# Appendix 3

## Traffic Impact Assessment (TIA)

# Proposed Social Welfare Facilities
# (Residential Care Home for the Elderly (RCHE))
# in “Village Type Development” Zone,
# Lots 3670 RP (Part), 3671 RP (Part),
# 3672 RP (Part), 3673 RP (Part)
# and adjoining Government Land in D.D.104,
# Nam Sang Wai, Yuen Long

Traffic Impact Assessment
Final Report
May 2025

Prepared by: [redacted]

# Proposed Social Welfare Facilities (Residential Care Home for the Elderly (RCHE)) in “Village Type Development” Zone, Lots 3670 RP (Part), 3671 RP (Part),3672 RP (Part), 3673 RP (Part) and adjoining Government Land in D.D.104,Nam Sang Wai, Yuen Long

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# Proposed Social Welfare Facilities (Residential Care Home for the Elderly (RCHE)) in "Village Type Development" Zone, Lots 3670 RP (Part), 3671 RP (Part),3672 RP (Part), 3673 RP (Part) and adjoining Government Land in D.D.104,Nam Sang Wai, Yuen Long

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# 1.0 INTRODUCTION

## Background

1.1 The Subject Site is located at lots 3670 RP (Part), 3671 RP (Part), 3672 RP (Part), 3673 RP (Part) and adjoining Government Land in D.D.104, Nam Sang Wai, Yuen Long. The location of the Subject Site is shown in Figure 1.1.

1.2 The owner has the intention to develop the Subject Site into a Residential Care Home for the Elderly with no more than 240 beds (the “Proposed RCHE”).

1.3 Against this background, CKM Asia Limited, a traffic and transportation planning consultancy firm, was commissioned to conduct a Traffic Impact Assessment (“TIA”) in support of the Proposed RCHE. The report presents the findings and recommendations of the TIA for the Proposed RCHE.

## Scope of the Assessment

1.4 The main objectives of this TIA are as follows:

- To assess the existing traffic issues in the vicinity of the Subject Site;
- To quantify the amount of traffic generated by the Proposed RCHE; and
- To examine the traffic impact on the local road network in the vicinity of the Subject Site.

## Contents of the Report

1.5 After this introduction, the remaining chapters contain the following:

Chapter Two - describes the existing situation;
Chapter Three - outlines the development proposal;
Chapter Four - presents the traffic impact analysis; and
Chapter Five - summarises the overall conclusion

# 2.0 THE EXISTING SITUATION

## The Subject Site

2.1 The Subject Site is located to the immediate north of Kam Pok Road East. At present, the Subject Site has no vehicular access.

## Existing Road Network

2.2 Kam Pok Road East is a local distributor, and it is of single carriageway 2-lane standard. It connects with Kam Pok Road to the west and Castle Peak Road – Tam Mi to the east.

2.3 Castle Peak Road – Tam Mi is a rural road, and it is of single carriageway2-lane standard. It connects with The Fairview Park Roundabout to the north and Kam Pok Road East to the south.

## Traffic Survey

2.4 To quantify the traffic flows at the junctions chosen for the capacity analysis, manual classified counts were conducted on Friday, 7th March 2025 during the AM and PM peak periods. The locations of the surveyed junctions are presented in Figure 2.1 and their layouts are shown in Figures 2.2 to 2.4.

2.5 The surveyed junctions include the following:

- J1: Kam Pok Road / Kam Pok Road East;
- J2: Castle Peak Road – Tam Mi / Kam Pok Road; and
- J3: The Fairview Park Roundabout

2.6 The counts were classified by vehicle type to enable traffic flows in passenger car units ("pcu") to be calculated. From the survey, the AM and PM peak hours were found to be between 0800 – 0900 and 1700 – 1800 hours respectively, and the existing AM and PM peak hour traffic flows are presented in Figure 2.5.

## Operational Performance of the Surveyed Junctions

2.7 The existing operational performance of the surveyed junctions is calculated based on the observed traffic counts and the analysis is undertaken using the methods outlined in Volume 2 of Transport Planning and Design Manual ("TPDM"). The existing operational performance of the junctions are summarised in Table 2.1 and the detailed calculations are found in Appendix 1.

TABLE 2.1 EXISTING JUNCTION OPERATIONAL PERFORMANCE

| Ref. | Junction | Type of Junction | Parameter(1) | AM Peak Hour | PM Peak Hour |
|---|---|---|---|---|---|
| J1 | Kam Pok Road / Kam Pok Road East | Priority | RFC | 0.31 | 0.22 |
| J2 | Castle Peak Road – Tam Mi / Kam Pok Road | Signal | RC | 24% | 38% |
| J3 | The Fairview Roundabout | Roundabout | RFC | 0.45 | 0.45 |

Notes: (1) RC – reserve capacity RFC – Ratio of Flow to Capacity

2.8 Table 2.1 shows that the junctions now operate with capacity.

## Public Transport Facilities

2.9 The Subject Site is located close to public transport services with franchised bus and public light bus routes operating in the vicinity. Details of the franchised bus and green minibus ("GMB") routes operating in the vicinity of the Subject Site are presented in Figure 2.6 and Table 2.2.

TABLE 2.2 FRANCHISED BUS AND GMB SERVICES OPERATING CLOSE TO THE SUBJECT SITE

| Route | Routing | Frequency (minutes) |
|---|---|---|
| KMB 76K | Long Ping Estate – Ching Ho Estate | 20 – 30 |
| KMB 268 | Sham Tseng – Kwun Tong (Tsui Ping North Estate) | 30 – 35 |
| CTB 976 | Sai Wan Ho – Lok Ma Chau (San Tin) | 6 per day |
| CTB 976A | Siu Sai Wan (Island Resort) – Lok Ma Chau (San Tin) | 2 per day |
| GMB 36 | Yuen Long (Fook Hong Street) – Tai Sang Wai Rural Office | 10 – 15 |
| GMB 37 | Yuen Long (Fook Hong Street) – Yau Tan Mei Village Office | 12 – 15 |
| GMB 38 | Yuen Long (Fook Hong Street) – Yau Tam Mei West | 10 – 15 |
| GMB 75 | Yuen Long (Fook Hong Street) – Lok Ma Chau Spur Line Public Transport Interchange | 7 – 9 |
| GMB 76 | Yuen Long (Fook Hong Street) – Siu Hum Tsuen | 15 – 20 |
| GMB 78 | Pat Heung Road (near Tai Lam Bus-Bus Interchange) – Lok Ma Chau (San Tin) Public Transport Interchange | 20 – 25 |

Note: KMB – Kowloon Motor Bus CTB – Citybus GMB – Green Minibus

## Trip Generation Rates for RCHE

2.10 In view that the TPDM does not have trip generation rates for RCHE, trip generation surveys were conducted at 3 RCHEs. Details of these RCHEs are found in Table 2.3, and survey results are presented in Table 2.4.

TABLE 2.3 DETAILS OF THE SURVEYED RCHEs

| Ref. | RCHE | Address | No. of beds | Distance from nearest MTR Station |
|---|---|---|---|---|
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 60 - 62 Tin Wan Street, Tin Wan | 392 | 2.8 km (Wong Chuk Hang Station) |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 16 Wah Fat Street, Tuen Mun | 260 | 2.2 km (Tuen Mun Station) |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 5 Sha Wan Drive, Pok Fu Lam, Hong Kong | 175 | 3.5km (Kennedy Town Station) |

TABLE 2.4 TRIP RATES OF THE SURVEYED RCHEs

| Ref. | RCHE | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | IN | OUT | IN | OUT |
| Traffic Generation (pcu/hr) | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 6 | 3 | 4 | 6 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 9 | 6 | 7 | 13 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 6 | 2 | 3 | 7 |
| Trip Rates (pcu/hour/ bed) | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 0.0153 | 0.0077 | 0.0102 | 0.0153 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 0.0346 | 0.0231 | 0.0269 | 0.0500 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 0.0343 | 0.0114 | 0.0171 | 0.0400 |
| | Adopted (maximum rates) = | 0.0346 | 0.0231 | 0.0269 | 0.0500 |

Pedestrian Generation Rates for RCHE

2.11 In view that the TPDM does not have pedestrian generation rates for RCHE, pedestrian generation surveys were also conducted at the 3 RCHEs found in Table 2.3. The survey results are presented in Table 2.5.

TABLE 2.5 PEDESTRIAN TRIP RATES OF THE SURVEYED RCHEs

| Ref. | RCHE | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | IN | OUT | IN | OUT |
| Pedestrian Generation (pedestrian/15 min) | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 16 | 7 | 5 | 18 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 16 | 5 | 3 | 17 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 9 | 2 | 1 | 7 |
| Pedestrian Generation Rates (pedestrian/15 min/bed) | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 0.0408 | 0.0179 | 0.0128 | 0.0459 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 0.0615 | 0.0192 | 0.0115 | 0.0654 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 0.0514 | 0.0114 | 0.0057 | 0.0400 |
| | Adopted (maximum rates) = | 0.0615 | 0.0192 | 0.0128 | 0.0654 |

Utilisation of Surveyed Bus Stops

2.12 An utilisation survey was conducted during the AM and PM peak periods at Tai Sang Wai (towards San Tin) and Long Ha (towards Yuen Long) bus stops and the results are presented in Tables 2.6 and 2.7 respectively.

TABLE 2.6 RESULTS OF THE UTILISATION SURVEY AT TAI SANG WAI (TOWARDS SAN TIN) BUS STOP

| Route[1] | No. of Vehicle | No. of Passengers on-board[2] [a] | Capacity[3] [b] | Vacancy [b] – [a] | Occupancy [a] / [b] |
|---|---|---|---|---|---|
| AM Peak | | | | | |
| KMB 76K | 3 | 146 | 384 | 238 | 38.0% |
| KMB 268 | 2 | 14 | 124 | 110 | 11.3% |
| GMB 37 | 5 | 65 | 86 | 21 | 75.6% |
| GMB 38 | 6 | 77 | 102 | 25 | 75.5% |
| GMB 75 | 3 | 27 | 51 | 24 | 52.9% |
| GMB 76 | 2 | 15 | 32 | 17 | 46.9% |
| GMB 78 | 2 | 12 | 38 | 26 | 31.6% |
| Total | 23 | 356 | 817 | 461 | 43.6% |
| PM Peak | | | | | |
| KMB 76K | 3 | 154 | 384 | 230 | 40.1% |
| KMB 268 | 2 | 14 | 124 | 110 | 11.3% |
| GMB 37 | 7 | 93 | 118 | 25 | 78.8% |
| GMB 38 | 9 | 95 | 147 | 52 | 64.6% |
| GMB 75 | 3 | 36 | 48 | 12 | 75.0% |
| GMB 76 | 1 | 10 | 19 | 9 | 52.6% |
| GMB 78 | 2 | 12 | 38 | 26 | 31.6% |
| Total | 27 | 414 | 878 | 464 | 47.2% |

Note: (1) KMB – Kowloon Motor Bus GMB – Green Minibus
(2) Passengers counted the moment before the vehicles departed from the bus stop
(3) Assumed capacities: Double-decker = 128, Single-decker = 62

TABLE 2.7 RESULTS OF THE UTILISATION SURVEY AT LONG HA (TOWARDS YUEN LONG) BUS STOP

| Route[1] | No. of Vehicle | No. of Passengers on-board[2] [a] | Capacity[3] [b] | Vacancy [b] – [a] | Occupancy [a] / [b] |
|---|---|---|---|---|---|
| AM Peak | | | | | |
| KMB 76K | 3 | 89 | 384 | 295 | 23.2% |
| KMB 268 | 2 | 14 | 124 | 110 | 11.3% |
| GMB 37 | 6 | 71 | 99 | 28 | 71.7% |
| GMB 38 | 2 | 22 | 32 | 10 | 68.8% |
| GMB 75 | 2 | 83 | 102 | 19 | 81.4% |
| GMB 76 | 2 | 16 | 32 | 16 | 50.0% |
| Total | 17 | 295 | 773 | 478 | 38.2% |
| PM Peak | | | | | |
| KMB 76K | 2 | 70 | 256 | 186 | 27.3% |
| KMB 268 | 3 | 21 | 186 | 165 | 11.3% |
| GMB 37 | 5 | 46 | 86 | 40 | 53.5% |
| GMB 38 | 4 | 40 | 67 | 27 | 59.7% |
| GMB 75 | 3 | 38 | 48 | 10 | 79.2% |
| GMB 76 | 2 | 33 | 51 | 18 | 64.7% |
| Total | 19 | 248 | 694 | 446 | 35.7% |

Note: (1) KMB – Kowloon Motor Bus GMB – Green Minibus
(2) Passengers counted the moment before the vehicles departed from the bus stop
(3) Assumed capacities: Double-decker = 128, Single-decker = 62

2.13 Table 2.6 shows that the utilisation of the franchised buses at Tai Sang Wai (towards San Tin) bus stop is 43.6% during the AM Peak Hour and 47.2% during the PM Peak Hour. Whilst, Table 2.7 shows that the utilisation of the franchised buses at Long Ha (towards Yuen Long)) bus stop is 38.2% during the AM Peak Hour and 35.7% during the PM Peak Hour.

# 3.0 THE PROPOSED RCHE

## Proposed RCHE

3.1 The Proposed RCHE consists of 1 building block with no more than 240 beds and is targeted for completion by 2030. The vehicular assess of Proposed RCHE is provided at Kam Pok Road East.

## Provision of Internal Transport Facilities

3.2 The HKPSG has no recommendation on the provision of internal transport facilities for RCHE, hence, reference is made to the 3 RCHEs listed in Table 2.3. The internal transport facilities provision rate derived from the 3 RCHEs are found in Table 3.1.

TABLE 3.1 INTERNAL TRANSPORT FACILITIES PROVIDED IN SURVEYED RCHEs

| Ref. | RCHE | No. of beds | Internal Transport Facilities | | |
|---|---|---|---|---|---|
| | | | Car | Light Bus / Ambulance | LGV |
| Parking Provision | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 392 | 8 | 0 | 1 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 260 | 5 | 1 | 0 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 175 | 8 | 0 | 0 |
| Provision rate (space / bed) | | | | | |
| 1 | The Hong Kong Society for the Aged Bradbury Home for the Elderly and Quan Chuen Home for the Elderly | 392 | 0.020 | 0.000 | 0.003 |
| 2 | Caritas Li Ka Shing Care and Attention Home, Tuen Mun | 260 | 0.019 | 0.004 | 0.000 |
| 3 | Chuk Lam Ming Tong Care and Attention Home for the Aged | 175 | 0.045 | 0.000 | 0.000 |
| Adopted provision rate = | | | 0.045 | 0.004 | 0.003 |

3.3 Based on the adopted provision rate in Table 3.1, the calculated internal transport facilities for the Proposed RCHE are presented in Table 3.2.

TABLE 3.2 PROVISION OF INTERNAL TRANSPORT FACILITIES THE FOR PROPOSED RCHE

| Use | No. of beds | Internal Transport facilities | Provision | Dimensions |
|---|---|---|---|---|
| RCHE | 240 | Car Parking Space | 11 | 10 @ 5m (L) x 2.5m (W) x 2.4m (H)<br>1 @ 5m (L) x 3.5m (W) x 2.4m (H) for persons with disabilities |
| | | LGV loading / unloading bay | 1 | 1 @ 7m (L) x 3.5m (W) x 3.6m (H) |
| | | Light Bus / Ambulance Parking Space | 1 | 1 @ 9m (L) x 3.0m (W) x 3.3m (H) |

3.4 The carpark layout plans for G/F and B/F are shown in Figures 3.1 – 3.2.

Swept Path Analysis

3.5 The CAD-based swept path analysis program, Autodesk Vehicle Tracking, was used to check the ease of vehicle manoeuvring. Vehicles are found to have no manoeuvring problems and all vehicles could enter and leave the spaces with ease. The swept path analysis drawings for critical movements are found in Appendix 2.

# 4.0 TRAFFIC IMPACT

## Design Year

4.1 The Proposed RCHE is expected to be completed by 2030, and the design year adopted for the capacity analysis is 2033, i.e. 3 years after the completion of the Proposed RCHE.

## Traffic Forecasting

4.2 The 2033 traffic flows used for the junction analysis are produced with reference to the following:

(i) 2031 traffic flows derived based on the NTW1 Base District Traffic Model ("BDTM");
(ii) estimated traffic growth from 2031 to 2033 based on the higher of: (a) Hong Kong Population Projections 2022 – 2046, published by Census and Statistics Department, or (b) historic Annual Average Daily Traffic ("AADT") produced by Transport Department;
(iii) the other developments in the vicinity of the Proposed RCHE; and
(iv) Traffic generated by the Proposed RCHE.

4.3 The (ii) estimated traffic growth from 2031 to 2033, (iii) the other development in the vicinity of the Proposed RCHE and (iv) traffic generated by the Proposed RCHE are presented in the paragraphs below.

## Estimated Growth Rate from 2031 to 2033

4.4 The (a) Hong Kong Population Projections 2022 – 2046, and (b) historic AADT are summarised in Tables 4.1 – 4.2 respectively.

TABLE 4.1 HONG KONG POPULATION PROJECTIONS 2022 – 2046

| Whole Territory Population | | Annual Growth Rate |
|---|---|---|
| Year 2031 | Year 2033 | 2031 to 2033 |
| 7,820,200 | 7,903,600 | 0.53% |

TABLE 4.2 AADT OF THE STATION IN THE VICINITY OF THE SUBJECT SITE

| Year \ Station | 5016 | 5019 | 5257 | 5297 | 5505 | 5508 | 5496 | Overall |
|---|---|---|---|---|---|---|---|---|
| 2013 | 90,610 | 34,530 | 12,620 | 8,220 | 9,030 | 68,040 | 35,980 | 259,030 |
| 2014 | 88,800 | 36,490 | 10,600 | 6,200 | 11,990 | 72,580 | 30,750 | 257,410 |
| 2015 | 86,180 | 34,380 | 10,510 | 6,140 | 12,090 | 85,910 | 27,750 | 262,960 |
| 2016 | 92,230 | 31,990 | 10,940 | 6,400 | 12,590 | 90,760 | 28,900 | 273,810 |
| 2017 | 90,650 | 30,040 | 10,770 | 6,300 | 12,390 | 90,110 | 28,450 | 268,710 |
| 2018 | 86,230 | 29,300 | 11,980 | 8,540 | 12,700 | 92,980 | 29,150 | 270,880 |
| 2019 | 90,860 | 30,160 | 11,910 | 7,530 | 13,330 | 80,460 | 26,970 | 261,220 |
| 2020 | 81,870 | 27,640 | 11,420 | 7,220 | 13,420 | 82,010 | 13,100 | 236,680 |
| 2021 | 86,620 | 29,600 | 11,880 | 7,510 | 13,960 | 86,000 | 13,630 | 249,200 |
| 2022 | 82,820 | 28,180 | 11,520 | 7,280 | 13,540 | 82,190 | 13,210 | 238,740 |
| 2023 | 88,760 | 55,700 | 10,740 | 10,960 | 13,860 | 87,340 | 13,520 | 280,880 |
| Average Annual Growth | | | | | | | | 0.81% |

Note: 5016 – San Tin Highway, Castle Peak Road & San Tam Road (From Kam Tin Road to Fairview Park Boulevard)
5019 – Castle Peak Road – Yuen Long (From Yuen Long On Lok Road to Kam Tin Road)
5257 – Castle Peak Road – Tam Mi, Mai Po & San Tin (From Fairview Park Boulevard to Lok Ma Chau Road)
5297 – San Tam Road (From Castle Peak Road – Mai Po to Fairview Park Boulevard Roundabout)
5505 – Sam Tam Road (From Fairview Park Boulevard RA to End)
5508 – San Tin Highway (From Fairview Park Boulevard to Lok Ma Chau Road)
5496 – San Sham Road (From San Tin Interchange to End of San Sham Road)

4.5 Table 4.1 shows that the annual growth rate from 2031 to 2033 is +0.53%. Table 4.2 shows that in the historic AADT of the stations between 2013 and 2023 in the vicinity has average annual growth rate of +0.81% per annum. To be conservative, the growth rate of +1.00% per annum is adopted for the traffic growth between 2031 and 2033.

