Appendix F

Revised Traffic Impact Assessment

30/05/2025

Reference number CHK50769410

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY), SHOP AND SERVICES (MEDICAL CONSULTING ROOM INCLUDING CLINIC) AND PUBLIC VEHICLE PARK (PRIVATE CAR ONLY) IN "VILLAGE TYPE DEVELOPMENT" ZONE AT LOTS 76 S.G (PART), 76 S.H (PART) IN D.D. 101 AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

TRAFFIC IMPACT ASSESSMENT REPORT

SYSTRA MVA

IDENTIFICATION TABLE	
Client/Project owner	Gotland Enterprises Limited
Project	Section 16 Planning Application for Proposed Social Welfare Facility (Residential Care Home for the Elderly), Shop and Services (Medical Consulting Room including Clinic) and Public Vehicle Park (Private Car Only) in "Village Type Development" Zone at Lots 76 S.G (Part), 76 S.H (Part) in D.D. 101 and adjoining Government Land, Mai Po, Yuen Long
Type of document	Traffic Impact Assessment Report
Date	30/05/2025
File name	Lot No. 76 S.G & 76 S.H in D.D. 101 TIA Report .docx
Reference number	CHK50769410

MVA Hong Kong Limited
[redacted]

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1. INTRODUCTION

1.1 Background

1.1.1 The application site is located at Tam Kon Chau Road, as indicated in **Drawing 1.1**. It is currently zoned as a "Village Type Development (V)" under the latest approved Mai Po & Fairview Park Outline Zoning Plan (OZP) no. S/YL-MP/6.

1.1.2 The application site is currently a temporary parking lot located at the junction Castle Peak Road / TAM Kon Chau Road, and it is proposed to be redeveloped into a Residential Care Home for the Elderly (RCHE).

1.2 Study Objective

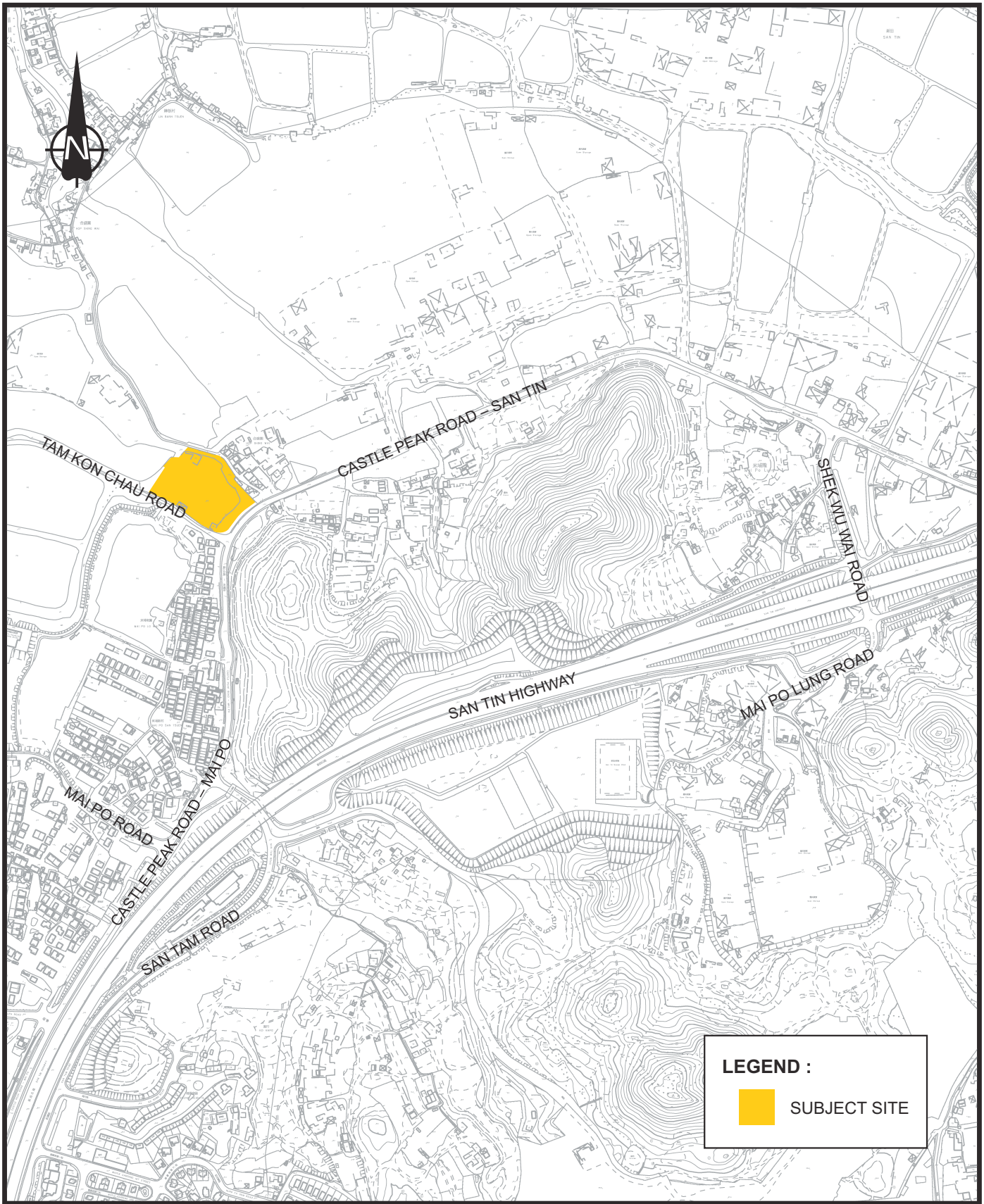
1.2.1 The main objective of this study is to investigate the anticipated traffic impact of Residential Care Home for the Elderly (RCHE) Redevelopment to the adjacent local road network, by performing the following tasks:

- review the current traffic condition in the vicinity;
- study the traffic related matters of the proposed MLP;
- produce traffic forecasts on the adjacent local road network;
- assess the traffic impact of this development scheme to the adjacent local road network and suggest mitigation measures, if applicable.

1.3 Report Structure

1.3.1 Following this introductory chapter, there are six further chapters.

- Chapter 2 – Traffic Context, review the current traffic condition in the vicinity;
- Chapter 3 – The Redevelopment, introduces the proposed Residential Care Home for the Elderly (RCHE) scheme, planning parameters, internal transport facilities and etc.;
- Chapter 4 – Traffic Forecasts, describes the traffic forecasting methodology and presents the results;
- Chapter 5 – Traffic Impact Assessment, presents the assessment findings and suggests mitigation measures, if applicable;
- Chapter 6 – Public Transport Assessment, analysis the public transport services impact induced by the proposed development; and,
- Chapter 7 – Summary and Conclusion, summarises the study findings and presents the conclusion accordingly.



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Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

SITE LOCATION PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	FEB 2024	1.1	-

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2. TRAFFIC CONTEXT

2.1 Existing Road Network

2.1.1 The application site is located at the north-east side of Tam Kon Chau Road. The Subject Site is bounded by Tam Kon Chau Road to the Southwest, Castle Peak Road – San Tin to the Southeast, the location is indicated in **Drawing 1.1**. The vehicular access routes of the application site are through Tam Kon Chau Road, Castle Peak Road – Mai Po, Castle Peak Road – San Tin, San Tin Highway, Shek Wu Wai Road and Kwu Tung Road.

2.1.2 Tam Kon Chau Road connects the application site to the Castle Peak Road -San Tin & Mai Po.

2.1.3 Castle Peak Road – Mai Po & San Tin are both single 2-lane rural road, linking up Castle Peak Road (Tam Mei) on the South and Castle Peak Road (Chau Tau) on the North respectively.

2.1.4 San Tin Highway is a dual 6-lane expressway. San Tin Highway connects Fanling Highway as its north-eastern, and Yuen Long Highway at the southwestern end of the San Tin Highway.

2.1.5 Shek Wu Wai Road is a single 2-lane carriageway, which connects Castle Peak Road – San Tin to the north and Mai Po Lung Road to the south.

2.1.6 Subject to the project of San Tin Technopole, the proposed road network will be upgraded to provide better linkage and strengthen future connectivity for developments located at the North and South of the San Tin Highway. At the existing Shek Wu Wai Interchange (SWWI), apart from improvement of existing slip roads at its western side connecting to San Tin Highway, a pair of new slip roads is proposed at the eastern side of SWWI to facilitate traffic movement. Also, the existing junction of Castle Peak Road – San Tin / Shek Wu Wai Road would be upgraded from priority junction to 4-arm signalized junction.

2.1.7 Kwu Tung Road is also a single 2-lane carriageway, which starts from the Kwu Tung Castle Peak Road in North District, and ends at the San Tin Castle Peak Road in Yuen Long District.

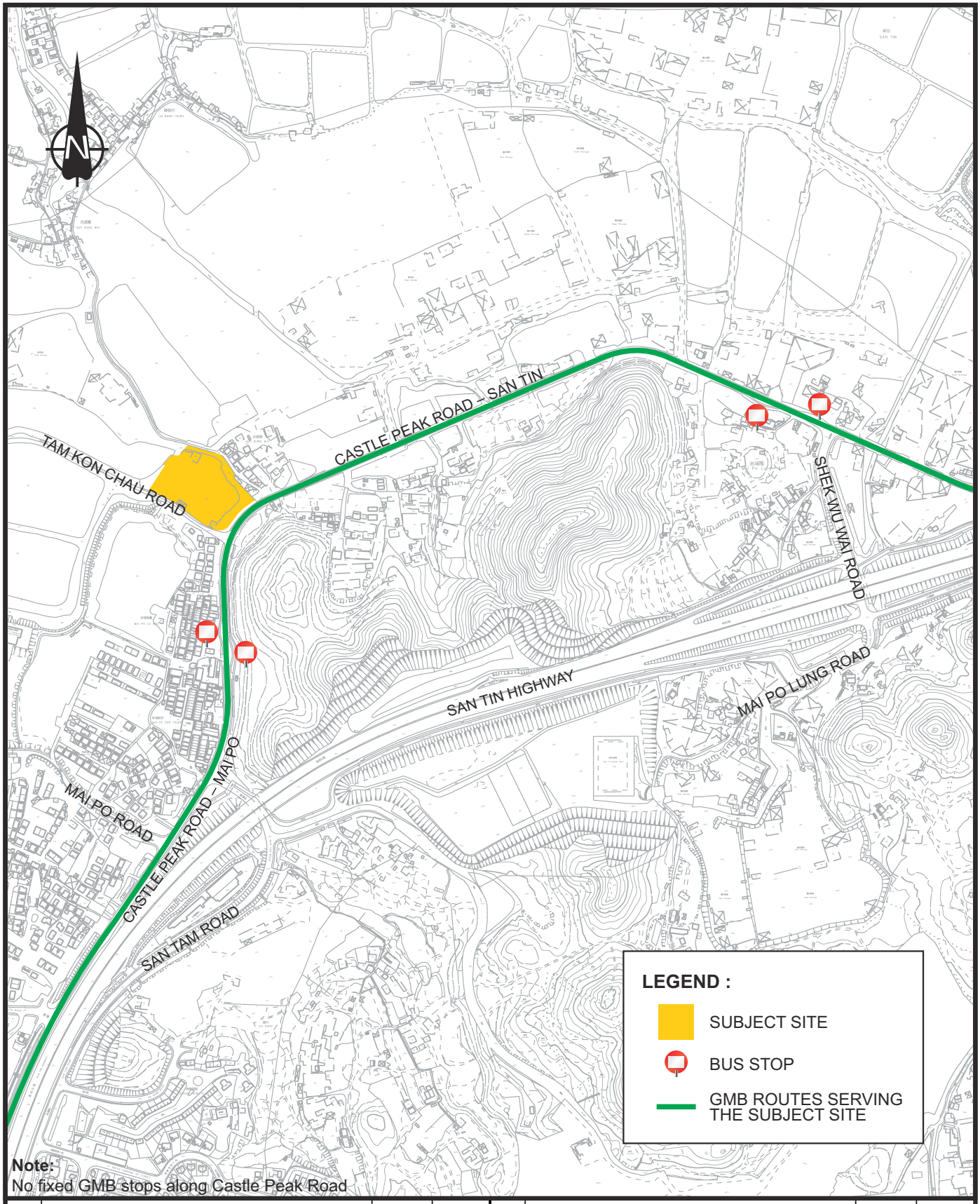
2.2 Public Transport Services

2.2.1 There are two bus stations near the application site, namely Mai Po Bus Station. There is one franchised bus route - 76K, and three Green Mini-Bus (GMB) routes – 75, 76 & 78, stopping at these two bus stations. And GMB Route 75 has a special route stops at Mai Po Bus Station.

2.2.2 The two bus stops located within 200-meter walking distance from the proposed development. The nearby public transport services are indicated in **Drawing 2.1**, and shown in **Table 2.1**.

Table 2.1 Public Transport Details and Servicing Schedules

Route No.	Destinations		Frequency (min)
Franchised Bus			
76K	Ching Ho Estate	Long Ping Estate	20
GMB			
75	Lok Ma Chau Spur Line	Yuen Long (Fook Hong Street)	15
75 (Special Trip)	Ha Wan Tsuen	Yuen Long (Fook Hong Street)	15
76	Siu Hum Tsuen	Yuen Long (Fook Hong Street)	15
78	Lok Ma Chau (San Tin)	Pat Heung Road (Tai Lam Interchange)	20



Note:
No fixed GMB stops along Castle Peak Road

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Project Title
TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title
EXISTING PUBLIC TRANSPORT SERVICES

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	FEB 2024	2.1	-

SYSTRA MVA

CHK50769410/TIA/F21.CDR/LLH/26FEB24

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2.3 Junction Operational Performance

2.3.1 A total of seven key local junctions have been identified for assessment purpose in this study. The identified key local junctions, as listed in **Table 2.2**, are indicated in **Drawing 2.2.**

Table 2.2 Identified Key Local Junctions

Ref. (1)	Junction	Control Method	Drawing No.
A	Castle Peak Road / TAM Kon Chau Road	Priority	2.3
B	Castle Peak Road / San Tam Road	Priority	2.4
C	Castle Peak Road / Mai Po Road	Priority	2.5
D	Castle Peak Road / Shek Wu Wai Road	Priority	2.6
E	Castle Peak Road / Kwu Tung Road	Priority	2.7
F	Shek Wu Wai Road / San Tin Highway Slip Road	Priority	2.8
G	Mai Po Lung Road / Shek Wu Wai Road	Priority	2.9

Remarks:
(1) Refer to **Drawing 2.2**.

2.3.2 In order to establish the current peak hour traffic condition in the area, traffic surveys in the form of manual classified count were conducted at the identified key local junctions during the morning and evening peak hours of a typical weekday.

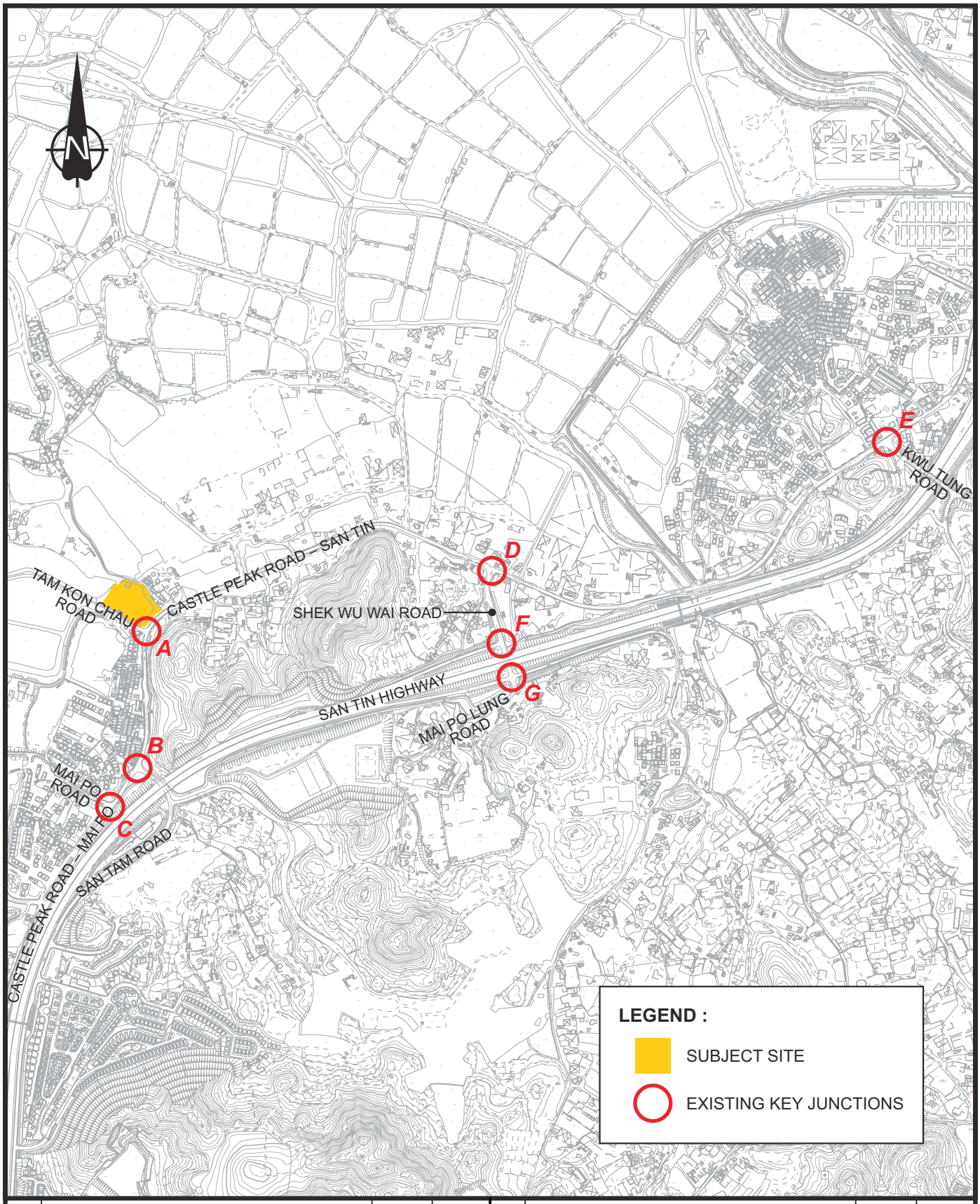
2.3.3 The traffic surveys were arranged and conducted during morning peak hours between 07:30 – 09:30 and the evening peak hours between 17:00 – 19:00 on a typical weekday in early-January 2024. The survey results reveal that the weekday morning and evening peak hour occur during 08:30 – 09:30 and 17:15 – 18:15 respectively. The observed peak hour traffic flows are summarised in **Drawing 2.10**.

2.3.4 Junction capacity assessments have been conducted to evaluate the current operational performance of the identified key local junctions. The assessments would be validated with the site observations, such as queue length, by applying appropriate site factors and adjustments accordingly in order to reflect the actual site conditions. The assessment results are summarised in **Table 2.3**. The junction calculation sheets are attached in **Appendix A**.

Table 2.3 Current Junction Operational Performance

Ref. (1)	Junction	RC/RFC (2)	
		AM Peak	PM Peak
A	Castle Peak Road / TAM Kon Chau Road	0.16	0.18
B	Castle Peak Road / San Tam Road	0.20	0.17
C	Castle Peak Road / Mai Po Road	0.11	0.12
D	Castle Peak Road / Shek Wu Wai Road	0.78	0.63
E	Castle Peak Road / Kwu Tung Road	0.40	0.41
F	Shek Wu Wai Road / San Tin Highway Slip Road	0.54	0.61
G	Mai Po Lung Road / Shek Wu Wai Road	0.58	0.43

Remarks:
(1) Refer to **Drawing 2.2**.
(2) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.



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A	TD'S COMMENTS INCORPORATED	JPP	28MAY25	-	-	-	-

Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

IDENTIFIED KEY LOCAL JUNCTIONS

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

CHK50769410/TIA/F22-A.CDR/LLH/28MAY25

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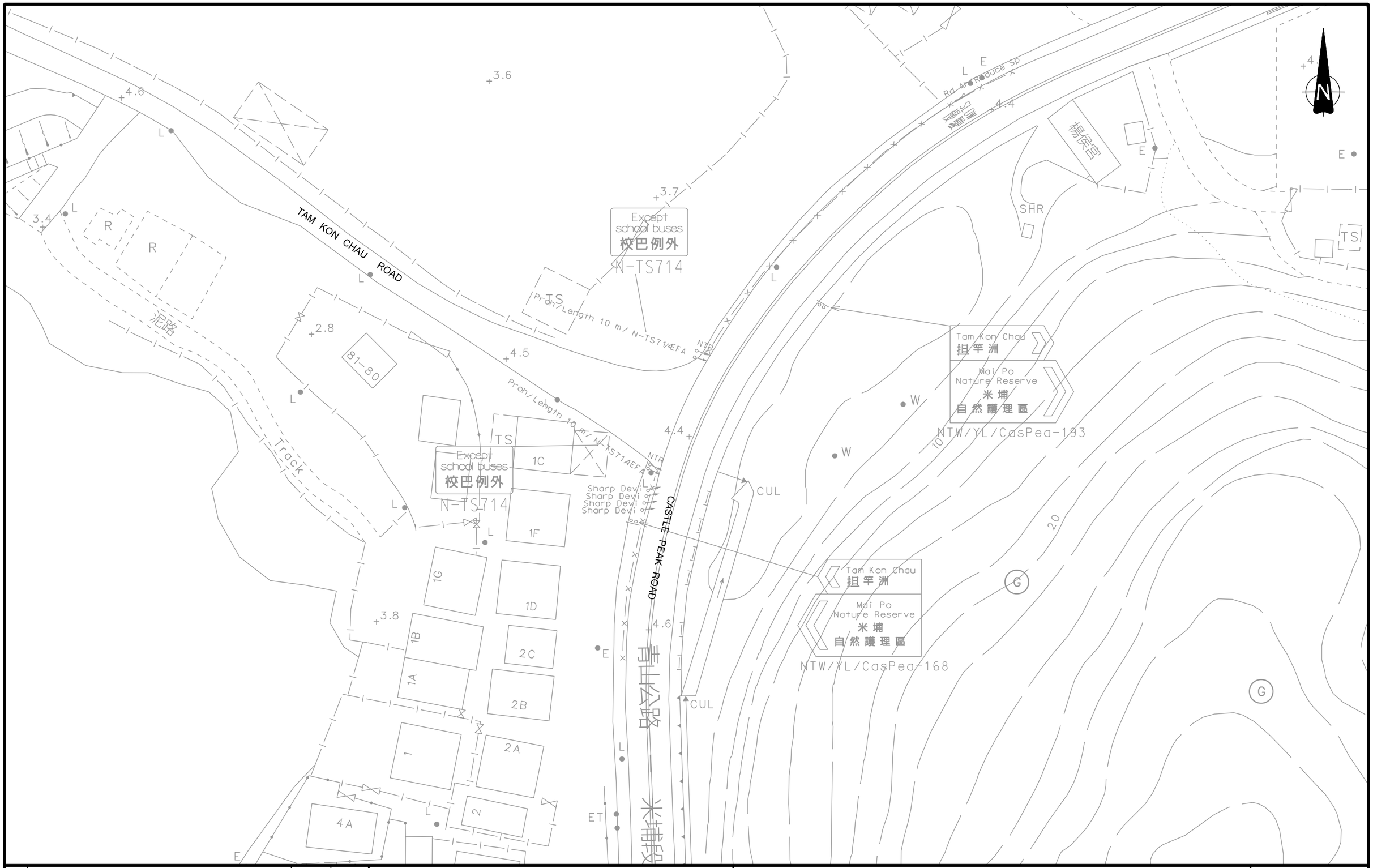

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

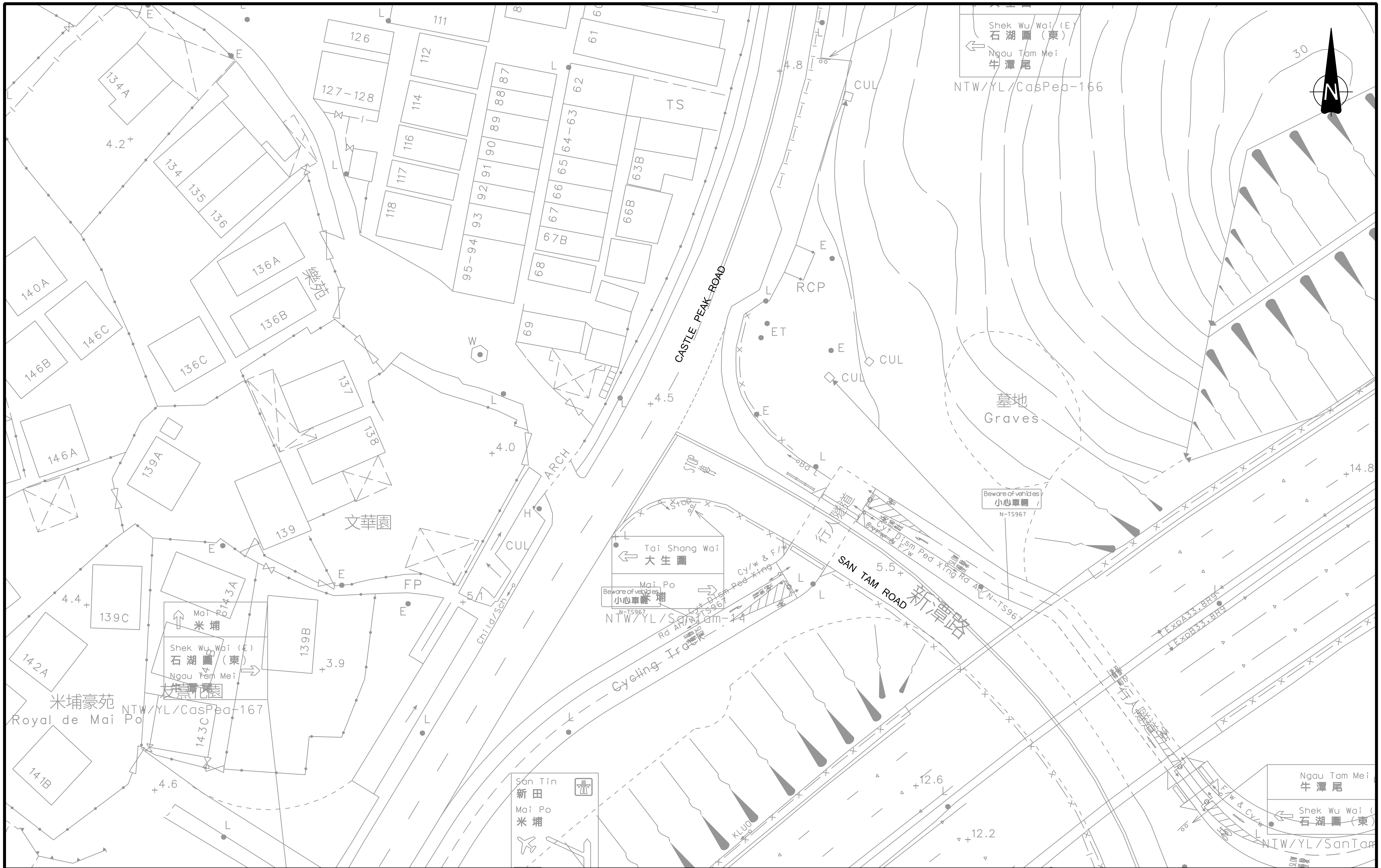
EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD / TAM KON CHAU ROAD (A)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	FEB 2024	2.3	-

SYSTRA MVA

CHK50769410/TIA/F23.DGN/TKH/28FEB24

Original Size : A3



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Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO. NT

Drawing Title

EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD / SAN TAM ROAD(B)

SYSTRA MVA

Designed	Checked	Scale	Date	Drawing No.	Rev.
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CHK50769410/TIA/F24.DGN/TKH/28FEB24

