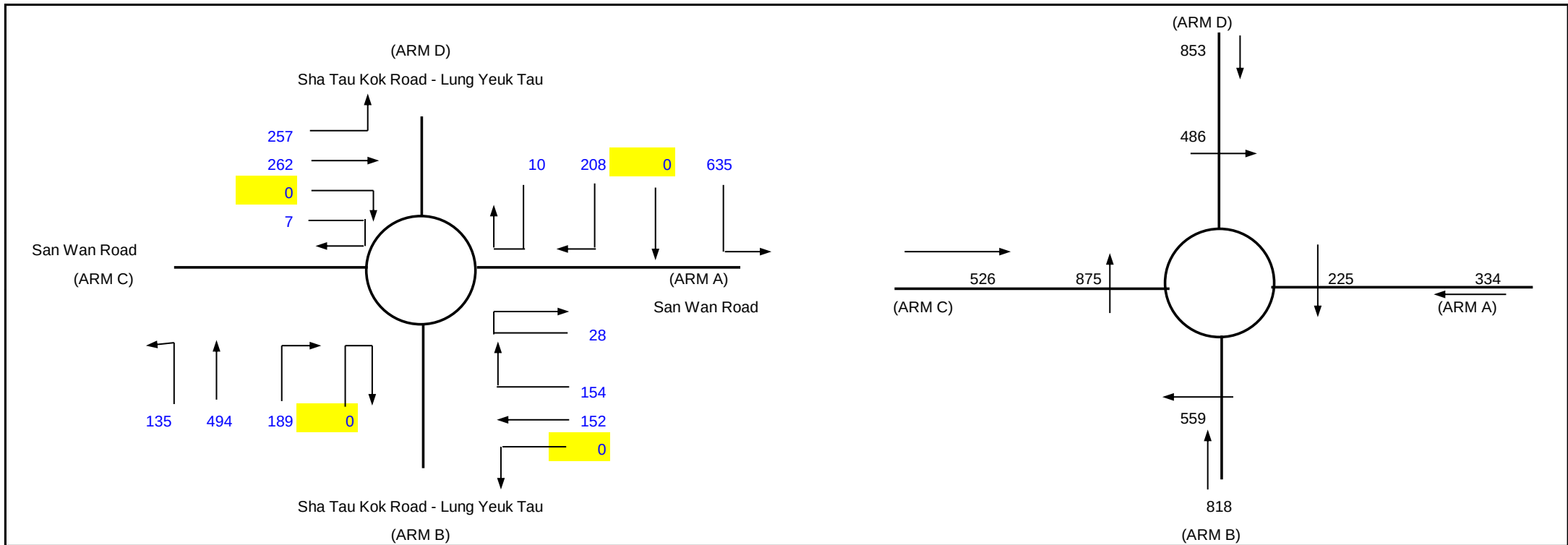
FILENAME: StreetName1-StreetName2.xls

CHECKED BY:

May-26

REFERENCE NO.:

REVIEWED BY:



ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	5.9	7.4	7.1	5.6
E	= Entry width (m)	6.9	8.7	8.0	9.3
L	= Effective length of flare (m)	7.3	6.7	4.9	10.0
R	= Entry radius (m)	30.4	20.8	20.0	100.0
D	= Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A	= Entry angle (degree)	15.5	29.5	13.0	11.5
Q	= Entry flow (pcu/h)	334	818	526	853
Qc	= Circulating flow across entry (pcu/h)	225	559	875	486
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2	= V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M	= EXP((D-60)/10)	0.53	0.53	0.53	0.53
F	= 303*X2	1998	2485	2323	2210
Td	= 1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc	= 0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe	= K(F-Fc*Qc)	1977	2082	1806	2071
					Total In Sum = 1134 PCU
DFC	= Design flow/Capacity = Q/Qe	0.17	0.39	0.29	0.41
					DFC of Critical Approach = 0.41

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S
Jn G - Fanling Highway/ So Kwun Po Road Roundabout

2025 Observed Traffic Flow (AM Peak)

PROJECT NO.: 31068

PREPARED BY:

May-26

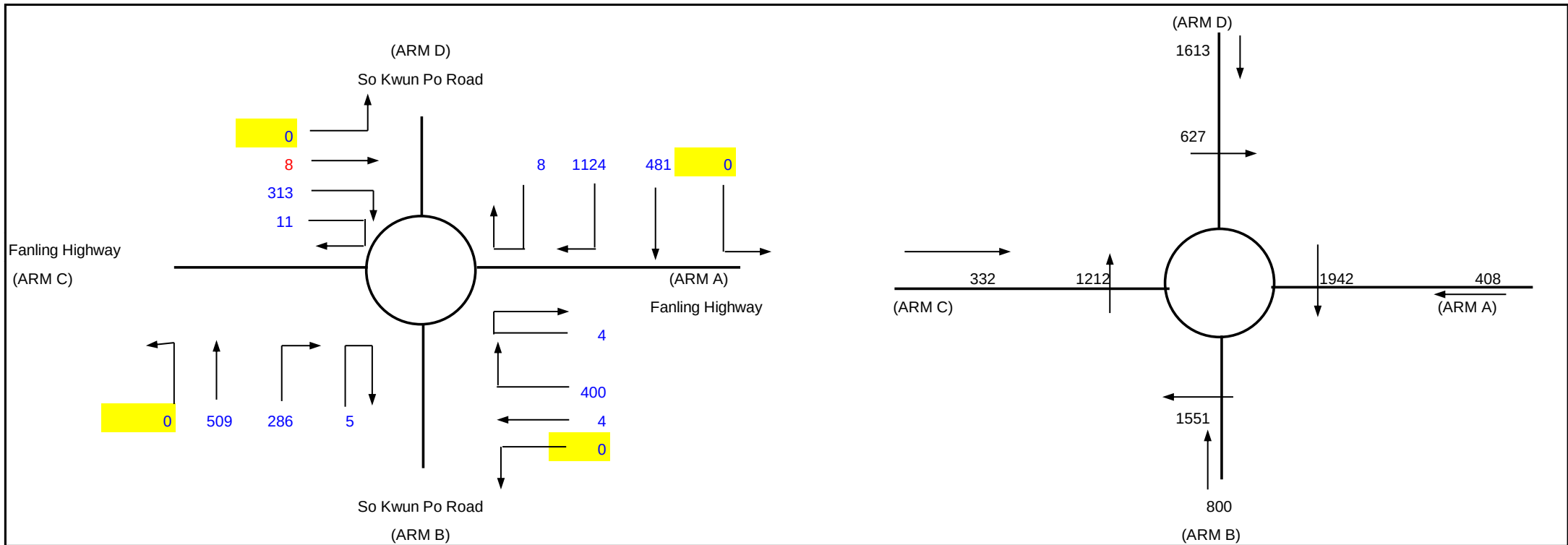
FILENAME: StreetName1-StreetName2.xls

CHECKED BY:

May-26

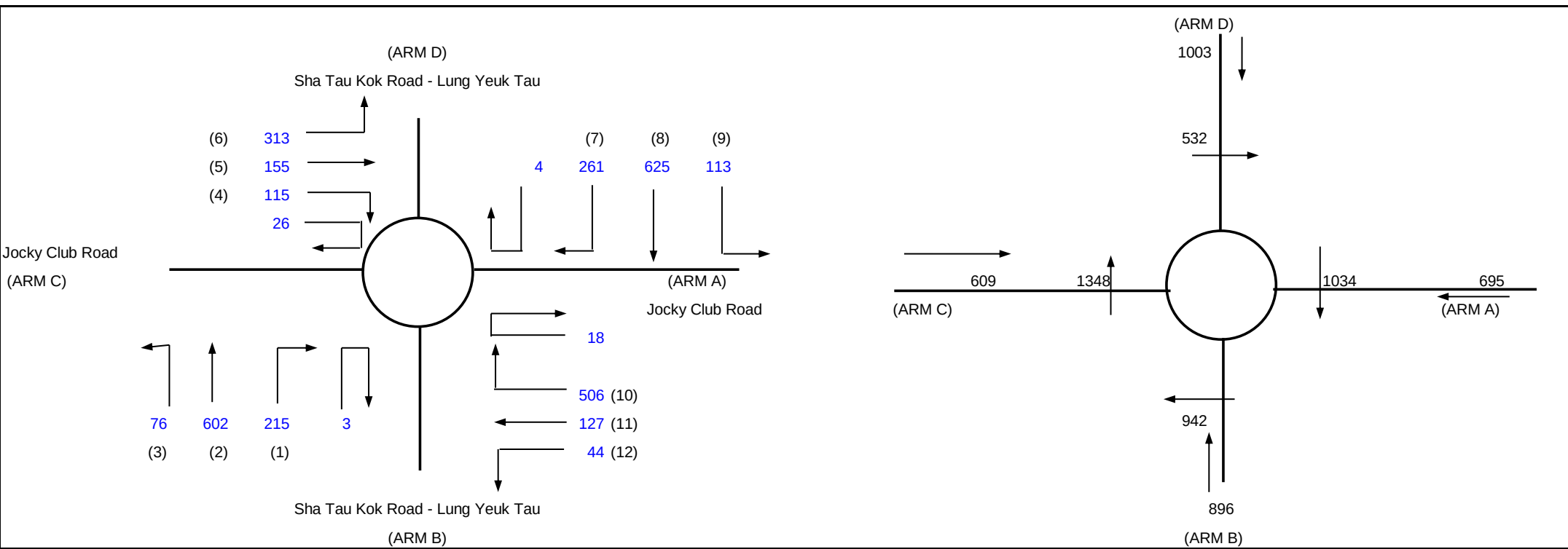
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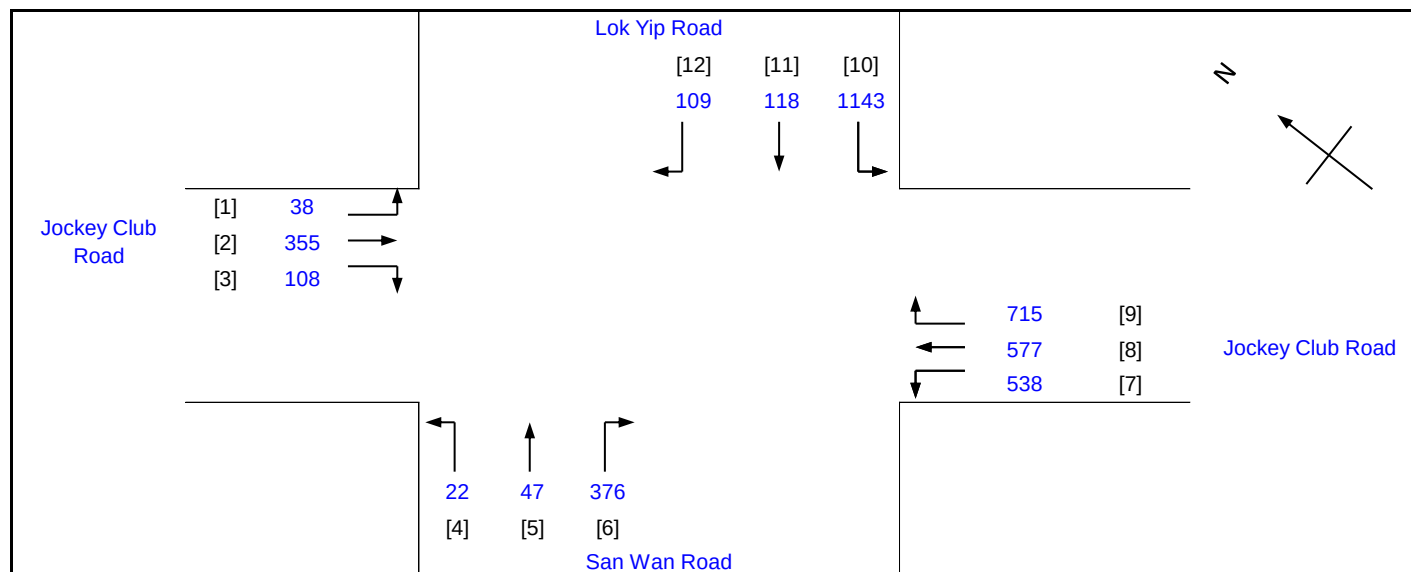


ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	4.7	6.8	3.0	8.2
E = Entry width (m)	6.5	9.8	7.6	11.6
L = Effective length of flare (m)	76.0	38.0	35.0	25.0
R = Entry radius (m)	73.0	34.0	64.0	18.0
D = Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A = Entry angle (degree)	30.0	45.0	60.0	75.0
Q = Entry flow (pcu/h)	408	800	332	1613
Qc = Circulating flow across entry (pcu/h)	1942	1551	1212	627
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2 = V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M = EXP((D-60)/10)	20.09	20.09	20.09	20.09
F = 303*X2	1931	2786	1890	3195
Td = 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc = 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe = K(F-Fc*Qc)	1016	1781	1213	2327
				Total In Sum = 1536 PCU
DFC = Design flow/Capacity = Q/Qe	0.40	0.45	0.27	0.69
				DFC of Critical Approach = 0.69

AXON CONSULTANCY LIMITED		PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK 2026/5/27
				Checked By:	SY 2026/5/27
Jn B - Lok Yip Road / On Cheung Street		2025 Observed Traffic Flow (PM Peak)		Project No.: 31068	Reviewed By: AW 2026/5/27
</					



ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	7.3	7.0	7.2	7.4
E	= Entry width (m)	7.4	9.0	7.2	8.0
L	= Effective length of flare (m)	5.8	12.0	4.0	7.5
R	= Entry radius (m)	32.7	60.0	36.0	26.0
D	= Inscribed circle diameter (m)	65.0	65.0	65.0	65.0
A	= Entry angle (degree)	22.0	25.0	4.0	20.0
Q	= Entry flow (pcu/h)	695	896	609	1003
Qc	= Circulating flow across entry (pcu/h)	1034	942	1348	532
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.03	0.27	0.00	0.13
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.11	1.05
X2	= V + ((E-V)/(1+2S))	7.39	8.30	7.20	7.88
M	= EXP((D-60)/10)	1.65	1.65	1.65	1.65
F	= 303*X2	2241	2516	2182	2387
Td	= 1+(0.5/(1+M))	1.19	1.19	1.19	1.19
Fc	= 0.21*Td(1+0.2*X2)	0.62	0.66	0.61	0.64
Qe	= K(F-Fc*Qc)	1676	1985	1513	2139
				Total In Sum =	1640 PCU
DFC	= Design flow/Capacity = Q/Qe	0.41	0.45	0.40	0.47
				DFC of Critical Approach =	0.47



No. of critical vehicular phase per cycle:	N =	4	
Intergreen Period Stage A - B	I =	9	sec
Stage B - C	I =	8	sec
Stage C - D	I =	7	sec
Stage D - A	I =	8	sec
Cycle time	C =	112	sec
Sum(y)	Y =	0.464	
Loss time	L =	28	sec
Total Flow		=	4146 pc/h
Co = $(1.5 \cdot L + 5) / (1 - Y)$		=	87.7 sec
Cm = $L / (1 - Y)$		=	52.2 sec
Yult = $0.9 - 0.0075L$		=	0.690
R.C.ult = $(Yult - Y) / Y \cdot 100\%$		=	48.8 %
Cp = $0.9 \cdot L / (0.9 - Y)$		=	57.8 sec
Ymax = $1 - L / C$		=	0.750
R.C.(C) = $(0.9 \cdot Ymax - Y) / Y \cdot 100\%$		=	45.5 %

Existing Method of Control

The figure consists of four panels, A, B, C, and D, each showing a different traffic control method for the intersection of Jockey Club Road, Lok Yip Road, and San Wan Road. Panel A shows a T-junction with a roundabout. Panel B shows a T-junction with a roundabout. Panel C shows a T-junction with a roundabout. Panel D shows a T-junction with a roundabout.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B,C	7	9	87	9	OK
7		D	6	12	21	12	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)	
	1,2	A	3.3	1	1	15			2085	38	129		167	0.23	2039			2039	0.082	0.082		15	15	0.612	23	50	
	2	A	3.3	1	1				2085		171		171	0.00	2085			2085	0.082			15	15	0.612	23	49	
	2,3	A	3.3	1	1	20			2085		55	108	163	0.66	1986			1986	0.082			15	15	0.612	22	50	
	9	B	3.5	2	1	25			2105			453	453	1.00	1986			1986	0.228			41	41	0.623	45	31	
	8,9	B	3.5	2	1	30			2105		205	262	467	0.56	2048			2048	0.228			41	41	0.623	46	31	
	7,8	B	3.5	2	1	20			2105	101	372		473	0.21	2072			2072	0.228			41	41	0.623	47	31	
	7	B	3.5	2	1	15			2105	437			437	1.00	1914			1914	0.228	0.228		41	41	0.623	43	31	
	12	C	3.2	4	1	20			2075	109				109	1.00	1930			1930	0.056			10	10	0.632	16	57
	11	C	3.2	4	1				2075		118			118	0.00	2075			2075	0.057	0.057		10	10	0.637	18	56
	10	B,C	3.2	3,4	2	15			4150			1143	1143	1.00	3773			3773	0.303			55	60	0.566	41	18	
	4,5	D	3.2	5	1	15			2075	22	47		69	0.32	2011			2011	0.034			6	18	0.214	9	42	
	5,6	D	3.2	5	1	25			2075		0	189	189	1.00	1958			1958	0.097	0.097		18	18	0.602	25	47	
	6	D	3.2	5	1	20			2075			187	187	1.00	1930			1930	0.097				18	18	0.602	24	47

