Appendix 1

Traffic Impact Assessment

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Traffic Impact Assessment

For

Amendment of Plan to

Rezone from "Residential (Group D)" ("R(D)"), "Residential (Group E)" ("R(E)") and an area shown as 'Road'

to "Residential (Group C)3) ("R(C)3")

on the Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11

at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land

Ho Chung, Sai Kung, New Territories, Hong Kong

Prepared by: **Prudential Surveyors (Hong Kong) Limited**
Version: **A**
Date: **August 2023**

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1. Introduction

1.1.1 This Traffic Impact Assessment (TIA) is prepared as part of the Section 12A Application for the amendment of plan to rezone to "Residential (Group C)3" ("R(C)3") on the Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11 (the Approved OZP) at various lots in Demarcation District 210 (D.D.210) and Demarcation District 244 (D.D.244) and adjoining government land, at Ho Chung, Sai Kung, New Territories (the Site) with a Site area about 3,190 sq.m. [Figure 1.1]

1.1.2 The TIA is required as part of the Section 12A planning application for the Proposed Development for rezone the Subject Site from "Residential (Group D)" ("R(D)"), "Residential (Group E)" ("R(E)") and an area shown as 'Road' to "Residential (Group C)3" ("R(C)3") zoned with a maximum site coverage of 25% and a maximum building height of 12m with 3 storeys over one storey of carport PR of 0.75 on the Approved OZP.

1.1.3 The owner of the Site has the intention to construct six individual houses with six ancillary car parking spaces of 2.5m X 5m, six accessible visitor parking space of 3.5m X 5m and one light goods vehicles (LGV) loading/unloading bay 3.5m X 7m in Parcel A & B of the Site, and two individual houses with two ancillary car parking spaces of 2.5m X 5m, two accessible visitor parking space of 3.5m X 5m in Parcel C of the Site.

1.1.4 This traffic impact assessment (TIA) study is to support the proposed development. This report describes the traffic impact assessment undertaken.

1.2 Study Objectives

1.2.1 The objectives of this study can be summarised as follows:

- undertake traffic impact assessment to assess the traffic impact to be induced by the proposed development on the nearby road network in the vicinity of the Subject Site;
- design and conduct traffic surveys during peak hours in the vicinity of the Subject Site to supplement available information and traffic data;
- estimate the extra volumes of traffic that will be generated by the proposed development during the peak period (arrivals and departures);
- estimate the likely changes of circulation patterns and traffic flow in the future road network adjacent to the Subject Site;
- review the capacity of the critical links of the road networks adjacent to the Subject Site;
- provide traffic advice on the internal vehicular movements; and
- advise on the provision of internal parking and loading and unloading spaces based on relevant standards and requirements for residential development.

2. Proposed Development

2.1.1 The proposed development is to erect six individual houses in Parcel A & B of the Site and two individual houses in Parcel C of the Site. The proposed gross floor area (GFA) of the houses are summarised in Table 2.1.

Propose House	Gross Floor Area (GFA) (sqm) (about)
House 1	283
House 2	283
House 3	283
House 4	283
House 5	283
House 6	283
House 7	346
House 8	346
Total	2,390
Average Size	299

Table 2.1 Proposed GFA of Houses

2.1.2 The proposed development would adopt a household size of 4 per house. In this connection, a total population of 32 would be used.

3. Existing Traffic Situation

3.1 Existing Road Network

3.1.1 The Site is located at Ho Chung North Road (former Luk Mei Tsuen Road), which is a Feeder Road with single-two carriageway connecting to Hiram's Highway to the east.

3.1.2 The connecting section of Hiram's Highway was a Rural Road improved in 2020 year, from single-two carriageway to dual-two carriageway.

3.1.3 The critical road links and junctions in this study are, from north to south:

- J1 - Hiram's Highway / Marina Cove North Access
- J2 - Hiram's Highway / Marina Cove South Access
- L1 - Hiram's Highway between Ho Chung North Road (former Luk Mei Tsuen Road) and Ho Chung Road
- J3 - Hiram's Highway / Ho Chung Road
- L2 - Hiram's Highway between Ho Chung Road and Nam Pin Wai Road
- J4 - Hiram's Highway / New Hiram's Highway / Nam Pin Wai Road (Roundabout)

3.1.4 The Area of Influence (AoI) and Study Area are shown in Figure 1.1.

3.2 Public Transport

3.2.1 Public transport services include franchised bus, green minibus (GMB) and public light bus (PLB) in the vicinity are depicted in Figure 3.1 and summarised in Table 3.1.

Franchised Bus		
Route	**Destination**	**Frequency (min)**
92	Sai Kung – Diamond Hill Station	12-20
92R	Sai Kung – Star Ferry	20 (Sunday and Holidays only)
96R	Wong Shek Pier – Diamond Hill Station	18-25 (Sunday and Holidays only)
292P	Sai Kung – Kwun Tong	7:30 (Only one departure Monday to Friday)
792M	Sai Kung – Tseung Kwan O Station	15-20
Green Minibus (GMB) Services		
1	Sai Kung – Kowloon Bay	8-20
1A	Sai Kung – San Po Kong	4
1S	Sai Kung – San Po Kong	10-15
2	Sai Kung – Ho Chung	15-30
12	Sai Kung – Po Lam	10-15
101M	Sai Kung – Hang Hau Station	3-5
Public Light Bus (PLB) Services		
--	Sai Kung –Kwun Tong	5-12
--	Sai Kung –Mong Kok	Depart when fully loaded
--	Sai Kung – Causeway Bay	10-15

Table 3.1 Service Provision of Public Transport

3.3 Future Road Network

3.3.1 To support the continued development and population growth in Sai Kung Area, Hiram's Highway Improvement is divided into two stages. Stage 1 between Clear Water Bay Road and Marina Cove has been completed in 2021. The works include improvement works that would relieve the traffic congestion on the road section near Marina Cove, enhance the safety of the road section and improve the local access to Ho Chung and Luk Mei Tsuen.

