Appendix I

Revised Traffic Impact Assessment

Proposed Concrete Batching Plant at 13 - 17 Wah Sing Street, Kwai Chung

Traffic Impact Assessment
Final Report
January 2025

Prepared by: CKM Asia Limited

Proposed Concrete Batching Plant at 13 - 17
Wah Sing Street, Kwai Chung

CONTENTS

Proposed Concrete Batching Plant at 13 - 17
Wah Sing Street, Kwai Chung

TABLES

NUMBER

Proposed Concrete Batching Plant at 13 - 17
Wah Sing Street, Kwai Chung

FIGURES

NUMBER

1.0 INTRODUCTION

Background

1.1 The Subject Site is located at 13 – 17 Wah Sing Street in Kwai Chung. Figure 1.1 shows the location of the Subject Site.

1.2 On 24th May 2024, the Town Planning Board ("TPB") approved the S16 Planning Application of Proposed minor relaxation of plot ratio restriction for Permitted Warehouse Use (excluding Dangerous Goods Godown) in "Industrial" Zone at the Subject Site (TPB ref: A/KC/505) ("the Approved Warehouse"). The Owner now intends to redevelop the Subject Site into a Proposed Concrete Batching Plant ("Proposed Concrete Batching Plant").

1.3 CKM Asia Limited, a traffic and transportation planning consultancy firm, was commissioned by the Owner to conduct a traffic impact assessment in support of the Proposed Concrete Batching Plant. This report presents the findings of the Traffic Impact Assessment.

Structure of Report

1.4 The report is structured as follows:

Chapter One	-	Gives the background of the project;
Chapter Two	-	Describes the existing situation;
Chapter Three	-	Explains the Proposed Concrete Batching Plant and presents the internal transport facilities provided;
Chapter Four	-	Describes the traffic impact analysis;
Chapter Five	-	Gives the overall conclusion.

2.0 EXISTING SITUATION

The Subject Site

2.1 The Subject Site fronts onto Wah Sing Street to the east and Kwai Chung Town Lot 111 RP in DD445 to the west and south.

Public Transport Facilities

2.2 The Subject Site is well-served by public transport facilities, and access to these services is convenient. Details of public transport services operating in the vicinity of the Subject Site are given in Table 2.1 and shown in Figure 2.1.

TABLE 2.1 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE

Route	Routing	Frequency (minutes)
KMB 30	Cheung Sha Wan – Allway Gardens	25 – 30
KMB 31	Tsuen Wan West Station – Shek Lei (Circular)	10 – 20
KMB 31B	Olympic Station – Shek Lei (Tai Loong Street)	12 – 25
KMB 31M	Shek Lei (Lei Pui Street) – Kwai Fong Station	5 –15
KMB 31P(1)	Shek Lei Commercial Complex → Kwai Fong Station	AM Peak
KMB 32	Olympic Station – Shek Wai Kok	20 – 28
KMB 32H	Cheung Shan – Lai Chi Kok	30 – 60
KMB 32M	Kwai Fong Station – Cheung Shan (Circular)	15 – 25
KMB 33A	Mong Kok (Park Avenue) – Tsuen Wan (Nina Tower)	17 – 25
KMB 34	Tsuen Wan (Bayview Garden) – Kwai Shing (Central)	12 – 20
KMB 35A	Tsim Sha Tsui East – On Yam Estate	5 – 20
KMB 35X(2)	On Yam Estate – Tsim Sha Tsui East	AM, PM Peak
KMB 36A	Cheung Sha Wan (Sham Mong Road) – Lei Muk Shue	15 – 30
KMB 36B	Jordan (West Kowloon Station) – Lei Muk Shue	12 – 25
KMB 36M	Kwai Fong Station – Lei Muk Shue	5 – 12
KMB 36X(1)	Lei Muk Shue – Tsim Sha Tsui East (Mody Road)	AM, PM Peak
KMB 37	Kwai Shing (Central) – Olympic Station	12 – 20
KMB 37M	Kwai Hing Station → Kwai Shing Central (Circular)	8 – 20
KMB 38	Kwai Shing (East) – Ping Tin	6 – 20
KMB 38A	Mei Foo – Riviera Gardens	20 – 30
KMB 38B(1)	Riviera Gardens – Shek Mun Estate	AM, PM Peak
KMB 38P(1)	Kwai Shing (Central) – Ping Tin	AM, PM Peak
KMB 40	Laguna City – Tsuen Wan (Belvedere Garden)	11 – 25
KMB 40A(1)	Ping Tin – Kwai Hing Station	AM, PM Peak
KMB 40P	Tsuen Wan (Nina Tower) – Kwun Tong Ferry	8 – 30
KMB 40E(1)	Nai Chung – Kwai Chung (Kwai Fong Estate)	AM, PM Peak
KMB 40X	Wu Kai Sha Station – Kwai Chung Estate	6 – 20
KMB 42C	Cheung Hang Estate – Lam Tin Station	5 – 15
KMB 43	Cheung Hong Estate – Tsuen Wan West Station	12 – 20
KMB 43A	Cheung Wang Estate – Shek Lei (Tai Loong Street)	6 – 20
KMB 43D(1)	Cheung Wang Estate → Kwai Shing	AM Peak
KMB 43S(1)	Shek Yam → Hong Kong Science Park	AM Peak
KMB 44M	Tsing Yi Station – Kwai Chung Estate	11 – 20
KMB 46P(2)	Mei Tin – Kwai Fong Station (Circular)	10 – 30
KMB 46X	Mei Foo – Hin Keng	5 – 20
KMB 47A	Kwai Fong (South) – Shui Chuen O	20 – 30
KMB 47X	Kwai Shing (East) – Chun Shek	6 – 20

Note: KMB – Kowloon Motor Bus LWB – Long Win Bus CTB – Citybus GMB – Green Minibus
(1) Monday to Friday. No services on Sundays and Public Holidays
(2) Monday to Saturday. No services on Sundays and Public Holidays
(O) Overnight service

TABLE 2.1 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route	Routing	Frequency (minutes)
KMB 57M	Lai King (North) – Shan King Estate	11 – 30
KMB 58M	Kwai Fong Station – Leung King Estate	3 – 15
KMB 59A	Kwai Fong (Kwai Tsui Estate) – Tuen Mun Pier Head	6 – 60
KMB 61M	Lai King (North) – Yau Oi (South)	8 – 25
KMB 67M	Kwai Fong Station – Siu Hong Court	5 – 20
KMB 69M	Kwai Fong Station – Tin Shui Wai Town Centre	5 – 30
KMB 69P(2)	Tin Shui Wai Station → Kwai Fong Station	AM Peak
KMB 73P(1)	Tai Mei Tuk – Tsuen Wan (Nina Tower)	AM Peak
KMB 73P(1)	Tsuen Wan (Nina Tower) → Tai Mei Tuk	PM Peak
KMB 235M	Kwai Fong Station – On Yam Estate	5 – 15
KMB 237A(2)	Kwai Shing (Central) → Tsim Sha Tsui East (Mody Road)	AM Peak
KMB 240X(1)	Wong Nai Tau – Kwai Hing Station	AM, PM Peak
KMB 260C(1)	Sam Shing Estate – Kwai Fong Station	AM, PM Peak
KMB 265M	Lai Yiu Estate – Tin Heng Estate	5 – 35
KMB 269A(2)	Wetland Park Road → Kwai Chung (Kwai Fong Estate)	AM Peak
KMB 269M	Cho Yiu – Tin Yan Estate	12 – 25
KMB 272P(2)	Tai Po (Fu Heng) – Kwai Hing Station	AM, PM Peak
KMB 290	Choi Ming – Tsuen Wan West Station	10 – 20
KMB 290A	Choi Ming – Tsuen Wan West Station	10 – 25
KMB 290B(1)	Tsuen Wan West Station – Tseung Kwan O Industrial Estate	AM, PM Peak
KMB 290E(1)	Tseung Kwan O Industrial Estate – Tseun Wan West Station	AM, PM Peak
KMB 290X	Lohas Park Station – Tsuen Wan West Station	15 – 35
KMB 935(2)	Shek Lei (Tai Loong Street) – Wan Chai (Fleming Road)	AM, PM Peak
KMB 936	Shek Wai Kok → Causeway Bay (Cotton Path)	AM Peak
KMB 936	Causeway Bay (Cotton Path) → Shek Wai Kok	PM Peak
KMB 936A(2)	Tsuen Wan (Shek Wai Kok) → Causeway Bay (Cotton Path)	AM Peak
KMB 936A(1)	Causeway Bay (Cotton Path) → Lei Muk Shue	PM Peak
KMB N237(O)	Mei Foo – Kwai Shing (Circular)	30
KMB N260(O)	Mei Foo – Tuen Mun Pier Head	20 – 30
KMB N269(O)	Mei Foo – Tin Tsz	10 – 25
KMB N290(O)	Tsuen Wan West Station → Lohas Park Station	2 per day
KMB X42P(1)	Cheung On Estate → Lam Tin Station	AM Peak
LWB A30	Lei Muk Shue – Airport (Ground Transportation Centre)	30 – 60
LWB A32	Airport (Ground Transportation Centre) – Kwai Chung Estate	30 – 60
LWB E32	Asiaworld-Expo – Kwai Fong (South)	11 – 30
LWB E32A	Tung Chung Development Pier – Kwai Fong (South)	12 – 30
LWB NA32(O)	Hzmb Hong Kong Port – Kwai Chung Estate	2 – 3 per day
CTB 930	Tsuen Wan – Exhibition Centre Station	10 – 30
CTB 930B(1)	Kwai Shing (East) → Causeway Bay (Moreton Terrace)	AM Peak
CTB N930(O)	Causeway Bay (Moreton Terrace) → Tsuen Wan	1 per day
CTB N930(O)	Tsuen Wan → Causeway Bay (Moreton Terrace)	2 per day
GMB 83A	Tsuen Wan (Chuen Lung Street) – On Yam Estate	8 – 30
GMB 86	Tsuen Wan West Station – Shek Lei Estate	10 – 20
GMB 86A(O)	Tsuen Wan (Chuen Lung Street) – Shek Lei Estate	15 – 30
GMB 86M	Tsuen Wan (Chuen Lung Street) – Shek Lei Estate	5 – 20
GMB 87K	Kwai Fong Station – Tsuen Wan West Station	6 – 10
GMB 89A	Kwai Hing Station – Tsuen Wan (Ho Pui Street)	8 – 18
GMB 89B	Tsuen Wan West Station – Kwai Shing East Estate	10 – 12
GMB 89M	Kwai Fong Station – Kwai Shing East Estate	5 – 15
GMB 89P	Kwai Chung (Shek Tau Street) – Kwai Fong (Circular)	15

Note: KMB – Kowloon Motor Bus LWB – Long Win Bus CTB – Citybus GMB – Green Minibus
(1) Monday to Friday. No services on Sundays and Public Holidays
(2) Monday to Saturday. No services on Sundays and Public Holidays
(O) Overnight service

TABLE 2.1 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route	Routing	Frequency (minutes)
GMB 89S	Kwai Fong Station – Kwai Shing Circuit (Circular)	5 – 15
GMB 94	Shek Wai Kok Estate – Kwai Shing Circuit	8 – 15
GMB 94A	Lei Muk Shue Estate – Kwai Shing Circuit	10 – 15
GMB 302	Hong Kong Garden – Kwai Fong Station	5 – 30
GMB 302	Bellagio – Kwai Fong Station	AM Peak
GMB 313	Fuk Loi Estate – Princess Margaret Hospital	6 – 11
GMB 401	Tsing Yi Ferry Terminus – Shek Yam Estate	7 – 10
GMB 403	Shek Lei Estate – Sha Tin Wai (Circular)	20
GMB 403P	Shek Lei Estate – Shatin Town Centre	6 – 20
GMB 403X	Tai Wai Station – Shek Lei Estate (Circular)	12 – 15
GMB 406(1)	Shek Lei Estate – Kwai Shing Circuit (Circular)	AM Peak
GMB 407	Cheung Wang Estate – Princess Margaret Hospital	4 – 10
GMB 410	Shek Yam Estate – Princess Margaret Hospital	15 – 20

Note: KMB – Kowloon Motor Bus LWB – Long Win Bus CTB – Citybus GMB – Green Minibus
(1) Monday to Friday. No services on Sundays and Public Holidays
(2) Monday to Saturday. No services on Sundays and Public Holidays
(O) Overnight service

Pedestrian Facilities

2.3 In the vicinity of the Subject Site, footpaths are provided alongside roads, and footbridges are provided across Kwai Chung Road.

Existing Traffic Flows

2.4 To quantify the existing traffic flows in the vicinity of the Subject Site, manual classified counts were conducted on Thursday, 10th October 2024 at the following junctions:

J01 – Junction of Kwai Chung Road / Kwai On Road / Kwai Yik Road;
J02 – Junction of Tai Lin Pai Road / Kwai On Road;
J03 – Junction of Tai Lin Pai Road / Kung Yip Street;
J04 – Junction of Kung Yip Street / Wah Sing Street;
J05 – Junction of Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road; and
J06 – Junction of Tai Lin Pai Road / San Kwai Street.

2.5 In view that junction of Kwai Chung Road / Tai Lin Pai Road is not a signal controlled or a priority junction, the junction performance assessment is not conducted.

2.6 The existing road network, the locations of these surveyed junctions and the area of influence ("AOI") are shown in Figure 2.2 and the junction layouts are shown in Figures 2.3 – 2.8.

2.7 The traffic counts are classified by vehicle type to enable traffic flows in passenger car units ("pcu") to be calculated. The AM and PM peak hours identified from the surveys are found to be between 0900 – 1000 hours and 1700 – 1800 hours respectively. Figure 2.9 presents the 2024 observed AM and PM peak hour traffic flows in pcu/hour.

Queueing of Taxis for Refilling Liquefied Petroleum Gas ("LPG") at J02

2.8 Since queuing of taxis for refilling liquefied petroleum gas occurs during the PM peak hour along Tai Lin Pai Road northbound near its junction with Kwai On Road, the effect of taxi queueing is only considered for the PM peak hour junction capacity analysis.

2.9 In the junction analysis, the queueing of taxis is regarded as "dead vehicles" occupying part of the slow lane of Tai Lin Pai Road northbound. Despite the presence of the "dead vehicles", the remaining lane width could still serve 2 northbound traffic movements.

Performance of the Surveyed Junctions

2.10 The existing performance of the surveyed junctions are calculated based on the methods outlined in Volume 2 of the Transport Planning and Design Manual ("TPDM"), which is published by the Transport Department. The results of the performance of junctions are summarised in Table 2.2, and detailed calculations of junction performance are found in Appendix A.

TABLE 2.2 EXISTING JUNCTION PERFORMANCE

Ref.	Junction	Type of Junction (Parameter)	AM Peak Hour	PM Peak Hour
J01	Kwai Chung Road / Kwai On Road / Kwai Yik Road	Signal (RC)	36%	42%
J02	Tai Lin Pai Road / Kwai On Road	Priority (RFC)	0.648	0.542[(1)]
J03	Tai Lin Pai Road / Kung Yip Street	Signal (RC)	86%	92%
J04	Kung Yip Street / Wah Sing Street	Priority (RFC)	0.330	0.294
J05	Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road	Signal (RC)	34%	50%
J06	Tai Lin Pai Road / San Kwai Street	Priority (RFC)	0.197	0.148

Note: RC – Reserve Capacity RFC – Ratio of Flow to Capacity
[(1)] The effect of taxi queueing is considered.

2.11 The results in Table 2.2 show that the junctions analysed operate with capacity.

3.0 THE PROPOSED CONCRETE BATCHING PLANT

Development Schedule

3.1 The Proposed Concrete Batching Plant has 4 production lines with peak concrete production capacity of 100m^3/hour/line. Sufficient loading / unloading facilities which meet the operational requirements are provided within the Proposed Concrete Batching Plant.

Vehicular Access Points

3.2 The vehicular access to the Proposed Concrete Batching Plant is provided at Wah Sing Street.

Operation of Proposed Concrete Batching Plant

3.3 The Proposed Concrete Batching Plant has 2 main activities which generate traffic: (a) delivery of concrete from the Proposed Concrete Batching Plant, and (b) delivery of raw materials, such as aggregate, cementitious materials, etc, to the Proposed Concrete Batching Plant.

3.4 Details of vehicle movements related to the concrete production and raw material delivery, are presented in Table 3.1.

TABLE 3.1 DETAILS OF DELIVERY TO / FROM THE PROPOSED CONCRETE BATCHING PLANT

Type of Delivery	Type of Vehicle	Typical Vehicle Dimension (Approx.)	Traffic Generation (veh/hour)		
			Peak Concrete Production (0600 – 1800 hrs)	Peak Raw Material Delivery (1800 – 2300 hrs)	Evening (2300 – 0600 hrs)
Concrete mixer truck [a]					
Concrete	Concrete mixer truck	10m(L) x 2.5m(W)	Max. 40[(1)]	4	2
Raw material delivery truck [b]					
Aggregate/ sand	Aggregate/ sand truck	Heavy Goods Vehicle: 10m(L) x 2.5m(W)	16	40	7
Admixture	Admixture truck		0	1	0
Waste	Waste truck		0	0	2
Cement / PFA	Cement / PFA tanker	Articulated Vehicle: 15.4m(L) x 2.5m(W)	2	6	6
		Total [a] + [b]	58	51	17

Note: [(1)] Maximum concrete production capacity = 100m^3 x 4 production lines ÷ typical capacity of 10m^3 for a concrete mixer truck = 40 nos.

3.5 Table 3.1 shows the following:

- During the peak concrete production, i.e. 0600 to 1800 hours, the Proposed Concrete Batching Plant is expected to operate at its production capacity. A total of 40 concrete mixer trucks and 18 raw material delivery trucks per hour are generated. It should be noted that the peak concrete production normally occurs at the start of the day, and during lunch, but, not throughout the day. However, to be conservative, peak concrete production is assumed for both the AM and PM peak hours.

- The peak raw material delivery period is from 1800 to 2300 hours. Each hour 4 concrete mixers trucks and 47 raw material delivery trucks are generated.

Internal Transport Facilities

3.6 The internal transport facilities provided for the Proposed Concrete Batching Plant are presented in Table 3.2 and the master layout plan is shown in Figure 3.1.

TABLE 3.2 INTERNAL TRANSPORT FACILITIES

Ref.	Type	Dimension	Quantity
Ground Floor			
LP01–LP02	Waiting space	11m(L) x 3.5m(W) x 4.7m(H)	2
LP03	Raw material unloading bay for container	16m(L) x 3.5m(W) x 4.7m(H)	1
LP04–LP07	Concrete mixer truck loading point	11m(L) x 3.5m(W) x 4.7m(H)	4
N/A	Raw material unloading area	N/A	3
		Total	10

Swept Path Analysis

3.7 The CAD-based swept path analysis programme, AUTODESK VEHICLE TRACKING, was used to ensure that all vehicles could enter and leave their respective space / bays, with ease. The swept path analysis drawings are found in Appendix B.

Traffic Management Plan

3.8 The operator will adopt the following measures: (i) the control room will monitor the traffic situation in the Proposed Concrete Batching Plant using CCTVs, (ii) GPS tracking units will be installed in the concrete delivery trucks, (iii) a worker is assigned to monitor the real-time delivery of all raw materials, and (iv) a worker will be deployed at the run-in/out to ensure safe entry and exit of vehicles from the Proposed Concrete Batching Plant.

4.0 TRAFFIC IMPACT

Design Year

4.1 The Proposed Concrete Batching Plant is expected to be completed in 2026, and the assessment year adopted is 2029, i.e. 3 years after the completion. The 2 scenarios for year 2029 assessed are:

(i) Year 2029 AM and PM peak hours without the Concrete Batching Plant;
(ii) Year 2029 AM and PM peak hours with the Concrete Batching Plant

Traffic Forecasting Methodology

4.2 Since the completion year of the Proposed Concrete Batching Plant is same as the Approved Warehouse, which is 2026, the same traffic forecasting methodology adopted for the Approved Warehouse is applied for the Proposed Concrete Batching Plant.

4.3 The 2029 traffic flows used for the junction analysis are produced with reference to the following:

(i) 2026 traffic flows derived based on the NTW2 Base District Traffic Model ("BDTM");
(ii) estimated traffic growth from 2026 to 2029 based on the higher of: (a) 2019 – based Territorial Population and Employment Data Matrix ("TPEDM") data produced by Planning Department ("PlanD") for Kwai Chung District, (b) Projections of Population Distribution 2023-2031 by PlanD, or (c) historic Annual Average Daily Traffic ("AADT") produced by Transport Department ("TD");
(iii) the other developments in the vicinity of the Proposed Concrete Batching Plant; and
(iv) Traffic generated by the Proposed Concrete Batching Plant.

4.4 The (ii) estimated traffic growth from 2026 to 2029, (iii) the other development in the vicinity of the Proposed Concrete Batching Plant and (iv) traffic generated by the Proposed Concrete Batching Plant are presented in the paragraphs below.

Estimated Growth Rate from 2026 to 2029

4.5 The (a) 2019 – based TPEDM data for Kwai Chung District, and the (b) Projections of Population Distribution 2023-2031, and (c) historic AADT are summarised in Tables 4.1 – 4.3 respectively.

TABLE 4.1 2019-BASED TPEDM DATA FOR KWAI CHUNG DISTRICT

Item	TPEDM Estimation / Projection			Annual Growth Rate		
	2019	2026	2031	2019 to 2026	2026 to 2031	2019 to 2031
Population	319,150	315,800	319,700	-0.15%	0.25%	0.01%
Employment	195,950	192,350	183,600	-0.26%	-0.93%	-0.54%

TABLE 4.2 PROJECTIONS OF POPULATION DISTRIBUTION 2023-2031

District	Year 2026	Year 2029	Annual Growth Rate from 2026 to 2029
Kwai Tsing	488,700	483,900	-0.33%

TABLE 4.3 AADT OF THE STATION IN THE VICINITY OF THE SUBJECT SITE

Year \ Station	5426	5430	5608	5629	5809	5828	6005	Overall
2011	15,660	13,720	29,110	14,960	51,600	10,260	70,640	205,950
2012	15,560	13,620	28,620	14,860	49,900	8,740	57,400	188,700
2013	16,220	14,210	28,500	15,490	49,700	9,120	54,130	187,370
2014	15,720	13,100	30,440	15,620	53,080	9,190	57,810	194,960
2015	16,500	10,540	30,090	14,710	54,590	9,370	59,460	195,260
2016	16,960	10,830	30,350	16,400	53,410	10,220	59,380	197,550
2017	17,270	11,030	30,480	16,700	52,580	10,700	60,970	199,730
2018	17,520	11,200	31,330	16,950	54,030	10,860	45,480	187,370
Average Annual Growth								-1.34%

Note: Due to the social events in 2019 and the COVID-19 pandemic thereafter, the 2019 to 2023 AADT are not used
5426 – Kwai On Road (From Tai Lin Pai Road to Kwai Chung Road)
5430 – Tai Lin Pai Road (From Kwai Chung Road Southern Junction to Kwai On Road)
5608 – Kwai Chung Road (From Kwai On Road to Kwai Foo Road)
5629 – Tai Lin Pai Road (From Kwai Cheong Road to Kwai On Road)
5809 – Kwai Chung Road (GL) (From Tai Lin Pai Road to Kwai On Road)
5828 – Tai Lin Pai Road (From Kwai Chung Road Southern Junction to Kwai Cheong Road)
6005 – Kwai Chung Road (From Tai Lin Pai Road to Castle Peak Road - Kwai Chung Interchange)

4.6 Table 4.1 shows that the highest annual growth rate for population is +0.25% and for employment is -0.26%. Table 4.2 shows that the annual growth rate from 2026 to 2029 is -0.33%. Table 4.3 shows that in the historic AADT of the stations between 2011 and 2018 in the vicinity has average annual growth rate of -1.34% per annum. To be conservative, the growth rate of +0.5% per annum is adopted for the traffic growth between 2026 and 2029.

