20/07/2023

Reference number CHK50709210

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

REVISED TRAFFIC IMPACT ASSESSMENT

SYSTRA MVA

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1. INTRODUCTION

1.1 Background

1.1.1 The proposed residential development is situated at Various lots in D.D.104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories as indicated in **Drawing 1.1**.

1.1.2 The Application Site is currently zoned as "Other Specified Uses" annotated "Comprehensive Development to include Wetland Restoration Area" on the Approved Nam Sang Wai Outline Zoning Plan No.: S/YL-NSW/8 (the "OZP"). In addition, the southern part of the application site falls within the boundary of Wetland Buffer Area in accordance with the Town Planning Board Guideline 12C "Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance" ("TPB PG-No. 12C").

1.1.3 MVA Hong Kong Limited has been commissioned by the Applicant as a traffic consultant to carry out a Traffic Impact Assessment (TIA) in support of the present Section 16 application for a proposed comprehensive development scheme to include wetland restoration proposal. This TIA study is to investigate the potential traffic impact of the proposed development scheme on the local road system.

1.2 Study Objectives

1.2.1 The objective of this TIA is to assess the potential traffic impact due to the proposed development on the area with a view to supporting this planning application. The following tasks were carried out and included in this report:

- Present the proposed development schedule and its internal transport provisions;
- Review the current traffic conditions in the vicinity;
- Estimate the traffic generation/attraction of the proposed development;
- Produce traffic forecasts for the local road network at the adopted design year;
- Investigate the traffic impact on the local road network upon operation of the proposed development; and
- Suggest any traffic improvement measures, if considered necessary, to alleviate the potential traffic problem.

1.3 Report Structure

1.3.1 Following this introductory chapter, there are five further chapters;

- Chapter 2 – Proposed Development, introduces the proposed development scheme;
- Chapter 3 – Existing Traffic Context, reviews the current traffic condition in the vicinity;
- Chapter 4 – Traffic Forecasting, describes the traffic forecasting methodology;
- Chapter 5 – Traffic Impact Assessment, describes the assessments conducted;
- Chapter 6 – Long Term Traffic Forecasts, depicts the forecasting methodology of deriving the long-term traffic forecasts for Environmental Assessment;
- Chapter 7 – Conclusions, summarizes and concludes the study findings.

2. PROPOSED DEVELOPMENT

2.1 Proposed Development Schedule

2.1.1 The proposed scheme comprises a total of 114 units in 108 housing blocks (i.e. 89 blocks of 2- to 4-storey on top of 1-level communal basement carpark and 25 houses of 3-storey including carport) with a total domestic GFA, approximately 20,430m^2 (round-up figure). The main development parameters of the proposed scheme are summarized in **Table 2.1**.

Table 2.1 Development Parameters

Application Site	Average Flat Size (sqm)	No. of Units	GFA (sqm)*
Northeast part	174.49	89	15,530
Southwest part	196	25	4,900
	Total	**114**	**20,430**

*Round-up figures.

2.2 Vehicular Access Arrangement

2.2.1 Due to the limitation of the Application Site and in order to minimize the potential impact on the wetland restoration area, the whole development is proposed to divide into two parts, as presented in **Drawing 2.1**, it is therefore proposed to provide two vehicular accesses in this proposed development. The main vehicular access point (about 7.3m wide) of the proposed development is proposed at Kam Pok Road East. The second vehicular access point with around 7.3m wide of single two-lane carriageway and 2m wide of footpath is proposed at the Application Site. The location of these two proposed two vehicular access points are illustrated in **Drawing 2.1**.

2.2.2 Swept path analysis of private vehicles, 11m long vehicles and fire engines at these two on-site vehicular accesses are attached in **Appendix B.**

2.3 Internal Transport Facility

2.3.1 The parking and loading/unloading provisions for the proposed comprehensive development are proposed in accordance with the Hong Kong Planning Standards and Guidelines "HKPSG" (August 2021 Edition). **Table 2.2** provides the breakdown of the calculations of the proposed provisions.

Table 2.2 Proposed Internal Transport Facility

Development Schedule	Internal Transport Facilities	Use	HKPSG Requirement	
			Min.	Max.
Residential	Private Car Parking Spaces [5]	Private Housing		
- Total GFA: ~20,430m^2		*(i) Residential Units flat size between 130 –160m^2 [2]*	*66*	*115*
- Actual Plot Ratio: 0.4 [1]		*(ii) Residential Units flat size over 160m^2 [3]*	*65*	*114*
- Total No. of Units: 114		**Sub-total**	**131**	**229**
(i) Flat size between 130 – 160m^2: 64 nos.		Required Accessible car parking spaces [4]	2	3
(ii) Flat size over 160m^2: 50 nos.	Motorcycle Parking Spaces [6]	**Total**	**1**	**2**
- No. of houses: 114	Loading/ Unloading Bay [7]	**Total**	**3**	**3**
• Assuming 1 house for every 1 flat	Bicycle Parking [8]	**Total**	**4**	**4**

Notes:
(1) For Domestic Plot Ratio (PR) between 0 – 1, adjustment ratio of 1.3 would be applied for calculating the required private car parking spaces.
(2) For flat size between 130 – 160 m^2, 1 private car parking space would be provided for every 0.56 – 0.98units.
(3) For flat size over 160m^2, 1 private car parking space would be provided for every 0.44 – 0.77units.
The standard for the developments of flat size greater than 160m^2 is a minimum requirement. Request for provision beyond the standard will be considered by Transport Department on a case-by-case basis.
(4) For total 1 – 50 nos. of car parking spaces in lot, 1 accessible car parking space is required.
For total 51 – 150 nos. of car parking spaces in lot, 2 accessible car parking spaces are required.
For total 151 – 250 nos. of car parking spaces in lot, 3 accessible car parking spaces are required
(5) Please be advised that there is no specific requirement in provision of visitor parking for houses, thus no visitor parking is proposed, or as determined by the Authority.
(6) In the case of private housing, the calculation shall be based on 1 motorcycle parking space per 100-150 flats excluding non-residential elements.
(7) Please be advised that there is no specific requirement in provision of loading / unloading bay for houses, thus 3 no. of loading / unloading bay is proposed, or as determined by the Authority.
(8) For residential developments outside a 2km radius of rail station, 1 bicycle parking space for every 30 flats with flat size smaller than 70m^2.

2.3.2 The parking and loading/unloading provisions for the proposed comprehensive development are summarised in **Table 2.3**. Swept path analysis of private cars, 11m long vehicles and refuse collection vehicles on GF and Basement of the Application Site are attached in **Appendix B**, demonstrating sufficient space for maneuvering of long vehicles.

Table 2.3 Proposed Parking Provision

Internal Transport Facilities	Proposed Provision
Private Car Parking Spaces	229
Visitor Parking Spaces	10 [1]
Motorcycle Parking Spaces	12 [2]
Loading/ Unloading Bay for heavy goods vehicle	3
Bicycle Parking	14 [3]

Notes:
(1) Based on HKSPG requirement for house type, no provision is required for the provision of parking for visitor parking. As requested by TD, additional 10 visitor parking spaces are proposed.
(2) As requested by TD, additional 10 motorcycle parking spaces are proposed.
(3) As requested by TD, additional 10 bicycle parking spaces are proposed.

3. EXISTING TRAFFIC CONTEXT

3.1 Surrounding Road Network

3.1.1 As indicated in **Drawing 1.1**, the site is located north of Kam Pok Road East. The development traffic from San Tin Highway would access the site via Castle Peak Road – Tam Mi Section and Kam Pok Road East. The proposed ingress and egress routes of the Application Site are illustrated in **Drawing 3.1**.

3.1.2 Kam Pok Road East is a standard single-two lane carriageway of 10m wide with a 2m wide footpath along its two sides. It mainly serves the local area (both for the Application Site and its surrounding developments).

3.1.3 Castle Peak Road – Tam Mi Section is also a standard single-two lane carriageway of 6.75m wide with a 2m wide footpath to the western side of the Application Site. It is a local access road.

3.2 Current Junction Operational Performance

3.2.1 A total of three local junctions, as indicated in **Drawing 3.2**, have been identified for assessment purpose in this study. These three identified junctions are listed in **Table 3.1**, and their existing layouts are shown in **Drawings 3.3** to **3.5**.

Table 3.1 Identified Local Key Junctions

Ref.(1)	Junction	Type	Drawing No.
J1	Fairview Park Boulevard Roundabout	Roundabout	3.3
J2	Castle Peak Road – Tam Mi / Kam Pok Road East	Signal	3.4
J3	Kam Pok Road East / Kam Pok Road	Priority	3.5

Remark: (1) Refer to **Drawing 3.2** for junction reference.

Traffic Surveys

3.2.2 A series of manual classified traffic surveys were conducted at the three identified junctions to establish the current traffic condition in the vicinity. The surveys were carried out during the morning and evening peak hour periods on a typical weekday in early-December 2022.

3.2.3 The results of the survey results have indicated that the morning and evening peak hours occur during 08:00 – 09:00 and 17:30 – 18:30 respectively. The observed weekday peak hour traffic flows are shown in **Drawing 3.6.**

3.2.4 Junction capacity assessments of the identified junctions were conducted with respect to the observed traffic flows in order to evaluate their current operational performance during the weekday peak hours and the results are summarised in **Table 3.2**. The detailed calculation sheet is provided in **Appendix A**.

Table 3.2 Current Junction Operational Performance

Ref. (1)	Junction	RC/RFC (2)	
		AM Peak	PM Peak
J1	Fairview Park Boulevard Roundabout	0.58	0.56
J2	Castle Peak Road – Tam Mi / Kam Pok Road East	+23%	+48%
J3	Kam Pok Road East / Kam Pok Road	0.36	0.23

Remarks: (1) Refer to **Drawing 3.2** for junction reference.
(2) RC = reserved capacity, RFC = ratio of flow to capacity.

3.2.5 The results of the junction operational performance as indicated in **Table 3.2** have demonstrated that all identified junctions are currently operating with ample capacity during the typical weekday morning and evening peak hours.

3.3 Road Link Assessment

3.3.1 Apart from junction capacity assessments, road link assessments for the identified road links were also carried out as illustrated in **Drawing 3.2**. Performance of these road links were assessed in terms of traffic volume/capacity (V/C) ratio and the results are presented in **Table 3.3** below.

Table 3.3 Road Link Assessment in Year 2022

Ref.(1)	Road Link	Direction	Link Capacity(2) (veh/hr)	Adopted Link Capacity (veh/hr)	Year 2022					
					AM			PM		
					Flows (pcu/hr)	Flows (veh/hr)	V/C ratio	Flows (pcu/hr)	Flows (veh/hr)	V/C ratio
L1	Castle Peak Road – Tam Mi	NB	850	765(3)	500	313	0.41	385	262	0.34
		SB	850	765(3)	320	192	0.25	315	183	0.24
L2	Kam Pok Road East	EB	1100	990(3)	250	120	0.12	185	102	0.10
		WB	1100	990(3)	250	142	0.14	215	119	0.12
L3	Kam Pok Road	EB	1100	990(3)	135	66	0.07	110	62	0.06
		WB	1100	990(3)	170	96	0.10	145	81	0.08
L4	Fairview Park Boulevard	EB	2600	2600	845	735	0.28	625	526	0.20
		WB	2600	2600	640	521	0.20	810	737	0.28

Remark: (1) Refer to **Drawing 3.2** for the location of road section.
(2) Refer to TPDM Vol. 2 Ch. 2.4 for the link capacity.
(3) Since the surveyed proportion of heavy vehicles exceeded 15%, 10% reduction in link capacity has been adopted.

3.3.2 As shown in the above table, results of road link assessment have indicated that all the identified road links are currently operating with sufficient capacity (i.e. V/C ratio ≤0.85) during the typical weekday morning and evening peak hours.

3.4 Existing Public Transport Services

3.4.1 Three franchised bus routes and four GMB routes are operating along Castle Peak Road to/from Yuen Long City Centre. Details of these franchised bus and GMB services are listed in **Table 3.4** and illustrated in **Drawing 3.7**.

Table 3.4 Existing Public Transport Services

Route	Destination – Origin	Peak Frequency (minutes)
Franchised Bus		
76K	Long Ping Estate – Ching Ho Estate	20 – 30
976	Lok Ma Chau (San Tin) → Sai Wan Ho	3 trips in Morning Peak
976	Sai Wan Ho → Lok Ma Chau (San Tin)	3 trips in Evening Peak
976A	Lok Ma Chau (San Tin) – Siu Sai Wan (Island Resort)	1 trip in Morning Peak
976A	Siu Sai Wan (Island Resort) – Lok Ma Chau (San Tin)	1 trip in Evening Peak
Green Mini-Bus		
36	Yuen Long (Fook Hong Street) – Tai Sang Wai Rural Office	10 – 15
37	Yuen Long (Fook Hong Street) – Yau Tam Mei Village Office	12 – 15
38	Yuen Long (Fook Hong Street) – Yau Tam Mei West	10 – 15
75	Yuen Long (Fook Hong Street) – Lok Ma Chau Spur Line Public Transport Interchange	7-9

4. TRAFFIC FORECAST

4.1 Design Year

4.1.1 The tentative operation year of the proposed development is by 2025. Hence, the design year 2028, three years upon operation, has been adopted for traffic forecast and assessment purposes.

4.2 Reference Traffic Forecast

4.2.1 To estimate the 2028 traffic flows in the local road network, an appropriate growth factor has identified for the area in the first instance.

Traffic Growth

4.2.2 Annual Traffic Census (ATC) traffic count stations are available in the vicinity of the Application Site. The traffic counts reported in the latest ATC report over the years between 2016 and 2021 have been referenced and the figures are shown in **Table 4.1**.

Table 4.1 ATC Traffic Counts between 2016 and 2021

Road (Section)	From	To	Stn No.	Average Annual Daily Traffic (A.A.D.T.)						Growth Rate (p.a.)
				2016	2017	2018	2019	2020	2021	16/21
San Tin Highway, Castle Peak Road & San Tam Road	Kam Tin Road	Fairview Park Boulevard	5016	92,230	90,650	86,230	90,860	81,870	86,620	-1.25%
Castle Peak Road – Yuen Long	Yuen Long On Lok Road	Kam Tin Road	5019	31,990	30,040	29,300	30,160	27,640	29,600	-1.54%
Castle Peak Road – Tam Mi, Mai Po & San Tin	Fairview Park Boulevard	Lok Ma Chau Road	5257	10,940*	10,770*	11,980	11,910	11,420*	11,880*	1.66%
San Tam Road	Castle Peak Road - Mai Po	Fairview Park Boulevard Roundabout	5297	6,400*	6,300*	8,540	7,530	7,220*	7,510*	3.25%
San Tam Road	Fairview Park Boulevard RA	End	5505	12,590*	12,390*	12,700*	13,330	13,420	13,960*	2.09%
San Tin Highway	Fairview Park Boulevard	Lok Ma Chau Rd	5508	90,760*	90,110*	92,980*	80,460	82,010	86,000*	-1.07%
			Total	**244,910**	**240,260**	**241,730**	**234,220**	**223,580**	**235,570**	**-0.77%**

Remark: *AADT estimated by Growth Factor

4.2.3 As shown in **Table 4.1**, it is noted that over the past 5 years, the average annual traffic growth pattern shows a negative trend with rate of -0.77% per annum from years 2016-2021.

4.2.4 Apart from ATC traffic count, reference has been made to the Projection of Population Distribution by Tertiary Planning Unit from 2022-2025 published by the Planning Department as presented in **Table 4.2**.

Table 4.2 Average Annual Growth Rate of Projection of Population Distribution by Tertiary Planning Unit 2022-2025

Tertiary Planning Unit	Projection of Population by Tertiary Planning Unit 2022-2025 (1)				Growth Rate (p.a.)
	2022	2023	2024	2025	22/25
525	1,500	1,500	1,500	1,600	2.17%
526	12,600	12,500	12,500	12,400	-0.53%
541	18,900	18,600	18,500	18,200	-1.25%
542	13,900	13,800	13,900	14,100	0.48%
543 & 546	4,300	4,200	4,800	5,000	5.16%
544	3,000	3,000	3,000	3,000	0.00%
548	4,000	3,900	3,900	3,900	-0.84%
Total	**58,200**	**57,500**	**58,100**	**58,200**	**0.00%**

Remark: (1) Projection of Population by Tertiary Planning Unit are taken from Table 15 of "Projection of Population Distribution 2021-2029" published by Planning Department.

4.2.5 As shown in **Table 4.2**, Projection of Population by Tertiary Planning Unit shows there will be no changes in population from year 2022 to year 2025.

4.2.6 Based on the information given by Annual Traffic Census (ATC) traffic count historical data and Projection of Population by Tertiary Planning Unit as shown in **Tables 4.1** to **4.2**, in order to provide a conservative assessment, the growth rate +0.5% per annum is being adopted to cover the growth in traffic from year 2022 to design year 2028.

Adjacent Planned/Committed Developments

4.2.7 A number of other planned/committed developments have been identified in the vicinity of the Application Site expected to be completed by year 2028. The development schedules of these developments are outlined in **Table 4.3** and the location of these developments are shown in **Drawing 4.1**.

Table 4.3 Planned/Committed Developments

Ref. (1)	Committed/Approved Developments	Parameters	Estimated Trip Generations (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
1	Sha Po North Development	82,430 m^2 GFA	106	61	44	58
2	Residential Development R(D) at Kam Pok Road (to the west of Chuk Yuen Tsuen)	13,183 m^2 GFA	20	13	12	17
3	Lots 43 S.A RP, 50 S.A and 50 RP in D.D.101, Wo Shang Wai, Mai Po, Yuen Long, New Territories	82,963 m^2 GFA	87	70	76	109
4	Residential Development next to Shek Wu Wai San Tsuen	45,197 m^2 GFA	81	54	52	60
5	Residential Development at the Junction of San Tam Road and Maple Gardens 1st Street	4,249 m^2 GFA	5	4	4	5
6	Residential Development at Kam Pok Road near Fairview Park	55,510 m^2 GFA	57	51	67	73
7	Comprehensive Development and Wetland Protection near Yau Mei San Tsuen	16,200 m^2 GFA	27	14	13	18
8	Lots 8 RP (Part), 14S.B. RP (Part), 45 and 1740S.A. RP in D.D.107 and adjoining government land to the south of Wing Kei Tsuen, Yuen Long	37,171 m^2 GFA	85	90	115	132
9	Lot 1743 S.C. RP (Part) in D.D.107 to the South of Wing Kei Tsuen, Yuen Long	Retail: 38,300 m^2 GFA Hotel: 700 Rooms	181	195	209	245
10	Residential development in D.D.104 and adjoining government land, Mai Po, Yuen Long	7,540 m^2 GFA	15	9	9	11

Remark: (1) Refer to **Drawing 4.1** for development locations.

4.3 Development Traffic Generations

Trip Generation of Proposed Scheme

4.3.1 The proposed development comprises a total of 114 houses and their trip generations of the proposed development are estimated in accordance with the relevant trip rates as tabulated in the Transport Planning Design Manual (TPDM). **Table 4.4** summarizes the trip rates of the proposed development.

Table 4.4 Estimated Trip Rates of Proposed Development

Private Housing	Trip Rates (pcu/hr/flat)			
	AM Peak		PM Peak	
	Gen	Att	Gen	Att
R(C), Average flat size = 180m^2 per units, Mean rate, for 89 houses with an average flat size 174.5m^2 (Northeast part of Application Site)	0.2772	0.1769	0.1635	0.2394
R(C), Average flat size = 240m^2 per units, Mean rate, for 25 houses with an average flat size 196m^2 (Southwest part of Application Site)	0.3012	0.2189	0.2235	0.3234

* Trip rates extracted from TPDM.

4.3.2 The resulting trips generated and attracted by the proposed development are given in Table **4.5**.

Table 4.5 Estimated Trip Generation and Attraction of Proposed Development

	Trip Generations (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
89 houses with an average flat size 174.5m^2 (Northeast part of Application Site)	25	16	15	22
25 houses with an average flat size 196m^2 (Southwest part of Application Site)	8	6	6	9
Total (2-way)	55		52	

4.3.3 As indicated in **Table 4.5**, the proposed development would generate a two-way total of 55 pcu/hr and 52 pcu/hr during the weekday morning and evening peak hour periods respectively.

4.3.4 Based on the above, the year 2028 reference traffic flows and year 2028 design flows are produced according to the following:

Year 2028 Reference Case = Observed Traffic Flows x Adopted Grow Factor (i.e. +0.5%) + Other Planned or Committed Development Trip Generation

Year 2028 Design Case = 2028 Reference Case + Proposed Trip Generation due to Application Site

4.3.5 The traffic flows under year 2028 reference case and year 2028 design case are shown in **Drawing 4.2** and **Drawing 4.3** respectively.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Year 2028 Junction Operational Performance

5.1.1 To assess the traffic impact of the proposed development on the surrounding road network at the design year 2028, operational performances of the identified key local junctions J1 and J2 were reviewed based on the existing junction layouts for both reference and design scenarios. As mentioned in **Section 2.2,** the access road with around 7.3m wide of single two-lane carriageway and 2m wide of footpath is proposed to connect the second vehicular access at the southwest of the Application Site to Kam Pok Road East, the junction layout of junction J3 is proposed to be modified slightly as shown in **Drawing 5.1**. The results of the assessment for the year 2028 reference and design scenarios are summarized in **Table 5.1**. The detailed calculation sheet is in **Appendix A**.

Table 5.1 Year 2028 Junction Operational Performance

Ref.(1)	Junction	RC/RFC (2)			
		Reference Scenario		Design Scenario	
		AM Peak	PM Peak	AM Peak	PM Peak
J1	Fairview Park Boulevard Roundabout	0.72	0.74	0.74	0.76
J2	Castle Peak Road – Tam Mi / Kam Pok Road East	+8%	+14%	+2%	+11%
J3	Kam Pok Road East / Kam Pok Road	0.37	0.24	0.37	0.24

Remarks: (1) Refer to **Drawing 3.2** for junction reference.
(2) RC = reserved capacity, RFC = ratio of flow to capacity.

5.1.2 The results of the above assessment have indicated that the identified key junction J1 and J3 would operate with ample capacity but junction J2 would operate at capacity in year 2028 with the proposed development at the Application Site.

5.1.3 In order to cater for the future traffic demand, junction improvement schemes are proposed for junction J2 illustrated in **Section 5.2**.

5.2 Proposed Traffic Improvement Scheme

Proposed Junction Improvement of Kam Pok Road / Castle Peak Road – Tam Mi (J2)

5.2.1 Modification of cycle time of the signal junction is proposed to be increased from 94 and 90 seconds to 120 seconds during AM and PM peak period respectively, while the existing method-of-control for the signal junction is maintained. The junction performance of junction J2 under the proposed improvement scheme is summarized in the below **Table 5.2**. The detailed calculation sheet is in **Appendix A**.

Table 5.2 Junction Performances in year 2028 with Proposed Traffic Improvement Scheme

Ref	Junction	Method of Control	Year 2028 R.C.[1] / DFC [2]			
			Design Scenario (without junction Improvement)		Design Scenario (with junction Improvement)	
			AM Peak	PM Peak	AM Peak	PM Peak
J2	Castle Peak Road – Tam Mi / Kam Pok Road East	Signal	+2%	+11%	+18%	+33%

5.3 Year 2028 Road Link Assessment

5.3.1 Road link assessments were also conducted for the identified road links to assess the traffic impact of the proposed development on the surrounding road network at the design year 2028 under reference and design scenarios. The results are presented in **Tables 5.3** to **5.4** below.

Table 5.3 Road Link Assessment in Year 2028 under Reference Scenario

Ref.[1]	Road Link	Direction	Link Capacity[2] (veh/hr)	Adopted Link Capacity (veh/hr)	Year 2028 Reference Scenario					
					AM			PM		
					Flows (pcu/hr)	Flows (veh/hr)	V/C ratio	Flows (pcu/hr)	Flows (veh/hr)	V/C ratio
L1	Castle Peak Road – Tam Mi	NB	850	765[3]	595	372	0.49	490	334	0.44
		SB	850	765[3]	415	249	0.33	435	252	0.33
L2	Kam Pok Road East	EB	1100	990[3]	255	122	0.12	190	105	0.11
		WB	1100	990[3]	255	145	0.15	220	121	0.12
L3	Kam Pok Road	EB	1100	990[3]	135	66	0.07	110	62	0.06
		WB	1100	990[3]	175	99	0.10	150	84	0.08
L4	Fairview Park Boulevard	EB	2600	2600	930	809	0.31	680	572	0.22
		WB	2600	2600	655	533	0.21	830	755	0.29

Remark: (1) Refer to **Drawing 3.2** for the location of road section.
(2) Refer to TPDM Vol. 2 Ch. 2.4 for the link capacity.
(3) Since the surveyed proportion of heavy vehicles exceeded 15%, 10% reduction in link capacity has been adopted.

