

Appendix 3
Traffic Impact Assessment

**S.12A Planning Application on the Approved Mai Po
& Fairview Park OZP No. S/YL-MP/6
Rezoning from “Residential (Group D)”
to Residential (Group C)1” Zone
for a Proposed Residential Development
at Various Lots in DD 104 and Adjacent G.L.
in Yuen Long, N.T.**

Traffic Impact Assessment

February 2025

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1 INTRODUCTION

1.1 Background

- 1.1.1 The subject site covers various lots and adjacent Government Land in DD 104, Yuen Long, N.T. The site is sandwiched by Kam Pok Road and San Tin Highway near Chuk Yuen Tsuen. Further to the west of the site across Kam Pok Road, Ngau Tam Mei Drainage Channel and Yau Pok Road are a previously approved residential site zoned “Recreation” (“REC”) and an existing large-scale suburban estate called Fairview Park. The location of the subject site is shown in **Figure 1.1**.
- 1.1.2 The subject site has been previously approved for a low-rise residential development. Under the Approved Scheme (A/YL-MP/205), the residential development comprises 71 nos. of low-rise houses with a domestic plot ratio of 0.2 and an average unit size of about 186m². Under the Current Scheme, the proposed residential development changes from house development to the flat development. It comprises 2,322 residential units with a domestic plot ratio of 1.5 and an average flat size of about 42.4 m². In addition, a transport layby, some local retail facilities and GIC uses [including a 6-classroom kindergarten and a neighbourhood elderly centre (NEC)] are also proposed to serve the future residents.
- 1.1.3 AECOM Asia Co. Ltd has been commissioned by the site owner (the Applicant) to carry out a Traffic Impact Assessment (TIA) to assess the traffic impacts of increasing the plot ratio for the Subject Site in the subject planning application.

1.2 Objectives

- 1.2.1 The main objectives of this report are as follows-
- Outline the proposed development parameters and internal transport facilities;
 - Review the current traffic condition in the vicinity;
 - Estimate the future public transport demand of the proposed development;
 - Estimate the potential traffic generations and attractions of the proposed development;
 - Produce traffic forecasts on the surrounding road network at the adopted design year;
 - Assess traffic impact on the surrounding road network induced from the proposed development; and
 - Develop traffic improvement proposal(s) if necessary.

1.3 Structure of TIA Report

1.3.1 Following this introductory chapter, the TIA is structured as follows:

- **Chapter 2:** Proposed Development, describes the development schedule of the proposed development and its internal traffic facilities provisions, access arrangement, etc.; The future public transport demand together with the required transport facilities would be discussed;
- **Chapter 3:** Existing Traffic Condition, reviews the current traffic conditions;
- **Chapter 4:** Traffic Impact Assessment, presents the traffic forecast arise from the proposed development, the approach and results of traffic forecast and the results of capacity assessments of the identified critical junctions with the proposed development;
- **Chapter 5:** Summary and Conclusion, summarizes the findings of the study and presents the conclusion of this TIA.

2 PROPOSED DEVELOPMENT

2.1 Development Schedule

- 2.1.1 The Subject Site has an area of about 6.57 ha. The domestic plot ratio of the site is proposed to be increased from 0.2 to 1.5 with an increase in housing production from the previously approved 71 houses to the currently proposed 2,322 flats. In planning terms, the proposed development remains as in low-medium density in nature. The indicative development schedule of the Proposed Development is summarized in **Table 2.1** for technical assessment purpose and the current Master Layout Plan is illustrated in **Figure 2.1** for reference.

Table 2.1 Indicative Development Schedule of Development

Development Parameters	Approved Scheme (A/YL-MP/205 & 205-1)	Proposed Scheme
Site Area	About 65,915 m ²	About 65,690 m ²
Domestic GFA	About 13,183 m ²	About 98,535 m ²
Commercial GFA	-	About 3,292 m ² ⁽¹⁾
Domestic Plot Ratio	0.2	1.5
No. of Units	71 houses	2,322 units
Average Flat Size	About 186 m ²	About 42.4 m ²

Note:

(1) including the floor space of Retail/ Eating Place use (abt. 2,363m²) and a 6-classroom kindergarten (abt. 929m²), but excluding the floor space of Transport Layby (abt. 2,400m²) and a Neighborhood Elderly Centre (NEC) (abt. 722m² GFA)

2.2 Accessibility Arrangement

- 2.2.1 The Subject Site is sandwiched by Kam Pok Road and San Tin Highway. Kam Pok Road is the existing road running along the Ngau Tam Mei Main Drainage Channel near the Subject Site. The Subject Site is accessible to/from Castle Peak Road – Tam Mi via Kam Pok Road.
- 2.2.2 The concerned section of Kam Pok Road is a single two-lane carriageway linking Fairview Park Boulevard from its south and Castle Peak Road to its north. It serves as the major access road to the proposed development. The development traffic would access the Subject Site via San Tin Highway through the Fairview Park Roundabout, Castle Peak Road and Kam Pok Road.

2.2.3 Two vehicular accesses (namely Access 1 and Access 2) are proposed along the frontage of Kam Pok Road. Access 1 will serve as the main access to/ from the proposed development as well as ingress point for the proposed transport layby. Access 2 will serve as the egress point for the proposed transport layby and the vehicular access for the proposed GIC and retail facilities. By taken into consideration the latest development from the Light Public Housing at REC site, the design of vehicular access of R(D) site at Kam Pok Road would be further discussed in Section 4.5 and subject to revise under the subsequent Land Grant Application.

2.2.4 **Figure 2.2** presents the proposed site accesses and the access route. Directional signs will be provided near the vehicular access within the lot to guide the drivers to route via Kam Pok Road Northbound and Castle Peak Road – Tam Mi Southbound to access to Fairview Park Roundabout.

2.3 Internal Transport Facilities

2.3.1 The parking and loading/unloading facilities of the Proposed Development will be provided in accordance with the requirements as stipulated in the latest Hong Kong Planning Standards and Guidelines (HKPSG) to cater for the transport demand. The respective requirements and proposed provision according to the development schedule are summarized in **Table 2.2**.

Table 2.2 HKPSG Parking and Servicing Facilities Provisions Requirement

HKPSG Requirements											
Private Car Parking Spaces											
Residential – Private Car Parking Spaces	GPS (1 space per 4-7) x R1 x R2 x R3										
	• Demand Adjustment Rate R1:										
	<table><tr><th>Flat size (FS)</th><th>R1</th></tr><tr><td>FS≤40</td><td>0.5</td></tr><tr><td>40<FS≤70</td><td>1.2</td></tr><tr><td>70<FS≤100</td><td>2.4</td></tr><tr><td>100<FS≤130</td><td>4.1</td></tr></table>	Flat size (FS)	R1	FS≤40	0.5	40<FS≤70	1.2	70<FS≤100	2.4	100<FS≤130	4.1
	Flat size (FS)	R1									
	FS≤40	0.5									
	40<FS≤70	1.2									
	70<FS≤100	2.4									
	100<FS≤130	4.1									
	• Accessibility Adjustment Ratio R2 = 1.0										
	• Development Intensity Adjustment Ratio R3 = 1.1										
For flat size 40≤FSm² ,											
= 1 space per 4-7 flats x 0.5 x 1.00 x 1.10											
= 0.55 spaces per 4-7 flats											
For flat size 40<FS≤70 m² ,											
= 1 space per 4-7 flats x 1.2 x 1.00 x 1.10											
= 1.32 spaces per 4-7 flats											
For flat size 70<FS≤100 m² ,											
= 1 space per 4-7 flats x 2.4 x 1.00 x 1.10											
= 2.64 spaces per 4-7 flats											
For flat size 100<FS≤130 m² ,											
= 1 space per 4-7 flats x 4.1 x 1.00 x 1.10											
= 4.51 spaces per 4-7 flats											

HKPSG Requirements	
Residential – Visitor Private Car Parking Spaces	5 spaces per block of more than 75 residential units
Retail – Private Car Parking spaces	1 car space per 150 – 300m ² GFA
Kindergarten – Private Car Parking Spaces	0 to 1 car parking space per 4 to 6 classrooms
Motorcycle Parking Spaces	
Residential – Motorcycle Parking Spaces	1 space per 100-150 flats
Retail – Motorcycle Parking Spaces	5% - 10% total provision for private cars
Loading/ Unloading Bay	
Residential – Loading and Unloading Bay	1 space for every 800 flats subject to min. 1 bay per block or as determined by the Authority.
Retail – Loading and Unloading Bay	1 loading/ unloading bay for goods vehicles for every 800 to 1200m ² or part thereof, GFA
Lay-bys	
Kindergarten – Taxi/ Private Cars lay-by	1 lay-by for taxis and private cars for every 5 to 8 classrooms
Kindergarten – Small Coaches Layby	5 lay-bys for mini-bus / nanny van (each 3m x 7m)
Bicycle Parking Spaces	
Residential – Bicycle Parking Spaces	1 space per 30 flats with flat size smaller than 70m ²

2.3.2 Regarding the provision of taxi/ private cars/ school bus layby for kindergarten, reference has been made to planning application no. A/YL-NSW/274 and the provision rates are shown in **Table 2.3**.

Table 2.3 Required and Proposed Parking and Servicing Facilities Provisions

	Private Car/ Taxi Layby	School Bus Layby
Adopted Rates	5.63 spaces / 100 students	Minimum 5 laybys for small coaches

2.3.3 In light of the HKPSG requirements given in **Table 2.2** and **Table 2.3**, the proposed provision according to the development schedule is given in **Table 2.4**. Taken into consideration the proximity to public transport services, availability of public car parking space, traffic conditions and the illegal parking condition in the vicinity, a total of 568 nos. of residential car parking spaces would be provided in 1 level of basement carpark

based on the proposed flat supply (2,322 units) and domestic plot ratio (DPR 1.5). For other facilities, the higher end of provision requirements has been adopted.

- 2.3.4 Also, the adjacent REC Northern (i.e. 1,249 Flats) and Southern sites (i.e. 1,228 Flats) will provide 364 and 345 private car spaces respectively. In case there is change in plot ratio/development flat mix in the subject site, a minimum GPS value of 5 would be achieved altogether with the adjacent REC northern and southern sites (planning application Y/YL-MP/7 and 8).

Table 2.4 Required and Proposed Parking and Servicing Facilities Provisions

	Parameters	Required Provision		Proposed Provision
Private Car Parking Spaces				
Residential – Private Car Parking Spaces	768 units	40 m ² ≤FS	61 - 106	496 spaces ⁽¹⁾
	1,554 units	40<FS≤70 m ²	294 - 513	
	Total: 2,322 units	355 - 619 spaces		
Residential – Visitor Private Car Parking Spaces	10 blocks	50 spaces		50 spaces
Retail – Private Car Parking Spaces	2,363m ²	8 – 16		16 spaces
Kindergarten – Private Car Parking Spaces	6 Classrooms	0 – 1 space		1 space
Private Car Parking Spaces ⁽²⁾				568 spaces
Motorcycle Parking Spaces				
Residential – Motorcycle Parking Spaces	2,322 units	16 - 24 spaces		24 spaces
Retail – Motorcycle Parking Spaces	16 spaces	1 – 2 spaces		2 spaces
Motorcycle Parking Spaces				26 spaces
Loading/ Unloading (L/UL) Bay				
Residential – L/UL Bay	10 blocks	10 spaces		10 spaces
Retail – Loading and Unloading Bay	2,363m ²	2 – 3 spaces		3 spaces

Lay-bys			
Kindergarten – Taxi/ Private Cars lay-by	6 Classrooms	1 lay-by	10 layby ⁽³⁾
Kindergarten – Small Coaches Layby	6 Classrooms	5 lay-bys	5 lay-bys ⁽⁵⁾ (each 3m x 7m)
Bicycle Parking Space			
Residential -- Bicycle Parking Space	2,322 units	78 spaces	78 spaces ⁽⁶⁾

Notes: Round up figures adopted.

- (1) The number is proposed based on 1 level of basement carpark.
- (2) Minimum 6 accessible car parking spaces will be reserved for persons with disabilities in accordance with the HKPSG (at least 1 space for visitor parking)
- (3) The kindergarten could accommodate up to 180 pupils. Adopted provision rates with reference to planning application no. A/YL-NSW/274.
- (4) With reference to the TIA report under planning application no. A/NE-SSH/120-1, nil provision is proposed for Neighbourhood Elderly Centre.
- (5) It is preliminarily proposed to place 3 nos. of kindergarten layby at G/F and 2 nos. at the basement level. Management staff would be deployed to guide traffic down to basement when the kindergarten layby at G/F is full to ensure no traffic queue back to public road. Nevertheless, the above details can be further reviewed in the subsequent detailed design stage.
- (6) Cycle parking is provided at basement under each residential tower. Lifts would be provided for cyclists between basement and G/F and have no need to travel via the carpark. The details would be provided in the subsequent detailed design stage.

2.4 Proposed Public Transport Facilities

- 2.4.1 MTRCL Tuen Ma Line is one of the most important mass public transport services in the Yuen Long and Kam Tin areas. Currently, the closest MTRCL Tuen Ma Line stations are Yuen Long Station and Kam Sheung Road Station which are located approximately 5.5 km and 6.5km away from the subject site respectively. Also, Lok Ma Chau Station of East Rail is located at approximately 7.0km away from the subject site.
- 2.4.2 In the future, by completion of the Northern Link (NOL), Ngau Tam Mei Station will be approximately 1.0km away which would also as an important mass public transport services at the subject site.
- 2.4.3 Currently, there is no public transport services available at the concerned sections of Yau Pok Road and Kam Pok Road that may serve the future public transport demand of the proposed development.
- 2.4.4 Under the proposed scheme, there will be 2,322 units. By assumption of 2.7 persons / flat, the anticipated population in proposed development is about 6,270. In addition, there are two other sites under the S12A Planning Application No. Y/YL-MP/7 and Y/YL-MP/8 with a total population of 6,688 persons. Hence, taking into consideration of the three sites, a total population of 12,958 persons would be served. Reference has been made to the published “Travel Characteristics Survey (TCS) 2011 Final Report”. According to the TCS Final Report, the daily mechanised trip rate per population is 1.83 trips and the morning peak hour accounted for about 12% of the daily trips. The percentage of using public transport is about 73% of the total trips. The estimated additional public transport demand in AM peak hour is about 2,077 pax/hr (i.e. $12,958 \times 1.83 \times 0.12 \times 0.73$) as shown in **Table 2.5**.

Table 2.5 Public Transport Demand for R(D) Site and Adjacent Northern,

Southern Site in AM Peak Hour

Development	No. of Units	Population	Public Transport Demand (pax/hr)
R(D) Site (Subject Site)	2,322	6,270	1,005 (i.e. $6,270 \times 1.83 \times 0.12 \times 0.73$)
Southern Site (Under Application No. Y/YL-MP-7)	1,228	3,315	531 (i.e. $3,315 \times 1.83 \times 0.12 \times 0.73$)
Northern Site (Under Application No. Y/YL-MP-8)	1,249	3,373	541 (i.e. $3,373 \times 1.83 \times 0.12 \times 0.73$)
Total	4,799	12,958	2,077

- 2.4.5 As stated in **Para 2.4.1**, MTRCL is the key mode of public transport in the area. It is therefore proposed to provide the future bus services to serve the Subject Site to Yuen Long Station or NT North or the nearby future Ngau Tam Mei Station of Northern Link (NOL) Project via Kam Po Road, Castle Peak Road (Tam Mi) and San Tin Highway.
- 2.4.6 A passenger count survey was conducted at existing Park YOHO, which is considered a comparable reference as the Subject Site. Based on the surveyed results, about 45% are destined to Tuen Ma Line Station, 35% via Long-haul bus service (via 268M) and 20% to Yuen Long Town Centre are identified.
- 2.4.7 As the major public transport demand would be likely to be destined to Tuen Ma Line Station / Yuen Long Town. A circular bus service is proposed between Yuen Long Station PTI and the development site. The proposed new bus service would be a circular route with terminating point at the development site with bus stops at the other two sites (i.e. routing via REC northern and southern sites) and a bus stop at Yuen Long Station PTI for passenger boarding / alighting. The location of the proposed bus stop at Yuen Long Station PTI is shown in **Figure 2.3**. Currently, there are 6 bus bays provided in the Yuen Long Station PTI as shown in **Figure 2.3** serving only bus routes B1, B2, K65 and N30. In view of that, one bus bay is proposed to serve for the proposed circular bus service. The proposed bus stop at Yuen Long Station would serve only for passenger boarding / alighting with no bus stacking required, as a result, there should still be capacity to accommodate the said bus stop within Yuen Long Station PTI. Nevertheless, the boarding / alighting point for this proposed circular bus service can be further reviewed / discussed with TD in the subsequent detail design stage.
- 2.4.8 Based on the demand of 1,350 pax/hr (i.e. $2,077 \times 65\%$) and a capacity of 90 persons/bus, the proposed headway is about 4 minutes. Subject to the future planning, the conceptual routing is diagrammatically shown in **Figure 2.3**. The estimated round trip journey distance and journey time are about 12 km and 24 minutes respectively. For the proposed circular bus service between Yuen Long Station PTI and the development site, the round trip time is about 30 minutes (12km / 30kph + 6 minutes boarding/ alighting time). For proposed headway of 4 minutes, a total of 8 buses would be required (i.e. $30/4$) during peak hour. For non-peak period, it is assumed that the proposed circular bus service would be operated in headway of 12 minutes, a total of 5 buses would be required (i.e. $60/12$) during non-peak hour. As shown in **Appendix A**, the proposed bus bay is about 42m long, which can accommodate 3 buses. In

addition, the double-width bus bay could accommodate additional 3 buses at the bypassing lane. Therefore, there will be sufficient stacking space at the proposed Transport Layby.

- 2.4.9 For the demand of the long-haul bus services, the overall demand for the 3 development sites is about 727 pax/hr (i.e. 2,077 x 35%). Based on a capacity of 90 persons/bus, this would be equivalent to about 8 bus trips/hour. Hence 8 bus trips of long-haul bus routes to/from urban areas (such as Hong Kong Island, Kowloon East and Kowloon) are proposed during the AM / PM peak hours. Passengers taking these bus services can also interchange with other bus routes to various districts via Tai Lam Bus Interchange.
- 2.4.10 To cater for the proposed services, Transport Laybys are proposed within the development site. The indicative layout of proposed Transport Laybys are shown in **Appendix A** (subject to further review under subsequent detailed design stage). As shown in the indicative layout, 3 transport laybys are provided including one double-width bay of about 42m, two single-width bays of about 40m. All the 3 laybys have been designed to allow the manoeuvring of 12.8m bus. One of these 3 laybys would be designated to serve the proposed bus service to/from Yuen Long Station PTI. One of these 3 laybys would be reserved for the provision of GMB services if required in future. For the remaining layby, it could serve the long-haul bus routes during the AM / PM peak hours.
- 2.4.11 The proposed circular bus services to / from Yuen Long Station PTI and peak hour long-haul services to / from urban areas serve the public transport demand for R(D) site as well as the two REC sites. As PTI has been proposed within both REC sites, a portion of the terminating routes can be located at these two sites. Within the two REC sites, a total of 8 bus bays are planned which could be used as loading/unloading bays or bus stacking bays for the proposed public transport service. The provisions in the two REC sites can be further reviewed under the relevant planning applications (Y/YL-MP7 and 8). Subject to the future detailed design, taxi would be allowed to route via the internal driveway within the development site to provide point-to-point service for the residents, hence taxi stand would not be provided in the transport layby.
- 2.4.12 The transport laybys proposed within the two REC sites development is shown in **Appendix A**. For the REC northern site, a total of 3 buses can be accommodated. For the REC southern site, a total of 5 buses can be accommodated. By deducting one bus bay used for passenger boarding/alighting for the circular bus service to/from Yuen Long Station, the remaining (i.e. 2 bus bays in northern site and 4 bus bays in southern site) could also be used to serve the long-haul bus routes during the AM / PM peak hours.
- 2.4.13 The swept path analysis of the 3 transport laybys is shown in **Appendix A**.

Passenger Queue Area

- 2.4.14 As indicated in **Section 2.4.7**, the proposed circular bus services to Yuen Long Station PTI and Yuen Long Town account for 65% of the passenger demand, the passenger queue condition is therefore considered the most critical.
- 2.4.15 Based on the patronage demand described in **Table 2.5**, the hourly demand during AM peak hour for the proposed circular bus route at the Subject Site would be 654

pax/hr (i.e. $1,005 \times 0.65$). Given a proposed headway of 4 minutes as suggested in **Section 2.4.7**, the maximum queue would be around 44 persons for the Application Site. Based on the above, the Level-of-Service (LOS) for passenger queueing area for the proposed circular bus route has been assessed and summarised in **Table 2.6**.

Table 2.6 LOS Of Passenger Queueing Area For Proposed Circular Bus Route at Proposed Transport Laybys

Transport Layby	Estimated Passenger Demand (pax/hr)	Maximum Queue (pax)	Waiting Area (m ²)	Waiting Space (m ² /person)	LOS ⁽¹⁾
Subject Site	654	44 (i.e. $654/60 \times 4$)	63	>1.4	A

Notes:

(1) Level-of-service (LOS) assessment criteria from Highway Capacity Manual 2000 is adopted.

2.4.16 As shown in **Table 2.6**, the passenger queueing area at the subject site would operate with acceptable LOS A, which is better than the preferred LOS C and is therefore considered acceptable. The description of LOS from Exhibit 11-9 of Highway Capacity Manual 2000 is extracted and shown in **Table 2.7** for reference.

Table 2.7 Description of Level-of-Service (LOS) For Queueing Area

LOS	Average Pedestrian Space (m ² /person)	Description
A	>1.2	Standing and free circulation through the queueing area is possible without disturbing others within the queue.
B	0.9 - 1.2	Standing and partially restricted circulation to avoid disturbing others in the queue is possible.
C	0.6 - 0.9	Standing and restricted circulation through the queueing area by disturbing others in the queue is possible; the density is within the range of personal comfort.
D	0.3 - 0.6	Standing without touching is possible circulation is severely restricted within the queue and forward movement is only possible as a group; long term waiting at this density is uncomfortable.
E	0.2 - 0.3	Standing in physical contact with others in unavoidable; circulation in the queue is not possible; queueing can only be sustained for a short period without serious discomfort.
F	≤ 0.2	Virtually all persons within the queue are standing in direct physical contact with others; this density is extremely uncomfortable; no movement is possible in the queue; there is potential for panic in large crowds at this density.

Impact on Tuen Ma Line

2.4.17 Referring to Section 2.4.14, the public transport demand for Tuen Ma Line (formerly named as West Rail Line) induced by three development sites would be around 935 pax/hr (i.e. $2,077 \times 45\%$) in AM peak.

2.4.18 Referring to Press Releases (2019). LCQ7: Loading of trains of West Rail Line, The patronage per direction of the West Rail Link in its critical link (i.e. from Kam Sheung Road to Tsuen Wan West) in year 2018 AM peak hour is 40,400 pax/hr

2.4.19 To forecast the patronage flow in year 2034, annual growth rate was estimated with reference to 2019-based Territorial Population and Employment Data Matrix (TPEDM) data which is available in Planning Department website. **Table 2.8** below shows the planning data of Tuen Mun, Yuen Long, Tin Shui Wai, and northwest New Territories

Table 2.8 2019-based TPEDM Planning Data

Planning Data District	Year 2019	Year 2026	Year 2031
	Population	Population	Population
Tuen Mun	476,500	538,900	606,850
Yuen Long	175,150	172,350	159,850
Tin Shui Wai	279,950	283,250	276,050
Northwest New Territories	222,800	239,250	353,900
Total	1,154,400	1,233,750	1,396,650
Annual growth rate from year 2019 to 2026 = 0.95%			
Annual growth rate from year 2026 to 2031 = 2.51%			

2.4.20 By adopting the annual growth rate of 0.95% (from year 2018 to 2026) and annual growth rate of 2.51% (from year 2026 to year 2034), the forecasted patronage flow in the critical link (i.e. from Kam Sheung Road to Tsuen Wan West) in year 2034 AM peak hour is 53,133 pax/hr (i.e. $40,400 \times (1.0095)^8 \times (1.0251)^8$). By adopting the demand generated from the development, the overall patronage flow is 54,068 pax/hr (i.e. $53,133 + 935$) in year 2034 AM peak.

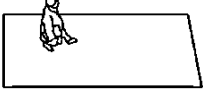
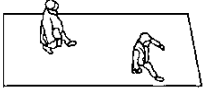
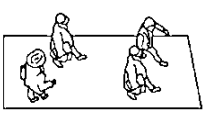
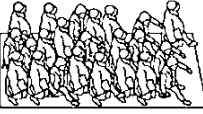
2.4.21 The maximum capacity of West Rail Link in year 2015 is 49,200 pax/hr. After the commissioning of the Tuen Ma Line, the MTRCL can provide services at a maximum frequency of 24 trains trips per hour by procuring more trains and enhancing signaling system, thus increasing the carrying capacity of WRL by approximately 37%^{Note 1} as compared with that in year 2015 (i.e. maximum capacity = $49,200 \times 1.37 = 67,404$ pax/hr).

2.4.22 Hence, even with the development, the Tuen Ma Line is anticipated to be operated within capacity in year 2034.

2.5 Pedestrian LOS Assessment

- 2.5.1 Pedestrian LOS was used to assess the performance of footpaths. The LOS of footpaths are assessed based on flow rate, a ratio between pedestrian flows and width of the pedestrian corridor.
- 2.5.2 LOS defines the walking environment in six levels by measuring the pedestrian flow rate in terms of the effective width of footpath. LOS A and B are both very good service levels and LOS F is the worst condition, while LOS C is desirable for most design with dominant ‘living’ pedestrian activities. **Table 2.9** describes different levels of LOS related to different ranges of pedestrian flow rate.

Table 2.9 Description of Pedestrian Level-of-Service (LOS) on Footpath

LOS	Flow Rate (ped/min/m)	Description
A	≤ 16 	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	$16 - 23$ 	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	$23 - 33$ 	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in a unidirectional stream. Where reverse direction or crossing movement exists, minor conflicts will occur, and speed and volume will be somewhat lower.
D	$33 - 49$ 	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speed and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	$49 - 75$ 	Virtually all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass by slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulty. Design volumes approach the limit of walking capacity, with resulting stoppages and interruptions to flow.
F	> 75 	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.

*Sources: Transport Planning and Design Manual (TPDM) Volume 6 Chapter 10 and Highway Capacity Manual
(HCM-version 2000) Chapter 11 Exhibit 11-8.*

- 2.5.3 As no rail service is provided within 500m of the subject site, it is expected that mechanical trips would be the major mode choice. With the provision of commercial and transport layby within the site, it is expected that pedestrian trips would be minimal travelling out of the site area.
- 2.5.4 As shown in **Figure 2.1**, arrows indicate potential pedestrian travel direction to/from the proposed site. The footpath along Kam Pok Road would be the main route used the pedestrian trips generated/attracted by the R(D) Site.
- 2.5.5 The footpath provision along Kam Pok Road has a minimum width of 3.5m at the proposed R(D) site, providing a two-way pedestrian throughput of 4,830ppl/hr to 6,930ppl/hr while maintain LOS C. The proposed development scheme included 2,322 units with 6,270 population. In case 30% of the population (1,881ppl) contributes to the 2-way trips along the 3.5m footpath section, the flow rate would be 9ped/min/m, which provide a LOS A for pedestrian corridor.

3 EXISTING TRAFFIC CONDITION

3.1 Traffic Survey

- 3.1.1 A total of 11 critical junctions were identified for assessment in this TIA as listed in **Table 3.1**. The locations of critical junctions and affected road links are shown in **Figure 3.1**. The existing junction layouts are presented in **Figures 3.2 to 3.12** respectively.

Table 3.1 Critical Junctions

Ref.	Junction	Type	Fig. No.
J1	Fairview Park Roundabout	Roundabout	3.2
J2	Castle Peak Road / Kam Pok Road	Priority	3.3
J3	Fairview Park Boulevard / Kam Pok Road	Signalized	3.4
J4	Kam Pok Road / Ha Chuk Yuen Road	Priority	3.5
J5	Kam Pok Road / Kam Pok Road East	Priority	3.6
J6	Castle Peak Road / Kam Pok Road East	Signalized	3.7
J7	Castle Peak Road / Yau Pok Road	Priority	3.8
J8	Kam Pok Road / Vehicular Bridge (North)	Priority	3.9
J9	Kam Pok Road / Vehicular Bridge (South)	Priority	3.10
J10	Yau Pok Road / Vehicular Bridge (South)	Priority	3.11
J11	Yau Pok Road / Vehicular Bridge (North)	Priority	3.12

- 3.1.2 Manual classified traffic counts surveys were carried out on a typical weekday in May 2021 to establish the current traffic condition in the vicinity. The surveys were undertaken during 7:30am – 9:30am and 5:00pm – 7:00pm at the critical junctions as listed in **Table 3.1**.
- 3.1.3 The identified morning (AM) and evening (PM) peak hour are from 7:45am to 8:45am and from 5:45pm to 6:45pm respectively. The 2021 observed AM and PM peak hour traffic flows are shown in **Figure 3.13**.

3.2 Road Link / Junction Assessment

- 3.2.1 Junction capacity analysis was carried out for the above surveyed junctions which are located in the vicinity of the Application Site to appraise the existing traffic condition based on the 2021 observed peak hour traffic flows.
- 3.2.2 Based on the turning flows at the above junctions, capacity assessments were carried out in accordance with the methodology documented in the appendices of Transport Planning and Design Manual (TPDM) Volume 2 Chapter 4 for priority junction / roundabout and Volume 4 for signal junction.
- 3.2.3 The existing junction performances of the critical junctions are summarized in **Table 3.2**. Capacity calculation sheets are attached in **Appendix D**.

Table 3.2 Existing Junction Performance

Ref.	Junction	Indicator*	2021 Existing	
			AM Peak	PM Peak
J1	Fairview Park Roundabout	DFC	0.66	0.68
J2	Castle Peak Road / Kam Pok Road	DFC	0.10	0.10
J3	Fairview Park Boulevard / Kam Pok Road	RC	73%	56%
J4	Kam Pok Road / Ha Chuk Yuen Road	DFC	0.04	0.04
J5	Kam Pok Road / Kam Pok Road East	DFC	0.25	0.16
J6	Castle Peak Road / Kam Pok Road East	RC	84%	>100%
J7	Castle Peak Road / Yau Pok Road	DFC	0.03	0.04
J8	Kam Pok Road / Vehicular Bridge (North)	DFC	0.02	0.02
J9	Kam Pok Road / Vehicular Bridge (South)	DFC	0.02	0.02
J10	Yau Pok Road / Vehicular Bridge (South)	DFC	0.02	0.02
J11	Yau Pok Road / Vehicular Bridge (North)	DFC	0.02	0.02

* DFC = Design Flow / Capacity ratio for priority junction or roundabout; RC= Reserved Capacity for signalized junction

3.2.4 At present, all critical junctions are operating within capacity.

3.2.5 Based on the observed traffic flows, the affected road links have been assessed and the results are summarized in **Table 3.3**.

Table 3.3 Existing Road Link Performance

Ref	Road Section	Dir	Link Capacity (pcu/hr)	2021 Traffic Flows (pcu/hr)		2021 V/C Ratio	
				AM Peak	PM Peak	AM Peak	PM Peak
L1	San Tin Highway	NB	6100 ⁽¹⁾	4290	3460	0.70	0.57
		SB	6100 ⁽¹⁾	3830	3820	0.63	0.63
L2	Castle Peak Road – Tam Mi	2-way	2500 ⁽²⁾	1000	750	0.40	0.30
L3	Fairview Park Boulevard	EB	2600 ⁽³⁾	920	720	0.35	0.28
		WB	2600 ⁽³⁾	660	810	0.25	0.31
L4	Kam Pok Road	2-way	1800 ⁽⁴⁾	130	130	0.07	0.07

Note:

- (1) Road capacity for Dual 3 - Trunk Road
- (2) Road capacity for Single 2 - Rural Road
- (3) Road capacity for Dual 2- Local Distributor
- (4) Road capacity for Single 2 - Local Distributor

3.3 Existing Public Transport Services

- 3.3.1 As mentioned in **Section 2.4.3**, currently, there is no public transport services available at the concerned sections of Yau Pok Road and Kam Pok Road that may serve the future public transport demand of the proposed development.

4 TRAFFIC IMPACT ASSESSMENT

4.1 Trip Generation of Proposed Development

- 4.1.1 In order to evaluate the traffic impact under both Reference (Approved Scheme) and Design (Proposed Scheme) scenarios, traffic trip generation and attraction volumes of the subject site are estimated with reference to the trip generation and attraction rates as stipulated in Annex D of Transport Planning and Design Manual (TPDM) Volume 1 Chapter 3 published by Transport Department. The adopted trip rates and the estimated trip generation of the Development under both Reference and Design Scenarios are presented in **Tables 4.1** and **4.2** respectively.

Table 4.1 Adopted Trip Rates

Scheme	Type	Unit	Trip Rates			
			AM Peak		PM Peak	
			Gen.	Att.	Gen.	Att.
Approved Scheme	Private Residential (Average Flat Size =180 m ² Mean)	(pcu/hr/flat)	0.2772	0.1769	0.1635	0.2394
Proposed Scheme	Private Residential (Average Flat Size =60m ² Mean)	(pcu/hr/flat)	0.0718	0.0425	0.0286	0.037
	Retail (GFA=2,363m ²)	(pcu/hr/100 sqm)	0.2296	0.2434	0.3100	0.3563
	Kindergarten	(pcu/hr/100 student)	26 ⁽¹⁾	26 ⁽¹⁾	1 ⁽¹⁾	1 ⁽¹⁾

Note: (1) Adopted trip rates for kindergarten with reference to the Traffic Impact Assessment Report under Planning Application (A/YL-NSW/274)

Table 4.2 Trip Generation and Attraction

Scheme	Development Parameter	Trip Generation/ Attractions (pcu/hr)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Approved Scheme	71 houses (Average Flat Size =186 m ²)	20	13	12	17
Proposed Scheme	2,322 units (Average Flat Size =42.4m ²)	167	99	67	86
	Public Transport ⁽³⁾	28	28	28	28
	Retail (abt. 2,363m ²)	6	6	8	9
	Kindergarten (6 Classrooms)	47 ⁽¹⁾	47 ⁽¹⁾	2 ⁽¹⁾	2 ⁽¹⁾
	NEC	10 ⁽²⁾	10 ⁽²⁾	10 ⁽²⁾	10 ⁽²⁾
	Total	258	190	115	135
	Difference (Proposed Scheme – Approved Scheme)	+238	+177	+103	+118

Note: (1) The proposed kindergarten could accommodate up to 180 pupils.

(2) Nominal figure adopted with reference to in-house survey at Yan Oi Tong Tin Ka Ping Neighbourhood

Elderly Centre for NEC.

(3) As given in Section 2.4, for the subject R(D) site, a total of about 1,006 persons (6,270 x 1.83 x 0.12 x 0.73) would take bus in the AM peak outbound direction. By assuming the bus capacity of 90 pax/hr and a pcu factor of 2.5 for bus, a total of 28 pcu/hr would be generated and attracted. Additional bus trips for the adjacent REC sites have been included in the Sensitivity Test under **Section 4.6**.

- 4.1.2 The comparison on trip generation/ attractions of the proposed development under Approved Scheme and Proposed Scheme as shown in **Table 4.2** reveals that the Proposed Scheme will induce additional 415 pcu/hr (two-way) during AM peak hour and 221 pcu/hr (two-way) during the PM peak.

4.2 Design Year

- 4.2.1 The proposed development is tentatively scheduled for population intake in 2031. According to Guidelines and Requirements of Traffic Impact Assessment (TIA) Studies, the TIA should assess at least 3 years after the planned completion of the Proposed Development. Hence, 2034 is adopted as the design year for this TIA.

4.3 Traffic Forecast

Other Planned Major Developments

- 4.3.1 Apart from the proposed development, the other major newly completed and committed/planned developments in the vicinity of the proposed development has also been taken into account in the traffic forecast. The future developments are listed in **Table 4.3**.

Table 4.3 Key Newly Completed and Planned Developments

Ref.	Development	Key Development Parameters	Estimated 2-way Trip Generation (pcu/hr)	
			AM Peak	PM Peak
1	Tung Shing Lei Development (A/YL-NSW/274)	1518 private residential units (average flat size = about 46m²)	174	101
2	Sha Po North Phase 2 Residential Development (A/YL-KTN/663)	1,154 private residential units (average flat size = about 42.57m²)	58	32
3	Nam Sang Wai Commercial Development (Y/YL-NSW/3)	38,300m² retail GFA 700 hotel rooms	378	456
4	Kam Tin South Priority Sites Development	8,100 units of public housing (average flat size = about 50m²) 2,200 units of private housing (average flat size = about 70m²)	1,160	751
5	Kam Tin West Outlet Mall (A/YL-NSW/241)	37,171m² retail GFA	177	249
6	Tung Shing Lei Land Sharing Pilot Scheme Development	1,261 units of private housing (average flat size = about 40m²) 1,868 units of public housing (average flat size = about 50m²)	342	215

Ref.	Development	Key Development Parameters	Estimated 2-way Trip Generation (pcu/hr)	
			AM Peak	PM Peak
7	Sha Po North Comprehensive residential development (A/YL-KTN/604)	3,891 private residential units (average flat size = about 49m²) 5,500 m² retail GFA	558	334
8	Sha Po Public Housing Development	16,300 Flats 1 Primary School 20,668 m² retail GFA 5 Kindergarten 38,384 m² Welfare Facilities 19,267 m² GIC	2,183	1,628
9	Kam Tin North Residential Development (A/YL-KTN/791)	230 flats (average flat size = about 31m²)	38	22
10	Sha Po South Residential Development (A/YL-KTN/964)	615 private residential units (average flat size = about 38m²)	70	41
11	Wing Kei Tsuen Development (Y/YL-NSW/7)	1,997 private residential units (average flat size = 48.9 m²)	230	130
12	Outlet Mall at Wing Kei Tsuen	37,000 m² retail GFA	177	249
13	Retail and Hotel Complex at Wing Kei Tseun	38,000 m² retail 700 hotel rooms	376	453
14	Au Tau Commercial Development (DD107 Lot 1928)	10,000 m² retail GFA	48	67

(Source: <http://www.tpb.gov.hk>)

Other Future Adjacent Developments

- 4.3.2 There are some future residential sites located in the close vicinity of the Site. The traffic forecast has been developed to include these residential sites to cater for the worst scenario. These sites are all designated for low-density residential use. As the worst-case testing, it is assumed that these adjacent planned residential sites will be fully developed by year 2031 (i.e. the completion year of the subject development).
- 4.3.3 Locations of these planned residential development sites near the Subject Site are presented in **Figure 4.1**. Their development parameters and their corresponding traffic generations are presented in **Table 4.4**, have been incorporated in this assessment as follows:

Table 4.4 Development Parameters of Future Adjacent Developments

Site	Key Development Parameters				Estimated 2-way Trip Generation (pcu/hr)	
	Zone	Site Area	Plot Ratio	No. of Houses	AM Peak	PM Peak
A	OU	207,408 m ²	0.4	789 houses	243	179
B	OU	81,000 m ²	0.2	105 houses	49	44
C	REC	89,774 m ²	0.63	2,150 flats	135	164
D	R(D)	37,702 m ²	0.2	65 houses	26	20
E	R(D)	2,716 m ²	0.2	3 houses	2	2
F	R(D)	898 m ²	0.2	1 house	2	2

*Remarks: Development parameters of Site A, B, C and D were obtained from their respective approved planning applications, while assumptions have been made for Site E and F which comply with the permissible PR under the OZP.

Future Traffic Flows

- 4.3.4 For projection of background traffic flows in Area of Influence, an in-house 2-tier modelling approach (Strategic Transport Model (STM) and Local Area Traffic Model (LATM)) have been adopted. Based on the planning data published on the website of Planning Department (i.e. 2019-based TPEDM Planning Data), together with other information (such as population distribution and employment type from Census) available in public domain, a simplified Strategic Transport Model (STM) was developed for cordoning board vehicle trip matrices for local area traffic modelling.
- 4.3.5 For the Local Area Traffic Model (LATM), the Base District Traffic Model (BDTM) “NTW1” covering Tuen Mun and Yuen Long Area has been adopted as the base traffic model for this study.
- 4.3.6 The LATM has been validated against the 2021 traffic data in the area of influence to ensure that the base year LATM could satisfactorily replicate the base year traffic patterns and volumes before the model is used to produce future years traffic forecasts.
- 4.3.7 The STM cordoned matrices were fed into the LATM for projecting the traffic flows from year 2021 to year 2034. In addition, the trip ends of traffic zones were adjusted and controlled to the estimated trips generated by the future developments in the vicinity as listed in **Table 4.2 (Approved Scheme)**, **Table 4.3** and **Table 4.4** to produce the 2034 reference traffic flows as shown in **Figure 4.2**.
- 4.3.8 The additional trip ends due to proposed development with proposed scheme as estimated in **Table 4.2** are then added to 2034 reference traffic flows to produce 2034 design traffic flows. **Figure 4.3** presents the net increase development traffic flow of the proposed development with proposed scheme. **Figure 4.4** presents 2034 design traffic flow (with Proposed Scheme).

4.4 Planned Junction Improvement Works

J1 – Fairview Park Interchange

- 4.4.1 As extracted from the feasibility study (CEDD Agreement No. CE10/2020(CE)) for Sha Po Public Housing Development enclosed in RNTPC Paper No. 9/22 for consideration by RNTPC on 9 December 2022, improvement measures were proposed at Fairview Park Interchange (J1). The approach arms of Castle Peak Road – Tam Mi (northbound), San Tin Highway Slip Road (southbound) and San Tam Road (northbound) would be widened. An additional exclusive left-turn lane is also proposed at the approach arm of San Tin Highway Slip Road (northbound) for traffic routing to Castle Peak Road – Tam Mi (southbound). The planned layout is as shown in **Figure 4.5**.

J8 – Yau Pok Road / Vehicular Bridge - North

- 4.4.2 According to the approved planning application A/YL-MP/341, improvement measures were proposed at the J/O Yau Pok Road / Vehicular Bridge – North. The existing Yau Pok Road would remain operation as one way road heading eastbound. The priority control marking from the vehicular bridge would be changed from “Giveway” to “STOP”. Meanwhile, new vehicular access was introduced at the opposite of the vehicular bridge for accessing the northern portion of the Light Public Housing. The planned vehicular access would terminate the existing cycle track and footpath. Pedestrian crossing facilities was provided for crossing the new access. The planned layout is as shown in **Figure 4.6**.

J9 – Yau Pok Road / Vehicular Bridge - South

- 4.4.3 Similar to the planned arrangement for J8 (Yau Pok Road / Vehicular Bridge – North), J9 (Yau Pok Road / Vehicular Bridge – South) also share similar arrangement. The planned vehicular access would be used for accessing the southern portion of the Light Public Housing. The planned layout is as shown in **Figure 4.7**.

J10 – Kam Pok Road / Vehicular Bridge - South

- 4.4.4 Reconfiguration of J10 (Kam Pok Road / Vehicular Bridge - South) into a 4-stage signalised junction is proposed by the planned Light Public Housing. The existing cautionary crossing at Kam Pok Road would be converted into a signalised one. The planned layout is as shown in **Figure 4.8**.

J11 – Kam Pok Road / Vehicular Bridge - North

- 4.4.5 Similar to the planned arrangement for J10 (Kam Pok Road / Vehicular Bridge – South), J11 (Kam Pok Road / Vehicular Bridge) also share similar arrangement. J11 would be converted into a signalized junction. The planned layout is as shown in **Figure 4.9**.

4.5 Road Link / Junction Assessment

- 4.5.1 The main criteria for assessing the traffic impact of critical junctions are whether the addition of generated traffic would significantly affect the capacity of junctions in the vicinity of the subject site.

- 4.5.2 The operational performances of the 11 critical junctions as identified in **Section 3** were assessed based on the 2034 Reference (Approved Scheme) and Design (Proposed Scheme) traffic flows as derived in **Section 4.3**. The results are summarized in **Table 4.5**. The junction calculation sheets are shown in **Appendix D**.

Table 4.5 2034 Junction Performance

Ref.	Junction	Year 2034 RC/DFC*			
		Reference Case (Approved Scheme)		Design Case (Proposed Scheme)	
		AM Peak	PM Peak	AM Peak	PM Peak
J1	Fairview Park Roundabout	1.09	1.12	1.17	1.17
J2	Castle Peak Road / Kam Pok Road	0.30	0.34	0.78	0.57
J3	Fairview Park Boulevard / Kam Pok Road	58%	41%	48%	36%
J4	Kam Pok Road / Ha Chuk Yuen Road	0.04	0.04	0.05	0.05
J5	Kam Pok Road / Kam Pok Road East	0.39	0.25	0.44	0.30
J6	Castle Peak Road / Kam Pok Road East	35%	46%	35%	46%
J7	Castle Peak Road / Yau Pok Road	0.07	0.07	0.07	0.07
J8	Kam Pok Road / Vehicular Bridge (North)	0.08	0.07	0.10	0.12
J9	Kam Pok Road / Vehicular Bridge (South)	0.08	0.08	0.08	0.08
J10	Yau Pok Road / Vehicular Bridge (South)	>100%	>100%	>100%	>100%
J11	Yau Pok Road / Vehicular Bridge (North)	>100%	>100%	N/A	N/A

*RC in % denotes “Reserve Capacity” for signalized junction; DFC decimal number denotes “Design Flow / Capacity” ratio for priority junction or roundabout

- 4.5.3 As shown in **Table 4.5**, except Junction 1, all junctions would be able to handle the future traffic demand with ample capacity in both reference case and design case.
- 4.5.4 As mentioned in Section 4.4, planned improvement measures were proposed to Fairview Park Interchange (J1) under the feasibility study (CEDD Agreement No. CE10/2020(CE)) for Sha Po Public Housing Development. Additional junction improvement proposal to Fairview Park Interchange (J1) is recommended to enhance the junction capacity. The approach arms of Castle Peak Road – Tam Mi (northbound), Fairview Park Boulevard (eastbound), Castle Peak Road – Tam Mi (southbound), San Tin Highway Slip Road (southbound), San Tam Road (southbound), San Tam Road (northbound) and San Tin Highway Slip Road (northbound) would be widened at the junction. The proposed layout is shown in **Figure 4.10**. In case, there is programme mismatch between the subject site and Sha Po Public Housing Development, the subject planning application would construct free flow lane from San Tin Highway NB slip road to Castle Peak Road – Tam Mi. The proposed layout is shown in **Figure 4.11**.

4.5.5 As mentioned in Section 4.4, planned improvement measures were proposed to Kam Pok Road / Vehicular Bridge - North (J11) by the Light Public Housing. Additional junction improvement proposal is recommended for provision of vehicular access to the subject planning application. Additional left turn lane is introduced along Kam Pok Road WB for the new traffic attraction heading to the subject site. Also, signalized crossing is proposed for pedestrian across the site. The proposed layout is shown in **Figure 4.12**.

4.5.6 The junction performance is reassessed taken into consideration the proposed improvements and the assessment results are shown in **Table 4.6**.

Table 4.6 2034 Junction Performance with Proposed Improvement Scheme

Ref.	Junction	Year 2034 RC/DFC*	
		Design Case	
		AM Peak	PM Peak
J1	Fairview Park Roundabout (Figure 4.10)	0.79	0.79
J11	Kam Pok Road / Vehicular Bridge / R(D) Site Access (Figure 4.11)	80%	>100%

4.5.7 Based on the future traffic flows, the affected road link has been assessed and the results are summarized in **Table 4.7**. The assessment result indicated that all the above road links are expected to operate within capacity except San Tin Highway (L1). Between the year 2031 (completion year of the development) and the opening year of Route 11, the V/C ratio of San Tin Highway would reach 1.06, meaning that the traffic speed would be reduced, but would still be manageable with V/C ratio under 1.2. Along with the developments of NDAs within Northern Metropolis, a Northern Metropolis Highway has been proposed under the “Strategic Studies on Railways and Major Roads Beyond 2030”. It is expected that traffic condition of San Tin Highway could be improved with the completion of Northern Metropolis Highway.

Table 4.7 Future Road Link Performance

Ref	Road Section	Dir	Link Capacity (pcu/hr)	Reference Case (Approved Scheme)				Design Case (Proposed Scheme)			
				2034 Traffic Flows (pcu/hr)		2034 V/C Ratio		2034 Traffic Flows (pcu/hr)		2034 V/C Ratio	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
L1	San Tin Highway	NB	6100 ⁽¹⁾	6350	5840	1.04	0.96	6450	5920	1.06	0.97
		SB	6100 ⁽¹⁾	5330	4870	0.87	0.80	5470	4950	0.90	0.81
L2	Castle Peak Road – Tam Mi	2-way	2500 ⁽²⁾	1270	1030	0.51	0.41	1590	1210	0.64	0.48
L3	Fairview Park Boulevard	EB	2600 ⁽³⁾	790	760	0.30	0.29	790	760	0.30	0.29
		WB	2600 ⁽³⁾	610	790	0.23	0.30	610	790	0.23	0.30
L4	Kam Pok Road	2-way	1800 ⁽⁴⁾	340	380	0.19	0.21	720	590	0.40	0.33

Note:

- (1) Road capacity for Dual 3-Trunk Road
- (2) Road capacity for Single 2-Rural Road
- (3) Road capacity for Dual 2- Local Distributor
- (4) Road Capacity for Single 2 – Local Distributor

4.6 Sensitivity Test (I)

- 4.6.1 It is noted that another application is submitted for the adjacent Site C (REC) at the opposite of the Application Site across the drainage channel for increasing its development density. As such, a sensitivity test was carried out assuming the REC site is completed according to the current proposed scheme.
- 4.6.2 In this sensitivity test, it is also assumed that the adjacent R(D) sites in the close vicinity of the site will increase their flat supply with domestic plot ratio increased from 0.2 to 1.5, same as the plot ratio in the Application. The traffic to be induced are summarised in **Table 4.8**. The cumulative net increase development traffic flow and design traffic flow (Sensitivity test I) are illustrated in **Figure 4.13** and **Figure 4.14** respectively.

Table 4.8 Development Parameters of Future R(D) Adjacent Developments assumed in Sensitivity Test

Site	Key Development Parameters			Estimated 2-way Trip Generation (pcu/hr)	
	Site Area (abt.)	Domestic Plot Ratio	No. of Houses	AM Peak	PM Peak
C (REC)	89,090 m ²	1.2	2,477 units ⁽²⁾	286	165
D	37,702 m ²	1.5	1,333 flats ⁽¹⁾	153	89
E	2,716 m ²	1.5	97 flats ⁽¹⁾	12	7
F	898 m ²	1.5	32 flats ⁽¹⁾	5	3

(1) Based on average flat size of 42.4m² according to the proposed scheme

(2) A total of 2,477 units private residential units is assumed for the REC site. As compared with the Light Public Housing development (2,100 units), the traffic generation of private residential development would be much higher which represent a more conservative approach.

- 4.6.3 Junction assessments are also carried for the three key junctions for the sensitivity test and the results are summarised in **Table 4.9**.

Table 4.9 2034 Junction Performance (Sensitivity test I)

Ref.	Junction	Year 2034 RC/DFC*	
		Design Case (Sensitivity Test I)	
		AM Peak	PM Peak
J1	Fairview Park Roundabout (Figure 4.10)	0.83	0.82
J2	Castle Peak Road / Kam Pok Road	1.12	0.65
J3	Fairview Park Boulevard / Kam Pok Road	21%	28%
J4	Kam Pok Road / Ha Chuk Yuen Road	0.05	0.05
J5	Kam Pok Road / Kam Pok Road East	0.59	0.37
J6	Castle Peak Road / Kam Pok Road East	35%	46%
J7	Castle Peak Road / Yau Pok Road	0.08	0.07
J8	Kam Pok Road / Vehicular Bridge (North)	0.22	0.16
J9	Kam Pok Road / Vehicular Bridge (South)	0.29	0.12
J10	Yau Pok Road / Vehicular Bridge (South)	34%	>100%
J11	Yau Pok Road / Vehicular Bridge (North) (Figure 4.12)	24%	81%

*RC in % denotes “Reserve Capacity” for signalized junction; DFC decimal number denotes “Design Flow / Capacity” ratio for priority junction or roundabout

- 4.6.4 As shown in **Table 4.9**, all the assessed junctions except Junction 2 would be able to handle the future traffic demand in the sensitivity test with sufficient capacity.
- 4.6.5 In view of the above, improvement schemes were formulated for allowing separated turning lanes in Yau Pok Road in order to enhance the junction performance of Junction 2 as illustrated in **Figure 4.15**. The junction performance is reassessed taking into consideration the proposed improvements and the assessment result is shown in **Table 4.10**.

Table 4.10 2034 Junction Performance with Proposed Improvement Scheme (Sensitivity Test (I))

Ref.	Junction	Year 2034 RC/DFC*	
		Design Case (Sensitivity Test)	
		AM Peak	PM Peak
J2	Castle Peak Road / Kam Pok Road (Figure 4.15)	0.75	0.45

*RC in % denotes “Reserve Capacity” for signalized junction; DFC decimal number denotes “Design Flow / Capacity” ratio for priority junction or roundabout

- 4.6.6 Road Link Assessment for the four key road links under sensitivity test scenario are tabulated in **Table 4.11**.

Table 4.11 Future Road Link Performance (Sensitivity Test (I))

Ref	Road Section	Dir	Link Capacity (pcu/hr)	Design Case (Sensitivity Test)			
				2034 Traffic Flows (pcu/hr)		2034 V/C Ratio	
				AM Peak	PM Peak	AM Peak	PM Peak
L1	San Tin Highway	NB	6100 ⁽¹⁾	6550	5990	1.07	0.98
		SB	6100 ⁽¹⁾	5600	5020	0.92	0.82
L2	Castle Peak Road – Tam Mi	2-way	2500 ⁽²⁾	1730	1240	0.69	0.50
L3	Fairview Park Boulevard	EB	2600 ⁽³⁾	950	810	0.37	0.31
		WB	2600 ⁽³⁾	610	790	0.23	0.30
L4	Kam Pok Road	2-way	1800 ⁽⁴⁾	970	680	0.54	0.38

Note:

- (1) Road capacity for Dual 3-Trunk Road
- (1) Road capacity for Single 2-Rural Road
- (2) Road capacity for Dual 2- Local Distributor
- (3) Road Capacity for Single 2 – Local Distributor

4.7 Sensitivity Test (II)

- 4.7.1 As mentioned in Section 4.6, the adjacent REC sites have submitted two planning applications (i.e. Y/YL-MP/7 and Y/YL-MP/8) for increasing the development density to PR 1.2. It is also noted that two private residential development have been proposed under planning application no. Y/YL-NSW/8 and Y/YL-NSW/9. A sensitivity was carried out to assess the cumulative traffic impact induced by the three planning applications.
- 4.7.2 For planning application Y/YL-NSW/8, 6,825 flats with an average flat size of 37.5m² along with 4,950m² of retail facilities and kindergarten site are being proposed. The same site was planned as an outlet mall with 37,171m² retail GFA under previously approved planning application A/YL-NSW/241. As the approved planning application A/YL-NSW/241 has already been considered in the traffic forecast, only the difference in trip generation and attraction between these two development proposals would be added to the road network for assessment as shown in **Table 4.12**.

Table 4.12 Trip Generation and Attraction – Planning Application No. Y/YL-NSW/8

Land Use	Trip Generation/ Attractions (pcu/hr)				
	Parameters	AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
<u>Latest Planning Application No. Y/YL-NSW/8</u>					
Private Housing	6,825 Flats	491	291	196	253
Retail	3,950m ²	10	10	13	15

Land Use	Trip Generation/ Attractions (pcu/hr)				
	Parameters	AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
GIC facilities	2 nos.	10	10	10	10
Kindergarten	1 Kindergarten (8 classrooms)	25	25	1	1
Total (A)	-	536	336	220	279
Approved Planning Application No. A/YL-NSW/241					
Retail (B)	37,171m ²	86	91	116	133
Difference (A) – (B)	-	+450	+245	+104	+146

4.7.3 For planning application Y/YL-NSW/9, 3,115 flats with an average flat size of 37.2m² along with 3,900m² of retail facilities, a primary school site, kindergarten sites and a relocated soy sauce factory are being proposed. The same site was planned as a retail facility with 38,300m² GFA and a hotel with 700 guest rooms under previously approved planning application Y/YL-NSW/3. The difference in trip generation and attraction between these two development proposals are as shown in **Table 4.13**.

Table 4.13 Trip Generation and Attraction – Planning Application No. Y/YL-NSW/9

Land Use	Trip Generation/ Attractions (pcu/hr)				
	Parameters	AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Latest Planning Application No. Y/YL-NSW/9					
Private Housing	3,115 Flats	224	133	90	116
Retail	2,900 m ²	7	8	9	11
Reserved School Site (Primary School)	1 school	7	30	1	1
Kindergarten	1 kindergarten (8 classrooms)	25	25	1	1
Relocated Soy Sauce Factory	13,700m ²	0	4	10	2
Total (A)	-	263	200	111	131
Approved Planning Application No. Y/YL-NSW/3					
Retail	38,300m ²	88	94	119	137
Hotel	700 guest rooms	94	102	91	109
Total (B)	-	182	196	210	246
Difference (A) – (B)	-	+81	+4	-99	-115

4.7.4 The additional traffic generated from the three potential developments has been added into the 2034 design flow. Operational performances of the critical junctions are reassessed according to the revised traffic forecast. The results are summarized in **Table 4.14**.

Table 4.14 2034 Junction Performance (Sensitivity test (II))

Ref.	Junction	Year 2034 RC/DFC	
		Design Case (Sensitivity Test II)	
		AM Peak	PM Peak
J1	Fairview Park Roundabout (Figure 4.10)	0.89	0.82
J2	Castle Peak Road / Kam Pok Road (Figure 4.15)	0.75	0.45
J3	Fairview Park Boulevard / Kam Pok Road	21%	28%
J4	Kam Pok Road / Ha Chuk Yuen Road	0.05	0.05
J5	Kam Pok Road / Kam Pok Road East	0.59	0.37
J6	Castle Peak Road / Kam Pok Road East	-7%	31%
J7	Castle Peak Road / Yau Pok Road	0.08	0.07
J8	Kam Pok Road / Vehicular Bridge (North)	0.22	0.16
J9	Kam Pok Road / Vehicular Bridge (South)	0.29	0.12
J10	Yau Pok Road / Vehicular Bridge (South)	34%	>100%
J11	Yau Pok Road / Vehicular Bridge (North) (Figure 4.12)	24%	81%

4.7.5 As shown in **Table 4.14**, all the assessed junctions except J6, would be operating within capacity under sensitivity test (II) scenario.

4.7.6 In view of the above, improvement schemes were formulated to Castle Peak Road – Tam Mi / Kam Pok Road East to enhance the junction capacity. Split phases control are proposed at Castle Peak Road – Tam Mi (southbound) and Kam Pok Road East. The proposed method of control is illustrated in **Figure 4.16**. The junction performance is reassessed taking into consideration the proposed improvements and the assessment result is shown in **Table 4.15**.

Table 4.15 2034 Junction Performance with Proposed Improvement Scheme (Sensitivity Test (II))

Ref.	Junction	Year 2034 RC/DFC*	
		Design Case (Sensitivity Test)	
		AM Peak	PM Peak
J6	Castle Peak Road / Kam Pok Road East (Figure 4.16)	37%	79%

*RC in % denotes “Reserve Capacity” for signalized junction; DFC decimal number denotes “Design Flow / Capacity” ratio for priority junction or roundabout

5 SUMMARY AND CONCLUSION⁸

5.1 Summary

- 5.1.1 The Subject Site is sandwiched by Kam Pok Road and San Tin Highway near Chuk Yuen Tsuen, Yuen Long. The location of the subject site is shown in **Figure 1.1**.
- 5.1.2 AECOM was commissioned by the Applicant to prepare a TIA in support of this S.12A planning application for rezoning of the site for an increase in domestic plot ratio from 0.2 to 1.5. There are also transport layby, some GIC uses (including a NEC) and local retail facilities provided on the site. The proposed residential development will comprise 2,322 residential units with an average flat size of about 42.4 m².
- 5.1.3 For residential components, the proposed development will provide 496 car parking spaces, 50 visitor private car parking spaces, 24 motorcycle parking spaces, and 10 loading/unloading bays for goods vehicles according to the latest HKPSG. For the retail component, 16 private car parking spaces, 2 motorcycle parking spaces and 3 loading/unloading bays for goods vehicles will be provided. For the kindergarten, 1 private car parking space, 10 taxi/ private car laybys and 5 small coach laybys will be provided. For NEC, nil car parking provision is proposed.
- 5.1.4 Franchised bus services are proposed to serve the subject site by circular route to Yuen Long Station PTI. Transport Layby is proposed within the development site. The indicative layout of proposed Transport Layby is shown in **Appendix A**. As shown in the indicative layout, 3 transport laybys are provided including one double-width bay of about 42m, two single-width bay of about 40m. All the 3 laybys have been designed to allow the manoeuvring of 12.8m bus. One of these 3 laybys would be designated to serve for the proposed bus service (to/from Yuen Long Station PTI). One of these 3 laybys would be reserved for the provision of GMB services if required in future. For the remaining one layby, it could serve the long-haul bus services during AM/PM peak hours and can supplement for further expansion future public transport services if required in the future.
- 5.1.5 In order to review the existing traffic condition, traffic count surveys were conducted at the following 11 identified critical junctions to investigate the traffic condition during commuting peak hours. At present, all the critical junctions are operating within capacity.
- Fairview Park Roundabout (J1)
 - Castle Peak Road / Kam Pok Road (J2)
 - Fairview Park Boulevard / Kam Pok Road (J3)
 - Kam Pok Road / Ha Chuk Yuen Road (J4)
 - Kam Pok Road / Kam Pok Road East (J5)
 - Castle Peak Road / Kam Pok Road East (J6)
 - Castle Peak Road / Yau Pok Road (J7)
 - Yau Pok Road / Vehicular Bridge (North) (J8)
 - Yau Pok Road / Vehicular Bridge (South) (J9)

- Kam Pok Road / Vehicular Bridge (South) (J10)
 - Kam Pok Road / Vehicular Bridge (North) (J11)
- 5.1.6 By comparing the trip generation/ attractions of the proposed development under Approved Scheme and Proposed Scheme, the Proposed Scheme will induce additional 435 pcu/hr (two-way) during AM peak hour and 241 pcu/hr (two-way) during PM peak hour.
- 5.1.7 The proposed development is tentatively scheduled for population intake in 2031. According to Guidelines and Requirements of Traffic Impact Assessment (TIA) Studies, the TIA should assess at least 3 years after the planned completion of the Proposed Development. Hence, 2034 is adopted as the design year for this TIA.
- 5.1.8 For projection of background traffic flows in Area of Influence, an in-house 2-tier modelling approach (Strategic Transport Model (STM) and Local Area Traffic Model (LATM)) have been adopted. Based on the planning data published on the website of Planning Department (i.e. 2019-based TPEDM Planning Data), together with other information (such as population distribution and employment type from Census) available in public domain, a simplified Strategic Transport Model (STM) was developed for cordoning board vehicle trip matrices for local area traffic modelling. For the Local Area Traffic Model (LATM), the Base District Traffic Model (BDTM) “NTW1” covering Tuen Mun and Yuen Long Area has been adopted as the base traffic model for this study.
- 5.1.9 The LATM has been validated against the 2021 traffic data in the area of influence to ensure that the base year LATM could satisfactorily replicate the base year traffic patterns and volumes before the model is used to produce future years traffic forecasts.
- 5.1.10 The STM cordoned matrices were fed into the LATM for projecting the traffic flows from year 2021 to year 2034. In addition, the trip ends of traffic zones were adjusted and controlled to the estimated trips generated by the future developments in the vicinity as listed in **Table 4.2 (Approved Scheme), Table 4.3 and Table 4.4** to produce the 2034 reference traffic flows as shown in **Figure 4.2**.
- 5.1.11 The additional trip ends due to the proposed development as estimated in **Table 4.2** are then added to 2034 reference traffic flows to produce 2034 design traffic flows. **Figure 4.4** presents 2034 design traffic flow (with Proposed Scheme).
- 5.1.12 The results of junction capacity assessments revealed that except Junction 1, all junctions would be able to handle the future traffic demand with ample capacity in both reference case and design case. As such, an improvement scheme is formulated for enhancing the junction performance of Junction 1 as illustrated in **Figure 4.10** and the junction performance as listed in **Table 4.6**. The applicant would be responsible for carrying out the proposed improvement works, which would be completed before the occupation of the subject R(D) site.
- 5.1.13 A sensitivity test was also carried out by assuming a domestic PR 1.2 residential scheme for the adjacent “REC” site (now under another S.12A rezoning application) and a domestic PR 1.5 for the adjacent “R(D)” sites to have been completed. The junction assessment results reveal that junction improvement at Junction 2 would be required, as illustrated in **Figure 4.15**. With the proposed junction improvement

schemes implemented, all the assessment junctions and critical road links would be able to handle the future traffic demand in the sensitivity test with sufficient capacity.

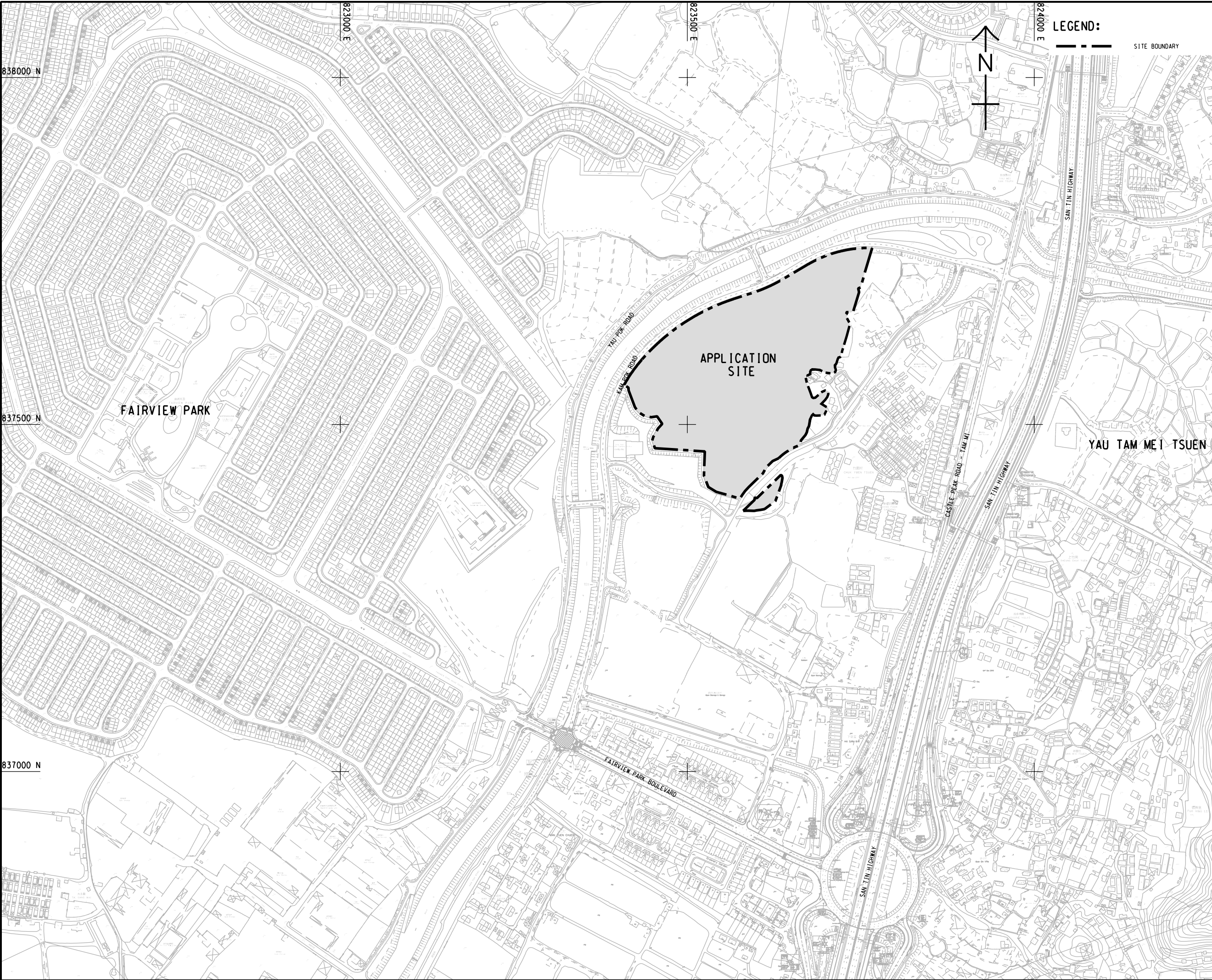
- 5.1.14 An additional sensitivity test has been carried out to assess the traffic impact induced by the potential private residential developments proposed under planning application no. Y/YL-NSW/8, Y/YL-NSW/9, Y/YL-MP/7 and Y/YL-MP/8. The junction assessment results reveal that junction improvement at Junction 6 would be required, as illustrated in **Figure 4.16**. With the proposed junction improvement scheme implemented, all the assessed junctions would be operating within capacity under the sensitivity test scenario.

5.2 Conclusion

- 5.2.1 In light of the findings of this TIA, it is concluded that there is no insurmountable traffic impact imposed onto the local road network due to the Proposed Development. With the proposed mitigation measures in place, the Proposed Development is technically feasible in traffic terms.

Figure

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S.12A PLANNING
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& ADJACENT G.L. IN DD
104, "R(D)" SITE, KAM TIN,
YUEN LONG

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合約編號

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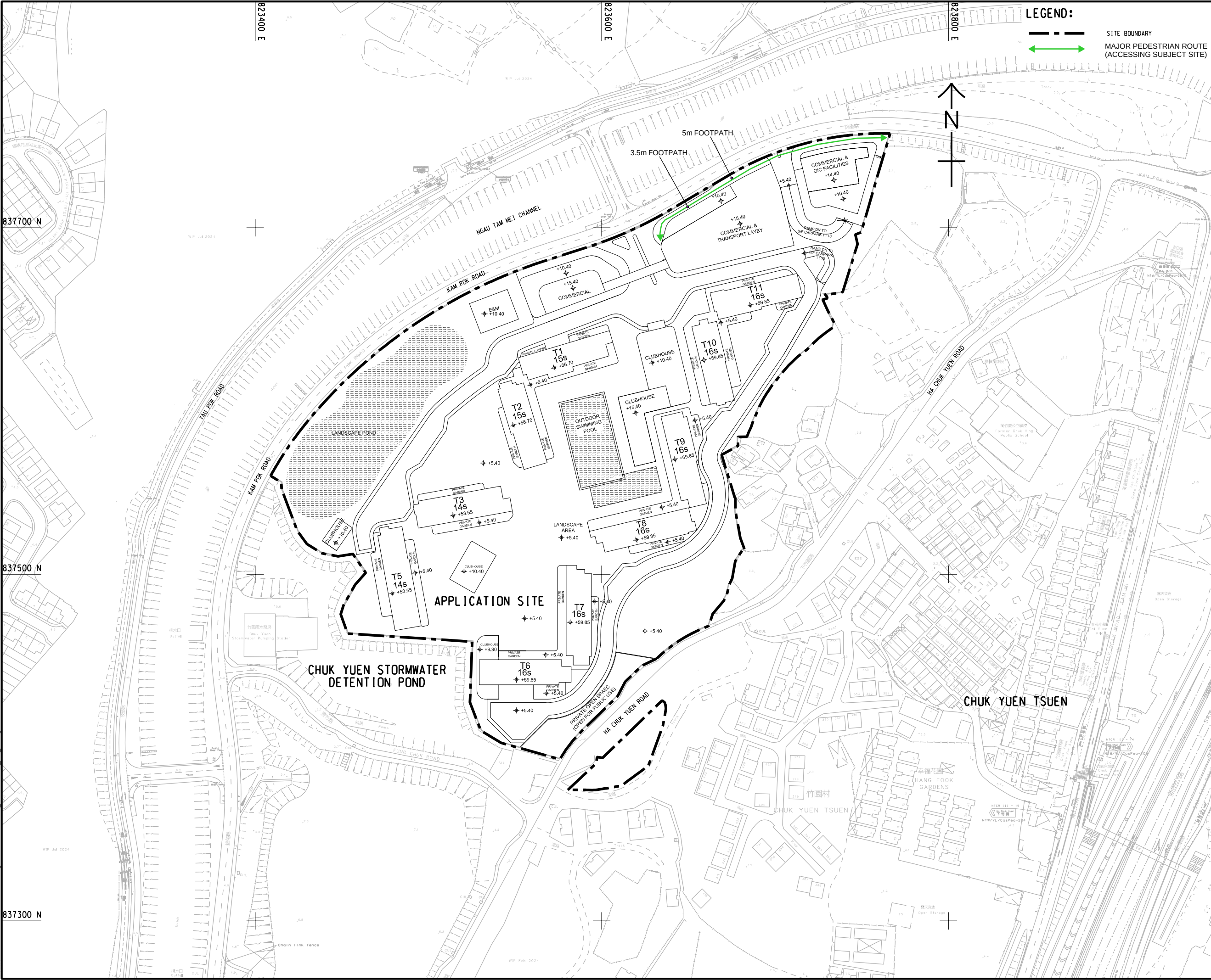
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FIGURE 1.1

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FIGURE 2.1

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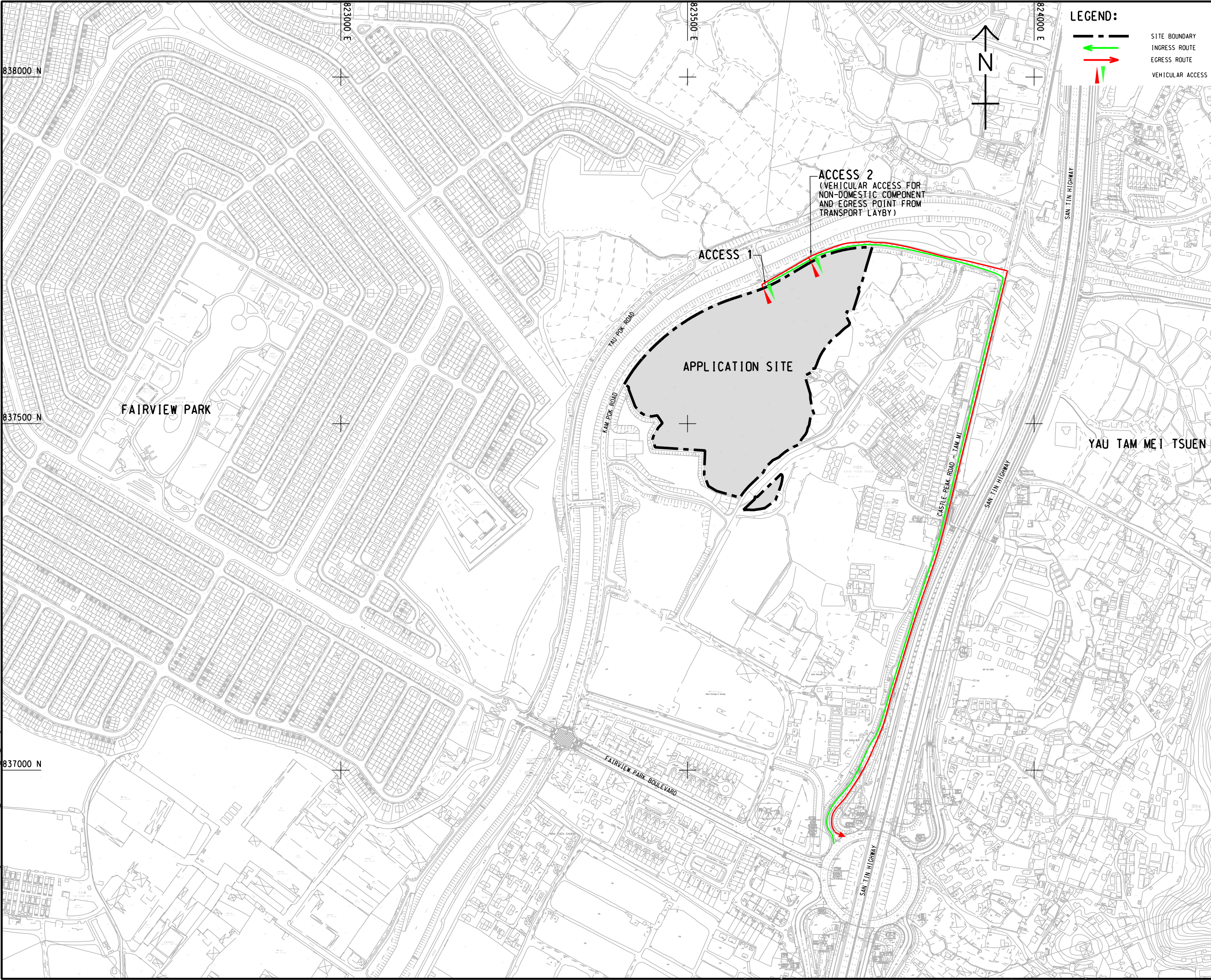
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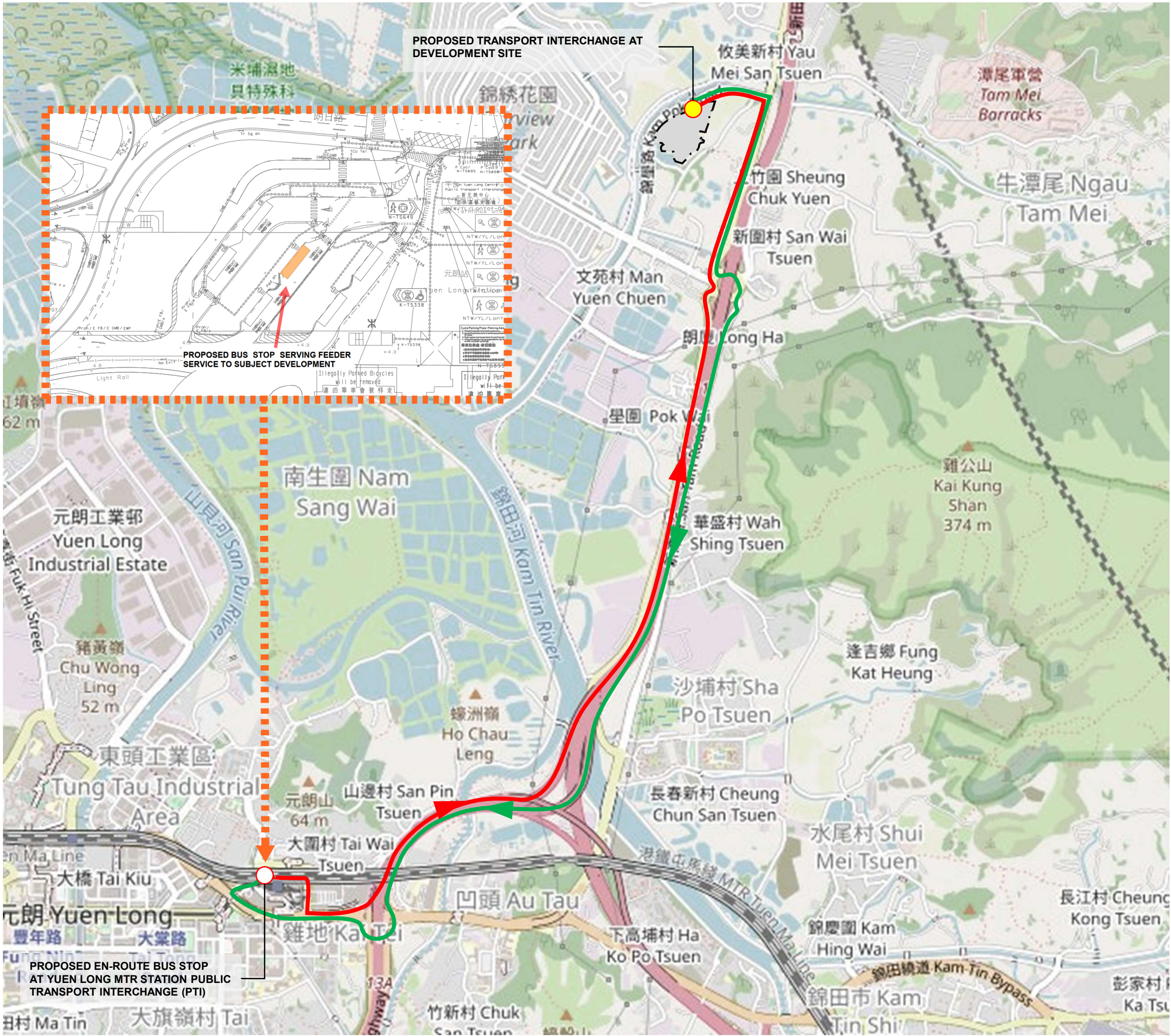
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FIGURE 2.2



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PROPOSED ROUTING OF
BUS SERVICE BETWEEN
DEVELOPMENT SITE AND
YUEN LONG MTR STATION PTI