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NOTE: O - OPPOSING TRAFFIC

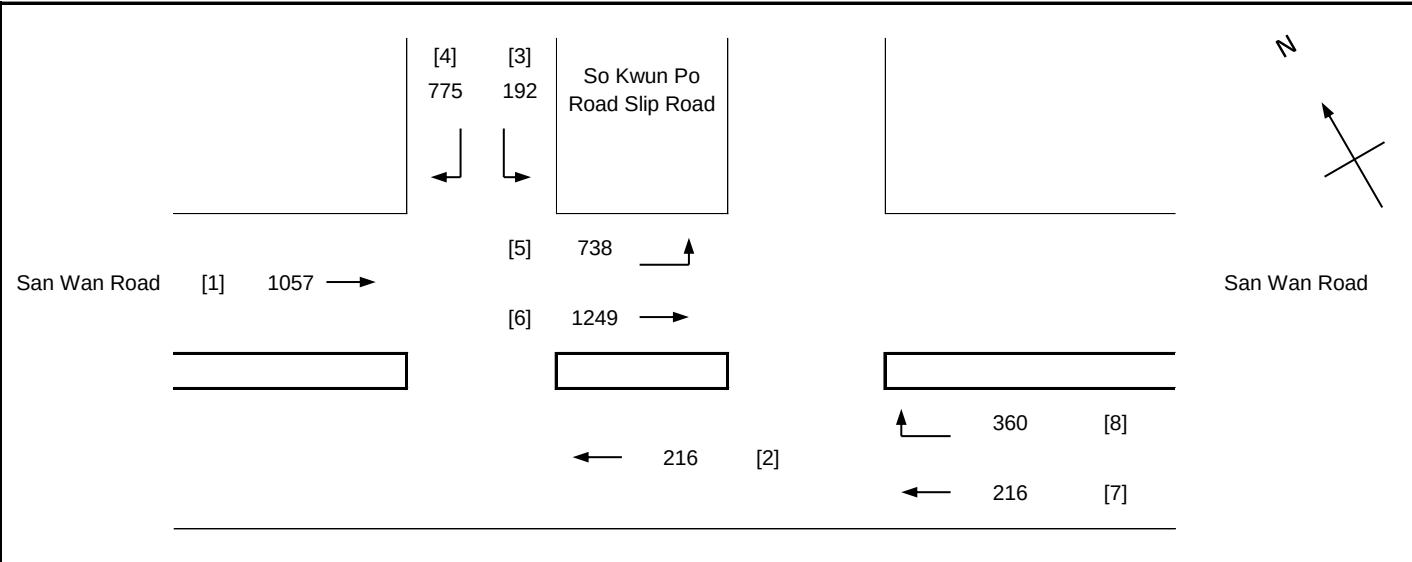
N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED										TRAFFIC SIGNAL CALCULATION										INITIALS		DATE																																																																																																																																																																																																																																												
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories															Prepared By:		JK		2026/5/27																																																																																																																																																																																																																																															
															Checked By:		SY		2026/5/27																																																																																																																																																																																																																																															
Jn E - San Wan Road / So Kwun Po Road Slip Road										2025 Observed Traffic Flow (PM Peak)					Project No.: 31068		Reviewed By:		AW		2026/5/27																																																																																																																																																																																																																																													
															No. of critical vehicular phase per cycle: N = 2 Intergreen Period Stage A - B I = 0 sec Stage B - C I = 7 sec Stage C - D I = 0 sec Stage D - A I = 7 sec Cycle time C = 96 sec Sum(y) Y = 0.648 Loss time L = 12 sec Total Flow = 4803 pcu Co = (1.5*L+5)/(1-Y) = 65.4 sec Cm = L/(1-Y) = 34.1 sec Yult = 0.9-0.0075L = 0.810 R.C.ult = (Yult-Y)/Y*100% = 25.0 % Cp = 0.9*L/(0.9-Y) = 42.9 sec Ymax = 1-L/C = 0.875 R.C.(C) = (0.9*Ymax-Y)/Y*100% = 21.5 %																																																																																																																																																																																																																																																			
Existing Method of Control															<table><tr><th rowspan="2">Pedestrian Phase</th><th rowspan="2">Width (m)</th><th rowspan="2">Stage no.</th><th colspan="2">Green Time Required (s)</th><th colspan="2">Green Time Provided (s)</th><th rowspan="2">Check</th></tr><tr><th>SG</th><th>FG</th><th>SG</th><th>FG</th></tr><tr><td>6</td><td></td><td>A,B</td><td>7</td><td>5</td><td>30</td><td>5</td><td>OK</td></tr><tr><td>7</td><td></td><td>B,C</td><td>7</td><td>6</td><td>42</td><td>6</td><td>OK</td></tr><tr><td>8</td><td></td><td>D,A</td><td>7</td><td>5</td><td>32</td><td>5</td><td>OK</td></tr><tr><td>9</td><td></td><td>D</td><td>6</td><td>7</td><td>13</td><td>7</td><td>OK</td></tr></table>										Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check	SG	FG	SG	FG	6		A,B	7	5	30	5	OK	7		B,C	7	6	42	6	OK	8		D,A	7	5	32	5	OK	9		D	6	7	13	7	OK																																																																																																																																																																																														
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<table><tr><th>Movement</th><th>Stage</th><th>Lane Width m.</th><th>Phase</th><th>No. of lane</th><th>Radius m.</th><th>O</th><th>N</th><th>Straight-Ahead Sat. Flow</th><th>Left Flow pcu/h</th><th>Straight Flow pcu/h</th><th>Right Flow pcu/h</th><th>Total Flow pcu/h</th><th>Proportion of Turning Vehicles</th><th>Sat. Flow pcu/h</th><th>Flare lane Length m.</th><th>Flare lane Effect</th><th>Revised Sat. Flow pcu/h</th><th>y</th><th>Greater y</th><th>L sec</th><th>g (required) sec</th><th>g (input) sec</th><th>Degree of Saturation X</th><th>Queue Length (m/lane)</th><th>Average Delay (sec)</th></tr><tr><td>→</td><td>1</td><td>A,B</td><td>3.4</td><td>2</td><td></td><td></td><td></td><td>4190</td><td></td><td>1057</td><td></td><td>1057</td><td>0.00</td><td>4190</td><td></td><td></td><td>4190</td><td>0.252</td><td>0.252</td><td></td><td>33</td><td>33</td><td>0.734</td><td>46</td><td>29</td></tr><tr><td>←</td><td>2</td><td>A,B</td><td>3.7</td><td>2</td><td></td><td></td><td></td><td>4250</td><td></td><td>216</td><td></td><td>216</td><td>0.00</td><td>4250</td><td></td><td></td><td>4250</td><td>0.051</td><td></td><td></td><td>7</td><td>33</td><td>0.148</td><td>9</td><td>22</td></tr><tr><td>↙</td><td>3</td><td>C,D</td><td>3.5</td><td>1</td><td>20</td><td></td><td></td><td>2105</td><td></td><td></td><td>775</td><td>775</td><td>1.00</td><td>1958</td><td></td><td></td><td>1958</td><td>0.396</td><td>0.396</td><td></td><td>51</td><td>51</td><td>0.745</td><td>49</td><td>20</td></tr><tr><td>↘</td><td>4</td><td>C,D</td><td>3.7</td><td>1</td><td>15</td><td></td><td></td><td>2125</td><td>192</td><td></td><td></td><td>192</td><td>1.00</td><td>1932</td><td></td><td></td><td>1932</td><td>0.099</td><td></td><td></td><td>13</td><td>51</td><td>0.187</td><td>12</td><td>12</td></tr><tr><td>↗</td><td>5</td><td>B,C</td><td>3.7</td><td>1</td><td>15</td><td></td><td></td><td>2125</td><td></td><td></td><td>738</td><td>738</td><td>1.00</td><td>1932</td><td></td><td></td><td>1932</td><td>0.382</td><td></td><td></td><td>50</td><td>50</td><td>0.733</td><td>48</td><td>21</td></tr><tr><td>→</td><td>6</td><td>B,C</td><td>3.7</td><td>2</td><td></td><td></td><td></td><td>4250</td><td></td><td>1249</td><td></td><td>1249</td><td>0.00</td><td>4250</td><td></td><td></td><td>4250</td><td>0.294</td><td></td><td></td><td>38</td><td>50</td><td>0.564</td><td>40</td><td>16</td></tr><tr><td>↖</td><td>8</td><td>D,A</td><td>3.5</td><td>1</td><td>20</td><td></td><td></td><td>2105</td><td></td><td>360</td><td></td><td>360</td><td>0.00</td><td>2105</td><td></td><td></td><td>2105</td><td>0.171</td><td></td><td></td><td>22</td><td>35</td><td>0.469</td><td>31</td><td>25</td></tr><tr><td>←</td><td>7</td><td>A,B,C</td><td>3.5</td><td>2</td><td></td><td></td><td></td><td>4210</td><td></td><td>216</td><td></td><td>216</td><td>0.00</td><td>4210</td><td></td><td></td><td>4210</td><td>0.051</td><td></td><td></td><td>7</td><td>65</td><td>0.076</td><td>5</td><td>5</td></tr></table>															Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)	→	1	A,B	3.4	2				4190		1057		1057	0.00	4190			4190	0.252	0.252		33	33	0.734	46	29	←	2	A,B	3.7	2				4250		216		216	0.00	4250			4250	0.051			7	33	0.148	9	22	↙	3	C,D	3.5	1	20			2105			775	775	1.00	1958			1958	0.396	0.396		51	51	0.745	49	20	↘	4	C,D	3.7	1	15			2125	192			192	1.00	1932			1932	0.099			13	51	0.187	12	12	↗	5	B,C	3.7	1	15			2125			738	738	1.00	1932			1932	0.382			50	50	0.733	48	21	→	6	B,C	3.7	2				4250		1249		1249	0.00	4250			4250	0.294			38	50	0.564	40	16	↖	8	D,A	3.5	1	20			2105		360		360	0.00	2105			2105	0.171			22	35	0.469	31	25	←	7	A,B,C	3.5	2				4210		216		216	0.00	4210			4210	0.051			7	65	0.076	5	5	C:\D\Axon\Project\31068 Concrete Batching Plant at DD51 Lot 4433, Fanling\Data\Calculation\31068 - Junction_OBS_PM.xlsx\E									
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)																																																																																																																																																																																																																																									
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NOTE : O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road

2025 Observed Traffic Flow (PM Peak)

PROJECT NO.: 31068

PREPARED BY:

May-26

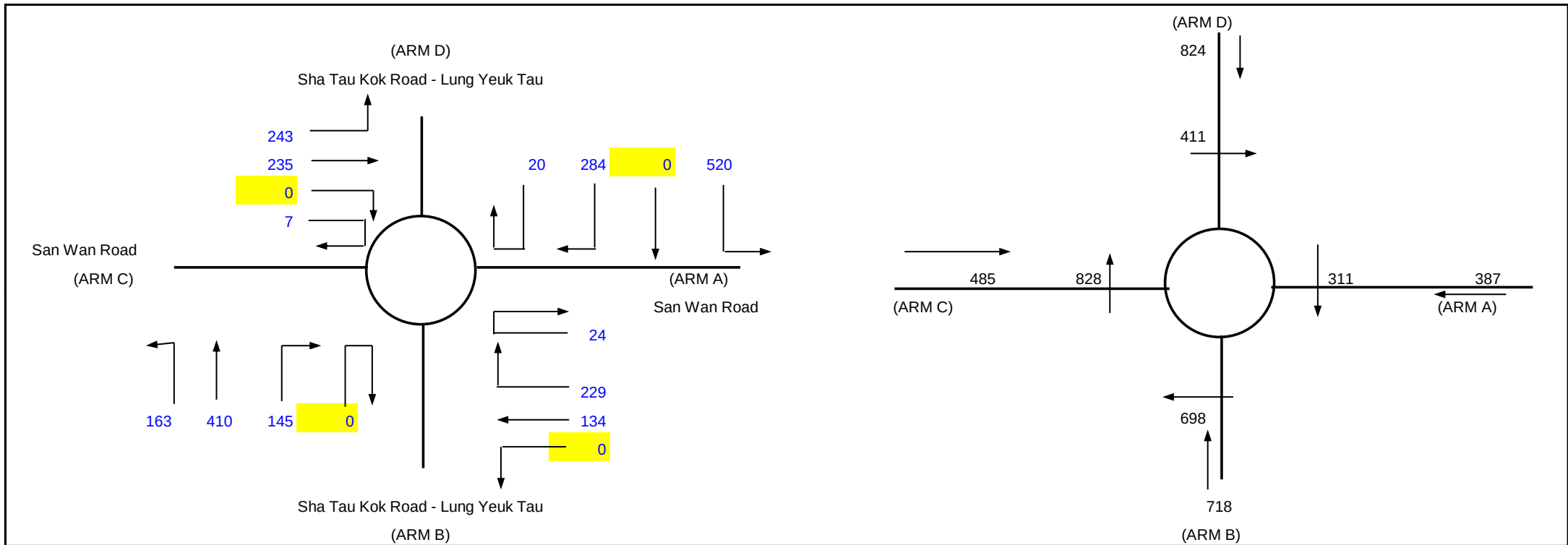
FILENAME: StreetName1-StreetName2.xls

CHECKED BY:

May-26

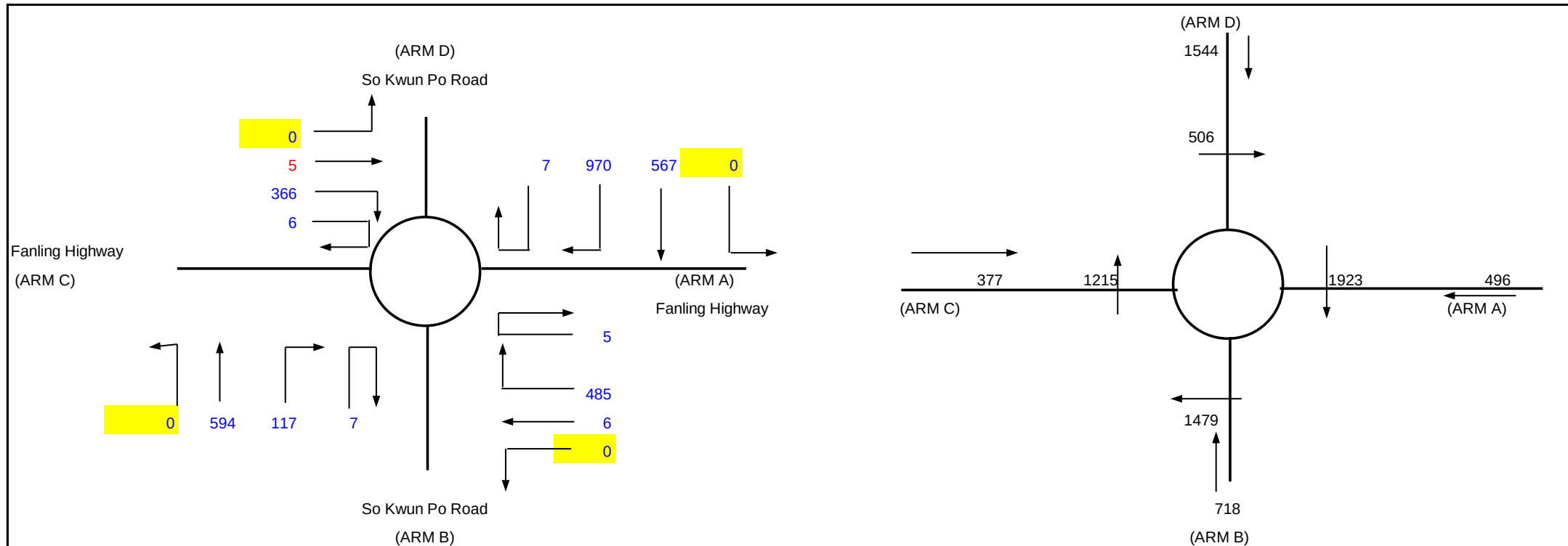
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REVIEWED BY:



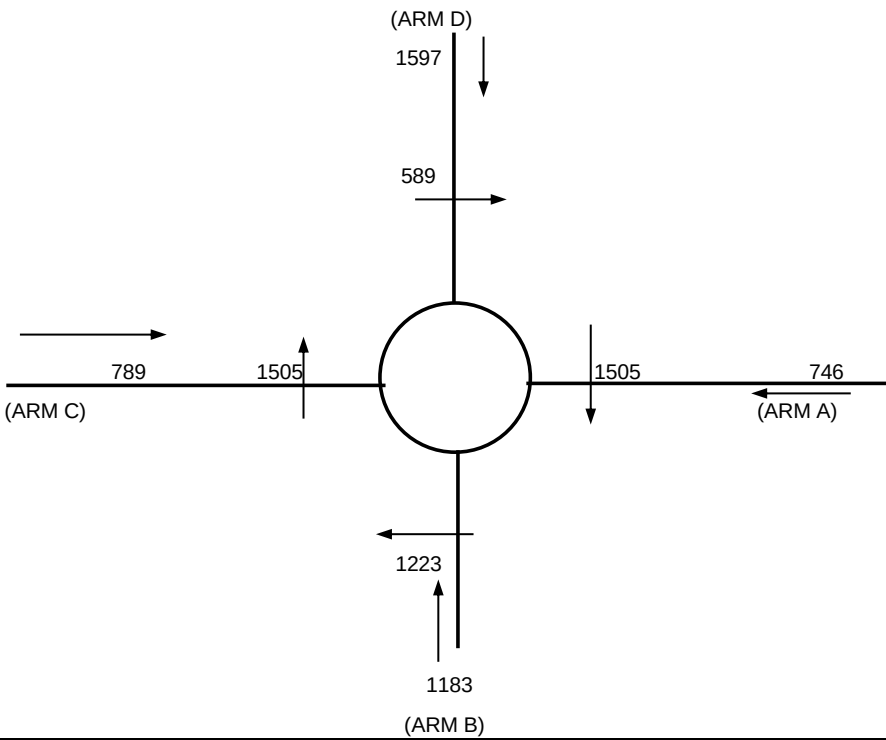
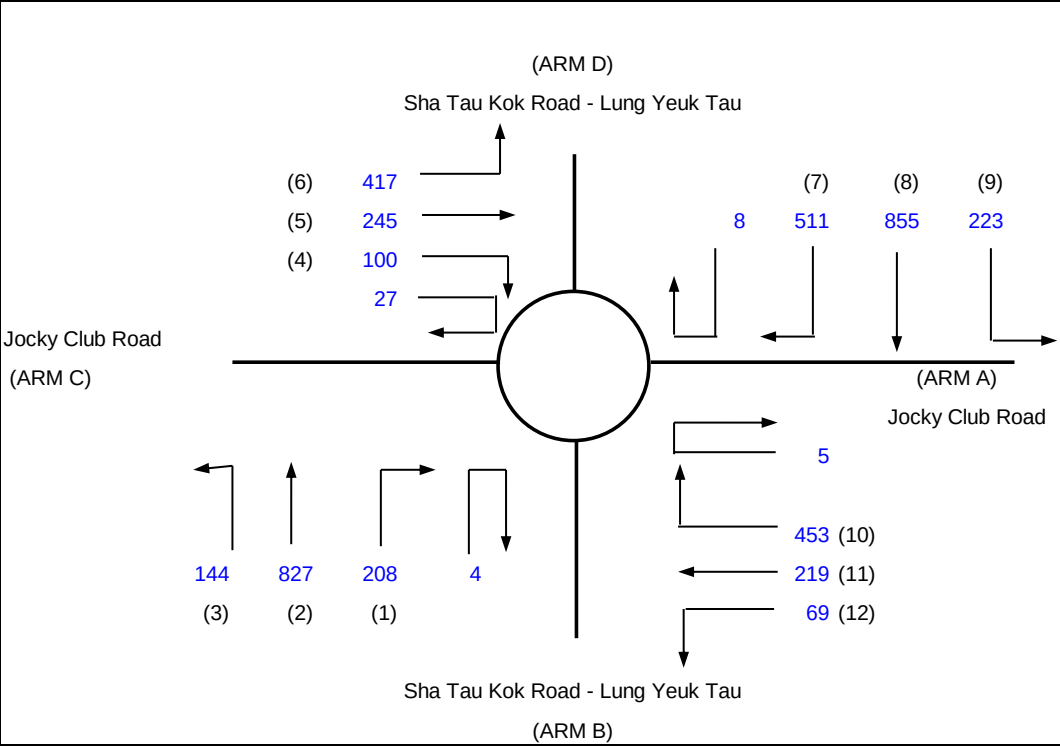
ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	5.9	7.4	7.1	5.6
E	= Entry width (m)	6.9	8.7	8.0	9.3
L	= Effective length of flare (m)	7.3	6.7	4.9	10.0
R	= Entry radius (m)	30.4	20.8	20.0	100.0
D	= Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A	= Entry angle (degree)	15.5	29.5	13.0	11.5
Q	= Entry flow (pcu/h)	387	718	485	824
Qc	= Circulating flow across entry (pcu/h)	311	698	828	411
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2	= V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M	= EXP((D-60)/10)	0.53	0.53	0.53	0.53
F	= 303*X2	1998	2485	2323	2210
Td	= 1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc	= 0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe	= K(F-Fc*Qc)	1918	1979	1841	2128
					Total In Sum = 1050 PCU
DFC	= Design flow/Capacity = Q/Qe	0.20	0.36	0.26	0.39
					DFC of Critical Approach = 0.39