Table 5.4 Road Link Assessment in Year 2028 under Design Scenario

Ref.[1]	Road Link	Direction	Link Capacity[2] (veh/hr)	Adopted Link Capacity (veh/hr)	Year 2028 Reference Scenario					
					AM			PM		
					Flows (pcu/hr)	Flows (veh/hr)	V/C ratio	Flows (pcu/hr)	Flows (veh/hr)	V/C ratio
L1	Castle Peak Road – Tam Mi	NB	850	765[3]	628	393	0.51	511	348	0.45
		SB	850	765[3]	437	262	0.34	466	270	0.35
L2	Kam Pok Road East	EB	1100	990[3]	288	138	0.14	211	116	0.12
		WB	1100	990[3]	282	160	0.16	251	138	0.14
L3	Kam Pok Road	EB	1100	990[3]	135	66	0.07	110	62	0.06
		WB	1100	990[3]	175	99	0.10	150	84	0.08
L4	Fairview Park Boulevard	EB	2600	2600	930	809	0.31	680	572	0.22
		WB	2600	2600	655	533	0.21	830	755	0.29

Remark: (1) Refer to **Drawing 3.2** for the location of road section.
(2) Refer to TPDM Vol. 2 Ch. 2.4 for the link capacity.
(3) Since the surveyed proportion of heavy vehicles exceeded 15%, 10% reduction in link capacity has been adopted.

5.3.2 As shown in **Tables 5.3** to **5.4**, results of road link assessment have indicated that all the identified road links are expected to operate with sufficient capacity (i.e. V/C ratio ≤0.85) in year 2028 under reference and design scenarios.

6. LONG TERM TRAFFIC FORECASTS

6.1 Design Year

6.1.1 Taking into consideration that the anticipated completion year of the proposed development is year 2025, the design year 2040 traffic forecasts (i.e. 15 years after the completion) was adopted as the assumption for the Noise Impact Assessment.

6.2 Traffic Forecast Methodology

6.2.1 The long-term traffic forecast exercise covers the road links within the 300m radius catchment of the proposed development site, which includes a total of 55 road sections identified, as illustrated and summarized in **Drawing 6.1 and Table 6.1**.

Table 6.1 List of Road Sections for Noise Impact Assessment

Road Sections	Road Name	Road Type
1E	Slip Road of San Tin Highway	Local Road
1F	Slip Road of San Tin Highway	
1G	Slip Road of San Tin Highway	
1H	Slip Road of San Tin Highway	
2A	Castle Peak Road - Tam Mi	
2B - NB	Castle Peak Road - Tam Mi	
2B - SB	Castle Peak Road - Tam Mi	
2C	Castle Peak Road - Tam Mi	
3A	San Tam Road	
3B	San Tam Road	
3C	San Tam Road	
4A	Fairview Park Boulevard	
4B	Fairview Park Boulevard	
4C	Fairview Park Boulevard	
4D	Fairview Park Boulevard	
4E	Fairview Park Boulevard	
4F	Fairview Park Boulevard	
4G	Fairview Park Boulevard	
4H	Fairview Park Boulevard	
4I	Ha San Wai Road	
5A - EB	Kam Pok Road East	
5A - WB	Kam Pok Road East	
5B - EB	Kam Pok Road East	
5B - WB	Kam Pok Road East	
5C	Kam Pok Road West	
5D	Kam Pok Road West	
6A	Yau Pok Road	
6B	Yau Pok Road	
6C	Yau Pok Road	
6D	Unnamed Road	

Road Sections	Road Name	Road Type
6E	Unnamed Road	
6F	Unnamed Road	
7A	Pok Wai South Road	
7B - NB	Kam Pok Road	Local Road
7B - SB	Kam Pok Road	
7C	Kam Pok Road	
7D	Kam Pok Road	
8A	Kam Pok Road	
8B	Pok Wai Road	
8C	Unnamed Road	
8D	Unnamed Road	
9A	Access Road to Application Site	
10A	Fairview Park Boulevard Roundabout	
10B	Fairview Park Boulevard Roundabout	
10C	Fairview Park Boulevard Roundabout	
10D	Fairview Park Boulevard Roundabout	
10E	Fairview Park Boulevard Roundabout	
10F	Fairview Park Boulevard Roundabout	
10G	Fairview Park Boulevard Roundabout	
10H	Fairview Park Boulevard Roundabout	
10I	Fairview Park Boulevard Roundabout	
1A	San Tin Highway	Strategic Road
1B	San Tin Highway	
1C	San Tin Highway	
1D	San Tin Highway	

Local Roads

6.2.2 Road section 1E to 10I were identified as local roads. To derive the 2040 future traffic forecast data, the year 2028 design traffic flows as discussed in **Section 4** have been used as basis.

Traffic Growth from year 2028 to 2040

6.2.3 For the growth of the 2028 traffic flows up to the 2040 traffic flows, reference has been made to Hong Kong resident population estimates from "Hong Kong Population Projections 2020-2069" published by the Census and Statistics Department. The available projected Hong Kong resident population at the year 2028 and 2040 are illustrated in **Table 6.2**.

Table 6.2 Average Annual Growth Rate of Hong Kong Resident Population 2028-2040

	2028	2040	Annual Growth Rate (2028- 2040)
Hong Kong Population (in thousands)	7,864.6	8,104.9	+0.25%

6.2.4 As shown in **Table 6.2**, Hong Kong population shows a positive growth trend with rate of +0.3% per annum from 2028-2040, which was adopted for projecting the year 2028 traffic flows up to year 2040.

Strategic Road

6.2.5 San Tin Highway (i.e. road section 1A to 1D) is an important strategic road link in Northwest New Territories (NWNT). Since the traffic growth of the strategic road would be affected by developments of a wider area, the traffic growth rate has been made reference to the latest 2019-Based Territorial Population and Employment Data Matrices (TPEDM) planning data published by the Planning Department in the NWNT.

Traffic Growth from year 2022 to 2031

6.2.6 **Drawing 6.1** shows the TPEDM zone plan of the NWNT. The average annual growth rate in terms of population from years 2019 to 2031 is illustrated in **Table 6.3**.

Table 6.3 2019 and 2031 Population Growth in NWNT Sub-region

Sub-region	Population		Growth Rate per annum (%)
	2019	2031	2019/2031
Northwest New Territories (NWNT)	1,154,400	1,396,650	+1.60%

6.2.7 From **Table 6.3**, the average annual growth rate of population in the area from year 2019 to 2031 is +1.60% per annum, which was adopted for projecting the observed traffic flows in year 2021 up to year 2031.

Traffic Growth from year 2031 to 2040

6.2.8 For the growth of the 2031 traffic flows up to the 2040 traffic flows, reference has been made to Hong Kong resident population estimated in "Hong Kong Population Projections 2020-2069" published by the Census and Statistics Department. The available projected Hong Kong resident population at the year 2026 and 2040 are illustrated in **Table 6.4**.

Table 6.4 Average Annual Growth Rate of Hong Kong Resident Population 2031-2040

	2031	2040	Annual Growth Rate (2031 - 2040)
Hong Kong Population (in thousands)	7,945.8	8,104.9	+0.22%

6.2.9 As shown in **Table 6.4**, Hong Kong population shows a positive growth trend with an average rate of +0.22% per annum from 2031 to 2040, which was adopted for projecting the year 2031 traffic flows up to year 2040.

6.3 Vehicle Classes

6.3.1 The types of vehicles in the traffic forecast were first sectored into 12-class according to surveyed vehicle distribution.

6.3.2 For noise impact assessment purpose, it is understood that vehicles with an unladen weight of 1,525 kg should be categorised as heavy vehicles. Therefore, heavy vehicle (HV) percentage including the category of goods vehicle (GV) (comprise with vans, light goods vehicles (LGV), medium/heavy goods vehicles (MGV/HGV) and container trucks) and the category of public transport (PT) (comprise with public light buses (PLB), non-franchised buses (SPB) (including

small coaches and large coaches) and franchised buses (FB)) are adopted in accordance with the NIA requirement.

6.4 2040 Traffic Forecasts

6.4.1 The 2040 traffic forecasts together with the vehicle composition breakdown as per the requirements of Environmental Consultant for NIA purpose are summarized in **Table 6.5**.

Table 6.5 2040 Traffic Forecasts

Road Section No.(1)	Road Name	Direction	2040 AM Peak Traffic Flows (2) (veh/hr)	HV% (3)
1A	San Tin Highway	NB	4230	45%
1B	San Tin Highway	SB	4520	47%
1C	San Tin Highway	NB	3310	48%
1D	San Tin Highway	SB	3440	51%
1E	Slip Road of San Tin Highway	NB	920	35%
1F	Slip Road of San Tin Highway	NB	560	37%
1G	Slip Road of San Tin Highway	SB	700	35%
1H	Slip Road of San Tin Highway	SB	1090	33%
2A	Castle Peak Road - Tam Mi	2-way	520	37%
2B - NB	Castle Peak Road - Tam Mi	NB	430	49%
2B - SB	Castle Peak Road - Tam Mi	SB	300	50%
2C	Castle Peak Road - Tam Mi	2-way	1000	33%
3A	San Tam Road	2-way	960	42%
3B	San Tam Road	2-way	1000	41%
3C	San Tam Road	2-way	920	35%
4A	Fairview Park Boulevard	EB	850	24%
4B	Fairview Park Boulevard	WB	570	31%
4C	Fairview Park Boulevard	EB	810	22%
4D	Fairview Park Boulevard	WB	520	31%
4E	Fairview Park Boulevard	EB	700	14%
4F	Fairview Park Boulevard	WB	530	22%
4G	Fairview Park Boulevard	EB	700	15%
4H	Fairview Park Boulevard	WB	510	22%
4I	Ha San Wai Road	2-way	50	37%
5A - EB	Kam Pok Road East	EB	170	67%
5A - WB	Kam Pok Road East	WB	170	69%
5B - EB	Kam Pok Road East	EB	120	71%
5B - WB	Kam Pok Road East	WB	120	76%
5C	Kam Pok Road West	2-way	330	61%
5D	Kam Pok Road West	2-way	320	59%
6A	Yau Pok Road	2-way	30	50%
6B	Yau Pok Road	SB	20	25%
6C	Yau Pok Road	NB	0(3)	N/A
6D	Unnamed Road	2-way	120	61%
6E	Unnamed Road	2-way	60	56%
6F	Unnamed Road	2-way	170	64%
7A	Pok Wai South Road	SB	60	19%
7B - NB	Kam Pok Road	NB	110	50%
7B - SB	Kam Pok Road	SB	100	37%

7C	Kam Pok Road	2-way	200	24%
7D	Kam Pok Road	2-way	210	20%
8A	Kam Pok Road	2-way	170	70%
8B	Pok Wai Road	2-way	20	22%
8C	Unnamed Road	2-way	100	43%
8D	Unnamed Road	2-way	30	37%
9A	Access Road to Application Site	2-way	20	13%
10A	Fairview Park Boulevard RB	1-way	2220	34%
10B	Fairview Park Boulevard RB	1-way	2260	33%
10C	Fairview Park Boulevard RB	1-way	1700	32%
10D	Fairview Park Boulevard RB	1-way	2400	33%
10E	Fairview Park Boulevard RB	1-way	2480	33%
10F	Fairview Park Boulevard RB	1-way	1980	35%
10G	Fairview Park Boulevard RB	1-way	890	39%
10H	Fairview Park Boulevard RB	1-way	1810	37%
10I	Fairview Park Boulevard RB	1-way	1940	38%

Remark: (1) Location refer to **Drawing 6.1**.
(2) Round up to the nearest 10.
(3) Heavy Vehicle (HV) percentage includes light/medium/heavy goods vehicle/container truck, non-franchised bus, public light bus and franchised bus.
(4) The road section is emergency vehicle access road with emergency crash gate, thus no general traffic is forecasted

7. CONCLUSION

7.1 Summary

7.1.1 The proposed comprehensive development to include wetland restoration proposal is situated at various lots in D.D.104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories.

7.1.2 The Application Site is currently zoned as "Other Specified Uses" annotated "Comprehensive Development to include Wetland Restoration Area" on the Approved Nam Sang Wai Outline Zoning Plan No.: S/YL-NSW/8 (the "OZP"). In addition, the southern part of Application Site falls within the boundary of Wetland Buffer Area in accordance with the Town Planning Board Guideline 12C "Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance" ("TPB PG-No. 12C").

7.1.3 The provision of the internal transport facilities in the proposed development at the Application Site is proposed in accordance with Hong Kong Planning Standards and Guidelines (HKPSG).

7.1.4 Two vehicular access points are proposed. Each serves one partial of development within the Application Site. The primary vehicular access of the Application Site is on Kam Pok Road East whilst the secondary one is proposed near the junction of Kam Pok Road East and Kam Pok Road at the southwest of the Application Site with 7.3m wide of single two-lane carriageway and 2m wide of footpath.

7.1.5 Traffic surveys were conducted to establish the current traffic condition in the vicinity of the Application Site. The results of the junction capacity assessments and road link assessments have revealed that all the identified local junctions and road links are currently operating with ample capacity.

7.1.6 The tentative operation year of proposed development is 2025. Thus, the design year of 2028 is being adopted for traffic forecast and assessment purposes.

7.1.7 Operational performances of the identified local junctions and identified road links were assessed based on the anticipated year 2028 traffic flows.

7.1.8 Operational assessment was carried out for each identified junction in year 2028. Fairview Park Boulevard Roundabout (J1) and the junction of Kam Pok Road East / Kam Pok Road (J3) would operate with capacity. The results of the assessment have indicated that only the junction of Kam Pok Road / Castle Peak Road – Tam Mi (J2) would operate at its capacity. To cater for the future traffic demand, cycle time of the signal junction is proposed to be increased. As such, the junction performance of J2 under the proposed improvement scheme will then operate with ample capacity.

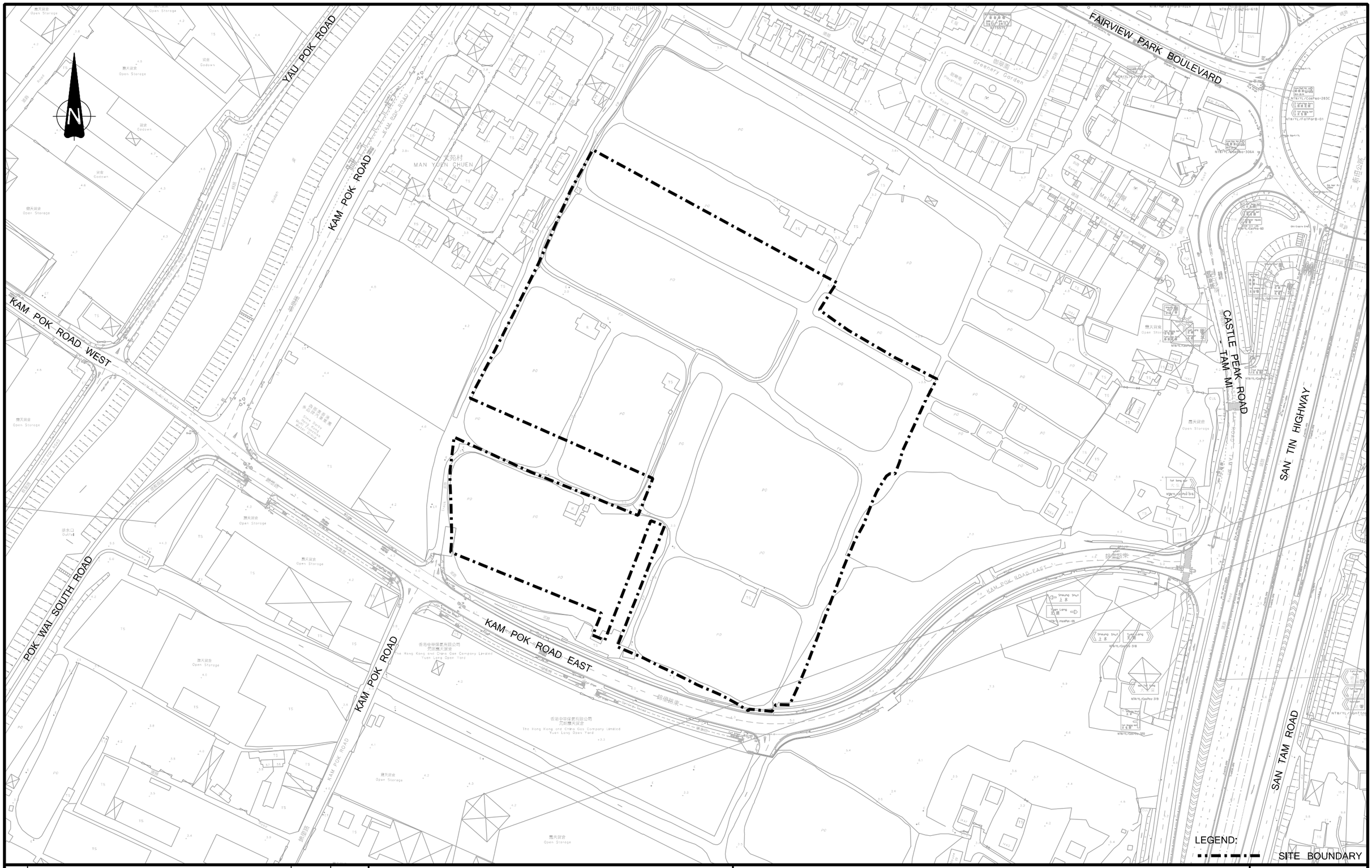
7.1.9 Road link assessments were conducted in year 2028. All the identified road links are expected to operate with sufficient capacity (i.e. V/C ratio ≤0.85) in year 2028 under reference and design scenarios.

7.1.10 Year 2040 has been adopted as the design year for long term traffic forecast for the purpose of Traffic Noise Impact Assessment. Methodology and results of the traffic forecast are in **Section 6**.

7.2 Conclusion

To conclude, the results of the traffic impact assessment have demonstrated that the traffic generated by the proposed development can be absorbed by the nearby road network and the traffic impact to be caused by the proposed development will be insignificant. Hence it can be concluded that the proposed comprehensive development scheme to include wetland restoration proposal is acceptable in traffic planning term.

DRAWINGS



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Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
SITE LOCATION PLAN

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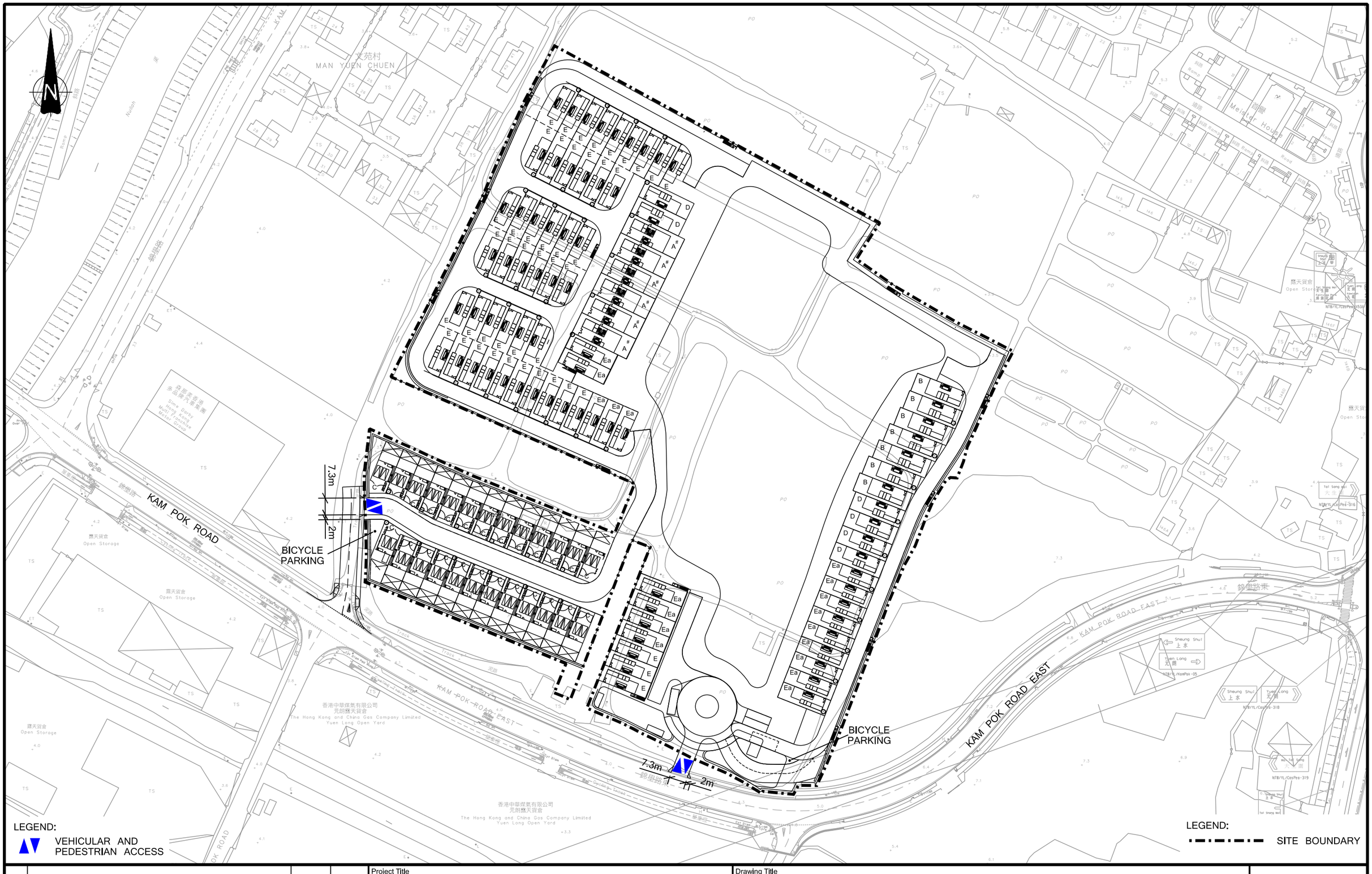
SYSTRA MVA

CHK50709210/TIA/F11.DGN/HHY/13MAR23



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Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
MASTER LAYOUT PLAN AT GROUND FLOOR LEVEL