Other Developments in the Vicinity of the Proposed RCHE

4.6 The major planned developments in the vicinity of the Proposed RCHE are summarized in Table 4.3, and are included in the traffic forecast.

TABLE 4.3 DETAILS OF MAJOR PLANNED DEVELOPMENTS

| Site | Address | Use | Development Parameter (Approx.) |
|---|---|---|---|
| 1 | TPB ref.: A/YL-KTN/663-1:<br>Lots 1783 (Part), 1784 RP, 1788 RP, 1789 RP, 1790 RP (Part), 1791 RP, 1795 (Part), 1796 (Part), 1797 (Part), 1836 (Part), 1927 S.A and 1927 RP (Part) in D.D. 107 and Adjoining Government Land, Kam Tin, Yuen Long | Residential | Around 1,154 flats |
| 2 | TPB ref.: A/YL-MP/205-1:<br>Lots 3054 S.A RP, 3098 RP (Part), 3108 (Part), 3109 (Part), 3100 (Part), 3110, 3111, 3112, 3113, 3114, 3115 RP, 3119 RP, 3122 RP, 3123, 3124, 3126, 3131 S.A, 3131 S.B, 3131 S.C, 3131 S.D, 3131 RP, 3132, 3138, 3146, 3147 RP (Part), 3148, 3150 RP, 3156 RP, 3158 RP, 3162, 3163, 3164 S.A, 3164 RP, 3167, 3168, 3171, 3173, 3176, 3177, 3178, 3179, 3180 RP, 3181 RP, 3182 RP, 3189 RP, 3190, 3191, 3192 RP, 3193RP and 3194 RP in D.D. 104 and Adjoining Government Land, Mai Po, Yuen Long, New Territories | Residential | Around 71 flats |
| 3 | TPB ref.: A/YL-MP/344:<br>Lots 50 S.A and 77 in D.D.101, Wo Shang Wai, Mai | Residential | Around 789 flats |

| Site | Address | Use | Development Parameter (Approx.) |
|---|---|---|---|
| | Po, Yuen Long | | |
| 4 | TPB ref.: A/YL-NTM/178:<br>Lots 435(Part), 436(Part), 438, 439, 442-444, 445(Part), 446-454, 456(Part), 457(Part), 459, 460, 461(Part), 462(Part), 463(Part), 464(Part), 465-474, 476, 478-483, 484(Part), 485, 486(Part), 492495(Part), 516-518, 520, 521(Part), 522(Part), 541(Part), 542(Part), 543-545, 547-552, 555, 556, 559, 560, 562, 563(Part), 564(Part), 572(Part), 573, 574, 575(Part), 576(Part) and Adjoining Government Land in DD 105, Shek Wu Wai, Ngau Tam Mei, Yuen Long | Residential | Around 322 flats |
| 5 | TPB ref.: A/YL-MP/341:<br>Various Lots in D.D. 104 and Adjoining Government Land, Yau Pok Road, Mai Po, Yuen Long | Residential | Around 2150 flats |
| 6 | TPB ref.: A/YL-MP/247:<br>Lots 3054 S.B RP and 3055 in D.D.104, near Yau Mei San Tsuen, Yuen Long | Residential | Around 105 flats |
| 7 | TPB ref.: A/YL-MP/287:<br>Lots 3207 RP, 3209 RP, 3220 RP, 3221 RP, 3224 RP, 3225 S.A RP, 3225 S.C RP, 3225 RP, 3226 S.A RP, 3226 RP, 3228, 3229, 3230 RP, 3250 S.B ss.21 RP, 3250 S.B ss.33 S.B, 3250 S.B ss.40 S.A RP, 3250 S.B ss.40 RP and 4658 RP in D.D. 104 and Adjoining Government Land, Mai Po, Yuen Long, New Territories | Residential | Around 65 flats |
| 8 | TPB ref.: Y/YL-NSW/4:<br>Lots 594, 595 (Part), 600 (Part) , 1288 S.B RP (Part), 1289 S.B RP (Part) and 1292 S.B RP (Part) in D.D. 115, Nam Sang Wai, Yuen Long | Residential | Around 57 flats |
| 9 | TPB ref.: A/YL-NSW/274:<br>Lots 592 S.C ss.1 S.A, 592 S.C ss.4 and 1252 S.C in D.D. 115, Tung Shing Lei, Yuen Long | Residential, Office and RCHE | Around 1518 flats,<br>office with 1800m$^2$ GFA and<br>RCHE with no more than 10 beds |
| 10 | TPB ref.: A/YL-NSW/314:<br>Various lots in D.D.104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories | Residential | Around 90 flats |

### Traffic Generated by the Proposed RCHE

4.7 Traffic generation associated with the Proposed RCHE is calculated based on results presented in Table 2.4, and the calculation is presented in Table 4.4.

TABLE 4.4 TRAFFIC GENERATION OF THE PROPOSED RCHE

| Item | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | 2-way | In | Out | 2-way |
| Trip Generation Rates for RCHE (pcu/hour/bed) in Table 2.4 | | | | | | |
| RCHE | 0.0346 | 0.0231 | NA | 0.0269 | 0.0500 | NA |
| Traffic Generation of Proposed RCHE (pcu/hour) | | | | | | |
| RCHE: 240 beds | 9 | 6 | 15 | 7 | 12 | 19 |

4.8 Table 4.4 shows that the total 2-way traffic generated by the Proposed Development is only 14 and 17 pcu/hour (2-way) during the AM and PM peak hours respectively.

2033 Traffic Flows

4.9 Year 2033 traffic flows for the following cases are derived:

| | |
|---|---|
| 2033 without the Proposed RCHE [A] | = (i) 2031 traffic flows derived with reference to BDTM + (ii) estimated total growth from 2031 to 2033 + (iii) Other Developments in the Vicinity of the Proposed RCHE |
| 2033 with the Proposed RCHE [B] | = [A] + (iv) traffic generated by the Proposed RCHE (Table 4.4) |

4.10 The 2033 peak hour traffic flows for the cases without and with the Proposed RCHE, are shown in Figures 4.1 - 4.2, respectively.

2033 Junction Operational Performance

4.11 Year 2033 capacity analysis for the cases without and with the Proposed RCHE are summarised in Table 4.5 and detailed calculations are found in the Appendix 1.

TABLE 4.5 2033 JUNCTION OPERATIONAL PERFORMANCE

| Ref. | Junction | Type of Junction / Parameter(1) | Without the Proposed RCHE | | With the Proposed RCHE | |
|---|---|---|---|---|---|---|
| | | | AM Peak | PM Peak | AM Peak | PM Peak |
| J1 | Kam Pok Road / Kam Pok Road East | Priority / RFC | 0.34 | 0.24 | 0.34 | 0.24 |
| J2(2) | Castle Peak Road – Tam Mi / Kam Pok Road | Signal / RC | 26% | 34% | 25% | 33% |
| J3 | The Fairview Roundabout | Roundabout / RFC | 0.66 | 0.71 | 0.66 | 0.72 |

Notes: (1) RC – reserve capacity RFC – Ratio of Flow to Capacity
(2) Cycle time increased from 94s to 120s as proposed by the approved A/YL-NSW/314

4.12 Table 4.5 shows that the junctions operate with capacities during the AM and PM peak hours for the cases without and with the Proposed RCHE.

Impact on Utilisation of Surveyed bus stops

4.13 To be conservative, it is assumed that all pedestrians generated by the Proposed RCHE will use public transport services. The number of public transport passengers generated by the Proposed RCHE is calculated based on the pedestrian generation of the Proposed RCHE, as presented in Table 2.5, and the calculation is found in Table 4.6.

TABLE 4.6 PUBLIC TRANSPORT PASSENGERS GENERATED BY THE PROPOSED RCHE

| Item | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | 2-way | In | Out | 2-way |
| Pedestrian Generation Rates for RCHE (pedestrian/15 min/bed) in Table 2.5 | | | | | | |
| RCHE | 0.0615 | 0.0192 | NA | 0.0128 | 0.0654 | NA |
| Pedestrian Generation of Proposed RCHE (pedestrian/15 min) | | | | | | |
| RCHE: 240 beds | 15 | 5 | 20 | 4 | 16 | 20 |
| Pedestrian Generation of Proposed RCHE (pedestrian/1 hour) | | | | | | |
| RCHE: 240 beds | 60 | 20 | 80 | 16 | 64 | 80 |

4.14 The public transport utilisation analysis is presented in Table 4.7.

TABLE 4.7 THE UTILISATION OF THE PUBLIC TRANSPORT SERVICES FOR THE CASE WITH THE PROPOSED RCHE

| No. | Location | Occupancy of Public Transport Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| 1 | Tai Sang Wai (towards San Tin) Bus Stop | 48.5% | 51.7% |
| 2 | Long Ha (towards Yuen Long) Bus Stop | 43.3% | 41.5% |

4.15 Table 4.7 shows that the public transport service have capacity to accommodate the passenger demand generated by the Proposed RCHE.

# 5.0 CONCLUSION

5.1 The Subject Site is located at lots 3670 RP (Part), 3671 RP (Part), 3672 RP (Part), 3673 RP (Part) and adjoining Government Land in D.D.104, Nam Sang Wai, Yuen Long. The owner has the intention to develop the Subject Site into a RCHE with no more than 240 beds.

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

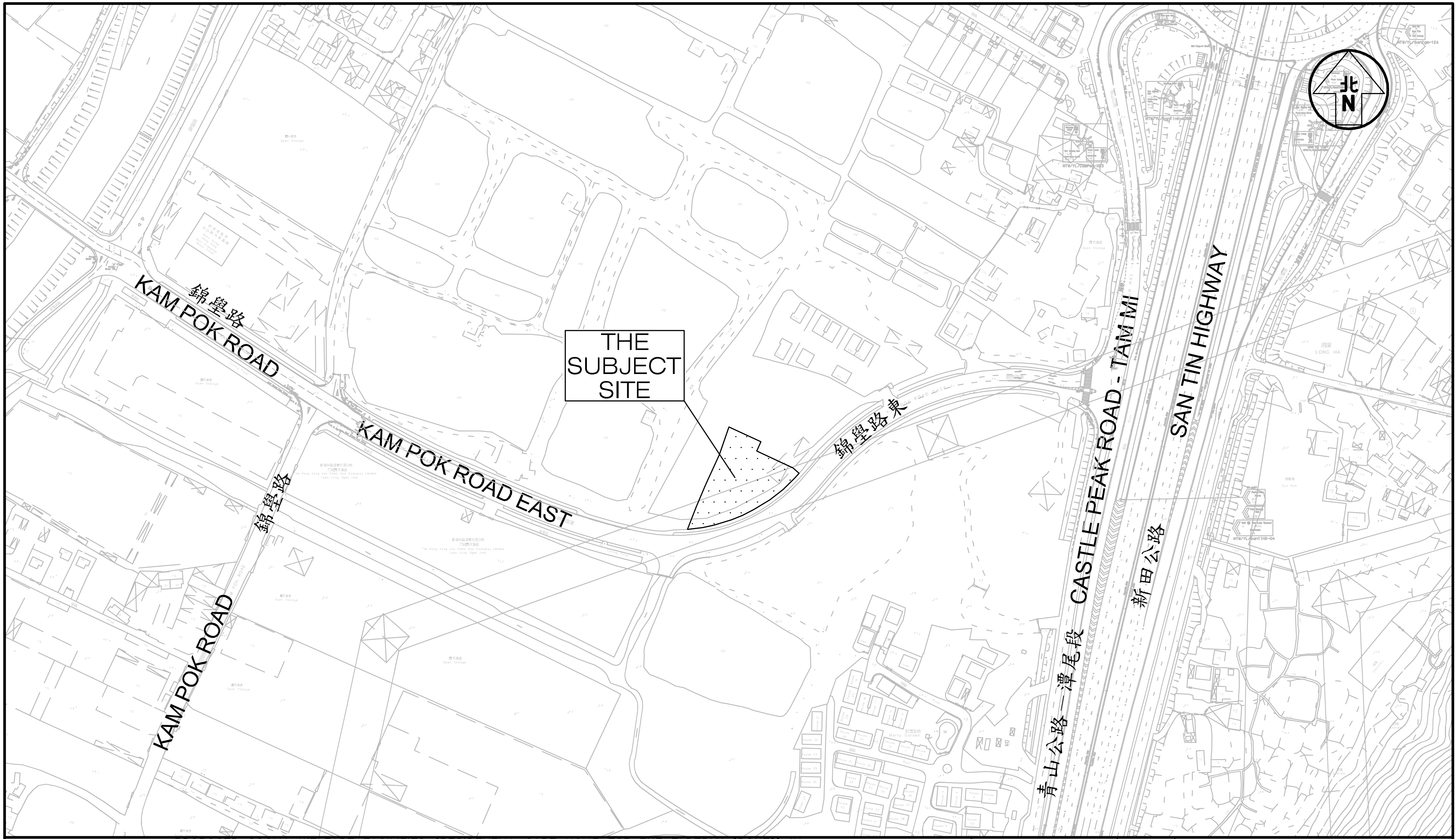
5.3 The internal transport facilities for the Proposed RCHE are provided based on the operational needs with the reference to 3 surveyed RCHEs.

5.4 The Proposed RCHE is expected to be completed by 2030, and the junction capacity analysis is undertaken for year 2033. For the design year 2033, the junctions analysed are expected to operate with capacities during the peak hours for the case without and with the Proposed RCHE.

5.5 The public transport services at 2 surveyed bus stops have capacity to accommodate the passenger demand generated by the Proposed RCHE.

5.6 It is concluded that the Proposed RCHE will result in no adverse traffic impact to the surrounding road network. From traffic engineering grounds, the Proposed RCHE is acceptable.

# Figures


THE SUBJECT SITE
錦壆路
KAM POK ROAD
KAM POK ROAD EAST
錦壆路東
錦壆路
KAM POK ROAD
CASTLE PEAK ROAD - TAM MI
青山公路－潭尾段
SAN TIN HIGHWAY
新田公路
北
N

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART), 3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104, NAM SANG WAI, YUEN LONG
J7401

Figure Title

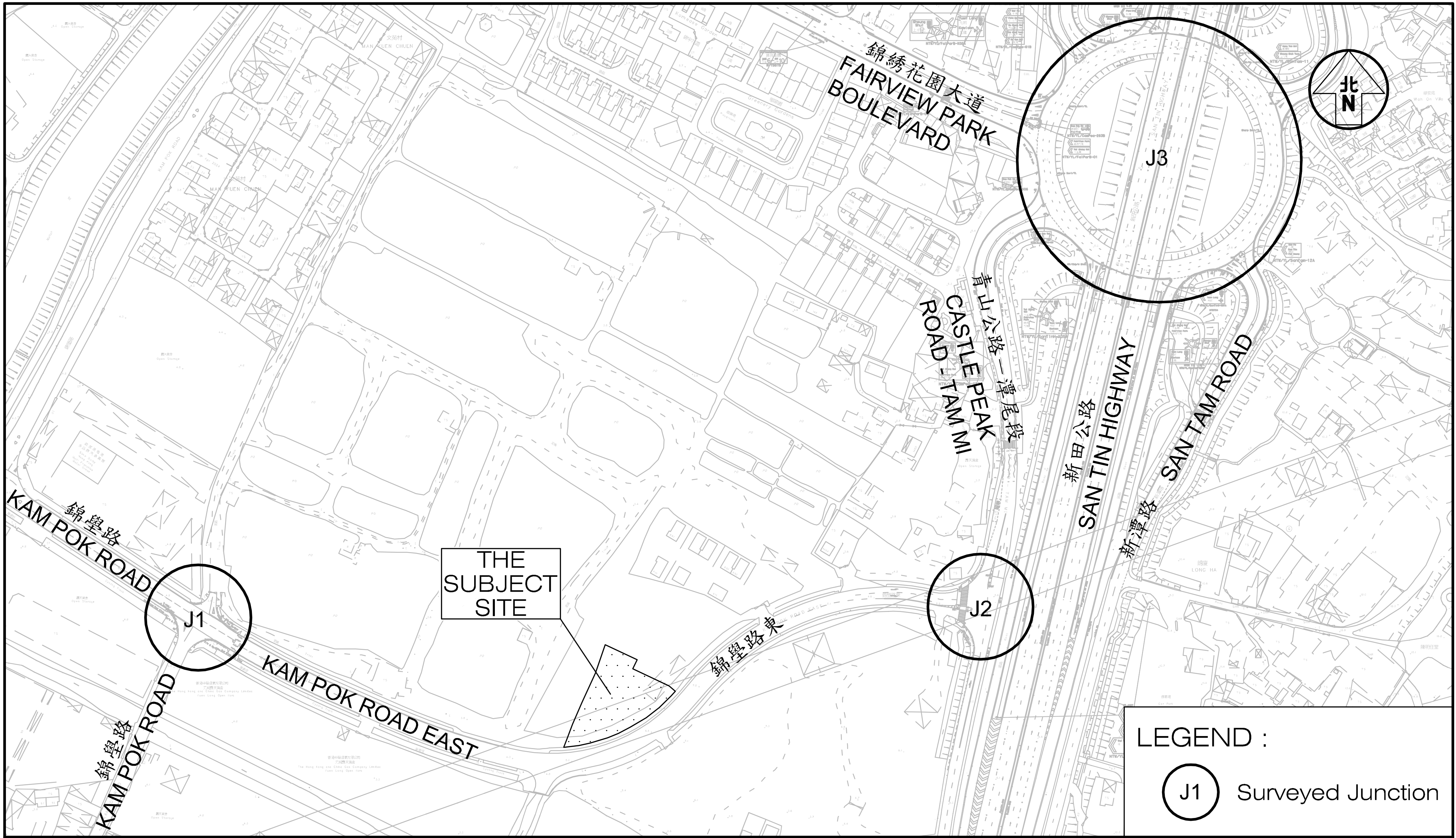
LOCATION OF SUBJECT SITE

Figure No. 1.1
Revision A

**CKM Asia Limited**
[redacted]

Designed by L C H
Drawn by N C M
Checked by K C
Scale in A4 1 : 3000
Date 26 MAY 2025

T:\JOB\J7400-J7449\J7401\2025 05\Fig 1.1 RevA.dwg


錦綉花園大道
FAIRVIEW PARK BOULEVARD
J3
北
N
青山公路－潭尾段
CASTLE PEAK ROAD - TAM MI
新田公路
SAN TIN HIGHWAY
新潭路
SAN TAM ROAD
錦壆路
KAM POK ROAD
J1
THE SUBJECT SITE
J2
錦壆路東
KAM POK ROAD EAST
錦壆路
KAM POK ROAD
LEGEND :
J1
Surveyed Junction

Project Title

PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG

J7401

Figure No. 2.1

Revision A

**CKM Asia Limited**

[redacted]