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn G - Fanling Highway/ So Kwun Po Road Roundabout	2025 Observed Traffic Flow (PM Peak	FILENAMI StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	4.7	6.8	3.0	8.2
E = Entry width (m)	6.5	9.8	7.6	11.6
L = Effective length of flare (m)	76.0	38.0	35.0	25.0
R = Entry radius (m)	73.0	34.0	64.0	18.0
D = Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A = Entry angle (degree)	30.0	45.0	60.0	75.0
Q = Entry flow (pcu/h)	496	718	377	1544
Qc = Circulating flow across entry (pcu/h)	1923	1479	1215	506
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2 = V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M = EXP((D-60)/10)	20.09	20.09	20.09	20.09
F = 303*X2	1931	2786	1890	3195
Td = 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc = 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe = K(F-Fc*Qc)	1026	1823	1211	2395
				Total In Sum = 1585 PCU
DFC = Design flow/Capacity = Q/Qe	0.48	0.39	0.31	0.64
				DFC of Critical Approach = 0.64

AXON CONSULTANCY LIMITED		PRIORITY JUNCTION CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK 2026/5/27
				Checked By:	SY 2026/5/27
Jn A - Lok Yip Road / On Kiu Street		2030 Reference Traffic Flow (AM Peak)		Project No.: 31068	Reviewed By: AW 2026/5/27



ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	7.3	7.0	7.2	7.4
E	= Entry width (m)	7.4	9.0	7.2	8.0
L	= Effective length of flare (m)	5.8	12.0	4.0	7.5
R	= Entry radius (m)	32.7	60.0	36.0	26.0
D	= Inscribed circle diameter (m)	65.0	65.0	65.0	65.0
A	= Entry angle (degree)	22.0	25.0	4.0	20.0
Q	= Entry flow (pcu/h)	746	1183	789	1597
Qc	= Circulating flow across entry (pcu/h)	1505	1223	1505	589
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.03	0.27	0.00	0.13
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.11	1.05
X2	= V + ((E-V)/(1+2S))	7.39	8.30	7.20	7.88
M	= EXP((D-60)/10)	1.65	1.65	1.65	1.65
F	= 303*X2	2241	2516	2182	2387
Td	= 1+(0.5/(1+M))	1.19	1.19	1.19	1.19
Fc	= 0.21*Td(1+0.2*X2)	0.62	0.66	0.61	0.64
Qe	= K(F-Fc*Qc)	1370	1789	1406	2101
DFC	= Design flow/Capacity = Q/Qe	0.54	0.66	0.56	0.76

Total In Sum = 1869 PCU

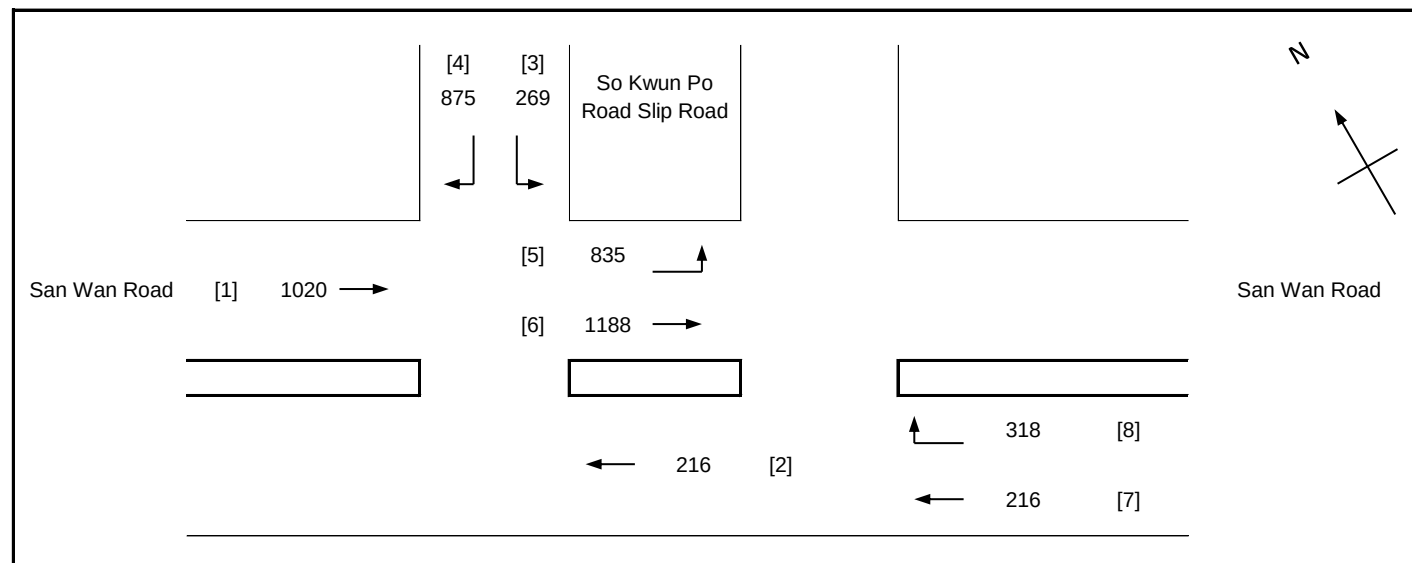
DFC of Critical Approach = 0.76

AXON CONSULTANCY LIMITED										TRAFFIC SIGNAL CALCULATION										INITIALS	DATE	
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories															Prepared By:		JK		2026/5/27			
															Checked By:		SY		2026/5/27			
Jn D - Jockey Club Road / Lok Yip Road										2030 Reference Traffic Flow (AM Peak)					Project No.: 31068		Reviewed By:		AW		2026/5/27	
</																						

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

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK	2026/5/27
				Checked By:	SY	2026/5/27
Jn E - San Wan Road / So Kwun Po Road Slip Road		2030 Reference Traffic Flow (AM Peak)		Project No.: 31068	Reviewed By:	AW
						2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period	Stage A - B	I =	0 sec
	Stage B - C	I =	7 sec
	Stage C - D	I =	0 sec
	Stage D - A	I =	7 sec
Cycle time	C =	88	sec
Sum(y)	Y =	0.690	
Loss time	L =	12	sec
Total Flow	=	4937	pcu
Co	$= (1.5 * L + 5) / (1 - Y)$	=	74.3 sec
Cm	$= L / (1 - Y)$	=	38.7 sec
Yult	$= 0.9 - 0.0075L$	=	0.810
R.C.ult	$= (Yult - Y) / Y * 100\%$	=	17.3 %
Cp	$= 0.9 * L / (0.9 - Y)$	=	51.5 sec
Ymax	$= 1 - L / C$	=	0.864
R.C.(C)	$= (0.9 * Ymax - Y) / Y * 100\%$	=	12.6 %

Existing Method of Control

Figure 1 consists of four diagrams (A, B, C, D) illustrating the existing method of control at a T-junction. Each diagram shows a main road with a roundabout at the end, and a side road joining from the left. The roundabout has a central island and a north arrow pointing towards the top right. The diagrams show the flow of traffic from the side road into the roundabout and then onto the main road. Diagram A shows a roundabout with a central island and a north arrow. Diagram B shows a roundabout with a central island and a north arrow. Diagram C shows a roundabout with a central island and a north arrow. Diagram D shows a roundabout with a central island and a north arrow.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	24	5	OK
7		B,C	7	6	40	6	OK
8		D,A	7	5	26	5	OK
9		D	6	7	7	7	OK

	Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1020		1020	0.00	4190			4190	0.243	0.243		27	27	0.793	44	30
←	2	A,B	3.7		2				4250		216		216	0.00	4250			4250	0.051			6	27	0.166	9	23
↙	4	C,D	3.5		1	20			2105			875	875	1.00	1958			1958	0.447	0.447		49	49	0.803	51	20
↘	3	C,D	3.7		1	15			2125	269			269	1.00	1932			1932	0.139			15	49	0.250	15	11
↗	5	B,C	3.7		1	15			2125			835	835	1.00	1932			1932	0.432			48	48	0.792	49	20
→	6	B,C	3.7		2				4250		1188		1188	0.00	4250			4250	0.280			31	48	0.512	33	13
↖	8	D,A	3.5		1	20			2105		318		318	0.00	2105			2105	0.151			17	29	0.458	26	25
←	7	A,B,C	3.5		2				4210		216		216	0.00	4210			4210	0.051			6	63	0.072	4	4

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NOTE : O - OPPOSING TRAFFIC

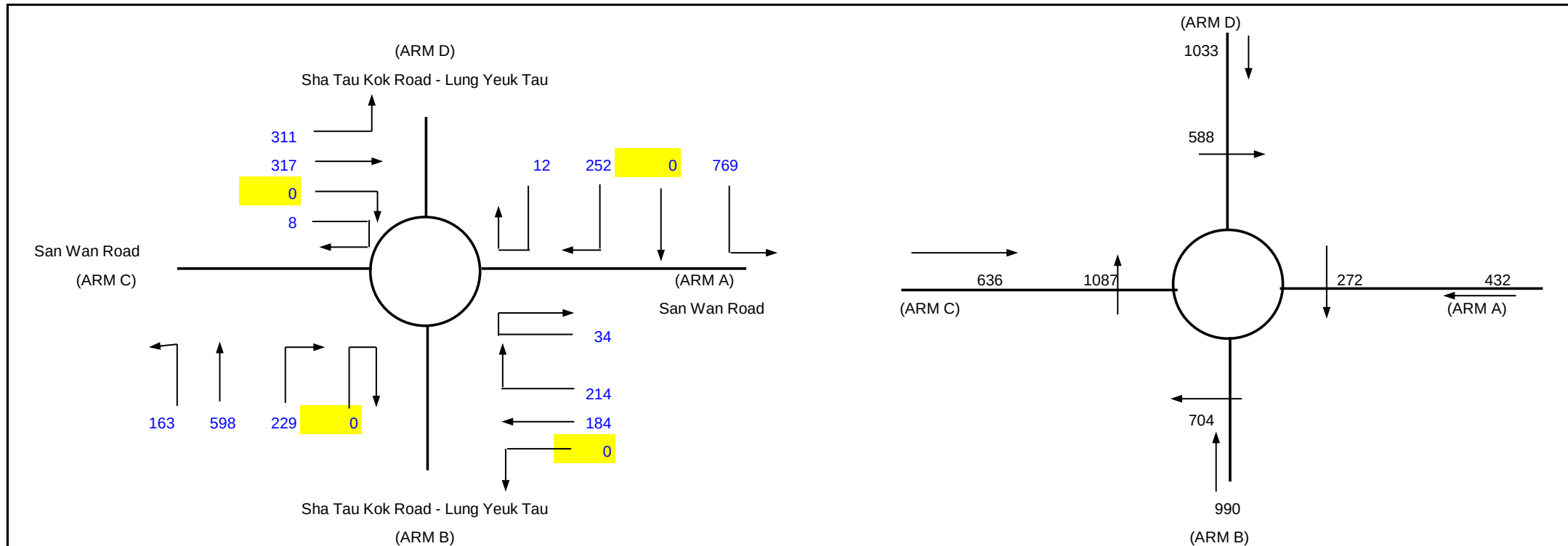
N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

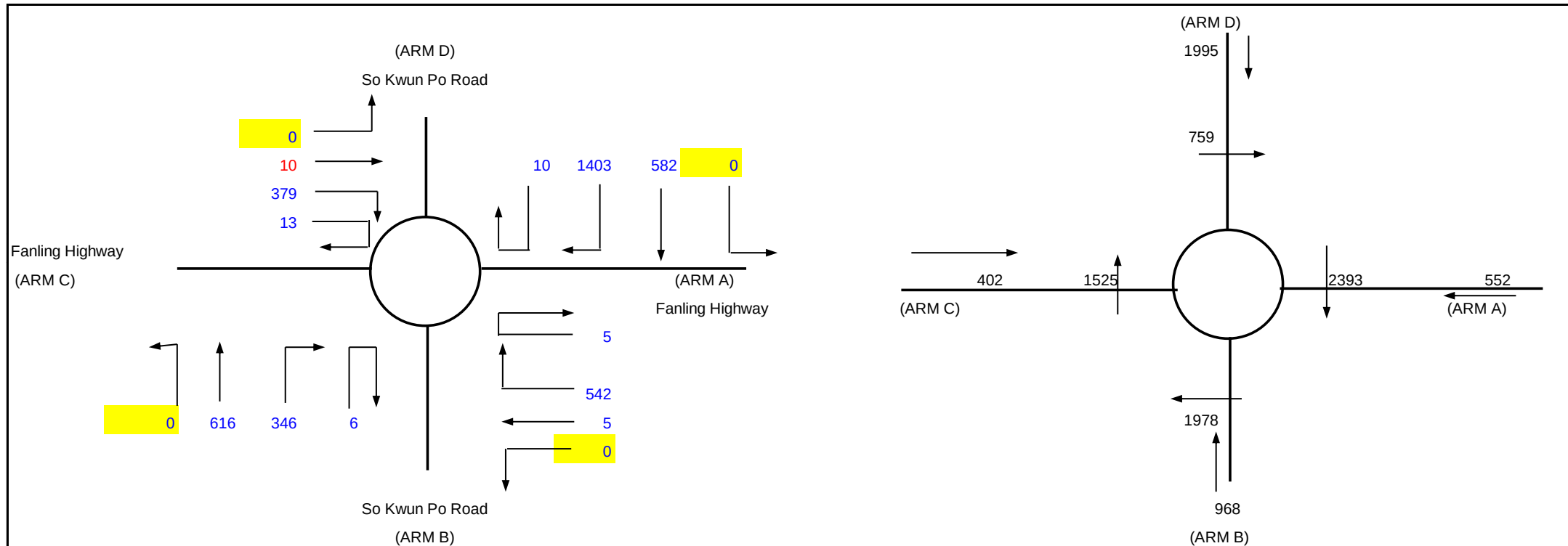
QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road	2030 Reference Traffic Flow (AM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		

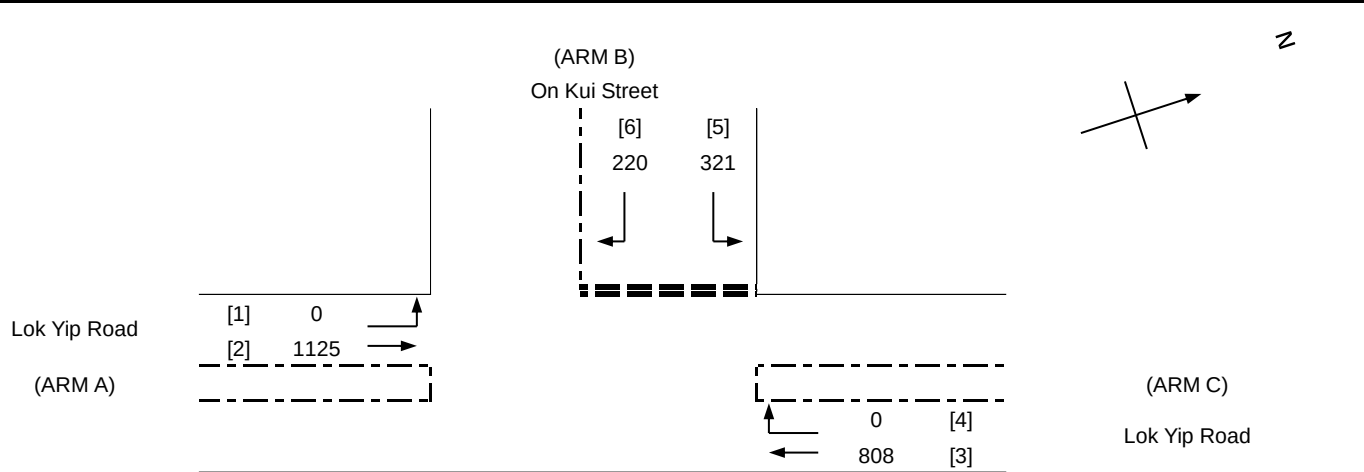


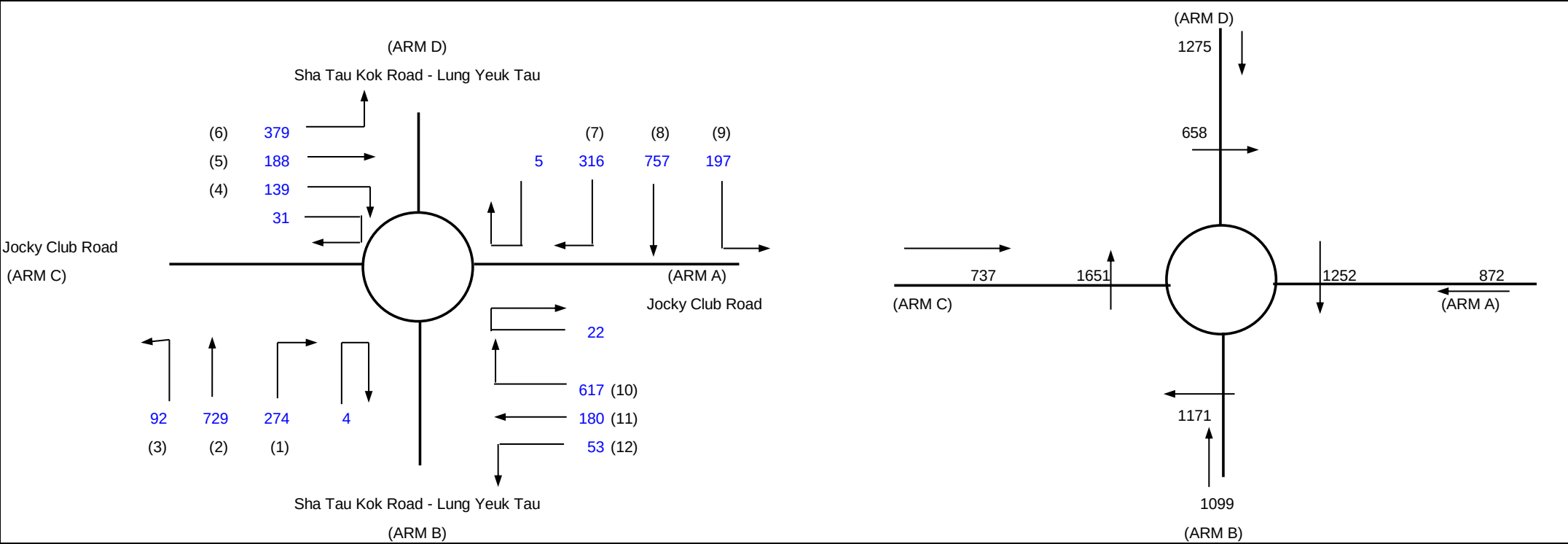
ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.9	7.4	7.1	5.6
E = Entry width (m)	6.9	8.7	8.0	9.3
L = Effective length of flare (m)	7.3	6.7	4.9	10.0
R = Entry radius (m)	30.4	20.8	20.0	100.0
D = Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A = Entry angle (degree)	15.5	29.5	13.0	11.5
Q = Entry flow (pcu/h)	432	990	636	1033
Qc = Circulating flow across entry (pcu/h)	272	704	1087	588
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2 = V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M = EXP((D-60)/10)	0.53	0.53	0.53	0.53
F = 303*X2	1998	2485	2323	2210
Td = 1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc = 0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe = K(F-Fc*Qc)	1945	1975	1648	1994
				Total In Sum = 1400 PCU
DFC = Design flow/Capacity = Q/Qe	0.22	0.50	0.39	0.52
				DFC of Critical Approach = 0.52