SHEET NUMBER

圖紙編號

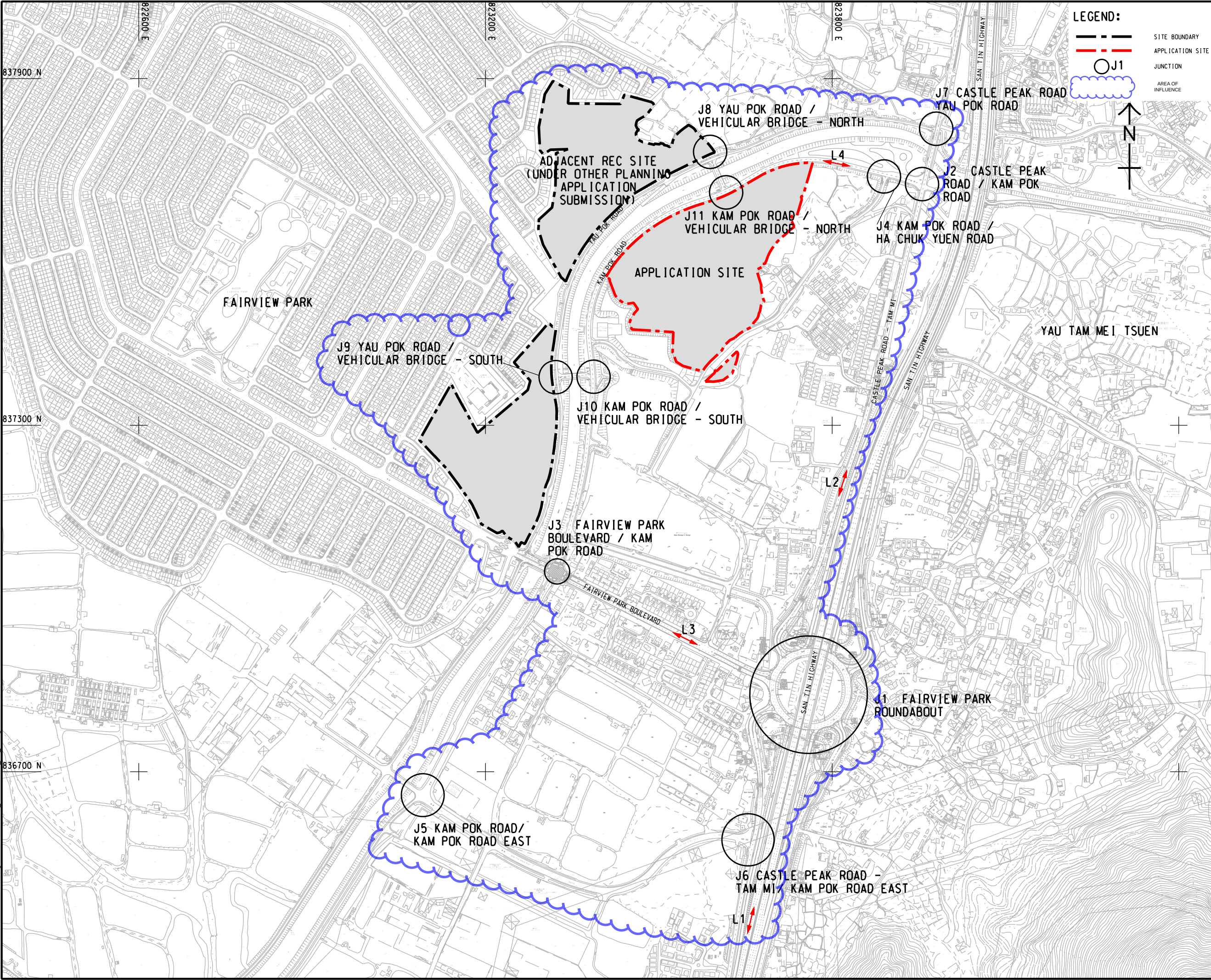
6FIGURE 2.3

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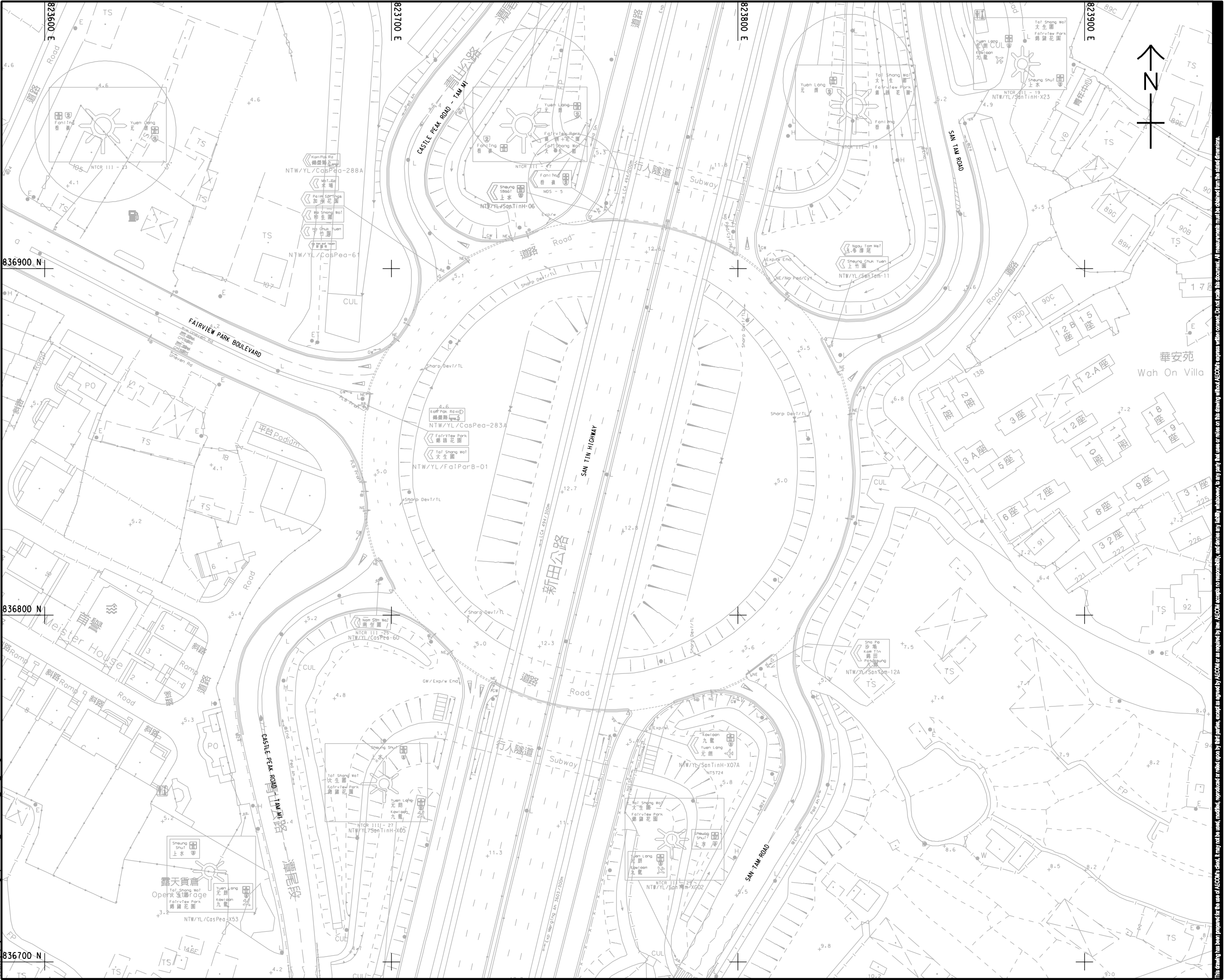
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FIGURE 3.1

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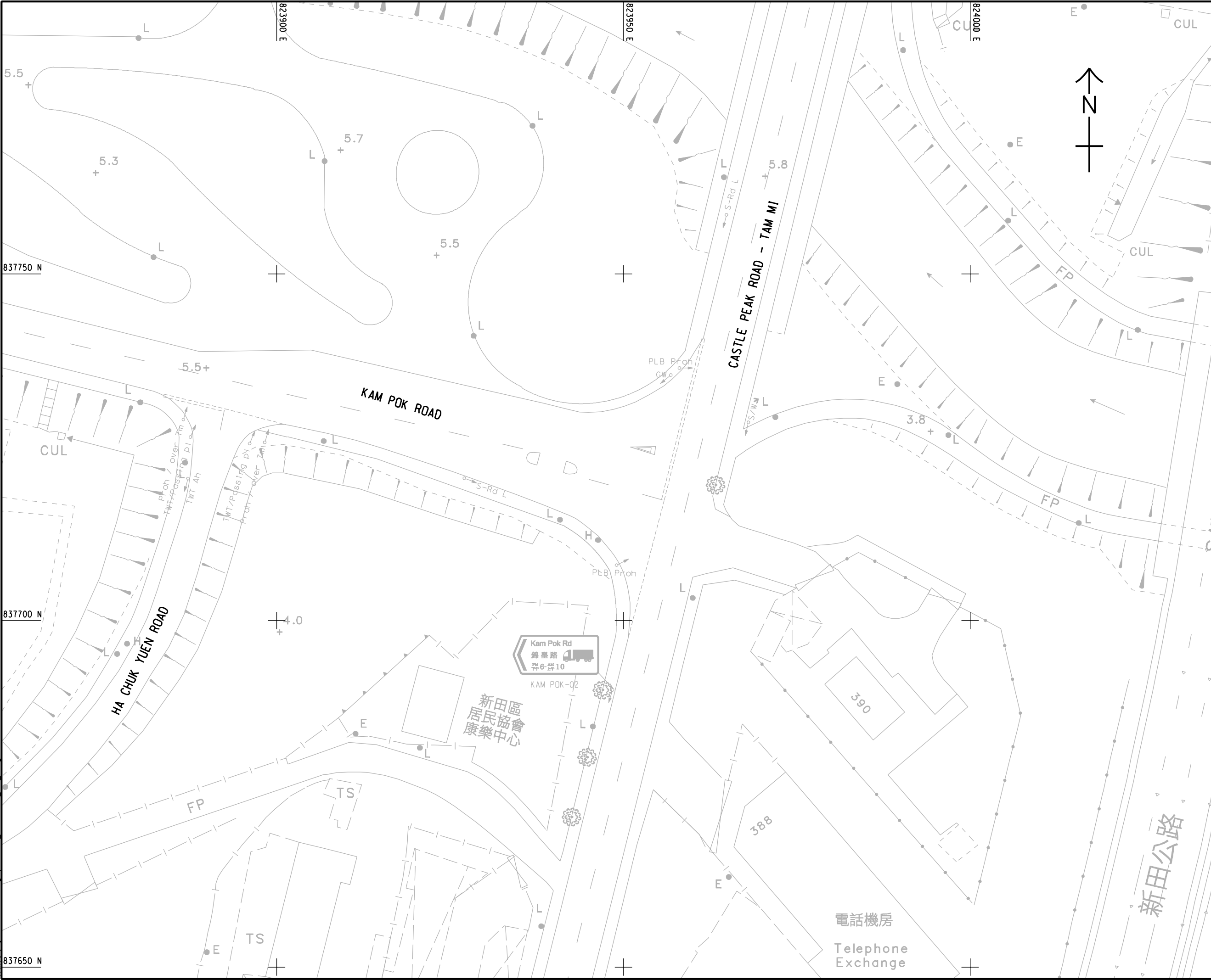
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圖紙編號
FIGURE 3.2

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104, "R(D)" SITE, KAM TIN,
YUEN LONG

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STATUS
階段

SCALE
比例
A3 1 : 500

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN
索引圖

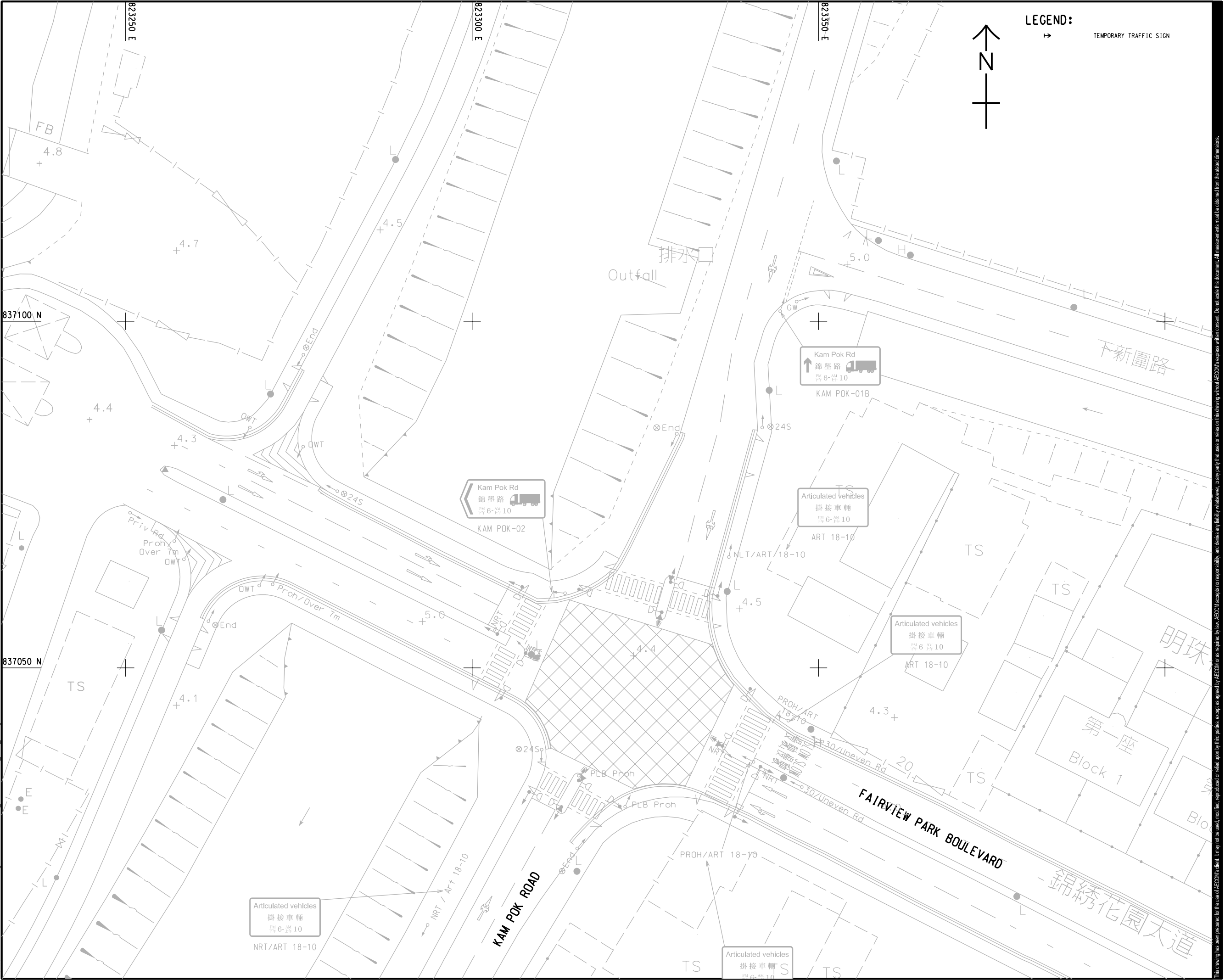
PROJECT NO.
項目編號
60607989

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱
EXISTING LAYOUT FOR
CASTLE PEAK ROAD /
KAM POK ROAD (J2)

SHEET NUMBER
圖紙編號
FIGURE 3.3

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
2022/8/30
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PATH P:\PROJECTS\60607989\REPORT\FAIRVIEW_REC\FAIRVIEW_REC_505.dgn



PROJECT

S.12A PLANNING
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SCALE

A3 1:500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60607989

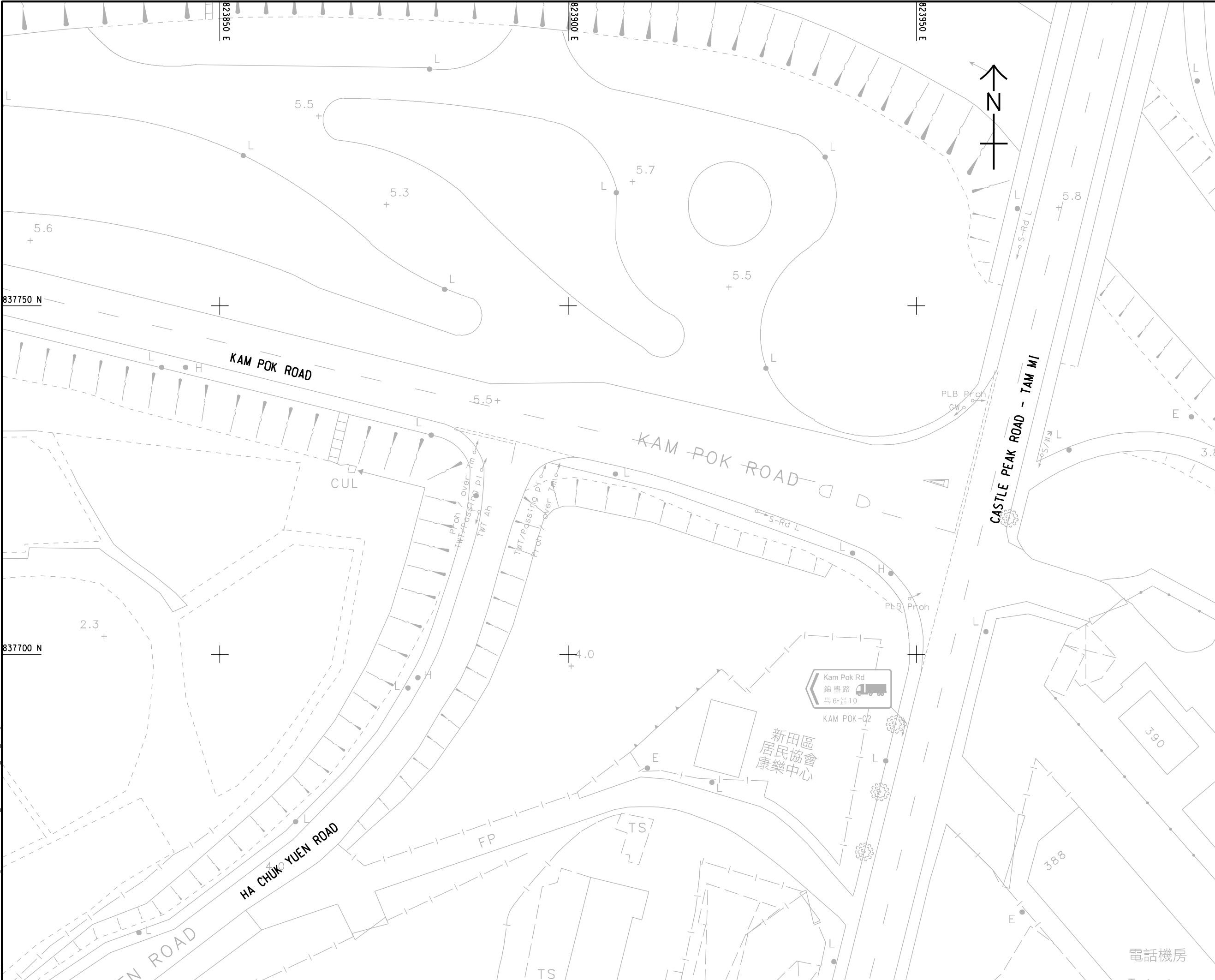
CONTRACT NO.

SHEET TITLE

EXISTING LAYOUT FOR
FAIRVIEW PARK BOULEVARD /
KAM POK ROAD (J3)

SHEET NUMBER

FIGURE 3.4

**AECOM**

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SCALE

A3 1 : 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

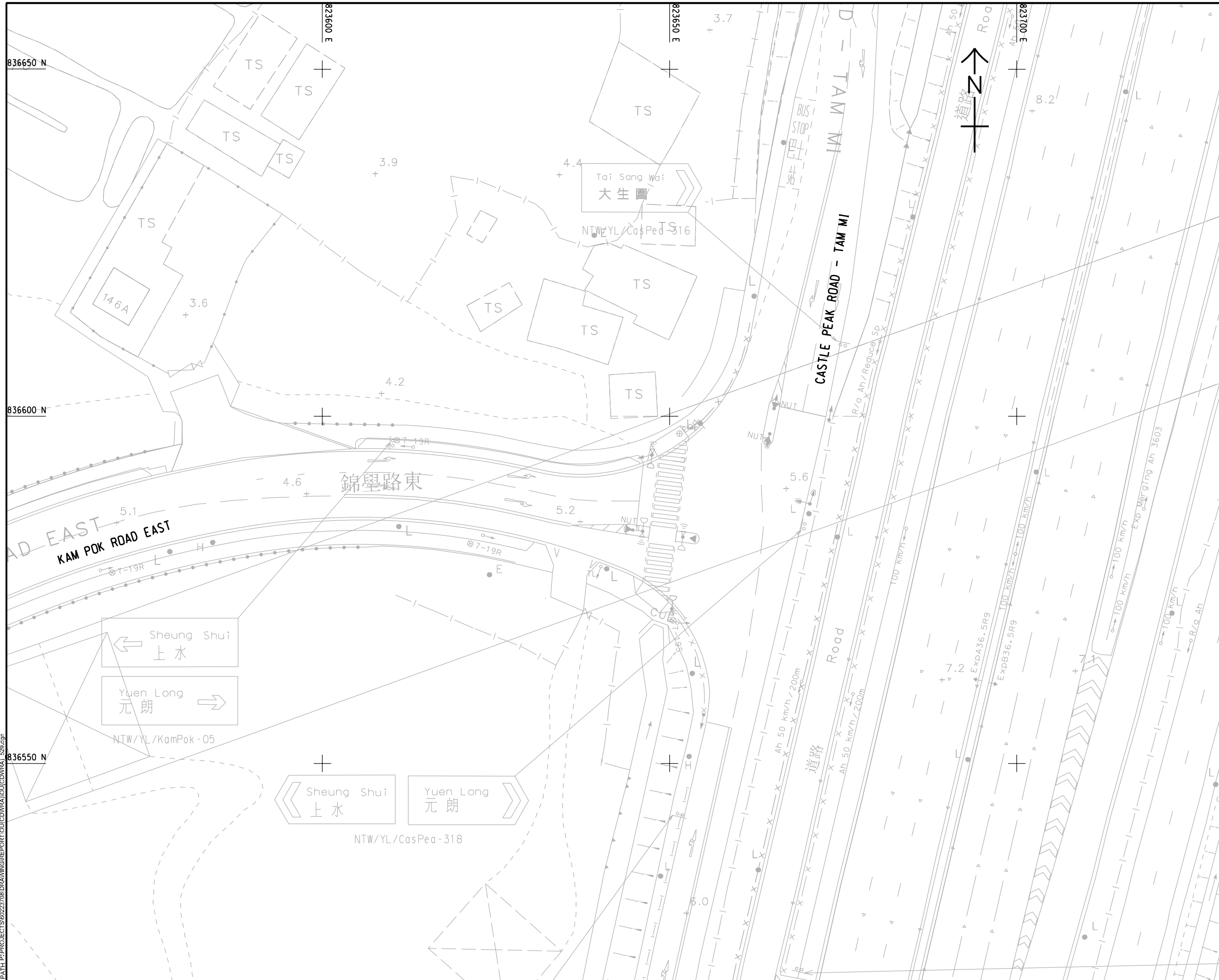
60607989

SHEET TITLE

EXISTING LAYOUT FOR
KAM POK ROAD /
HA CHUK YUEN ROAD (J4)

SHEET NUMBER

FIGURE 3.5



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S. 12A PLANNING
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STATUS

SCALE
Medical

比例	尺寸单位
A3 1 : 500	METRES

KEY PLAN

第51回

PROJECT NO. 61-1034

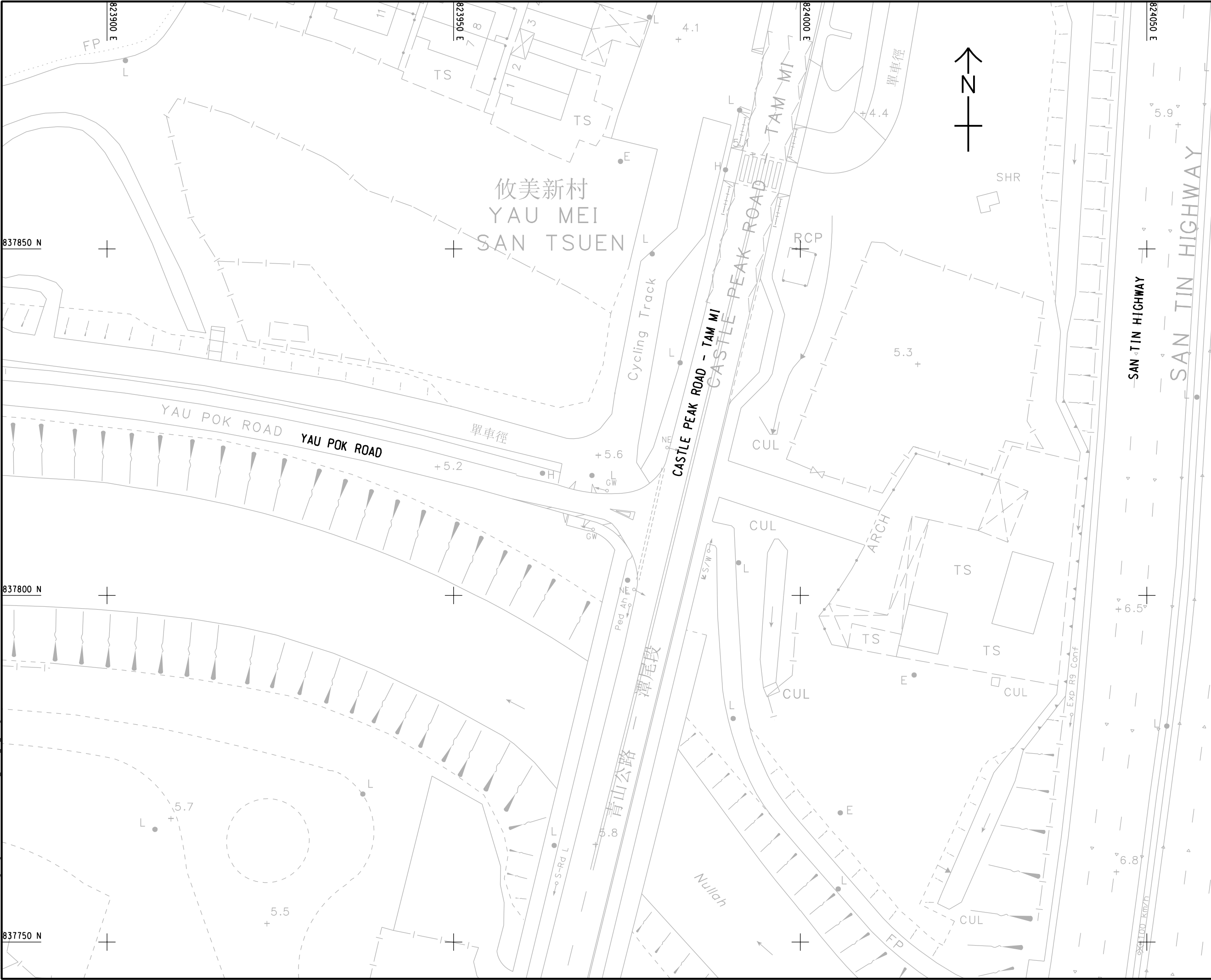
60223708

SHEET TITLE
10/10/24/25

EXISTING LAYOUT FOR JUNCTION
CASTLE PEAK ROAD - TAM MI /
KAM POK ROAD EAST (J6)

SHEET NUMBER

FIGURE 3.7



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階段

PRELIMINARY

SCALE	DIMENSION UNIT
比例	尺寸單位

A3 1: 500 METRES

KEY PLAN

圖則編號

PROJECT NO.

項目編號

CONTRACT NO.

合約編號

SHEET TITLE

圖則名稱

EXISTING JUNCTION OF
CASTLE PEAK ROAD /
YAU POK ROAD (J7)

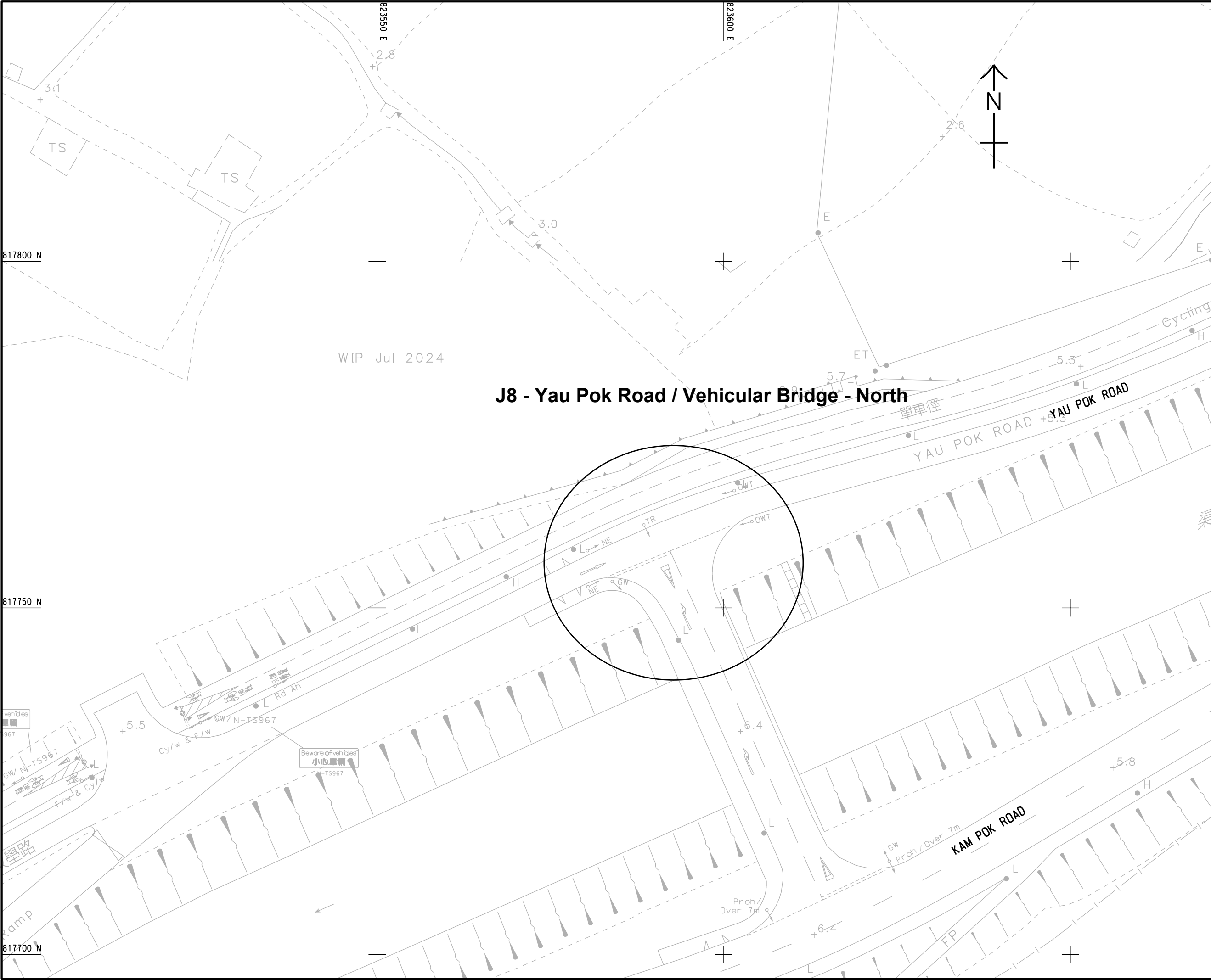
SHEET NUMBER

圖則編號

FIGURE 3.8

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04	2024/07/13	Issue for approval	04
05	2024/07/13	Issue for approval	05
06	2024/07/13	Issue for approval	06
07	2024/07/13	Issue for approval	07
08	2024/07/13	Issue for approval	08
09	2024/07/13	Issue for approval	09
10	2024/07/13	Issue for approval	10

STATUS

SCALE

A3 1 : 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60607989

CONTRACT NO.

60607989

SHEET TITLE

EXISTING JUNCTION LAYOUT OF
YAU POK ROAD / VEHICULAR BRIDGE -
NORTH (J8)

SHEET NUMBER

FIGURE 3.9

V:\BAKU\US5-BAK\CSWP\p\p\ddr\Create Plt file\new\CSWP-75(color).plt
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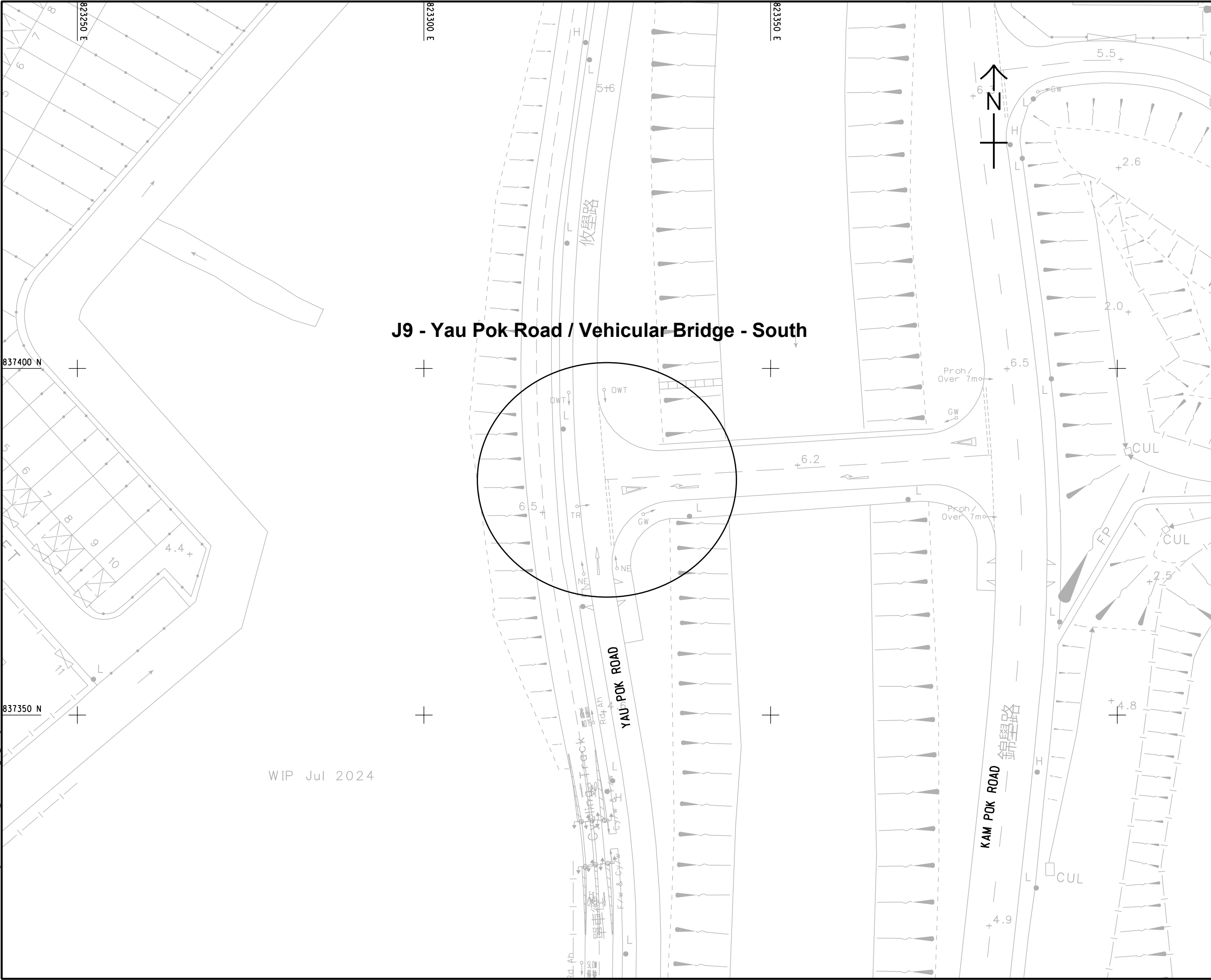
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SCALE
比例

DIMENSION UNIT
尺寸單位

A3 1 : 500

METRES

KEY PLAN
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合約編號

SHEET TITLE
圖紙名稱

EXISTING JUNCTION LAYOUT OF
YAU POK ROAD / VEHICULAR BRIDGE -
SOUTH (J9)

SHEET NUMBER
圖紙編號

FIGURE 3.10

V:\BAKU\US5-BAK\CSWP\p\ddr\Create PH file\new\CSWP-75\color\pjt
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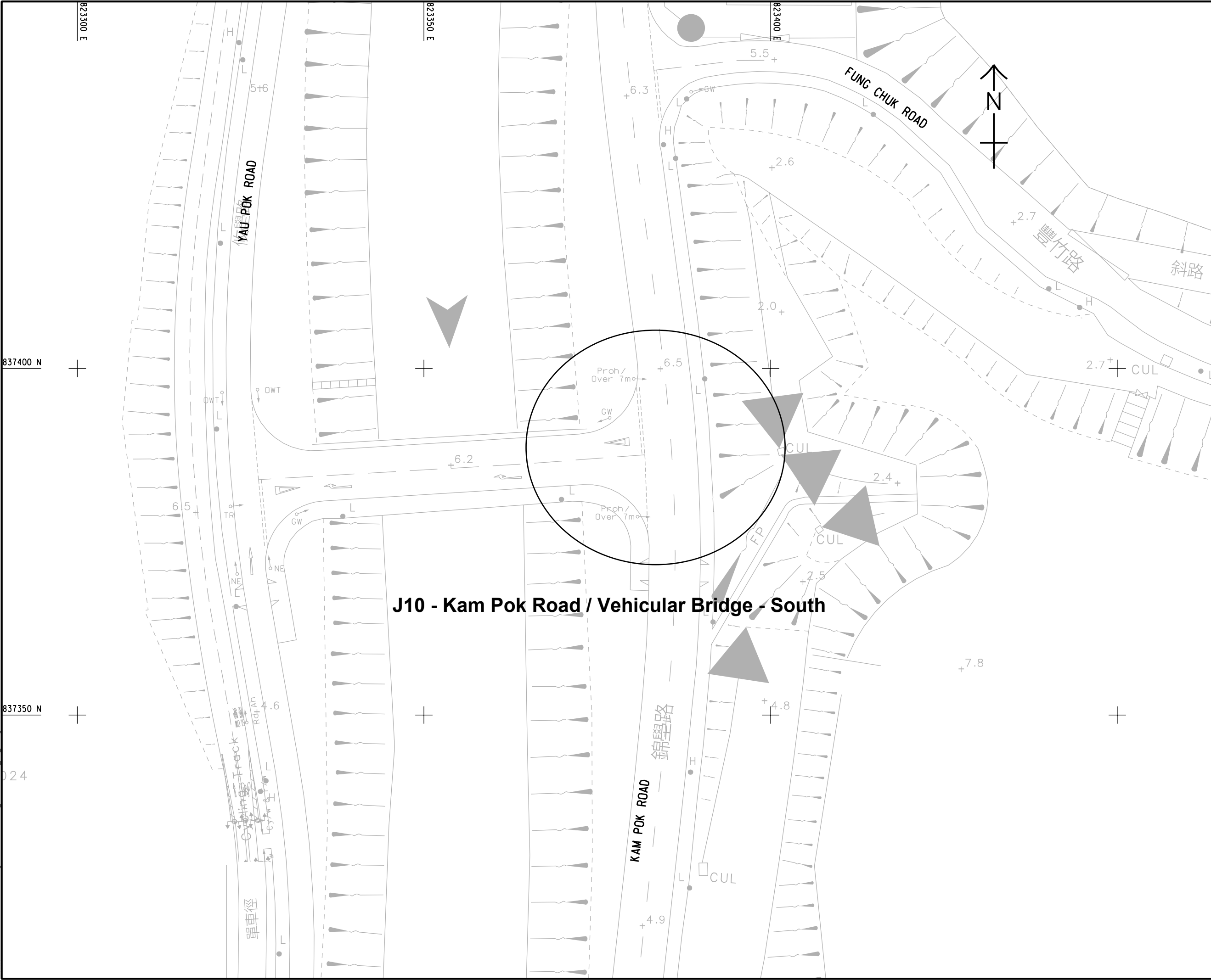
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J10 - Kam Pok Road / Vehicular Bridge - South

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SCALE

A3 1 : 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60607989

CONTRACT NO.

SHEET TITLE

EXISTING JUNCTION LAYOUT OF
KAM POK ROAD / VEHICULAR BRIDGE -
SOUTH (J10)

SHEET NUMBER

FIGURE 3.11

V:\BAKU\US5-BAK\CSWP\pltdrv\Create Plt file\new\CSWP-75(color).plt
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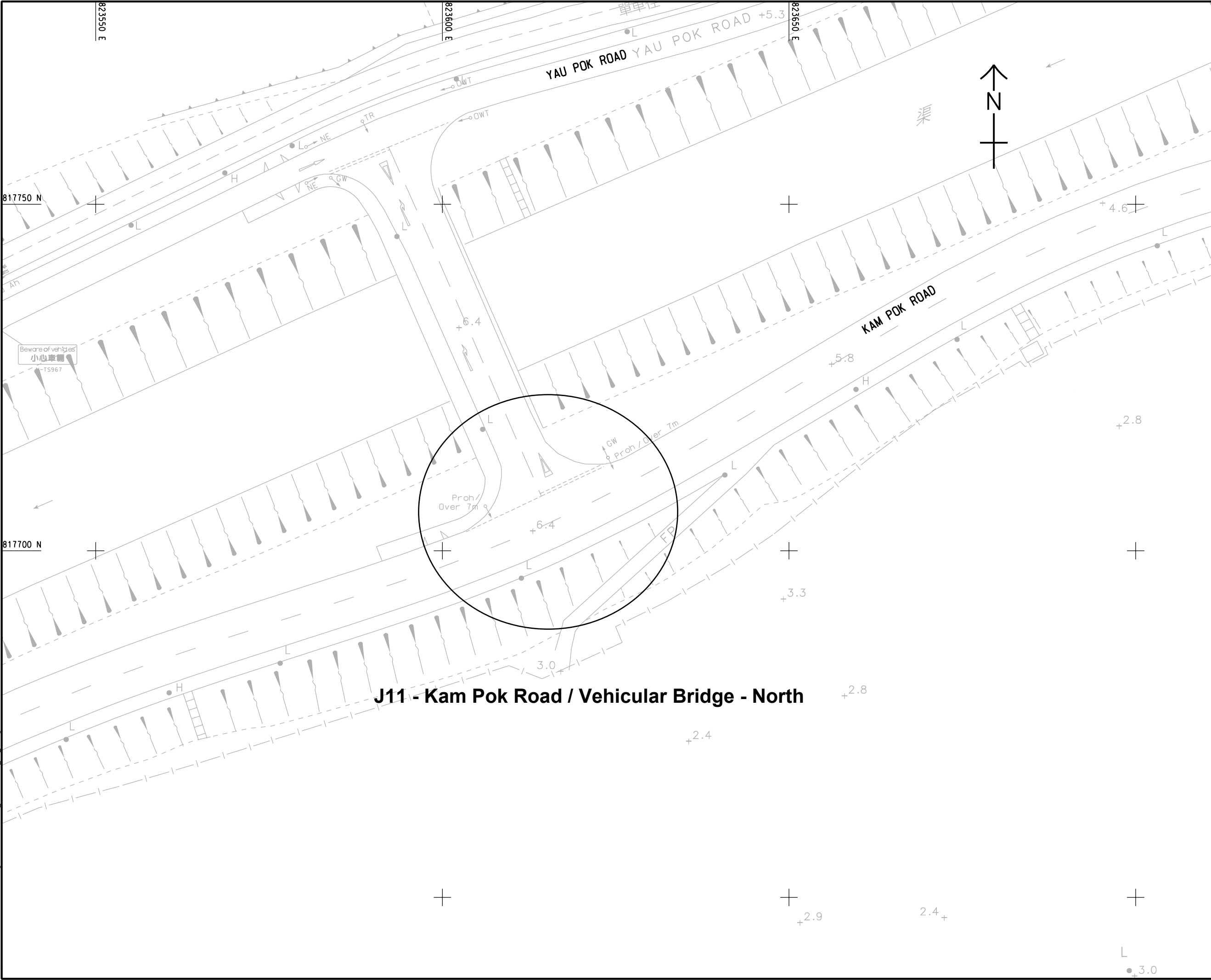
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SCALE

比例

A3 1 : 500

DIMENSION UNIT

尺寸單位

METRES

KEY PLAN

索引圖

PROJECT NO.

項目編號

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CONTRACT NO.

合約編號

SHEET TITLE

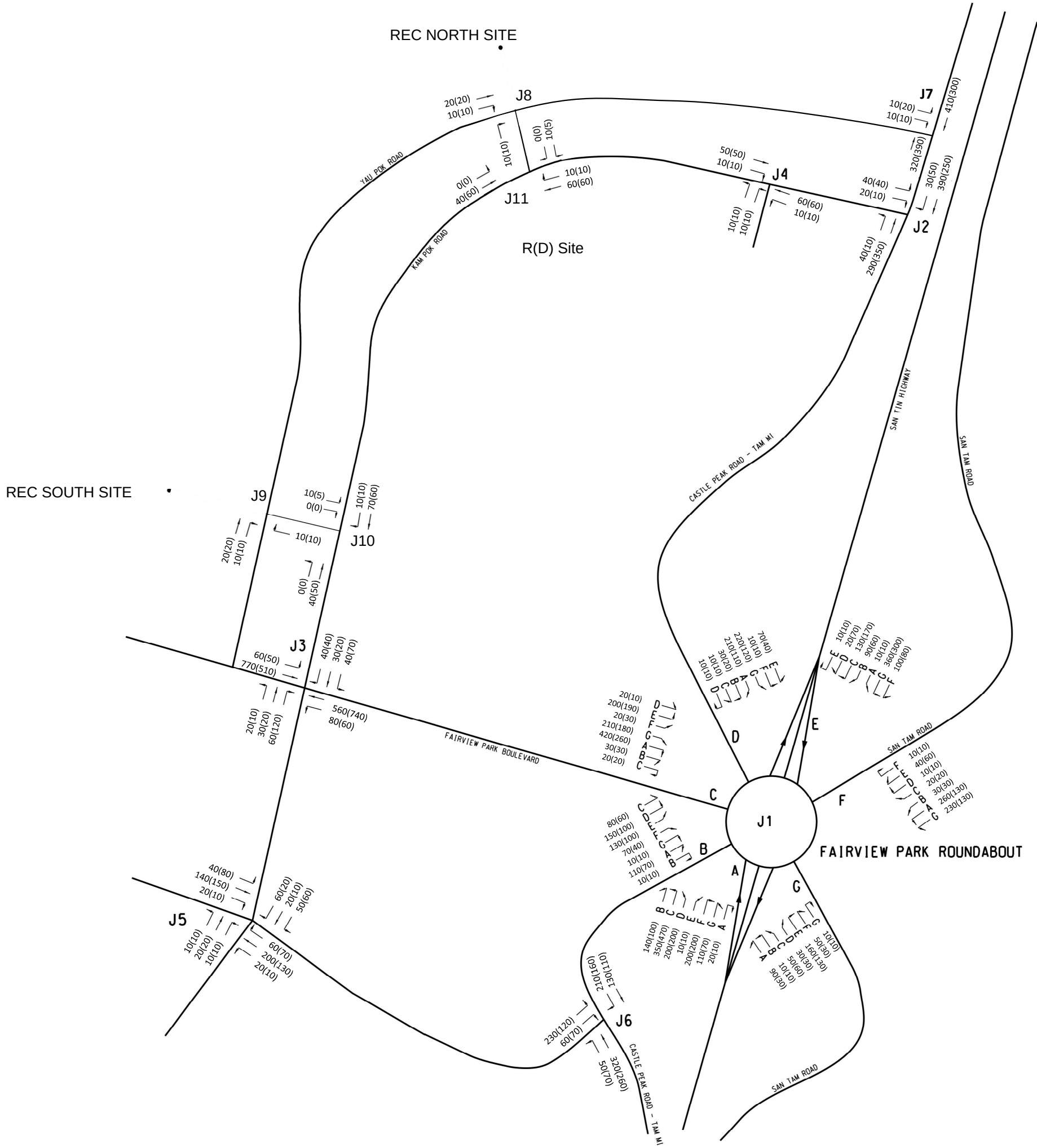
圖紙名稱

EXISTING JUNCTION LAYOUT OF
KAM POK ROAD / VEHICULAR BRIDGE -
NORTH (J11)

SHEET NUMBER

圖紙編號

FIGURE 3.12



LEGEND:

J1
100(100)

JUNCTION NO.
AM (PM) PEAK HOUR TRAFFIC
FLOW (PCU/HR)



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SCALE

N.T.S. METRES

KEY PLAN

PROJECT NO.

60607989

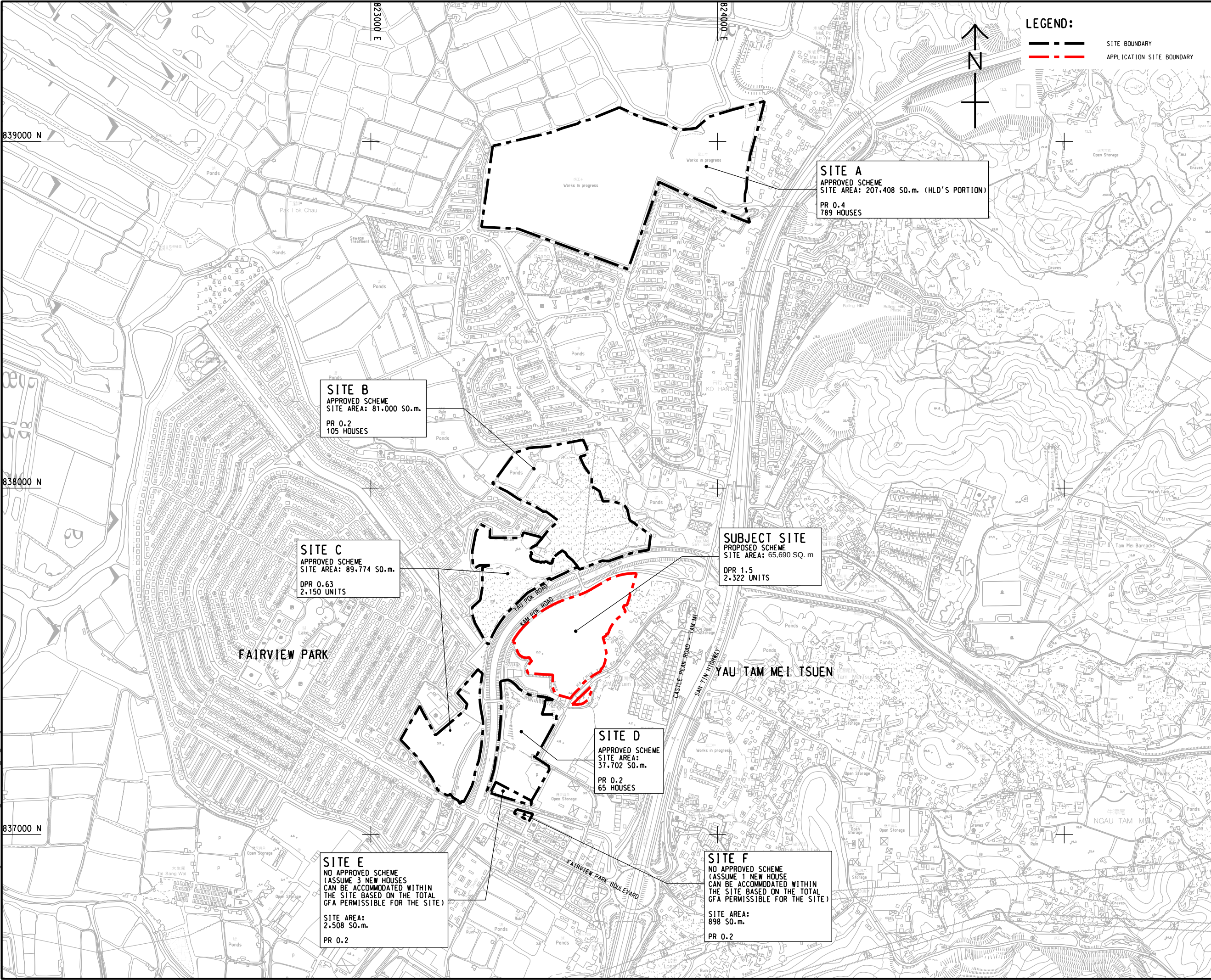
SHEET TITLE

2021 OBSERVED TRAFFIC FLOWS

SHEET NUMBER

FIGURE 3.13

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Plot File by: ZHACHC2
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STATUS
狀態

SCALE	DIMENSION UNIT
比例	尺寸單位
A3 1 : 10000	METRES

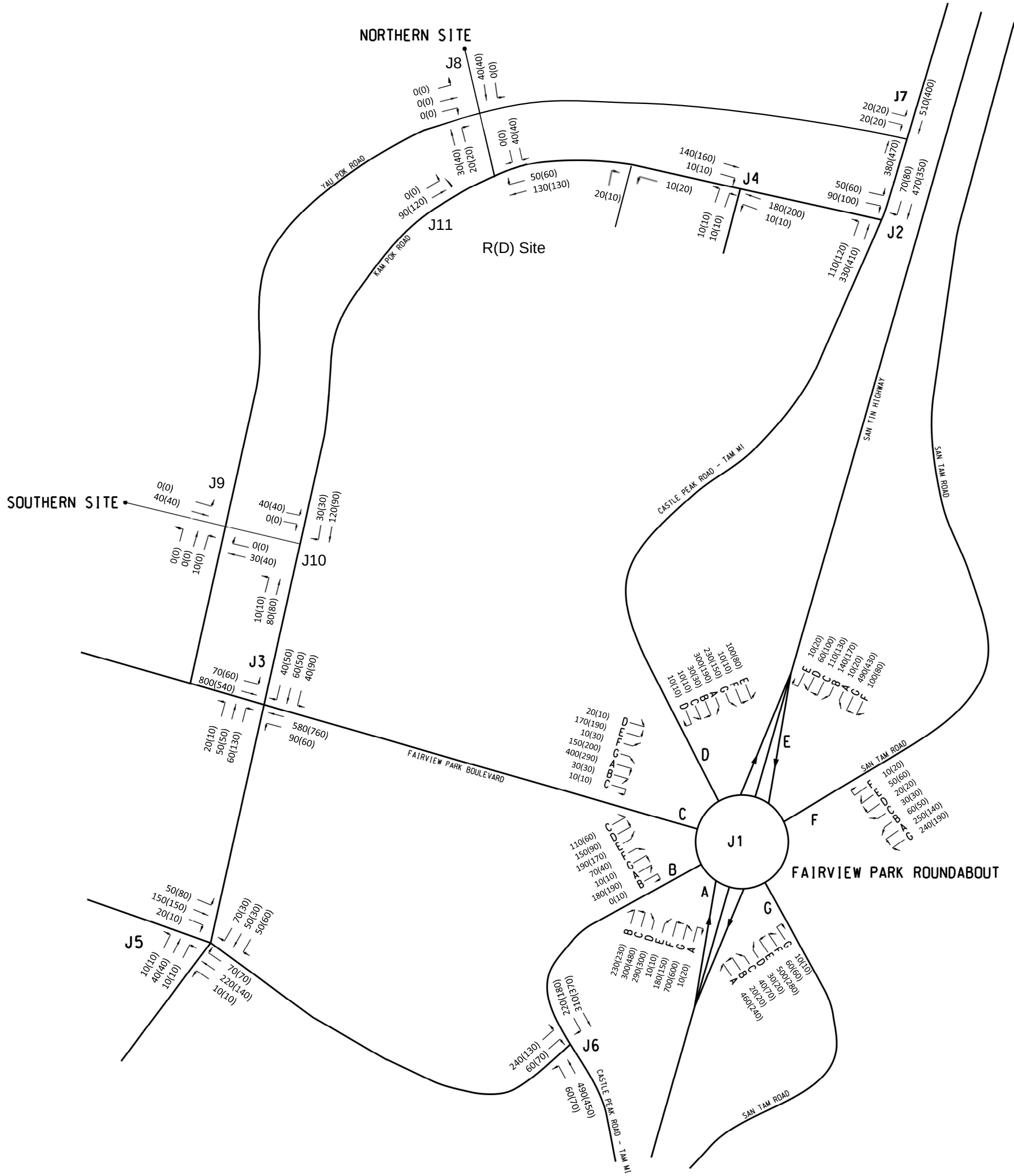
KEY PLAN
索引圖

PROJECT NO.
項目編號
60607989

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱
FUTURE ADJACENT DEVELOPMENTS

SHEET NUMBER
圖紙編號
FIGURE 4.1



PROJECT
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S.12A PLANNING
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阶段

SCALE
比例

DIMENSION UNIT
尺寸单位

N.T.S.

METRES

KEY PLAN
位置圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

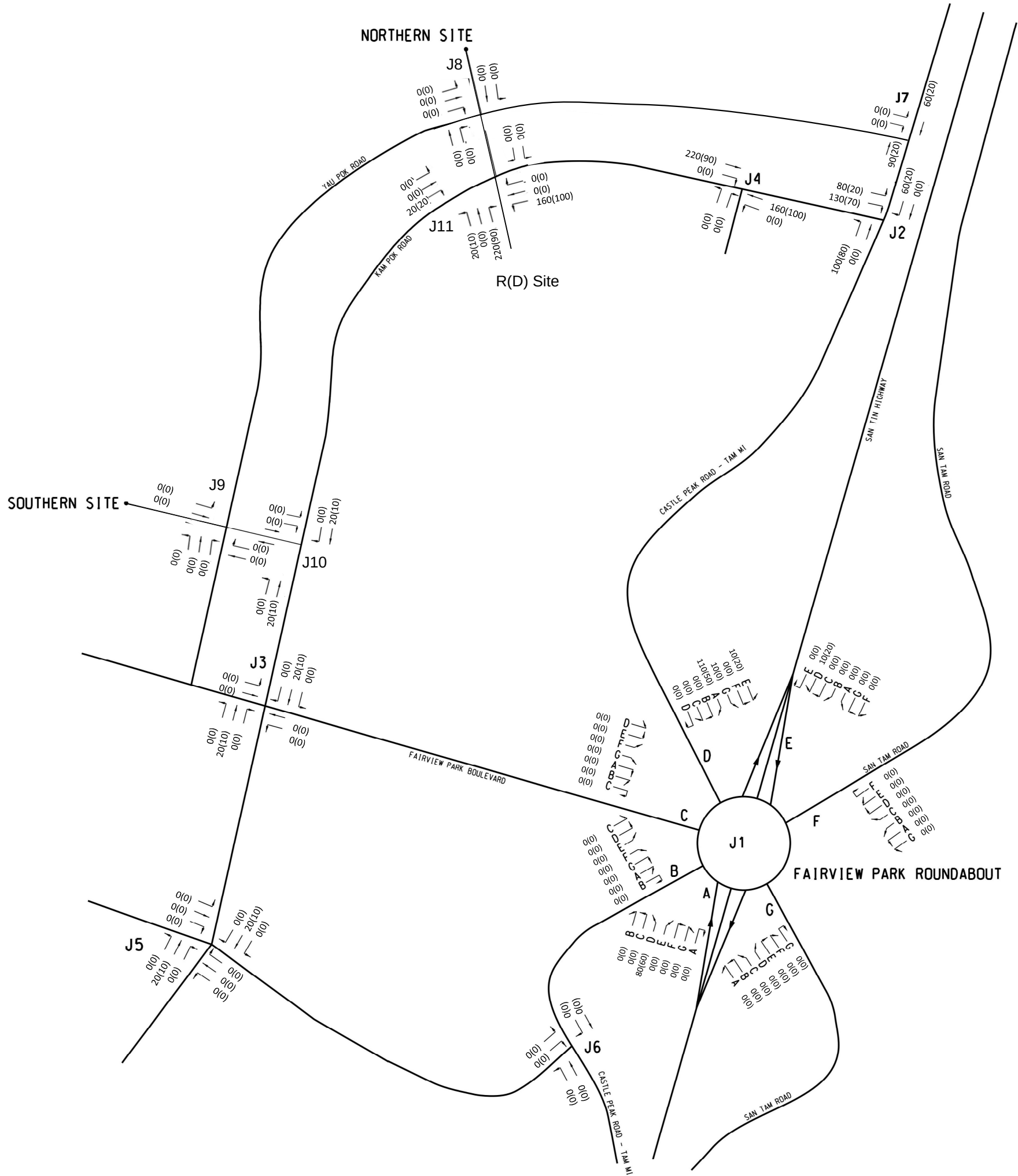
60607989

SHEET TITLE
圖紙名稱

2034 REFERENCE TRAFFIC FLOWS

SHEET NUMBER
圖紙編號

FIGURE 4.2



LEGEND:

J1
100(100)

JUNCTION NO.
AM (PM) PEAK HOUR TRAFFIC
FLOW (PCU/HR)

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SCALE

N.T.S. METRES

KEY PLAN

位置圖

PROJECT NO.

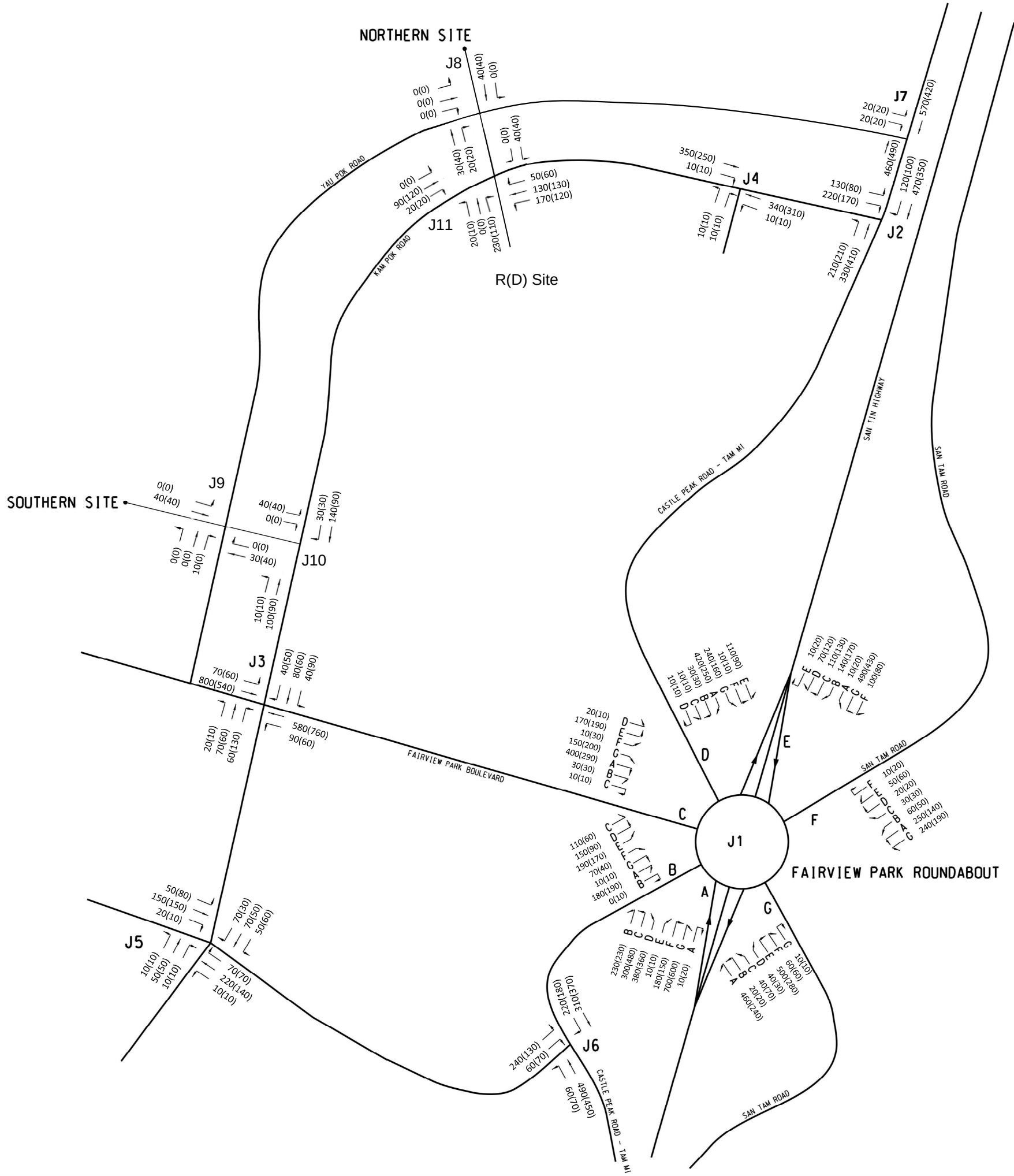
60607989

SHEET TITLE

R(D) SITE DEVELOPMENT
TRAFFIC FLOWS
(NET INCREASE)

SHEET NUMBER

FIGURE 4.3



LEGEND:

J1
100(100)

JUNCTION NO.
AM (PM) PEAK HOUR TRAFFIC
FLOW (PCU/HR)



PROJECT

S.12A PLANNING
APPLICATION FOR
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& ADJACENT G.L. IN
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N.T.S.

KEY PLAN

DIMENSION UNIT

METRES

PROJECT NO.

60607989

CONTRACT NO.

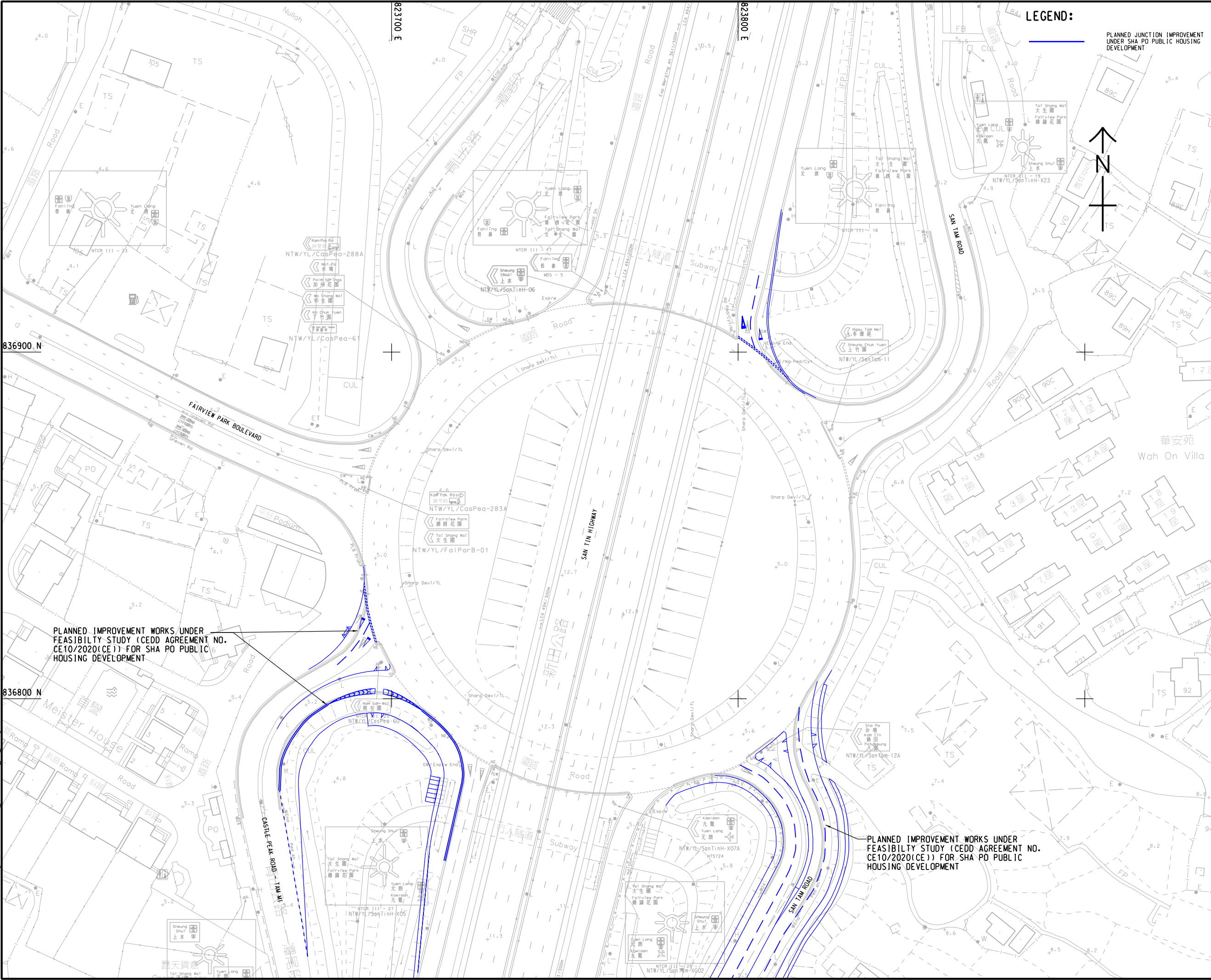
SHEET TITLE

2034 DESIGN TRAFFIC FLOWS

SHEET NUMBER

FIGURE 4.4

ISO A1 594mm x 841mm
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LEGEND:

PLANNED JUNCTION IMPROVEMENT
UNDER SHA PO PUBLIC HOUSING
DEVELOPMENT



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校核

SCALE

比例

A3 1:1000

DIMENSION UNIT

尺寸單位

METRES

KEY PLAN

索引圖

PROJECT NO.

項目編號

60607989

CONTRACT NO.

合約編號

SHEET TITLE

圖紙名稱

PLANNED IMPROVEMENT LAYOUT FOR
FAIRVIEW PARK INTERCHANGE (J1)

SHEET NUMBER

圖紙編號

FIGURE 4.5

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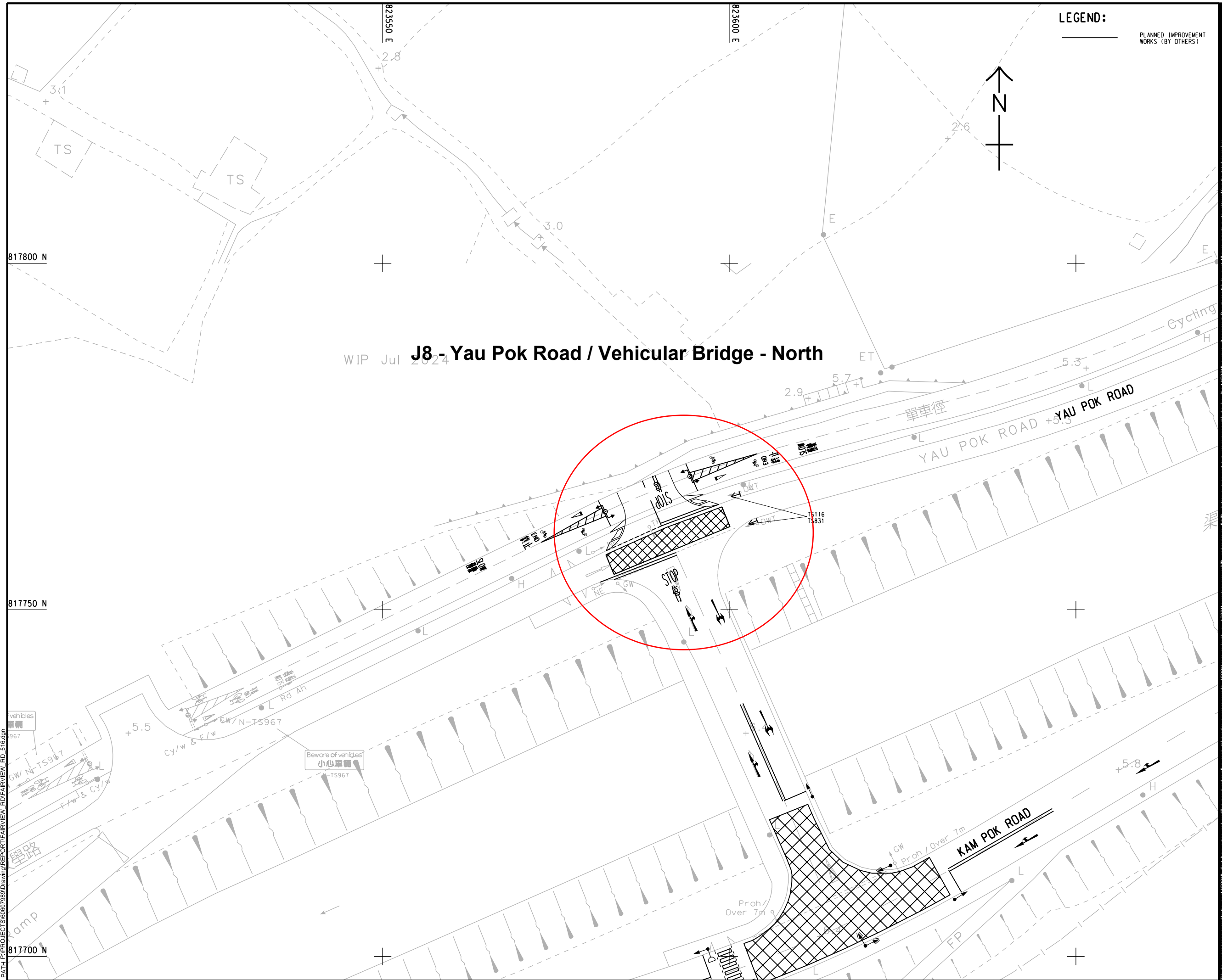
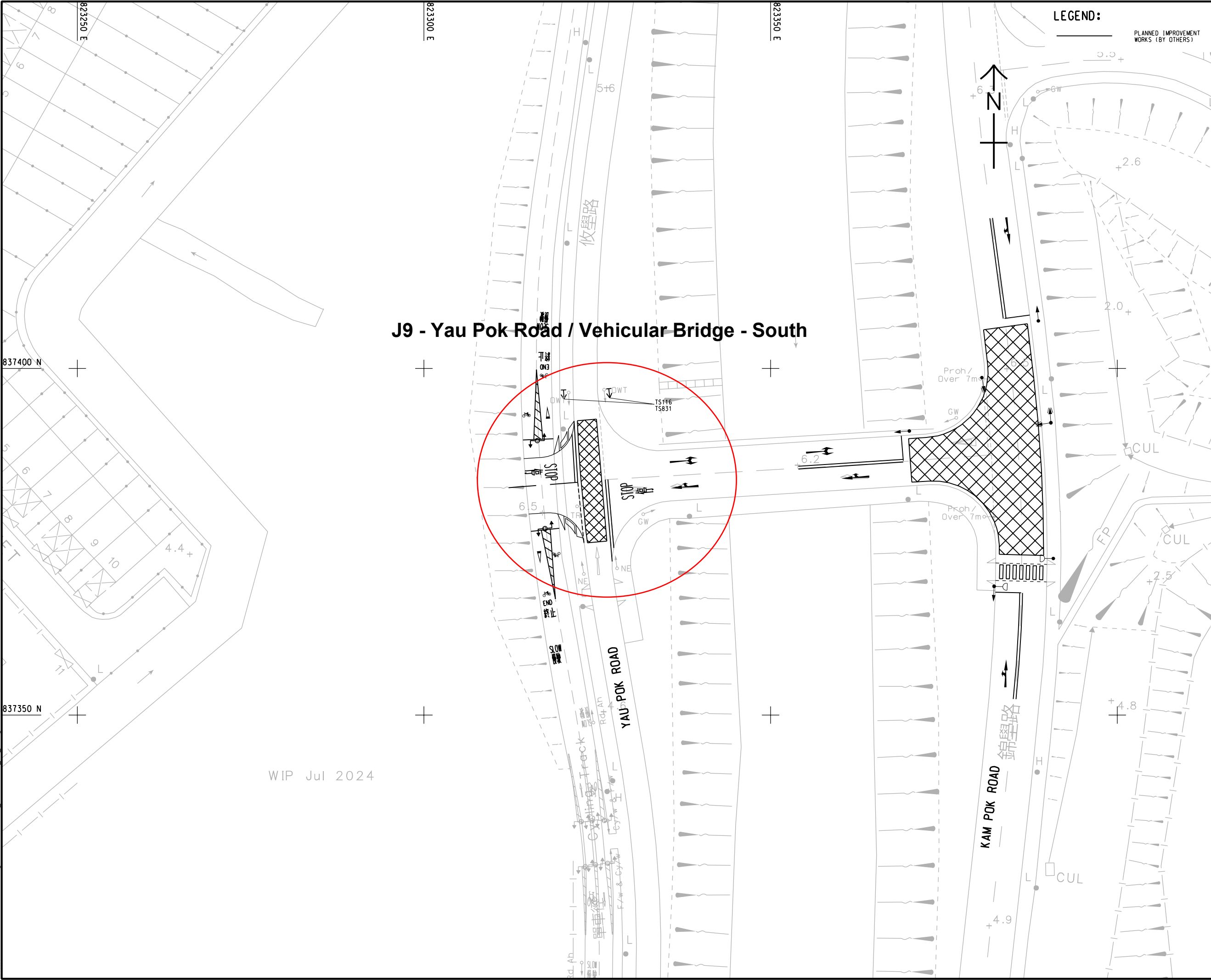


FIGURE 4.6

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校核

SCALE
比例
A3 1 : 500

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN
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項目編號
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合約編號

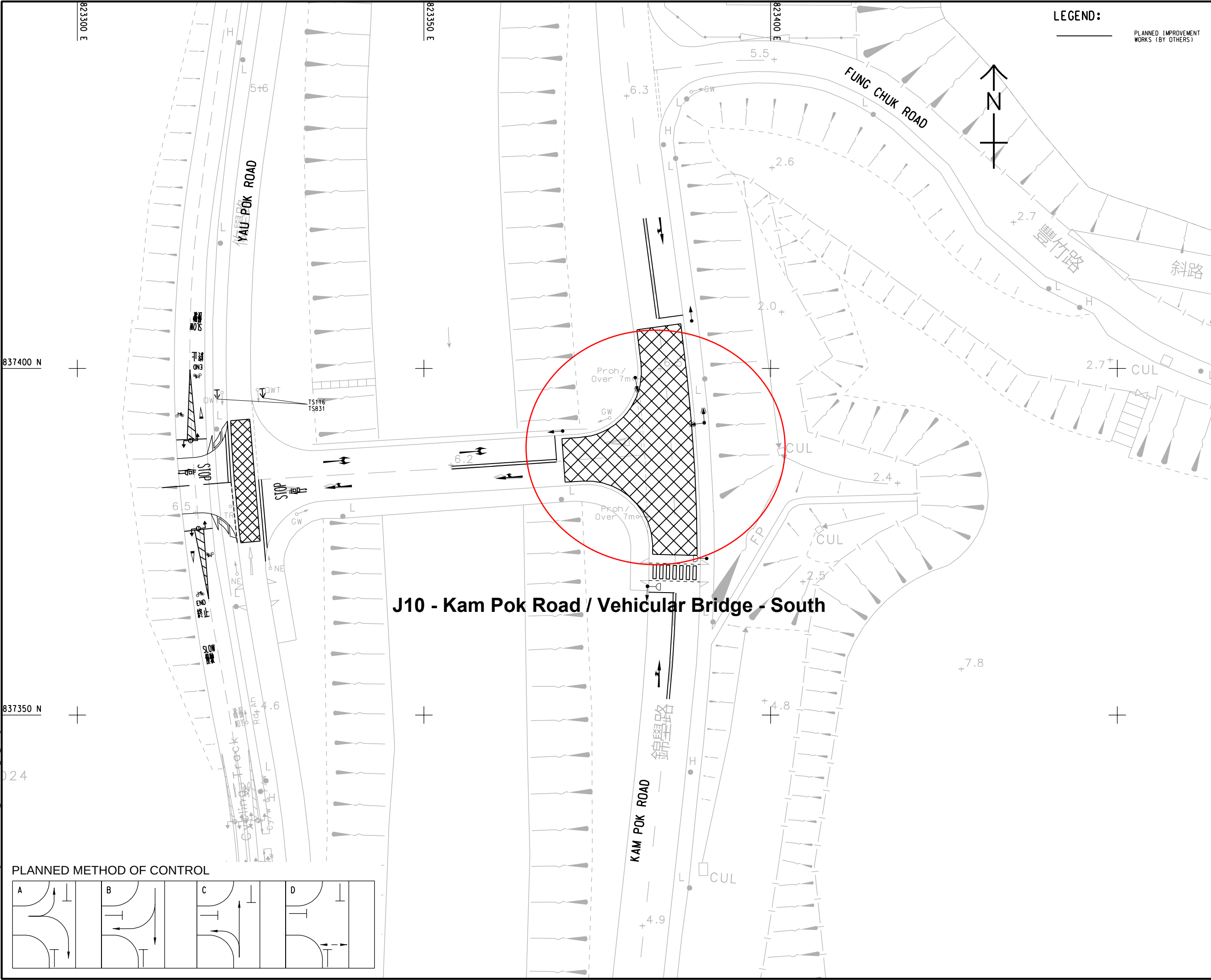
SHEET TITLE
圖紙名稱

PLANNED JUNCTION LAYOUT OF
YAU POK ROAD / VEHICULAR BRIDGE -
SOUTH (J9)

SHEET NUMBER
圖紙編號
FIGURE 4.7

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I/R	DATE	DESCRIPTION	CHK.
修改	日期	修改描述	校核

STATUS

SCALE
A3 1 : 500
DIMENSION UNIT
METRES

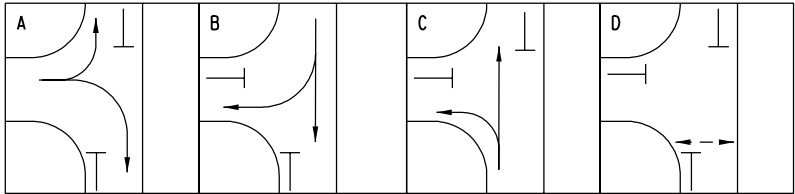
KEY PLAN

PROJECT NO.
60607989
CONTRACT NO.