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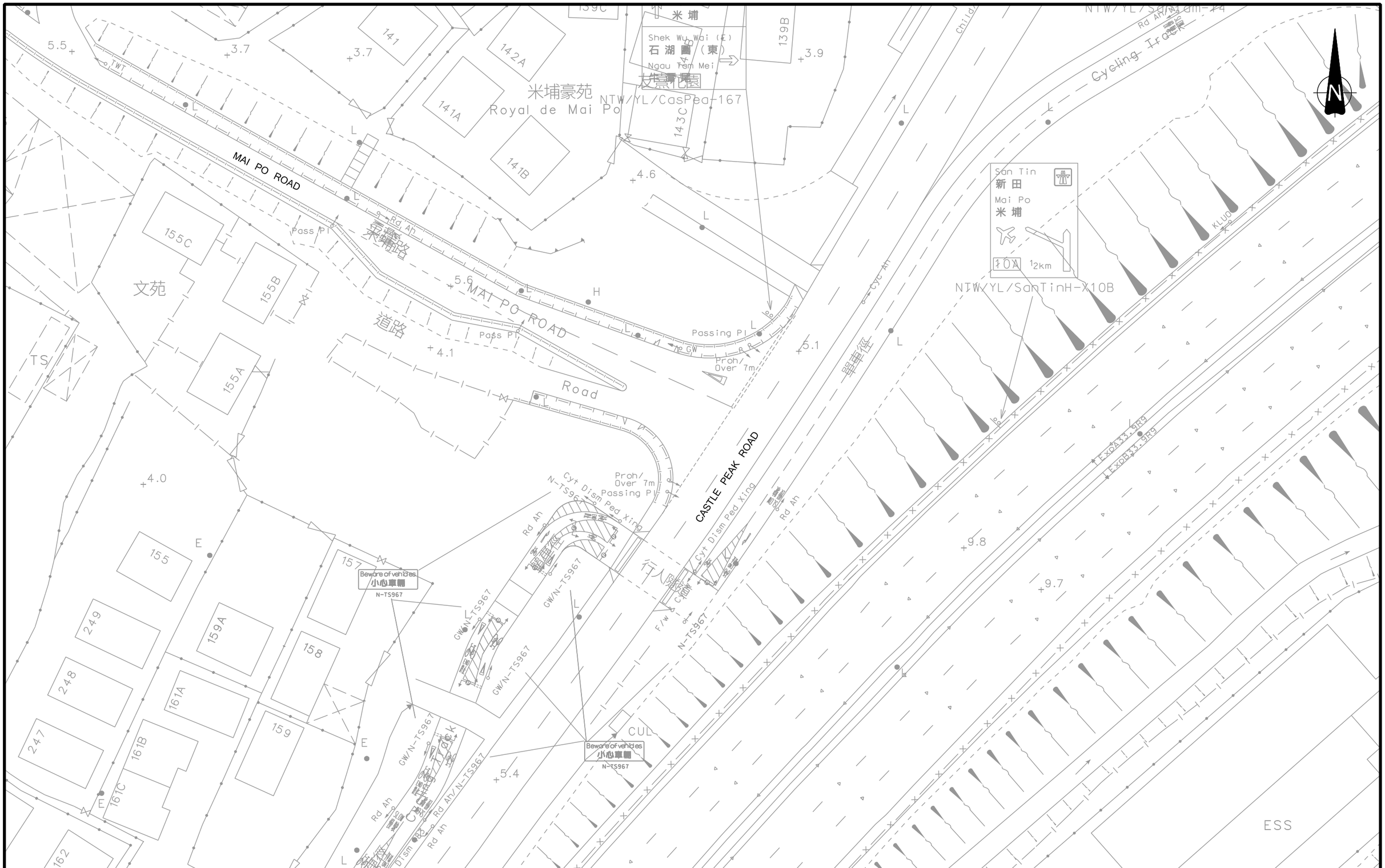

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD / MAI PO ROAD(C)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	FEB 2024	**2.5**	-

SYSTRA MVA

CHK50769410/TIA/F25.DGN/TKH/28FEB24

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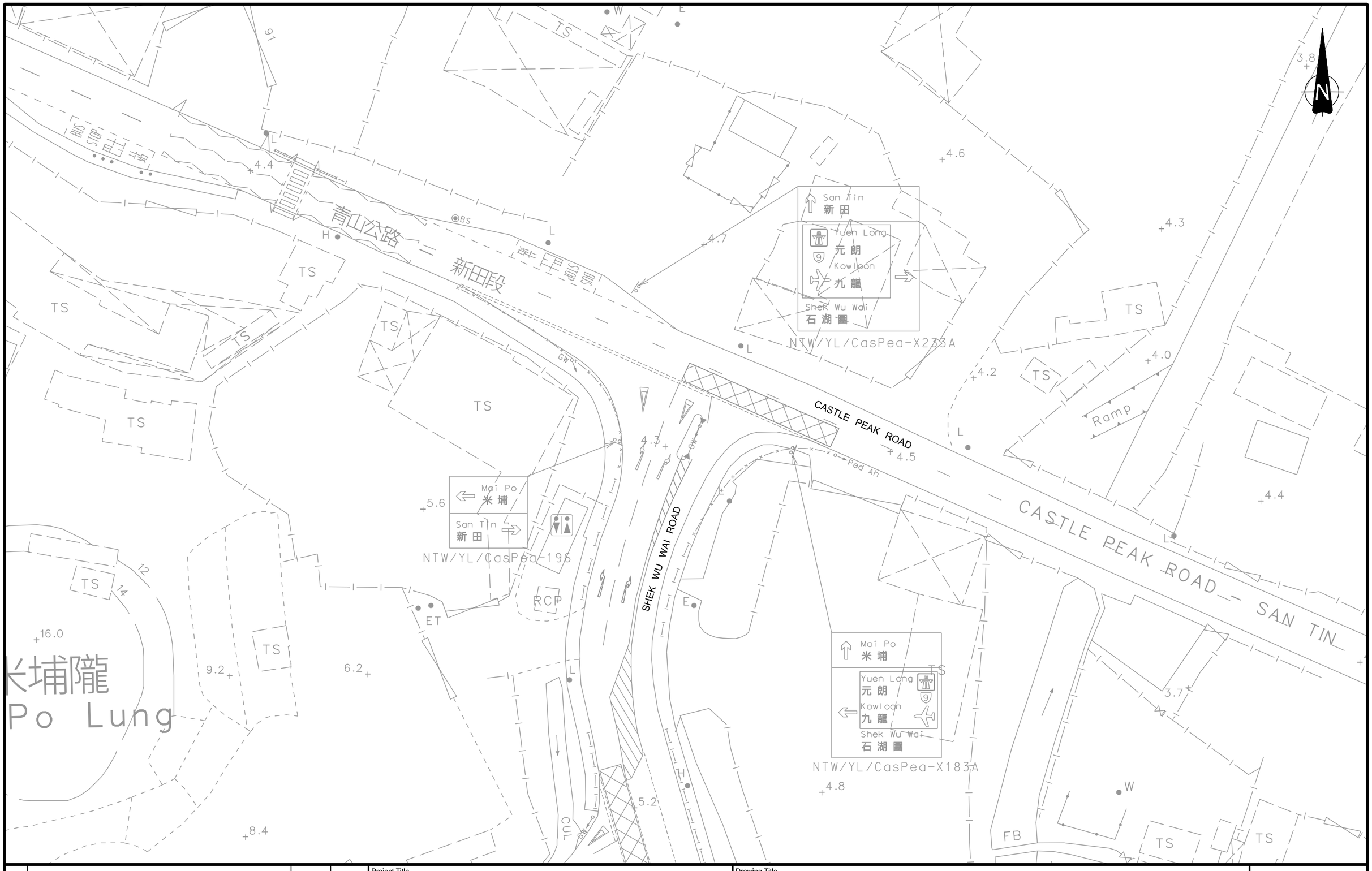

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD / SHEK WU WAI ROAD (D)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	MAR 2024	2.6	-

SYSTRA MVA

CHK50769410/TIA/F26.DGN/CKC/07MAR24

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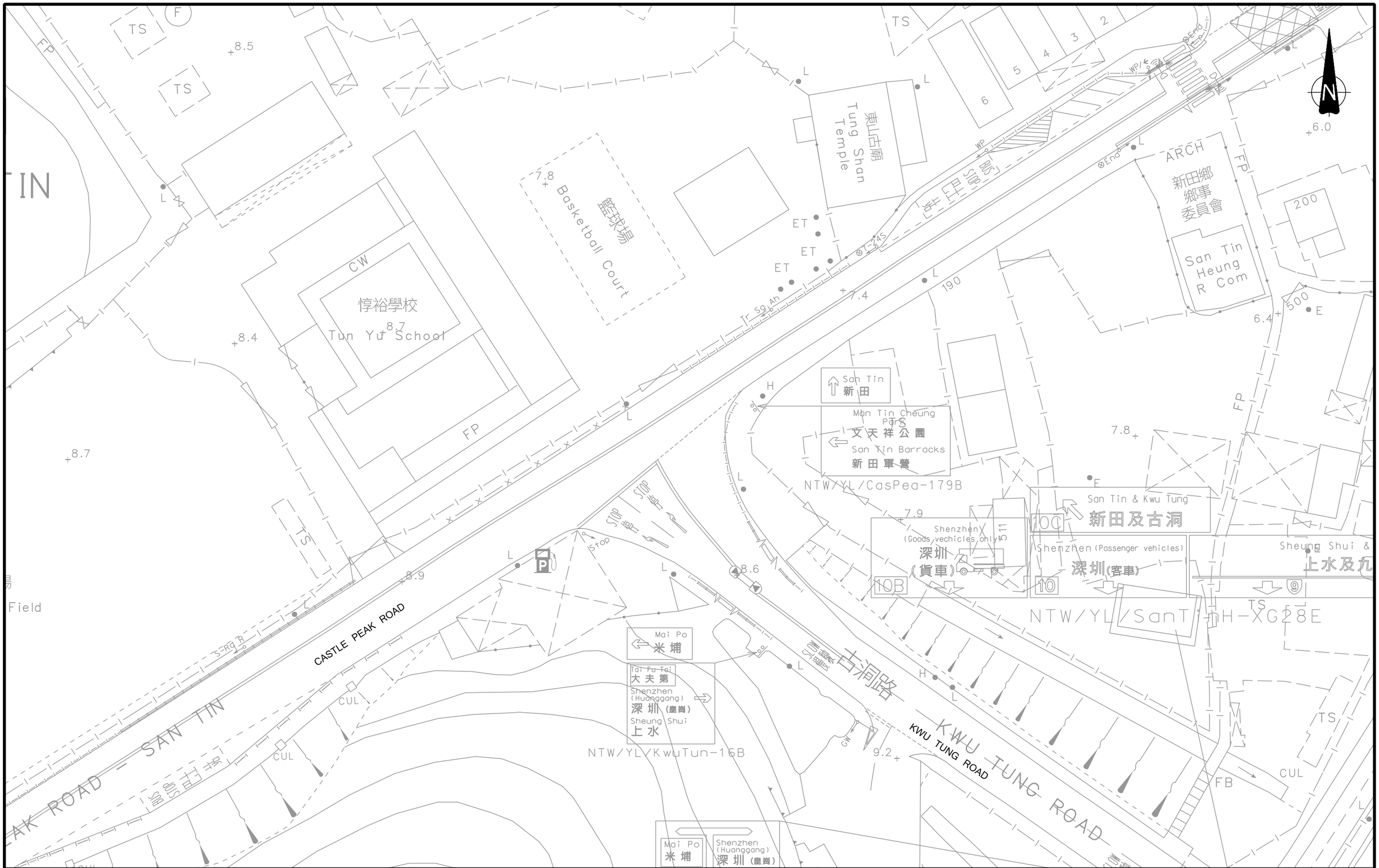

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

EXISTING JUNCTION LAYOUT OF CASTLE PEAK ROAD / KWU TUNG ROAD (E)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	AUG 2024	2.7	-

SYSTRA MVA

CHK50769410/TIA/F27.DGN/TKH/28AUG24

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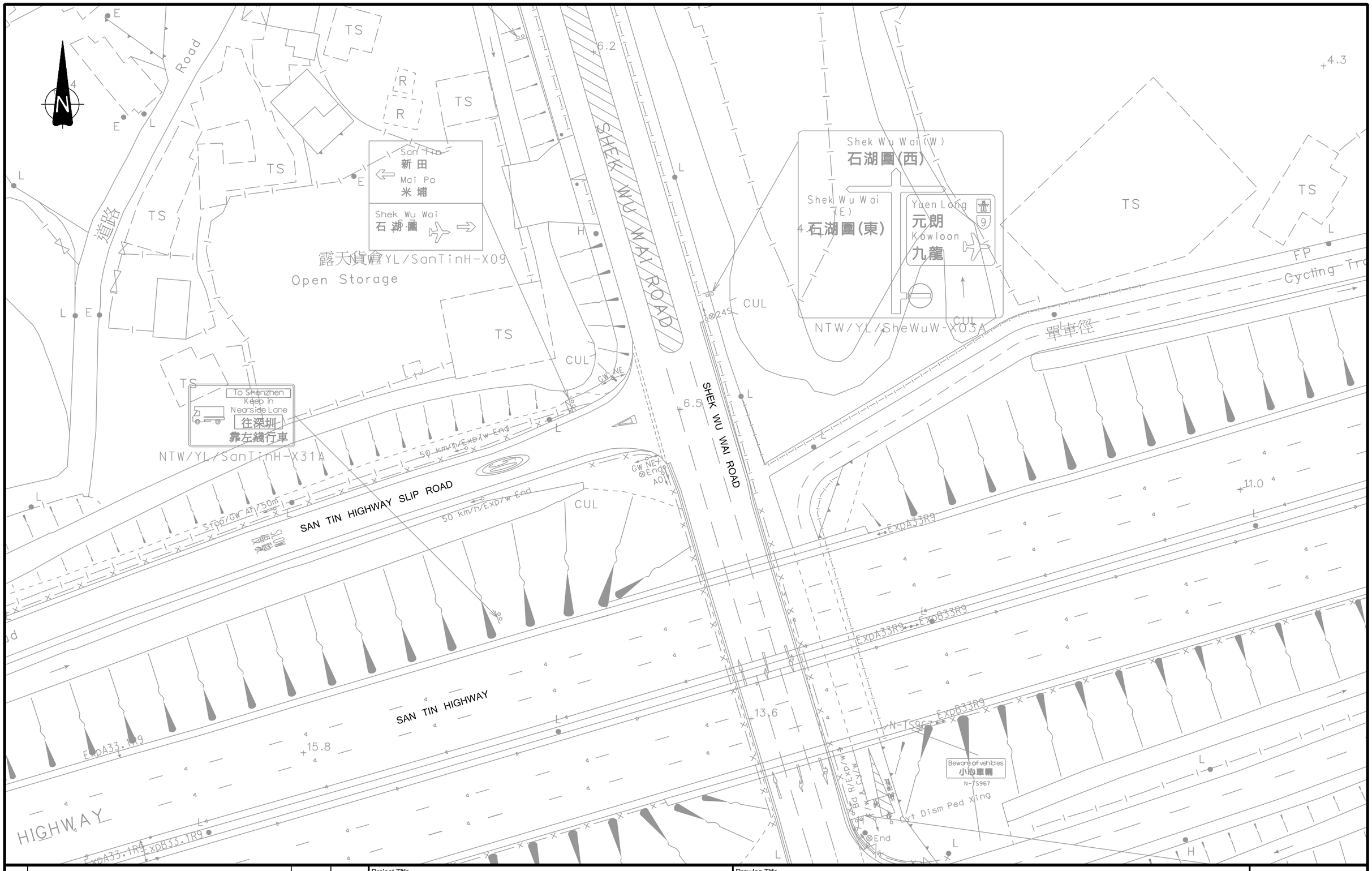

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

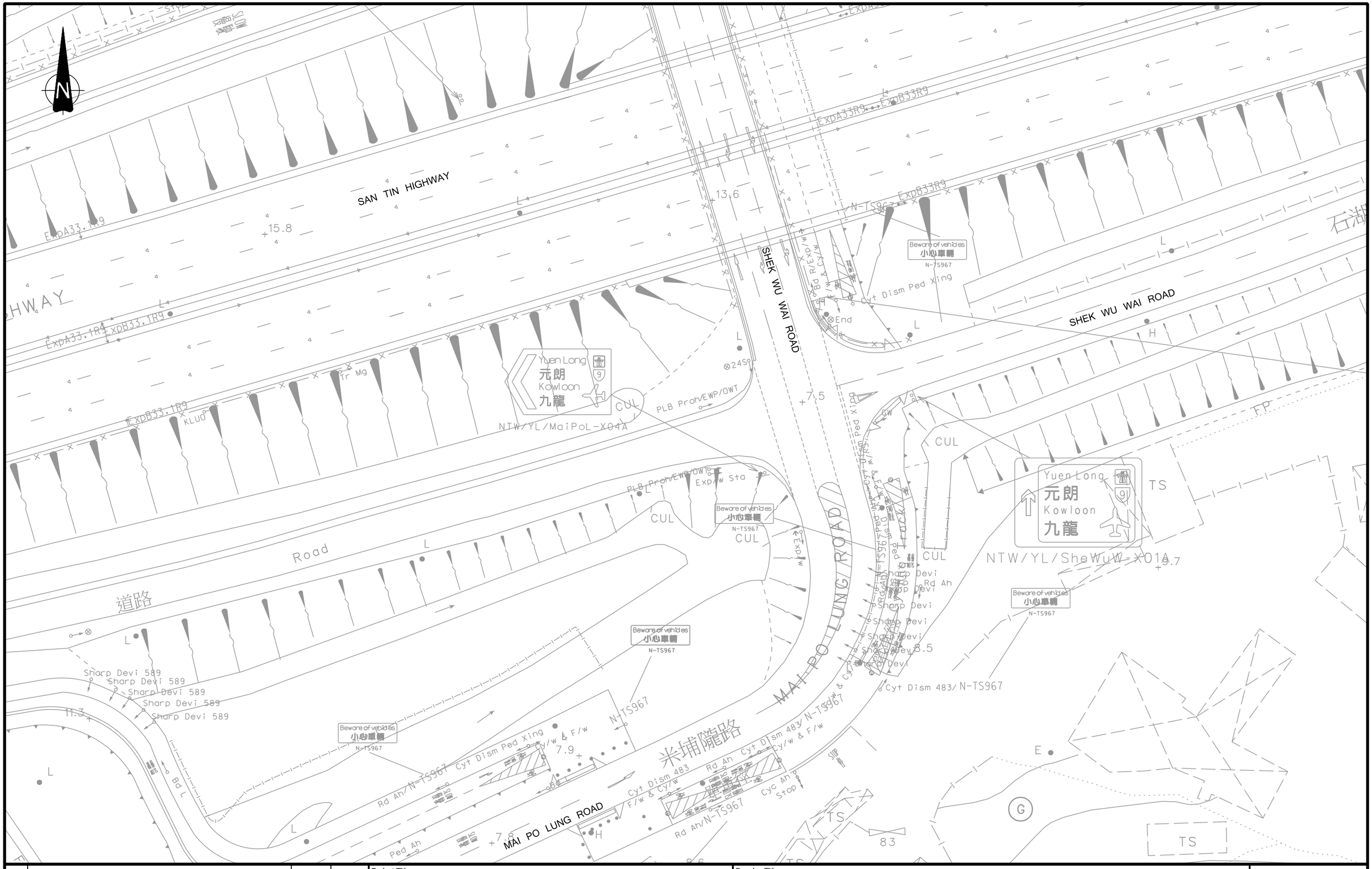
EXISTING JUNCTION LAYOUT OF SHEK WU WAI ROAD / SAN TIN HIGHWAY SLIP ROAD (F)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	MAY 2025	**2.8**	A

SYSTRA MVA

CHK50769410/TIA/F28-A.DGN/LHO/23MAY25

Original Size : A3



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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

EXISTING JUNCTION LAYOUT OF SHEK WU WAI ROAD / MAI PO LUNG ROAD (G)

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SYSTRA MVA

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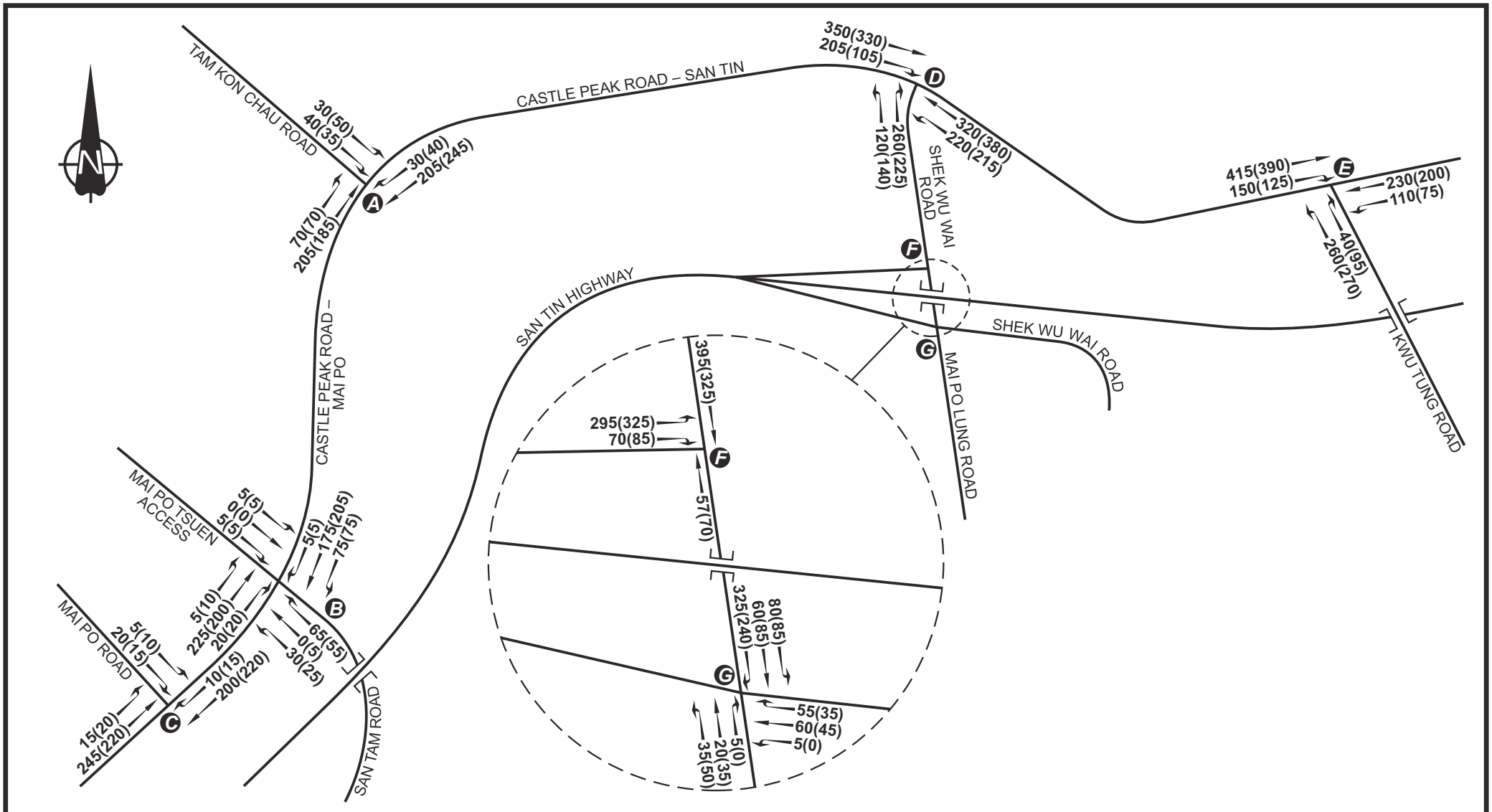

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

YEAR 2024 OBSERVED TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	MAY 2025	2.10	-

SYSTRA MVA

CHK50769410/TIA/F210.CDR/LLH/27MAY25

Original Size : A4

2.3.5 The assessment results indicate that all the identified key local junctions are currently operating with adequate capacity with RFC value less than 0.85 during the weekday peak hour periods.

3. THE REDEVELOPMENT

3.1 Development Parameter

3.1.1 For the purpose of Section 16 planning application, Lot DD101 76 S.G. and 76 S.H. in Mai Po is this TIA study area.

3.1.2 Currently, the site is a temporary parking lot located at the junction Castle Peak Road / Tam Kon Chau Road, and it is proposed to be redeveloped into a Residential Care Home for the Elderly (RCHE). The proposed main development parameters of the Lot DD101 76 S.G. and 76 S.H. are summarised in **Table 3.1** and the indicative MLP is shown in **Drawing 3.1**.

Table 3.1 Proposed Development Parameters

Component	Proposed Scheme for the Development Site
Site Area (m^2)	approx. 8,429 m^2
Key Development Parameters	
No. of beds	716
No. of Parking Spaces	76
No. of Consulting Rooms	6

3.1.3 The proposed development is scheduled to be completed by year 2028 tentatively.

3.2 Internal Traffic Arrangement

Vehicular Access

3.2.1 Under the proposed MLP, there is one vehicular access of subject site and is located TAM Kon Chau Road. A short section of widening of Tam Kon Chau Road is proposed, allowing full 2-way, 2-lane access to the site. The location of the vehicular access of Lot DD101 76 S.G. and 76 S.H. under the proposed MLP is indicated in **Drawing 3.1**.

3.2.2 All the traffic would enter / leave the site via Tam Kon Chau Road and Castle Peak Road – San Tin & Mai Po. The traffic going to/from Yuen Long would pass through Castle Peak Road – Mai Po / Tam Kon Chau Road. As for the traffic going to/from Kowloon, Hong Kong Island and New Territories West would pass through San Tin Highway / Shek Wu Wai Road / Castle Peak Road – San Tin. And the traffic going to /from New Territories East would pass through Castle Peak Road – San Tin / Kwu Tung Road. The traffic ingress and egress routings of the site are illustrated in **Drawing Nos. 3.2 and 3.3**.

Internal Driveway

3.2.3 The vehicular accesses and the internal transport facilities are linked up by internal driveway. Car park is located at the basement levels, and the drop-off area and loading/unloading bays are located at ground level.