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn G - Fanling Highway/ So Kwun Po Road Roundabout	2030 Reference Traffic Flow (AM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		

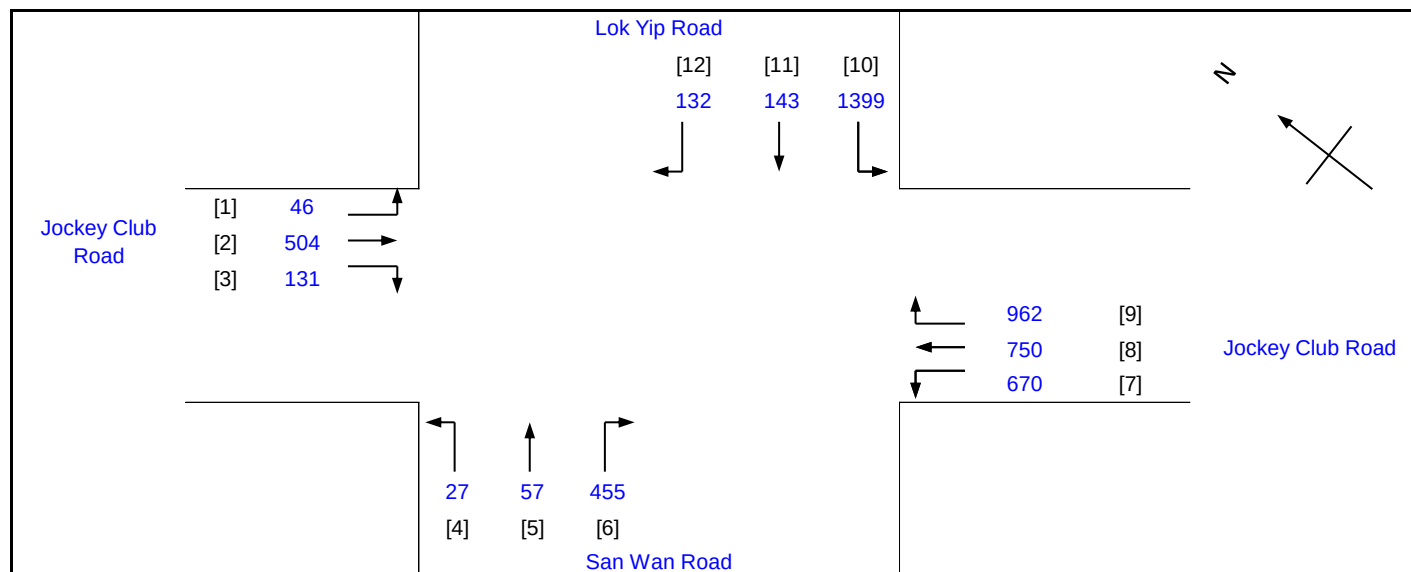


ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	4.7	6.8	3.0	8.2
E	= Entry width (m)	6.5	9.8	7.6	11.6
L	= Effective length of flare (m)	76.0	38.0	35.0	25.0
R	= Entry radius (m)	73.0	34.0	64.0	18.0
D	= Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A	= Entry angle (degree)	30.0	45.0	60.0	75.0
Q	= Entry flow (pcu/h)	552	968	402	1995
Qc	= Circulating flow across entry (pcu/h)	2393	1978	1525	759
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2	= V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M	= EXP((D-60)/10)	20.09	20.09	20.09	20.09
F	= 303*X2	1931	2786	1890	3195
Td	= 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc	= 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe	= K(F-Fc*Qc)	788	1528	1072	2253
					Total In Sum = 1917 PCU
DFC	= Design flow/Capacity = Q/Qe	0.70	0.63	0.38	0.89
					DFC of Critical Approach = 0.89

AXON CONSULTANCY LIMITED		PRIORITY JUNCTION CALCULATION		INITIALS	DATE																																																																																																																																																								
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK 2026/5/27																																																																																																																																																								
				Checked By:	SY 2026/5/27																																																																																																																																																								
Jn A - Lok Yip Road / On Kiu Street		2030 Reference Traffic Flow (PM Peak)	Project No.: 31068	Reviewed By:	AW 2026/5/27																																																																																																																																																								
			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 VI 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)																																																																																																																																																										
<table><tr><td colspan="2">GEOMETRIC DETAILS:</td><td colspan="2">GEOMETRIC FACTORS :</td><td colspan="2">THE CAPACITY OF MOVEMENT :</td><td colspan="2">COMPARISON OF DESIGN FLOW TO CAPACITY:</td></tr><tr><td colspan="2">MAJOR ROAD (ARM A)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>W</td><td>= 13.5 (metres)</td><td>D</td><td>= 0.9</td><td>Q b-a</td><td>= 278 (pcu/hr)</td><td>DFC b-a</td><td>= 0.7914</td></tr><tr><td>W cr</td><td>= 0.0 (metres)</td><td>E</td><td>= 0.991</td><td>Q b-c</td><td>= 521 (pcu/hr)</td><td>DFC b-c</td><td>= 0.6161</td></tr><tr><td>q a-b</td><td>= 0 (pcu/hr)</td><td>F</td><td>= 0.805</td><td>Q c-b</td><td>= 424 (pcu/hr)</td><td>DFC c-b</td><td>= 0.0000</td></tr><tr><td>q a-c</td><td>= 1125 (pcu/hr)</td><td>Y</td><td>= 0.534</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">MAJOR ROAD (ARM C)</td><td colspan="2">F for (Qb-ac) = 0.593</td><td colspan="2">TOTAL FLOW = 2474 (pcu/hr)</td><td colspan="2"></td></tr><tr><td>W c-b</td><td>= 2.1 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>Vr c-b</td><td>= 55.8 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>q c-a</td><td>= 808 (pcu/hr)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>q c-b</td><td>= 0 (pcu/hr)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">MINOR ROAD (ARM B)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2">CRITICAL DFC = 0.79</td></tr><tr><td>W b-a</td><td>= 4.2 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>W b-c</td><td>= 4.2 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>VI b-a</td><td>= 35.7 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>Vr b-a</td><td>= 29.6 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>Vr b-c</td><td>= 55.8 (metres)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>q b-a</td><td>= 220 (pcu/hr)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td>q b-c</td><td>= 321 (pcu/hr)</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr></table>						GEOMETRIC DETAILS:		GEOMETRIC FACTORS :		THE CAPACITY OF MOVEMENT :		COMPARISON OF DESIGN FLOW TO CAPACITY:		MAJOR ROAD (ARM A)								W	= 13.5 (metres)	D	= 0.9	Q b-a	= 278 (pcu/hr)	DFC b-a	= 0.7914	W cr	= 0.0 (metres)	E	= 0.991	Q b-c	= 521 (pcu/hr)	DFC b-c	= 0.6161	q a-b	= 0 (pcu/hr)	F	= 0.805	Q c-b	= 424 (pcu/hr)	DFC c-b	= 0.0000	q a-c	= 1125 (pcu/hr)	Y	= 0.534					MAJOR ROAD (ARM C)		F for (Qb-ac) = 0.593		TOTAL FLOW = 2474 (pcu/hr)				W c-b	= 2.1 (metres)							Vr c-b	= 55.8 (metres)							q c-a	= 808 (pcu/hr)							q c-b	= 0 (pcu/hr)							MINOR ROAD (ARM B)						CRITICAL DFC = 0.79		W b-a	= 4.2 (metres)							W b-c	= 4.2 (metres)							VI b-a	= 35.7 (metres)							Vr b-a	= 29.6 (metres)							Vr b-c	= 55.8 (metres)							q b-a	= 220 (pcu/hr)							q b-c	= 321 (pcu/hr)						
GEOMETRIC DETAILS:		GEOMETRIC FACTORS :		THE CAPACITY OF MOVEMENT :		COMPARISON OF DESIGN FLOW TO CAPACITY:																																																																																																																																																							
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ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.3	7.0	7.2	7.4
E = Entry width (m)	7.4	9.0	7.2	8.0
L = Effective length of flare (m)	5.8	12.0	4.0	7.5
R = Entry radius (m)	32.7	60.0	36.0	26.0
D = Inscribed circle diameter (m)	65.0	65.0	65.0	65.0
A = Entry angle (degree)	22.0	25.0	4.0	20.0
Q = Entry flow (pcu/h)	872	1099	737	1275
Qc = Circulating flow across entry (pcu/h)	1252	1171	1651	658
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.03	0.27	0.00	0.13
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.11	1.05
X2 = V + ((E-V)/(1+2S))	7.39	8.30	7.20	7.88
M = EXP((D-60)/10)	1.65	1.65	1.65	1.65
F = 303*X2	2241	2516	2182	2387
Td = 1+(0.5/(1+M))	1.19	1.19	1.19	1.19
Fc = 0.21*Td(1+0.2*X2)	0.62	0.66	0.61	0.64
Qe = K(F-Fc*Qc)	1534	1825	1308	2054
				Total In Sum = 2004 PCU
DFC = Design flow/Capacity = Q/Qe	0.57	0.60	0.56	0.62
				DFC of Critical Approach = 0.62



No. of critical vehicular phase per cycle:	N =	4	
Intergreen Period	Stage A - B	I =	9 sec
	Stage B - C	I =	8 sec
	Stage C - D	I =	7 sec
	Stage D - A	I =	8 sec
Cycle time	C =	112	sec
Sum(y)	Y =	0.594	
Loss time	L =	28	sec
Total Flow		=	5276 pcu
Co = $(1.5 \cdot L + 5) / (1 - Y)$		=	115.8 sec
Cm = $L / (1 - Y)$		=	69.0 sec
Yult = $0.9 - 0.0075L$		=	0.690
R.C.ult = $(Yult - Y) / Y \cdot 100\%$		=	16.1 %
Cp = $0.9 \cdot L / (0.9 - Y)$		=	82.4 sec
Ymax = $1 - L / C$		=	0.750
R.C.(C) = $(0.9 \cdot Ymax - Y) / Y \cdot 100\%$		=	13.6 %

Existing Method of Control

The figure consists of four panels, A, B, C, and D, each showing a different traffic control method for the intersection of Jockey Club Road, Lok Yip Road, and San Wan Road. The roads are labeled: Jockey Club Road (horizontal), Lok Yip Road (vertical), and San Wan Road (vertical). A north arrow is present in panel A.

- Panel A:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located at the intersection. The roundabout has a single lane for each direction. The traffic flow is indicated by arrows: 1 (left turn from Jockey Club Road), 2 (right turn from Jockey Club Road), 3 (left turn from Lok Yip Road), 4 (right turn from Lok Yip Road), 5 (left turn from San Wan Road), 6 (right turn from San Wan Road), and 7 (through traffic from San Wan Road).
- Panel B:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located at the intersection. The traffic flow is indicated by arrows: 1 (left turn from Jockey Club Road), 2 (right turn from Jockey Club Road), 3 (left turn from Lok Yip Road), 4 (right turn from Lok Yip Road), 5 (left turn from San Wan Road), 6 (right turn from San Wan Road), and 7 (through traffic from San Wan Road).
- Panel C:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located at the intersection. The traffic flow is indicated by arrows: 1 (left turn from Jockey Club Road), 2 (right turn from Jockey Club Road), 3 (left turn from Lok Yip Road), 4 (right turn from Lok Yip Road), 5 (left turn from San Wan Road), 6 (right turn from San Wan Road), and 7 (through traffic from San Wan Road).
- Panel D:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located at the intersection. The traffic flow is indicated by arrows: 1 (left turn from Jockey Club Road), 2 (right turn from Jockey Club Road), 3 (left turn from Lok Yip Road), 4 (right turn from Lok Yip Road), 5 (left turn from San Wan Road), 6 (right turn from San Wan Road), and 7 (through traffic from San Wan Road).

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B,C	7	9	89	9	OK
7		D	6	12	20	12	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)	
	1,2	A	3.3	1	1	15			2085	46	181		227	0.20	2044			2044	0.111	0.111		16	16	0.778	33	58	
	2	A	3.3	1	1				2085		232		232	0.00	2085			2085	0.111			16	16	0.778	34	58	
	2,3	A	3.3	1	1	20			2085		91	131	222	0.59	1997			1997	0.111			16	16	0.778	33	58	
	9	B	3.5	2	1	25			2105			590	590	1.00	1986			1986	0.297			42	42	0.792	60	36	
	8,9	B	3.5	2	1	30			2105		234	372	607	0.61	2042			2042	0.297			42	42	0.792	62	36	
	7,8	B	3.5	2	1	20			2105	102	516		617	0.16	2079			2079	0.297			42	42	0.792	63	36	
	7	B	3.5	2	1	15			2105	568			568	1.00	1914			1914	0.297	0.297		42	42	0.792	58	36	
	12	C	3.2	4	1	20			2075	132				132	1.00	1930			1930	0.068			10	10	0.766	22	69
	11	C	3.2	4	1				2075		143			143	0.00	2075			2075	0.069	0.069		10	10	0.772	24	68
	10	B,C	3.2	3,4	2	15			4150			1399	1399	1.00	3773			3773	0.371			52	60	0.692	51	20	
	4,5	D	3.2	5	1	15			2075	27	57		84	0.32	2010			2010	0.042			6	17	0.275	11	43	
	5,6	D	3.2	5	1	25			2075		0	229	229	1.00	1958			1958	0.117	0.117		17	17	0.771	33	56	
	6	D	3.2	5	1	20			2075			226	226	1.00	1930			1930	0.117			17	17	0.771	33	57	

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NOTE: O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

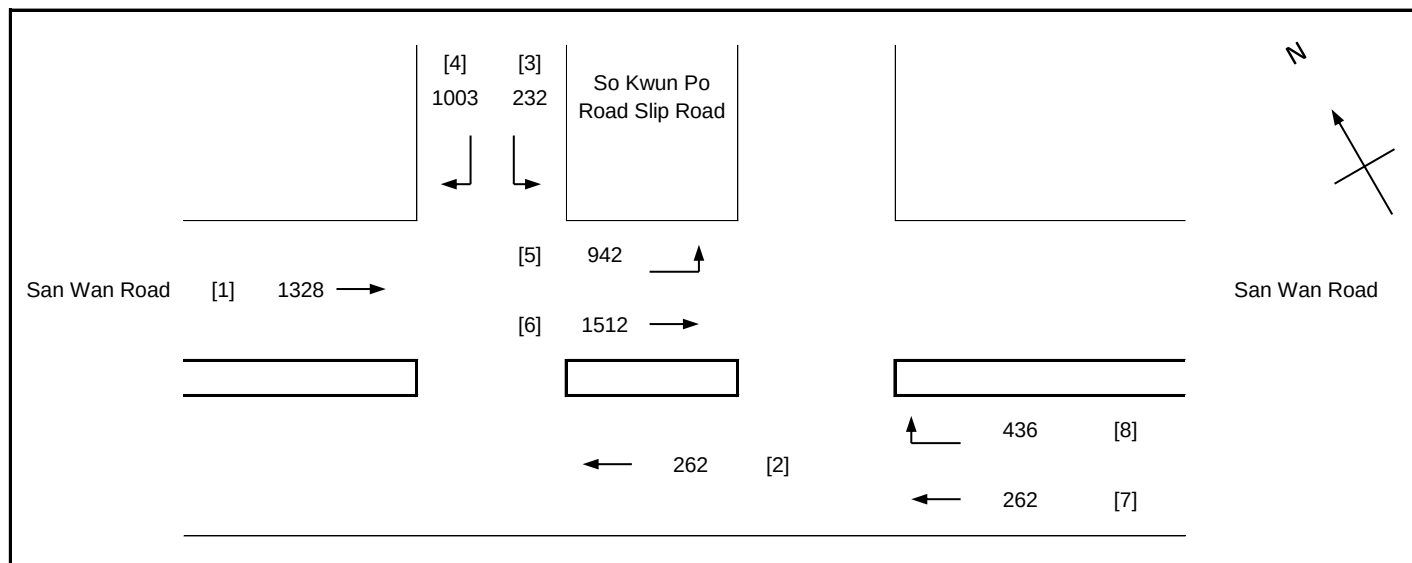
SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

$$\text{QUEUING LENGTH} = \text{AVERAGE QUEUE} * 6m$$

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK	2026/5/27
				Checked By:	SY	2026/5/27
Jn E - San Wan Road / So Kwun Po Road Slip Road		2030 Reference Traffic Flow (PM Peak)		Project No.: 31068	Reviewed By:	AW
						2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period	Stage A - B	I =	0 sec
	Stage B - C	I =	7 sec
	Stage C - D	I =	0 sec
	Stage D - A	I =	7 sec
Cycle time	C =	96	sec
Sum(y)	Y =	0.829	
Loss time	L =	12	sec
Total Flow	=	5977	pcu
Co = $(1.5 * L + 5) / (1 - Y)$	=	134.6	sec
Cm = $L / (1 - Y)$	=	70.2	sec
Yult = $0.9 - 0.0075L$	=	0.810	
R.C.ult = $(Yult - Y) / Y * 100\%$	=	-2.3	%
Cp = $0.9 * L / (0.9 - Y)$	=	152.5	sec
Ymax = $1 - L / C$	=	0.875	
R.C.(C) = $(0.9 * Ymax - Y) / Y * 100\%$	=	-5.0	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	29	5	OK
7		B,C	7	6	41	6	OK
8		D,A	7	5	33	5	OK
9		D	6	7	14	7	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1328		1328	0.00	4190			4190	0.317	0.317		32	32	0.951	77	51
←	2	A,B	3.7		2				4250		262		262	0.00	4250			4250	0.062			6	32	0.185	12	23
↙	4	C,D	3.5		1	20			2105			1003	1003	1.00	1958			1958	0.512	0.512		52	52	0.946	93	45
↘	3	C,D	3.7		1	15			2125	232			232	1.00	1932			1932	0.120			12	52	0.222	14	12
↗	5	B,C	3.7		1	15			2125			942	942	1.00	1932			1932	0.488			49	49	0.955	103	56
→	6	B,C	3.7		2				4250		1512		1512	0.00	4250			4250	0.356			36	49	0.697	49	19
↖	8	D,A	3.5		1	20			2105		436		436	0.00	2105			2105	0.207			21	36	0.552	36	25
←	7	A,B,C	3.5		2				4210		262		262	0.00	4210			4210	0.062			6	64	0.093	6	6