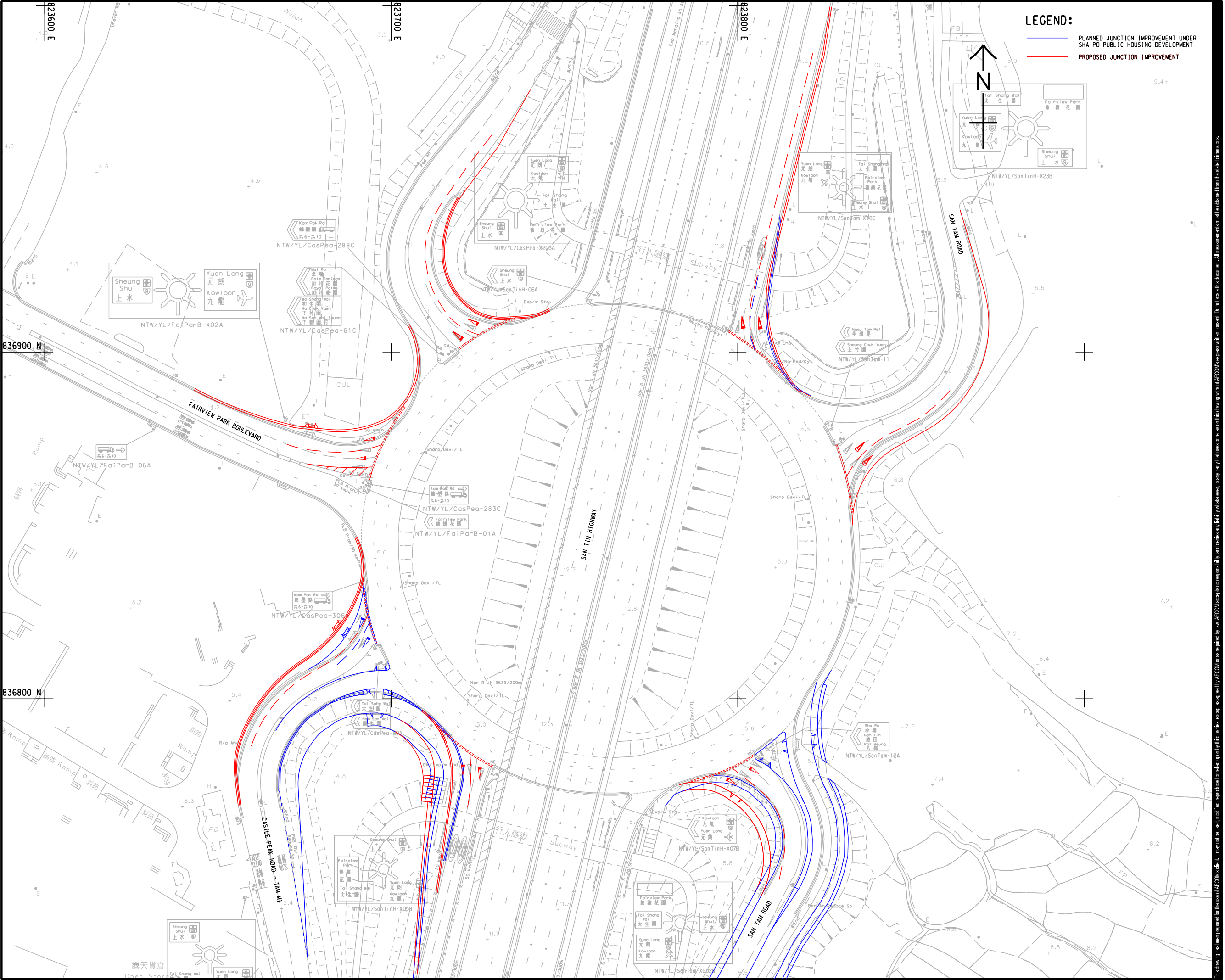
SHEET TITLE
PLANNED JUNCTION LAYOUT OF
KAM POK ROAD / VEHICULAR BRIDGE -
SOUTH (J10)

SHEET NUMBER
FIGURE 4.8

PLANNED METHOD OF CONTROL



ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: chenovia 23/10/2024
PATH F:\BACK UP (E)\Timothy Choy\Fairview INT\RD RD_506.dgn



LEGEND:

- PLANNED JUNCTION IMPROVEMENT UNDER SHA PD PUBLIC HOUSING DEVELOPMENT
- PROPOSED JUNCTION IMPROVEMENT

AECOM

PROJECT
項目

S.12A PLANNING APPLICATION FOR REZONING VARIOUS LOTS & ADJACENT G.L. IN DD 104, "R(D)" SITE, KAM TIN, YUEN LONG

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STATUS	
階段	

SCALE	DIMENSION UNIT
比例	尺寸單位
A3 1:1000	METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

60223708

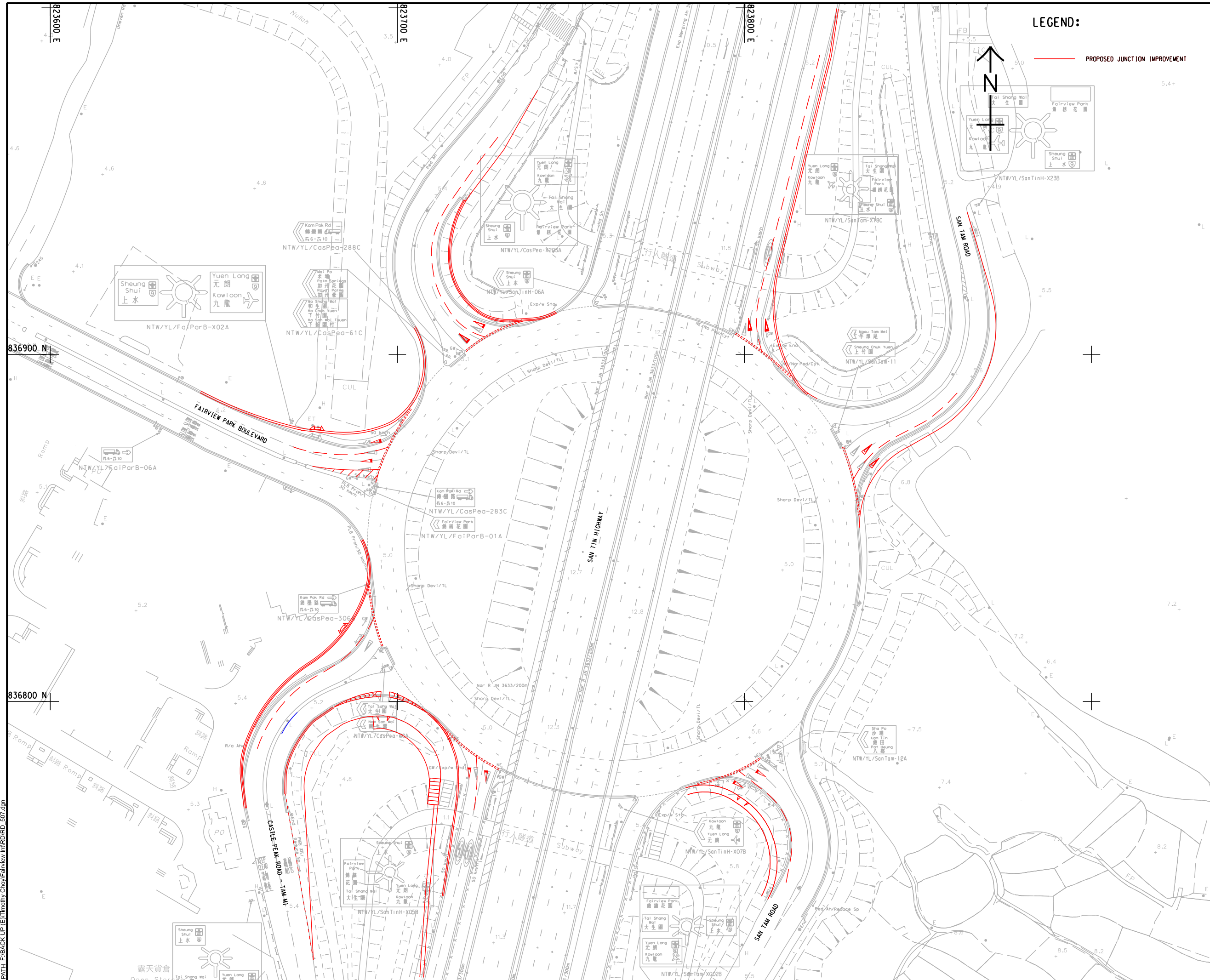
SHEET TITLE
圖紙名稱

PROPOSED IMPROVEMENT LAYOUT FOR FAIRVIEW PARK INTERCHANGE (J1)

SHEET NUMBER
圖紙編號

FIGURE 4.10

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[illegible]

PROJECT 0011

S.12A PLANNING
APPLICATION FOR
REZONING VARIOUS
LOTS & ADJACENT G.L.
IN DD 104, "REC" SITE,
KAM TIN, YUEN LONG

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STATUS

124

SCALE

比例

DIMENSION UNIT

尺寸單位

KEY PLAN

...

PROJECT NO.

項目編號

CONTRACT NO.

合約編號

SHEET TITLE

圖紙名稱

PROPOSED IMPROVEMENT LAYOUT
FOR FAIRVIEW PARK INTERCHANGE
(J1) - WITHOUT SHA PO PUBLIC
HOUSING PLANNED IMPROVEMENT

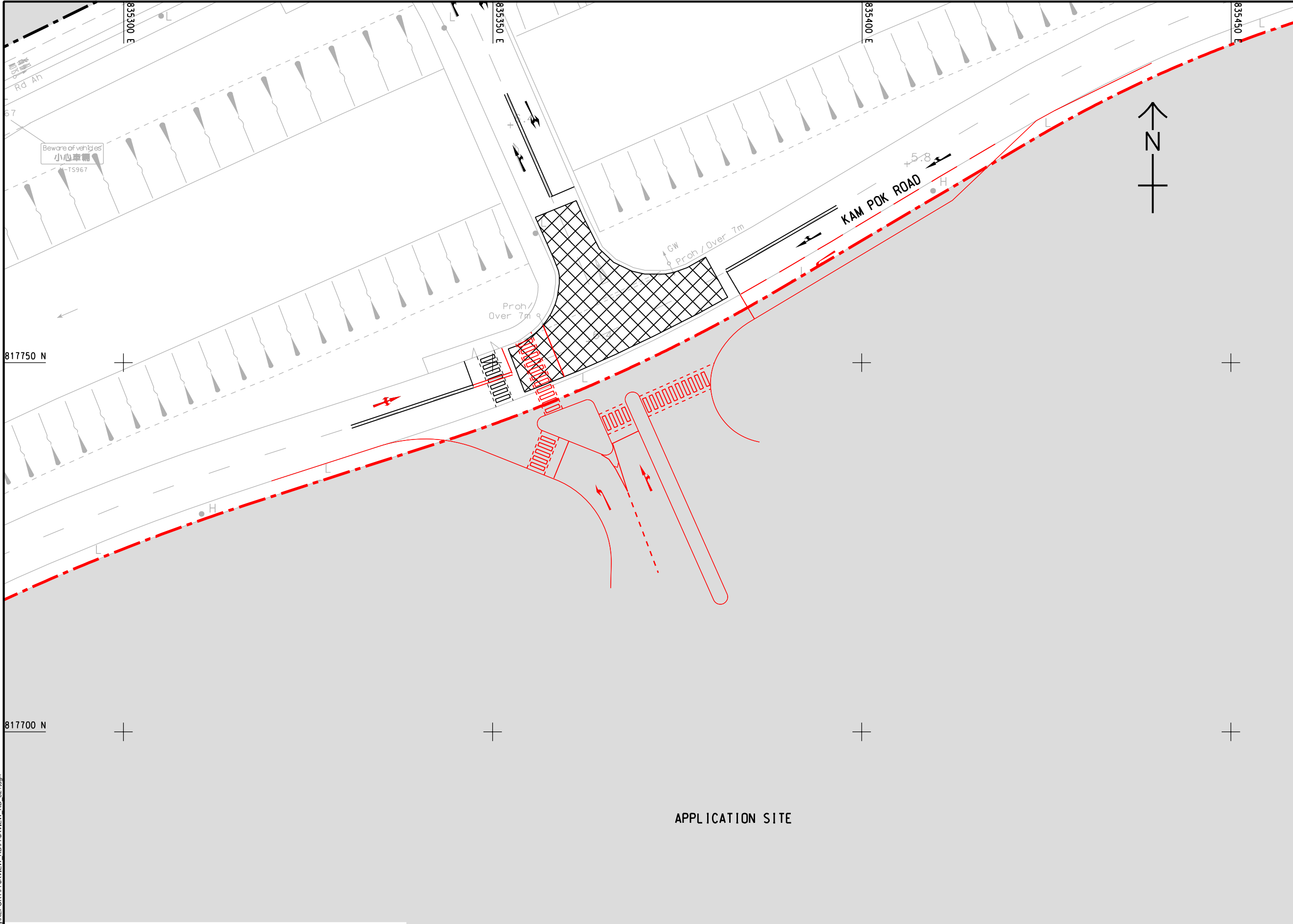
SHEET NUMBER

圖紙編號

FIGURE 4.11

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Checked:
Designer:
Project Management Initials:

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PROPOSED METHOD OF CONTROL

1

2

3

4

LEGEND:

SITE BOUNDARY

APPLICATION SITE BOUNDARY

PLANNED IMPROVEMENT WORKS
(BY OTHERS)

PROPOSED IMPROVEMENT WORKS
(BY R(D) SITE)

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S.12A PLANNING
APPLICATION FOR
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& ADJACENT G.L. IN
DD 104, "R(D)" SITE,
KAM TIN, YUEN LONG
CLIENT
業主

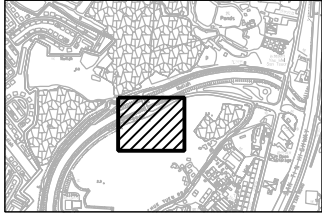
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STATUS
校核

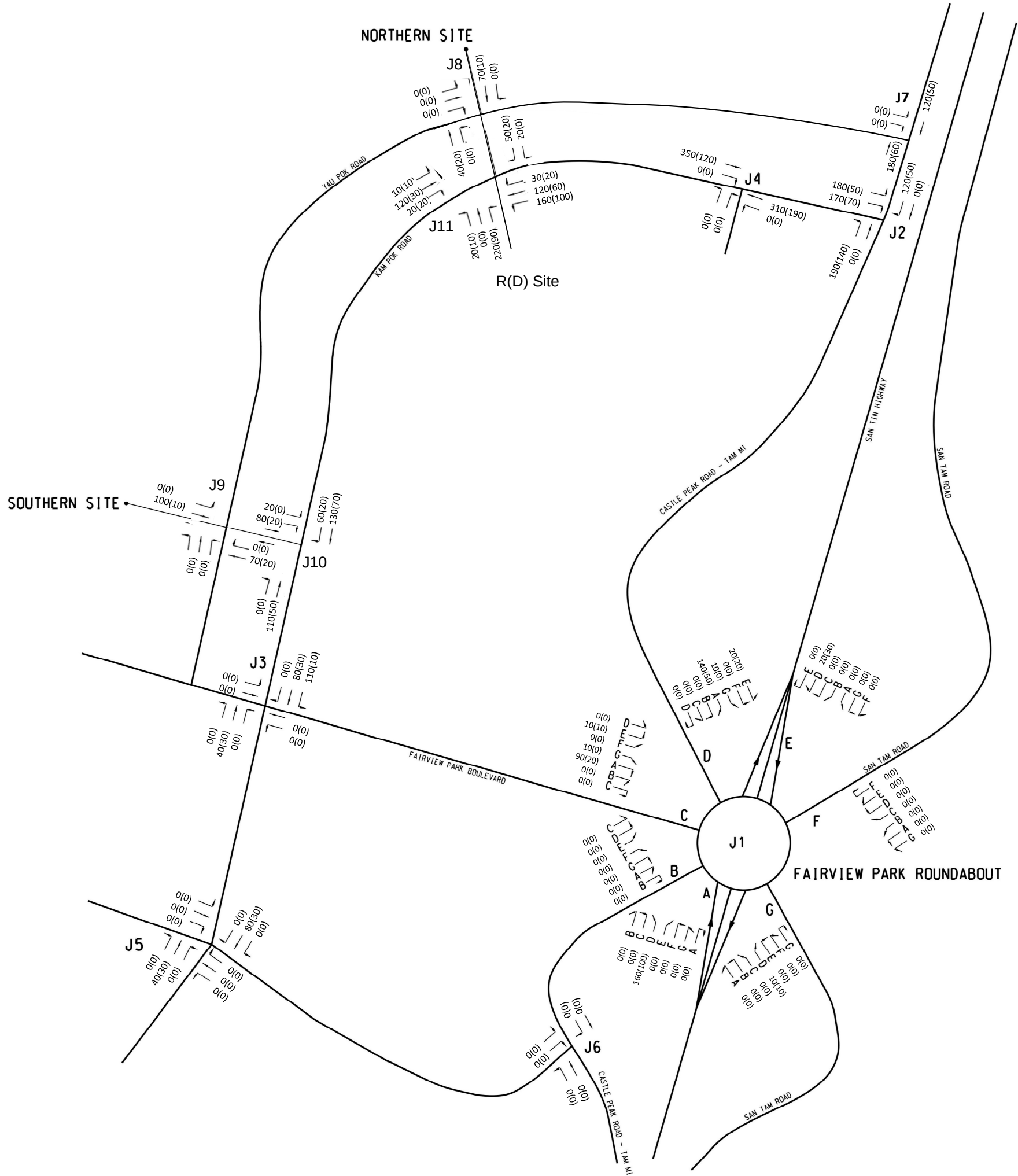
SCALE 比例	DIMENSION UNIT 尺寸單位
A3 1 : 500	METRES
KEY PLAN 索引圖	A3 1 : 20000



PROJECT NO.
項目編號
60607989

SHEET TITLE
圖紙名稱
PROPOSED JUNCTION IMPROVEMENT
OF J11 - YAU POK ROAD /
VEHICULAR BRIDGE - NORTH
R(D) SITE ACCESS

SHEET NUMBER
圖紙編號
FIGURE 4.12



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STATUS
阶段

SCALE
比例

DIMENSION UNIT
尺寸单位

N.T.S.

METRES

KEY PLAN
位置图

PROJECT NO.
项目编号

CONTRACT NO.
合约编号

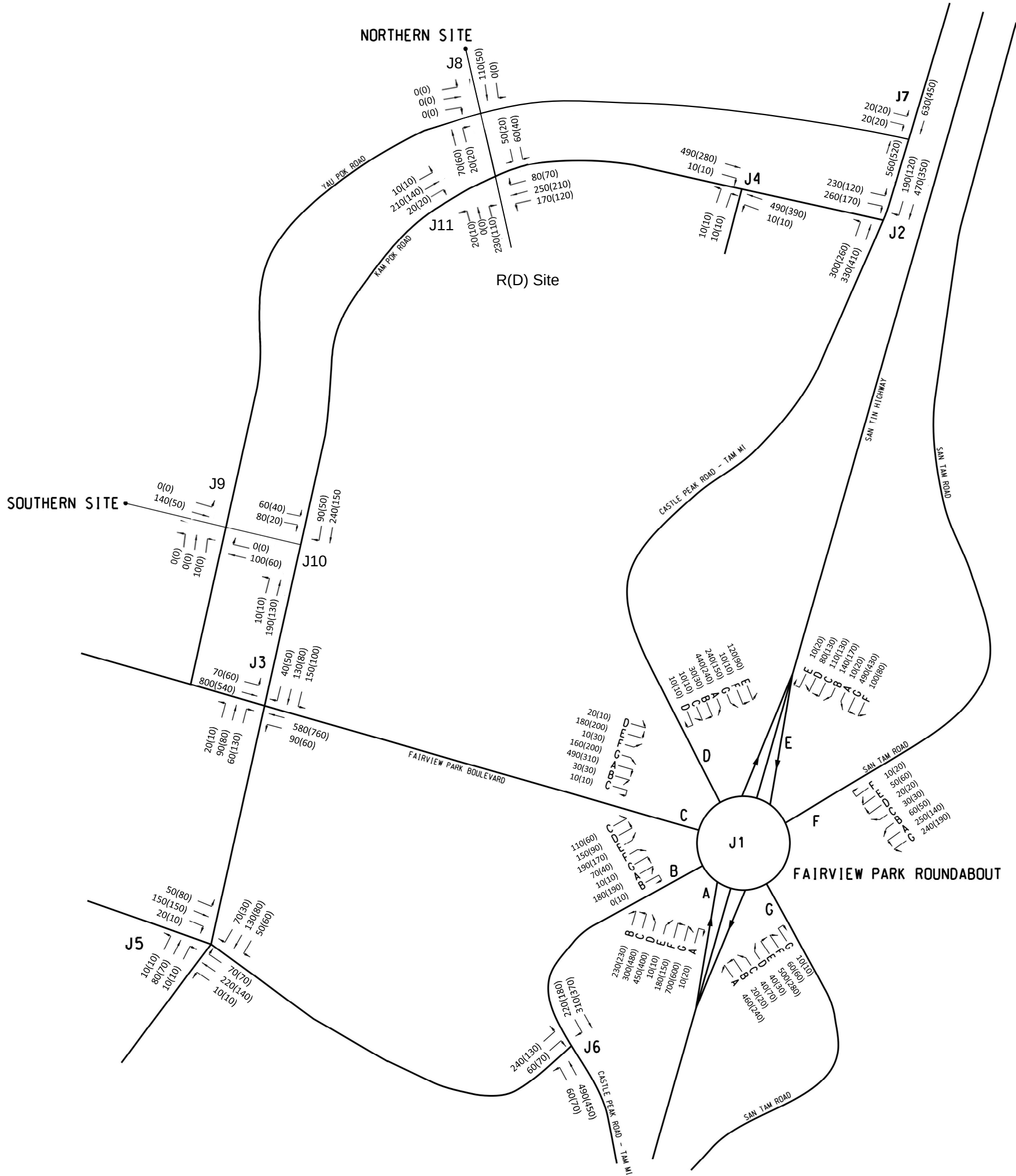
60607989

SHEET TITLE
图纸名称

SITE DEVELOPMENT TRAFFIC FLOWS
(NET INCREASE) -
SENSITIVITY TEST (I)

SHEET NUMBER
图纸编号

FIGURE 4.13



LEGEND:

J1
100(100)

JUNCTION NO.
AM (PM) PEAK HOUR TRAFFIC
FLOW (PCU/HR)

AECOM

PROJECT
S.12A PLANNING
APPLICATION FOR
REZONING VARIOUS LOTS
& ADJACENT G.L. IN
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尚待

SCALE	DIMENSION UNIT
比例	尺寸單位
N.T.S.	METRES
KEY PLAN	
位置圖	

PROJECT NO.
項目編號
60607989

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱
2034 DESIGN TRAFFIC FLOWS
(SENSITIVITY TEST 1)

SHEET NUMBER
圖紙編號
FIGURE 4.14

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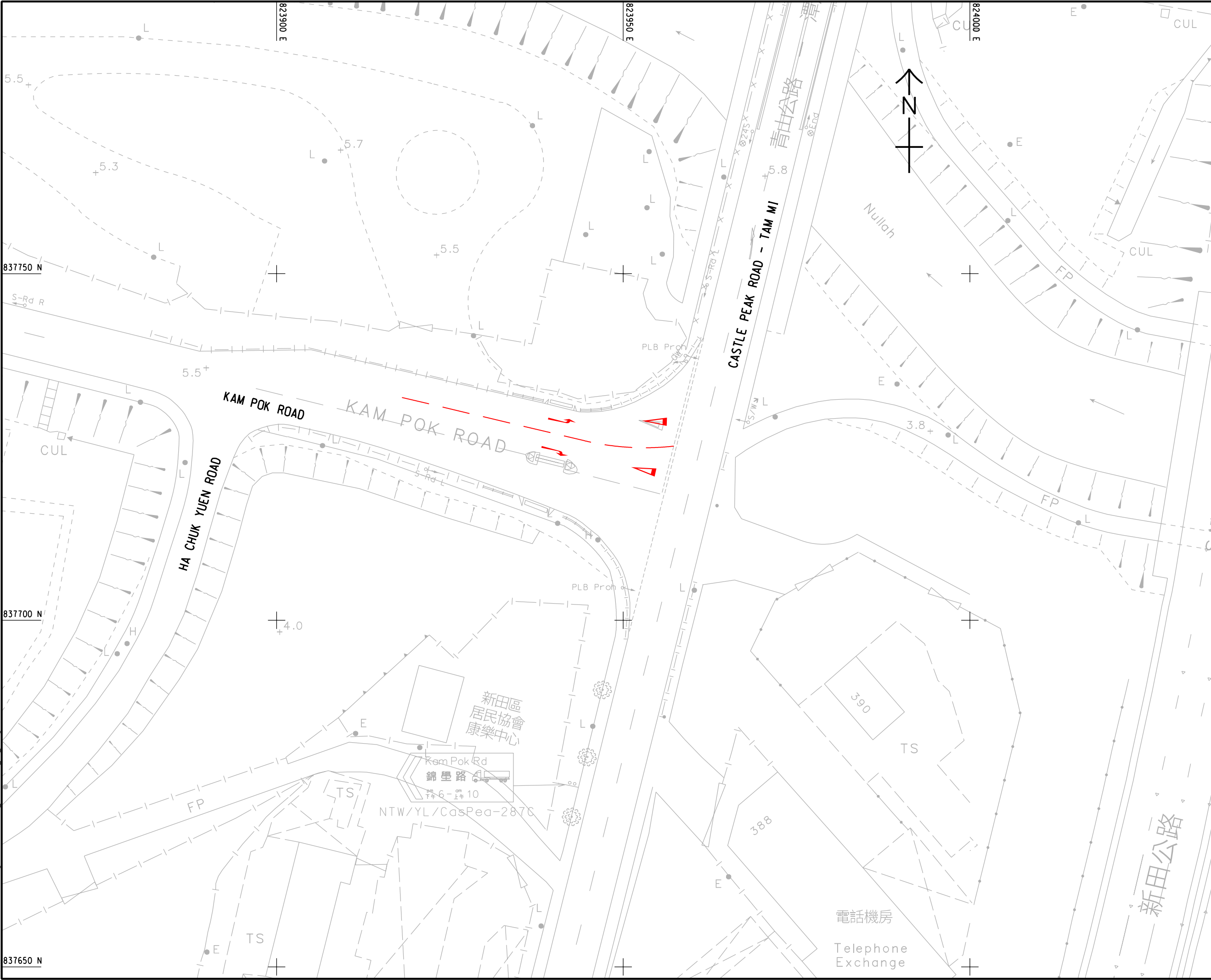
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Checked:

Designer:

Project Management Initials:



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校核

SCALE

比例

A3 1 : 500

DIMENSION UNIT

尺寸單位

METRES

KEY PLAN

圖則編號

PROJECT NO.

項目編號

60607989

CONTRACT NO.

合約編號

SHEET TITLE

圖則名稱

PROPOSED IMPROVEMENT LAYOUT
FOR CASTLE PEAK ROAD - TAM MI/
KAM POK ROAD (J2)

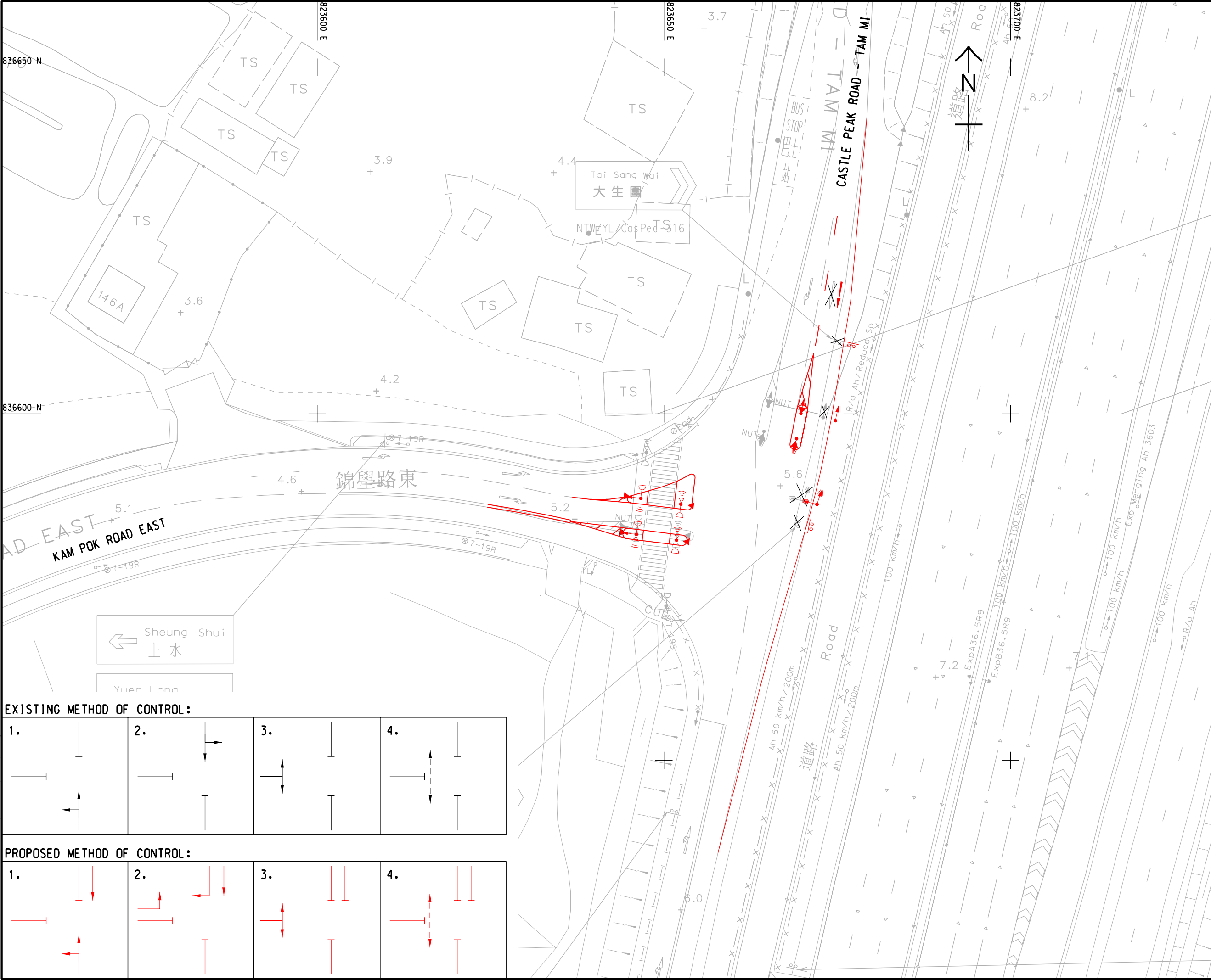
- UNDER SENSITIVITY TEST (I)

SHEET NUMBER

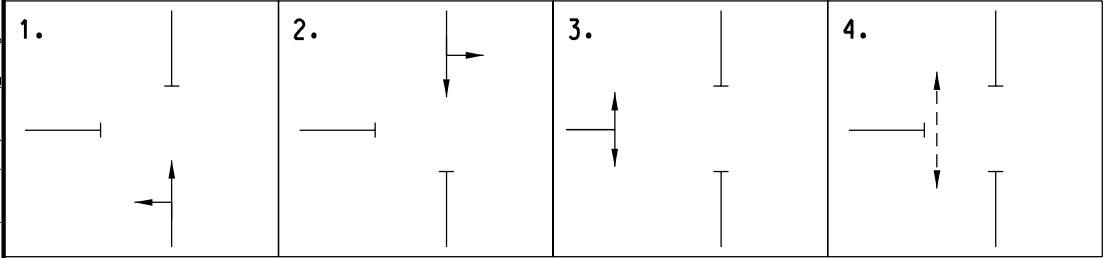
圖則編號

FIGURE 4.15

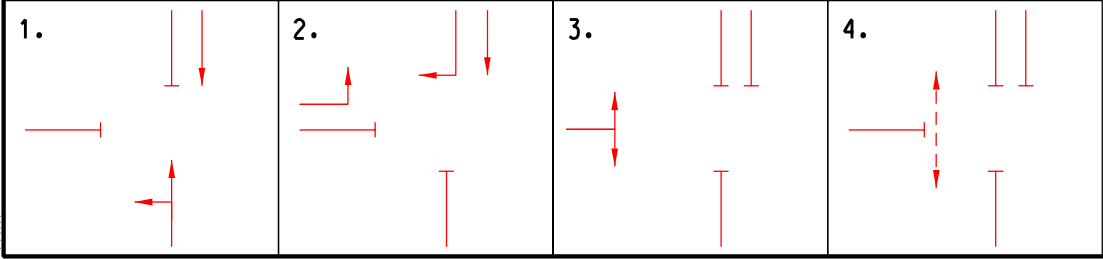
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Design:
Checked:
Approved:
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EXISTING METHOD OF CONTROL:



PROPOSED METHOD OF CONTROL:



PROJECT
項目
S. 12A PLANNING
APPLICATION FOR
REZONING VARIOUS LOTS
& ADJACENT G.L. IN
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KAM TIN, YUEN LONG

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階段

SCALE
比例
A3 1: 500

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN

索引圖

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項目編號
60223708

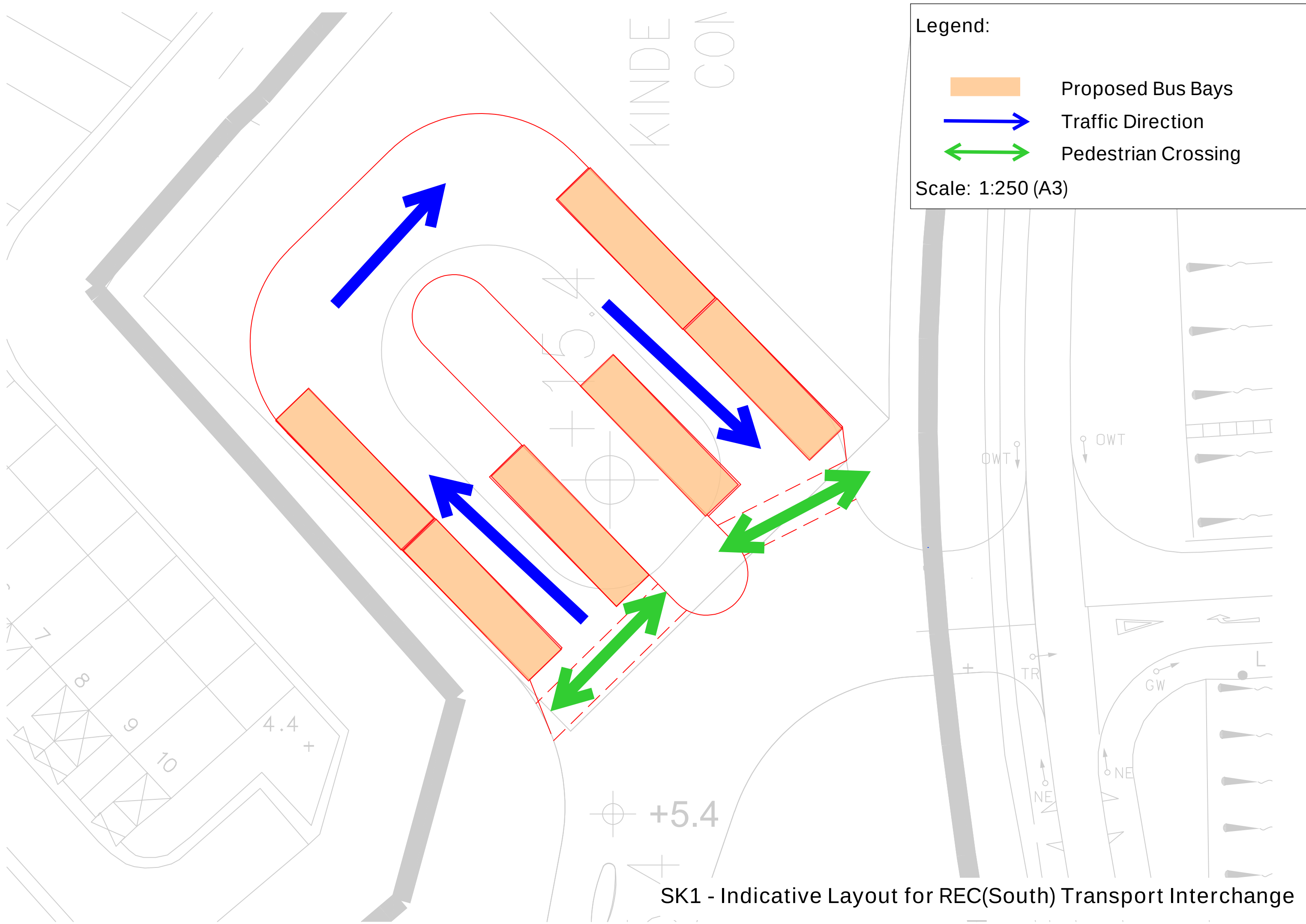
CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱
PROPOSED IMPROVEMENT SCHEME
FOR JUNCTION OF CASTLE PEAK
ROAD - TAM MI / KAM POK ROAD EAST
(J6) - UNDER SENSITIVITY TEST (II)

SHEET NUMBER
圖紙編號
FIGURE 4.16

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Appendix A
Indicative Layout of Transport Layby and
Swept Path Analysis



Legend:



Proposed Bus Bays



Traffic Direction

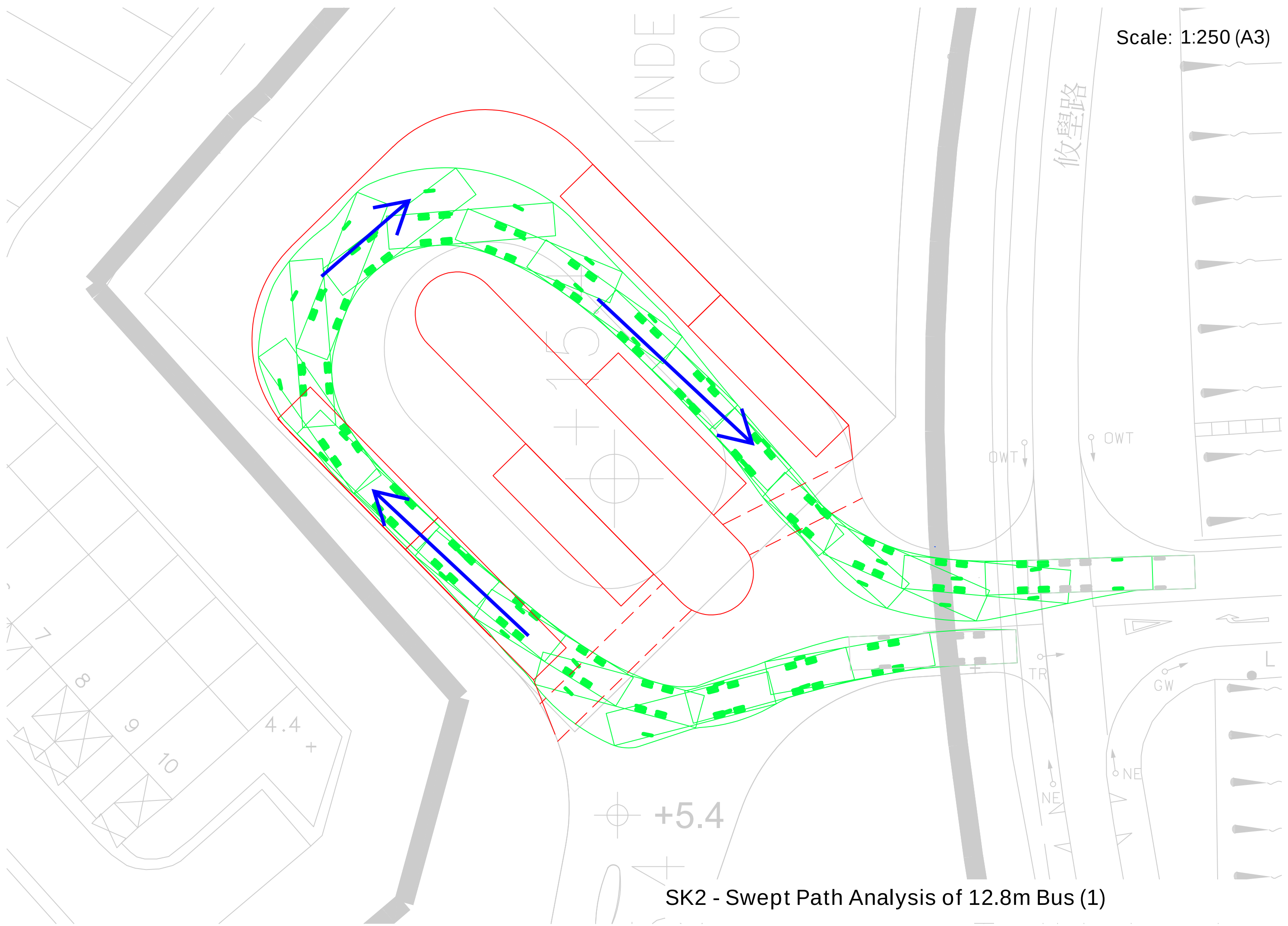


Pedestrian Crossing

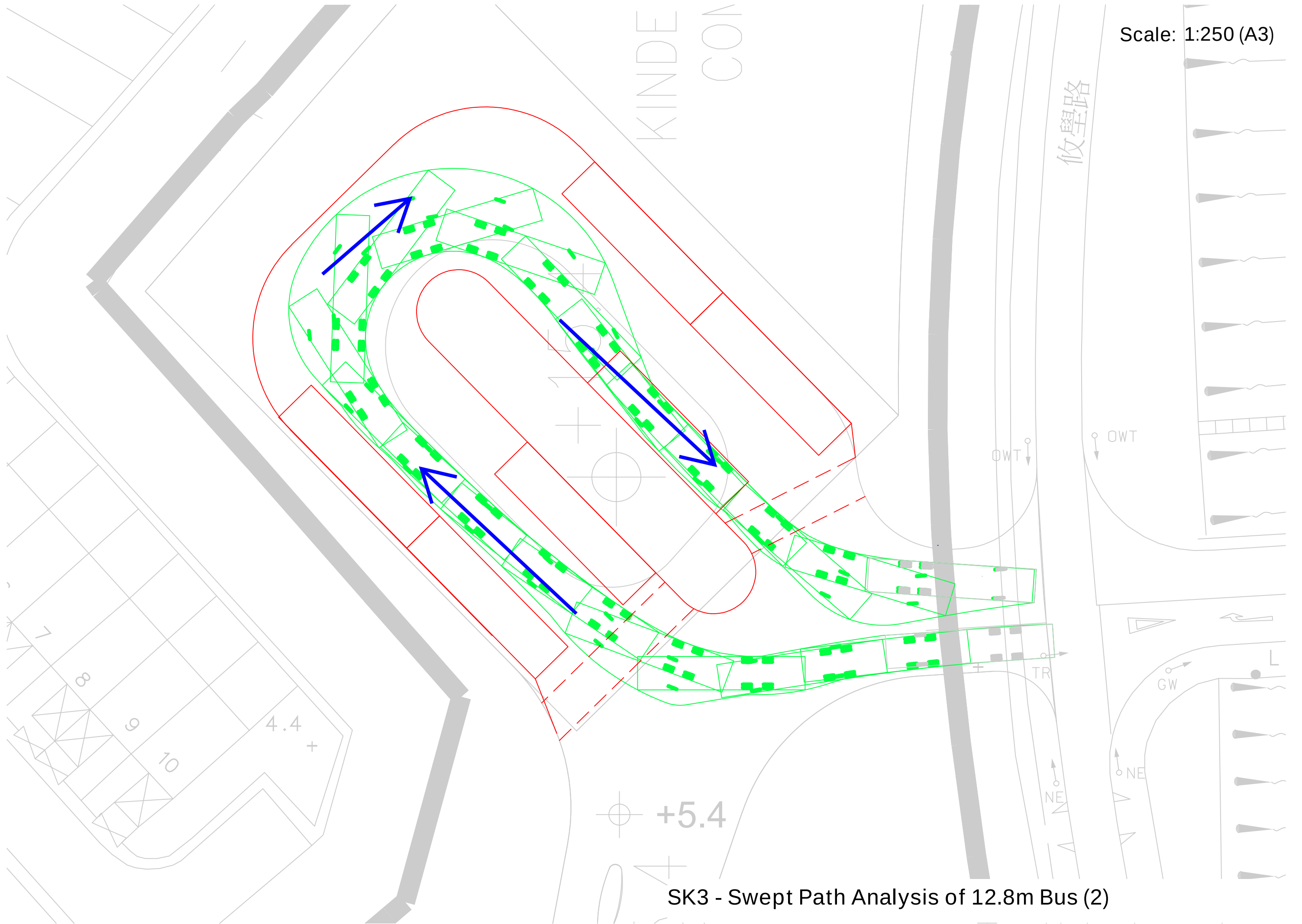
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SK1 - Indicative Layout for REC(South) Transport Interchange

Scale: 1:250 (A3)

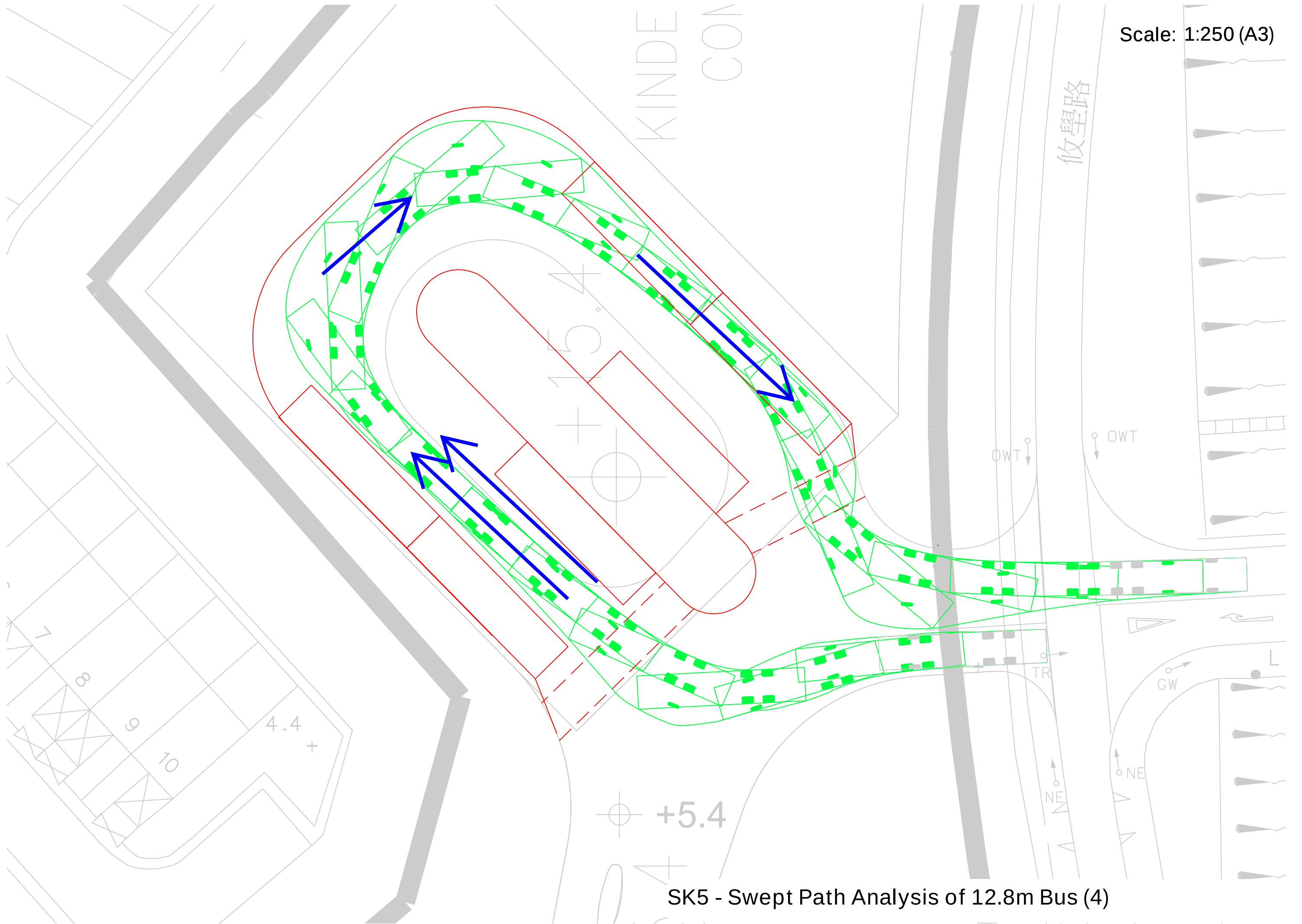


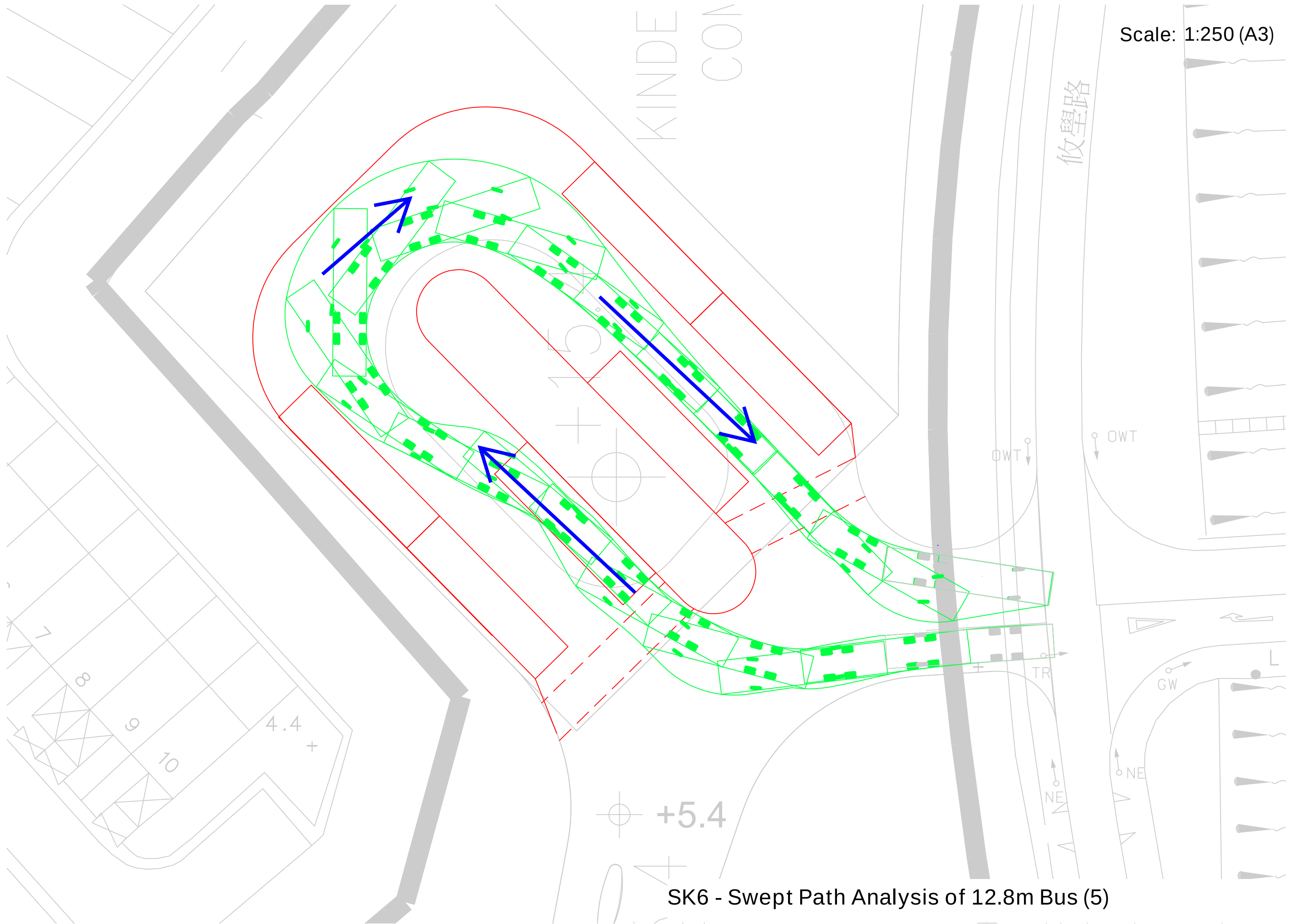
SK2 - Swept Path Analysis of 12.8m Bus (1)



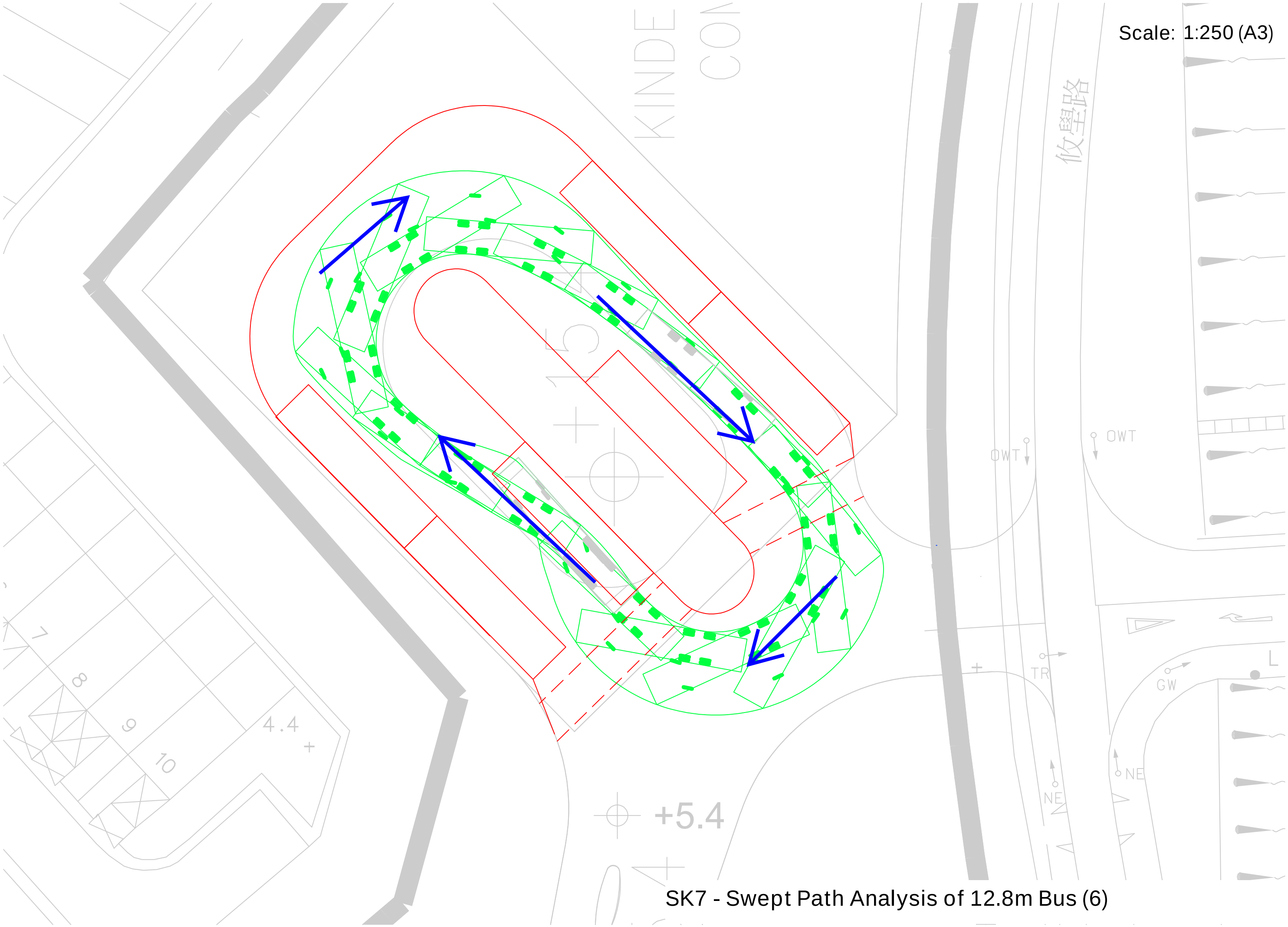
SK3 - Swept Path Analysis of 12.8m Bus (2)

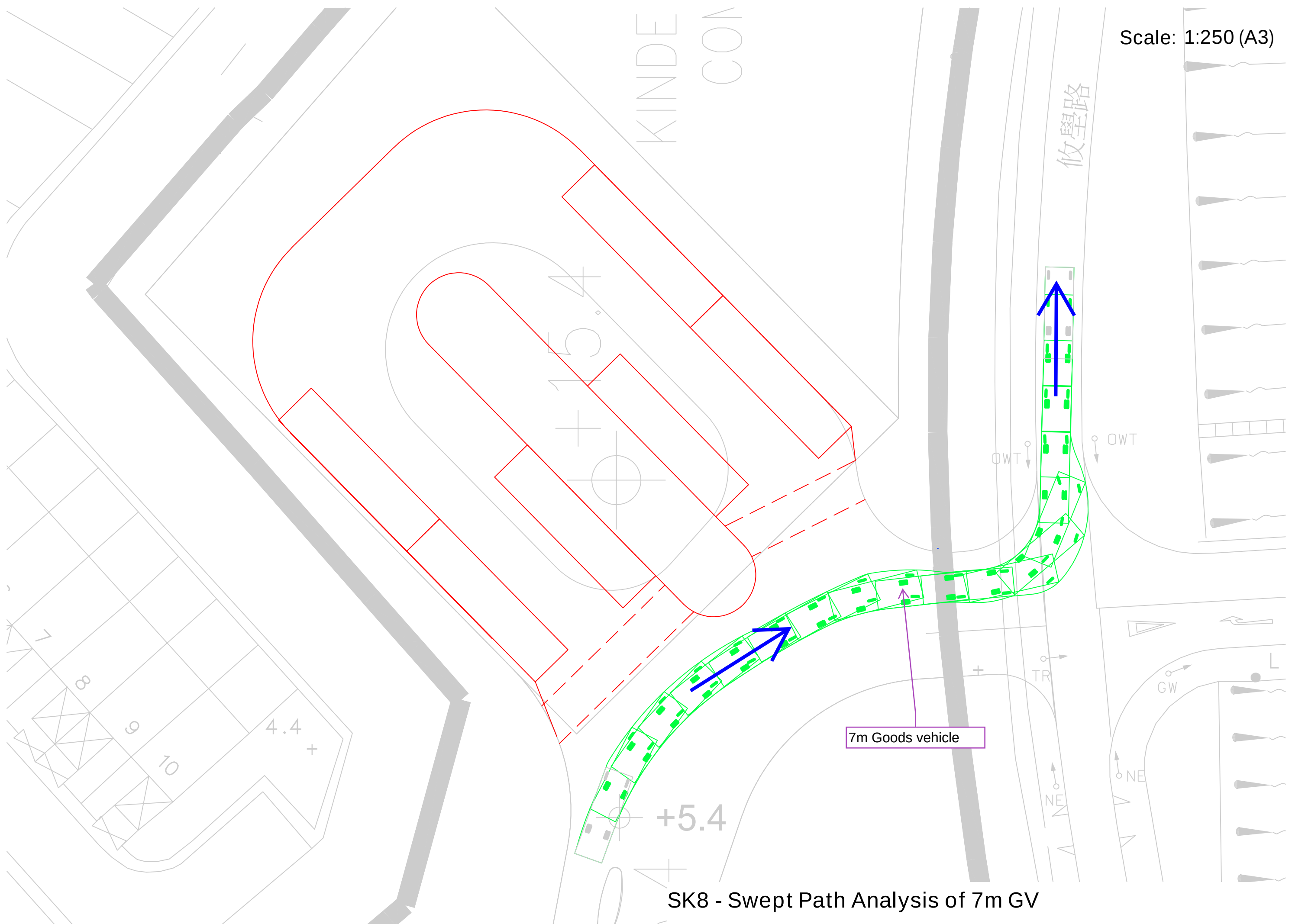






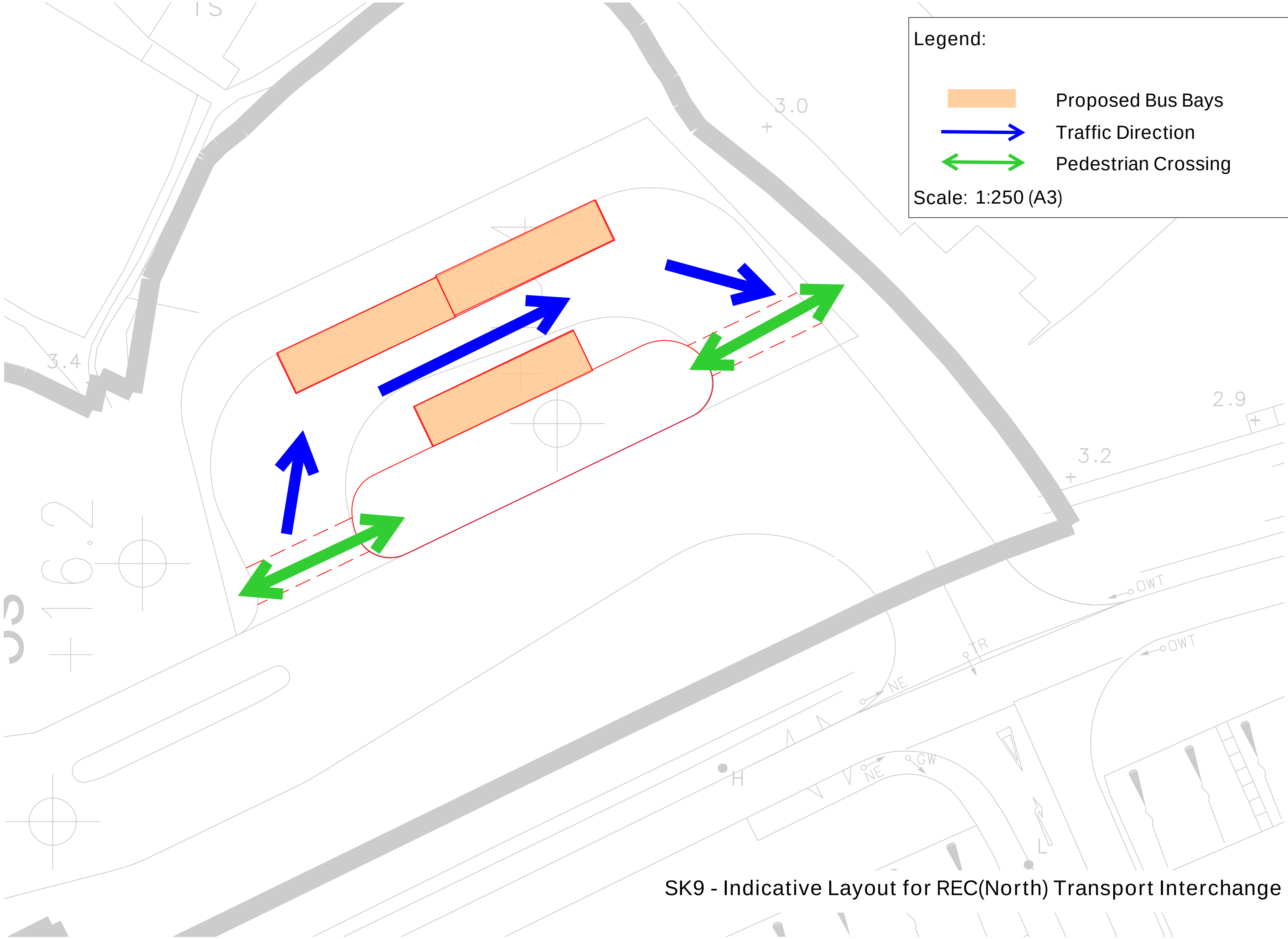
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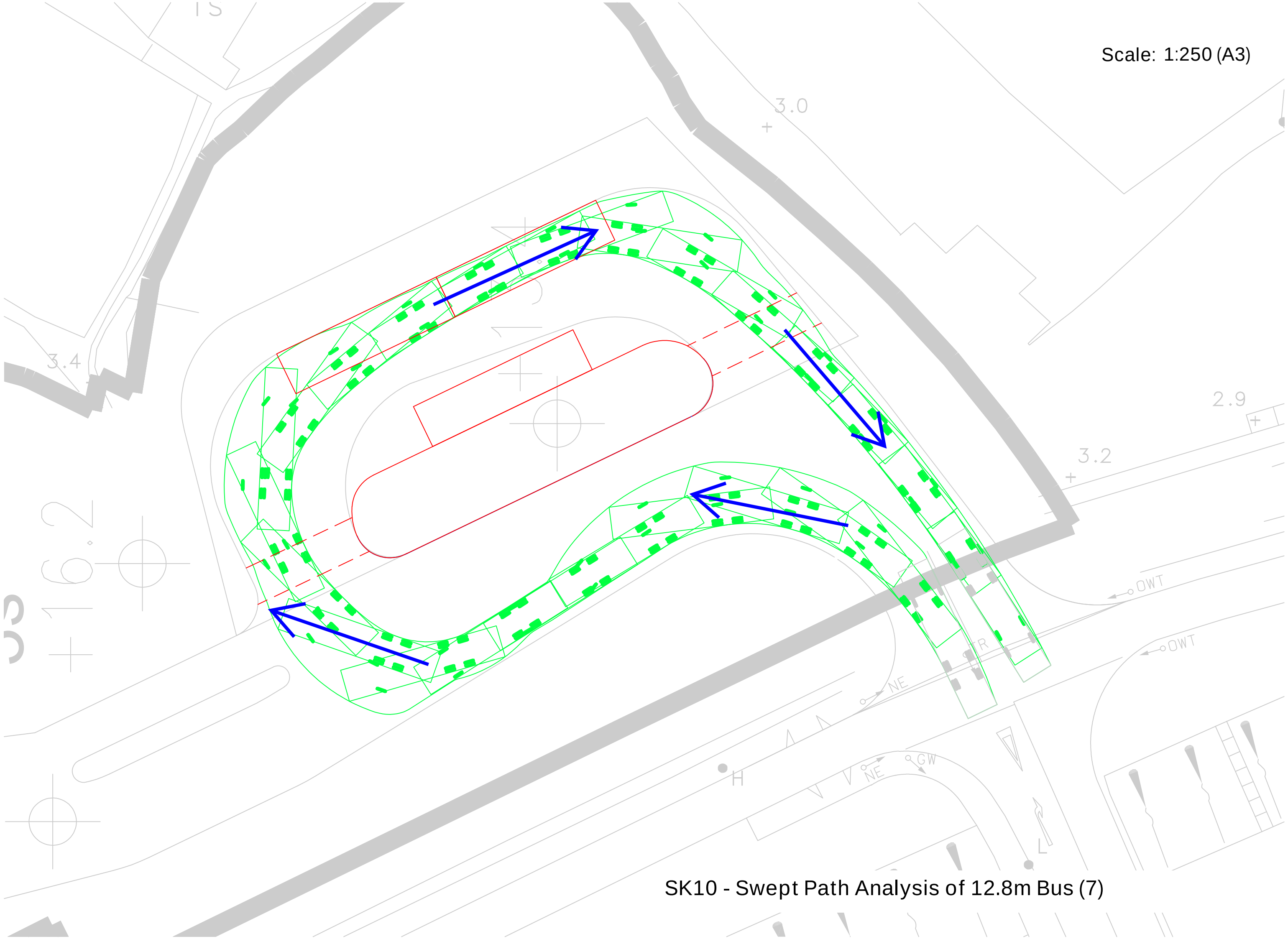




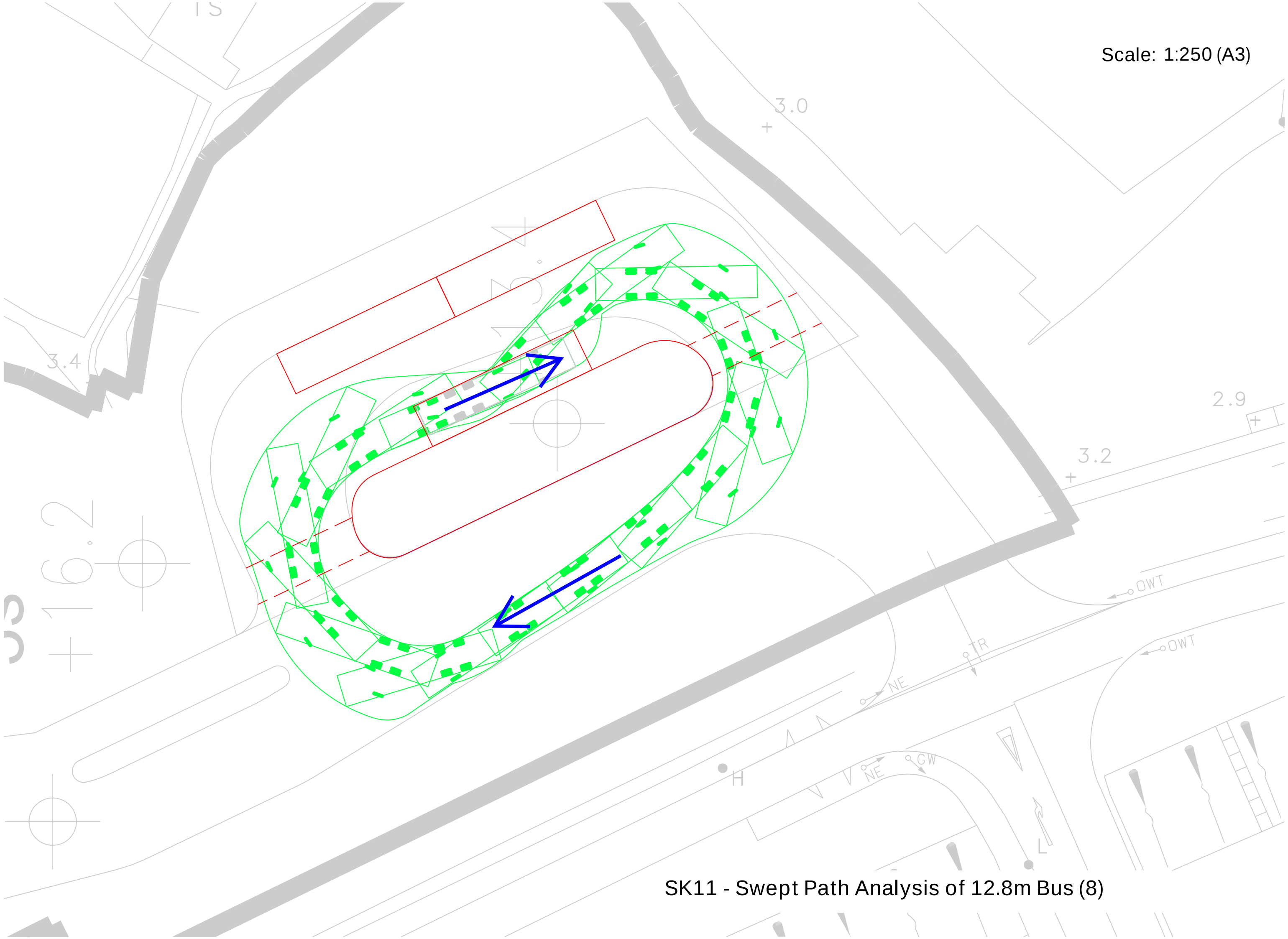
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SK8 - Swept Path Analysis of 7m GV

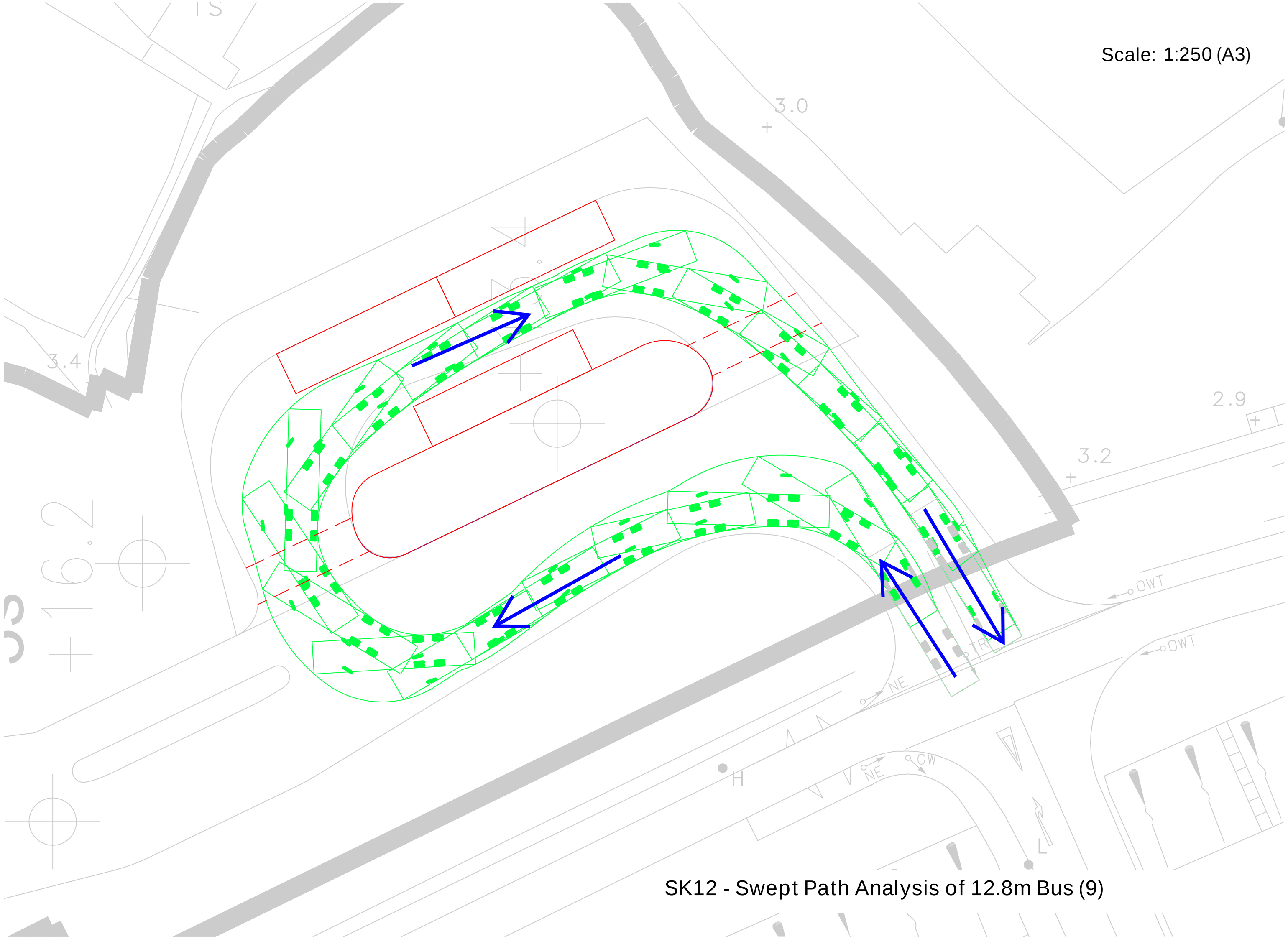




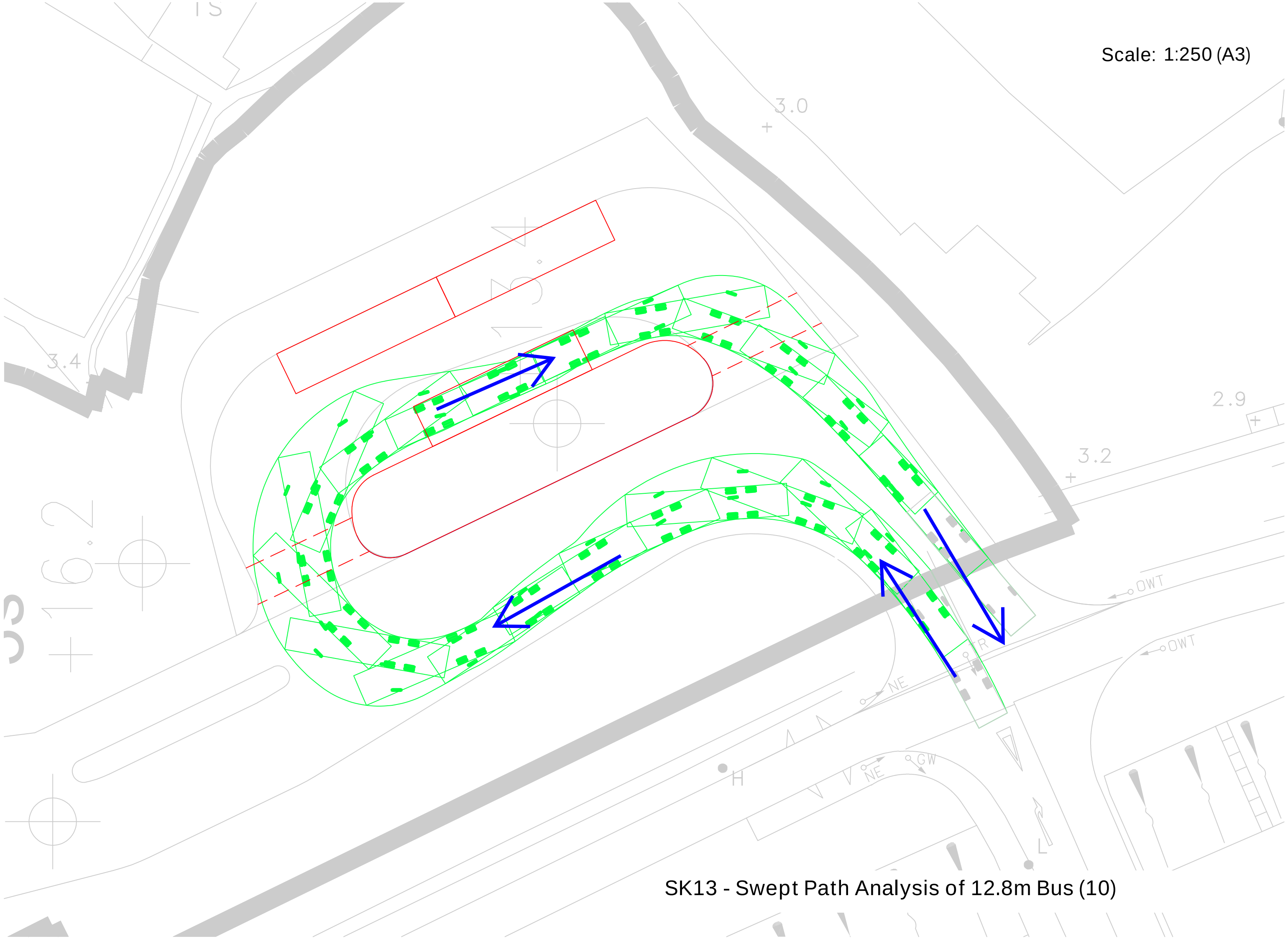
SK10 - Swept Path Analysis of 12.8m Bus (7)



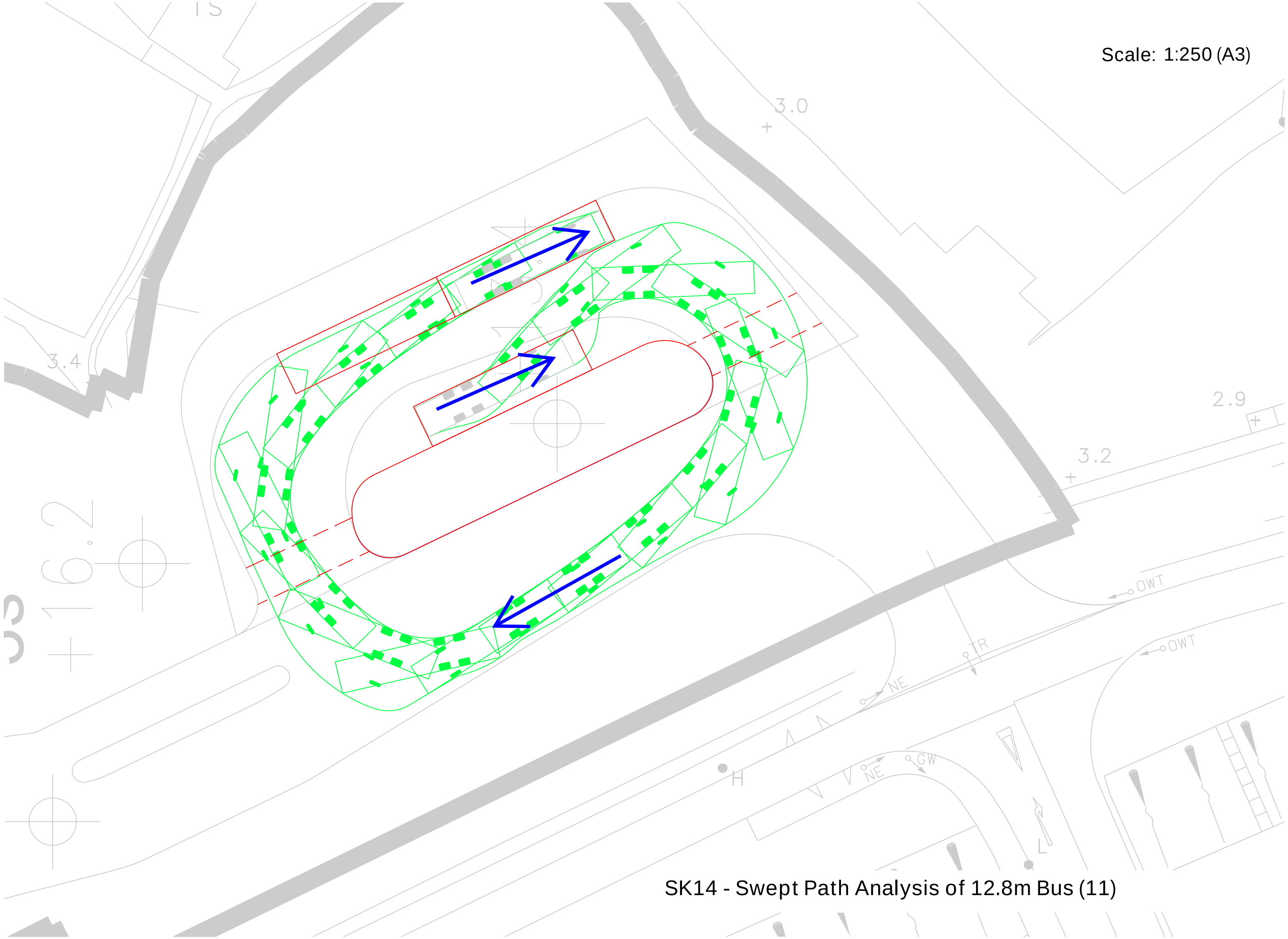
SK11 - Swept Path Analysis of 12.8m Bus (8)



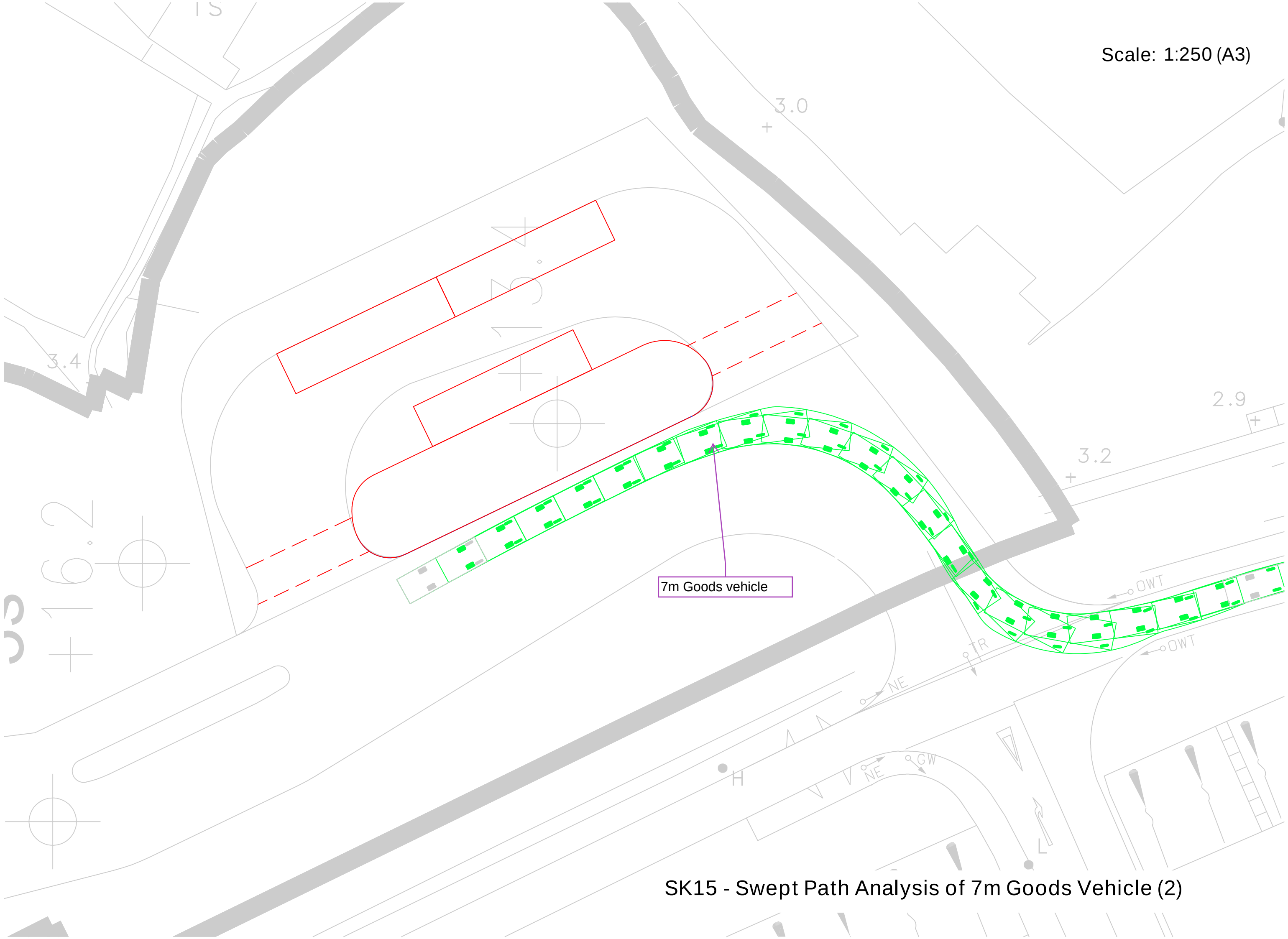
SK12 - Swept Path Analysis of 12.8m Bus (9)



SK13 - Swept Path Analysis of 12.8m Bus (10)



SK14 - Swept Path Analysis of 12.8m Bus (11)



SK15 - Swept Path Analysis of 7m Goods Vehicle (2)

Legend:



Proposed Bus Bays

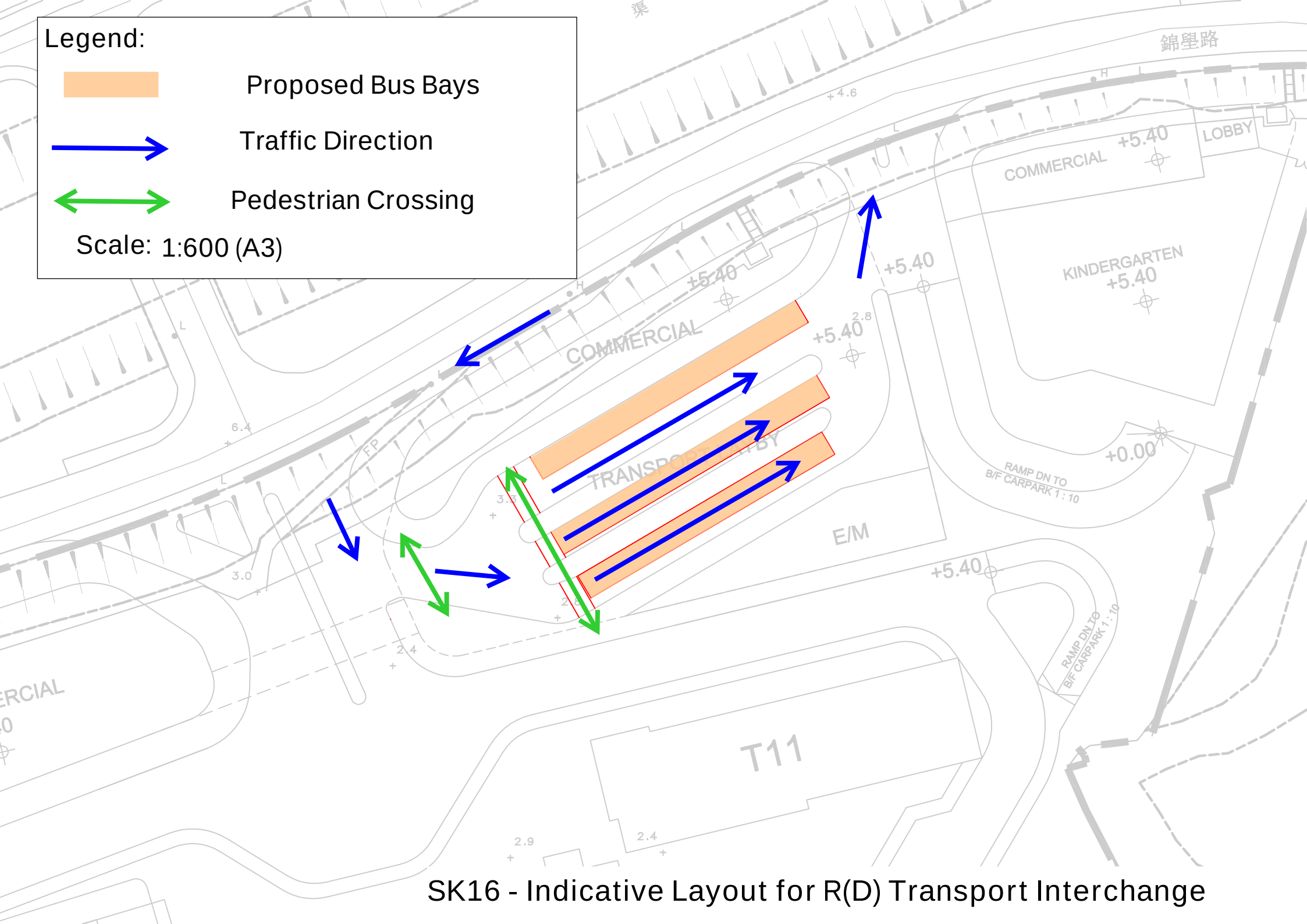


Traffic Direction

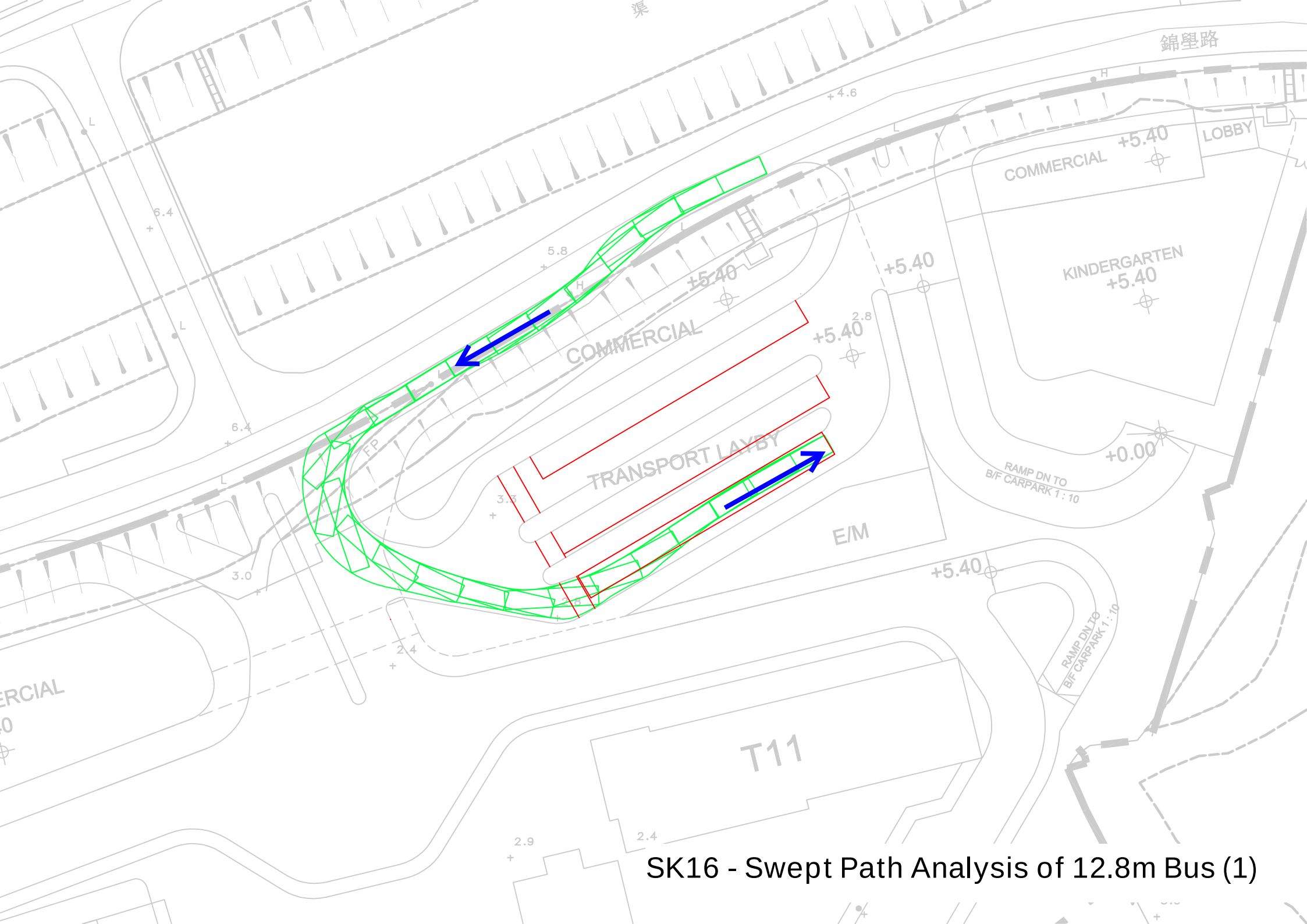


Pedestrian Crossing

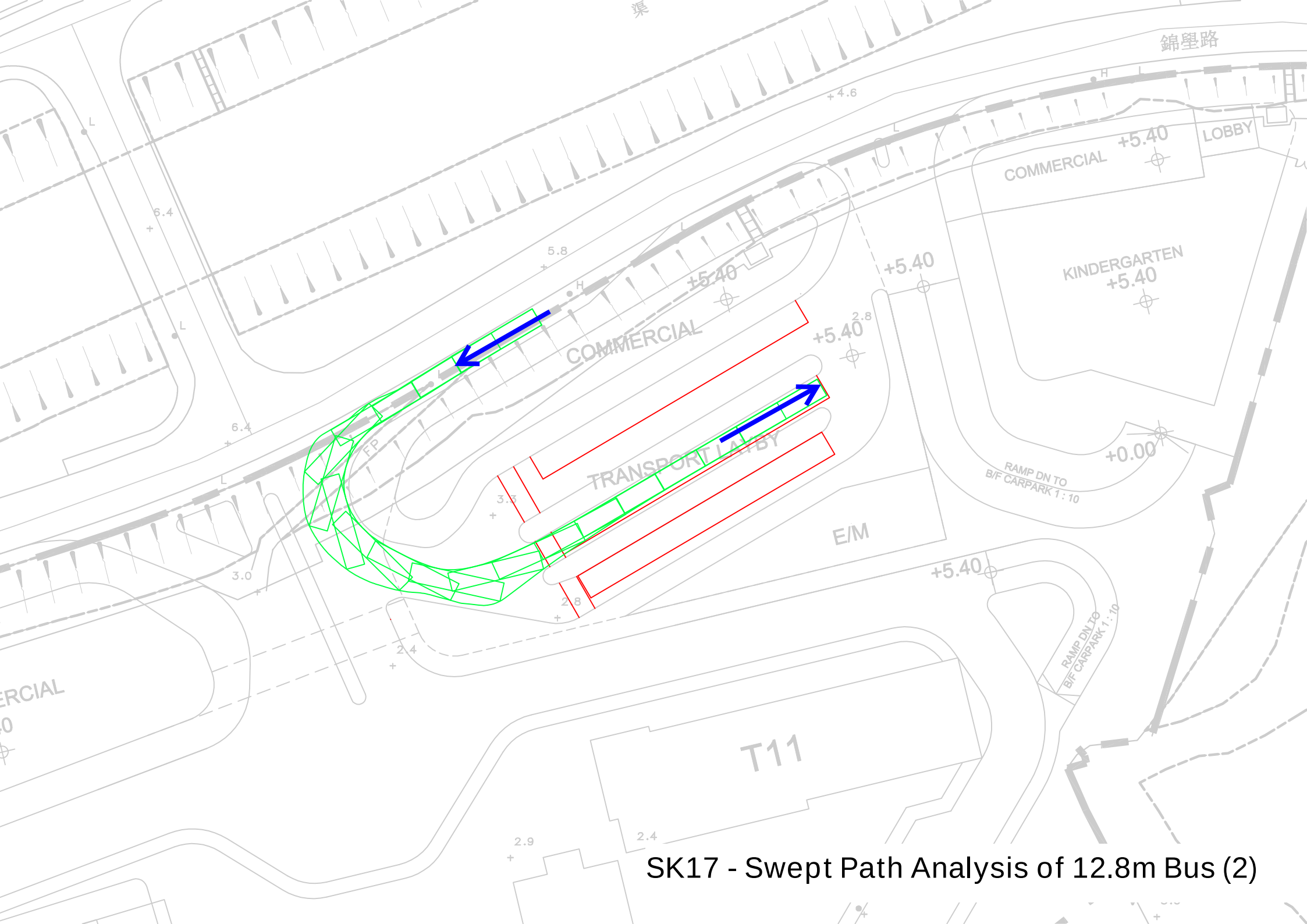
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SK16 - Indicative Layout for R(D) Transport Interchange

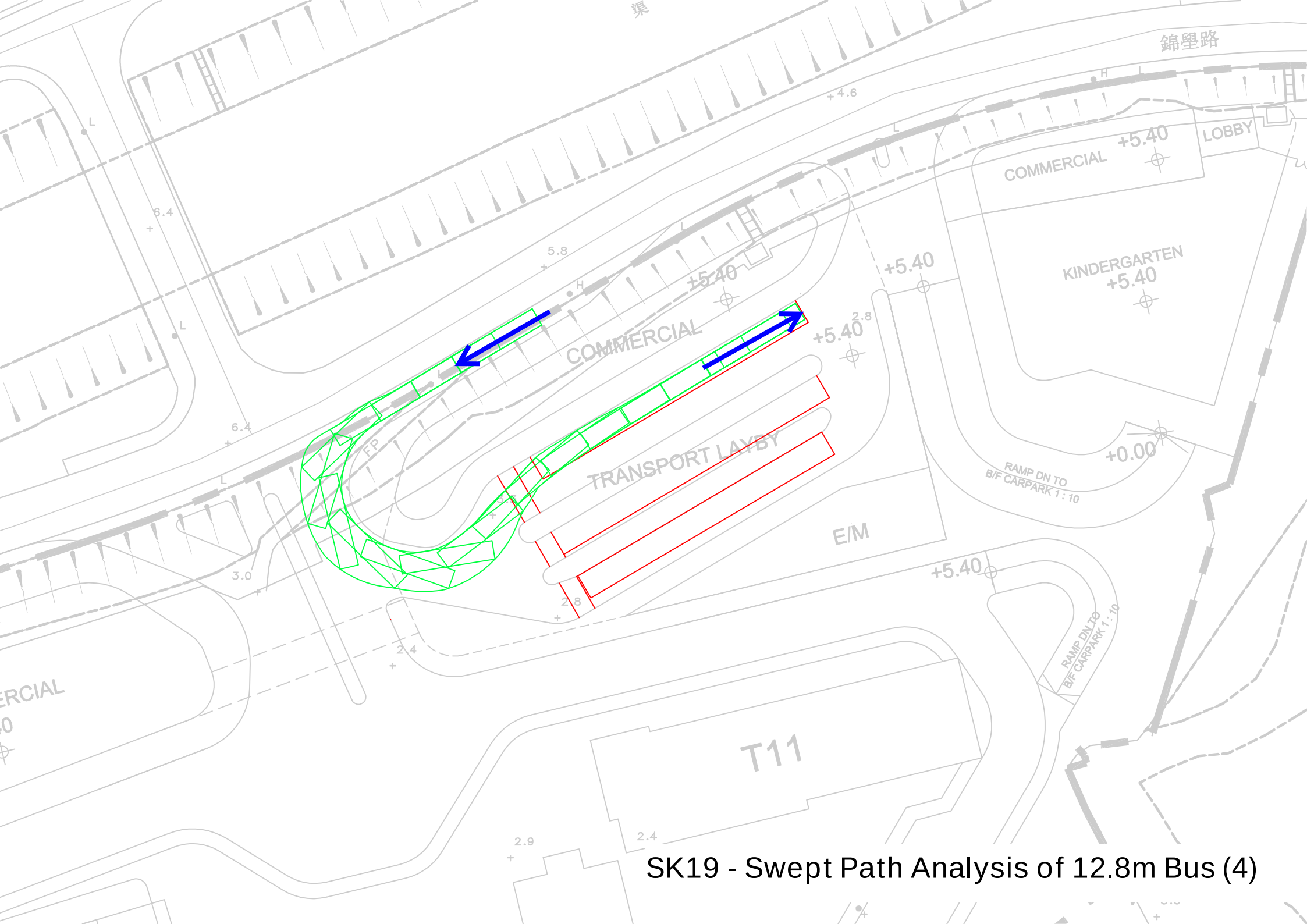


SK16 - Swept Path Analysis of 12.8m Bus (1)

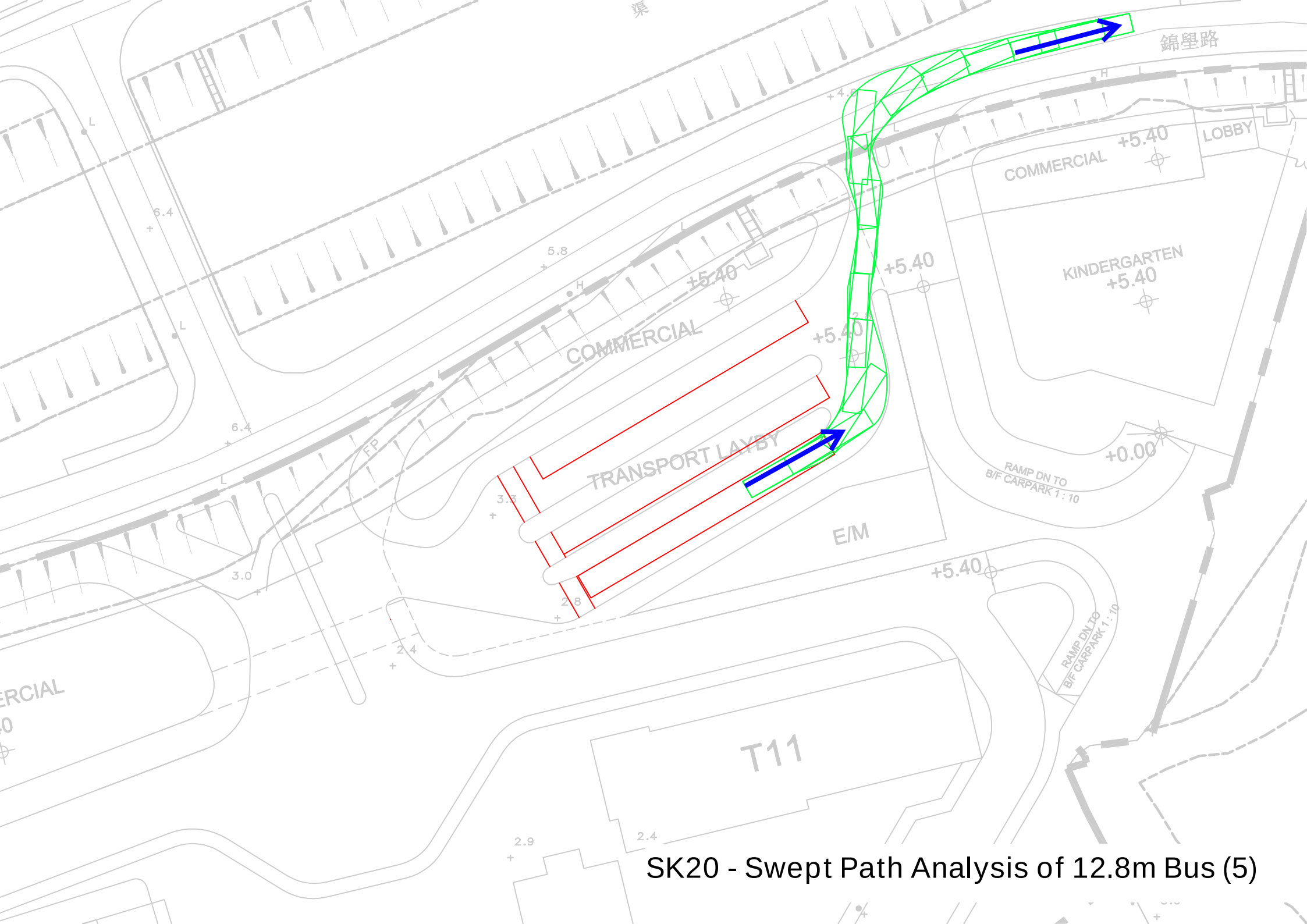


SK17 - Swept Path Analysis of 12.8m Bus (2)

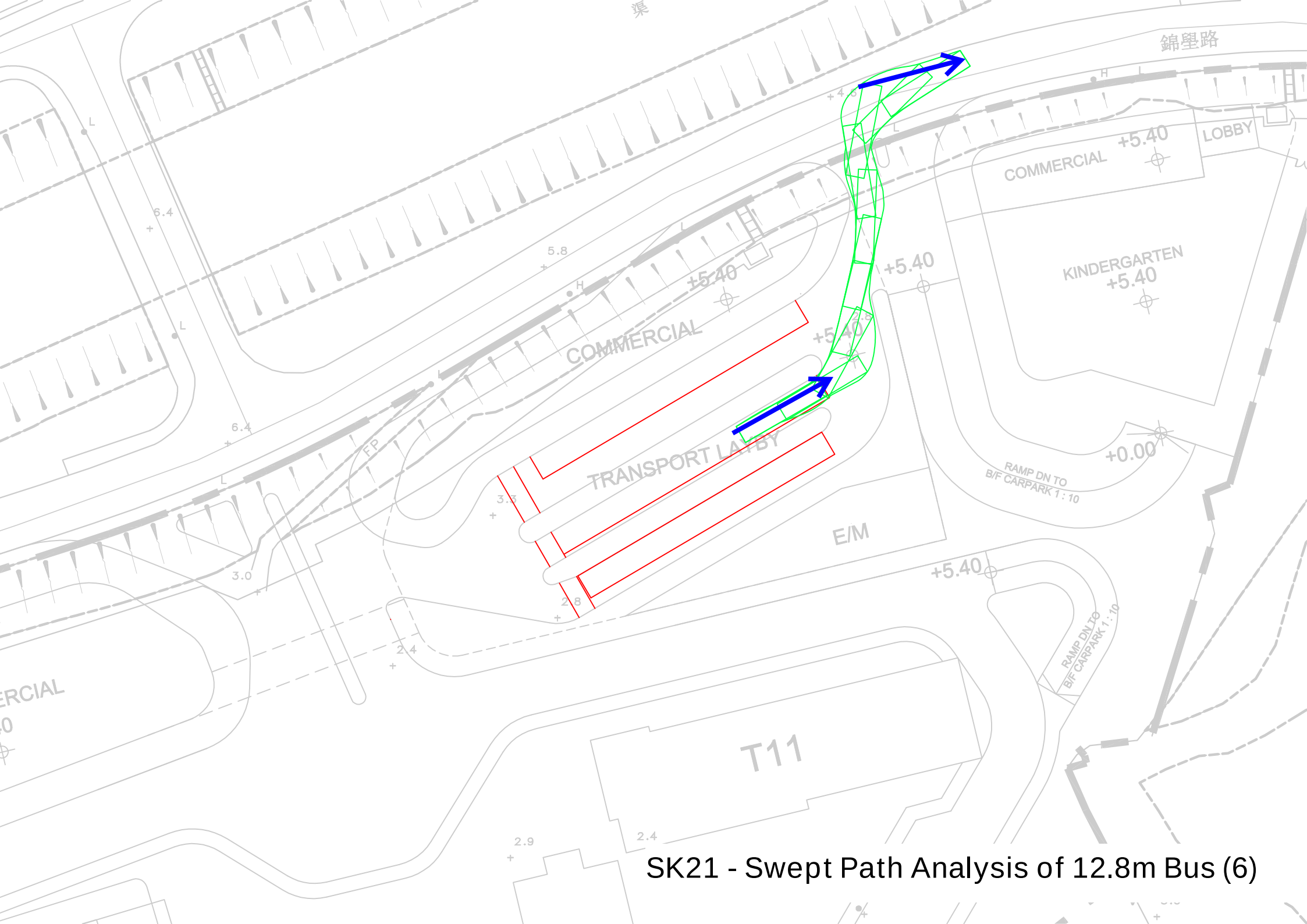




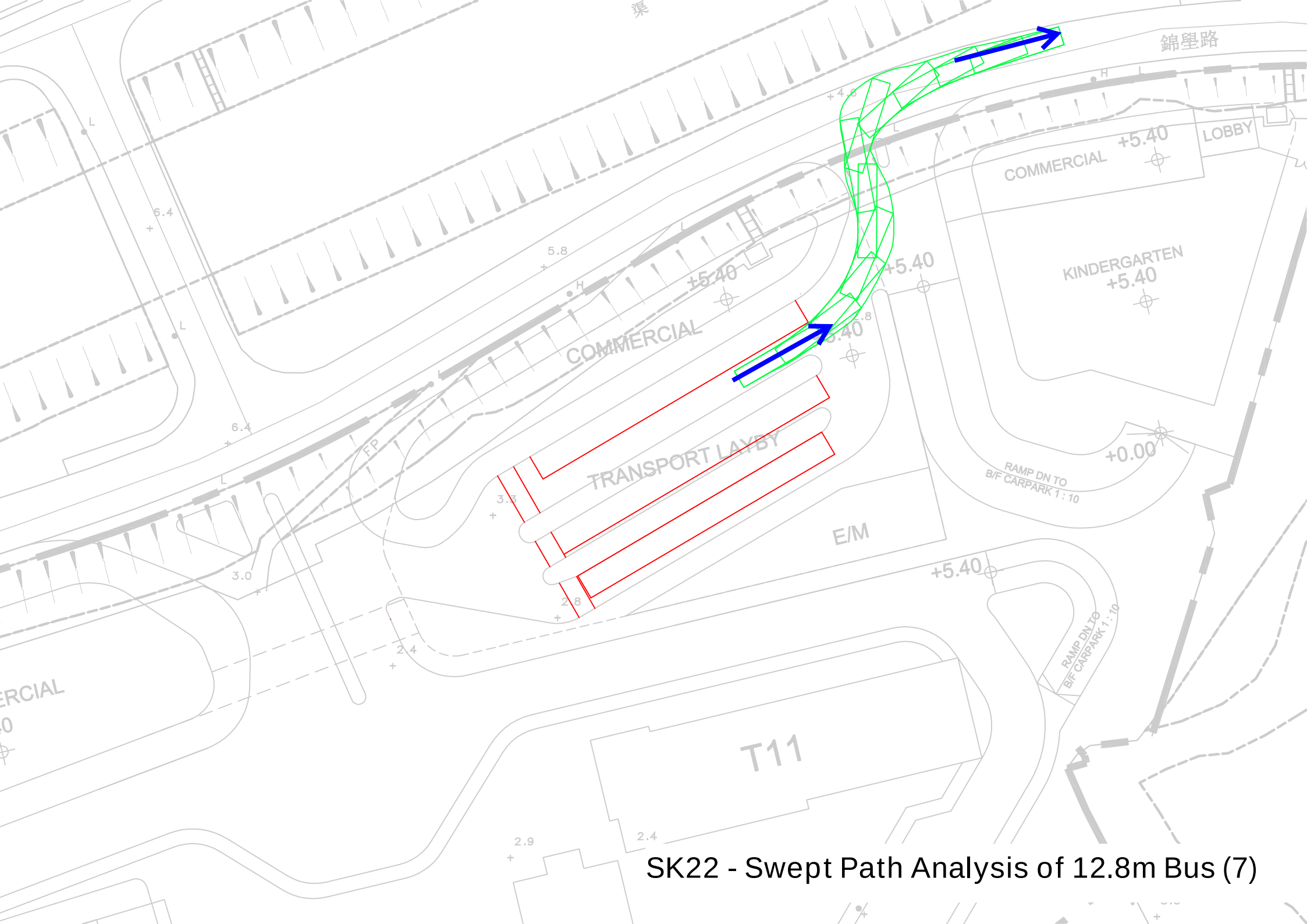
SK19 - Swept Path Analysis of 12.8m Bus (4)



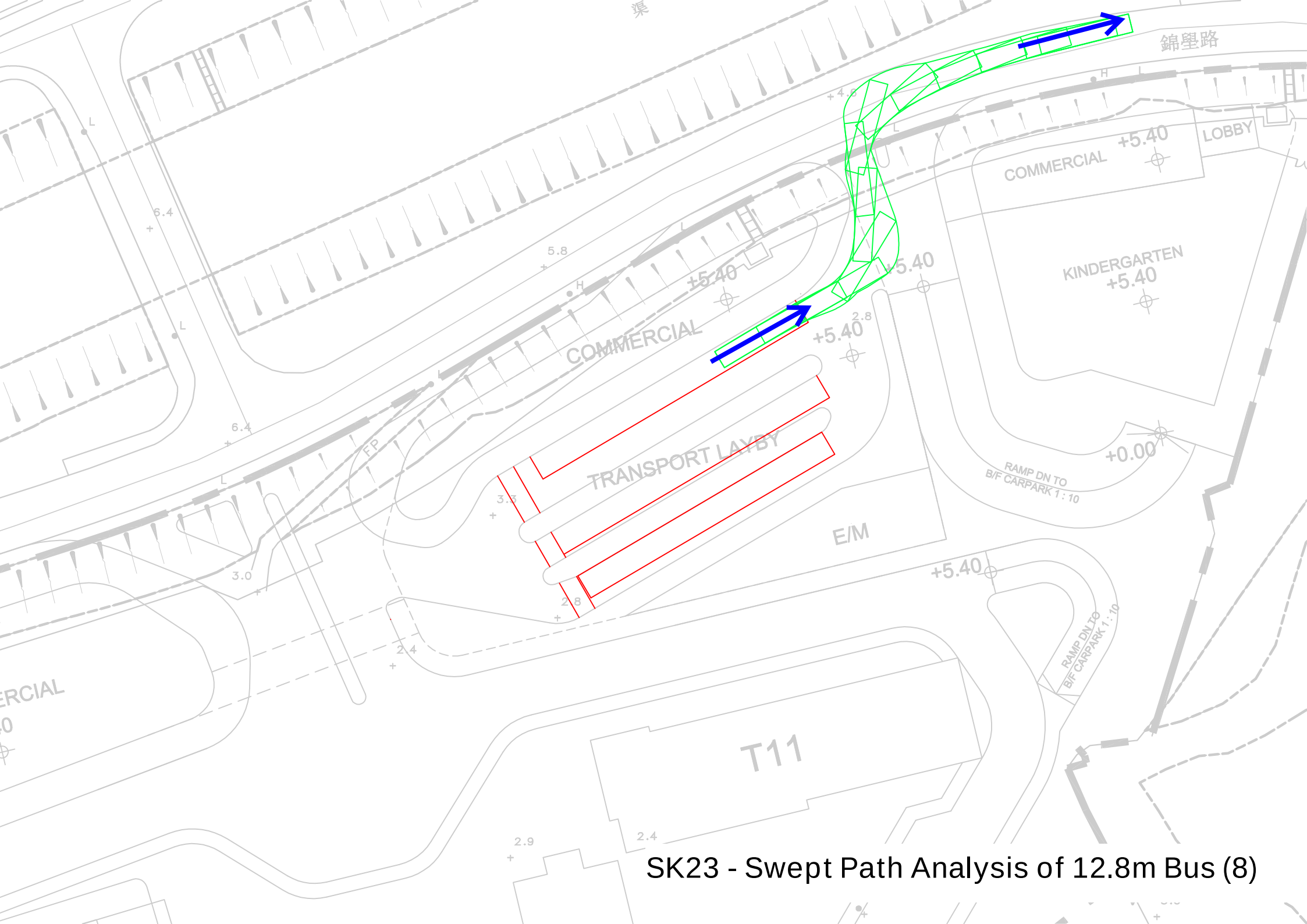
SK20 - Swept Path Analysis of 12.8m Bus (5)



SK21 - Swept Path Analysis of 12.8m Bus (6)



SK22 - Swept Path Analysis of 12.8m Bus (7)



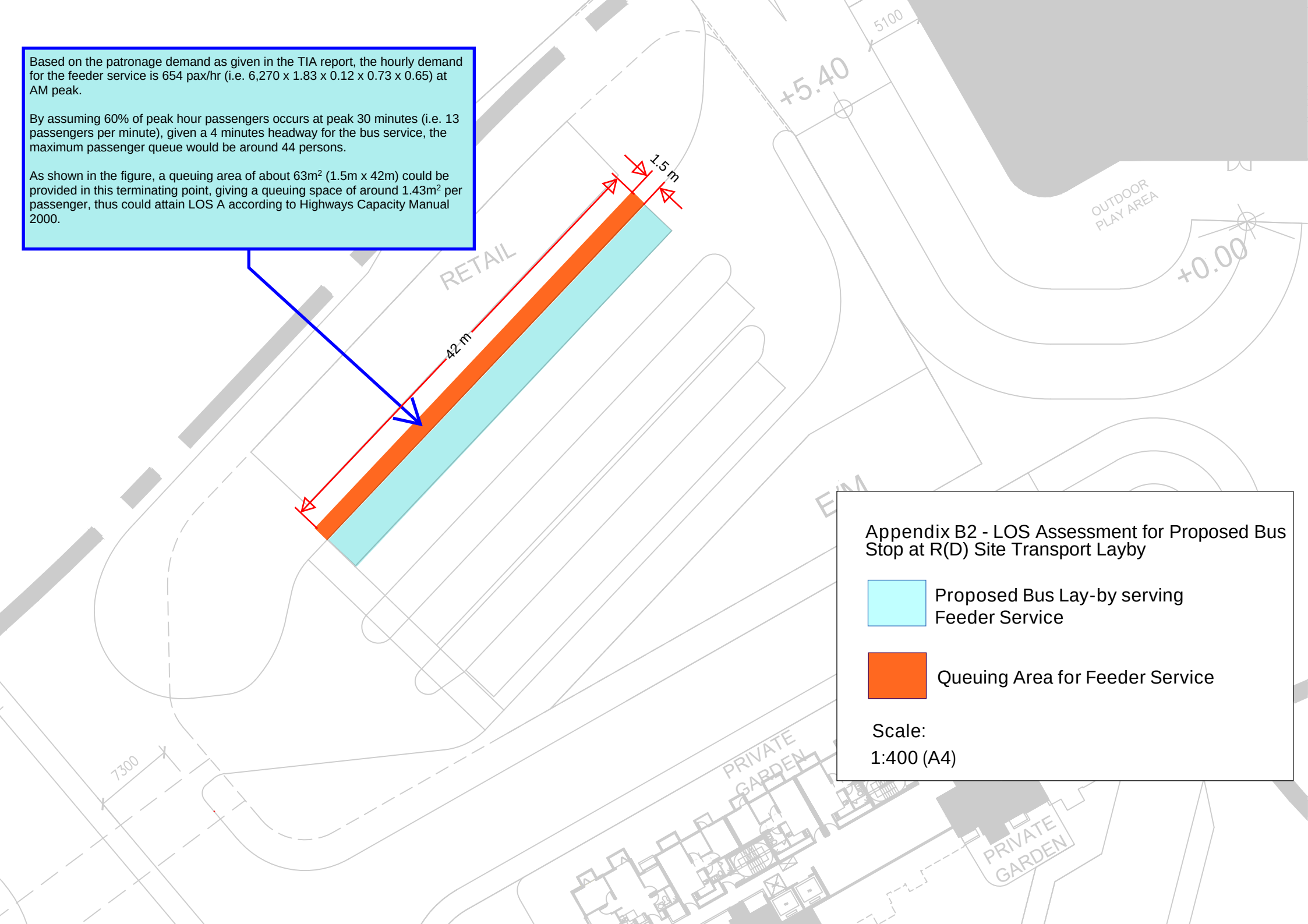
SK23 - Swept Path Analysis of 12.8m Bus (8)

Appendix B
LOS Assessment for Proposed Bus Stops

Based on the patronage demand as given in the TIA report, the hourly demand for the feeder service is 654 pax/hr (i.e. $6,270 \times 1.83 \times 0.12 \times 0.73 \times 0.65$) at AM peak.

By assuming 60% of peak hour passengers occurs at peak 30 minutes (i.e. 13 passengers per minute), given a 4 minutes headway for the bus service, the maximum passenger queue would be around 44 persons.

As shown in the figure, a queuing area of about 63m^2 ($1.5\text{m} \times 42\text{m}$) could be provided in this terminating point, giving a queuing space of around 1.43m^2 per passenger, thus could attain LOS A according to Highways Capacity Manual 2000.



Appendix B2 - LOS Assessment for Proposed Bus Stop at R(D) Site Transport Layby

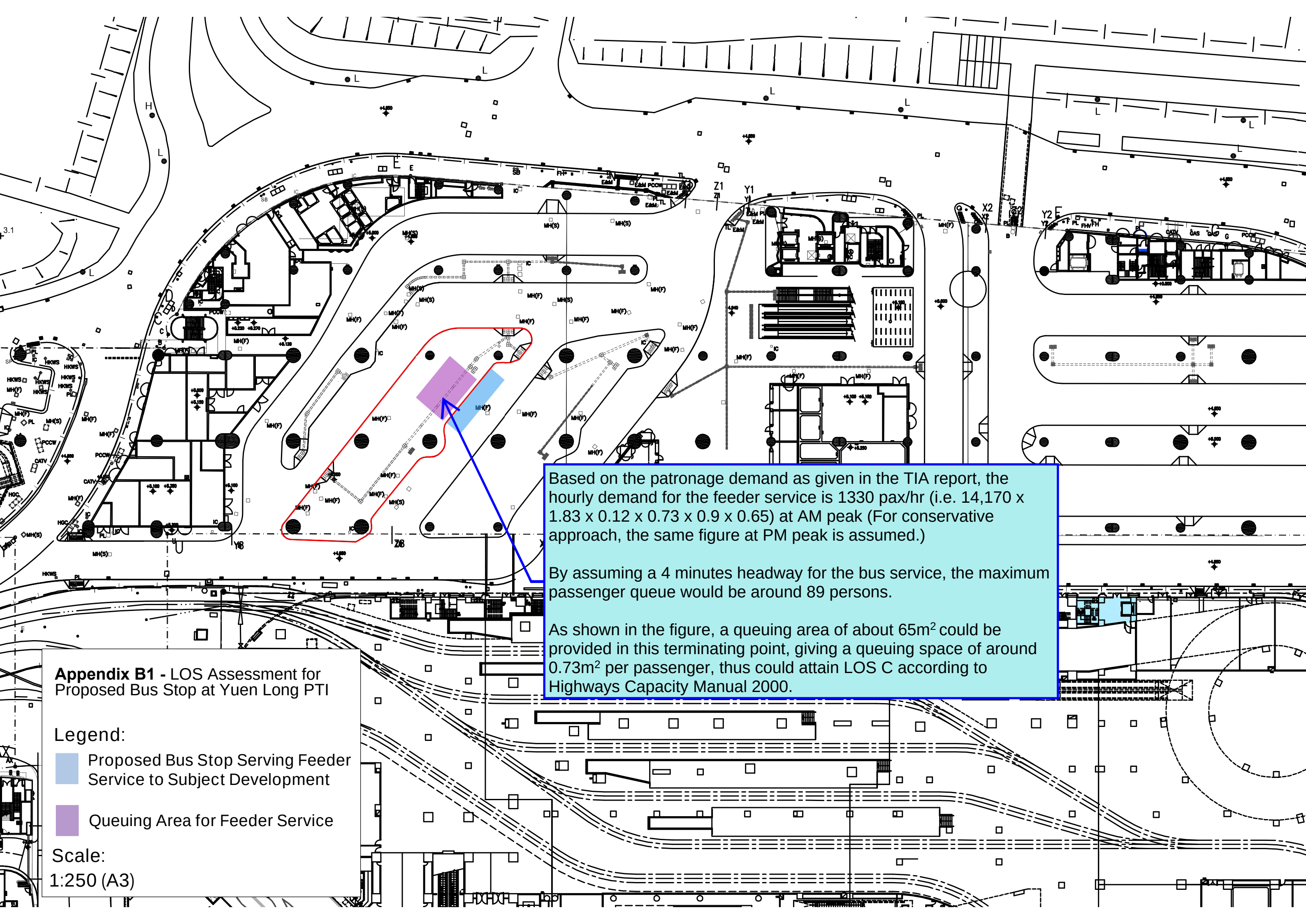


Proposed Bus Lay-by serving Feeder Service



Queuing Area for Feeder Service

Scale:
1:400 (A4)



Based on the patronage demand as given in the TIA report, the hourly demand for the feeder service is 1330 pax/hr (i.e. $14,170 \times 1.83 \times 0.12 \times 0.73 \times 0.9 \times 0.65$) at AM peak (For conservative approach, the same figure at PM peak is assumed.)

By assuming a 4 minutes headway for the bus service, the maximum passenger queue would be around 89 persons.

As shown in the figure, a queuing area of about 65m² could be provided in this terminating point, giving a queuing space of around 0.73m² per passenger, thus could attain LOS C according to Highways Capacity Manual 2000.

Appendix B1 - LOS Assessment for Proposed Bus Stop at Yuen Long PTI

Legend:

Proposed Bus Stop Serving Feeder Service to Subject Development

Queuing Area for Feeder Service

Scale:
1:250 (A3)

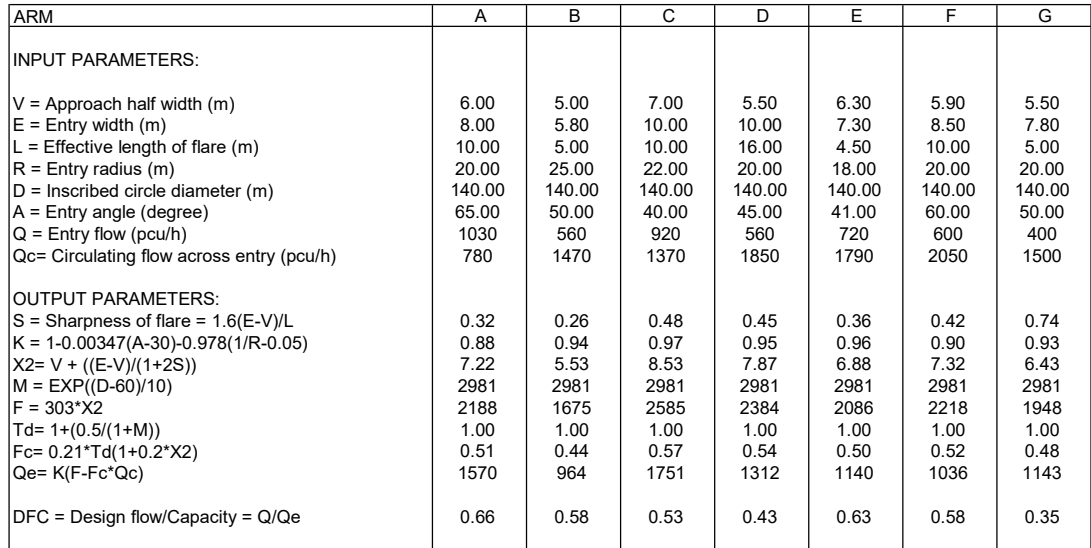
Appendix C
Preliminary Design of Directional Signs at
Egresses of Application Site

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Appendix D
Junction Calculation Sheets

Observed Flow

AECOM



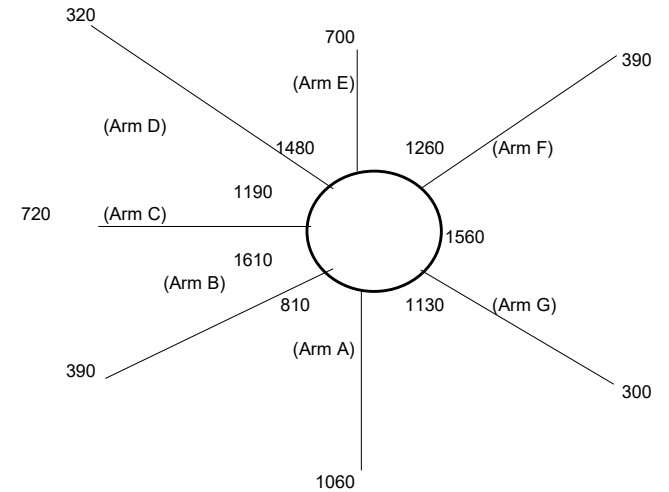
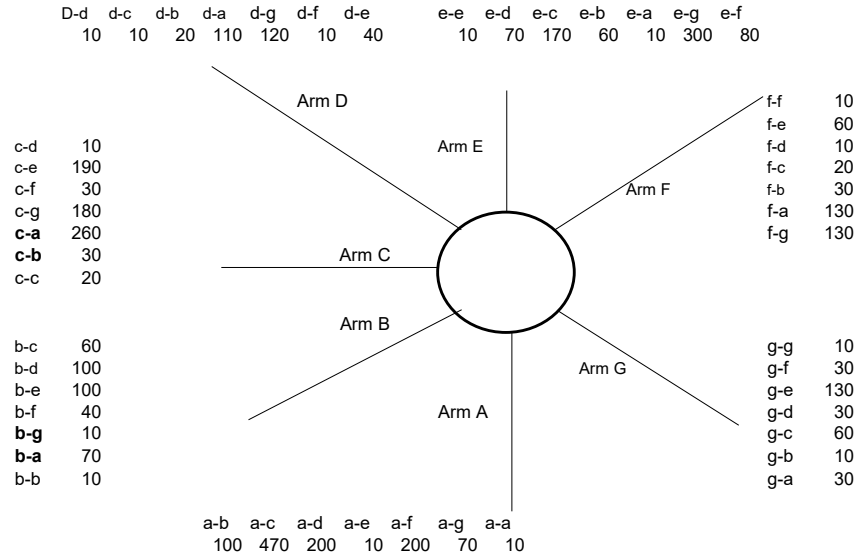
TOTAL ENTRY FLOWS = 4790 PCU

CRITICAL DFC = 0.66

ROUNDBOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2021 PM Observed Flows	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Sep 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	5.00	7.00	5.50	6.30	5.90	5.50
E = Entry width (m)	8.00	5.80	10.00	10.00	7.30	8.50	7.80
L = Effective length of flare (m)	10.00	5.00	10.00	16.00	4.50	10.00	5.00
R = Entry radius (m)	20.00	25.00	22.00	20.00	18.00	20.00	20.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	65.00	50.00	40.00	45.00	41.00	60.00	50.00
Q = Entry flow (pcu/h)	1060	390	720	320	700	390	300
Qc= Circulating flow across entry (pcu/h)	810	1610	1190	1480	1260	1560	1130
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.32	0.26	0.48	0.45	0.36	0.42	0.74
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.88	0.94	0.97	0.95	0.96	0.90	0.93
X2= V + ((E-V)/(1+2S))	7.22	5.53	8.53	7.87	6.88	7.32	6.43
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2188	1675	2585	2384	2086	2218	1948
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.51	0.44	0.57	0.54	0.50	0.52	0.48
Qe= K(F-Fc*Qc)	1557	906	1851	1502	1393	1264	1308
DFC = Design flow/Capacity = Q/Qe	0.68	0.43	0.39	0.21	0.50	0.31	0.23

TOTAL ENTRY FLOWS = 3880 PCU

CRITICAL DFC = 0.68

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

2021 AM 2021 Observed

Designed By :

Checked By :

Job No. :

Date : Dec 21

CASTLE PEAK ROAD

(ARM C)

390
30

290
40

(ARM A)

CASTLE PEAK ROAD

40 20

KAM POK ROAD
(ARM B)

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 40 (pcu/hr)
q a-c = 290 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 390 (pcu/hr)
q c-b = 30 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 20 (pcu/hr)
q b-c = 40 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 461
Q b-c = 663
Q c-b = 512
Q b-ac = 578

CRITICAL DFC = 0.10

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.04
DFC b-c = 0.06
DFC c-b = 0.06
DFC b-ac = 0.10

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

2021 PM 2021 Observed

Designed By :

Checked By :

Job No. :

Date : Dec 21

CASTLE PEAK ROAD
(ARM C)

250
50

350
10

(ARM A)

CASTLE PEAK ROAD

40 10

KAM POK ROAD
(ARM B)

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 350 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 250 (pcu/hr)
q c-b = 50 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 10 (pcu/hr)
q b-c = 40 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 464
Q b-c = 650
Q c-b = 505
Q b-ac = 602

CRITICAL DFC = 0.10

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.06
DFC c-b = 0.10
DFC b-ac = 0.08

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

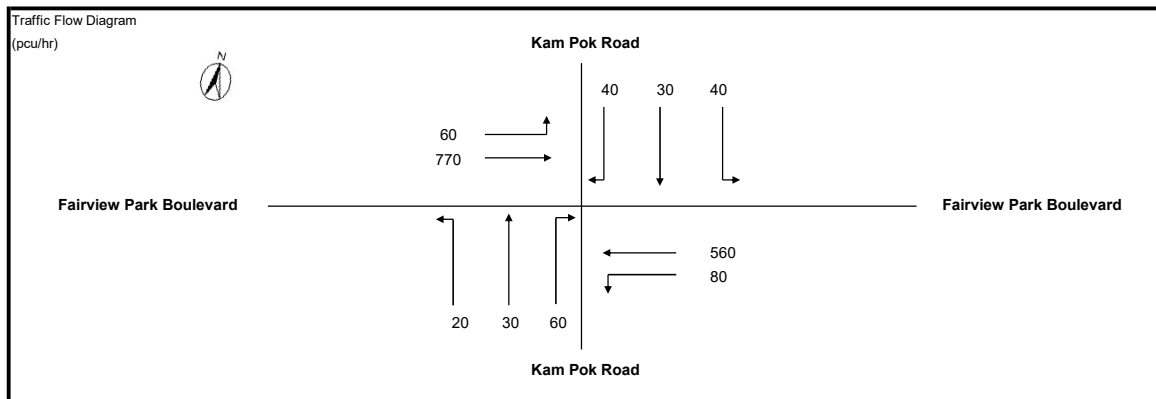
2021 AM Existing Traffic Flows

DESIGN: 0

CHECK: 0

JOB NO: -

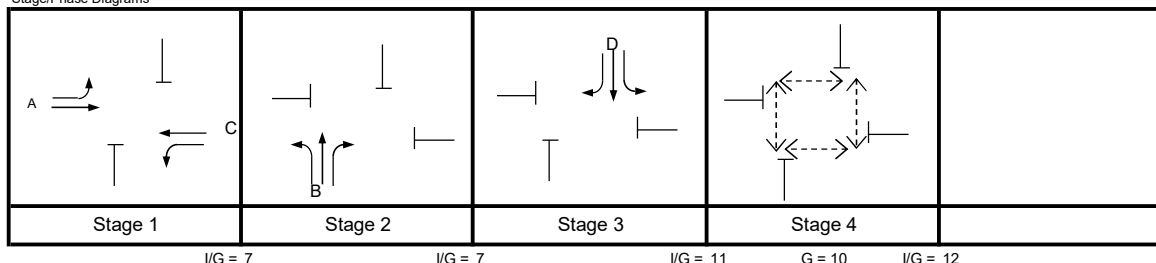
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.329
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	106 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	66 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	73.4 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	69 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : A,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 73\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	60	352		412	15%		1917	0.215	0.215
	A	1	3.300	1				1		0		1945		418		418			1945	0.215	
	B	2	3.600	1	13	20	0	1		0		1975	20	30	60	110	18%	55%	1860	0.059	0.059
	C	1	3.000	1	17			1		0		1915	80	234		314	25%		1873	0.168	
	C	1	3.300	1				1		0		1945		326		326			1945	0.168	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	40	30	40	110	36%	36%	2012	0.055	0.055
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

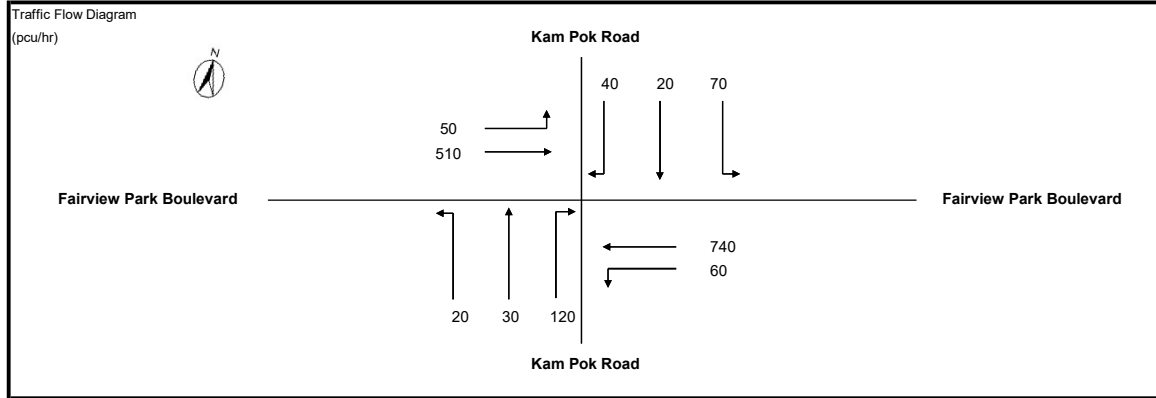
2021 PM Existing Traffic Flows

DESIGN: 0

CHECK: 0

JOB NO: -

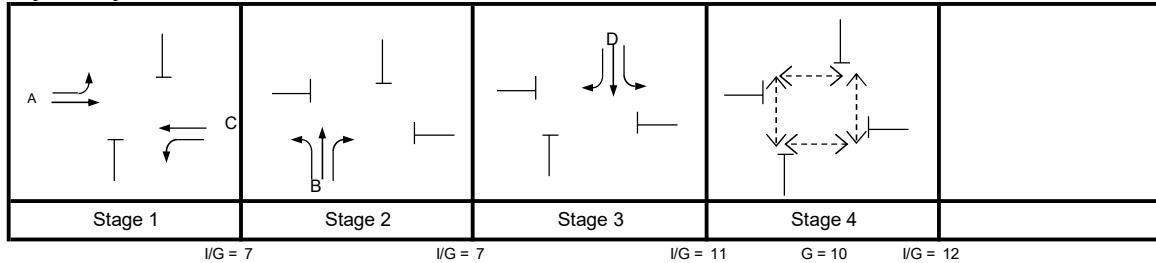
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.366
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	112 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	69 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	55.8 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	74 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



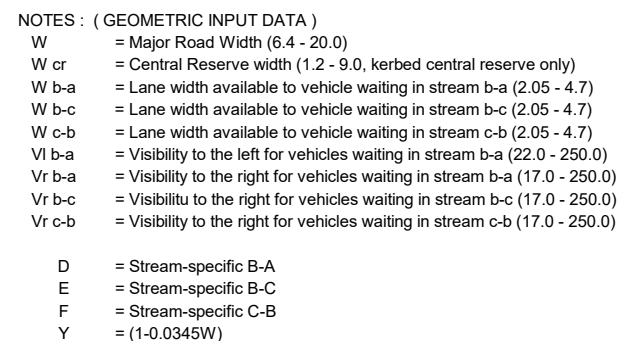
Critical Case : B,C,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 56\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	50	228		278	18%		1911	0.145	
	A	1	3.300	1				1		0		1945		283		283			1945	0.145	
	B	2	3.600	1	13	20	0	1		0		1975	20	30	120	170	12%	71%	1852	0.092	0.092
	C	1	3.000	1	17			1		0		1915	60	334		394	15%		1890	0.209	0.209
	C	1	3.300	1				1		0		1945		406		406			1945	0.209	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	70	20	40	130	54%	31%	1989	0.065	0.065
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

AECOM

Date : Sep 24



MINOR ROAD (ARM B)		
W b-a	=	2.05 (metres)
W b-c	=	2.05 (metres)
VI b-a	=	50 (metres)
Vr b-a	=	50 (metres)
Vr b-c	=	50 (metres)
q b-a	=	10 (pcu/hr)
q b-c	=	10 (pcu/hr)

D	=	0.748311
E	=	0.796075
F	=	0.923788
Y	=	0.679150

Q b-a	=	449
Q b-c	=	580
Q c-b	=	672
Q b-ac	=	506

DFC b-a	=	0.02
DFC b-c	=	0.02
DFC c-b	=	0.01
DFC b-ac	=	0.04

CRITICAL DFC = 0.04

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

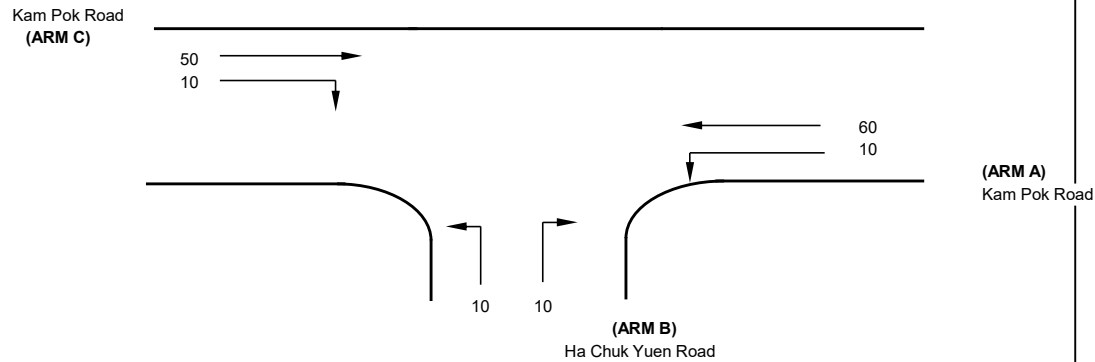
2021 PM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 60 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 50 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 449
Q b-c = 580
Q c-b = 672
Q b-ac = 506

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.02
DFC c-b = 0.01
DFC b-ac = 0.04

CRITICAL DFC = 0.04

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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SOLUTION

Run with file:- "C:\Users\Sam.Wong\Downloads\210BS_KPR-PWSR_V1.vpi"
(drive-on-the-left) at 16:02:22 on Wednesday, 11 September 2024

.RUN INFORMATION

RUN TITLE : 2021 Observed - Kam Pok Road/ Pok Wai South Road
LOCATION :
DATE : 21/12/13
CLIENT :
ENUMERATOR : nokhinnaomi.tam [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Kam Pok Road
ARM B IS Pok Wai South Road
ARM C IS Kam Pok Road West
ARM D IS Kam Pok Road

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 8.80
M. I (W) 8.80 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I
I I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 2.20
M. I (WD-A) 5.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM B-C	STREAM A-C	STREAM A-B
I	602.92	0.21	0.08

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM D-A	STREAM C-A	STREAM C-D
I	786.65	0.27	0.11

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19

I	0.19	I	
---	------	---	--

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I			

I	0.10	I	0.08	0.12	0.28
---	------	---	------	------	------

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I		I		

I	622.33	0.25	0.25	0.25
I	0.25	I		

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I			

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.21	0.29	0.21

B-D Stream From Left Hand Lane

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM C-A	STREAM C-D		

I	0.12	0.12		
	I			

B-D Stream From Right Hand Lane

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM C-A	STREAM C-D		

I	0.12	0.12		
	I			

D-B Stream From Left Hand Lane

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			

I	622.33	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM A-C	STREAM A-B		

I	0.16	0.16		
	I			

D-B Stream From Right Hand Lane

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	Slope For Opposing	I
I	STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			

I	622.33	0.25	0.25	0.10
0.36	I			

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
	(VEH.MIN/	PER ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE (MIN)	I						
I 08.00-08.15			I					

I	B-ACD	0.38	6.81	0.055		0.00	0.06	0.8
I	A-B	0.13		I				
I	A-C	2.51		I				
I	A-D	0.75	8.60	0.088		0.00	0.10	1.4
I	D-ABC	1.51	9.24	0.163		0.00	0.19	2.8
I	C-ABD	0.32	9.93	0.032		0.00	0.04	0.6
I	C-D	0.49		I				
I	C-A	1.70		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						

I	08.15-08.30			I				
I	B-ACD	0.45	6.62	0.068		0.06	0.07	1.1
I	A-B	0.15		I				
I	A-C	3.00		I				
I	A-D	0.90	8.49	0.106		0.10	0.12	1.7
I	D-ABC	1.80	9.02	0.199		0.19	0.25	3.6
I	C-ABD	0.40	10.09	0.040		0.04	0.06	0.8
I	C-D	0.58		I				
I	C-A	2.02		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
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I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.30-08.45			I				
I	B-ACD	0.55	6.35	0.087		0.07	0.09	1.4
I	A-B	0.18		I				
I	A-C	3.67		I				
I	A-D	1.10	8.35	0.132		0.12	0.15	2.2
I	D-ABC	2.20	8.71	0.253		0.25	0.33	4.9
I	C-ABD	0.53	10.32	0.051		0.06	0.08	1.2
I	C-D	0.70		I				
I	C-A	2.44		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						

I	08.45-09.00			I				
I	B-ACD	0.55	6.35	0.087		0.09	0.09	1.4
I	A-B	0.18		I				
I	A-C	3.67		I				
I	A-D	1.10	8.35	0.132		0.15	0.15	2.3
I	D-ABC	2.20	8.71	0.253		0.33	0.34	5.0
I	C-ABD	0.53	10.32	0.051		0.08	0.08	1.2
I	C-D	0.70		I				
I	C-A	2.44		I				
I				I				

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.00-09.15	VEHICLE (MIN)	I					
I								
I	B-ACD	0.45	6.61	0.068		0.09	0.07	1.1
I								
I	A-B	0.15						
I								
I	A-C	3.00						
I								
I	A-D	0.90	8.49	0.106		0.15	0.12	1.8
I								
I	D-ABC	1.80	9.01	0.199		0.34	0.25	3.9
I								
I	C-ABD	0.41	10.09	0.040		0.08	0.06	0.9
I								
I	C-D	0.58						
I								
I	C-A	2.02						
I								
I								

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.15-09.30	VEHICLE (MIN)	I					
I								
I	B-ACD	0.38	6.81	0.055		0.07	0.06	0.9
I								
I	A-B	0.13						
I								
I	A-C	2.51						
I								
I	A-D	0.75	8.60	0.088		0.12	0.10	1.5
I								
I	D-ABC	1.51	9.23	0.163		0.25	0.20	3.0
I								

I	C-ABD	0.32	9.93	0.033		0.06	0.04	0.7
I								
I	C-D	0.49						
I								
I	C-A	1.70						
I								
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	
09.30	0.1	

QUEUE FOR STREAM		A-D

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.2	
09.00	0.2	
09.15	0.1	
09.30	0.1	

QUEUE FOR STREAM		D-ABC

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.2	
08.30	0.2	
08.45	0.3	
09.00	0.3	
09.15	0.3	
09.30	0.2	

QUEUE FOR STREAM		C-ABD

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.1	

08.45 0.1
09.00 0.1
09.15 0.1
09.30 0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-ACD	I	41.3	I	27.5	I	6.7	I	0.16
I	A-B	I	13.8	I	9.2	I		I	
I	A-C	I	275.3	I	183.5	I		I	
I	A-D	I	82.6	I	55.1	I	10.9	I	0.13
I	D-ABC	I	165.2	I	110.1	I	23.2	I	0.14
I	C-ABD	I	37.8	I	25.2	I	5.4	I	0.14
I	C-D	I	52.8	I	35.2	I		I	
I	C-A	I	184.7	I	123.2	I		I	
I	ALL	I	853.4	I	568.9	I	46.2	I	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	602.92		0.21		0.08	I

STREAM D-A

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM D-A	STREAM	C-A	STREAM	C-D	I
I	786.65		0.27		0.11	I

STREAM B-A

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-A STREAM A-C STREAM A-D STREAM D-A
STREAM D-B I

I 476.98 0.19 0.19 0.19
0.19 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-B STREAM C-A STREAM C-B
STREAM D-C I

I 0.10 0.08 0.12 0.28
0.10 I

STREAM D-C

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-C STREAM C-A STREAM C-B STREAM B-C
STREAM B-D I

I 622.33 0.25 0.25 0.25
0.25 I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	STREAM C-D	STREAM A-C	STREAM A-D
I	I		
STREAM B-A			

I	0.13	I	0.10	0.16	0.36
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STREAM C-B	I Intercept For	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM C-B	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	I	I	I	I
602.92	0.21	0.21	0.29	

STREAM A-D	I Intercept For	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM A-D	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	I	I	I	I
602.92	0.21	0.29	0.21	

B-D Stream From Left Hand Lane

I	I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
I	I	I	I	I
STREAM C-B				

I	476.98	I	0.19	0.19	0.08
0.28					

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	STREAM C-A	STREAM C-D	
I	I		

I	0.12	0.12
I		

B-D Stream From Right Hand Lane

I	I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
I	I	I	I	I
STREAM C-B				

I	476.98	I	0.19	0.19	0.08
0.28					

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	STREAM C-A	STREAM C-D	
I	I	I	I

I	0.12	0.12
I		

D-B Stream From Left Hand Lane

I	I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	I STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D
I	I	I	I	I
STREAM A-D				

I	622.33	I	0.25	0.25	0.10
0.36					

I	TIME	I FROM/TO	I ARM	A I ARM	B I ARM	C I ARM	D I
I	08.00 - 09.30	I	I	I	I	I	I
I		I ARM A	I 0.000	I 0.048	I 0.619	I 0.333	I
I		I	I 0.0	I 10.0	I 130.0	I 70.0	I
I		I	I (0.0)	I (10.0)	I (10.0)	I (10.0)	I
I		I	I	I	I	I	I

I	I	ARM	B	I	0.250	I	0.000	I	0.250	I	0.500	I
I	I			I	10.0	I	0.0	I	10.0	I	20.0	I
I	I			I	(10.0)	I	(0.0)	I	(10.0)	I	(10.0)	I
I	I			I		I		I		I		I
I	I	ARM	C	I	0.625	I	0.042	I	0.000	I	0.333	I
I	I			I	150.0	I	10.0	I	0.0	I	80.0	I
I	I			I	(10.0)	I	(10.0)	I	(0.0)	I	(10.0)	I
I	I			I		I		I		I		I
I	I	ARM	D	I	0.667	I	0.111	I	0.222	I	0.000	I
I	I			I	60.0	I	10.0	I	20.0	I	0.0	I
I	I			I	(10.0)	I	(10.0)	I	(10.0)	I	(0.0)	I
I	I			I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2023 Observed PM - Kam Pok Road/ Pok Wai
South Road
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	PER ARRIVING	PER ARRIVING	I	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	VEHICLE (MIN)	VEHICLE (MIN)	I				
I	08.00-08.15			I				
I	B-ACD	0.50	6.80	0.074		0.00	0.08	1.1
I	A-B	0.13		I				
I	A-C	1.63		I				
I	A-D	0.88	8.51	0.103		0.00	0.11	1.6
I	D-ABC	1.13	10.02	0.113		0.00	0.13	1.8
I	C-ABD	0.17	10.48	0.016		0.00	0.02	0.3
I	C-D	0.99		I				
I	C-A	1.85		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
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GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	PER ARRIVING	PER ARRIVING	I	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	VEHICLE (MIN)	VEHICLE (MIN)	I				
I	08.15-08.30			I				
I	B-ACD	0.60	6.64	0.090		0.08	0.10	1.4
I	A-B	0.15		I				
I	A-C	1.95		I				
I	A-D	1.05	8.38	0.125		0.11	0.14	2.1
I	D-ABC	1.35	9.84	0.137		0.13	0.16	2.3
I	C-ABD	0.22	10.75	0.020		0.02	0.02	0.4
I	C-D	1.18		I				
I	C-A	2.20		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	PER ARRIVING	PER ARRIVING	I	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	VEHICLE (MIN)	VEHICLE (MIN)	I				
I	08.30-08.45			I				
I	B-ACD	0.73	6.41	0.115		0.10	0.13	1.9
I	A-B	0.18		I				
I	A-C	2.39		I				
I	A-D	1.28	8.22	0.156		0.14	0.18	2.7
I	D-ABC	1.65	9.58	0.172		0.16	0.21	3.0
I	C-ABD	0.29	11.12	0.026		0.02	0.03	0.5
I	C-D	1.43		I				
I	C-A	2.69		I				
I				I				

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	08.45-09.00	VEHICLE (MIN)	I					
I	B-ACD	0.73	6.41	0.115		0.13	0.13	1.9
I	A-B	0.18						
I	A-C	2.39						
I	A-D	1.28	8.21	0.156		0.18	0.18	2.8
I	D-ABC	1.65	9.57	0.172		0.21	0.21	3.1
I	C-ABD	0.29	11.12	0.026		0.03	0.03	0.5
I	C-D	1.43						
I	C-A	2.69						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.00-09.15	VEHICLE (MIN)	I					
I	B-ACD	0.60	6.63	0.090		0.13	0.10	1.5
I	A-B	0.15						
I	A-C	1.95						
I	A-D	1.05	8.38	0.125		0.18	0.14	2.2
I	D-ABC	1.35	9.83	0.137		0.21	0.16	2.5
I								

I	C-ABD	0.22	10.75	0.020		0.03	0.02	0.4
I	C-D	1.18						
I	C-A	2.20						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.15-09.30	VEHICLE (MIN)	I					
I	B-ACD	0.50	6.80	0.074		0.10	0.08	1.2
I	A-B	0.13						
I	A-C	1.63						
I	A-D	0.88	8.51	0.103		0.14	0.12	1.8
I	D-ABC	1.13	10.02	0.113		0.16	0.13	2.0
I	C-ABD	0.17	10.48	0.016		0.02	0.02	0.3
I	C-D	0.99						
I	C-A	1.85						
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	
09.30	0.1	

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.2
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-ACD	I	55.1	I 36.7	I 9.1	I 0.17	I 9.1	I 0.17	I
I	A-B	I	13.8	I 9.2	I	I	I	I	I
I	A-C	I	178.9	I 119.3	I	I	I	I	I
I	A-D	I	96.3	I 64.2	I 13.2	I 0.14	I 13.2	I 0.14	I
I	D-ABC	I	123.9	I 82.6	I 14.7	I 0.12	I 14.7	I 0.12	I
I	C-ABD	I	20.2	I 13.5	I 2.3	I 0.11	I 2.3	I 0.11	I
I	C-D	I	107.9	I 71.9	I	I	I	I	I
I	C-A	I	202.2	I 134.8	I	I	I	I	I
I	ALL	I	798.3	I 532.2	I 39.3	I 0.05	I 39.3	I 0.05	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

***** PICADY 5 run completed.

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

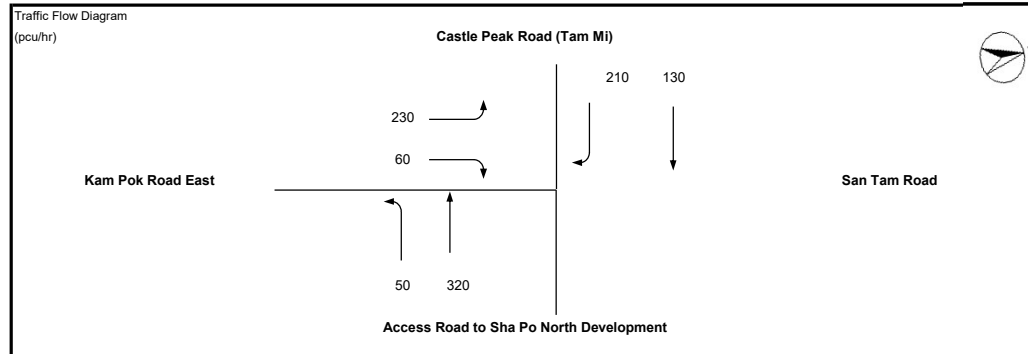
2021 AM Peak Hour Observed Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21

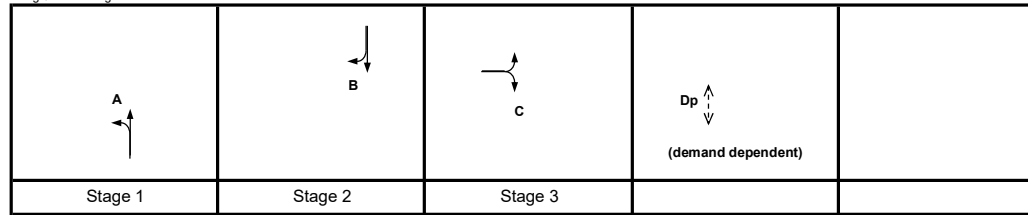


No. of stages per cycle N = 3
 Cycle time C = 90 sec
 Sum(y) Y = 0.419
 Lost time L = 13 sec
 Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 42$ sec
 Min. Cycle Time $C_m = L / (1 - Y) = 22$ sec
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.803$
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 91.4\%$
 Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 24$ sec
 $Y_{max} = 1 - L / C = 0.856$

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 84\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
↕	A	1	3.500	1	25			1		0		1965	50	320		370	14%		1949	0.190	0.190
↕	B	2	3.400	1		30	0	1	0	0		1955	130		130		100%	1955	0.066	0.105	
	B	2	3.500	1								2105			210			2005			0.105
↕	C	3	3.400	1	25	30	0	1	0	0		1955	230		230	100%	100%	1844	0.125	0.125	
	C	3	3.400	1	2095							60			60			1995			0.030
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

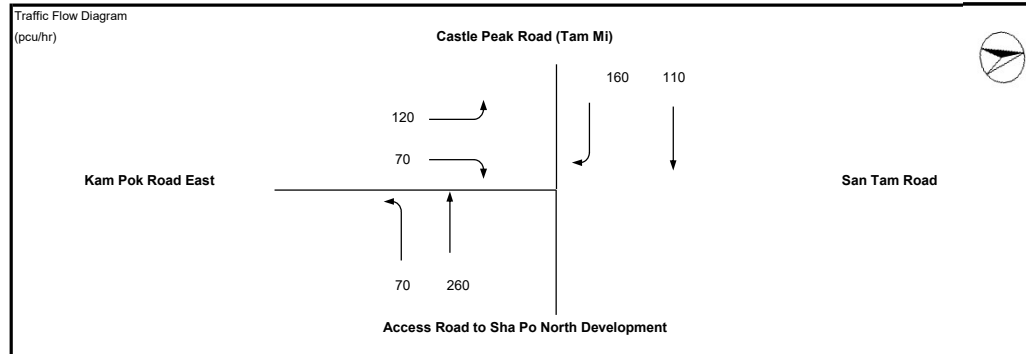
2021 PM Peak Hour Observed Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21



No. of stages per cycle N = 3

Cycle time C = 90 sec

Sum(y) Y = 0.315

Lost time L = 13 sec

Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 36$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 19$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.803$

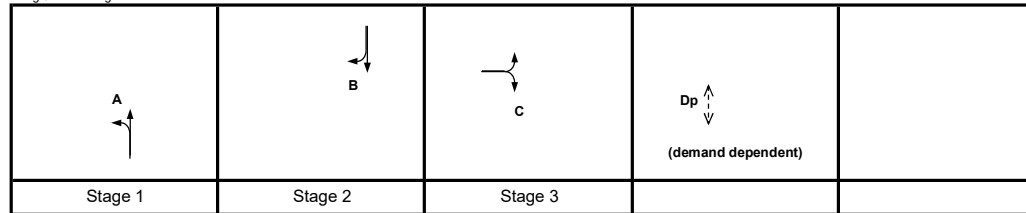
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 154.8\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 20$ sec

$Y_{max} = 1 - L / C = 0.856$

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 144\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	70	260		330	21%		1940	0.170	0.170
	B	2	3.400	1				1		0		1955		110		110			1955	0.056	
	B	2	3.500	1		30	0	0		0		2105			160	160		100%	2005	0.080	0.080
	C	3	3.400	1	25			1		0		1955	120			120	100%		1844	0.065	0.065
	C	3	3.400	1		30	0	0		0		2095			70	70		100%	1995	0.035	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

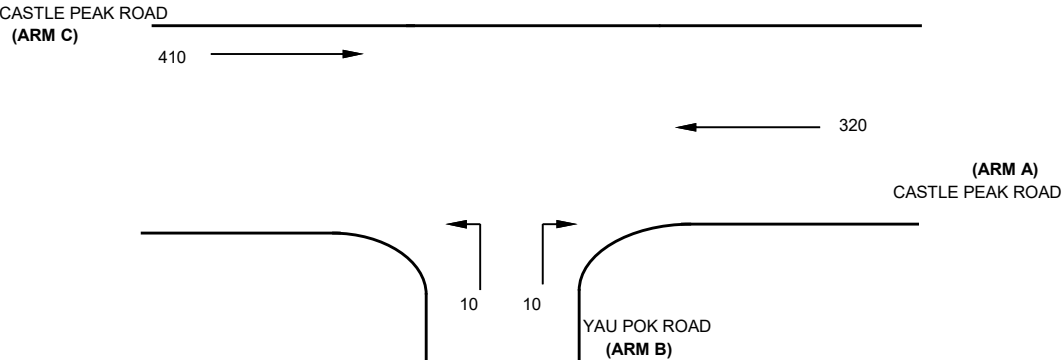
2033 AM Observed Flow

Designed By :

Checked By :

Job No. :

Date : Jan 00



NOTES : (GEOMETRIC INPUT DATA)

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	410 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	320 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	10 (pcu/hr)
						q b-c	=	10 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	324
Q b-c	=	495
Q c-b	=	393
Q b-ac	=	392

CRITICAL DFC = 0.03

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.03
DFC b-c	=	0.02
DFC c-b	=	0.00

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

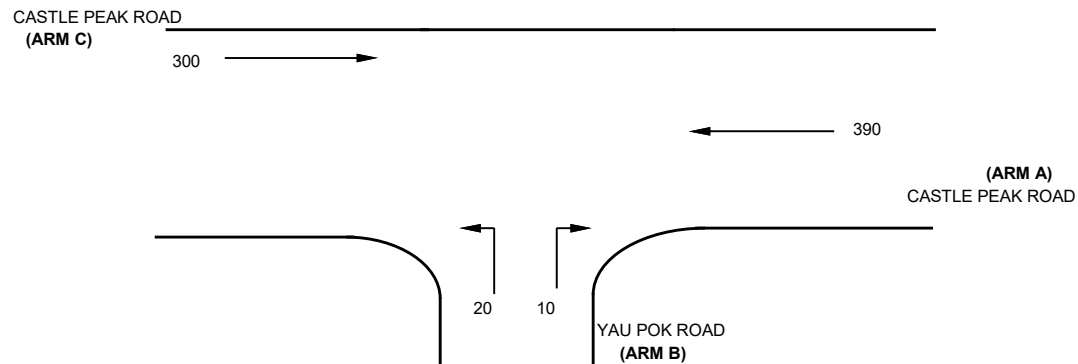
2033 PM Observed Flow

Designed By :

Checked By :

Job No. :

Date : Jan 00



NOTES : (GEOMETRIC INPUT DATA)

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	6.5 (metres)
W cr	=	0 (metres)
q a-b	=	0 (pcu/hr)
q a-c	=	390 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	0 (metres)
Vr c-b	=	25 (metres)
q c-a	=	300 (pcu/hr)
q c-b	=	0 (pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	1.8 (metres)
W b-c	=	1.8 (metres)
VI b-a	=	25 (metres)
Vr b-a	=	25 (metres)
Vr b-c	=	25 (metres)
q b-a	=	10 (pcu/hr)
q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	324
Q b-c	=	480
Q c-b	=	381
Q b-ac	=	413

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.03
DFC b-c	=	0.04
DFC c-b	=	0.00

CRITICAL DFC = 0.04

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Vehicular Bridge/ Yau Pok Rd

2021 AM Observed Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24

Yau Pok Road
(ARM C)

20
10



10

(ARM B)
Vehicular Bridge

(ARM A)
Yau Pok Road

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J8

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.4 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 0 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 20 (metres)
q c-a = 20 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 2.05 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 10 (pcu/hr)
q b-c = 0 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.773136
F = 0.773136
Y = 0.779200

THE CAPACITY OF MOVEMENT :

Q b-a = 517
Q b-c = 576
Q c-b = 576
Q b-ac = 517

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.00
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Vehicular Bridge/ Yau Pok Rd

2021 PM Observed Flow

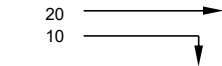
Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24

Road C
(ARM C)



(ARM A)
Road A

10

(ARM B)
Road B

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J8

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.4 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 0 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 20 (metres)
q c-a = 20 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 2.05 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 10 (pcu/hr)
q b-c = 0 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.773136
F = 0.773136
Y = 0.779200

THE CAPACITY OF MOVEMENT :

Q b-a = 517
Q b-c = 576
Q c-b = 576
Q b-ac = 517

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.00
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Vehicular Bridge/ Yau Pok Rd

2021 AM Observed Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24

Road C
(ARM C)

20
10



10

(ARM B)
Road B

(ARM A)
Road A

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J9

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.4 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 0 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 20 (metres)
q c-a = 20 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 2.05 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 10 (pcu/hr)
q b-c = 0 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.773136
F = 0.773136
Y = 0.779200

THE CAPACITY OF MOVEMENT :

Q b-a = 517
Q b-c = 576
Q c-b = 576
Q b-ac = 517

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.00
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Vehicular Bridge/ Yau Pok Rd

2021 PM Observed Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24

Road C
(ARM C)

20
10



(ARM A)
Road A

10

(ARM B)
Road B

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J9

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.4 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 0 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 20 (metres)
q c-a = 20 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 2.05 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 10 (pcu/hr)
q b-c = 0 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.773136
F = 0.773136
Y = 0.779200

THE CAPACITY OF MOVEMENT :

Q b-a = 517
Q b-c = 576
Q c-b = 576
Q b-ac = 517

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.00
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Vehicular Bridge/ Kam Pok Road

2021 AM Observed Flow

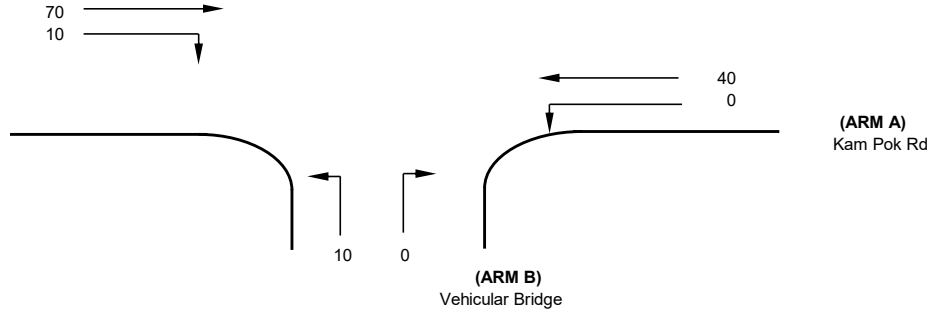
Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24

Kam Pok Rd
(ARM C)



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J10

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.2 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 40 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.6 (metres)
Vr c-b = 20 (metres)
q c-a = 70 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 3.6 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 0 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.905723
F = 0.905723
Y = 0.751600

THE CAPACITY OF MOVEMENT :

Q b-a = 501
Q b-c = 665
Q c-b = 665
Q b-ac = 665

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.00
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Vehicular Bridge/ Kam Pok Road

2021 PM Observed Flow

Designed By : MHS

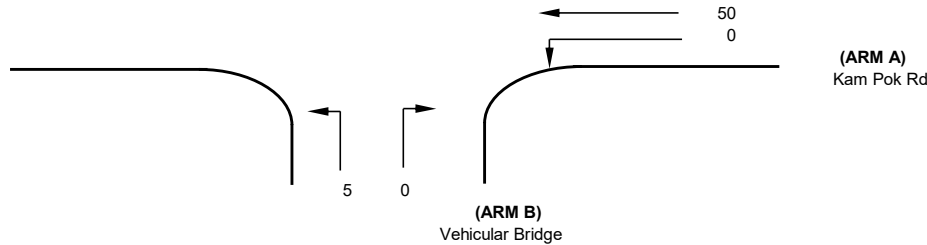
Checked By : WCS

Job No. :

Date : Sep 24

Kam Pok Rd
(ARM C)

60
10



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J10

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.2 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 50 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.6 (metres)
Vr c-b = 20 (metres)
q c-a = 60 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 3.6 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 0 (pcu/hr)
q b-c = 5 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.905723
F = 0.905723
Y = 0.751600

THE CAPACITY OF MOVEMENT :

Q b-a = 500
Q b-c = 662
Q c-b = 662
Q b-ac = 662

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.00
DFC b-c = 0.01
DFC c-b = 0.02
DFC b-ac = 0.01

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Vehicular Bridge/ Kam Pok Road

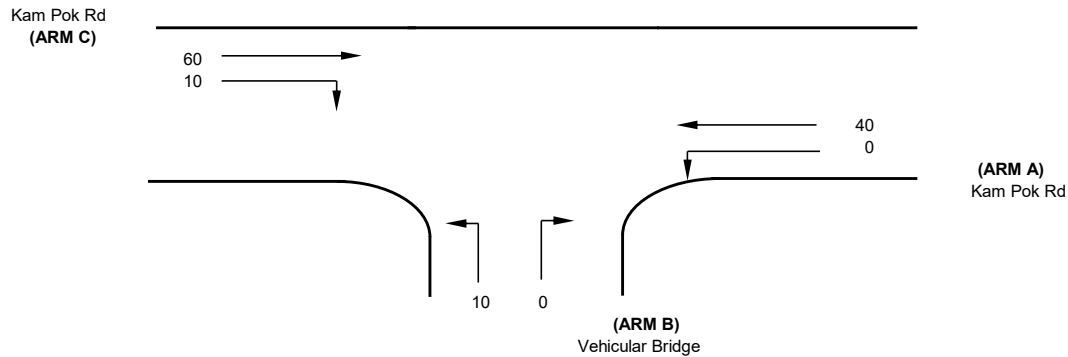
2021 AM Observed Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J11

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.2 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 40 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.6 (metres)
Vr c-b = 20 (metres)
q c-a = 60 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 3.6 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 0 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.905723
F = 0.905723
Y = 0.751600