Swept Path Analysis

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

MASTER LAYOUT PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	MAY 2025	3.1	-

SYSTRA MVA

CHK50769410/TIA/F31.CDR/LLH/26MAY25

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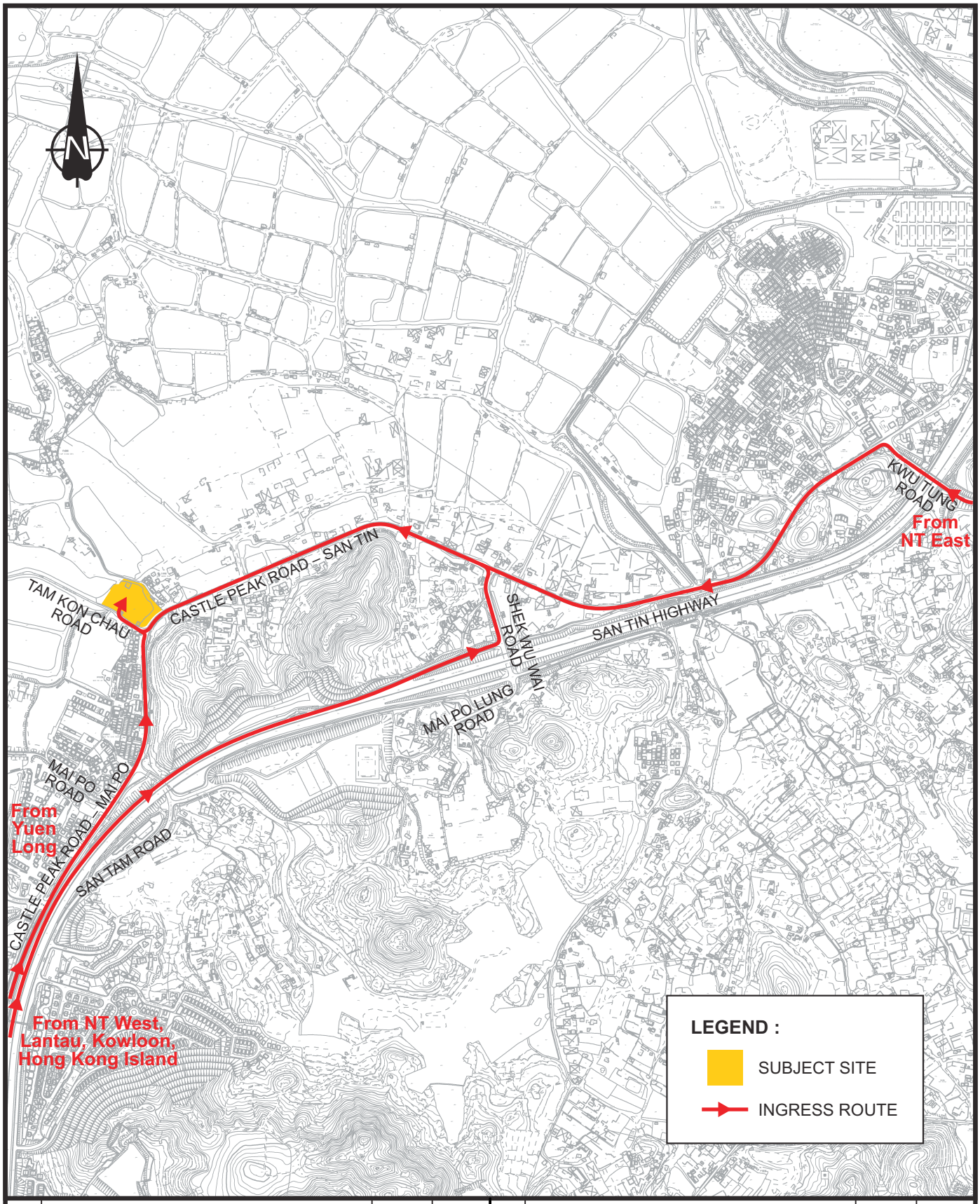

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

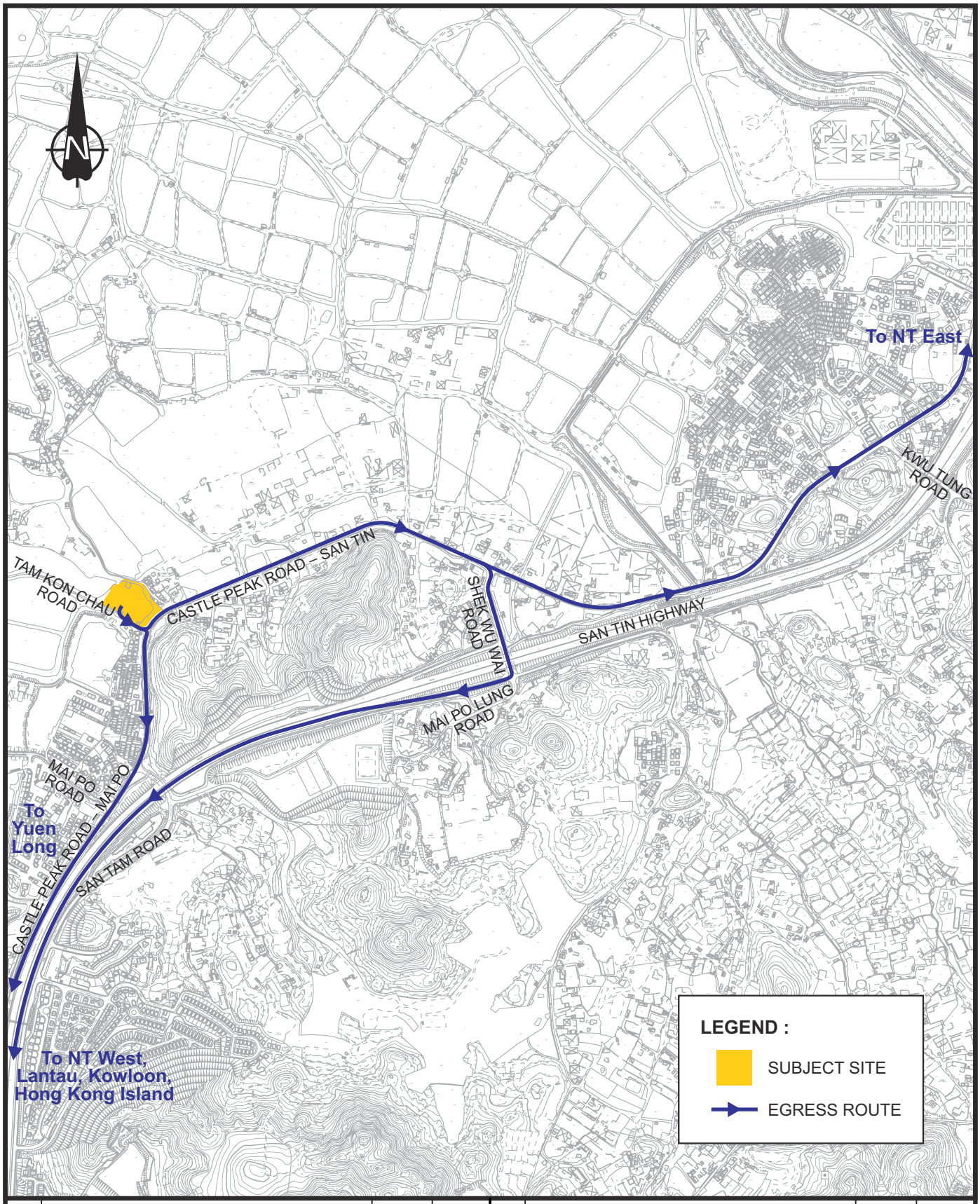
Drawing Title

DEVELOPMENT INGRESS ROUTE

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	3.2	-

CHK50769410/TIA/F32.CDR/LLH/29AUG24

Original Size : A4



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Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

DEVELOPMENT EGRESS ROUTE

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	3.3	-

SYSTRA MVA

CHK50769410/TIA/F33.CDR/LLH/29AUG24

Original Size : A4

3.2.4 The swept path analysis for all vehicles heading to all lay-bys and loading/unloading area, and swept path for vehicles ramping up and down to the basement carpark and within the basement carpark are all provided in **Appendix B**. The swept path analysis shows that all the vehicles can manoeuvre smoothly when entering, leaving and within the site.

3.3 Internal Transport Facility

3.3.1 Since there is no parking standard in the latest Hong Kong Planning Standard Guideline (HKPSG) for RCHE, case study research on similar RCHE has been conducted to obtain the appropriate provision rate for internal transport facilities.

Table 3.2 Provision of Internal Transport Facility on relevant RCHE

Project	Location	No. of Beds	No. of Parking	Parking rate No./bed
Caritas Fung Wong Fung Ting Home, Ta Kwu Ling	*Ta Kwu Ling*	120	6	0.050
Fung Creek Nursing and Attention Home, Sheung Shui	*Sheung Shui*	232	8	0.034
Caritas Harold H. W. Lee Care and Attention Home	*Shatin*	276	6	0.022
Chuk Yuen Home for Aged	*Yuen Long*	60	4	0.067
Jockey Club Rehabilitation Complex	*Aberdeen*	1352	43	0.032
Wong Cho Tong Care and Attention Home	*Ho Man Tin*	278	8	0.029
Tai Tung Pui Hostel	*Tuen Mun*	121	8	0.066

3.3.2 Considering Jockey Club Rehabilitation Complex with similar scale as this project, a traffic survey of parking utilization has been conducted in a typical weekday during peak hour. The parking utilization rate of the Jockey Club Rehabilitation Complex is 56%.

3.3.3 A conservative rate of 0.067 parking space/bed is proposed for considering parking provisions for the subject site, and 48 private car parking spaces need to be provided. In addition, there are 6 medical consulting rooms will be proposed within the site, according to HKPSG, 1.5 car parking spaces/consulting room is required, so 9 parking spaces need to be provided. Moreover, refer to the 'Revised Recommended Outline Development Plan of San Tin Technopole' published in 2023, AFCD Wetland Conservation Park Management Office will be built on the east side of the subject site in the future, which may attract traffic or tourists. Therefore, additional 19 parking spaces as public car parking will be provided as well.

3.3.4 The proposed provisions, including Loading/Unloading bays, Non-emergency Medical Transportation Lay-by, Ambulance Lay-by and etc., are based on the operation needs. **Table 3.3** summaries the proposed provisions of internal transport facility of subject site.

Table 3.3 Proposed Internal Transport Facility

Component		Proposed Provision
No. of Car Parking Spaces	Private Car Parking (5.0m x 2.5m) for RCHE [(1)]	48[(1)]
	Clinic[(2)]	9[(2)]
	Public Parking	19
	Total	76
Parking for Disabilities[(3)] (5.0m x 3.5m)		2
Taxi/ Private Car Lay-by (5.0m x 2.5m)		3
Non-emergency Medical Transportation Lay-by (9.0m x 3.0m)		2
Ambulance Lay-by (9.0m x 3.0m)		1
Loading/Unloading Bays (11.0m x 3.5m) & Refuse Collection Vehicles Bays (11.0m x 3.5m)		2

Remarks:

(1) Since there is no requirement in HKPSG for parking provision for RCHE, 0.067 parking space/bed is proposed for considering parking provisions based on existing RCHE study

(2) As per HKPSG, parking provision for clinics is 1 to 1.5 car parking spaces for each consulting room.

(3) Included in the total number of car parking spaces

3.3.5 **Table 3.3** suggests that the Lot DD101 76 S.G. and 76 S.H. development would provide total 76 car parking spaces, in which 2 spaces would be reserved for disabilities. Besides, 2 loading/unloading bays, 3 Taxi/Private Car Lay-bys, 2 Non-emergency Medical Transportation Lay-bys and 1 ambulance Lay-by as ancillary transport facilities.

3.3.6 The B1 parking area mainly provides parking spaces for RCHE & clinic vehicles and vehicles visiting public car park. The parking area can be divided into two parking zones for public car park and RCHE & clinic vehicles, to ensure privacy and safety for vehicles visiting public car park and RCHE & clinic vehicles. The detailed management arrangement will be provided at later detailed design stage.

4. TRAFFIC FORECASTS

4.1 Forecasting Assumptions and Methodology

Design Year

4.1.1 The proposed development is anticipated to be completed by year 2028. Following the guidelines and requirements of TIA as published by Transport Department, the design year of year 2031 (i.e. 3 years upon completion year) is adopted for traffic forecast purpose.

4.1.2 To evaluate the traffic impact to the surrounding road junctions due to the Development Proposal, the Reference Scenario (with Adjacent Planned Development but without the Development Proposal) and Design Scenario (with Adjacent Planned Development and Proposed Development) have been identified for year 2031.

Traffic Growth Rate

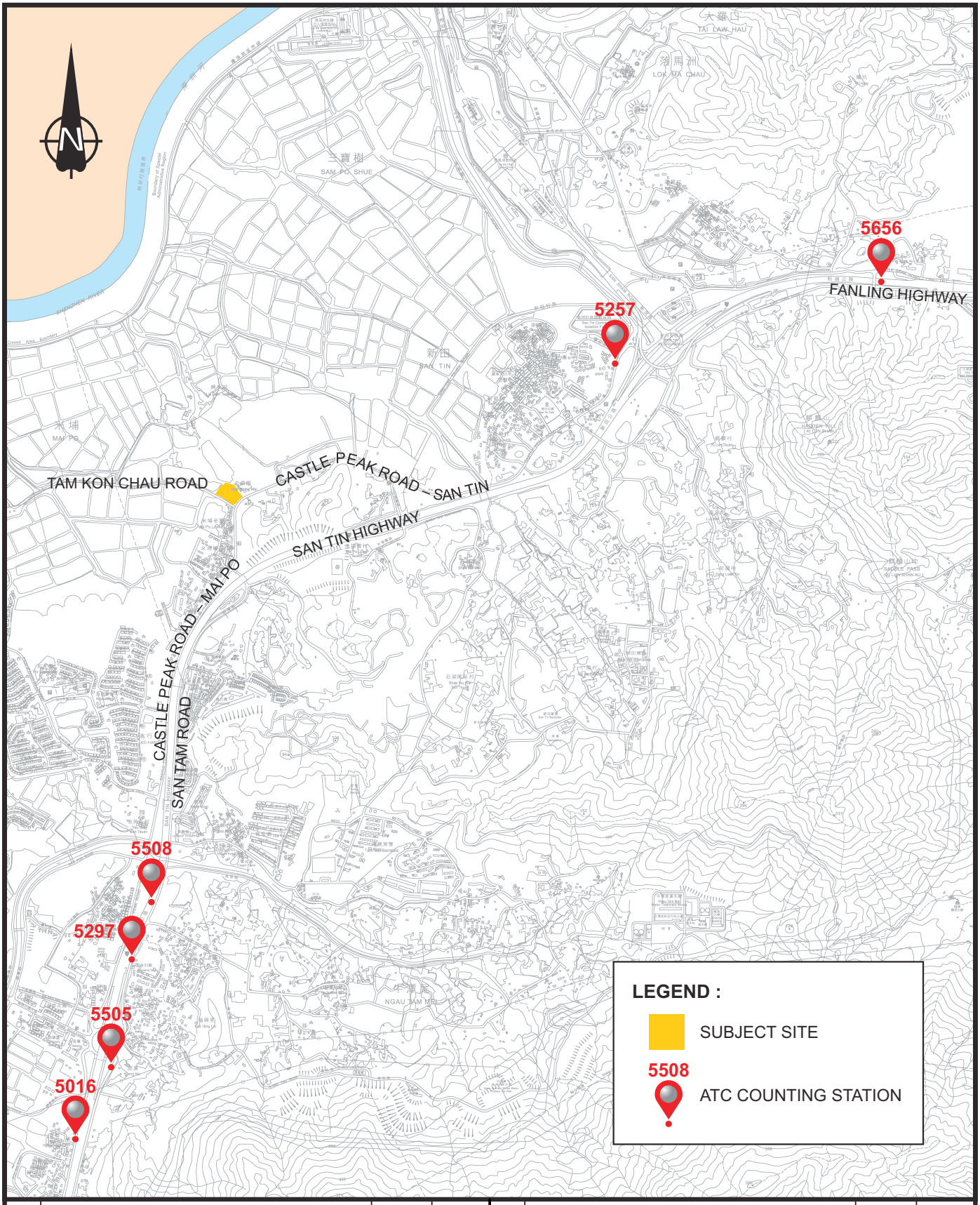
4.1.3 To estimate the year 2031 reference traffic flows in the local road network, an appropriate growth factor was identified for the area. The derivation of the growth rate is determined with reference to historical growth trends and planning data, which are summarised below.

Historical Growth Trends

4.1.4 According to the latest Annual Traffic Census (ATC) published by Transport Department, the Average Annual Daily Traffic (AADT) of the nearby count station between Year 2019 and Year 2023 have been taken into account to establish the historical growth trend, the findings are summarised in **Table 4.1** and location of count stations are indicated in **Drawing 4.1**.

Table 4.1 AADT of nearby ATC Traffic Counts between Years 2019 to 2023

Road	Station No.	Annual Average Daily Traffic (AADT)					Growth Rate (p.a.)
		2019	2020	2021	2022	2023	2023/ 2019
San Tin Highway, Castle Peak Rd & San Tam Rd (Kam Tin Rd- Fairview Park Boulevard)	5016	90,860	81,870	86,620	82,820	88,760	-0.6%
San Tam Rd (Fairview Park Boulevard RA - End)	5505	13,330	13,420	13,960	13,540	13,860	+1.0%
San Tam Rd (Castle Peak Rd - Fairview Park Boulevard RA)	5297	7,530	7,220	7,510	7,280	10,960	+9.8%
San Tin Highway (Fairview Park Boulevard - Lok Ma Chau Rd)	5508	80,460	82,010	86,000	82,190	87,340	+2.1%
Castle Peak Rd - Tam Mi,Mai Po & San Tin (Fairview Park Boulevard - Lok Ma Chau Rd)	5257	11,910	11,420	11,880	11,520	10,740	-2.6%
Fanling Highway (Fan Kam Rd - Lok Ma Chau Rd)	5656	69,560	66,440	63,880	61,050	64,880	-1.7%
Sum up		**273,650**	**262,380**	**269,850**	**258,400**	**276,540**	**+0.3%**



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-	-	-	-	-	-	-	-

Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

LOCATION OF ATC COUNTING STATIONS IN THE VICINITY

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	FEB 2024	4.1	-

SYSTRA MVA

CHK50769410/TIA/F41.CDR/LLH/26FEB24

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4.1.5 As showed in **Table 4.1** above, the average annual growth rate of the AADT of the nearby count stations from Year 2019 to 2023 is +0.3% per annum. Due to the effect of the COVID-19 from 2020 to 2022, the historical traffic data did not effectively represent the actual traffic growth. In addition, the strategic development like San Tin Technopole will attract more district-wide traffic volumes to the vicinity. Therefore, the growth rate form ATC is not appropriate to be adopted in this traffic forecast due to the two reasons mentioned above.

Projected Population data (From The Census and Statistics Department (C&SD)

4.1.6 According to the Census and Statistics Department (C&SD), the Hong Kong resident population will increase to 7.8 million in 2031, and the average growth rate from years 2024 to 2031 is +0.548%. The Hong Kong Resident Population between Year 2024 and Year 2031 are summarised in **Table 4.2**.

Table 4.2 Hong Kong Resident Population between Year 2024 and Year 2031

Year	Hong Kong Resident Population
2024	7,526,800
2025	7,559,800
2026	7,596,800
2027	7,638,700
2028	7,684,500
2029	7,731,100
2030	7,777,100
2031	7,820,200
Annual Growth Rate (p.a.) – 2031/2024	**+0.548%**

4.1.7 The location of the subject site is in the underdeveloped area of Northwest New Territories, the overall population growth rate of Hong Kong may not reflect the actual situation of population growth in this area. Therefore, narrowing the research scope of growth rate to Yuen Long District will have more reference value.

Planning Data (From Working Group on Population Distribution Projections (WGPD)

4.1.8 Based on the Projected Population by Tertiary Planning Unit(TPU) from WGPD, the population of TPU where the proposed development located in has been projected with the average growth rate of 0.93% from 2021 to 2027. The detail of average annual growth rate from years 2021 to 2027 is illustrated in **Table 4.3**.

Table 4.3 Projected Population by Tertiary Planning Unit (TPU), 2021-2027

TPU	Population		Growth Rate (p.a.)
	2021	**2027**	**2021-2027**
542	12,500	11,700	-1.10%
543&546	3,300	5,000	7.17%
Sum up	**15,800**	**16,700**	**0.93%**

4.1.9 Considering the substantial planned development and population/employment growth in the northern New Territories, a conservative estimation of +1.0% per annum is adopted, to produce the year 2031 traffic forecasts from the 2024 observed traffic flows.

San Tin Technopole

4.1.10 The large-scale development of San Tin Technopole (STT) will be constructed, and the first population intake will be in 2031. The summary of development phase will be as shown in **Table 4.4**.

Table 4.4 Phasing of San Tin Technopole

Phase[1]	Proposed Commencement of Works	Proposed Intake Year
Initial Phase	Year 2024	Year 2031

Remark: (1) Source from EIA study of First Phase Development of the New Territories North – San Tin / Lok Ma Chau Development Node - Investigation.

4.1.11 The development trips in "Initial Phase" would be considered in the assessment of Year 2031. The related development schedules and estimated traffic generations are summarized in below **Table 4.5**.

Table 4.5 Development Trips of San Tin Technopole Adopted in Assessment

Ref.[1]	Development Schedule	Parameters	Trip Generations (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
San Tin Technopole (Initial Phase)	Information and Technology (I&T) Section	(Approximate 29,821 m^2)	305[2]	439[2]	282[2]	211[2]
	Logistics & Storage and Workshop	(Approximate 17,380 m^2)	33[3]	49[3]	47[3]	37[3]
	Public Housing	Approximate 6,653 units (Average house/flat size of about 50 m^2)	415[4]	285[4]	198[4]	267[4]
	Private Housing	Approximate 5,173 units (Average house/flat size of about 60 m^2)	372[5]	220[5]	148[5]	192[5]

Remark:
(1) Source from EIA study of First Phase Development of the New Territories North – San Tin / Lok Ma Chau Development Node - Investigation.
(2) Based on site area measurement, plot ratio of 6 in RODP, and traffic generation and attraction rates for office building in TPDM.
(3) Based on site area measurement, plot ratio of 2 in RODP, and traffic generation and attraction rates for industrial building in TPDM.
(4) Based on site area measurement, plot ratio of 6.5 in RODP, assumed average flat size of 50 m^2, consideration of new flat units about 50,000-54,000 in TPB land use proposal, and traffic generation and attraction rates for subsidised housing: HOS/PSPS in TPDM.
(5) Based on site area measurement, plot ratio of 6 in RODP, assumed average flat size of 60 m^2, consideration of new flat units about 50,000 - 54,000 in TPB land use proposal, and traffic generation and attraction rates for private housing: high-density/R(A) in TPDM.

Other Nearby Planned Developments

4.1.12 The planned and committed developments in subjected study area, as listed in **Table 4.6**, which would have traffic contribution to the road network in the vicinity, have been considered

in the traffic forecast for the year 2031. The peak hour traffic trips of each developments are also summarised in **Table 4.6**.

Table 4.6 Estimated Trip Generations of Adjacent Planned Developments

Ref.	Development	Type	Peak Hour Traffic Trip (pcu/hr)			
			AM Peak		PM Peak	
			Gen	Att	Gen	Att
1.	A/ YL-MP/ 291	- 789 houses(1)	149	75	69	96
2.	A/YL-MP/205	- 71 units (average flat size of about 186 m^2)(1)	20	13	12	17
3.	A/YL-MP/287	- 65 units (average flat size of about 116 m^2)(1)	15	8	7	10
4.	Y/YL-NTM/9	- 5,400 m2 GFA Elderly Care Home 142 Beds (2)	10(3)	10(3)	10(3)	10(3)
5.	Y/YL-NTM/7 & Y/YL-NTM/8	- 1,228 units (Average Flat Size 43 m^2) - 1,249 units (Average Flat Size 44 m^2) - Retail: 831m^2 - PTI - Kindergarten (6 Classrooms)	243(4)	171(4)	106(4)	127(4)

Remarks:

(1) As extracted from newspaper articles / online information.
(2) As extracted from the latest approved planning application.
(3) Assume Nominal Trips of 10 pcu/hr.
(4) Trips generation from project's TIA report.

4.2 Forecasting Scenarios

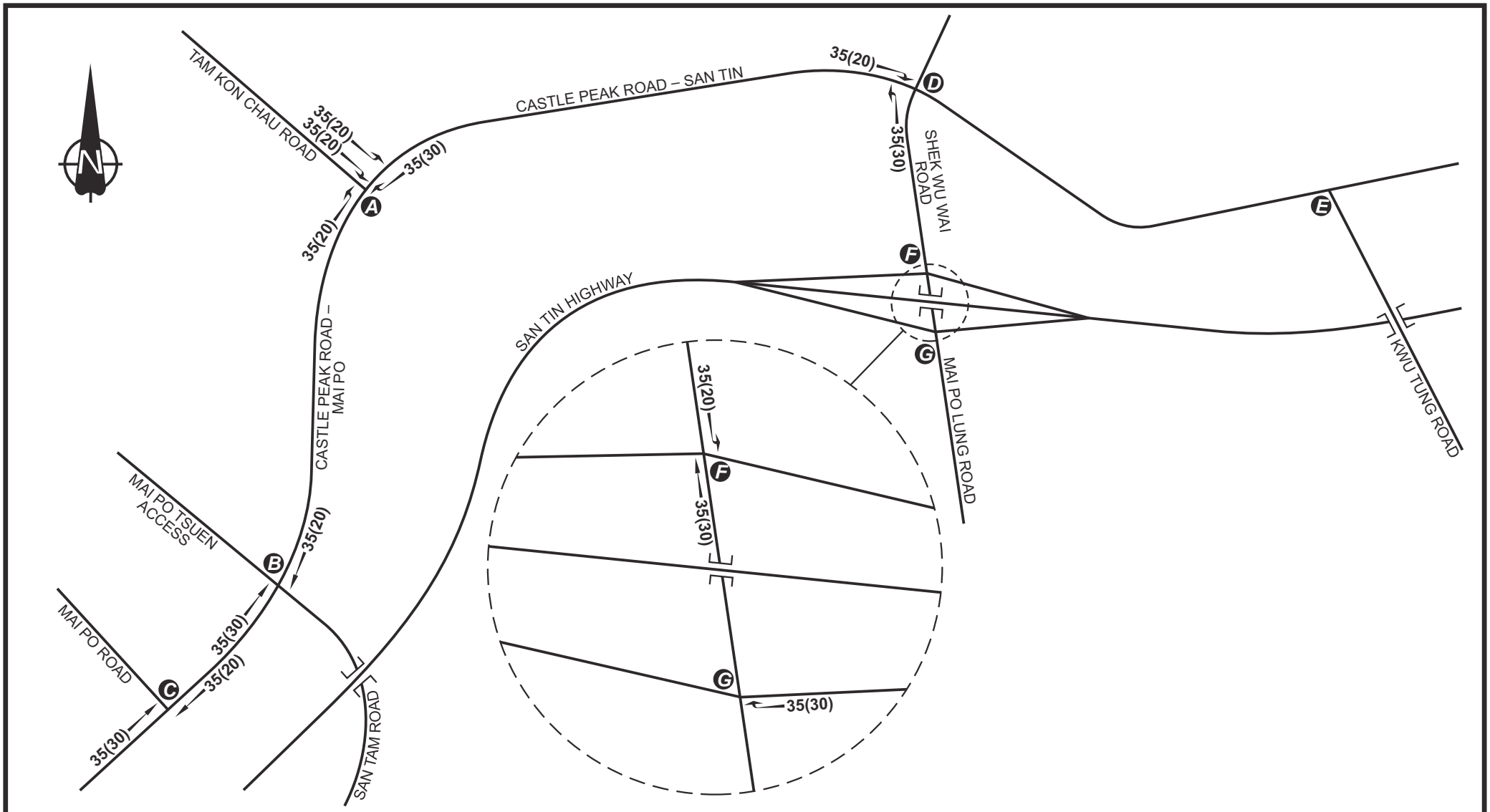
4.2.1 The derived peak hour traffic trips of the subject site would be assigned onto the local road network in accordance with the observed traffic circulation pattern. The distributions of the peak hour development traffic trips are shown in **Drawing 4.2**.

The existing car park Traffic Trips

4.2.2 The current status of the project is an open-air parking lot, and the traffic flow of the parking lot during peak hours was obtained through manual surveys, as summarised in **Table 4.7**.

Table 4.7 The Survey Trip Generation and Attraction for Existing Car Park

Ref.	Use	Peak Hour Traffic Trip (pcu/hr)			
		AM Peak		PM Peak	
		Gen	Att	Gen	Att
1.	Car Park	11	14	11	12



A	TD'S COMMENTS INCORPORATED	JPP	30MAY25	-	-	-	-	-	-	-	-
Rev.	Description	Checked	Date	Rev.	Description	Checked	Date	Rev.	Description	Checked	Date

Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

DEVELOPMENT TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	4.2	A

SYSTRA MVA

CHK50769410/TIA/F42-A.CDR/LLH/30MAY25

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The proposed development Traffic Trips

4.2.3 According to the latest T.P.D.M., due to the absence of trip rate specific for RCHE, case studies and manual survey of RCHE with similar scale were conducted, to better understand the traffic generation and attraction of RCHE. Detailed data can be found in **Table 4.8**. The tabulated data reveals that TWGHs Wong Cho Tong Social Service Building in Ho Man Tin exhibits a higher trip rate per bed. Therefore, adopting a conservative analytical approach, the trip rate of TWGHs Wong Cho Tong Social Service Building was adopted as the foundation for this traffic forecasting of the proposed development. The traffic trip of proposed development would be estimated in **Table 4.9**.

Table 4.8 Traffic Trips of Similar RCHE Survey

Ref	Development	Item	AM			PM		
			Att	Gen	2-WAY	Att	Gen	2-WAY
1	Fung Creek Nursing and Attention Home, Sheung Shui	Trips (pcu/hr)	9	4.5	13.5	2	3	5
		No. of beds	232					
		Trip rates (pcu/hr/bed)	0.0388	0.0194	0.0582	0.0086	0.0129	0.0216
2	Caritas Harold H.W. Lee Care and Attention Home, Sha Tin	Trips (pcu/hr)	13	10	23	2	3	5
		No. of beds	276					
		Trip rates (pcu/hr/bed)	0.0471	0.0362	0.0833	0.0072	0.0109	0.0181
3	Jocky Club Rehabilitation Complex	Trips (pcu/hr)	22	23	45	10	9	19
		No. of beds	1,352					
		Trip rates (pcu/hr/bed)	0.0162	0.0170	0.0032	0.0074	0.0067	0.0141
4	TWGHs Wong Cho Tong Social Service Building	Trips (pcu/hr)	19	24	43	16	12	28
		No. of consulting room	278					
		Trip rates (pcu/hr/room)	0.0683	0.0863	0.1547	0.0576	0.0432	0.1007

Table 4.9 Estimated Traffic Trips for Proposed Development

Ref	Development	Item	AM			PM		
			Att	Gen	2-WAY	Att	Gen	2-WAY
1	**Lot DD101 76 S.G. & 76 S.H.**	**Trips (pcu/hr)**	**49**	**62**	**111**	**42**	**31**	**73**
		No. of beds	**716**					
		Trip rates[(1)] (pcu/hr/bed)	**0.0683**	**0.0863**	**0.1547**	**0.0576**	**0.0432**	**0.1007**
2	**Clinic**	Trips (pcu/hr)	**2**	**2**	**3**	**1**	**2**	**11**
		No. of consulting room	6					

Ref	Development	Item	AM			PM		
			Att	Gen	2-WAY	Att	Gen	2-WAY
		Trip rates[2] (pcu/hr/room)	0.292	0.208	0.500	0.167	0.250	1.670
3	Public Car Park	Trips (pcu/hr)	3	4	7	3	2	5
		No. of parking space	19					
		Trip rates[3] (pcu/hr/car)	0.143	0.1785	0.321	0.1305	0.1005	0.231

Remarks:

(1) With reference to trip rate of TWGHs Wong Cho Tong Social Service Building, the higher reference trip rate will be adopted.

(2) Adopted trip rate refers to the surveyed trip rate of the Clinic of Jocky Club Rehabilitation Complex in Aberdeen during the peak hour of a normal weekday.