Other Developments in the Vicinity of the Proposed Concrete Batching Plant

4.7 The major planned developments in the vicinity of the Proposed Concrete Batching Plant are summarized in Table 4.4.

TABLE 4.4 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Site	Address	Use	Development Parameters (Approx.)
A	132 – 134 Tai Lin Pai Road (A/KC/467)	Industrial	around 7,035m^2 GFA
B	45 – 51 Tai Lin Pai Road (A/KC/480)	Data Centre	around 24,955m^2 GFA
C	10 – 16 Kwai Ting Road (A/KC/483)	Office and Retail	around 19,480m^2 GFA
D	11-19 Wing Yip Street (A/KC/488)	Data Centre	around 32,735m^2 GFA
E	2 San Kwai Street (A/KC/499)	Public Housing, Retail and Office	Around 800 flats, 360 m^2 Retail GFA and 2300 m^2 Office GFA

4.8 The major planned developments listed in Table 4.4 have been included in the traffic forecast.

Traffic Generation of the Proposed Concrete Batching Plant

4.9 With reference to Table 3.1, the estimated traffic generation of the Proposed Concrete Batching Plant is given in Table 4.5. To be conservative, the peak concrete production is assumed to occur during both the AM and PM peak hours.

TABLE 4.5 TRAFFIC GENERATION OF THE PROPOSED CONCRETE BATCHING PLANT

Item	AM Peak Hour		PM Peak Hour	
	Generation	Attraction	Generation	Attraction
Total in veh/hr [From Table 3.1]	58	58	58	58
PCU Factor	2.5	2.5	2.5	2.5
Total in PCU/Hour	145	145	145	145
	290 (2-way)		290 (2-way)	

4.10 Table 4.5 shows that the Proposed Concrete Batching Plant is expected to generate a total of 116 vehicles (2-way), or equivalent to 290 pcu (2-way) during the AM and PM peak hours.

2029 Traffic Flows

4.11 Year 2029 traffic flows for the following cases are derived:

2029 without the Proposed Concrete Batching Plant [A] = (i) 2026 traffic flows derived with reference to Base District Traffic Model + (ii) estimated total growth from 2026 to 2029, i.e. +0.5% per annum + (iii) traffic generated by other development in the vicinity of the Proposed Concrete Batching Plant

2029 with the Proposed Concrete Batching Plant [B] = [A] + Traffic generated by the Proposed Concrete Batching Plant (Table 4.5)

4.12 The 2029 peak hour traffic flows for the cases without and with the Proposed Concrete Batching Plant, are shown in Figures 4.1 - 4.2, respectively. The ingress / egress routes for the Proposed Concrete Batching Plant are shown in Figure 4.3.

2029 Junction Capacity Analysis

4.13 The 2029 junction capacity analyses for the cases without and with the Proposed Concrete Batching Plant are summarised in Table 4.6 and the detailed calculations are found in Appendix A.

TABLE 4.6 2029 JUNCTION PERFORMANCE

Ref.	Junction	Type of Junction	Parameter	Without the Concrete Batching Plant		With the Concrete Batching Plant	
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
J01[(1)]	Kwai Chung Road / Kwai On Road / Kwai Yik Road	Signal	RC	39%	53%	32%	41%
J02[(1)]	Tai Lin Pai Road / Kwai On Road	Signal	RC	6%	46%	-7%	22%
J03	Tai Lin Pai Road / Kung Yip Street	Signal	RC	77%	81%	52%	81%
J04	Kung Yip Street / Wah Sing Street	Priority	RFC	0.378	0.334	0.677	0.625
J05	Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road	Signal	RC	22%	37%	20%	34%
J06	Tai Lin Pai Road / San Kwai Street	Priority	RFC	0.341	0.225	0.341	0.225

Note: RC – Reserve Capacity RFC – Ratio of Flow to Capacity
[(1)] – Junction layout and control is prior to the implementation of the improvement proposed by Kwai On Factory Estate Redevelopment

4.14 Table 4.6 shows that the junctions analysed have capacity to accommodate the expected traffic growth to 2029 and the traffic generated by the Proposed Concrete Batching Plant, except for J02 Tai Lin Pai Road / Kwai On Road.

Junction Improvement Scheme at J02

4.15 The junction improvement found in Appendix C is proposed by the Kwai On Factory Estate Redevelopment, and includes conversion of the existing priority junction Tai Li Pai Road / Kwai On Road ("J02") into a signalised junction. It is found that with this junction improvement, the RC in 2029 for the case without the Proposed Concrete Batching Plant will be less than 15%. Hence, further improvement ("Further Improvement") is proposed and this involves modification of the road markings and staging plans. The Further Improvement is presented in Figure 4.4.

4.16 The capacity analysis is re-conducted with the Further Improvement and the results are presented in Table 4.7, and detailed calculations are found in Pages 20-21 of Appendix A.

TABLE 4.7 2029 JUNCTION PERFORMANCE WITH FURTHER IMPROVEMENT

Ref.	Junction	Type of Junction	Parameter	Without the Proposed Concrete Batching Plant		With the Proposed Concrete Batching Plant	
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
J02	Tai Lin Pai Road / Kwai On Road	Signal	RC	42%	65%	33%	52%

Note: RC – Reserve Capacity RFC – Ratio of Flow to Capacity

4.17 Table 4.7 shows that J02 with the Further Improvement implemented, could accommodate the expected traffic growth to 2029 and the traffic generated by the Proposed Concrete Batching Plant.

5.0 SUMMARY

5.1 On 24th May 2024, the TPB approved the S16 Planning Application of Proposed minor relaxation of plot ratio restriction for Permitted Warehouse Use (excluding Dangerous Goods Godown) in "Industrial" Zone at 13 – 17 Wah Sing Street in Kwai Chung the Subject Site (TPB ref: A/KC/505). The Owner now intends to redevelop the Subject Site into a Proposed Concrete Batching Plant.

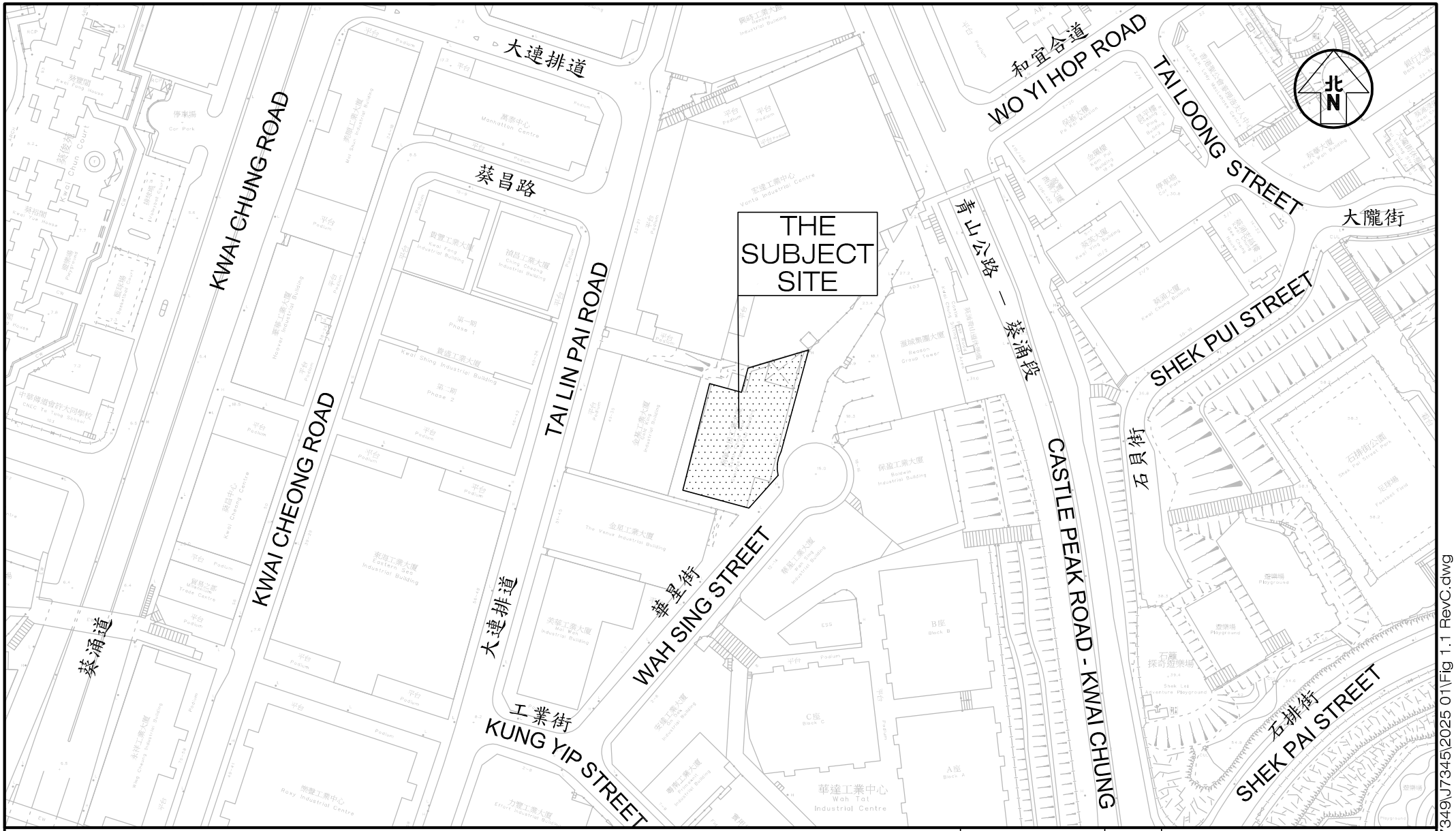
5.2 The Proposed Concrete Batching Plant provides sufficient internal transport facilities meet the operational requirements. The vehicular access to the Proposed Concrete Batching Plant is provided at Wah Sing Street.

5.3 Manual classified counts were conducted at junctions located in the vicinity of the Proposed Concrete Batching Plant in order to establish the peak hour traffic flows. Currently, the junctions operate with capacities during the AM and PM peak hours.

5.4 The Proposed Concrete Batching Plant is expected to be completed by 2026, and the junction capacity analysis is undertaken for year 2029. With the Further Improvement implemented, in addition to the improvement proposed by the Hong Kong Housing Authority, at the junction of Tai Lin Pai Road / Kwai On Road, all junctions analysed are found to have sufficient capacity to accommodate the expected traffic flow in 2029 and the traffic generated by the Proposed Concrete Batching Plant.

5.5 It is concluded that the Proposed Concrete Batching Plant will result in no adverse traffic impact to the surrounding road network. From traffic engineering grounds, the Proposed Concrete Batching Plant is acceptable.

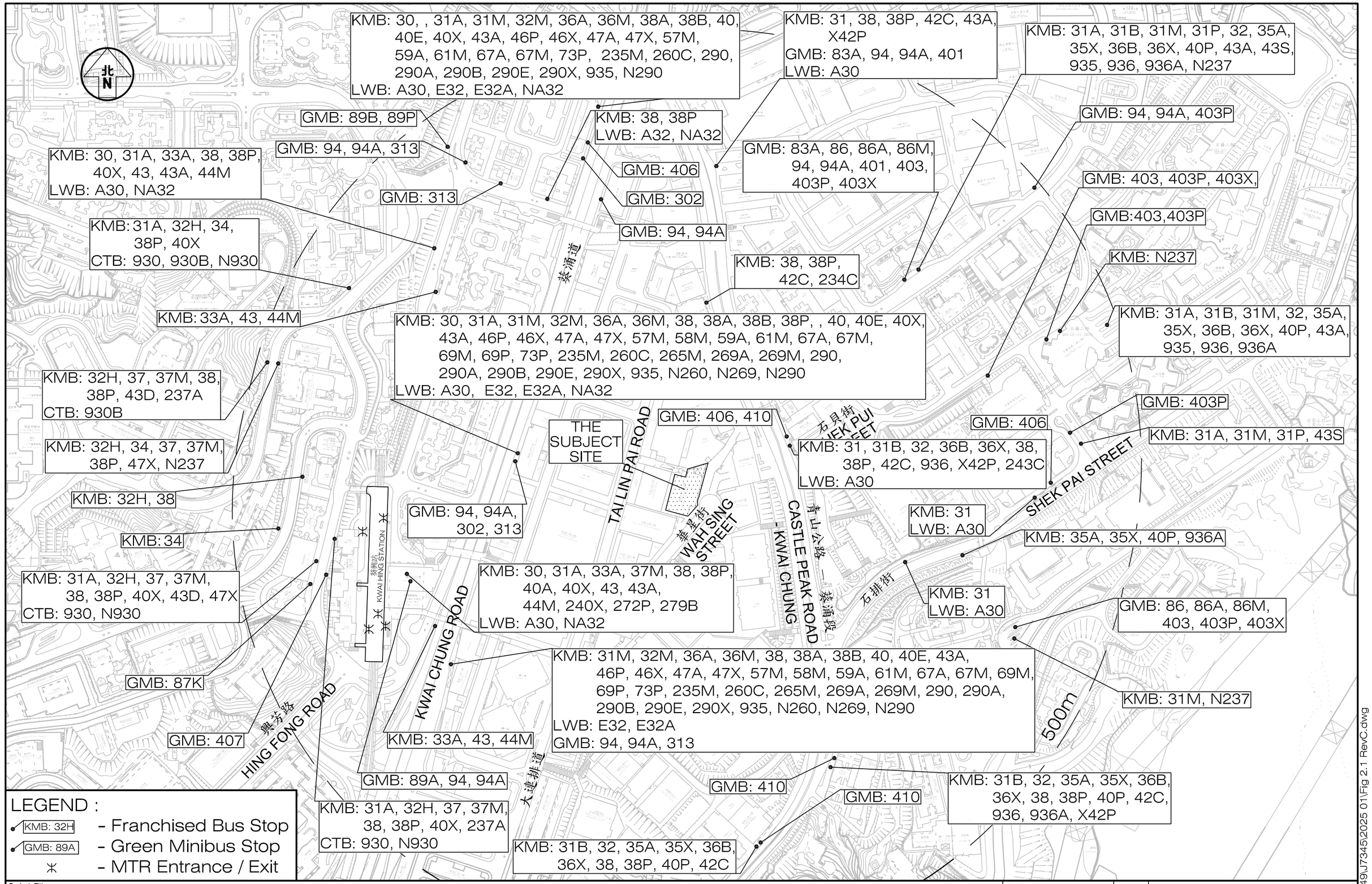
Figures



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 1.1	Revision C
Figure Title: LOCATION OF THE SUBJECT SITE		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: 1 : 2,000	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

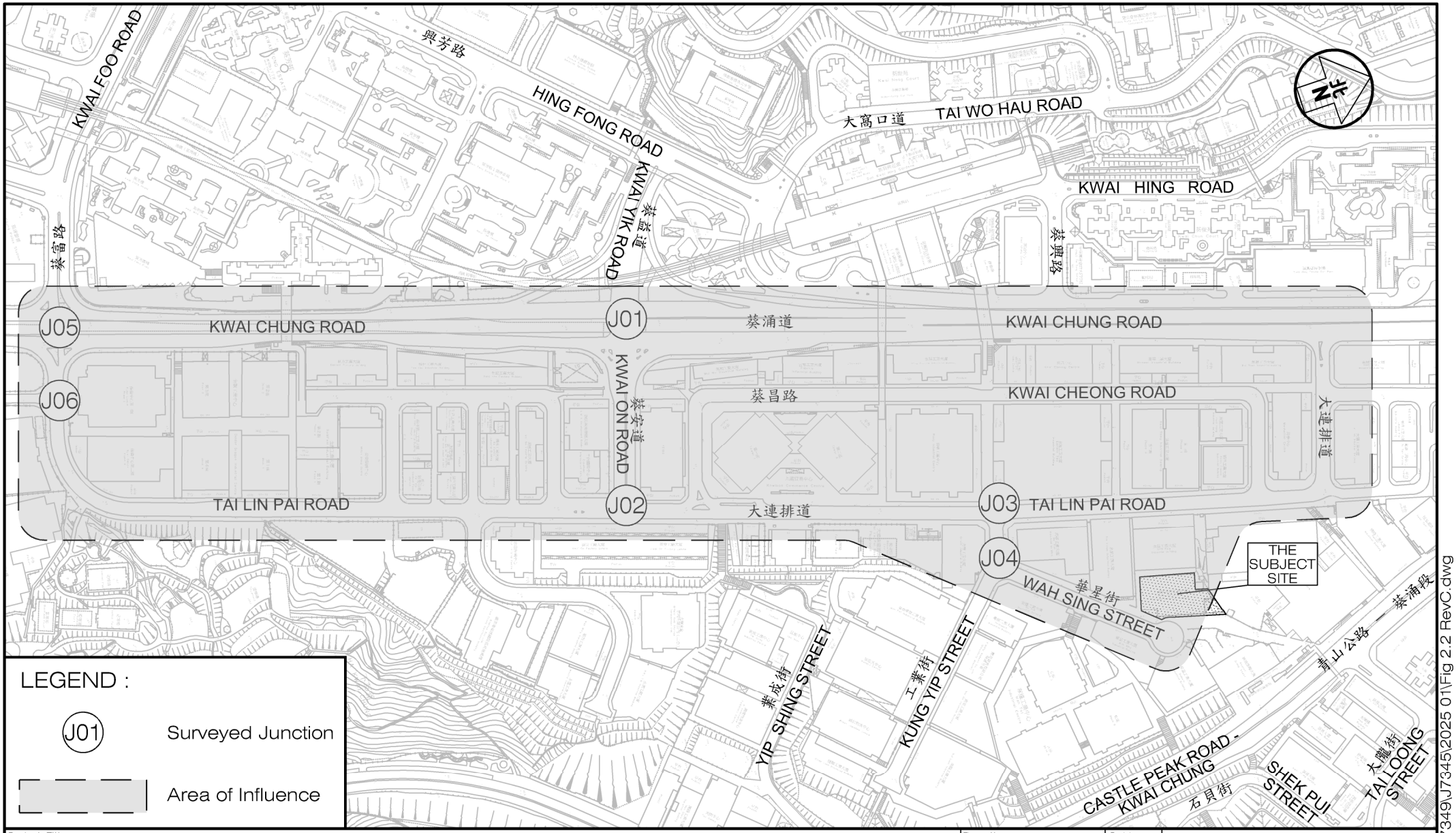
T:\JOB\J7300-J7349\J7345\2025 01\Fig 1.1 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 2.1	Revision C
Figure Title: PUBLIC TRANSPORT FACILITIES IN THE VICINITY OF THE SUBJECT SITE		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A3: 1 : 4,000	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

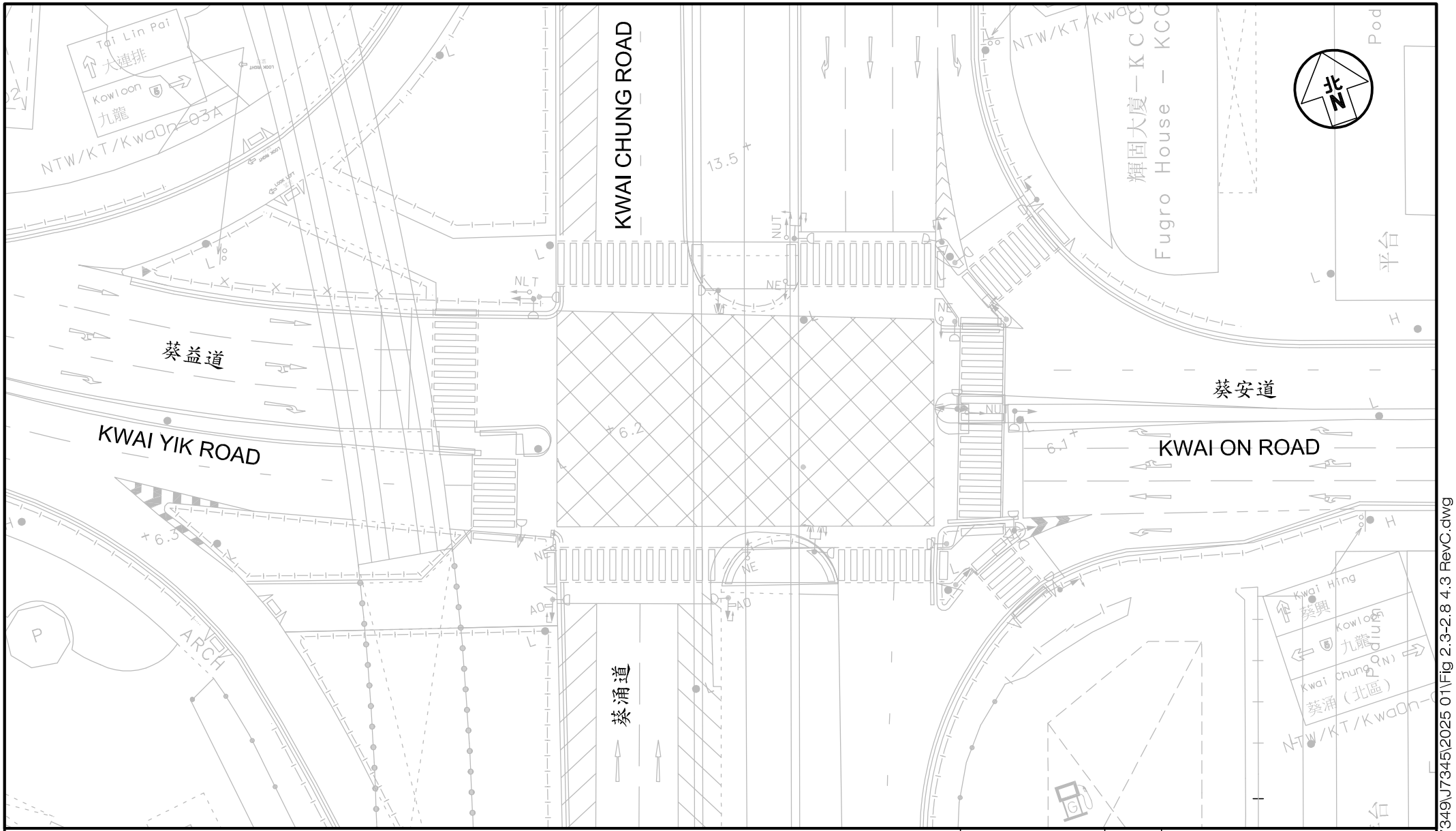
T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.1 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 2.2	Revision C
Figure Title: LOCATION OF SURVEYED JUNCTIONS AND AREA OF INFLUENCE		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: 1 : 4,000	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOBs\J730C-J7349\J7345\2025 01\Fig 2.2 RevC.dwg