THE CAPACITY OF MOVEMENT :

Q b-a = 503
Q b-c = 665
Q c-b = 665
Q b-ac = 665

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.00
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.02

CRITICAL DFC = 0.02

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Vehicular Bridge/ Kam Pok Road

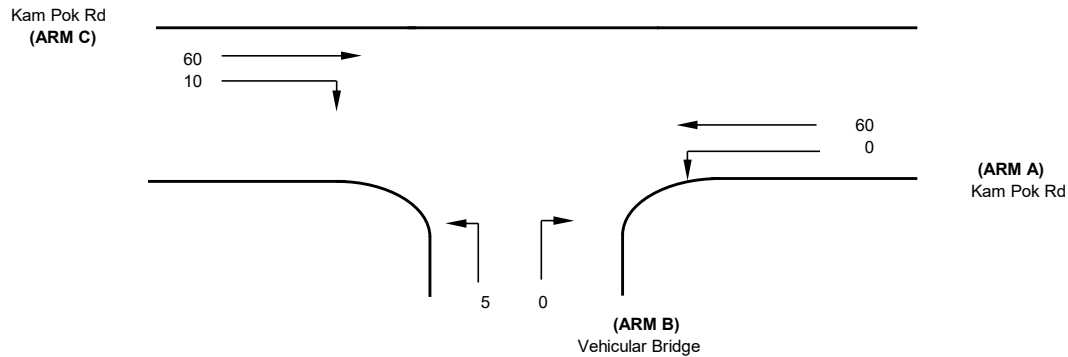
2021 PM Observed Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.70)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.70)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.70)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J11

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.2 (metres)
W cr = 0 (metres)
q a-b = 0 (pcu/hr)
q a-c = 60 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.6 (metres)
Vr c-b = 20 (metres)
q c-a = 60 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.6 (metres)
W b-c = 3.6 (metres)
Vl b-a = 20 (metres)
Vr b-a = 20 (metres)
Vr b-c = 20 (metres)
q b-a = 0 (pcu/hr)
q b-c = 5 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.835077
E = 0.905723
F = 0.905723
Y = 0.751600

THE CAPACITY OF MOVEMENT :

Q b-a = 498
Q b-c = 660
Q c-b = 660
Q b-ac = 660

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.00
DFC b-c = 0.01
DFC c-b = 0.02
DFC b-ac = 0.01

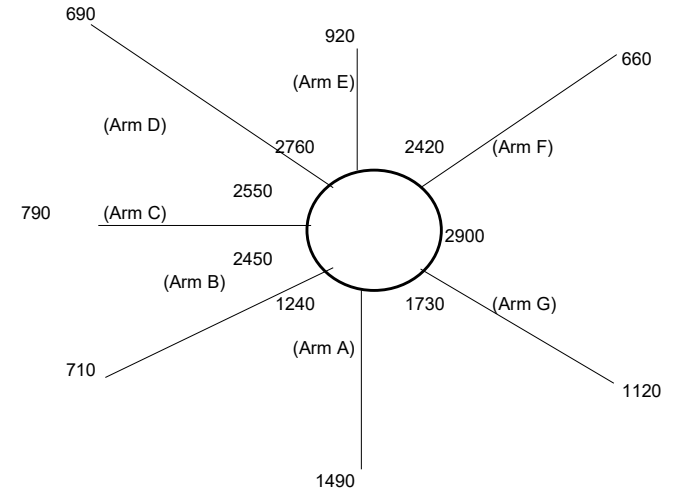
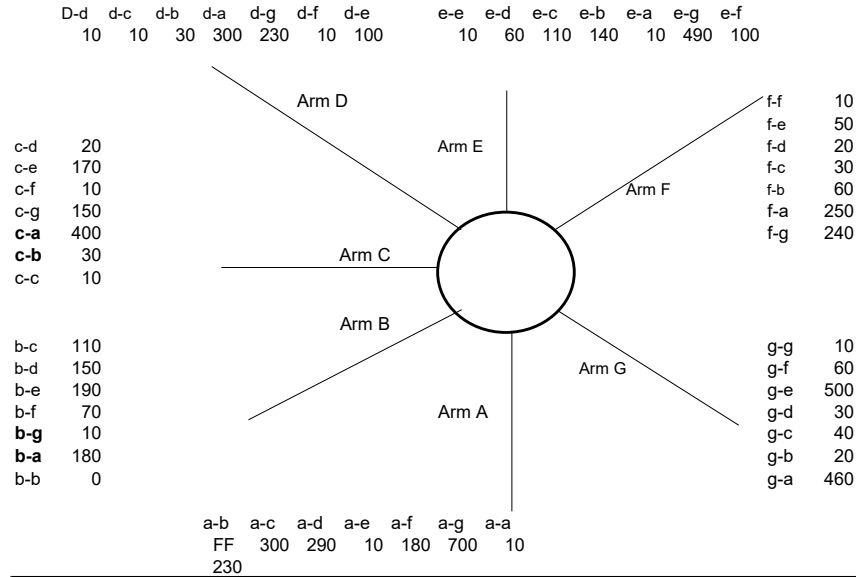
CRITICAL DFC = 0.02

Reference Flow

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 AM Reference Flows	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Sep 2024



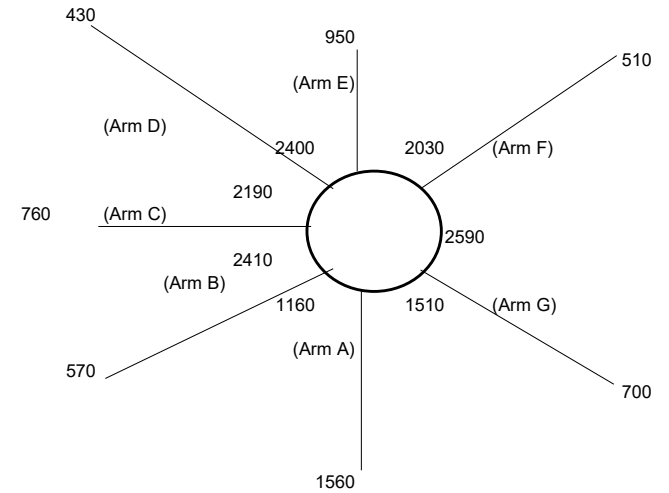
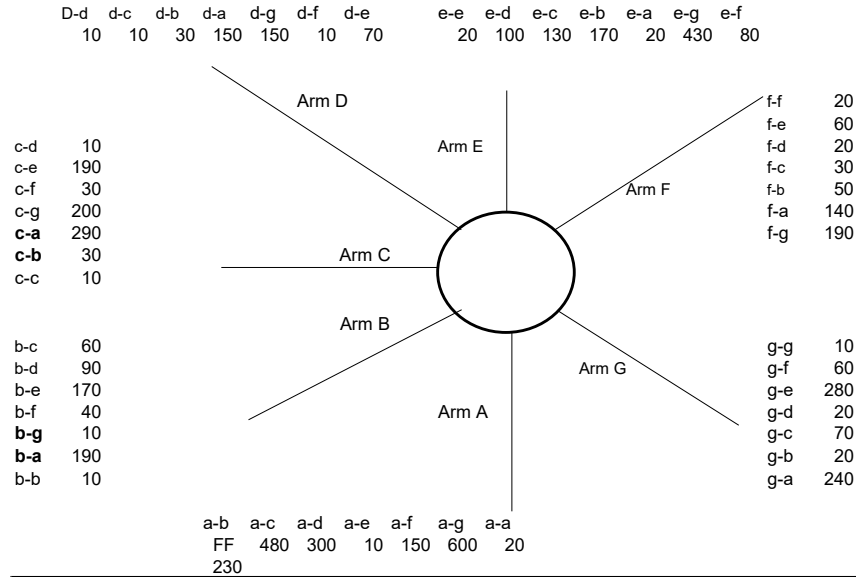
ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	5.00	7.00	5.50	6.30	5.90	6.75
E = Entry width (m)	8.00	8.00	10.00	10.00	10.00	8.50	8.50
L = Effective length of flare (m)	10.00	25.00	10.00	16.00	30.00	10.00	20.00
R = Entry radius (m)	20.00	22.00	22.00	20.00	23.00	20.00	20.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	65.00	30.00	40.00	45.00	30.00	60.00	35.00
Q = Entry flow (pcu/h)	1490	710	790	690	920	660	1120
Qc= Circulating flow across entry (pcu/h)	1240	2450	2550	2760	2420	2900	1730
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.32	0.19	0.48	0.45	0.20	0.42	0.14
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.88	1.00	0.97	0.95	1.01	0.90	0.98
X2= V + ((E-V)/(1+2S))	7.22	7.17	8.53	7.87	8.95	7.32	8.12
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2188	2172	2585	2384	2713	2218	2460
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.51	0.51	0.57	0.54	0.59	0.52	0.55
Qe= K(F-Fc*Qc)	1363	924	1101	846	1303	642	1480
DFC = Design flow/Capacity = Q/Qe	1.09	0.77	0.72	0.82	0.71	1.03	0.76

TOTAL ENTRY FLOWS = 6380 PCU
CRITICAL DFC = 1.09

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 PM Reference Flows	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Sep 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	5.00	7.00	5.50	6.30	5.90	6.75
E = Entry width (m)	8.00	8.00	10.00	10.00	10.00	8.50	8.50
L = Effective length of flare (m)	10.00	25.00	10.00	16.00	30.00	10.00	20.00
R = Entry radius (m)	20.00	22.00	22.00	20.00	23.00	20.00	20.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	65.00	30.00	40.00	45.00	30.00	60.00	35.00
Q = Entry flow (pcu/h)	1560	570	760	430	950	510	700
Qc= Circulating flow across entry (pcu/h)	1160	2410	2190	2400	2030	2590	1510
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.32	0.19	0.48	0.45	0.20	0.42	0.14
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.88	1.00	0.97	0.95	1.01	0.90	0.98
X2= V + ((E-V)/(1+2S))	7.22	7.17	8.53	7.87	8.95	7.32	8.12
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2188	2172	2585	2384	2713	2218	2460
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.51	0.51	0.57	0.54	0.59	0.52	0.55
Qe= K(F-Fc*Qc)	1399	944	1299	1030	1533	786	1599
DFC = Design flow/Capacity = Q/Qe	1.12	0.60	0.58	0.42	0.62	0.65	0.44

TOTAL ENTRY FLOWS = 5480 PCU
CRITICAL DFC = 1.12

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

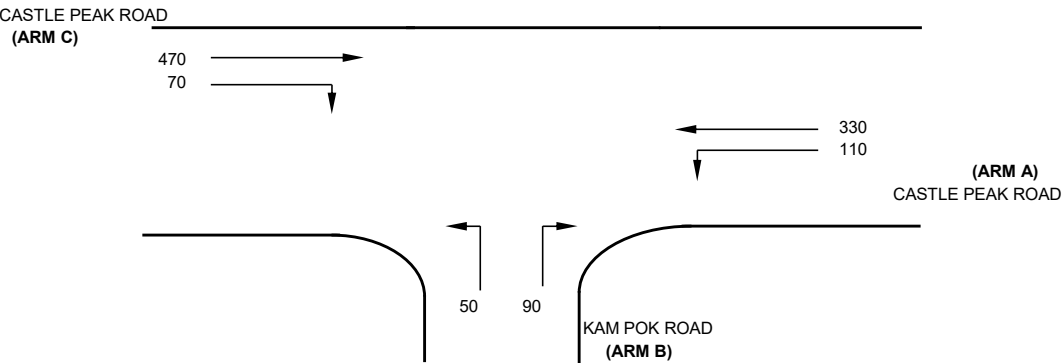
2034 AM Reference Flows

Designed By :

Checked By :

Job No. :

Date : Dec 21



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.3 (metres)
W cr	=	0 (metres)
q a-b	=	110 (pcu/hr)
q a-c	=	330 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.05 (metres)
Vr c-b	=	30 (metres)
q c-a	=	470 (pcu/hr)
q c-b	=	70 (pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	4.07 (metres)
W b-c	=	4.07 (metres)
VI b-a	=	100 (metres)
Vr b-a	=	100 (metres)
Vr b-c	=	80 (metres)
q b-a	=	90 (pcu/hr)
q b-c	=	50 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.990146
E	=	1.002059
F	=	0.780782
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	413
Q b-c	=	645
Q c-b	=	488
Q b-ac	=	474

CRITICAL DFC = 0.30

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.22
DFC b-c	=	0.08
DFC c-b	=	0.14
DFC b-ac	=	0.30

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

2034 PM Reference Flows

Designed By :

Checked By :

Job No. :

Date : Dec 21

CASTLE PEAK ROAD

(ARM C)

350
80

410
120

(ARM A)

CASTLE PEAK ROAD

60 100

KAM POK ROAD
(ARM B)

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 120 (pcu/hr)
q a-c = 410 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 350 (pcu/hr)
q c-b = 80 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 100 (pcu/hr)
q b-c = 60 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 407
Q b-c = 622
Q c-b = 469
Q b-ac = 468

CRITICAL DFC = 0.34

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.25
DFC b-c = 0.10
DFC c-b = 0.17
DFC b-ac = 0.34

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

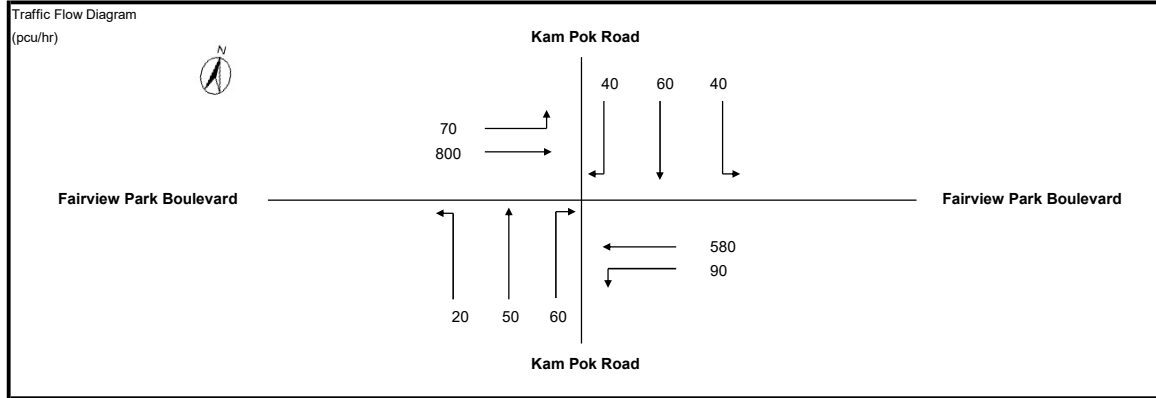
2034 AM Reference Flows

DESIGN: MHS

CHECK: WCS

JOB NO: -

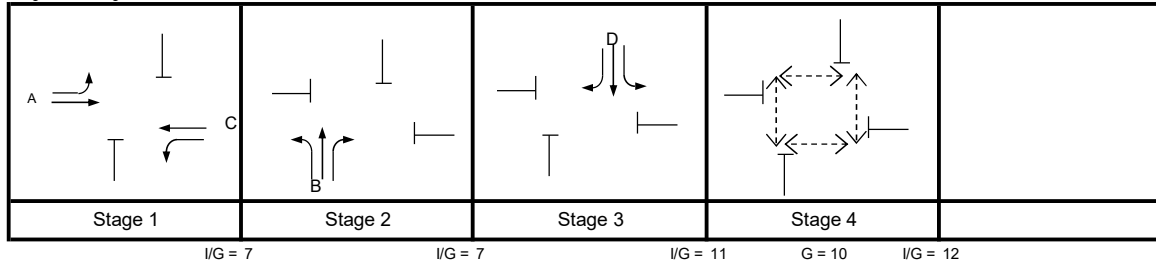
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.360
Lost time	L =	44 sec
Total Flow	=	11,980 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	111 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	69 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	58.3 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	73 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : A,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 58\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	70	362		432	16%		1914	0.225	0.225
	A	1	3.300	1				1		0		1945		439		439			1945	0.225	
	B	2	3.600	1	13	20	0	1		0		1975	20	50	60	130	15%	46%	1877	0.069	0.069
	C	1	3.000	1	17			1		0		1915	90	238		328	27%		1870	0.176	
	C	1	3.300	1				1		0		1945		342		342			1945	0.176	
	D	3	6.400	1	15.5	17.5	0	1		0		2255	40	60	40	140	29%	29%	2143	0.065	0.065
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

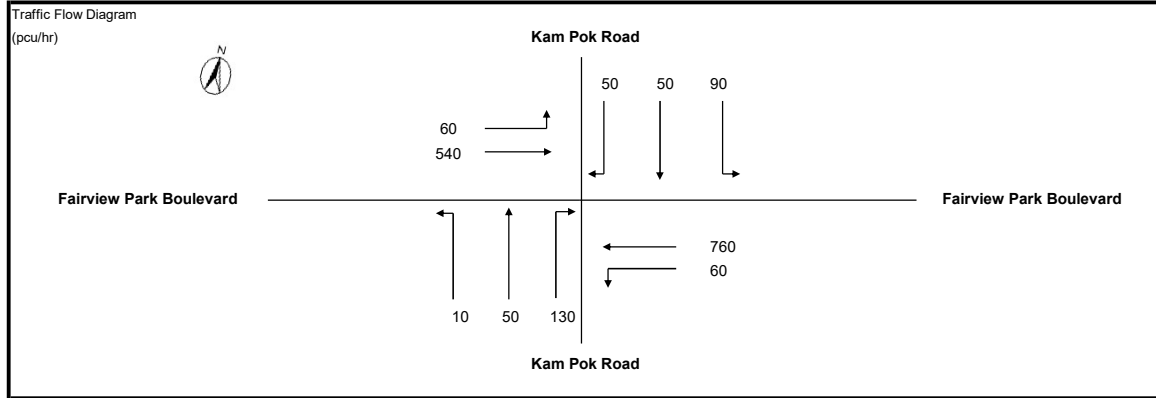
2034 PM Existing Traffic Flows

DESIGN: 0

CHECK: 0

JOB NO: -

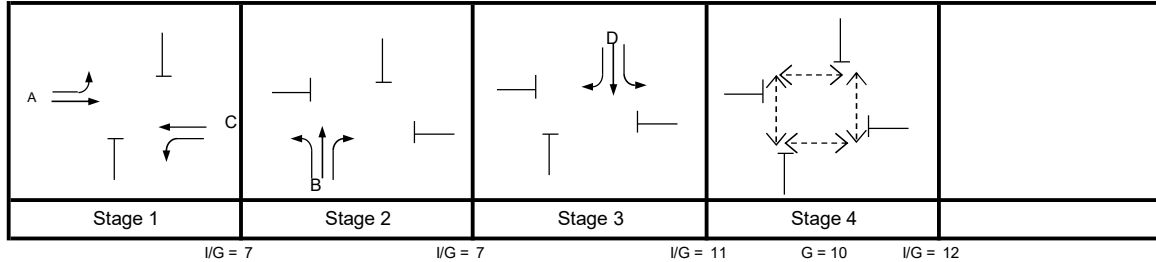
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.406
Lost time	L =	44 sec
Total Flow	=	11,980 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	119 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	74 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	40.5 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	80 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : C,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 41\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	60	237		297	20%		1906	0.156	0.102
	A	1	3.300	1				1		0		1945		303		303			1945	0.156	
	B	2	3.600	1	13	20	0	1		0		1975	10	50	130	190	5%	68%	1868	0.102	
	C	1	3.000	1	17			1		0		1915	60	344		404	15%		1890	0.214	0.214
	C	1	3.300	1				1		0		1945		416		416			1945	0.214	
	D	3	6.400	1	15.5	17.5	0	1		0		2255	90	50	50	190	47%	26%	2111	0.090	
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

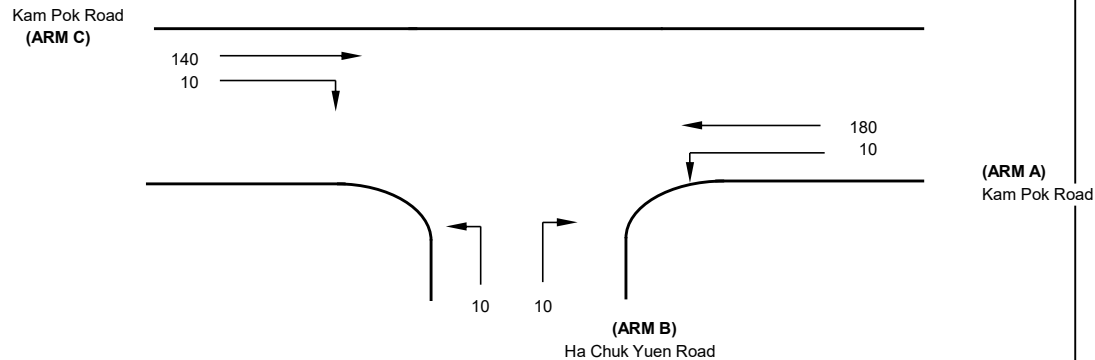
2034 AM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 180 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 140 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 416
Q b-c = 557
Q c-b = 645
Q b-ac = 476

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.04

CRITICAL DFC = 0.04

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

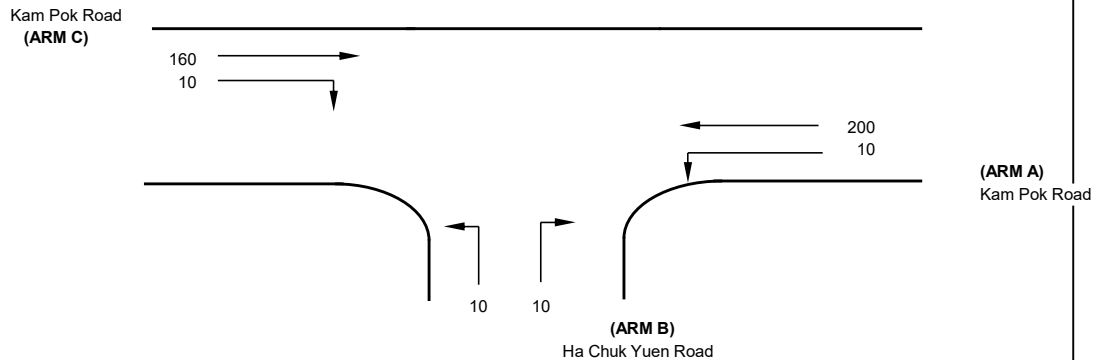
2034 PM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 200 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 160 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 410
Q b-c = 553
Q c-b = 640
Q b-ac = 471

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.04

CRITICAL DFC = 0.04

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
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Run with file:- "C:\Users\Sam.Wong\Downloads\J5\34_KPR-PWSR_REF.vpi"
(drive-on-the-left) at 12:27:45 on Friday, 13 September 2024

.RUN INFORMATION

RUN TITLE : 2034 - J5 Kam Pok Road/ Pok Wai South Road
LOCATION :
DATE : 21/12/13
CLIENT :
ENUMERATOR : nokhinnaomi.tam [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Kam Pok Road
ARM B IS Pok Wai South Road
ARM C IS Kam Pok Road West
ARM D IS Kam Pok Road

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 8.80
M. I (W) 8.80 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I
I I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 2.20
M. I (WD-A) 5.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	602.92	0.21	0.08	I

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	786.65	0.27	0.11	I

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19
	0.19	I		

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.08	0.12
	I		0.28

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25
	0.25	I		

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.13	0.10	0.16
	I		0.36

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29
				I

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.21	0.29	0.21
				I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 476.98 0.19 0.19 0.08
0.28 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.12 0.12
I

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 476.98 0.19 0.19 0.08
0.28 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.12 0.12
I

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 622.33 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 622.33 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 2034 Reference AM - J5 Kam Pok Road/ Pok Wai South Road

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I
I I I I I I I I
I
I ARM A I 15.00 I 45.00 I 75.00 I 3.75 I 5.63 I 3.75
I
I ARM B I 15.00 I 45.00 I 75.00 I 0.75 I 1.13 I 0.75
I
I ARM C I 15.00 I 45.00 I 75.00 I 2.75 I 4.13 I 2.75
I
I ARM D I 15.00 I 45.00 I 75.00 I 2.13 I 3.19 I 2.13
I

.Demand set: 2034 Reference AM - J5 Kam Pok Road/ Pok Wai South Road

I TURNING PROPORTIONS I
I TURNING COUNTS I
I (PERCENTAGE OF H.V.S) I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I
I 08.00 - 09.30 I I I I I I I
I I ARM A I 0.000 I 0.033 I 0.733 I 0.233 I
I I 0.0 I 10.0 I 220.0 I 70.0 I
I I (0.0)I (10.0)I (10.0)I (10.0)I
I I I I I I
I I ARM B I 0.167 I 0.000 I 0.167 I 0.667 I
I I 10.0 I 0.0 I 10.0 I 40.0 I
I I (10.0)I (0.0)I (10.0)I (10.0)I
I I I I I I
I I ARM C I 0.682 I 0.091 I 0.000 I 0.227 I
I I 150.0 I 20.0 I 0.0 I 50.0 I
I I (10.0)I (10.0)I (0.0)I (10.0)I
I I I I I I
I I ARM D I 0.294 I 0.294 I 0.412 I 0.000 I
I I 50.0 I 50.0 I 70.0 I 0.0 I
I I (10.0)I (10.0)I (10.0)I (0.0)I
I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2034 Reference AM - J5 Kam Pok Road/ Pok
Wai South Road
AND FOR TIME PERIOD 1

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
(VEH.MIN/ PER ARRIVING I
I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME
SEGMENT) TIME SEGMENT) VEHICLE (MIN) I
I 08.00-08.15 I
I I
I B-ACD 0.75 6.40 0.118 0.00 0.13 1.9
I I
I A-B 0.13 I
I A-C 2.76 I
I A-D 0.88 8.55 0.103 0.00 0.11 1.6
I I

I	D-ABC	2.13	8.73	0.244		0.00	0.32	4.6
I	C-ABD	0.33	10.02	0.033		0.00	0.04	0.7
I	C-D	0.61		I				
I	C-A	1.82		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
I	08.15-08.30		VEHICLE (MIN)	I				

I	B-ACD	0.90	6.18	0.145		0.13	0.17	2.4
I	A-B	0.15		I				
I	A-C	3.30		I				
I	A-D	1.05	8.43	0.124		0.11	0.14	2.1
I	D-ABC	2.55	8.47	0.301		0.32	0.42	6.2
I	C-ABD	0.42	10.20	0.041		0.04	0.06	0.9
I	C-D	0.72		I				
I	C-A	2.16		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
I	08.30-08.45		VEHICLE (MIN)	I				

I	B-ACD	1.10	5.88	0.187		0.17	0.23	3.3
I				I				

I	A-B	0.18						
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155		0.14	0.18	2.7
I	D-ABC	3.12	8.10	0.385		0.42	0.61	8.8
I	C-ABD	0.55	10.46	0.053		0.06	0.08	1.2
I	C-D	0.87		I				
I	C-A	2.61		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
I	08.45-09.00		VEHICLE (MIN)	I				

I	B-ACD	1.10	5.88	0.187		0.23	0.23	3.4
I	A-B	0.18		I				
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155		0.18	0.18	2.7
I	D-ABC	3.12	8.10	0.385		0.61	0.62	9.3
I	C-ABD	0.55	10.46	0.053		0.08	0.08	1.2
I	C-D	0.87		I				
I	C-A	2.61		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		PER ARRIVING	I					

I	SEGMENT)	TIME	SEGMENT)	VEHICLE	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
I	09.00-09.15								
I	B-ACD	0.90		6.18	0.146		0.23	0.17	2.7
I	A-B	0.15							
I	A-C	3.30							
I	A-D	1.05		8.43	0.124		0.18	0.14	2.2
I	D-ABC	2.55		8.46	0.301		0.62	0.44	6.8
I	C-ABD	0.42		10.20	0.041		0.08	0.06	0.9
I	C-D	0.72							
I	C-A	2.16							
I									

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	09.15-09.30							
I	B-ACD	0.75	6.39	0.118		0.17	0.14	2.1
I	A-B	0.13						
I	A-C	2.76						
I	A-D	0.88	8.55	0.103		0.14	0.12	1.8
I	D-ABC	2.13	8.72	0.244		0.44	0.33	5.1
I	C-ABD	0.33	10.02	0.033		0.06	0.05	0.7
I	C-D	0.61						
I	C-A	1.82						
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.2
09.30	0.1

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.3
08.30	0.4
08.45	0.6 *
09.00	0.6 *
09.15	0.4
09.30	0.3

QUEUE FOR STREAM C-ABD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(MIN)	I	(MIN)	I

I	B-ACD	I	82.6	I	55.1	I	15.8	I	0.19	I	15.8	I	0.19	I
I	A-B	I	13.8	I	9.2	I		I		I		I		I
I	A-C	I	302.8	I	201.9	I		I		I		I		I
I	A-D	I	96.3	I	64.2	I	13.1	I	0.14	I	13.1	I	0.14	I
I	D-ABC	I	234.0	I	156.0	I	40.7	I	0.17	I	40.7	I	0.17	I
I	C-ABD	I	39.1	I	26.1	I	5.6	I	0.14	I	5.6	I	0.14	I
I	C-D	I	65.9	I	43.9	I		I		I		I		I
I	C-A	I	197.8	I	131.8	I		I		I		I		I
I	ALL	I	1032.3	I	688.2	I	75.1	I	0.07	I	75.1	I	0.07	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	602.92	0.21	0.08	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	786.65	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19

0.19 I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10		

I	0.08	0.12	0.28
---	------	------	------

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

I	0.25			
---	------	--	--	--

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.10	0.16	0.36

STREAM C-B					
I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D	I	
I	602.92	0.21	0.21	0.29	I

STREAM A-D					
I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D	I	
I	602.92	0.21	0.29	0.21	I

B-D Stream From Left Hand Lane

I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B	I	
I	476.98	0.19	0.19	0.08	I
0.28	I				

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I	STREAM C-A	STREAM C-D		I	

I	0.12	0.12
I		

B-D Stream From Right Hand Lane

I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I				I	

I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I		
I	476.98	0.19	0.19
0.28	I		0.08

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-A	STREAM C-D	

I	0.12	0.12
I		

D-B Stream From Left Hand Lane

I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D	I	
I	622.33	0.25	0.25	0.10	I
0.36	I				

I	622.33	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-C	STREAM A-B	

I	0.16	0.16
I		

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 622.33 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 2034 Reference PM - J5 Kam Pok Road/ Pok Wai South Road

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I I I I I I I
I I

I ARM A I 15.00 I 45.00 I 75.00 I 2.75 I 4.13 I 2.75
I I
I ARM B I 15.00 I 45.00 I 75.00 I 0.75 I 1.13 I 0.75
I I
I ARM C I 15.00 I 45.00 I 75.00 I 3.00 I 4.50 I 3.00
I I
I ARM D I 15.00 I 45.00 I 75.00 I 1.50 I 2.25 I 1.50
I I

.Demand set: 2034 Reference PM - J5 Kam Pok Road/ Pok Wai South Road

I I TURNING PROPORTIONS I
I I TURNING COUNTS I
I I (PERCENTAGE OF H.V.S) I
I I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I
I 08.00 - 09.30 I I I I I I I
I I ARM A I 0.000 I 0.045 I 0.636 I 0.318 I
I I I 0.0 I 10.0 I 140.0 I 70.0 I
I I I (0.0)I (10.0)I (10.0)I (10.0)I
I I I I I I I
I I ARM B I 0.167 I 0.000 I 0.167 I 0.667 I
I I I 10.0 I 0.0 I 10.0 I 40.0 I
I I I (10.0)I (0.0)I (10.0)I (10.0)I
I I I I I I I
I I ARM C I 0.625 I 0.042 I 0.000 I 0.333 I
I I I 150.0 I 10.0 I 0.0 I 80.0 I
I I I (10.0)I (10.0)I (0.0)I (10.0)I
I I I I I I I
I I ARM D I 0.500 I 0.250 I 0.250 I 0.000 I
I I I 60.0 I 30.0 I 30.0 I 0.0 I
I I I (10.0)I (10.0)I (10.0)I (0.0)I
I I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME GEOMETRIC I I I SEGMENT)	DEMAND DELAY (VEH./MIN) (VEH./MIN/ TIME	CAPACITY AVERAGE (VEH./MIN) PER SEGMENT)	DEMAND/ DELAY I CAPACITY I (RFC) VEHICLE (MIN) I	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH./MIN/ TIME
08.15-08.30							
B-ACD	0.90	6.43	0.140		0.13	0.16	2.3
A-B	0.15						
A-C	2.10						
A-D	1.05	8.38	0.125		0.11	0.14	2.1
D-ABC	1.80	9.24	0.194		0.19	0.24	3.5
C-ABD	0.22	10.72	0.020		0.02	0.02	0.4

I	C-D	1.18		I				
I	C-A	2.20		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		PER ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME
SEGMENT)	TIME SEGMENT)	VEHICLE	(MIN)	I				
I	08.30-08.45			I				
I	B-ACD	1.10	6.19	0.178		0.16	0.21	3.1
I	A-B	0.18		I				
I	A-C	2.57		I				
I	A-D	1.28	8.22	0.156		0.14	0.18	2.7
I	D-ABC	2.20	8.95	0.246		0.24	0.32	4.7
I	C-ABD	0.29	11.08	0.026		0.02	0.03	0.5
I	C-D	1.43		I				
I	C-A	2.68		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		PER ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME
SEGMENT)	TIME SEGMENT)	VEHICLE	(MIN)	I				
I	08.45-09.00			I				
I	B-ACD	1.10	6.19	0.178		0.21	0.21	3.2
I	A-B	0.18		I				
I	A-C	2.57		I				
				I				

I	A-D	1.28	8.21	0.156		0.18	0.18	2.8
I	D-ABC	2.20	8.94	0.246		0.32	0.32	4.9
I	C-ABD	0.29	11.08	0.026		0.03	0.03	0.5
I	C-D	1.43						
I	C-A	2.68						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		(VEH.MIN/	PER ARRIVING	I				
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
SEGMENT)	TIME SEGMENT)		VEHICLE (MIN)	I				

I	09.00-09.15							
I	B-ACD	0.90	6.43	0.140		0.21	0.16	2.5
I	A-B	0.15						
I	A-C	2.10						
I	A-D	1.05	8.38	0.125		0.18	0.14	2.2
I	D-ABC	1.80	9.24	0.195		0.32	0.24	3.8
I	C-ABD	0.22	10.72	0.020		0.03	0.02	0.4
I	C-D	1.18						
I	C-A	2.20						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		(VEH.MIN/	PER ARRIVING	I				
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME
SEGMENT)	TIME SEGMENT)		VEHICLE (MIN)	I				

I	09.15-09.30							

I	B-ACD	0.75	6.60	0.114		0.16	0.13	2.0
I	A-B	0.13						
I	A-C	1.76						
I	A-D	0.88	8.51	0.103		0.14	0.12	1.8
I	D-ABC	1.51	9.46	0.159		0.24	0.19	2.9
I	C-ABD	0.17	10.46	0.016		0.02	0.02	0.3
I	C-D	0.99						
I	C-A	1.85						
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.2
09.30	0.1

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.3
09.00	0.3
09.15	0.2

09.30 0.2

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I		I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN)	I
I		I		I		I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-ACD	I	82.6	I	55.1	I	15.0	I	0.18	I
I	A-B	I	13.8	I	9.2	I		I		I
I	A-C	I	192.7	I	128.5	I		I		I
I	A-D	I	96.3	I	64.2	I	13.2	I	0.14	I
I	D-ABC	I	165.2	I	110.1	I	22.5	I	0.14	I
I	C-ABD	I	20.3	I	13.5	I	2.3	I	0.11	I
I	C-D	I	107.9	I	71.9	I		I		I
I	C-A	I	202.2	I	134.8	I		I		I
I	ALL	I	880.9	I	587.3	I	52.9	I	0.06	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

***** PICADY 5 run completed.

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

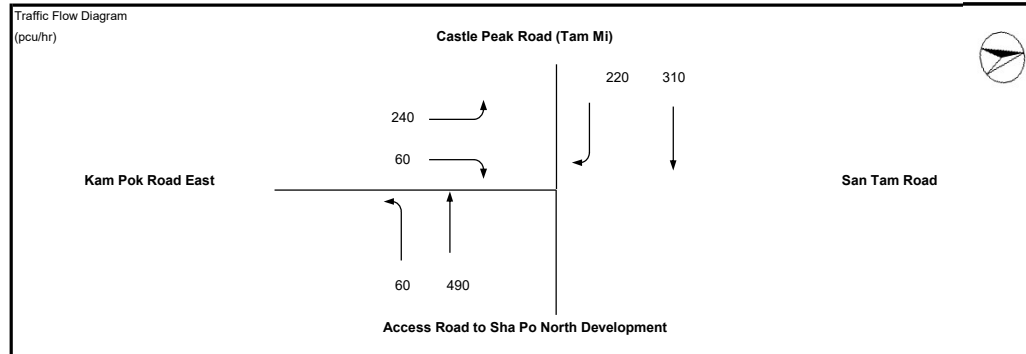
2034 AM Peak Hour Reference Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

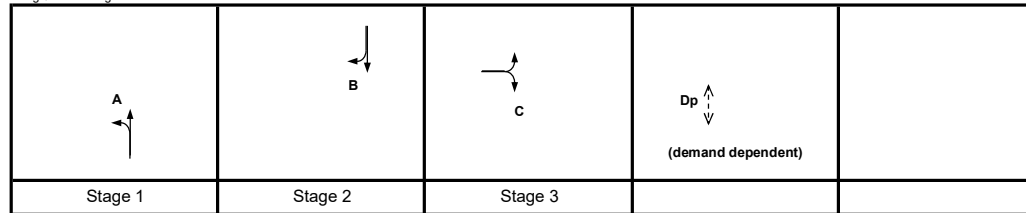
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.570
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	57 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	30 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	40.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	36 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 35\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	60	490		550	11%		1952	0.282	0.282
	B	2	3.400	1				1		0		1955		310		310			1955	0.159	0.159
	B	2	3.500	1		30	0	0		0		2105			220	220		100%	2005	0.110	
	C	3	3.400	1	25			1		0		1955	240			240	100%		1844	0.130	0.130
	C	3	3.400	1		30	0	0		0		2095		60		60		100%	1995	0.030	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

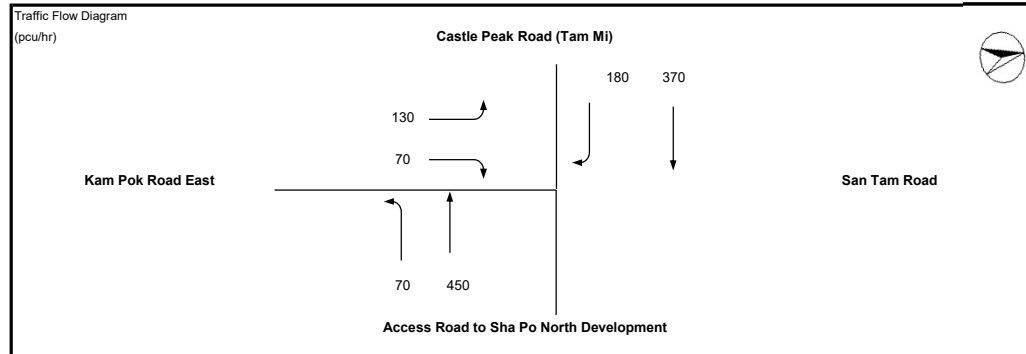
2034 PM Peak Hour Reference Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21



No. of stages per cycle N = 3

Cycle time C = 90 sec

Sum(y) Y = 0.527

Lost time L = 13 sec

Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 52$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 27$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.803$

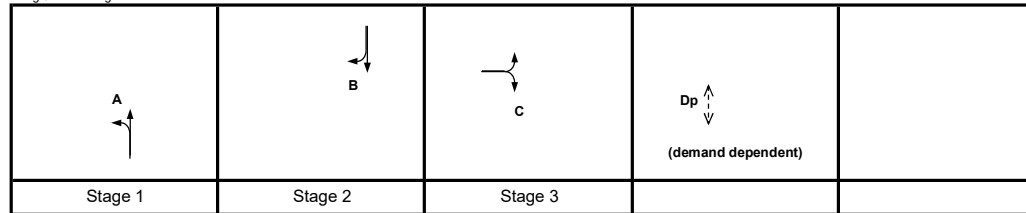
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 52.4\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 31$ sec

$Y_{max} = 1 - L / C = 0.856$

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 46\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	70	450		520	13%		1949	0.267	0.267
	B	2	3.400	1				1		0		1955		370		370			1955	0.189	0.189
	B	2	3.500	1		30	0	0		0		2105			180	180		100%	2005	0.090	
	C	3	3.400	1	25			1		0		1955	130			130	100%		1844	0.070	0.070
	C	3	3.400	1		30	0	0		0		2095			70	70		100%	1995	0.035	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

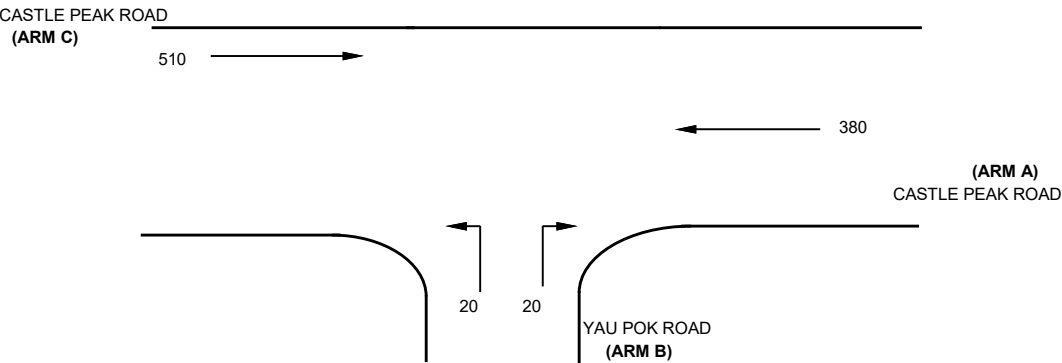
2034 AM Reference Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	510 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	380 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	300
Q b-c	=	482
Q c-b	=	383
Q b-ac	=	370

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

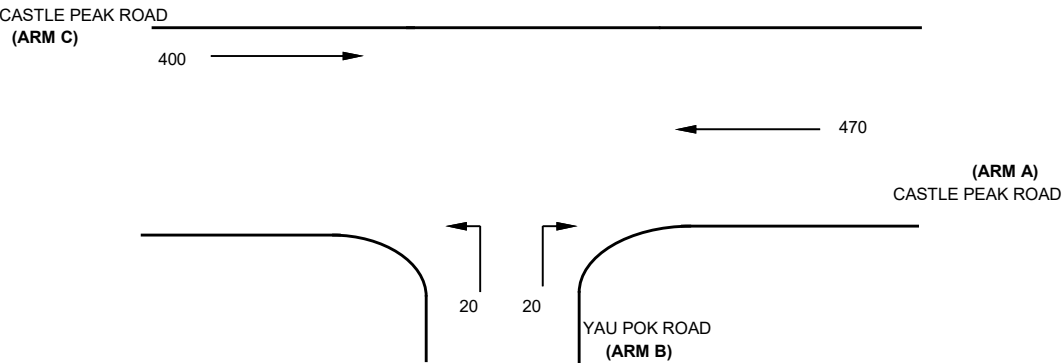
2034 PM Reference Flow

Designed By : MHS

Checked By : WCS

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	400 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	470 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	296
Q b-c	=	463
Q c-b	=	368
Q b-ac	=	361

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:- "C:\Users\Sam.Wong\Downloads\J8\REF\J8_2034 AM Ref.vpi"
(drive-on-the-left) at 12:37:31 on Friday, 13 September 2024

.RUN INFORMATION

RUN TITLE : J8 - Yau Pok Road / REC North Access
LOCATION : Fairview
DATE : 09/02/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC North

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0)
I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope	For Opposing	Slope For Opposing I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept	For Slope	For Opposing	Slope For Opposing I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept	For Slope	For Opposing	Slope For Opposing	Slope For Opposing	Slope
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A	STREAM	
I	544.46	0.25	0.25	0.25		

I	544.46	0.25	0.25	0.25
0.25	I			

I	Intercept	For Slope	For Opposing	Slope For Opposing	Slope
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B	STREAM
I					

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM D-C

I	Intercept	For Slope	For Opposing	Slope For Opposing	Slope For Opposing	Slope
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C	STREAM	
I						

I	544.46	0.25	0.25	0.25
0.25	I			

I	Intercept	For Slope	For Opposing	Slope For Opposing	Slope For Opposing	Slope
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D	STREAM	
I						

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM C-B

I	Intercept	For Slope	For Opposing	Slope For Opposing	Slope For OpposingI
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D	I
I	602.92	0.23	0.23	0.33	I

STREAM A-D

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I 602.92	0.23	0.33	0.23	I

B-D Stream From Left Hand Lane

I Intercept For I STREAM B-D C-B I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B	Slope STREAM
--	----------------------------------	----------------------------------	----------------------------------	-----------------

I 544.46 0.25 0.25 0.10
0.36 I

I Intercept For I STREAM B-D C-B I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope STREAM
--	----------------------------------	----------------------------------	-----------------

I 0.16 0.16
I

B-D Stream From Right Hand Lane

I Intercept For I STREAM B-D C-B I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B	Slope STREAM
--	----------------------------------	----------------------------------	----------------------------------	-----------------

I 544.46 0.25 0.25 0.10
0.36 I

I Intercept For I STREAM D-B A-D I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	Slope STREAM
--	----------------------------------	----------------------------------	----------------------------------	-----------------

I 0.16 0.16
I

D-B Stream From Left Hand Lane

I Intercept For I STREAM D-B A-D I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	Slope STREAM
--	----------------------------------	----------------------------------	----------------------------------	-----------------

I 544.46 0.25 0.25 0.10
0.36 I

I Intercept For I STREAM D-B A-D I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope STREAM
--	----------------------------------	----------------------------------	-----------------

I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope
For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D STREAM
A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing Slope
For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: J8 2034 REF AM - Yau Pok Road / REC North Access

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN) I

I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK I
I I I I I I I I I I

I ARM A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00 I
I ARM B I 15.00 I 45.00 I 75.00 I 0.63 I 0.94 I 0.63 I
I ARM C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00 I
I ARM D I 15.00 I 45.00 I 75.00 I 0.50 I 0.75 I 0.50 I

.Demand set: J8 2034 REF AM - Yau Pok Road / REC North Access

I I TURNING PROPORTIONS I
I I TURNING COUNTS I
I I (PERCENTAGE OF H.V.S) I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I

I 08.00 - 09.30 I I I I I I I
I I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM B I 0.400 I 0.000 I 0.000 I 0.600 I
I I 20.0 I 0.0 I 0.0 I 30.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM C I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM D I 0.000 I 1.000 I 0.000 I 0.000 I
I I 0.0 I 40.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET J8 2034 REF AM - Yau Pok Road / REC North

Access

AND FOR TIME PERIOD 1

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
(VEH.MIN/ PER ARRIVING I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)
I
TIME SEGMENT) VEHICLE (MIN) I
I 08.00-08.15 I

I	B-ACD	0.63	9.02	0.070		0.00	0.07	1.1
I	A-B	0.00	I					
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.50	9.07	0.055		0.00	0.06	0.8
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					
I	C-A	0.00	I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.15-08.30							
I	B-ACD	0.75	9.01	0.083		0.07	0.09	1.3
I	A-B	0.00	I					
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.07	0.066		0.06	0.07	1.0
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					
I	C-A	0.00	I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.30-08.45							
I	B-ACD	0.92	9.00	0.102		0.09	0.11	1.7
I	A-B	0.00	I					
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.73	9.07	0.081		0.07	0.09	1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					
I	C-A	0.00	I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.45-09.00							
I	B-ACD	0.92	9.00	0.102		0.11	0.11	1.7
I	A-B	0.00	I					
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.73	9.07	0.081		0.09	0.09	1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					

I	C-A	0.00	I					
I			I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN/	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
I	PER ARRIVING	I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	09.00-09.15		I					
I	B-ACD	0.75	9.01	0.083		0.11	0.09	1.4
I	A-B	0.00	I					
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.07	0.066		0.09	0.07	1.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					
I	C-A	0.00	I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN/	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
I	PER ARRIVING	I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	09.15-09.30		I					
I	B-ACD	0.63	9.02	0.070		0.09	0.08	1.2
I	A-B	0.00	I					
I			I					

I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.50	9.07	0.055		0.07	0.06	0.9
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	I					
I	C-A	0.00	I					
I			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	
09.30	0.1	
.		
QUEUE FOR STREAM		A-D

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	

QUEUE FOR STREAM		D-ABC

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	
09.15	0.1	
09.30	0.1	

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(MIN)	I	(MIN/VEH)	I
I	I	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	B-ACD	I	68.8	I	45.9	I	8.3	I
I	A-B	I	0.0	I	0.0	I	0.12	I
I	A-C	I	0.0	I	0.0	I	0.12	I
I	A-D	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	55.1	I	36.7	I	0.00	I
I	C-ABD	I	0.0	I	0.0	I	0.12	I
I	C-D	I	0.0	I	0.0	I	0.00	I
I	C-A	I	0.0	I	0.0	I	0.00	I

I	ALL	I	123.9	I	82.6	I	14.8	I	0.12	I
---	-----	---	-------	---	------	---	------	---	------	---

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	688.22		0.27		0.11	I

STREAM D-A

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM D-A	STREAM	C-A	STREAM	C-D	I
I	688.22		0.27		0.11	I

STREAM B-A

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope
I	For OpposingI	STREAM	A-C	STREAM	A-D	STREAM	D-A	STREAM
I	STREAM B-A	D-B	I	I	I	I	I	I
I	544.46		0.25		0.25		0.25	I
0.25	I							I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope
I	For OpposingI	STREAM	A-B	STREAM	C-A	STREAM	C-B	STREAM
I	D-C	I	I	I	I	I	I	I
I			0.10		0.16		0.36	I
0.13	I							I

STREAM D-C

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope
I	For OpposingI	STREAM	C-A	STREAM	C-B	STREAM	B-C	STREAM
I	STREAM D-C	B-D	I	I	I	I	I	I

I	544.46	0.25	0.25	0.25
0.25	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope
For OpposingI	STREAM C-D	STREAM A-C	STREAM A-D	STREAM
I	I			
I	0.10	0.16	0.36	
0.13	I			

STREAM		C-B							
I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM C-B	STREAM A-B	A-B	STREAM	A-C	STREAM A-D	A-D	I	
I	602.92		0.23		0.23		0.33	I	

STREAM A-D					
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For OpposingI	
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D	I
I	602.92	0.23	0.33	0.23	I

B-D Stream From Left Hand Lane

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope
For OpposingI	I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B	STREAM
C-B	I				

I	544.46	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope
For OpposingI	STREAM C-A	STREAM C-D		
I	I	0.16	0.16	

B-D Stream From Right Hand Lane

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope
For OpposingI	I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B	STREAM
C-B	I				

I	544.46	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope
For OpposingI	STREAM C-A	STREAM C-D		
I	I	0.16	0.16	

D-B Stream From Left Hand Lane

I Intercept For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope
I STREAM D-B A-D	I STREAM C-A	I STREAM C-B	I STREAM C-D	I STREAM

I 544.46	0.25	0.25	0.10
0.36 I			

I For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope
I	I STREAM A-C	I STREAM A-B		

I	0.16	0.16
I		

D-B Stream From Right Hand Lane

I Intercept For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope
I STREAM B-D A-D	I STREAM C-A	I STREAM C-B	I STREAM C-D	I STREAM

I 544.46	0.25	0.25	0.10
0.36 I			

I For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope For OpposingI	Slope
I	I STREAM A-C	I STREAM A-B		

I	0.16	0.16
I		

.TRAFFIC DEMAND DATA

I ARM	I FLOW	I SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

.Demand set: J8 2034 REF PM - Yau Pok Road / REC North Access

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I ARM	I NUMBER OF MINUTES FROM START WHEN I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I RATE OF FLOW (VEH/MIN)	I
I	I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK	I	I
I ARM A	I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00	I	I
I ARM B	I 15.00 I 45.00 I 75.00 I 0.75 I 1.13 I 0.75	I	I
I ARM C	I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00	I	I
I ARM D	I 15.00 I 45.00 I 75.00 I 0.50 I 0.75 I 0.50	I	I

.Demand set: J8 2034 REF PM - Yau Pok Road / REC North Access

I	I TURNING PROPORTIONS	I
I	I TURNING COUNTS	I
I	I (PERCENTAGE OF H.V.S)	I
I		
I	I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I	

I	08.00 - 09.30	I	I	I	I	I	I	I
I		I ARM A	I	0.000	I	0.000	I	0.000
I		I	I	0.0	I	0.0	I	0.0
I		I	I	(0.0)	I	(0.0)	I	(0.0)
I		I	I	I	I	I	I	I
I		I ARM B	I	0.333	I	0.000	I	0.667
I		I	I	20.0	I	0.0	I	40.0
I		I	I	(0.0)	I	(0.0)	I	(0.0)
I		I	I	I	I	I	I	I
I		I ARM C	I	0.000	I	0.000	I	0.000
I		I	I	0.0	I	0.0	I	0.0
I		I	I	(0.0)	I	(0.0)	I	(0.0)
I		I	I	I	I	I	I	I
I		I ARM D	I	0.000	I	1.000	I	0.000
I		I	I	0.0	I	40.0	I	0.0
I		I	I	(0.0)	I	(0.0)	I	(0.0)
I		I	I	I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET J8 2034 REF PM - Yau Pok Road / REC North

Access

AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.00-08.15							
I	B-ACD	0.75	9.03	0.083		0.00	0.09	1.3
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.50	9.07	0.055		0.00	0.06	0.8
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								

I								
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.15-08.30							
I	B-ACD	0.90	9.02	0.100		0.09	0.11	1.6
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.07	0.066		0.06	0.07	1.0
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								
I								
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.30-08.45							
I	B-ACD	1.10	9.01	0.122		0.11	0.14	2.0
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I								

I	D-ABC	0.73	9.07	0.081		0.07	0.09	1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	08.45-09.00	VEHICLE (MIN)	I					

I	B-ACD	1.10	9.01	0.122		0.14	0.14	2.1
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.73	9.07	0.081		0.09	0.09	1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.00-09.15	VEHICLE (MIN)	I					

I	B-ACD	0.90	9.02	0.100		0.14	0.11	1.7
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.07	0.066		0.09	0.07	1.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.15-09.30	VEHICLE (MIN)	I					

I	B-ACD	0.75	9.03	0.083		0.11	0.09	1.4
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.50	9.07	0.055		0.07	0.06	0.9
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
---	--------	---	--------------	---	--------------	---	------------------------	---

I	I	I	* DELAY *	I	* DELAY *	I				
I	I	I	I	I	I	I				
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	82.6	I	55.1	I	10.1	I	0.12	I
I	A-B	I	0.0	I	0.0	I	I	I	I	I
I	A-C	I	0.0	I	0.0	I	I	I	I	I
I	A-D	I	0.0	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	55.1	I	36.7	I	6.5	I	0.12	I
I	C-ABD	I	0.0	I	0.0	I	0.0	I	0.00	I
I	C-D	I	0.0	I	0.0	I	I	I	I	I
I	C-A	I	0.0	I	0.0	I	I	I	I	I
I	ALL	I	137.6	I	91.8	I	16.6	I	0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

***** PICADY 5 run completed.

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:- "C:\Users\Sam.Wong\Downloads\J9\REF\J9_2034 AM REF.vpi"
(drive-on-the-left) at 14:18:48 on Friday, 13 September 2024

.RUN INFORMATION

RUN TITLE : J9 - Yau Pok Road / REC South Access
LOCATION : Fairview
DATE : 09/02/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I

I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC South

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0) I
I NO (0) I
I I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B
I	688.22	0.27	0.11

STREAM D-A

I	Intercept For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D
I	688.22	0.27	0.11

STREAM B-A

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D
I	688.22	0.27	0.11

I	544.46	0.25	0.25	0.25
0.25	I			

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A
I	688.22	0.27	0.11

I	0.13	0.10	0.16	0.36
0.13	I			

STREAM D-C

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B
I	544.46	0.25	0.25

I	544.46	0.25	0.25	0.25
0.25	I			

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C
I	688.22	0.27	0.11

I	0.13	0.10	0.16	0.36
0.13	I			

STREAM C-B

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C
I	602.92	0.23	0.23

STREAM A-D

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B
I	602.92	0.23	0.33

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D
I 0.16 0.16
I

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D
I 0.16 0.16
I

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B
I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I Slope For Opposing Slope For Opposing Slope For Opposing

I	C-A	0.00						
I			I					
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	08.15-08.30							
I			I					
I	B-ACD	0.45	9.02	0.050		0.04	0.05	0.8
I			I					
I	A-B	0.00						
I			I					
I	A-C	0.00						
I			I					
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I			I					
I	D-ABC	0.60	9.04	0.066		0.06	0.07	1.0
I			I					
I	C-ABD	0.15	10.05	0.015		0.01	0.02	0.2
I			I					
I	C-D	0.00						
I			I					
I	C-A	0.00						
I			I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	08.30-08.45							
I			I					
I	B-ACD	0.55	9.01	0.061		0.05	0.06	0.9
I			I					
I	A-B	0.00						
I			I					
I	A-C	0.00						
I			I					
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I			I					

I	D-ABC	0.73	9.03	0.081		0.07	0.09	1.3
I			I					
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I			I					
I	C-D	0.00						
I			I					
I	C-A	0.00						
I			I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	08.45-09.00							
I			I					
I	B-ACD	0.55	9.01	0.061		0.06	0.06	1.0
I			I					
I	A-B	0.00						
I			I					
I	A-C	0.00						
I			I					
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I			I					
I	D-ABC	0.73	9.03	0.081		0.09	0.09	1.3
I			I					
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I			I					
I	C-D	0.00						
I			I					
I	C-A	0.00						
I			I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	09.00-09.15							
I			I					
I	B-ACD	0.45	9.02	0.050		0.06	0.05	0.8
I			I					

I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.04	0.066		0.09	0.07	1.1
I	C-ABD	0.15	10.05	0.015		0.02	0.02	0.2
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	DEMAND AVERAGE DELAY (VEH/MIN) VEHICLE (MIN)	CAPACITY AVERAGE DELAY (VEH/MIN) I	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
I	09.15-09.30							
I	B-ACD	0.38	9.03	0.042		0.05	0.04	0.7
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
I	D-ABC	0.50	9.04	0.056		0.07	0.06	0.9
I	C-ABD	0.13	10.05	0.012		0.02	0.01	0.2
I	C-D	0.00						
I	C-A	0.00						
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	

08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(MIN)	I	(MIN)	I
I	I	I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-ACD	I	41.3	I	27.5	I	4.8	I
I	A-B	I	0.0	I	0.0	I		I
I	A-C	I	0.0	I	0.0	I		I
I	A-D	I	0.0	I	0.0	I	0.0	I
I	D-ABC	I	55.1	I	36.7	I	6.5	I

I	C-ABD	I	13.8	I	9.2	I	1.4	I	0.10	I	1.4	I	0.10	I
I	C-D	I	0.0	I	0.0	I		I		I		I		I
I	C-A	I	0.0	I	0.0	I		I		I		I		I

I	ALL	I	110.1	I	73.4	I	12.7	I	0.12	I	12.7	I	0.12	I
---	-----	---	-------	---	------	---	------	---	------	---	------	---	------	---

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25

I	544.46	0.25	0.25	0.25
0.25	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.16	0.36

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25

I	544.46	0.25	0.25	0.25
0.25	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.10	0.16	0.36

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM C-B

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23	0.33

STREAM A-D

I	Intercept	Slope For Opposing I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I	602.92		0.23	0.33	0.23	I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C
STREAM C-B I

I	544.46		0.25	0.25	0.10
0.36	I				

I Slope For Opposing
Slope For OpposingI
I STREAM C-A

I		0.16	0.16
I			

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C
STREAM C-B I

I	544.46		0.25	0.25	0.10
---	--------	--	------	------	------

0.36 I

I Slope For Opposing
Slope For OpposingI
I STREAM C-A

I		0.16	0.16
I			

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A
STREAM A-D I

I	544.46		0.25	0.25	0.10
0.36	I				

I Slope For Opposing
Slope For OpposingI
I STREAM A-C

I		0.16	0.16
I			

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: J9 REF PM - Yau Pok Road / REC South Access

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK

I
I I I I I I I
I

I ARM A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM B I 15.00 I 45.00 I 75.00 I 0.50 I 0.75 I 0.50
I
I ARM C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM D I 15.00 I 45.00 I 75.00 I 0.50 I 0.75 I 0.50
I

.Demand set: J9 REF PM - Yau Pok Road / REC South Access

I TURNING PROPORTIONS I
I TURNING COUNTS I
I (PERCENTAGE OF H.V.S) I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I
I 08.00 - 09.30 I
I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM B I 0.000 I 0.000 I 0.000 I 1.000 I
I I 0.0 I 0.0 I 0.0 I 40.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM C I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM D I 0.000 I 1.000 I 0.000 I 0.000 I
I I 0.0 I 40.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET J9 REF PM - Yau Pok Road / REC South Access
AND FOR TIME PERIOD 1

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
(VEH.MIN/ PER ARRIVING I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)
I
TIME SEGMENT) VEHICLE (MIN) I

I	08.00-08.15							
I	B-ACD	0.50	9.07	0.055	0.00	0.06	0.8	
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0	
I	D-ABC	0.50	9.07	0.055	0.00	0.06	0.8	
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0	
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/	
I	(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.15-08.30							
I	B-ACD	0.60	9.07	0.066	0.06	0.07	1.0	
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0	
I	D-ABC	0.60	9.07	0.066	0.06	0.07	1.0	
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0	
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/	
I	(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.30-08.45							
I	B-ACD	0.73	9.07	0.081	0.07	0.09	1.3	
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0	
I	D-ABC	0.73	9.07	0.081	0.07	0.09	1.3	
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0	
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/	
I	(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.45-09.00							
I	B-ACD	0.73	9.07	0.081	0.09	0.09	1.3	
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0	
I	D-ABC	0.73	9.07	0.081	0.09	0.09	1.3	
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0	
I	C-D	0.00						
I	C-A	0.00						
I								

I								

.								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.00-09.15							
I	B-ACD	0.60	9.07	0.066		0.09	0.07	1.1
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.07	0.066		0.09	0.07	1.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								
I								

I	C-D	0.00	I
I	C-A	0.00	I
I			I
			I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR			
.			
QUEUE FOR STREAM B-ACD			

TIME	NO. OF		
SEGMENT	VEHICLES		
ENDING	IN QUEUE		
08.15	0.1		
08.30	0.1		
08.45	0.1		
09.00	0.1		
09.15	0.1		
09.30	0.1		
.			
QUEUE FOR STREAM A-D			

TIME	NO. OF		
SEGMENT	VEHICLES		
ENDING	IN QUEUE		
08.15	0.0		
08.30	0.0		
08.45	0.0		
09.00	0.0		
09.15	0.0		
09.30	0.0		
.			
QUEUE FOR STREAM D-ABC			

TIME	NO. OF		
SEGMENT	VEHICLES		
ENDING	IN QUEUE		
08.15	0.1		
08.30	0.1		
08.45	0.1		
09.00	0.1		
09.15	0.1		
09.30	0.1		
.			
QUEUE FOR STREAM C-ABD			

TIME	NO. OF		
SEGMENT	VEHICLES		
ENDING	IN QUEUE		
08.15	0.0		
08.30	0.0		
08.45	0.0		
09.00	0.0		

09.15 0.0
09.30 0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		
I	I	I	I	I	* DELAY *	I	* DELAY *	I		
I	I	I	I	I	I	I	I	I		
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	55.1	I	36.7	I	6.5	I	0.12	I
I	A-B	I	0.0	I	0.0	I	I	I	I	I
I	A-C	I	0.0	I	0.0	I	I	I	I	I
I	A-D	I	0.0	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	55.1	I	36.7	I	6.5	I	0.12	I
I	C-ABD	I	0.0	I	0.0	I	0.0	I	0.00	I
I	C-D	I	0.0	I	0.0	I	I	I	I	I
I	C-A	I	0.0	I	0.0	I	I	I	I	I
I	ALL	I	110.1	I	73.4	I	12.9	I	0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

***** PICADY 5 run completed.

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

2034 AM Reference Flows

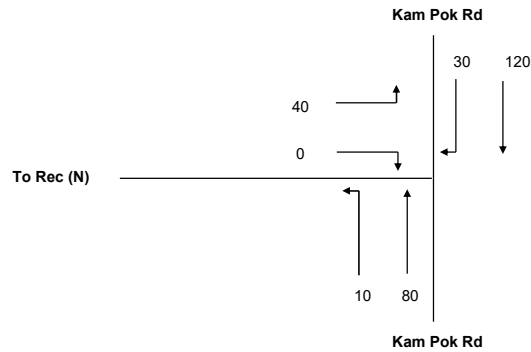
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JOB NO: 60XXXXXX

DATE: Sep 24

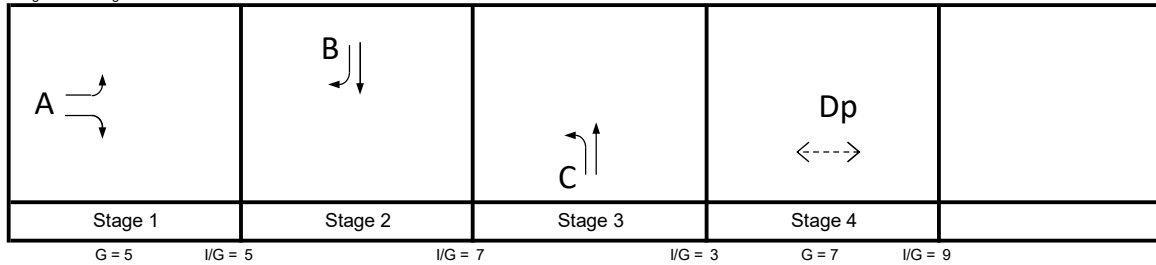
Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.125
Lost time	L =	34 sec
Total Flow	=	280 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	64 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	39 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.645
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	414.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	40 sec
Y_{max}	$= 1 - L / C =$	0.433

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 211\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		0	40	100%	0%	1627	0.025	
↙	B	2	3.600	1		10	0	1		0		1975		120	30	150		20%	1917	0.078	0.078
↘	C	3	3.600	1	5			1		0		1975	10	80		90	11%		1911	0.047	0.047
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

2034 PM Reference Flows

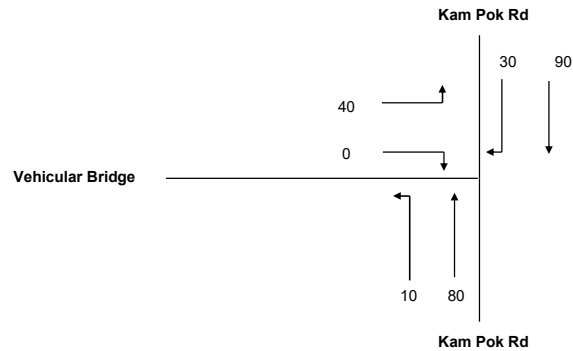
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JOB NO: 60XXXXXX

DATE: Sep 24

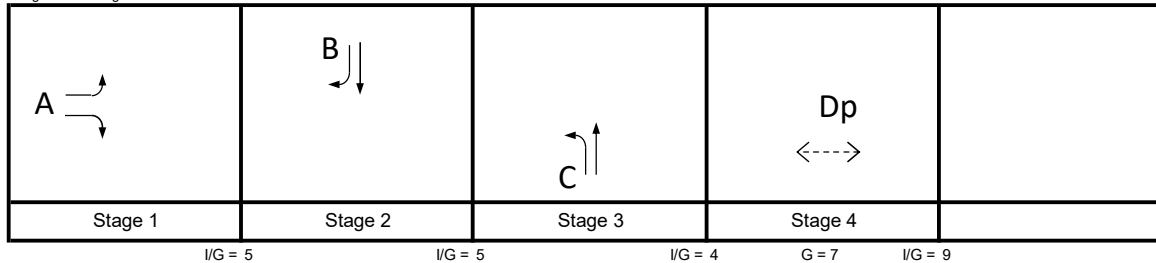
Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.135
Lost time	L =	27 sec
Total Flow	=	250 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	53 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	31 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.698
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	417.8 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	32 sec
Y_{max}	$= 1 - L / C =$	0.550

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 267\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		0	40	100%	0%	1627	0.025	0.025
↘	B	2	3.600	1		10	0	1		0		1975		90	30	120		25%	1904	0.063	0.063
↗	C	3	3.600	1	5			1		0		1975	10	80		90	11%		1911	0.047	0.047
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge

2034 AM Reference Traffic Flows

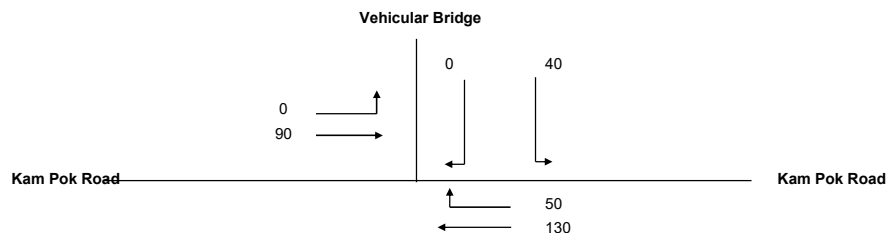
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DATE: Oct 24

Traffic Flow Diagram
(pcu/hr)

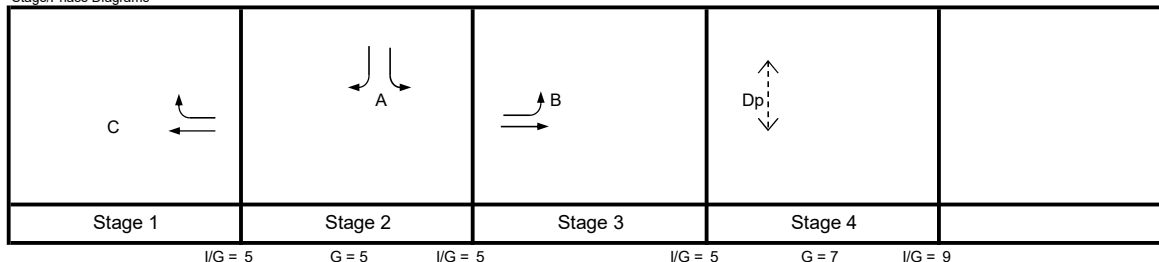


No. of stages per cycle N = 4
Cycle time C = 60 sec
Sum(y) Y = 0.138
Lost time L = 34 sec
Total Flow = 310 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 65$ sec
Min. Cycle Time $C_m = L / (1 - Y) = 39$ sec
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.645$
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 367.8\%$
Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 40$ sec
 $Y_{max} = 1 - L / C = 0.433$

J11

Stage/Phase Diagrams



Critical Case : C,A,B,Dp

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 183\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
Left Turn	C	1	3.650	1		25	0	1		0		1980		130	50	180		28%	1948	0.092	0.092
Through/Right Turn	B	3	3.650	1	20			1		0		1980	0	90		90	0%		1980	0.045	0.045
Through/Right Turn	A	2	3.650	1	20	25	0	1		0		1980	40		0	40	100%	0%	1842	0.022	
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge

2034 PM Reference Traffic Flows

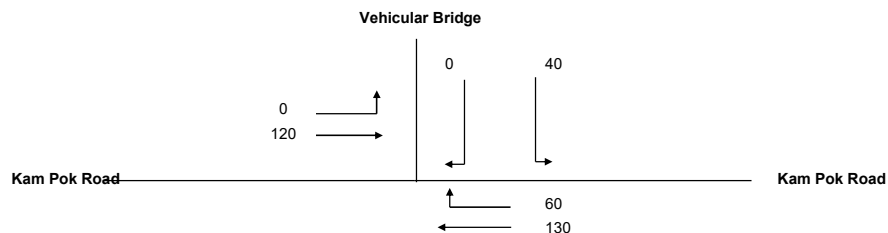
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DATE: Oct 24

Traffic Flow Diagram
(pcu/hr)

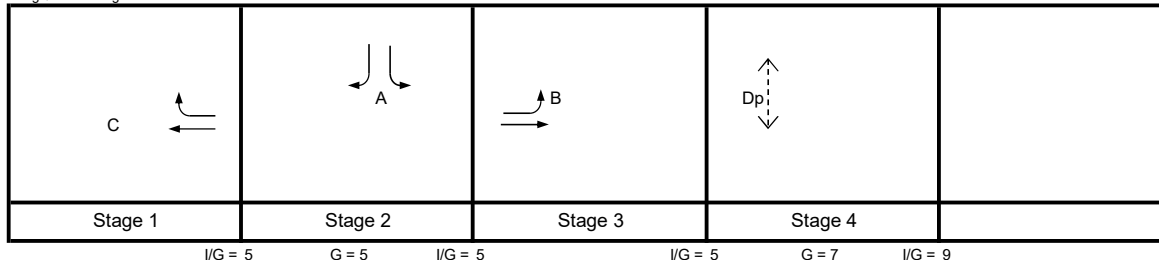


No. of stages per cycle N = 4
Cycle time C = 60 sec
Sum(y) Y = 0.158
Lost time L = 34 sec
Total Flow = 350 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 67$ sec
Min. Cycle Time $C_m = L / (1 - Y) = 40$ sec
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.645$
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 307.2\%$
Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 41$ sec
 $Y_{max} = 1 - L / C = 0.433$

J11

Stage/Phase Diagrams



Critical Case : C,A,B,Dp

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 146\%$

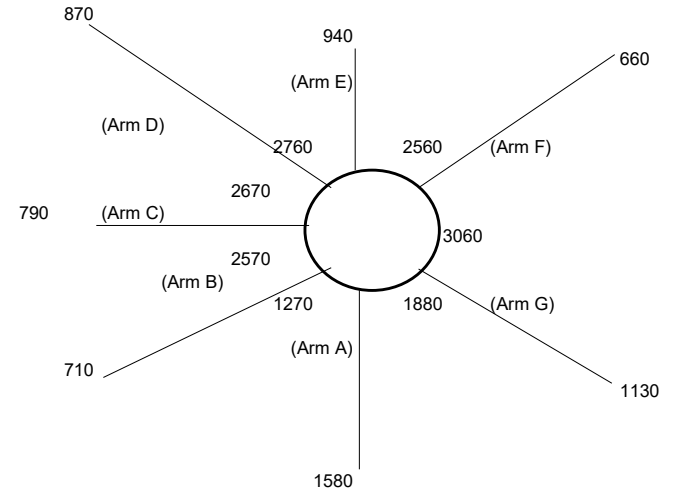
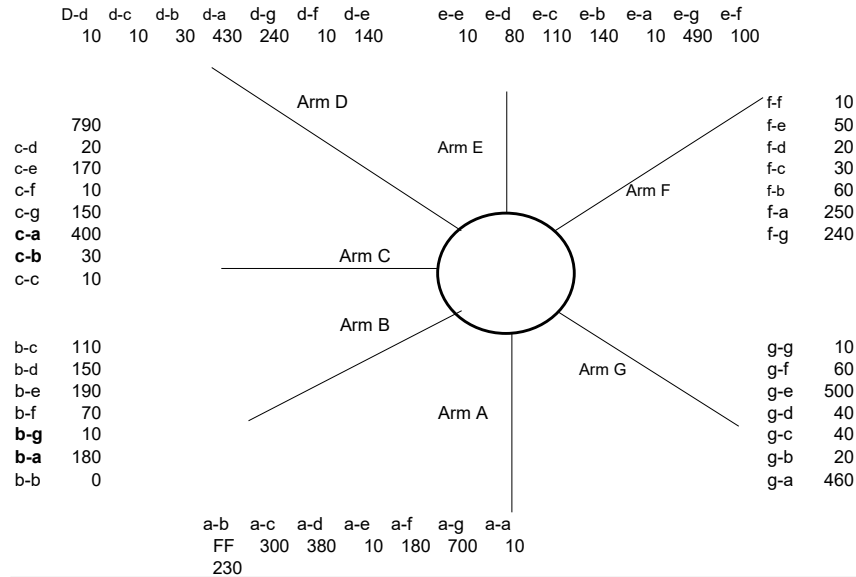
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	C	1	3.650	1		25	0	1		0		1980		130	60	190		32%	1943	0.098	0.098
	B	3	3.650	1	20			1		0		1980	0	120		120	0%		1980	0.061	0.061
	A	2	3.650	1	20	25	0	1		0		1980	40		0	40	100%	0%	1842	0.022	
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

Design Flow

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 AM Design Flows	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Sep 2024



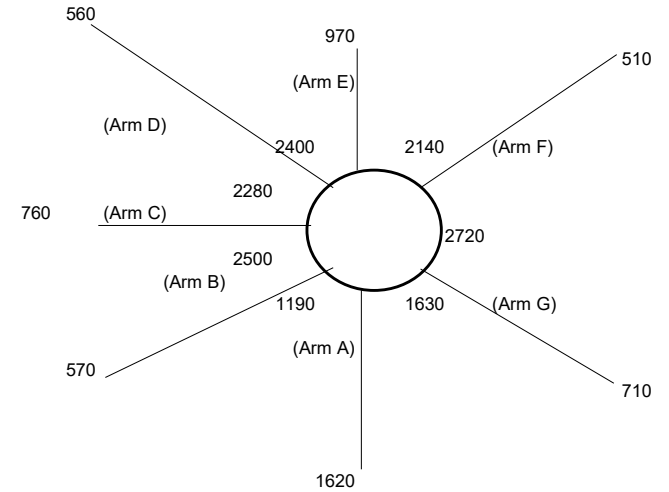
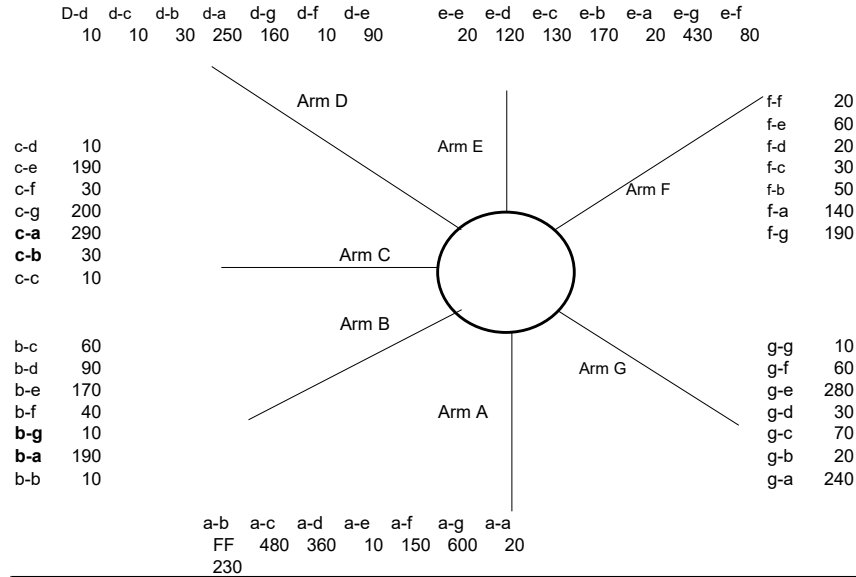
ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	5.00	7.00	5.50	6.30	5.90	6.75
E = Entry width (m)	8.00	8.00	10.00	10.00	10.00	8.50	8.50
L = Effective length of flare (m)	10.00	25.00	10.00	16.00	30.00	10.00	20.00
R = Entry radius (m)	20.00	22.00	22.00	20.00	23.00	20.00	20.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	65.00	30.00	40.00	45.00	30.00	60.00	35.00
Q = Entry flow (pcu/h)	1580	710	790	870	940	660	1130
Qc= Circulating flow across entry (pcu/h)	1270	2570	2670	2760	2560	3060	1880
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.32	0.19	0.48	0.45	0.20	0.42	0.14
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.88	1.00	0.97	0.95	1.01	0.90	0.98
X2= V + ((E-V)/(1+2S))	7.22	7.17	8.53	7.87	8.95	7.32	8.12
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2188	2172	2585	2384	2713	2218	2460
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.51	0.51	0.57	0.54	0.59	0.52	0.55
Qe= K(F-Fc*Qc)	1349	862	1035	846	1220	568	1399
DFC = Design flow/Capacity = Q/Qe	1.17	0.82	0.76	1.03	0.77	1.16	0.81

TOTAL ENTRY FLOWS = 6680 PCU
CRITICAL DFC = 1.17

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 PM Design Flows	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Sep 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	5.00	7.00	5.50	6.30	5.90	6.75
E = Entry width (m)	8.00	8.00	10.00	10.00	10.00	8.50	8.50
L = Effective length of flare (m)	10.00	25.00	10.00	16.00	30.00	10.00	20.00
R = Entry radius (m)	20.00	22.00	22.00	20.00	23.00	20.00	20.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	65.00	30.00	40.00	45.00	30.00	60.00	35.00
Q = Entry flow (pcu/h)	1620	570	760	560	970	510	710
Qc= Circulating flow across entry (pcu/h)	1190	2500	2280	2400	2140	2720	1630
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.32	0.19	0.48	0.45	0.20	0.42	0.14
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.88	1.00	0.97	0.95	1.01	0.90	0.98
X2= V + ((E-V)/(1+2S))	7.22	7.17	8.53	7.87	8.95	7.32	8.12
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2188	2172	2585	2384	2713	2218	2460
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.51	0.51	0.57	0.54	0.59	0.52	0.55
Qe= K(F-Fc*Qc)	1385	898	1250	1030	1468	726	1534
DFC = Design flow/Capacity = Q/Qe	1.17	0.63	0.61	0.54	0.66	0.70	0.46

TOTAL ENTRY FLOWS = 5700 PCU
CRITICAL DFC = 1.17

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

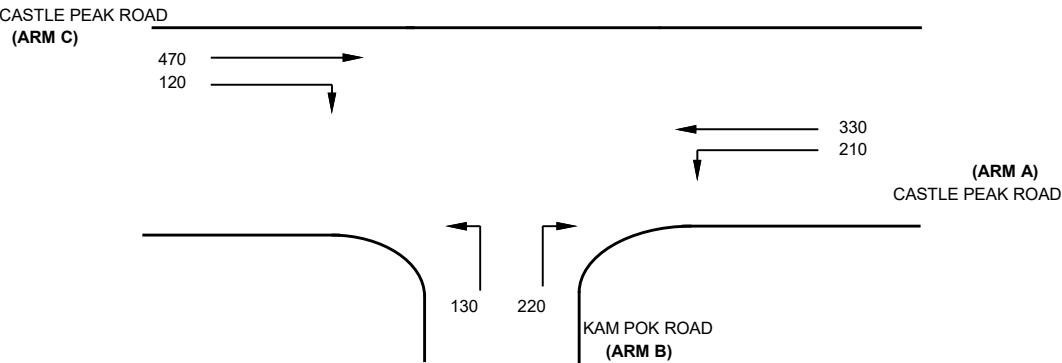
2034 AM Design Flows

Designed By :

Checked By :

Job No. :

Date : Dec 21



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)

W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)

W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)

W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)

W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)

VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)

Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)

Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)

Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A

E = Stream-specific B-C

F = Stream-specific C-B

Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)

W cr = 0 (metres)

q a-b = 210 (pcu/hr)

q a-c = 330 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)

Vr c-b = 30 (metres)

q c-a = 470 (pcu/hr)

q c-b = 120 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)

W b-c = 4.07 (metres)

VI b-a = 100 (metres)

Vr b-a = 100 (metres)