(3) Adopted trip rate refers to the surveyed trip rate of a similar public car park in Jumbo Court during the peak hour of a normal weekday ,with an additional factor of 1.5.

4.2.4 The proposed RCHE in subject site would generate a two-way total of 111 pcu/hr and 73 pcu/hr in the AM and PM peak respectively in year 2031. The current (2024) and future (2031) traffic trip of this site are summarised in **Table 4.10**.

Table 4.10 Trip Generations of Current Land-use and Proposed Future Land-use

	Peak Hour Traffic Trip (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Observed 2024	11	14	11	12
Forecasts 2031	**68**	**54**	**35**	**46**
Net Difference (Forecasts - Observed)	**+57**	**+40**	**+24**	**+34**

4.2.5 The result in **Table 4.10** reveals the net difference of traffic flows between current use of open-air parking and the future RCHE. The additional impact of the development onto the road network would actually be smaller.

4.2.6 The annual traffic growth rate and the adjacent planned developments as discussed in **Section 4.1** would be considered to produce the year 2031 reference traffic flows during the typical weekday morning and evening peak hours of the local road network.

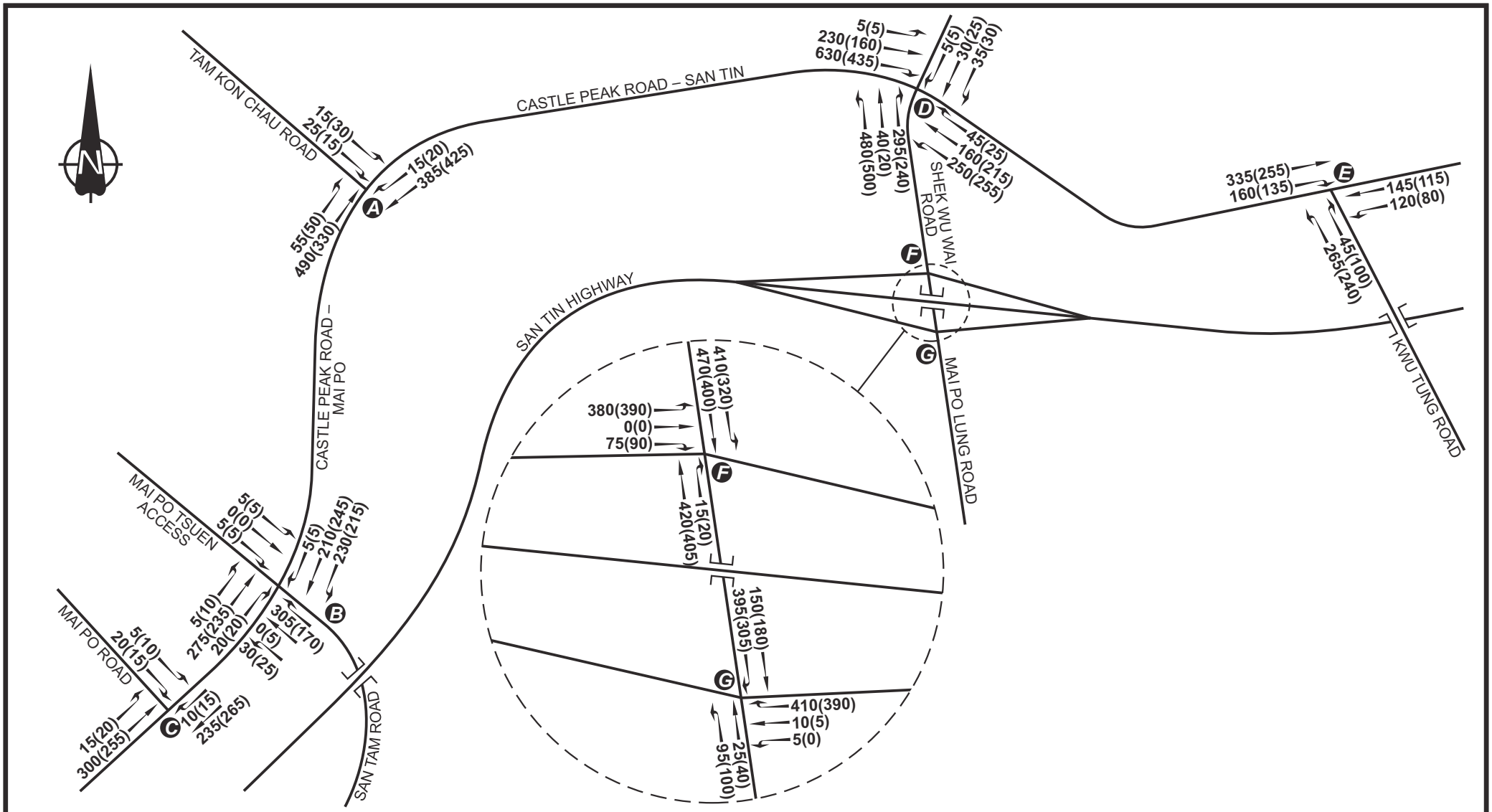
4.2.7 The traffic trips of the proposed RCHE in subjected site would be superimposed onto the reference traffic flows to produce the anticipated year 2031 peak hour traffic flows for design scenarios.

4.2.8 The general formulae of the forecasting scenarios of year 2031 are as follows:

Reference Traffic Flows = 2024 Observed Traffic Flow x Adopted Growth Rate + Traffic Flow of Adjacent Planned Developments

Design Traffic Flows = Year 2031 Reference Traffic Flows + Traffic Trips for Proposed Development

4.2.9 The reference traffic flows and design traffic flows in year 2031 as shown in **Drawings 4.3** and **Drawing 4.4** respectively.



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

Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

YEAR 2031 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	4.3	A

SYSTRA MVA

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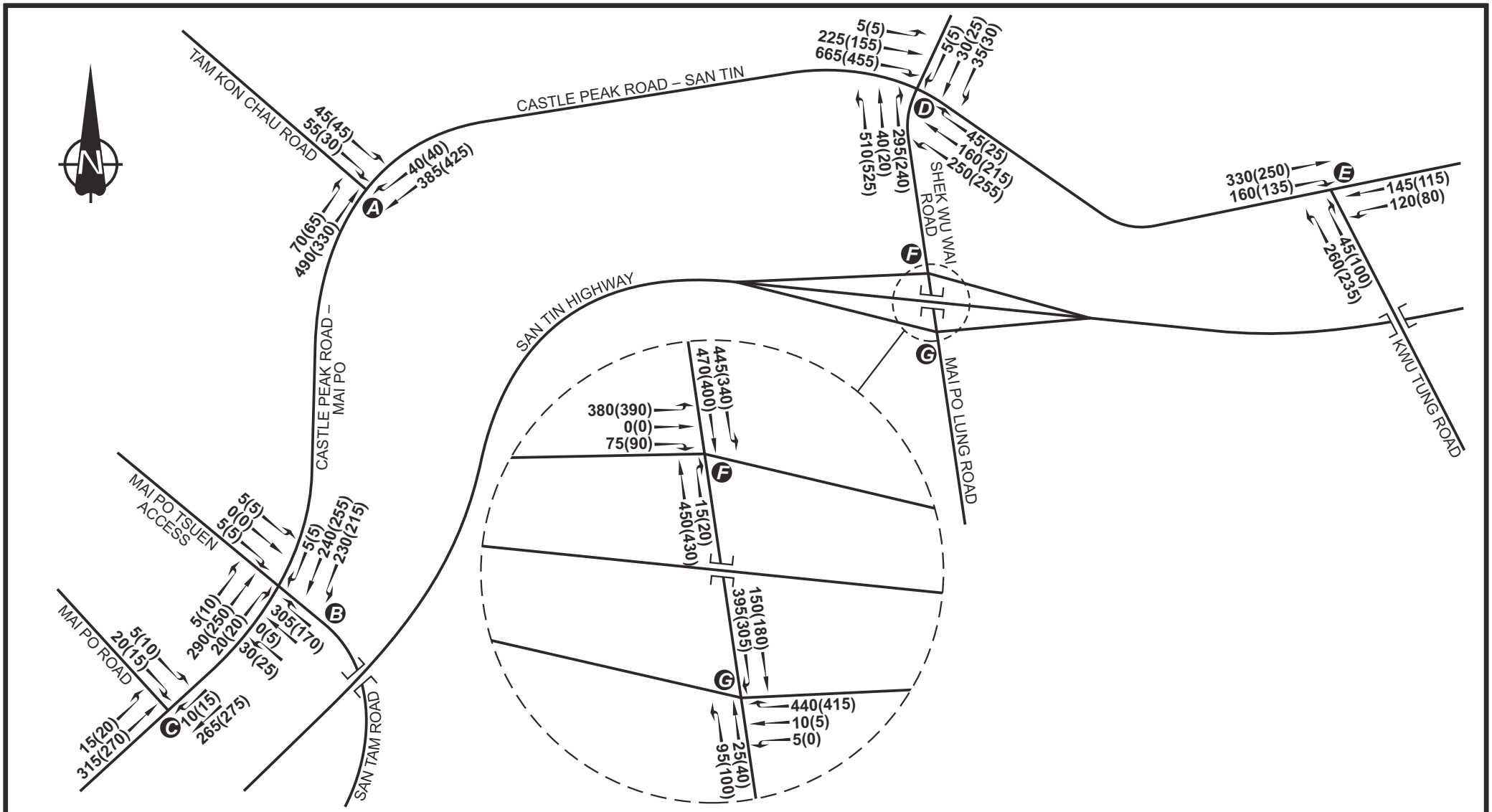

A	TD'S COMMENTS INCORPORATED	JPP	30MAY25	-	-	-	-	-	-	-	-
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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

YEAR 2031 DESIGN TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	4.4	A

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5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Operational Performance

5.1.1 The identified seven key local junctions would be assessed in accordance with the anticipated year 2031 traffic flows for both reference and design scenarios in order to investigate the traffic impact of the proposed RCHE development with respect to the background situation.

5.1.2 The junction assessments are based on the existing layouts and arrangements of the respective junctions, and the layouts of Junction D, Junction F and Junction G in anticipated year 2031 refers to STT gazette documents, the planned layouts of junction D, F and G as shown in **Drawing 5.1 and 5.2**. The assessment results of year 2031 traffic flows for both reference and design scenarios are summarised in **Table 5.1**. The junction calculation sheets are attached in **Appendix A**.

Table 5.1 Junction Operational Performance in Year 2031

Ref. (1)	Junction	RC/RFC (2)			
		Reference		Design	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Castle Peak Road / TAM Kon Chau Road	0.22	0.24	0.26	0.25
B	Castle Peak Road / San Tam Road	0.78	0.46	0.80	0.46
C	Castle Peak Road / Mai Po Road	0.13	0.15	0.15	0.16
D	Castle Peak Road / Shek Wu Wai Road	59%	89%	56%	84%
E	Castle Peak Road / Kwu Tung Road	0.39	0.35	0.39	0.34
F	Shek Wu Wai Road / San Tin Highway Slip Road	>100%	>100%	>100%	>100%
G	Mai Po Lung Road / Shek Wu Wai Road				

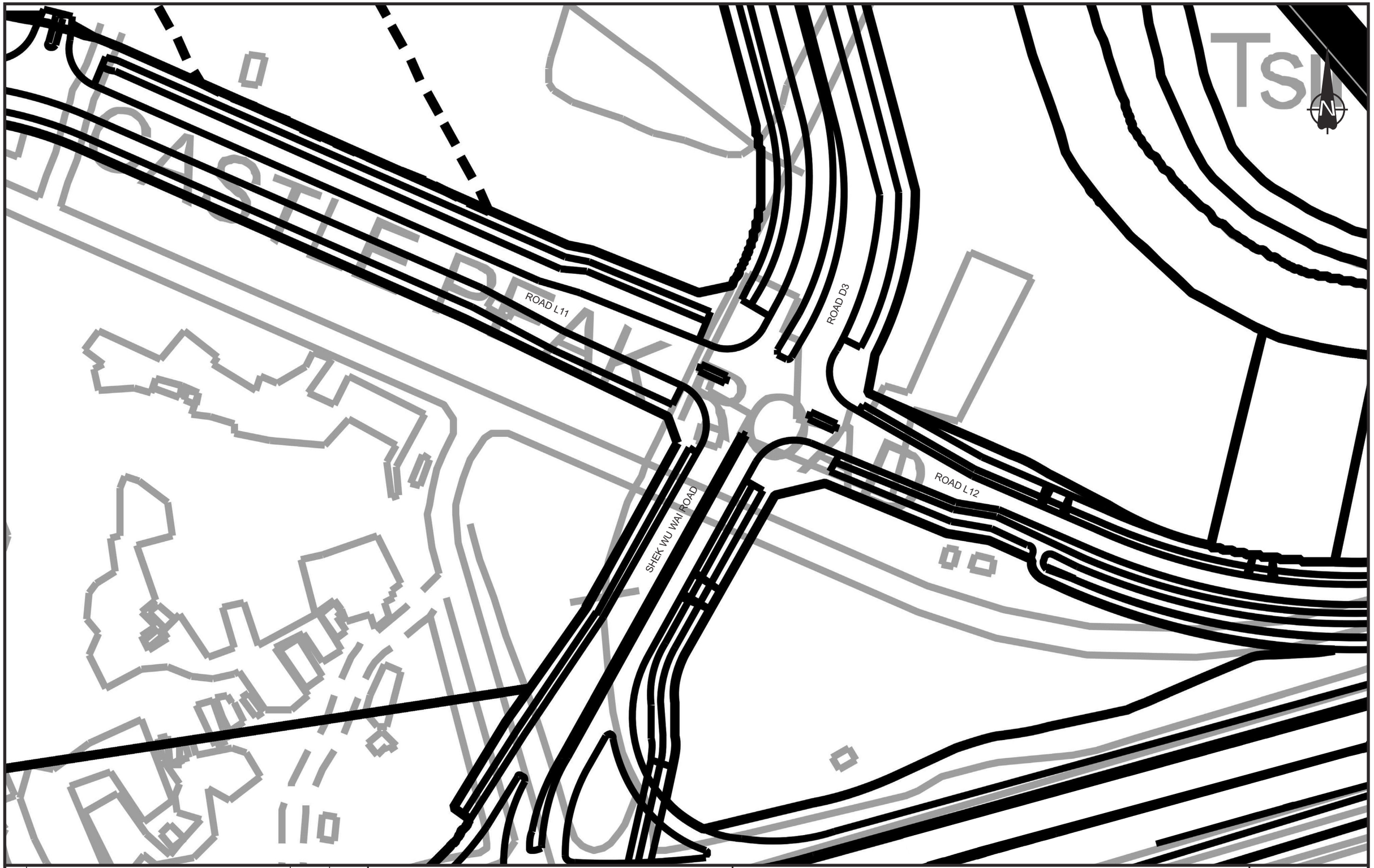
Remarks:
(1) Refer to **Drawing 2.2;**
(2) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.

5.1.3 The findings presented in **Table 5.1** demonstrate that all the key junctions will operate with sufficient traffic capacity in reference and design scenario in year 2031.

5.2 Link Assessment

5.2.1 Tam Kon Chau Road is a single track access road, with a road width of 3.2m. Tam Kon Chau Road also is a prohibited zone 24 hours daily for all motor vehicles exceeding 10 metres in length.

5.2.2 Therefore, apart from junction capacity assessment, road link assessment for Tam Kon Chau Road is also carried out. Performance of the Tam Kon Chau Road is assessed in terms of traffic volume / capacity (V/C) ratio and the results are presented in **Table 5.2**.



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A	TD'S COMMENTS INCORPORATED	JPP	26MAY25

Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

PLANNED JUNCTION LAYOUT OF
CASTLE PEAK ROAD / SHEK WU WAI ROAD (D)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	MAR 2024	5.1	A

SYSTRA MVA

CHK50769410/TIA/F51-A.CDR/LLH/26MAY25

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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN MAI PO, NT

Drawing Title

PLANNED JUNCTION LAYOUT OF
SHEK WU WAI ROAD / SAN TIN HIGHWAY SLIP ROAD (F)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	NTS	AUG 2024	5.2	A

SYSTRA MVA

CHK50769410/TIA/F52-A.CDR/LLH/26MAY25

Original Size : A3

Table 5.2 Tam Kon Chau Road Assessment in Year 2024 and Year 2031 Design Case

Road	Direction	Capacity (pcu/hr)	2024 Observed Flow V/C Ratio		2031 Design Case V/C Ratio	
			AM	PM	AM	PM
Tam Kon Chau Road	2-way	120(1)	0.57	0.65	1.70	1.41

Remarks:

(1) By TPDM Volume 2 Chapter 3 Section 3.11.3, the design flow of a single track road is recommended to be taken as 100 veh/hr for 2-way traffic, approximately 120 pcu/hr for 2-way traffic.

5.2.3 The table above indicates that Tam Kon Chau Road is operating within capacity at present, but will be over its capacity in the year 2031 Design case. Therefore, it is suggested that Tam Kon Chau Road needs to be widen, the details of proposed road widening scheme as shown in **Drawing 5.3**. With the proposed improvement, Tam Kon Chau Road will operate with adequate capacity. **Table 5.3** shows the link performance in year 2031 design case.

Table 5.3 Tam Kon Chau Road Assessment in Year 2031 Design Case

Road	Direction	Capacity (pcu/hr)	2031 Design Case V/C Ratio	
			AM	PM
Tam Kon Chau Road (widened road section)	Northbound	490(1)	0.22	0.21
	Southbound	490(1)	0.20	0.14
Tam Kon Chau Road (after passing widened road section)	2-way	120(2)	0.68	0.73

Remarks:

(1) By TPDM Volume 2 Chapter 2 Section 2.4.1, the design flow of a 2-lane single carriageway for local roads will be taken as 800 veh/hr for 2-way traffic, approximately 980 pcu/hr for 2-way traffic. Each direction has half of the capacity.

(2) By TPDM Volume 2 Chapter 3 Section 3.11.3, the design flow of a single track road is recommended to be taken as 100 veh/hr for 2-way traffic, approximately 120 pcu/hr for 2-way traffic.

5.3 Traffic Queue Assessment

5.3.1 In the proposed planning scheme, the vehicular access is about 30m away from the junction of Castle Peak Road – San Tin and Tam Kon Chau Road, which can accommodate about 6 vehicles for waiting. In **Table 4.10**, which reveals that the proposed development will attract a maximum of 62 vehicles during AM peak. Since the drop-bar gate will not be provided at the vehicular access, the time it takes for each vehicle to enter the site can be assumed as minimal.

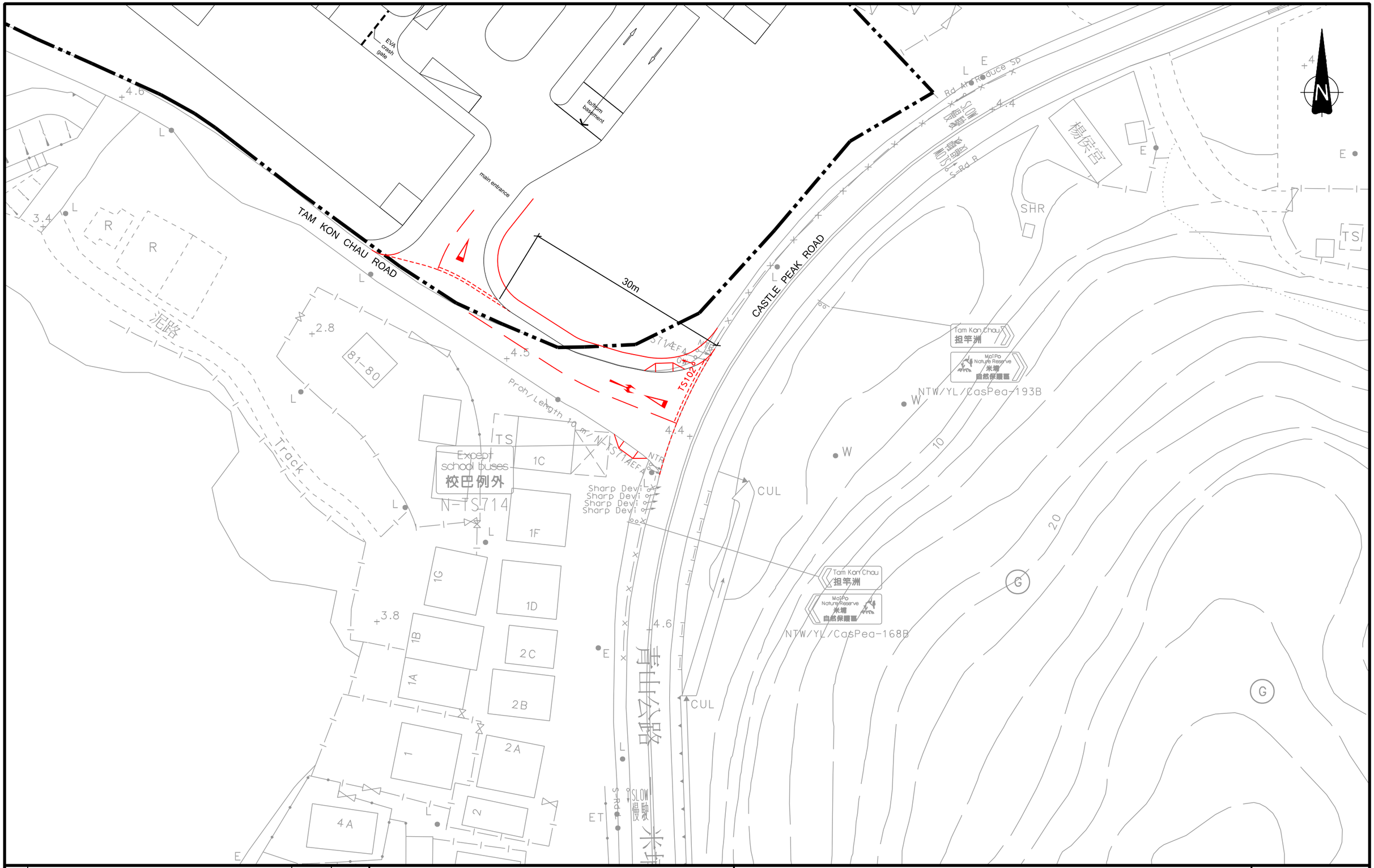
5.3.2 The vehicle queuing assessment during an incident is calculated as follows:

Number of lanes N=1

Average Arrival Rate Per Hour (λ) λ=62 veh/hr (62 veh/hr worst AM peak attraction, detail refer to **Table 4.10**)

Assumed Entering Time per car in an incident 45 seconds

Average Service Rate (μ) μ=3,600/45= 80 veh/hr



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Project Title

TRAFFIC CONSULTANCY SERVICES FOR
PROPOSED ELDERLY HOME IN
LOT DD101 76 S.G. & 76 S.H. IN
MAI PO. NT

Drawing Title

SUGGESTED ROAD WIDENING SCHEME BETWEEN THE SITE ACCESS AND THE JUNCTION OF CASTLE PEAK ROAD / TAM KON CHAU ROAD (A)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:500(A3)	MAY 2025	**5.3**	-

SYSTRA MVA

CHK50769410/TIA/F53.DGN/LHO/26MAY25

Original Size : A3

P= Average Arrival Rate Per Hour (λ) / Average Service Rate (μ) = 0.775

5.3.3 The vehicle queuing analysis is calculated with reference to Principles of Highway Engineering and Traffic Analysis by Fred L. Mannering and Walter P. Kilareski. The results of the vehicle queuing analysis are summarized in **Table 5.4**.

Table 5.4 Vehicle Queuing Analysis

Number of Vehicles Waiting (n)	Probability of Number of Vehicles Waiting p(n)	Accumulative Probability of More Than n Vehicles waiting p(≤n)
(a) n=0	0.461	0.461
(b) n=1	0.357	0.818
(c) n=2	0.138	0.956
(d) n≥3	1-(a)-(b)-(c)=0.044	N.A.

5.3.4 From the results of vehicle queuing analysis, the probability of 3 vehicles queuing in front of the entrance is less than 5%. It is therefore concluded that 6 waiting spaces are adequate to meeting the proposed development traffic demand and will not affect the traffic flow at the junction of Castle Peak Road – San Tin and Tam Kon Chau Road.

6. PUBLIC TRANSPORT ASSESSMENT

6.1 Public transport services in the vicinity

6.1.1 Public transport occupancy surveys were conducted at Mai Po bus stop in a typical weekday, to identify if there is surplus in the current public transport services. Details of the current services of franchised bus and GMB route and the survey results are listed in **Table 6.1**.

Table 6.1 Existing Road-based Public Transport Services in the Vicinity (AM & PM Peak)

Bound	Mode	Route No.	Observed No. of Vehicles	Total Service Capacity (pax)(1)	Observed Occupancy (pax)	Occupancy Rate (%)
AM Peak Hour						
Yuen Long	Bus	76K	3	330	49	15%
	GMB	75	9	144	66	46%
		76	3	48	24	50%
		78	2	32	11	34%
	PLB	17	31	496	242	49%
			Total	**1050**	**392**	**37%**
Sheung Shui / San Tin	Bus	76K	2	220	47	21%
	GMB	75	11	176	98	56%
		76	3	48	33	69%
		78	2	32	19	59%
	PLB	17	19	304	188	62%
			Total	**780**	**385**	**49%**
PM Peak Hour						
Yuen Long	Bus	76K	2	220	71	32%
	GMB	75	10	160	152	95%
		76	4	64	37	58%
		78	2	32	15	47%
	PLB	17	23	368	330	90%
			Total	**844**	**605**	**72%**
Sheung Shui / San Tin	Bus	76K	3	330	29	9%
	GMB	75	5	80	71	89%
		76	3	48	45	94%
		78	2	32	18	56%
	PLB	17	23	368	273	74%
			Total	**858**	**436**	**51%**

Remarks:
(1) Assume 16 passengers per GMB and RMB and 110 passengers per bus.

6.1.2 From **Table 6.1**, it can be noted that the bus service has an extensive service coverage running between Yuen Long and Sheung Shui, and the passenger demands are mostly severed by KMB 76K, GMB 75 and PLB 17.

6.1.3 To be consistent with the annual traffic growth rate from 2025 to 2031, a +1% p.a. growth rate is applied to the 2025 surveyed passenger demand to estimate the 2031 reference demand for public transport.

6.2 Additional traffic demand from the proposed development

6.2.1 There are mainly two groups of people from proposed development will travel by public transport, namely the staffs of RCHE and visitors of RCHE. The details of estimated trip generation of proposed development are shown in **Table 6.2**.

Table 6.2 Estimation of Total Public Transport Trips from Proposed Development

Item	Proposed Development
Nos. of staff of RCHE	79(1)
Nos. of visitor of RCHE	716*0.4=287(2)
Daily trips generated from staff of RCHE in Peak hour	79*0.82*0.8=52(3)
Daily trips generated from visitor of RCHE in Peak hour	287*0.82*0.15=36(4)
Total Trips	52+36=88
Yuen Long Bound Demand 65%	58
San Tin/Sheung Shui Bound Demand 35%	30

Remarks:
(1) The number of staff is estimated by client.
(2) According to news, 40% of the people lives in RCHE in HK has visitors once per week.
(3) Estimated 82% of RCHE staffs will travel by public transport, and 80% of trips will occur in peak hour.
(4) Estimated 82% of RCHE visitors will travel by public transport, and estimated 15% of trips will occur in peak hour.

6.2.2 From **Table 6.3**, it can be indicated that all the existing public transport services have sufficient capacity to cater for the additional demands due to the proposed development.

Table 6.3 Estimated Year 2031 Public Transport Demands

Peak Hour	Bound	Peak Hour Service Capacity (pax)	Estimated Year 2031 Occupancy (pax)(1)	Additional Passenger Demands (pax)(2)	Overall Passenger Demands (pax)	Occupancy Rate (%)
AM Peak	Yuen Long	1,050	417	58	475	45%
	San Tin/Sheung Shui	780	409	30	439	56%
PM Peak	Yuen Long	844	643	58	701	83%
	San Tin/Sheung Shui	858	463	30	493	57%

Remarks:
(1) +1.0% annual growth rate is applied to the average observed peak hour PT trips to estimate Year 2031 demand;
(2) Refer to Table 6.2 and Para 6.2.1.

6.3 Pedestrian Flow and Queuing Space Assessment

6.3.1 Currently, there are two 1.6m width footpaths connecting the proposed development to the nearby bus stops, with an uncontrolled cautionary crossing near the two bus stops. In the future, one additional pedestrian crossing will be added near the access of proposed development, to facilitate the staff, residences and visitors of RCHE crossing street to the nearby bus stops. The current and proposed pedestrian facilities are indicated in **Drawing 6.1**.

6.3.2 A pedestrian flows survey was also conducted on a typical weekday, the operational performance of identified footpaths and concerned queuing area of Mai Po bus stops at Castle Peak Road in term of average flow of Level of Services (LOS), as stipulated in Highway Capacity Manual 2000 and Transport Planning & Design Manual (TPDM), has been assessed. The results of peak hour pedestrian flows in 2025 are summarized in **Table 6.4** and **Table 6.5**.