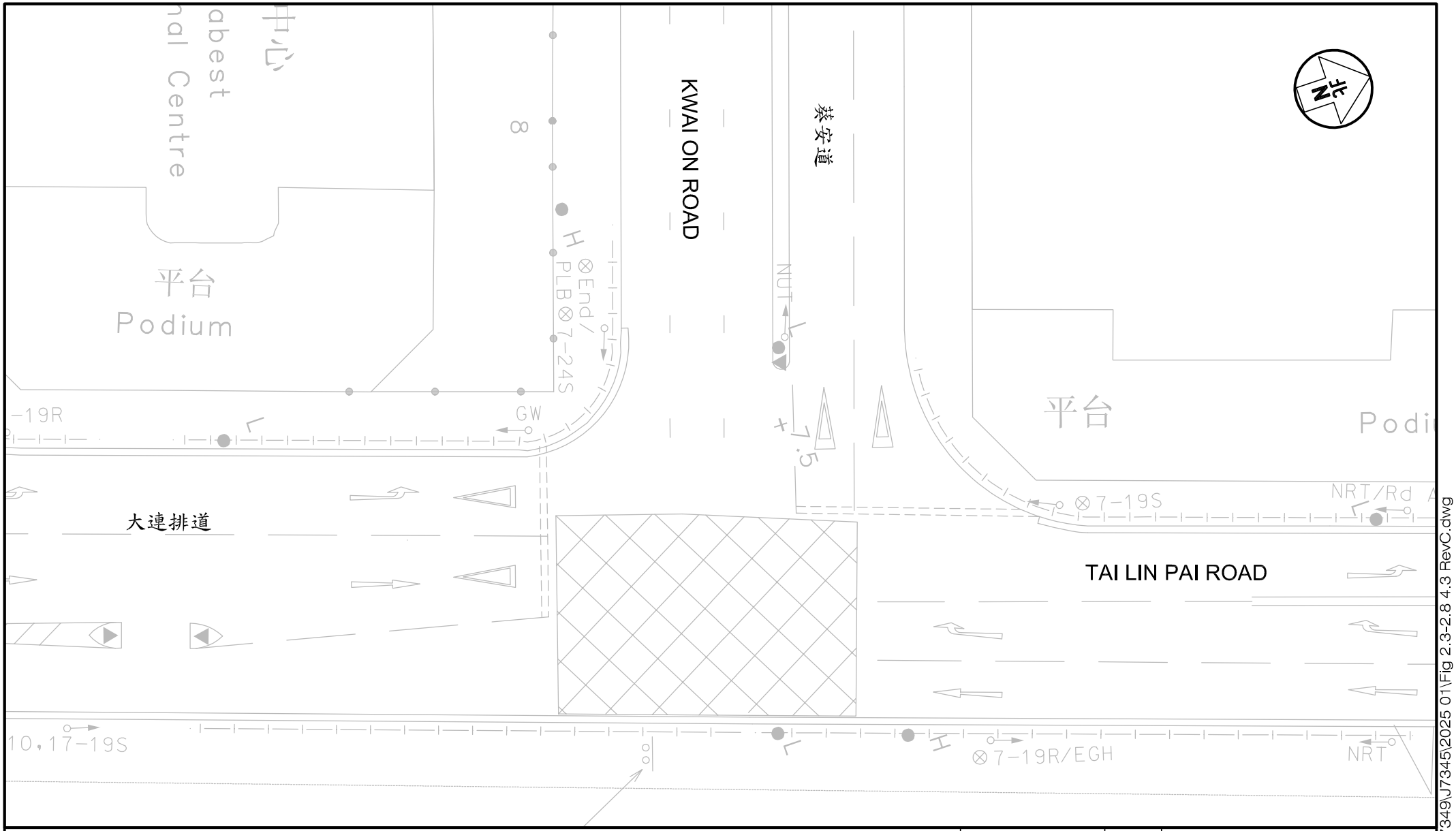


Project Title	PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	
Figure Title	EXISTING JUNCTION LAYOUT OF KWAI CHUNG ROAD / KWAI ON ROAD / KWAI YIK ROAD		

Figure No.	2.3	Revision	C
Designed by	C Y Y	Drawn by	S C Y
Checked by	K C		
Scale in A4	1 : 500	Date	22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

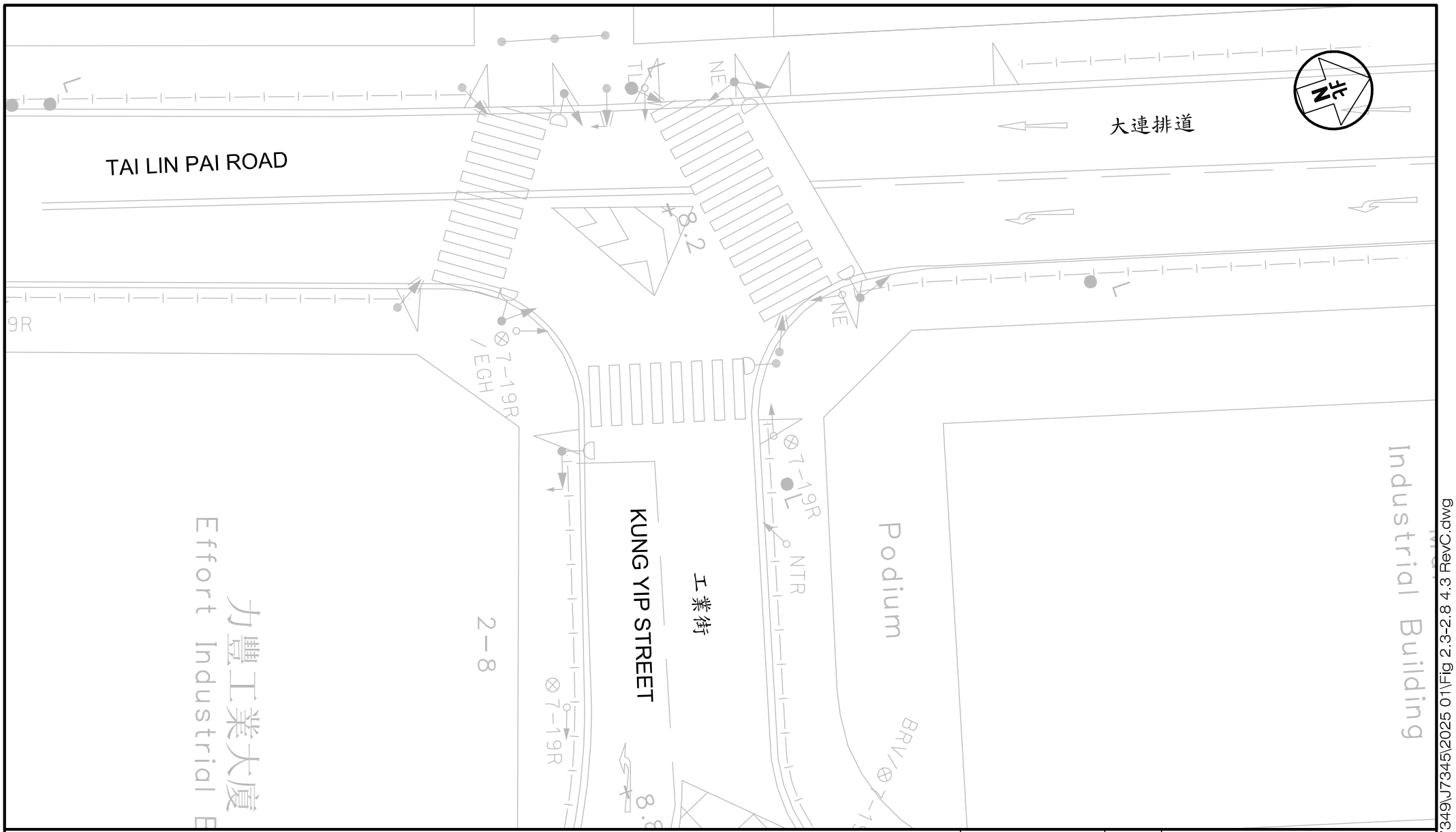
T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg



Project Title	PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 2.4 / Revision C
Figure Title	EXISTING JUNCTION LAYOUT OF TAI LIN PAI ROAD / KWAI ON ROAD		Designed by C Y Y / Drawn by S C Y / Checked by K C
			Scale in A4 1 : 300 / Date 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg

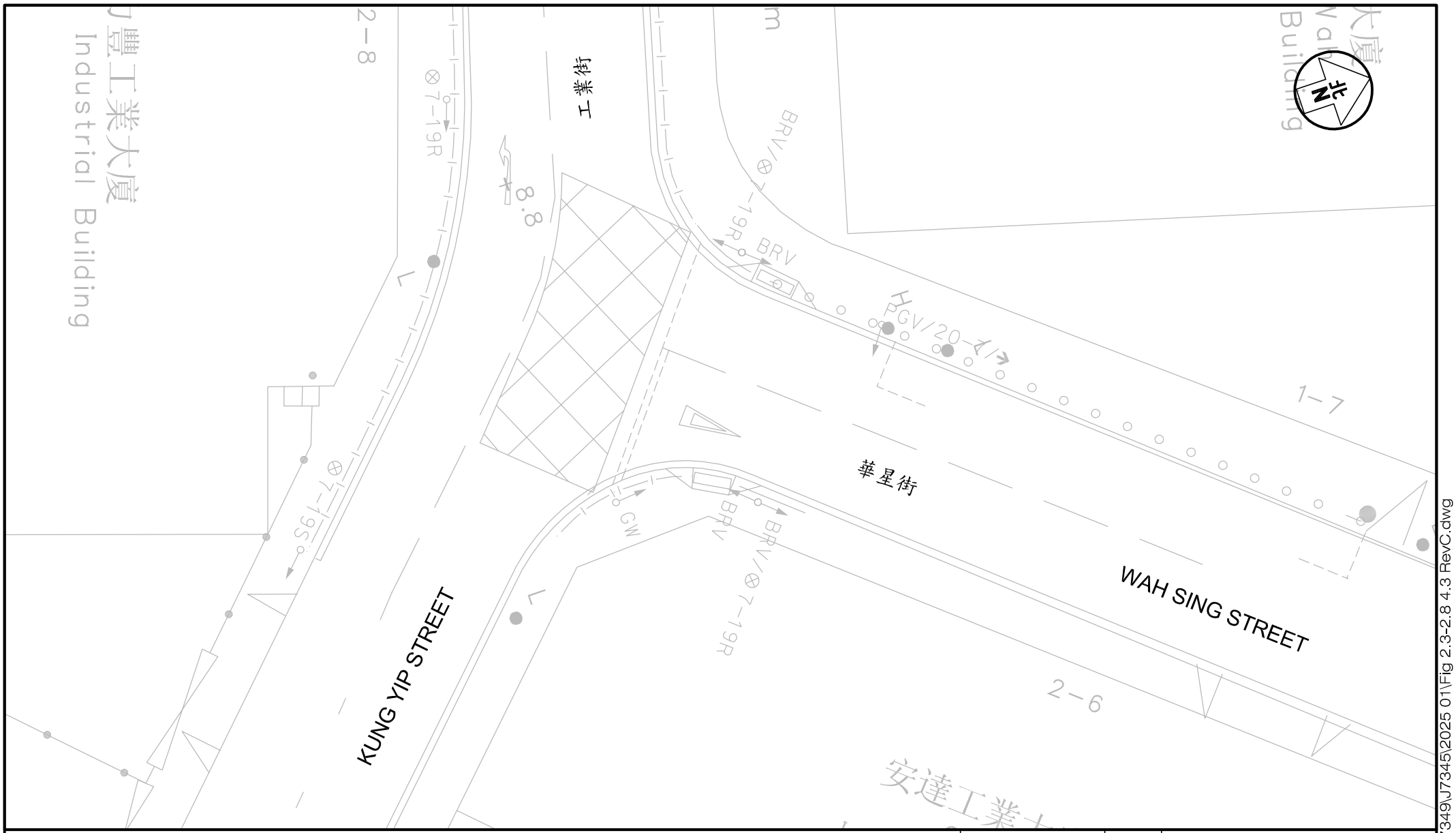


Project Title	PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	
Figure Title	EXISTING JUNCTION LAYOUT OF TAI LIN PAI ROAD / KUNG YIP STREET		

Figure No.	2.5	Revision C
Designed by	Drawn by	Checked by
C Y Y	S C Y	K C
Scale in A4	Date	
1 : 300	22 JAN 2025	

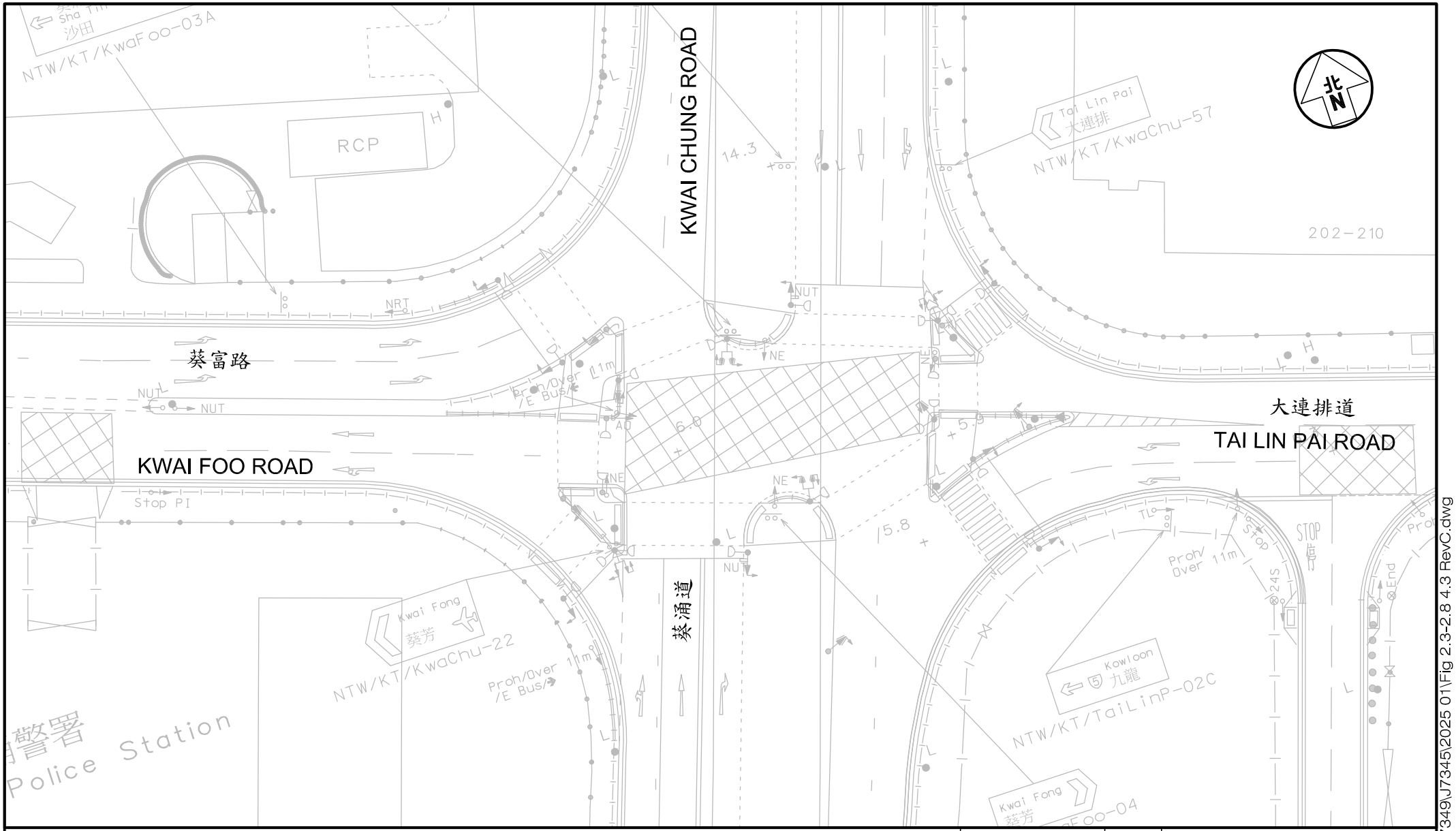
CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG J7345	Figure No. 2.6	Revision C	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: EXISTING JUNCTION LAYOUT OF KUNG YIP STREET / WAH SING STREET	Designed by C Y Y / Drawn by S C Y / Checked by K C		
	Scale in A4 1 : 300	Date 22 JAN 2025	

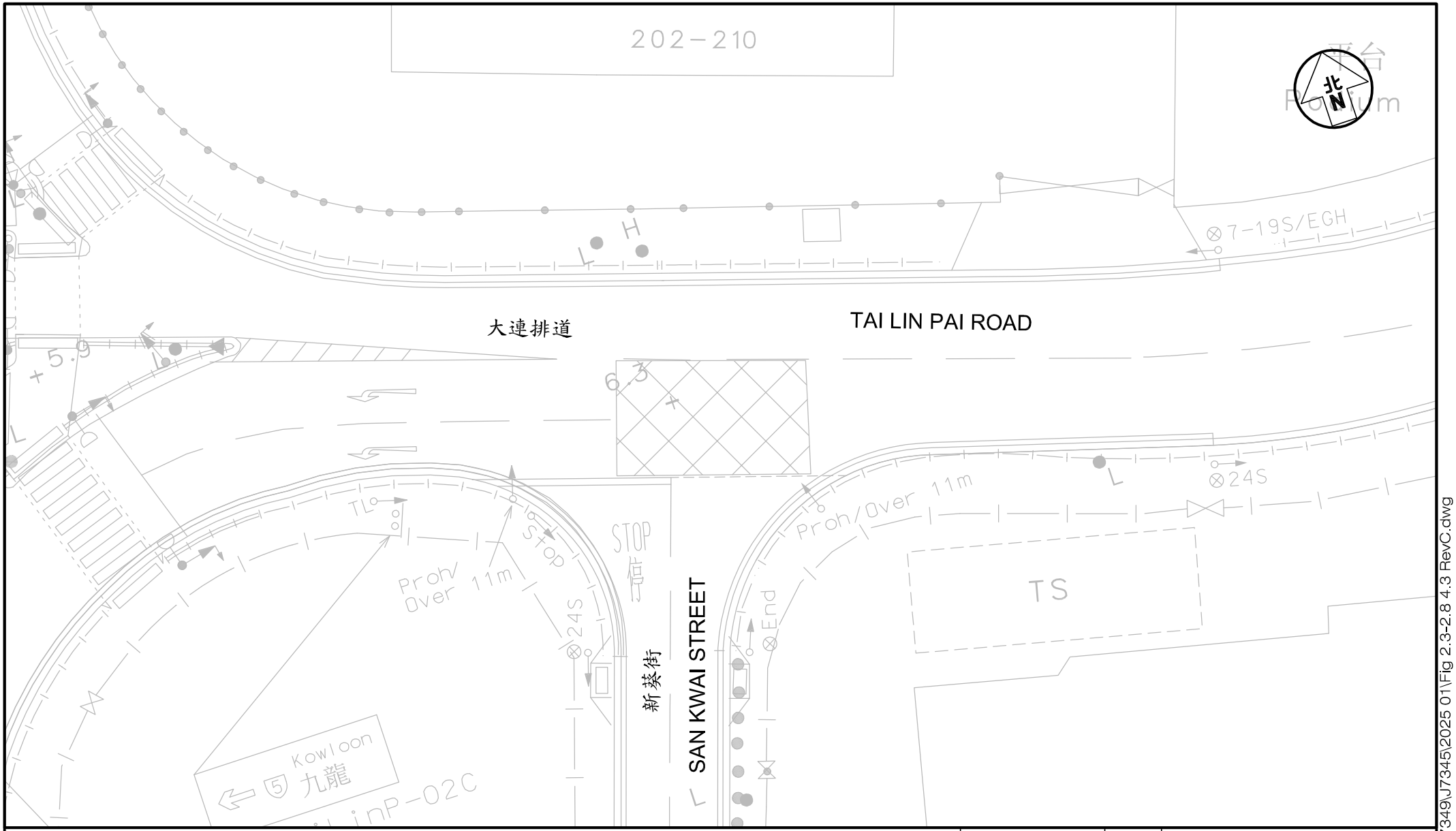
T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg



Project Title	PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	
Figure Title	EXISTING JUNCTION LAYOUT OF KWAI CHUNG ROAD / TAI LIN PAI ROAD / KWAI FOO ROAD	Figure No. 2.7	Revision C
		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4 1 : 300 / Date 22 JAN 2025	

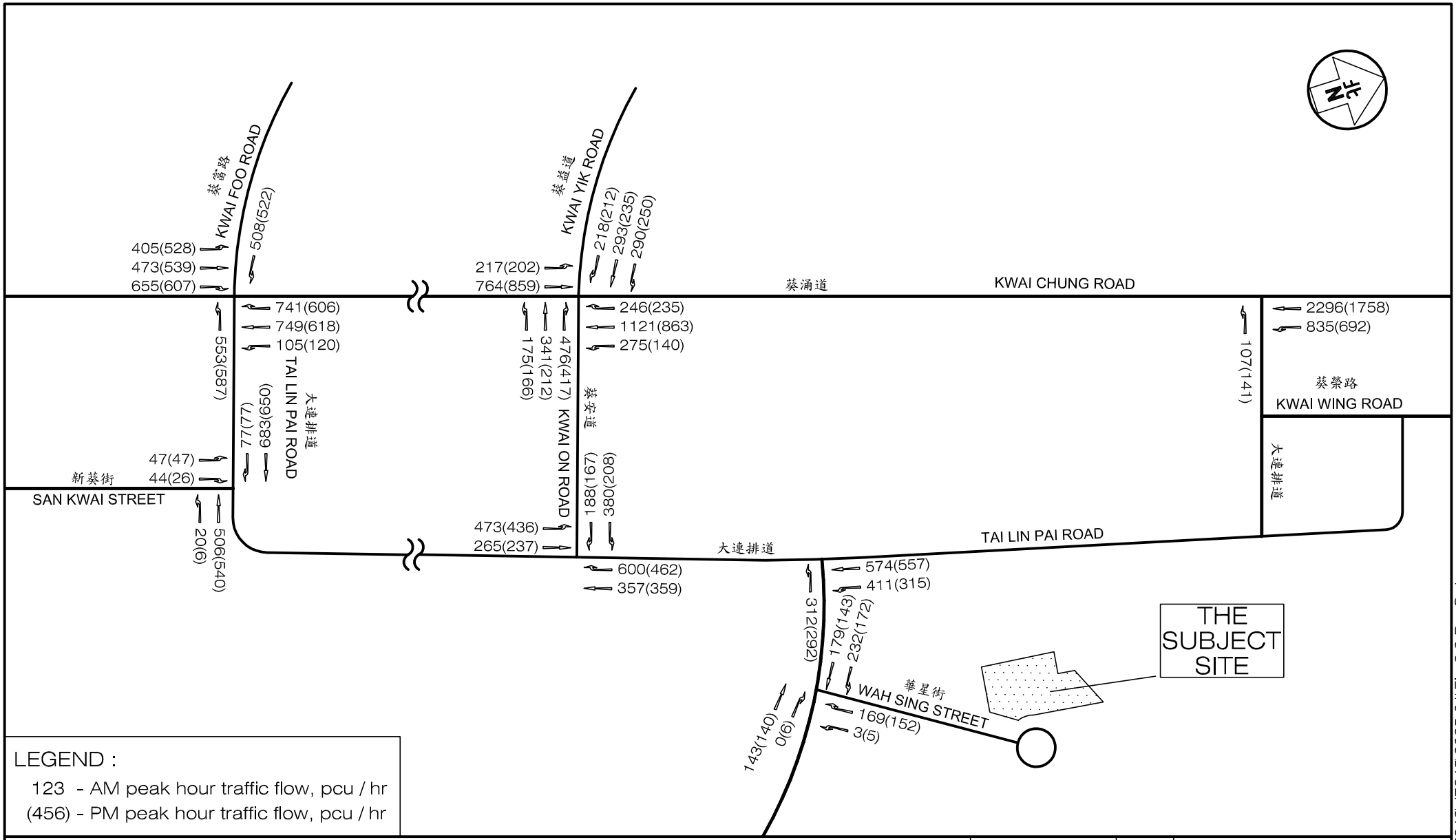
CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG J7345	Figure No. 2.8	Revision C	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: EXISTING JUNCTION LAYOUT OF TAI LIN PAI ROAD / SAN KWAI STREET	Designed by C Y Y / Drawn by S C Y / Checked by K C		
	Scale in A4 1 : 300	Date 22 JAN 2025	