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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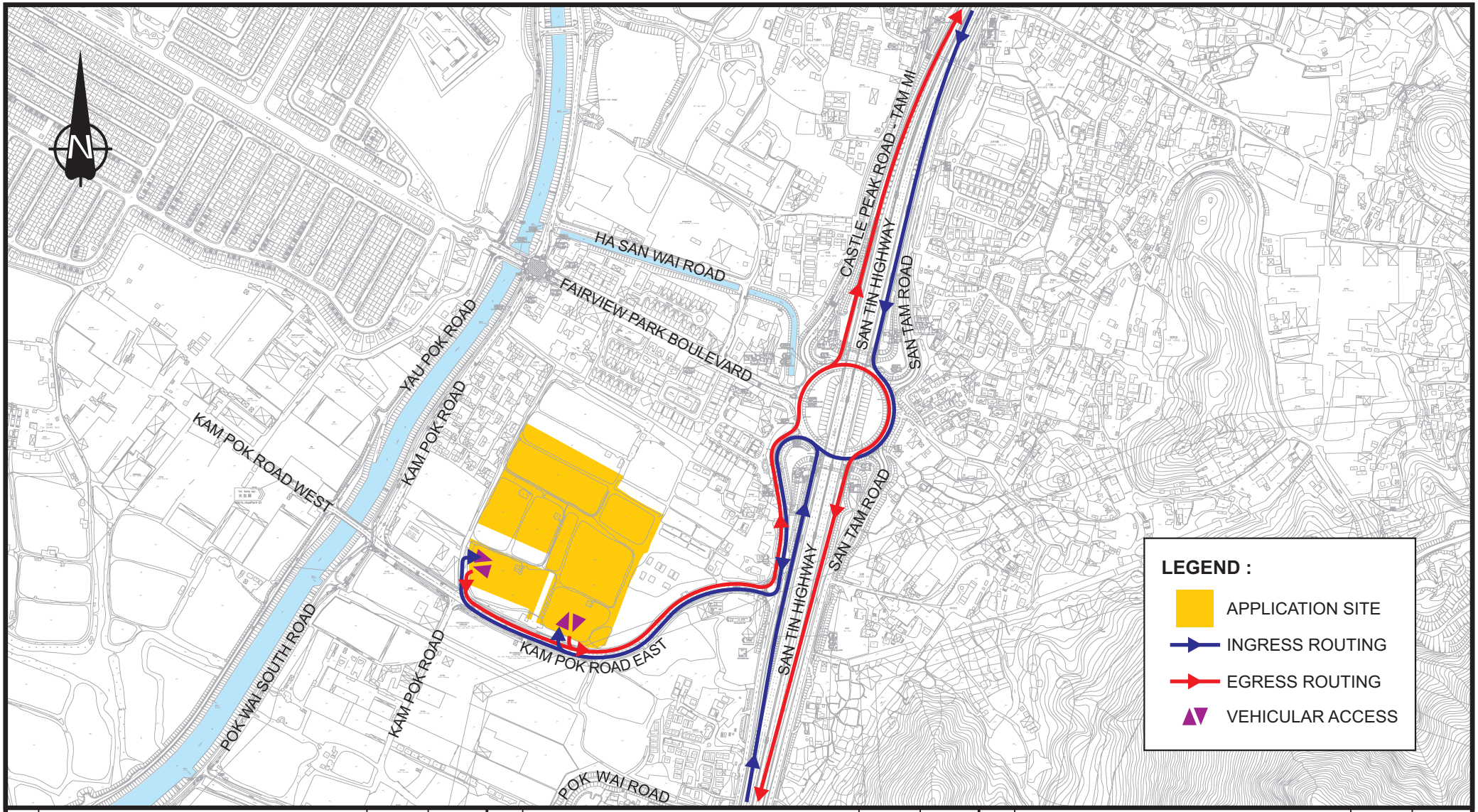

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Rev.	Description	Checked	Date
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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

MAJOR INGRESS AND EGRESS ROUTES

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SYSTRA MVA

CHK50709210/TIA/F31-A.CDR/LLH/19JUL23

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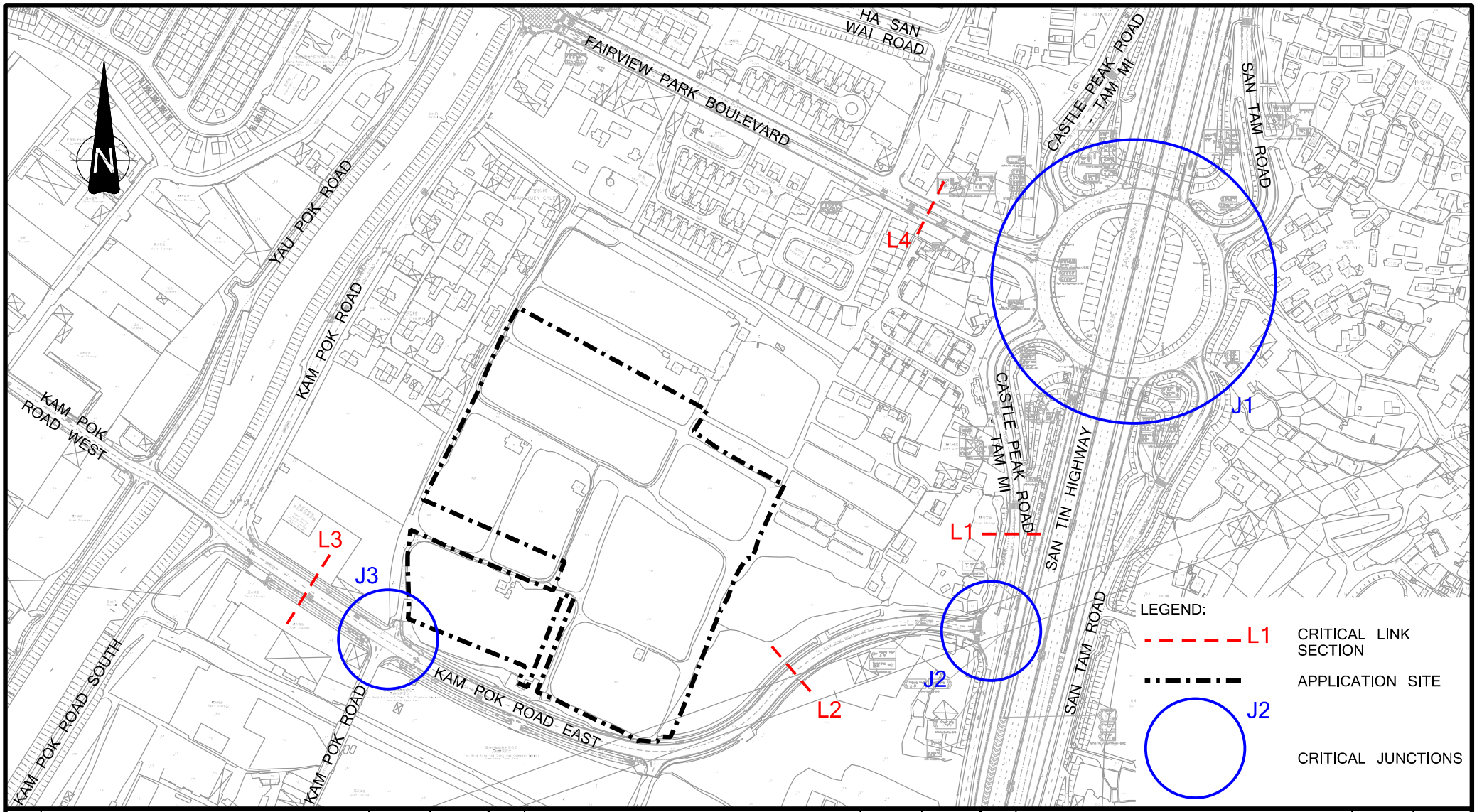

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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

IDENTIFIED KEY JUNCTIONS

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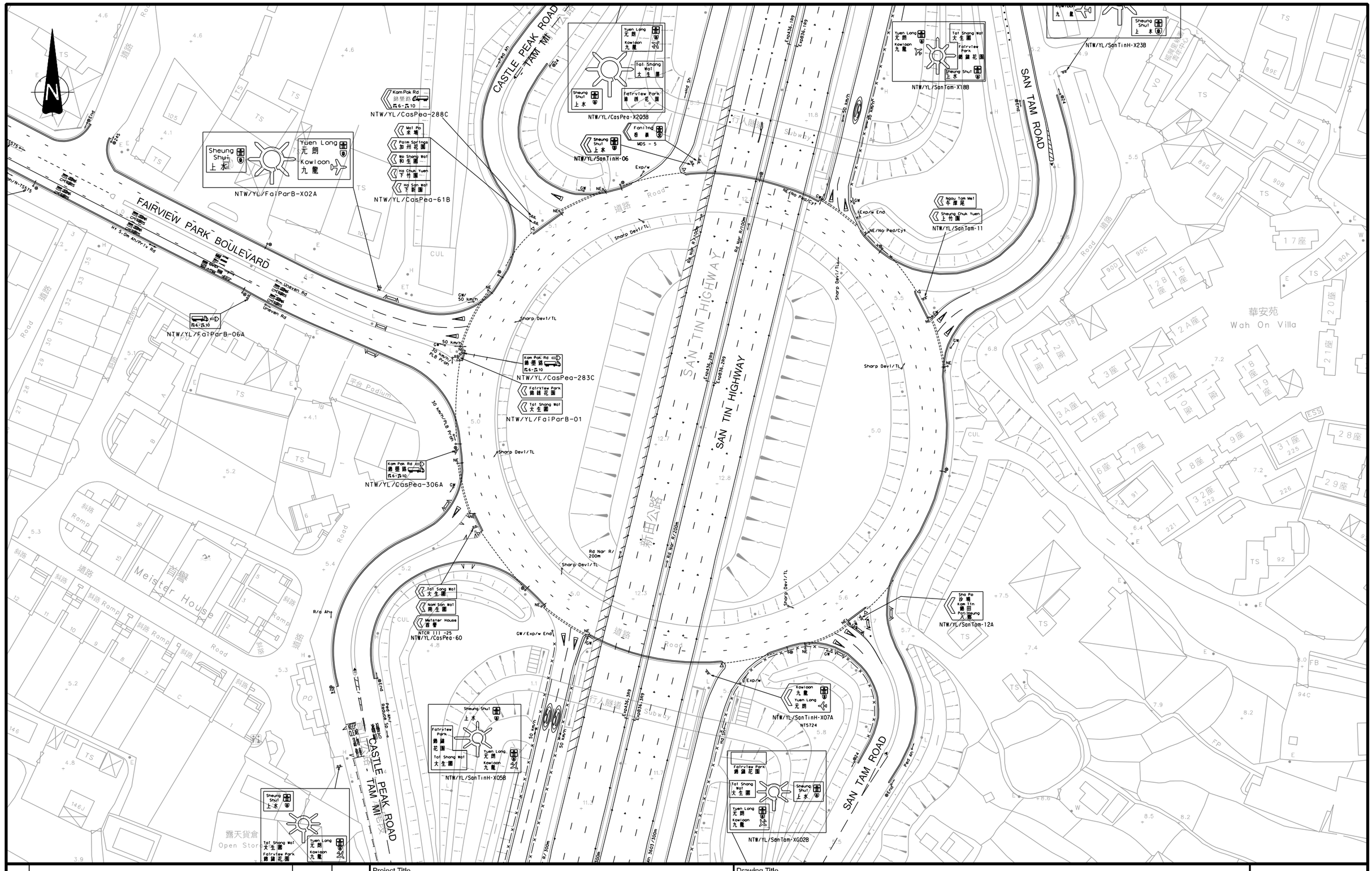

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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

EXISTING JUNCTION LAYOUT OF FAIRVIEW PARK BOULEVARD ROUNDABOUT (J1)

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SYSTRA MVA

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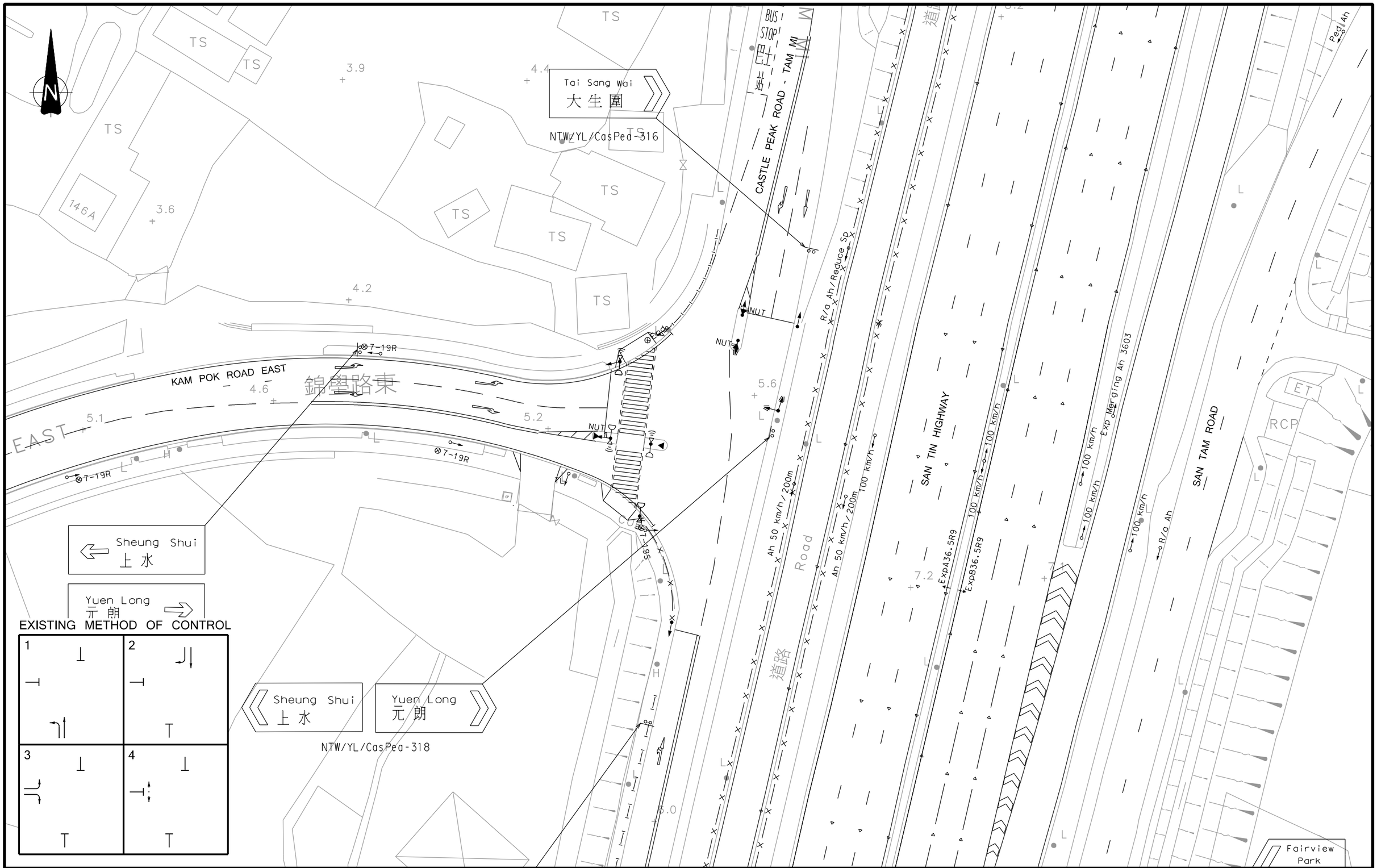

EXISTING METHOD OF CONTROL

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Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD - TAM MI / KAM POK ROAD EAST (J2)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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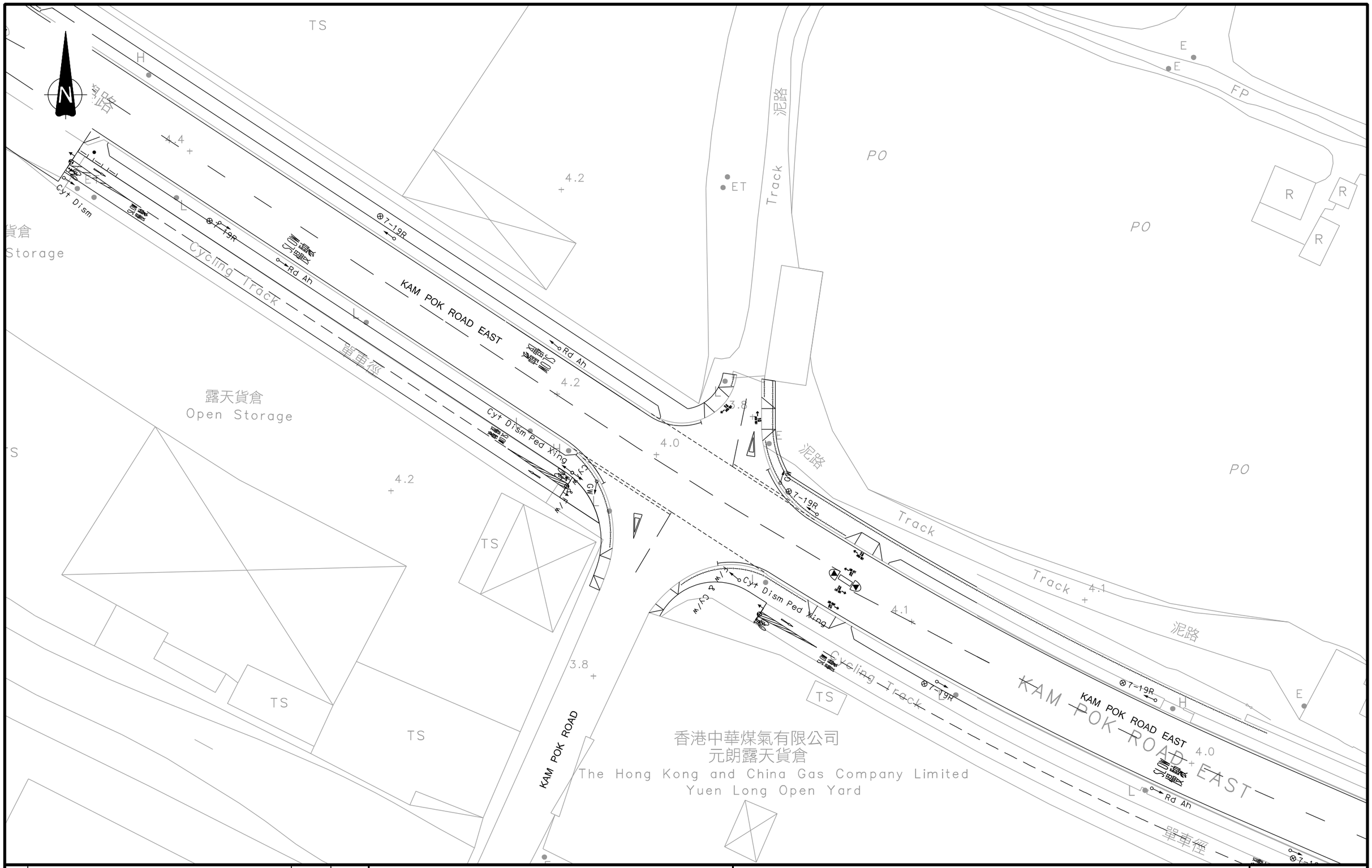

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Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
EXISTING JUNCTION LAYOUT OF KAM POK ROAD EAST / KAM POK ROAD (J3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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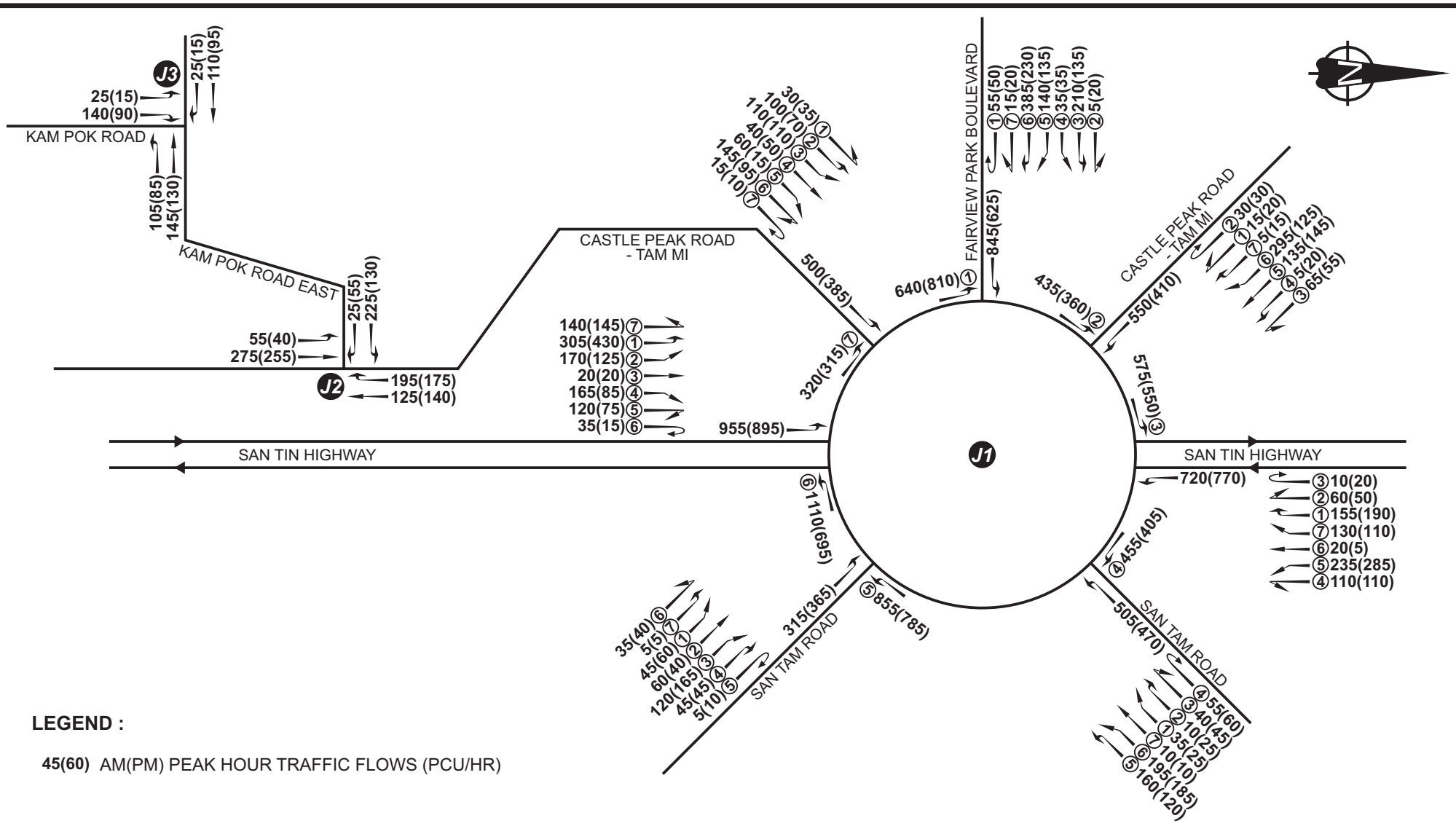

LEGEND :

45(60) AM(PM) PEAK HOUR TRAFFIC FLOWS (PCU/HR)

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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

2022 OBSERVED TRAFFIC FLOWS

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SYSTRA MVA

CHK50709210/TIA/F36.CDR/LLH/13MAR23

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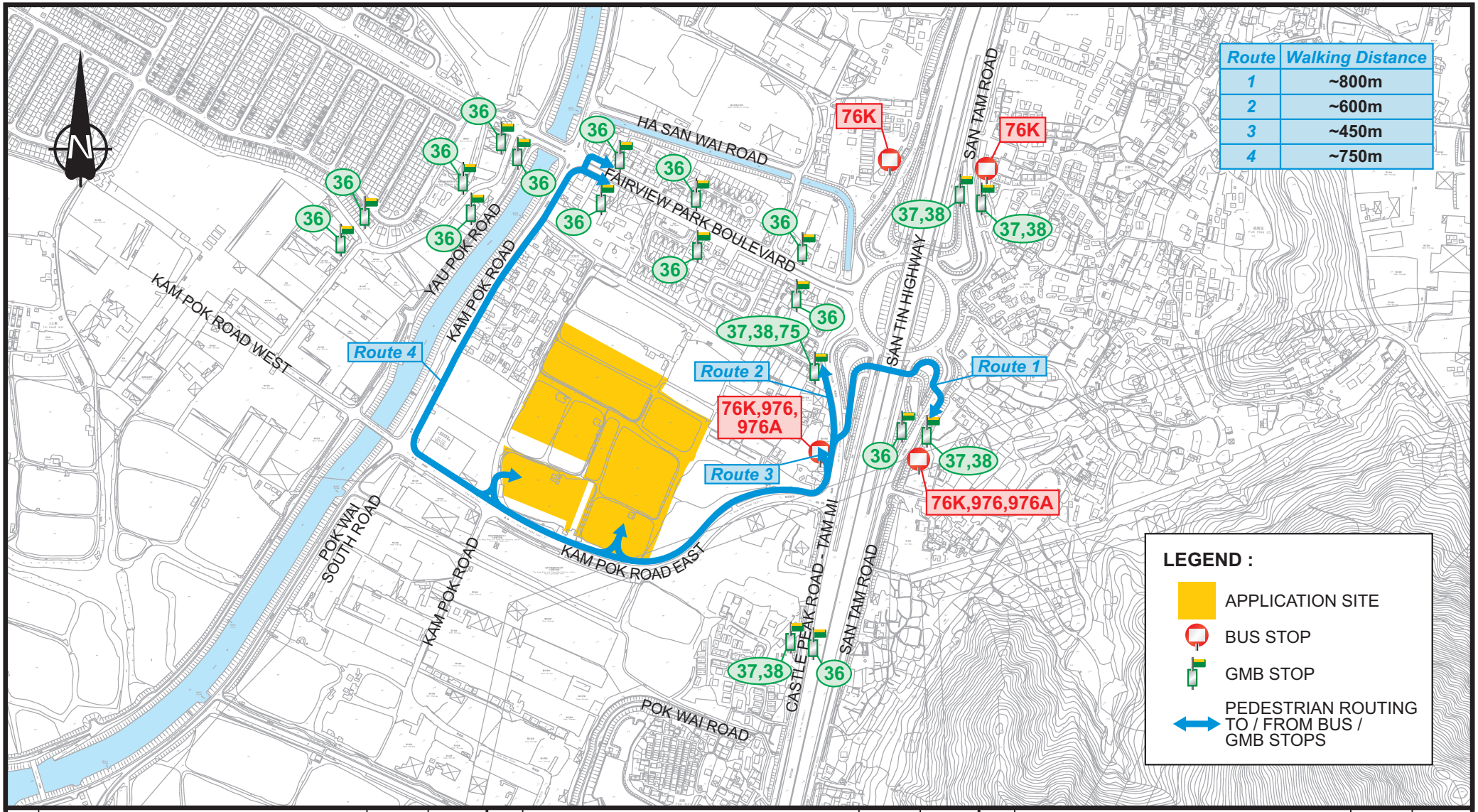

Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

EXISTING PUBLIC TRANSPORT SERVICES

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TBZ	MYL	NTS	MAR 2023	3.7	A

SYSTRA MVA

CHK50709210/TIA/F37-A.CDR/LLH/19JUL23

Original Size : A4

LOCAL PLANNED / COMMITTEND DEVELOPMENTS:

1. SHA PO NORTH DEVELOPMENT.
2. RESIDENTIAL DEVELOPMENT R(D) AT KAM POK ROAD (TO THE WEST OF CHUK YUEN TSUEN).
3. LOTS 43 S.A RP, 50 S.A AND 50 RP IN D.D.101, WO SHANG WAI, MAI PO, YUEN LONG, NEW TERRITORIES.
4. RESIDENTIAL DEVELOPMENT NEXT TO SHEK WU WAI SAN TSUEN.
5. RESIDENTIAL DEVELOPMENT AT THE JUNCTION OF SAN TAM ROAD AND MAPLE GARDENS 1ST STREET.
6. RESIDENTIAL DEVELOPMENT AT KAM POK ROAD NEAR FAIRVIEW PARK.
7. COMPREHENSIVE DEVELOPMENT AND WETLAND PROTECTION NEAR YAU MEI SAN TSUEN.
8. LOTS 8 RP (PART), 14S.B. RP (PART), 45 AND 1740 S.A. RP IN D.D. 107 AND ADJOINING GOVERNMENT LAND TO THE SOUTH OF POK WAI AND WING KEI TSUEN, YUEN LONG.
9. LOT 1743 S.C. RP (PART) IN D.D.107 TO THE SOUTH OF WING KEI TSUEN, YUEN LONG.
10. RESIDENTIAL DEVELOPMENT IN D.D.104 AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

N

SAN TIN HIGHWAY
CASTLE PEAK ROAD - MAI PO
SAN TAM ROAD
NGAU TAM MEI ROAD
CHUN SHIN ROAD
CHUK YAU ROAD
SAN TIN HIGHWAY
CASTLE PEAK ROAD - TAM MI
SAN TIN HIGHWAY
SAN TAM ROAD
KAM POK ROAD
FAIRVIEW PARK BOULEVARD
KAM POK ROAD EAST
POK WAI WEST ROAD
KAM TIN ROAD

LEGEND:

APPLICATION SITE

PLANNED / COMMITTED DEVELOPMENT

Rev.	Description	Checked	Date
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Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
LOCAL PLANNED AND COMMITTED DEVELOPMENTS

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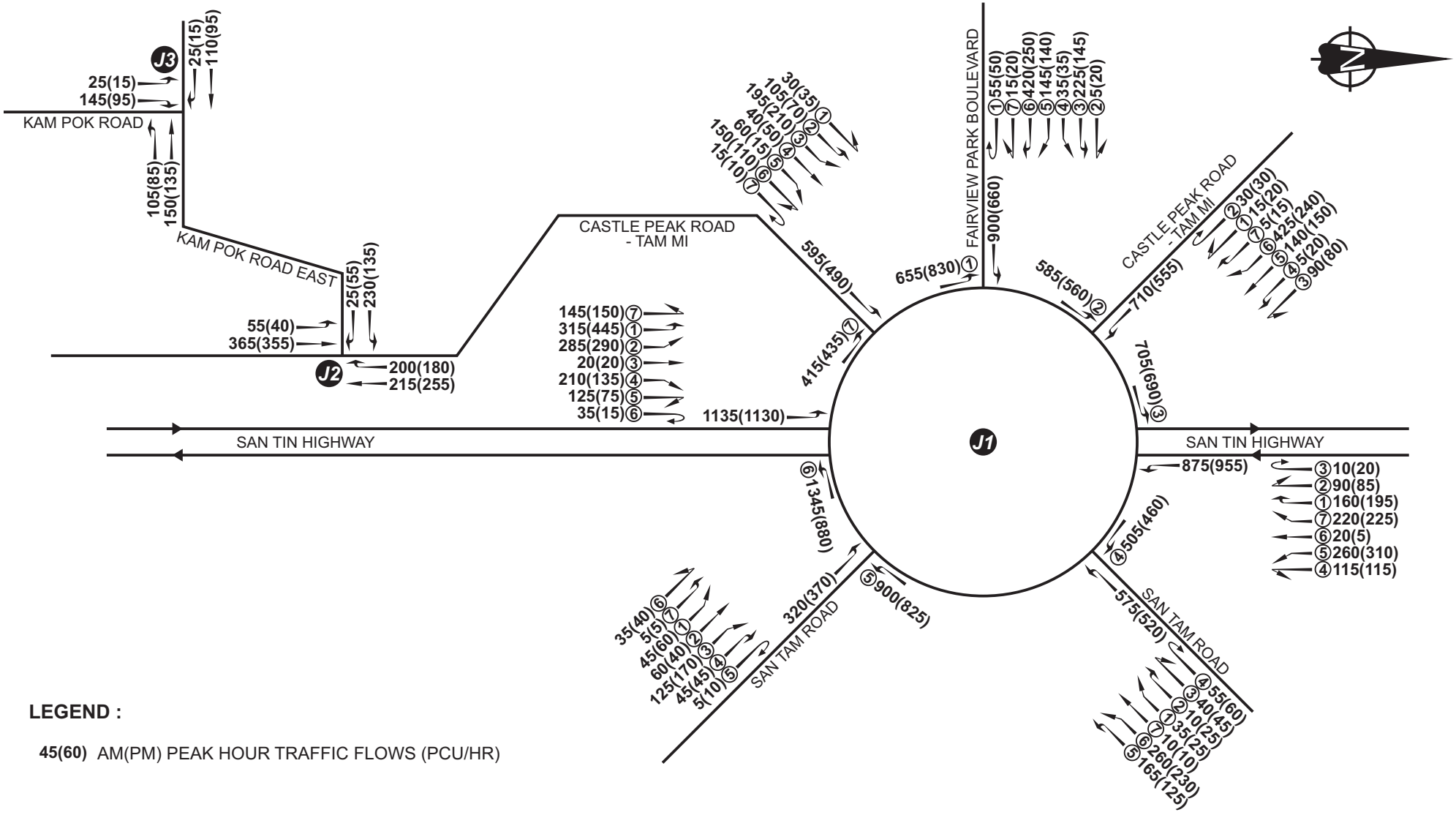

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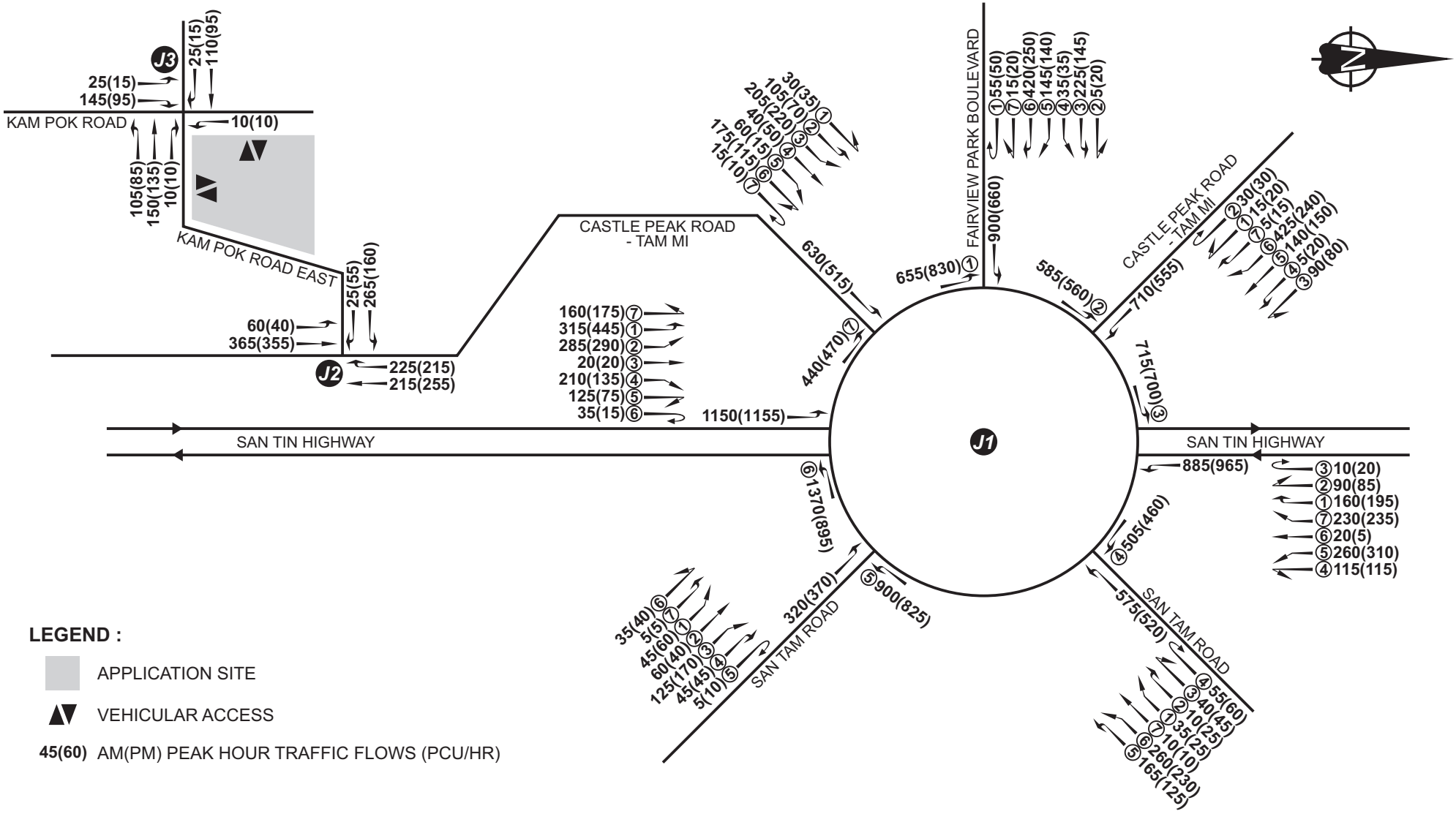
Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
2028 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TBZ	MYL	NTS	MAR 2023	4.2	A

SYSTRA MVA



LEGEND :

APPLICATION SITE

VEHICULAR ACCESS

45(60) AM(PM) PEAK HOUR TRAFFIC FLOWS (PCU/HR)

Rev.	Description	Checked	Date	Rev.	Description	Checked	Date	Rev.	Description	Checked	Date
A	TD'S COMMENT INCORPORATED	MYL	20JUL23	-	-	-	-	-	-	-	-

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

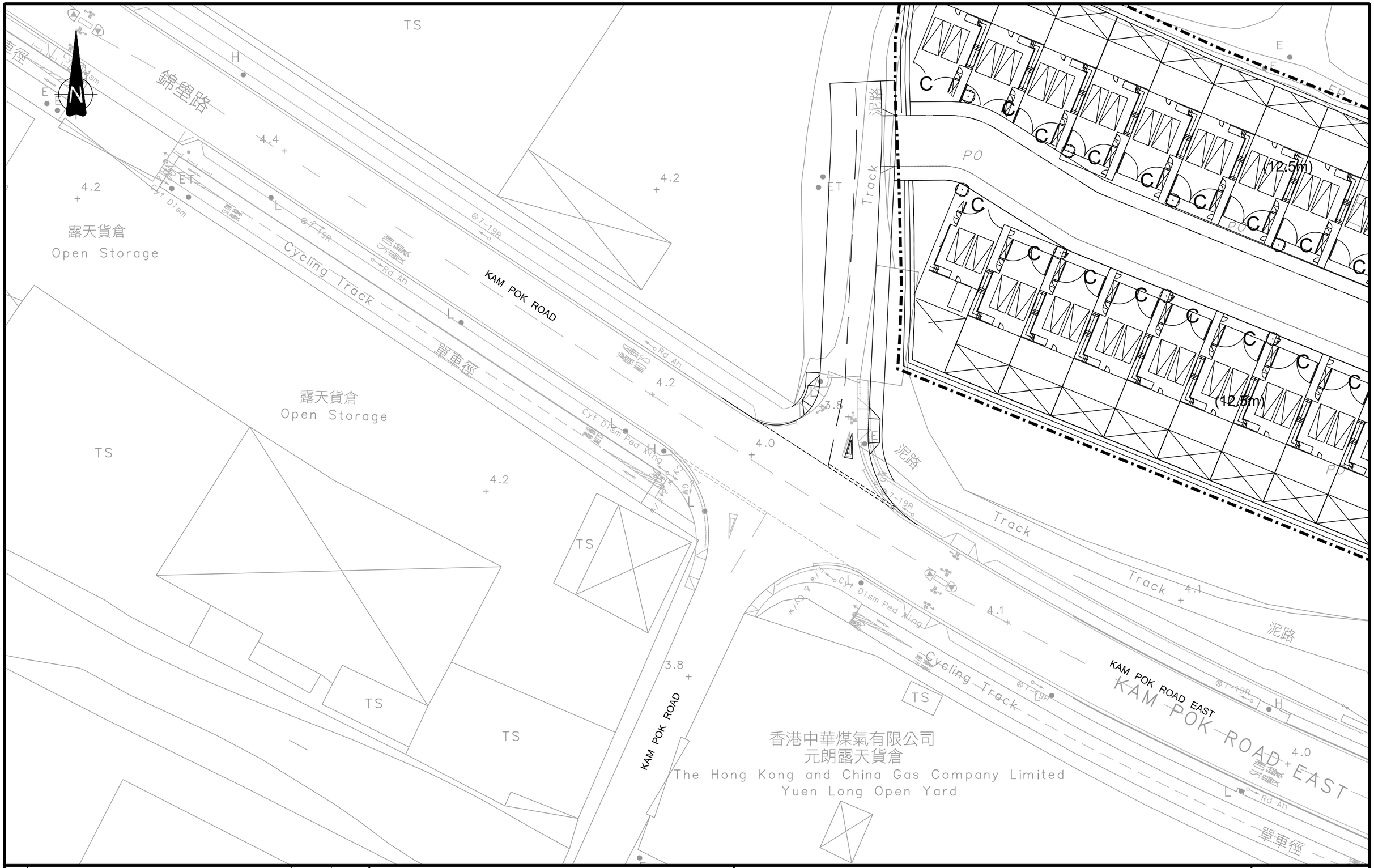
2028 DESIGN TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TBZ	MYL	NTS	MAR 2023	4.3	A

SYSTRA MVA

CHK50709210/TIA/F43-A.CDR/LLH/20JUL23

Original Size : A4



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

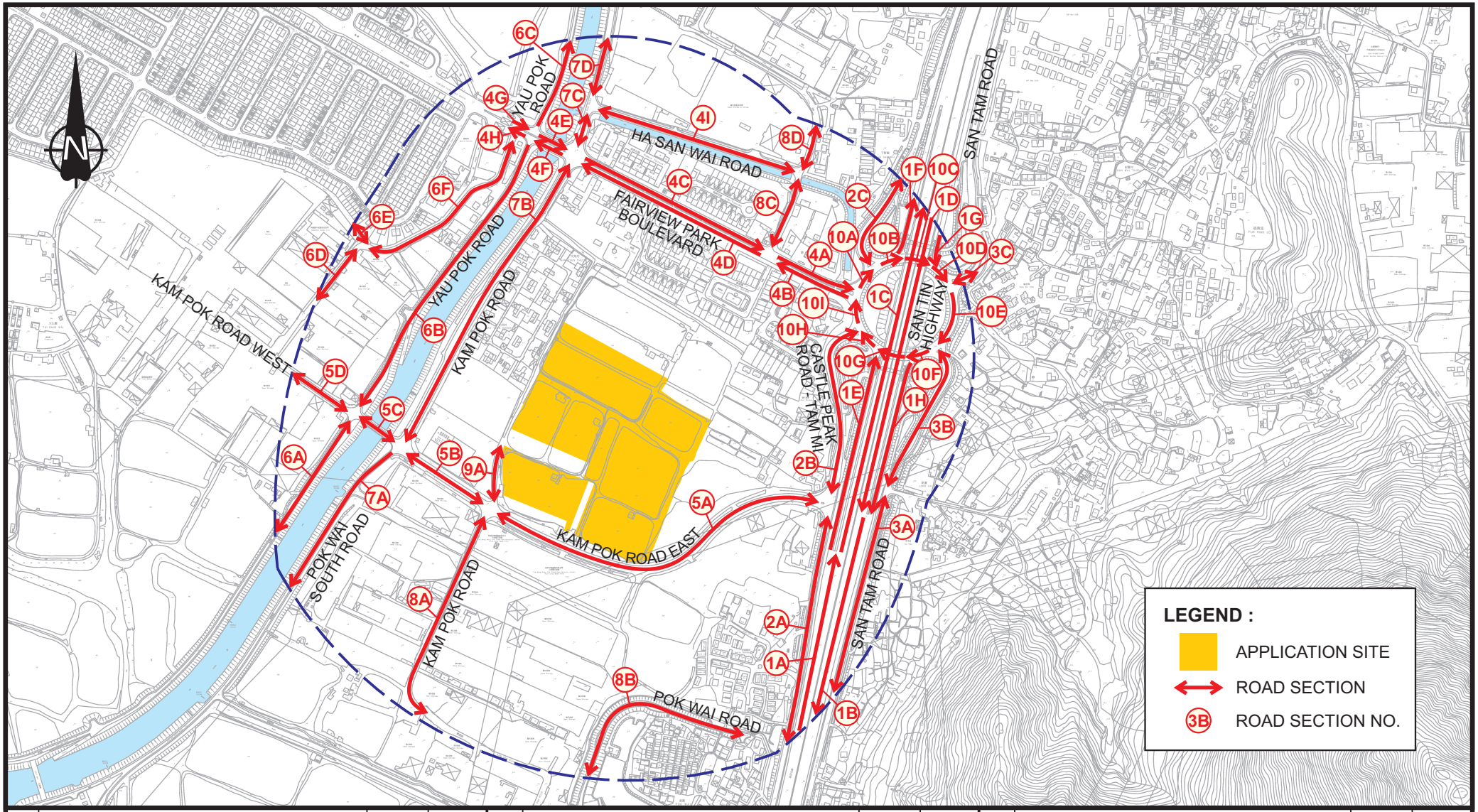
Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
PROPOSED JUNCTION LAYOUT OF KAM POK ROAD EAST / KAM POK ROAD / NEW ACCESS ROAD CONNECTING APPLICATION SITE (J3)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TBZ	MYL	1:500(A3)	FEB 2023	5.1	A

SYSTRA MVA

CHK50709210/TIA/F51-A.DGN/LHO/19JUL23



-	-	-	-
Rev.	Description	Checked	Date

-	-	-	-
Rev.	Description	Checked	Date

-	-	-	-
Rev.	Description	Checked	Date

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

INDEX PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
TBZ	MYL	NTS	MAR 2023	6.1	-

SYSTRA MVA

CHK50709210/TIA/F61.CDR/LLH/13MAR23

Original Size : A4

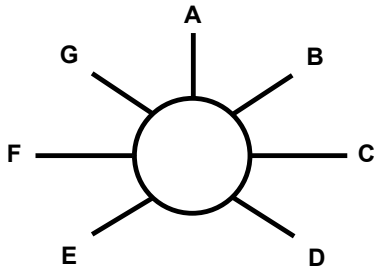
Appendix A
Detail Calculation Sheet of Junction Assessment

Simplified Roundabout Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)			
Junction:	Fairview Park Roundabout (J1)		Ref. No.:	J1_2022Obs
Scheme:	2022 Observed Flows		Ref. No.:	
Year:	2022	Job No.: CHK50709210	Rev.:	-

AM PM

ARM A: Fairview Park Boulevard
ARM B: Castle Peak Road(Tam Mi) (N)
ARM C: New Territories Circular Road (San Tin Highway) (N)
ARM D: San Tam Road (N)
ARM E: San Tam Road (S)
ARM F: New Territories Circular Road (San Tin Highway) (S)
ARM G: Castle Peak Road(Tam Mi) (S)



GEOMETRY

ARM	v	e	L	r	D	Phi	S
A	7.00	11.00	14	22	142	35	0.46
B	5.50	9.00	10	20	142	35	0.56
C	6.40	8.50	7.5	23	142	30	0.45
D	6.50	8.50	10	20	142	25	0.32
E	6.00	8.00	9.5	20	142	35	0.34
F	6.00	8.50	6.5	25	142	40	0.62
G	5.00	6.00	7	22	142	30	0.23

AM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	55	5	210	35	140	385	15	1415	845
B	15	30	65	5	135	295	5	1825	550
C	155	60	10	110	235	20	130	1800	720
D	35	10	40	55	160	195	10	2065	505
E	45	60	120	45	5	35	5	1715	315
F	305	170	20	165	120	35	140	920	955
G	30	100	110	40	60	145	15	1555	500

PM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	50	20	135	35	135	230	20	1160	625
B	20	30	55	20	145	125	15	1425	410
C	190	50	20	110	285	5	110	1285	770
D	25	25	45	60	120	185	10	1650	470
E	60	40	165	45	10	40	5	1335	365
F	430	125	20	85	75	15	145	1005	895
G	35	70	110	50	15	95	10	1585	385

CALCULATIONS

ARM	K	X_2	M	F	t_D	f_c	Q_E AM	Q_E PM	RFC AM	RFC PM
A	0.99	9.09	3640.95	2754	1.00	0.59	1892	2041	0.45	0.31
B	0.98	7.15	3640.95	2167	1.00	0.51	1214	1414	0.45	0.29
C	1.01	7.51	3640.95	2275	1.00	0.53	1338	1610	0.54	0.48
D	1.02	7.72	3640.95	2339	1.00	0.53	1257	1483	0.40	0.32
E	0.98	7.19	3640.95	2180	1.00	0.51	1279	1470	0.25	0.25
F	0.98	7.12	3640.95	2158	1.00	0.51	1647	1605	0.58	0.56
G	1.00	5.69	3640.95	1723	1.00	0.45	1029	1016	0.49	0.38
								Crtical Arm:	**F**	**F**
								RFC:	**0.58**	**0.56**
									AM	**PM**

- In accordance with TPDM V2.4

Calculated by:	MST	Date:	Jan-23	Checked by:	MYL

O:\tbz\[507092-Sigcal-J1.xlsm]J1_2022Obs

K

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50417310 **MVA HONG KONG LIMITED**

Junction: Castle Peak Road - Tam Mi / Kam Pok Road East (J2) Design Year: 2022

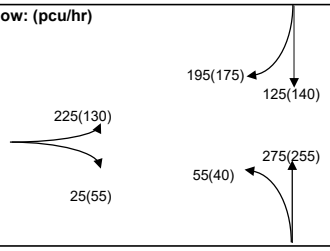
Description: 2022 Observed Flows Designed By: MST Checked By: MYL