Figure Title

LOCATION OF SURVEYED JUNCTIONS

Designed by L C H

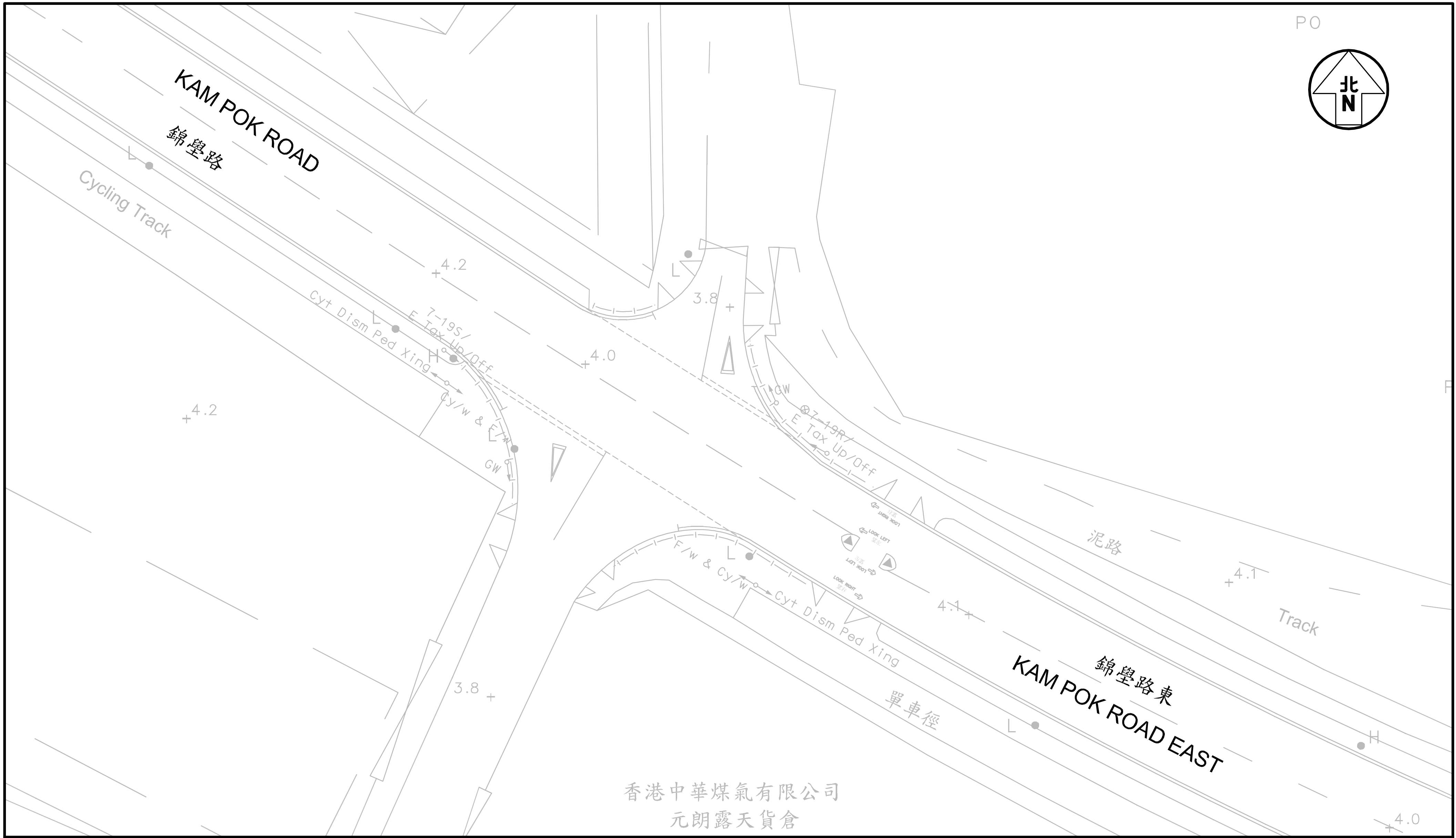
Drawn by N C M

Checked by K C

Scale in A4 1 : 3000

Date 26 MAY 2025

T:\JOB\J7400-J7449\J7401\2025 05\Fig 2.1 RevA.dwg


KAM POK ROAD
錦壆路
Cycling Track
PO
北
N
L
H
4.2
3.8
4.0
4.1
4.0
7-19S/
E Tax Up/Off
Cyt Dism Ped Xing
Cy/w & F/w
GW
7-19R/
E Tax Up/Off
LOOK RIGHT
LOOK LEFT
F/w & Cy/w
Cyt Dism Ped Xing
泥路
Track
錦壆路東
KAM POK ROAD EAST
單車徑
香港中華煤氣有限公司
元朗露天貨倉

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG

J7401

Figure Title

# EXISTING JUNCTION LAYOUT OF KAM POK ROAD / KAM POK ROAD EAST

| Figure No. | Revision |
|---|---|
| 2.2 | A |

| Designed by | Drawn by | Checked by |
|---|---|---|
| L C H | N C M | K C |

| Scale in A4 | Date |
|---|---|
| 1 : 500 | 26 MAY 2025 |

**CKM Asia Limited**

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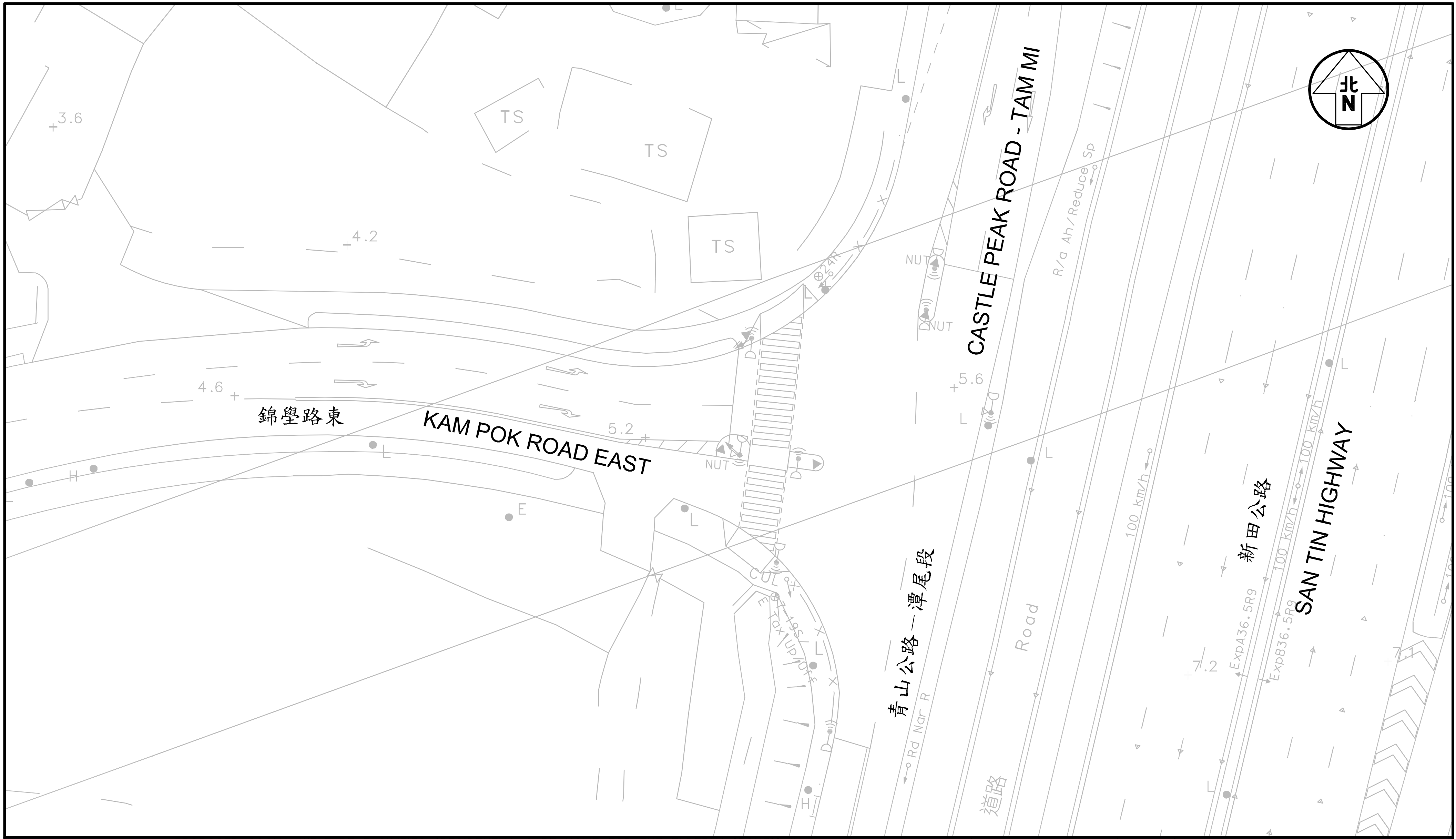
北 N
TS
TS
TS
3.6
4.2
4.6
5.2
5.6
7.2
錦壆路東
KAM POK ROAD EAST
CASTLE PEAK ROAD - TAM MI
青山公路－潭尾段
SAN TIN HIGHWAY
新田公路
NUT
NUT
NUT
CUL
Taxi Up/Off
R/a Ah/Reduce Sp
Rd Nar R
Road
道路
100 km/h
100 km/h
100 km/h
100 km/h
ExpA36.5R9
ExpB36.5R9

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG
J7401

Figure No.
2.3

Revision
A

CKM Asia Limited

[redacted]

Figure Title

## EXISTING JUNCTION LAYOUT OF
## CASTLE PEAK ROAD –TAM MI / KAM POK ROAD

Designed by
L C H

Drawn by
N C M

Checked by
K C

Scale in A4
1 : 500

Date
26 MAY 2025

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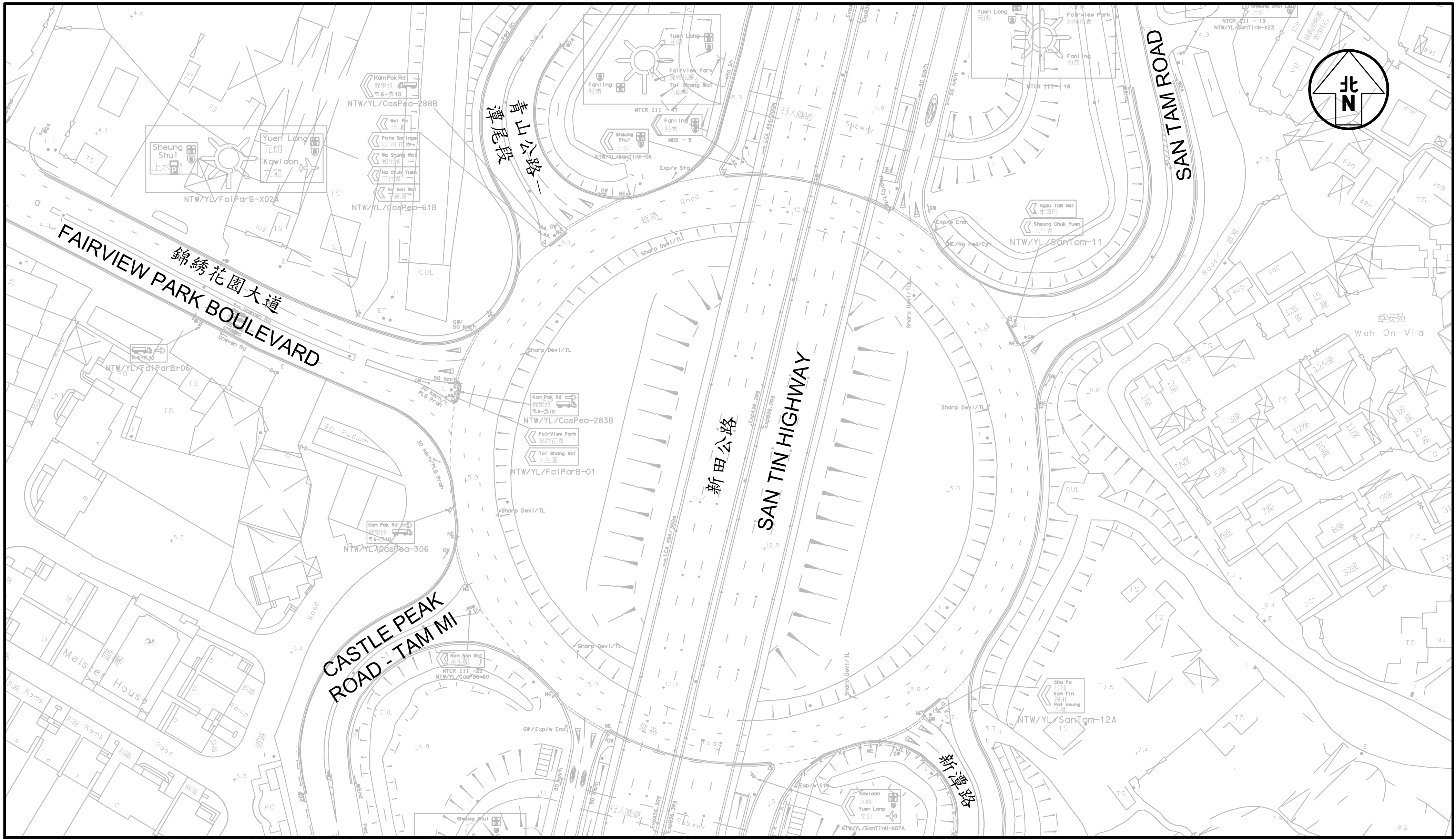
北
N
FAIRVIEW PARK BOULEVARD
錦綉花園大道
青山公路 — 潭尾段
SAN TIN HIGHWAY
新田公路
SAN TAM ROAD
CASTLE PEAK ROAD - TAM MI
新潭路
華安苑
Wah On Villa

| | | | |
|---|---|---|---|
| Project Title | PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN "VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART) AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG | J7401 | |
| Figure No. | 2.4 | Revision | A |
| Designed by | L C H | Drawn by | N C M |
| Checked by | K C | | |
| Scale in A4 | 1 : 1250 | Date | 26 MAY 2025 |

Figure Title

## EXISTING JUNCTION LAYOUT OF THE FAIRVIEW PARK ROUNDABOUT

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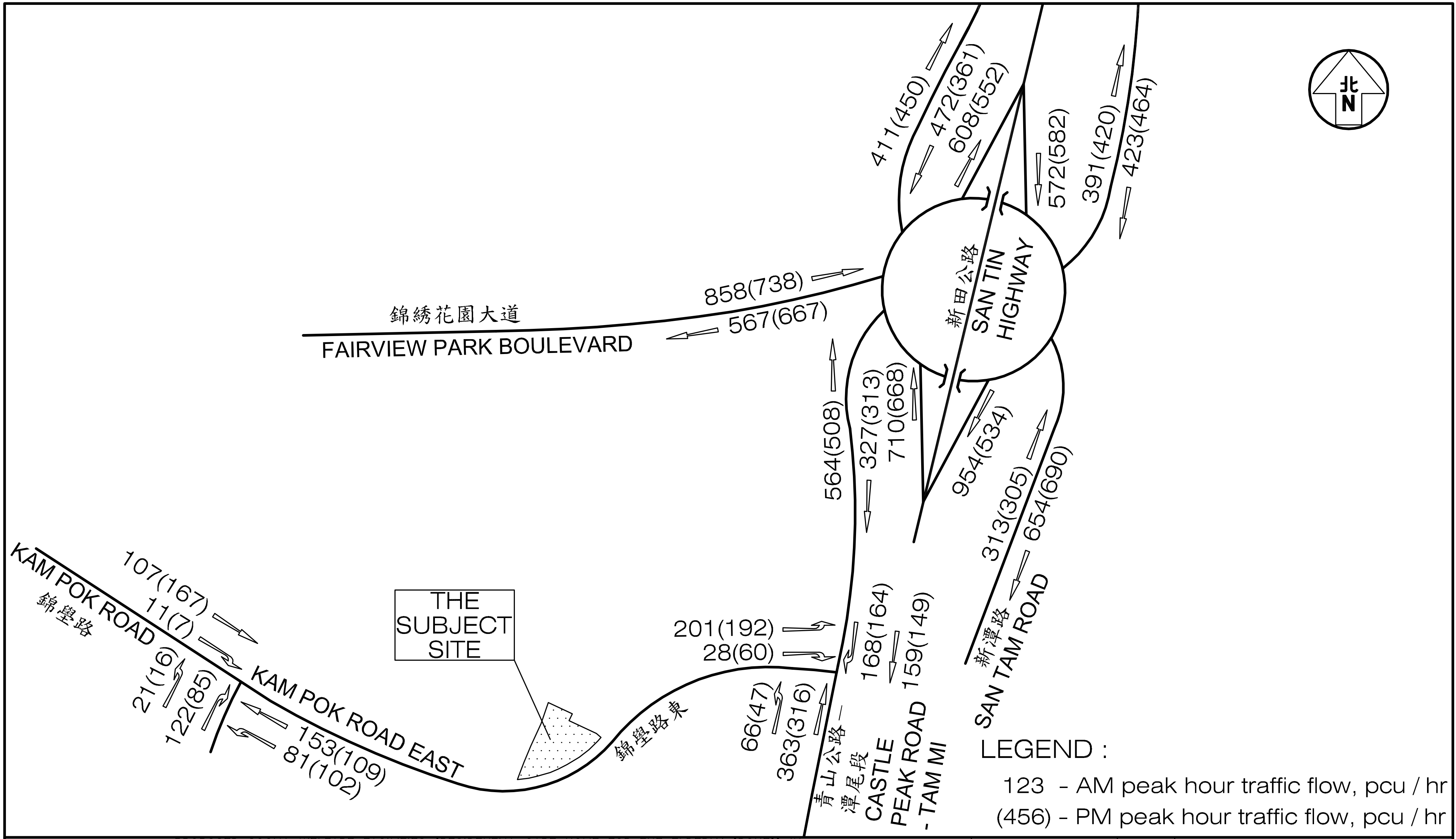

北
N
858(738)
567(667)
錦綉花園大道
FAIRVIEW PARK BOULEVARD
411(450)
472(361)
608(552)
572(582)
391(420)
423(464)
新田公路
SAN TIN HIGHWAY
564(508)
327(313)
710(668)
954(534)
313(305)
654(690)
新潭路
SAN TAM ROAD
KAM POK ROAD
錦壆路
107(167)
11(7)
21(16)
122(85)
153(109)
81(102)
KAM POK ROAD EAST
錦壆路東
THE SUBJECT SITE
201(192)
28(60)
168(164)
159(149)
66(47)
363(316)
青山公路－潭尾段
CASTLE PEAK ROAD - TAM MI
LEGEND :
123 - AM peak hour traffic flow, pcu / hr
(456) - PM peak hour traffic flow, pcu / hr

| | | | | |
|---|---|---|---|---|
| Project Title<br>PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN "VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART) AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG<br>J7401 | Figure No.<br>2.5 | | Revision<br>A | CKM Asia Limited<br>[redacted] |
| Figure Title<br>EXISTING PEAK HOUR TRAFFIC FLOWS | Designed by<br>L C H | Drawn by<br>N C M | Checked by<br>K C | |
| | Scale in A4<br>N.T.S. | Date<br>26 MAY 2025 | | |

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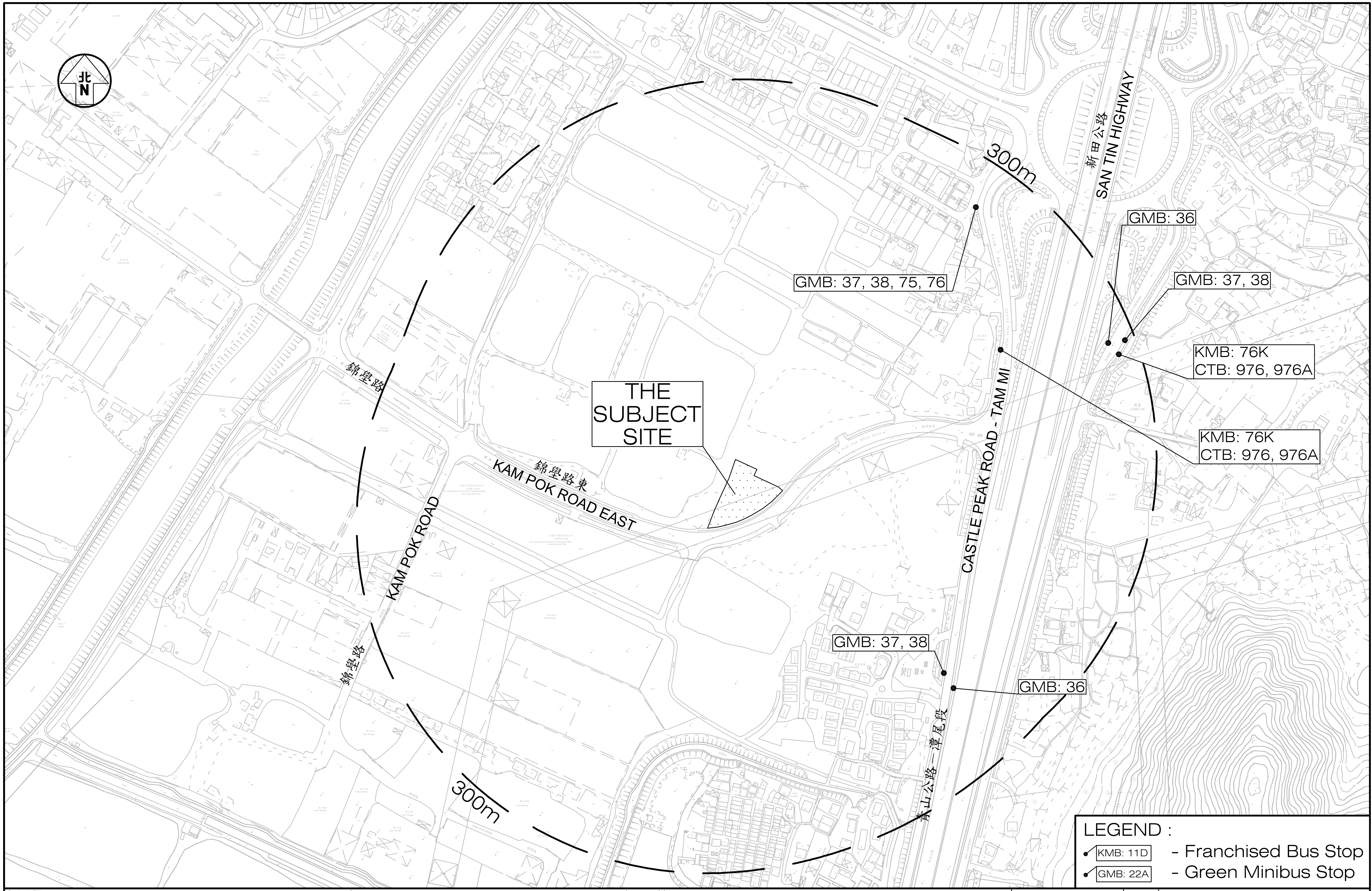
北
N
300m
新田公路
SAN TIN HIGHWAY
GMB: 36
GMB: 37, 38, 75, 76
GMB: 37, 38
KMB: 76K
CTB: 976, 976A
KMB: 76K
CTB: 976, 976A
THE SUBJECT SITE
錦壆路
錦壆路東
KAM POK ROAD EAST
KAM POK ROAD
錦壆路
CASTLE PEAK ROAD - TAM MI
青山公路－潭尾段
GMB: 37, 38
GMB: 36
300m
LEGEND :
KMB: 11D - Franchised Bus Stop
GMB: 22A - Green Minibus Stop