3.3.2 Stage 2 is to improve the section of Hiram's Highway, Po Tung Road and Tai Mong Tsai Road from Marina Cove to the south of Sha Ha. The proposed improvement works will relieve traffic congestion and enhance the safety of the road section at Sai Kung area. The project is currently under review and the commencement date is under review. The location of the improvements for Stage 2 are presented in Figure 3.2.

3.4 Traffic Count Surveys

3.4.1 In order to appraise the actual traffic demand for the proposed development, classified turning movement count surveys are carried out during peak hours, 07:00 to 10:00 and 17:00 to 20:00 on both Wednesday, 26 August 2020 and Sunday, 30 August 2020 at the key junctions of the study area as presented in Figure 3.3.

3.4.2 The traffic count survey data were recorded in a 15 minutes interval, and to be converted into pcu per hour. The highest hourly traffic volume is adopted as the peak hour traffic flow.

3.4.3 The morning and afternoon peak hours during weekday of the road network have been identified as 08:00 to 09:00 and 17:30 to 18:30 respectively. Meanwhile the peak hour of the weekend was observed to be 17:15 to 18:15. The observed traffic flows in the study area presented in Figure 3.4.

3.5 Existing Capacity Assessment

Junction Capacity

3.5.1 Based on the observed traffic flows, the performance of the key junctions in the vicinity of the subject site during the morning and evening peak hours were assessed. The results area summarised and presented in Table 3.2 and the detailed calculation sheets are attached in Appendix A.

3.5.2 The Design Flow / Capacity (DFC) ratio is measured in evaluating the performance of a roundabout or priority junction. With reference to Ch4, Vol2, TPDM, a DFC ratio of 0.85 can be considered reasonable.

3.5.3 The performance of a traffic signalised junction is indicated by its reserved capacity (RC). A positive RC indicates that the junction is operating with spare capacity. A negative RC indicates that the junction is overloaded; resulting in traffic queues and longer delay.

Jun No.	Junction Location	Type/ Capacity Index	AM Peak Hour	PM Peak Hour	Weekend Peak Hour
J1	Luk Cheung Road /Hiram's Highway / Marina Cove North Access	Priority / DFC	0.12	0.07	0.07
J2	Luk Mei Tsuen Road /Hiram's Highway/ Marina Cove South Access	Signal / RC	147%	113%	135%
J3	Ho Chung Road /Hiram's Highway	Signal / RC	83%	109%	88%
J4	Nam Pin Wai Road / New Hiram's Highway / Hiram's Highway	Roundabout / DFC	0.71	0.64	0.69

Notes: RC=reserved capacity; DFC=Design Flow/ Capacity Ratio

Table 3.2 Existing Junction Performance

3.5.4 It can be observed in Table 3.2 that all of the key junctions perform satisfactorily during peak hours with adequate reserved capacities.

Link Capacity

3.5.5 Considering the routing of development traffic and construction traffic, link capacity of Sai Kung bound of L1 and L2, and Kowloon bound of L2 are assessed.

3.5.6 The result of road link capacity assessment is summarised in Table 3.3. With reference to para 10.6.4.5, Vol6, TPDM, the desirable limit of volume to capacity (V/C) ratio is less than 0.85 for links.

Link No.	Section of Hiram's Highway	Link Capacity (veh/hr)	Reference Flow		Reference V/C Ratio	
			Daily Peak	Weekend	Daily Peak	Weekend
L1 (Sai Kung Bound)	Between Ho Chung Road and Luk Mei Tsuen Road	2600	1336	1243	0.51	0.47
L2 (Sai Kung Bound)	Between Ho Chung Road and Nam Pin Wai Road	2600	1008	1188	0.39	0.46
L2 (Kowloon Bound)	Between Ho Chung Road and Nam Pin Wai Road	2600	1303	1143	0.50	0.44

Notes: Based on TPDM Volume 2 Chapter 2.4 – Design Flow Characteristics, it is assumed 2600 veh/hour for dual two-lane carriageway for one direction of flow.

Table 3.3 Existing Link Performance

3.5.7 It can be seen from Table 3.3 that all of the key links are within design capacities.

4. Future Traffic Situation

4.1 2028 Design Year Road Network

4.1.1 The anticipated year of completion for the proposed development is 2025. The design year is either 3 years after the completion year or 5 years after the application year, which ever longer. Therefore, Year 2028 is adopted as the design year of this study.

4.2 Traffic Generation

4.2.1 The proposed development is intended for eight single-family houses with an average size of 299 sq.m. It is proposed that there will only be 16 parking spaces.

4.2.2 The estimated average traffic generation and traffic attraction rate at peak hours are based on the trip rate based on the Transport Planning and Design Manual published by the Transport Department and are summarised in Table 4.1.

Description	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Trip Rate (pcu/unit/hr)	0.3252	0.2609	0.2835	0.4074

Private Housing: Low-Density / R(C) (pcu/hr) (8 units)	3	2	2	3

Note 1: As the Site is used as a single-family house, the commutes would take place once in the morning and once in the afternoon to/from work/school.
Note 2: The pcu of a private car is taken as 1.
Note 3: Morning peak is defined as 8:00 a.m. to 9:00 a.m. whereas afternoon peak is defined as 6:00 p.m. to 7:00 p.m.

Table 4.1 AM/PM Peak Generation and Attraction

4.2.3 As shown in Table 4.1, the proposed development would generate 3(2) pcus and attract 2(3) pcus in the morning (evening) peak hours, which is considered negligible.

4.2.4 The development traffic was re-distributed and assigned onto the existing road network. Figure 4.1 show that resulting assignment of the proposed development traffic.

4.3 Regional Traffic Growth

4.3.1 For the estimation of traffic flows in the design year of 2028, it is proposed to adjust the existing traffic flows to take into account of the natural traffic growth which is related to the increase in car usage.

Annual Traffic Census (ATC)

4.3.2 Reference has been made with uses of 2016 to 2021 (Latest) Annual Traffic Census Reports. The traffic data recorded at counting stations adjacent to the site are shown in Table 4.2.