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Castle Peak Rd NB	← ↑	A	1	3.500	20			17%	14%	1940	1945	330	0.170	0.170	295	0.152	0.152
Castle Peak Rd SB	*↱	B	2	3.300		15				1515	1515	195	0.129	0.129	175	0.116	0.116
	*↑	B	2	3.400						1565	1565	125	0.080		140	0.089	
Kam Pok Rd East EB	↰	C	3	3.500	27.5					1865	1865	225	0.121	0.121	130	0.070	0.070
	↱	C	3	3.500		12.5				1880	1880	25	0.013		55	0.029	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			13	+	12	=	25			*			*

Notes:

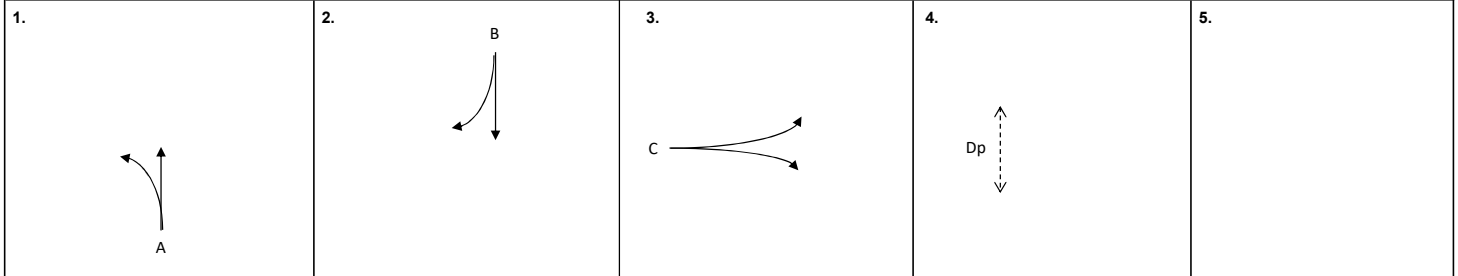
* Site factor has been adopted

Flow: (pcu/hr)



Group		A,B,C,Dp	Group		A,B,C,Dp
y		0.419	y		0.337
L (sec)		40	L (sec)		40
C (sec)		94	C (sec)		90
y pract.		0.517	y pract.		0.500
R.C. (%)		23%	R.C. (%)		48%

Stage / Phase Diagrams



I/G= 2		I/G= 6		I/G= 5		I/G= 5	25
I/G= 2		I/G= 6		I/G= 5		I/G= 5	25

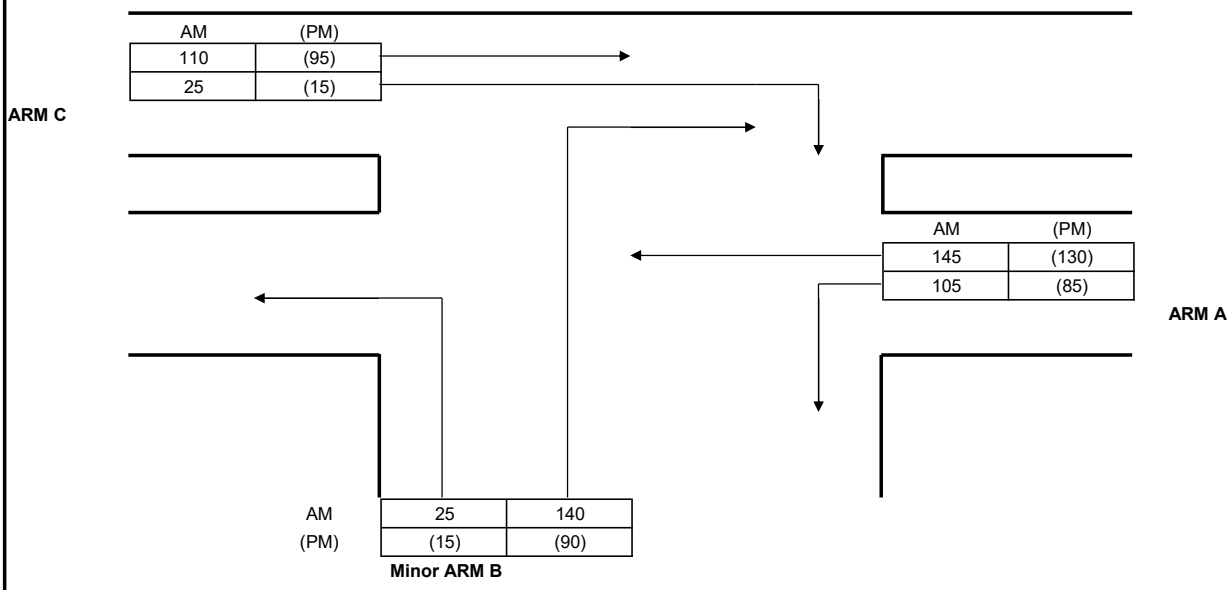
I/G= | | I/G= | |

Date: JAN, 2023

Junction: (J2) Castle Peak Road - Tam Mi / Kam Pok Road East (J2)

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)				
Junction:	Kam Pok Road East / Kam Pok Road			Ref. No.:	J3_2022OBS
Scheme:	2022 Observed Flow			Ref. No.:	
Year:	2022	Job No.:	CHK50709210	Rev.:	-
ARM A:	Kam Pok Road East				
ARM B:	Kam Pok Road				
ARM C:	Kam Pok Road East				



GEOMETRY

Major road width	W	10.30	Lane widths	w(b-a)	2.70
Central Reserve width	Wcr	0.00		w(b-c)	2.70
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	45	Calculated	D	0.79
	Vl(b-a)	30		E	0.85
	Vr(b-c)	45		F	0.60
	Vr(c-b)	30		Y	0.64

ANALYSIS

			AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)		110	95
	q(c-b)		25	15
	q(a-b)		105	85
	q(a-c)		145	130
	q(b-a)		140	90
	q(b-c)		25	15
	f		0.15	0.14
		Factor		
CAPACITIES	Q(b-a)	1	440	449
	Q(b-c)	1	596	600
	Q(c-b)	1	414	419
	Q(b-ac)	1	458	466
RFC's	b-a		0.318	0.200
	b-c		0.042	0.025
	c-b		0.060	0.036
	b-ac		0.360	0.225
Worst RFC			**0.360**	**0.225**

Where Vl and Vr are visibility distances to the left or right of the respective streams

D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))

E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))

F = (1+0.094(w(c-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

T.P.D.M.V.2.4
Appendix 1

Capacity of combined streams
- in accordance with TPDM V2.4

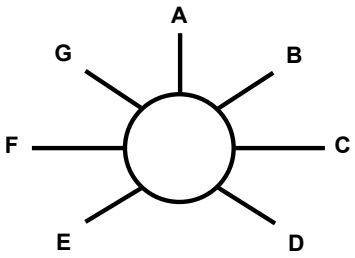
Calculated by:	MST	Date:	Jan-23	Checked by:	MYL

Simplified Roundabout Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)			
Junction:	Fairview Park Roundabout (J1)			Ref. No.: J1_2028Ref
Scheme:	2028 Reference Flow			Ref. No.:
Year:	2022	Job No.:	CHK50709210	Rev.:

AM PM

ARM A: Fairview Park Boulevard
ARM B: Castle Peak Road(Tam Mi) (N)
ARM C: New Territories Circular Road (San Tin Highway) (N)
ARM D: San Tam Road (N)
ARM E: San Tam Road (S)
ARM F: New Territories Circular Road (San Tin Highway) (S)
ARM G: Castle Peak Road(Tam Mi) (S)



GEOMETRY

ARM	v	e	L	r	D	Phi	S
A	7.00	11.00	14	22	142	35	0.46
B	5.50	9.00	10	20	142	35	0.56
C	6.40	8.50	7.5	23	142	30	0.45
D	6.50	8.50	10	20	142	25	0.32
E	6.00	8.00	9.5	20	142	35	0.34
F	6.00	8.50	6.5	25	142	40	0.62
G	5.00	6.00	7	22	142	30	0.23

AM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	55	5	225	35	145	420	15	1710	900
B	15	30	90	5	140	425	5	2025	710
C	160	90	10	115	260	20	220	2030	875
D	35	10	40	55	165	260	10	2400	575
E	45	60	125	45	5	35	5	2075	320
F	315	285	20	210	125	35	145	1050	1135
G	30	105	195	40	60	150	15	1770	595

PM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	50	20	145	35	140	250	20	1520	660
B	20	30	80	20	150	240	15	1620	555
C	195	85	20	115	310	5	225	1485	955
D	25	25	45	60	125	230	10	1980	520
E	60	40	170	45	10	40	5	1675	370
F	445	290	20	135	75	15	150	1165	1130
G	35	70	210	50	15	100	10	1860	490

CALCULATIONS

ARM	K	X_2	M	F	t_D	f_c	Q_E AM	Q_E PM	RFC AM	RFC PM
A	0.99	9.09	3640.95	2754	1.00	0.59	1720	1831	0.52	0.36
B	0.98	7.15	3640.95	2167	1.00	0.51	1113	1317	0.64	0.42
C	1.01	7.51	3640.95	2275	1.00	0.53	1216	1504	0.72	0.63
D	1.02	7.72	3640.95	2339	1.00	0.53	1075	1303	0.53	0.40
E	0.98	7.19	3640.95	2180	1.00	0.51	1098	1299	0.29	0.28
F	0.98	7.12	3640.95	2158	1.00	0.51	1583	1525	0.72	0.74
G	1.00	5.69	3640.95	1723	1.00	0.45	933	892	0.64	0.55
								Crtical Arm:	**C**	**F**
								RFC:	**0.72**	**0.74**
									AM	**PM**

- In accordance with TPDM V2.4

Calculated by:	MST	Date:	Jul-23	Checked by:	MYL

K

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50417310 **MVA HONG KONG LIMITED**

Junction: Castle Peak Road - Tam Mi / Kam Pok Road East (J2) Design Year: 2022

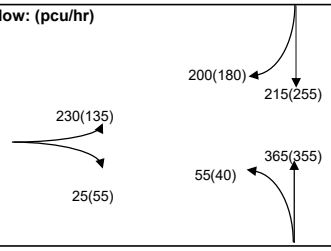
Description: 2028 Reference Flow Designed By: MST Checked By: MYL

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Castle Peak Rd NB	← ↑	A	1	3.500	20			13%	10%	1945	1950	420	0.216	0.216	395	0.203	0.203
Castle Peak Rd SB	*↱	B	2	3.300		15				1515	1515	200	0.132		180	0.119	
	*↑	B	2	3.400						1565	1565	215	0.137	0.137	255	0.163	0.163
Kam Pok Rd East EB	↰	C	3	3.500	27.5					1865	1865	230	0.123	0.123	135	0.072	0.072
	↱	C	3	3.500		12.5				1880	1880	25	0.013		55	0.029	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			13	+	12	=	25			*			*

Notes:

* Site factor has been adopted

Flow: (pcu/hr)



Group		A,B,C,Dp	Group		A,B,C,Dp
y		0.477	y		0.438
L (sec)		40	L (sec)		40
C (sec)		94	C (sec)		90
y pract.		0.517	y pract.		0.500
R.C. (%)		8%	R.C. (%)		14%

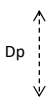
Stage / Phase Diagrams

1.

2.

3.

4.



5.

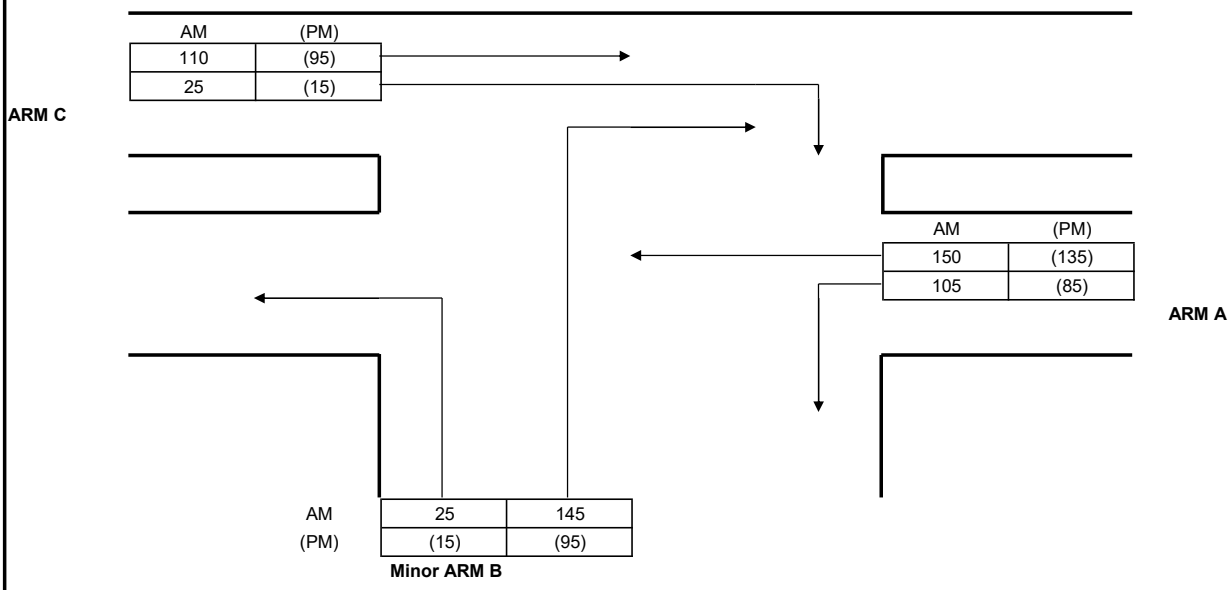
I/G= 2		I/G= 6		I/G= 5		I/G= 5	25
I/G= 2		I/G= 6		I/G= 5		I/G= 5	25

I/G= | | I/G= | |

Date: JAN, 2023 **Junction:** (J2) Castle Peak Road - Tam Mi / Kam Pok Road East (J2)

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)				
Junction:	Kam Pok Road East / Kam Pok Road			Ref. No.:	J3_2028Ref
Scheme:	2028 Reference Flow			Ref. No.:	
Year:	2028	Job No.:	CHK50709210	Rev.:	-
ARM A:	Kam Pok Road East				
ARM B:	Kam Pok Road				
ARM C:	Kam Pok Road East				



GEOMETRY

Major road width	W	10.30	Lane widths	w(b-a)	2.70
Central Reserve width	Wcr	0.00		w(b-c)	2.70
2 Lane Minor Arm (Y/N)		N		w(c-b)	0.00
Visibilities	Vr(b-a)	45	Calculated	D	0.79
	Vl(b-a)	30		E	0.85
	Vr(b-c)	45		F	0.60
	Vr(c-b)	30		Y	0.64

ANALYSIS

		Factor	AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)		110	95
	q(c-b)		25	15
	q(a-b)		105	85
	q(a-c)		150	135
	q(b-a)		145	95
	q(b-c)		25	15
	f		0.15	0.14
CAPACITIES	Q(b-a)	1	439	448
	Q(b-c)	1	595	599
	Q(c-b)	1	414	419
	Q(b-ac)	1	456	464
RFC's	b-a		0.330	0.212
	b-c		0.042	0.025
	c-b		0.060	0.036
	b-ac		0.373	0.237
Worst RFC			**0.373**	**0.237**

Where Vl and Vr are visibility distances to the left or right of the respective streams

D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))

E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))

F = (1+0.094(w(c-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

T.P.D.M.V.2.4
Appendix 1

Capacity of combined streams
- in accordance with TPDM V2.4

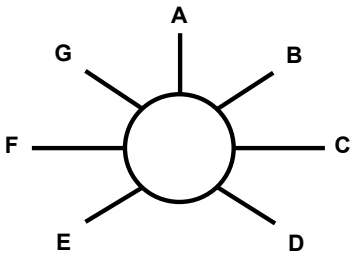
Calculated by:	MST	Date:	Jan-23	Checked by:	MYL

Simplified Roundabout Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)			
Junction:	Fairview Park Roundabout (J1)		Ref. No.:	J1_2028Des
Scheme:	2028 Design Flow		Ref. No.:	
Year:	2022	Job No.: CHK50709210	Rev.:	-

AM PM

ARM A: Fairview Park Boulevard
ARM B: Castle Peak Road(Tam Mi) (N)
ARM C: New Territories Circular Road (San Tin Highway) (N)
ARM D: San Tam Road (N)
ARM E: San Tam Road (S)
ARM F: New Territories Circular Road (San Tin Highway) (S)
ARM G: Castle Peak Road(Tam Mi) (S)



GEOMETRY

ARM	v	e	L	r	D	Phi	S
A	7.00	11.00	14	22	142	35	0.46
B	5.50	9.00	10	20	142	35	0.56
C	6.40	8.50	7.5	23	142	30	0.45
D	6.50	8.50	10	20	142	25	0.32
E	6.00	8.00	9.5	20	142	35	0.34
F	6.00	8.50	6.5	25	142	40	0.62
G	5.00	6.00	7	22	142	30	0.23

AM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	55	5	225	35	145	420	15	1745	900
B	15	30	90	5	140	425	5	2060	710
C	160	90	10	115	260	20	230	2055	885
D	35	10	40	55	165	260	10	2435	575
E	45	60	125	45	5	35	5	2110	320
F	315	285	20	210	125	35	160	1060	1150
G	30	105	205	40	60	175	15	1770	630

PM FLOWS

from \ to	A	B	C	D	E	F	G	Circ	Entry
A	50	20	145	35	140	250	20	1545	660
B	20	30	80	20	150	240	15	1645	555
C	195	85	20	115	310	5	235	1500	965
D	25	25	45	60	125	230	10	2005	520
E	60	40	170	45	10	40	5	1700	370
F	445	290	20	135	75	15	175	1175	1155
G	35	70	220	50	15	115	10	1860	515

CALCULATIONS

ARM	K	X_2	M	F	t_D	f_c	Q_E AM	Q_E PM	RFC AM	RFC PM
A	0.99	9.09	3640.95	2754	1.00	0.59	1699	1816	0.53	0.36
B	0.98	7.15	3640.95	2167	1.00	0.51	1096	1304	0.65	0.43
C	1.01	7.51	3640.95	2275	1.00	0.53	1203	1496	0.74	0.64
D	1.02	7.72	3640.95	2339	1.00	0.53	1056	1290	0.54	0.40
E	0.98	7.19	3640.95	2180	1.00	0.51	1080	1287	0.30	0.29
F	0.98	7.12	3640.95	2158	1.00	0.51	1578	1520	0.73	0.76
G	1.00	5.69	3640.95	1723	1.00	0.45	933	892	0.68	0.58
								Crtical Arm:	**C**	**F**
								RFC:	**0.74**	**0.76**
									AM	**PM**

- In accordance with TPDM V2.4

Calculated by:	MST	Date:	Jul-23	Checked by:	MYL

K

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50417310 **MVA HONG KONG LIMITED**

Junction: Castle Peak Road - Tam Mi / Kam Pok Road East (J2) Design Year: 2022

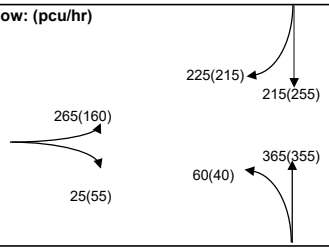
Description: 2028 Design Flow Designed By: MST Checked By: MYL

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Castle Peak Rd NB	← ↑	A	1	3.500	20			14%	10%	1945	1950	425	0.219	0.219	395	0.203	0.203
Castle Peak Rd SB	*↱	B	2	3.300		15				1515	1515	225	0.149	0.149	215	0.142	
	*↑	B	2	3.400						1565	1565	215	0.137		255	0.163	0.163
Kam Pok Rd East EB	↰	C	3	3.500	27.5					1865	1865	265	0.142	0.142	160	0.086	0.086
	↱	C	3	3.500		12.5				1880	1880	25	0.013		55	0.029	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			13	+	12	=	25			*			*

Notes:

* Site factor has been adopted

Flow: (pcu/hr)



Group		A,B,C,Dp	Group		A,B,C,Dp
y		0.509	y		0.451
L (sec)		40	L (sec)		40
C (sec)		94	C (sec)		90
y pract.		0.517	y pract.		0.500
R.C. (%)		2%	R.C. (%)		11%

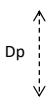
Stage / Phase Diagrams

1.

2.

3.

4.



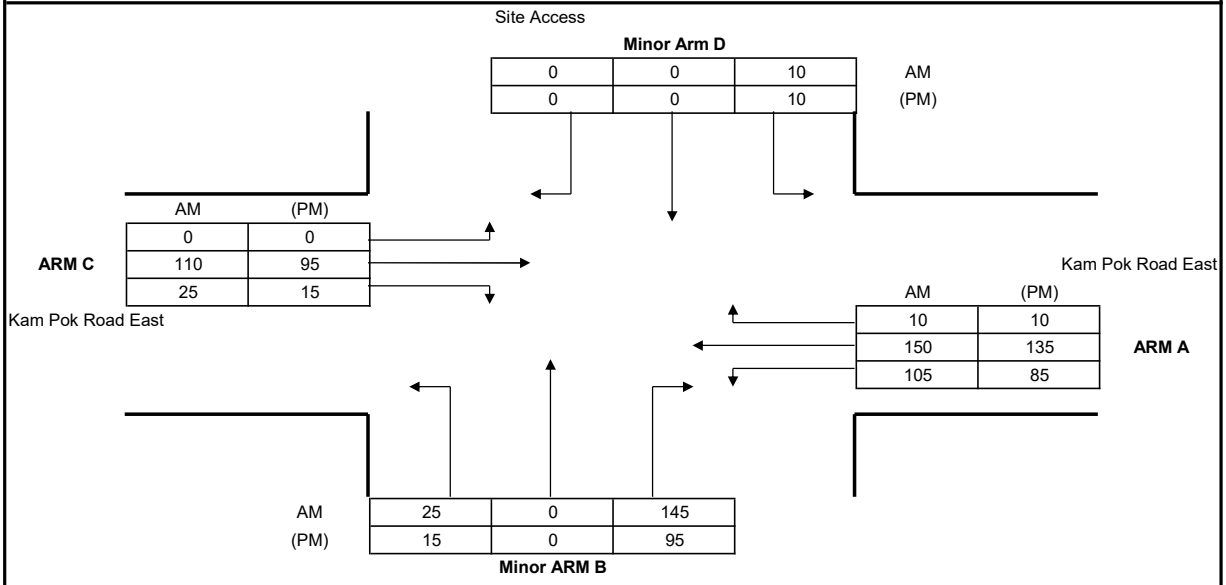
5.