Project Title

PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN "VILLAGE TYPE DEVELOPMENT" ZONE,
LOTS 3670 RP (PART), 3671 RP (PART), 3672 RP (PART), 3673 RP (PART) AND ADJOINING GOVERNMENT LAND IN D.D.104, NAM SANG WAI, YUEN LONG

J7401

Figure Title

THE PUBLIC TRANSPORT SERVICES PROVIDED IN THE VICINITY OF THE SUBJECT SITE

| Figure No. | | Revision |
|---|---|---|
| 2.6 | | A |
| Designed by | Drawn by | Checked by |
| L C H | N C M | K C |
| Scale in A3 | Date | |
| 1 : 3,000 | 26 MAY 2025 | |

CKM Asia Limited

Traffic and Trans ortation Plannin Consultants

[redacted]

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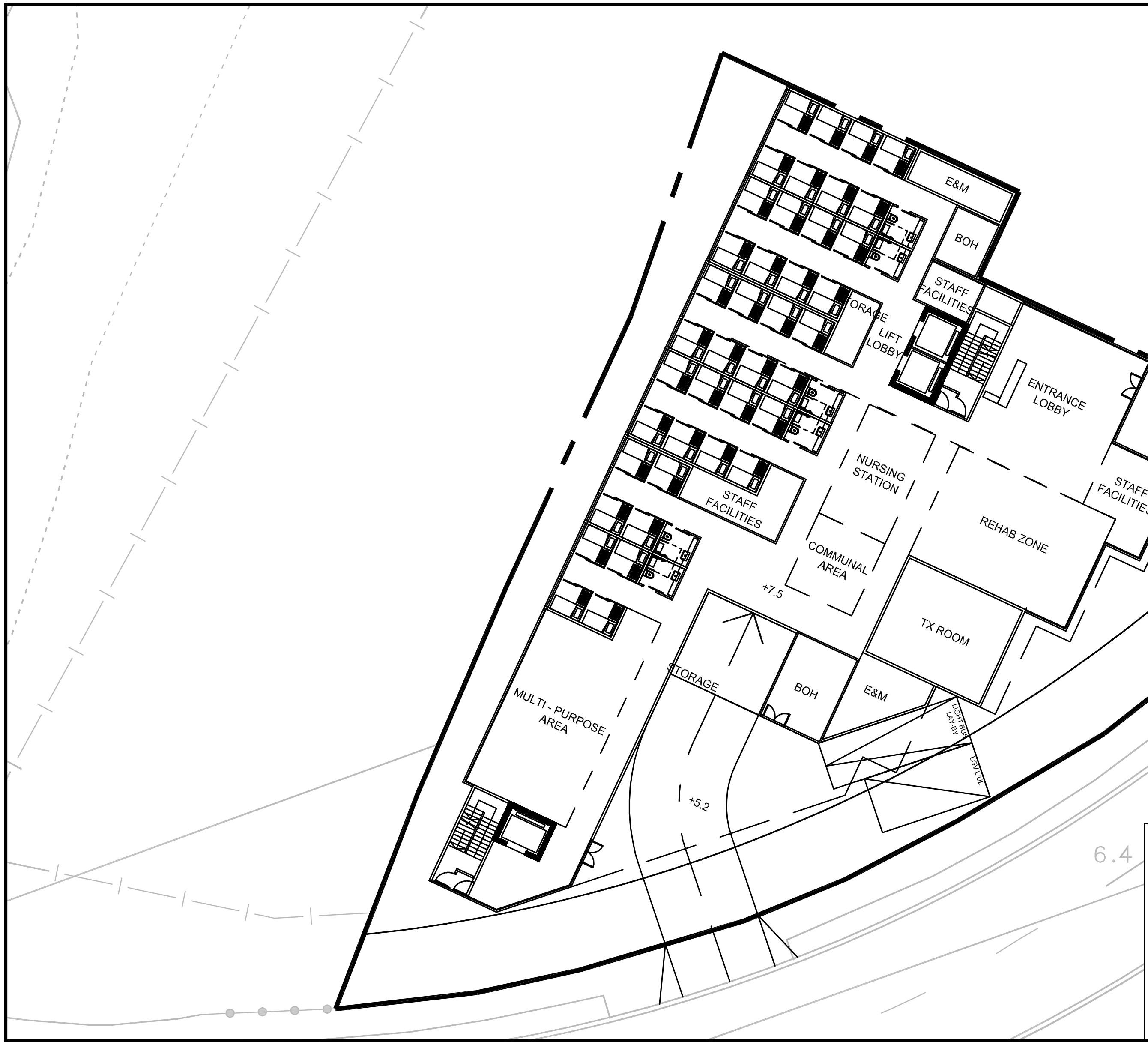
北
N
E&M
BOH
STAFF FACILITIES
STORAGE
LIFT LOBBY
ENTRANCE LOBBY
NURSING STATION
STAFF FACILITIES
STAFF FACILITIES
REHAB ZONE
COMMUNAL AREA
+7.5
TX ROOM
STORAGE
BOH
E&M
LIGHT BUS LAY-BY
LGV L/UL
MULTI - PURPOSE AREA
+5.2
KAM POK ROAD EAST
錦壆路東
7.2
H
L
6.4

LEGEND :

| | |
|---|---|
| ⊠ | Light Bus / Ambulance Parking Space @9m(L) x 3m(W) x 3.3m(H) |
| ⧄ | LGV loading / unloading bay @7m(L) X 3.5m(W) X 3.6m(H) |

| | | | | |
|---|---|---|---|---|
| Project Title | PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN "VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART), 3672 RP (PART), 3673 RP (PART) AND ADJOINING GOVERNMENT LAND IN D.D.104, NAM SANG WAI, YUEN LONG | J7401 | Figure No.<br>3.1 | Revision<br>A |
| Figure Title | G/F LAYOUT PLAN | Designed by<br>L C H | Drawn by<br>N C M | Checked by<br>K C |
| | | Scale in A4<br>1 : 400 | Date<br>26 MAY 2025 | |

CKM Asia Limited

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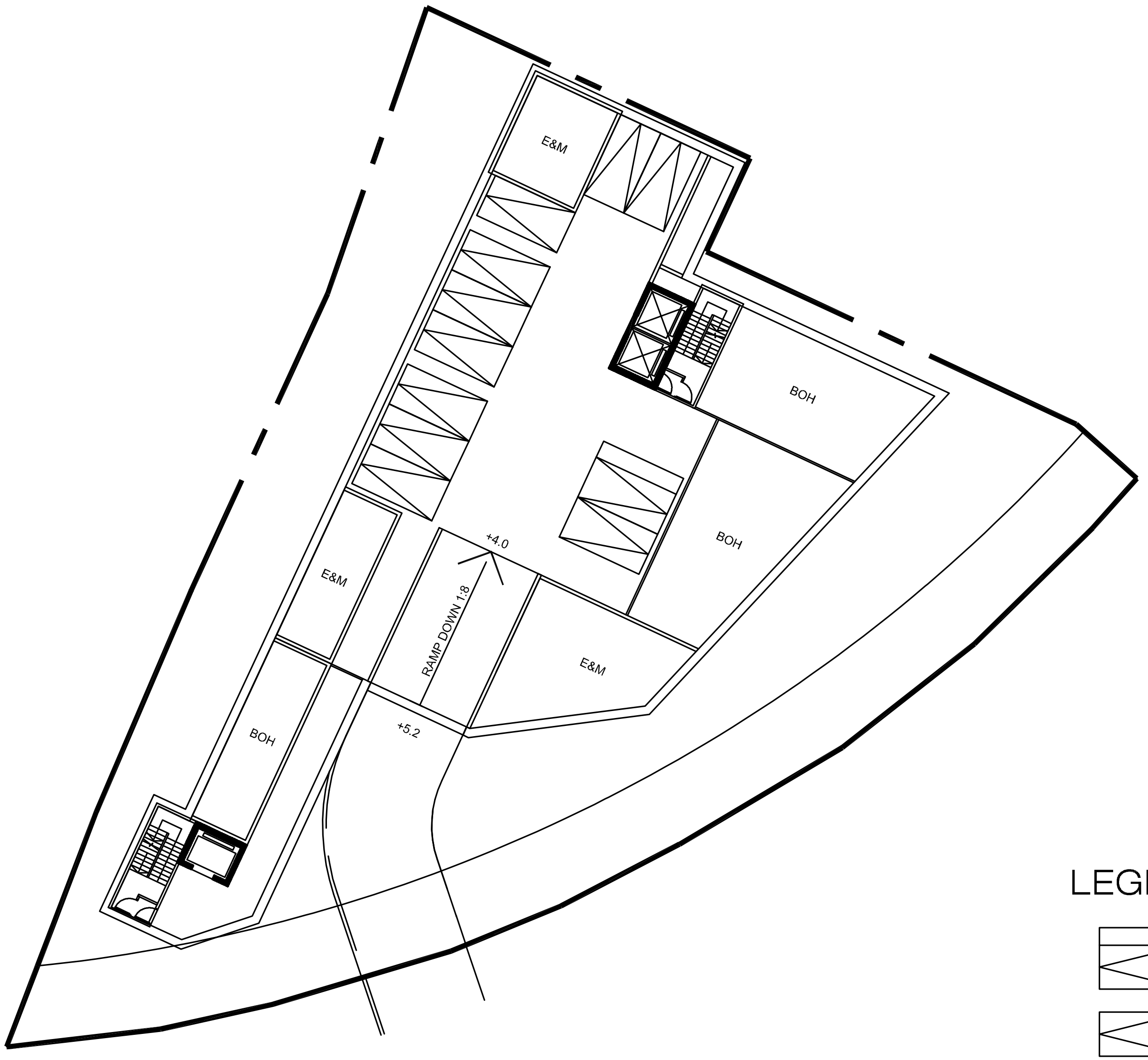
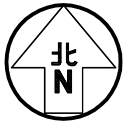




LEGEND :

Accessible car parking space @5m(L) X 3.5m(W) X 2.4m(H)

Private car parking space @5m(L) X 2.5m(W) X 2.4m(H)

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG
J7401

Figure Title

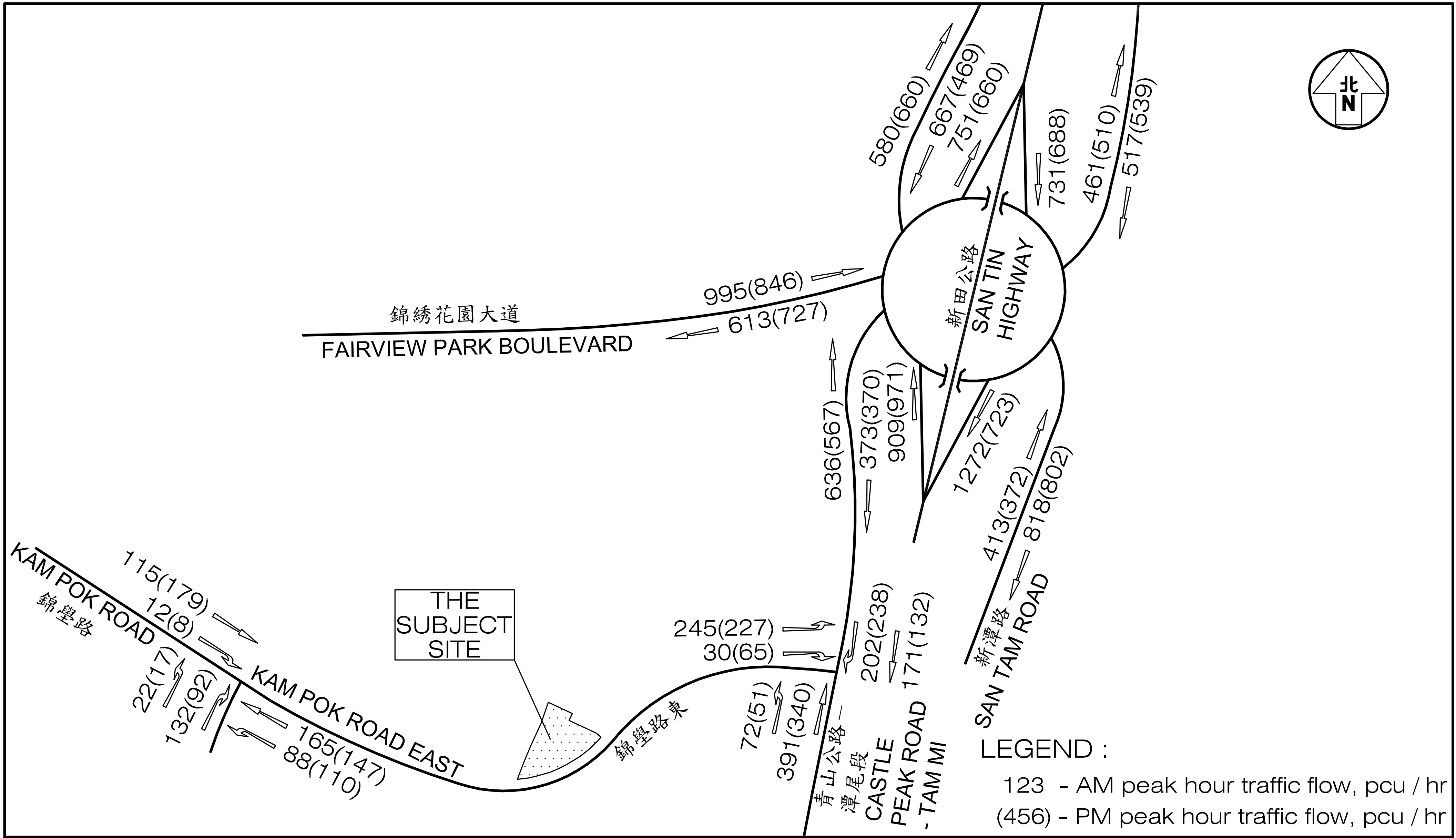
B/F LAYOUT PLAN

Figure No. 3.2
Revision A
Designed by L C H
Drawn by N C M
Checked by K C
Scale in A4 1 : 400
Date 26 MAY 2025

CKM Asia Limited

[redacted]

T:\JOB\J7400-J7449\J7401\2025 05\Fig 3.1 - 3.2 RevA.dwg


北
N
錦綉花園大道
FAIRVIEW PARK BOULEVARD
995(846)
613(727)
580(660)
667(469)
751(660)
731(688)
461(510)
517(539)
新田公路
SAN TIN
HIGHWAY
636(567)
373(370)
909(971)
1272(723)
413(372)
818(802)
新潭路
SAN TAM ROAD
KAM POK ROAD
錦壆路
115(179)
12(8)
22(17)
132(92)
165(147)
88(110)
KAM POK ROAD EAST
錦壆路東
THE
SUBJECT
SITE
245(227)
30(65)
202(238)
171(132)
72(51)
391(340)
青山公路一
潭尾段
CASTLE
PEAK ROAD
- TAM MI

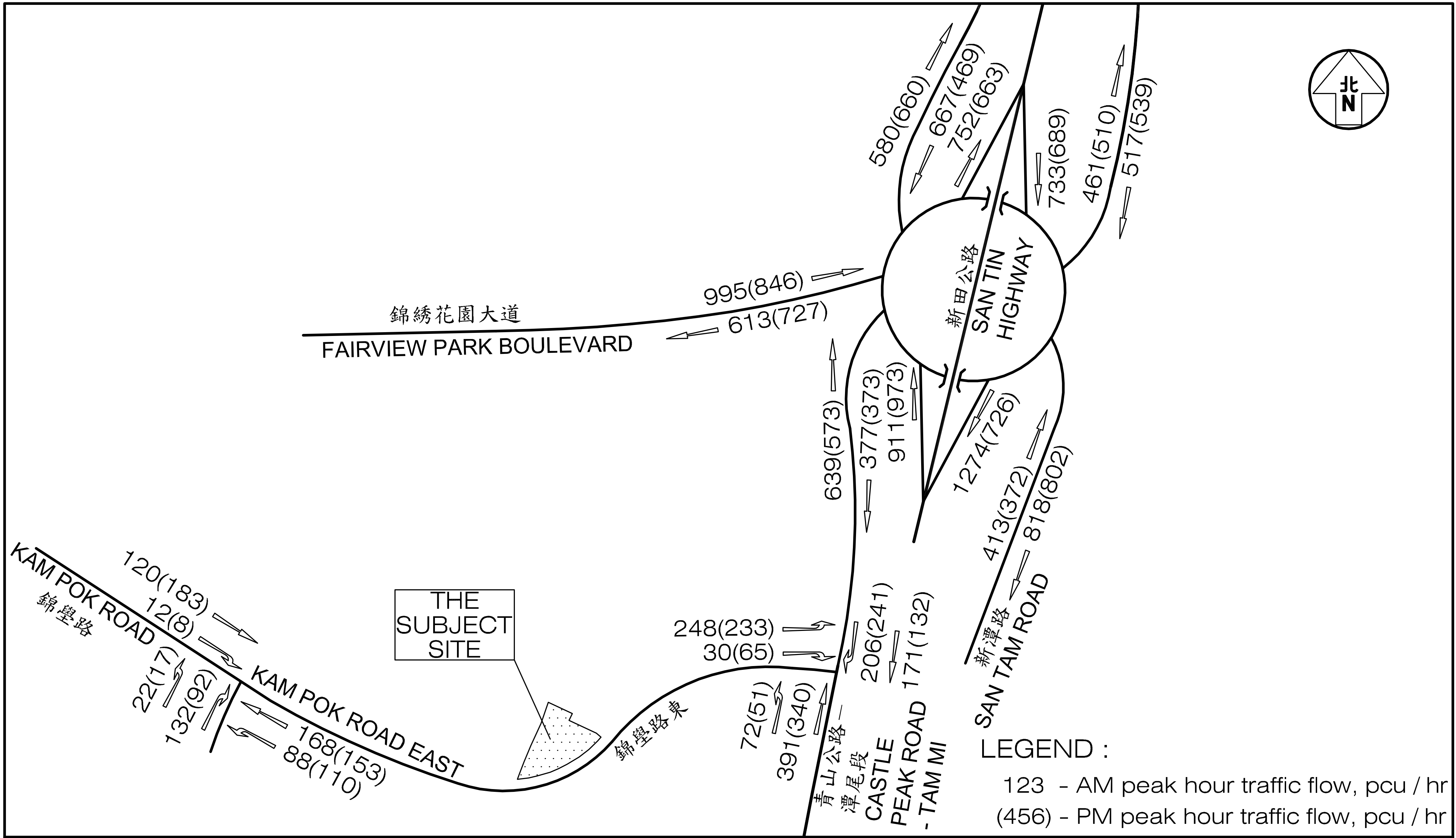
LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

| | | | | |
|---|---|---|---|---|
| Project Title<br>PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN<br>"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)<br>AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG<br>J7401 | Figure No.<br>4.1 | | Revision<br>A | CKM Asia Limited<br>[redacted] |
| Figure Title<br>YEAR 2033 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED RCHE | Designed by<br>L C H | Drawn by<br>N C M | Checked by<br>K C | |
| | Scale in A4<br>N.T.S. | Date<br>26 MAY 2025 | | |