Vr b-c = 80 (metres)

q b-a = 220 (pcu/hr)

q b-c = 130 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146

E = 1.002059

F = 0.780782

Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 383

Q b-c = 634

Q c-b = 467

Q b-ac = 449

CRITICAL DFC = 0.78

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.57

DFC b-c = 0.21

DFC c-b = 0.26

DFC b-ac = 0.78

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

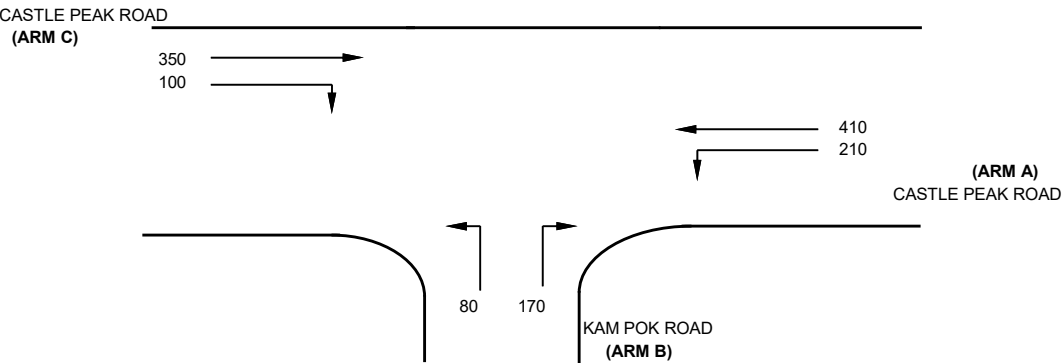
2034 PM Design Flows

Designed By :

Checked By :

Job No. :

Date : Dec 21



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)

W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)

W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)

W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)

W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)

VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)

Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)

Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)

Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A

E = Stream-specific B-C

F = Stream-specific C-B

Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)

W cr = 0 (metres)

q a-b = 210 (pcu/hr)

q a-c = 410 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)

Vr c-b = 30 (metres)

q c-a = 350 (pcu/hr)

q c-b = 100 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)

W b-c = 4.07 (metres)

VI b-a = 100 (metres)

Vr b-a = 100 (metres)

Vr b-c = 80 (metres)

q b-a = 170 (pcu/hr)

q b-c = 80 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146

E = 1.002059

F = 0.780782

Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 390

Q b-c = 612

Q c-b = 450

Q b-ac = 441

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.44

DFC b-c = 0.13

DFC c-b = 0.22

DFC b-ac = 0.57

CRITICAL DFC = 0.57

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

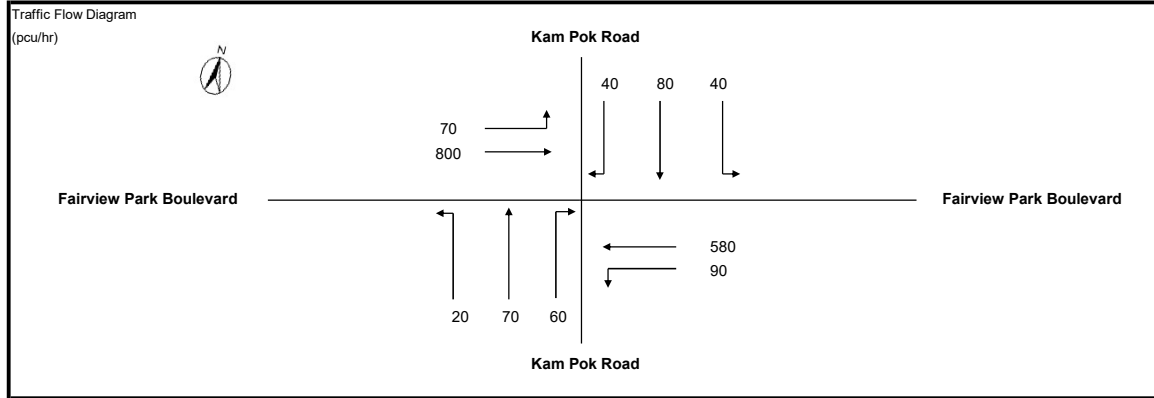
2034 AM Design Traffic Flows

DESIGN: 0

CHECK: 0

JOB NO: -

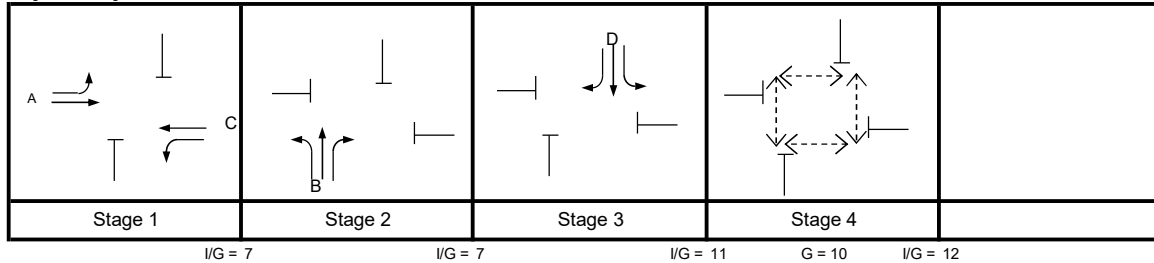
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.385
Lost time	L =	44 sec
Total Flow	=	11,840 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	115 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	71 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	48.2 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	77 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : A,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 48\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.100	1	15			1		0		1925	70	360		430	16%		1894	0.227	
	A	1	3.200	1				1		0		1935		440		440			1935	0.227	0.227
	B	2	3.600	1	13	20	0	1		0		1975	20	70	60	150	13%	40%	1889	0.079	0.079
	C	1	3.000	1	17			1		0		1915	90	238		328	27%		1870	0.176	
	C	1	3.300	1				1		0		1945		342		342			1945	0.176	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	40	80	40	160	25%	25%	2051	0.078	0.078
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

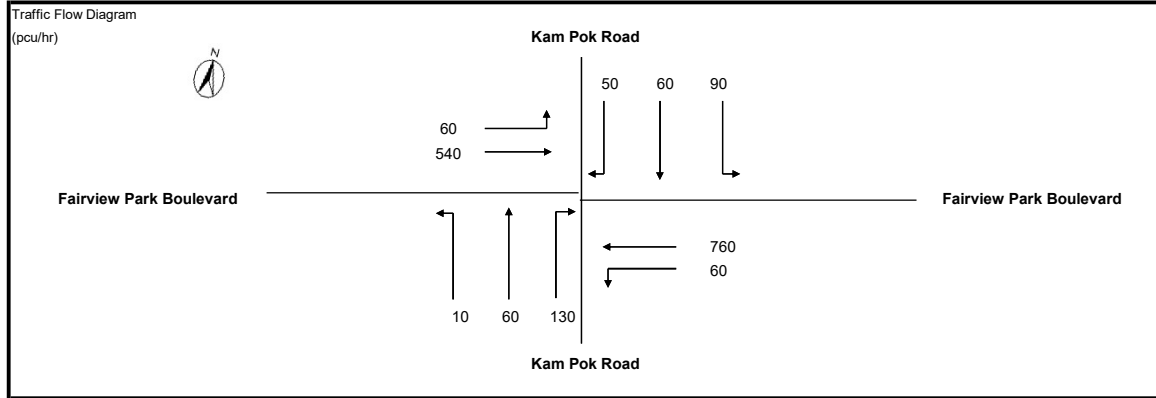
2034 PM Design Traffic Flows

DESIGN: 0

CHECK: 0

JOB NO: -

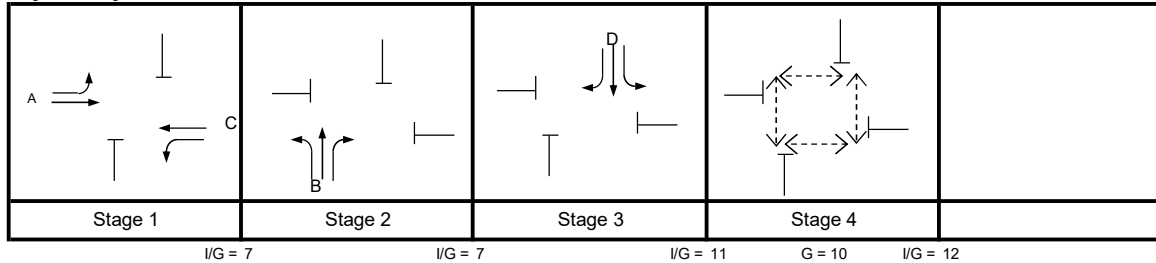
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.420
Lost time	L =	44 sec
Total Flow	=	11,840 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	122 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	76 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	35.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	82 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : B,C,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 36\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.100	1	15			1		0		1925	60	236		296	20%		1887	0.157	0.107
	A	1	3.200	1				1		0		1935		304		304			1935	0.157	
	B	2	3.600	1	13	20	0	1		0		1975	10	60	130	200	5%	65%	1873	0.107	
	C	1	3.000	1	17			1		0		1915	60	344		404	15%		1890	0.214	0.214
	C	1	3.300	1				1		0		1945		416		416			1945	0.214	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	90	60	50	200	45%	25%	2014	0.099	
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

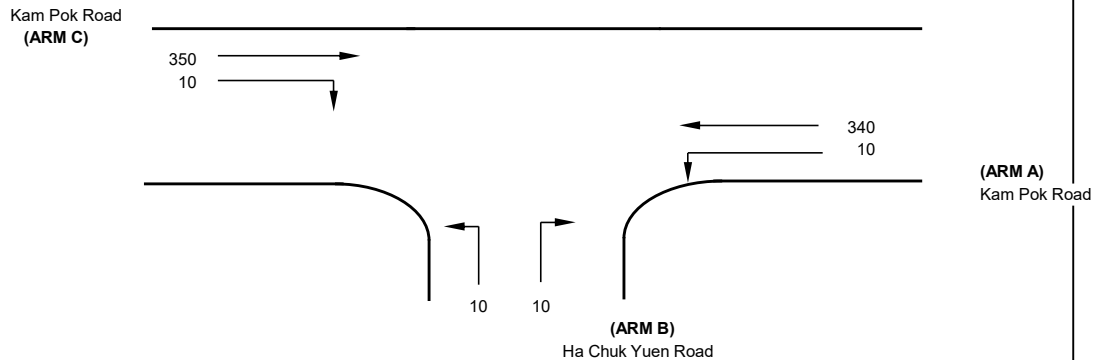
2034 AM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 340 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 350 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 362
Q b-c = 525
Q c-b = 608
Q b-ac = 429

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

CRITICAL DFC = 0.05

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

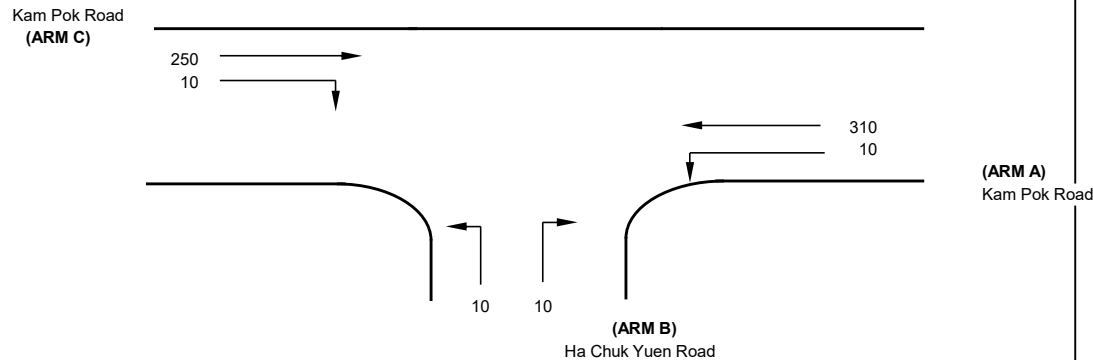
2034 PM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Sep 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 310 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 250 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 379
Q b-c = 531
Q c-b = 615
Q b-ac = 443

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

CRITICAL DFC = 0.05

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-
"T:\Anthony Sun\20240920 Picidy\Junction 5_Picaddy\2034 REF DES SEN\0920 Des RD\RD
Des.vpi"
(drive-on-the-left) at 12:36:19 on Friday, 20 September 2024

.RUN INFORMATION

RUN TITLE : 2034 - J5 Kam Pok Road/ Pok Wai South Road
LOCATION :
DATE : 13/12/21
CLIENT :
ENUMERATOR : nokhinnaomi.tam [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Kam Pok Road
ARM B IS Pok Wai South Road
ARM C IS Kam Pok Road West
ARM D IS Kam Pok Road

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 8.80 M.
I (W) 8.80 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0) I
I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 2.20 M.
I (WD-A) 5.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B
I	602.92	0.21	0.08

STREAM D-A

I	Intercept For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D
I	786.65	0.27	0.11

STREAM B-A

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D
I	476.98	0.19	0.19

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-B	STREAM A-C	STREAM A-D
I	0.19	0.19	0.19

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A
I	0.10	0.08	0.12

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-B
I	0.10	0.08	0.28

STREAM D-C

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B
I	622.33	0.25	0.25

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B
I	0.25	0.25	0.25

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C
I	0.13	0.10	0.16

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C
I	0.13	0.10	0.36

STREAM C-B

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C
I	602.92	0.21	0.21

STREAM A-D

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B
I	602.92	0.21	0.29

B-D Stream From Left Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B
I	602.92	0.21	0.29

I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			
I	476.98	0.19	0.19	0.08
0.28	I			
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM C-A	STREAM C-D		
I				
I	I	0.12	0.12	
B-D Stream From Right Hand Lane				
I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			
I	476.98	0.19	0.19	0.08
0.28	I			
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM C-A	STREAM C-D		
I				
I	I	0.12	0.12	

D-B Stream From Left Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			
I	622.33	0.25	0.25	0.10
0.36	I			
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM A-C	STREAM A-B		
I				
I	I	0.16	0.16	
D-B Stream From Right Hand Lane				
I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			
I	622.33	0.25	0.25	0.10
0.36	I			
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM A-C	STREAM A-B		
I				

,TRAFFIC DEMAND DATA

Demand set: 0920 Des Rd AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

. DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	A	I	15.00	I	45.00	I	75.00	I	3.75	I	5.63	I	3.75
I	ARM	B	I	15.00	I	45.00	I	75.00	I	0.88	I	1.31	I	0.88
I	ARM	C	I	15.00	I	45.00	I	75.00	I	2.75	I	4.13	I	2.75
I	ARM	D	I	15.00	I	45.00	I	75.00	I	2.38	I	3.56	I	2.38

.Demand set: 0920 Des Rd AM

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 0920 Des Rd AM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME	SEGMENT)	VEHICLE (MIN)	I					
I	08.00-08.15							
I	B-ACD	0.88	6.35	0.138		0.00	0.16	2.3
		0.18	I					
I	A-B	0.13						
			I					
I	A-C	2.76						
			I					
I	A-D	0.88	8.55	0.103		0.00	0.11	1.6
		0.13	I					
I	D-ABC	2.38	8.64	0.276		0.00	0.38	5.4
		0.16	I					
I	C-ABD	0.33	10.02	0.033		0.00	0.04	0.7
		0.10	I					
I	C-D	0.61						
			I					
I	C-A	1.82						
			I					

I	A-D	1.05	8.43	0.124		0.18	0.14	2.2
		0.14	I					
I	D-ABC	2.85	8.37	0.340		0.76	0.52	8.2
		0.18	I					
I	C-ABD	0.42	10.20	0.041		0.08	0.06	0.9
		0.10	I					
I	C-D	0.72						
			I					
I	C-A	2.16						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/	
I	(VEH./MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	09.15-09.30							
			I					
I	B-ACD	0.88	6.35	0.138		0.21	0.16	2.5
		0.18	I					
I	A-B	0.13						
			I					
I	A-C	2.76						
			I					
I	A-D	0.88	8.55	0.103		0.14	0.12	1.8
		0.13	I					
I	D-ABC	2.38	8.63	0.276		0.52	0.39	6.0
		0.16	I					
I	C-ABD	0.33	10.02	0.033		0.06	0.05	0.7
		0.10	I					
I	C-D	0.61						
			I					
I	C-A	1.82						
			I					
I								
			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM	B-ACD
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.3
09.00	0.3
09.15	0.2

09.30	0.2
QUEUE FOR STREAM	A-D
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM	D-ABC
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.4
08.30	0.5
08.45	0.8
09.00	0.8
09.15	0.5
09.30	0.4

QUEUE FOR STREAM	C-ABD
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-ACD	I 96.3	I 64.2	I 19.2	I 0.20	I 19.2	I 0.20	I
I	A-B	I 13.8	I 9.2	I	I	I	I	I
I	A-C	I 302.8	I 201.9	I	I	I	I	I
I	A-D	I 96.3	I 64.2	I 13.1	I 0.14	I 13.1	I 0.14	I
I	D-ABC	I 261.5	I 174.3	I 49.1	I 0.19	I 49.1	I 0.19	I
I	C-ABD	I 39.1	I 26.1	I 5.6	I 0.14	I 5.6	I 0.14	I
I	C-D	I 65.9	I 43.9	I	I	I	I	I
I	C-A	I 197.8	I 131.8	I	I	I	I	I
I	ALL	I 1073.6	I 715.7	I 86.9	I 0.08	I 86.9	I 0.08	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For I STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	I
I	602.92	0.21	0.08	I

STREAM D-A

I	Intercept For I STREAM D-A	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	I
I	786.65	0.27	0.11	I

STREAM B-A

I	Intercept For Slope For Opposing I STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM D-A
I	476.98	0.19	0.19	0.19

I	Intercept For Slope For Opposing I STREAM D-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
I	602.92	0.21	0.21	0.29

I	Intercept For Slope For Opposing I STREAM D-C	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM B-C
I	622.33	0.25	0.25	0.25

STREAM D-C

I	Intercept For Slope For Opposing I STREAM D-C	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM B-C
I	622.33	0.25	0.25	0.25

I	Intercept For Slope For Opposing I STREAM B-A	Slope For Opposing STREAM C-D	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D
I	0.13	0.10	0.16	0.36

STREAM C-B

I	Intercept For Slope For Opposing I STREAM C-B	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM A-D

I	Intercept For Slope For Opposing I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D
I	602.92	0.21	0.21	0.29

I	602.92	0.21	0.29	0.21	I
---	--------	------	------	------	---

B-D Stream From Left Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I		STREAM A-B

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I	I	0.12	0.12
---	---	------	------

B-D Stream From Right Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I		STREAM A-B

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			

I	STREAM C-A	STREAM C-D
---	------------	------------

I	I	0.12	0.12
---	---	------	------

D-B Stream From Left Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM D-B	STREAM C-A	STREAM C-B
STREAM A-D	I		STREAM C-D

I	622.33	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	

I	I	0.16	0.16
---	---	------	------

D-B Stream From Right Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM B-D	STREAM C-A	STREAM C-B
STREAM A-D	I		STREAM C-D

I	622.33	0.25	0.25	0.10
0.36	I			

```
-----
-----
-----
I      Slope For Opposing   Slope For Opposing   Slope For Opposing
Slope For OpposingI
I      STREAM  A-C          STREAM A-B
-----
I      I      0.16          0.16
-----
-----
I
-----

.TRAFFIC DEMAND DATA
-----
I ARM I FLOW SCALE(%) I
-----
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I
-----

.Demand set: 0920 Des RD PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA
-----
-----
I      I      NUMBER OF MINUTES FROM START WHEN      I      RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I      I      TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I
I      I      I      I      I      I      I
I
-----
-----
I ARM A I 15.00 I 45.00 I 75.00 I 2.75 I 4.13 I 2.75
I
I ARM B I 15.00 I 45.00 I 75.00 I 0.88 I 1.31 I 0.88
I
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I ARM C I 15.00 I 45.00 I 75.00 I 3.00 I 4.50 I 3.00
I
I ARM D I 15.00 I 45.00 I 75.00 I 1.75 I 2.63 I 1.75
I
-----
-----
.Demand set: 0920 Des RD PM
-----
I      I      TURNING PROPORTIONS      I
I      I      TURNING COUNTS      I
I      I      (PERCENTAGE OF H.V.S)      I
I
I      TIME      I FROM/TO I ARM A I ARM B I ARM C I ARM D I
-----
I 08.00 - 09.30 I I I I I I I I
I I ARM A I 0.000 I 0.045 I 0.636 I 0.318 I
I I I 0.0 I 10.0 I 140.0 I 70.0 I
I I I ( 0.0)I ( 10.0)I ( 10.0)I ( 10.0)I
I I I I I I I I
I I ARM B I 0.143 I 0.000 I 0.143 I 0.714 I
I I I 10.0 I 0.0 I 10.0 I 50.0 I
I I I ( 10.0)I ( 0.0)I ( 10.0)I ( 10.0)I
I I I I I I I I
I I ARM C I 0.625 I 0.042 I 0.000 I 0.333 I
I I I 150.0 I 10.0 I 0.0 I 80.0 I
I I I ( 10.0)I ( 10.0)I ( 0.0)I ( 10.0)I
I I I I I I I I
I I ARM D I 0.429 I 0.357 I 0.214 I 0.000 I
I I I 60.0 I 50.0 I 30.0 I 0.0 I
I I I ( 10.0)I ( 10.0)I ( 10.0)I ( 0.0)I
I I I I I I I I
-----
TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

.      QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
-----
FOR DEMAND SET 0920 Des RD PM
AND FOR TIME PERIOD 1
-----
I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
I (VEH.MIN/ PER ARRIVING I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)
TIME SEGMENT) VEHICLE (MIN) I
I 08.00-08.15
I B-ACD 0.88 6.56 0.134 0.00 0.15 2.2
I 0.18 I
I A-B 0.13 I
I A-C 1.76 I
I
```

I	A-D	0.88	8.51	0.103	0.00	0.11	1.6
		0.13	I				
I	D-ABC	1.76	9.25	0.190	0.00	0.23	3.3
		0.13	I				
I	C-ABD	0.17	10.46	0.016	0.00	0.02	0.3
		0.10	I				
I	C-D	0.99					
			I				
I	C-A	1.85					
			I				
I							
			I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/		PER ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.15-08.30							

I	A-B	0.15						
I	A-C	2.10						
I	A-D	1.05	8.38	0.125	0.11	0.14	2.1	
I	D-ABC	2.10	9.03	0.232	0.23	0.30	4.4	
I	C-ABD	0.22	10.72	0.020	0.02	0.02	0.4	
I	C-D	1.18						
I	C-A	2.20						
I								
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/		PER ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.30-08.45							

I	B-ACD	1.28	6.14	0.209	0.19	0.26	3.8
---	-------	------	------	-------	------	------	-----

I	A-B	0.18	0.21	I				
I	A-C	2.57		I				
I	A-D	1.28	8.22	I	0.156	0.14	0.18	2.7
I	D-ABC	2.57	8.72	I	0.295	0.30	0.41	6.0
I	C-ABD	0.29	11.08	I	0.026	0.02	0.03	0.5
I	C-D	1.43		I				
I	C-A	2.68		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME SEGMENT)	VEHICLE (MIN)	I						
I	08.45-09.00							

I	A-B	0.18	0.21	I				
I	A-C	2.57		I				
I	A-D	1.28	8.21	I	0.156	0.18	0.18	2.8
I	D-ABC	2.57	8.72	I	0.295	0.41	0.41	6.2
I	C-ABD	0.29	11.08	I	0.026	0.03	0.03	0.5
I	C-D	1.43		I				
I	C-A	2.68		I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN/	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
	PER ARRIVING	I						

I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I 09.00-09.15			I					
I B-ACD	1.05	6.38	I 0.164		0.26	0.20	3.1	
	0.19		I					
I A-B	0.15		I					
I A-C	2.10		I					
I A-D	1.05	8.38	I 0.125		0.18	0.14	2.2	
	0.14		I					
I D-ABC	2.10	9.02	I 0.232		0.41	0.31	4.7	
	0.14		I					
I C-ABD	0.22	10.72	I 0.020		0.03	0.02	0.4	
	0.10		I					
I C-D	1.18		I					
I C-A	2.20		I					
I			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I						
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I 09.15-09.30			I					
I B-ACD	0.88	6.55	I 0.134		0.20	0.16	2.4	
	0.18		I					
I A-B	0.13		I					
I A-C	1.76		I					
I A-D	0.88	8.51	I 0.103		0.14	0.12	1.8	
	0.13		I					
I D-ABC	1.76	9.25	I 0.190		0.31	0.24	3.6	
	0.13		I					
I C-ABD	0.17	10.46	I 0.016		0.02	0.02	0.3	
	0.10		I					
I C-D	0.99		I					
I C-A	1.85		I					
I			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM	B-ACD
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.3
09.00	0.3
09.15	0.2
09.30	0.2

QUEUE FOR STREAM	D-ABC
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.2
08.30	0.3
08.45	0.4
09.00	0.4
09.15	0.3
09.30	0.2

QUEUE FOR STREAM	C-ABD
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		
I	I	I	I	I	* DELAY *	I	* DELAY *	I		
I	I	I	I	I	I	I	I	I		
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	96.3	I	64.2	I	18.2	I	0.19	I

I	A-B	I	13.8	I	9.2	I		I		I		I
I	A-C	I	192.7	I	128.5	I		I		I		I
I	A-D	I	96.3	I	64.2	I	13.2	I	0.14	I	13.2	I
I	D-ABC	I	192.7	I	128.5	I	28.3	I	0.15	I	28.3	I
I	C-ABD	I	20.3	I	13.5	I	2.3	I	0.11	I	2.3	I
I	C-D	I	107.9	I	71.9	I		I		I		I
I	C-A	I	202.2	I	134.8	I		I		I		I

I	ALL	I	922.2	I	614.8	I	62.0	I	0.07	I	62.0	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

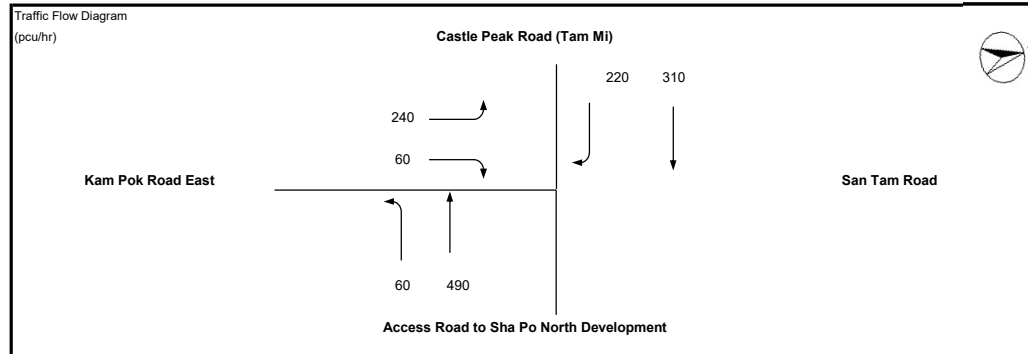
2034 AM Peak Hour Design Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

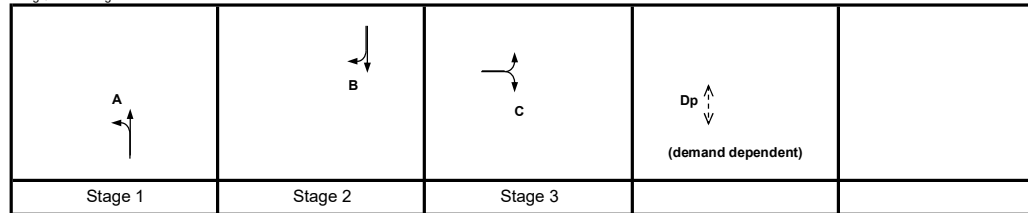
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.570
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	57 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	30 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	40.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	36 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 35\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
←	A	1	3.500	1	25			1		0		1965	60	490		550	11%		1952	0.282	0.282
↓	B	2	3.400	1				1		0		1955		310		310			1955	0.159	0.159
↘	B	2	3.500	1		30	0	0		0		2105			220	220		100%	2005	0.110	
↙	C	3	3.400	1	25			1		0		1955	240			240	100%		1844	0.130	0.130
↘	C	3	3.400	1		30	0	0		0		2095			60	60		100%	1995	0.030	
Pedestrian Crossing																					
	Dp	4	min.	GM 13	+	FGM 12	=	25	sec												

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

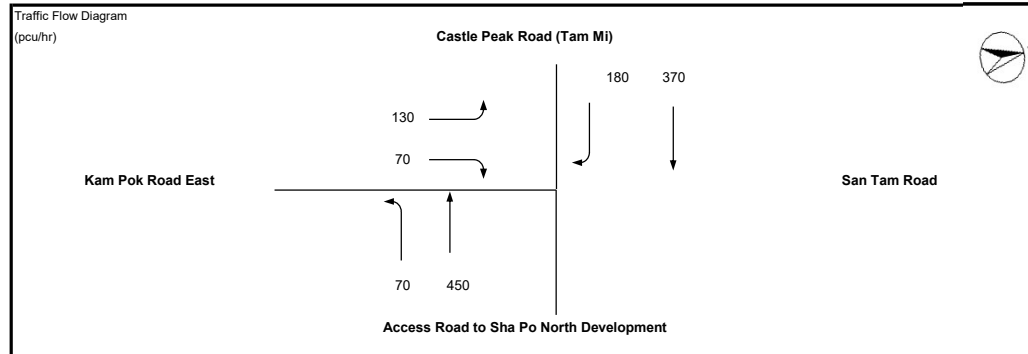
2034 PM Peak Hour Design Traffic Flows

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

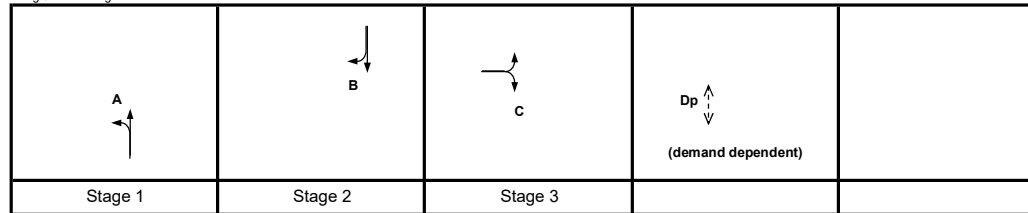
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.527
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	52 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	27 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	52.4 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	31 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 46\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
↕	A	1	3.500	1	25			1		0		1965	70	450		520	13%		1949	0.267	0.267
↕	B	2	3.400	1				1		0		1955		370		370			1955	0.189	0.189
	B	2	3.500	1		30	0	0		0		2105			180	180		100%	2005	0.090	
↕	C	3	3.400	1	25			1		0		1955	130			130	100%		1844	0.070	0.070
	C	3	3.400	1		30	0	0		0		2095			70	70		100%	1995	0.035	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

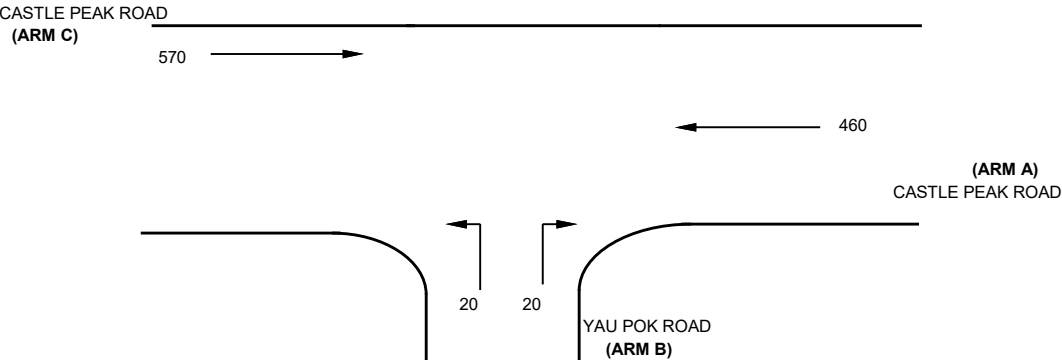
2034 AM Design Flow

Designed By :

Checked By :

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	570 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	460 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	277
Q b-c	=	465
Q c-b	=	370
Q b-ac	=	347

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

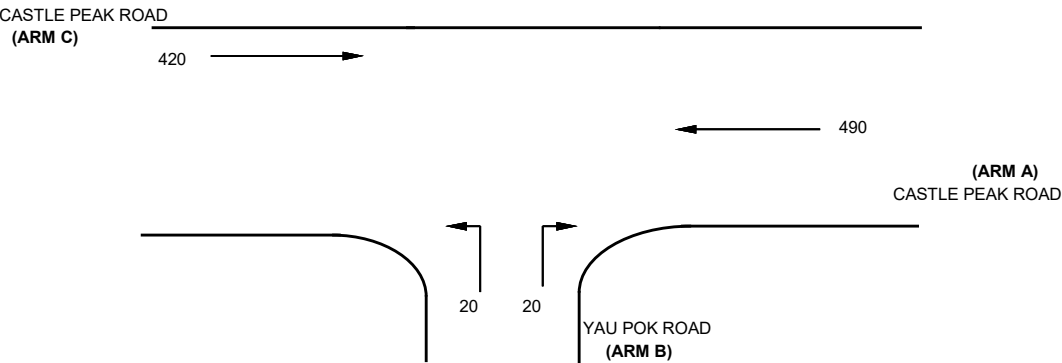
2034 PM Design Flow

Designed By :

Checked By :

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	420 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	490 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	289
Q b-c	=	458
Q c-b	=	364
Q b-ac	=	355

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"T:\Anthony Sun\20240920 Picidy\Junction 8 - Yau Pok Road REC N\0920 Des RD\Des
Rd.vpi"
(drive-on-the-left) at 12:19:54 on Friday, 20 September 2024

.RUN INFORMATION

RUN TITLE : J8 - Yau Pok Road / REC North Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC North

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0) I
I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25

I	0.25	I			
---	------	---	--	--	--

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.16	0.36

I	0.13	I			
---	------	---	--	--	--

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25

I	0.25	I			
---	------	---	--	--	--

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.10	0.16	0.36

I	0.13	I			
---	------	---	--	--	--

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23	0.33

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33	0.23

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.16 0.16
I

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.16 0.16

I

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I	I	0.16	0.16
---	---	------	------

I	ARM	I	FLOW	SCALE(%)	I
I	A	I		100	I
I	B	I		100	I
I	C	I		100	I
I	D	I		100	I

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

I I I I I I I I	NUMBER OF MINUTES FROM START WHEN						RATE OF FLOW (VEH/MIN)						
	ARM	FLOW STARTS		TOP OF PEAK		FLOW STOPS		BEFORE		AT TOP		AFTER	
		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK
	I		I		I		I		I		I		
I I I I I I I I	ARM A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I I I I I I I I	ARM B	I	15.00	I	45.00	I	75.00	I	0.63	I	0.94	I	0.63
I I I I I I I I	ARM C	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I I I I I I I I	ARM D	I	15.00	I	45.00	I	75.00	I	0.50	I	0.75	I	0.50

I		I	TURNING PROPORTIONS								I
I		I	TURNING COUNTS								I
I		I	(PERCENTAGE OF H.V.S)								I
I		I									I
I	TIME	I	FROM/TO	I ARM	A I ARM	B I ARM	C I ARM	D I	I		
I	08.00 - 09.30	I		I	I	I	I	I	I		
I		I	ARM A	I 0.000	I 0.000	I 0.000	I 0.000	I 0.000	I		
I		I		I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I		
I		I		I (0.0)	I (0.0)	I (0.0)	I (0.0)	I (0.0)	I		
I		I		I	I	I	I	I	I		
I		I	ARM B	I 0.400	I 0.000	I 0.000	I 0.600	I 0.600	I		
I		I		I 20.0	I 0.0	I 0.0	I 30.0	I 30.0	I		
I		I		I (0.0)	I (0.0)	I (0.0)	I (0.0)	I (0.0)	I		
I		I		I	I	I	I	I	I		
I		I	ARM C	I 0.000	I 0.000	I 0.000	I 0.000	I 0.000	I		
I		I		I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I		
I		I		I (0.0)	I (0.0)	I (0.0)	I (0.0)	I (0.0)	I		
I		I		I	I	I	I	I	I		
I		I	ARM D	I 0.000	I 1.000	I 0.000	I 0.000	I 0.000	I		
I		I		I 0.0	I 40.0	I 0.0	I 0.0	I 0.0	I		
I		I		I (0.0)	I (0.0)	I (0.0)	I (0.0)	I (0.0)	I		
I		I		I	I	I	I	I	I		

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH./MIN/
I	PER ARRIVING	I						
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.00-08.15							
I	B-ACD	0.63	9.02	0.070		0.00	0.07	1.1
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.07	0.055		0.00	0.06	0.8
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					

I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.15-08.30							
			I					
I	B-ACD	0.75	9.01	0.083		0.07	0.09	1.3
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.60	9.07	0.066		0.06	0.07	1.0
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.30-08.45							
			I					
I	B-ACD	0.92	9.00	0.102		0.09	0.11	1.7
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					

I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.07	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.45-09.00							
			I					
I	B-ACD	0.92	9.00	0.102		0.11	0.11	1.7
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.09	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.00-09.15							
			I					

I	B-ACD	0.75	9.01	0.083	0.11	0.09	1.4
		0.12	I				
I	A-B	0.00					
			I				
I	A-C	0.00					
			I				
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	D-ABC	0.60	9.07	0.066	0.09	0.07	1.1
		0.12	I				
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.15-09.30							
			I					
I	B-ACD	0.63	9.02	0.070	0.09	0.08	1.2	
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0	
		0.00	I					
I	D-ABC	0.50	9.07	0.055	0.07	0.06	0.9	
		0.12	I					
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0	
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM	B-ACD
TIME	NO. OF

SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	
I	B-ACD	I	68.8	I	45.9	I	8.3	I	0.12
I	A-B	I	0.0	I	0.0	I	I	I	I
I	A-C	I	0.0	I	0.0	I	I	I	I

I	A-D	I	0.0	I	0.0	I	0.0	I	0.00	I	0.0	I	0.00	I
I	D-ABC	I	55.1	I	36.7	I	6.5	I	0.12	I	6.5	I	0.12	I
I	C-ABD	I	0.0	I	0.0	I	0.0	I	0.00	I	0.0	I	0.00	I
I	C-D	I	0.0	I	0.0	I		I		I		I		I
I	C-A	I	0.0	I	0.0	I		I		I		I		I

I	ALL	I	123.9	I	82.6	I	14.8	I	0.12	I	14.8	I	0.12	I
---	-----	---	-------	---	------	---	------	---	------	---	------	---	------	---

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25
I	0.25			

I	544.46	0.25	0.25	0.25
I	0.25			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.16	0.36
I	0.13		

I	0.10	0.16	0.36
I	0.13		

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25
I	0.25			

I	544.46	0.25	0.25	0.25
I	0.25			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.10	0.16	0.36
I	0.13		

I	0.10	0.16	0.36
I	0.13		

STREAM C-B

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	544.46	0.25	0.25	0.25
I	0.25			

I 602.92 0.23 0.23 0.33 I

STREAM A-D

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM A-D STREAM C-A STREAM C-B STREAM C-D I

I 602.92 0.23 0.33 0.23 I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I I 0.16 0.16

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I I 0.16 0.16

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I I 0.16 0.16

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 0920 Des RD PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER

I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I I I I I I
I

I ARM A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM B I 15.00 I 45.00 I 75.00 I 0.75 I 1.13 I 0.75
I
I ARM C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM D I 15.00 I 45.00 I 75.00 I 0.50 I 0.75 I 0.50
I

.Demand set: 0920 Des RD PM

I I TURNING PROPORTIONS I
I I TURNING COUNTS I
I I (PERCENTAGE OF H.V.S) I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I
I 08.00 - 09.30 I I I I I I
I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM B I 0.333 I 0.000 I 0.000 I 0.667 I
I I 20.0 I 0.0 I 0.0 I 40.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM C I 0.000 I 0.000 I 0.000 I 0.000 I
I I 0.0 I 0.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I
I ARM D I 0.000 I 1.000 I 0.000 I 0.000 I
I I 0.0 I 40.0 I 0.0 I 0.0 I
I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 0920 Des RD PM
AND FOR TIME PERIOD 1

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
(VEH.MIN/ PER ARRIVING I

I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	08.00-08.15							
I	B-ACD	0.75	9.03	0.083		0.00	0.09	1.3
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.07	0.055		0.00	0.06	0.8
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		PER	ARRIVING	I				
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.15-08.30							
			I					
I	B-ACD	0.90	9.02	0.100		0.09	0.11	1.6
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.60	9.07	0.066		0.06	0.07	1.0
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME SEGMENT)
TIME	SEGMENT)	VEHICLE (MIN)	I					
I	08.30-08.45							
			I					
I	B-ACD	1.10	9.01	0.122		0.11	0.14	2.0
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.07	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.45-09.00							
			I					
I	B-ACD	1.10	9.01	0.122		0.14	0.14	2.1
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.09	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					

.-----								
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN/	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER ARRIVING	I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	09.15-09.30							
			I					
I	B-ACD	0.75	9.03	0.083		0.11	0.09	1.4
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.07	0.055		0.07	0.06	0.9

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

08.45 0.0
09.00 0.0
09.15 0.0
09.30 0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	82.6	I 55.1	I	10.1	I 0.12	I	10.1	I 0.12	I
I	A-B	I	0.0	I 0.0	I		I	I		I	I
I	A-C	I	0.0	I 0.0	I		I	I		I	I
I	A-D	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	D-ABC	I	55.1	I 36.7	I	6.5	I 0.12	I	6.5	I 0.12	I
I	C-ABD	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	C-D	I	0.0	I 0.0	I		I	I		I	I
I	C-A	I	0.0	I 0.0	I		I	I		I	I
I	ALL	I	137.6	I 91.8	I	16.6	I 0.12	I	16.6	I 0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-

"T:\Anthony Sun\20240920 Picidy\Junction 9 - Yau Pok Road REC S\0920 Des Rd\Des
RD.vpi"
(drive-on-the-left) at 12:26:10 on Friday, 20 September 2024

.RUN INFORMATION

RUN TITLE : J9 - Yau Pok Road / REC South Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)

I
I
I
I
I
I

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC South

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (
0) I NO (0) I
I I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	688.22	0.27	0.11	I

I	544.46	0.25	0.25	0.25
0.25	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.13	0.10	0.16

STREAM D-C

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25

I	544.46	0.25	0.25	0.25
0.25	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.13	0.10	0.16

I	0.13	0.10	0.16	0.36
0.13	I			

STREAM C-B

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23	0.33

STREAM A-D

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33	0.23

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.16 0.16
I

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I 0.16 0.16

I

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I	I	0.16	0.16
---	---	------	------

I	ARM	I	FLOW	SCALE(%)	I
I	A	I		100	I
I	B	I		100	I
I	C	I		100	I
I	D	I		100	I

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

	NUMBER OF MINUTES FROM START WHEN							RATE OF FLOW (VEH/MIN)				
	ARM	FLOW STARTS		TOP OF PEAK		FLOW STOPS		BEFORE	AT TOP		AFTER	
		TO RISE		IS REACHED		FALLING		PEAK	OF PEAK		PEAK	
		I	I	I	I	I	I	I	I	I		
ARM A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
ARM B	I	15.00	I	45.00	I	75.00	I	0.38	I	0.56	I	0.38
ARM C	I	15.00	I	45.00	I	75.00	I	0.13	I	0.19	I	0.13
ARM D	I	15.00	I	45.00	I	75.00	I	0.50	I	0.75	I	0.50

I		I	TURNING PROPORTIONS								I
I		I	TURNING COUNTS								I
I		I	(PERCENTAGE OF H.V.S)								I
I		I									I
I	TIME	I	FROM/TO	I ARM	A I	ARM B	I ARM C	I ARM D	I		
I	08.00 - 09.30	I		I	I	I	I	I	I		
I		I	ARM A	I	0.000	I	0.000	I	0.000	I	
I		I		I	0.0	I	0.0	I	0.0	I	
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	
I		I	ARM B	I	0.000	I	0.000	I	1.000	I	
I		I		I	0.0	I	0.0	I	30.0	I	
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	
I		I	ARM C	I	0.000	I	1.000	I	0.000	I	
I		I		I	0.0	I	10.0	I	0.0	I	
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	
I		I	ARM D	I	0.000	I	1.000	I	0.000	I	
I		I		I	0.0	I	40.0	I	0.0	I	
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	

FOR DEMAND SET 0920 Des RD AM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I						
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	08.00-08.15							
I	B-ACD	0.38	9.03	0.042		0.00	0.04	0.6
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.04	0.056		0.00	0.06	0.8
		0.12	I					
I	C-ABD	0.13	10.05	0.012		0.00	0.01	0.2
		0.10	I					

I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I 08.15-08.30								
I	B-ACD	0.45	9.02	0.050		0.04	0.05	0.8
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I	D-ABC	0.60	9.04	0.066		0.06	0.07	1.0
I	C-ABD	0.15	10.05	0.015		0.01	0.02	0.2
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I 08.30-08.45								
I	B-ACD	0.55	9.01	0.061		0.05	0.06	0.9
I	A-B	0.00						
I	A-C	0.00						
I								

I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I	D-ABC	0.73	9.03	0.081		0.07	0.09	1.3
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I 08.45-09.00								
I	B-ACD	0.55	9.01	0.061		0.06	0.06	1.0
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I	D-ABC	0.73	9.03	0.081		0.09	0.09	1.3
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I 09.00-09.15								
I								
I								

I	B-ACD	0.45	9.02	0.050		0.06	0.05	0.8
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.60	9.04	0.066		0.09	0.07	1.1
		0.12	I					
I	C-ABD	0.15	10.05	0.015		0.02	0.02	0.2
		0.10	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH/MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.15-09.30							
			I					
I	B-ACD	0.38	9.03	0.042		0.05	0.04	0.7
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.04	0.056		0.07	0.06	0.9
		0.12	I					
I	C-ABD	0.13	10.05	0.012		0.02	0.01	0.2
		0.10	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM	B-ACD
TIME	NO. OF

SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I			
I	I	I	I		I	* DELAY *		I	* DELAY *		I			
I	I	I	I		I	I		I	I		I			
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I			
I	B-ACD	I	41.3	I	27.5	I	4.8	I	0.12	I	4.8	I	0.12	I
I	A-B	I	0.0	I	0.0	I	I	I	I	I	I	I	I	I
I	A-C	I	0.0	I	0.0	I	I	I	I	I	I	I	I	I

I	A-D	I	0.0	I	0.0	I	0.0	I	0.00	I	0.0	I	0.00	I
I	D-ABC	I	55.1	I	36.7	I	6.5	I	0.12	I	6.5	I	0.12	I
I	C-ABD	I	13.8	I	9.2	I	1.4	I	0.10	I	1.4	I	0.10	I
I	C-D	I	0.0	I	0.0	I		I		I		I		I
I	C-A	I	0.0	I	0.0	I		I		I		I		I

I	ALL	I	110.1	I	73.4	I	12.7	I	0.12	I	12.7	I	0.12	I
---	-----	---	-------	---	------	---	------	---	------	---	------	---	------	---

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25
I	0.25			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.16	0.36
I	0.13		

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25
I	0.25			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-D	STREAM A-C	STREAM A-D
I	0.10	0.16	0.36
I	0.13		

STREAM C-B

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I				

I 602.92 0.23 0.23 0.33 I

STREAM A-D

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM A-D STREAM C-A STREAM C-B STREAM C-D I

I 602.92 0.23 0.33 0.23 I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I I 0.16 0.16

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM C-A STREAM C-D

I I 0.16 0.16

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I I 0.16 0.16

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW	SCALE(%)	I
I	A	I	100		I
I	B	I	100		I
I	C	I	100		I
I	D	I	100		I

.Demand set: 0920 Des RD PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER		

I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK
I	I		I		I		I		I		I	

I	ARM	A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	B	I	15.00	I	45.00	I	75.00	I	0.50	I	0.75	I	0.50
I	ARM	C	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	D	I	15.00	I	45.00	I	75.00	I	0.50	I	0.75	I	0.50

.Demand set: 0920 Des RD PM

I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS	I
I	I	(PERCENTAGE OF H.V.S)	I
I	I		I
I	TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D I	I
I	08.00 - 09.30	I I I I I I I	I
I		I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I	I
I		I I 0.0 I 0.0 I 0.0 I 0.0 I	I
I		I (0.0)I (0.0)I (0.0)I (0.0)I	I
I		I I I I I I I	I
I		I ARM B I 0.000 I 0.000 I 0.000 I 1.000 I	I
I		I I 0.0 I 0.0 I 0.0 I 40.0 I	I
I		I (0.0)I (0.0)I (0.0)I (0.0)I	I
I		I I I I I I I	I
I		I ARM C I 0.000 I 0.000 I 0.000 I 0.000 I	I
I		I I 0.0 I 0.0 I 0.0 I 0.0 I	I
I		I (0.0)I (0.0)I (0.0)I (0.0)I	I
I		I I I I I I I	I
I		I ARM D I 0.000 I 1.000 I 0.000 I 0.000 I	I
I		I I 0.0 I 40.0 I 0.0 I 0.0 I	I
I		I (0.0)I (0.0)I (0.0)I (0.0)I	I
I		I I I I I I I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 0920 Des RD PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/		PER ARRIVING	I					

I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	08.00-08.15							
I	B-ACD	0.50	9.07	0.055		0.00	0.06	0.8
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.50	9.07	0.055		0.00	0.06	0.8
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I						
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		
I	08.15-08.30							
			I					
I	B-ACD	0.60	9.07	0.066		0.06	0.07	1.0
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.60	9.07	0.066		0.06	0.07	1.0
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I						
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		
I	08.30-08.45							
			I					
I	B-ACD	0.73	9.07	0.081		0.07	0.09	1.3
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.07	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I						
I	(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		
I	08.45-09.00							
			I					
I	B-ACD	0.73	9.07	0.081		0.09	0.09	1.3
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.73	9.07	0.081		0.09	0.09	1.3
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					

08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I	I	I			I	* DELAY *		I	* DELAY *		I
I	I	I			I			I			I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I

I	B-ACD	I	55.1	I 36.7	I	6.5	I 0.12	I	6.5	I 0.12	I
I	A-B	I	0.0	I 0.0	I		I	I		I	I
I	A-C	I	0.0	I 0.0	I		I	I		I	I
I	A-D	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	D-ABC	I	55.1	I 36.7	I	6.5	I 0.12	I	6.5	I 0.12	I
I	C-ABD	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	C-D	I	0.0	I 0.0	I		I	I		I	I
I	C-A	I	0.0	I 0.0	I		I	I		I	I

I	ALL	I	110.1	I 73.4	I	12.9	I 0.12	I	12.9	I 0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

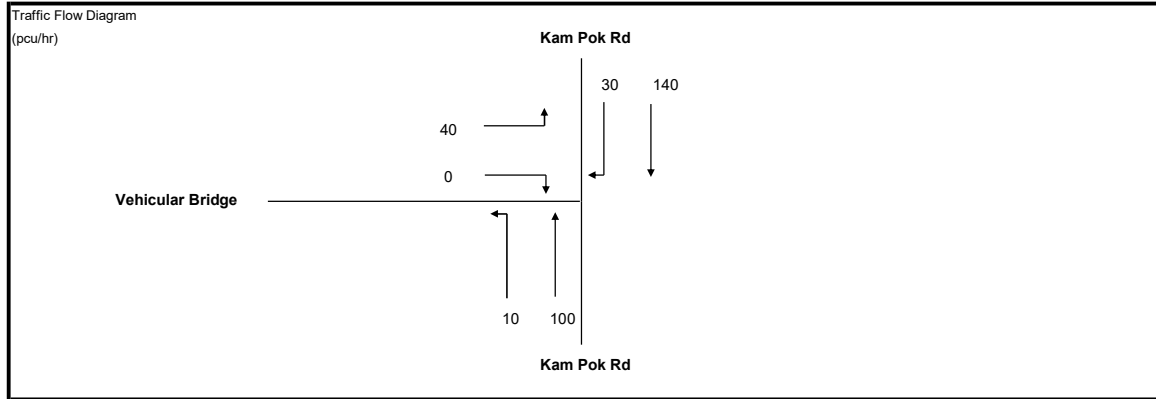
2034 AM Design Flows

DESIGN: 0

CHECK: 0

JOB NO: 60XXXXXX

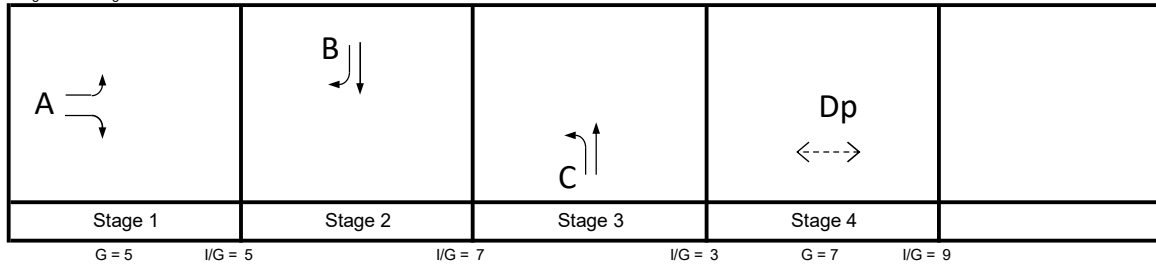
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.146
Lost time	L =	34 sec
Total Flow	=	320 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	66 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	40 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.645
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	343.1 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	41 sec
Y_{max}	$= 1 - L/C =$	0.433

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 168\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		0	40	100%	0%	1627	0.025	
↘	B	2	3.600	1		10	0	1		0		1975		140	30	170		18%	1924	0.088	0.088
↗	C	3	3.600	1	5			1		0		1975	10	100		110	9%		1923	0.057	0.057
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

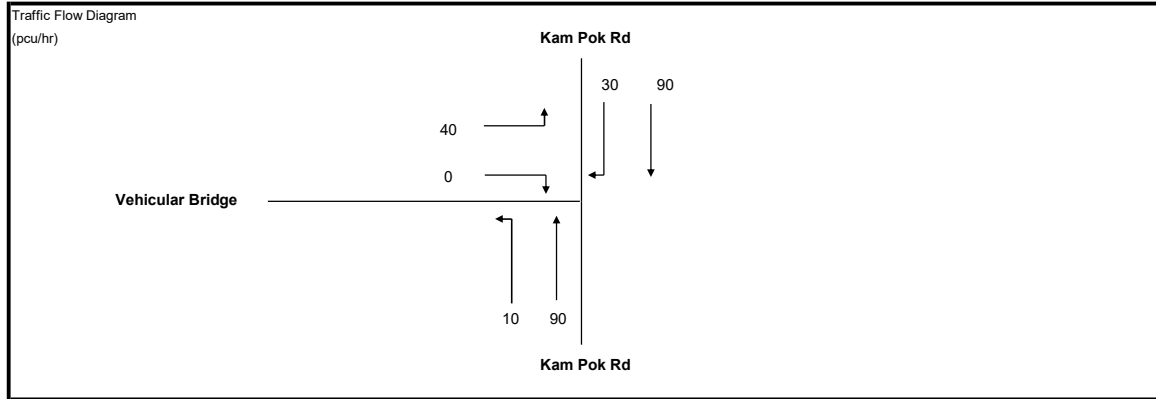
2034 PM Design Flows

DESIGN: 0

CHECK: 0

JOB NO: 60XXXXXX

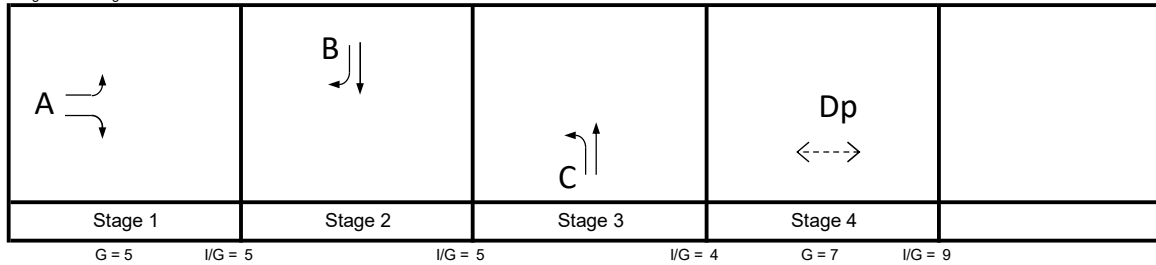
DATE: Sep 24



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.115
Lost time	L =	33 sec
Total Flow	=	260 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	62 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	37 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.653
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	466.5 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	38 sec
Y_{max}	$= 1 - L / C =$	0.450

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

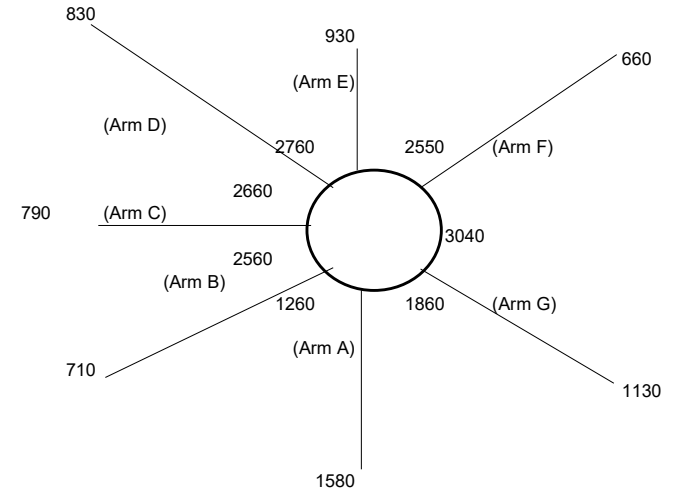
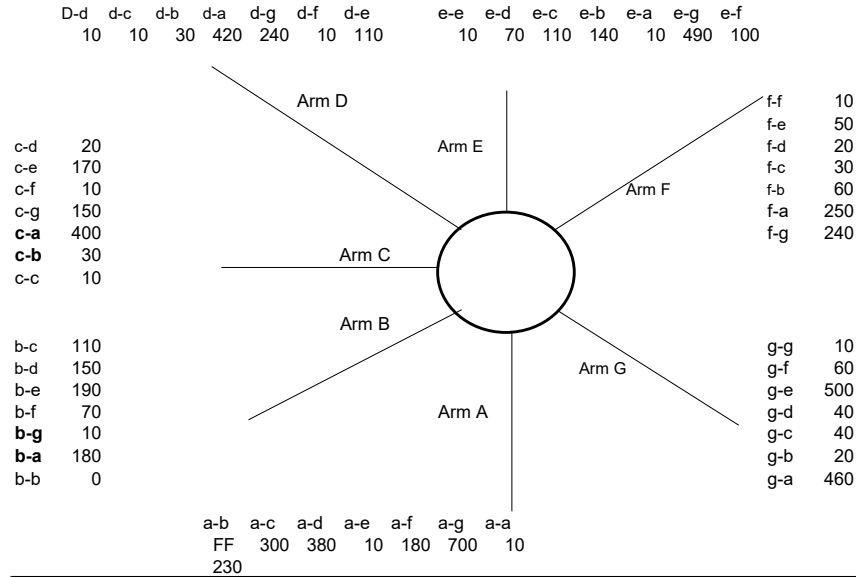
$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 252\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		0	40	100%	0%	1627	0.025	
↙	B	2	3.600	1		10	0	1		0		1975		90	30	120		25%	1904	0.063	0.063
↘	C	3	3.600	1	5			1		0		1975	10	90		100	10%		1917	0.052	0.052
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 AM Design Flows (with Improvement)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024

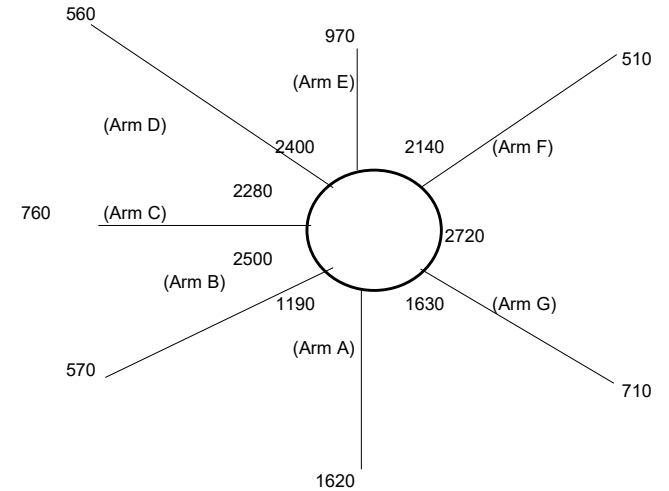
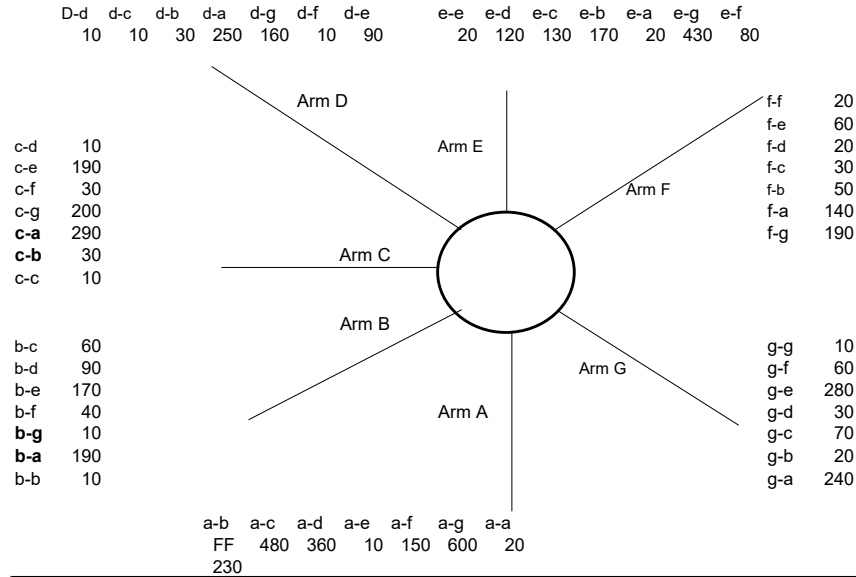


TOTAL ENTRY FLOWS = 6630 PCU
 CRITICAL DFC = 0.79

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 PM Design Flows (with Improvement)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	6.50	7.00	7.30	7.30	7.30	7.30
E = Entry width (m)	11.00	11.20	11.80	12.00	12.00	11.00	12.00
L = Effective length of flare (m)	30.00	22.00	20.00	36.00	18.00	23.00	27.00
R = Entry radius (m)	25.00	25.00	25.00	30.00	45.00	25.00	25.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	40.00	35.00	35.00	25.00	30.00	35.00	45.00
Q = Entry flow (pcu/h)	1620	570	760	560	970	510	710
Qc= Circulating flow across entry (pcu/h)	1190	2500	2280	2400	2140	2720	1630
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.27	0.34	0.38	0.21	0.42	0.26	0.28
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.99	0.99	1.03	1.03	0.99	0.96
X2= V + ((E-V)/(1+2S))	9.26	9.29	9.71	10.62	9.86	9.74	10.32
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2806	2815	2944	3216	2988	2952	3127
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.60	0.60	0.62	0.66	0.62	0.62	0.64
Qe= K(F-Fc*Qc)	2041	1305	1523	1697	1697	1258	1990
DFC = Design flow/Capacity = Q/Qe	0.79	0.44	0.50	0.33	0.57	0.41	0.36

TOTAL ENTRY FLOWS = 5700 PCU
CRITICAL DFC = 0.79

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

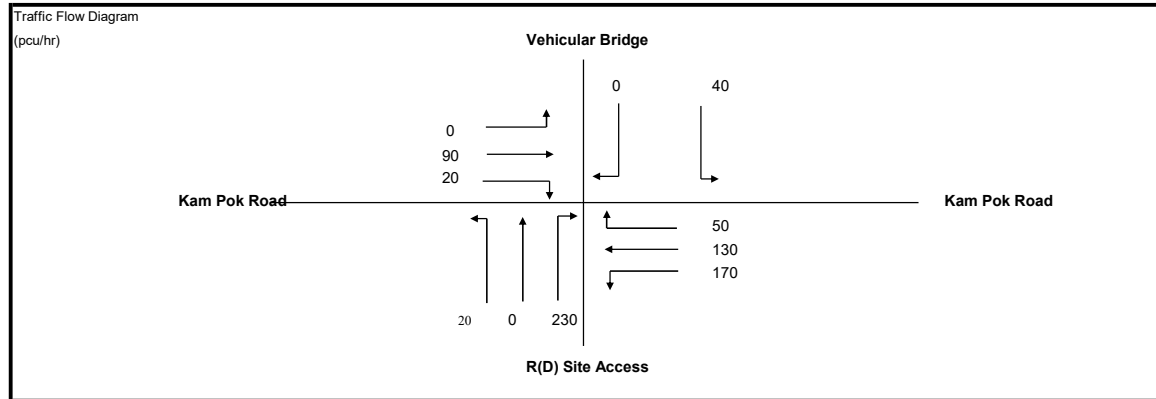
Year 2034 AM R(D) Design Flow

DESIGN: 0

CHECK: 0

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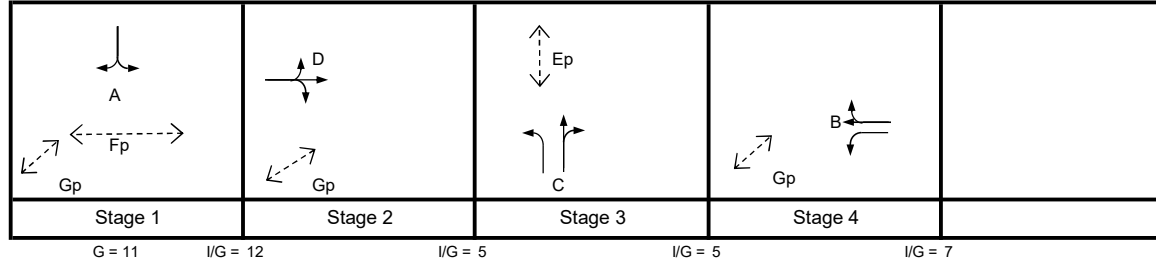
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	90 sec
Sum(y)	Y =	0.295
Lost time	L =	37 sec
Total Flow	=	750 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	86 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	52 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.623
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	110.9 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	55 sec
Y_{max}	$= 1 - L / C =$	0.589

J11

Stage/Phase Diagrams



Critical Case : F_p, D, C, B

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 80\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	10	12	0	0		0		2105	40		0	40	100%	0%	1830	0.022	
	B	4	3.650	1	15	15	0	1		0		1980	170			170	100%		1800	0.094	0.094
	B	4	3.650	1			0	0		0		2120		130	50	180		28%	2063	0.087	
	C	3	3.000	1	12	15	0	1		0		1915	20	0	230	250	8%	92%	1738	0.144	0.144
	D	2	3.650	1	10	12	0	1		0		1980	0	90	20	110	0%	18%	1936	0.057	0.057
Pedestrian Crossing					GM	FGM															
Ep		3	min.	10	+	10	=	20	sec												
Fp		1	min.	11	+	10	=	21	sec												*
Gp		1,2,4	min.	5	+	5	=	10	sec												

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

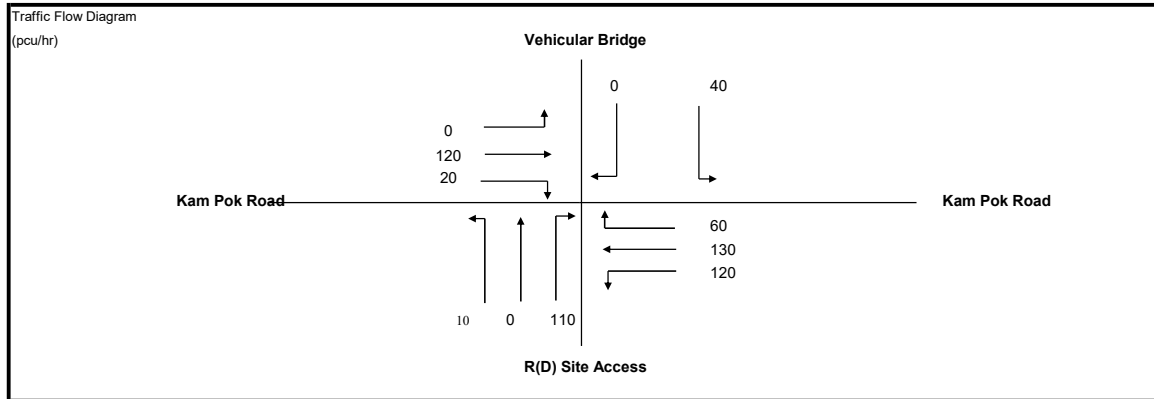
Year 2034 PM R(D) Design Flow

DESIGN: 0

CHECK: 0

#VALUE!

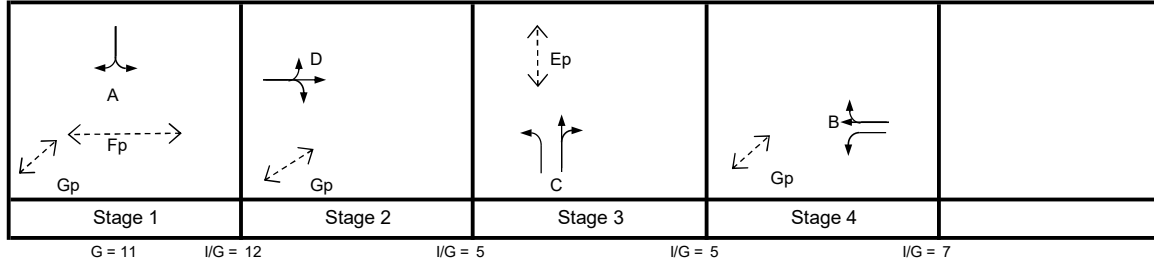
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	90 sec
Sum(y)	Y =	0.233
Lost time	L =	37 sec
Total Flow	=	610 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	79 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	48 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.623
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	166.6 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	50 sec
Y_{max}	$= 1 - L / C =$	0.589

J11

Stage/Phase Diagrams



Critical Case : F_p, D, C, B

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 127\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	10	12	0	0		0		2105	40		0	40	100%	0%	1830	0.022	
	B	4	3.650	1	15			1		0		1980	120			120	100%		1800	0.067	
	B	4	3.650	1		15	0	0		0		2120		130	60	190		32%	2055	0.092	0.092
	C	3	3.000	1	12	15	0	1		0		1915	10	0	110	120	8%	92%	1738	0.069	0.069
	D	2	3.650	1	10	12	0	1		0		1980	0	120	20	140	0%	14%	1945	0.072	0.072
Pedestrian Crossing					GM	FGM															
Ep		3	min.	10	+	10	=	20	sec												
Fp		1	min.	11	+	10	=	21	sec												*
Gp		1,2,4	min.	5	+	5	=	10	sec												

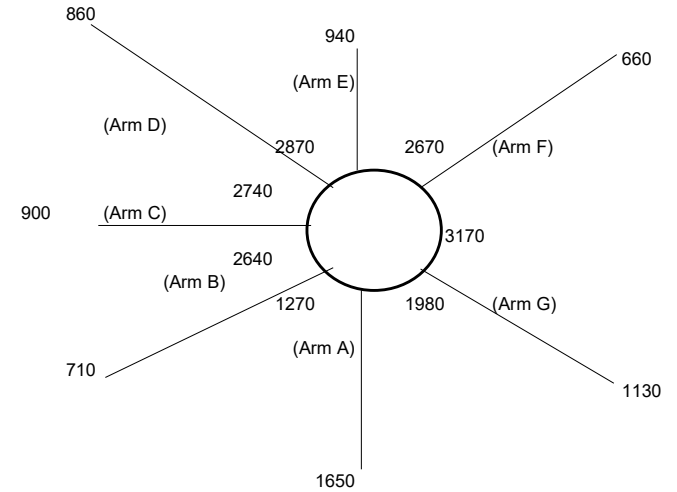
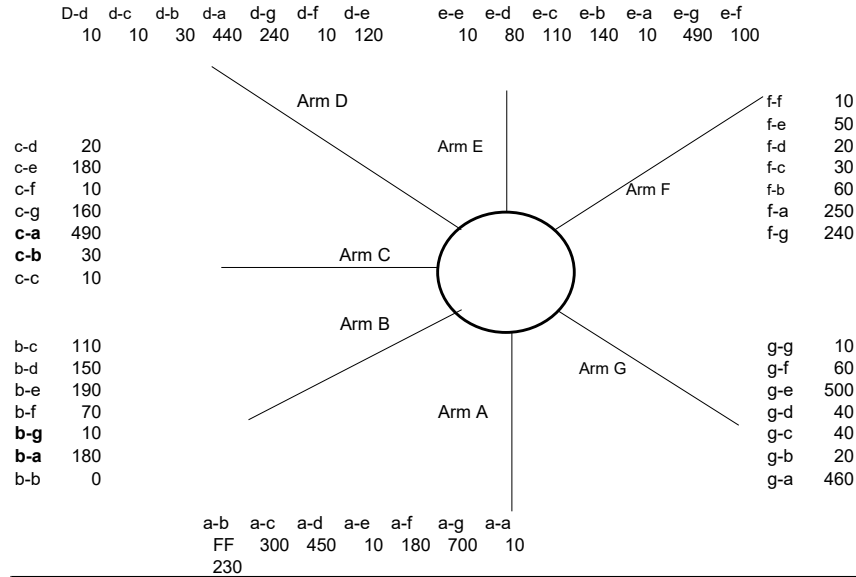
Design Flow

Sensitivity Test (I)

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 AM Design Flows (Sensitivity Test w IMP)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024



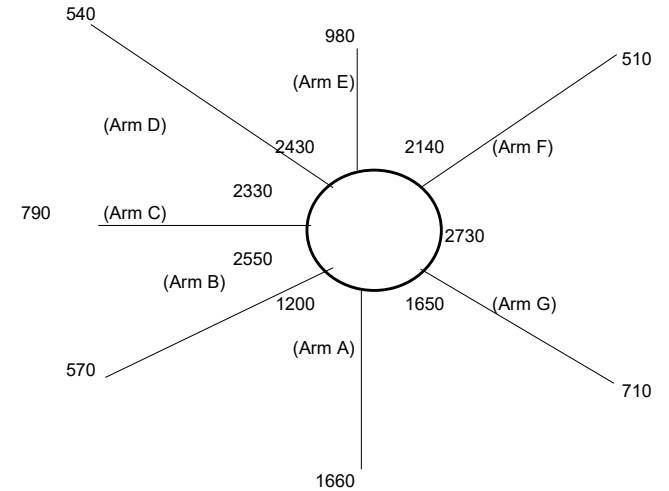
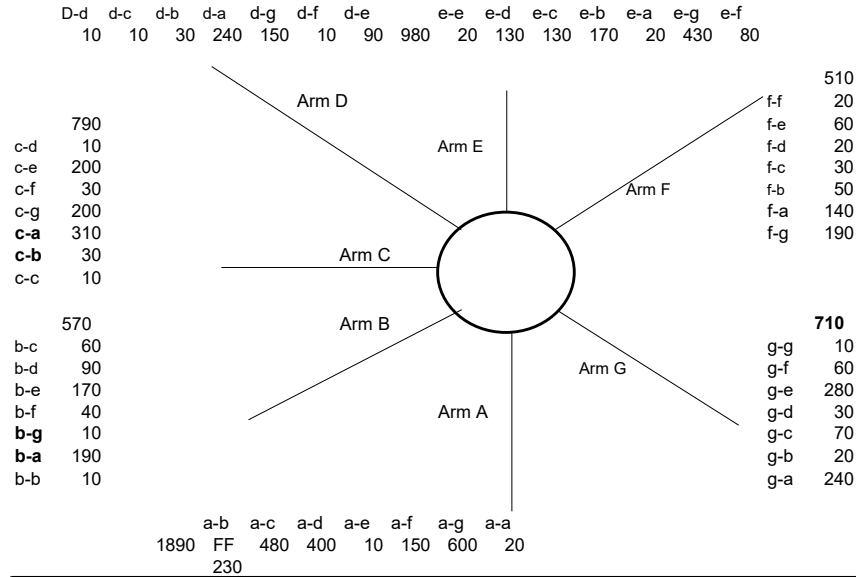
ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	6.50	7.00	7.30	7.30	7.30	7.30
E = Entry width (m)	11.00	11.20	11.80	12.00	12.00	11.00	12.00
L = Effective length of flare (m)	30.00	22.00	20.00	36.00	18.00	23.00	27.00
R = Entry radius (m)	25.00	25.00	25.00	30.00	45.00	25.00	25.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	40.00	35.00	35.00	25.00	30.00	35.00	45.00
Q = Entry flow (pcu/h)	1650	710	900	860	940	660	1130
Qc= Circulating flow across entry (pcu/h)	1270	2640	2740	2870	2670	3170	1980
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.27	0.34	0.38	0.21	0.42	0.26	0.28
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.99	0.99	1.03	1.03	0.99	0.96
X2= V + ((E-V)/(1+2S))	9.26	9.29	9.71	10.62	9.86	9.74	10.32
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2806	2815	2944	3216	2988	2952	3127
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.60	0.60	0.62	0.66	0.62	0.62	0.64
Qe= K(F-Fc*Qc)	1994	1221	1240	1379	1357	981	1774
DFC = Design flow/Capacity = Q/Qe	0.83	0.58	0.73	0.62	0.69	0.67	0.64

TOTAL ENTRY FLOWS = 6850 PCU
CRITICAL DFC = 0.83

ROUNDBOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 PM Design Flows (Sensitivity Test w IMP)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	6.50	7.00	7.30	7.30	7.30	7.30
E = Entry width (m)	11.00	11.20	11.80	12.00	12.00	11.00	12.00
L = Effective length of flare (m)	30.00	22.00	20.00	36.00	18.00	23.00	27.00
R = Entry radius (m)	25.00	25.00	25.00	30.00	45.00	25.00	25.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	40.00	35.00	35.00	25.00	30.00	35.00	45.00
Q = Entry flow (pcu/h)	1660	570	790	540	980	510	710
Qc= Circulating flow across entry (pcu/h)	1200	2550	2330	2430	2140	2730	1650
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.27	0.34	0.38	0.21	0.42	0.26	0.28
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.99	0.99	1.03	1.03	0.99	0.96
X2= V + ((E-V)/(1+2S))	9.26	9.29	9.71	10.62	9.86	9.74	10.32
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2806	2815	2944	3216	2988	2952	3127
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.60	0.60	0.62	0.66	0.62	0.62	0.64
Qe= K(F-Fc*Qc)	2035	1275	1492	1677	1697	1252	1977
DFC = Design flow/Capacity = Q/Qe	0.82	0.45	0.53	0.32	0.58	0.41	0.36

TOTAL ENTRY FLOWS = 5760 PCU

CRITICAL DFC = 0.82

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

2034 AM Design Flows Sensitivity Test 1

Designed By :

Checked By :

Job No. :

Date : Dec 21

CASTLE PEAK ROAD
(ARM C)

470
190

330
300

(ARM A)
CASTLE PEAK ROAD

230

260

KAM POK ROAD
(ARM B)

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 300 (pcu/hr)
q a-c = 330 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 470 (pcu/hr)
q c-b = 190 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 260 (pcu/hr)
q b-c = 230 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 347
Q b-c = 624
Q c-b = 448
Q b-ac = 438

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.75
DFC b-c = 0.37
DFC c-b = 0.42
DFC b-ac = 1.12

CRITICAL DFC = 1.12

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

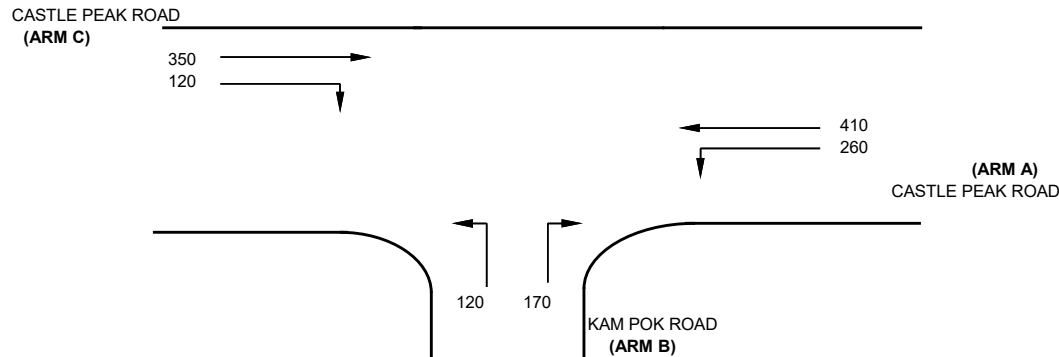
2034 PM Design Flows Sensitivity Test 1

Designed By :

Checked By :

Job No. :

Date : Dec 21



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 260 (pcu/hr)
q a-c = 410 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 350 (pcu/hr)
q c-b = 120 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 170 (pcu/hr)
q b-c = 120 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 377
Q b-c = 607
Q c-b = 439
Q b-ac = 447

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.45
DFC b-c = 0.20
DFC c-b = 0.27
DFC b-ac = 0.65

CRITICAL DFC = 0.65

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

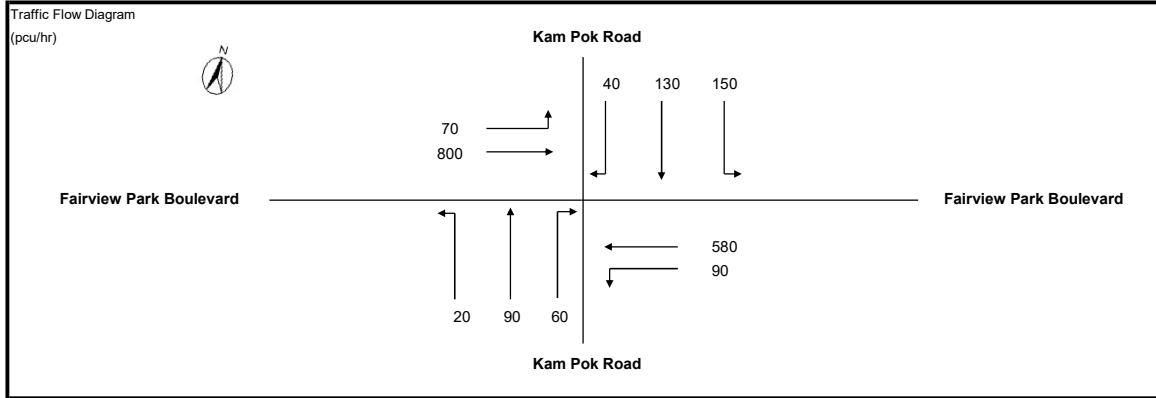
2034 AM Design Traffic Flows (Sensitivity Test)

DESIGN: 0

CHECK: 0

JOB NO: -

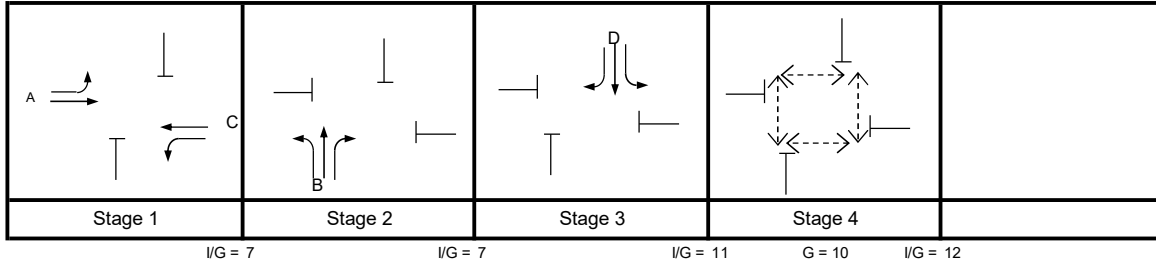
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.473
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	135 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	83 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	20.6 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	93 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