I/G= 2		I/G= 6		I/G= 5		I/G= 5	25	I/G=	
I/G= 2		I/G= 6		I/G= 5		I/G= 5	25	I/G=	

Date: JAN, 2023 **Junction:** (J2) Castle Peak Road - Tam Mi / Kam Pok Road East (J2)

Simplified Priority Junction Capacity Calculation

Job Title:	Traffic Consultancy Services for Proposed Residential Development at North of Pok Wai West Road, Nam Sang Wai, Yuen Long (Various Lots in D.D. 104)				
Junction:	Kam Pok Road East / Kam Pok Road / Site Access			Ref. No.:	J3
Scheme:	2028 Design Flow			Ref. No.:	
Year:	2028	Job No.:	CHK50709210	Rev.:	-
ARM A:	Kam Pok Road East				
ARM B:	Kam Pok Road				
ARM C:	Kam Pok Road East				
ARM D:	Site Access				



GEOMETRY					ARM B		ARM D
Major road width	W	10.00	Lane widths		w(b-a)	2.70	w(d-c) 2.25
Central Reserve width	Wcr	0.00			w(b-c)	2.70	w(d-a) 2.25
					w(c-b)	0.00	w(a-d) 0.00
Visibilities	Vr(b-a)	45	Vr(d-c)	22	D	0.79	D 0.74
	Vl(b-a)	30	Vl(d-c)	33	E	0.85	E 0.79
	Vr(b-c)	45	Vr(d-a)	22	F	0.60	F 0.61
	Vr(c-b)	30	Vr(a-d)	35	Y	0.66	Y 0.66

		Arm B		Arm D	
ANALYSIS		AM PEAK	(PM) PEAK	AM PEAK	(PM) PEAK
TRAFFIC FLOWS	q(c-a)	120	105	q(a-c) 175	150
	q(c-b)	25	15	q(a-d) 10	10
	q(a-b)	105	85	q(c-d) 0	0
	q(a-c)	150	135	q(c-a) 255	190
	q(b-a)	145	95	q(d-c) 0	0
	q(b-c)	25	15	q(d-a) 10	10
	f	0.15	0.14	f 1.00	1.00
CAPACITIES	Q(b-a)	437	446	Q(d-c) 395	409
	Q(b-c)	594	599	Q(d-a) 542	554
	Q(c-b)	413	418	Q(a-d) 415	424
	Q(b-ac)	455	462	Q(d-ca) 542	554
	Q(c-a)	1691	1735	Q(a-c) 1757	1758
RFC's	b-a	0.332	0.213	d-c 0.000	0.000
	b-c	0.042	0.025	d-a 0.018	0.018
	c-b	0.061	0.036	a-d 0.024	0.024
	b-ac	0.374	0.238	d-ca 0.018	0.018
	c-a	0.071	0.061	a-c 0.100	0.085

	AM	(PM)
Worst RFC	**0.374**	**0.238**

Where Vl and Vr are visibility distances to the left or right of the respective streams

D = (1+0.094(w(b-a)-3.65))(1+0.0009(Vr(b-a)-120))(1+0.0006(Vl(b-a)-150))

E = (1+0.094(w(b-c)-3.65))(1+0.0009(Vr(b-c)-120))

F = (1+0.094(w(c-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

f = proportion of minor traffic turning left

Q (b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a)

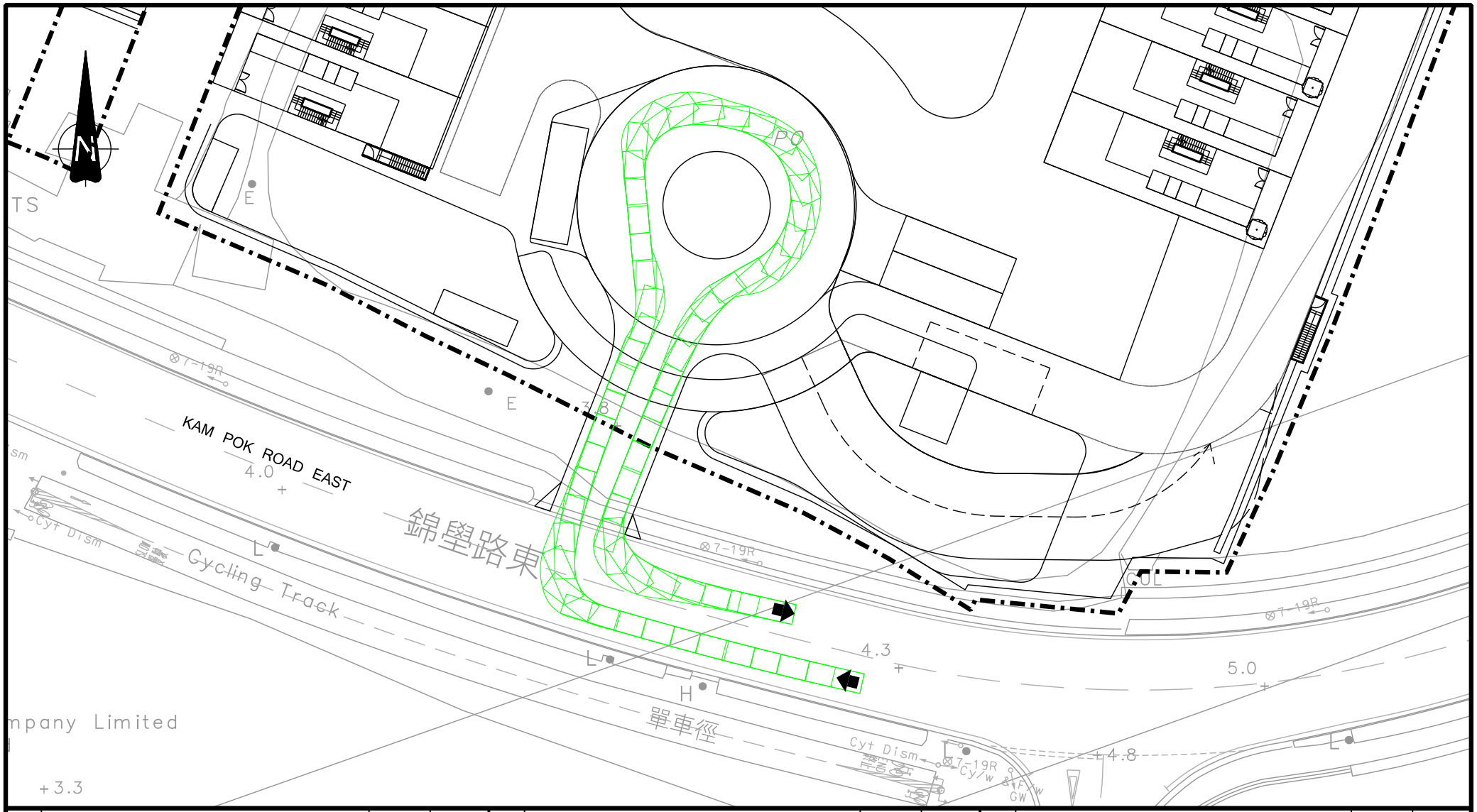
T.P.D.M.V.2.4
Appendix 1

Capacity of combined streams
- in accordance with TPDM V2.4

Calculated by:	MST	Date:	Jan-23	Checked by:	MYL

Appendix B

Swept Path Analysis of Long Vehicle



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Rev.	Description	Checked	Date
-	-	-	-

Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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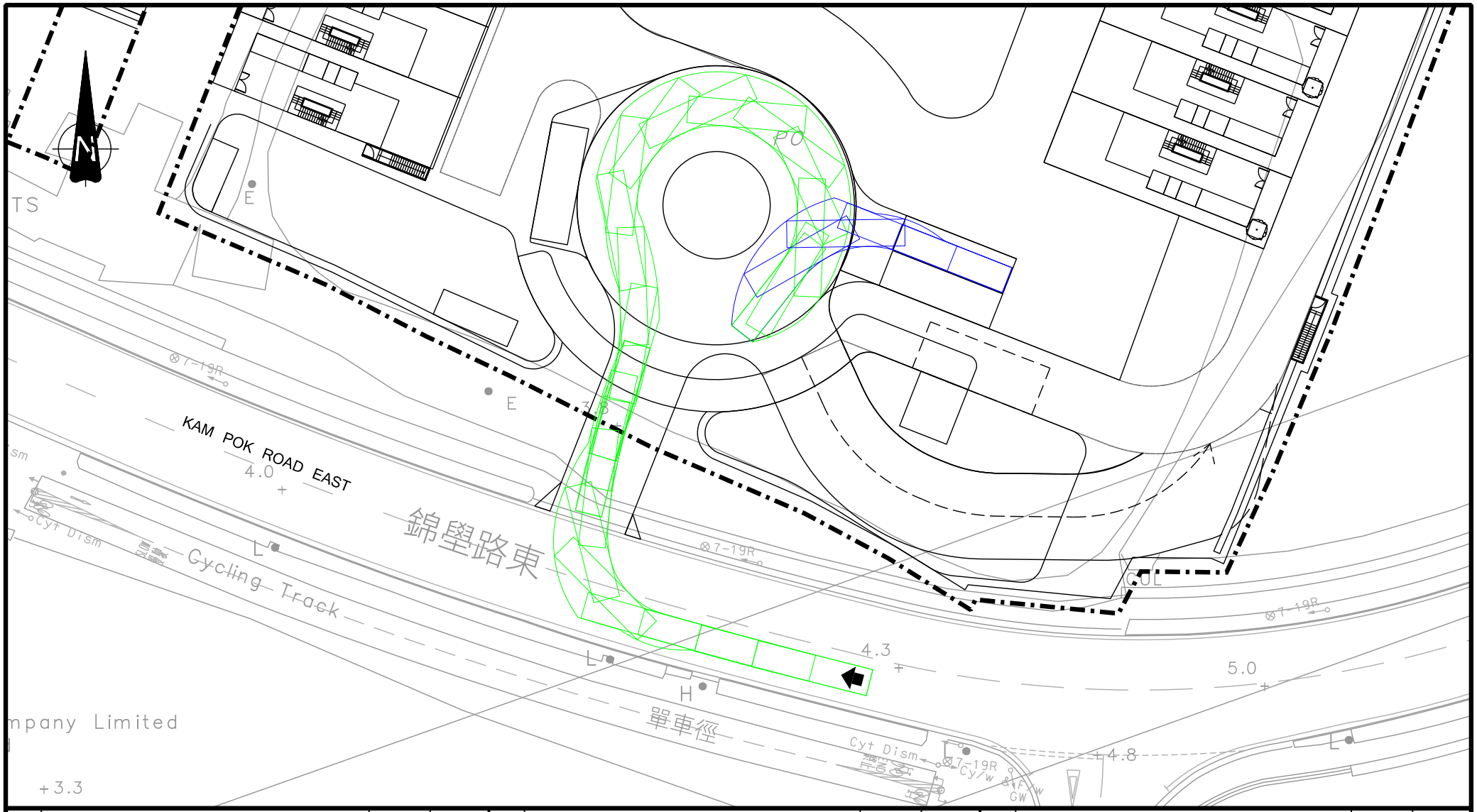
SYSTRA MVA

CHK50709210/TIA/B1-A.DGN/LHO/20JUL23



Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

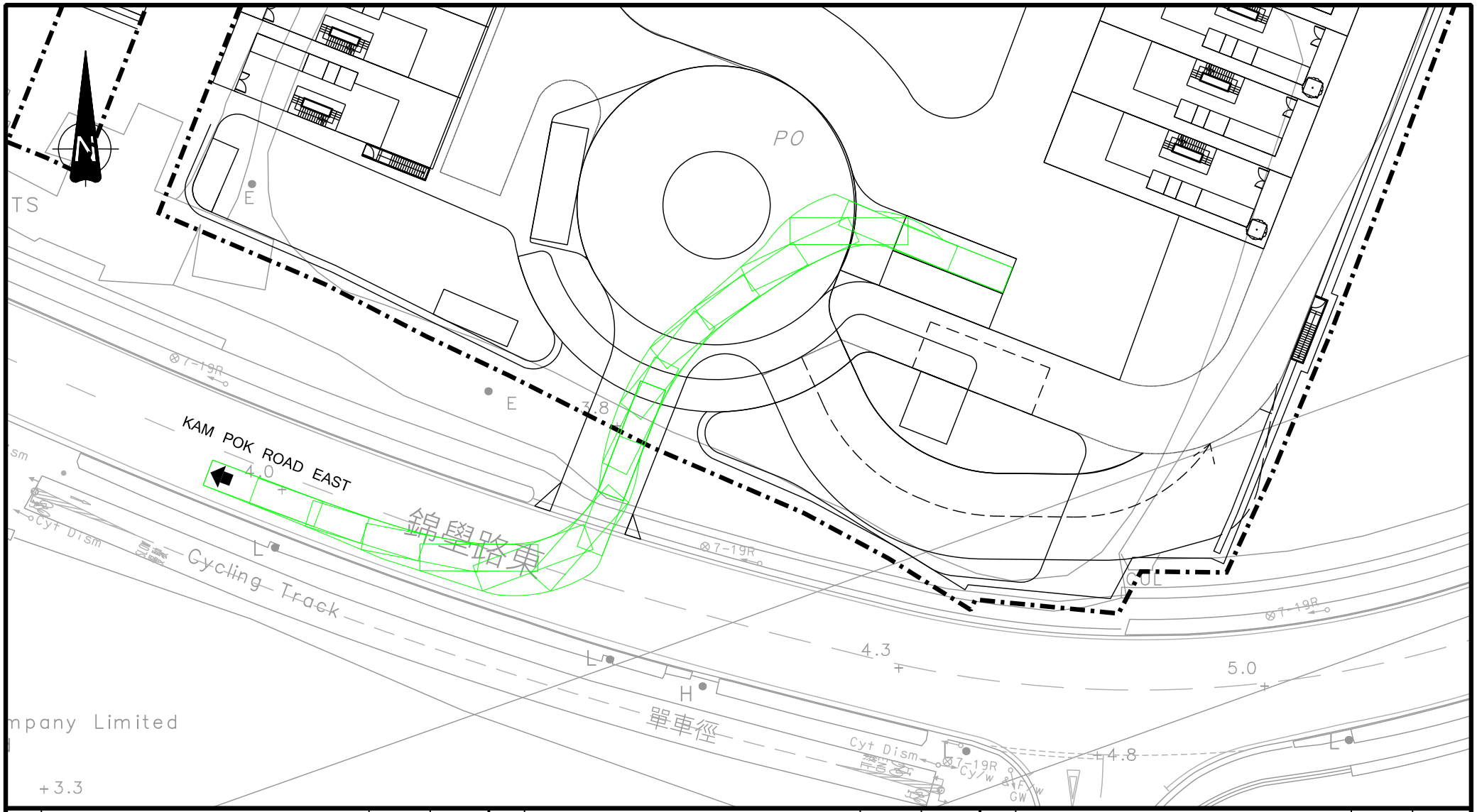
Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B2**	A

SYSTRA MVA

CHK50709210/TIA/B2-A.DGN/LHO/20JUL23



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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

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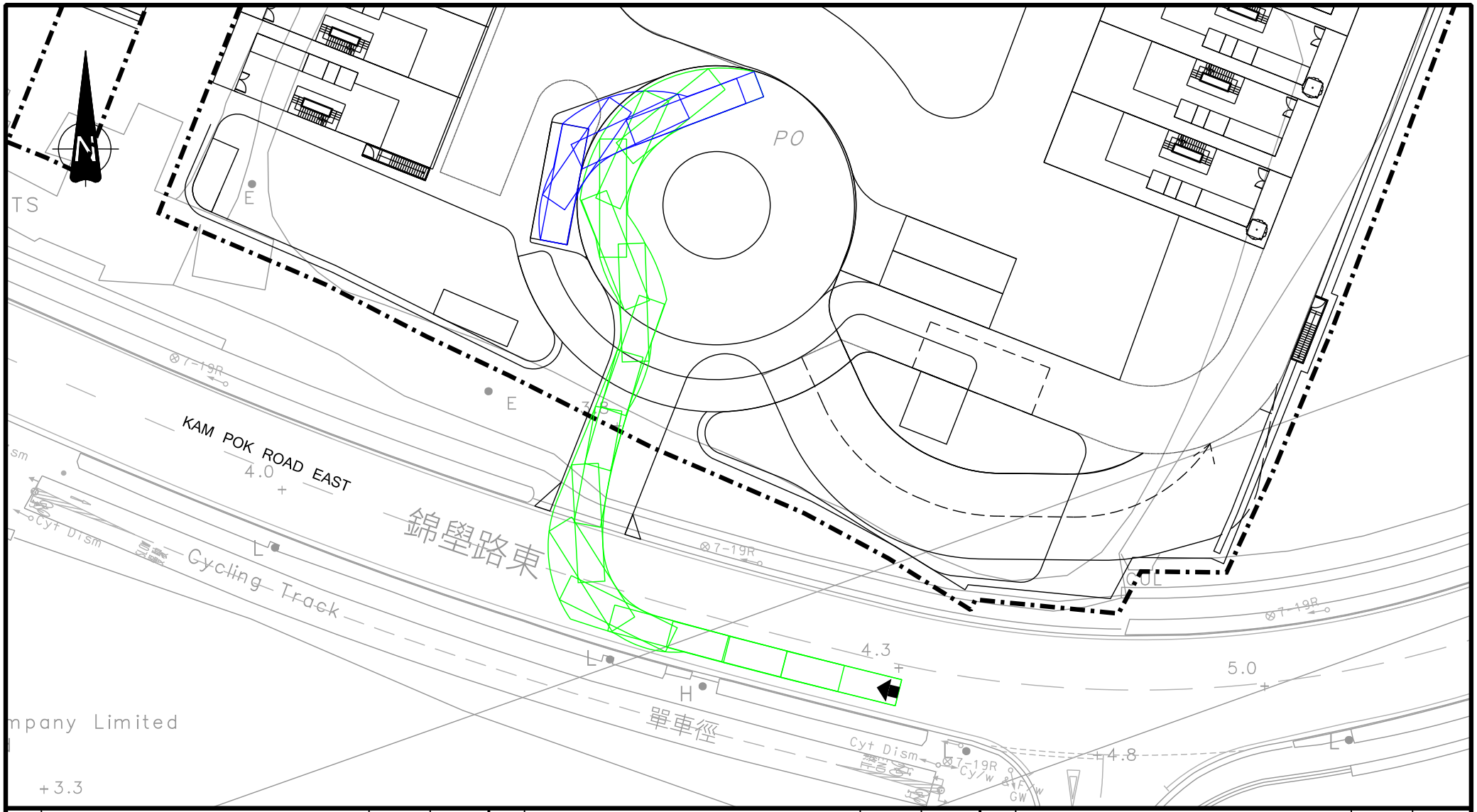
Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B3**	A

SYSTRA MVA

CHK50709210/TIA/B3-A.DGN/LHO/20JUL23



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A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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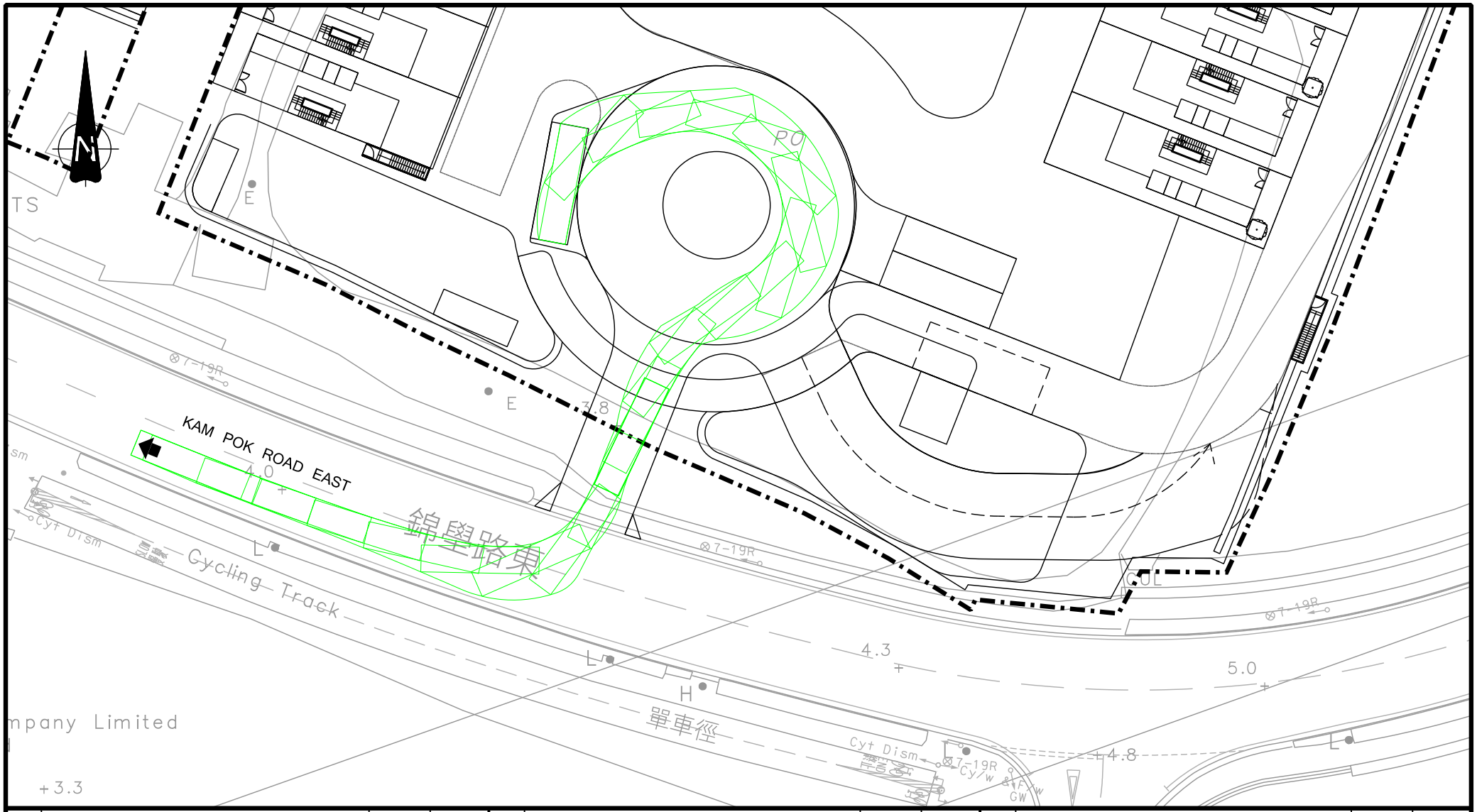
SYSTRA MVA

CHK50709210/TIA/B4-A.DGN/LHO/20JUL23



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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

CHK50709210/TIA/B5-A.DGN/LHO/20JUL23

Rev.	Description	Checked	Date
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A	TD'S COMMENT INCORPORATED	MYL	19JUL23

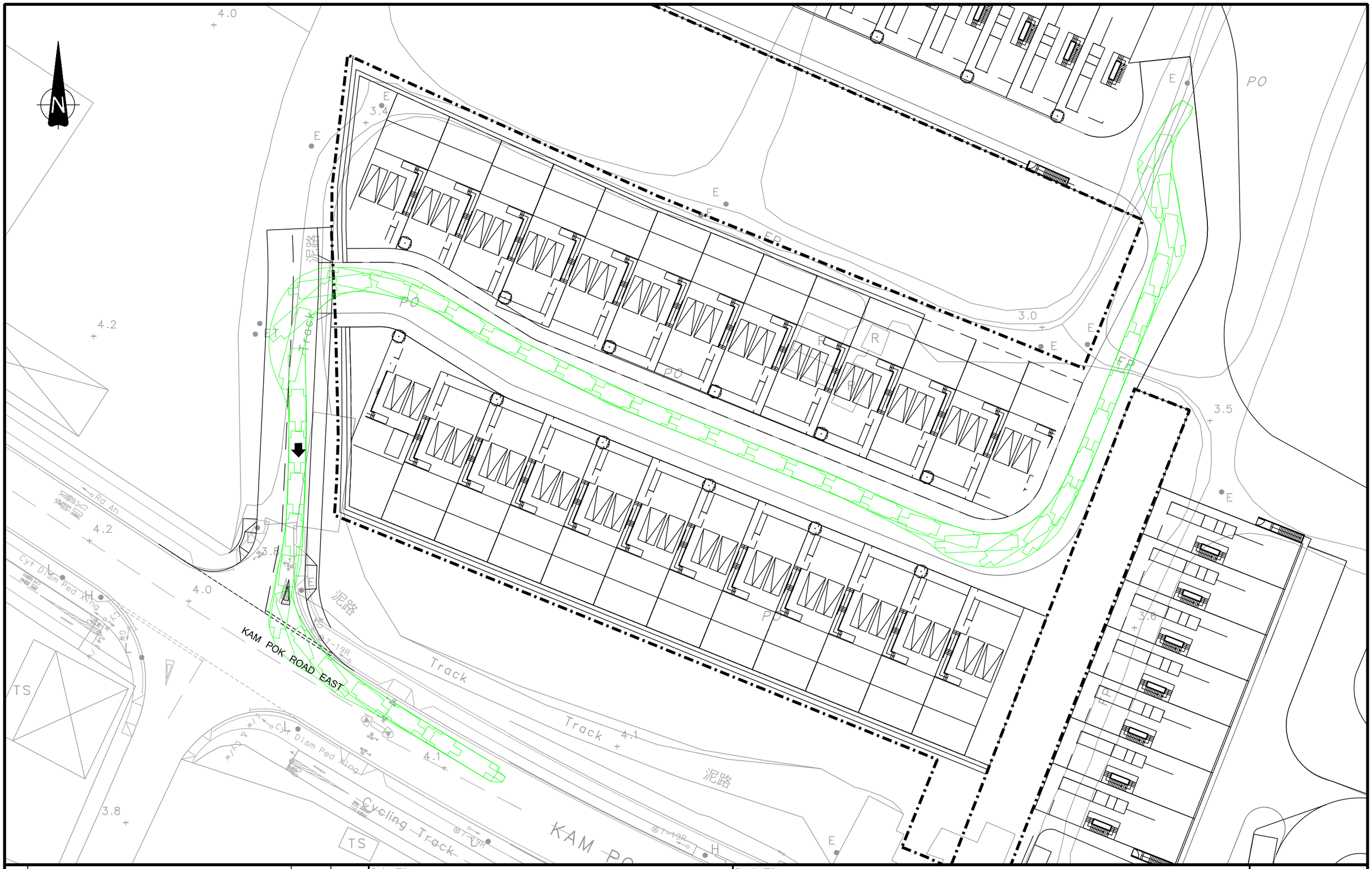
Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
SWEPT PATH ANALYSIS OF 12m LONG FIRE ENGINE ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A3)	FEB 2023	**B6**	A