Station No./Road Name	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Growth per Annum**
6055/ Hiram's Highway	25,610	24,050	24,450	24,280	23,360	24,460	**-0.91%**
5017/ Clear Water Bay Road	29,370	26,910	28,450	28,980	28,900	29,100	**-0.18%**
5466 / Clear Water Bay Road	18,770	18,650	18,950	20,240	19,110	20,020	**1.30%**
6056/ Sai Sha Road	10,780	10,990	11,880	11,800	11,350	11,880	**1.96%**
Total Growth per Annum							**0.22%**

Source: Annual Traffic Census, Transport Department

Table 4.2: Traffic Data from Annual Traffic Census Reports

4.3.3 It is noted from Table 4.2 that +0.22% annual growth is observed from the traffic flow record over the past five years.

Territory Population and Employment Data Matrices (TPEDM)

4.3.4 According to the latest 2019-based TPEDM from year 2019 to year 2031 in Southeast New Territories (Other Area) published on the PlanD website. The population growth from the base year 2019 to 2031 is -1.18% as shown in Table 4.3.

Planning Data District	Year 2019	Year 2026	Year 2031	Growth Rate p.a. (%)
Southeast New Territories (Other Area)	68,900	65,800	59,750	-1.18%

Table 4.3 Projected Population by TPEDM, 2019-2031

4.3.5 After comparing the historical data and the future planning data, for conservative purpose, an annual growth rate of +1.00% was adopted.

4.4 Reference and Design Flows

4.4.1 The anticipated year of completion and estimated year of population intake of the proposed development is 2025. The design year for assessment is 3 years after the completion year, i.e. Year 2028, is adopted as the design year of this study.

4.4.2 The growth factor derived in Section 4.3 will be applied to the traffic flows of 2020 observed peak hours, to estimate the 2028 reference flows.

4.4.3 The reference and design flows for design year 2028 are calculated from the following formulae:

2028 Reference Flows = 2020 Observed Flows x (1+1.00%)^8
2028 Design Flows = 2028 Reference Flows + Proposed Development Traffic

4.4.4 Based on the observed traffic flows and pattern of existing and future road network, the 2028 peak hour Reference Flows at the critical junctions are presented in Figure 4.2. Meanwhile, the design Flows are presented in Figure 4.3.

4.5 Capacity Assessment Construction Stage and After Project Completion

Construction Stage Junction Capacity

4.5.1 Based on similar projects, it is assumed that the development would generate 3(3) and attract 3(3) no. of construction vehicles (i.e. generate 6(6) and attract 6(6) pcus), in the morning (afternoon) peak hours throughout the week. The project is anticipated to be completed 2025. The reference peak hours traffic flows and design peak hours traffic flows are shown in Figures 4.4 and 4.5 respectively. The results are summarised and presented in Table 4.4 and shown in Figure 4.6.

Jun No.	Junction Location	Type/ Capacity Index	2025					
			Reference			Design		
			AM	PM	Week end	AM	PM	Week end
J1	Luk Cheung Road /Hiram's Highway / Marina Cove North	Priority / DFC	No Construction Traffic					

	Access							
J2	Luk Mei Tsuen Road /Hiram's Highway/ Marina Cove South Access	Signal / RC	Construction Traffic Free Flow from Hiram's Highway Northbound Left Turning to Luk Mei Tsuen Road					
J3	Ho Chung Road /Hiram's Highway	Signal / RC	74%	99%	79%	73%	97%	79%
J4	Nam Pin Wai Road / New Hiram's Highway / Hiram's Highway	Roundabout / DFC	0.75	0.68	0.73	0.76	0.68	0.73

Notes: RC=reserved capacity; DFC=Design Flow/ Capacity Ratio

Table 4.4 2025 Construction Stage Junction Capacity

4.5.2 According to Table 4.4, the capacity of all the keys junctions would be performing satisfactorily during the peak periods for both the Reference and Design Scenarios.

Construction Stage Link Capability

4.5.3 The link capacity assessment results with reference to the net development are summarised in Table 4.5.

Link No.	Section of Hiram's Highway	Link Capacity (veh/hr)	Reference Flow		Reference V/C Ratio		Design Flow		Design V/C Ratio	
			Daily Peak	Weekend	Daily Peak	Weekend	Daily Peak	Weekend	Daily Peak	Weekend
L1 (Sai Kung Bound)	Between Ho Chung Road and Luk Mei Tsuen Road	2600	1404	1306	0.54	0.50	1410	1312	0.54	0.50
L2 (Sai Kung Bound)	Between Ho Chung Road and Nam Pin	2600	1059	1249	0.41	0.48	1065	1255	0.41	0.48

	Wai Road									
L2 (Kowloon Bound)	Between Ho Chung Road and Nam Pin Wai Road	2600	1369	1201	0.53	0.46	1375	1207	0.53	0.46

Notes: Based on TPDM Volume 2 Chapter 2.4 – Design Flow Characteristics, it is assumed 2600 veh/hour for dual two-lane carriageway for one direction of flow.

Table 4.5 2025 Construction Stage Link Capacity

4.5.4 It can be seen from Table 4.5 that all of the key links perform satisfactorily during the peak hours with adequate reserve capacities.

Future Junction Capacity

4.5.5 After completion of the widening of Hiram's Highway, the new signalised junction at Ho Chung Road will be assessed. Capacity assessments were carried out for the major junctions in the local network for both the Reference and Design scenarios. The results are summarised and presented in Table 4.6 with detailed calculations sheets attached in Appendix A.

Jun No.	**Junction Location**	**Type/ Capacity Index**	**2028**					
			Reference			**Design**		
			AM	**PM**	**Week end**	**AM**	**PM**	**Week end**
J1	Luk Cheung Road /Hiram's Highway / Marina Cove North Access	Priority / DFC	No Construction Traffic					
J2	Luk Mei Tsuen Road /Hiram's Highway/ Marina Cove South Access	Signal / RC	Construction Traffic Free Flow from Hiram's Highway Northbound Left Turning to Luk Mei Tsuen Road					
J3	Ho Chung Road /Hiram's Highway	Signal / RC	69%	93%	74%	68%	92%	74%
J4	Nam Pin Wai Road /	Roundabout / DFC	0.78	0.70	0.75	0.78	0.70	0.75

	New Hiram's Highway / Hiram's Highway							

Notes: RC=reserved capacity; DFC=Design Flow/ Capacity Ratio

Table 4.6 2028 Junction Capacity Assessments

4.5.6 According to Table 4.6, the capacity of all the key junctions would be preforming satisfactory during the peak periods for bother the Reference and Design Scenarios.