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NOTE : O - OPPOSING TRAFFIC

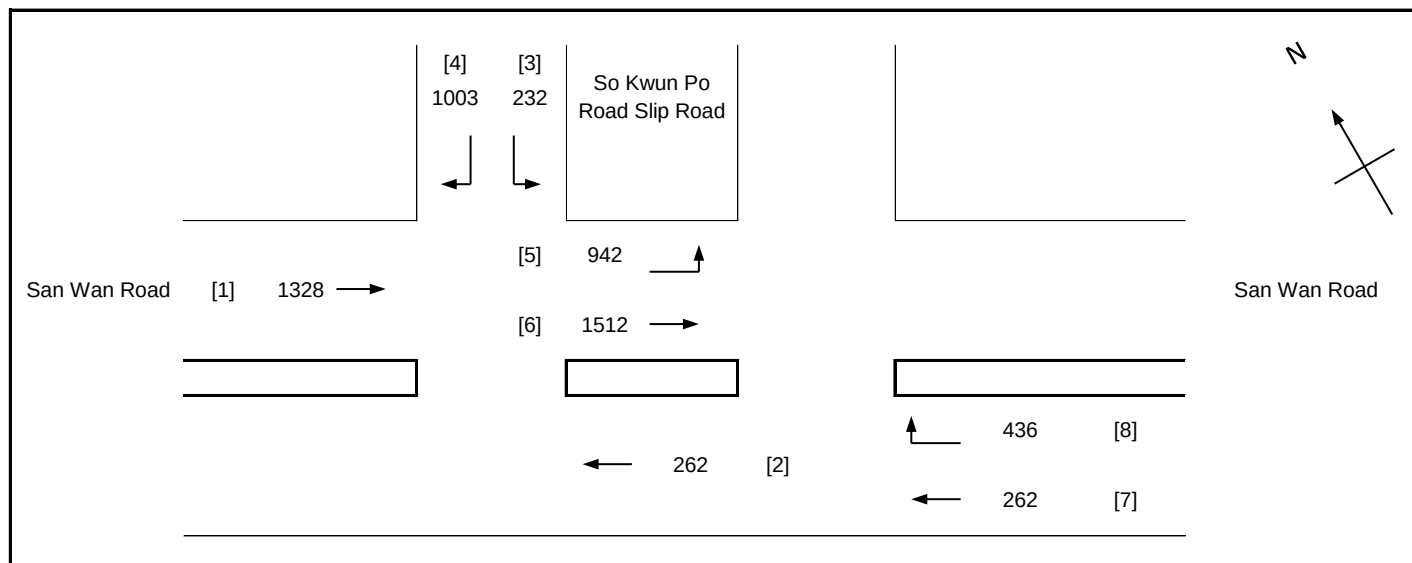
N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories			Prepared By:	JK	2026/5/27
			Checked By:	SY	2026/5/27
Jn E - San Wan Road / So Kwun Po Road Slip Road	2030 Reference Traffic Flow (PM Peak) (with Local Widening)		Project No.: 31068	Reviewed By:	AW 2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period	Stage A - B	I =	0 sec
	Stage B - C	I =	7 sec
	Stage C - D	I =	0 sec
	Stage D - A	I =	7 sec
Cycle time	C =	96	sec
Sum(y)	Y =	0.573	
Loss time	L =	12	sec
Total Flow	=	5977	pcu
Co = $(1.5 * L + 5) / (1 - Y)$	=	53.9	sec
Cm = $L / (1 - Y)$	=	28.1	sec
Yult = $0.9 - 0.0075L$	=	0.810	
R.C.ult = $(Yult - Y) / Y * 100\%$	=	41.3	%
Cp = $0.9 * L / (0.9 - Y)$	=	33.0	sec
Ymax = $1 - L / C$	=	0.875	
R.C.(C) = $(0.9 * Ymax - Y) / Y * 100\%$	=	37.4	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	43	5	OK
7		B,C	7	6	63	6	OK
8		D,A	7	5	11	5	OK
9		D	6	7	6	7	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1328		1328	0.00	4190			4190	0.317	0.317		46	46	0.661	46	20
←	2	A,B	3.7		2				4250		262		262	0.00	4250			4250	0.062			9	46	0.129	9	14
↙	4	C,D	3.5		2	20			4210			1003	1003	1.00	3916			3916	0.256	0.256		38	38	0.647	40	24
↘	3	C,D	3.7		1	15			2125	232			232	1.00	1932			1932	0.120			18	38	0.303	19	21
↗	5	B,C	3.7		1	15			2125			942	942	1.00	1932			1932	0.488			71	71	0.659	33	8
→	6	B,C	3.7		2				4250		1512		1512	0.00	4250			4250	0.356			52	71	0.481	26	6
↖	8	D,A	3.5		1	20			2105		436		436	0.00	2105			2105	0.207			30	30	0.655	40	31
←	7	A,B,C	3.5		2				4210		262		262	0.00	4210			4210	0.062			9	86	0.069	2	1

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NOTE : O - OPPOSING TRAFFIC

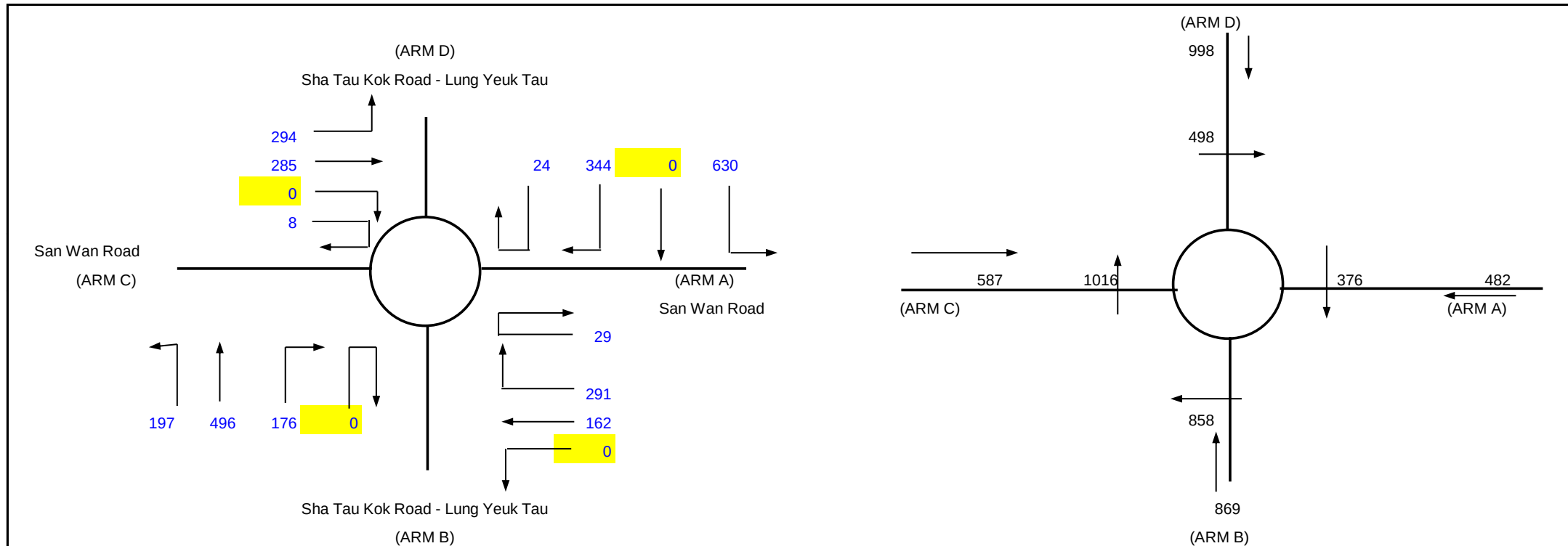
N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

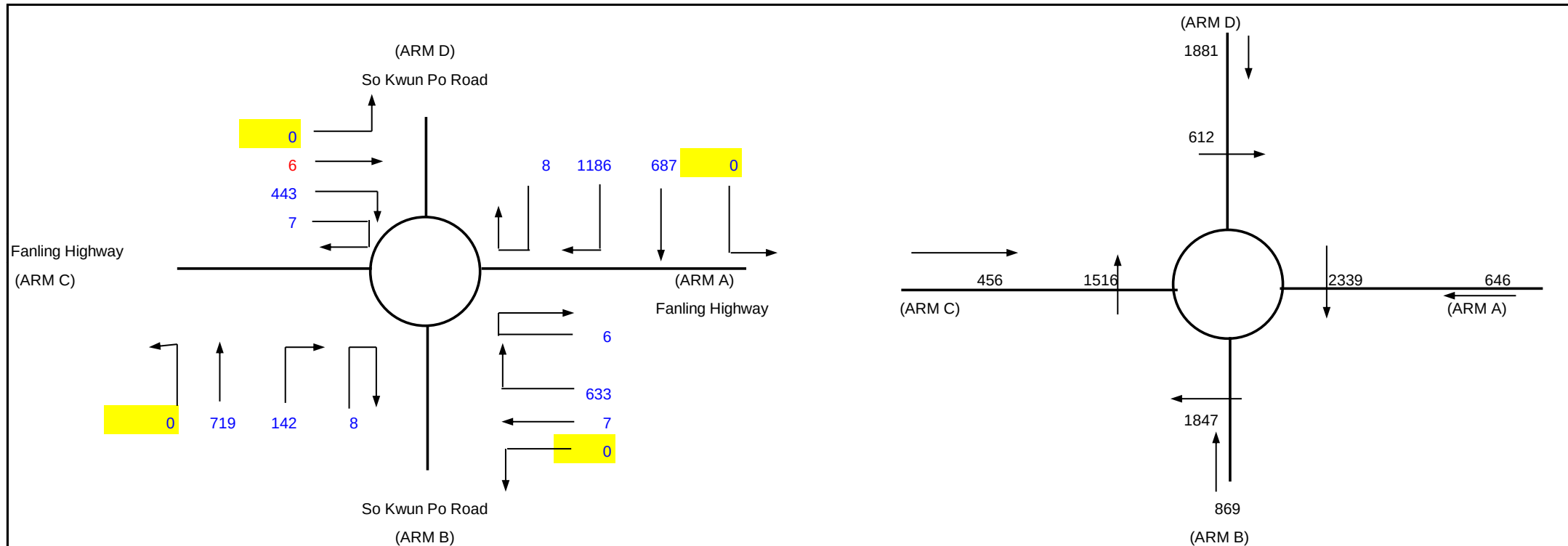
QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road	2030 Reference Traffic Flow (PM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		

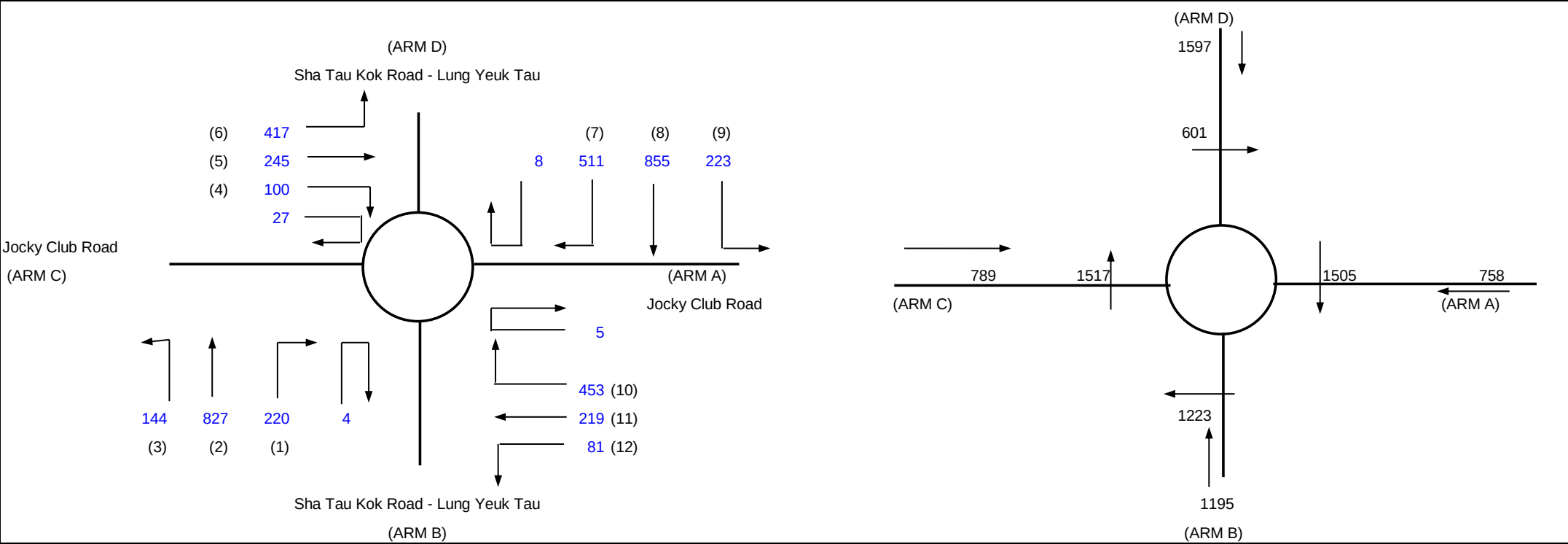


ARM		A	B	C	D	
INPUT PARAMETERS:						
V	=	Approach half width (m)	5.9	7.4	7.1	5.6
E	=	Entry width (m)	6.9	8.7	8.0	9.3
L	=	Effective length of flare (m)	7.3	6.7	4.9	10.0
R	=	Entry radius (m)	30.4	20.8	20.0	100.0
D	=	Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A	=	Entry angle (degree)	15.5	29.5	13.0	11.5
Q	=	Entry flow (pcu/h)	482	869	587	998
Qc	=	Circulating flow across entry (pcu/h)	376	858	1016	498
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2	=	V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M	=	EXP((D-60)/10)	0.53	0.53	0.53	0.53
F	=	303*X2	1998	2485	2323	2210
Td	=	1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc	=	0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe	=	K(F-Fc*Qc)	1873	1861	1701	2062
					Total In Sum =	1285 PCU
DFC	=	Design flow/Capacity = Q/Qe	0.26	0.47	0.35	0.48
					DFC of Critical Approach =	0.48

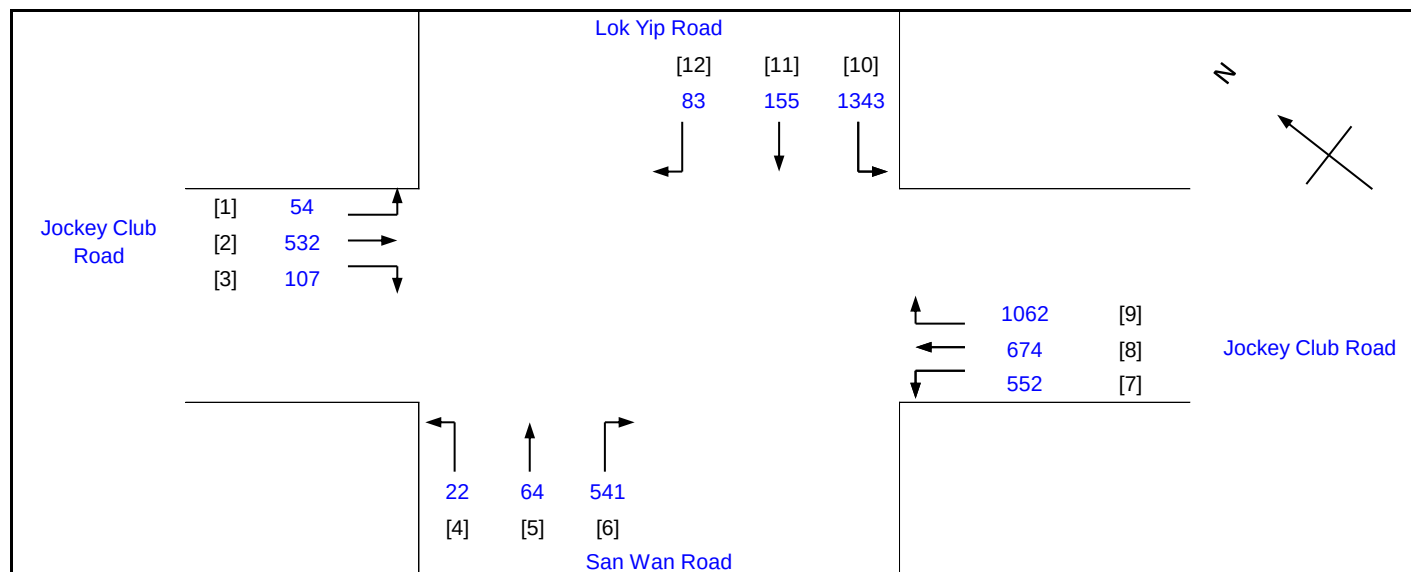
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn G - Fanling Highway/ So Kwun Po Road Roundabout	2030 Reference Traffic Flow (PM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	4.7	6.8	3.0	8.2
E = Entry width (m)	6.5	9.8	7.6	11.6
L = Effective length of flare (m)	76.0	38.0	35.0	25.0
R = Entry radius (m)	73.0	34.0	64.0	18.0
D = Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A = Entry angle (degree)	30.0	45.0	60.0	75.0
Q = Entry flow (pcu/h)	646	869	456	1881
Qc = Circulating flow across entry (pcu/h)	2339	1847	1516	612
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2 = V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M = EXP((D-60)/10)	20.09	20.09	20.09	20.09
F = 303*X2	1931	2786	1890	3195
Td = 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc = 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe = K(F-Fc*Qc)	815	1606	1076	2336
				Total In Sum = 1964 PCU
DFC = Design flow/Capacity = Q/Qe	0.79	0.54	0.42	0.81
				DFC of Critical Approach = 0.81



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.3	7.0	7.2	7.4
E = Entry width (m)	7.4	9.0	7.2	8.0
L = Effective length of flare (m)	5.8	12.0	4.0	7.5
R = Entry radius (m)	32.7	60.0	36.0	26.0
D = Inscribed circle diameter (m)	65.0	65.0	65.0	65.0
A = Entry angle (degree)	22.0	25.0	4.0	20.0
Q = Entry flow (pcu/h)	758	1195	789	1597
Qc = Circulating flow across entry (pcu/h)	1505	1223	1517	601
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.03	0.27	0.00	0.13
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.11	1.05
X2 = V + ((E-V)/(1+2S))	7.39	8.30	7.20	7.88
M = EXP((D-60)/10)	1.65	1.65	1.65	1.65
F = 303*X2	2241	2516	2182	2387
Td = 1+(0.5/(1+M))	1.19	1.19	1.19	1.19
Fc = 0.21*Td(1+0.2*X2)	0.62	0.66	0.61	0.64
Qe = K(F-Fc*Qc)	1370	1789	1398	2093
				Total In Sum = 1881 PCU
DFC = Design flow/Capacity = Q/Qe	0.55	0.67	0.56	0.76
				DFC of Critical Approach = 0.76



No. of critical vehicular phase per cycle:	N =	4	
Intergreen Period	Stage A - B	I =	9 sec
	Stage B - C	I =	8 sec
	Stage C - D	I =	7 sec
	Stage D - A	I =	8 sec
Cycle time	C =	120	sec
Sum(y)	Y =	0.612	
Loss time	L =	28	sec
Total Flow		=	5189 pcu
Co = $(1.5 \cdot L + 5) / (1 - Y)$		=	121.1 sec
Cm = $L / (1 - Y)$		=	72.2 sec
Yult = $0.9 - 0.0075L$		=	0.690
R.C.ult = $(Yult - Y) / Y \cdot 100\%$		=	12.7 %
Cp = $0.9 \cdot L / (0.9 - Y)$		=	87.5 sec
Ymax = $1 - L / C$		=	0.767
R.C.(C) = $(0.9 \cdot Ymax - Y) / Y \cdot 100\%$		=	12.7 %

Existing Method of Control

The figure consists of four panels, A, B, C, and D, each showing a different traffic control method for the intersection of Jockey Club Road, Lok Yip Road, and San Wan Road. The roads are labeled: Jockey Club Road (horizontal), Lok Yip Road (vertical), and San Wan Road (vertical). A north arrow is present in panel A.