SYSTRA MVA

CHK50709210/TIA/B6-A.DGN/LHO/19JUL23



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Rev.	Description	Checked	Date

Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
SWEPT PATH ANALYSIS OF 12m LONG FIRE ENGINE ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A3)	FEB 2023	**B7**	A

SYSTRA MVA

CHK50709210/TIA/B7-A.DGN/LHO/19JUL23

LEGEND:

PRIVATE CAR PARKING SPACE

VISITOR PARKING SPACE

MOTORCYCLE PARKING SPACE

Rev.	Description	Checked	Date
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A	TD'S COMMENTS INCORPORATED	MLY	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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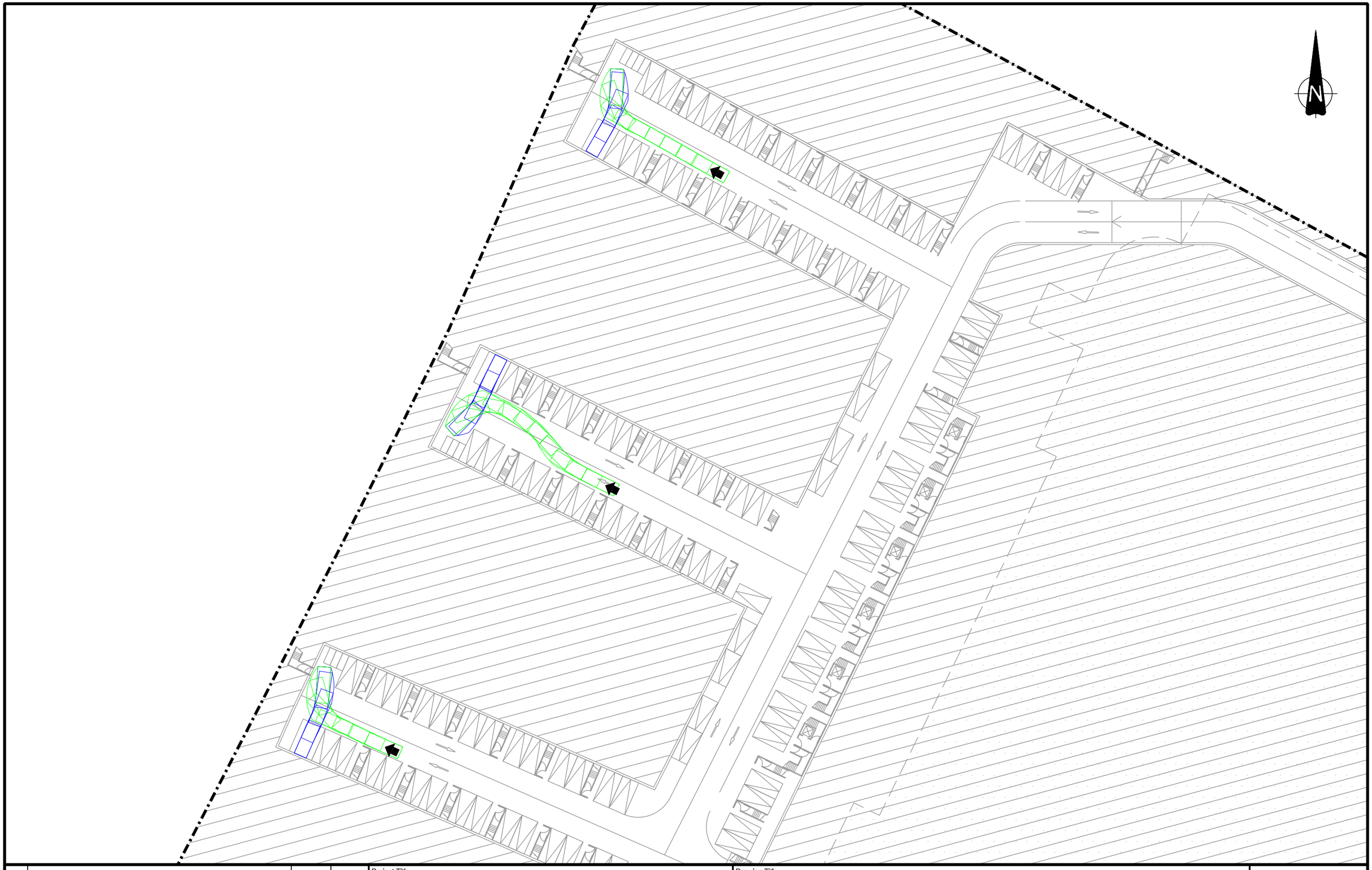
SYSTRA MVA

CHK50709210/TIA/B8-A.DGN/LHO/20JUL23



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A	TD'S COMMENTS INCORPORATED	MLY	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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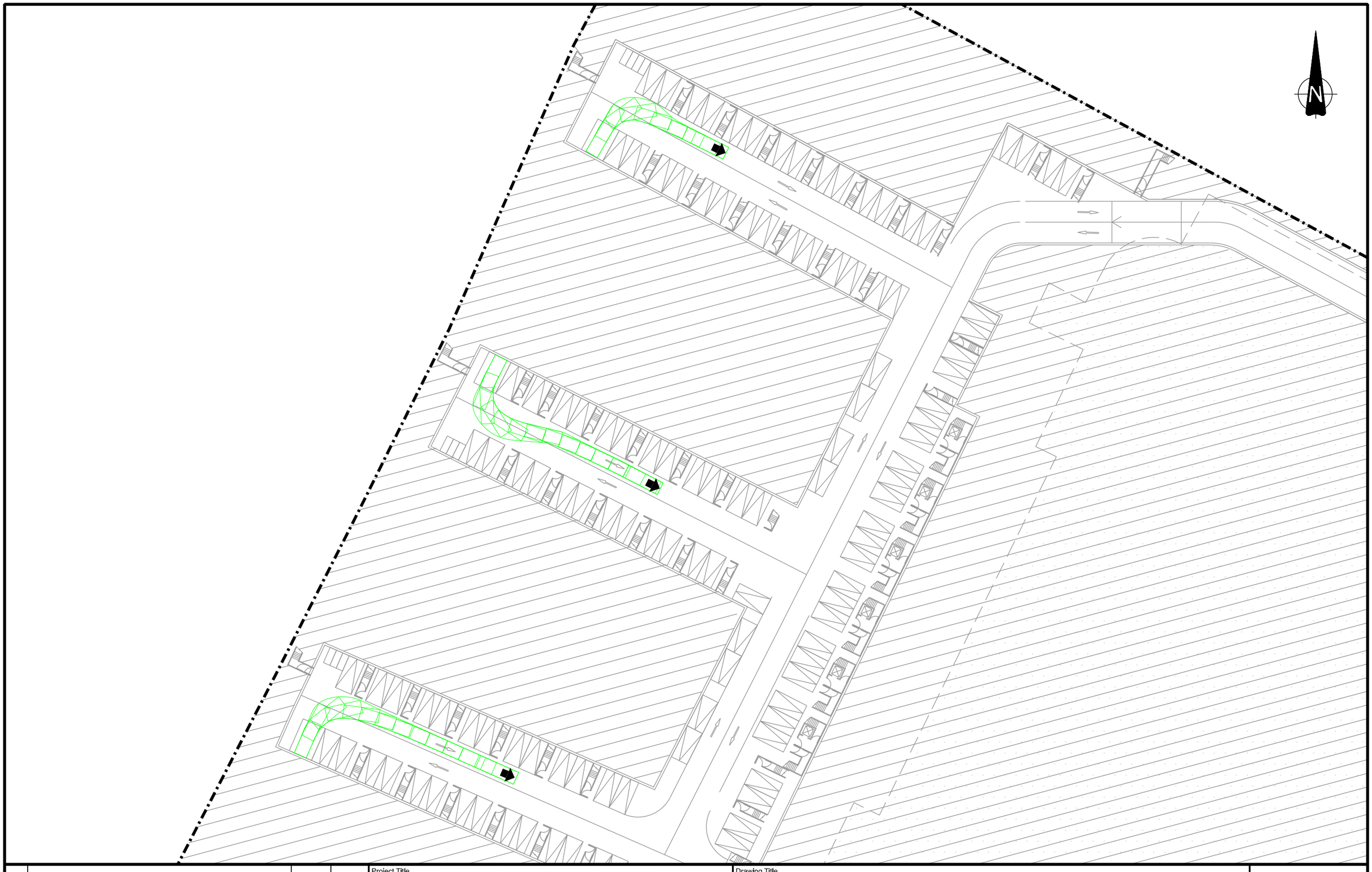

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A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

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Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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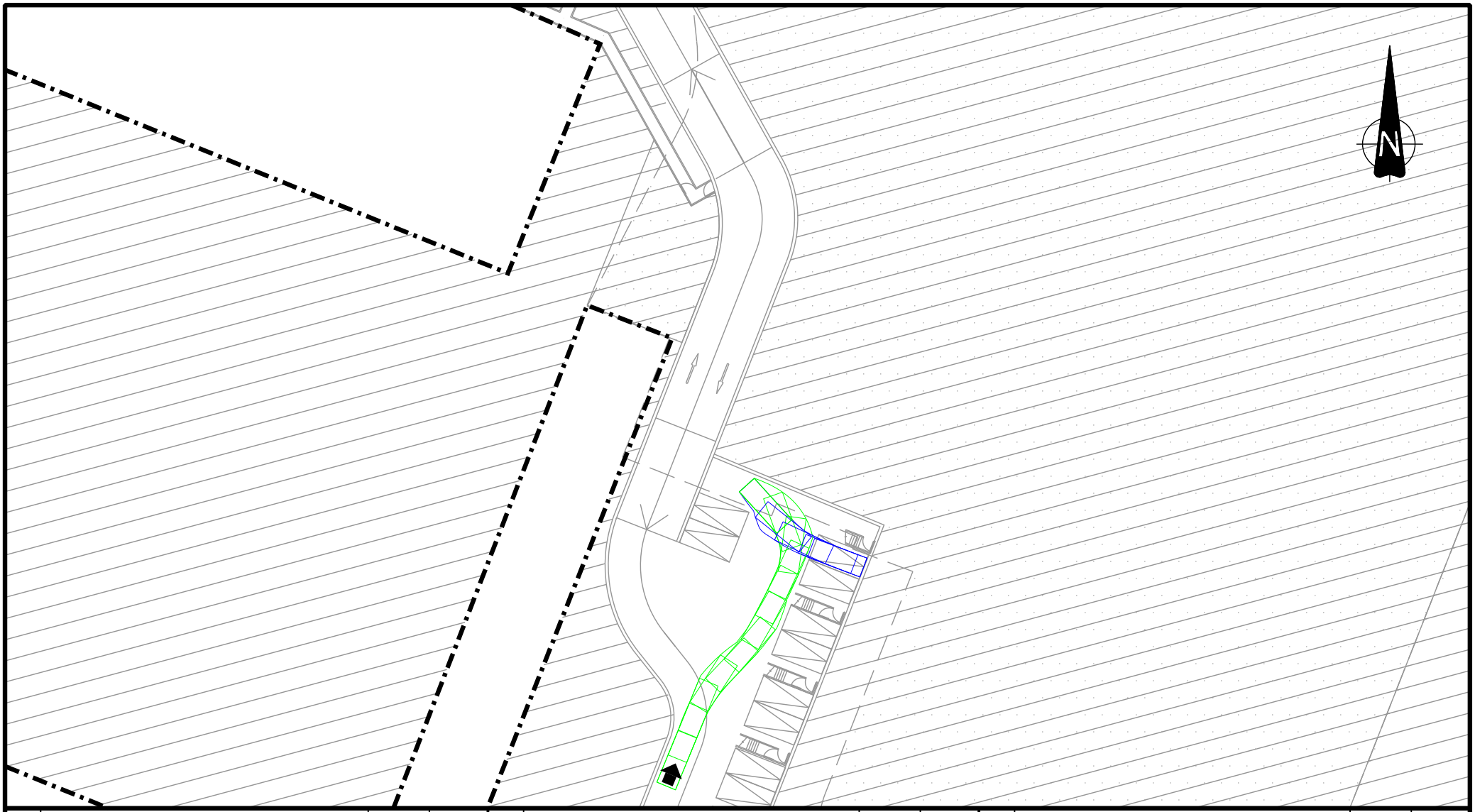

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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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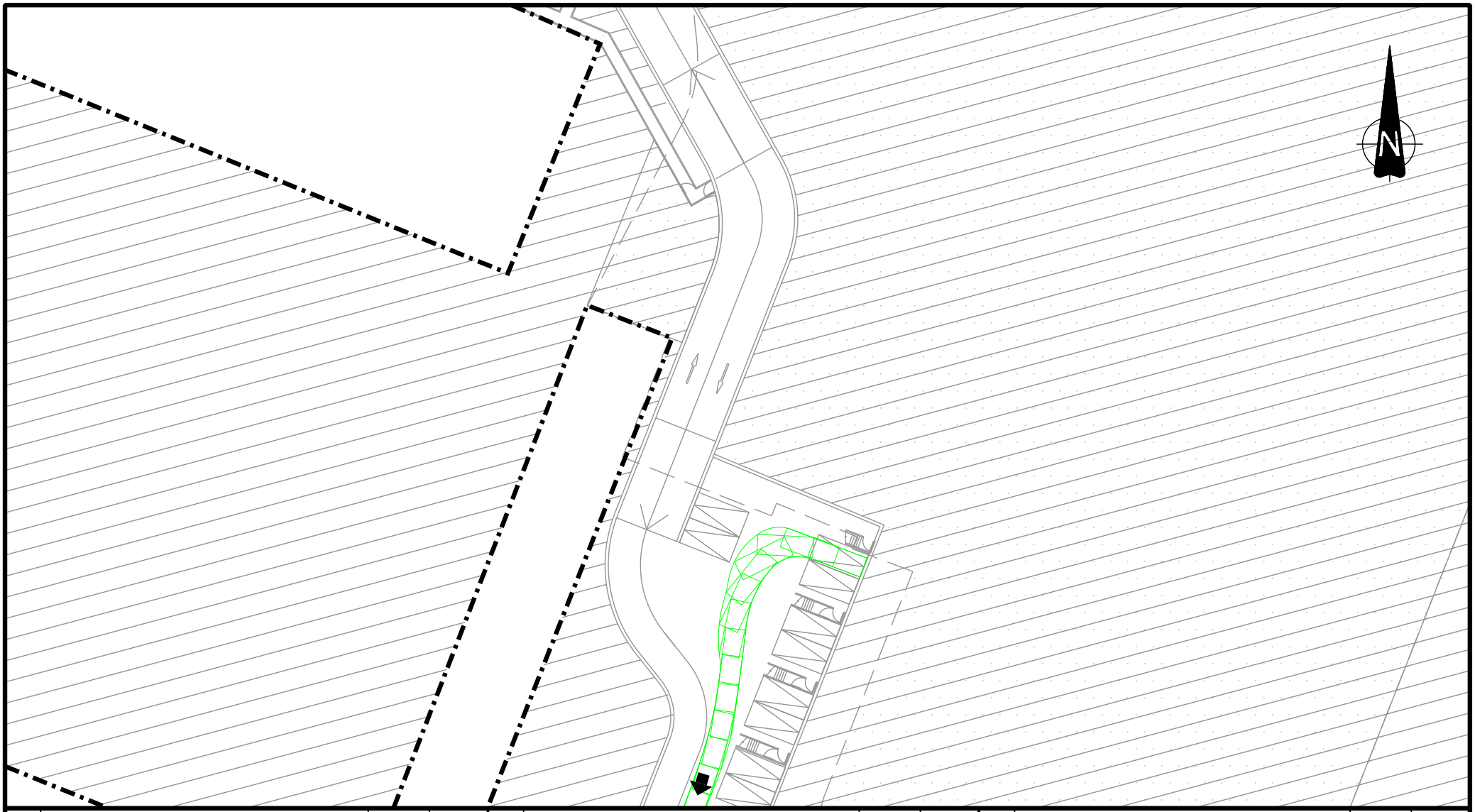

Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF PRIVATE VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

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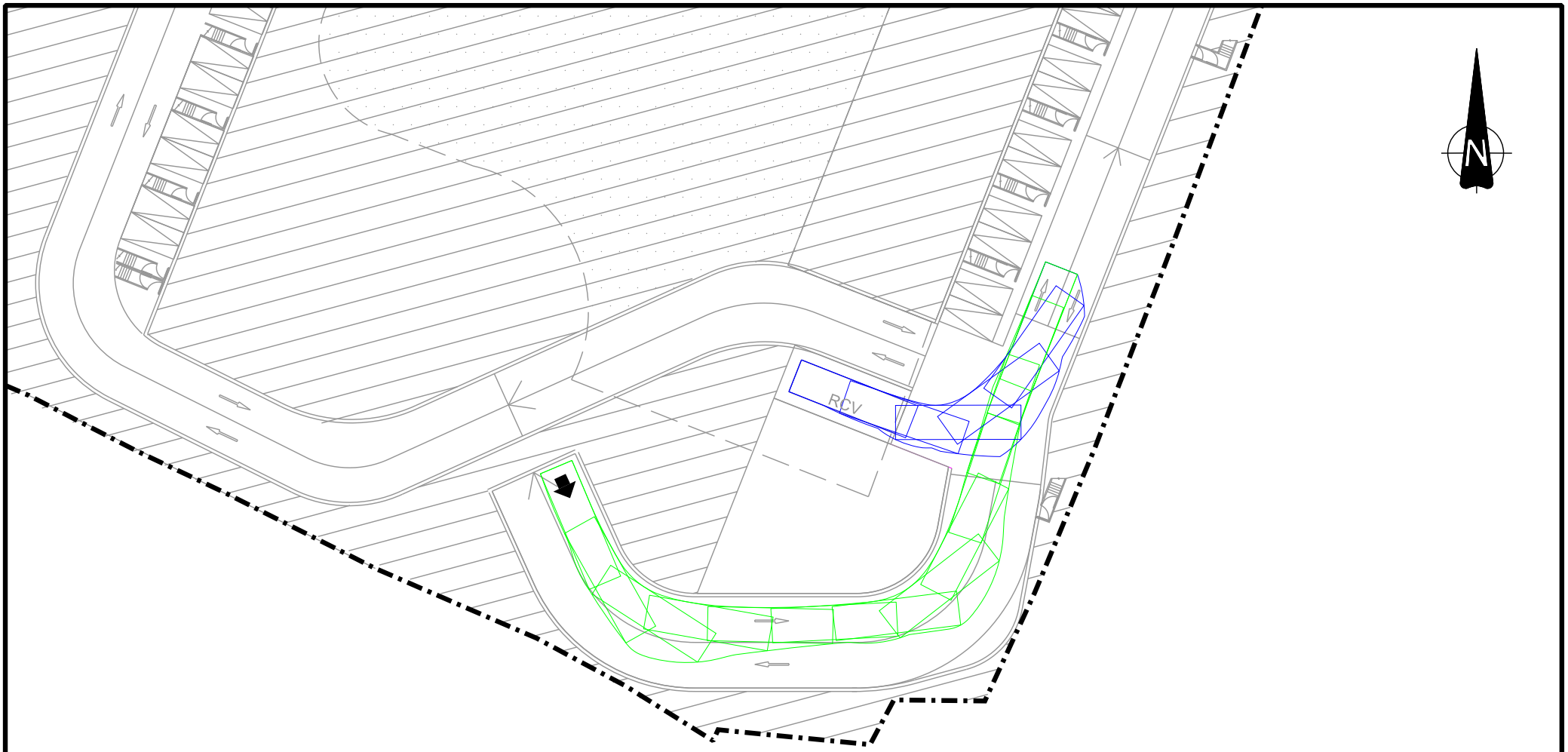

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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