Future Link Capacity

4.5.7 The road link capacity assessment results with reference to the development traffic are summarised in Table 4.7.

Link No.	Section of Hiram's Highway	Link Capacity (veh/hr)	Reference Flow		Reference V/C Ratio		Design Flow		Design V/C Ratio	
			Daily Peak	Weekend	Daily Peak	Weekend	Daily Peak	Weekend	Daily Peak	Weekend
L1 (Sai Kung Bound)	Between Ho Chung Road and Luk Mei Tsuen Road	2600	1447	1346	0.56	0.52	1453	1352	0.56	0.52
L2 (Sai Kung Bound)	Between Ho Chung Road and Nam Pin Wai Road	2600	1092	1286	0.42	0.49	1098	1292	0.42	0.50
L2 (Kowloon Bound)	Between Ho Chung Road and Nam Pin Wai Road	2600	1411	1238	0.54	0.48	1417	1244	0.54	0.48

Notes: Based on TPDM Volume 2 Chapter 2.4 – Design Flow Characteristics, it is assumed 2600 veh/hour for dual two-lane carriageway for one direction of flow.

Table 4.7 2028 Link Capacity

4.5.8 Table 4.7 demonstrates that all of the key links perform satisfactorily during peak hours with adequate reserve capacities after completion of the improvement works.

5. Transport Provision

5.1 Parking and Loading/Unloading Provision

5.1.1 With reference to the proposed plan, 12 car parking spaces (6 ancillary carparking spaces and 6 accessible/visitor parking space) and one LGV loading/unloading bay for the residential development are proposed to serve the needs occupants in Parcel A & B and 4 car parking spaces (2 ancillary carparking spaces and 2 accessible/visitor parking space) are proposed to serve the needs occupants in Parcel C. This is summarised in Table 5.1.

Type of Parking Space/Bay	**Provision**
Parcel A & B for 6 Houses	
Private Car (2.5m X 5m)	6
Accessible Visitor (3. 5X 5m)	6
Loading/Unloading Bay (3.5 X 7m)	1
Parcel C for 2 Houses	
Private Car (2.5m X 5m)	2
Accessible Visitor (3. 5X 5m)	2

Table 5.1 Provision of Internal Transport

5.2 Hong Kong Planning Standards and Guidelines (HKPSG)

5.2.1 The car parking requirements and loading/unloading provisions for the proposed development in accordance with the HKPSG are listed in Table 5.2.

Development	**Facility**	**HKPSG Standard**	**Required**	**Provision**
Residential (8 units with avg. size of 299 sqm)	Car Parking	Global Parking Standard (GPS) = 1 Car space per 4-7 flats R1 = 7.0 for avg. flat size over 160 sqm R2 = 1 (outside a 500m radius of rail station) R3 = 1.3 of domestic plot ratio 0.00-1.00	11-19	16

	Loading/Unloading Bay	Minimum of 1 Loading/Unloading Bay for goods vehicles within the site for every 800 flats or part thereof, subject to a minimum of 1 bay for each housing block or as determined by the Authority.	1	1

Table 5.2 HKPSG Requirement and Provision

5.3 Ingress/Egress Points and Internal Manoeuvring

5.3.1 The proposed ingress and egress point to all Parcels of the Site will be from Ho Chung North Road. In all Parcels of the Site, adequate maneuvering space is proposed for the maneuvering within the Site for the vehicles such that no vehicle queuing outside the Site would occur as a result of the proposed developments. In addition, there will be no reverse onto/from Ho Chung North Road to the Site. [Figure 5.1]

6. Conclusions

6.1.1 The traffic generation from the proposed development (including the construction period) is minimal in nature and will have will have minimal traffic impact to the surrounding network.

6.1.2 The proposed development would provide a total of 16 carparking spaces and 1 loading/unloading bay which fulfills the requirements of HKPSG.

6.1.3 The proposed development will provide adequate maneuvering space within all Parcels of the Site. Therefore, no queuing or reversing motion will occur at the street level.

6.1.4 As a result, it is concluded that the proposed development would not generate any significant adverse impact to the traffic of the surrounding vicinity of the Site.