Table 6.4 2025 Observed Level-Of-Service Assessment

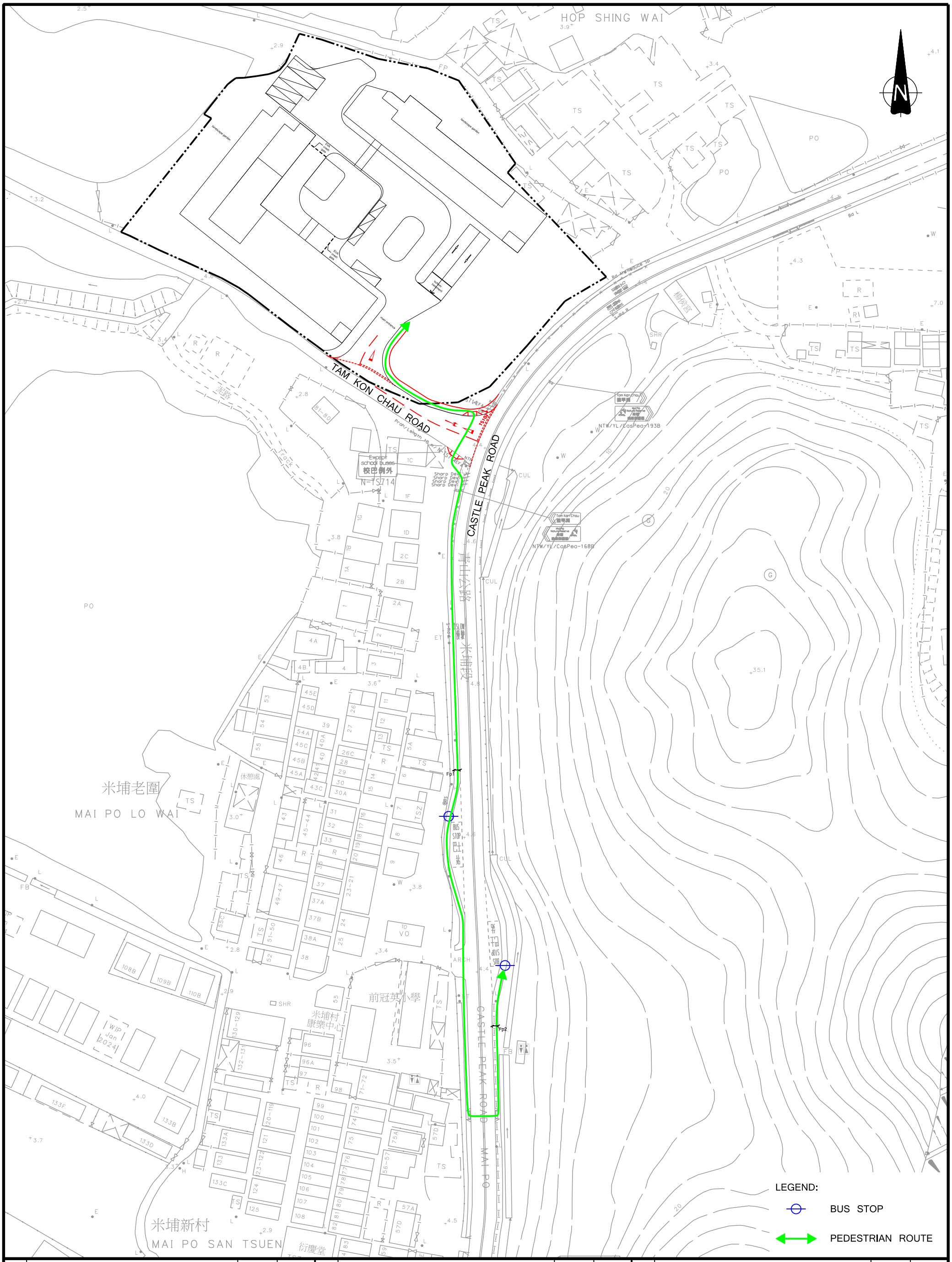
Ref. (1)	Actual Width (m)	Effective Width (m) (2)	2025 Observed Peak Hourly Flow (ped/hr)		2025 Observed Peak Flow Rate (ped/min/m) (3)		LOS (4)	
			AM	PM	AM	PM	AM	PM
Fp1	2.3	1.3	10	6	0.13	0.08	A	A
Fp2	2.5	1.5	12	7	0.13	0.08	A	A

Remarks:
(1) Refer to **Drawing 6.1** for locations and operational performance of identified footpaths.
(2) Effective width for footpath = Actual width – 1.0m dead width (0.5m dead width on one side of footpath).
(3) Peak flow rate = Peak hourly flow ÷ 60 ÷ effective width.
(4) Refer to TPDM Vol.6 Chapter 10 Chapter 10.5.2.

Table 6.5 2025 Observed Queuing Area Level-Of-Service Assessment at Bus Stops

Ref.	2025 Observed Peak Hourly Passenger Flow at Bus Stop (pax/hr)	2025 Observed Maximum Queue at Queuing Area (pax)	Queuing Area (m^2)	Avg. Queuing Space (m^2/p)	LOS (1)
Mai Po Bus Stop – Yuen Long Bound (SB)	12	4	9.5	2.4	A
Mai Po Bus Stop – Sheung Shui Bound (NB)	7	2	11.3	5.7	A

Remarks:
(1) Refer to HCM2000, EXHIBIT 11-9.



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

Project Title

TRAFFIC CONSULTANCY SERVICES FOR PROPOSED ELDERLY HOME IN LOT DD101 76 S.G. & 76 S.H. IN MAI PO. NT

Drawing Title

CURRENT AND PROPOSED PEDESTRIAN FACILITIES

Designed	Checked	Scale	Date	Drawing No.	Rev.
CCT	JPP	1:1000(A3)	MAY 2025	**6.1**	-

SYSTRA MVA

CHK50769410/TIA/F61.DGN/LHO/27MAY25

Original Size : A3

6.3.3 As shown in **Table 6.4** and **Table 6.5**, the identified footpaths and queuing area at concerned bus stops are currently operating with adequate spare capacities during the typical weekday morning and evening peak hours.

6.4 Year 2031 Pedestrian Flow and Queuing Space Assessment

6.4.1 As shown in **Table 4.3**, the projected population planning data suggest that the annual growth rate between Year 2021 and Year 2027 is +0.93% when considering the local TPUs. In conservative approach, +1.0% per annum is adopted for the background pedestrian growth of the local pedestrian flow from Year 2025 to Year 2031, and the consideration of the induced pedestrian trips for franchised bus demand of **Table 6.2**.

6.4.2 The peak hour pedestrian flows for footpath and the level of service for each footpath in Year 2031 under both reference and design scenarios are summarized in **Table 6.6**.

Table 6.6 2031 Level-Of-Service Assessment

Ref. (1)	Actual Width (m)	Effective Width (m) (2)	2031 Reference Peak Hourly Flow (ped/hr) (3)		2031 Reference Peak Flow Rate (ped/min/m) (4)		LOS (5)		2031 Design Peak Hourly Flow (ped/hr)(6)		2031 Design Peak Flow Rate (ped/min/m) (4)		LOS (5)	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Fp1	2.3	1.3	11	7	0.14	0.09	A	A	121	117	1.55	1.5	A	A
Fp2	2.5	1.5	13	8	0.15	0.09	A	A	79	74	0.88	0.83	A	A

Remark:
(1) Refer to **Drawing 6.1** for locations and operational performance of identified footpaths.
(2) Effective width for footpath = Actual width – 1.0m dead width (0.5m dead width on one side of footpath).
(3) Reference pedestrian flow = Year 2025 peak hour pedestrian flows*(1+adopted growth rate of 1.0%)^9.
(4) Peak flow rate = Peak hourly flow ÷ 60 ÷ effective width.
(5) Refer to TPDM Vol.6 Chapter 10 Chapter 10.5.2.
(6) Design pedestrian flow = Reference pedestrian flow + induced pedestrian trips for franchised bus demand

6.4.3 For the assessment of queuing area for the two bus stops, the results of concerned queuing area of bus stops are summarized in **Table 6.7.**

Table 6.7 2031 Queuing Area Level-Of-Service Assessment for Bus Stops

Ref.	Queuing Area (m^2)	2031 Reference				2031 Design			
		Passenger Flow at Bus Stop (pax/hr)(1)	Maximum Queue at Queuing Area (pax)	Avg. Queuing Space (m^2/p)(2)	LOS (3)	Passenger Flow at Bus Stop (pax/hr)(4)	Maximum Queue at Queuing Area (pax)	Avg. Queuing Space (m^2/p)	LOS (3)
Mai Po Bus Stop – Yuen Long Bound (SB)	9.5	13	5 (i.e. 13/60x20)	1.90	A	47	16 (i.e. 47/60x20)	0.61	C
Mai Po Bus Stop – Sheung Shui / San Tin Bound (NB)	11.3	8	4 (i.e. 8/60x30)	2.83	A	27	14 (i.e. 27/60x30)	0.86	C

Note:
(1) Reference pedestrian flow = Year 2025 peak hour passenger flows*(1+adopted growth rate of 1.0%)^9
(2) Average Queuing Space = Queuing Area ÷ (Maximum Queue)
(3) Refer to HCM2000, EXHIBIT 11-9.
(4) Design pedestrian flow = Reference pedestrian flow + induced passenger demand for franchised bus

6.4.4 As shown in **Table 6.6** and **Table 6.7**, the results indicate that the identified footpaths are operating with adequate spare capacities to cater for the future demand during the peak hours under reference and design scenarios. And the LOS of queuing area at two bus stops would be operated with LOS C under the Year 2031 design scenario.

7. CONCLUSION

7.1 Summary

7.1.1 The application site is currently zoned as a "Village Type Development (V)" under the latest approved Mai Po & Fairview Park Outline Zoning Plan (OZP) no. S/YL-MP/6. The application site is intended to be re-developed into a Residential Care Home for the Elderly (RCHE).

7.1.2 The subject site is currently a temporary parking lot, and will be redeveloped into a Residential Care Home for the Elderly with 3 blocks, 716 beds, and a total of 10 floors.

7.1.3 Since there is no parking standard in the latest Hong Kong Planning Standard Guideline (HKPSG) for RCHE, case study research on similar RCHE has been conducted to obtain the appropriate provision rate for internal transport facilities.

7.1.4 In order to review the traffic impact of the new developments on the vicinity, traffic surveys have been conducted to establish the current peak hour traffic condition in the vicinity.

7.1.5 The proposed development would be completed in year 2028. The design year of 2031, three years after full occupation, is therefore adopted in this study for forecasting and assessment purposes. This study have considered the future local developments and the latest Government planning assumptions.

7.1.6 For the layout of J/O Castle Peak Road/ Shek Wu Wai Road (D), J/O Shek Wu Wai Road / San Tin Highway Slip Road (F) and the J/O Mai Po Lung Road / Shek Wu Wai Road (G) in Year 2031, are refer to San Tin Technopole gazette documents.

7.1.7 Operational performances at the key junctions have been assessed in accordance with the anticipated year 2031 traffic flow and it is found that all the identified local junctions are operating within capacity.

7.1.8 Public transport surveys have been conducted to establish the current peak hours traffic condition and anticipated future public transport demands by the proposed development. The assessment indicated that all the existing public transport services have sufficient capacity to cater for the additional demands due to the proposed development.

7.1.9 Operational performance of pedestrian flows and queuing space assessment have been assessed based on the anticipated year 2031 pedestrian flows. It is shown that the LOS of the identified road link and queuing area at bus stops would be operating within capacity in Year 2031.

7.1.10 Due to Tam Kon Chau Road is a prohibited zone, link assessment for Tam Kon Chau Road has been conducted, and the result shows that Tam Kon Chau Road is operating with ample capacity at present but will over its capacity in the year 2031 design case. Therefore, road widening scheme for Tam Kon Chau Road is proposed.

7.2 Conclusion

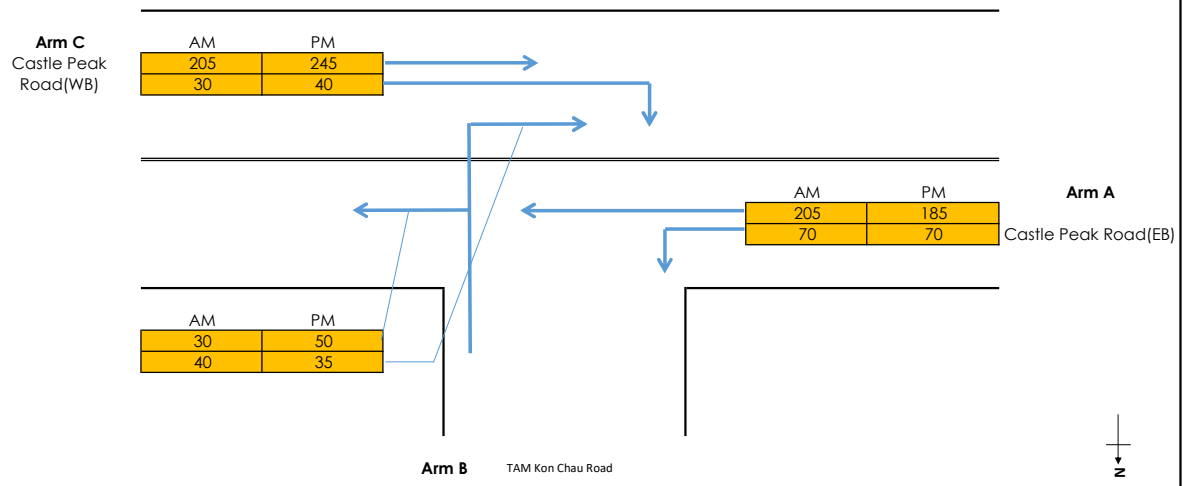
7.2.1 In view of the above, the proposed development under this Section 16 application is considered acceptable in traffic term.

Appendix A

Signal Calculation Sheets

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - TAM Kon Chau Road (A)	Designed by:	GTL
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	TAM Kon Chau Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.25	Lane widths (m)	w(b-a)	2.65
Central Reserve Width (m)	Wcr	0.00		w(b-c)	2.65
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	25	Calculated	D	0.7649
	Vl(b-a)	22	Parameters	E	0.8285
	Vr(b-c)	25		F	0.8948
	Vr(c-b)	42		Y	0.7844

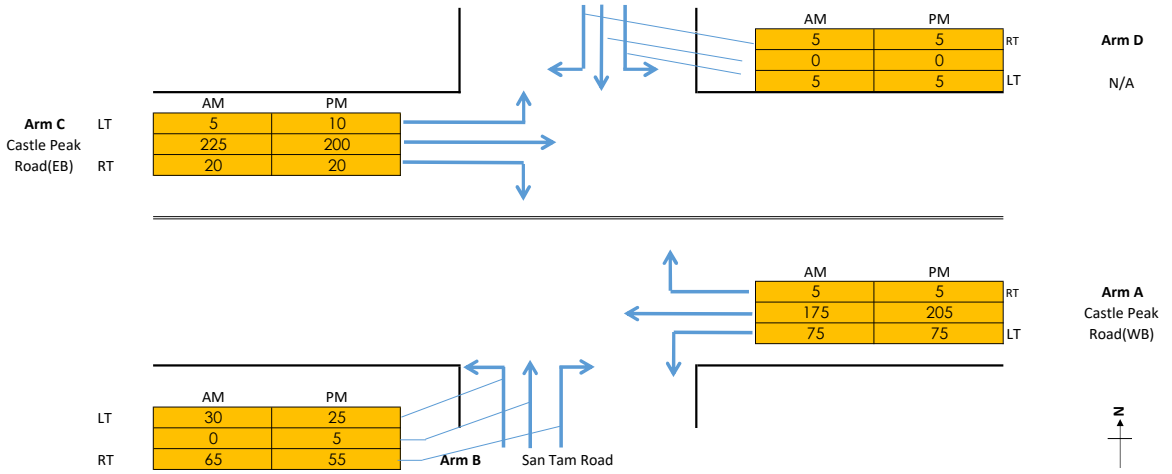
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	205	245
	q(c-b)	30	40
	q(a-b)	70	70
	q(a-c)	205	185
	q(b-a)	40	35
	q(b-c)	30	50
	f	0.43	0.59
CAPACITIES (pcu/hr)	Q(b-ac)	449.883	475.84
	Q(c-a)	1709.46	1680.3
	Q(c-b)	596.396	601.51
RFC's	c-a	0.12	0.15
	c-b	0.05	0.07
	b-ac	0.16	0.18
RFC		**0.16**	**0.18**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - San Tam Road (B)	Designed by:	GTL
Scheme:	Observed Flow	Checked by:	JPP
Design Year:	2031	Job No.: CHK50769410	Date: Feb-24
Arm A:	Castle Peak Road(WB)		
Arm B:	San Tam Road		
Arm C:	Castle Peak Road(EB)		
Arm D:	N/A		



GEOMETRY

Major Road Width (m)	W	7.25
Central Reserve Width (m)	Wcr	0.00

Arm B

Lane widths (m)	w(b-a)	3.55	Blockage of major road RT (c-b block c-a)?		Y
	w(b-c)	3.55			
	w(c-b)	4.00	Combined stream on minor arm B?		Y
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.8415
	Vl(b-a)	24		E	0.9104
	Vr(b-c)	30		F	0.9678
	Vr(c-b)	50		Y	0.7499

Arm D

Lane widths (m)	w(d-a)	2.50	Blockage of major road RT (a-d block a-c)?		Y
	w(d-c)	2.50			
	w(a-d)	3.25	Combined stream on minor arm D?		Y
Visibility Distances (m)	Vr(d-c)	17	Calculated Parameters	D	0.7471
	Vl(d-c)	22		E	0.8092
	Vr(d-a)	17		F	1.0317
	Vr(d-a)	200		Y	0.7499

ANALYSIS

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(c-a)	225	200
	q(c-b)	20	20
	q(a-b)	75	75
	q(a-c)	180	210
	q(b-a)	65	55
	q(b-c)	30	30
	f	0.32	0.35
CAPACITIES (pcu/hr)	Q(b-ac)	485.9	487.63
	Q(c-a)	1744.9	1744.3
	Q(c-b)	653.7	645.74
RFC's	c-a	0.13	0.11
	c-b	0.03	0.03
	b-ac	0.20	0.17
RFC		**0.20**	**0.17**

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(a-c)	175	205
	q(a-d)	5	10
	q(c-d)	5	10
	q(c-a)	245	220
	q(d-c)	5	5
	q(d-a)	5	5
	f	0.50	0.50
CAPACITIES (pcu/hr)	Q(d-ac)	458.6	460.0
	Q(a-c)	1787.1	1774.4
	Q(a-d)	698.2	703.8
	a-c	0.10	0.12
	a-d	0.01	0.01
	d-ac	0.02	0.02

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(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

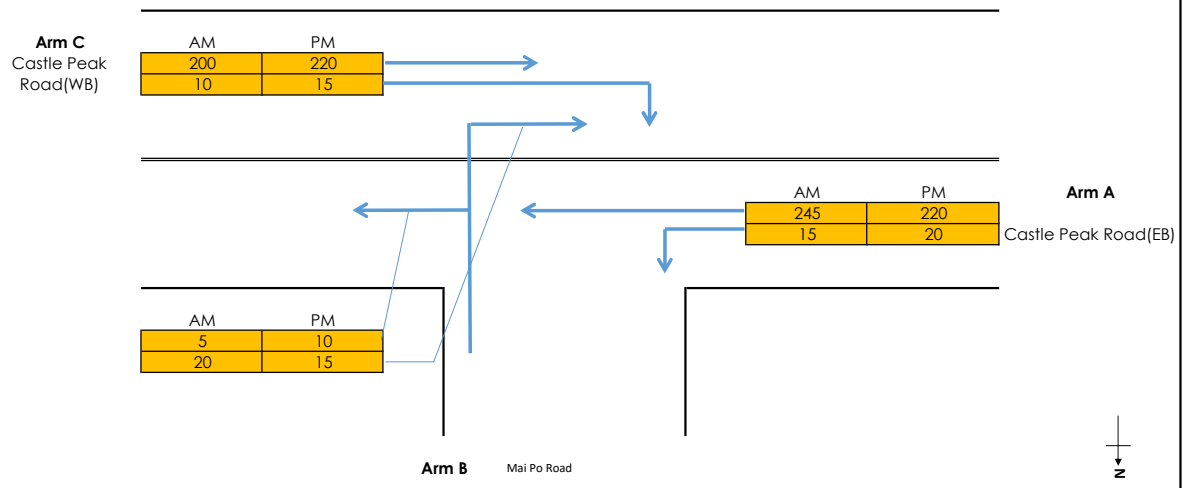
f = proportion of minor traffic turning left

Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. V.2.4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Mai Po Road (C)	Designed by:	GTL
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	Mai Po Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.95	Lane widths (m)	w(b-a)	3.05
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.05
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.50
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	55	Calculated	D	0.8324
	Vl(b-a)	45	Parameters	E	0.8884
	Vr(b-c)	55		F	1.0569
	Vr(c-b)	200		Y	0.7602

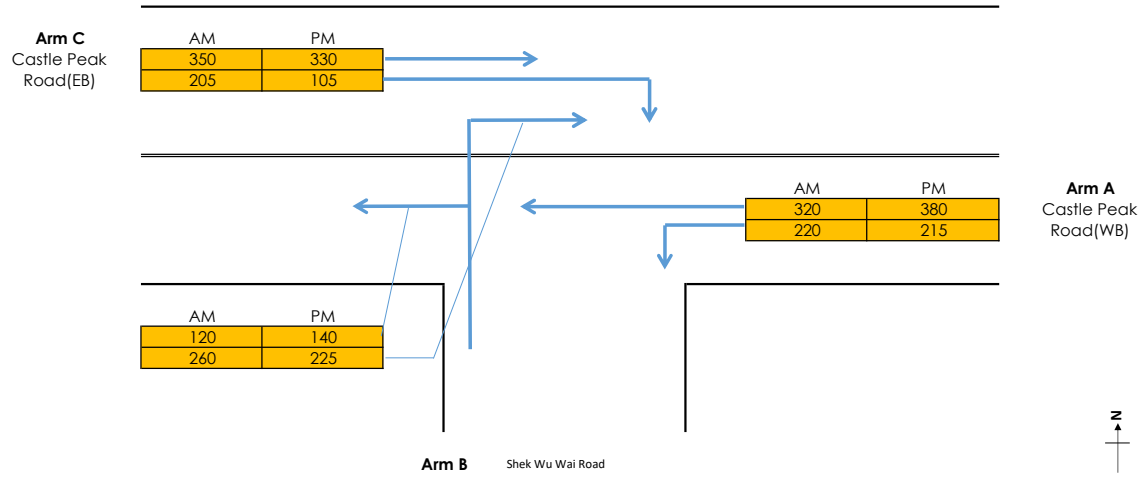
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	200	220
	q(c-b)	10	15
	q(a-b)	15	20
	q(a-c)	245	220
	q(b-a)	20	15
	q(b-c)	5	10
	f	0.20	0.40
CAPACITIES (pcu/hr)	Q(b-ac)	457.517	488.48
	Q(c-a)	1774.7	1762.4
	Q(c-b)	711.339	717.19
RFC's	c-a	0.11	0.12
	c-b	0.01	0.02
	b-ac	0.05	0.05
RFC		**0.11**	**0.12**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Shek Wu Wai Road (D)	Designed by:	GTL
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	Feb-24
Arm A:	Castle Peak Road(WB)		
Arm B:	Shek Wu Wai Road		
Arm C:	Castle Peak Road(EB)		



GEOMETRY

Major Road Width (m)	W	6.60	Lane widths (m)	w(b-a)	4.20
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.70
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.9074
	Vl(b-a)	48		E	1.0137
	Vr(b-c)	34		F	1.049
	Vr(c-b)	220		Y	0.7723

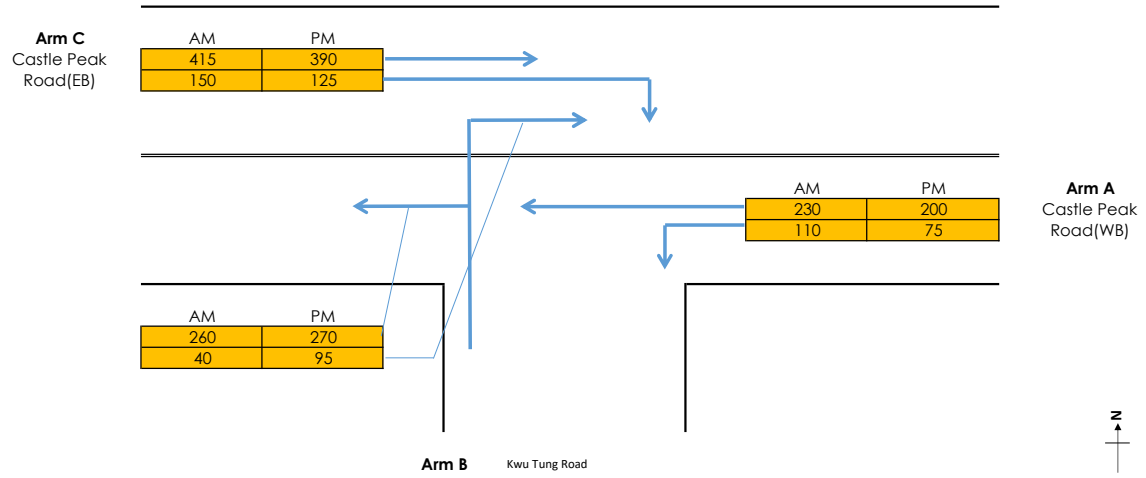
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	350	330
	q(c-b)	205	105
	q(a-b)	220	215
	q(a-c)	320	380
	q(b-a)	260	225
	q(b-c)	120	140
	f	0.32	0.38
CAPACITIES (pcu/hr)	Q(b-a)	334.226	359.07
	Q(b-c)	639.19	622.66
	Q(c-a)	1207.01	1488.1
	Q(c-b)	622.273	606.05
RFC's	c-a	0.29	0.22
	c-b	0.33	0.17
	b-a	0.78	0.63
	b-c	0.19	0.22
RFC		**0.78**	**0.63**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Kwu Tung Road (E)	Designed by:	GTL
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	Feb-24
Arm A:	Castle Peak Road(WB)		
Arm B:	Kwu Tung Road		
Arm C:	Castle Peak Road(EB)		



GEOMETRY

Major Road Width (m)	W	6.50	Lane widths (m)	w(b-a)	4.29
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	36	Calculated	D	0.9059
	Vl(b-a)	24	Parameters	E	0.9622
	Vr(b-c)	44		F	1.0317
	Vr(c-b)	200		Y	0.7758

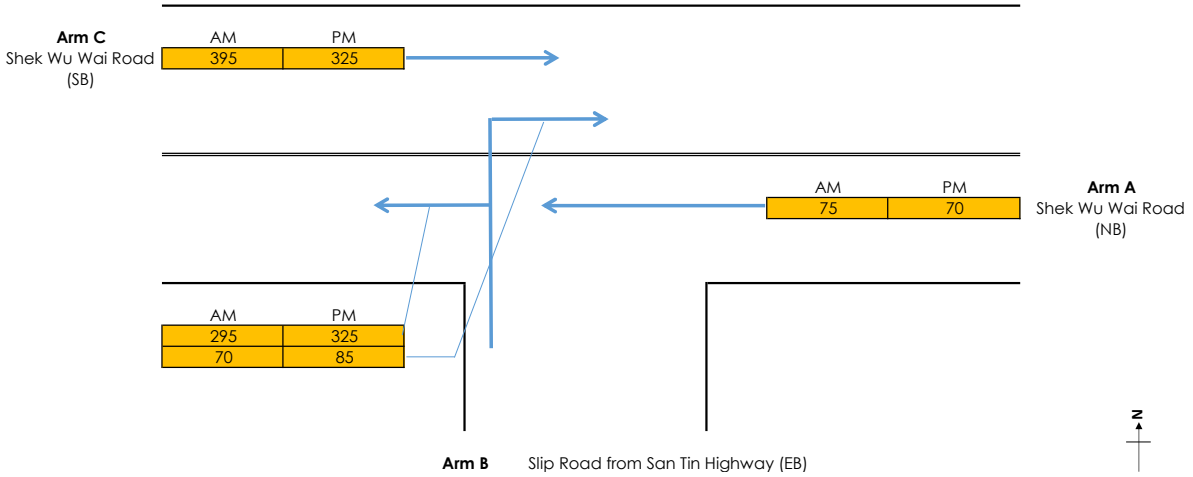
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	415	390
	q(c-b)	150	125
	q(a-b)	110	75
	q(a-c)	230	200
	q(b-a)	40	95
	q(b-c)	260	270
	f	0.87	0.74
CAPACITIES (pcu/hr)	Q(b-a)	376.442	400.82
	Q(b-c)	642.558	654.47
	Q(c-a)	1396.75	1473.2
	Q(c-b)	669.562	688.5
RFC's	c-a	0.30	0.26
	c-b	0.22	0.18
	b-a	0.11	0.24
	b-c	0.40	0.41
RFC		**0.40**	**0.41**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Shek Wu Wai Road - Slip Road from San Tin Highway (F)	Designed by:	CCT
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	May-25
Arm A:	Shek Wu Wai Road (NB)		
Arm B:	Slip Road from San Tin Highway (EB)		
Arm C:	Shek Wu Wai Road (SB)		