T:\JOB\J7400-J7449\J7401\2025 05\Fig 4.1 RevA.dwg


北 N
580(660)
667(469)
752(663)
733(689)
461(510)
517(539)
新田公路
SAN TIN HIGHWAY
995(846)
613(727)
錦綉花園大道
FAIRVIEW PARK BOULEVARD
639(573)
377(373)
911(973)
1274(726)
413(372)
818(802)
新潭路
SAN TAM ROAD
THE SUBJECT SITE
KAM POK ROAD
錦壆路
120(183)
12(8)
22(17)
132(92)
168(153)
88(110)
KAM POK ROAD EAST
錦壆路東
248(233)
30(65)
206(241)
171(132)
72(51)
391(340)
青山公路－潭尾段
CASTLE PEAK ROAD - TAM MI
LEGEND :
123 - AM peak hour traffic flow, pcu / hr
(456) - PM peak hour traffic flow, pcu / hr

Project Title

PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN "VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART) AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG

J7401

Figure Title

YEAR 2033 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED RCHE

| Figure No. | Revision |
|---|---|
| 4.2 | A |

| Designed by | Drawn by | Checked by |
|---|---|---|
| L C H | N C M | K C |

| Scale in A4 | Date |
|---|---|
| N.T.S. | 26 MAY 2025 |

**CKM Asia Limited**

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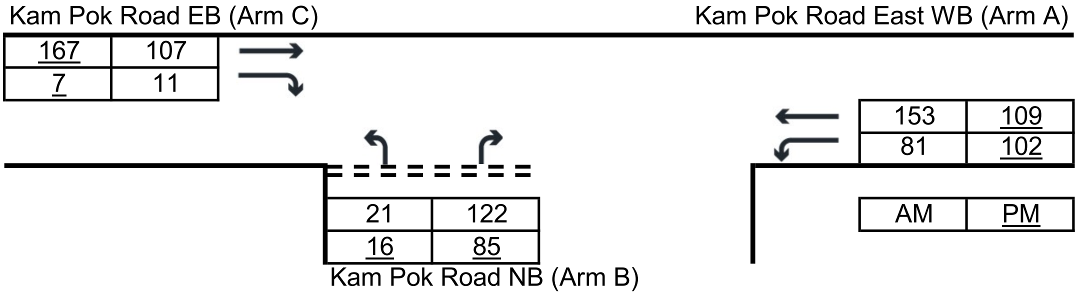
# Appendix 1 – Calculation

# Priority Junction Analysis

| | | | | | |
|---|---|---|---|---|---|
| Junction: | Kam Pok Road / Kam Pok Road East | | | | |
| Design Year: | 2025 | Job Number: | J7401 | Date: | 26 May 2025 |
| Scenario: | Existing Condition | | | Page | 1 |



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]
Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]
Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

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

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]
F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W
q-AB, etc = the design flow of movement AB, etc
W = major road width
W-CR = central reserve width
w-BA, etc = lane width to vehicle
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc
v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

| Geometry : | Input | | Input | | Input | | Calculated | |
|---|---|---|---|---|---|---|---|---|
| | W | 10.30 | V-rBA | 45 | w-BA | 2.70 | D | 0.7881 |
| | W-CR | 0.00 | V-lBA | 30 | w-BC | 2.70 | E | 0.8492 |
| | | | V-rBC | 45 | w-CB | 5.00 | F | 1.0356 |
| | | | V-rCB | 30 | | | Y | 0.6447 |

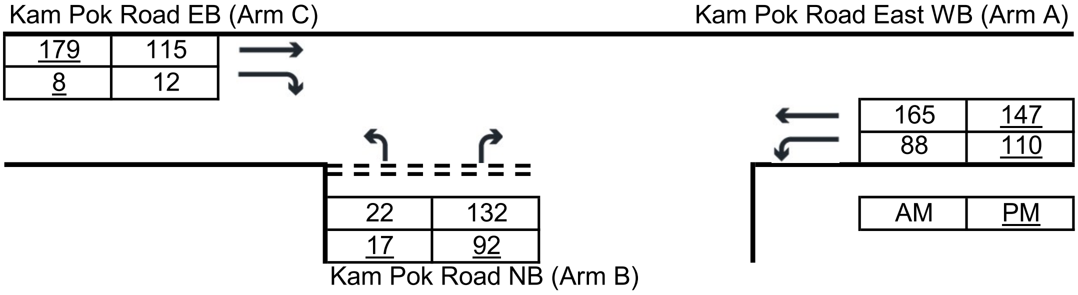
Analysis :

| Traffic Flows, pcu/hr | AM | PM | Capacity, pcu/hr | AM | PM |
|---|---|---|---|---|---|
| q-CA | 107 | 167 | Q-BA | 445 | 445 |
| q-CB | 11 | 7 | Q-BC | 596 | 603 |
| q-AB | 81 | 102 | Q-CB | 715 | 720 |
| q-AC | 153 | 109 | Q-BAC | 462 | 464 |
| q-BA | 122 | 85 | | | |
| q-BC | 21 | 16 | | | |
| f | 0.147 | 0.158 | | | |

| Ratio-of-flow to Capacity | AM | PM |
|---|---|---|
| B-A | 0.274 | 0.191 |
| B-C | 0.035 | 0.027 |
| C-B | 0.015 | 0.010 |
| B-AC | 0.310 | 0.217 |

## Priority Junction Analysis

| | | | | | |
|---|---|---|---|---|---|
| Junction: | Kam Pok Road / Kam Pok Road East | | | | |
| Design Year: | 2033 | Job Number: | J7401 | Date: | 26 May 2025 |
| Scenario: | Future Condition (Without Proposed RCHE) | | | Page | 2 |



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]
Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]
Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

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

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]
F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W
q-AB, etc = the design flow of movement AB, etc
W = major road width
W-CR = central reserve width
w-BA, etc = lane width to vehicle
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc
v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :

| Input | | Input | | Input | | Calculated | |
|---|---|---|---|---|---|---|---|
| W | 10.30 | V-rBA | 45 | w-BA | 2.70 | D | 0.7881 |
| W-CR | 0.00 | V-lBA | 30 | w-BC | 2.70 | E | 0.8492 |
| | | V-rBC | 45 | w-CB | 5.00 | F | 1.0356 |
| | | V-rCB | 30 | | | Y | 0.6447 |

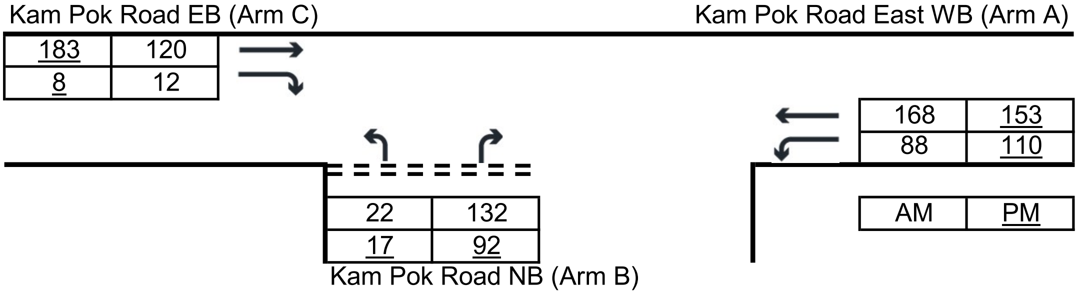
Analysis :

| Traffic Flows, pcu/hr | AM | PM | Capacity, pcu/hr | AM | PM |
|---|---|---|---|---|---|
| q-CA | 115 | 179 | Q-BA | 441 | 436 |
| q-CB | 12 | 8 | Q-BC | 593 | 595 |
| q-AB | 88 | 110 | Q-CB | 710 | 709 |
| q-AC | 165 | 147 | Q-BAC | 457 | 455 |
| q-BA | 132 | 92 | | | |
| q-BC | 22 | 17 | | | |
| f | 0.143 | 0.156 | | | |

| Ratio-of-flow to Capacity | AM | PM |
|---|---|---|
| B-A | 0.300 | 0.211 |
| B-C | 0.037 | 0.029 |
| C-B | 0.017 | 0.011 |
| B-AC | 0.337 | 0.240 |

## Priority Junction Analysis

| | | | | | |
|---|---|---|---|---|---|
| Junction: | Kam Pok Road / Kam Pok Road East | | | | |
| Design Year: | 2033 | Job Number: | J7401 | Date: | 26 May 2025 |
| Scenario: | Future Condition (With Proposed RCHE) | | | Page | 3 |



The predictive equations of capacity of movement are:

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

$Q\text{-}BC = E[745 - Y(0.364q\text{-}AC + 0.144q\text{-}AB)]$

$Q\text{-}CB = F[745 - 0.364Y(q\text{-}AC + q\text{-}AB)]$

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

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

$E = [1 + 0.094(w\text{-}BC - 3.65)][1 + 0.0009(V\text{-}rBC - 120)]$

$F = [1 + 0.094(w\text{-}CB - 3.65)][1 + 0.0009(V\text{-}rCB - 120)]$

where $Y = 1 - 0.0345W$

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

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

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

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

Geometry :

| Input | | Input | | Input | | Calculated | |
|---|---|---|---|---|---|---|---|
| W | 10.30 | V-rBA | 45 | w-BA | 2.70 | D | 0.7881 |
| W-CR | 0.00 | V-lBA | 30 | w-BC | 2.70 | E | 0.8492 |
| | | V-rBC | 45 | w-CB | 5.00 | F | 1.0356 |
| | | V-rCB | 30 | | | Y | 0.6447 |

Analysis :

| Traffic Flows, pcu/hr | AM | PM |
|---|---|---|
| q-CA | 120 | 183 |
| q-CB | 12 | 8 |
| q-AB | 88 | 110 |
| q-AC | 168 | 153 |
| q-BA | 132 | 92 |
| q-BC | 22 | 17 |
| f | 0.143 | 0.156 |

| Capacity, pcu/hr | AM | PM |
|---|---|---|
| Q-BA | 439 | 434 |
| Q-BC | 592 | 594 |
| Q-CB | 709 | 708 |
| Q-BAC | 456 | 453 |

| Ratio-of-flow to Capacity | AM | PM |
|---|---|---|
| B-A | 0.300 | 0.212 |
| B-C | 0.037 | 0.029 |
| C-B | 0.017 | 0.011 |
| B-AC | 0.337 | 0.240 |

# Signal Junction Analysis

Junction: Castle Peak Road - Tam Mi / Kam Pok Road  Job Number: J7401

Scenario: Existing Condition  P. 4

Design Year: 2025  Designed By:  Checked By:  Date: 26 May 2025

| Approach | | Phase | Stage | Width (m) | Radius (m) | % Up-hill Gradient | AM Peak Turning % | AM Peak Sat. Flow (pcu/hr) | AM Peak Flow (pcu/hr) | AM Peak y value | AM Peak Critical y | PM Peak Turning % | PM Peak Sat. Flow (pcu/hr) | PM Peak Flow (pcu/hr) | PM Peak y value | PM Peak Critical y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Castle Peak Road - | LT+SA | A1 | 1 | 3.50 | 20.0 | | 17 | 1940 | 429 | 0.221 | 0.221 | 14 | 1945 | 363 | 0.187 | 0.187 |
| Tam Mi NB | | | | | | | | | | | | | | | | |
| Castle Peak Road - Tam Mi SB | SA | B1 | 2 | 3.30 | | | | 2085 | 159 | 0.076 | | | 2085 | 149 | 0.071 | |
| | RT | B2 | 2 | 3.40 | 15.0 | | 100 | 1905 | 168 | 0.088 | 0.088 | 100 | 1905 | 164 | 0.086 | 0.086 |
| | | | | | | | | | | | | | | | | |
| Kam Pok Road EB | LT | C1 | 3 | 3.50 | 28.0 | | 100 | 1865 | 201 | 0.108 | 0.108 | 100 | 1865 | 192 | 0.103 | 0.103 |
| | RT | C2 | 3 | 3.50 | 13.0 | | 100 | 1887 | 28 | 0.015 | | 100 | 1887 | 60 | 0.032 | |
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|---|---|---|---|---|---|---|---|---|---|---|
| pedestrian phase | D(p) | 4 | | min crossing time = | 13 | sec GM + | 12 | sec FGM = | 25 | sec |
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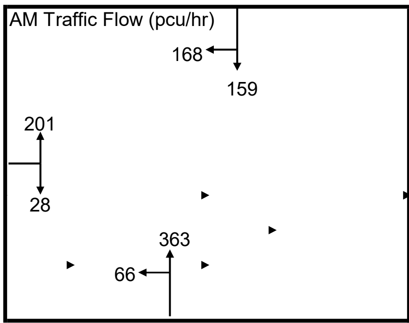
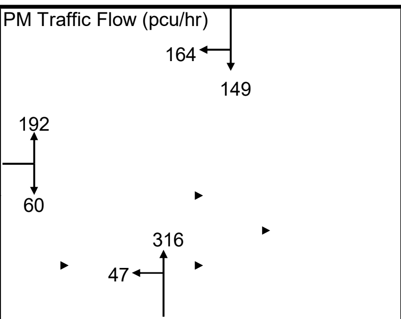
AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

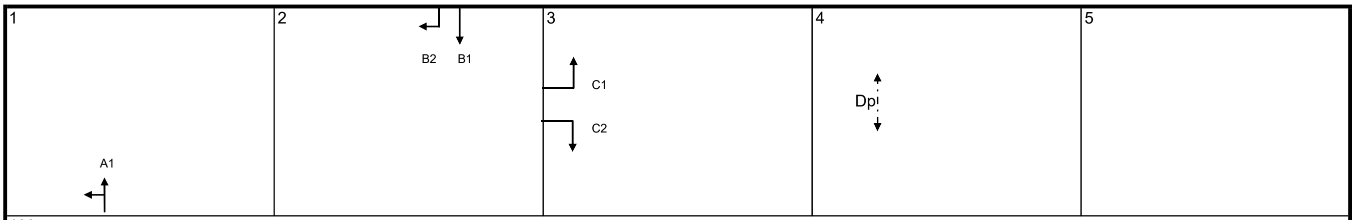


S=1940+100(W–3.25)  S=2080+100(W–3.25)

$S_M$=S÷(1+1.5f/r)  $S_M$=(S–230)÷(1+1.5f/r)

| | AM Peak | | PM Peak | |
|---|---|---|---|---|
| Group | 1+2+3 | | 1+2+3 | |
| Sum y | 0.417 | | 0.376 | |
| L (s) | 40 | | 40 | |
| C (s) | 94 | | 94 | |
| practical y | 0.517 | | 0.517 | |
| R.C. (%) | 24% | | 38% | |

Note:



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AM | G = | I/G = 6 | G = | I/G = 5 | G = | I/G = 5 | G = 25 | I/G = 2 | G = | I/G = |
| | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = |
| PM | G = | I/G = 6 | G = | I/G = 5 | G = | I/G = 5 | G = 25 | I/G = 2 | G = | I/G = |
| | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = |

# Signal Junction Analysis

Junction: Castle Peak Road - Tam Mi / Kam Pok Road
Job Number: J7401
Scenario: Future Condition (Without Proposed RCHE)
P. 5
Design Year: 2033
Designed By:
Checked By:
Date: 26 May 2025

| Approach | | Phase | Stage | Width (m) | Radius (m) | % Up-hill Gradient | AM Peak Turning % | AM Peak Sat. Flow (pcu/hr) | AM Peak Flow (pcu/hr) | AM Peak y value | AM Peak Critical y | PM Peak Turning % | PM Peak Sat. Flow (pcu/hr) | PM Peak Flow (pcu/hr) | PM Peak y value | PM Peak Critical y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Castle Peak Road - | LT+SA | A1 | 1 | 3.50 | 20.0 | | 14 | 1945 | 463 | 0.238 | 0.238 | 10 | 1950 | 391 | 0.201 | 0.201 |
| Tam Mi NB | | | | | | | | | | | | | | | | |
| Castle Peak Road - Tam Mi SB | SA | B1 | 2 | 3.30 | | | | 2085 | 171 | 0.082 | | | 2085 | 132 | 0.063 | |
| | RT | B2 | 2 | 3.40 | 15.0 | | 100 | 1905 | 202 | 0.106 | 0.106 | 100 | 1905 | 238 | 0.125 | 0.125 |
| | | | | | | | | | | | | | | | | |
| Kam Pok Road EB | LT | C1 | 3 | 3.50 | 28.0 | | 100 | 1865 | 245 | 0.131 | 0.131 | 100 | 1865 | 227 | 0.122 | 0.122 |
| | RT | C2 | 3 | 3.50 | 13.0 | | 100 | 1887 | 30 | 0.016 | | 100 | 1887 | 65 | 0.034 | |
| | | | | | | | | | | | | | | | | |
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|---|---|---|---|---|---|---|---|---|---|---|
| pedestrian phase | D(p) | 4 | | min crossing time = | 13 | sec GM + | 12 | sec FGM = | 25 | sec |
| | | | | | | | | | | |
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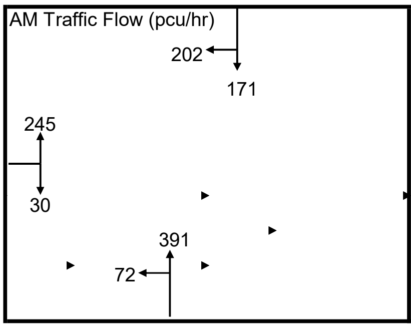
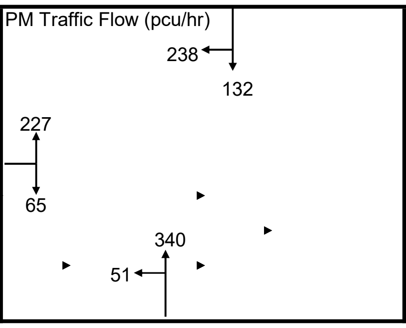
AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

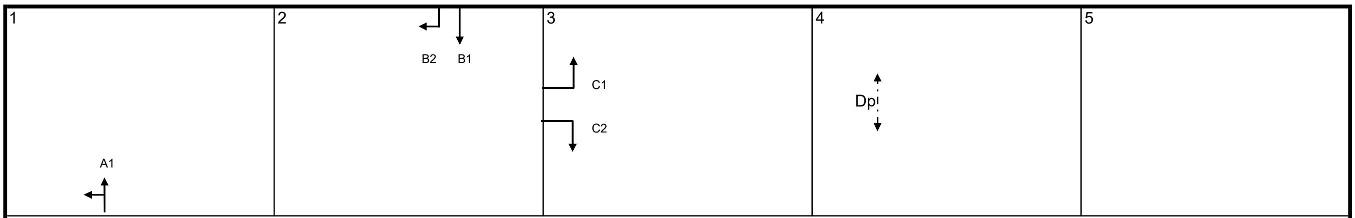


**S=1940+100(W–3.25)** **S=2080+100(W–3.25)**

**$S_M$=S÷(1+1.5f/r)** **$S_M$=(S–230)÷(1+1.5f/r)**

| | AM Peak | | PM Peak | |
|---|---|---|---|---|
| Group | 1+2+3 | | 1+2+3 | |
| Sum y | 0.475 | | 0.447 | |
| L (s) | 40 | | 40 | |
| C (s) | 120 | | 120 | |
| practical y | 0.600 | | 0.600 | |
| R.C. (%) | 26% | | 34% | |