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Figures

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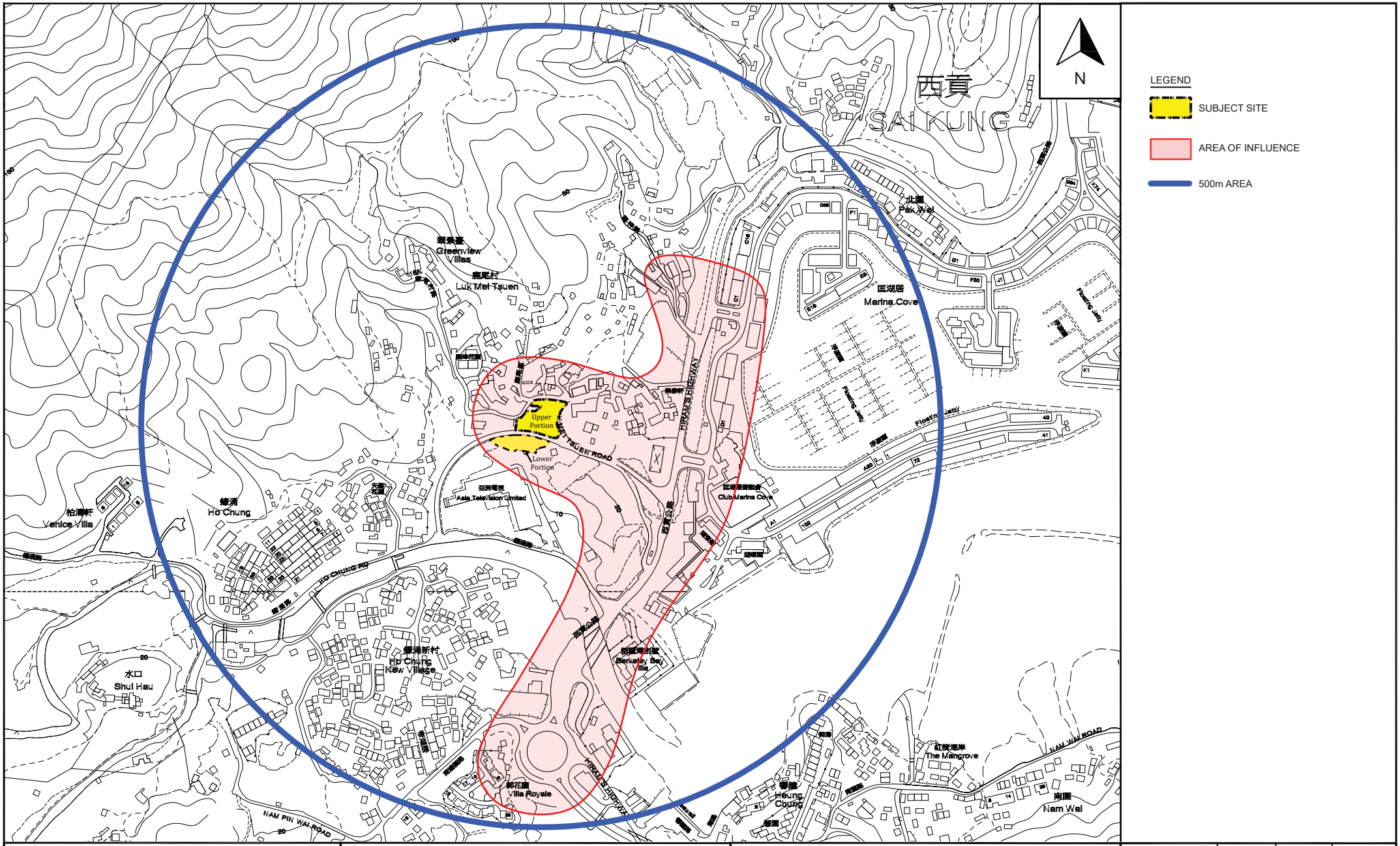

CONSULTANT :

測建行

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PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

Figure 1.1 Study Area and Area of Influence

SOURCE :

11 - NE - D (03/06/2021)

7 - NE - D (03/06/2021)

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2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

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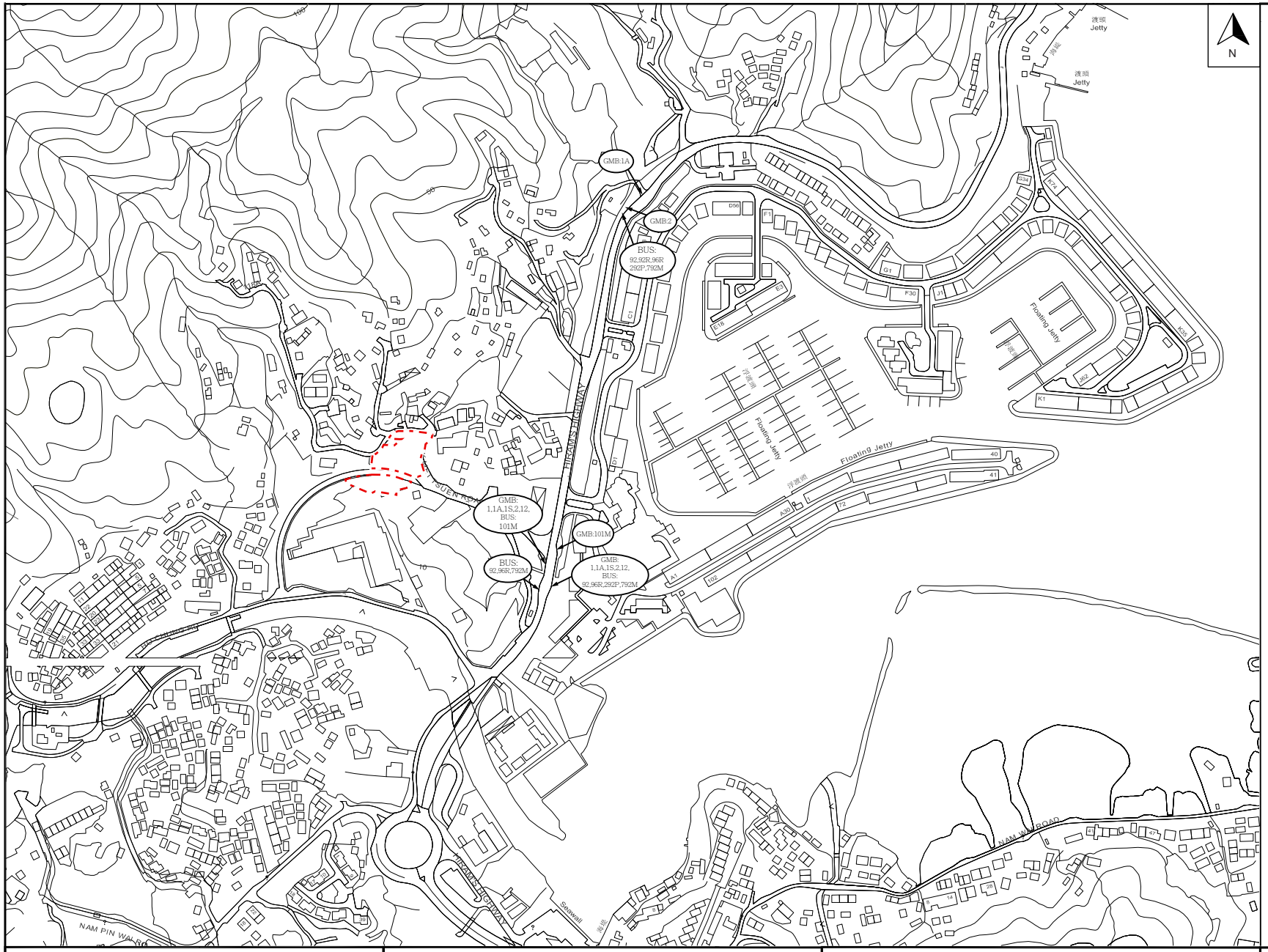