GEOMETRY					
Major Road Width (m)	W	10.50	Lane widths (m)	w(b-a)	4.63
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.63
Blockage of major road right turn	Y/N?			w(c-b)	0.00
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	25	Calculated	D	0.9334
	Vl(b-a)	41	Parameters	E	0.9987
	Vr(b-c)	25		F	0.586
	Vr(c-b)			Y	0.6378

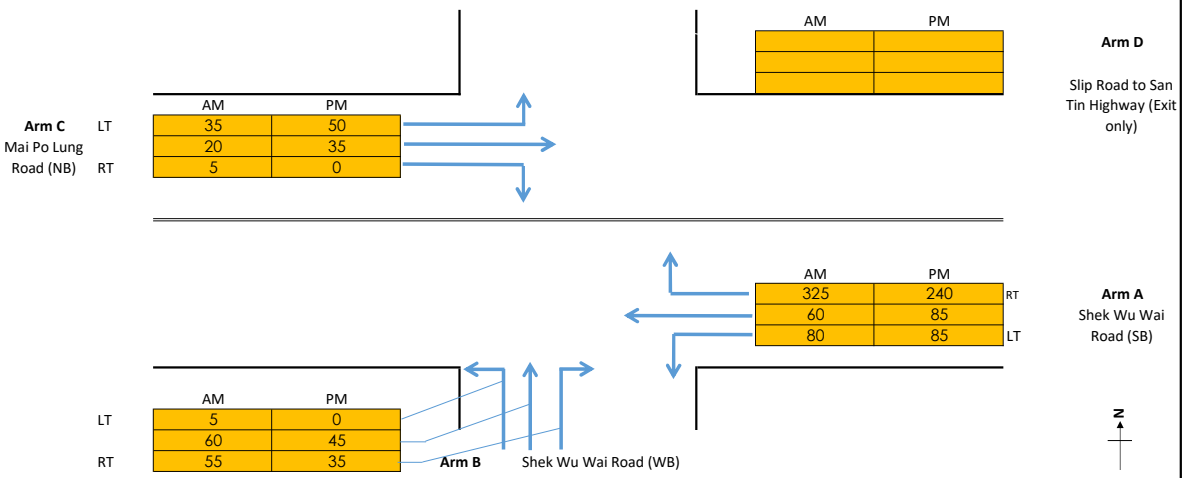
ANALYSIS		AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)	395	325
	q(c-b)	0	0
	q(a-b)	0	0
	q(a-c)	75	70
	q(b-a)	70	85
	q(b-c)	295	325
	f	0.81	0.79
CAPACITIES (pcu/hr)	Q(b-ac)	673.632	674.13
	Q(c-b)	426.335	427.01
RFC's	c-b	0.00	0.00
	b-ac	0.54	0.61
RFC		**0.54**	**0.61**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Shek Wu Wai Road / Mai Po Lung Road / Slip Road to San Tin Highway (G)	Designed by:	CCT
Scheme:	Observed Flow	Checked by:	JPP
Design Year: 2031	Job No.: CHK50769410	Date:	May-25
Arm A:	Shek Wu Wai Road (SB)		
Arm B:	Shek Wu Wai Road (WB)		
Arm C:	Mai Po Lung Road (NB)		
Arm D:	Slip Road to San Tin Highway (Exit only)		



GEOMETRY

Major Road Width (m)	W	9.61
Central Reserve Width (m)	Wcr	0.00

Arm B

Lane widths (m)	w(b-a)	2.77	Blockage of major road RT (c-b block c-a)?		Y
	w(b-c)	2.77			
	w(c-b)	2.20	Combined stream on minor arm B?		Y
Visibility Distances (m)	Vr(b-a)	26	Calculated Parameters	D	0.8901
	Vl(b-a)	250		E	0.8397
	Vr(b-c)	26		F	0.7836
	Vr(c-b)	17		Y	0.6685

Arm D

Lane widths (m)	w(d-a)		Blockage of major road RT (a-d block a-c)?		N
	w(d-c)				
	w(a-d)	3.46	Combined stream on minor arm D?		
Visibility Distances (m)	Vr(d-c)		Calculated Parameters	D	0.5332
	Vl(d-c)			E	0.586
	Vr(d-a)			F	0.9114
	Vr(a-d)	40		Y	0.6685

ANALYSIS

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(c-a)	20	35
	q(c-b)	5	0
	q(a-b)	80	85
	q(a-c)	385	325
	q(b-a)	55	35
	q(b-c)	65	45
	f	0.54	0.56
CAPACITIES (pcu/hr)	Q(b-ac)	502.3	515.91
	Q(c-a)	1781.8	1800
	Q(c-b)	495.1	505.63
RFC's	c-a	0.01	0.02
	c-b	0.01	0.00
	b-ac	0.24	0.16
RFC		**0.58**	**0.43**

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(a-c)	60	85
	q(a-d)	385	285
	q(c-d)	35	50
	q(c-a)	25	35
	q(d-c)	0	0
	q(d-a)	0	0
	f	N/A	N/A
CAPACITIES (pcu/hr)	Q(d-a)	253.0	267.5
	Q(d-c)	431.0	428.7
	Q(d-ac)	N/A	N/A
	Q(a-d)	665.7	660.2
	a-d	0.58	0.43
	d-a	0.00	0.00
	d-c	0	0

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(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

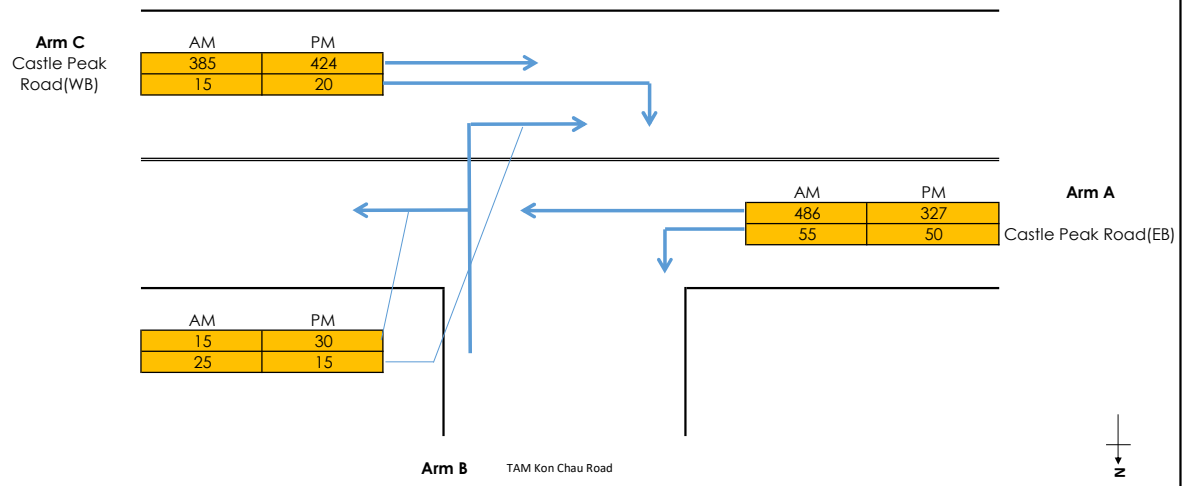
f = proportion of minor traffic turning left

Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. V.2.4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - TAM Kon Chau Road (A)	Designed by:	GTL
Scheme:	Reference Flow	Checked by:	JPP
Design Year: 2031	Job No.: 50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	TAM Kon Chau Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.25	Lane widths (m)	w(b-a)	2.65
Central Reserve Width (m)	Wcr	0.00		w(b-c)	2.65
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	25	Calculated	D	0.7649
	Vl(b-a)	22	Parameters	E	0.8285
	Vr(b-c)	25		F	0.8948
	Vr(c-b)	42		Y	0.7844

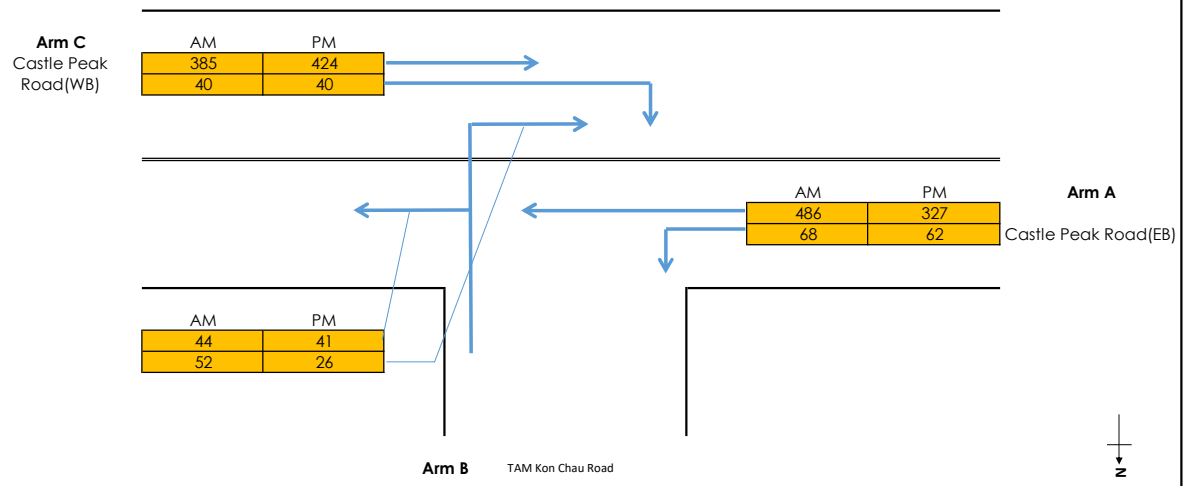
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	385.15	424.25
	q(c-b)	15	20
	q(a-b)	55	50
	q(a-c)	485.54	326.56
	q(b-a)	25	15
	q(b-c)	15	30
	f	0.38	0.67
CAPACITIES (pcu/hr)	Q(b-ac)	362	448.96
	Q(c-a)	1748.92	1736.9
	Q(c-b)	528.554	570.45
RFC's	c-a	0.22	0.24
	c-b	0.03	0.04
	b-ac	0.11	0.10
RFC		**0.22**	**0.24**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - TAM Kon Chau Road (A)	Designed by:	GTL
Scheme:	Design Flow	Checked by:	JPP
Design Year: 2031	Job No.: 50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	TAM Kon Chau Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.25	Lane widths (m)	w(b-a)	2.65
Central Reserve Width (m)	Wcr	0.00		w(b-c)	2.65
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	25	Calculated Parameters	D	0.7649
	Vl(b-a)	22		E	0.8285
	Vr(b-c)	25		F	0.8948
	Vr(c-b)	42		Y	0.7844

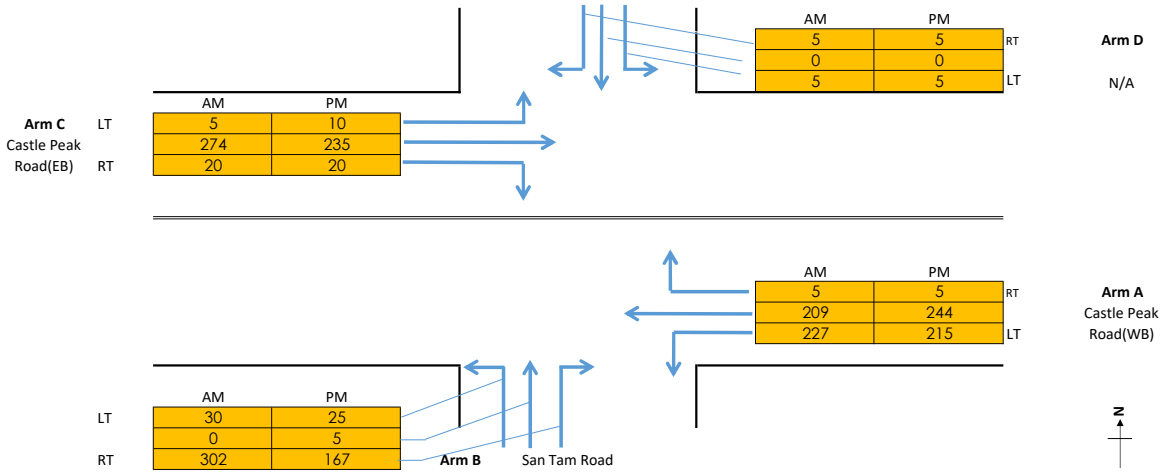
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	385.15	424.25
	q(c-b)	40	40
	q(a-b)	68	62
	q(a-c)	485.54	326.56
	q(b-a)	52	26
	q(b-c)	44	41
	f	0.46	0.61
CAPACITIES (pcu/hr)	Q(b-ac)	368.204	432.18
	Q(c-a)	1662.92	1673.1
	Q(c-b)	525.233	567.38
RFC's	c-a	0.23	0.25
	c-b	0.08	0.07
	b-ac	0.26	0.16
RFC		**0.26**	**0.25**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - San Tam Road (B)	Designed by:	GTL
Scheme:	Reference Flow	Checked by:	JPP
Design Year:	2031	Job No.: 50769410	Date: Feb-24
Arm A:	Castle Peak Road(WB)		
Arm B:	San Tam Road		
Arm C:	Castle Peak Road(EB)		
Arm D:	N/A		



GEOMETRY

Major Road Width (m)	W	7.25
Central Reserve Width (m)	Wcr	0.00

Arm B

Lane widths (m)	w(b-a)	3.55	Blockage of major road RT (c-b block c-a)?		Y
	w(b-c)	3.55			
	w(c-b)	4.00	Combined stream on minor arm B?		Y
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.8415
	Vl(b-a)	24		E	0.9104
	Vr(b-c)	30		F	0.9678
	Vr(c-b)	50		Y	0.7499

Arm D

Lane widths (m)	w(d-a)	2.50	Blockage of major road RT (a-d block a-c)?		Y
	w(d-c)	2.50			
	w(a-d)	3.25	Combined stream on minor arm D?		Y
Visibility Distances (m)	Vr(d-c)	17	Calculated Parameters	D	0.7471
	Vl(d-c)	22		E	0.8092
	Vr(d-a)	17		F	1.0317
	Vr(d-a)	200		Y	0.7499

ANALYSIS

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(c-a)	273.84	234.96
	q(c-b)	20	20
	q(a-b)	226.5	214.9
	q(a-c)	213.65	249.35
	q(b-a)	302	166.6
	q(b-c)	30	30
	f	0.09	0.15
CAPACITIES (pcu/hr)	Q(b-ac)	424.0	430.73
	Q(c-a)	1740.5	1739.8
	Q(c-b)	604.8	598.39
RFC's	c-a	0.16	0.14
	c-b	0.03	0.03
	b-ac	0.78	0.46
RFC		**0.78**	**0.46**

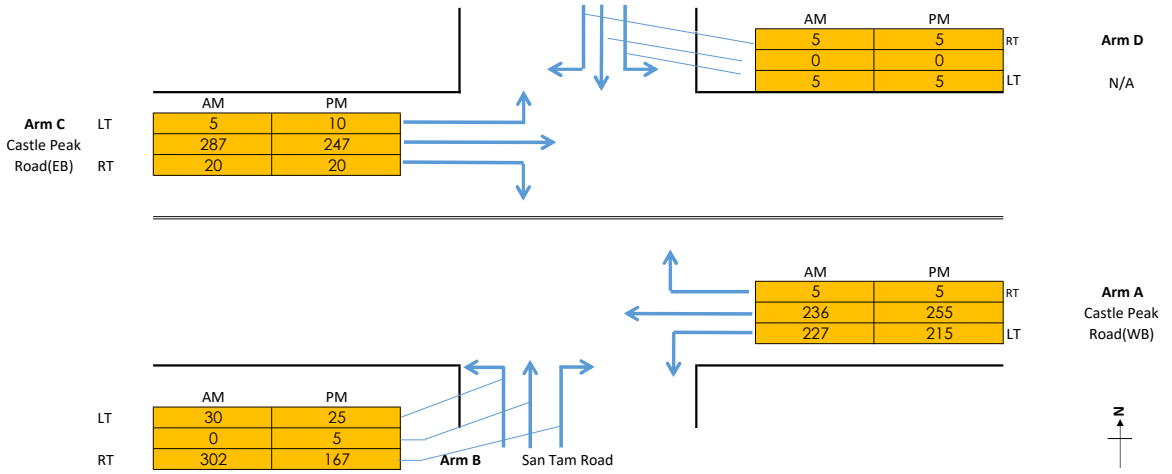
		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(a-c)	208.65	244.35
	q(a-d)	5	10
	q(c-d)	5	10
	q(c-a)	293.84	254.96
	q(d-c)	5	5
	q(d-a)	5	5
	f	0.50	0.50
CAPACITIES (pcu/hr)	Q(d-ac)	445.2	449.0
	Q(a-c)	1786.9	1774.1
	Q(a-d)	684.5	694.0
	a-c	0.12	0.14
	a-d	0.01	0.01
	d-ac	0.02	0.02

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. V.2.4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - San Tam Road (B)	Designed by:	GTL
Scheme:	Design Flow	Checked by:	JPP
Design Year:	2031	Job No.: 50769410	Date: Feb-24
Arm A:	Castle Peak Road(WB)		
Arm B:	San Tam Road		
Arm C:	Castle Peak Road(EB)		
Arm D:	N/A		



GEOMETRY

Major Road Width (m)	W	7.25
Central Reserve Width (m)	Wcr	0.00

Arm B

Lane widths (m)	w(b-a)	3.55	Blockage of major road RT (c-b block c-a)?		Y
	w(b-c)	3.55			
	w(c-b)	4.00	Combined stream on minor arm B?		Y
Visibility Distances (m)	Vr(b-a)	30	Calculated Parameters	D	0.8415
	Vl(b-a)	24		E	0.9104
	Vr(b-c)	30		F	0.9678
	Vr(c-b)	50		Y	0.7499

Arm D

Lane widths (m)	w(d-a)	2.50	Blockage of major road RT (a-d block a-c)?		Y
	w(d-c)	2.50			
	w(a-d)	3.25	Combined stream on minor arm D?		Y
Visibility Distances (m)	Vr(d-c)	17	Calculated Parameters	D	0.7471
	Vl(d-c)	22		E	0.8092
	Vr(d-a)	17		F	1.0317
	Vr(d-a)	200		Y	0.7499

ANALYSIS

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(c-a)	286.84	246.96
	q(c-b)	20	20
	q(a-b)	226.5	214.9
	q(a-c)	240.65	260.35
	q(b-a)	302	166.6
	q(b-c)	30	30
	f	0.09	0.15
CAPACITIES (pcu/hr)	Q(b-ac)	415.9	426.54
	Q(c-a)	1739.8	1739.5
	Q(c-b)	597.6	595.48
RFC's	c-a	0.16	0.14
	c-b	0.03	0.03
	b-ac	0.80	0.46
RFC		**0.80**	**0.46**

		AM Peak	PM Peak
TRAFFIC FLOWS (pcu/hr)	q(a-c)	235.65	255.35
	q(a-d)	5	10
	q(c-d)	5	10
	q(c-a)	306.84	266.96
	q(d-c)	5	5
	q(d-a)	5	5
	f	0.50	0.50
CAPACITIES (pcu/hr)	Q(d-ac)	440.0	445.4
	Q(a-c)	1786.8	1773.9
	Q(a-d)	680.8	690.6
	a-c	0.13	0.14
	a-d	0.01	0.01
	d-ac	0.02	0.02

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(wc-b)-3.65))(1+0.0009(Vr(c-b)-120))

Y = 1-0.0345W

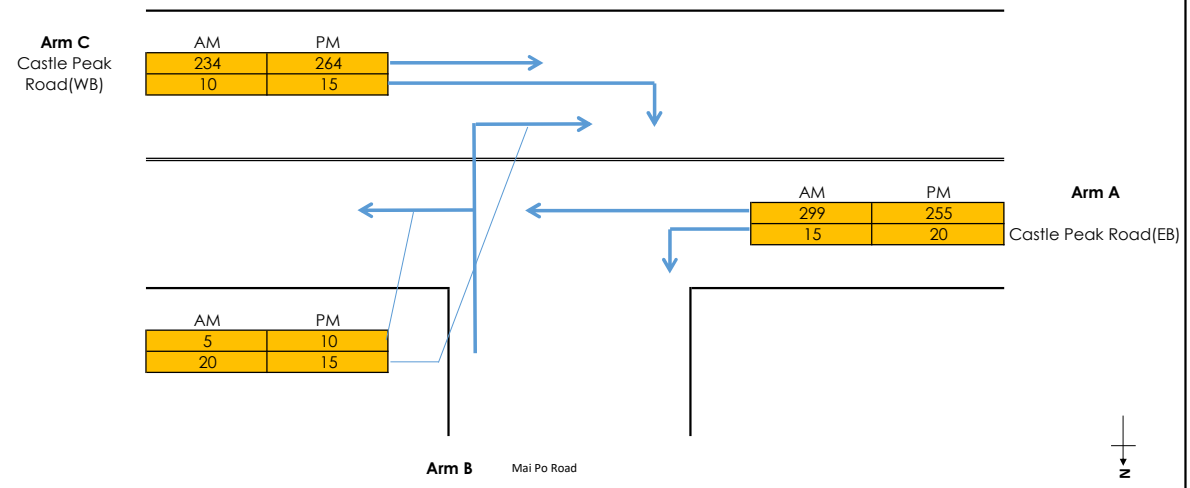
f = proportion of minor traffic turning left

Q(b-ac) = Q(b-c)*Q(b-a)/(1-f)*Q(b-c)+f*Q(b-a) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. V.2.4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Mai Po Road (C)	Designed by:	GTL
Scheme:	Reference Flow	Checked by:	JPP
Design Year: 2031	Job No.: 50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	Mai Po Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.95	Lane widths (m)	w(b-a)	3.05
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.05
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.50
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	55	Calculated	D	0.8324
	Vl(b-a)	45	Parameters	E	0.8884
	Vr(b-c)	55		F	1.0569
	Vr(c-b)	200		Y	0.7602

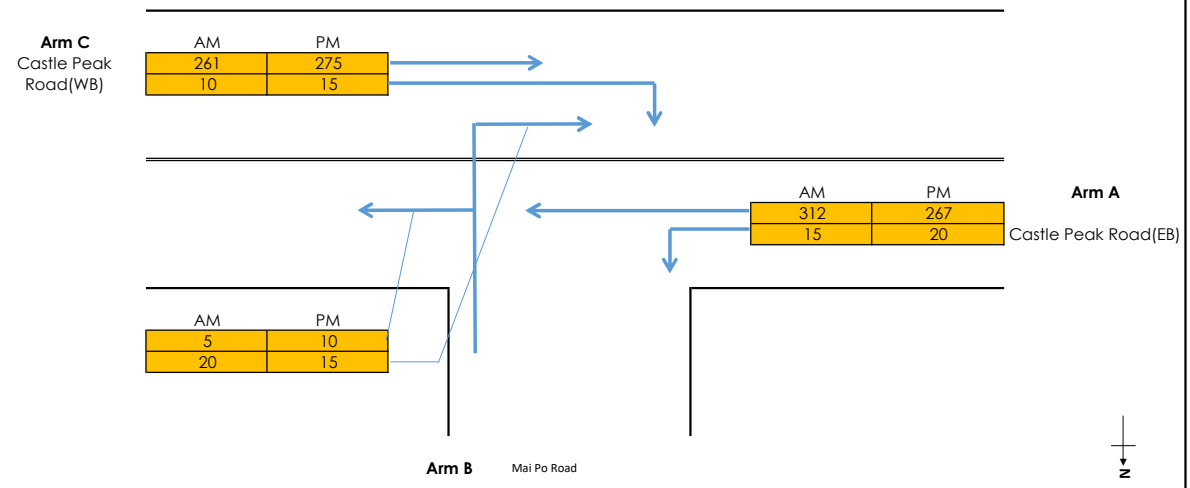
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	233.65	264.35
	q(c-b)	10	15
	q(a-b)	15	20
	q(a-c)	298.84	254.96
	q(b-a)	20	15
	q(b-c)	5	10
	f	0.20	0.40
CAPACITIES (pcu/hr)	Q(b-ac)	440.445	475.13
	Q(c-a)	1774.12	1761.8
	Q(c-b)	695.593	706.96
RFC's	c-a	0.13	0.15
	c-b	0.01	0.02
	b-ac	0.06	0.05
RFC		**0.13**	**0.15**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Mai Po Road (C)	Designed by:	GTL
Scheme:	Design Flow	Checked by:	JPP
Design Year: 2031	Job No.: 50769410	Date:	Feb-24
Arm A:	Castle Peak Road(EB)		
Arm B:	Mai Po Road		
Arm C:	Castle Peak Road(WB)		



GEOMETRY

Major Road Width (m)	W	6.95	Lane widths (m)	w(b-a)	3.05
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.05
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.50
Combined stream on minor arm	Y/N?	Y			
Visibility Distances (m)	Vr(b-a)	55	Calculated	D	0.8324
	Vl(b-a)	45	Parameters	E	0.8884
	Vr(b-c)	55		F	1.0569
	Vr(c-b)	200		Y	0.7602

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	260.65	275.35
	q(c-b)	10	15
	q(a-b)	15	20
	q(a-c)	311.84	266.96
	q(b-a)	20	15
	q(b-c)	5	10
	f	0.20	0.40
CAPACITIES (pcu/hr)	Q(b-ac)	433.841	471
	Q(c-a)	1773.98	1761.6
	Q(c-b)	691.791	703.45
RFC's	c-a	0.15	0.16
	c-b	0.01	0.02
	b-ac	0.06	0.05
RFC		**0.15**	**0.16**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50769410 **MVA HONG KONG LIMITED**

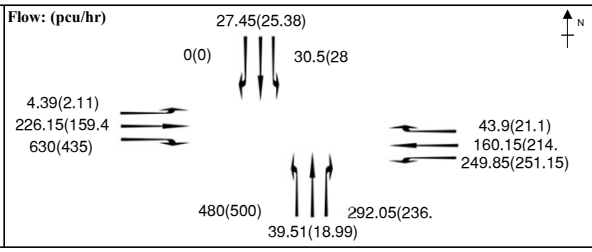
Junction: Castle Peak Road - Shek Wu Wai Road - Road D3 (D) Design Year: 2031

Description: Reference flows Designed By: CCT Checked By: JPP

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 Road (EB)		A	1	3.700	15			2%	1%	1980	1980	231	0.117		162	0.082	
		A	1	3.650		12		100%	100%	1885	1885	315	0.167		217	0.115	
		A	1	3.650		12				1885	1885	315	0.167	0.167	218	0.116	0.116
Shek Wu Wai Road (NB)		B	2	3.650	15					1800	1800	234	0.130		243	0.135	
		B	2	3.350	15			100%	100%	1900	1900	246	0.129		257	0.135	0.135
		B	2	3.350						2090	2090	40	0.019		19	0.009	
		B	2	3.650		12		100%	100%	1885	1885	292	0.155	0.155	237	0.126	
Road D3 (SB)		D	4	3.000	15			98%	101%	1745	1740	31	0.018		28	0.016	
		D	4	3.000						2055	2055	9	0.004		9	0.004	
		D	4	3.000						2055	2055	9	0.004		9	0.004	
		D	4	3.000		12		0%	0%	2055	2055	9	0.004		8	0.004	
Castle Peak Road (EB)		C	3	4.000		12		22%	9%	2100	2130	204	0.097		236	0.111	
		C	3	4.000	18			100%	100%	1860	1860	250	0.134	0.134	251	0.135	0.135

Notes:

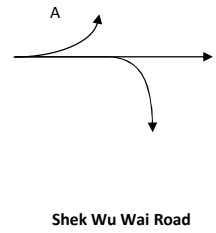
Flow: (pcu/hr)



Group		A,B,C,D	Group		A,B,C,D
y		0.456	y		0.386
L (sec)		23	L (sec)		23
C (sec)		120	C (sec)		120
y pract.		0.728	y pract.		0.728
R.C. (%)		59%	R.C. (%)		89%

Stage / Phase Diagrams

1.



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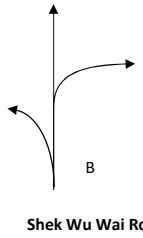

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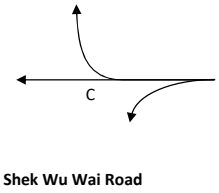

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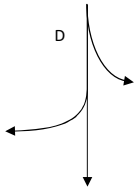


5.