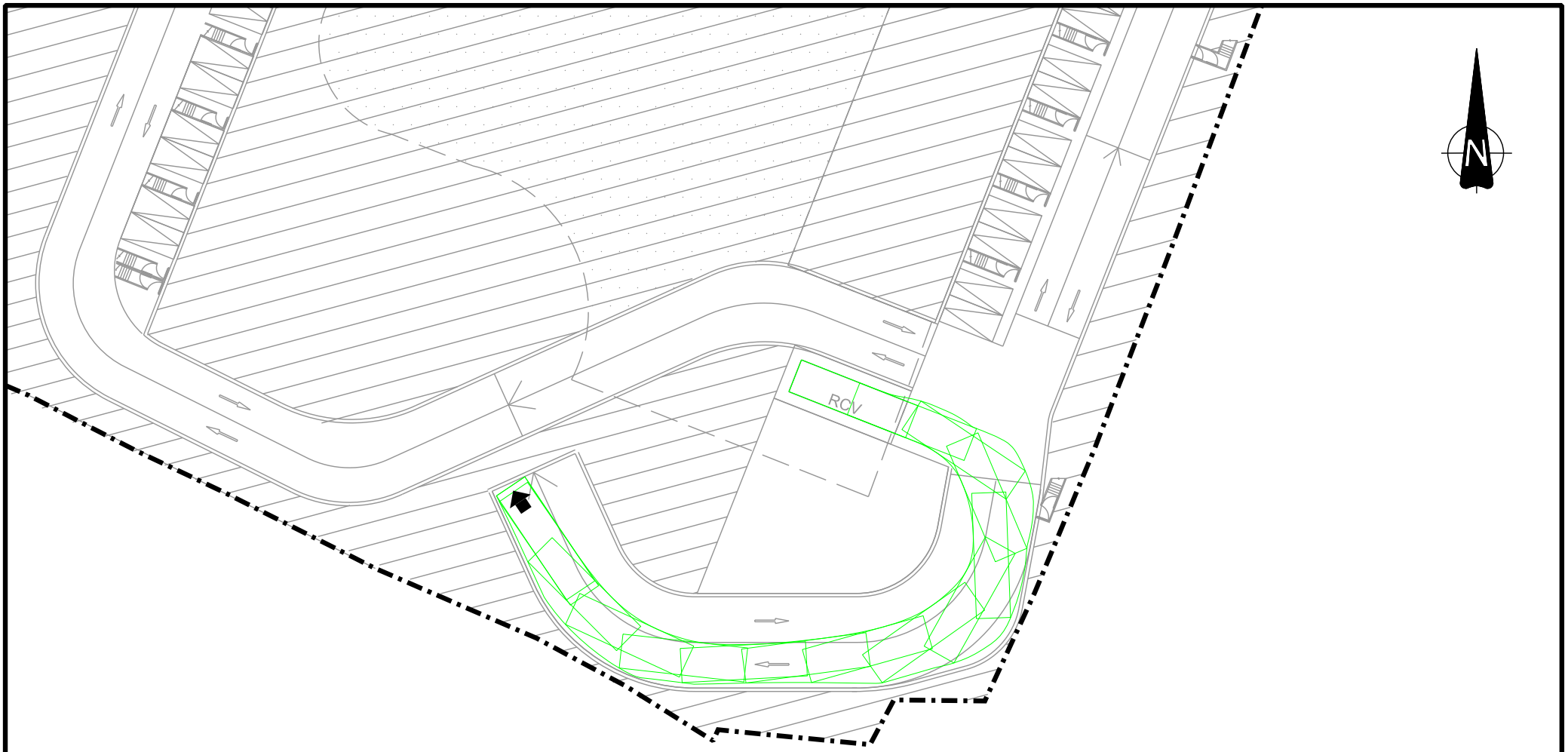
Drawing Title

SWEPT PATH ANALYSIS OF REFUSE COLLECTION VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B13**	A

SYSTRA MVA

CHK50709210/TIA/B13-A.DGN/LHO/20JUL23



Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

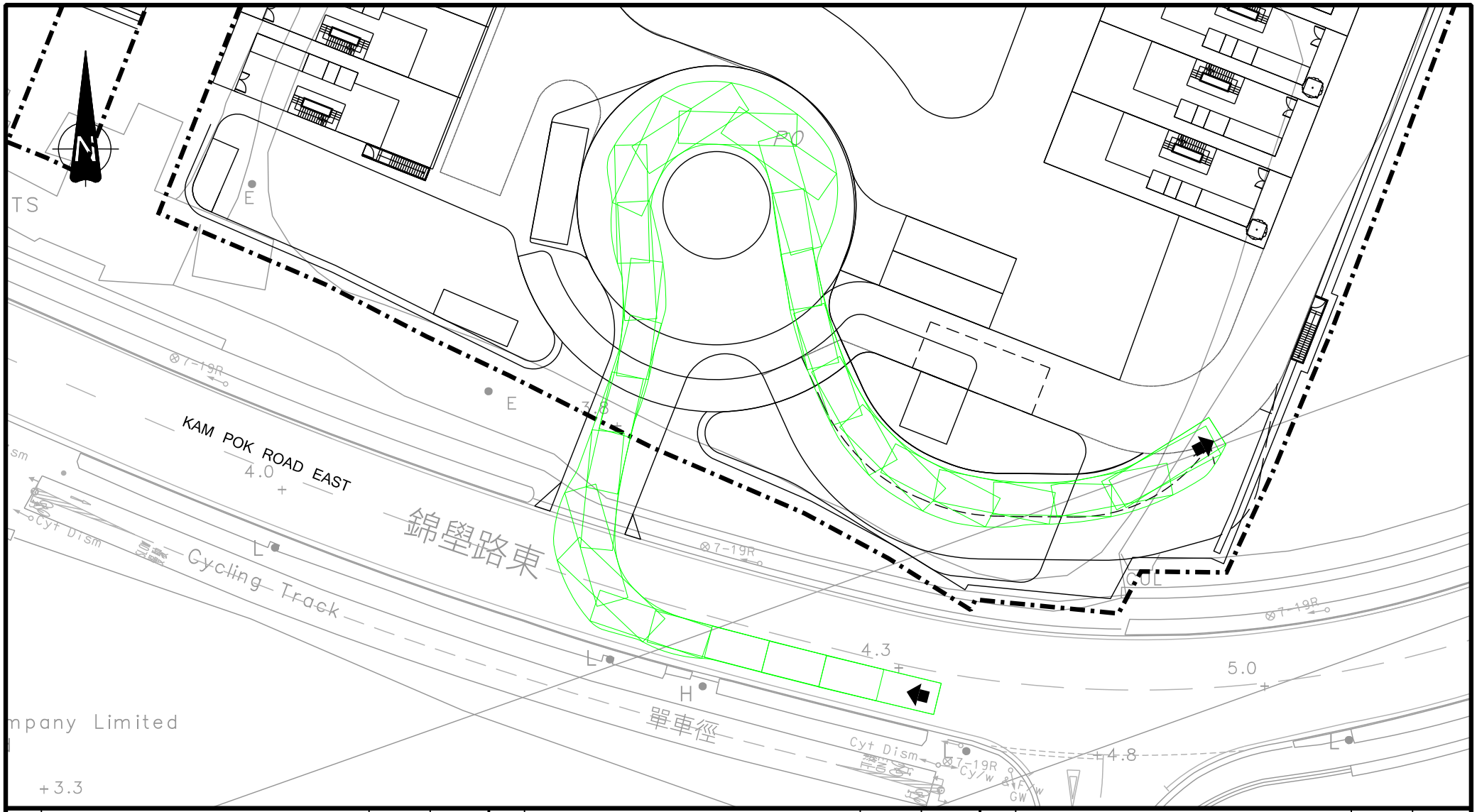
Drawing Title

SWEPT PATH ANALYSIS OF REFUSE COLLECTION VEHICLES ON B/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B14**	A

SYSTRA MVA

CHK50709210/TIA/B14-A.DGN/LHO/20JUL23



Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

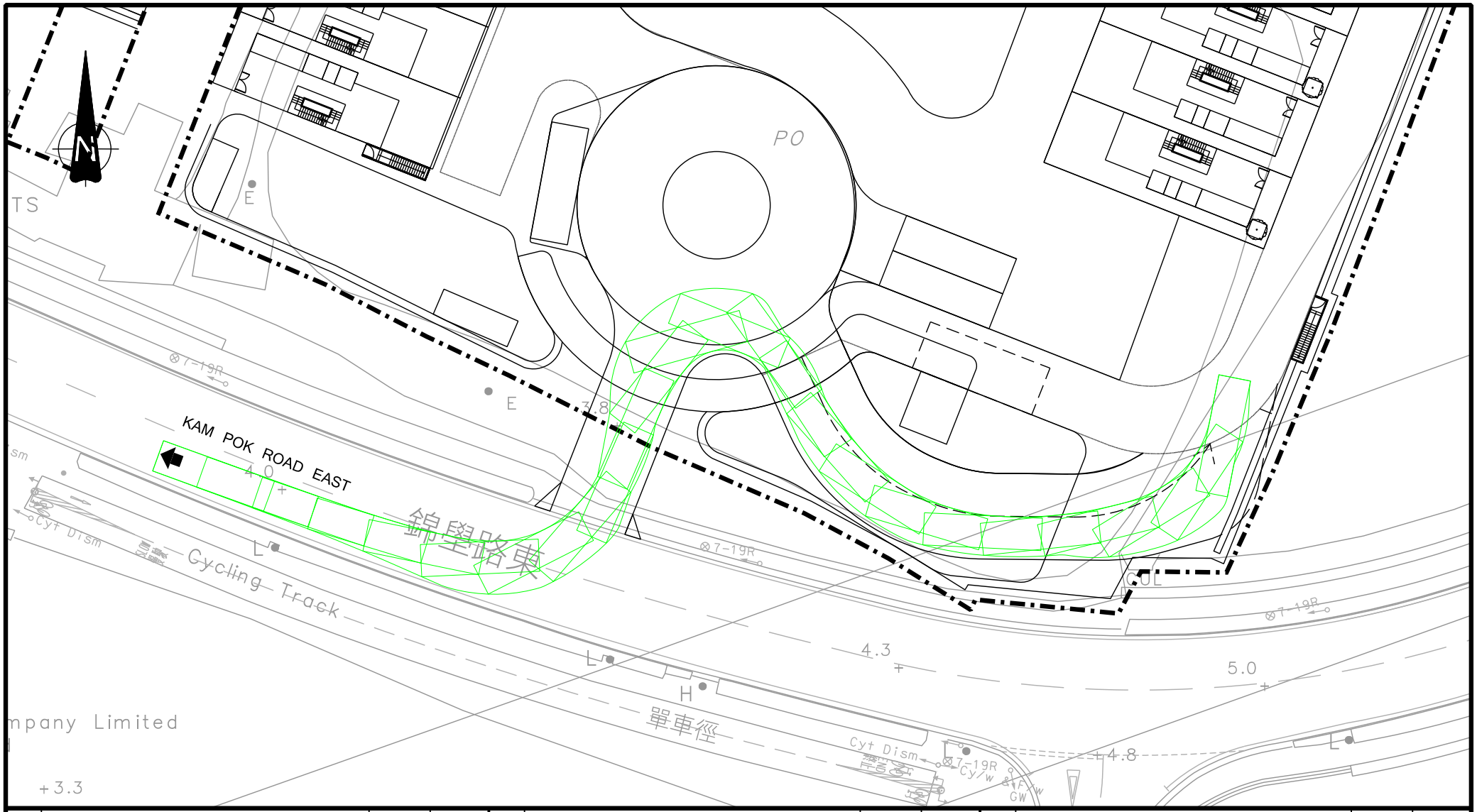
Drawing Title

SWEPT PATH ANALYSIS OF REFUSE COLLECTION VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	B15	A

SYSTRA MVA

CHK50709210/TIA/B15-A.DGN/LHO/20JUL23



Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
A	TD'S COMMENTS INCORPORATED	MYL	20JUL23

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

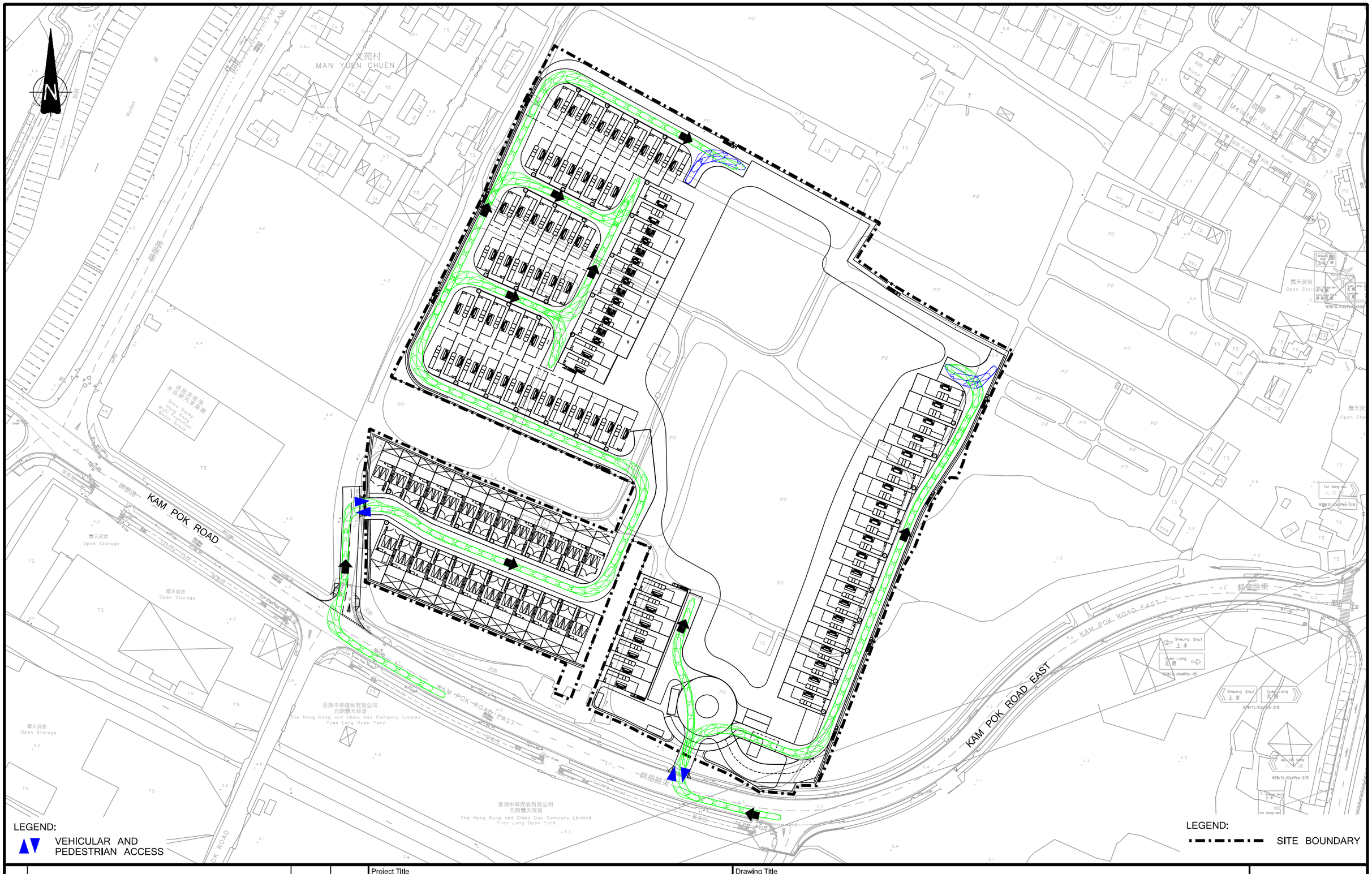
Drawing Title

SWEPT PATH ANALYSIS OF REFUSE COLLECTION VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B16**	A

SYSTRA MVA

CHK50709210/TIA/B16-A.DGN/LHO/20JUL23



Rev.	Description	Checked	Date
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A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

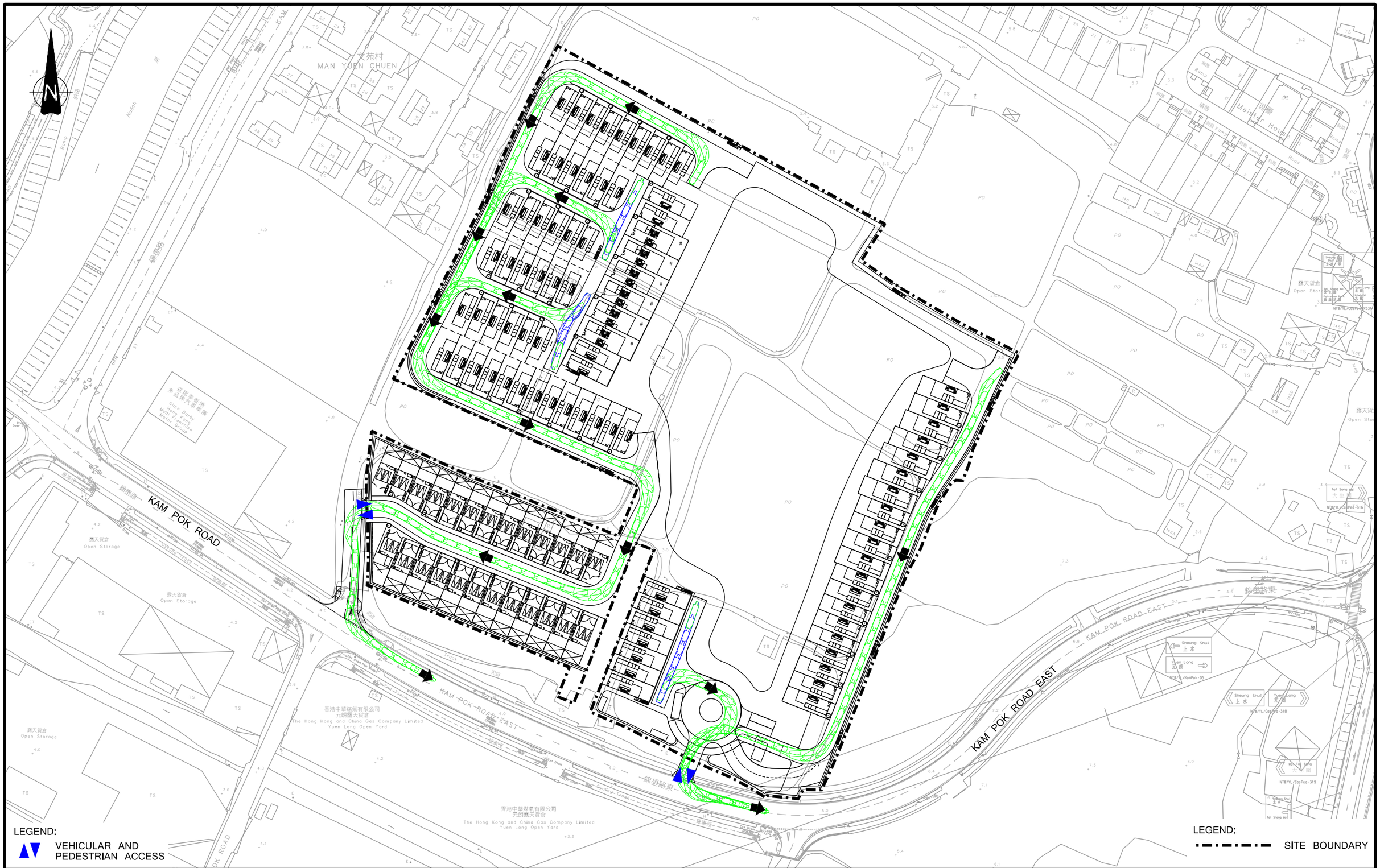
Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
SWEPT PATH ANALYSIS OF FIRE ENGINES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
PMH	MYL	1:1500(A3)	FEB 2023	**B17**	A

SYSTRA MVA

CHK50709210/TIA/B17-A.DGN/LHO/19JUL23



Rev.	Description	Checked	Date
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A	TD'S COMMENTS INCORPORATED	MYL	19JUL23

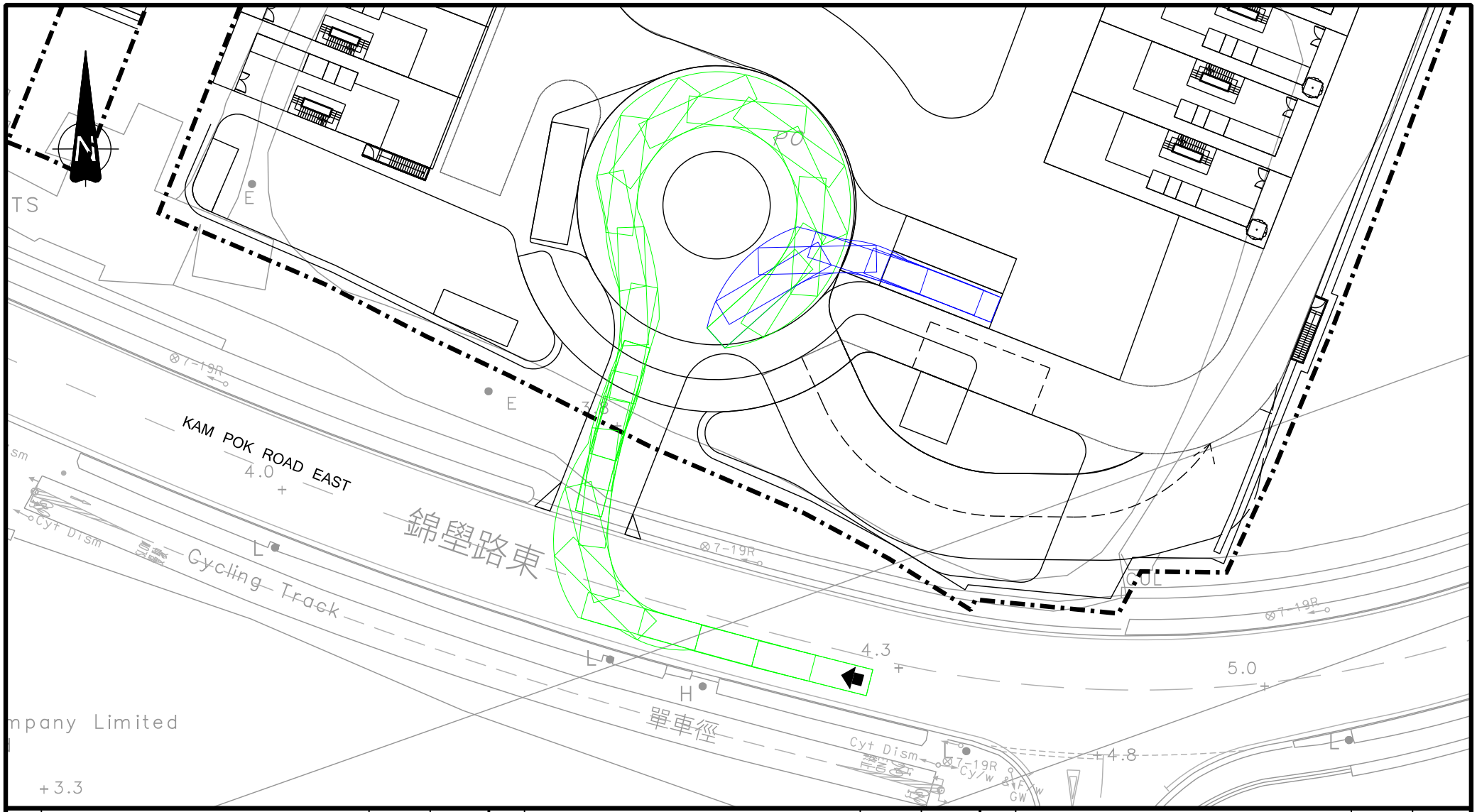
Project Title
PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title
SWEPT PATH ANALYSIS OF FIRE ENGINES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
PMH	MYL	1:1500(A3)	FEB 2023	B18	A

SYSTRA MVA

CHK50709210/TIA/B18-A.DGN/LHO/19JUL23



Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Rev.	Description	Checked	Date
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Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

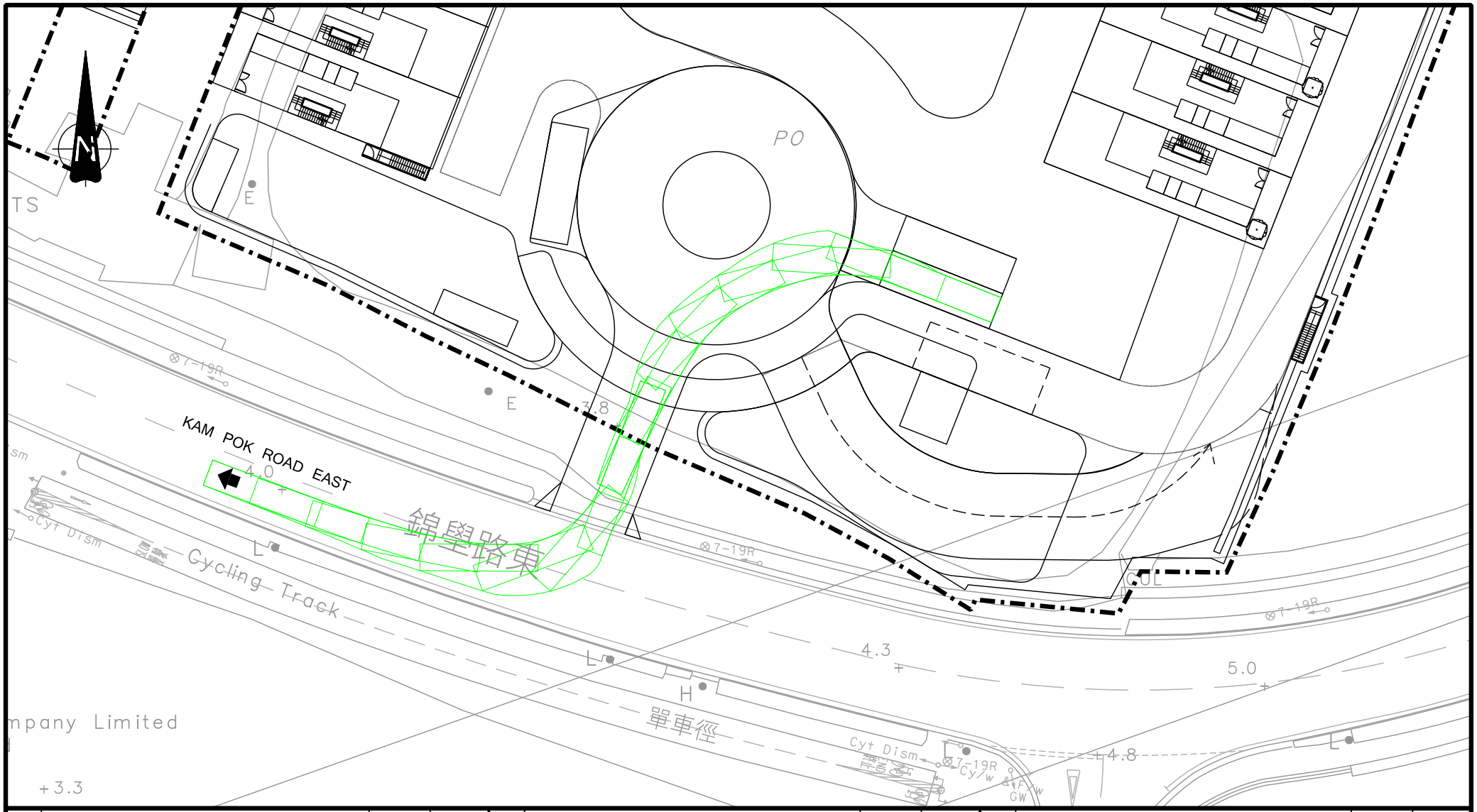
Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	B19	-

SYSTRA MVA

CHK50709210/TIA/B19.DGN/LHO/20JUL23



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

Project Title

PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES

Drawing Title

SWEPT PATH ANALYSIS OF 11m LONG VEHICLES ON G/F

Designed	Checked	Scale	Date	Drawing No.	Rev.
MST	MYL	1:500(A4)	FEB 2023	**B20**	-

SYSTRA MVA

CHK50709210/TIA/B20.DGN/LHO/20JUL23