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FIGURE :

Figure 3.1 Location of Public Transport

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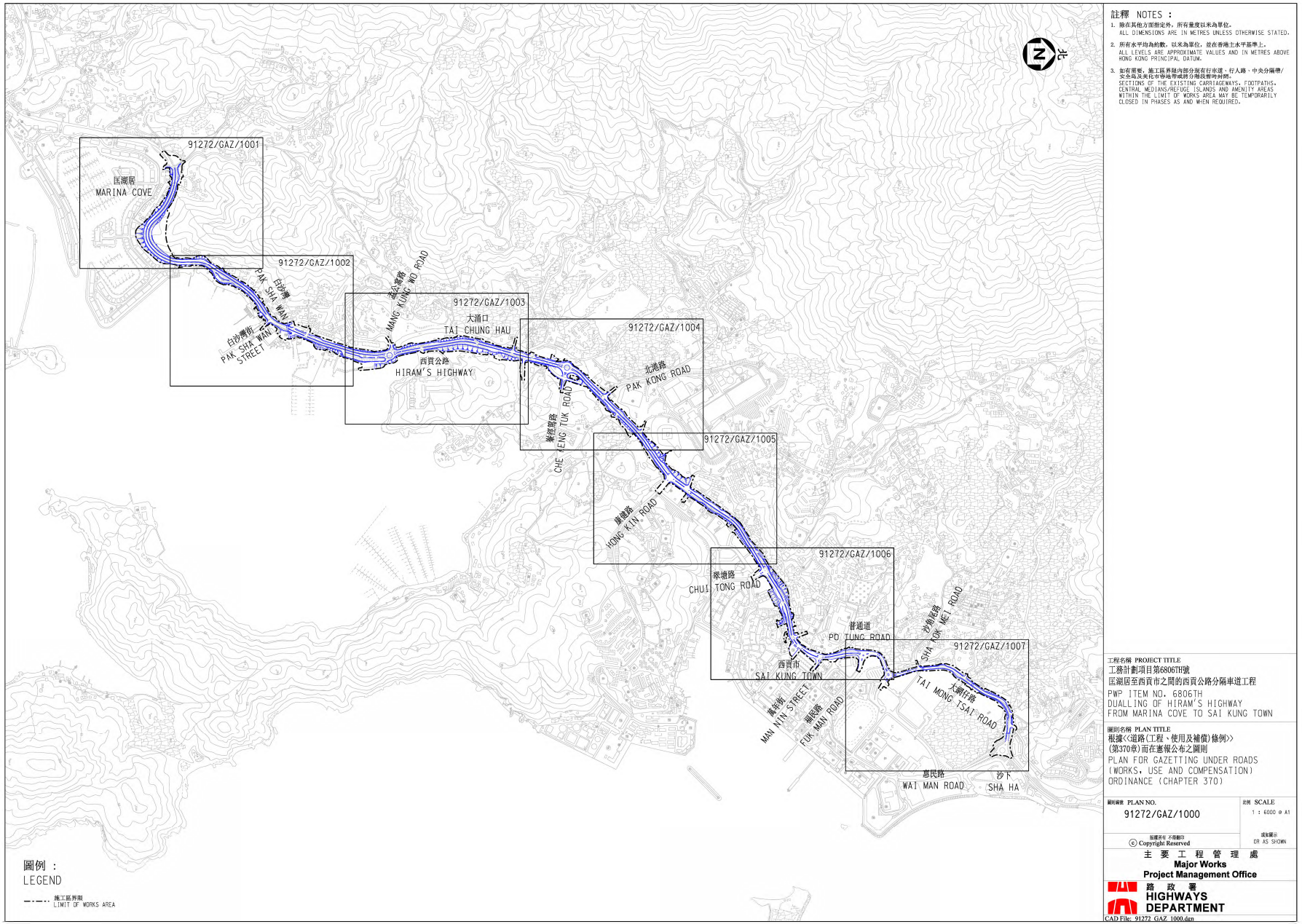
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



註釋 NOTES :

1. 除在其他方面指定外，所有量度以米為單位。
   ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. 所有水平均為約數，以米為單位，並在香港主水平基準上。
   ALL LEVELS ARE APPROXIMATE VALUES AND IN METRES ABOVE HONG KONG PRINCIPAL DATUM.
3. 如有需要，施工區界限內部分現有行車道、行人路、中央分隔帶/安全島及其他市場地帶或路分階段實時封閉。
   SECTIONS OF THE EXISTING CARRIAGEWAYS, FOOTPATHS, CENTRAL MEDIANS/REFUGE ISLANDS AND AMENITY AREAS WITHIN THE LIMIT OF WORKS AREA MAY BE TEMPORARILY CLOSED IN PHASES AS AND WHEN REQUIRED.

工程名稱 PROJECT TITLE
工務計劃項目第6806TH號
匡湖居至西貢市之間的西貢公路分隔車道工程
PWP ITEM NO. 6806TH
DUALLING OF HIRAM'S HIGHWAY
FROM MARINA COVE TO SAI KUNG TOWN

圖則名稱 PLAN TITLE
根據《道路(工程、使用及補償)條例》
(第370章)而在憲報公布之圖則
PLAN FOR GAZETTING UNDER ROADS
(WORKS, USE AND COMPENSATION)
ORDINANCE (CHAPTER 370)

圖則編號 PLAN NO. 91272/GAZ/1000
比例 SCALE 1 : 6000 @ A1
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或如圖示 OR AS SHOWN

主要工程管理處
Major Works
Project Management Office
路政署
HIGHWAYS
DEPARTMENT
CAD File: 91272_GAZ_1000.dgn

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FIGURE :
Figure 3.2
Location of Stage 2 of the Hiram's Highway Improvement Project