I/G= 5		I/G= 5		I/G= 5		I/G= 6	5	I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G= 6	5	I/G=	

Date: MAY, 2025 **Junction:** Castle Peak Road - Shek Wu Wai Road D

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50769410 **MVA HONG KONG LIMITED**

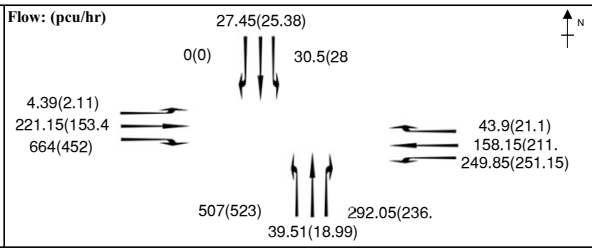
Junction: Castle Peak Road - Shek Wu Wai Road - Road D3 (D) Design Year: 2031

Description: Design flows Designed By: CCT Checked By: JPP

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 Road (EB)		A	1	3.700	15			2%	1%	1980	1980	226	0.114		156	0.079	
		A	1	3.650		12		100%	100%	1885	1885	332	0.176		226	0.120	
		A	1	3.650		12				1885	1885	332	0.176	0.176	226	0.120	0.120
Shek Wu Wai Road (NB)		B	2	3.650	15					1800	1800	247	0.137		254	0.141	
		B	2	3.350	15			100%	100%	1900	1900	260	0.137		269	0.142	0.142
		B	2	3.350						2090	2090	40	0.019		19	0.009	
		B	2	3.650		12		100%	100%	1885	1885	292	0.155	0.155	237	0.126	
Road D3 (SB)		D	4	3.000	15			98%	101%	1745	1740	31	0.018		28	0.016	
		D	4	3.000						2055	2055	9	0.004		9	0.004	
		D	4	3.000						2055	2055	9	0.004		9	0.004	
		D	4	3.000		12		0%	0%	2055	2055	9	0.004		8	0.004	
Castle Peak Road (EB)		C	3	4.000		12		22%	9%	2100	2130	202	0.096		233	0.109	
		C	3	4.000	18			100%	100%	1860	1860	250	0.134	0.134	251	0.135	0.135

Notes:

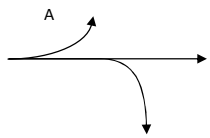
Flow: (pcu/hr)



Group		A,B,C,D	Group		A,B,C,D
y		0.465	y		0.396
L (sec)		23	L (sec)		23
C (sec)		120	C (sec)		120
y pract.		0.728	y pract.		0.728
R.C. (%)		56%	R.C. (%)		84%

Stage / Phase Diagrams

1.



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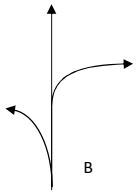

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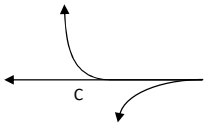

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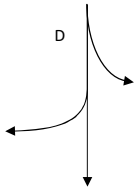


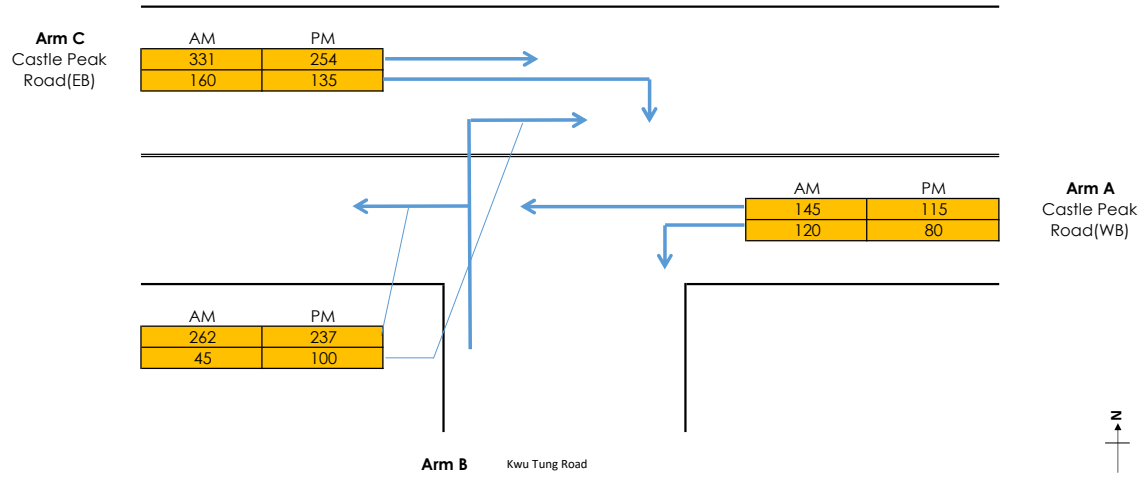
5.

I/G= 5		I/G= 5		I/G= 5		I/G= 6	5	I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G= 6	5	I/G=	

Date: MAY, 2025 **Junction:** Castle Peak Road - Shek Wu Wai Road D

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Kwu Tung Road (E)	Designed by:	GTL
Scheme:	Reference Flow	Checked by:	JPP
Design Year: 2031	Job No.: 50769410	Date:	May-25
Arm A:	Castle Peak Road(WB)		
Arm B:	Kwu Tung Road		
Arm C:	Castle Peak Road(EB)		



GEOMETRY

Major Road Width (m)	W	6.50	Lane widths (m)	w(b-a)	4.29
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	36	Calculated	D	0.9059
	Vl(b-a)	24	Parameters	E	0.9622
	Vr(b-c)	44		F	1.0317
	Vr(c-b)	200		Y	0.7758

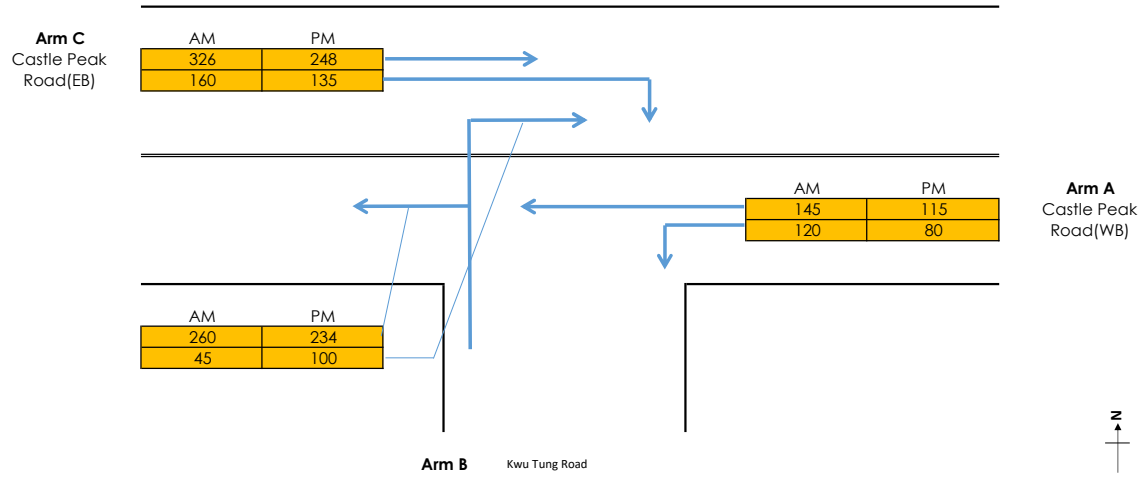
ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	330.7	254.3
	q(c-b)	160	135
	q(a-b)	120	80
	q(a-c)	145	115
	q(b-a)	45	100
	q(b-c)	261.9	236.5
	f	0.85	0.70
CAPACITIES (pcu/hr)	Q(b-a)	407.086	440.24
	Q(b-c)	664.579	677.03
	Q(c-a)	1383.46	1458.6
	Q(c-b)	691.411	711.8
RFC's	c-a	0.24	0.17
	c-b	0.23	0.19
	b-a	0.11	0.23
	b-c	0.39	0.35
RFC		**0.39**	**0.35**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

Simplified Priority Junction Capacity Calculation

Job Title:	Elderly Home in Lot DD101 76 S.G. & 76 S.H. in Mai Po		
Junction:	Castle Peak Road - Kwu Tung Road (E)	Designed by:	GTL
Scheme:	Design Flow	Checked by:	JPP
Design Year: 2028	Job No.: 50769410	Date:	May-25
Arm A:	Castle Peak Road(WB)		
Arm B:	Kwu Tung Road		
Arm C:	Castle Peak Road(EB)		



GEOMETRY

Major Road Width (m)	W	6.50	Lane widths (m)	w(b-a)	4.29
Central Reserve Width (m)	Wcr	0.00		w(b-c)	4.00
Blockage of major road right turn	Y/N?	Y		w(c-b)	3.25
Combined stream on minor arm	Y/N?	N			
Visibility Distances (m)	Vr(b-a)	36	Calculated	D	0.9059
	Vl(b-a)	24	Parameters	E	0.9622
	Vr(b-c)	44		F	1.0317
	Vr(c-b)	200		Y	0.7758

ANALYSIS		**AM PEAK**	**PM PEAK**
TRAFFIC FLOWS (pcu/hr)	q(c-a)	325.7	248.3
	q(c-b)	160	135
	q(a-b)	120	80
	q(a-c)	145	115
	q(b-a)	45	100
	q(b-c)	259.9	233.5
	f	0.85	0.70
CAPACITIES (pcu/hr)	Q(b-a)	407.891	441.21
	Q(b-c)	664.579	677.03
	Q(c-a)	1383.46	1458.6
	Q(c-b)	691.411	711.8
RFC's	c-a	0.24	0.17
	c-b	0.23	0.19
	b-a	0.11	0.23
	b-c	0.39	0.34
RFC		**0.39**	**0.34**

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(wc-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) Capacity of combined streams

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50769410 **MVA HONG KONG LIMITED**

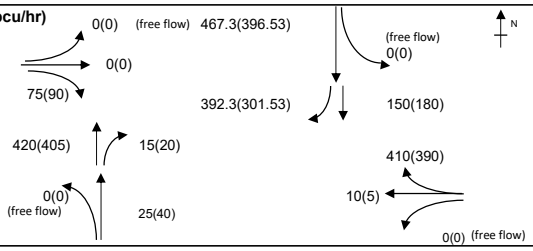
Junction: Shek Wu Wai Road / San Tin Highway Slip Road (F and G) Design Year: 2031

Description: Reference flows Designed By: CCT Checked By: JPP

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
San Tin Highway		A	1	3.650		12.5		100%	100%	1770	1770	37	0.021		44	0.025	
Slip Road (EB)		A	1	3.650		10				1845	1845	38	0.021	0.021	46	0.025	0.025
San Tin Highway		B	1,2	3.900		10				1865	1865	214	0.115		201	0.108	
Slip Road (WB)		B	1,2	3.900		12.5		95%	97%	1800	1795	206	0.114		194	0.108	
Shek Wu Wai		D	4	3.500						1965	1965	150	0.076		164	0.083	
Road (SB)		D	4	3.500		15		100%	90%	1915	1930	198	0.104		161	0.083	
		D	4	3.500		12.5				1880	1880	194	0.103	0.103	157	0.084	0.084
Shek Wu Wai		C	2,3	3.500						1965	1965	203	0.103	0.103	196	0.100	
Road (NB)		C	2,3	3.500		15		0%	0%	2105	2105	217	0.103		209	0.099	0.099
		C	2,3	3.500		12.5				1880	1880	15	0.008		20	0.011	
Shek Wu Wai		F	4	3.500						2105	2105	159	0.076		135	0.064	
Road (SB)		F	4	3.500						2105	2105	159	0.076		136	0.064	
		F	4	3.500						1965	1965	149	0.076		126	0.064	
Shek Wu Wai		E	3	3.500						1965	1965	8	0.004		13	0.007	
Road (NB)		E	3	3.500						2105	2105	8	0.004		13	0.006	
		E	3	3.500						2105	2105	9	0.004		14	0.007	

Notes:

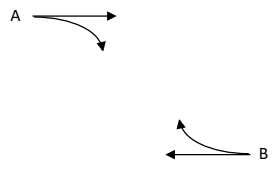
Flow: (pcu/hr)



Group	B,E,D	A,C,D	Group	B,E,D	A,C,D
y	0.218	0.228	y	0.192	0.208
L (sec)	16	13	L (sec)	16	13
C (sec)	120	120	C (sec)	120	120
y pract.	0.780	0.803	y pract.	0.780	0.803
R.C. (%)	257%	252%	R.C. (%)	307%	285%

Stage / Phase Diagrams

1.



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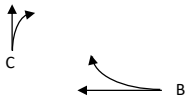


3.

4.

5.

I/G= 5		I/G= 6		I/G=		I/G= 5	I/G=
I/G= 5		I/G= 6		I/G=		I/G= 5	I/G=

Date: MAY, 2025 **Junction:** (F) (G) Shek Wu Wai Road / San Tin Highway Slip Road (F and G)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50769410 **MVA HONG KONG LIMITED**

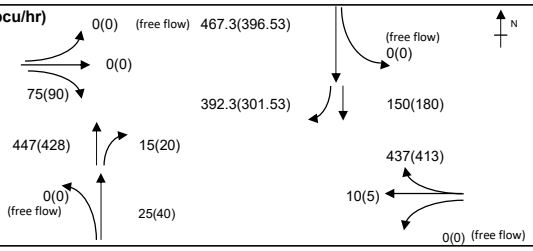
Junction: Shek Wu Wai Road / San Tin Highway Slip Road (F and G) Design Year: 2031

Description: Design flows Designed By: CCT Checked By: JPP

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
San Tin Highway		A	1	3.650		12.5		100%	100%	1770	1770	37	0.021		44	0.025	
Slip Road (EB)		A	1	3.650		10				1845	1845	38	0.021	0.021	46	0.025	0.025
San Tin Highway		B	1,2	3.900		10				1865	1865	228	0.122		213	0.114	
Slip Road (WB)		B	1,2	3.900		12.5		95%	98%	1800	1795	219	0.122		205	0.114	
Shek Wu Wai		D	4	3.500						1965	1965	150	0.076		164	0.083	
Road (SB)		D	4	3.500		15		100%	90%	1915	1930	198	0.104	0.104	161	0.083	
		D	4	3.500		12.5				1880	1880	194	0.103		157	0.084	0.084
Shek Wu Wai		C	2,3	3.500						1965	1965	216	0.110	0.110	207	0.105	0.105
Road (NB)		C	2,3	3.500		15		0%	0%	2105	2105	231	0.110		221	0.105	
		C	2,3	3.500		12.5				1880	1880	15	0.008		20	0.011	
Shek Wu Wai		F	4	3.500						2105	2105	159	0.076		135	0.064	
Road (SB)		F	4	3.500						2105	2105	159	0.076		136	0.064	
		F	4	3.500						1965	1965	149	0.076		126	0.064	
Shek Wu Wai		E	3	3.500						1965	1965	8	0.004		13	0.007	
Road (NB)		E	3	3.500						2105	2105	8	0.004		13	0.006	
		E	3	3.500						2105	2105	9	0.004		14	0.007	

Notes:

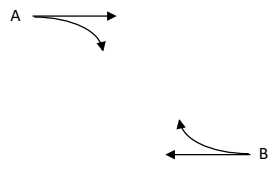
Flow: (pcu/hr)



Group	B,E,D	A,C,D	Group	B,E,D	A,C,D
y	0.226	0.234	y	0.198	0.214
L (sec)	16	13	L (sec)	16	13
C (sec)	120	120	C (sec)	120	120
y pract.	0.780	0.803	y pract.	0.780	0.803
R.C. (%)	245%	242%	R.C. (%)	294%	275%

Stage / Phase Diagrams

1.



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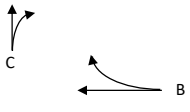


3.

4.

5.

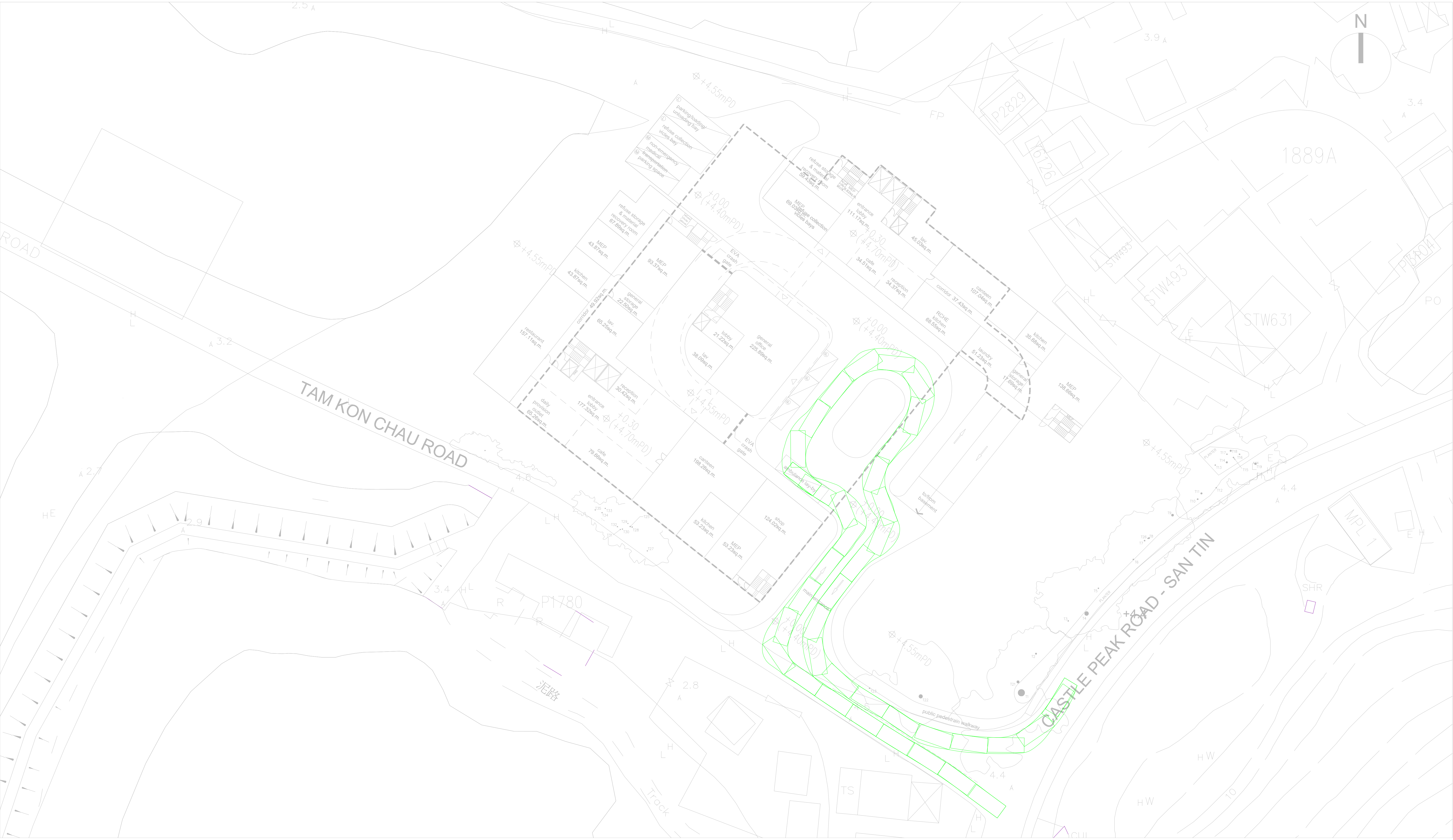
I/G= 5		I/G= 6		I/G=		I/G= 5	I/G=
I/G= 5		I/G= 6		I/G=		I/G= 5	I/G=

Date: MAY, 2025

Junction: (F) (G) Shek Wu Wai Road / San Tin Highway Slip Road (F and G)

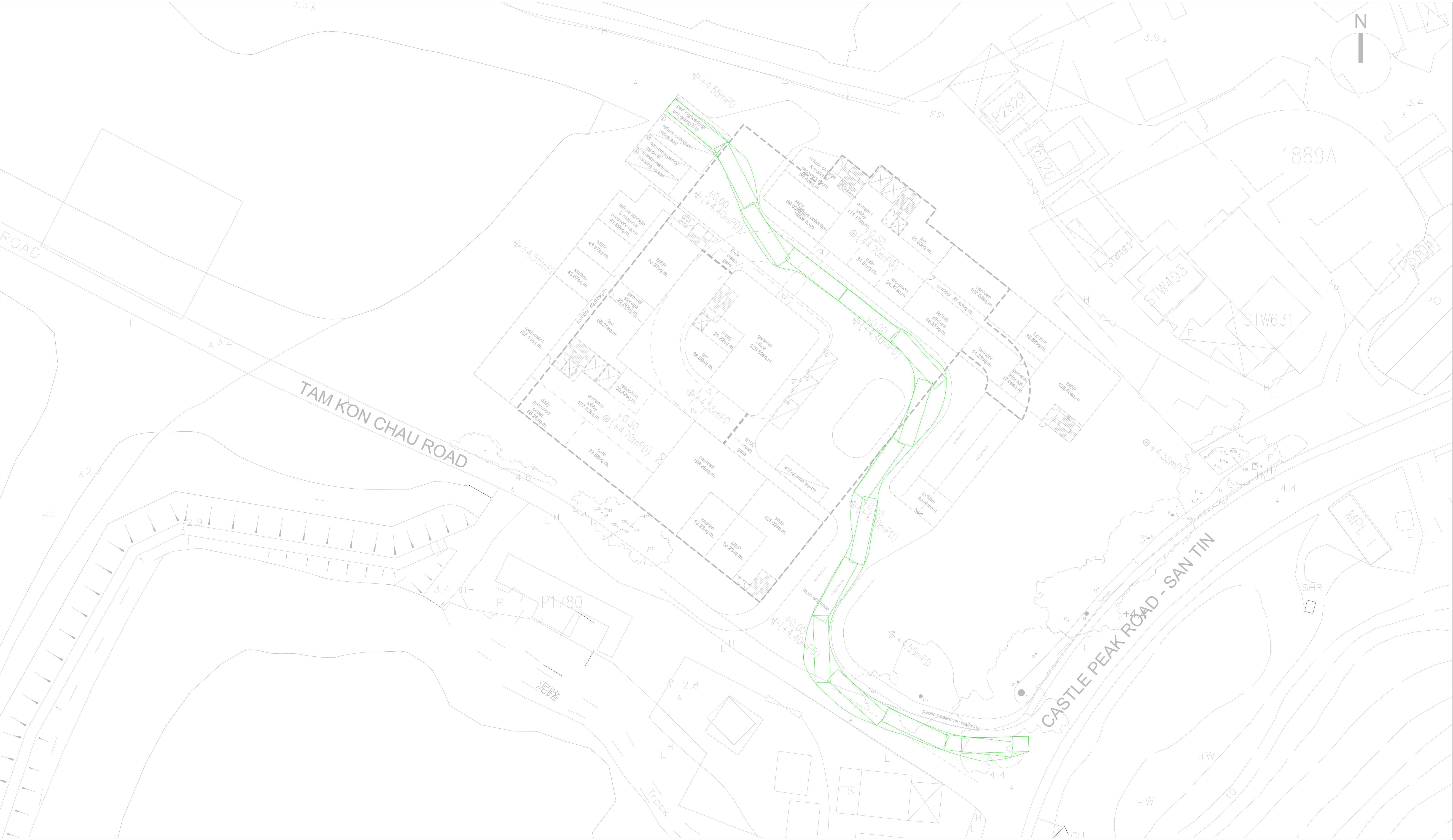
Appendix B

Swept Path Analysis



N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
1889A
STW631
STW493
P2829
P1780
MPL 1
Track
泥路
TS
SHR
public pedestrian walkway
+4.55mPD
+0.00 (+4.40mPD)
+0.30 (+4.70mPD)