T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.3-2.8 4.3 RevC.dwg

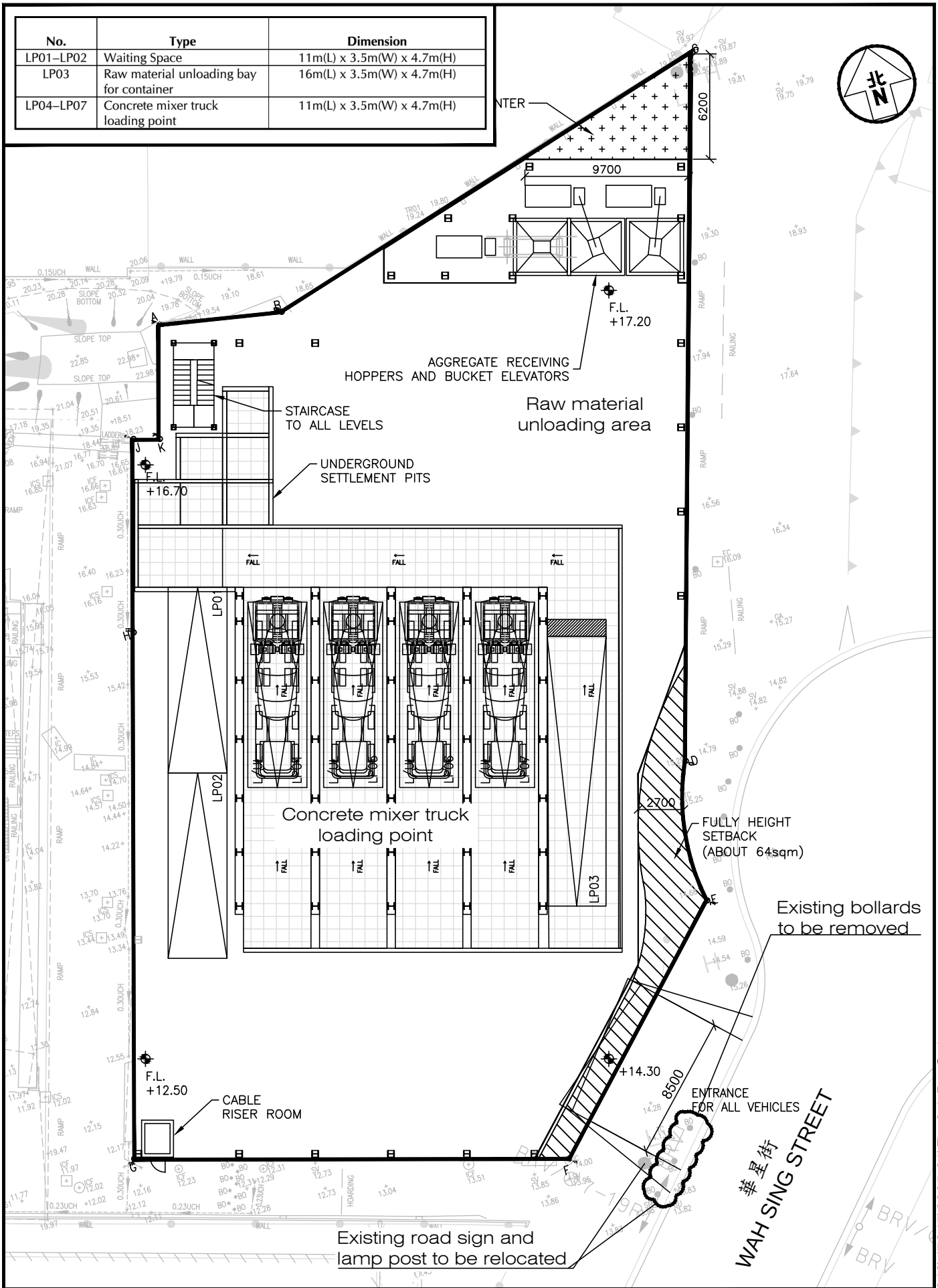


Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 2.9	Revision C
Figure Title: YEAR 2024 OBSERVED PEAK HOUR TRAFFIC FLOWS		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: N.T.S.	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

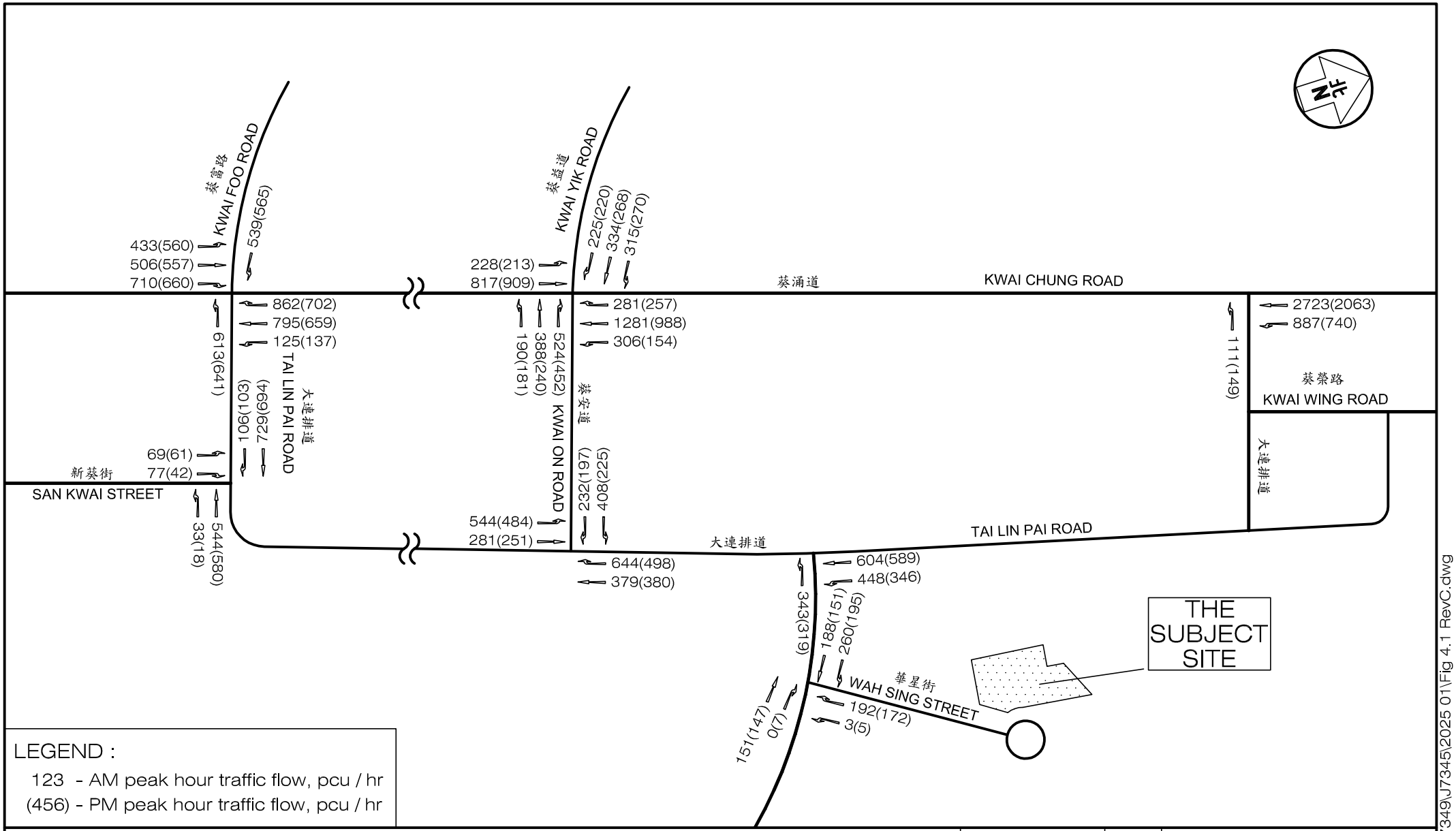
T:\JOB\J7300-J7349\J7345\2025 01\Fig 2.9 RevC.dwg

No.	Type	Dimension
LP01–LP02	Waiting Space	11m(L) x 3.5m(W) x 4.7m(H)
LP03	Raw material unloading bay for container	16m(L) x 3.5m(W) x 4.7m(H)
LP04–LP07	Concrete mixer truck loading point	11m(L) x 3.5m(W) x 4.7m(H)



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	Job No. J7345	Figure No. 3.1			Scale in A4 1 : 300
	Designed by C Y Y	Drawn by S C Y	Checked by K C	Revision C	Date 22 JAN 2025
Figure Title: GROUND FLOOR	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk				

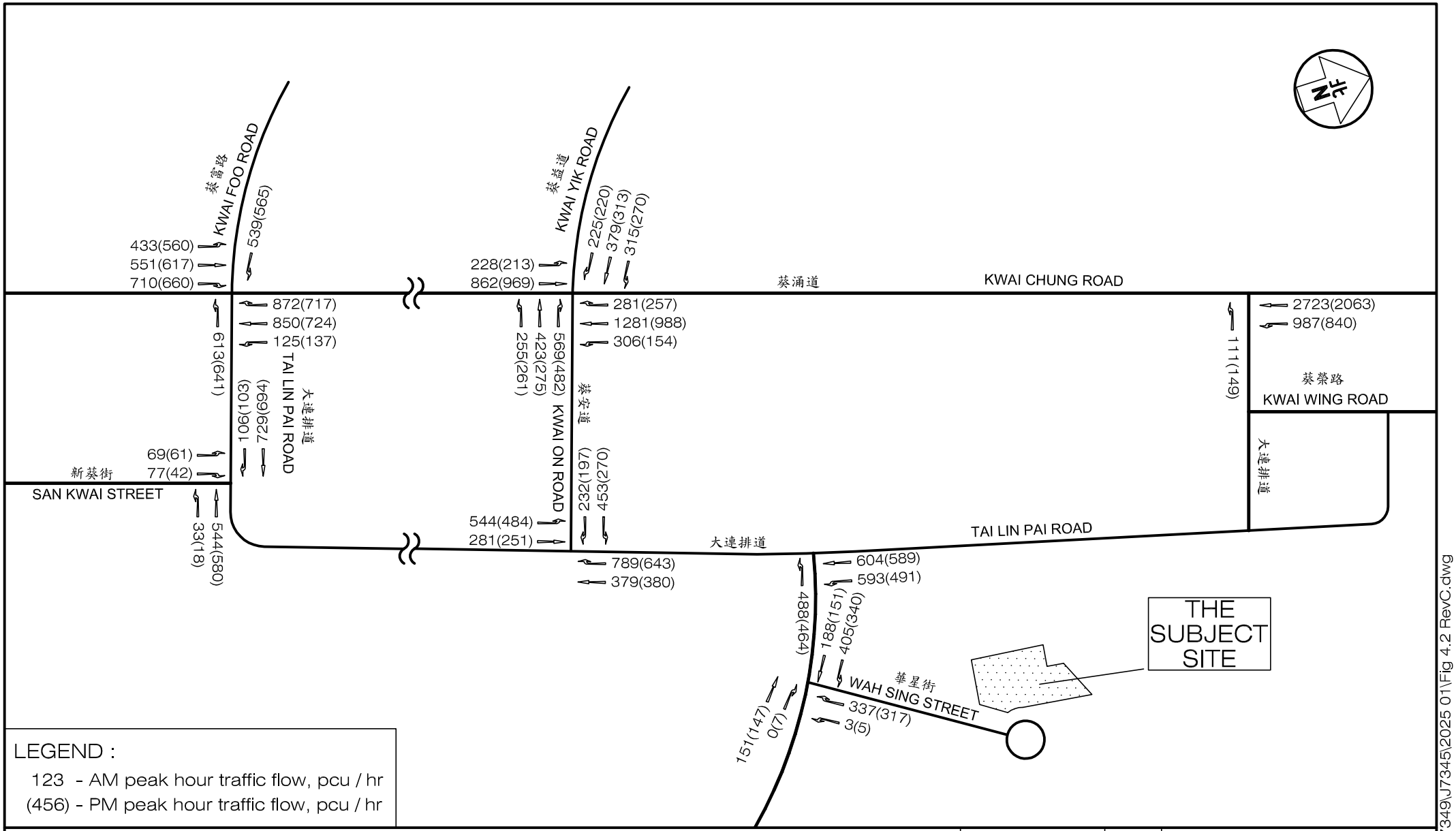
T:\JOB\J7300-J7349\J7345\2025 01\Fig 3.1 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 4.1	Revision C
Figure Title: YEAR 2029 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED CONCRETE BATCHING PLANT		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: N.T.S.	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

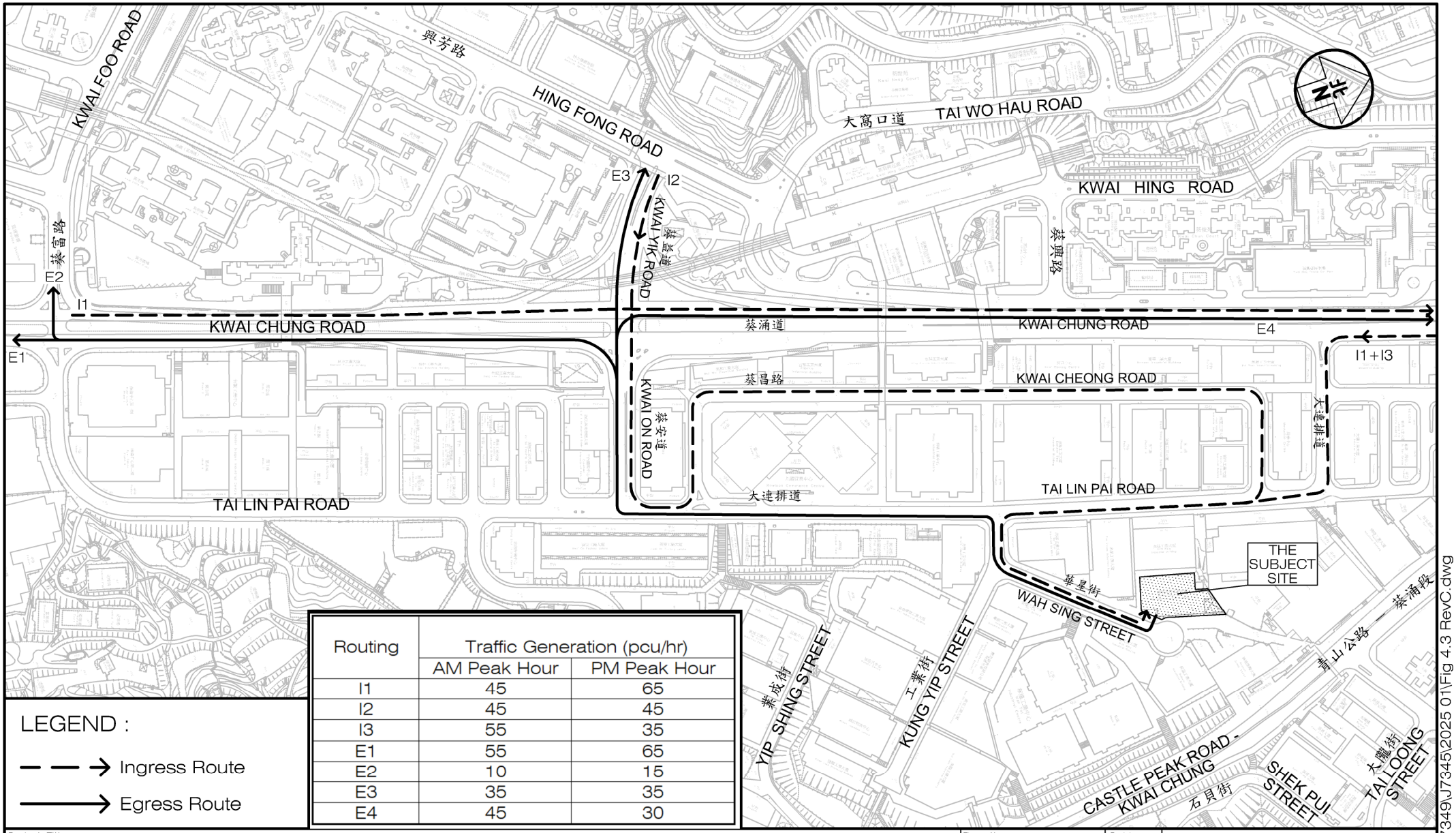
T:\JOB\J7300-J7349\J7345\2025 01\Fig 4.1 RevC.dwg



Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. 4.2	Revision C
Figure Title: YEAR 2029 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED CONCRETE BATCHING PLANT		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4 N.T.S. / Date 22 JAN 2025	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig 4.2 RevC.dwg



Routing	Traffic Generation (pcu/hr)	
	AM Peak Hour	PM Peak Hour
I1	45	65
I2	45	45
I3	55	35
E1	55	65
E2	10	15
E3	35	35
E4	45	30

LEGEND :

Ingress Route

Egress Route

Project Title

PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG

J7345

Figure Title

INGRESS AND EGRESS ROUTES FOR THE PROPOSED CONCRETE BATCHING PLANT

Figure No.	Revision
4.3	C

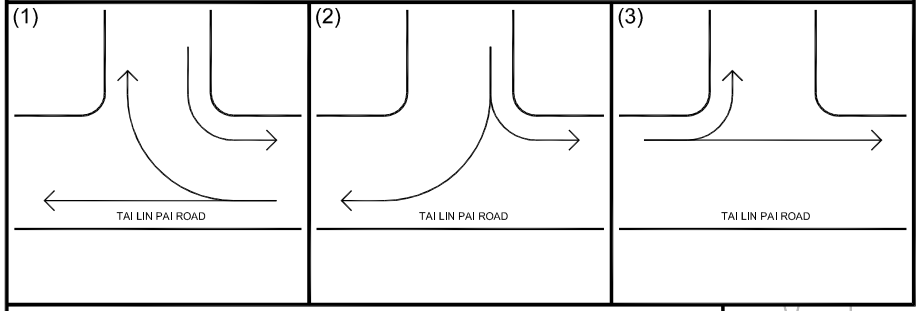
Designed by	Drawn by	Checked by
A Y T	S C Y	K C

Scale in A4	Date
1 : 4,000	22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOBs\J730C-J7349\J7345\2025 01\Fig 4.3 RevC.dwg

Proposed Method of Control



NOTES :

- Indicates Primary Signals
- Indicates Secondary Signals

KWAI ON ROAD

RM1021 RM1019 蔡安道

RM1021 RM1019

6.7m

RM1011

RM1019 大連排道 RM1019

RM1104

RM1019 RM1019

RM1104

RM1017 RM1017

10.5m

RM1011

4m

TAI LIN PAI ROAD

3.6m

RM1011

6.7m

RM1021 RM1021

RM1104

RM1025 RM1025

平台 Podium

KC100

Project Title	PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	
Figure Title	JUNCTION IMPROVEMENT SCHEME AT TAI LIN PAI ROAD / KWAI ON ROAD		

Figure No.	4.4	Revision	C
Designed by	C Y Y	Drawn by	S C Y
Checked by	K C		
Scale in A4	1 : 500	Date	22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig 4.4 RevC.dwg

Appendix A – Detailed Calculation

Signal Junction Analysis

Junction: J01 - Kwai Chung Road / Kwai On Road / Kwai Yik Road — Job Number: J7345

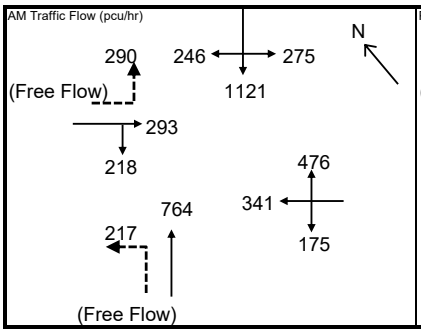
Scenario: Existing Condition — Page 1

Design Year: 2024 — Designed By: — Checked By: — Date: 24 January 2025

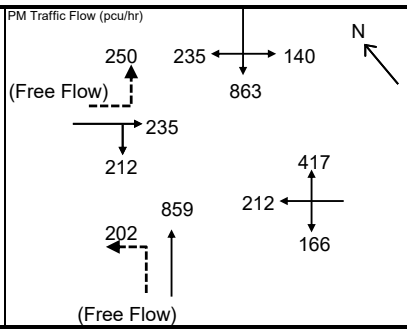
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Chung Road SB	LT	A1	1, 2	4.00	25.0		100	1901	275	0.145		100	1901	140	0.074	
Kwai Chung Road SB	SA	A2	1, 2	4.40				2195	561	0.256			2195	432	0.197	
Kwai Chung Road SB	SA	A3	1, 2	4.40				2195	560	0.255			2195	431	0.196	
Kwai Chung Road SB	RT	A4	2	4.40	20.0		100	2042	246	0.120	0.120	100	2042	235	0.115	0.115
Kwai Yik Road EB	SA	B1	3	3.80				2135	175	0.082			2135	153	0.072	
Kwai Yik Road EB	SA+RT	B2	3	3.80	30.0		31	2102	172	0.082	0.082	45	2088	150	0.072	0.072
Kwai Yik Road EB	RT	B3	3	3.80	25.0		100	2014	164	0.081		100	2014	144	0.071	
Kwai Chung Road NB	SA	C1	1	3.50				2105	382	0.181	0.181		2105	430	0.204	0.204
Kwai Chung Road NB	SA	C2	1	3.50				2105	382	0.181			2105	429	0.204	
Kwai On Road WB	LT	D1	4	3.40	25.0		100	1844	175	0.095		100	1844	166	0.090	
Kwai On Road WB	SA	D2	4	2.90				2045	283	0.138	0.139		2045	212	0.104	
Kwai On Road WB	SA+RT	D3	4	2.90	25.0		79	1952	270	0.138		100	1929	210	0.109	
Kwai On Road WB	RT	D4	4	2.90	20.0		100	1902	264	0.139		100	1902	207	0.109	0.109

pedestrian phase	P1	1, 3		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P2	1, 2, 4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P3	1, 2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1, 2, 3		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P5	2, 3		min crossing time =	6	sec GM +	13	sec FGM =	19	sec
	P6	2, 3, 4		min crossing time =	7	sec GM +	14	sec FGM =	21	sec
	P7	4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P8	3, 4		min crossing time =	6	sec GM +	12	sec FGM =	18	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

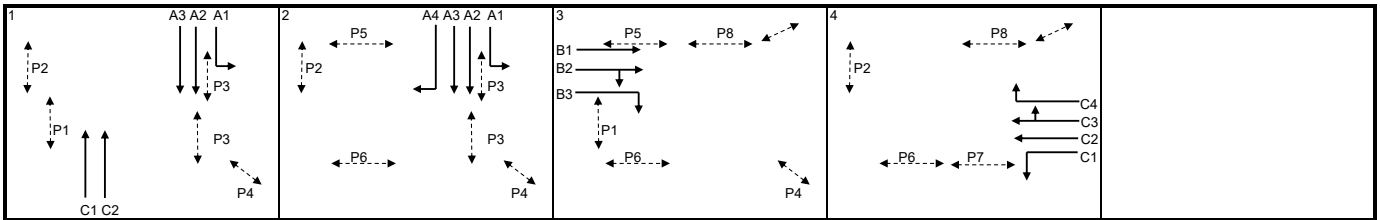


$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3+4	AM Peak 1,2+3+4	PM Peak 1+2+3+4	PM Peak 1,2+3+4
Sum y	0.523	0.476	0.500	0.378
L (s)	25	18	25	18
C (s)	120	120	120	120
practical y	0.713	0.765	0.713	0.765
R.C. (%)	36%	61%	42%	103%