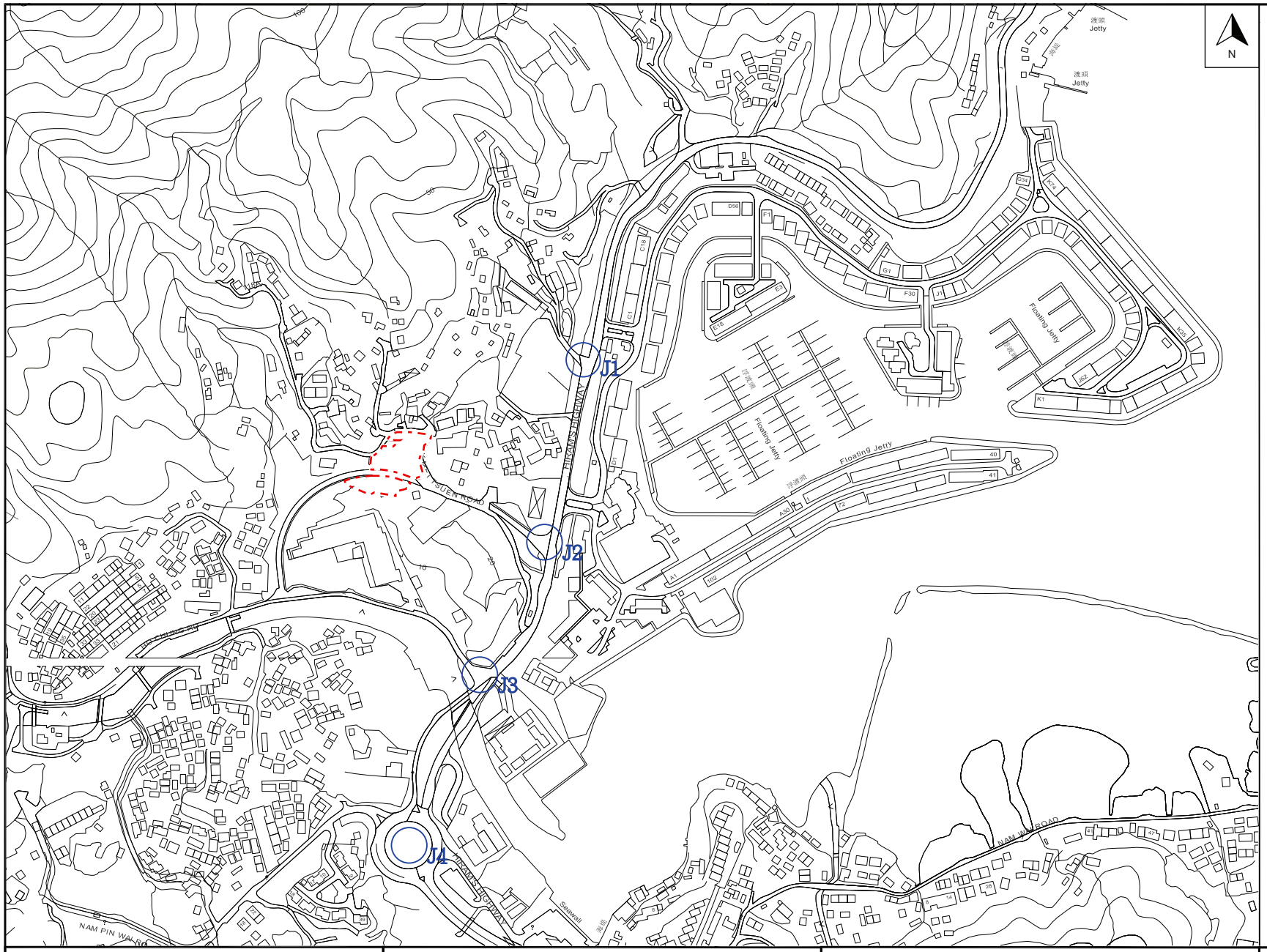
SOURCE :
https://www.hyd.gov.hk/en/road_and_railway/road_projects/6806th/gazettal/scheme/gn43/91272_gaz_1000.pdf

DATE	DRAWN	CHECKED	SCALE
2020.12	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



CONSULTANT :

測建行
PRUDENTIAL SURVEYORS (INTL) LTD
TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