Note:



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AM | G = | I/G = 6 | G = | I/G = 5 | G = | I/G = 5 | G = 25 | I/G = 2 | G = | I/G = |
| | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = |
| PM | G = | I/G = 6 | G = | I/G = 5 | G = | I/G = 5 | G = 25 | I/G = 2 | G = | I/G = |
| | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = | G = | I/G = |

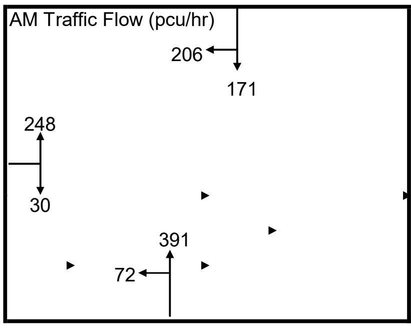
# Signal Junction Analysis

Junction: Castle Peak Road - Tam Mi / Kam Pok Road
Job Number: J7401
Scenario: Future Condition (With Proposed RCHE)
P. 6
Design Year: 2033
Designed By:
Checked By:
Date: 26 May 2025

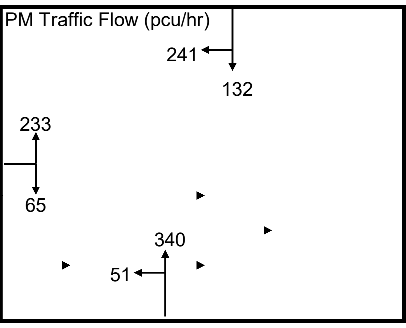
| Approach | | Phase | Stage | Width (m) | Radius (m) | % Up-hill Gradient | AM Peak Turning % | AM Peak Sat. Flow (pcu/hr) | AM Peak Flow (pcu/hr) | AM Peak y value | AM Peak Critical y | PM Peak Turning % | PM Peak Sat. Flow (pcu/hr) | PM Peak Flow (pcu/hr) | PM Peak y value | PM Peak Critical y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Castle Peak Road - | LT+SA | A1 | 1 | 3.50 | 20.0 | | 14 | 1945 | 463 | 0.238 | 0.238 | 10 | 1950 | 391 | 0.201 | 0.201 |
| Tam Mi NB | | | | | | | | | | | | | | | | |
| Castle Peak Road - Tam Mi SB | SA | B1 | 2 | 3.30 | | | | 2085 | 171 | 0.082 | | | 2085 | 132 | 0.063 | |
| | RT | B2 | 2 | 3.40 | 15.0 | | 100 | 1905 | 206 | 0.108 | 0.108 | 100 | 1905 | 241 | 0.127 | 0.127 |
| | | | | | | | | | | | | | | | | |
| Kam Pok Road EB | LT | C1 | 3 | 3.50 | 28.0 | | 100 | 1865 | 248 | 0.133 | 0.133 | 100 | 1865 | 233 | 0.125 | 0.125 |
| | RT | C2 | 3 | 3.50 | 13.0 | | 100 | 1887 | 30 | 0.016 | | 100 | 1887 | 65 | 0.034 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| pedestrian phase | D(p) | 4 | | min crossing time = | 13 | sec GM + | 12 | sec FGM = | 25 | sec |

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

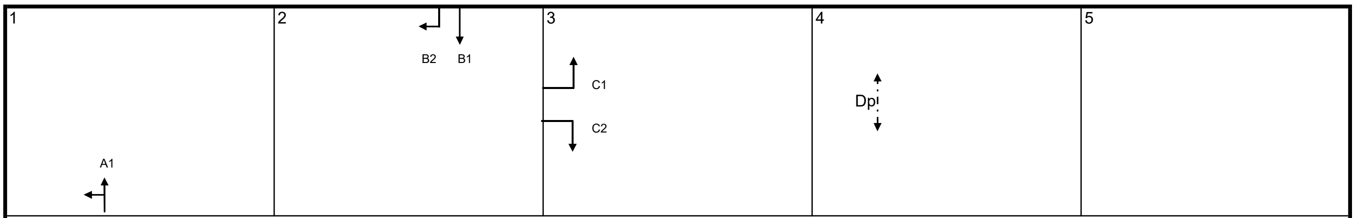


**$S=1940+100(W-3.25)$** **$S=2080+100(W-3.25)$**

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

| | AM Peak | | PM Peak | |
|---|---|---|---|---|
| Group | 1+2+3 | | 1+2+3 | |
| Sum y | 0.479 | | 0.452 | |
| L (s) | 40 | | 40 | |
| C (s) | 120 | | 120 | |
| practical y | 0.600 | | 0.600 | |
| R.C. (%) | 25% | | 33% | |

Note:



| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AM | G = | | I/G = | 6 | G = | | I/G = | 5 | G = | | I/G = | 5 | G = | 25 | I/G = | 2 | G = | | I/G = | |
| | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | |
| PM | G = | | I/G = | 6 | G = | | I/G = | 5 | G = | | I/G = | 5 | G = | 25 | I/G = | 2 | G = | | I/G = | |
| | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | | G = | | I/G = | |

# Roundabout Analysis

Junction: The Fairview Park Roundabout Job Number: J7401
Scenario: Existing Condition P. 7
Design Year: 2025 Designed By: Checked By: Date: 26 May 2025

**AM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 34 | 53 | 373 | 138 | 72 | 120 | 68 | 858 | 1234 |
| From B | 30 | 11 | 137 | 32 | 52 | 205 | 97 | 564 | 1765 |
| From C | 205 | 41 | 42 | 128 | 127 | 68 | 99 | 710 | 1375 |
| From D | 29 | 17 | 72 | 14 | 51 | 117 | 13 | 313 | 1431 |
| From E | 62 | 34 | 131 | 108 | 10 | 46 | 32 | 423 | 1353 |
| From F | 155 | 86 | 110 | 84 | 25 | 29 | 83 | 572 | 1168 |
| From G | 52 | 85 | 89 | 150 | 54 | 23 | 19 | 472 | 1329 |
| Total | 567 | 327 | 954 | 654 | 391 | 608 | 411 | 3912 | |

**PM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 28 | 53 | 151 | 97 | 95 | 251 | 63 | 738 | 1147 |
| From B | 67 | 16 | 76 | 44 | 77 | 110 | 118 | 508 | 1572 |
| From C | 223 | 75 | 22 | 140 | 76 | 35 | 97 | 668 | 1546 |
| From D | 66 | 17 | 48 | 24 | 63 | 70 | 17 | 305 | 1524 |
| From E | 99 | 21 | 127 | 133 | 14 | 37 | 33 | 464 | 1409 |
| From F | 124 | 73 | 54 | 146 | 51 | 25 | 109 | 582 | 1321 |
| From G | 60 | 58 | 56 | 106 | 44 | 24 | 13 | 361 | 1453 |
| Total | 667 | 313 | 534 | 690 | 420 | 552 | 450 | 3626 | |

**Legend**

| Arm | Road (in clockwise order) |
|---|---|
| A | Fairview Park Boulevard EB |
| B | Castle Peak Road NB |
| C | San Tin Road NB |
| D | San Tam Road NB |
| E | San Tam Road SB |
| F | San Tin Road SB |
| G | Castle Peak Road SB |
| H | |

**Geometric Parameters**

| Arm | e (m) | v (m) | r (m) | L (m) | D (m) | $\varnothing$ (°) | S |
|---|---|---|---|---|---|---|---|
| From A | 11.0 | 7.0 | 22.0 | 14.0 | 142 | 35 | 0.5 |
| From B | 9.0 | 5.5 | 20.0 | 10.0 | 142 | 35 | 0.6 |
| From C | 8.5 | 6.4 | 23.0 | 7.5 | 142 | 30 | 0.4 |
| From D | 8.5 | 6.5 | 20.0 | 10.0 | 142 | 25 | 0.3 |
| From E | 8.0 | 6.0 | 20.0 | 9.5 | 142 | 35 | 0.3 |
| From F | 8.5 | 6.0 | 25.0 | 6.5 | 142 | 40 | 0.6 |
| From G | 6.0 | 5.0 | 22.0 | 7.0 | 142 | 30 | 0.2 |
| From H | | | | | | | |

**Predictive Equation $Q_E = K(F - f_cq_c)$**

| | |
|---|---|
| $Q_E$ | Entry Capacity |
| $q_c$ | Circulating Flow across the Entry |
| K | $= 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$ |
| F | $= 303x_2$ |
| $f_c$ | $= 0.210t_D(1+0.2x_2)$ |
| $t_D$ | $= 1+0.5/(1+M)$ |
| M | $= \exp[(D-60)/10]$ |
| $x_2$ | $= v+(e-v)/(1+2S)$ |
| S | $= 1.6(e-v)/L$ |

**Limitation**

| | | |
|---|---|---|
| e | Entry Width | 4.0 - 15.0 m |
| v | Approach Half Width | 2.0 - 7.3 m |
| r | Entry Radius | 6.0 - 100.0 m |
| L | Effective Length of Flare | 1.0 - 100.0 m |
| D | Inscribed Circle Diameter | 15 - 100 m |
| $\varnothing$ | Entry Angle | 10° - 60° |
| S | Sharpness of Flare | 0.0 - 3.0 |

**Ratio-of-Flow to Capacity (RFC)**

| | | | | | | | $Q_E$ | | Entry Flow | | RFC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arm | $x_2$ | M | $t_D$ | K | F | $f_c$ | AM | PM | AM | PM | AM | PM |
| From A | 9.09 | 3640.95 | 1.00 | 0.99 | 2754.13 | 0.59 | 1997.68 | 2049 | 858 | 738 | 0.43 | 0.36 |
| From B | 7.15 | 3640.95 | 1.00 | 0.98 | 2166.74 | 0.51 | 1243.90 | 1341 | 564 | 508 | 0.45 | 0.38 |
| From C | 7.51 | 3640.95 | 1.00 | 1.01 | 2274.80 | 0.53 | 1562.29 | 1472 | 710 | 668 | 0.45 | 0.45 |
| From D | 7.72 | 3640.95 | 1.00 | 1.02 | 2339.01 | 0.53 | 1601.76 | 1551 | 313 | 305 | 0.20 | 0.20 |
| From E | 7.19 | 3640.95 | 1.00 | 0.98 | 2180.08 | 0.51 | 1461.19 | 1433 | 423 | 464 | 0.29 | 0.32 |
| From F | 7.12 | 3640.95 | 1.00 | 0.98 | 2157.57 | 0.51 | 1523.95 | 1448 | 572 | 582 | 0.38 | 0.40 |
| From G | 5.69 | 3640.95 | 1.00 | 1.00 | 1722.94 | 0.45 | 1131.38 | 1075 | 472 | 361 | 0.42 | 0.34 |
| From H | | | | | | | | | | | | |

# Roundabout Analysis

Junction: The Fairview Park Roundabout — Job Number: J7401
Scenario: Future Condition (Without Proposed RCHE) — P. 8
Design Year: 2033 — Designed By: ________ — Checked By: ________ — Date: 26 May 2025

**AM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 36 | 58 | 444 | 156 | 79 | 148 | 74 | 995 | 1652 |
| From B | 32 | 12 | 165 | 37 | 57 | 229 | 104 | 636 | 2274 |
| From C | 222 | 55 | 55 | 139 | 167 | 75 | 196 | 909 | 1638 |
| From D | 31 | 20 | 78 | 15 | 61 | 180 | 28 | 413 | 1729 |
| From E | 67 | 36 | 194 | 126 | 11 | 49 | 34 | 517 | 1681 |
| From F | 168 | 100 | 120 | 161 | 27 | 32 | 123 | 731 | 1447 |
| From G | 57 | 92 | 216 | 184 | 59 | 38 | 21 | 667 | 1598 |
| Total | 613 | 373 | 1272 | 818 | 461 | 751 | 580 | 4868 | |

**PM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 30 | 58 | 191 | 110 | 103 | 286 | 68 | 846 | 1436 |
| From B | 73 | 17 | 94 | 49 | 83 | 125 | 126 | 567 | 1912 |
| From C | 245 | 106 | 36 | 155 | 134 | 42 | 253 | 971 | 1756 |
| From D | 72 | 20 | 52 | 26 | 71 | 103 | 28 | 372 | 1925 |
| From E | 107 | 22 | 170 | 150 | 15 | 40 | 35 | 539 | 1787 |
| From F | 134 | 85 | 60 | 188 | 56 | 30 | 135 | 688 | 1666 |
| From G | 66 | 62 | 120 | 124 | 48 | 34 | 15 | 469 | 1694 |
| Total | 727 | 370 | 723 | 802 | 510 | 660 | 660 | 4452 | |

**Legend**

| Arm | Road (in clockwise order) |
|---|---|
| A | Fairview Park Boulevard EB |
| B | Castle Peak Road NB |
| C | San Tin Road NB |
| D | San Tam Road NB |
| E | San Tam Road SB |
| F | San Tin Road SB |
| G | Castle Peak Road SB |
| H | |

**Geometric Parameters**

| Arm | e (m) | v (m) | r (m) | L (m) | D (m) | ∅ (°) | S |
|---|---|---|---|---|---|---|---|
| From A | 11.0 | 7.0 | 22.0 | 14.0 | 142 | 35 | 0.5 |
| From B | 9.0 | 5.5 | 20.0 | 10.0 | 142 | 35 | 0.6 |
| From C | 8.5 | 6.4 | 23.0 | 7.5 | 142 | 30 | 0.4 |
| From D | 8.5 | 6.5 | 20.0 | 10.0 | 142 | 25 | 0.3 |
| From E | 8.0 | 6.0 | 20.0 | 9.5 | 142 | 35 | 0.3 |
| From F | 8.5 | 6.0 | 25.0 | 6.5 | 142 | 40 | 0.6 |
| From G | 6.0 | 5.0 | 22.0 | 7.0 | 142 | 30 | 0.2 |
| From H | | | | | | | |

**Predictive Equation $Q_E = K(F - f_c q_c)$**

$Q_E$ Entry Capacity
$q_c$ Circulating Flow across the Entry
$K = 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$
$F = 303x_2$
$f_c = 0.210t_D(1+0.2x_2)$
$t_D = 1+0.5/(1+M)$
$M = \exp[(D-60)/10]$
$x_2 = v+(e-v)/(1+2S)$
$S = 1.6(e-v)/L$

**Limitation**

| | | |
|---|---|---|
| e | Entry Width | 4.0 - 15.0 m |
| v | Approach Half Width | 2.0 - 7.3 m |
| r | Entry Radius | 6.0 - 100.0 m |
| L | Effective Length of Flare | 1.0 - 100.0 m |
| D | Inscribed Circle Diameter | 15 - 100 m |
| ∅ | Entry Angle | 10° - 60° |
| S | Sharpness of Flare | 0.0 - 3.0 |

**Ratio-of-Flow to Capacity (RFC)**

| | | | | | | | $Q_E$ | | Entry Flow | | RFC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arm | $x_2$ | M | $t_D$ | K | F | $f_c$ | AM | PM | AM | PM | AM | PM |
| From A | 9.09 | 3640.95 | 1.00 | 0.99 | 2754.13 | 0.59 | 1753 | 1880 | 995 | 846 | 0.57 | 0.45 |
| From B | 7.15 | 3640.95 | 1.00 | 0.98 | 2166.74 | 0.51 | 989 | 1170 | 636 | 567 | 0.64 | 0.48 |
| From C | 7.51 | 3640.95 | 1.00 | 1.01 | 2274.80 | 0.53 | 1423 | 1361 | 909 | 971 | 0.64 | 0.71 |
| From D | 7.72 | 3640.95 | 1.00 | 1.02 | 2339.01 | 0.53 | 1440 | 1333 | 413 | 372 | 0.29 | 0.28 |
| From E | 7.19 | 3640.95 | 1.00 | 0.98 | 2180.08 | 0.51 | 1296 | 1243 | 517 | 539 | 0.40 | 0.43 |
| From F | 7.12 | 3640.95 | 1.00 | 0.98 | 2157.57 | 0.51 | 1385 | 1277 | 731 | 688 | 0.53 | 0.54 |
| From G | 5.69 | 3640.95 | 1.00 | 1.00 | 1722.94 | 0.45 | 1010 | 967 | 667 | 469 | 0.66 | 0.49 |
| From H | | | | | | | | | | | | |

# Roundabout Analysis

Junction: The Fairview Park Roundabout — Job Number: J7401
Scenario: Future Condition (With Proposed RCHE) — P. 9
Design Year: 2033 — Designed By: ________ — Checked By: ________ — Date: 26 May 2025

**AM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 36 | 58 | 444 | 156 | 79 | 148 | 74 | 995 | 1656 |
| From B | 32 | 12 | 167 | 37 | 57 | 230 | 104 | 639 | 2274 |
| From C | 222 | 57 | 55 | 139 | 167 | 75 | 196 | 911 | 1639 |
| From D | 31 | 20 | 78 | 15 | 61 | 180 | 28 | 413 | 1732 |
| From E | 67 | 36 | 194 | 126 | 11 | 49 | 34 | 517 | 1684 |
| From F | 168 | 102 | 120 | 161 | 27 | 32 | 123 | 733 | 1449 |
| From G | 57 | 92 | 216 | 184 | 59 | 38 | 21 | 667 | 1602 |
| Total | 613 | 377 | 1274 | 818 | 461 | 752 | 580 | 4875 | |

**PM Peak**

| Arm | To A | To B | To C | To D | To E | to F | to G | Total | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|
| From A | 30 | 58 | 191 | 110 | 103 | 286 | 68 | 846 | 1439 |
| From B | 73 | 17 | 97 | 49 | 83 | 128 | 126 | 573 | 1912 |
| From C | 245 | 108 | 36 | 155 | 134 | 42 | 253 | 973 | 1759 |
| From D | 72 | 20 | 52 | 26 | 71 | 103 | 28 | 372 | 1930 |
| From E | 107 | 22 | 170 | 150 | 15 | 40 | 35 | 539 | 1792 |
| From F | 134 | 86 | 60 | 188 | 56 | 30 | 135 | 689 | 1668 |
| From G | 66 | 62 | 120 | 124 | 48 | 34 | 15 | 469 | 1697 |
| Total | 727 | 373 | 726 | 802 | 510 | 663 | 660 | 4461 | |

**Legend**

| Arm | Road (in clockwise order) |
|---|---|
| A | Fairview Park Boulevard EB |
| B | Castle Peak Road NB |
| C | San Tin Road NB |
| D | San Tam Road NB |
| E | San Tam Road SB |
| F | San Tin Road SB |
| G | Castle Peak Road SB |
| H | |

**Geometric Parameters**

| Arm | e (m) | v (m) | r (m) | L (m) | D (m) | ∅ (°) | S |
|---|---|---|---|---|---|---|---|
| From A | 11.0 | 7.0 | 22.0 | 14.0 | 142 | 35 | 0.5 |
| From B | 9.0 | 5.5 | 20.0 | 10.0 | 142 | 35 | 0.6 |
| From C | 8.5 | 6.4 | 23.0 | 7.5 | 142 | 30 | 0.4 |
| From D | 8.5 | 6.5 | 20.0 | 10.0 | 142 | 25 | 0.3 |
| From E | 8.0 | 6.0 | 20.0 | 9.5 | 142 | 35 | 0.3 |
| From F | 8.5 | 6.0 | 25.0 | 6.5 | 142 | 40 | 0.6 |
| From G | 6.0 | 5.0 | 22.0 | 7.0 | 142 | 30 | 0.2 |
| From H | | | | | | | |

**Predictive Equation $Q_E = K(F - f_c q_c)$**

$Q_E$ Entry Capacity
$q_c$ Circulating Flow across the Entry
$K = 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$
$F = 303x_2$
$f_c = 0.210t_D(1+0.2x_2)$
$t_D = 1+0.5/(1+M)$
$M = \exp[(D-60)/10]$
$x_2 = v+(e-v)/(1+2S)$
$S = 1.6(e-v)/L$