- Panel A:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located on San Wan Road. A single arrow labeled '1' indicates the direction of traffic flow from Jockey Club Road into the roundabout.
- Panel B:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located on San Wan Road. Two arrows labeled '2' and '3' indicate the direction of traffic flow from Jockey Club Road into the roundabout.
- Panel C:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located on San Wan Road. Two arrows labeled '4' and '5' indicate the direction of traffic flow from Jockey Club Road into the roundabout.
- Panel D:** Shows a T-junction where Jockey Club Road meets Lok Yip Road. A roundabout is located on San Wan Road. Two arrows labeled '6' and '7' indicate the direction of traffic flow from Jockey Club Road into the roundabout.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B,C	7	9	92	9	OK
7		D	6	12	24	12	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
	1,2	A	3.3	1	1	15			2085	54	176		230	0.23	2037			2037	0.113	0.113		17	17	0.797	37	63
	2	A	3.3	1	1				2085		235		235	0.00	2085			2085	0.113			17	17	0.797	38	63
	2,3	A	3.3	1	1	20			2085		120	107	227	0.47	2014			2014	0.113			17	17	0.797	36	64
	9	B	3.5	2	1	25			2105			566	566	1.00	1986			1986	0.285			43	43	0.796	64	40
	8,9	B	3.5	2	1	30			2105		80	496	576	0.86	2018			2018	0.285			43	43	0.796	65	40
	7,8	B	3.5	2	1	20			2105	6	594		600	0.01	2103			2103	0.285			43	43	0.796	67	39
	7	B	3.5	2	1	15			2105	546			546	1.00	1914			1914	0.285	0.285		43	43	0.796	61	40
	12	C	3.2	4	1	20			2075	83			83	1.00	1930			1930	0.043			6	11	0.469	13	55
	11	C	3.2	4	1				2075		155		155	0.00	2075			2075	0.075	0.075		11	11	0.815	29	79
	10	B,C	3.2	3,4	2	15			4150			1343	1343	1.00	3773			3773	0.356			54	62	0.689	54	23
	4,5	D	3.2	5	1	15			2075	22	64		86	0.26	2023			2023	0.043			6	21	0.243	12	44
	5,6	D	3.2	5	1	25			2075		0	272	272	1.00	1958			1958	0.139	0.139		21	21	0.795	41	59
	6	D	3.2	5	1	20			2075			269	269	1.00	1930			1930	0.139			21	21	0.795	41	59

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NOTE : O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK
				Checked By:	SY
Jn E - San Wan Road / So Kwun Po Road Slip Road		2030 Design Traffic Flow (AM Peak)		Project No.: 31068	Reviewed By: AW
					2026/5/27

Existing Method of Control

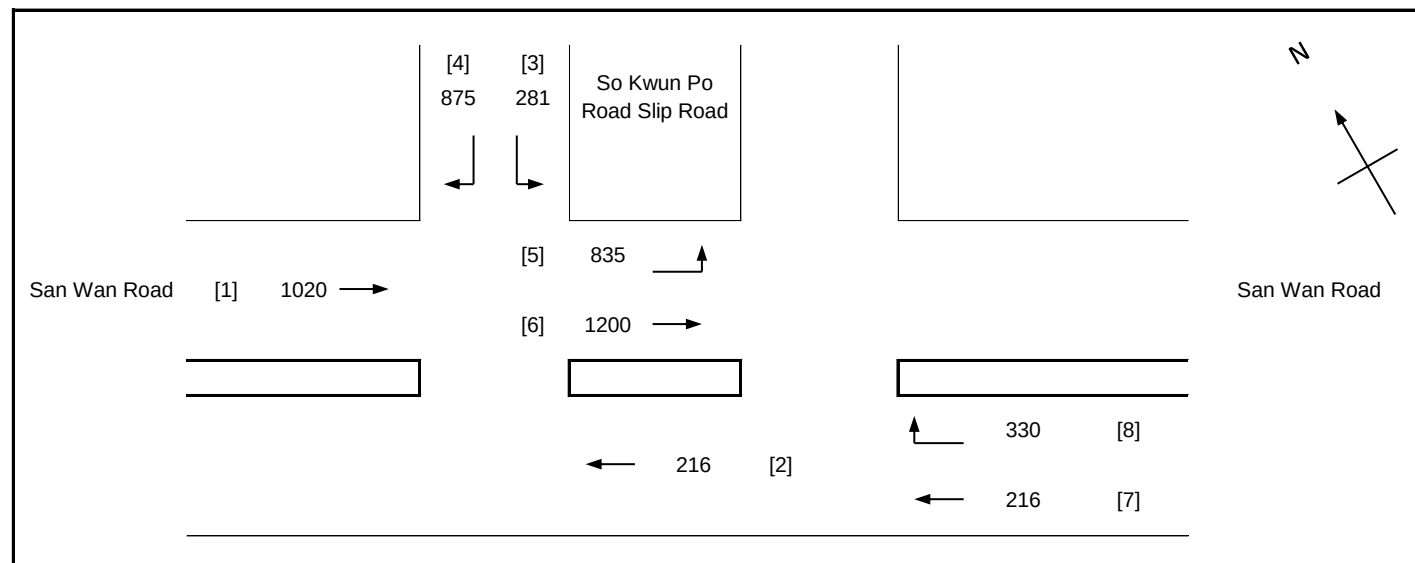
The diagrams illustrate four different traffic control methods at a T-junction where a minor road crosses a major road. In all diagrams, the major road has two lanes in each direction, and the minor road has one lane in each direction. The minor road is labeled 'SAN YAN ROAD'.

- Diagram A:** Shows a roundabout with a north arrow. The minor road approaches from the left. The major road has a roundabout on the right. The minor road has a roundabout on the left. The major road has a roundabout on the right. The minor road has a roundabout on the left.
- Diagram B:** Shows a roundabout with a north arrow. The minor road approaches from the left. The major road has a roundabout on the right. The minor road has a roundabout on the left. The major road has a roundabout on the right. The minor road has a roundabout on the left.
- Diagram C:** Shows a roundabout with a north arrow. The minor road approaches from the left. The major road has a roundabout on the right. The minor road has a roundabout on the left. The major road has a roundabout on the right. The minor road has a roundabout on the left.
- Diagram D:** Shows a roundabout with a north arrow. The minor road approaches from the left. The major road has a roundabout on the right. The minor road has a roundabout on the left. The major road has a roundabout on the right. The minor road has a roundabout on the left.

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1020		1020	0.00	4190			4190	0.243	0.243		27	27	0.793	44	30
←	2	A,B	3.7		2				4250		216		216	0.00	4250			4250	0.051			6	27	0.166	9	23
↙	3	C,D	3.5		1	20			2105			875	875	1.00	1958			1958	0.447	0.447		49	49	0.803	51	20
↘	4	C,D	3.7		1	15			2125	281			281	1.00	1932			1932	0.145			16	49	0.261	15	11
↗	5	B,C	3.7		1	15			2125			835	835	1.00	1932			1932	0.432			48	48	0.792	49	20
→	6	B,C	3.7		2				4250		1200		1200	0.00	4250			4250	0.282			31	48	0.518	33	13
↖	8	D,A	3.5		1	20			2105		330		330	0.00	2105			2105	0.157			17	29	0.476	27	25
←	7	A,B,C	3.5		2				4210		216		216	0.00	4210			4210	0.051			6	63	0.072	4	4

NOTE : O - OPPOSING TRAFFIC

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories			Prepared By:	JK	2026/5/27
			Checked By:	SY	2026/5/27
Jn E - San Wan Road / So Kwun Po Road Slip Road	2030 Design Traffic Flow (AM Peak) (with Local Widening)		Project No.: 31068	Reviewed By:	AW 2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	0	sec
Stage B - C	I =	7	sec
Stage C - D	I =	0	sec
Stage D - A	I =	7	sec
Cycle time	C =	88	sec
Sum(y)	Y =	0.467	
Loss time	L =	12	sec
Total Flow	=	4973	pcu
Co = $(1.5 * L + 5) / (1 - Y)$	=	43.1	sec
Cm = $L / (1 - Y)$	=	22.5	sec
Yult = $0.9 - 0.0075L$	=	0.810	
R.C.ult = $(Yult - Y) / Y * 100\%$	=	73.5	%
Cp = $0.9 * L / (0.9 - Y)$	=	24.9	sec
Ymax = $1 - L / C$	=	0.864	
R.C.(C) = $(0.9 * Ymax - Y) / Y * 100\%$	=	66.5	%

Existing Method of Control

Figure 1 consists of four diagrams labeled A, B, C, and D, illustrating different traffic control methods at a T-junction. Each diagram shows a main road (bottom) and a side road (top) labeled 'SAR (NAN ROAD)'. A north arrow is present in diagram A. Diagram A shows a standard T-junction with a roundabout. Diagram B shows a T-junction with a roundabout and a pedestrian crossing. Diagram C shows a T-junction with a roundabout and a pedestrian crossing. Diagram D shows a T-junction with a roundabout and a pedestrian crossing.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	37	5	OK
7		B,C	7	6	62	6	OK
8		D,A	7	5	4	5	Not OK!
9		D	6	7	-15	7	Not OK!

	Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1020		1020	0.00	4190			4190	0.243	0.243		40	40	0.536	34	18
←	2	A,B	3.7		2				4250		216		216	0.00	4250			4250	0.051			8	40	0.112	7	14
↙	4	C,D	3.5		2	20			4210			875	875	1.00	3916			3916	0.223	0.223		36	36	0.546	32	20
↘	3	C,D	3.7		1	15			2125	281			281	1.00	1932			1932	0.145			24	36	0.356	20	19
↗	5	B,C	3.7		1	15			2125			835	835	1.00	1932			1932	0.432			70	70	0.543	21	4
→	6	B,C	3.7		2				4250		1200		1200	0.00	4250			4250	0.282			46	70	0.355	15	3
↖	8	D,A	3.5		1	20			2105		330		330	0.00	2105			2105	0.157			26	7	1.971	250	959
←	7	A,B,C	3.5		2				4210		216		216	0.00	4210			4210	0.051			8	85	0.053	0	0

C:\D\Axon\Project\31068 Concrete Batching Plant at DD51 Lot 4433, Fanling\Data\Calculation\31068 - Junction DES AM.xlsx[E (widen)

NOTE : O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road

2030 Design Traffic Flow (AM Peak)

PROJECT NO.: 31068

PREPARED BY:

May-26

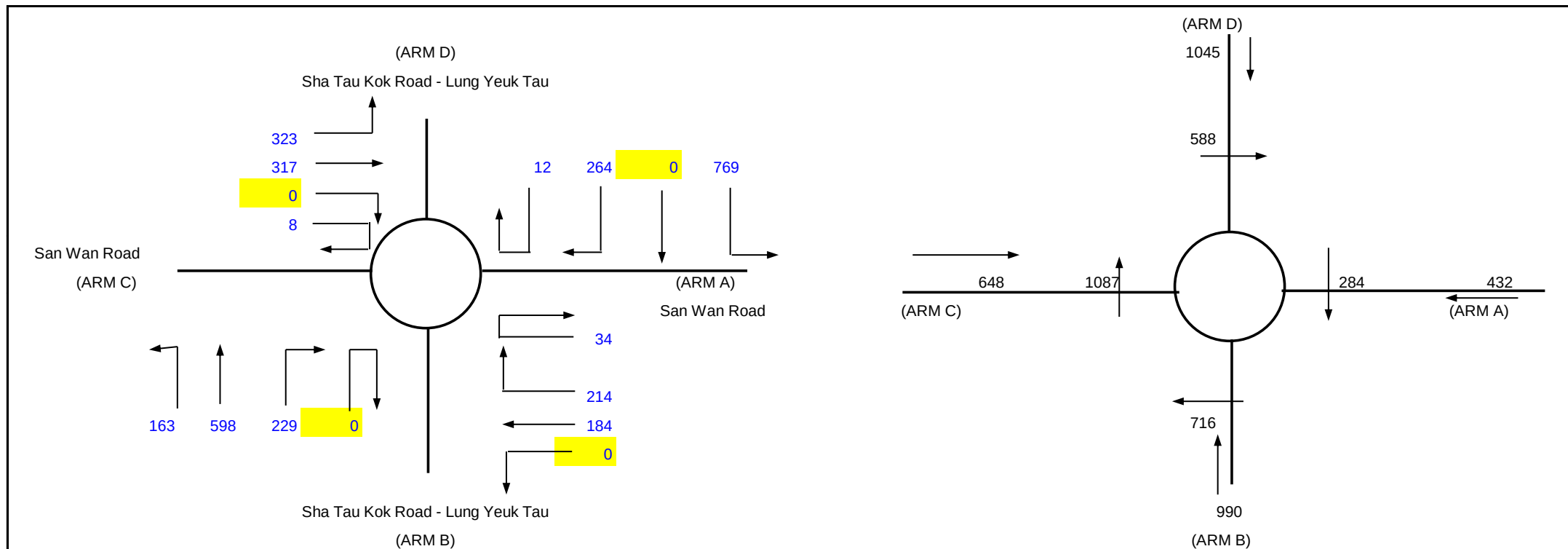
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CHECKED BY:

May-26

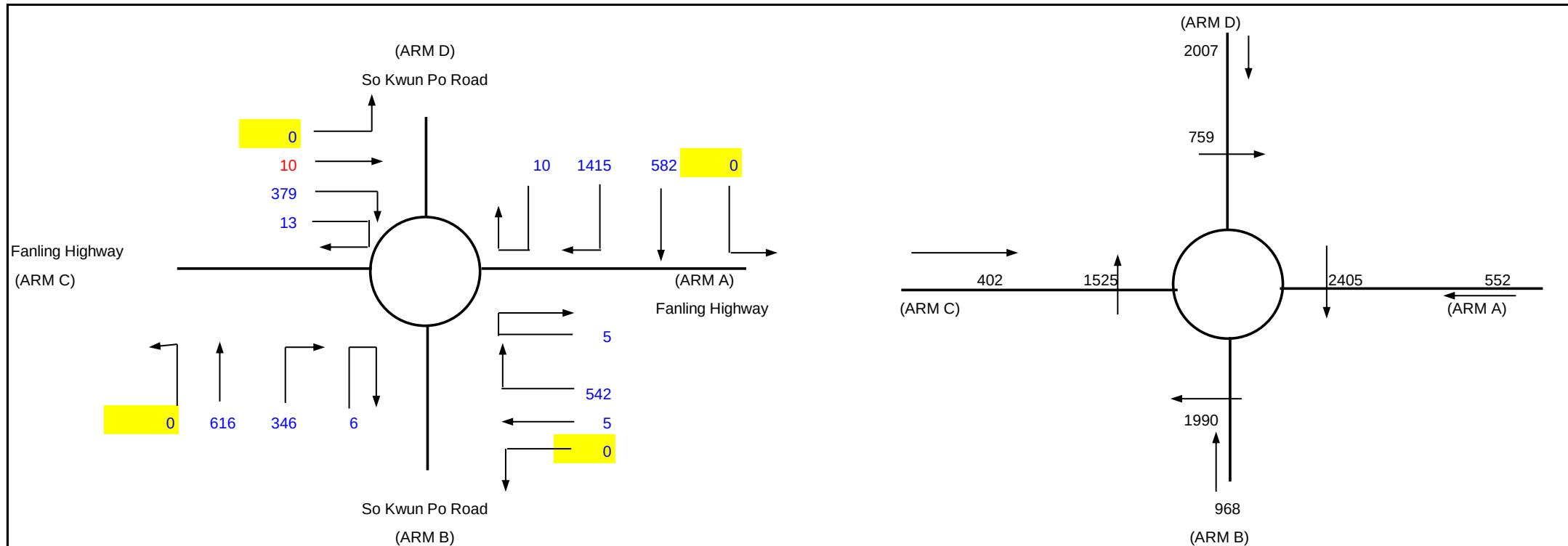
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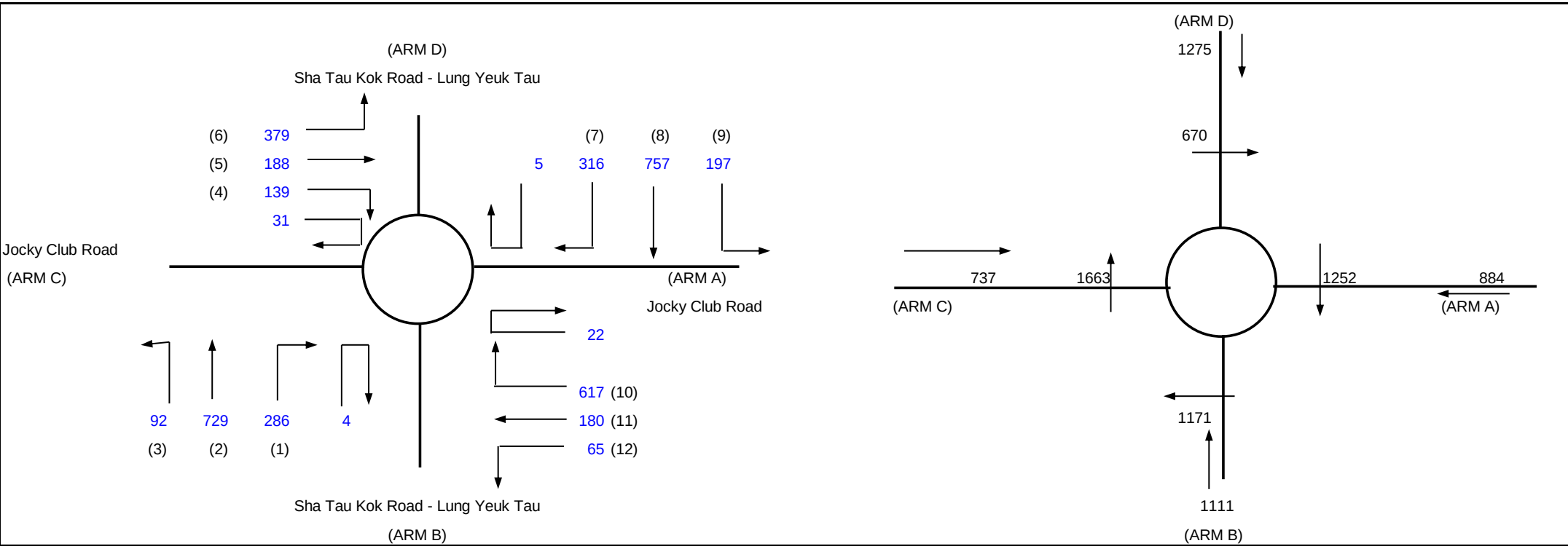


ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	5.9	7.4	7.1	5.6
E = Entry width (m)	6.9	8.7	8.0	9.3
L = Effective length of flare (m)	7.3	6.7	4.9	10.0
R = Entry radius (m)	30.4	20.8	20.0	100.0
D = Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A = Entry angle (degree)	15.5	29.5	13.0	11.5
Q = Entry flow (pcu/h)	432	990	648	1045
Qc = Circulating flow across entry (pcu/h)	284	716	1087	588
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2 = V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M = EXP((D-60)/10)	0.53	0.53	0.53	0.53
F = 303*X2	1998	2485	2323	2210
Td = 1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc = 0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe = K(F-Fc*Qc)	1937	1966	1648	1994
				Total In Sum = 1400 PCU
DFC = Design flow/Capacity = Q/Qe	0.22	0.50	0.39	0.52
				DFC of Critical Approach = 0.52

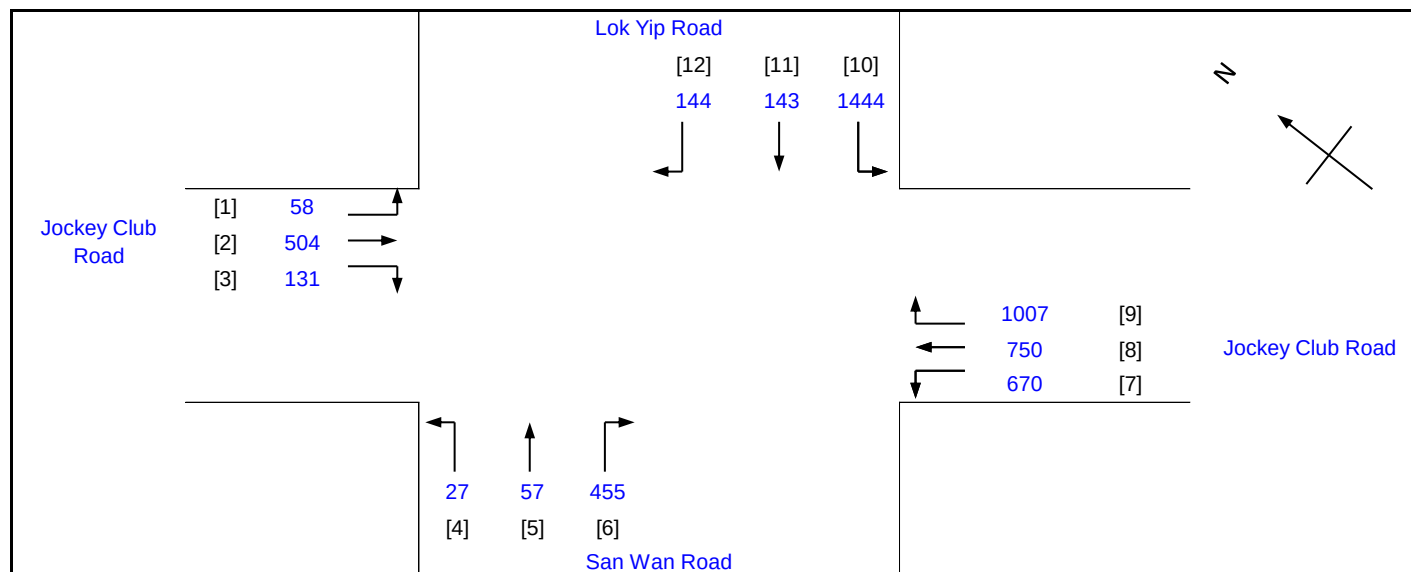
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn G - Fanling Highway/ So Kwun Po Road Roundabout	2030 Design Traffic Flow (AM Peak)	FILENAMI StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	4.7	6.8	3.0	8.2
E = Entry width (m)	6.5	9.8	7.6	11.6
L = Effective length of flare (m)	76.0	38.0	35.0	25.0
R = Entry radius (m)	73.0	34.0	64.0	18.0
D = Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A = Entry angle (degree)	30.0	45.0	60.0	75.0
Q = Entry flow (pcu/h)	552	968	402	2007
Qc = Circulating flow across entry (pcu/h)	2405	1990	1525	759
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2 = V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M = EXP((D-60)/10)	20.09	20.09	20.09	20.09
F = 303*X2	1931	2786	1890	3195
Td = 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc = 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe = K(F-Fc*Qc)	782	1521	1072	2253
				Total In Sum = 1917 PCU
DFC = Design flow/Capacity = Q/Qe	0.71	0.64	0.38	0.89
				DFC of Critical Approach = 0.89



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.3	7.0	7.2	7.4
E = Entry width (m)	7.4	9.0	7.2	8.0
L = Effective length of flare (m)	5.8	12.0	4.0	7.5
R = Entry radius (m)	32.7	60.0	36.0	26.0
D = Inscribed circle diameter (m)	65.0	65.0	65.0	65.0
A = Entry angle (degree)	22.0	25.0	4.0	20.0
Q = Entry flow (pcu/h)	884	1111	737	1275
Qc = Circulating flow across entry (pcu/h)	1252	1171	1663	670
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.03	0.27	0.00	0.13
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.11	1.05
X2 = V + ((E-V)/(1+2S))	7.39	8.30	7.20	7.88
M = EXP((D-60)/10)	1.65	1.65	1.65	1.65
F = 303*X2	2241	2516	2182	2387
Td = 1+(0.5/(1+M))	1.19	1.19	1.19	1.19
Fc = 0.21*Td(1+0.2*X2)	0.62	0.66	0.61	0.64
Qe = K(F-Fc*Qc)	1534	1825	1299	2046
Total In Sum = 2016 PCU				
DFC = Design flow/Capacity = Q/Qe	0.58	0.61	0.57	0.62
DFC of Critical Approach = 0.62				



No. of critical vehicular phase per cycle:	N =	4	
Intergreen Period	Stage A - B	I =	9 sec
	Stage B - C	I =	8 sec
	Stage C - D	I =	7 sec
	Stage D - A	I =	8 sec
Cycle time	C =	112	sec
Sum(y)	Y =	0.602	
Loss time	L =	28	sec
Total Flow	=	5390	pcu
Co = $(1.5*L+5)/(1-Y)$	=	118.0	sec
Cm = $L/(1-Y)$	=	70.3	sec
Yult = $0.9-0.0075L$	=	0.690	
R.C.ult = $(Yult-Y)/Y*100\%$	=	14.6	%
Cp = $0.9*L/(0.9-Y)$	=	84.5	sec
Ymax = $1-L/C$	=	0.750	
R.C.(C) = $(0.9*Ymax-Y)/Y*100\%$	=	12.2	%

Existing Method of Control

Figure 1 consists of four diagrams labeled A, B, C, and D, each illustrating a different method of traffic control at a T-junction. The junction is formed by Jockey Club Road (horizontal) and San Wan Road (vertical). A north arrow is present in diagram A.

- Diagram A:** Shows a roundabout with a northbound lane (1), a southbound lane (2), and a roundabout lane (3). A north arrow is present.
- Diagram B:** Shows a roundabout with a northbound lane (1), a southbound lane (2), and a roundabout lane (3). A north arrow is present.
- Diagram C:** Shows a roundabout with a northbound lane (1), a southbound lane (2), and a roundabout lane (3). A north arrow is present.
- Diagram D:** Shows a roundabout with a northbound lane (1), a southbound lane (2), and a roundabout lane (3). A north arrow is present.

[illegible]

	Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)	
	1,2	A	3.3	1	1	15			2085	58	172		230	0.25	2034			2034	0.113	0.113		16	16	0.793	34	60	
	2	A	3.3	1	1				2085		236		236	0.00	2085			2085	0.113				16	16	0.793	35	59
	2,3	A	3.3	1	1	20			2085		95	131	226	0.58	1998			1998	0.113				16	16	0.793	34	60
	9	B	3.5	2	1	25			2105			601	601	1.00	1986			1986	0.303				42	42	0.807	62	37
	8,9	B	3.5	2	1	30			2105		211	406	617	0.66	2038			2038	0.303				42	42	0.807	64	37
	7,8	B	3.5	2	1	20			2105	91	539		630	0.14	2082			2082	0.303				42	42	0.807	65	37
	7	B	3.5	2	1	15			2105	579			579	1.00	1914			1914	0.303	0.303			42	42	0.807	60	37
	12	C	3.2	4	1	20			2075	144			144	1.00	1930			1930	0.075				10	10	0.836	27	86
	11	C	3.2	4	1				2075		143		143	0.00	2075			2075	0.069	0.069			10	10	0.772	24	68
	10	B,C	3.2	3,4	2	15			4150			1444	1444	1.00	3773			3773	0.383				53	61	0.703	51	20
	4,5	D	3.2	5	1	15			2075	27	57		84	0.32	2010			2010	0.042				6	16	0.292	11	44
	5,6	D	3.2	5	1	25			2075		0	229	229	1.00	1958			1958	0.117	0.117			16	16	0.819	36	64
	6	D	3.2	5	1	20			2075			226	226	1.00	1930			1930	0.117				16	16	0.819	35	65

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NOTE: O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

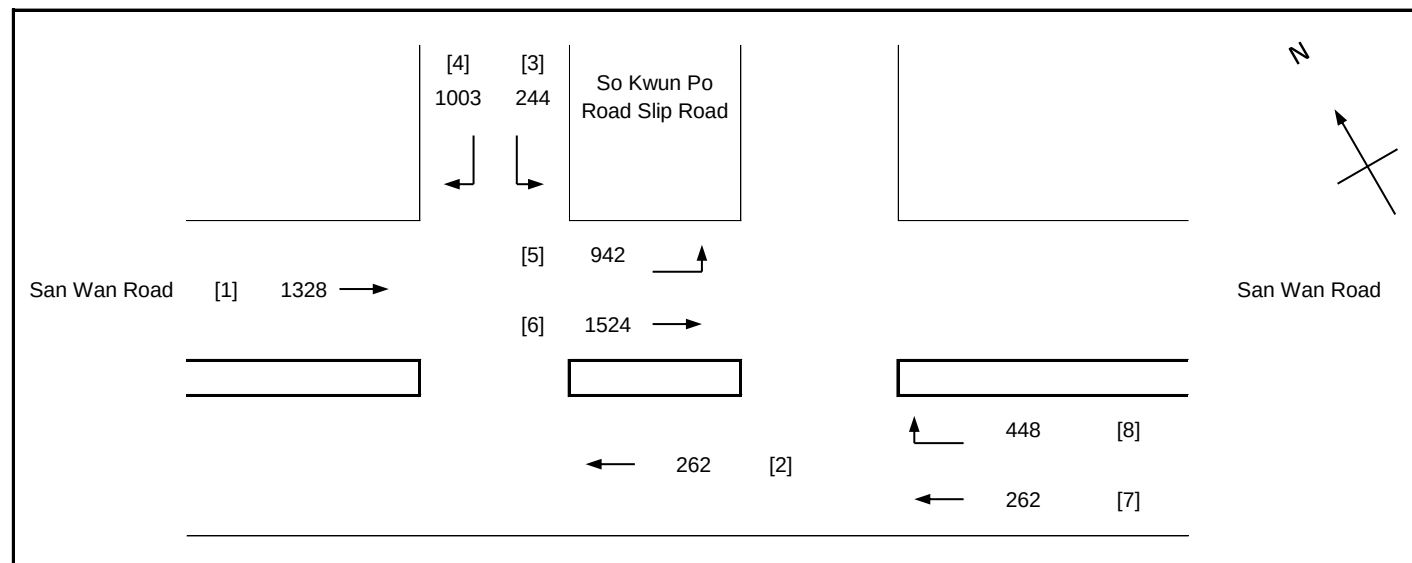
SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories				Prepared By:	JK
				Checked By:	SY
Jn E - San Wan Road / So Kwun Po Road Slip Road		2030 Design Traffic Flow (PM Peak)		Project No.: 31068	Reviewed By: AW
					2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period	Stage A - B	I =	0 sec
	Stage B - C	I =	7 sec
	Stage C - D	I =	0 sec
	Stage D - A	I =	7 sec
Cycle time	C =	96	sec
Sum(y)	Y =	0.829	
Loss time	L =	12	sec
Total Flow	=	6013	pcu
Co = $(1.5 * L + 5) / (1 - Y)$	=	134.6	sec
Cm = $L / (1 - Y)$	=	70.2	sec
Yult = $0.9 - 0.0075L$	=	0.810	
R.C.ult = $(Yult - Y) / Y * 100\%$	=	-2.3	%
Cp = $0.9 * L / (0.9 - Y)$	=	152.5	sec
Ymax = $1 - L / C$	=	0.875	
R.C.(C) = $(0.9 * Ymax - Y) / Y * 100\%$	=	-5.0	%

Existing Method of Control

Figure 1 consists of four diagrams labeled A, B, C, and D, illustrating different traffic control methods at a T-junction. Each diagram shows a main road (bottom) and a side road (top) labeled 'SAR (VAN ROAD)'. A north arrow is present in diagram A. Diagram A shows a standard T-junction with a roundabout. Diagram B shows a T-junction with a roundabout and a pedestrian crossing. Diagram C shows a T-junction with a roundabout and a pedestrian crossing. Diagram D shows a T-junction with a roundabout and a pedestrian crossing.

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	29	5	OK
7		B,C	7	6	41	6	OK
8		D,A	7	5	33	5	OK
9		D	6	7	14	7	OK

	Move- ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight- Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1328		1328	0.00	4190			4190	0.317	0.317		32	32	0.951	77	51
←	2	A,B	3.7		2				4250		262		262	0.00	4250			4250	0.062			6	32	0.185	12	23
↙	3	C,D	3.5		1	20			2105			1003	1003	1.00	1958			1958	0.512	0.512		52	52	0.946	93	45
↘	4	C,D	3.7		1	15			2125	244			244	1.00	1932			1932	0.126			13	52	0.233	15	12
↗	5	B,C	3.7		1	15			2125			942	942	1.00	1932			1932	0.488			49	49	0.955	103	56
→	6	B,C	3.7		2				4250		1524		1524	0.00	4250			4250	0.359			36	49	0.703	50	19
↖	8	D,A	3.5		1	20			2105		448		448	0.00	2105			2105	0.213			22	36	0.568	37	25
←	7	A,B,C	3.5		2				4210		262		262	0.00	4210			4210	0.062			6	64	0.093	6	6

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NOTE : O - OPPOSING TRAFFIC

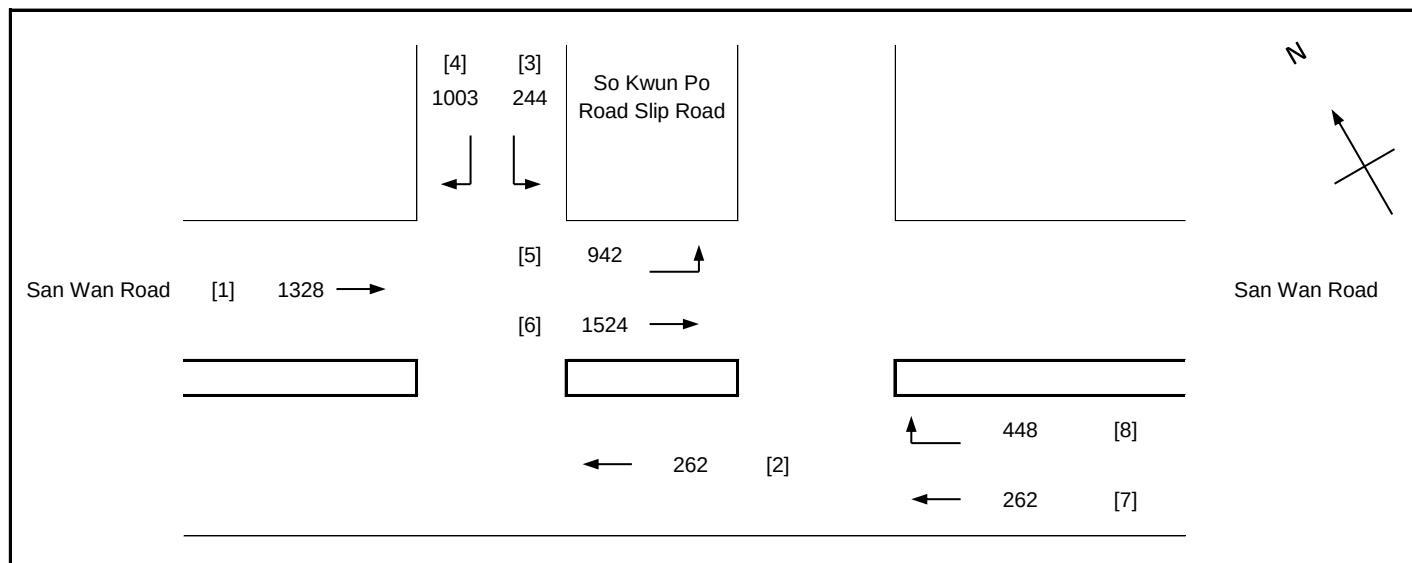
N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED		TRAFFIC SIGNAL CALCULATION		INITIALS	DATE
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90) in D.D 51, Fanling, New Territories			Prepared By:	JK	2026/5/27
			Checked By:	SY	2026/5/27
Jn E - San Wan Road / So Kwun Po Road Slip Road	2030 Design Traffic Flow (PM Peak) (with Local Widening)		Project No.: 31068	Reviewed By:	AW 2026/5/27



No. of critical vehicular phase per cycle:	N =	2	
Intergreen Period	Stage A - B	I =	0 sec
	Stage B - C	I =	7 sec
	Stage C - D	I =	0 sec
	Stage D - A	I =	7 sec
Cycle time	C =	96	sec
Sum(y)	Y =	0.573	
Loss time	L =	12	sec
Total Flow	=	6013	pcu
Co = (1.5*L+5)/(1-Y)	=	53.9	sec
Cm = L/(1-Y)	=	28.1	sec
Yult = 0.9-0.0075L	=	0.810	
R.C.ult = (Yult-Y)/Y*100%	=	41.3	%
Cp = 0.9*L/(0.9-Y)	=	33.0	sec
Ymax = 1-L/C	=	0.875	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	37.4	%

Existing Method of Control

Figure 10-10 consists of four diagrams (A, B, C, D) illustrating different traffic control methods at a T-intersection where a side road (SAN WAN ROAD) meets a main road. The diagrams show the flow of traffic and the placement of traffic signs and signals.

- Diagram A:** Shows a roundabout with a north arrow. Traffic flows from the side road into the main road. The roundabout is controlled by a single traffic light (1) and a stop sign (2). The main road has a traffic light (3) and a stop sign (4). The side road has a stop sign (5) and a yield sign (6).
- Diagram B:** Shows a roundabout with a north arrow. Traffic flows from the side road into the main road. The roundabout is controlled by a single traffic light (1) and a stop sign (2). The main road has a traffic light (3) and a stop sign (4). The side road has a stop sign (5) and a yield sign (6).
- Diagram C:** Shows a roundabout with a north arrow. Traffic flows from the side road into the main road. The roundabout is controlled by a single traffic light (1) and a stop sign (2). The main road has a traffic light (3) and a stop sign (4). The side road has a stop sign (5) and a yield sign (6).
- Diagram D:** Shows a roundabout with a north arrow. Traffic flows from the side road into the main road. The roundabout is controlled by a single traffic light (1) and a stop sign (2). The main road has a traffic light (3) and a stop sign (4). The side road has a stop sign (5) and a yield sign (6).