N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
1889A
STW631
STW493
P2829
P1780
ROAD
+4.55mPD
+0.30 (+4.70mPD)
+0.00 (+4.40mPD)
main entrance
public pedestrian walkway
ambulance lay-by
EVA crash gate
restaurant 157.11sq.m.
canteen 198.28sq.m.
shop 124.02sq.m.
general office 225.89sq.m.
cafe 79.68sq.m.
MEP 138.69sq.m.
Track
泥路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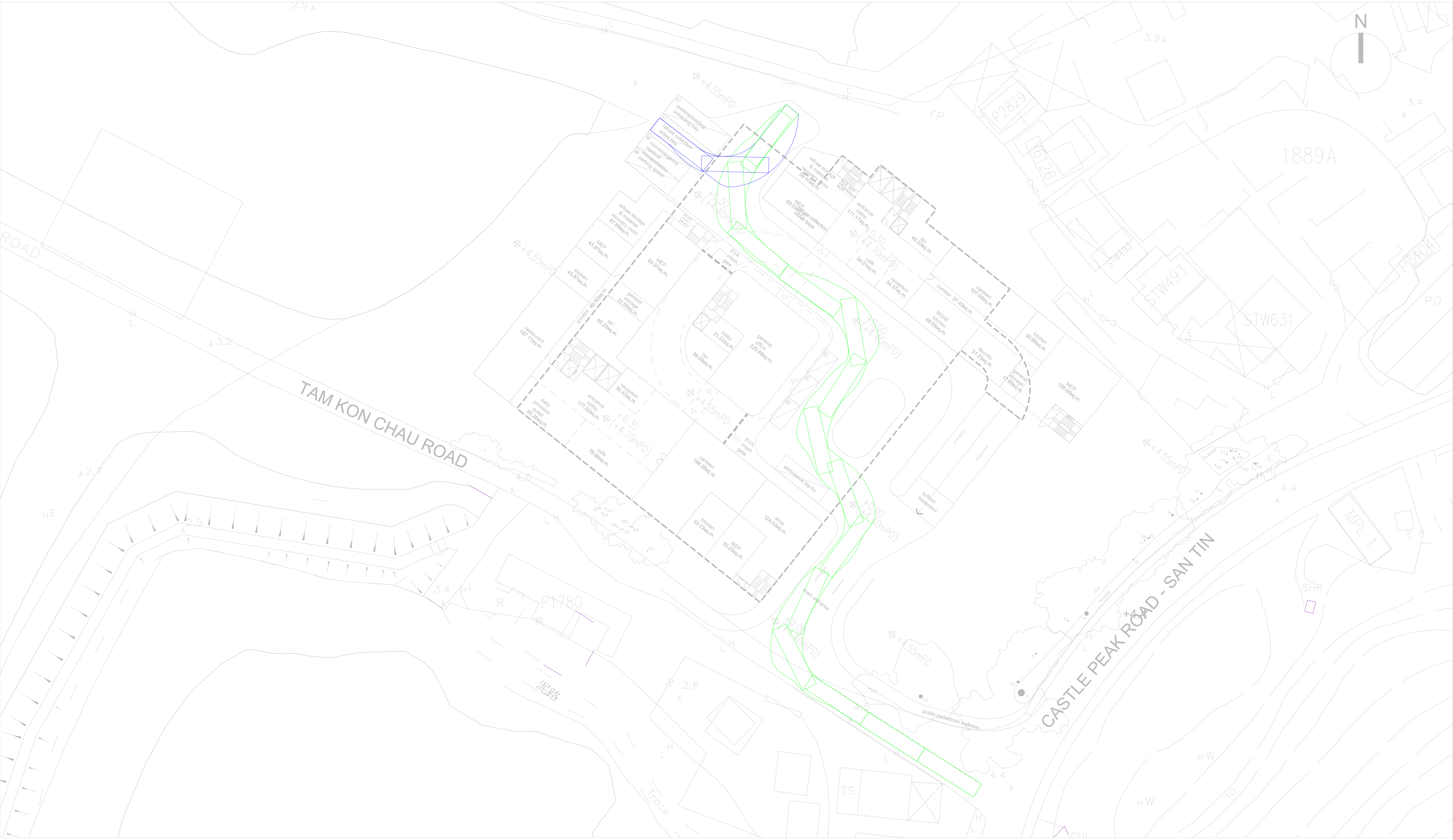
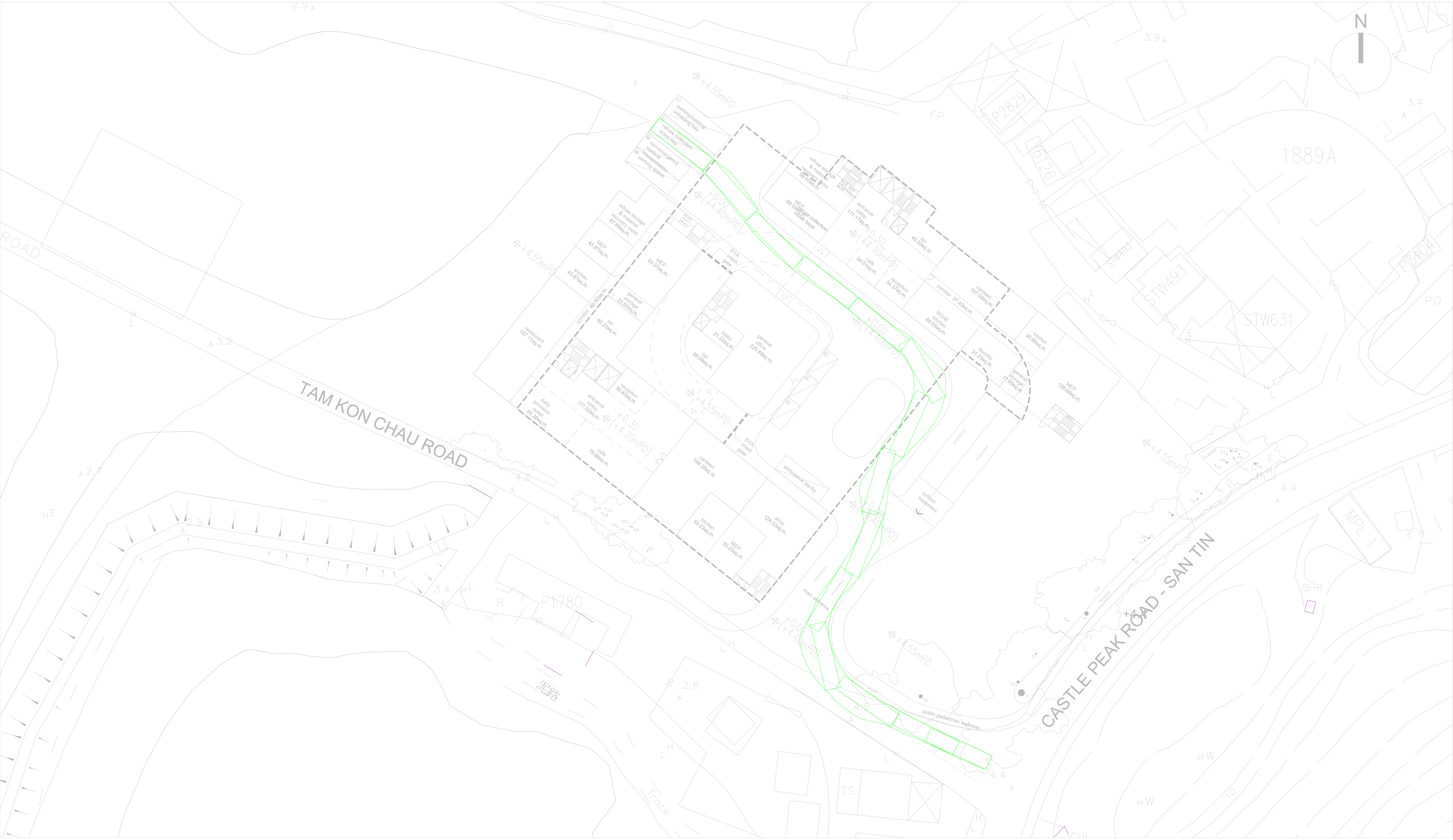
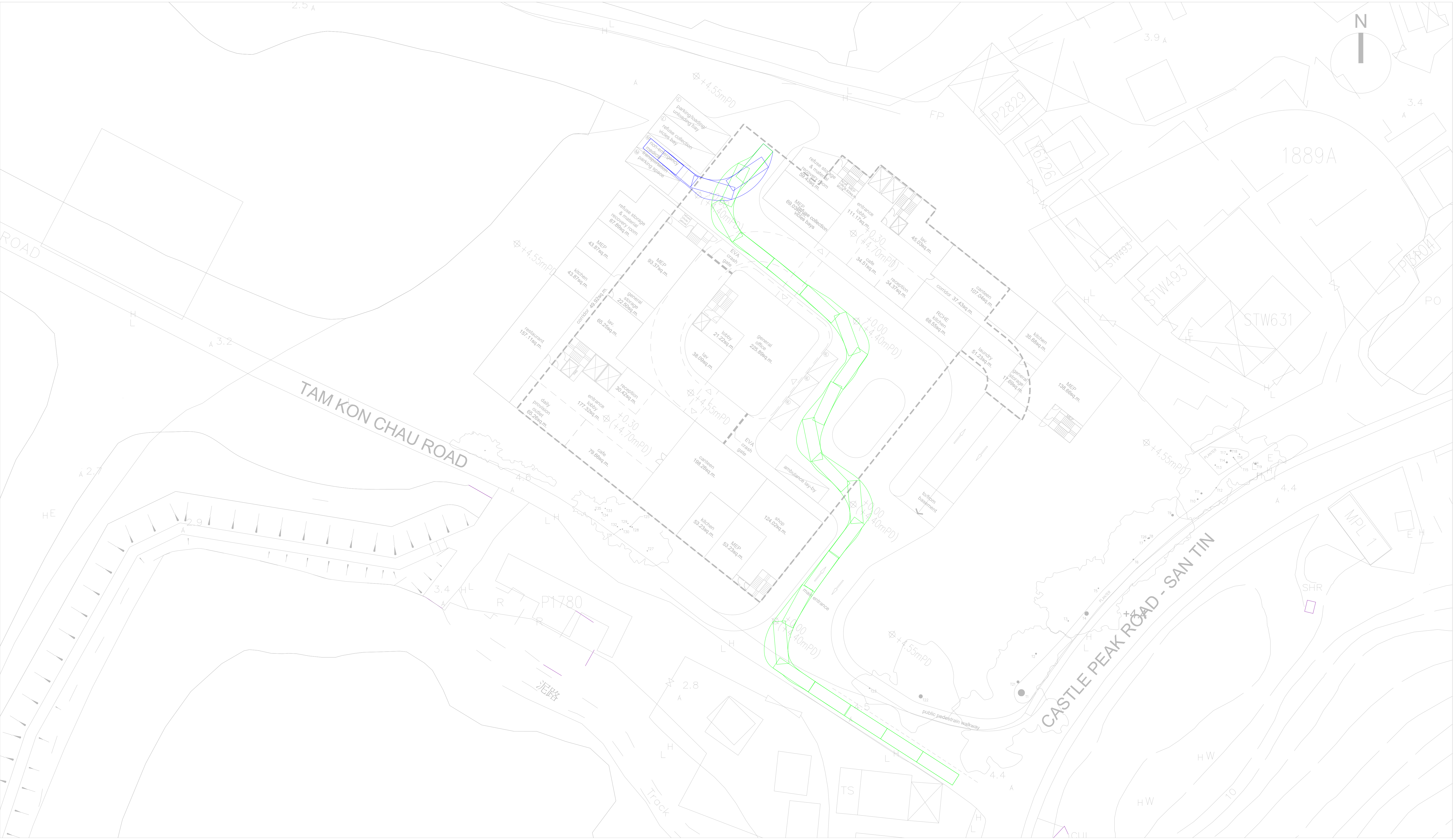
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
1889A
STW631
STW493
P2829
P1780
main entrance
public pedestrian walkway
ambulance lay-by
EVA crash gate
restaurant
canteen
shop
kitchen
MEP
cafe
entrance lobby
reception
general office
Track
泥路



N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
P2829
1889A
STW493
STW631
P1780
+4.55mPD
restaurant
canteen
kitchen
MEP
lav.
reception
entrance lobby
cafe
shop
general office
laundry
corridor
EVA crash gate
ambulance lay-by
main entrance
public pedestrian walkway
Track



N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
1889A
STW631
STW493
P2829
P1780
MPL 1
SHR
main entrance
public pedestrian walkway
ambulance lay-by
Track
泥路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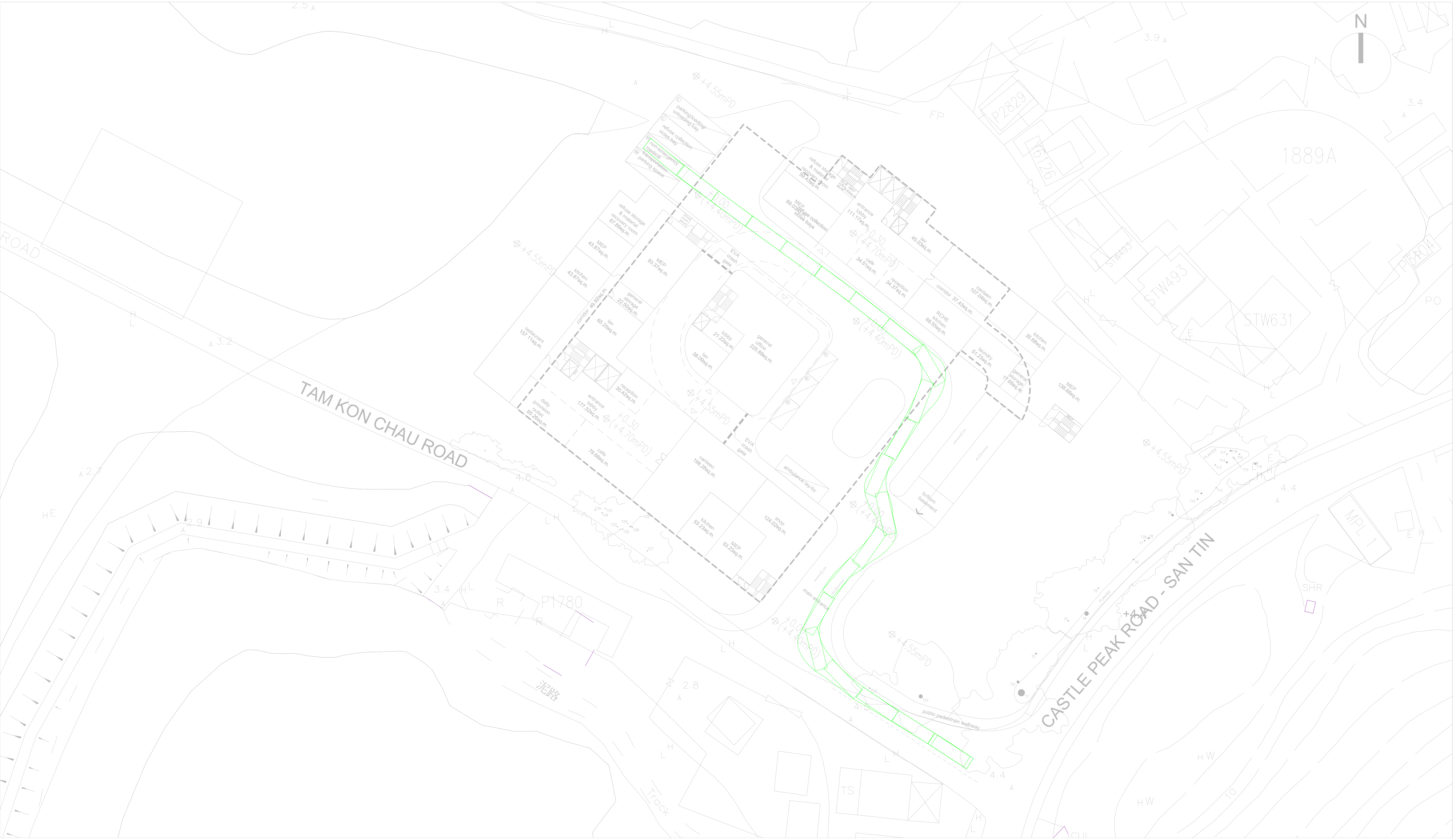
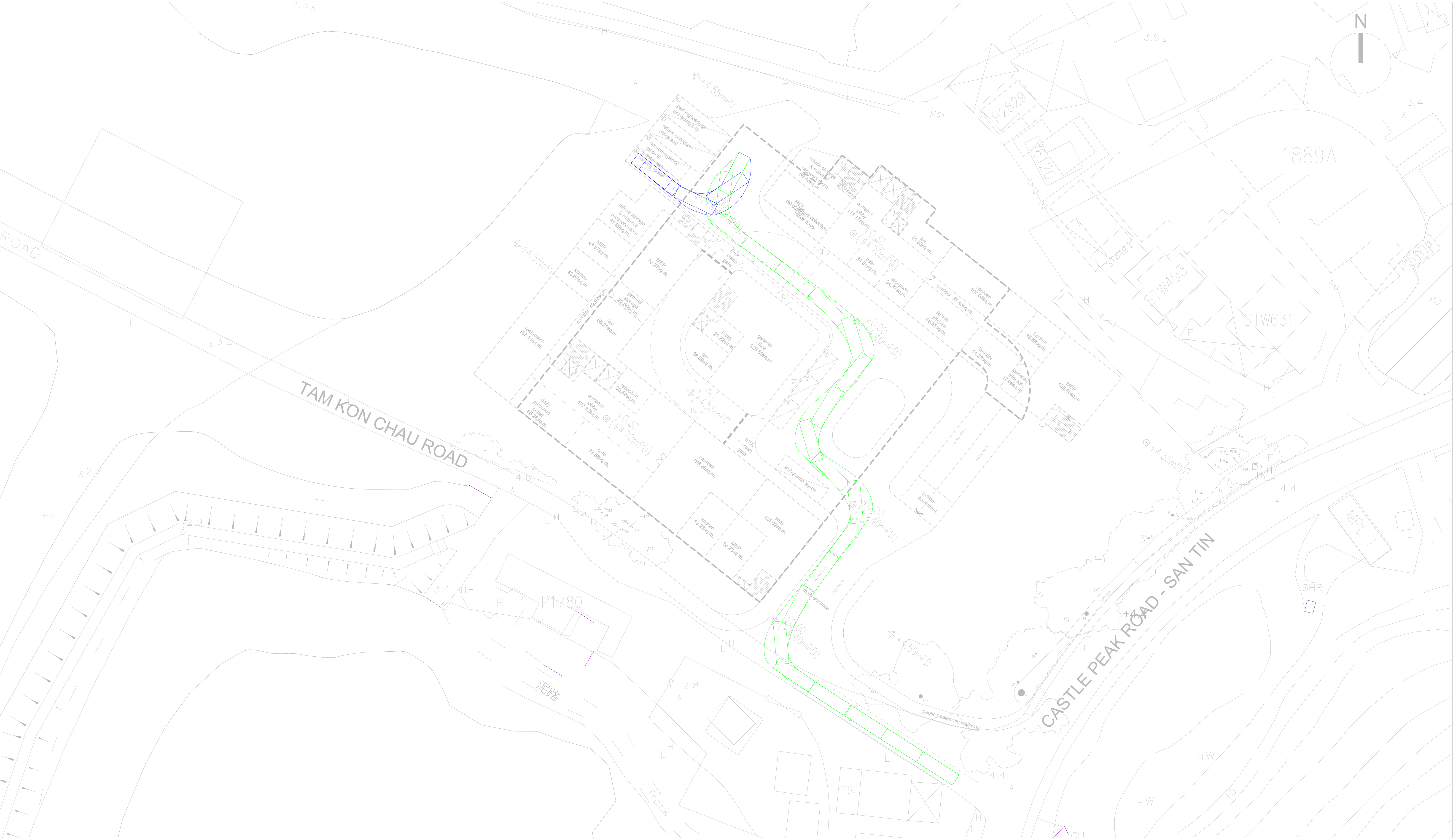
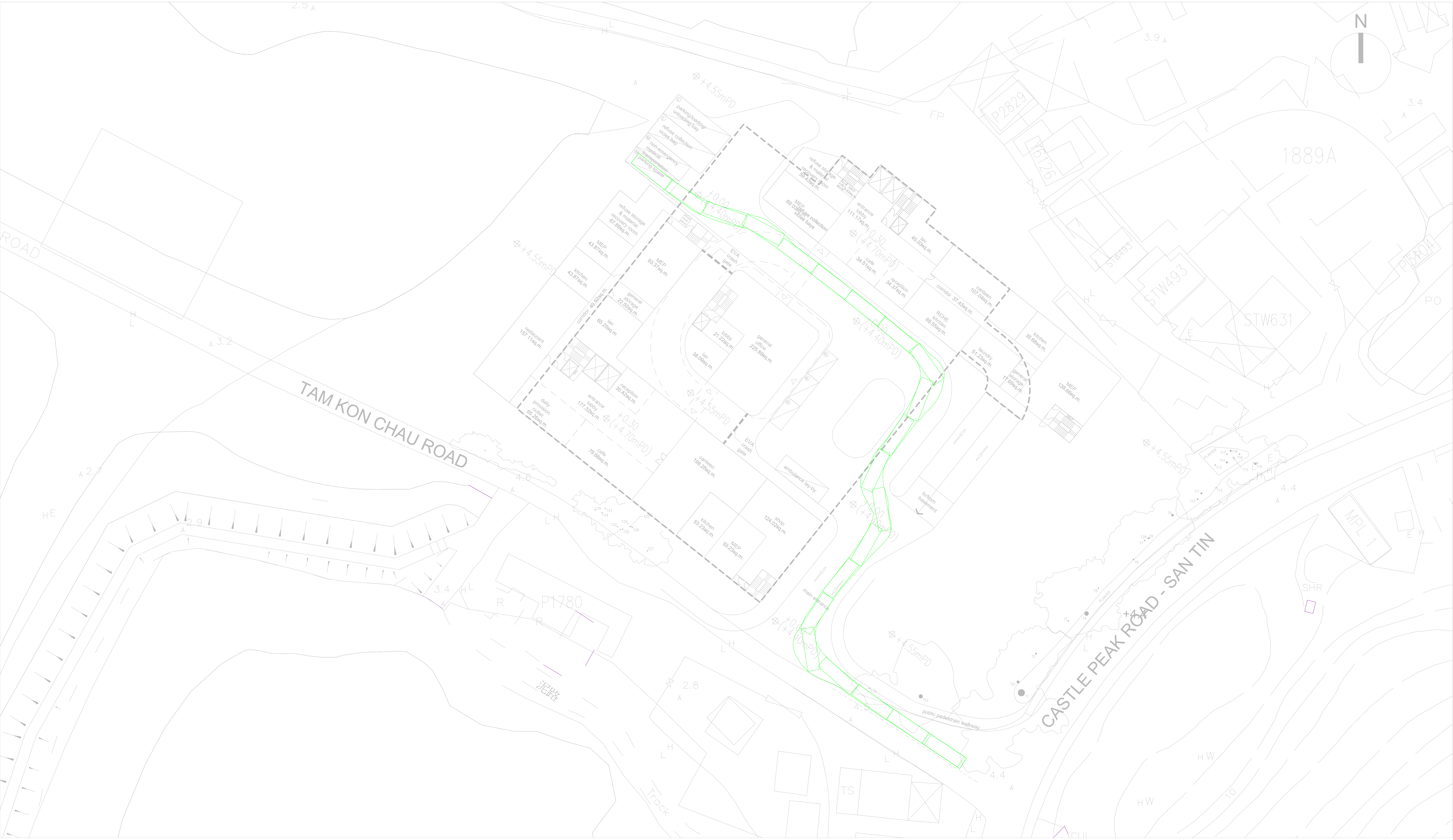
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
P2829
1889A
STW493
STW631
P1780
MPL 1
+4.55mPD
canteen
restaurant
kitchen
MEP
shop
cafe
reception
entrance lobby
general office
lav.
laundry
RCHE kitchen
general storage
ambulance lay-by
EVA crash gate
main entrance
public pedestrian walkway
Track
泥路

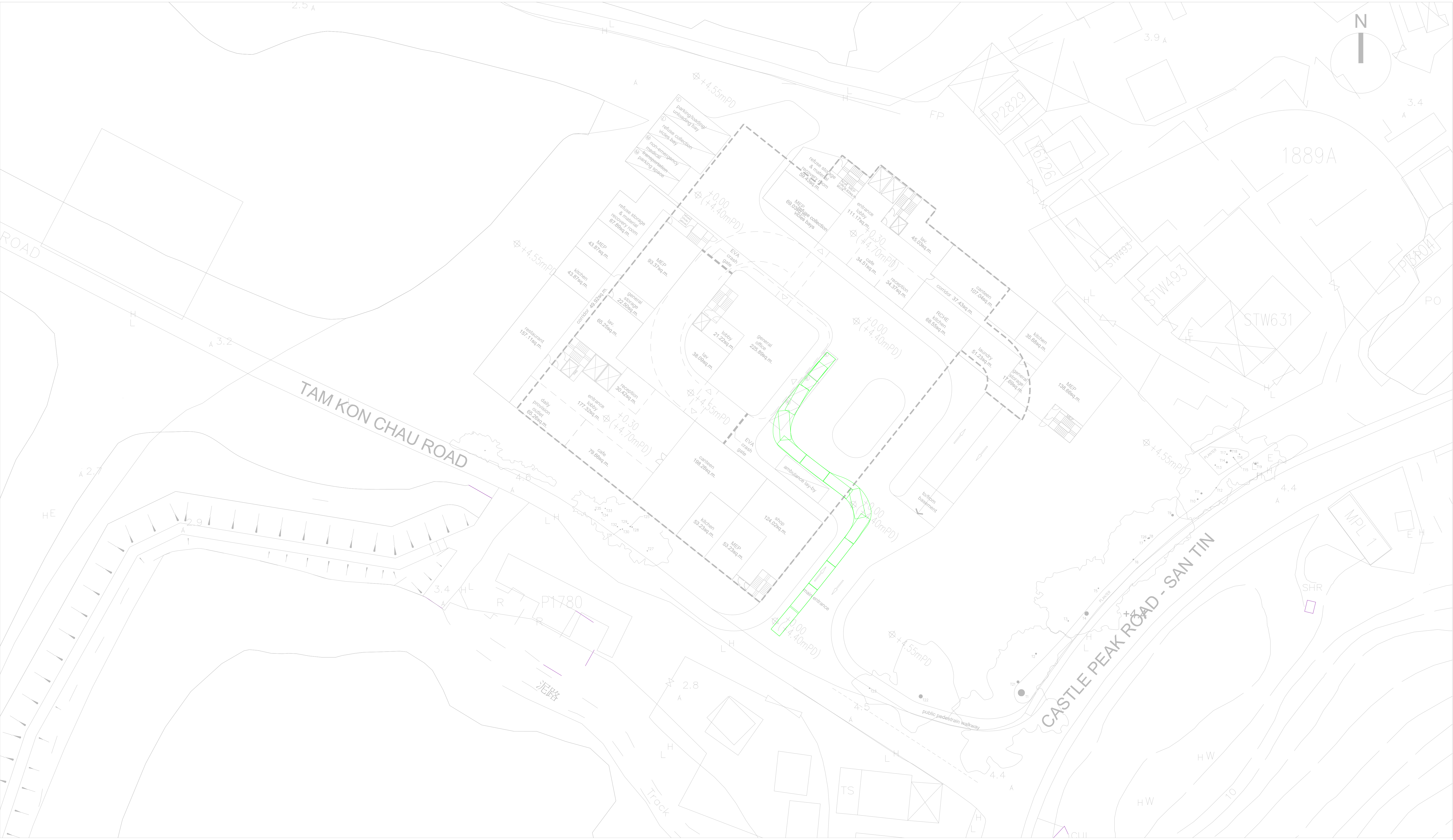


N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
1889A
STW631
STW493
P2829
P1780
MPL 1
+4.55mPD
+0.30 (+4.70mPD)
main entrance
public pedestrian walkway
ambulance lay-by
EVA crash gate
restaurant 157.11sq.m.
canteen 198.28sq.m.
shop 124.02sq.m.
kitchen 53.23sq.m.
MEP 53.23sq.m.
cafe 79.68sq.m.
entrance lobby 177.32sq.m.
general office 225.89sq.m.
MEP 138.68sq.m.
Track


N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
1889A
P2829
STW493
STW631
P1780
MPL 1
+4.55mPD
+0.30 (+4.70mPD)
+0.00 (+4.40mPD)
main entrance
public pedestrian walkway
ambulance lay-by
EVA crash gate
general office 225.89sq.m.
canteen 198.28sq.m.
shop 124.02sq.m.
restaurant 157.11sq.m.
cafe 79.68sq.m.
Track
SHR
TS



N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
P1780
1889A
STW631
STW493
P2829
public pedestrian walkway
main entrance
ambulance lay-by


N
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
ROAD
P2829
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STW493
STW631
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泥路
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TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
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1889A
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泥路
Track
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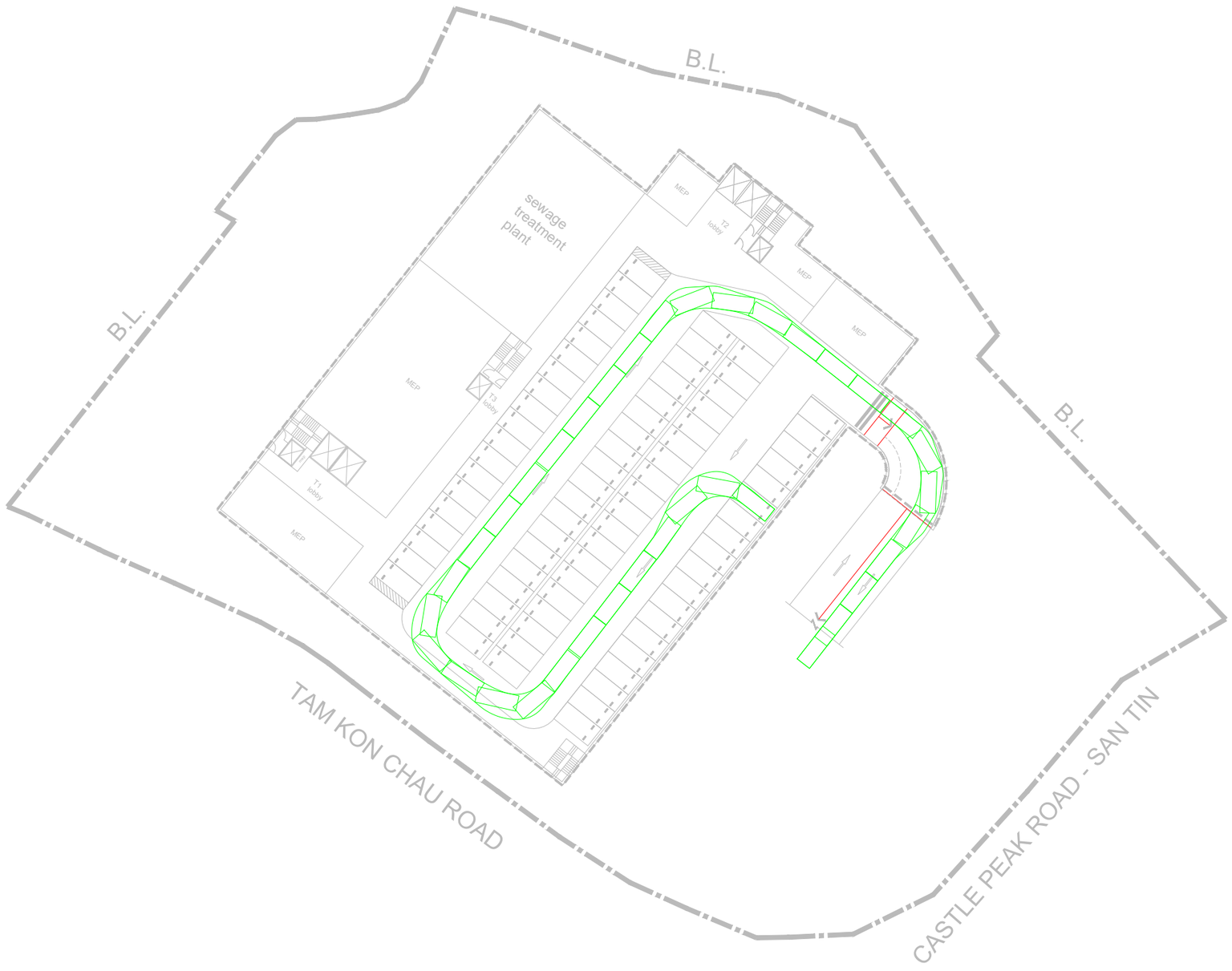
main entrance
ambulance lay-by
EVA crash gate
+4.55mPD


TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN
N
P2829
P1780
1889A
STW493
STW631
MPL 1
SHR
PO
FP
泥路
Track
+4.55mPD
+0.00
(+4.40mPD)
+0.30
(+4.70mPD)
parking/loading/unloading bay
refuse collection vehicle bay
non-emergency ambulance parking space
refuse storage & material recovery room
MEP
entrance lobby
lay.
café
reception
canteen
corridor
RCHE kitchen
laundry
kitchen
general office
lobby
daily provision outlet
EVA crash gate
ambulance lay-by
kitchen
shop
public pedestrain walkway
PLANTER
TS
CUL
HW


N
B.L.
B.L.
B.L.
sewage treatment plant
MEP
T2 lobby
MEP
MEP
T3 lobby
T1 lobby
MEP
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN


N
B.L.
B.L.
B.L.
sewage treatment plant
MEP
T2 lobby
MEP
MEP
T3 lobby
T1 lobby
MEP
TAM KON CHAU ROAD
CASTLE PEAK ROAD - SAN TIN