I/G = 7

I/G = 7

I/G = 11

G = 10

I/G = 12

Critical Case : A,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 21\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	70	362		432	16%		1914	0.225	0.225
	A	1	3.300	1				1		0		1945		439		439			1945	0.225	
	B	2	3.600	1	13	20	0	1		0		1975	20	90	60	170	12%	35%	1899	0.090	0.090
	C	1	3.000	1	17			1		0		1915	90	238		328	27%		1870	0.176	
	C	1	3.300	1				1		0		1945		342		342			1945	0.176	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	150	130	40	320	47%	13%	2031	0.158	0.158
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

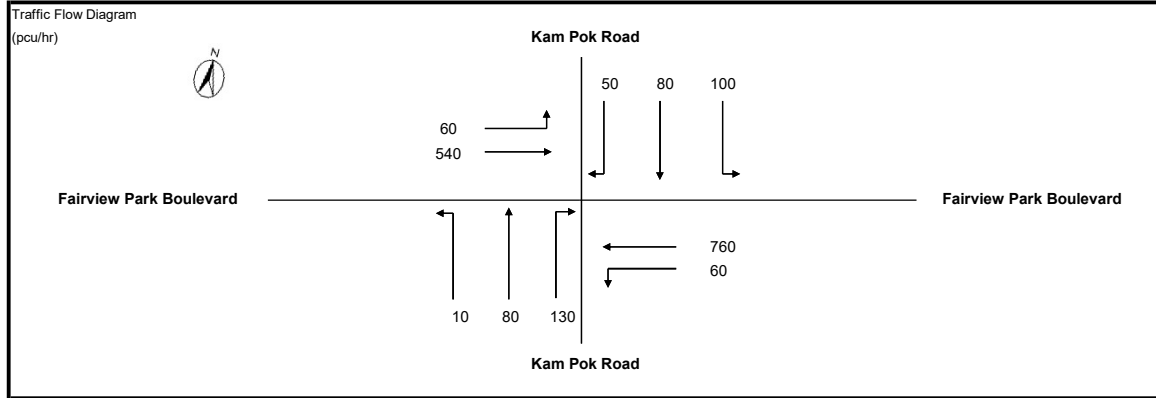
2034 PM Design Traffic Flows (Sensitivity Test)

DESIGN: 0

CHECK: 0

JOB NO: -

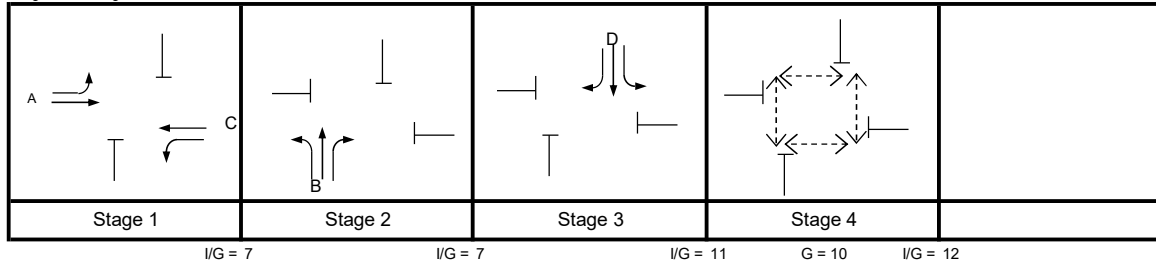
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.444
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	128 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	79 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	28.2 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	87 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : B,C,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 28\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	60	237		297	20%		1906	0.156	0.117
	A	1	3.300	1				1		0		1945		303		303			1945	0.156	
	B	2	3.600	1	13	20	0	1		0		1975	10	80	130	220	5%	59%	1882	0.117	
	C	1	3.000	1	17			1		0		1915	60	344		404	15%		1890	0.214	0.214
	C	1	3.300	1				1		0		1945		416		416			1945	0.214	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	100	80	50	230	43%	22%	2022	0.114	
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

2034 AM Design Traffic Flows - Sensitivity Test

Designed By : MKCN

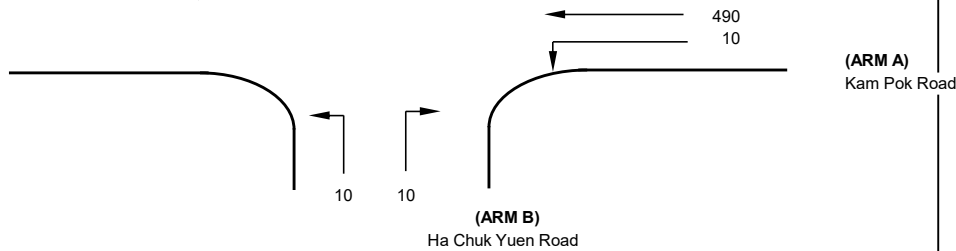
Checked By : SHSN

Job No. : -

Date : Oct 24

Kam Pok Road
(ARM C)

490
10



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

J4

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 490 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 490 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 318
Q b-c = 496
Q c-b = 574
Q b-ac = 388

CRITICAL DFC = 0.05

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

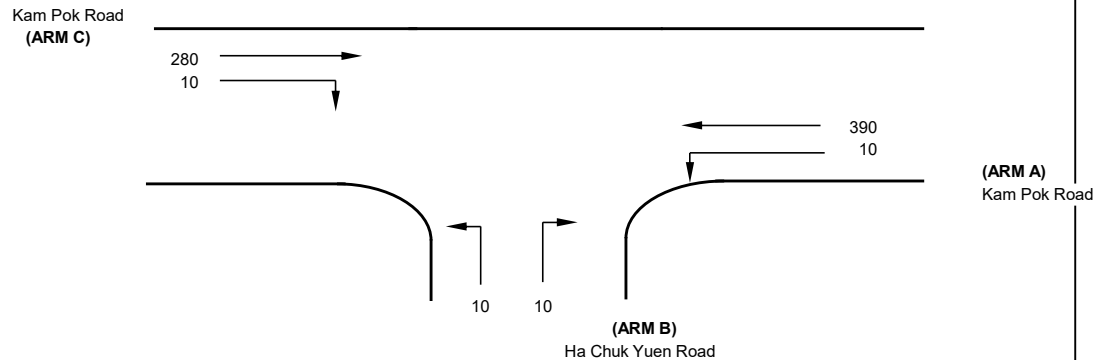
2034 PM Design Traffic Flows - Sensitivity Test

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Oct 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 390 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 280 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 361
Q b-c = 516
Q c-b = 597
Q b-ac = 425

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

CRITICAL DFC = 0.05

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-
"L:\Secure\Transportation\Group\TTP_TE\Private Job\Fairview\Info\TIA Working RD
and REC\Flow\
V13 202407_RD1.5+REC1.2 Combined\Junction 5_Picaddy\20241031 Sen 1\Sen 1.vpi"
(drive-on-the-left) at 13:56:27 on Thursday, 31 October 2024

.RUN INFORMATION

RUN TITLE : 2034 - J5 Kam Pok Road/ Pok Wai South Road
LOCATION :
DATE : 13/12/21
CLIENT :
ENUMERATOR : nokhinnaomi.tam [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I

I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Kam Pok Road
ARM B IS Pok Wai South Road
ARM C IS Kam Pok Road West
ARM D IS Kam Pok Road

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 8.80
M. I (W) 8.80 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I
I I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 2.20
M. I (WD-A) 5.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM B-C	STREAM A-C	STREAM A-B
I	602.92	0.21	0.08

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM D-A	STREAM C-A	STREAM C-D
I	786.65	0.27	0.11

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-B	STREAM A-B	STREAM C-A	STREAM C-B
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-D	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.21	0.21	0.29

I	602.92	0.21	0.29	0.21	I
---	--------	------	------	------	---

B-D Stream From Left Hand Lane

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I			
I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I		
I	STREAM C-A	STREAM C-D	

I	I	0.12	0.12
---	---	------	------

B-D Stream From Right Hand Lane

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I			
I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			

I	476.98	0.19	0.19	0.08
0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I		
I	STREAM C-A	STREAM C-D	

I	I	0.12	0.12
---	---	------	------

D-B Stream From Left Hand Lane

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I			
I	STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			

I	622.33	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I		
I	STREAM A-C	STREAM A-B	

I	I	0.16	0.16
---	---	------	------

D-B Stream From Right Hand Lane

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For Opposing	I			
I	STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
	(VEH.MIN/	PER	ARRIVING	I				
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME
SEGMENT)	TIME	SEGMENT)	VEHICLE (MIN)	I				

I 08.00-08.15

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.30-08.45							
I	B-ACD	1.25	6.27	0.200	0.00	0.25	3.5	
I	A-B	0.13	0.20	I				
I	A-C	2.76		I				
I	A-D	0.88	8.55	0.103	0.00	0.11	1.6	
I	D-ABC	3.14	0.13	I	0.00	0.58	8.2	
I	C-ABD	0.33	8.46	0.371	0.00	0.04	0.7	
I	C-D	0.61	0.19	I				
I	C-A	1.82	10.02	0.033				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.15-08.30							

I	B-ACD	1.50	6.05	0.248	0.25	0.32	4.7	
I	A-B	0.15	0.22	I				
I	A-C	3.30		I				
I	A-D	1.05	8.43	0.124	0.11	0.14	2.1	
I	D-ABC	3.75	0.14	I	0.58	0.82	11.8	
I	C-ABD	0.42	8.19	0.458	0.04	0.06	0.9	
I	C-D	0.72	0.22	I				
I	C-A	2.16	10.20	0.041				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.30-08.45							
I	B-ACD	1.84	5.74	0.319	0.32	0.46	6.6	
I	A-B	0.18	0.25	I				
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155	0.14	0.18	2.7	
I	D-ABC	4.59	0.14	I	0.82	1.36	19.0	
I	C-ABD	0.55	7.80	0.588	0.06	0.08	1.2	
I	C-D	0.87	0.30	I				
I	C-A	2.61	10.46	0.053				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.45-09.00							
I	B-ACD	1.84	5.74	0.320	0.46	0.46	6.9	
I	A-B	0.18	0.26	I				
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155	0.18	0.18	2.7	
I	D-ABC	4.59	0.14	I	1.36	1.39	20.7	
I	C-ABD	0.55	7.80	0.588	0.08	0.08	1.2	
I	C-D	0.87	0.31	I				
I	C-A	2.61	10.46	0.053				
I			0.10	I				
I				I				

	I								
I				I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END		DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I						
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN) CAPACITY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
I	09.00-09.15		VEHICLE (MIN) I						
I	B-ACD	1.50	6.05	0.248		0.46	0.34		5.2
I	A-B	0.15	0.22	I					
I	A-C	3.30		I					
I	A-D	1.05	8.43	0.124		0.18	0.14		2.2
I	D-ABC	3.75	0.14	0.458		1.39	0.87		13.8
I	C-ABD	0.42	8.18	0.041		0.08	0.06		0.9
I	C-D	0.72	0.23	I					
I	C-A	2.16	10.20	I					
I			0.10	I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END		DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I						
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN) CAPACITY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
I	09.15-09.30		VEHICLE (MIN) I						
I	B-ACD	1.25	6.27	0.200		0.34	0.25		3.9
I	A-B	0.13	0.20	I					
I	A-C	2.76		I					
I	A-D	0.88	8.55	0.103		0.14	0.12		1.8
			0.13	I					

I	D-ABC	3.14	8.45	0.371			
			0.19	I			9.4
I	C-ABD	0.33	10.02	0.033	0.06	0.05	0.7
			0.10	I			
I	C-D	0.61					
				I			
I	C-A	1.82					
				I			
I							
				I			

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR							
.							
QUEUE FOR STREAM B-ACD							

TIME			NO. OF				
SEGMENT			VEHICLES				
ENDING			IN QUEUE				
08.15			0.2				
08.30			0.3				
08.45			0.5				
09.00			0.5				
09.15			0.3				
09.30			0.3				
.							
QUEUE FOR STREAM A-D							

TIME			NO. OF				
SEGMENT			VEHICLES				
ENDING			IN QUEUE				
08.15			0.1				
08.30			0.1				
08.45			0.2				
09.00			0.2				
09.15			0.1				
09.30			0.1				
.							
QUEUE FOR STREAM D-ABC							

TIME			NO. OF				
SEGMENT			VEHICLES				
ENDING			IN QUEUE				
08.15			0.6	*			
08.30			0.8	*			
08.45			1.4	*			
09.00			1.4	*			
09.15			0.9	*			
09.30			0.6	*			
.							
QUEUE FOR STREAM C-ABD							

TIME			NO. OF				
SEGMENT			VEHICLES				
ENDING			IN QUEUE				

08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	B-ACD	I	137.6	I	91.8	I	30.9	I	0.22	I
I	A-B	I	13.8	I	9.2	I	I	I	I	I
I	A-C	I	302.8	I	201.9	I	I	I	I	I
I	A-D	I	96.3	I	64.2	I	13.1	I	0.14	I
I	D-ABC	I	344.1	I	229.4	I	82.9	I	0.24	I
I	C-ABD	I	39.1	I	26.1	I	5.6	I	0.14	I
I	C-D	I	65.9	I	43.9	I	I	I	I	I
I	C-A	I	197.8	I	131.8	I	I	I	I	I
I	ALL	I	1197.5	I	798.3	I	132.4	I	0.11	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	602.92	0.21	0.08	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	786.65	0.27	0.11	I

STREAM B-A

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-A STREAM A-C STREAM A-D STREAM D-A
STREAM D-B I

I	476.98	0.19	0.19	0.19
	0.19	I		

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-B STREAM C-A STREAM C-B
STREAM D-C I

I	0.10	0.08	0.12	0.28
		I		

STREAM D-C

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-C STREAM C-A STREAM C-B STREAM B-C
STREAM B-D I

I	622.33	0.25	0.25	0.25
	0.25	I		

Slope For Opposing					
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	I	
I	STREAM C-D	STREAM A-C	STREAM A-D	I	
STREAM B-A	I				
I	0.13	I	0.10	0.16	0.36

STREAM C-B				
I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D	I
I	602.92	0.21	0.21	0.29
I				I

STREAM A-D					
I	Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I	602.92	0.21	0.29	0.21	I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing		Slope For Opposing	Slope For Opposing		
Slope For OpposingI	I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I				

I	476.98	0.19	0.19	0.08	
	0.28	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI				

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-D	STREAM C-B	STREAM C-D
I	0.12	0.12		I

B-D Stream From Right Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I				

I	476.98	0.19	0.19	0.08	
	0.28	I			

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	I
I	STREAM C-A	STREAM C-D	STREAM C-B	I
I	0.12	0.12		I

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing		Slope For Opposing	Slope For Opposing	
Slope For OpposingI				
I	STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I			

I	622.33	0.25	0.25	0.10

0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I I 0.16 0.16

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 622.33 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I I 0.16 0.16

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 20241031 Sen 1 PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)

I I

I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I I
I I I I I I I

I ARM A I 15.00 I 45.00 I 75.00 I 2.75 I 4.13 I 2.75
I I
I ARM B I 15.00 I 45.00 I 75.00 I 1.13 I 1.69 I 1.13
I I
I ARM C I 15.00 I 45.00 I 75.00 I 3.00 I 4.50 I 3.00
I I
I ARM D I 15.00 I 45.00 I 75.00 I 2.13 I 3.19 I 2.13
I I

.Demand set: 20241031 Sen 1 PM

I I TURNING PROPORTIONS I
I I TURNING COUNTS I
I I (PERCENTAGE OF H.V.S) I

I I

I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I

I 08.00 - 09.30 I I I I I I I
I I ARM A I 0.000 I 0.045 I 0.636 I 0.318 I
I I I 0.0 I 10.0 I 140.0 I 70.0 I

I		I	I (0.0)	I (10.0)	I (10.0)	I (10.0)	I
I		I	I	I	I	I	I
I		I	ARM	B	I	0.111	I 0.000 I 0.111 I 0.778 I
I		I			I	10.0	I 0.0 I 10.0 I 70.0 I
I		I			I	(10.0)	I (0.0) I (10.0) I (10.0) I
I		I			I	I	I
I		I	ARM	C	I	0.625	I 0.042 I 0.000 I 0.333 I
I		I			I	150.0	I 10.0 I 0.0 I 80.0 I
I		I			I	(10.0)	I (10.0) I (0.0) I (10.0) I
I		I			I	I	I
I		I	ARM	D	I	0.353	I 0.471 I 0.176 I 0.000 I
I		I			I	60.0	I 80.0 I 30.0 I 0.0 I
I		I			I	(10.0)	I (10.0) I (10.0) I (0.0) I
I		I			I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 20241031 Sen 1 PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		(VEH.MIN/	PER ARRIVING	I				
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
I	SEGMENT)	TIME SEGMENT)	VEHICLE	(MIN) I				
I	08.00-08.15							
I	B-ACD	1.13	6.50	0.174		0.00	0.21	3.0
I			0.19	I				
I	A-B	0.13		I				
I	A-C	1.76		I				
I	A-D	0.88	8.51	0.103		0.00	0.11	1.6
I			0.13	I				
I	D-ABC	2.13	9.03	0.236		0.00	0.31	4.4
I			0.14	I				
I	C-ABD	0.17	10.46	0.016		0.00	0.02	0.3
I			0.10	I				
I	C-D	0.99		I				
I	C-A	1.85		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		(VEH.MIN/	PER ARRIVING	I				
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
I	SEGMENT)	TIME SEGMENT)	VEHICLE	(MIN) I				
I	08.15-08.30							
I	B-ACD	1.35	6.32	0.214		0.21	0.27	3.9
I			0.20	I				
I	A-B	0.15		I				
I	A-C	2.10		I				
I	A-D	1.05	8.38	0.125		0.11	0.14	2.1
I			0.14	I				
I	D-ABC	2.55	8.80	0.289		0.31	0.40	5.8
I			0.16	I				
I	C-ABD	0.22	10.72	0.020		0.02	0.02	0.4
I			0.10	I				
I	C-D	1.18		I				
I	C-A	2.20		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I		(VEH.MIN/	PER ARRIVING	I				
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
I	SEGMENT)	TIME SEGMENT)	VEHICLE	(MIN) I				
I	08.30-08.45							
I	B-ACD	1.65	6.07	0.272		0.27	0.37	5.3
I			0.23	I				
I	A-B	0.18		I				
I	A-C	2.57		I				
I	A-D	1.28	8.22	0.156		0.14	0.18	2.7
I			0.14	I				
I	D-ABC	3.12	8.49	0.368		0.40	0.57	8.2
I			0.19	I				
I	C-ABD	0.29	11.08	0.026		0.02	0.03	0.5
I			0.09	I				
I	C-D	1.43		I				
I	C-A	2.68		I				
I				I				

I									
			I						

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	
I	GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	SEGMENT)	TIME	SEGMENT)	VEHICLE (MIN)	I				
I	08.45-09.00								
I	B-ACD	1.65	6.07	0.272		0.37	0.37	5.5	
I	A-B	0.18	0.23	I					
I	A-C	2.57		I					
I	A-D	1.28	8.21	0.156		0.18	0.18	2.8	
I	D-ABC	3.12	8.48	0.368		0.57	0.58	8.6	
I	C-ABD	0.29	11.08	0.026		0.03	0.03	0.5	
I	C-D	1.43	0.09	I					
I	C-A	2.68		I					
I				I					
I				I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	
I	GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	SEGMENT)	TIME	SEGMENT)	VEHICLE (MIN)	I				
I	09.00-09.15								
I	B-ACD	1.35	6.31	0.214		0.37	0.28	4.3	
I	A-B	0.15	0.20	I					
I	A-C	2.10		I					
I	A-D	1.05	8.38	0.125		0.18	0.14	2.2	
I	D-ABC	2.55	8.80	0.289		0.58	0.41	6.4	

			0.16	I				
I	C-ABD	0.22	10.72	0.020		0.03	0.02	0.4
			0.10	I				
I	C-D	1.18						
				I				
I	C-A	2.20						
				I				
I								
				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	SEGMENT)	TIME	SEGMENT)	VEHICLE (MIN)	I			
I	09.15-09.30							
				I				
I	B-ACD	1.13	6.49	0.174		0.28	0.21	3.3
			0.19	I				
I	A-B	0.13						
				I				
I	A-C	1.76						
				I				
I	A-D	0.88	8.51	0.103		0.14	0.12	1.8
			0.13	I				
I	D-ABC	2.13	9.03	0.236		0.41	0.31	4.8
			0.15	I				
I	C-ABD	0.17	10.46	0.016		0.02	0.02	0.3
			0.10	I				
I	C-D	0.99						
				I				
I	C-A	1.85						
				I				
I								
				I				

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR								
.								

QUEUE FOR STREAM B-ACD								

TIME	NO. OF							
SEGMENT	VEHICLES							
ENDING	IN QUEUE							
08.15	0.2							
08.30	0.3							
08.45	0.4							
09.00	0.4							
09.15	0.3							
09.30	0.2							

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.3	
08.30	0.4	
08.45	0.6	*
09.00	0.6	*
09.15	0.4	
09.30	0.3	

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	123.9	I 82.6	I	25.3	I 0.20	I	25.3	I 0.20	I
I	A-B	I	13.8	I 9.2	I		I	I		I	I
I	A-C	I	192.7	I 128.5	I		I	I		I	I
I	A-D	I	96.3	I 64.2	I	13.2	I 0.14	I	13.2	I 0.14	I
I	D-ABC	I	234.0	I 156.0	I	38.3	I 0.16	I	38.3	I 0.16	I
I	C-ABD	I	20.3	I 13.5	I	2.3	I 0.11	I	2.3	I 0.11	I
I	C-D	I	107.9	I 71.9	I		I	I		I	I
I	C-A	I	202.2	I 134.8	I		I	I		I	I
I	ALL	I	991.0	I 660.7	I	79.1	I 0.08	I	79.1	I 0.08	I

 * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

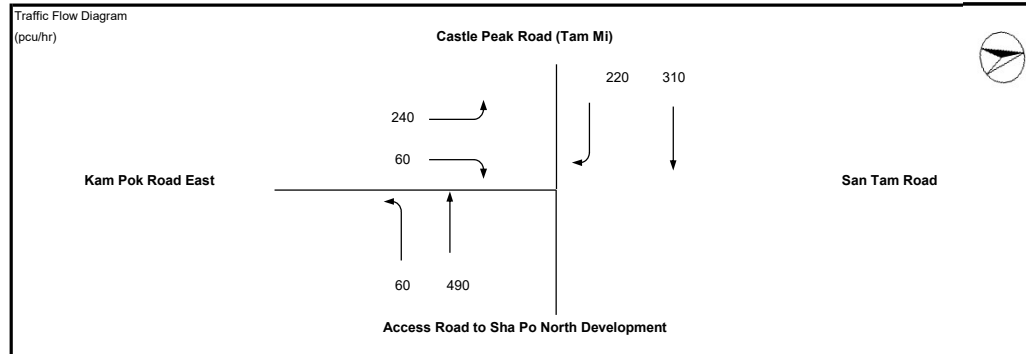
2034 AM Peak Hour Design Traffic Flows - Sensitivity Test

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

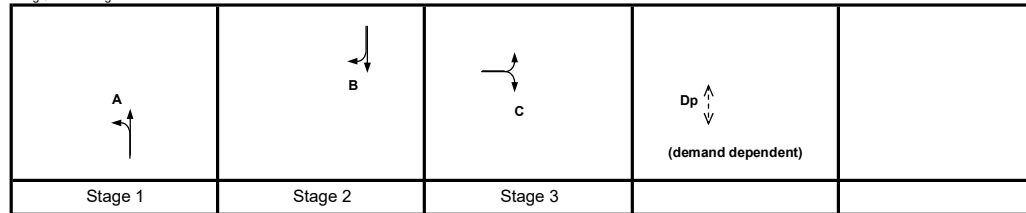
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.570
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	57 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	30 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	40.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	36 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 35\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	60	490		550	11%		1952	0.282	0.282
	B	2	3.400	1				1		0		1955		310		310			1955	0.159	0.159
	B	2	3.500	1		30	0	0		0		2105			220	220		100%	2005	0.110	
	C	3	3.400	1	25			1		0		1955	240			240	100%		1844	0.130	0.130
	C	3	3.400	1		30	0	0		0		2095		60		60		100%	1995	0.030	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

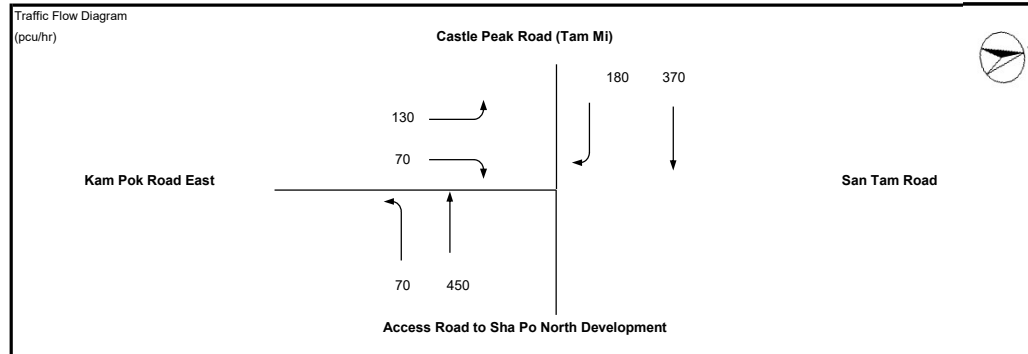
2034 PM Peak Hour Design Traffic Flows - Sensitivity Test

DESIGN: MCKN

CHECK: SHSN

JOB NO: -

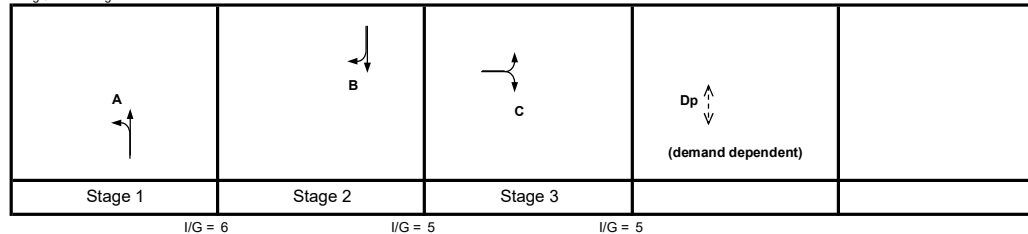
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.527
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	52 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	27 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	52.4 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	31 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 46\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	70	450		520	13%		1949	0.267	0.267
	B	2	3.400	1				1		0		1955		370		370			1955	0.189	0.189
	B	2	3.500	1		30	0	0		0		2105			180	180		100%	2005	0.090	
	C	3	3.400	1	25			1		0		1955	130			130	100%		1844	0.070	0.070
	C	3	3.400	1		30	0	0		0		2095			70	70		100%	1995	0.035	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

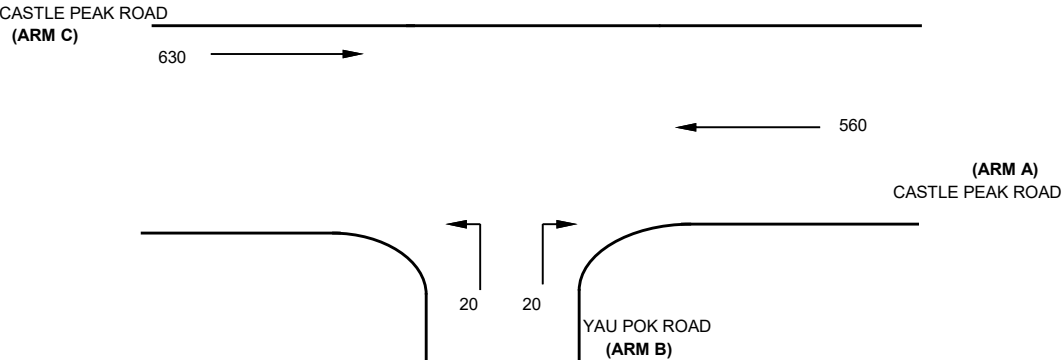
2034 AM Design Flow (Sensitivity Test 1)

Designed By :

Checked By :

Job No. :

Date : Jan 00



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	630 (pcu/hr)	Vl b-a	=	25 (metres)
q a-c	=	560 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	249
Q b-c	=	443
Q c-b	=	353
Q b-ac	=	319

CRITICAL DFC = 0.08

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.08
DFC b-c	=	0.05
DFC c-b	=	0.00

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

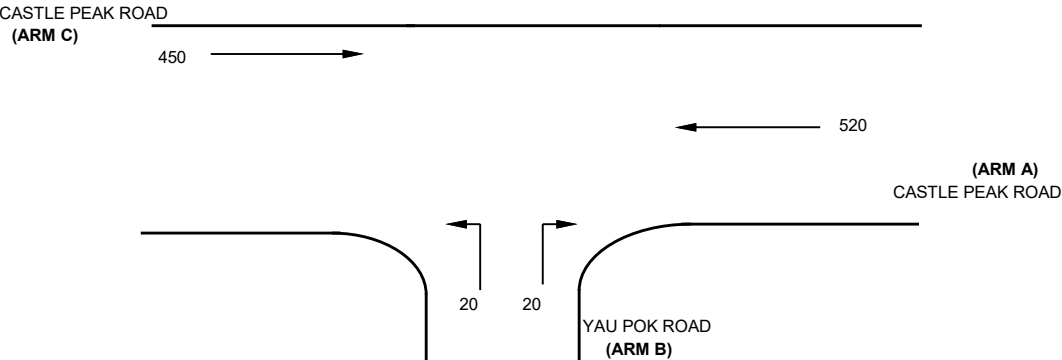
2034 PM Design Flow (Sensitivity Test 1)

Designed By :

Checked By :

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	6.5 (metres)
W cr	=	0 (metres)
q a-b	=	0 (pcu/hr)
q a-c	=	520 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	0 (metres)
Vr c-b	=	25 (metres)
q c-a	=	450 (pcu/hr)
q c-b	=	0 (pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	1.8 (metres)
W b-c	=	1.8 (metres)
VI b-a	=	25 (metres)
Vr b-a	=	25 (metres)
Vr b-c	=	25 (metres)
q b-a	=	20 (pcu/hr)
q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	280
Q b-c	=	452
Q c-b	=	359
Q b-ac	=	346

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS
PICADY 5.1 ANALYSIS PROGRAM
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SOLUTION

Run with file:-
"T:\Anthony Sun\20240920 Picidy\Junction 8 - Yau Pok Road REC N\0920 Cumu
Des\Cumu Des.vpi"
(drive-on-the-left) at 12:21:52 on Friday, 20 September 2024

.RUN INFORMATION

RUN TITLE : J8 - Yau Pok Road / REC North Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I

I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC North

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00
M. I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50
M. I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25
I	0.25	I		

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B
I	602.92	0.23	0.23	0.33
I	0.13	I		

I		0.10	0.16	0.36
---	--	------	------	------

0.13 I

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25
I	0.25	I		

I	544.46	0.25	0.25	0.25
I	0.25	I		

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	544.46	0.10	0.16	0.36
I	0.13	I		

I	544.46	0.10	0.16	0.36
I	0.13	I		

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23	0.33
I	0.13	I		

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33	0.23
I	0.13	I		

B-D Stream From Left Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM B-D STREAM A-C STREAM A-D STREAM A-B				
STREAM C-B I				

I	544.46	0.25	0.25	0.10
0.36	I			

I Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM C-A STREAM C-D				
I I				

I		0.16	0.16	
	I			

B-D Stream From Right Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM B-D STREAM A-C STREAM A-D STREAM A-B				
STREAM C-B I				

I	544.46	0.25	0.25	0.10
0.36	I			

I Slope For Opposing Slope For Opposing Slope For Opposing				

Slope For OpposingI				
I	STREAM	C-A	STREAM	C-D

I		0.16	0.16	
	I			

D-B Stream From Left Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM D-B STREAM C-A STREAM C-B STREAM C-D				
STREAM A-D I				

I	544.46	0.25	0.25	0.10
0.36	I			

I Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM A-C STREAM A-B				
I I				

I		0.16	0.16	
	I			

D-B Stream From Right Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI I STREAM B-D STREAM C-A STREAM C-B STREAM C-D				
STREAM A-D I				

I 544.46 0.25 0.25 0.10
0.36 I

Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 0920 Cumu Des Am

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I
I I I I I I I
I

I ARM A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM B I 15.00 I 45.00 I 75.00 I 1.13 I 1.69 I 1.13
I
I ARM C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM D I 15.00 I 45.00 I 75.00 I 1.38 I 2.06 I 1.38
I

.Demand set: 0920 Cumu Des Am

I TURNING PROPORTIONS I
I TURNING COUNTS I
I (PERCENTAGE OF H.V.S) I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I
I 08.00 - 09.30 I I I I I I I
I I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I
I I I 0.0 I 0.0 I 0.0 I 0.0 I
I I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM B I 0.222 I 0.000 I 0.000 I 0.778 I
I I I 20.0 I 0.0 I 0.0 I 70.0 I
I I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM C I 0.000 I 0.000 I 0.000 I 0.000 I
I I I 0.0 I 0.0 I 0.0 I 0.0 I
I I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I
I I ARM D I 0.000 I 1.000 I 0.000 I 0.000 I
I I I 0.0 I 110.0 I 0.0 I 0.0 I
I I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 0920 Cumu Des Am
AND FOR TIME PERIOD 1
I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY
GEOMETRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/
I (VEH.MIN/ PER ARRIVING I
I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)
TIME SEGMENT) VEHICLE (MIN) I
I 08.00-08.15 I

I	B-ACD	1.13	9.00	0.126		0.00	0.14	2.1
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	1.38	9.07	0.152		0.00	0.18	2.6
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.15-08.30							

I	B-ACD	1.35	8.98	0.150		0.14	0.18	2.6
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	1.65	9.07	0.182		0.18	0.22	3.2
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
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I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.30-08.45							
I	B-ACD	1.65	8.96	0.184		0.18	0.22	3.3
I	A-B	0.00	0.14	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	2.02	9.07	0.222		0.22	0.28	4.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.45-09.00							

I	B-ACD	1.65	8.96	0.184		0.22	0.22	3.4
I	A-B	0.00	0.14	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	2.02	9.07	0.222		0.28	0.28	4.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I 09.00-09.15								
I								
I	B-ACD	1.35	8.98	0.150		0.22	0.18	2.7
I								
I	A-B	0.00	0.13	I				
I								
I	A-C	0.00		I				
I								
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I								
I	D-ABC	1.65	9.07	0.182		0.28	0.22	3.4
I								
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I								
I	C-D	0.00	0.00	I				
I								
I	C-A	0.00		I				
I								
I								

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I 09.15-09.30								
I								
I	B-ACD	1.13	8.99	0.126		0.18	0.14	2.2
I								
I	A-B	0.00	0.13	I				
I								
I	A-C	0.00		I				
I								
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I								
I	D-ABC	1.38	9.07	0.152		0.22	0.18	2.8
I								
		0.13		I				

I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I								
I	C-D	0.00	0.00	I				
I								
I	C-A	0.00		I				
I								
I								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.1	
08.30	0.2	
08.45	0.2	
09.00	0.2	
09.15	0.2	
09.30	0.1	

QUEUE FOR STREAM		A-D

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	

QUEUE FOR STREAM		D-ABC

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.2	
08.30	0.2	
08.45	0.3	
09.00	0.3	
09.15	0.2	
09.30	0.2	

QUEUE FOR STREAM		C-ABD

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.0	

08.45 0.0
09.00 0.0
09.15 0.0
09.30 0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-ACD	I	123.9	I	82.6	I	16.2	I
I	A-B	I	0.0	I	0.0	I		I
I	A-C	I	0.0	I	0.0	I		I
I	A-D	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	151.4	I	100.9	I	20.4	I
I	C-ABD	I	0.0	I	0.0	I	0.00	I
I	C-D	I	0.0	I	0.0	I		I
I	C-A	I	0.0	I	0.0	I		I
I	ALL	I	275.3	I	183.5	I	36.6	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-A STREAM A-C STREAM A-D STREAM D-A
STREAM D-B I

I 544.46 0.25 0.25 0.25
0.25 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-B STREAM C-A STREAM C-B
STREAM D-C I

I 0.13 0.10 0.16 0.36
0.13 I

STREAM D-C

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-C STREAM C-A STREAM C-B STREAM B-C
STREAM B-D I

I 544.46 0.25 0.25 0.25
0.25 I

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-D	STREAM A-C	STREAM A-D
STREAM B-A	I		

I	0.13	I	0.10	0.16	0.36
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STREAM C-B			
I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23
			0.33
			I

STREAM A-D			
I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33
			0.23
			I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I	STREAM A-B

I	544.46	I	0.25	0.25	0.10
	0.36				

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I	0.16	0.16
I		

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I	STREAM A-B

I	544.46	I	0.25	0.25	0.10
	0.36				

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I	0.16	0.16
I		

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM D-B	STREAM C-A	STREAM C-B
STREAM A-D	I	STREAM C-D

I	544.46	I	0.25	0.25	0.10
	0.36				

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D
STREAM A-D I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-C STREAM A-B

I 0.16 0.16
I

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I

.Demand set: 0920 cumu Des Pm

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN)
I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK
I
I I I I I I
I
I

I ARM A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM B I 15.00 I 45.00 I 75.00 I 1.00 I 1.50 I 1.00
I
I ARM C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM D I 15.00 I 45.00 I 75.00 I 0.63 I 0.94 I 0.63
I

.Demand set: 0920 cumu Des Pm

I I TURNING PROPORTIONS I
I I TURNING COUNTS I
I I (PERCENTAGE OF H.V.S) I
I
I
I TIME I FROM/TO I ARM A I ARM B I ARM C I ARM D I

I 08.00 - 09.30 I I I I I I
I I ARM A I 0.000 I 0.000 I 0.000 I 0.000 I
I I I 0.0 I 0.0 I 0.0 I 0.0 I
I I I (0.0)I (0.0)I (0.0)I (0.0)I
I I I I I I I I

I	I	ARM	B	I	0.250	I	0.000	I	0.000	I	0.750	I
I	I			I	20.0	I	0.0	I	0.0	I	60.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I
I	I	ARM	C	I	0.000	I	0.000	I	0.000	I	0.000	I
I	I			I	0.0	I	0.0	I	0.0	I	0.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I
I	I	ARM	D	I	0.000	I	1.000	I	0.000	I	0.000	I
I	I			I	0.0	I	50.0	I	0.0	I	0.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 0920 cumu Des Pm
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY I						
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	PER ARRIVING	I		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)				
I	08.00-08.15							
I			I					
I	B-ACD	1.00	9.03	0.111		0.00	0.12	1.8
I	A-B	0.00	0.12	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.63	9.07	0.069		0.00	0.07	1.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY I						
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	

I	(VEH.MIN/	PER ARRIVING	I	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)				
I	08.15-08.30							
I			I					
I	B-ACD	1.20	9.03	0.133		0.12	0.15	2.2
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.75	9.07	0.083		0.07	0.09	1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY I						
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	PER ARRIVING	I		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I	(RFC)				
I	08.30-08.45							
I			I					
I	B-ACD	1.47	9.02	0.163		0.15	0.19	2.8
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.92	9.07	0.101		0.09	0.11	1.6
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.45-09.00							
I	B-ACD	1.47	9.02	0.163		0.19	0.19	2.9
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.92	9.07	0.101		0.11	0.11	1.7
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	09.00-09.15							
I	B-ACD	1.20	9.03	0.133		0.19	0.15	2.4
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.75	9.07	0.083		0.11	0.09	1.4
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I		0.00	0.00	I				

I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	09.15-09.30							
I	B-ACD	1.00	9.03	0.111		0.15	0.13	1.9
I	A-B	0.00	0.12	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.63	9.07	0.069		0.09	0.07	1.1
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00	0.00	I				
I	C-A	0.00		I				
I				I				

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.2
09.30	0.1

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-ACD	I	110.1	I	73.4	I	14.0	I	0.13
I	A-B	I	0.0	I	0.0	I		I	
I	A-C	I	0.0	I	0.0	I		I	
I	A-D	I	0.0	I	0.0	I	0.00	I	0.00
I	D-ABC	I	68.8	I	45.9	I	8.2	I	0.12
I	C-ABD	I	0.0	I	0.0	I	0.00	I	0.00
I	C-D	I	0.0	I	0.0	I		I	
I	C-A	I	0.0	I	0.0	I		I	
I	ALL	I	178.9	I	119.3	I	22.3	I	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

TRL LIMITED
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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS
PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)
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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE
SOLUTION

Run with file:-
"T:\Anthony Sun\20240920 Picidy\Junction 9 - Yau Pok Road REC S\0920 Cumu
Des\Cumu Des.vpi"
(drive-on-the-left) at 12:27:46 on Friday, 20 September 2024

.RUN INFORMATION

RUN TITLE : J9 - Yau Pok Road / REC South Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I
I

I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC South

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00
M. I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.50
M. I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	544.46	0.25	0.25	0.25
I	0.25	I		

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B
I	602.92	0.23	0.23	0.33
I	0.13	I		

I	0.10	0.16	0.36
---	------	------	------

0.13 I

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	544.46	0.25	0.25	0.25
I	0.25	I		

I	0.25	I		
---	------	---	--	--

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	544.46	0.10	0.16	0.36
I	0.13	I		

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23	0.33
I	0.13	I		

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33	0.23
I	0.13	I		

B-D Stream From Left Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B				
STREAM C-B I				

I 544.46 0.25 0.25 0.10				
0.36 I				

I Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM C-A STREAM C-D				

I 0.16 0.16				
I				

B-D Stream From Right Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B				
STREAM C-B I				

I 544.46 0.25 0.25 0.10				
0.36 I				

I Slope For Opposing Slope For Opposing Slope For Opposing				

Slope For OpposingI				
I STREAM C-A STREAM C-D				

I 0.16 0.16				
I				

D-B Stream From Left Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM D-B STREAM C-A STREAM C-B STREAM C-D				
STREAM A-D I				

I 544.46 0.25 0.25 0.10				
0.36 I				

I Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM A-C STREAM A-B				

I 0.16 0.16				
I				

D-B Stream From Right Hand Lane				

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing				
Slope For OpposingI				
I STREAM B-D STREAM C-A STREAM C-B STREAM C-D				
STREAM A-D I				

I Slope For Opposing Slope For Opposing Slope For Opposing				

I

I	B-ACD	1.25	9.03	0.139		0.00	0.16	2.3
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
I	D-ABC	1.76	9.04	0.194		0.00	0.24	3.4
I	C-ABD	0.13	10.05	0.012		0.00	0.01	0.2
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.15-08.30							

I	B-ACD	1.50	9.02	0.166		0.16	0.20	2.9
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I	D-ABC	2.10	9.04	0.232		0.24	0.30	4.4
I	C-ABD	0.15	10.05	0.015		0.01	0.02	0.2
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
---	------	--------	----------	---------	------------	-------	-----	-------

I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.30-08.45							
I	B-ACD	1.84	9.01	0.204		0.20	0.25	3.7
I	A-B	0.00	0.14	I				
I	A-C	0.00		I				
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I	D-ABC	2.57	9.03	0.285		0.30	0.39	5.7
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	VEHICLE (MIN)	I						
I	08.45-09.00							

I	B-ACD	1.84	9.01	0.204		0.25	0.25	3.8
I	A-B	0.00	0.14	I				
I	A-C	0.00		I				
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I	D-ABC	2.57	9.03	0.285		0.39	0.39	5.9
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				

I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.00-09.15	VEHICLE (MIN)	I					
I	B-ACD	1.50	9.02	0.166		0.25	0.20	3.1
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I	D-ABC	2.10	9.04	0.232		0.39	0.31	4.7
I	C-ABD	0.15	10.05	0.015		0.02	0.02	0.2
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC	DELAY	AVERAGE	DELAY I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	TIME SEGMENT)	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	09.15-09.30	VEHICLE (MIN)	I					
I	B-ACD	1.25	9.03	0.139		0.20	0.16	2.5
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
I	D-ABC	1.76	9.04	0.194		0.31	0.24	3.7
		0.14		I				

I	C-ABD	0.13	10.05	0.012		0.02	0.01	0.2
I	C-D	0.00	0.10	I				
I	C-A	0.00		I				
I				I				
I				I				

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM		B-ACD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.2	
08.30	0.2	
08.45	0.3	
09.00	0.3	
09.15	0.2	
09.30	0.2	

QUEUE FOR STREAM		A-D
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	

QUEUE FOR STREAM		D-ABC
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.2	
08.30	0.3	
08.45	0.4	
09.00	0.4	
09.15	0.3	
09.30	0.2	

QUEUE FOR STREAM		C-ABD
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.15	0.0	
08.30	0.0	

08.45 0.0
09.00 0.0
09.15 0.0
09.30 0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-ACD	I	137.6	I	91.8	I	18.3	I
I	A-B	I	0.0	I	0.0	I		I
I	A-C	I	0.0	I	0.0	I		I
I	A-D	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	192.7	I	128.5	I	27.9	I
I	C-ABD	I	13.8	I	9.2	I	1.4	I
I	C-D	I	0.0	I	0.0	I		I
I	C-A	I	0.0	I	0.0	I		I
I	ALL	I	344.1	I	229.4	I	47.6	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	STREAM B-A	STREAM A-C
I	STREAM D-B	I		STREAM A-D
I		I		STREAM D-A

I	544.46	I	0.25	I	0.25	I	0.25
I	0.25	I		I		I	

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	I	STREAM A-B
I		I	STREAM C-A
I		I	STREAM C-B

I	0.13	I	0.10	I	0.16	I	0.36
---	------	---	------	---	------	---	------

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Slope For Opposing	I	STREAM D-C	STREAM C-A
I	STREAM B-D	I		STREAM C-B
I		I		STREAM B-C

I	544.46	I	0.25	I	0.25	I	0.25
I	0.25	I		I		I	

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-D	STREAM A-C	STREAM A-D
STREAM B-A	I		

I	0.13	I	0.10	0.16	0.36
---	------	---	------	------	------

STREAM C-B			
I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.23	0.23
			0.33
			I

STREAM A-D			
I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.23	0.33
			0.23
			I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I	STREAM A-B

I	544.46	I	0.25	0.25	0.10
	0.36				

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I	0.16	0.16
I		

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM B-D	STREAM A-C	STREAM A-D
STREAM C-B	I	STREAM A-B

I	544.46	I	0.25	0.25	0.10
	0.36				

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I	0.16	0.16
I		

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI		
I STREAM D-B	STREAM C-A	STREAM C-B
STREAM A-D	I	STREAM C-D

I	544.46	I	0.25	0.25	0.10
	0.36				

```

-----
-----
-----
I      Slope For Opposing  Slope For Opposing  Slope For Opposing
Slope For OpposingI
I      STREAM  A-C      STREAM A-B
-----
-----
I      0.16      0.16
I
-----
-----

```

D-B Stream From Right Hand Lane

```

-----
-----
I Intercept For Slope For Opposing  Slope For Opposing  Slope For Opposing
Slope For OpposingI
I STREAM B-D  STREAM  C-A      STREAM C-B      STREAM  C-D
STREAM  A-D  I
-----
-----
I      544.46      0.25      0.25      0.10
0.36      I
-----
-----

```

```

-----
-----
I      Slope For Opposing  Slope For Opposing  Slope For Opposing
Slope For OpposingI
I      STREAM  A-C      STREAM A-B
-----
-----
I      0.16      0.16
I
-----
-----

```

.TRAFFIC DEMAND DATA

```

-----
-----
I ARM I FLOW SCALE(%) I
-----

```

```

-----
I A I 100 I
I B I 100 I
I C I 100 I
I D I 100 I
-----

```

.Demand set: 0920 Cumu Des PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

```

-----
---
I      I  NUMBER OF MINUTES FROM START WHEN  I  RATE OF FLOW (VEH/MIN)
I
I ARM  I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER
I
I      I  TO RISE  I  IS REACHED I FALLING  I  PEAK  I OF PEAK I PEAK
I
I      I      I      I      I      I      I
I
I
-----
---
I ARM  A I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM  B I 15.00 I 45.00 I 75.00 I 0.75 I 1.13 I 0.75
I
I ARM  C I 15.00 I 45.00 I 75.00 I 0.00 I 0.00 I 0.00
I
I ARM  D I 15.00 I 45.00 I 75.00 I 0.63 I 0.94 I 0.63
I
-----
---

```

.Demand set: 0920 Cumu Des PM

```

-----
I      I  TURNING PROPORTIONS  I
I      I  TURNING COUNTS  I
I      I  (PERCENTAGE OF H.V.S)  I
I
I      I  FROM/TO I ARM  A I ARM  B I ARM  C I ARM  D I
I
I 08.00 - 09.30 I      I      I      I      I
I      I ARM  A I 0.000 I 0.000 I 0.000 I 0.000 I
I      I      I 0.0 I 0.0 I 0.0 I 0.0 I
I      I      I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I
I      I      I      I      I      I
I

```


TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

FOR DEMAND SET 0920 Cumu Des PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE		(VEH.MIN/

TIME GEOMETRIC I I I I I	TIME DELAY (VEH.MIN/ TIME SEGMENT)	DEMAND AVERAGE (VEH/MIN) VEHICLE	CAPACITY DELAY I (VEH/MIN) (MIN)	DEMAND/ CAPACITY I (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
B-ACD	1.10	9.07	0.121		0.11	0.14	2.0	
A-B	0.00							
A-C	0.00							
A-D	0.00	9.14	0.000		0.00	0.00	0.0	
D-ABC	0.92	9.07	0.101		0.09	0.11	1.6	
C-ABD	0.00	9.14	0.000		0.00	0.00	0.0	
C-D	0.00							
C-A	0.00							

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.45-09.00							
I	B-ACD	1.10	9.07	0.121		0.14	0.14	2.1
I	A-B	0.00	0.13	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.92	0.00	0.101		0.11	0.11	1.7
I	C-ABD	0.00	9.07	0.000		0.00	0.00	0.0
I	C-D	0.00	0.12	I				
I	C-A	0.00	9.14	0.000				
I			0.00	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	09.00-09.15							
I	B-ACD	0.90	9.07	0.099		0.14	0.11	1.7
I	A-B	0.00	0.12	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.75	0.00	0.083		0.11	0.09	1.4
I	C-ABD	0.00	9.07	0.000		0.00	0.00	0.0
I			0.12	I				
I			9.14	0.000				
I			0.00	I				

I	C-D	0.00						
I	C-A	0.00						
I								
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	09.15-09.30							
I	B-ACD	0.75	9.07	0.083		0.11	0.09	1.4
I	A-B	0.00	0.12	I				
I	A-C	0.00		I				
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.63	0.00	0.069		0.09	0.07	1.1
I	C-ABD	0.00	9.07	0.000		0.00	0.00	0.0
I	C-D	0.00	0.12	I				
I	C-A	0.00	9.14	0.000				
I			0.00	I				
I				I				
I				I				

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-ACD	I	82.6	I	55.1	I	10.1	I	0.12
I	A-B	I	0.0	I	0.0	I		I	
I	A-C	I	0.0	I	0.0	I		I	
I	A-D	I	0.0	I	0.0	I	0.00	I	0.00
I	D-ABC	I	68.8	I	45.9	I	8.2	I	0.12
I	C-ABD	I	0.0	I	0.0	I	0.00	I	0.00
I	C-D	I	0.0	I	0.0	I		I	
I	C-A	I	0.0	I	0.0	I		I	
I	ALL	I	151.4	I	100.9	I	18.3	I	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

2034 AM Design - Sensitivity Test (I)

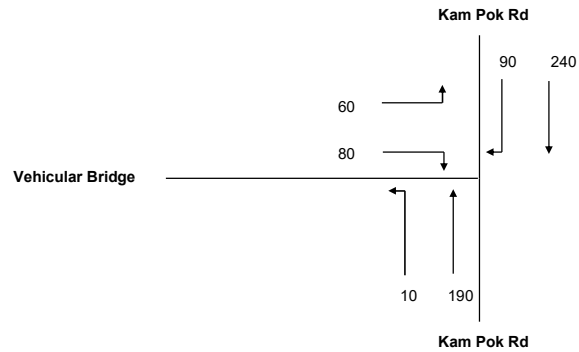
DESIGN: 0

CHECK: 0

JOB NO: 60XXXXXX

DATE: Oct 24

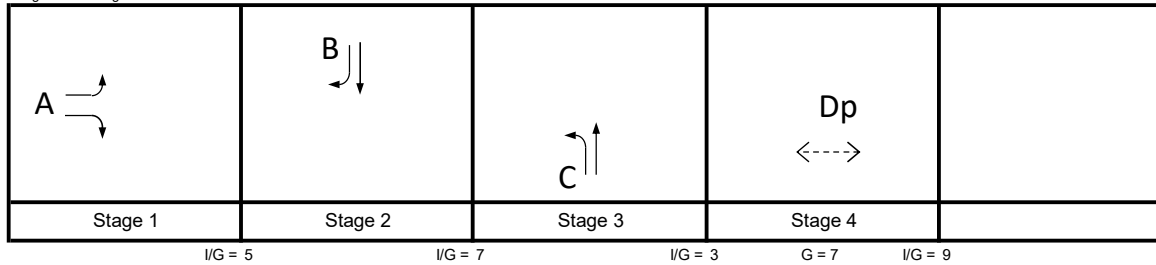
Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.357
Lost time	L =	28 sec
Total Flow	=	670 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	73 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	44 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.690
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	93.2 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	46 sec
Y_{max}	$= 1 - L / C =$	0.533

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 34\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.600	1	5	10	0	0		0		2115	60		80	140	43%	57%	1742	0.080	0.080
	B	2	3.600	1		10	0	1		0		1975		240	90	330		27%	1897	0.174	0.174
	C	3	3.600	1	5			1		0		1975	10	190		200	5%		1946	0.103	0.103
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

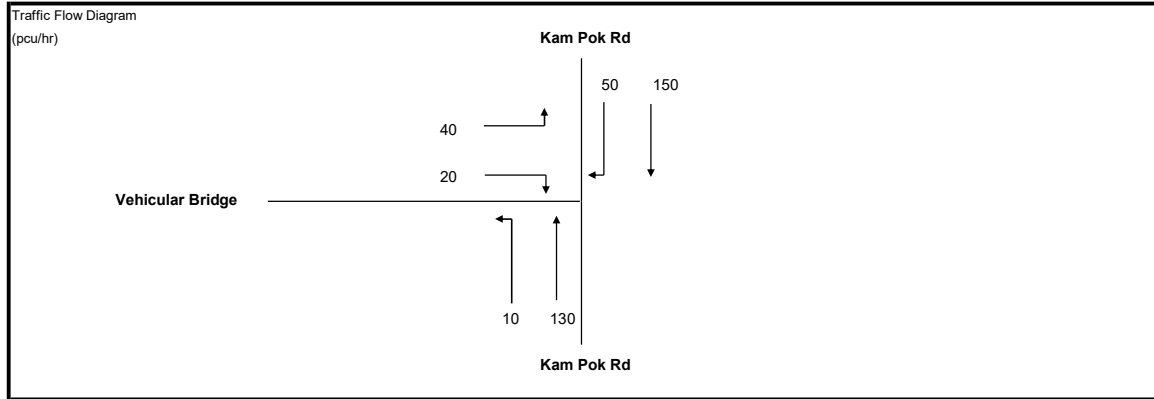
2034 PM Design - Sensitivity Test (I)

DESIGN: 0

CHECK: 0

JOB NO: 60XXXXXX

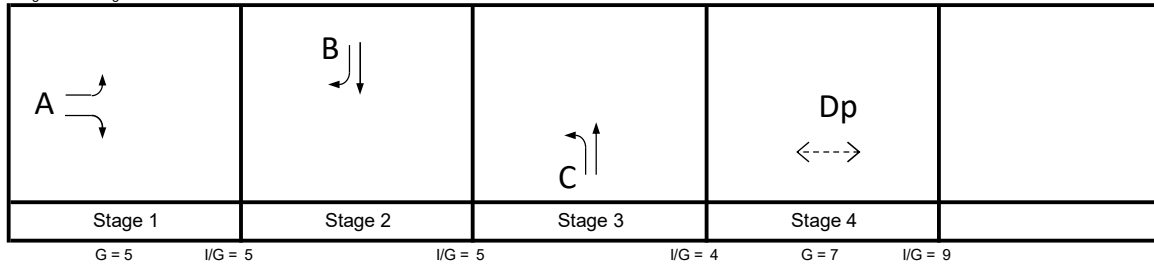
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.177
Lost time	L =	33 sec
Total Flow	=	400 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	66 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	40 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.653
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	267.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	41 sec
Y_{max}	$= 1 - L / C =$	0.450

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 128\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		20	60	67%	33%	1692	0.035	
↘	B	2	3.600	1		10	0	1		0		1975		150	50	200		25%	1904	0.105	0.105
↗	C	3	3.600	1	5			1		0		1975	10	130		140	7%		1934	0.072	0.072
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

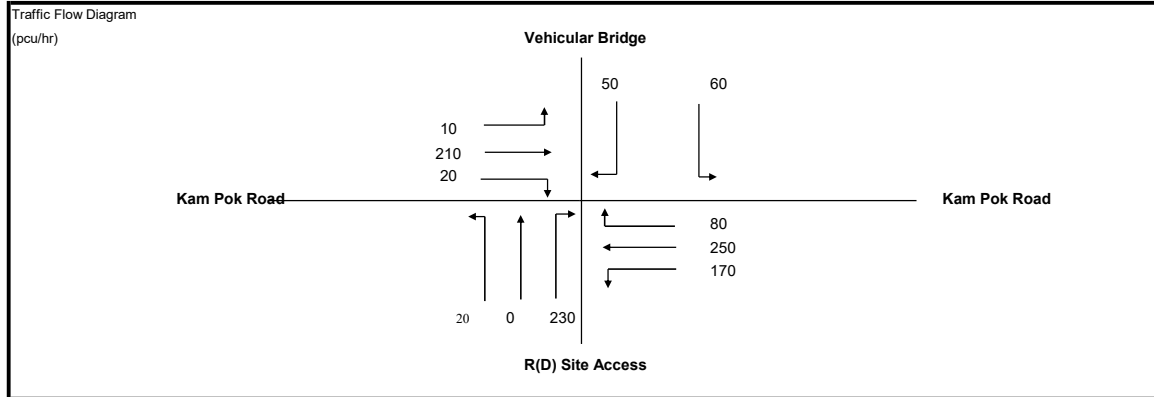
Year 2034 AM Cumulative Traffic Impact [R(D) + REC(NS)] & 100% Kam Pok R

DESIGN: 0

CHECK: 0

#VALUE!

DATE: Oct 24



No. of stages per cycle N = 4

Cycle time C = 90 sec

Sum(y) Y = 0.427

Lost time L = 37 sec

Total Flow = 1,100 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 105$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 65$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.623$

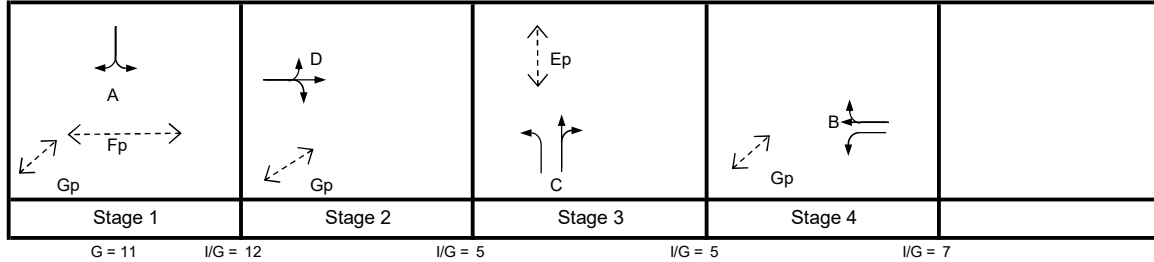
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 45.9\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 70$ sec

$Y_{max} = 1 - L / C = 0.589$

J11

Stage/Phase Diagrams



Critical Case : Fp,D,C,B

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 24\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
↔	A	1	3.500	1	10	12	0	0		0		2105	60		50	110	55%	45%	1849	0.060	
↔	B	4	3.650	1	15			1		0		1980	170			170	100%		1800	0.094	0.159
↔	B	4	3.650	1		15	0	0		0		2120		250	80	330		24%	2070	0.159	
↔	C	3	3.000	1	12	15	0	1		0		1915	20	0	230	250	8%	92%	1738	0.144	0.144
↔	D	2	3.650	1	10	12	0	1		0		1980	10	210	20	240	4%	8%	1948	0.123	0.123
Pedestrian Crossing					GM	FGM															
	Ep	3	min.	10	+	10	=	20	sec												*
	Fp	1	min.	11	+	10	=	21	sec												
	Gp	1,2,4	min.	5	+	5	=	10	sec												

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

Year 2034 AM Cumulative Traffic Impact [R(D) + REC(NS)] & 100% Kam Pok R

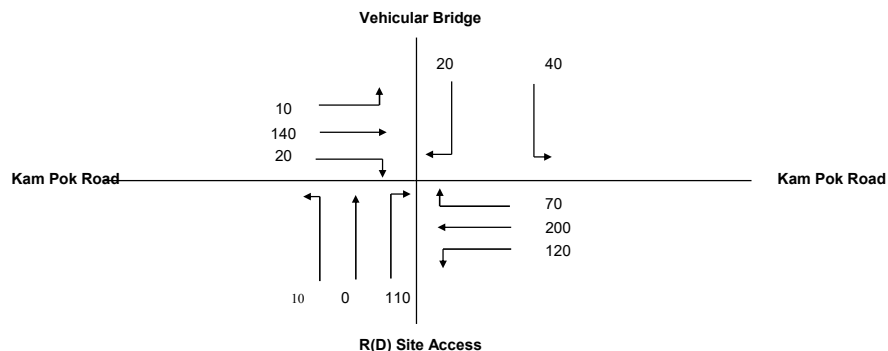
DESIGN: 0

CHECK: 0

#VALUE!

DATE: Oct 24

Traffic Flow Diagram
(pcu/hr)

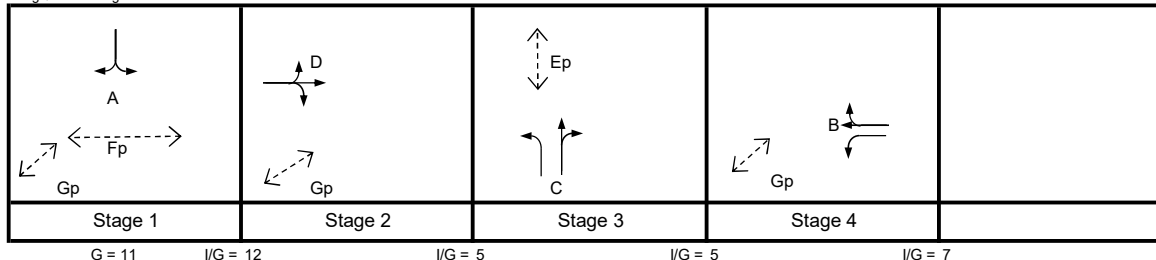


No. of stages per cycle N = 4
Cycle time C = 90 sec
Sum(y) Y = 0.292
Lost time L = 37 sec
Total Flow = 750 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 85$ sec
Min. Cycle Time $C_m = L / (1 - Y) = 52$ sec
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.623$
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 113.0\%$
Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 55$ sec
 $Y_{max} = 1 - L / C = 0.589$

J11

Stage/Phase Diagrams



Critical Case : Fp,D,C,B

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 81\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
Left Turn	A	1	3.500	1	10	12	0	0		0		2105	40		20	60	67%	33%	1844	0.033	
Through/Right Turn	B	4	3.650	1	15			1		0		1980	120			120	100%		1800	0.067	
Through/Right Turn	B	4	3.650	1		15		0		0		2120		210	70	280		25%	2068	0.135	0.135
Left Turn	C	3	3.000	1	12	15		1		0		1915	10	0	110	120	8%	92%	1738	0.069	0.069
Through/Right Turn	D	2	3.650	1	10	12		1		0		1980	10	140	20	170	6%	12%	1934	0.088	0.088
Pedestrian Crossing					GM	FGM															
Ep		3	min.	10	+	10	=	20	sec												
Fp		1	min.	11	+	10	=	21	sec												*
Gp		1,2,4	min.	5	+	5	=	10	sec												

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

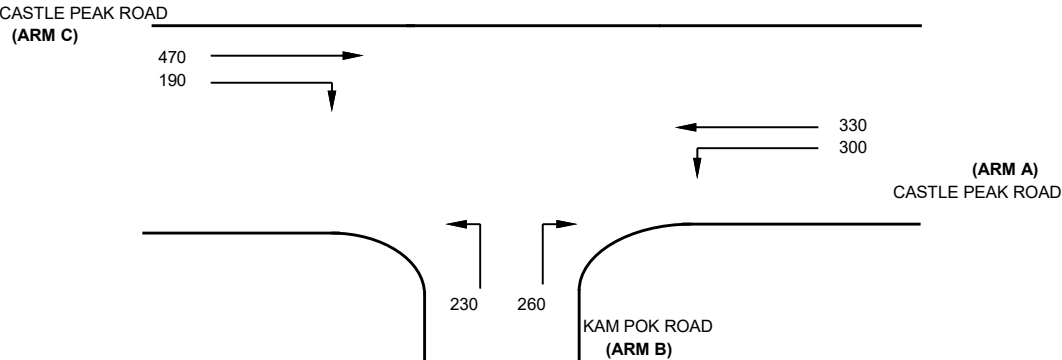
2034 AM Design Flows Sensitivity Test 1 (with IMP)

Designed By :

Checked By :

Job No. :

Date : Dec 21



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	7.3 (metres)	W c-b	=	2.05 (metres)	W b-a	=	4.07 (metres)
W cr	=	(metres)	Vr c-b	=	30 (metres)	W b-c	=	4.07 (metres)
q a-b	=	300 (pcu/hr)	q c-a	=	470 (pcu/hr)	Vl b-a	=	100 (metres)
q a-c	=	330 (pcu/hr)	q c-b	=	190 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	80 (metres)
						q b-a	=	260 (pcu/hr)
						q b-c	=	230 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.990146
E	=	1.002059
F	=	0.780782
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	347
Q b-c	=	624
Q c-b	=	448
Q b-ac	=	438

CRITICAL DFC = 0.75

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.75
DFC b-c	=	0.37
DFC c-b	=	0.42

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

2034 PM Design Flows Sensitivity Test 1 (With IMP)

Designed By :

Checked By :

Job No. :

Date : Dec 21

CASTLE PEAK ROAD

(ARM C)

350
120

410
260

(ARM A)

CASTLE PEAK ROAD

120 170

KAM POK ROAD
(ARM B)

NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)
W cr = 0 (metres)
q a-b = 260 (pcu/hr)
q a-c = 410 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)
Vr c-b = 30 (metres)
q c-a = 350 (pcu/hr)
q c-b = 120 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)
W b-c = 4.07 (metres)
Vl b-a = 100 (metres)
Vr b-a = 100 (metres)
Vr b-c = 80 (metres)
q b-a = 170 (pcu/hr)
q b-c = 120 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146
E = 1.002059
F = 0.780782
Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 377
Q b-c = 607
Q c-b = 439
Q b-ac = 447

CRITICAL DFC = 0.45

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.45
DFC b-c = 0.20
DFC c-b = 0.27

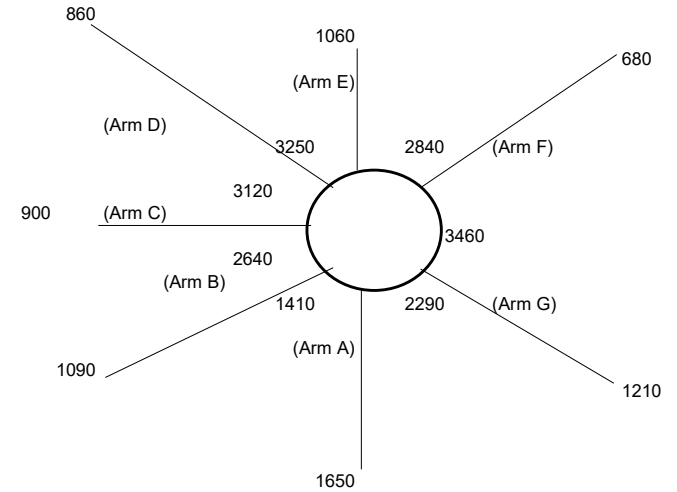
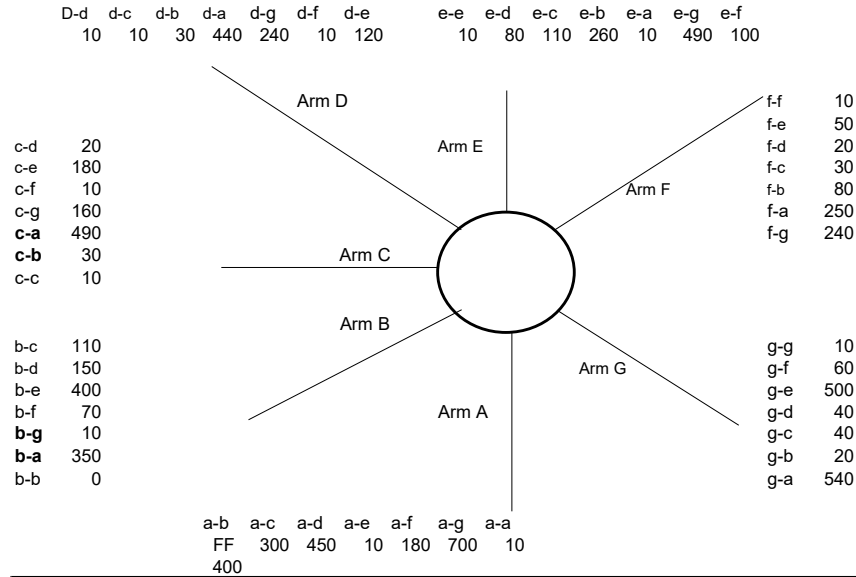
Design Flow

Sensitivity Test (II)

ROUNABOUT CAPACITY CALCULATIC

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 AM Design Flows (Sensitivity Test with Soy Factory w IMP)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024



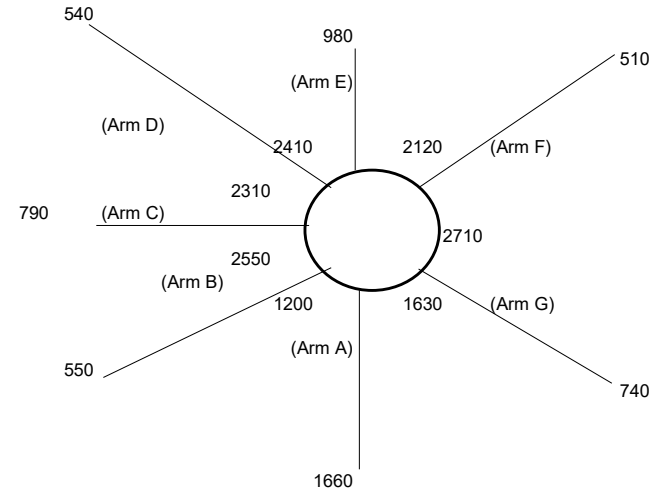
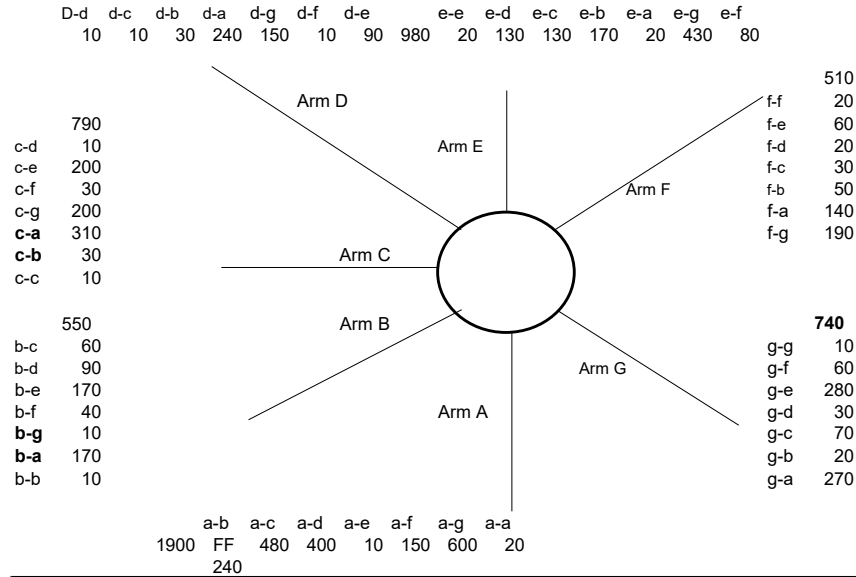
ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	6.50	7.00	7.30	7.30	7.30	7.30
E = Entry width (m)	11.00	11.20	11.80	12.00	12.00	11.00	12.00
L = Effective length of flare (m)	30.00	22.00	20.00	36.00	18.00	23.00	27.00
R = Entry radius (m)	25.00	25.00	25.00	30.00	45.00	25.00	25.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	40.00	35.00	35.00	25.00	30.00	35.00	45.00
Q = Entry flow (pcu/h)	1650	1090	900	860	1060	680	1210
Qc= Circulating flow across entry (pcu/h)	1410	2640	3120	3250	2840	3460	2290
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.27	0.34	0.38	0.21	0.42	0.26	0.28
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.99	0.99	1.03	1.03	0.99	0.96
X2= V + ((E-V)/(1+2S))	9.26	9.29	9.71	10.62	9.86	9.74	10.32
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2806	2815	2944	3216	2988	2952	3127
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.60	0.60	0.62	0.66	0.62	0.62	0.64
Qe= K(F-Fc*Qc)	1912	1221	1007	1121	1248	803	1583
DFC = Design flow/Capacity = Q/Qe	0.86	0.89	0.89	0.77	0.85	0.85	0.76

TOTAL ENTRY FLOWS = 7450 PCU
CRITICAL DFC = 0.89

ROUNABOUT CAPACITY CALCULAT

AECOM

Junction	Junction J1 - Fairview Roundabout	cenar	2034 PM Design Flows (Sensitivity Test with Soy Factory w IMP)	Project No.	Prepared By	Checked By	Date
				-	MK	JL	Oct 2024



ARM	A	B	C	D	E	F	G
INPUT PARAMETERS:							
V = Approach half width (m)	6.00	6.50	7.00	7.30	7.30	7.30	7.30
E = Entry width (m)	11.00	11.20	11.80	12.00	12.00	11.00	12.00
L = Effective length of flare (m)	30.00	22.00	20.00	36.00	18.00	23.00	27.00
R = Entry radius (m)	25.00	25.00	25.00	30.00	45.00	25.00	25.00
D = Inscribed circle diameter (m)	140.00	140.00	140.00	140.00	140.00	140.00	140.00
A = Entry angle (degree)	40.00	35.00	35.00	25.00	30.00	35.00	45.00
Q = Entry flow (pcu/h)	1660	550	790	540	980	510	740
Qc= Circulating flow across entry (pcu/h)	1200	2550	2310	2410	2120	2710	1630
OUTPUT PARAMETERS:							
S = Sharpness of flare = 1.6(E-V)/L	0.27	0.34	0.38	0.21	0.42	0.26	0.28
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.99	0.99	1.03	1.03	0.99	0.96
X2= V + ((E-V)/(1+2S))	9.26	9.29	9.71	10.62	9.86	9.74	10.32
M = EXP((D-60)/10)	2981	2981	2981	2981	2981	2981	2981
F = 303*X2	2806	2815	2944	3216	2988	2952	3127
Td= 1+(0.5/(1+M))	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fc= 0.21*Td(1+0.2*X2)	0.60	0.60	0.62	0.66	0.62	0.62	0.64
Qe= K(F-Fc*Qc)	2035	1275	1504	1691	1710	1264	1990
DFC = Design flow/Capacity = Q/Qe	0.82	0.43	0.53	0.32	0.57	0.40	0.37

TOTAL ENTRY FLOWS = 5770 PCU
CRITICAL DFC = 0.82

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

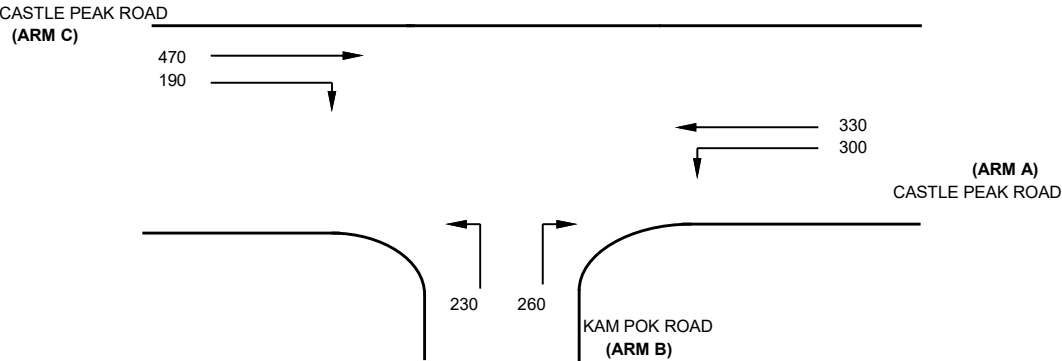
2034 AM Design Flows (Sensitivity Test with Soy Factory)(With

Designed By :

Checked By :

Job No. :

Date : Dec 21



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)

W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)

W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)

W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)

W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)

VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)

Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)

Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)

Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A

E = Stream-specific B-C

F = Stream-specific C-B

Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7.3 (metres)

W cr = 0 (metres)

q a-b = 300 (pcu/hr)

q a-c = 330 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.05 (metres)

Vr c-b = 30 (metres)

q c-a = 470 (pcu/hr)

q c-b = 190 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 4.07 (metres)

W b-c = 4.07 (metres)

VI b-a = 100 (metres)

Vr b-a = 100 (metres)

Vr b-c = 80 (metres)

q b-a = 260 (pcu/hr)

q b-c = 230 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.990146

E = 1.002059

F = 0.780782

Y = 0.748150

THE CAPACITY OF MOVEMENT :

Q b-a = 347

Q b-c = 624

Q c-b = 448

Q b-ac = 438

CRITICAL DFC = 0.75

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.75

DFC b-c = 0.37

DFC c-b = 0.42

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J2 - Castle Peak Road / Kam Pok Road

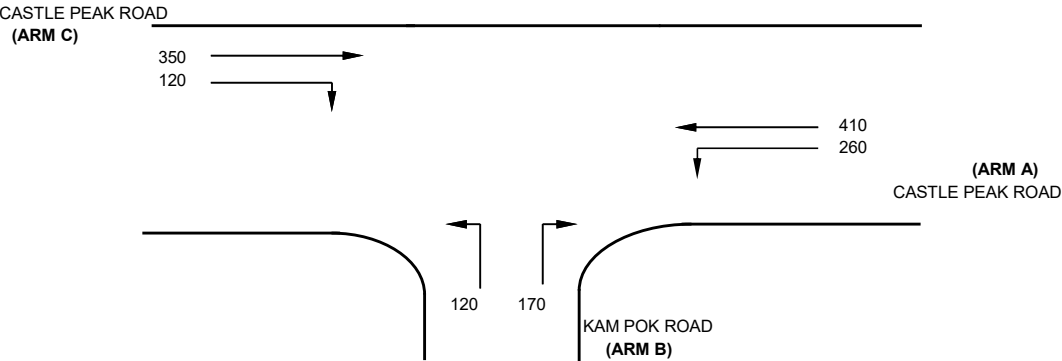
2034 PM Design Flows (Sensitivity Test with Soy Factory)(Wit

Designed By :

Checked By :

Job No. :

Date : Dec 21



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	7.3 (metres)	W c-b	=	2.05 (metres)	W b-a	=	4.07 (metres)
W cr	=	0 (metres)	Vr c-b	=	30 (metres)	W b-c	=	4.07 (metres)
q a-b	=	260 (pcu/hr)	q c-a	=	350 (pcu/hr)	VI b-a	=	100 (metres)
q a-c	=	410 (pcu/hr)	q c-b	=	120 (pcu/hr)	Vr b-a	=	100 (metres)
						Vr b-c	=	80 (metres)
						q b-a	=	170 (pcu/hr)
						q b-c	=	120 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.990146
E	=	1.002059
F	=	0.780782
Y	=	0.748150

THE CAPACITY OF MOVEMENT :

Q b-a	=	377
Q b-c	=	607
Q c-b	=	439
Q b-ac	=	447

CRITICAL DFC = 0.45

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.45
DFC b-c	=	0.20
DFC c-b	=	0.27

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

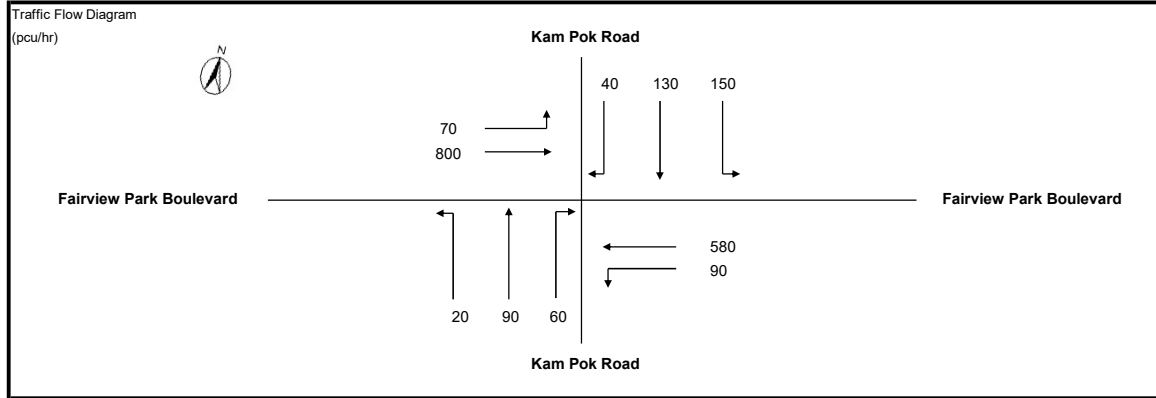
2034 AM Design Traffic Flows (SEN II)

DESIGN: 0

CHECK: 0

JOB NO: -

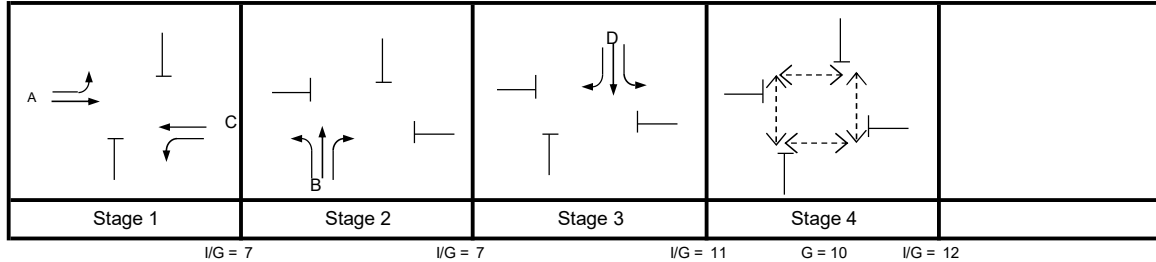
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.473
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	135 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	83 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	20.6 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	93 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : A,B,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 21\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	70	362		432	16%		1914	0.225	0.225
	A	1	3.300	1				1		0		1945		439		439			1945	0.225	
	B	2	3.600	1	13	20	0	1		0		1975	20	90	60	170	12%	35%	1899	0.090	0.090
	C	1	3.000	1	17			1		0		1915	90	238		328	27%		1870	0.176	
	C	1	3.300	1				1		0		1945		342		342			1945	0.176	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	150	130	40	320	47%	13%	2031	0.158	0.158
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