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
6		A,B	7	5	43	5	OK
7		B,C	7	6	63	6	OK
8		D,A	7	5	11	5	OK
9		D	6	7	6	7	OK

	Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A,B	3.4		2				4190		1328		1328	0.00	4190			4190	0.317	0.317		46	46	0.661	46	20
←	2	A,B	3.7		2				4250		262		262	0.00	4250			4250	0.062			9	46	0.129	9	14
↙	4	C,D	3.5		2	20			4210			1003	1003	1.00	3916			3916	0.256	0.256		38	38	0.647	40	24
↘	3	C,D	3.7		1	15			2125	244			244	1.00	1932			1932	0.126			19	38	0.319	20	21
↗	5	B,C	3.7		1	15			2125			942	942	1.00	1932			1932	0.488			71	71	0.659	33	8
→	6	B,C	3.7		2				4250		1524		1524	0.00	4250			4250	0.359			53	71	0.485	26	6
↖	8	D,A	3.5		1	20			2105		448		448	0.00	2105			2105	0.213			31	14	1.459	239	486
←	7	A,B,C	3.5		2				4210		262		262	0.00	4210			4210	0.062			9	86	0.069	2	1

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NOTE : O - OPPOSING TRAFFIC

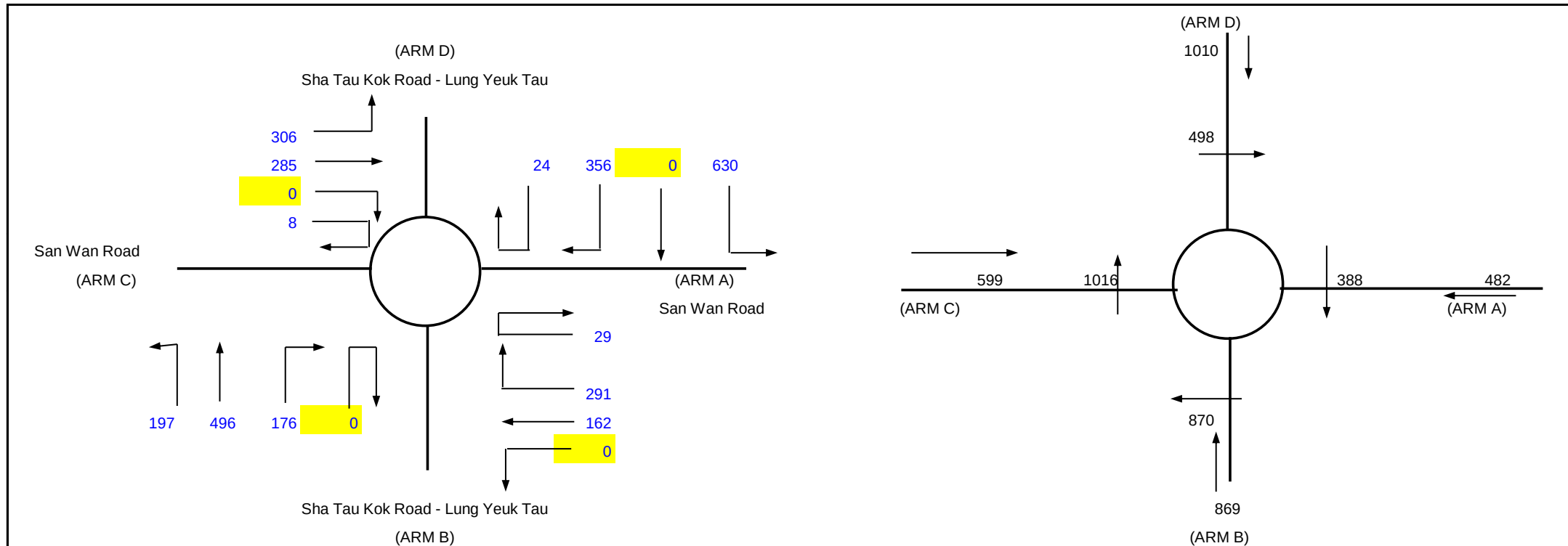
N - NEAR SIDE LANE

SG - STEADY GREEN FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

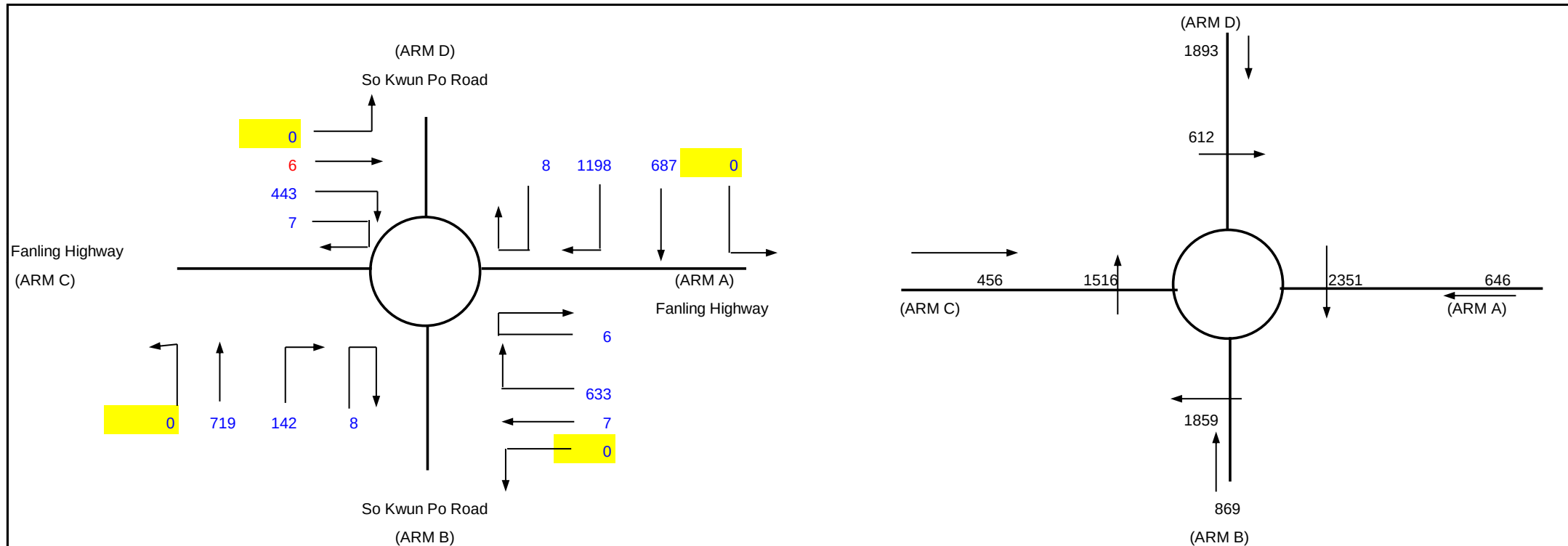
QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn F - Sha Tau Kok Road - Lung Yeuk Tau / San Wan Road	2030 Design Traffic Flow (PM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		



ARM		A	B	C	D
INPUT PARAMETERS:					
V	= Approach half width (m)	5.9	7.4	7.1	5.6
E	= Entry width (m)	6.9	8.7	8.0	9.3
L	= Effective length of flare (m)	7.3	6.7	4.9	10.0
R	= Entry radius (m)	30.4	20.8	20.0	100.0
D	= Inscribed circle diameter (m)	53.7	53.7	53.7	53.7
A	= Entry angle (degree)	15.5	29.5	13.0	11.5
Q	= Entry flow (pcu/h)	482	869	599	1010
Qc	= Circulating flow across entry (pcu/h)	388	870	1016	498
OUTPUT PARAMETERS:					
S	= Sharpness of flare = 1.6(E-V)/L	0.22	0.31	0.29	0.59
K	= 1-0.00347(A-30)-0.978(1/R-0.05)	1.07	1.00	1.06	1.10
X2	= V + ((E-V)/(1+2S))	6.60	8.20	7.67	7.29
M	= EXP((D-60)/10)	0.53	0.53	0.53	0.53
F	= 303*X2	1998	2485	2323	2210
Td	= 1+(0.5/(1+M))	1.33	1.33	1.33	1.33
Fc	= 0.21*Td(1+0.2*X2)	0.65	0.74	0.71	0.68
Qe	= K(F-Fc*Qc)	1865	1852	1701	2062
					Total In Sum = 1285 PCU
DFC	= Design flow/Capacity = Q/Qe	0.26	0.47	0.35	0.49
					DFC of Critical Approach = 0.49

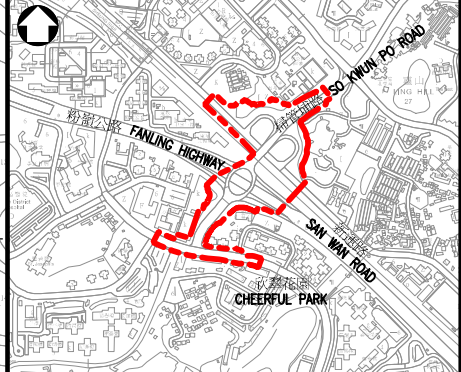
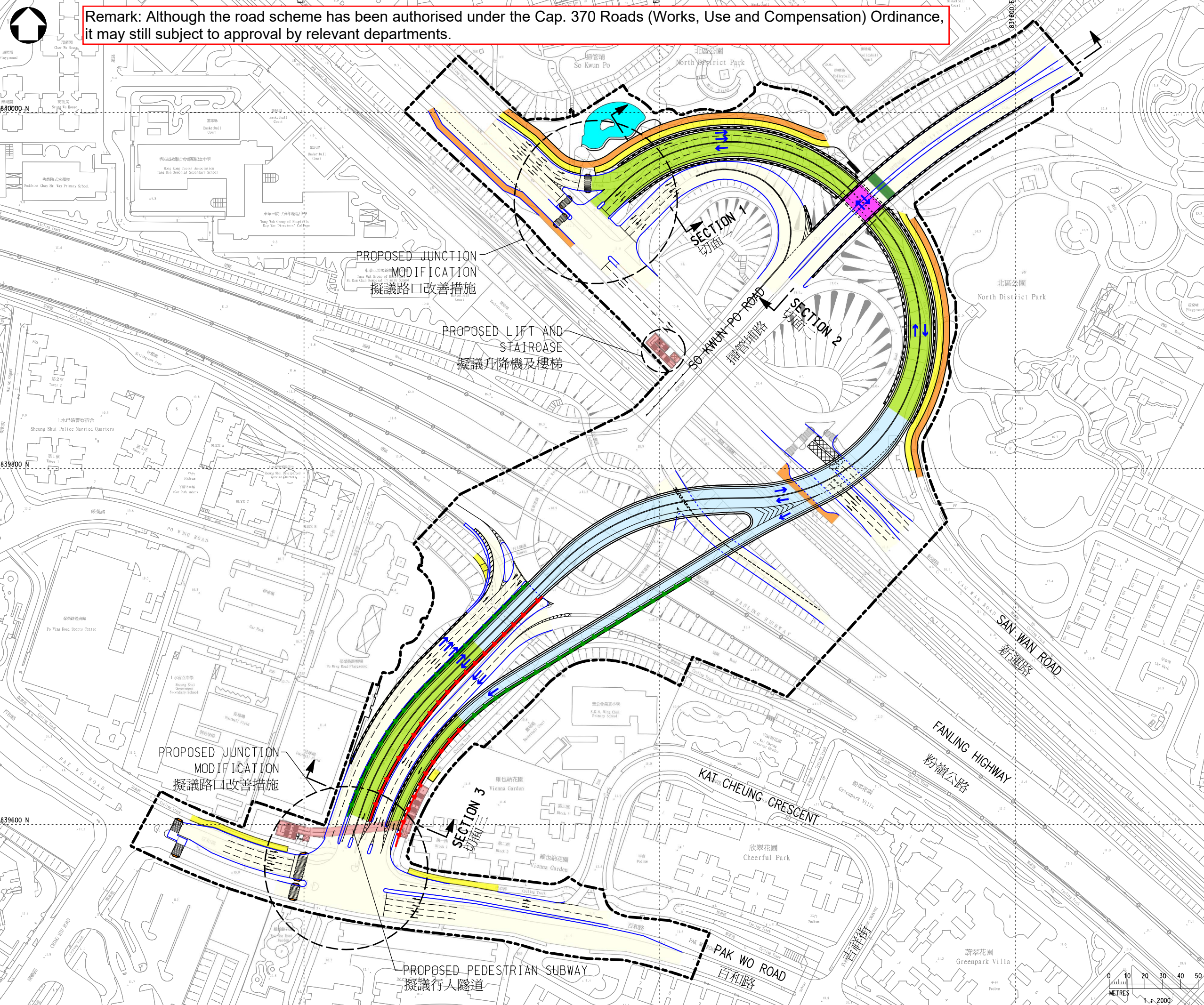
Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and S	PROJECT NO.: 31068	PREPARED BY:		May-26
Jn G - Fanling Highway/ So Kwun Po Road Roundabout	2030 Design Traffic Flow (PM Peak)	FILENAME: StreetName1-StreetName2.xls	CHECKED BY:	May-26
	REFERENCE NO.:	REVIEWED BY:		



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	4.7	6.8	3.0	8.2
E = Entry width (m)	6.5	9.8	7.6	11.6
L = Effective length of flare (m)	76.0	38.0	35.0	25.0
R = Entry radius (m)	73.0	34.0	64.0	18.0
D = Inscribed circle diameter (m)	90.0	90.0	90.0	90.0
A = Entry angle (degree)	30.0	45.0	60.0	75.0
Q = Entry flow (pcu/h)	646	869	456	1893
Qc = Circulating flow across entry (pcu/h)	2351	1859	1516	612
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.04	0.13	0.21	0.21
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.04	0.97	0.93	0.84
X2 = V + ((E-V)/(1+2S))	6.37	9.19	6.24	10.54
M = EXP((D-60)/10)	20.09	20.09	20.09	20.09
F = 303*X2	1931	2786	1890	3195
Td = 1+(0.5/(1+M))	1.02	1.02	1.02	1.02
Fc = 0.21*Td(1+0.2*X2)	0.49	0.61	0.48	0.67
Qe = K(F-Fc*Qc)	809	1599	1076	2336
				Total In Sum = 1964 PCU
DFC = Design flow/Capacity = Q/Qe	0.80	0.54	0.42	0.81
				DFC of Critical Approach = 0.81

Appendix B

Junction Improvement By CEDD



- 圖例 LEGEND:
- LIMIT OF WORKS AREA
 - PROPOSED 2-METRE TO 5-METRE VERTICAL NOISE BARRIER WITH 2-METRE CANTILEVER
 - PROPOSED 2-METRE TO 5-METRE VERTICAL NOISE BARRIER
 - PROPOSED RETAINING WALL
 - PROPOSED LIFT AND STAIRCASE
 - PROPOSED AT-GRADE FOOTPATH
 - PROPOSED CYCLE TRACK
 - PROPOSED AT-GRADE CARRIAGEWAY
 - PROPOSED ELEVATED ROAD FOR SO KWUN PO LINK
 - PROPOSED AT-GRADE CARRIAGEWAY FOR SO KWUN PO LINK
 - PROPOSED VEHICULAR UNDERPASS FOR SO KWUN PO LINK
 - PROPOSED PEDESTRIAN CROSSING
 - PROPOSED ROAD MARKINGS
 - REPROVISION OF EXISTING ROLLER SKATING RINK
 - RECONSTRUCTION OF EXISTING PEDESTRIAN SUBWAY
 - ASSOCIATED ROAD WORKS
 - TRAFFIC LANE FOR CARRIAGEWAY (ONE ARROW REPRESENTS ONE LANE)

圖則名稱 PLAN TITLE
北區掃管埔(雞嶺)交匯處改善工程
平面及剖面圖
IMPROVEMENT TO SO KWUN PO INTERCHANGE
LAYOUT AND SECTION PLAN

三張之第一張
SHEET 1 OF 3

附錄一
ANNEX A

比例 SCALE
A3 1 : 2000
或如圖示 OR AS SHOWN

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT
DEPARTMENT
北拓處
NORTH DEVELOPMENT OFFICE

CEDD

Appendix C

Loading/unloading Bay Analysis

AXON CONSULTANCY LIMITED

QUEUEING ASSESSMENT (3 BAYS & 4 WAITING SPACES)

Traffic Impact Assessment for Section 16 Planning Application of Proposed Concrete Batching Plant at DD51 Lot 4433 Section 89 RP (S89) and Section 90 RP (S90), Fanling

Arrival Rate Estimate

Max. Trip Attraction Rate	=	20 veh/hr
Peak 15 Minutes Arrival Rate	=	5.00 veh/15mins
Peak Arrival Rate (A)	=	0.33 veh/min

Total Loading Time (say)

	=	300 s
Average Servicing Rate (S)	=	60s / 300 x 3 veh/min
	=	0.60 veh/min

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

$$P(n) = p^n \times P(0) = p^n \times (1-p)$$

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

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

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

where
n = number of units in the system
p = A/S = 0.55556
P(n) = probability of the system being at state n

Probability of an idle bay

$$\begin{aligned} P(0) &= 1 / [(1 + p + p^2 / 2) + p^3 / (6 - 2p)] \\ &= 1 / [(1 + 0.55556 + 0.55556^2 / 2) + 0.55556^3 / (6 - 2 \times 0.55556)] \\ &= 57.308\% \end{aligned}$$

Probability of 1 bay is in use

$$P(1) = 0.55556^1 (0.57308) / 1! = 31.838\%$$

Probability of 2 bays are in use

$$P(2) = 0.55556^2 (0.57308) / 2! = 8.844\%$$

Probability of 3 bays are in use

$$P(3) = 0.55556^3 (0.57308) / 3! = 1.638\%$$

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

$$P(4) = 0.55556^4 (0.57308) / 3! (3^1) = 0.303\%$$

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

$$P(5) = 0.55556^5 (0.57308) / 3! (3^2) = 0.056\%$$

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

$$P(6) = 0.55556^6 (0.57308) / 3! (3^3) = 0.010\%$$

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

$$P(7) = 0.55556^7 (0.57308) / 3! (3^4) = 0.002\%$$

Probability of 7 or less trucks in the system

$$\begin{aligned} &= P(0) + P(1) + P(2) + P(3) + P(4) + P(5) + P(6) + P(7) \\ &= 0.57308 + 0.31838 + 0.08844 + 0.01638 + 0.00303 + \\ &= 0.00056 + 0.0001 + 0.00002 \\ &= 99.999\% \end{aligned}$$

Probability of more than 7 trucks in the system

$$\begin{aligned} &= 1 - 0.99999 \\ &= 0.00001 \end{aligned}$$

The chances that traffic will queue up is less than

0.001%