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	

Signal Junction Analysis

Junction: J01 - Kwai Chung Road / Kwai On Road / Kwai Yik Road Job Number: J7345

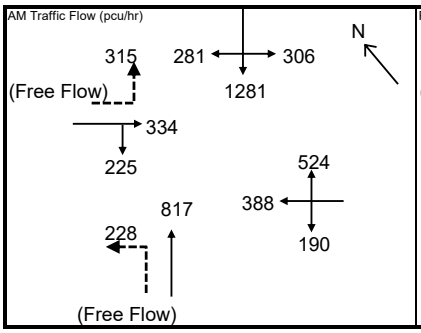
Scenario: Without Proposed Concrete Batching Plant Page 2

Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

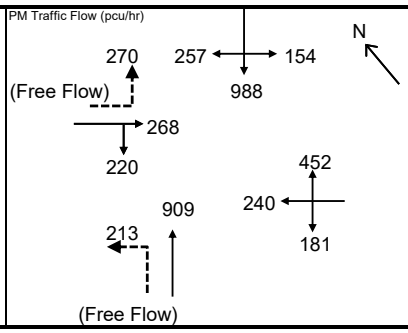
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Chung Road SB	LT	A1	1, 2	4.00	25.0		100	1901	306	0.161		100	1901	154	0.081	
Kwai Chung Road SB	SA	A2	1, 2	4.40				2195	641	0.292			2195	494	0.225	
Kwai Chung Road SB	SA	A3	1, 2	4.40				2195	640	0.292			2195	494	0.225	
Kwai Chung Road SB	RT	A4	2	4.40	20.0		100	2042	281	0.138	0.138	100	2042	257	0.126	0.126
Kwai Yik Road EB	SA	B1	3	3.80				2135	191	0.089	0.089		2135	167	0.078	0.078
Kwai Yik Road EB	SA+RT	B2	3	3.80	30.0		24	2110	188	0.089		38	2095	164	0.078	
Kwai Yik Road EB	RT	B3	3	3.80	25.0		100	2014	180	0.089		100	2014	157	0.078	
Kwai Chung Road NB	SA*	C1	1	3.50				2105	272	0.129	0.130		2105	303	0.144	0.144
Kwai Chung Road NB	SA	C2	1	3.50				2105	272	0.129			2105	303	0.144	
Kwai Chung Road NB	SA	C3	1	3.50				2105	273	0.130			2105	303	0.144	
Kwai On Road WB	LT	D1	4	3.40	25.0		100	1844	190	0.103		100	1844	181	0.098	
Kwai On Road WB	SA	D2	4	2.90				2045	316	0.155			2045	240	0.117	
Kwai On Road WB	SA+RT	D3	4	2.90	25.0		76	1956	302	0.154	0.155	100	1929	228	0.118	

pedestrian phase	P1	1, 3		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P2	1, 2, 4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P3	1, 2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1, 2, 3		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P5	2, 3		min crossing time =	6	sec GM +	13	sec FGM =	19	sec
	P6	2, 3, 4		min crossing time =	7	sec GM +	14	sec FGM =	21	sec
	P7	4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec
	P8	3, 4		min crossing time =	6	sec GM +	12	sec FGM =	18	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



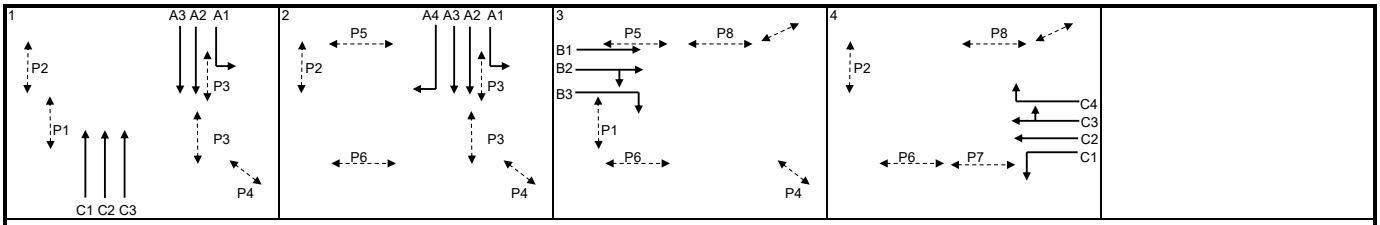
$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3+4	AM Peak 1,2+3+4	PM Peak 1+2+3+4	PM Peak 1,2+3+4
Sum y	0.511	0.536	0.466	0.422
L (s)	25	18	25	18
C (s)	120	120	120	120
practical y	0.713	0.765	0.713	0.765
R.C. (%)	39%	43%	53%	81%

Note:

*Junction Improvement Scheme by Other Project



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	

Signal Junction Analysis

Junction: J01 - Kwai Chung Road / Kwai On Road / Kwai Yik Road Job Number: J7345

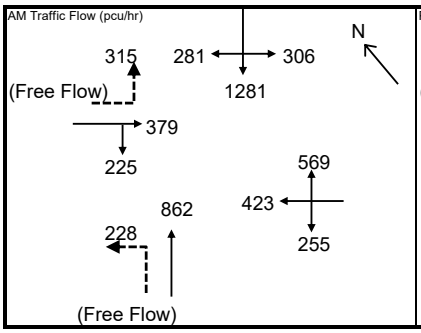
Scenario: With Proposed Concrete Batching Plant Page 3

Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

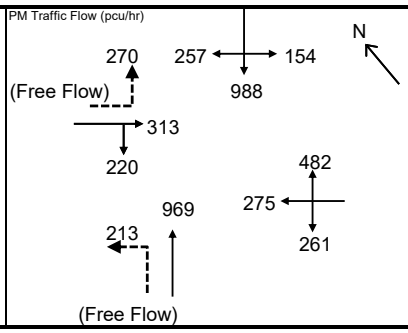
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Chung Road SB	LT	A1	1, 2	4.00	25.0		100	1901	306	0.161		100	1901	154	0.081	
Kwai Chung Road SB	SA	A2	1, 2	4.40				2195	641	0.292			2195	494	0.225	
Kwai Chung Road SB	SA	A3	1, 2	4.40				2195	640	0.292			2195	494	0.225	
Kwai Chung Road SB	RT	A4	2	4.40	20.0		100	2042	281	0.138	0.138	100	2042	257	0.126	0.126
Kwai Yik Road EB	SA	B1	3	3.80				2135	206	0.096	0.096		2135	182	0.085	0.085
Kwai Yik Road EB	SA+RT	B2	3	3.80	30.0		15	2119	204	0.096		27	2107	180	0.085	
Kwai Yik Road EB	RT	B3	3	3.80	25.0		100	2014	194	0.096		100	2014	171	0.085	
Kwai Chung Road NB	SA*	C1	1	3.50				2105	287	0.136	0.137		2105	323	0.153	0.153
Kwai Chung Road NB	SA	C2	1	3.50				2105	287	0.136			2105	323	0.153	
Kwai Chung Road NB	SA	C3	1	3.50				2105	288	0.137			2105	323	0.153	
Kwai On Road WB	LT	D1	4	3.40	25.0		100	1844	255	0.138		100	1844	261	0.142	
Kwai On Road WB	SA	D2	4	2.90				2045	344	0.168			2045	263	0.129	
Kwai On Road WB	SA+RT	D3	4	2.90	25.0		76	1956	329	0.168	0.168	95	1935	249	0.129	

pedestrian phase	P1	1, 3		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P2	1, 2, 4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P3	1, 2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P4	1, 2, 3		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P5	2, 3		min crossing time =	6	sec GM +	13	sec FGM =	19	sec	
	P6	2, 3, 4		min crossing time =	7	sec GM +	14	sec FGM =	21	sec	
	P7	4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P8	3, 4		min crossing time =	6	sec GM +	12	sec FGM =	18	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



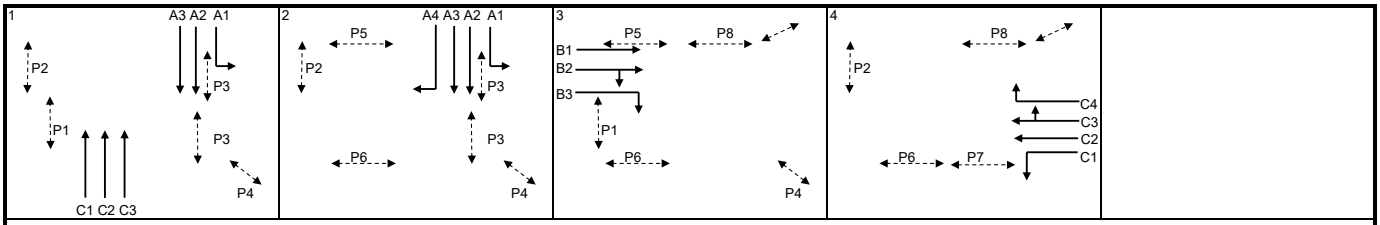
$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3+4	AM Peak 1,2+3+4	PM Peak 1+2+3+4	PM Peak 1,2+3+4
Sum y	0.539	0.557	0.506	0.452
L (s)	25	18	25	18
C (s)	120	120	120	120
practical y	0.713	0.765	0.713	0.765
R.C. (%)	32%	37%	41%	69%

Note:

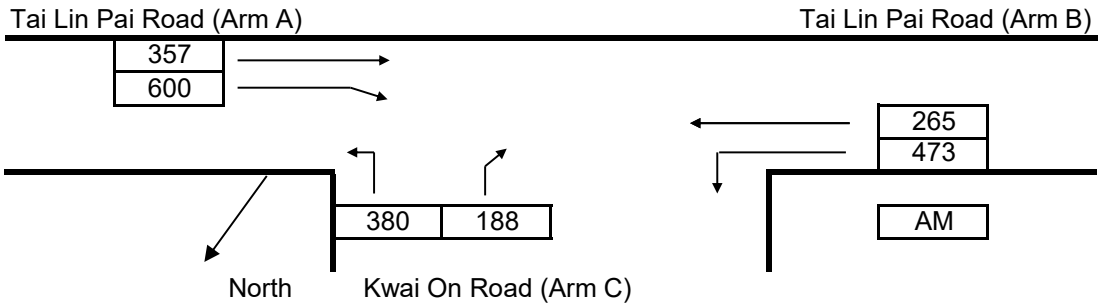
*Junction Improvement Scheme by Other Project



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 11	G =	I/G = 8	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 11	G =	I/G = 5	G =	

Priority Junction Analysis

Junction:	J02 - Tai Lin Pai Road / Kwai On Road				
Design Year:	2024	Job Number:	J7345	Date:	24 January 2025
Scenario:	Existing Condition				P. 4



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	14.00	V-rBA	250	w-BA	4.50	D	1.1773
	W-CR	3.00	V-lBA	110	w-BC	4.50	E	1.2062
			V-rBC	250	w-CB	3.40	F	1.0908
			V-rCB	250			Y	0.5170

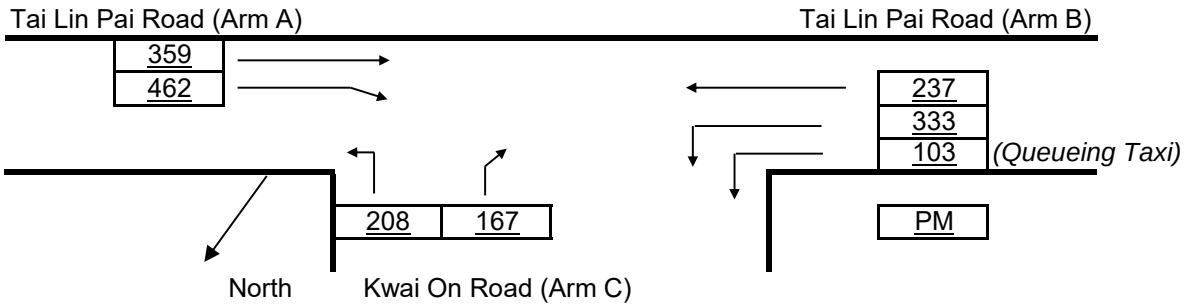
Analysis :

Traffic Flows, pcu/hr	AM	Capacity, pcu/hr	AM
q-CA	380	Q-BA	511
q-CB	188	Q-BC	730
q-AB	357	Q-CB	616
q-AC	600	Q-BAC	633
q-BA	265		
q-BC	473		
f	0.641		

Ratio-of-flow to Capacity	AM
B-A	0.519
B-C	0.648
C-B	0.305

Priority Junction Analysis

Junction:	J02 - Tai Lin Pai Road / Kwai On Road				
Design Year:	2024	Job Number:	J7345	Date:	24 January 2025
Scenario:	Existing Condition				P. 5



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W*	12.00	V-rBA	250	w-BA	4.50	D	1.1773
	W-CR	3.00	V-lBA	110	w-BC*	2.50	E	0.9963
			V-rBC	250	w-CB	3.40	F	1.0908
			V-rCB	250			Y	0.5860

Analysis :

Traffic Flows, pcu/hr	PM	Capacity, pcu/hr	PM
q-CA	208	Q-BA	543
q-CB	167	Q-BC	614
q-AB	359	Q-CB	622
q-AC	462	Q-BAC	582
q-BA	237		
q-BC	333		
f	0.584		

Ratio-of-flow to Capacity	PM
B-A	0.436
B-C	0.542
C-B	0.269

Note: *Due to the effect of taxi queueing at Tai Lin Pai Road NB

Signal Junction Analysis

Junction: J02 - Tai Lin Pai Road / Kwai On Road Job Number: J7345

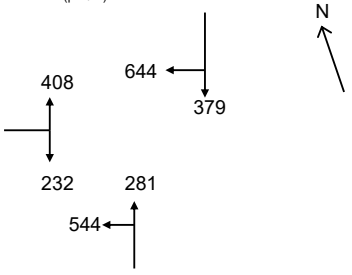
Scenario: Without Proposed Concrete Batching Plant Page 6

Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

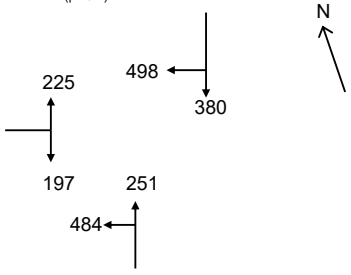
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	SA	A1	1	3.35				1950	379	0.194			1950	380	0.195	
Tai Lin Pai Road SB	RT	A2	1	3.35	18.0		100	1929	644	0.334	0.334	100	1929	498	0.258	0.258
Tai Lin Pai Road NB	LT	B1	2	3.50	7.0		100	1618	255	0.158	0.158	100	1618	227	0.140	
Tai Lin Pai Road NB	LT	B2	2	3.50	10.0		100	1830	289	0.158		100	1830	257	0.140	0.140
Tai Lin Pai Road NB	SA	B3	2	3.50				2105	281	0.133			2105	251	0.119	
Kwai On Road EB	LT	C1	3	3.35	13.0		100	1748	408	0.233	0.233	100	1748	225	0.129	0.129
Kwai On Road EB	RT	C2	3	3.35	17.0		100	1921	232	0.121		100	1921	197	0.103	

pedestrian phase	P1	1, 3		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P2	1, 2, 4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P3	1, 2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P4	1, 2, 3		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P5	2, 3		min crossing time =	6	sec GM +	13	sec FGM =	19	sec	
	P6	2, 3, 4		min crossing time =	7	sec GM +	14	sec FGM =	21	sec	
	P7	4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P8	3, 4		min crossing time =	6	sec GM +	12	sec FGM =	18	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3	AM Peak	PM Peak 1+2+3	PM Peak
Sum y	0.725		0.527	
L (s)	19		19	
C (s)	130		130	
practical y	0.768		0.768	
R.C. (%)	6%		46%	

Note:

Junction Improvement Scheme proposed by Kwai On Factory Redevelopment

1

2

3

AM	G =	I/G = 5	G =	I/G = 7	G =	I/G = 10	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	
PM	G =	I/G = 5	G =	I/G = 7	G =	I/G = 10	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	

Signal Junction Analysis

Junction: J02 - Tai Lin Pai Road / Kwai On Road Job Number: J7345

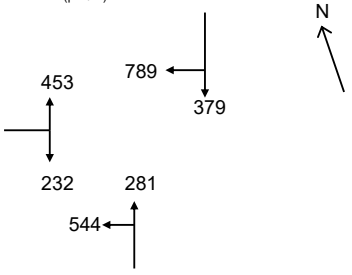
Scenario: With Proposed Concrete Batching Plant Page 7

Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

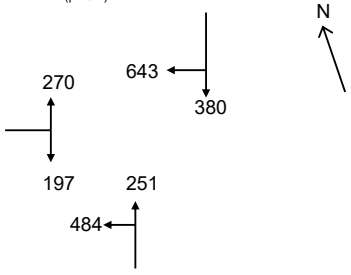
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	SA	A1	1	3.35				1950	379	0.194			1950	380	0.195	
Tai Lin Pai Road SB	RT	A2	1	3.35	18.0		100	1929	789	0.409	0.409	100	1929	643	0.333	0.333
Tai Lin Pai Road NB	LT	B1	2	3.50	7.0		100	1618	255	0.158	0.158	100	1618	227	0.140	
Tai Lin Pai Road NB	LT	B2	2	3.50	10.0		100	1830	289	0.158		100	1830	257	0.140	
Tai Lin Pai Road NB	SA	B3	2	3.50				2105	281	0.133			2105	251	0.119	0.140
Kwai On Road EB	LT	C1	3	3.35	13.0		100	1748	453	0.259	0.259	100	1748	270	0.154	0.154
Kwai On Road EB	RT	C2	3	3.35	17.0		100	1921	232	0.121		100	1921	197	0.103	

pedestrian phase	P1	1, 3		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P2	1, 2, 4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P3	1, 2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P4	1, 2, 3		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P5	2, 3		min crossing time =	6	sec GM +	13	sec FGM =	19	sec	
	P6	2, 3, 4		min crossing time =	7	sec GM +	14	sec FGM =	21	sec	
	P7	4		min crossing time =	5	sec GM +	10	sec FGM =	15	sec	
	P8	3, 4		min crossing time =	6	sec GM +	12	sec FGM =	18	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3		PM Peak 1+2+3	
Sum y	0.826		0.628	
L (s)	19		19	
C (s)	130		130	
practical y	0.768		0.768	
R.C. (%)	-7%		22%	

Note:

Junction Improvement Scheme proposed by Kwai On Factory Redevelopment

1

2

3

AM	G =	I/G = 5	G =	I/G = 7	G =	I/G = 10	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	
PM	G =	I/G = 5	G =	I/G = 7	G =	I/G = 10	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	

Signal Junction Analysis

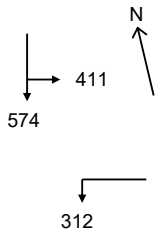
Junction: J03 - Tai Lin Pai Road / Kung Yip Street Job Number: J7345

Scenario: Existing Condition Page 8

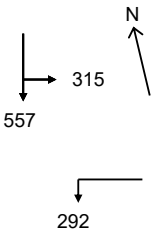
Design Year: 2024 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	LT	A1	1	5.20	8.0		100	1798	411	0.229		100	1798	315	0.175	
Tai Lin Pai Road SB	SA	A2	1	5.20				2135	574	0.269	0.269		2135	557	0.261	0.261
Kung Yip Street WB	LT	B1	1	4.30	8.0		100	1722	312	0.181		100	1722	292	0.170	
pedestrian phase		P1	2		min crossing time =		6	sec GM +			13	sec FGM =		19	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



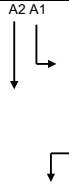
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

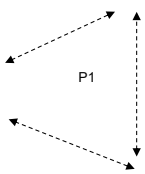
	AM Peak		PM Peak	
	1		1	
Sum y	0.269		0.261	
L (s)	40		40	
C (s)	90		90	
practical y	0.500		0.500	
R.C. (%)	86%		92%	

Note:

1



2



AM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =
PM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =

Signal Junction Analysis

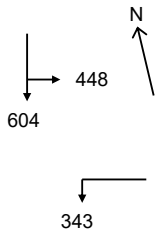
Junction: J03 - Tai Lin Pai Road / Kung Yip Street Job Number: J7345

Scenario: Without Proposed Concrete Batching Plant Page 9

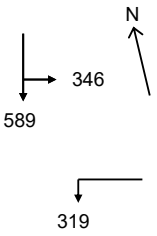
Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	LT	A1	1	5.20	8.0		100	1798	448	0.249		100	1798	346	0.192	
Tai Lin Pai Road SB	SA	A2	1	5.20				2135	604	0.283	0.283		2135	589	0.276	0.276
Kung Yip Street WB	LT	B1	1	4.30	8.0		100	1722	343	0.199		100	1722	319	0.185	
pedestrian phase		P1	2		min crossing time =		6	sec GM +			13	sec FGM =		19	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



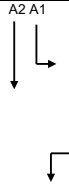
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

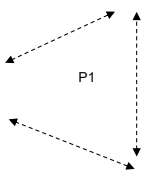
	AM Peak 1		PM Peak 1	
Sum y	0.283		0.276	
L (s)	40		40	
C (s)	90		90	
practical y	0.500		0.500	
R.C. (%)	77%		81%	

Note:

1



2



AM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	
PM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =	
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	

Signal Junction Analysis

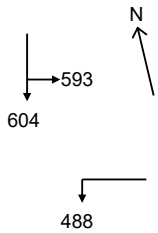
Junction: J03 - Tai Lin Pai Road / Kung Yip Street Job Number: J7345

Scenario: With Proposed Concrete Batching Plant Page 10

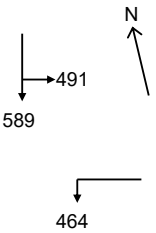
Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	LT	A1	1	5.20	8.0		100	1798	593	0.330	0.330	100	1798	491	0.273	
Tai Lin Pai Road SB	SA	A2	1	5.20				2135	604	0.283			2135	589	0.276	0.276
Kung Yip Street WB	LT	B1	1	4.30	8.0		100	1722	488	0.283		100	1722	464	0.269	
pedestrian phase		P1	2		min crossing time =		6	sec GM +		13	sec FGM =		19	sec		

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



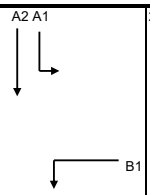
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

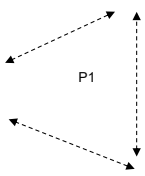
	AM Peak		PM Peak	
	1		1	
Sum y	0.330		0.276	
L (s)	40		40	
C (s)	90		90	
practical y	0.500		0.500	
R.C. (%)	52%		81%	

Note:

1



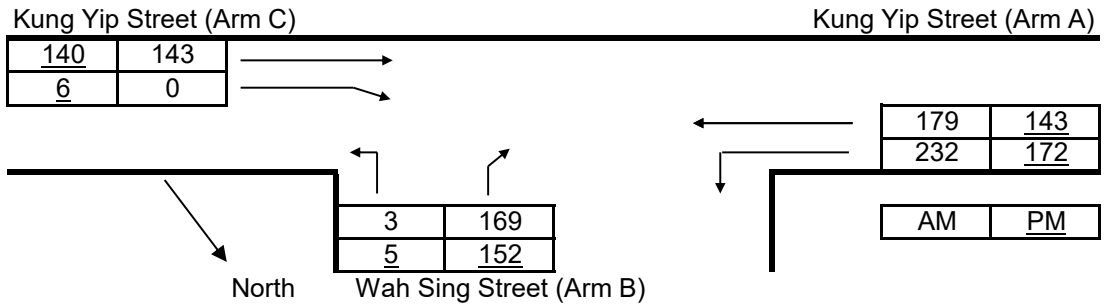
2



AM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =
PM	G =	I/G = 7	G = 32	I/G = 2	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =

Priority Junction Analysis

Junction:	J04 - Kung Yip Street / Wah Sing Street				
Design Year:	2024	Job Number:	J7345	Date:	24 January 2025
Scenario:	Existing Condition				P. 11