JUNCTION CAPACITY CALCULATION

Junction J3 - Fairview Park Boulevard - Kam Pok Road

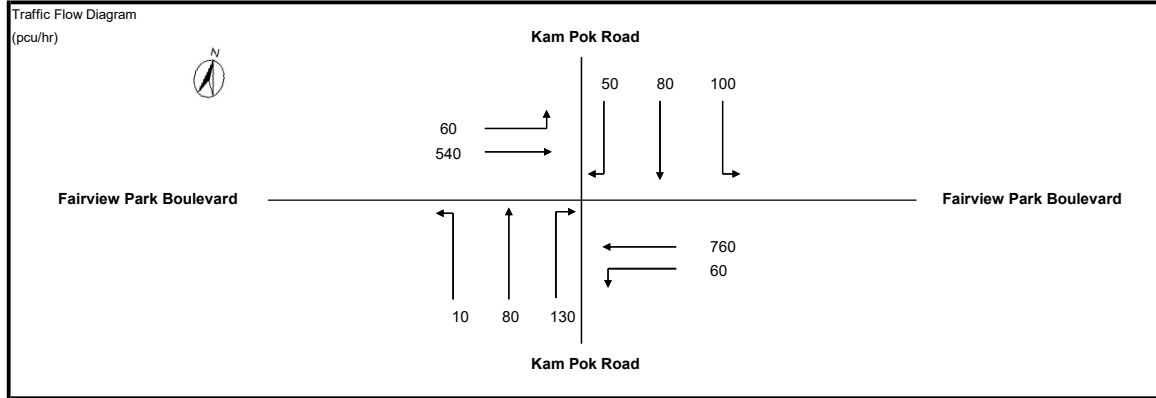
2034 PM Design Traffic Flows (SEN II)

DESIGN: 0

CHECK: 0

JOB NO: -

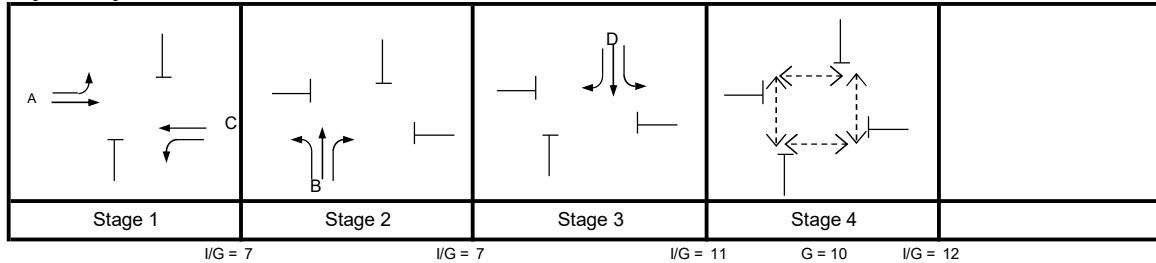
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.444
Lost time	L =	44 sec
Total Flow	=	11,870 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	128 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	79 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.570
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	28.2 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	87 sec
Y_{max}	$= 1 - L / C =$	0.633

J3

Stage/Phase Diagrams



Critical Case : B,C,D,Ep

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 28\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	1	15			1		0		1945	60	237		297	20%		1906	0.156	0.117
	A	1	3.300	1				1		0		1945		303		303			1945	0.156	
	B	2	3.600	1	13	20	0	1		0		1975	10	80	130	220	5%	59%	1882	0.117	
	C	1	3.000	1	17			1		0		1915	60	344		404	15%		1890	0.214	0.214
	C	1	3.300	1				1		0		1945		416		416			1945	0.214	
	D	3	5.300	1	15.5	17.5	0	1		0		2145	100	80	50	230	43%	22%	2022	0.114	
Pedestrian Crossing	Ep	4	min.	GM 10	+	FGM 9	=	19	sec												*

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

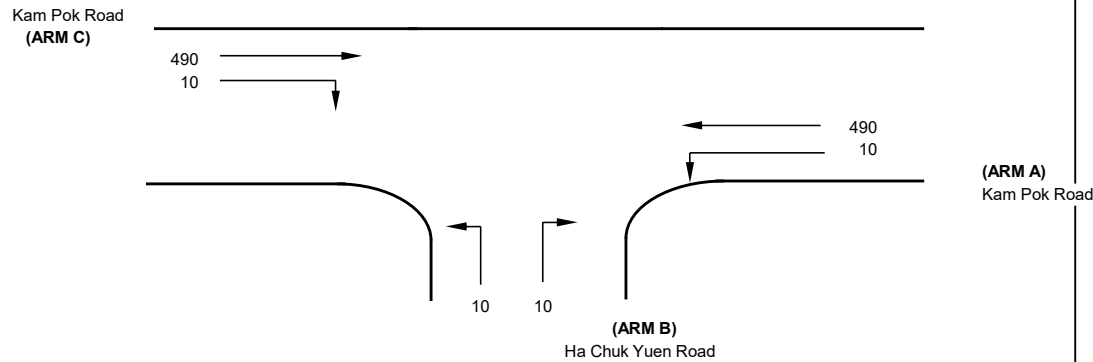
2034 AM Design Traffic Flows - Sensitivity Test (with Soy Factory)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Oct 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 490 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 490 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 318
Q b-c = 496
Q c-b = 574
Q b-ac = 388

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

CRITICAL DFC = 0.05

PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

J4 - Kam Pok Road - Ha Chuk Yuen Road

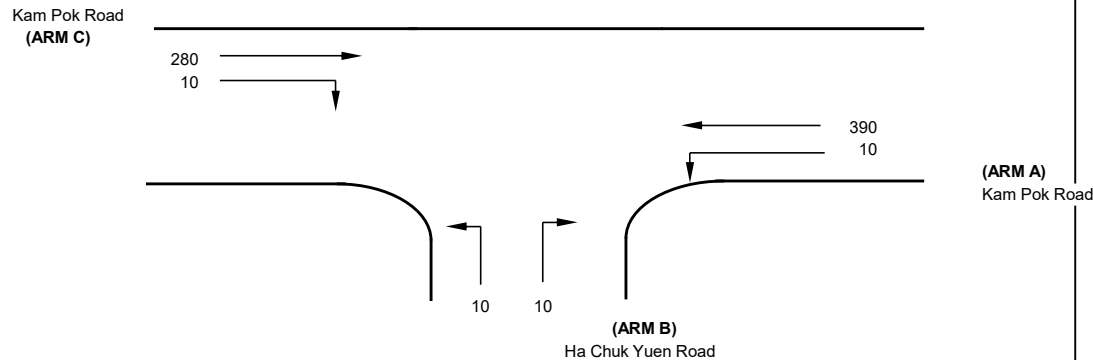
2034 PM Design Traffic Flows - Sensitivity Test (with Soy Factory)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Oct 24



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.7)
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.7)
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.7)
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A
E = Stream-specific B-C
F = Stream-specific C-B
Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 9.3 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 390 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)
Vr c-b = 50 (metres)
q c-a = 280 (pcu/hr)
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.05 (metres)
W b-c = 2.05 (metres)
Vl b-a = 50 (metres)
Vr b-a = 50 (metres)
Vr b-c = 50 (metres)
q b-a = 10 (pcu/hr)
q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.748311
E = 0.796075
F = 0.923788
Y = 0.679150

THE CAPACITY OF MOVEMENT :

Q b-a = 361
Q b-c = 516
Q c-b = 597
Q b-ac = 425

COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03
DFC b-c = 0.02
DFC c-b = 0.02
DFC b-ac = 0.05

CRITICAL DFC = 0.05

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:-
"L:\Secure\Transportation\Group\TTP_TE\Private Job\Fairview\Info\TIA Working RD
and REC\Flow\
V13 202407_RD1.5+REC1.2 Combined\Junction 5_Picaddy\20241031 Sen 2\Sen 2.vpi"
(drive-on-the-left) at 14:00:19 on Thursday, 31 October 2024

.RUN INFORMATION

RUN TITLE : 2034 - J5 Kam Pok Road/ Pok Wai South Road
LOCATION :
DATE : 13/12/21
CLIENT :
ENUMERATOR : nokhinnaomi.tam [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I

I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Kam Pok Road
ARM B IS Pok Wai South Road
ARM C IS Kam Pok Road West
ARM D IS Kam Pok Road

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD
B I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 8.80
M. I (W) 8.80 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00
M. I (WCR) 0.00 M. I
I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20
M. I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00
M. I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES
(0) I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0
M. I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0
M. I (VD-C) 50.0 M. I
I - LANE 1 WIDTH I (WB-C) 2.20
M. I (WD-A) 5.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00
M. I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM B-C	STREAM A-C	STREAM A-B
I	602.92	0.21	0.08

STREAM D-A

I	Intercept	For Slope For Opposing	Slope For Opposing I
I	STREAM D-A	STREAM C-A	STREAM C-D
I	786.65	0.27	0.11

STREAM B-A

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-B	STREAM A-B	STREAM C-A	STREAM C-B
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B
I	476.98	0.19	0.19	0.19

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-D	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

STREAM D-C

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM C-B

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29

STREAM A-D

I	Intercept	For Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM A-D	STREAM C-A	STREAM C-B	STREAM C-D
I	602.92	0.21	0.21	0.29

B-D Stream From Left Hand Lane

I	476.98		0.19		0.19		0.08
	0.28	I					

I	0.12	0.12
I		

B-D Stream From Right Hand Lane

I	476.98		0.19		0.19		0.08
	0.28	I					

I	0.12	0.12
I		

D-B Stream From Left Hand Lane

I	622.33		0.25		0.25		0.10
	0.36	I					

I	0.16	0.16
I		

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For OpposingI	Slope For Opposing	Slope For Opposing
I STREAM B-D	STREAM C-A	STREAM C-B
STREAM A-D	I	STREAM C-D

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN/	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
	(VEH.MIN/	PER ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I					

I 08.00-08.15

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.30-08.45							
I	B-ACD	1.25	6.27	0.200	0.00	0.25	3.5	
I	A-B	0.13	0.20	I				
I	A-C	2.76		I				
I	A-D	0.88	8.55	0.103	0.00	0.11	1.6	
I	D-ABC	3.14	0.13	I	0.00	0.58	8.2	
I	C-ABD	0.33	8.46	0.371	0.00	0.04	0.7	
I	C-D	0.61	0.19	I				
I	C-A	1.82	10.02	0.033				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.15-08.30							

I	B-ACD	1.50	6.05	0.248	0.25	0.32	4.7	
I	A-B	0.15	0.22	I				
I	A-C	3.30		I				
I	A-D	1.05	8.43	0.124	0.11	0.14	2.1	
I	D-ABC	3.75	0.14	I	0.58	0.82	11.8	
I	C-ABD	0.42	8.19	0.458	0.04	0.06	0.9	
I	C-D	0.72	0.22	I				
I	C-A	2.16	10.20	0.041				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.30-08.45							
I	B-ACD	1.84	5.74	0.319	0.32	0.46	6.6	
I	A-B	0.18	0.25	I				
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155	0.14	0.18	2.7	
I	D-ABC	4.59	0.14	I	0.82	1.36	19.0	
I	C-ABD	0.55	7.80	0.588	0.06	0.08	1.2	
I	C-D	0.87	0.30	I				
I	C-A	2.61	10.46	0.053				
I			0.10	I				
I				I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY				
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I			
I	08.45-09.00							
I	B-ACD	1.84	5.74	0.320	0.46	0.46	6.9	
I	A-B	0.18	0.26	I				
I	A-C	4.04		I				
I	A-D	1.28	8.27	0.155	0.18	0.18	2.7	
I	D-ABC	4.59	0.14	I	1.36	1.39	20.7	
I	C-ABD	0.55	7.80	0.588	0.08	0.08	1.2	
I	C-D	0.87	0.31	I				
I	C-A	2.61	10.46	0.053				
I			0.10	I				
I				I				

[illegible]

I	D-ABC	3.14	8.45	0.371				9.4
			0.19	I				
I	C-ABD	0.33	10.02	0.033		0.06	0.05	0.7
			0.10	I				
I	C-D	0.61						
				I				
I	C-A	1.82						
				I				
I								
				I				

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR								
.								
QUEUE FOR STREAM B-ACD								

TIME			NO. OF					
SEGMENT			VEHICLES					
ENDING			IN QUEUE					
08.15			0.2					
08.30			0.3					
08.45			0.5					
09.00			0.5					
09.15			0.3					
09.30			0.3					
.								
QUEUE FOR STREAM A-D								

TIME			NO. OF					
SEGMENT			VEHICLES					
ENDING			IN QUEUE					
08.15			0.1					
08.30			0.1					
08.45			0.2					
09.00			0.2					
09.15			0.1					
09.30			0.1					
.								
QUEUE FOR STREAM D-ABC								

TIME			NO. OF					
SEGMENT			VEHICLES					
ENDING			IN QUEUE					
08.15			0.6	*				
08.30			0.8	*				
08.45			1.4	*				
09.00			1.4	*				
09.15			0.9	*				
09.30			0.6	*				
.								
QUEUE FOR STREAM C-ABD								

TIME			NO. OF					
SEGMENT			VEHICLES					
ENDING			IN QUEUE					

08.15	0.0
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)
I	B-ACD	I	137.6	I	91.8	I	30.9	I	0.22
I	A-B	I	13.8	I	9.2	I		I	
I	A-C	I	302.8	I	201.9	I		I	
I	A-D	I	96.3	I	64.2	I	13.1	I	0.14
I	D-ABC	I	344.1	I	229.4	I	82.9	I	0.24
I	C-ABD	I	39.1	I	26.1	I	5.6	I	0.14
I	C-D	I	65.9	I	43.9	I		I	
I	C-A	I	197.8	I	131.8	I		I	
I	ALL	I	1197.5	I	798.3	I	132.4	I	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	602.92	0.21	0.08	I

STREAM D-A

I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	786.65	0.27	0.11	I

STREAM B-A

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	476.98	0.19	0.19	0.19

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM A-B	STREAM C-A	STREAM C-B
I	0.10	0.08	0.12	0.28

STREAM D-C

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	622.33	0.25	0.25	0.25

Slope For Opposing				
I	Slope For OpposingI	STREAM C-D	STREAM A-C	STREAM A-D
STREAM B-A	I			
I	0.13	I	0.10	0.16
				0.36

Slope For Opposing					
I	Slope For OpposingI	STREAM C-B	STREAM A-B	STREAM A-C	STREAM A-D
I	602.92	0.21	0.21	0.29	I

STREAM A-D					
I	Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I	602.92	0.21	0.29	0.21	I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing		Slope For Opposing		Slope For Opposing
Slope For OpposingI		STREAM A-D		STREAM A-B
I	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I			

I	476.98	0.19	0.19	0.08
	0.28	I		

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI				

Slope For Opposing				
I	Slope For OpposingI	STREAM C-A	STREAM C-D	
I	0.12	0.12		

B-D Stream From Right Hand Lane

I	Slope For OpposingI	STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B	
I	476.98	0.28	I	0.19	0.19	0.08

Slope For Opposing				
I	Slope For OpposingI	STREAM C-A	STREAM C-D	
I	0.12	0.12		

D-B Stream From Left Hand Lane

I	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI	I	STREAM D-B	STREAM C-A	STREAM C-B
STREAM A-D	I			STREAM C-D

I	622.33	0.25	0.25	0.10

0.36	I			
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM A-C	STREAM A-B		
I				
I		0.16	0.16	
	I			

D-B Stream From Right Hand Lane

I	Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
I	STREAM A-D	I		
I	622.33	0.25	0.25	0.10
	0.36	I		

I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
Slope For OpposingI	STREAM A-C	STREAM A-B		
I				
I		0.16	0.16	
	I			

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I
I	D	I	100	I

.Demand set: 20241031 Sen 2 PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I		I	NUMBER OF MINUTES FROM START WHEN	I		I	RATE OF FLOW (VEH/MIN)	
I		I		I		I		
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I
I		I		I		I	PEAK	I
I		I		I		I	OF PEAK	I
I		I		I		I	PEAK	I
I		I		I		I		I

I	ARM	A	I	15.00	I	45.00	I	75.00	I	2.75	I	4.13	I	2.75
I		I			I		I		I		I		I	
I	ARM	B	I	15.00	I	45.00	I	75.00	I	1.13	I	1.69	I	1.13
I		I			I		I		I		I		I	
I	ARM	C	I	15.00	I	45.00	I	75.00	I	3.00	I	4.50	I	3.00
I		I			I		I		I		I		I	
I	ARM	D	I	15.00	I	45.00	I	75.00	I	2.13	I	3.19	I	2.13
I		I			I		I		I		I		I	

.Demand set: 20241031 Sen 2 PM

I		I		I	TURNING PROPORTIONS	I
I		I		I	TURNING COUNTS	I
I		I		I	(PERCENTAGE OF H.V.S)	I
I		I		I		I
I	TIME	I	FROM/TO	I	ARM A	I
I		I		I	ARM B	I
I		I		I	ARM C	I
I		I		I	ARM D	I
I	08.00 - 09.30	I		I		I
I		I	ARM A	I	0.000	I
I		I		I	0.045	I
I		I		I	0.636	I
I		I		I	0.318	I
I		I		I	0.0	I
I		I		I	10.0	I
I		I		I	140.0	I
I		I		I	70.0	I

I		I	I (0.0)	I (10.0)	I (10.0)	I (10.0)	I
I		I	I	I	I	I	I
I	I ARM B	I	0.111	I 0.000	I 0.111	I 0.778	I
I	I	I	10.0	I 0.0	I 10.0	I 70.0	I
I	I	I	I (10.0)	I (0.0)	I (10.0)	I (10.0)	I
I	I	I	I	I	I	I	I
I	I ARM C	I	0.625	I 0.042	I 0.000	I 0.333	I
I	I	I	150.0	I 10.0	I 0.0	I 80.0	I
I	I	I	I (10.0)	I (10.0)	I (0.0)	I (10.0)	I
I	I	I	I	I	I	I	I
I	I ARM D	I	0.353	I 0.471	I 0.176	I 0.000	I
I	I	I	60.0	I 80.0	I 30.0	I 0.0	I
I	I	I	I (10.0)	I (10.0)	I (10.0)	I (0.0)	I
I	I	I	I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 20241031 Sen 2 PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	(VEH.MIN/	PER ARRIVING	I					
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
I	SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I				
I	08.00-08.15							
I	B-ACD	1.13	6.50	0.174		0.00	0.21	3.0
I	A-B	0.13	0.19	I				
I	A-C	1.76		I				
I	A-D	0.88	8.51	0.103		0.00	0.11	1.6
I	D-ABC	2.13	9.03	0.236		0.00	0.31	4.4
I	C-ABD	0.17	10.46	0.016		0.00	0.02	0.3
I	C-D	0.99	0.10	I				
I	C-A	1.85		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	(VEH.MIN/	PER ARRIVING	I					
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
I	SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I				
I	08.15-08.30							
I	B-ACD	1.35	6.32	0.214		0.21	0.27	3.9
I	A-B	0.15	0.20	I				
I	A-C	2.10		I				
I	A-D	1.05	8.38	0.125		0.11	0.14	2.1
I	D-ABC	2.55	8.80	0.289		0.31	0.40	5.8
I	C-ABD	0.22	10.72	0.020		0.02	0.02	0.4
I	C-D	1.18	0.10	I				
I	C-A	2.20		I				
I				I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	(VEH.MIN/	PER ARRIVING	I					
I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
I	SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I				
I	08.30-08.45							
I	B-ACD	1.65	6.07	0.272		0.27	0.37	5.3
I	A-B	0.18	0.23	I				
I	A-C	2.57		I				
I	A-D	1.28	8.22	0.156		0.14	0.18	2.7
I	D-ABC	3.12	8.49	0.368		0.40	0.57	8.2
I	C-ABD	0.29	11.08	0.026		0.02	0.03	0.5
I	C-D	1.43	0.09	I				
I	C-A	2.68		I				
I				I				

I									
			I						

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	
I	GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN)		
I	(VEH./MIN)	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I				
I 08.45-09.00									
I	B-ACD	1.65	6.07	0.272		0.37	0.37	5.5	
I	A-B	0.18	0.23	I					
I	A-C	2.57		I					
I	A-D	1.28	8.21	0.156		0.18	0.18	2.8	
I	D-ABC	3.12	0.14	8.48		0.57	0.58	8.6	
I	C-ABD	0.29	0.19	11.08		0.03	0.03	0.5	
I	C-D	1.43	0.09	I					
I	C-A	2.68		I					
I				I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	
I	GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN)		
I	(VEH./MIN)	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I				
I 09.00-09.15									
I	B-ACD	1.35	6.31	0.214		0.37	0.28	4.3	
I	A-B	0.15	0.20	I					
I	A-C	2.10		I					
I	A-D	1.05	8.38	0.125		0.18	0.14	2.2	
I	D-ABC	2.55	0.14	8.80		0.58	0.41	6.4	

I			0.16	I					
I	C-ABD	0.22	10.72	0.020				0.03	0.02
I	C-D	1.18	0.10	I					0.4
I	C-A	2.20		I					
I				I					
I				I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	
I	GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN)		
I	(VEH./MIN)	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME		
SEGMENT)	TIME	SEGMENT)	VEHICLE	(MIN)	I				
I 09.15-09.30									
I	B-ACD	1.13	6.49	0.174		0.28	0.21	3.3	
I	A-B	0.13	0.19	I					
I	A-C	1.76		I					
I	A-D	0.88	8.51	0.103		0.14	0.12	1.8	
I	D-ABC	2.13	0.13	9.03		0.41	0.31	4.8	
I	C-ABD	0.17	0.15	10.46		0.02	0.02	0.3	
I	C-D	0.99	0.10	I					
I	C-A	1.85		I					
I				I					
I				I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR									
.									
. QUEUE FOR STREAM B-ACD									

TIME	NO. OF								
SEGMENT	VEHICLES								
ENDING	IN QUEUE								
08.15	0.2								
08.30	0.3								
08.45	0.4								
09.00	0.4								
09.15	0.3								
09.30	0.2								

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.2
09.00	0.2
09.15	0.1
09.30	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.3	
08.30	0.4	
08.45	0.6	*
09.00	0.6	*
09.15	0.4	
09.30	0.3	

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I						
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I						
I	B-ACD	I	123.9	I	82.6	I	25.3	I	0.20	I	25.3	I	0.20	I
I	A-B	I	13.8	I	9.2	I		I		I		I		I
I	A-C	I	192.7	I	128.5	I		I		I		I		I
I	A-D	I	96.3	I	64.2	I	13.2	I	0.14	I	13.2	I	0.14	I
I	D-ABC	I	234.0	I	156.0	I	38.3	I	0.16	I	38.3	I	0.16	I
I	C-ABD	I	20.3	I	13.5	I	2.3	I	0.11	I	2.3	I	0.11	I
I	C-D	I	107.9	I	71.9	I		I		I		I		I
I	C-A	I	202.2	I	134.8	I		I		I		I		I
I	ALL	I	991.0	I	660.7	I	79.1	I	0.08	I	79.1	I	0.08	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

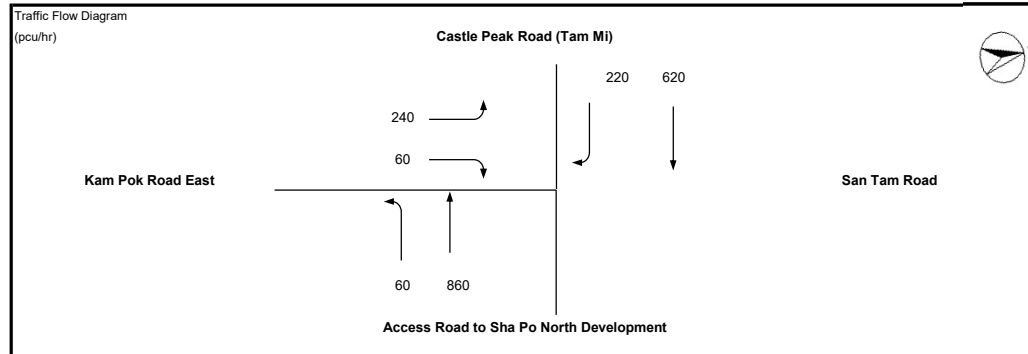
2034 AM Peak Hour Design Traffic Flows - Sensitivity Test (with Soy Factory)

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21



No. of stages per cycle N = 3

Cycle time C = 90 sec

Sum(y) Y = 0.825

Lost time L = 13 sec

Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 140$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 74$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.803$

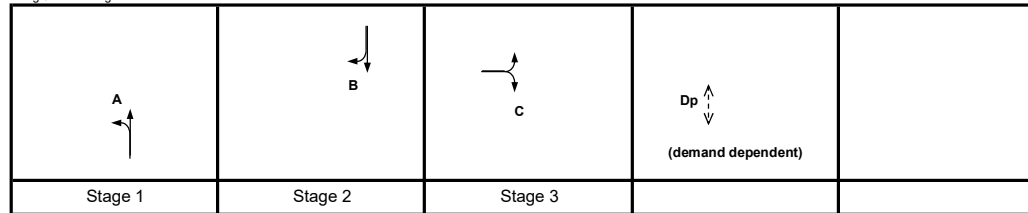
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = -2.8\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 157$ sec

$Y_{max} = 1 - L / C = 0.856$

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = -7\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	60	770		830	7%		1957	0.424	0.424
	B	2	3.400	1				1		0		1955		530		530			1955	0.271	0.271
	B	2	3.500	1		30	0	0		0		2105			220	220		100%	2005	0.110	
	C	3	3.400	1	25			1		0		1955	240			240	100%		1844	0.130	0.130
	C	3	3.400	1		30	0	0		0		2095			60	60		100%	1995	0.030	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

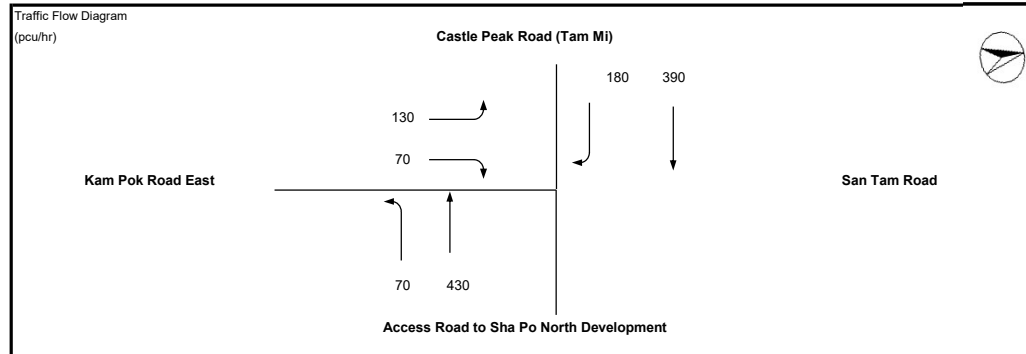
2034 PM Peak Hour Design Traffic Flows - Sensitivity Test (with Soy Factory)

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

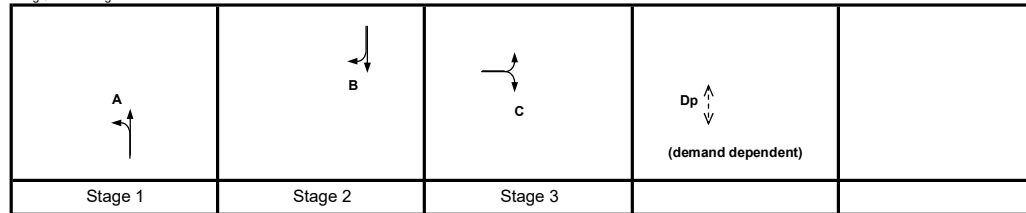
DATE: May 21



No. of stages per cycle	N =	3
Cycle time	C =	90 sec
Sum(y)	Y =	0.588
Lost time	L =	13 sec
Total Flow	=	10,075 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	59 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	32 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.803
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	36.5 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	37 sec
Y_{max}	$= 1 - L / C =$	0.856

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

I/G = 5

Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 31\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	70	490		560	13%		1950	0.287	0.287
	B	2	3.400	1				1		0		1955		450		450			1955	0.230	0.230
	B	2	3.500	1		30	0	0		0		2105			180	180		100%	2005	0.090	
	C	3	3.400	1	25			1		0		1955	130			130	100%		1844	0.070	0.070
	C	3	3.400	1		30	0	0		0		2095			70	70		100%	1995	0.035	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

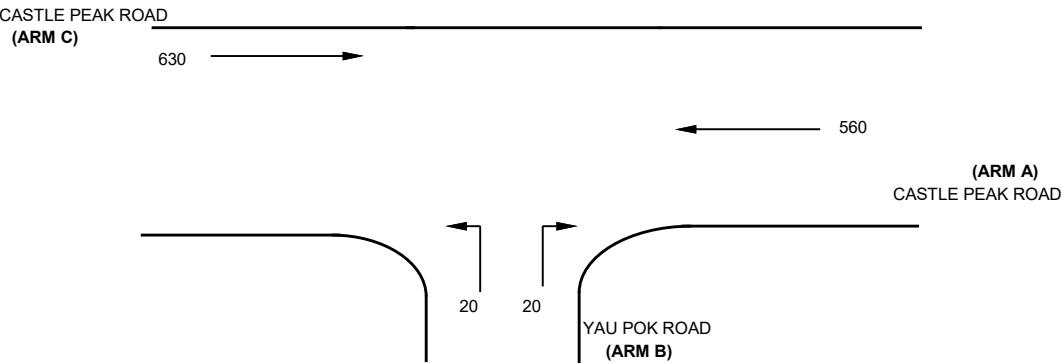
2034 AM Design Flow (Sensitivity Test II)

Designed By :

Checked By :

Job No. :

Date : Jan 00



NOTES : (GEOMETRIC INPUT DATA)

W = Major Road Width (6.4 - 20.0)

W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)

W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)

W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)

W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)

VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)

Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)

Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)

Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A

E = Stream-specific B-C

F = Stream-specific C-B

Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)

W cr = 0 (metres)

q a-b = 0 (pcu/hr)

q a-c = 560 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 0 (metres)

Vr c-b = 25 (metres)

q c-a = 630 (pcu/hr)

q c-b = 0 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 1.8 (metres)

W b-c = 1.8 (metres)

VI b-a = 25 (metres)

Vr b-a = 25 (metres)

Vr b-c = 25 (metres)

q b-a = 20 (pcu/hr)

q b-c = 20 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.698808

E = 0.755468

F = 0.600735

Y = 0.775750

THE CAPACITY OF MOVEMENT :

Q b-a = 249

Q b-c = 443

Q c-b = 353

Q b-ac = 319

CRITICAL DFC = 0.08

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.08

DFC b-c = 0.05

DFC c-b = 0.00

PRIORITY JUNCTION CAPACITY CALCULATION

Junction J7 - Castle Peak Road / Yau Pok Road

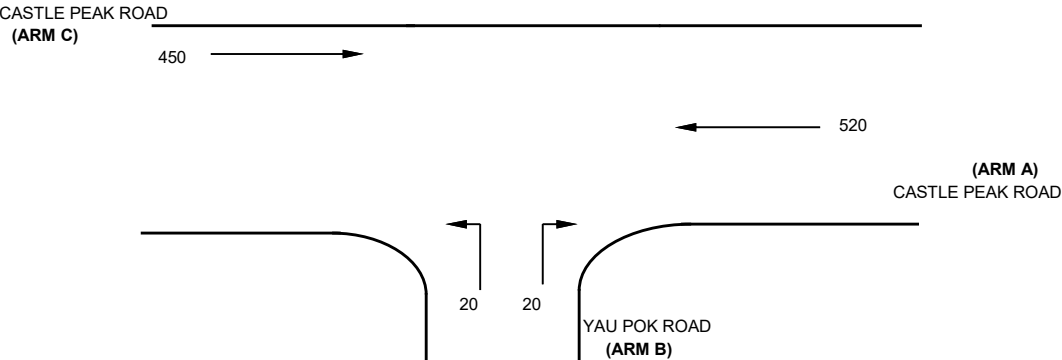
2034 PM Design Flow (Sensitivity Test II)

Designed By :

Checked By :

Job No. :

Date : Jan 00



- NOTES : (GEOMETRIC INPUT DATA)
- W = Major Road Width (6.4 - 20.0)
 - W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
 - W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
 - W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
 - W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
 - VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
 - Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
 - Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
 - Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)
 - D = Stream-specific B-A
 - E = Stream-specific B-C
 - F = Stream-specific C-B
 - Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)			MAJOR ROAD (ARM C)			MINOR ROAD (ARM B)		
W	=	6.5 (metres)	W c-b	=	0 (metres)	W b-a	=	1.8 (metres)
W cr	=	0 (metres)	Vr c-b	=	25 (metres)	W b-c	=	1.8 (metres)
q a-b	=	0 (pcu/hr)	q c-a	=	450 (pcu/hr)	VI b-a	=	25 (metres)
q a-c	=	520 (pcu/hr)	q c-b	=	0 (pcu/hr)	Vr b-a	=	25 (metres)
						Vr b-c	=	25 (metres)
						q b-a	=	20 (pcu/hr)
						q b-c	=	20 (pcu/hr)

GEOMETRIC FACTORS :

D	=	0.698808
E	=	0.755468
F	=	0.600735
Y	=	0.775750

THE CAPACITY OF MOVEMENT :

Q b-a	=	280
Q b-c	=	452
Q c-b	=	359
Q b-ac	=	346

CRITICAL DFC = 0.07

COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.07
DFC b-c	=	0.04
DFC c-b	=	0.00

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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Run with file:- "T:\Anthony Sun\J8 Soy RD\1016 J8_2034 AM DesSoy Sen 2.vpi"
(drive-on-the-left) at 15:16:35 on Wednesday, 16 October 2024

.RUN INFORMATION

RUN TITLE : J8 - Yau Pok Road / REC North Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I

I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC North

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0) I
I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I

I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT
(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C				
I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A				
I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A				
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	STREAM D-B	I		
I	544.46	0.25	0.25	0.25
0.25	I			

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	STREAM A-B	STREAM C-A	STREAM C-B	
I	STREAM D-C	I		
I	0.13	I	0.10	0.16
				0.36

STREAM D-C				
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	STREAM B-D	I		
I	544.46	0.25	0.25	0.25
0.25	I			

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	STREAM B-A	I		
I	0.13	I	0.10	0.16
				0.36

STREAM C-B

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	I
I 602.92	0.23	0.23	0.33	I

STREAM A-D

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I 602.92	0.23	0.33	0.23	I

B-D Stream From Left Hand Lane

I Intercept For I STREAM B-D STREAM C-B	Slope For Opposing STREAM A-C I	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B
---	---------------------------------------	----------------------------------	----------------------------------

I 544.46 0.36 I	0.25	0.25	0.10
--------------------	------	------	------

I Slope For Opposing I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D
------------------------------	----------------------------------	----------------------------------

I I	0.16	0.16
-----	------	------

B-D Stream From Right Hand Lane

I Intercept For I STREAM B-D STREAM C-B	Slope For Opposing STREAM A-C I	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B
---	---------------------------------------	----------------------------------	----------------------------------

I 544.46 0.36 I	0.25	0.25	0.10
--------------------	------	------	------

I Slope For Opposing I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D
------------------------------	----------------------------------	----------------------------------

I I	0.16	0.16
-----	------	------

D-B Stream From Left Hand Lane

I Intercept For I STREAM D-B STREAM A-D	Slope For Opposing STREAM C-A I	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D
---	---------------------------------------	----------------------------------	----------------------------------

I 544.46 0.36 I	0.25	0.25	0.10
--------------------	------	------	------

I Slope For Opposing I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
------------------------------	----------------------------------	----------------------------------

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For OpposingI	Slope For Opposing	Slope For Opposing
I STREAM B-D STREAM A-D	STREAM C-A	STREAM C-B
I		STREAM C-D

I	544.46	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	

I	0.16	0.16
I		

```
.TRAFFIC DEMAND DATA
```

I	ARM	I	FLOW	SCALE(%)	I
I	A	I		100	I
I	B	I		100	I
I	C	I		100	I
I	D	I		100	I

.Demand set: 1016 Sen 2 AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
		I	I	I	I	I	I
I	ARM	I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS	I BEFORE	I AT TOP	I AFTER
I		I TO RISE	I IS REACHED	I FALLING	I PEAK	I OF PEAK	I PEAK
I		I	I	I	I	I	I
I							

I	ARM	A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	B	I	15.00	I	45.00	I	75.00	I	1.13	I	1.69	I	1.13
I	ARM	C	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	D	I	15.00	I	45.00	I	75.00	I	1.38	I	2.06	I	1.38

.Demand set: 1016 Sen 2 AM

I		I		TURNING PROPORTIONS								I	
I		I		TURNING COUNTS								I	
I		I		(PERCENTAGE OF H.V.S)								I	
I		I		-----								I	
I		I		-----								I	
TIME		FROM/TO		I ARM		A I ARM		B I ARM		C I ARM		D I	
-----		-----		-----		-----		-----		-----		-----	
I	08.00 - 09.30	I	I	I		I		I		I		I	
I		I ARM	A	I	0.000	I	0.000	I	0.000	I	0.000	I	0.000
I		I		I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)
I		I		I		I		I		I		I	
I		I		I		I		I		I		I	
I		I ARM	B	I	0.222	I	0.000	I	0.000	I	0.778	I	0.778
I		I		I	20.0	I	0.0	I	0.0	I	70.0	I	70.0
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)

I		I		I		I		I				
I	I	ARM	C	I	0.000	I	0.000	I	0.000	I		
I	I			I	0.0	I	0.0	I	0.0	I		
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I		
I	I			I		I		I		I		
I	I	ARM	D	I	0.000	I	1.000	I	0.000	I	0.000	I
I	I			I	0.0	I	110.0	I	0.0	I	0.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 1016 Sen 2 AM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.00-08.15		I					
I	B-ACD	1.13	9.00	0.126		0.00	0.14	2.1
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	1.38	9.07	0.152		0.00	0.18	2.6
		0.13	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	(VEH.MIN/	PER ARRIVING	I	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.15-08.30		I					
I	B-ACD	1.35	8.98	0.150		0.14	0.18	2.6
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	1.65	9.07	0.182		0.18	0.22	3.2
		0.13	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.30-08.45		I					
I	B-ACD	1.65	8.96	0.184		0.18	0.22	3.3
		0.14	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	2.02	9.07	0.222		0.22	0.28	4.1
		0.14	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					

I	C-A	0.00	I
I			I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH/MIN/		PER ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.45-09.00							

I	B-ACD	1.65 0.14	8.96	0.184		0.22	0.22	3.4
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00 0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	2.02 0.14	9.07	0.222		0.28	0.28	4.3
I	C-ABD	0.00 0.00	9.14	0.000		0.00	0.00	0.0
I	C-D	0.00						
I	C-A	0.00						
I								
.								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	I					
I		PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	09.00-09.15							

I	B-ACD	1.35	8.98	0.150	0.22	0.18	2.7
I	A-B	0.00	0.13				

I	A-C	0.00	I				
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	D-ABC	1.65	9.07	0.182	0.28	0.22	3.4
		0.13	I				
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I			I				

I TIME GEOMETRIC I (VEH.MIN/ I TIME SEGMENT)	DEMAND DELAY (VEH/MIN) PER ARRIVING VEHICLE (MIN)	CAPACITY AVERAGE DELAY (VEH/MIN) I (RFC)	DEMAND/ I CAPACITY (PEDS/MIN)	PEDESTRIAN FLOW (VEHS)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
I 09.15-09.30							

I	B-ACD	1.13	8.99	0.126	0.18	0.14	2.2
I	A-B	0.00	0.13	I			
I	A-C	0.00	I				
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0
I	D-ABC	1.38	9.07	0.152	0.22	0.18	2.8
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
I	C-D	0.00	I				
I	C-A	0.00	I				
I			I				

***WARNING* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR**

QUEUE FOR STREAM B-ACD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.2
09.30	0.1

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.3
09.00	0.3
09.15	0.2
09.30	0.2

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
---	--------	---	--------------	---	--------------	---	------------------------	---

I	I	I	* DELAY *	I	* DELAY *	I				
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	123.9	I	82.6	I	16.2	I	0.13	I
I	A-B	I	0.0	I	0.0	I		I		I
I	A-C	I	0.0	I	0.0	I		I		I
I	A-D	I	0.0	I	0.0	I	0.0	I	0.00	I
I	D-ABC	I	151.4	I	100.9	I	20.4	I	0.13	I
I	C-ABD	I	0.0	I	0.0	I	0.0	I	0.00	I
I	C-D	I	0.0	I	0.0	I		I		I
I	C-A	I	0.0	I	0.0	I		I		I
I	ALL	I	275.3	I	183.5	I	36.6	I	0.13	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope	For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM A-B	I
I	688.22		0.27	0.11	I

STREAM D-A

I	Intercept	For Slope	For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM	C-A	STREAM C-D	I
I	688.22		0.27	0.11	I

STREAM B-A

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-A STREAM A-C STREAM A-D STREAM D-A
STREAM D-B I

I 544.46 0.25 0.25 0.25
0.25 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-B STREAM C-A STREAM C-B
STREAM D-C I

I 0.13 I 0.10 0.16 0.36

STREAM D-C

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-C STREAM C-A STREAM C-B STREAM B-C
STREAM B-D I

I 544.46 0.25 0.25 0.25
0.25 I

I Slope For Opposing Slope For Opposing Slope For Opposing

Slope For OpposingI
I STREAM C-D STREAM A-C STREAM A-D
STREAM B-A I

I 0.13 I 0.10 0.16 0.36

STREAM C-B

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM C-B STREAM A-B STREAM A-C STREAM A-D I
I 602.92 0.23 0.23 0.33 I

STREAM A-D

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM A-D STREAM C-A STREAM C-B STREAM C-D I
I 602.92 0.23 0.33 0.23 I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing

Slope For OpposingI			
I	STREAM C-A	STREAM C-D	
I	0.16	0.16	
I			

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I		
I	544.46	0.25	0.25
0.36	I		0.10

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM C-A	STREAM C-D	
I	0.16	0.16	
I			

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D

STREAM A-D	I		
I	544.46	0.25	0.25
0.36	I		0.10

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	
I	0.16	0.16	
I			

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I		
I	544.46	0.25	0.25
0.36	I		0.10

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	
I	0.16	0.16	

I

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I
I	D	I	100	I

.Demand set: 1016 Sen 2 PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I	
I	I	I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK	I	
I	I	I	I	I

I	ARM	A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	B	I	15.00	I	45.00	I	75.00	I	1.00	I	1.50	I	1.00
I	ARM	C	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	D	I	15.00	I	45.00	I	75.00	I	0.63	I	0.94	I	0.63

.Demand set: 1016 Sen 2 PM

I	I	TURNING PROPORTIONS										I				
I	I	TURNING COUNTS										I				
I	I	(PERCENTAGE OF H.V.S)										I				
I	-----															
I	TIME	I	FROM/TO	I	ARM	A	I	ARM	B	I	ARM	C	I	ARM	D	I
I	-----															
I	08.00 - 09.30	I		I			I			I			I			I
I		I	ARM	A	I	0.000	I	0.000	I	0.000	I	0.000	I	0.000	I	
I		I		I	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	B	I	0.250	I	0.000	I	0.000	I	0.750	I			
I		I		I	I	20.0	I	0.0	I	0.0	I	60.0	I			
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I			
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	C	I	0.000	I	0.000	I	0.000	I	0.000	I	0.000	I	
I		I		I	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	D	I	0.000	I	1.000	I	0.000	I	0.000	I	0.000	I	
I		I		I	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I	
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	I	I	I	I	I	

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 1016 Sen 2 PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	08.00-08.15	I	I					
I	B-ACD	1.00	9.03	0.111		0.00	0.12	1.8
I	A-B	0.00	0.12	I				
I	A-C	0.00	I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
I	D-ABC	0.63	9.07	0.069		0.00	0.07	1.1
		0.12	I					

I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/		PER ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.15-08.30							

I	B-ACD	1.20	9.03	0.133	0.12	0.15	2.2
		0.13	I				
I	A-B	0.00					
			I				
I	A-C	0.00					
			I				
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	D-ABC	0.75	9.07	0.083	0.07	0.09	1.3
		0.12	I				
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH.MIN/	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME SEGMENT)	VEHICLE	(MIN)	I					
I	08.30-08.45							

I	B-ACD	1.47	9.02	0.163		0.15	0.19
		0.13					2.8
I	A-B	0.00					
I	A-C	0.00					
I	A-D	0.00	9.14	0.000		0.00	0.00
		0.00					0.0
I	D-ABC	0.92	9.07	0.101		0.09	0.11
		0.12					1.6
I	C-ABD	0.00	9.14	0.000		0.00	0.00
		0.00					0.0
I	C-D	0.00					
I	C-A	0.00					
I							

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/		PER	ARRIVING I					
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.45-09.00							

I	B-ACD	1.47	9.02	0.163		0.19	0.19	2.9
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.92	9.07	0.101		0.11	0.11	1.7
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I	TIME SEGMENT)	VEHICLE (MIN)	I					
I	09.00-09.15							
			I					
I	B-ACD	1.20	9.03	0.133		0.19	0.15	2.4
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.75	9.07	0.083		0.11	0.09	1.4
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					
			I					
			I					

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	110.1	I 73.4	I	14.0	I 0.13	I	14.0	I 0.13	I
I	A-B	I	0.0	I 0.0	I		I	I		I	I
I	A-C	I	0.0	I 0.0	I		I	I		I	I
I	A-D	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	D-ABC	I	68.8	I 45.9	I	8.2	I 0.12	I	8.2	I 0.12	I
I	C-ABD	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	C-D	I	0.0	I 0.0	I		I	I		I	I
I	C-A	I	0.0	I 0.0	I		I	I		I	I
I	ALL	I	178.9	I 119.3	I	22.3	I 0.12	I	22.3	I 0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "T:\Anthony Sun\J9 Soy RD\1016 Soy RD Sen 2.vpi"
(drive-on-the-left) at 15:21:14 on Wednesday, 16 October 2024

.RUN INFORMATION

RUN TITLE : J9 - Yau Pok Road / REC South Access
LOCATION : Fairview
DATE : 02/09/24
CLIENT : SHK
ENUMERATOR : sam.wong [HKSHT1PC0702]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D)
I
I
I

I
I
I
MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Yau Pok Road exit
ARM B IS Vehicular Bridge
ARM C IS Yau Pok Road entry
ARM D IS REC South

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I DATA ITEM I MINOR ROAD B
I MINOR ROAD D I

I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH I (W) 6.00 M.
I (W) 6.00 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M.
I (WCR) 0.00 M. I
I
I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 2.20 M.
I (WA-D) 2.20 M. I
I - VISIBILITY I (VC-B) 50.00 M.
I (VA-D) 50.00 M. I
I - BLOCKS TRAFFIC (SPACES) I YES (0) I
I NO (0) I
I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 50.0 M.
I (VD-A) 50.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 50.0 M.
I (VD-C) 50.0 M. I

I - LANE 1 WIDTH I (WB-C) 3.50 M.
I (WD-A) 3.50 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M.
I (WD-C) 0.00 M. I

.SLOPES AND INTERCEPT
(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C				
I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-B	I
I	688.22	0.27	0.11	I

STREAM D-A				
I	Intercept For	Slope For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM C-A	STREAM C-D	I
I	688.22	0.27	0.11	I

STREAM B-A				
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A
I	STREAM D-B	I		
I	544.46	0.25	0.25	0.25
0.25	I			

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	STREAM A-B	STREAM C-A	STREAM C-B	
I	STREAM D-C	I		
I	0.13	I	0.10	0.16
				0.36

STREAM D-C				
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing
I	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C
I	STREAM B-D	I		
I	544.46	0.25	0.25	0.25
0.25	I			

Slope For Opposing				
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	Slope For Opposing	Slope For Opposing	Slope For Opposing	
I	STREAM B-A	STREAM C-D	STREAM A-C	STREAM A-D
I	STREAM B-A	I		
I	0.13	I	0.10	0.16
				0.36

STREAM C-B

I Intercept For I STREAM C-B	Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	I
I 602.92	0.23	0.23	0.33	I

STREAM A-D

I Intercept For I STREAM A-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	I
I 602.92	0.23	0.33	0.23	I

B-D Stream From Left Hand Lane

I Intercept For I STREAM B-D STREAM C-B	Slope For Opposing STREAM A-C I	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B
I 544.46 0.36 I	0.25	0.25	0.10

I Slope For Opposing I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D
I	0.16	0.16

B-D Stream From Right Hand Lane

I Intercept For I STREAM B-D STREAM C-B	Slope For Opposing STREAM A-C I	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B
I 544.46 0.36 I	0.25	0.25	0.10

I Slope For Opposing I	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D
I	0.16	0.16

D-B Stream From Left Hand Lane

I Intercept For I STREAM D-B STREAM A-D	Slope For Opposing STREAM C-A I	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D
I 544.46 0.36 I	0.25	0.25	0.10

I Slope For Opposing I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
I		

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing Slope For OpposingI	Slope For Opposing	Slope For Opposing
I STREAM B-D STREAM A-D I	STREAM C-A	STREAM C-B
		STREAM C-D

I	544.46	0.25	0.25	0.10
0.36	I			

I	Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	

I	0.16	0.16
I		

```
.TRAFFIC DEMAND DATA
```

I	ARM	I	FLOW	SCALE(%)	I
I	A	I		100	I
I	B	I		100	I
I	C	I		100	I
I	D	I		100	I

.Demand set: 1016 Sen 2 AM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I		I NUMBER OF MINUTES FROM START WHEN			I RATE OF FLOW (VEH/MIN)		
I	I	I	I	I	I	I	I
I	ARM	I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS	I BEFORE	I AT TOP	I AFTER
I		I TO RISE	I IS REACHED	I FALLING	I PEAK	I OF PEAK	I PEAK
I		I	I	I	I	I	I
I							

I	ARM	A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	B	I	15.00	I	45.00	I	75.00	I	1.25	I	1.88	I	1.25
I	ARM	C	I	15.00	I	45.00	I	75.00	I	0.13	I	0.19	I	0.13
I	ARM	D	I	15.00	I	45.00	I	75.00	I	1.75	I	2.63	I	1.75

.Demand set: 1016 Sen 2 AM

I		I		TURNING PROPORTIONS								I	
I		I		TURNING COUNTS								I	
I		I		(PERCENTAGE OF H.V.S)								I	
I		I		-----								I	
I		I		-----								I	
TIME		FROM/TO		I ARM		A I ARM		B I ARM		C I ARM		D I	
I		I		I		I		I		I		I	
I	08.00 - 09.30	I	I	I	I	I	I	I	I	I	I	I	I
I		I	ARM A	I	0.000	I	0.000	I	0.000	I	0.000	I	0.000
I		I		I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)
I		I		I		I		I		I		I	
I		I	ARM B	I	0.000	I	0.000	I	0.000	I	0.000	I	1.000
I		I		I	0.0	I	0.0	I	0.0	I	0.0	I	100.0
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)

I		I		I		I		I				
I	I	ARM	C	I	0.000	I	1.000	I	0.000	I	0.000	I
I	I			I	0.0	I	10.0	I	0.0	I	0.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I
I	I	ARM	D	I	0.000	I	1.000	I	0.000	I	0.000	I
I	I			I	0.0	I	140.0	I	0.0	I	0.0	I
I	I			I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I	I			I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 1016 Sen 2 AM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.00-08.15							
I	B-ACD	1.25	9.03	0.139		0.00	0.16	2.3
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
I	D-ABC	1.76	9.04	0.194		0.00	0.24	3.4
I	C-ABD	0.13	10.05	0.012		0.00	0.01	0.2
I	C-D	0.00						
I	C-A	0.00						
I								

I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.15-08.30							
I	B-ACD	1.50	9.02	0.166		0.16	0.20	2.9
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.09	0.000		0.00	0.00	0.0
I	D-ABC	2.10	9.04	0.232		0.24	0.30	4.4
I	C-ABD	0.15	10.05	0.015		0.01	0.02	0.2
I	C-D	0.00						
I	C-A	0.00						
I								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
I	GEOMETRIC DELAY	AVERAGE DELAY	I					
I	(VEH.MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	
I	VEHICLE (MIN)	I						
I	08.30-08.45							
I	B-ACD	1.84	9.01	0.204		0.20	0.25	3.7
I	A-B	0.00						
I	A-C	0.00						
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
I	D-ABC	2.57	9.03	0.285		0.30	0.39	5.7
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
I	C-D	0.00						

I	C-A	0.00	I
I			I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH/MIN/		PER ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	08.45-09.00							

		1	2	3	4	5	6	7
I	B-ACD	1.84	9.01	0.204		0.25	0.25	3.8
		0.14	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.08	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	2.57	9.03	0.285		0.39	0.39	5.9
		0.15	I					
I	C-ABD	0.18	10.05	0.018		0.02	0.02	0.3
		0.10	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	
(VEH/MIN/		PER ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME SEGMENT)		VEHICLE (MIN)	I					
I	09.00-09.15							

I	B-ACD	1.50	9.02	0.166	0.25	0.20	3.1
		0.13	I				
I	A-B	0.00					

I	A-C	0.00					
I	A-D	0.00	9.09	0.000		0.00	0.00
I	D-ABC	2.10	9.04	0.232		0.39	0.31
I	C-ABD	0.15	10.05	0.015		0.02	0.02
I	C-D	0.00					
I	C-A	0.00					
I							

I TIME GEOMETRIC I (VEH.MIN/ I TIME SEGMENT) I 09.15-09.30	DEMAND DELAY (VEH/MIN) PER VEHICLE	CAPACITY AVERAGE (VEH/MIN) ARRIVING (MIN)	DEMAND/ DELAY I CAPACITY I (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
--	--	---	--	----------------------------------	--------------------------	------------------------	-------------------------------------

		1	2	3	4	5	6	7
I	B-ACD	1.25	9.03	0.139		0.20	0.16	2.5
		0.13	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.10	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	1.76	9.04	0.194		0.31	0.24	3.7
		0.14	I					
I	C-ABD	0.13	10.05	0.012		0.02	0.01	0.2
		0.10	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

```
*WARNING* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR
.
  QUEUE FOR STREAM      B-ACD
```

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.3
09.00	0.3
09.15	0.2
09.30	0.2

QUEUE FOR STREAM A-D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.3
08.45	0.4
09.00	0.4
09.15	0.3
09.30	0.2

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM I TOTAL DEMAND I * QUEUEING * I * INCLUSIVE QUEUEING * I

I	I	I	* DELAY *		I	* DELAY *		I
I	I	I			I			I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I
I	I	I			I			I
I	B-ACD	I	137.6	I 91.8	I	18.3	I 0.13	I
I	A-B	I	0.0	I 0.0	I		I	I
I	A-C	I	0.0	I 0.0	I		I	I
I	A-D	I	0.0	I 0.0	I	0.00	I 0.00	I
I	D-ABC	I	192.7	I 128.5	I	0.14	I 27.9	I 0.14
I	C-ABD	I	13.8	I 9.2	I	0.10	I 1.4	I 0.10
I	C-D	I	0.0	I 0.0	I		I	I
I	C-A	I	0.0	I 0.0	I		I	I
I	ALL	I	344.1	I 229.4	I	0.14	I 47.6	I 0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

I	Intercept	For Slope	For Opposing	Slope For Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM A-B	I
I	688.22		0.27	0.11	I

STREAM D-A

I	Intercept	For Slope	For Opposing	Slope For Opposing	I
I	STREAM D-A	STREAM	C-A	STREAM C-D	I
I	688.22		0.27	0.11	I

STREAM B-A

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-A STREAM A-C STREAM A-D STREAM D-A
STREAM D-B I

I 544.46 0.25 0.25 0.25
0.25 I

I Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM A-B STREAM C-A STREAM C-B
STREAM D-C I

I 0.13 I 0.10 0.16 0.36

STREAM D-C

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM D-C STREAM C-A STREAM C-B STREAM B-C
STREAM B-D I

I 544.46 0.25 0.25 0.25
0.25 I

I Slope For Opposing Slope For Opposing Slope For Opposing

Slope For OpposingI
I STREAM C-D STREAM A-C STREAM A-D
STREAM B-A I

I 0.13 I 0.10 0.16 0.36

STREAM C-B

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM C-B STREAM A-B STREAM A-C STREAM A-D I
I 602.92 0.23 0.23 0.33 I

STREAM A-D

I Intercept For Slope For Opposing Slope For Opposing Slope For OpposingI
I STREAM A-D STREAM C-A STREAM C-B STREAM C-D I
I 602.92 0.23 0.33 0.23 I

B-D Stream From Left Hand Lane

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing
Slope For OpposingI
I STREAM B-D STREAM A-C STREAM A-D STREAM A-B
STREAM C-B I

I 544.46 0.25 0.25 0.10
0.36 I

I Slope For Opposing Slope For Opposing Slope For Opposing

Slope For OpposingI			
I	STREAM C-A	STREAM C-D	

I		0.16	0.16
	I		

B-D Stream From Right Hand Lane

I Intercept For Slope For Opposing		Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I STREAM B-D	STREAM A-C	STREAM A-D	STREAM A-B
STREAM C-B	I		

I	544.46	0.25	0.10
0.36	I		

I		Slope For Opposing	Slope For Opposing	Slope For Opposing
Slope For OpposingI				
I		STREAM C-A	STREAM C-D	

I		0.16	0.16	
I				

D-B Stream From Left Hand Lane

I Intercept For Slope For Opposing			
Slope For OpposingI			
I STREAM D-B	STREAM C-A	STREAM C-B	STREAM C-D

STREAM A-D I			

I	544.46	0.25	0.25
0.36	I		0.10

Slope For Opposing		Slope For Opposing		Slope For Opposing			
Slope For OpposingI		Slope For OpposingI		Slope For OpposingI			
I	STREAM A-C	I	STREAM A-B	I	STREAM A-B		

I		0.16		0.16			
	I						

D-B Stream From Right Hand Lane

I Intercept For Slope For Opposing		Slope For Opposing	Slope For Opposing
Slope For OpposingI			
I STREAM B-D	STREAM C-A	STREAM C-B	STREAM C-D
STREAM A-D	I		

I	544.46	0.25	0.10
0.36	I		

I Intercept For Slope For Opposing			
Slope For OpposingI			
I	STREAM A-C	STREAM A-B	

I		0.16	0.16

I

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I
I	D	I	100	I

.Demand set: 1016 Sen 2 PM

TIME PERIOD BEGINS 08.00 AND ENDS 09.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I	
I	I	I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK	I	
I	I	I	I	I

I	ARM	A	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	B	I	15.00	I	45.00	I	75.00	I	0.75	I	1.13	I	0.75
I	ARM	C	I	15.00	I	45.00	I	75.00	I	0.00	I	0.00	I	0.00
I	ARM	D	I	15.00	I	45.00	I	75.00	I	0.63	I	0.94	I	0.63

.Demand set: 1016 Sen 2 PM

I	I	TURNING PROPORTIONS										I				
I	I	TURNING COUNTS										I				
I	I	(PERCENTAGE OF H.V.S)										I				
I	-----															
I	TIME	I	FROM/TO	I	ARM	A	I	ARM	B	I	ARM	C	I	ARM	D	I
I	-----															
I	08.00 - 09.30	I		I			I			I			I			I
I		I	ARM	A	I	0.000	I	0.000	I	0.000	I	0.000	I	0.000	I	
I		I		I	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	B	I	0.000	I	0.000	I	0.000	I	1.000	I			I
I		I		I	I	0.0	I	0.0	I	0.0	I	60.0	I			I
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I			I
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	C	I	0.000	I	0.000	I	0.000	I	0.000	I			I
I		I		I	I	0.0	I	0.0	I	0.0	I	0.0	I			I
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I			I
I		I		I	I	I	I	I	I	I	I	I	I	I	I	
I		I	ARM	D	I	0.000	I	1.000	I	0.000	I	0.000	I			I
I		I		I	I	0.0	I	50.0	I	0.0	I	0.0	I			I
I		I		I	I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I			I
I		I		I	I	I	I	I	I	I	I	I	I	I	I	

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 1016 Sen 2 PM
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN/	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER ARRIVING	I						
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME SEGMENT)
TIME SEGMENT)	VEHICLE (MIN)	I						
I	08.00-08.15							
I	B-ACD	0.75	9.07	0.083		0.00	0.09	1.3
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.63	9.07	0.069		0.00	0.07	1.1
		0.12	I					

I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00	I				
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH/MIN)	(VEH/MIN)	I				
(VEH.MIN/	PER ARRIVING	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
I							
TIME SEGMENT)	VEHICLE (MIN)	I					
I 08.15-08.30							

I	B-ACD	0.90	9.07	0.099		0.09	0.11
		0.12	I				1.6
I	A-B	0.00					
			I				
I	A-C	0.00					
			I				
I	A-D	0.00	9.14	0.000		0.00	0.00
		0.00	I				0.0
I	D-ABC	0.75	9.07	0.083		0.07	0.09
		0.12	I				1.3
I	C-ABD	0.00	9.14	0.000		0.00	0.00
		0.00	I				0.0
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC DELAY	AVERAGE DELAY	I	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/
I	(VEH/MIN)	(VEH/MIN)	I	(PDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
(VEH.MIN/	PER ARRIVING	I	(RFC)				
I							
TIME SEGMENT)	VEHICLE (MIN)	I					
I 08.30-08.45							

I	B-ACD	1.10	9.07	0.121	0.11	0.14	2.0
		0.13					
I	A-B	0.00					
I	A-C	0.00					
I	A-D	0.00	9.14	0.000	0.00	0.00	0.0
		0.00					
I	D-ABC	0.92	9.07	0.101	0.09	0.11	1.6
		0.12					
I	C-ABD	0.00	9.14	0.000	0.00	0.00	0.0
		0.00					
I	C-D	0.00					
I	C-A	0.00					
I							

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY I					
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/
(VEH.MIN/	PER	ARRIVING	I					
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)
TIME SEGMENT)	VEHICLE (MIN)	I						
I	08.45-09.00							

I	B-ACD	1.10	9.07	0.121		0.14	0.14
		0.13	I				2.1
I	A-B	0.00					
			I				
I	A-C	0.00					
			I				
I	A-D	0.00	9.14	0.000		0.00	0.00
		0.00	I				0.0
I	D-ABC	0.92	9.07	0.101		0.11	0.11
		0.12	I				1.7
I	C-ABD	0.00	9.14	0.000		0.00	0.00
		0.00	I				0.0
I	C-D	0.00					
			I				
I	C-A	0.00					
			I				
I							
			I				

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.00-09.15							
I	B-ACD	0.90	9.07	0.099		0.14	0.11	1.7
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	D-ABC	0.75	9.07	0.083		0.11	0.09	1.4
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY
GEOMETRIC	DELAY	AVERAGE	DELAY	I				
I	(VEH./MIN)	(VEH./MIN)	(VEH./MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH./MIN/
(VEH./MIN/	PER	ARRIVING	I					
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME	SEGMENT)
TIME	SEGMENT)	VEHICLE	(MIN)	I				
I	09.15-09.30							
I	B-ACD	0.75	9.07	0.083		0.11	0.09	1.4
		0.12	I					
I	A-B	0.00						
			I					
I	A-C	0.00						
			I					
I	A-D	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					

I	D-ABC	0.63	9.07	0.069		0.09	0.07	1.1
		0.12	I					
I	C-ABD	0.00	9.14	0.000		0.00	0.00	0.0
		0.00	I					
I	C-D	0.00						
			I					
I	C-A	0.00						
			I					
I								
			I					

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-ACD

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM A-D

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUE FOR STREAM D-ABC

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I
I		I			I	* DELAY *		I	* DELAY *		I
I		I			I			I			I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-ACD	I	82.6	I 55.1	I	10.1	I 0.12	I	10.1	I 0.12	I
I	A-B	I	0.0	I 0.0	I		I	I		I	I
I	A-C	I	0.0	I 0.0	I		I	I		I	I
I	A-D	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	D-ABC	I	68.8	I 45.9	I	8.2	I 0.12	I	8.2	I 0.12	I
I	C-ABD	I	0.0	I 0.0	I	0.0	I 0.00	I	0.0	I 0.00	I
I	C-D	I	0.0	I 0.0	I		I	I		I	I
I	C-A	I	0.0	I 0.0	I		I	I		I	I
I	ALL	I	151.4	I 100.9	I	18.3	I 0.12	I	18.3	I 0.12	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

2034 AM Design Flows - Sensitivity Test (II)

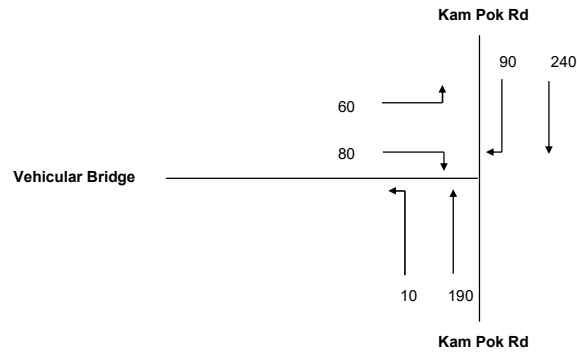
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CHECK: 0

JOB NO: 60XXXXXX

DATE: Oct 24

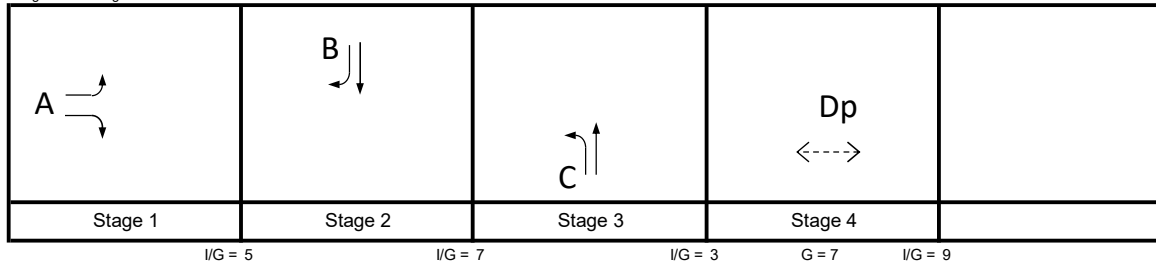
Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.357
Lost time	L =	28 sec
Total Flow	=	670 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	73 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	44 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.690
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	93.2 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	46 sec
Y_{max}	$= 1 - L / C =$	0.533

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 34\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.600	1	5	10	0	0		0		2115	60		80	140	43%	57%	1742	0.080	0.080
	B	2	3.600	1		10	0	1		0		1975		240	90	330		27%	1897	0.174	0.174
	C	3	3.600	1	5			1		0		1975	10	190		200	5%		1946	0.103	0.103
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J10 - Kam Pok Road / Vehicular Bridge

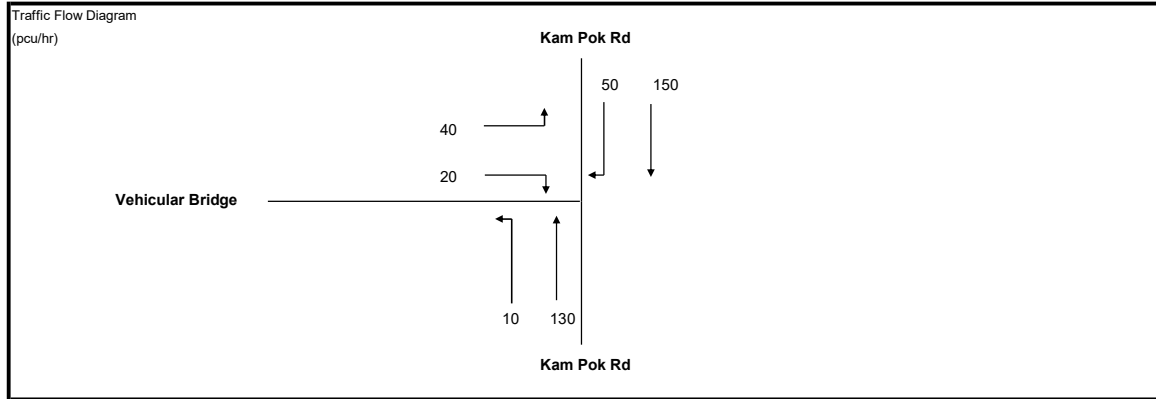
2034 PM Design Flows - Sensitivity Test (II)

DESIGN: 0

CHECK: 0

JOB NO: 60XXXXXX

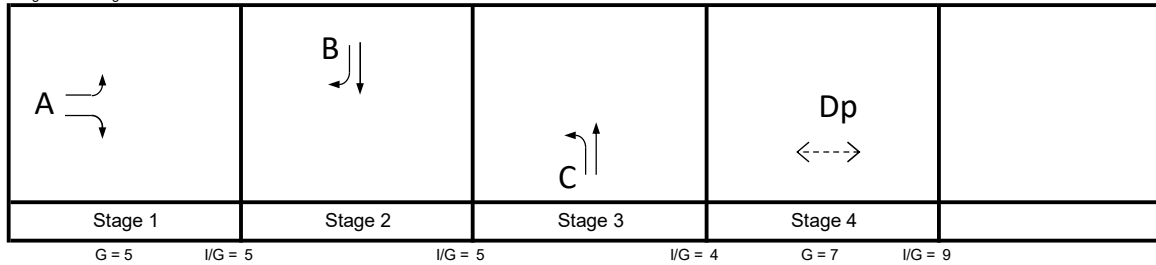
DATE: Oct 24



No. of stages per cycle	N =	4
Cycle time	C =	60 sec
Sum(y)	Y =	0.177
Lost time	L =	33 sec
Total Flow	=	400 pcu
Optimum Cycle C_o	$= (1.5 \times L + 5) / (1 - Y) =$	66 sec
Min. Cycle Time C_m	$= L / (1 - Y) =$	40 sec
Y_{ult}	$= 0.9 - 0.0075 \times L =$	0.653
$R.C_{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	267.7 %
Practical Cycle Time C_p	$= 0.9 \times L / (0.9 - Y) =$	41 sec
Y_{max}	$= 1 - L/C =$	0.450

J10

Stage/Phase Diagrams



Critical Case : A,B,C,Dp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 128\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
→	A	1	3.600	1	5	10	0	0		0		2115	40		20	60	67%	33%	1692	0.035	
↘	B	2	3.600	1		10	0	1		0		1975		150	50	200		25%	1904	0.105	0.105
↗	C	3	3.600	1	5			1		0		1975	10	130		140	7%		1934	0.072	0.072
Pedestrian Crossing	Dp	4	min.	GM 7	+	FGM 7	=	14	sec												*

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

Year 2034 AM SENSITIVITY TEST II

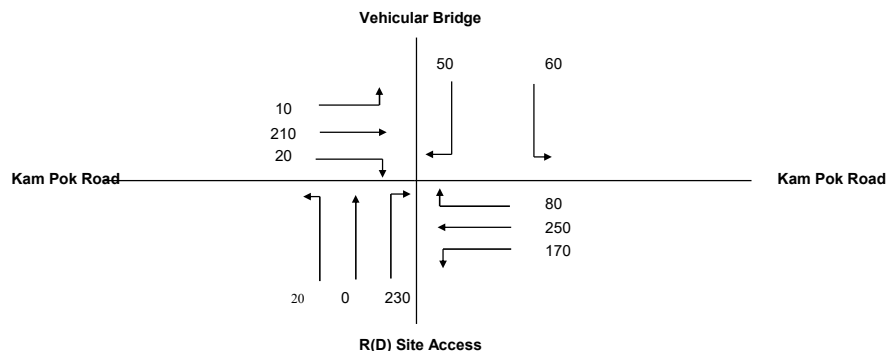
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#VALUE!

DATE: Oct 24

Traffic Flow Diagram
(pcu/hr)

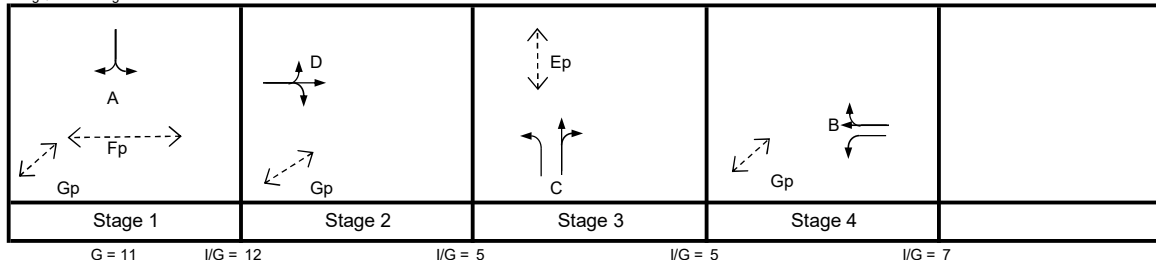


No. of stages per cycle N = 4
Cycle time C = 90 sec
Sum(y) Y = 0.427
Lost time L = 37 sec
Total Flow = 1,100 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 105$ sec
Min. Cycle Time $C_m = L / (1 - Y) = 65$ sec
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.623$
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 45.9\%$
Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 70$ sec
 $Y_{max} = 1 - L / C = 0.589$

J11

Stage/Phase Diagrams



Critical Case : Fp,D,C,B

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 24\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
↔	A	1	3.500	1	10	12	0	0		0		2105	60		50	110	55%	45%	1849	0.060	
↔	B	4	3.650	1	15			1		0		1980	170			170	100%		1800	0.094	0.159
↔	B	4	3.650	1		15	0	0		0		2120		250	80	330		24%	2070	0.159	
↔	C	3	3.000	1	12	15	0	1		0		1915	20	0	230	250	8%	92%	1738	0.144	0.144
↔	D	2	3.650	1	10	12	0	1		0		1980	10	210	20	240	4%	8%	1948	0.123	0.123
Pedestrian Crossing					GM	FGM															
	Ep	3	min.	10	+	10	=	20	sec												*
	Fp	1	min.	11	+	10	=	21	sec												
	Gp	1,2,4	min.	5	+	5	=	10	sec												

JUNCTION CAPACITY CALCULATION

AECOM

Junction J11 - Kam Pok Road / Vehicular Bridge / R(D) Site Access

Year 2034 PM SENSITIVITY TEST II

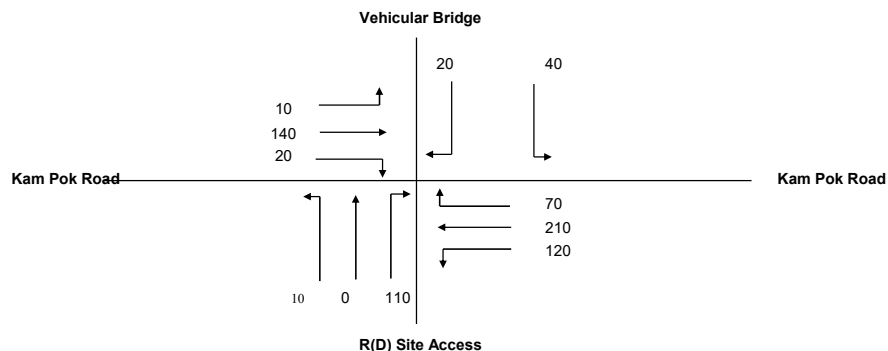
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CHECK: 0

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DATE: Oct 24

Traffic Flow Diagram
(pcu/hr)



No. of stages per cycle N = 4

Cycle time C = 90 sec

Sum(y) Y = 0.292

Lost time L = 37 sec

Total Flow = 750 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 85$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 52$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.623$

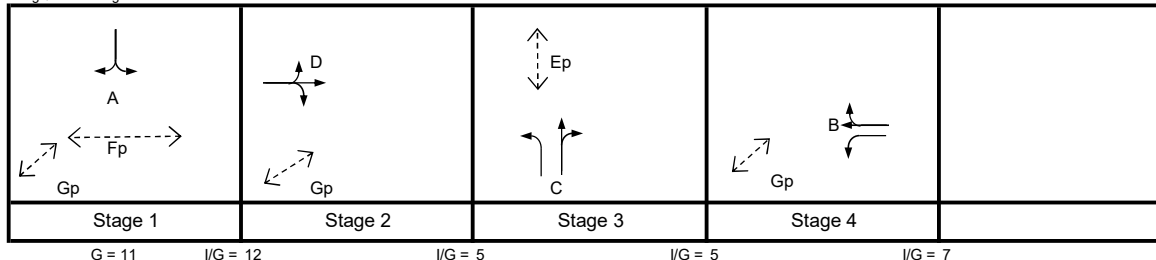
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 113.0$ %

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 55$ sec

$Y_{max} = 1 - L / C = 0.589$

J11

Stage/Phase Diagrams



Critical Case : Fp,D,C,B

R.C.(C) = $(0.9 \times Y_{max} - Y) / Y \times 100\% = 81\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
Left Turn	A	1	3.500	1	10	12	0	0		0		2105	40		20	60	67%	33%	1844	0.033	
Through/Right Turn	B	4	3.650	1	15			1		0		1980	120			120	100%		1800	0.067	
	B	4	3.650	1		15	0	0		0		2120		210	70	280		25%	2068	0.135	0.135
Left Turn	C	3	3.000	1	12	15	0	1		0		1915	10	0	110	120	8%	92%	1738	0.069	0.069
Through/Right Turn	D	2	3.650	1	10	12	0	1		0		1980	10	140	20	170	6%	12%	1934	0.088	0.088
Pedestrian Crossing					GM	FGM															
	Ep	3	min.	10	+	10	=	20	sec												
	Fp	1	min.	11	+	10	=	21	sec												*
	Gp	1,2,4	min.	5	+	5	=	10	sec												

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

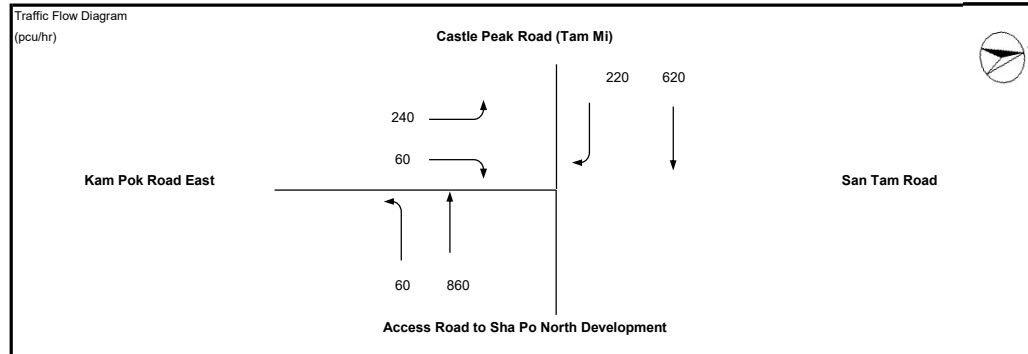
2034 AM Peak Hour Design Traffic Flows - Sensitivity Test (with Soy Factory) with Improvement

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21



No. of stages per cycle N = 3

Cycle time C = 100 sec

Sum(y) Y = 0.534

Lost time L = 19 sec

Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 72$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 41$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.758$

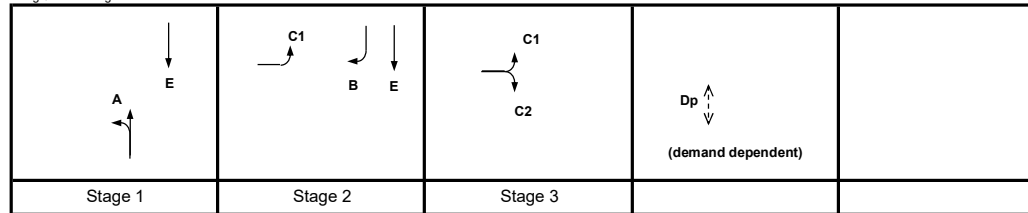
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 41.9\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 47$ sec

$Y_{max} = 1 - L/C = 0.810$

J6

Stage/Phase Diagrams



Critical Case : A,B,C2

$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 37\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	25			1		0		1965	60	770		830	7%		1957	0.424	0.424
	E	1,2	3.400	1		30	0	0		0		1955 2105		530	220	530 220		100%	1955 2005	0.271 0.110	0.110
	B	2	3.500	1																	
	C1	2,3	3.400	1	25	30	0	0		0	0	1955 2095	240		60	240 60	100%	100%	1844 1995	0.130 0.030	
	C2	3	3.400	1																	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		

JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Castle Peak Road -Tam Mi / Kam Pok Road East

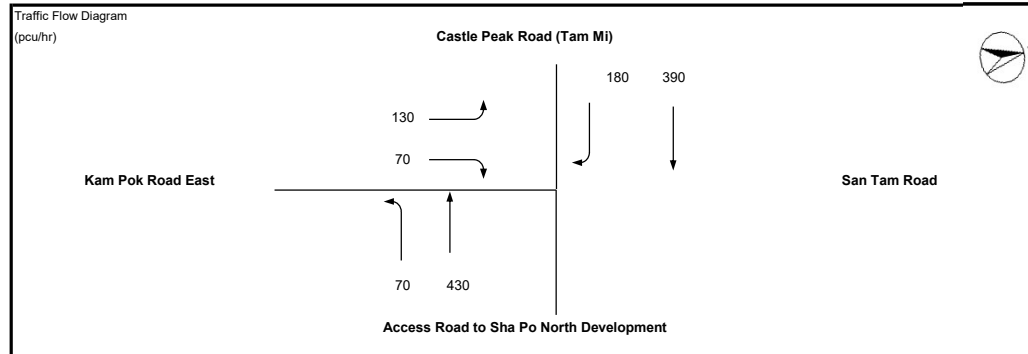
2034 PM Peak Hour Design Traffic Flows - Sensitivity Test (with Soy Factory) with Improvement

DESIGN: MKCN

CHECK: SHSN

JOB NO: -

DATE: May 21



No. of stages per cycle N = 3

Cycle time C = 100 sec

Sum(y) Y = 0.412

Lost time L = 18 sec

Total Flow = 10,075 pcu

Optimum Cycle $C_o = (1.5 \times L + 5) / (1 - Y) = 54$ sec

Min. Cycle Time $C_m = L / (1 - Y) = 31$ sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.765$

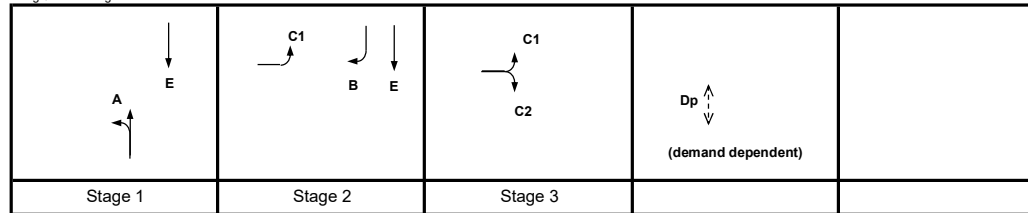
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 85.7\%$

Practical Cycle Time $C_p = 0.9 \times L / (0.9 - Y) = 33$ sec

$Y_{max} = 1 - L / C = 0.820$

J6

Stage/Phase Diagrams



I/G = 6

I/G = 5

G = 5

I/G = 5

Critical Case : A,B,C2

$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 79\%$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
↕	A	1	3.500	1	25			1		0		1965	70	490		560	13%		1950	0.287	0.287
↕	E	1,2	3.400	1		30	0	0		0		1955 2105		450		450 180		100%	1955 2005	0.230 0.090	
	B	2	3.500	1																	
↕	C1	2,3	3.400	1	25	30	0	0		0		1955 2095	130		70	130 70	100%	100%	1844 1995	0.070 0.035	
	C2	3	3.400	1																	
Pedestrian Crossing				GM 13	+	FGM 12	=	25	sec												
	Dp	4	min.																		