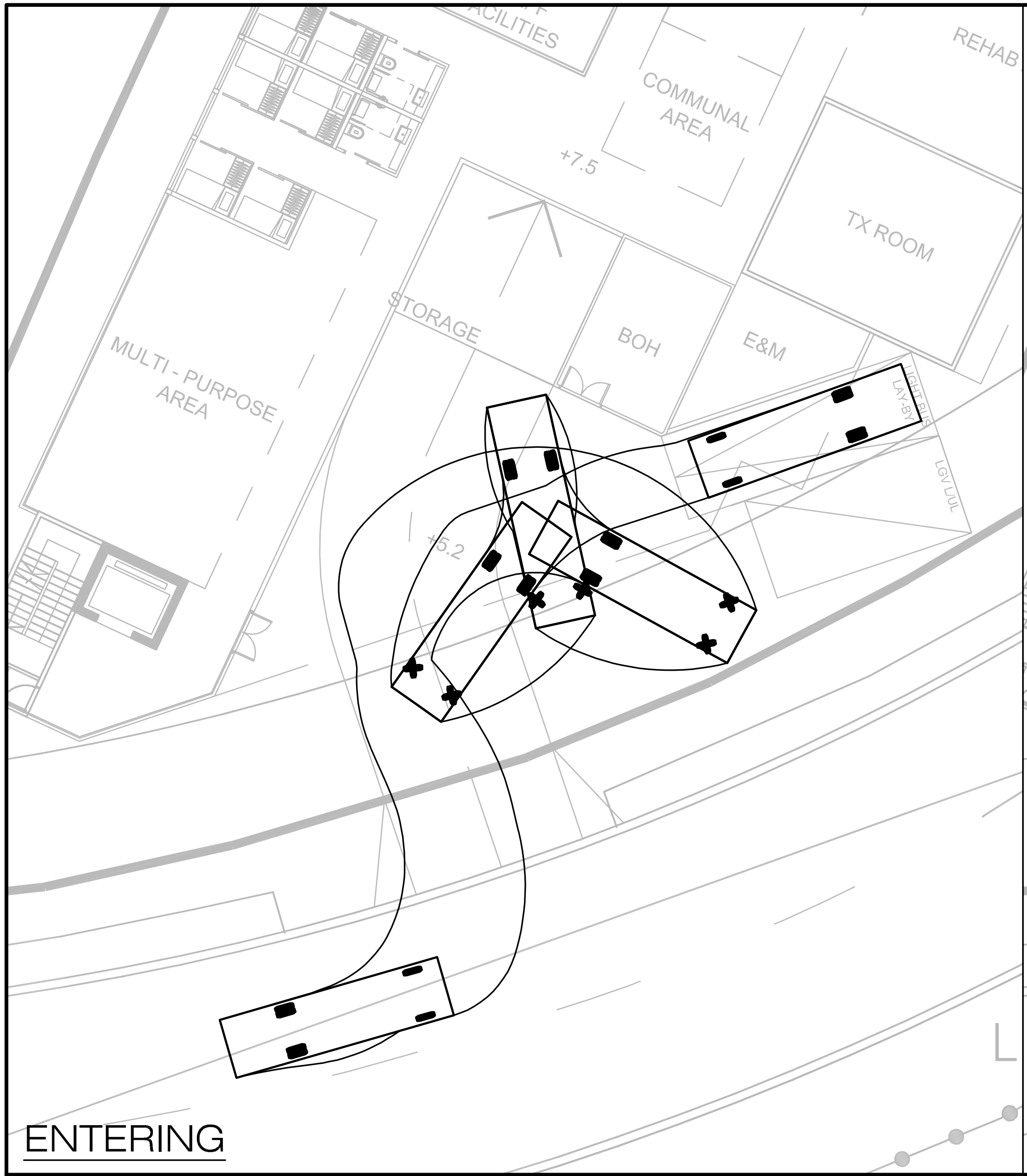
**Limitation**

| | | |
|---|---|---|
| e | Entry Width | 4.0 - 15.0 m |
| v | Approach Half Width | 2.0 - 7.3 m |
| r | Entry Radius | 6.0 - 100.0 m |
| L | Effective Length of Flare | 1.0 - 100.0 m |
| D | Inscribed Circle Diameter | 15 - 100 m |
| ∅ | Entry Angle | 10° - 60° |
| S | Sharpness of Flare | 0.0 - 3.0 |

**Ratio-of-Flow to Capacity (RFC)**

| | | | | | | | $Q_E$ | | Entry Flow | | RFC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arm | $x_2$ | M | $t_D$ | K | F | $f_c$ | AM | PM | AM | PM | AM | PM |
| From A | 9.09 | 3640.95 | 1.00 | 0.99 | 2754.13 | 0.59 | 1751 | 1878 | 995 | 846 | 0.57 | 0.45 |
| From B | 7.15 | 3640.95 | 1.00 | 0.98 | 2166.74 | 0.51 | 989 | 1170 | 639 | 573 | 0.65 | 0.49 |
| From C | 7.51 | 3640.95 | 1.00 | 1.01 | 2274.80 | 0.53 | 1423 | 1359 | 911 | 973 | 0.64 | 0.72 |
| From D | 7.72 | 3640.95 | 1.00 | 1.02 | 2339.01 | 0.53 | 1438 | 1331 | 413 | 372 | 0.29 | 0.28 |
| From E | 7.19 | 3640.95 | 1.00 | 0.98 | 2180.08 | 0.51 | 1295 | 1240 | 517 | 539 | 0.40 | 0.43 |
| From F | 7.12 | 3640.95 | 1.00 | 0.98 | 2157.57 | 0.51 | 1384 | 1276 | 733 | 689 | 0.53 | 0.54 |
| From G | 5.69 | 3640.95 | 1.00 | 1.00 | 1722.94 | 0.45 | 1008 | 965 | 667 | 469 | 0.66 | 0.49 |
| From H | | | | | | | | | | | | |

# Appendix 2 –
# Swept Path Analysis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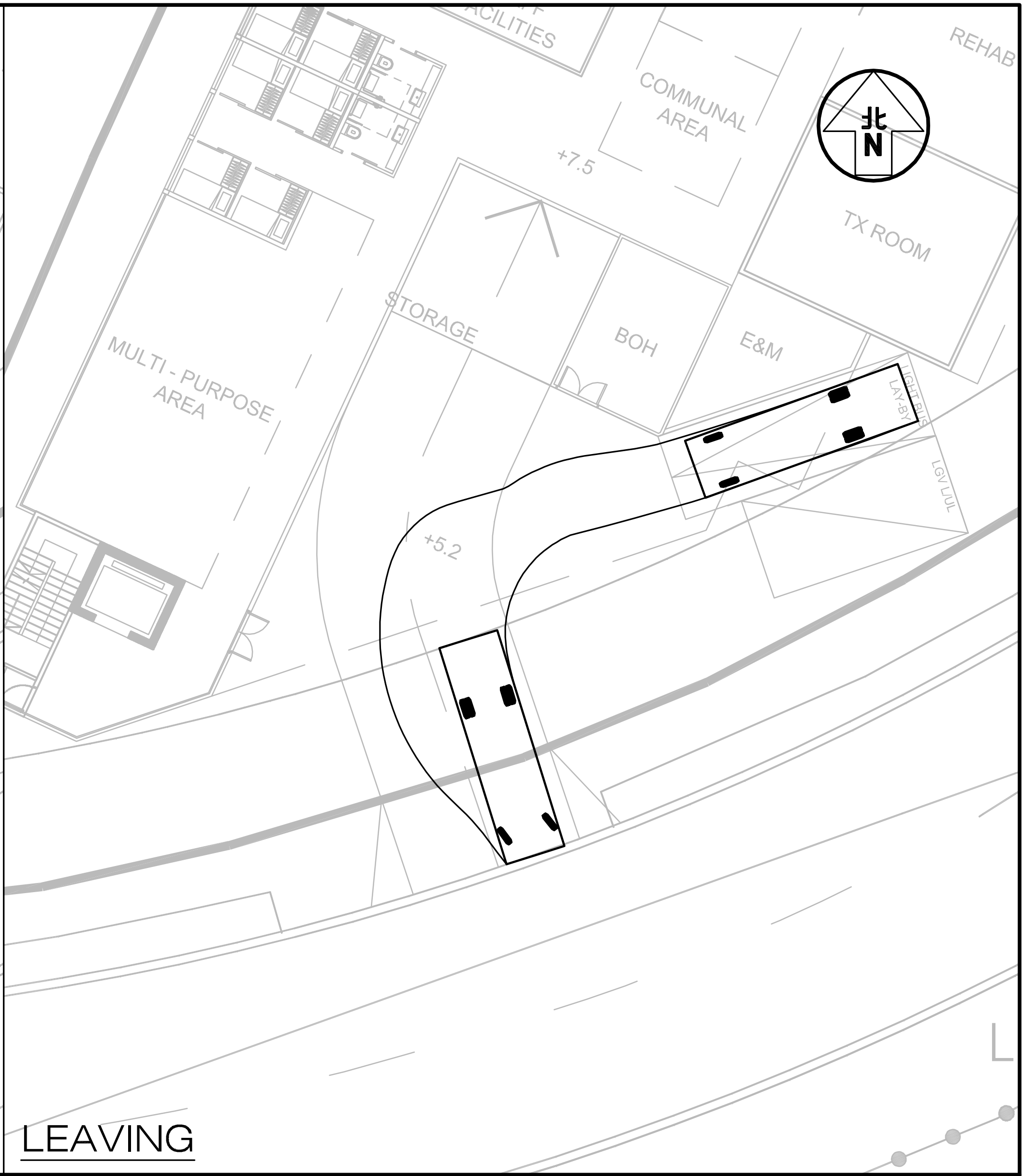
REHAB
+7.5
TX ROOM
STORAGE
BOH
E&M
MULTI - PURPOSE AREA
+5.2
LIGHT BUS LAY-BY
LGV L/UL

ENTERING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REHAB
+7.5
TX ROOM
N
STORAGE
BOH
E&M
MULTI - PURPOSE AREA
+5.2
LIGHT BUS LAY-BY
LGV L/UL

LEAVING

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG
J7401

Figure No.
SP1

Revision
A

CKM Asia Limited

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Figure Title

## SWEPT PATH OF MINI COACH ENTERING AND LEAVING THE LIGHT BUS / AMBULANCE PARKING SPACE ON G/F

Designed by
L C H

Drawn by
N C M

Checked by
K C

Scale in A4
1 : 250

Date
26 MAY 2025

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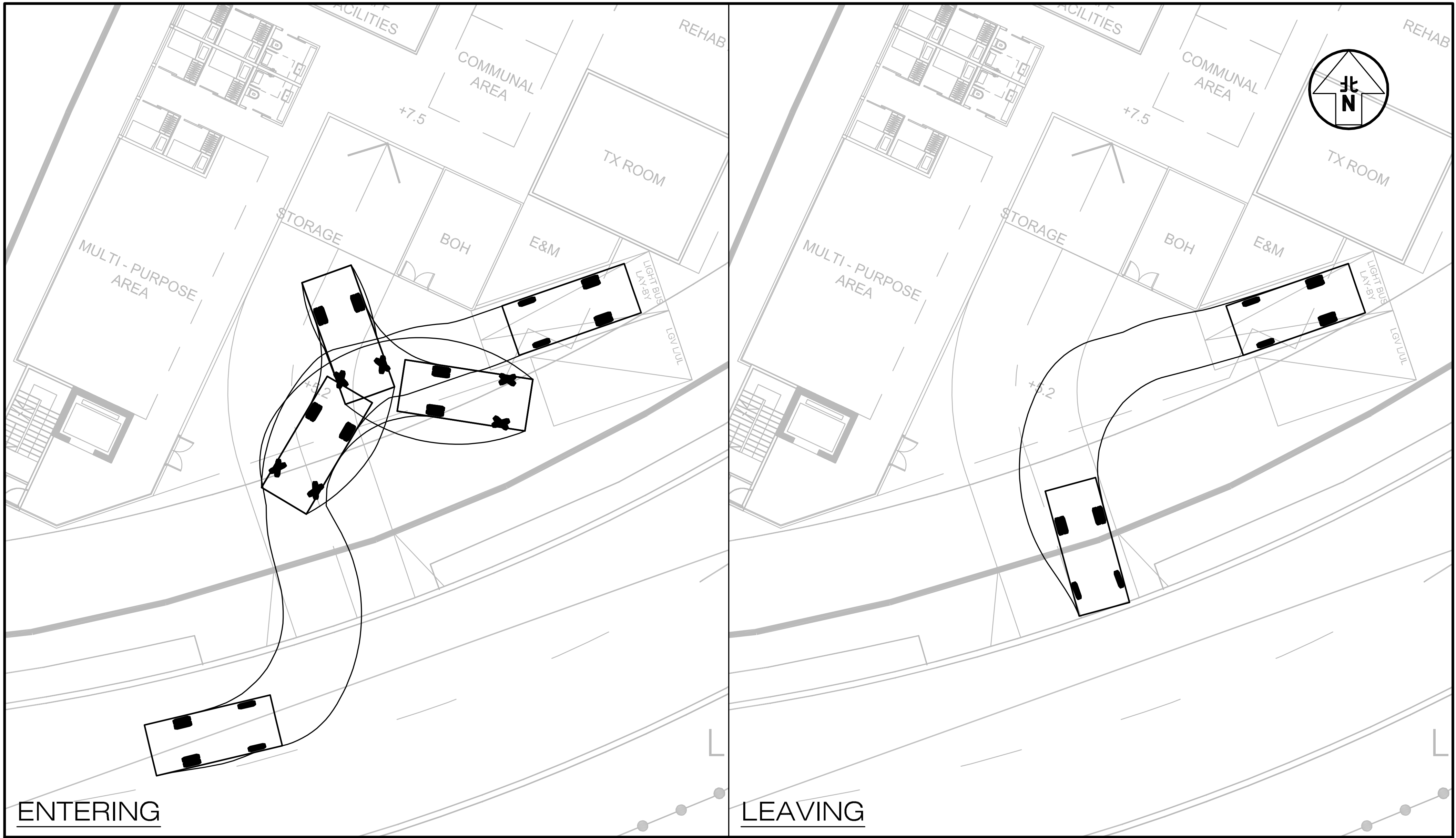
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COMMUNAL AREA
REHAB
+7.5
TX ROOM
STORAGE
BOH
E&M
MULTI - PURPOSE AREA
LIGHT BUS LAY-BY
LGV L/UL
+5.2
N

ENTERING

LEAVING

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG
J7401

Figure Title
# SWEPT PATH OF AMBULANCE ENTERING AND LEAVING THE LIGHT BUS / AMBULANCE PARKING SPACE ON G/F

| Figure No. | Revision |
|---|---|
| SP2 | A |

| Designed by | Drawn by | Checked by |
|---|---|---|
| L C H | N C M | K C |

| Scale in A4 | Date |
|---|---|
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CKM Asia Limited

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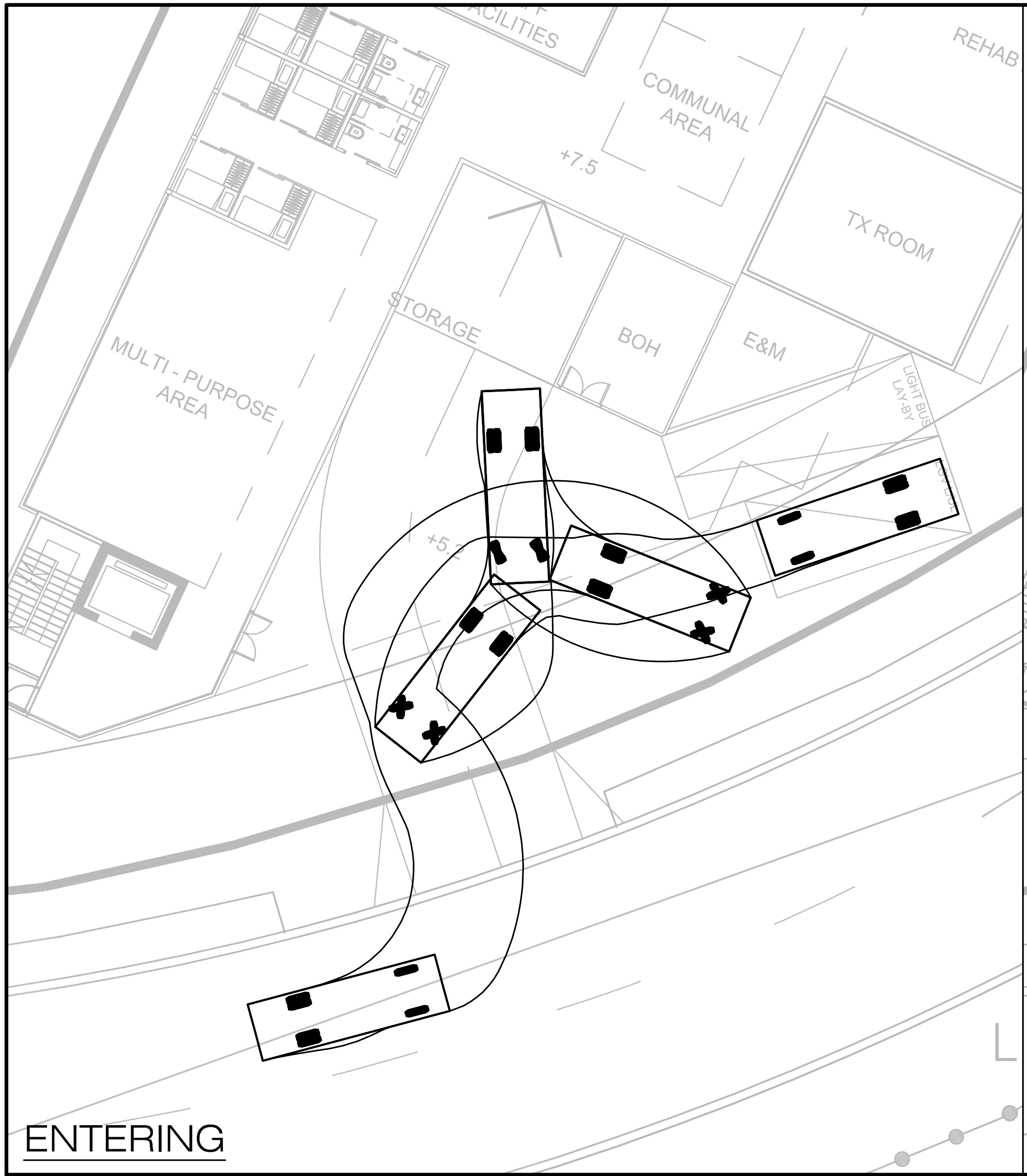
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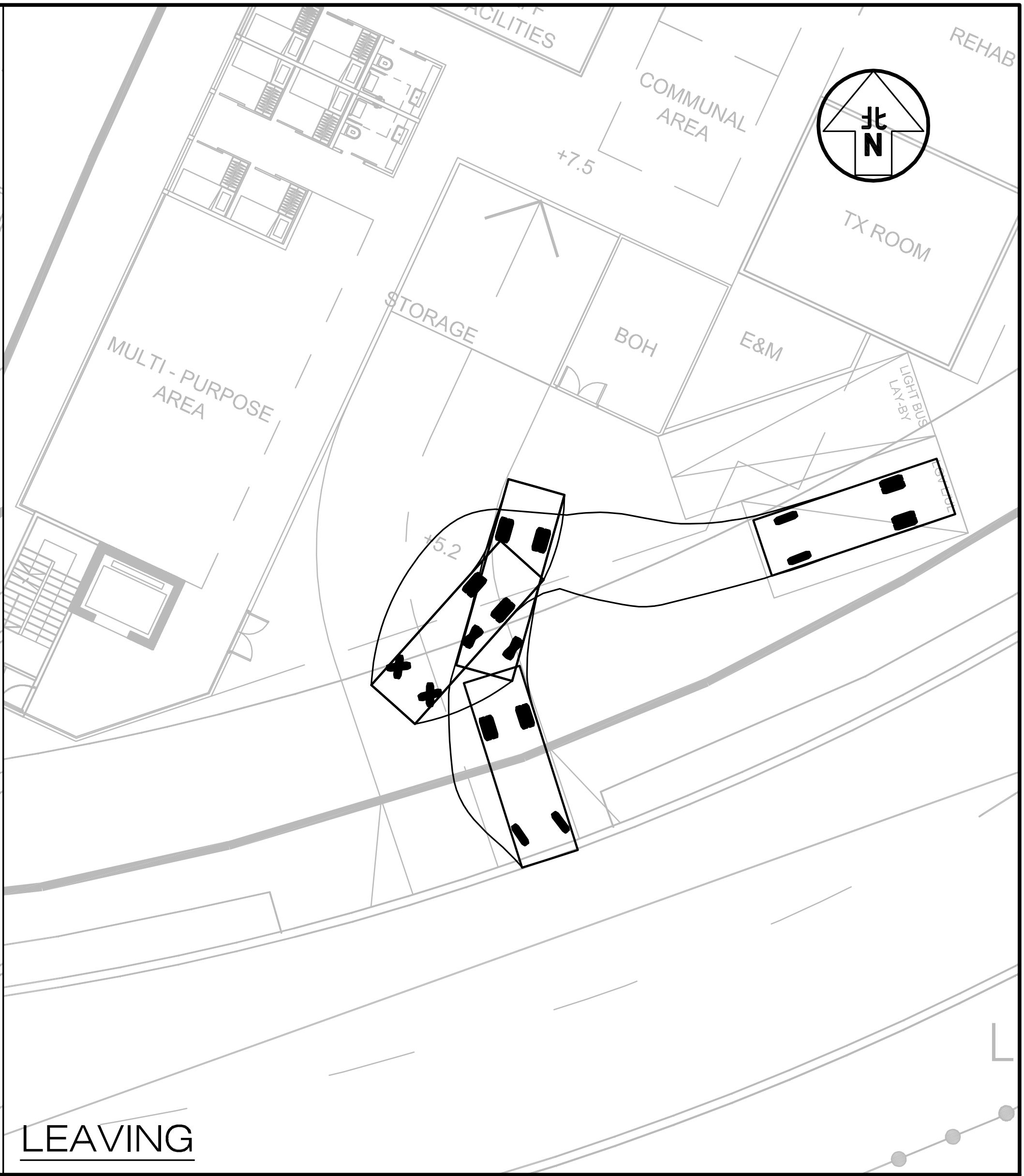
REHAB
COMMUNAL AREA
+7.5
TX ROOM
STORAGE
BOH
E&M
MULTI - PURPOSE AREA
LIGHT BUS LAY-BY
+5.2