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.90	V-rBA	40	w-BA	4.70	D	0.9523
	W-CR	0.00	V-lBA	40	w-BC	4.70	E	1.0196
			V-rBC	40	w-CB	2.50	F	0.8237
			V-rCB	35			Y	0.6240

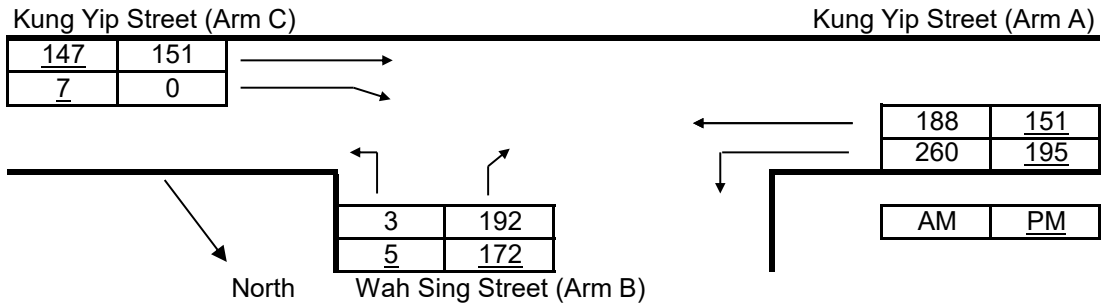
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	143	140	Q-BA	519	531
q-CB	0	6	Q-BC	697	711
q-AB	232	172	Q-CB	537	555
q-AC	179	143	Q-BAC	521	535
q-BA	169	152			
q-BC	3	5			
f	0.017	0.032			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.326	0.286	
B-C	0.004	0.007	
C-B	0.000	0.011	
B-AC	0.330	0.294	(for shared lane BA, BC)

Priority Junction Analysis

Junction:	J04 - Kung Yip Street / Wah Sing Street				
Design Year:	2029	Job Number:	J7345	Date:	24 January 2025
Scenario:	Without Proposed Concrete Batching Plant				P. 12



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.90	V-rBA	40	w-BA	4.70	D	0.9523
	W-CR	0.00	V-lBA	40	w-BC	4.70	E	1.0196
			V-rBC	40	w-CB	2.50	F	0.8237
			V-rCB	35			Y	0.6240

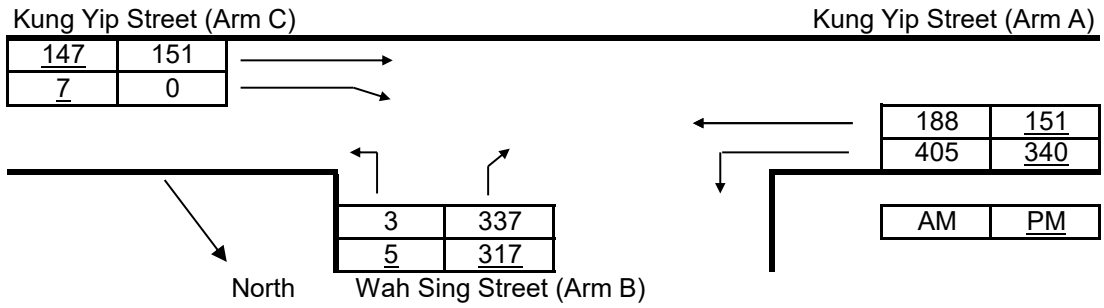
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	151	147	Q-BA	514	526
q-CB	0	7	Q-BC	692	707
q-AB	260	195	Q-CB	530	549
q-AC	188	151	Q-BAC	516	529
q-BA	192	172			
q-BC	3	5			
f	0.015	0.028			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.374	0.327	
B-C	0.004	0.007	
C-B	0.000	0.013	
B-AC	0.378	0.334	(for shared lane BA, BC)

Priority Junction Analysis

Junction:	J04 - Kung Yip Street / Wah Sing Street				
Design Year:	2029	Job Number:	J7345	Date:	24 January 2025
Scenario:	With Proposed Concrete Batching Plant				P. 13



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.90	V-rBA	40	w-BA	4.70	D	0.9523
	W-CR	0.00	V-lBA	40	w-BC	4.70	E	1.0196
			V-rBC	40	w-CB	2.50	F	0.8237
			V-rCB	35			Y	0.6240

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	151	147	Q-BA	501	513
q-CB	0	7	Q-BC	679	693
q-AB	405	340	Q-CB	503	522
q-AC	188	151	Q-BAC	502	515
q-BA	337	317			
q-BC	3	5			
f	0.009	0.016			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.672	0.618	
B-C	0.004	0.007	
C-B	0.000	0.013	
B-AC	0.677	0.625	(for shared lane BA, BC)

Signal Junction Analysis

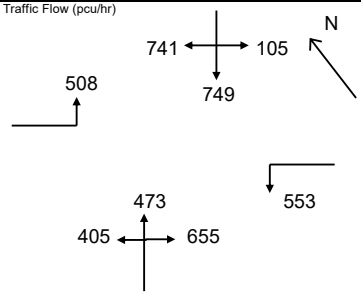
Junction: J05 - Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road — Job Number: J7345

Scenario: Existing Condition — Page 14

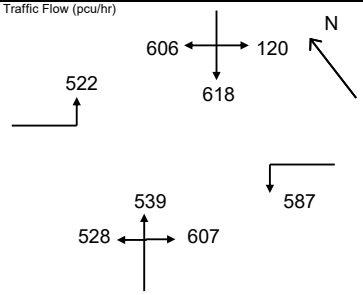
Design Year: 2024 — Designed By: — Checked By: — Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Foo Road EB	LT	A1	1	4.10	25.0		100	2042	253	0.124		100	2042	260	0.127	
Kwai Foo Road EB	LT	A2	1	4.10	29.0		100	2059	255	0.124		100	2059	262	0.127	
Kwai Chung Road NB	LT+SA*	B1	2	4.00	22.0		98	1919	414	0.216		100	1916	528	0.276	
Kwai Chung Road NB	SA	B2	2	4.00				2155	464	0.215			2155	539	0.250	
Kwai Chung Road NB	RT	B3	2	4.00	20.0		100	2005	655	0.327	0.327	100	2005	607	0.303	0.303
Tai Lin Pai Road WB	LT	C1	2	3.80	22.0		100	1868	266	0.142		100	1868	282	0.151	
Tai Lin Pai Road WB	LT	C2	2	3.80	26.0		100	2019	287	0.142		100	2019	305	0.151	
Kwai Chung Road SB	LT+SA*	D1	1	4.30	27.0		20	2053	524	0.255	0.255	27	2045	441	0.216	0.216
Kwai Chung Road SB	SA+RT	D2	1	4.30				2185	558	0.255			2185	471	0.216	
Kwai Chung Road SB	RT	D3	1	4.20	18.0		100	2008	513	0.255		100	2008	432	0.215	
pedestrian phase		P1	1		min crossing time =		6	sec GM +		12	sec FGM =		18	sec		
		P2	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P3	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P4	1		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P5	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P6	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P7	2		min crossing time =		7	sec GM +		13	sec FGM =		20	sec		
		P8	2		min crossing time =		5	sec GM +		6	sec FGM =		11	sec		

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

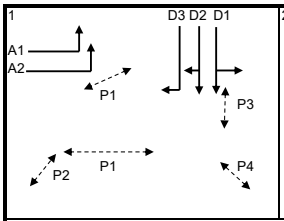


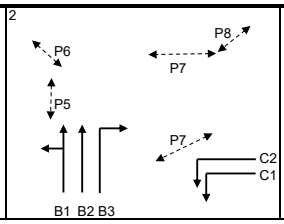
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

Note: *A flared approach

	AM Peak 1+2		PM Peak 1+2	
Sum y	0.582		0.518	
L (s)	16		16	
C (s)	120		120	
practical y	0.780		0.780	
R.C. (%)	34%		50%	





AM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =
PM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =

Signal Junction Analysis

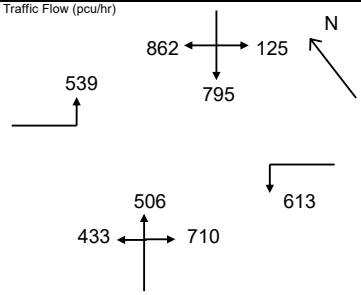
Junction: J05 - Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road Job Number: J7345

Scenario: Without Proposed Concrete Batching Plant Page 15

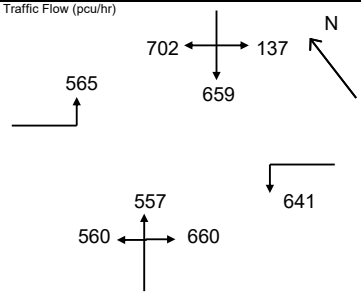
Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Foo Road EB	LT	A1	1	4.10	25.0		100	2042	268	0.131		100	2042	281	0.138	
Kwai Foo Road EB	LT	A2	1	4.10	29.0		100	2059	271	0.132		100	2059	284	0.138	
Kwai Chung Road NB	LT+SA*	B1	2	4.00	22.0		98	1919	442	0.230		100	1916	560	0.292	
Kwai Chung Road NB	SA	B2	2	4.00				2155	497	0.231			2155	557	0.258	
Kwai Chung Road NB	RT	B3	2	4.00	20.0		100	2005	710	0.354	0.354	100	2005	660	0.329	0.329
Tai Lin Pai Road WB	LT	C1	2	3.80	22.0		100	1868	295	0.158		100	1868	308	0.165	
Tai Lin Pai Road WB	LT	C2	2	3.80	26.0		100	2019	318	0.158		100	2019	333	0.165	
Kwai Chung Road SB	LT+SA*	D1	1	4.30	27.0		21	2051	585	0.285	0.286	28	2044	491	0.240	0.240
Kwai Chung Road SB	SA+RT	D2	1	4.30				2185	624	0.286			2185	525	0.240	
Kwai Chung Road SB	RT	D3	1	4.20	18.0		100	2008	573	0.285		100	2008	482	0.240	
pedestrian phase		P1	1		min crossing time =		6	sec GM +		12	sec FGM =		18	sec		
		P2	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P3	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P4	1		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P5	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P6	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P7	2		min crossing time =		7	sec GM +		13	sec FGM =		20	sec		
		P8	2		min crossing time =		5	sec GM +		6	sec FGM =		11	sec		

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



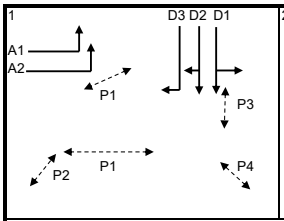
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

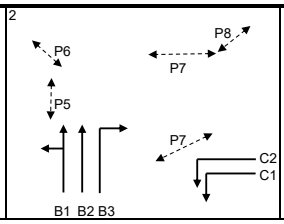
$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

Note:

*A flared approach

	AM Peak 1+2		PM Peak 1+2	
Sum y	0.640		0.569	
L (s)	16		16	
C (s)	120		120	
practical y	0.780		0.780	
R.C. (%)	22%		37%	





AM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =
PM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =

Signal Junction Analysis

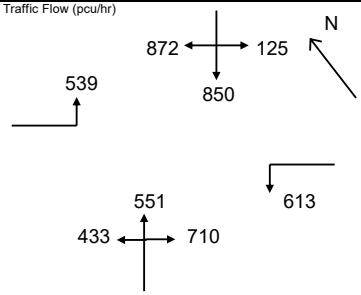
Junction: J05 - Kwai Chung Road / Tai Lin Pai Road / Kwai Foo Road — Job Number: J7345

Scenario: With Proposed Concrete Batching Plant — Page 16

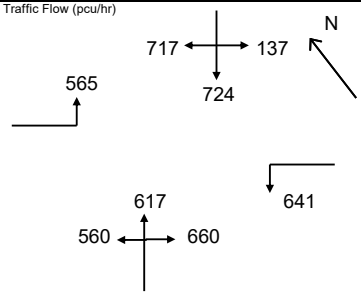
Design Year: 2029 — Designed By: — Checked By: — Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Kwai Foo Road EB	LT	A1	1	4.10	25.0		100	2042	268	0.131		100	2042	281	0.138	
Kwai Foo Road EB	LT	A2	1	4.10	29.0		100	2059	271	0.132		100	2059	284	0.138	
Kwai Chung Road NB	LT+SA*	B1	2	4.00	22.0		94	1924	464	0.241		100	1916	560	0.292	
Kwai Chung Road NB	SA	B2	2	4.00				2155	520	0.241			2155	617	0.286	
Kwai Chung Road NB	RT	B3	2	4.00	20.0		100	2005	710	0.354	0.354	100	2005	660	0.329	0.329
Tai Lin Pai Road WB	LT	C1	2	3.80	22.0		100	1868	295	0.158		100	1868	308	0.165	
Tai Lin Pai Road WB	LT	C2	2	3.80	26.0		100	2019	318	0.158		100	2019	333	0.165	
Kwai Chung Road SB	LT+SA*	D1	1	4.30	27.0		21	2051	607	0.296		26	2046	517	0.253	0.253
Kwai Chung Road SB	SA+RT	D2	1	4.30				2185	646	0.296			2185	553	0.253	
Kwai Chung Road SB	RT	D3	1	4.20	18.0		100	2008	594	0.296	0.296	100	2008	508	0.253	
pedestrian phase		P1	1		min crossing time =		6	sec GM +		12	sec FGM =		18	sec		
		P2	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P3	1		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		P4	1		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P5	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P6	2		min crossing time =		5	sec GM +		7	sec FGM =		12	sec		
		P7	2		min crossing time =		7	sec GM +		13	sec FGM =		20	sec		
		P8	2		min crossing time =		5	sec GM +		6	sec FGM =		11	sec		

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



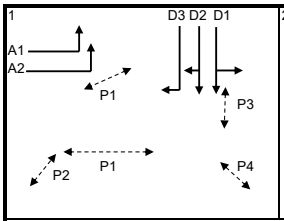
$S = 1940 + 100\ (W-3.25)$ $S = 2080 + 100\ (W-3.25)$

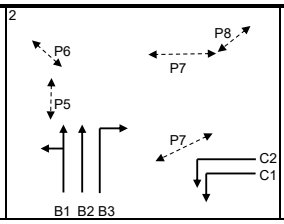
$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2		PM Peak 1+2	
Sum y	0.650		0.582	
L (s)	16		16	
C (s)	120		120	
practical y	0.780		0.780	
R.C. (%)	20%		34%	

Note:

*A flared approach

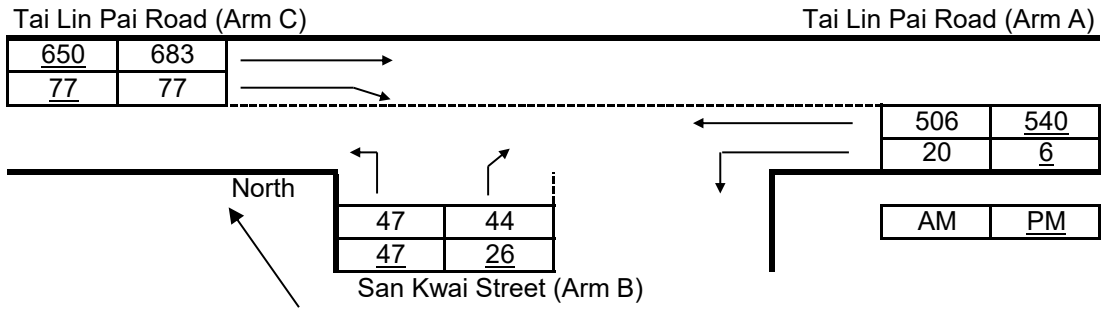




AM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =
PM	G =	I/G = 9	G =	I/G = 9	G =	I/G =	G =	I/G =	G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =

Priority Junction Analysis

Junction:	J06 - Tai Lin Pai Road / San Kwai Street				
Design Year:	2024	Job Number:	J7345	Date:	24 January 2025
Scenario:	Existing Condition				P. 17



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.60	V-rBA	30	w-BA	4.70	D	0.9340
	W-CR	0.00	V-lBA	25	w-BC	4.70	E	1.0097
			V-rBC	30	w-CB	4.40	F	1.0416
			V-rCB	90			Y	0.6343

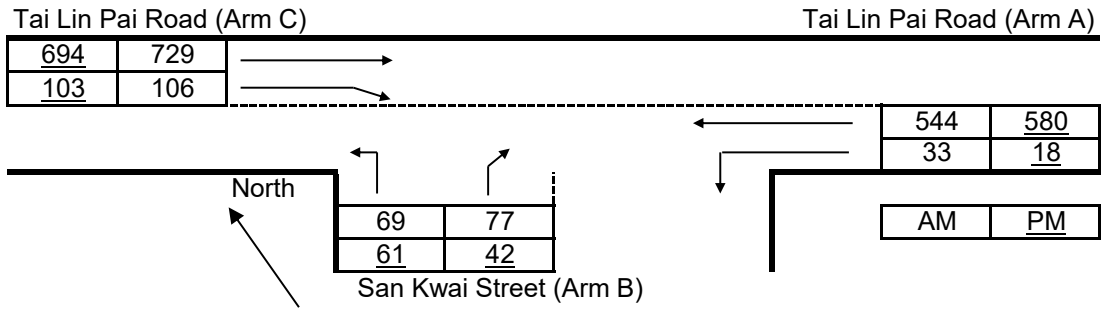
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	683	650	Q-BA	358	357
q-CB	77	77	Q-BC	632	626
q-AB	20	6	Q-CB	649	645
q-AC	506	540	Q-BAC	462	493
q-BA	44	26			
q-BC	47	47			
f	0.516	0.644			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.123	0.073	
B-C	0.074	0.075	
C-B	0.119	0.119	
B-AC	0.197	0.148	(for shared lane BA, BC)

Priority Junction Analysis

Junction:	J06 - Tai Lin Pai Road / San Kwai Street				
Design Year:	2029	Job Number:	J7345	Date:	24 January 2025
Scenario:	Without Proposed Concrete Batching Plant				P. 18



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.60	V-rBA	30	w-BA	4.70	D	0.9340
	W-CR	0.00	V-lBA	25	w-BC	4.70	E	1.0097
			V-rBC	30	w-CB	4.40	F	1.0416
			V-rCB	90			Y	0.6343

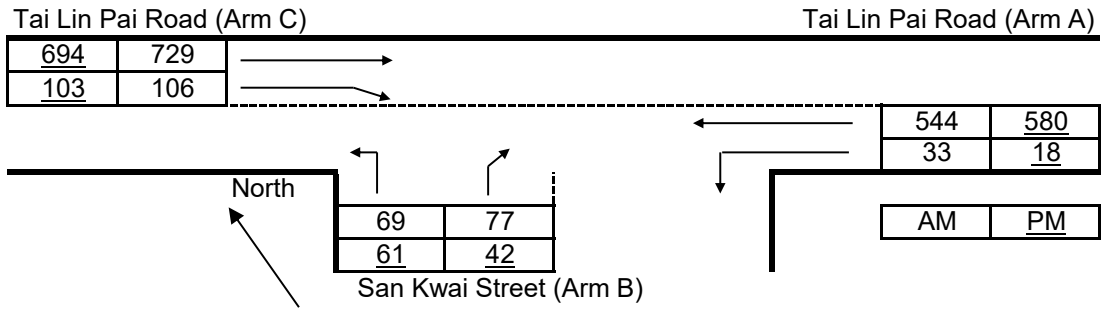
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	729	694	Q-BA	334	333
q-CB	106	103	Q-BC	622	615
q-AB	33	18	Q-CB	637	632
q-AC	544	580	Q-BAC	428	457
q-BA	77	42			
q-BC	69	61			
f	0.473	0.592			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.231	0.126	
B-C	0.111	0.099	
C-B	0.166	0.163	
B-AC	0.341	0.225	(for shared lane BA, BC)

Priority Junction Analysis

Junction:	J06 - Tai Lin Pai Road / San Kwai Street				
Design Year:	2029	Job Number:	J7345	Date:	24 January 2025
Scenario:	With Proposed Concrete Batching Plant				P. 19



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	10.60	V-rBA	30	w-BA	4.70	D	0.9340
	W-CR	0.00	V-lBA	25	w-BC	4.70	E	1.0097
			V-rBC	30	w-CB	4.40	F	1.0416
			V-rCB	90			Y	0.6343

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	729	694	Q-BA	334	333
q-CB	106	103	Q-BC	622	615
q-AB	33	18	Q-CB	637	632
q-AC	544	580	Q-BAC	428	457
q-BA	77	42			
q-BC	69	61			
f	0.473	0.592			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.231	0.126	
B-C	0.111	0.099	
C-B	0.166	0.163	
B-AC	0.341	0.225	(for shared lane BA, BC)

Signal Junction Analysis

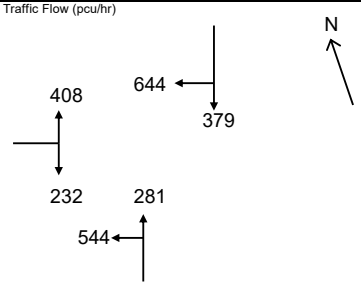
Junction: J02 - Tai Lin Pai Road / Kwai On Road Job Number: J7345

Scenario: Without Proposed Concrete Batching Plant Page 20

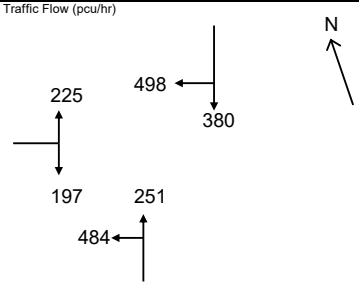
Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	SA+RT	A1	1	3.35	21.0		26	1914	510	0.266	0.266	13	1932	439	0.227	0.228
Tai Lin Pai Road SB	RT	A2	1	3.35	18.0		100	1929	513	0.266		100	1929	439	0.228	
Tai Lin Pai Road NB	LT*	B1	3	3.50	7.0		100	1618	255	0.158	0.158	100	1618	227	0.140	0.140
Tai Lin Pai Road NB	LT	B2	3	3.50	10.0		100	1830	289	0.158		100	1830	257	0.140	
Tai Lin Pai Road NB	SA	B3	3	3.50				2105	281	0.133			2105	251	0.119	
Kwai On Road EB	LT	C1	1, 2	3.35	13.0		100	1748	408	0.233		100	1748	225	0.129	
Kwai On Road EB	RT	C2	2	3.35	17.0		100	1921	232	0.121	0.121	100	1921	197	0.103	0.103
pedestrian phase																

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



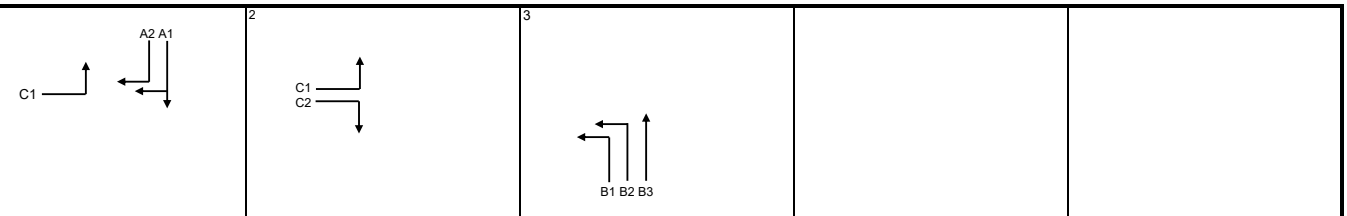
$S = 1940+100(W-3.25)$ $S = 2080+100(W-3.25)$

$S_M = S / (1 + 1.5\ f/r)$ $S_M = (S - 230) / (1 + 1.5\ f/r)$

	AM Peak 1+2+3	AM Peak 1,2, + 3	PM Peak 1+2+3	PM Peak 1,2 + 3
Sum y	0.545	0.391	0.471	0.269
L (s)	18	12	18	12
C (s)	130	130	130	130
practical y	0.775	0.817	0.775	0.817
R.C. (%)	42%	109%	65%	204%

Note:

Further improvement on Scheme proposed by Kwai On Factory Redevelopment



AM	G =	I/G = 6	G =	I/G = 6	G =	I/G = 9	G =	I/G =	G =
	G =	I/G =	G =	I/G = 5	G =	I/G = 9	G =	I/G =	G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G = 9	G =	I/G =	G =
	G =	I/G =	G =	I/G = 5	G =	I/G = 9	G =	I/G =	G =

Signal Junction Analysis

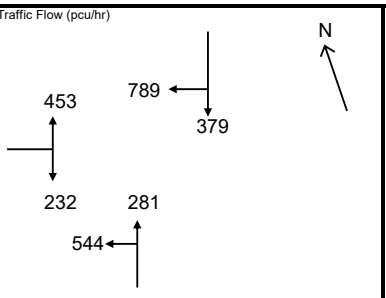
Junction: J02 - Tai Lin Pai Road / Kwai On Road Job Number: J7345

Scenario: With Proposed Concrete Batching Plant Page 21

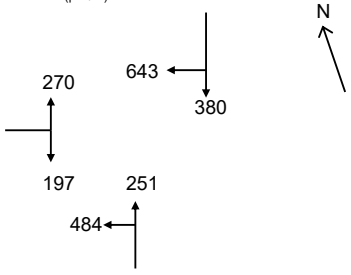
Design Year: 2029 Designed By: Checked By: Date: 24 January 2025

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tai Lin Pai Road SB	SA+RT	A1	1	3.35	21.0		35	1902	580	0.305	0.305	25	1916	510	0.266	
Tai Lin Pai Road SB	RT	A2	1	3.35	18.0		100	1929	588	0.305		100	1929	513	0.266	0.266
Tai Lin Pai Road NB	LT*	B1	3	3.50	7.0		100	1618	255	0.158	0.158	100	1618	227	0.140	0.140
Tai Lin Pai Road NB	LT	B2	3	3.50	10.0		100	1830	289	0.158		100	1830	257	0.140	
Tai Lin Pai Road NB	SA	B3	3	3.50				2105	281	0.133			2105	251	0.119	
Kwai On Road EB	LT	C1	1, 2	3.35	13.0		100	1748	453	0.259		100	1748	270	0.154	
Kwai On Road EB	RT	C2	2	3.35	17.0		100	1921	232	0.121	0.121	100	1921	197	0.103	0.103
pedestrian phase																

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)



S = 1940+100(W-3.25) S = 2080+100(W-3.25)

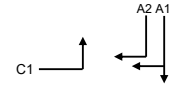
S_M = S / (1 + 1.5 f/r) S_M = (S - 230) / (1 + 1.5 f/r)

	AM Peak 1+2+3	AM Peak 1,2, + 3	PM Peak 1+2+3	PM Peak 1,2 + 3
Sum y	0.584	0.417	0.509	0.295
L (s)	18	12	18	12
C (s)	130	130	130	130
practical y	0.775	0.817	0.775	0.817
R.C. (%)	33%	96%	52%	177%

Note:

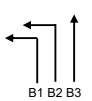
Further improvement on Scheme proposed by Kwai On Factory Redevelopment

1



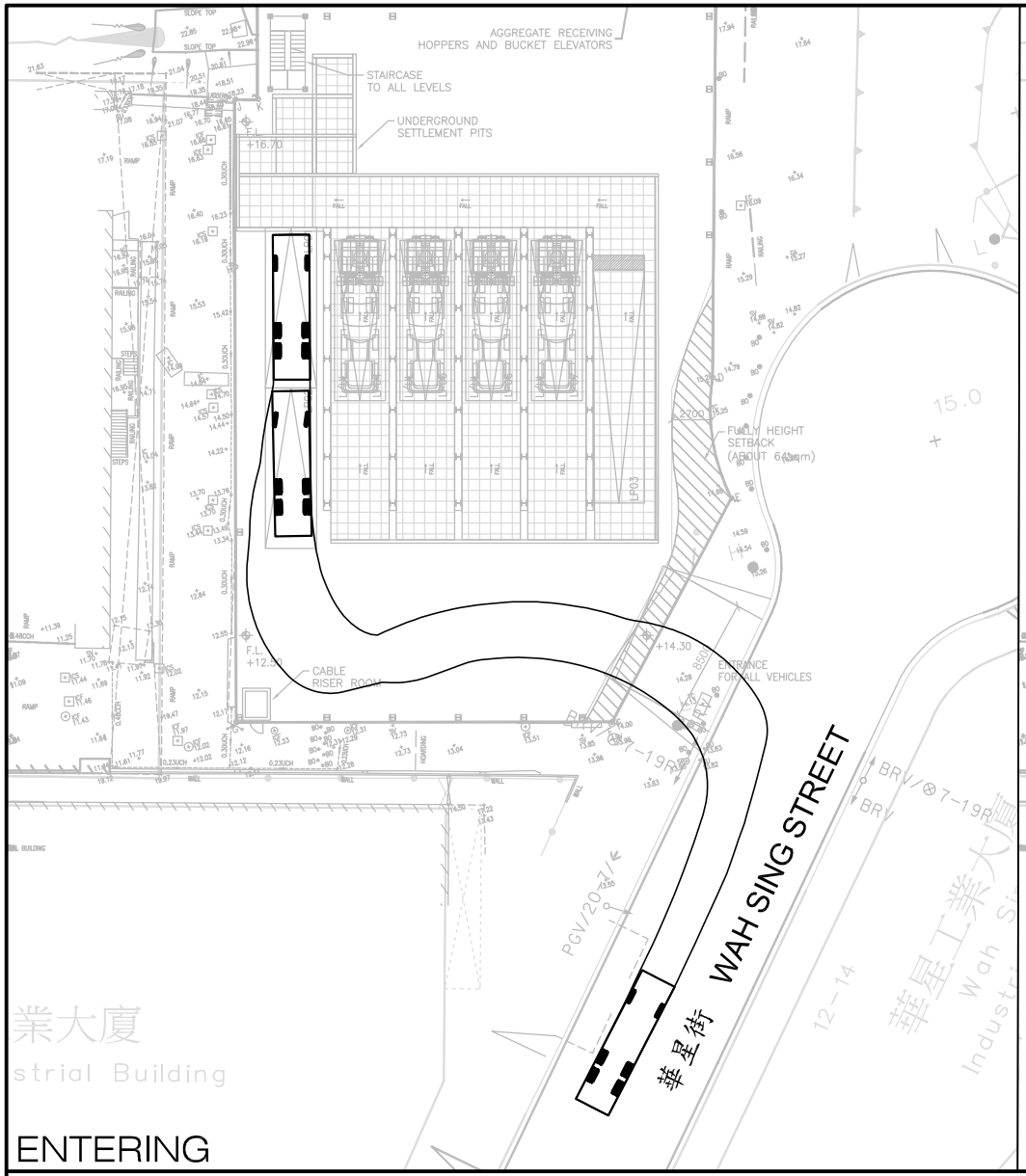
2

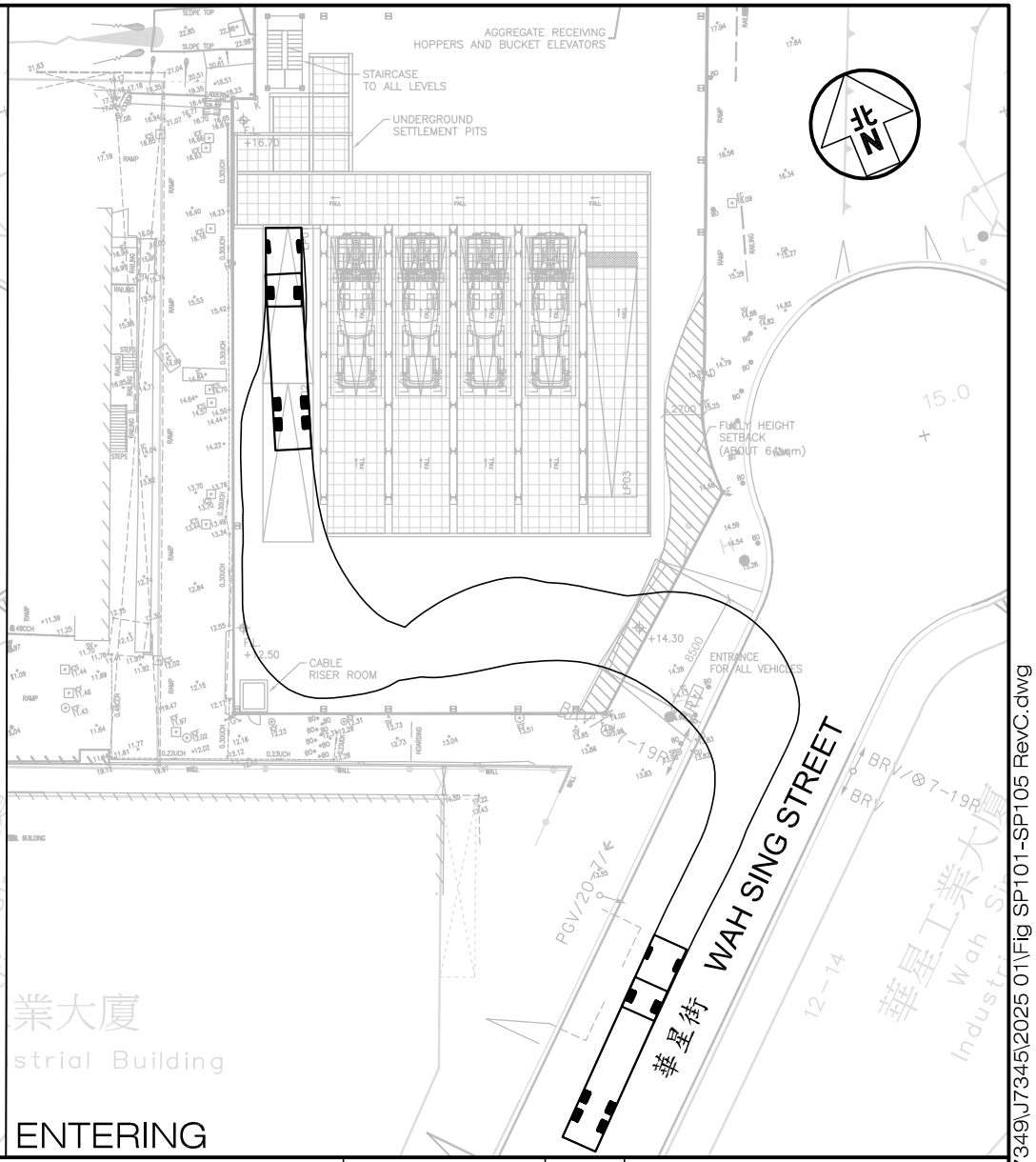
3



AM	G =	I/G = 6	G =	I/G = 6	G =	I/G = 9	G =	I/G =	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 9	G =	I/G =	G =	
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G = 9	G =	I/G =	G =	
	G =	I/G =	G =	I/G = 5	G =	I/G = 9	G =	I/G =	G =	

Appendix B –
Swept Path Analysis

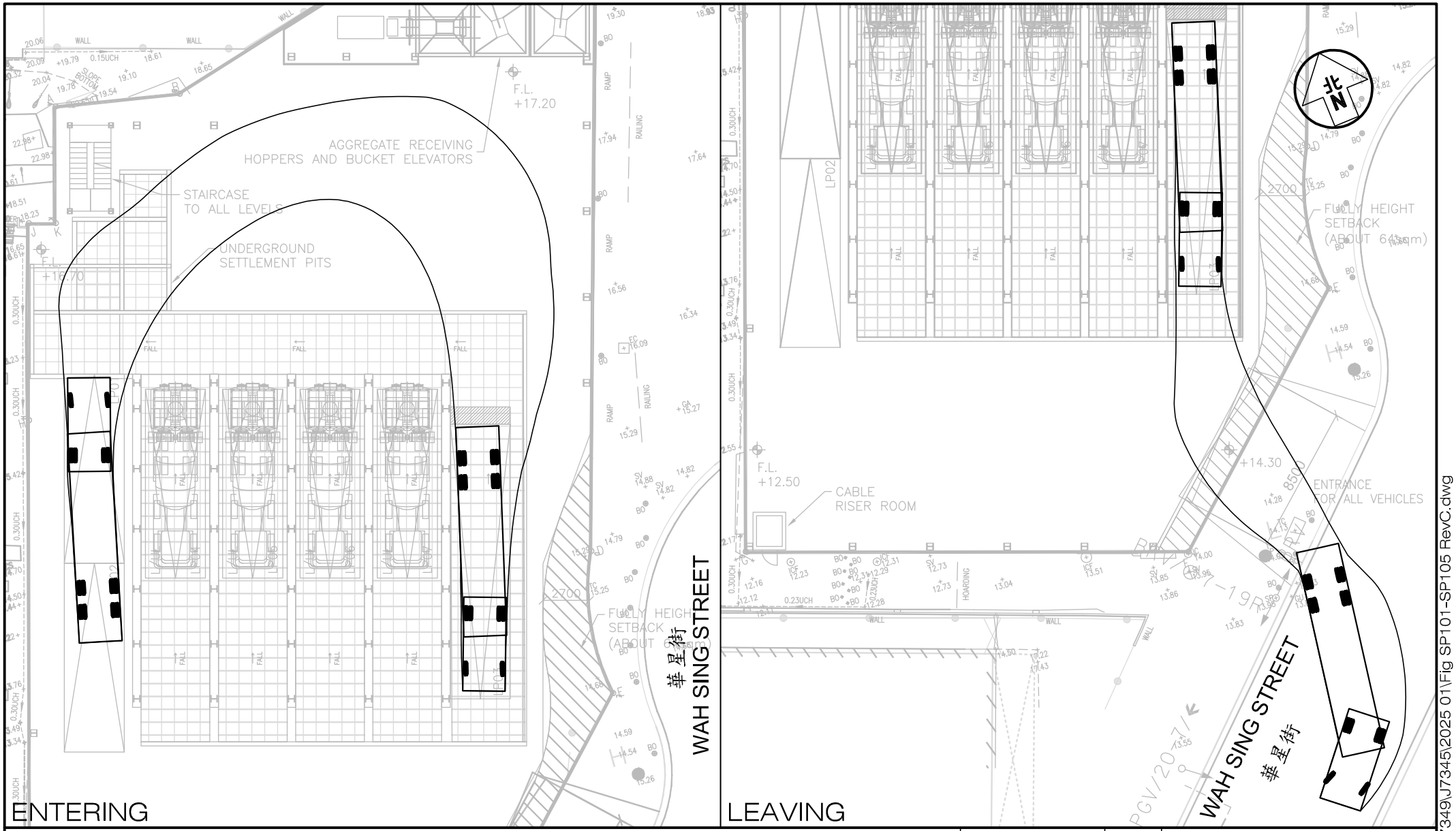




Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. SP101	Revision C
Figure Title: SWEPT PATH OF CONCRETE MIXER TRUCK & CONTAINER ENTERING THE WAITING SAPCES LP01 & 02		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: 1 : 500	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

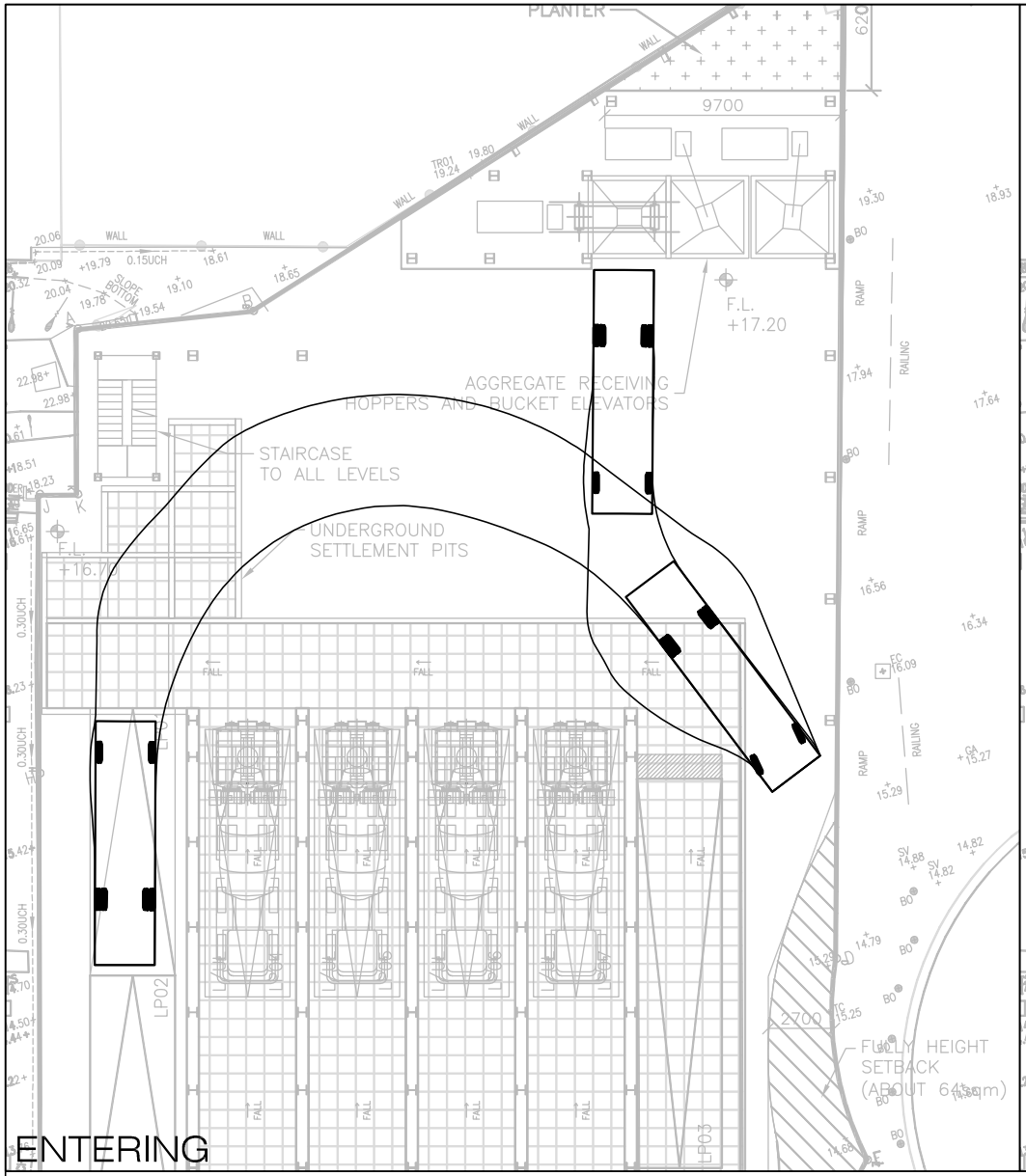
T:\JOB\J7300-J7349\J7345\2025 01\Fig SP101-SP105 RevC.dwg



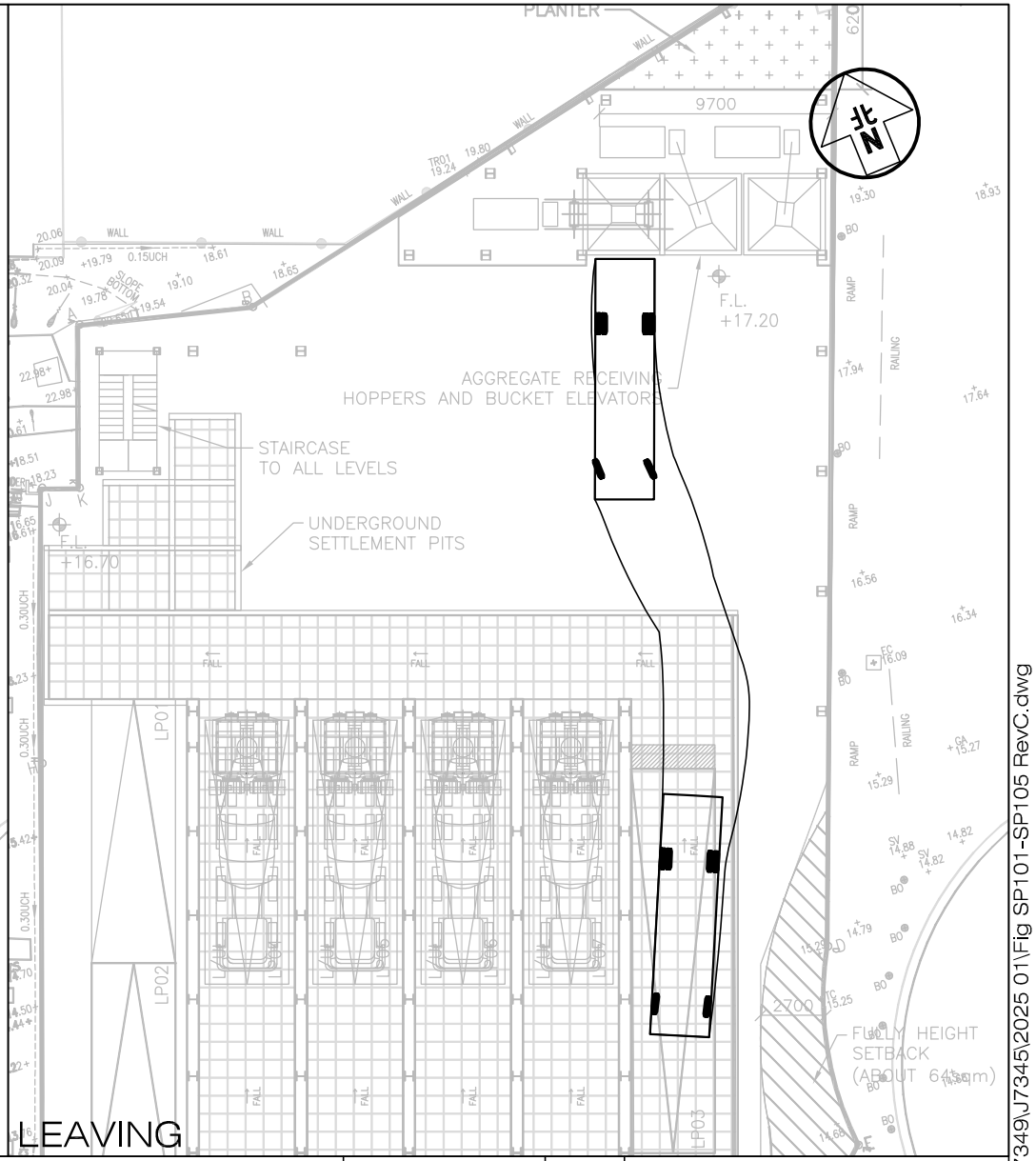
Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. SP102	Revision C
Figure Title: SWEPT PATH OF CONTAINER ENTERING AND LEAVING THE RAW MATERIAL UNLOADING BAY LP03		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: 1 : 300 / Date: 22 JAN 2025	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOBs\J7300-J7349\J7345\2025 01\Fig SP101-SP105 RevC.dwg