ENTERING


FACILITIES
REHAB
COMMUNAL AREA
+7.5
N
TX ROOM
STORAGE
BOH
E&M
MULTI - PURPOSE AREA
LIGHT BUS LAY-BY
+5.2

LEAVING

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG
J7401

Figure Title

## SWEPT PATH OF LGV ENTERING AND LEAVING THE LOADING / UNLOADING BAY ON G/F

| Figure No. | | Revision |
|---|---|---|
| SP3 | | A |
| Designed by | Drawn by | Checked by |
| L C H | N C M | K C |
| Scale in A4 | Date | |
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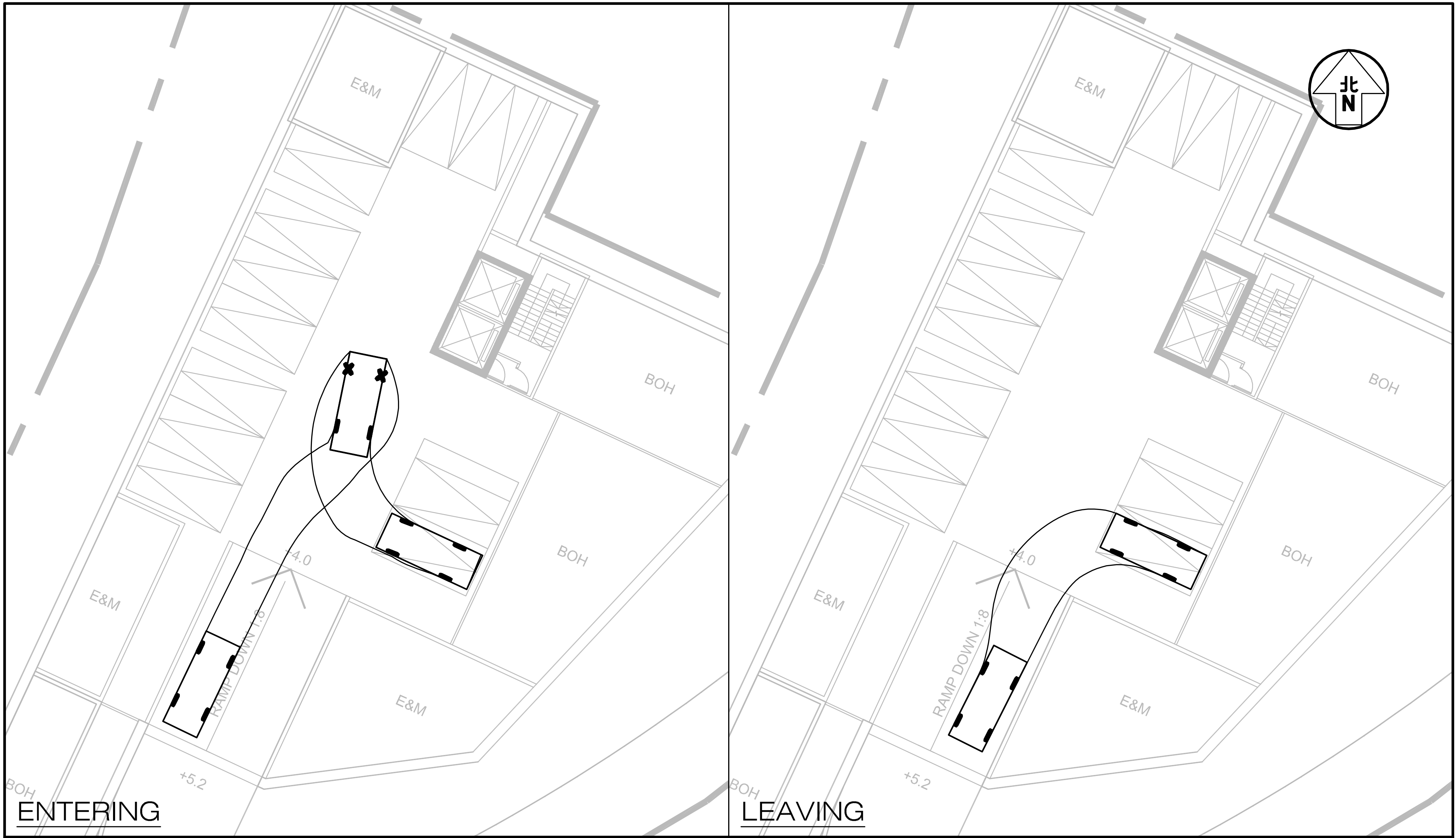

Project Title

PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART), 3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104, NAM SANG WAI, YUEN LONG

J7401

Figure Title

SWEPT PATH OF PRIVATE CAR ENTERING AND LEAVING
THE CAR PARKING SPACE ON B/F

| Figure No. | Revision |
|---|---|
| SP4 | A |

| Designed by | Drawn by | Checked by |
|---|---|---|
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| Scale in A4 | Date |
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| 1 : 250 | 26 MAY 2025 |

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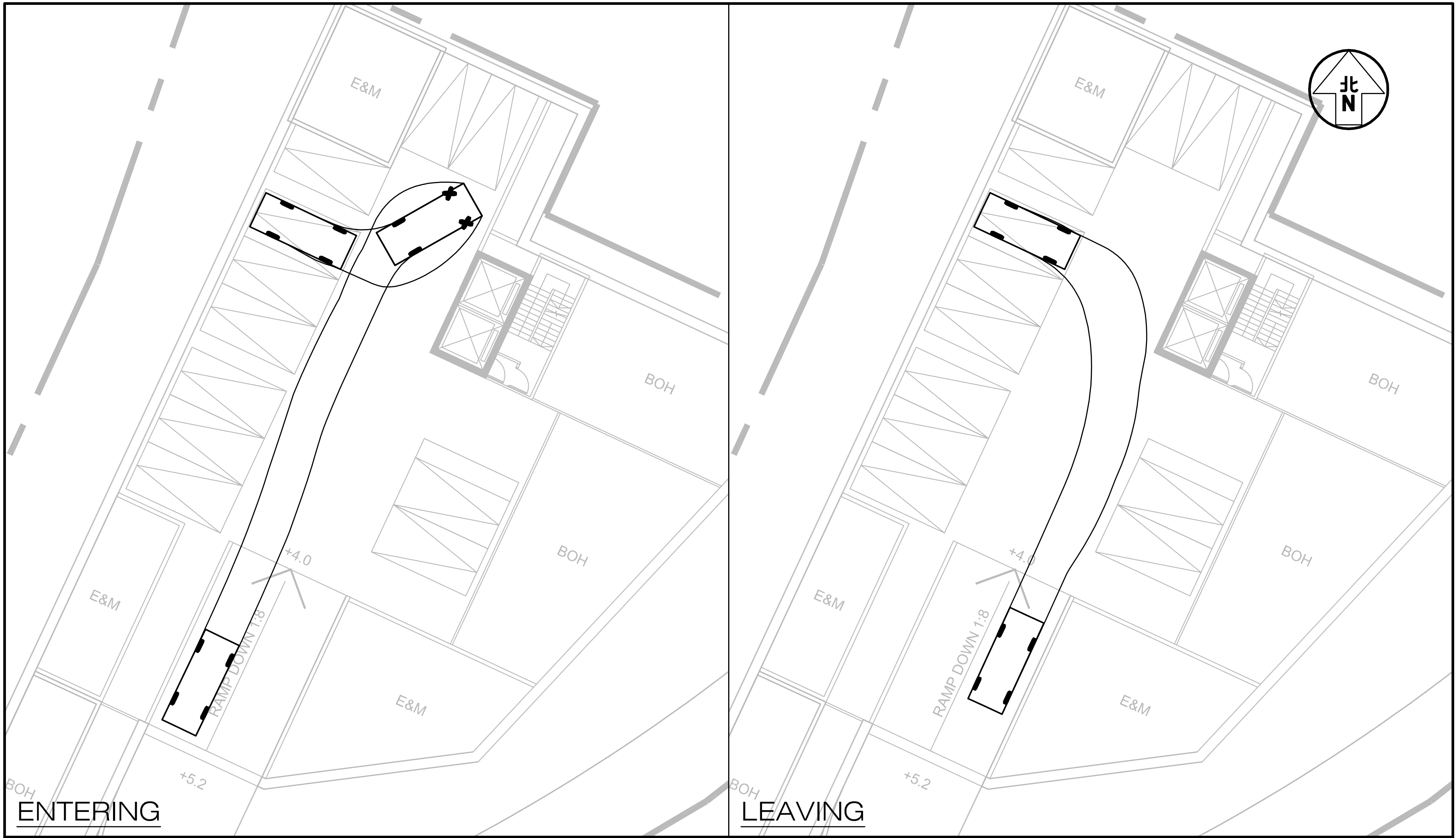
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E&M
E&M
BOH
BOH
BOH
+4.0
RAMP DOWN 1:8
+5.2
ENTERING
E&M
E&M
E&M
BOH
BOH
BOH
+4.0
RAMP DOWN 1:8
+5.2
LEAVING
北
N

Project Title
PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART), 3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104, NAM SANG WAI, YUEN LONG

J7401

Figure Title

## SWEPT PATH OF PRIVATE CAR ENTERING AND LEAVING THE CAR PARKING SPACE ON B/F

| Figure No. | Revision |
|---|---|
| SP5 | A |

| Designed by | Drawn by | Checked by |
|---|---|---|
| L C H | N C M | K C |

| Scale in A4 | Date |
|---|---|
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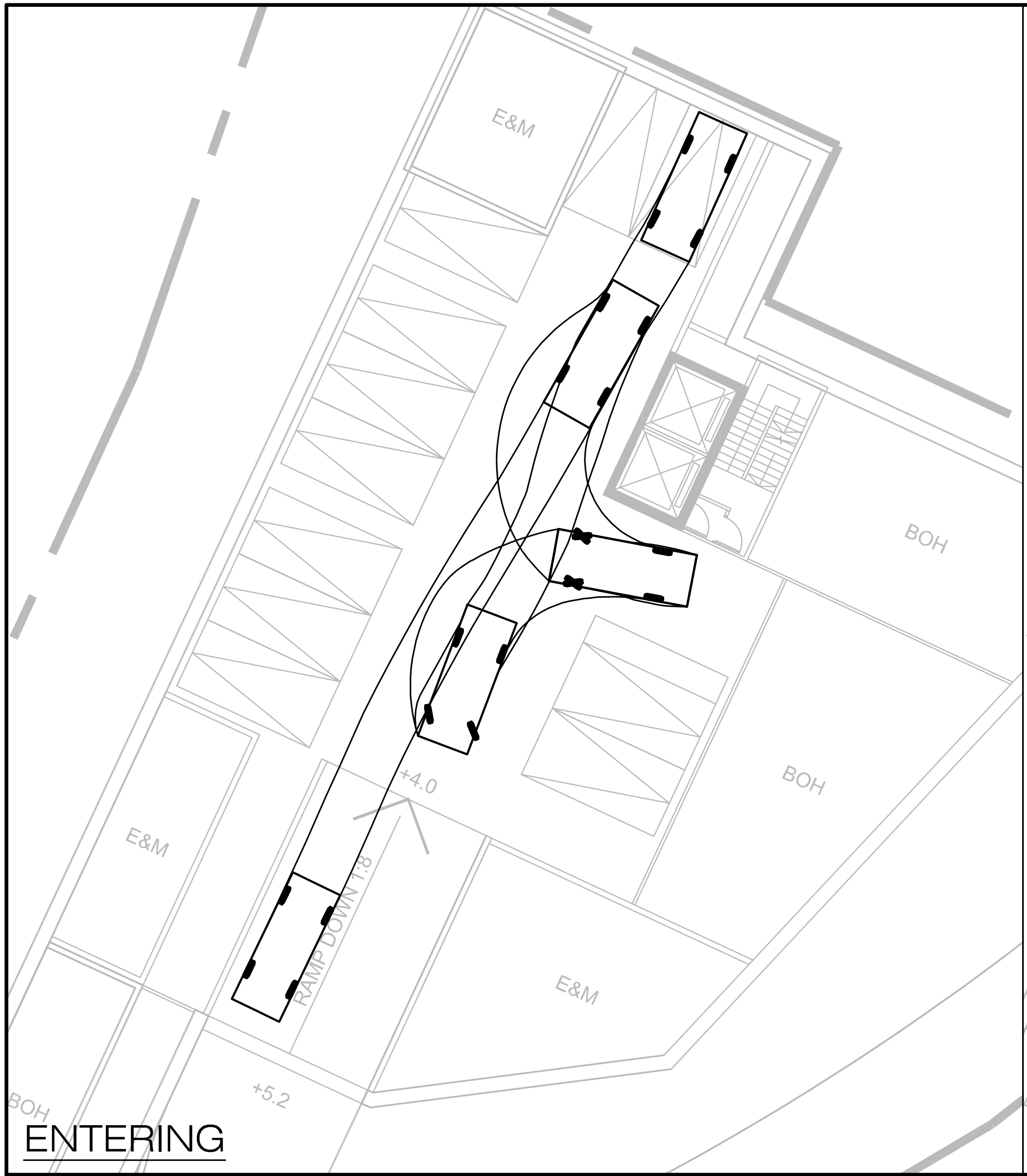
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E&M
E&M
BOH
BOH
BOH
+4.0
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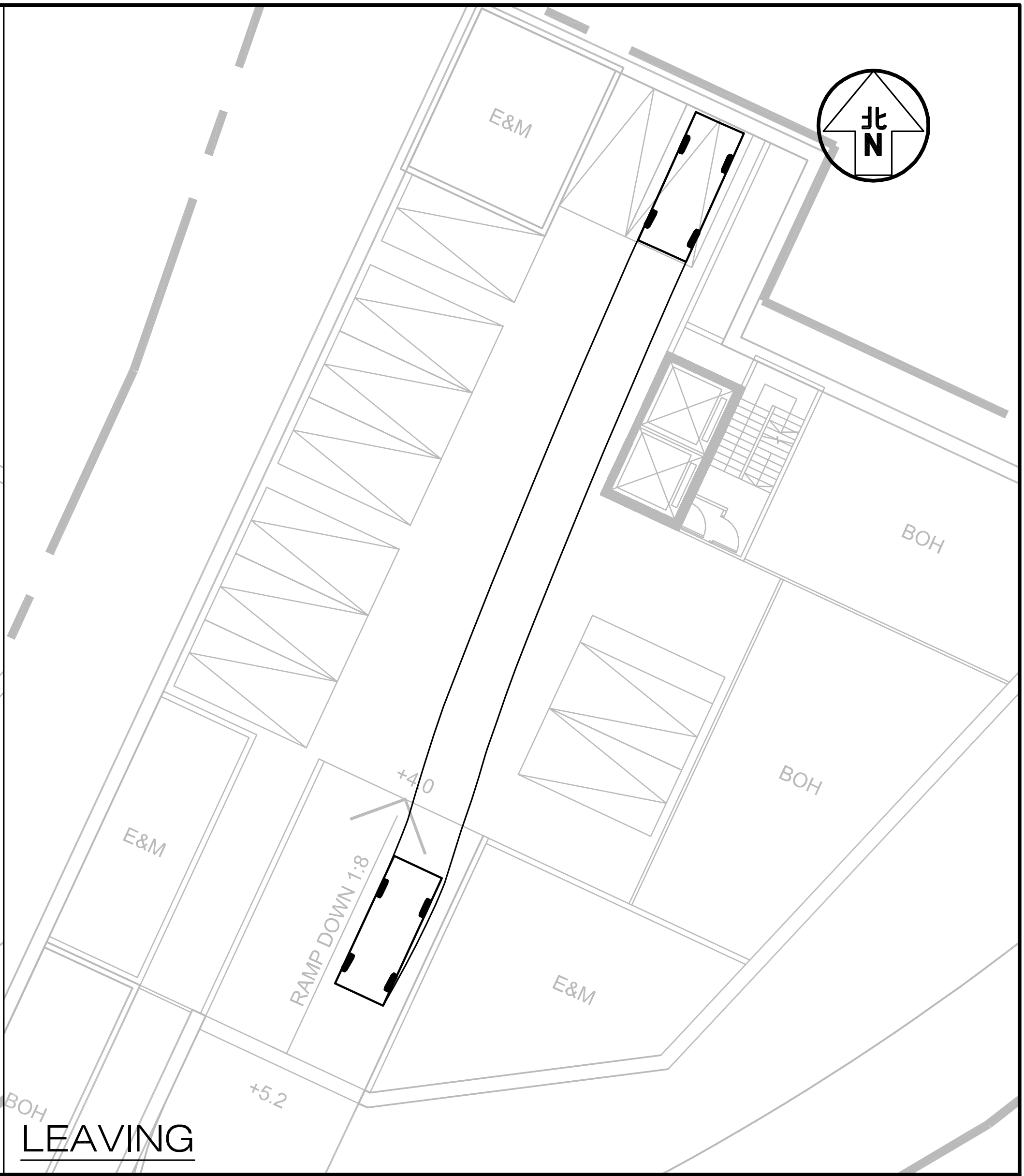
+5.2

ENTERING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E&M
E&M
BOH
BOH
BOH
+4.0
RAMP DOWN 1:8
+5.2
N

LEAVING

Project Title

PROPOSED SOCIAL WELFARE FACILITIES (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN
"VILLAGE TYPE DEVELOPMENT" ZONE, LOTS 3670 RP (PART), 3671 RP (PART),3672 RP (PART), 3673 RP (PART)
AND ADJOINING GOVERNMENT LAND IN D.D.104,NAM SANG WAI, YUEN LONG

J7401

Figure Title

SWEPT PATH OF PRIVATE CAR ENTERING AND LEAVING
THE CAR PARKING SPACE ON B/F

Figure No.
SP6

Revision
A

Designed by
L C H

Drawn by
N C M

Checked by
K C

Scale in A4
1 : 250

Date
26 MAY 2025

CKM Asia Limited
Traffic and Transportation Planning Consultants

[redacted]

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