ENTERING



LEAVING

Project Title

PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG

J7345

Figure No. SP103

Revision C

Figure Title

SWEPT PATH OF RAW MATERIAL DELIVERY TRUCK ENTERING AND LEAVING THE RAW MATERIAL UNLOADING AREA

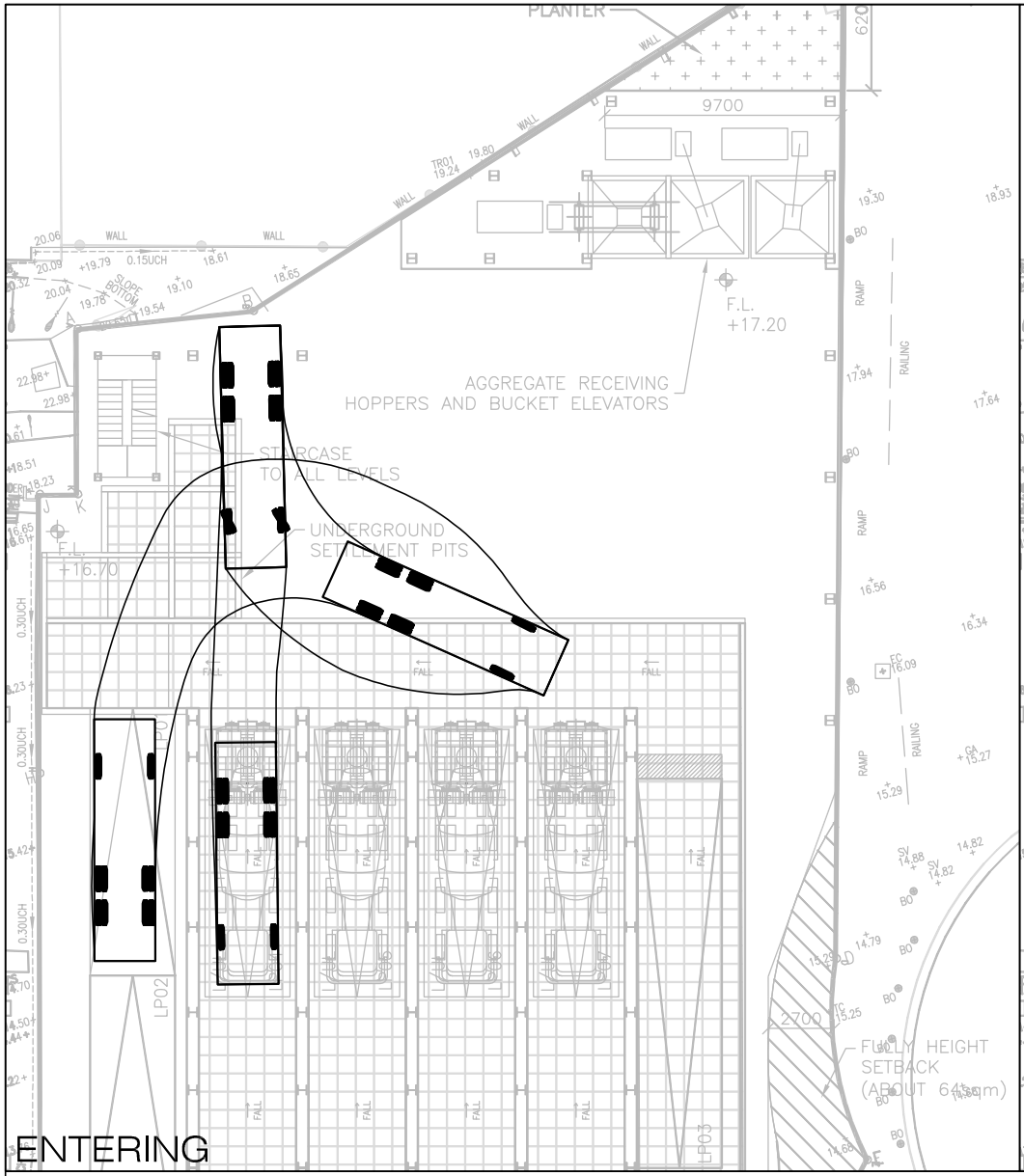
Designed by	Drawn by	Checked by
C Y Y	S C Y	K C

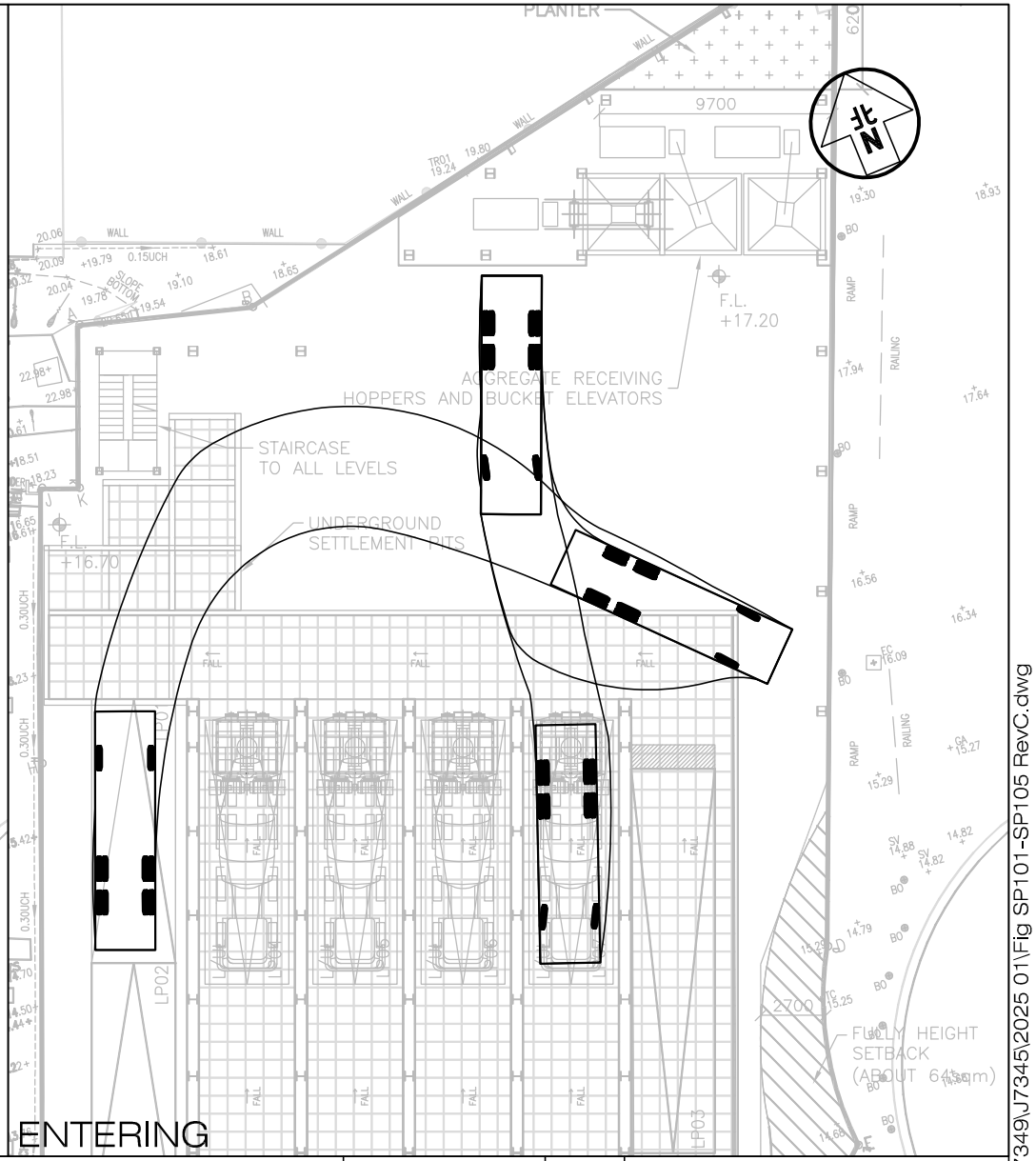
Scale in A4: 1 : 300

Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig SP101-SP105 RevC.dwg





Project Title

PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG

J7345

Figure Title

SWEPT PATH OF CONCRETE MIXER TRUCK ENTERING THE CONCRETE LOADING POINTS LP04 & 07

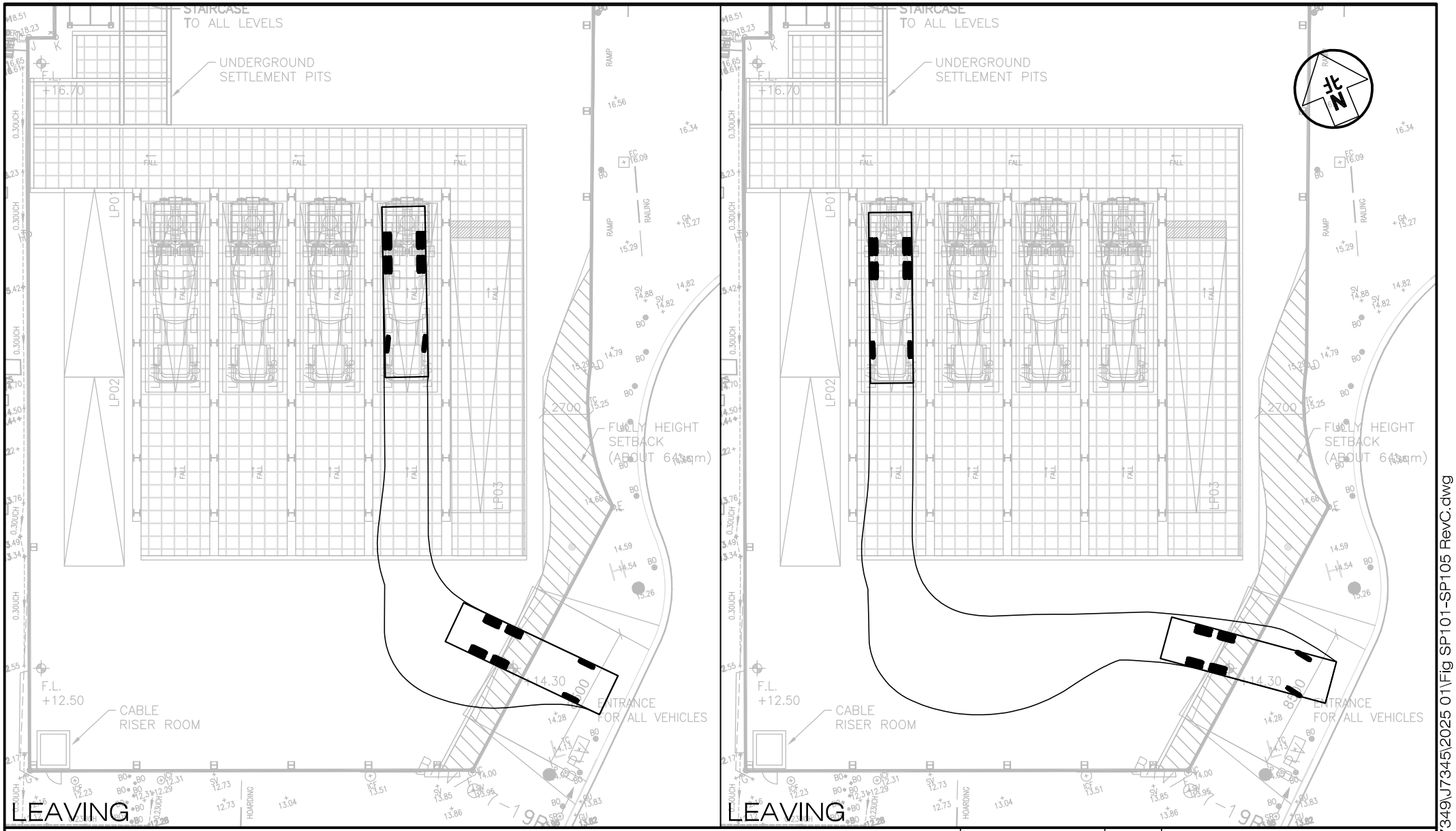
Figure No.	Revision
SP104	C

Designed by	Drawn by	Checked by
C Y Y	S C Y	K C

Scale in A4	Date
1 : 300	22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig SP101-SP105 RevC.dwg

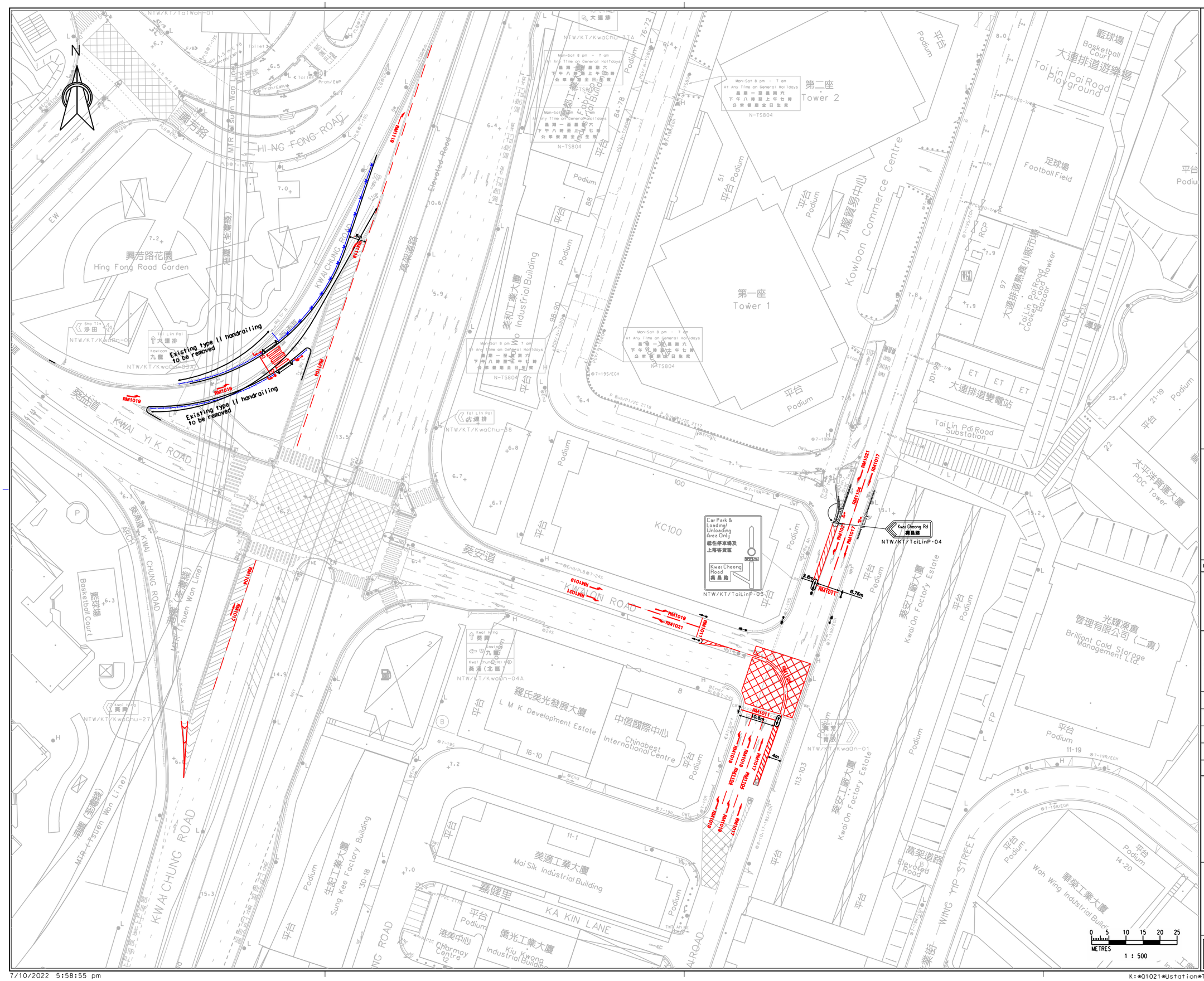


Project Title: PROPOSED CONCRETE BATCHING PLANT AT 13 – 17 WAH SING STREET, KWAI CHUNG	J7345	Figure No. SP105	Revision C
Figure Title: SWEPT PATH OF CONCRETE MIXER TRUCK LEAVING THE CONCRETE LOADING POINTS LP04 & 07		Designed by C Y Y / Drawn by S C Y / Checked by K C	
		Scale in A4: 1 : 300	Date: 22 JAN 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7345\2025 01\Fig SP101-SP105 RevC.dwg

Appendix C – Junction Improvement Scheme proposed by Kwai On Factory Redevelopment



Legend

- Proposed site
- Proposed type II handrailing
- Proposed corrugated beam barrier

Rev.	Description of Revision	Date	Ckd.

Client: HONG KONG HOUSING AUTHORITY

Consultants: MANNINGS (Asia) Consultants Limited

Scale in A3 1:1000	Date	
Designed	Drawn	Checked
Design Team Leader		Date
Approved		Date

Project: HKHA TERM ENGINEERING CONSULTANCY SERVICES 2018-2020 FOR KOWLOON CENTRAL & WEST AND ISLANDS REGION

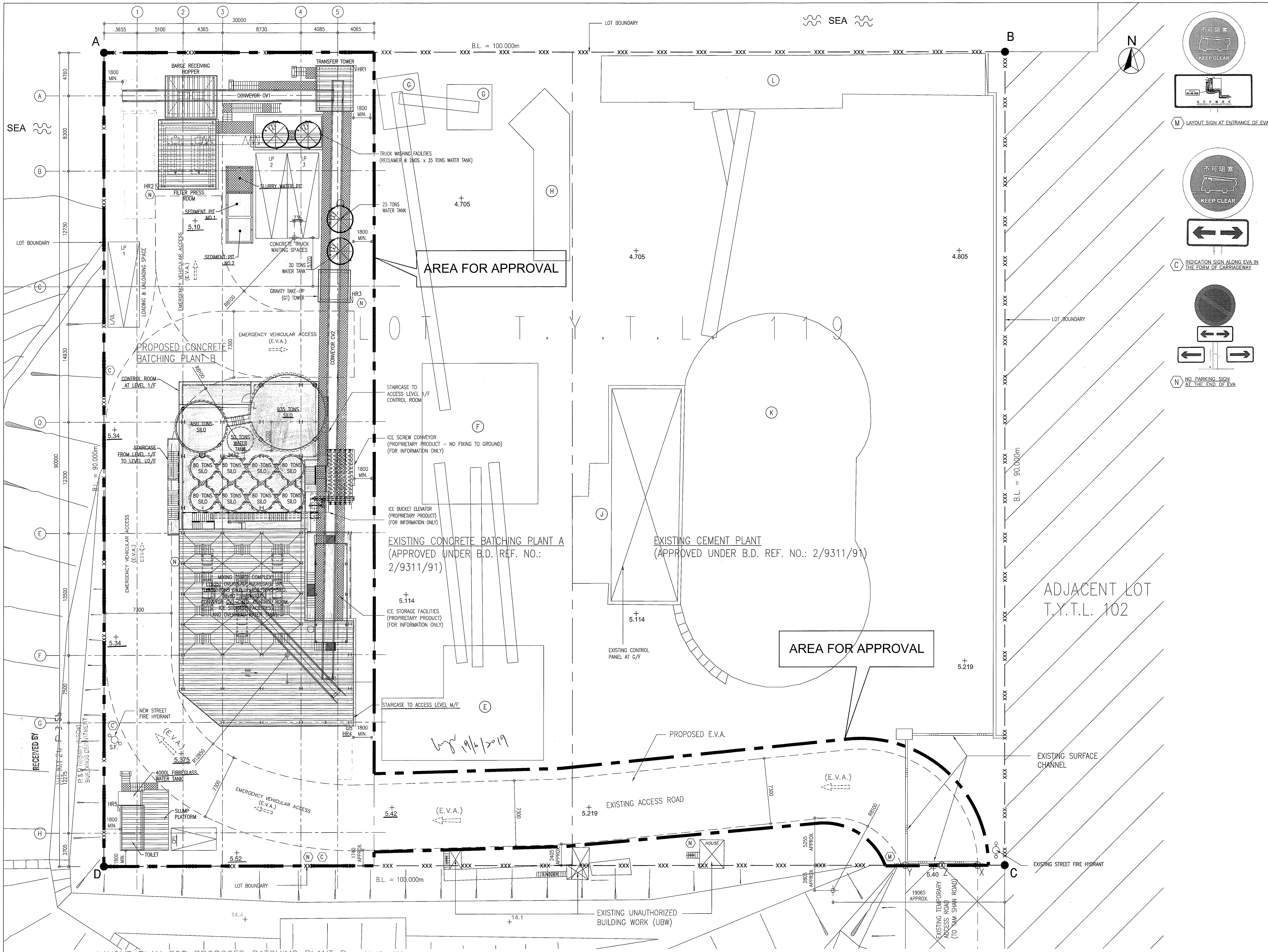
Title: JUNCTION IMPROVEMENT LAYOUT PLAN

Drawing No.	Stage	Rev.
FIGURE 10	P	

7/10/2022 5:58:55 pm

K:*Q1021*Ustation*T002-Kwai On TIA*FIGURE 10n(no set back).dgn

Appendix 2 –
The layout of the Concrete Batching Plant in Tsing Yi



LAYOUT PLAN FOR PROPOSED BATCHING PLANT B SCALE 1:200

REMARKS:
1. REFER TO DRAWING NO. HKC–TYW–GP–03 TO GP–06 FOR MIXING TOWER COMPLEX LAYOUT PLAN
2. REFER TO DRAWING NO. HKC–TYW–GP–07 FOR ANCILLARY BUILDING LAYOUT PLAN
3. ANCILLARY BUILDING INCLUDE TRUCK RECEIVING HOPPER, BARGE RECEIVING HOPPER, FILTER PRESS ROOM, TRUCK UNLOADING RAMP, WATER TANK, TRUCK WASHING FACILITIES, SLURRY WATER PIT, SEDIMENT PIT, F.S. WATER TANK AND PUMP ROOM.
4. REFER TO DRAWING NO, HKC–TYW–GP–08 FOR PORTABLE TOILET & CONVEYOR COMPLEX STRUCTURE LAYOUT PLAN.
5. CONVEYOR COMPLEX STRUCTURE INCLUDE CONVEYOR CV1, CONVEYOR CV2, TRANSFER TOWER AND GT TOWER.

NOTE FOR E.V.A.

1. E.V.A. SHALL BE PROVIDED IN ACCORDANCE WITH PART D OF "CODE OF PRACTICE FOR FIRE SAFETY IN BUILDINGS 2011".

RECEIVED BY
R & D REGISTRY (HQ) BUILDINGS DEPARTMENT

B.D. REFERENCE: BD 2/9128/17

F.S.D. REFERENCE: FP 8/22798

GENERAL NOTES:
1. ALL GENERAL NOTES SHALL BE REFER TO DRAWING NO. HKC–TYW–GP–01.
2. SETTING OUT OF GUIDELINE SHALL BE REFER TO DRAWING NO. HKC–TYW–GP–01.
3. UNLESS OTHERWISE STATED, ALL DIMENSIONS ARE IN mm AND ALL LEVELS ARE IN mPD.

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

Plan Approved
TSANG Po-king, Aileen
Senior Building Surveyor
for BUILDING AUTHORITY
21 JUN 2019

AMENDMENT

CARMEN K. M. CHAN
Authorized Person - Architect

Date	Rev.	Description	Design	Drawn	Ch'd	App'd
05/19	C	BD AMENDMENT	MM	LL	MM	EL
04/18	B	BD RE–SUBMISSION	MM	LL	MM	EL
03/18	A	BD SUBMISSION	MM	LL	MM	EL

AUTHORIZED PERSON & REGISTERED STRUCTURAL ENGINEER:

CHAN & WONG ASSOCIATES LTD.

PROJECT TITLE:

PROPOSED CONCRETE BATCHING PLANT B AT TSING YI WEST

100 TAM KON SHAN ROAD TSING YI, T.Y.T.L. 119

DRAWING TITLE:

GENERAL LAYOUT PLAN FOR PROPOSED BATCHING PLANT B

DRAWING NUMBER:		REVISION
HKC–TYW–GP–02		C
DATE 20–MAY–2019	SCALE 1:300@A1	