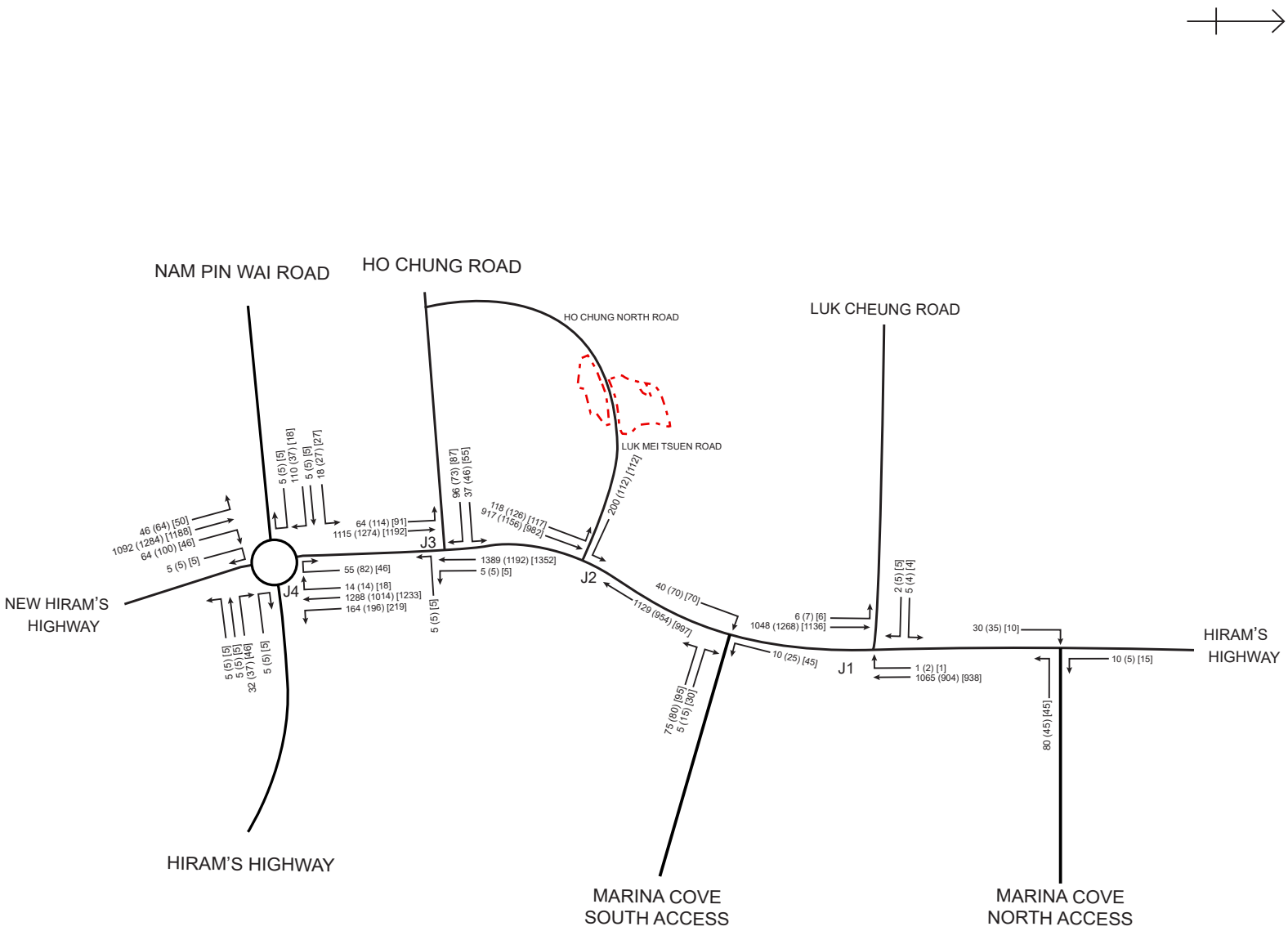
Figure 3.3 Key Junctions

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



CONSULTANT :

測建行

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TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

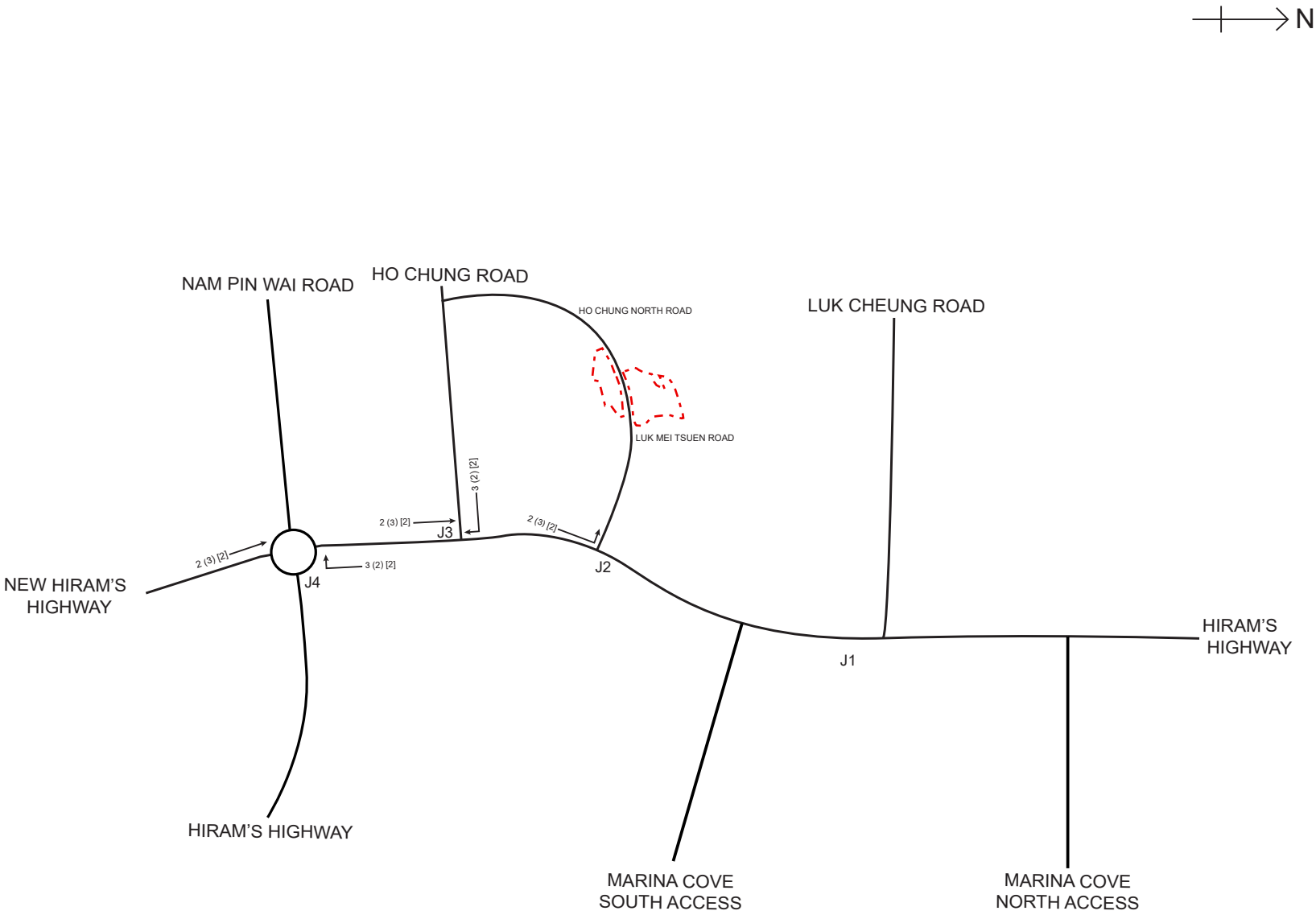
Figure 3.4 2020 Observed Peak Hours Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

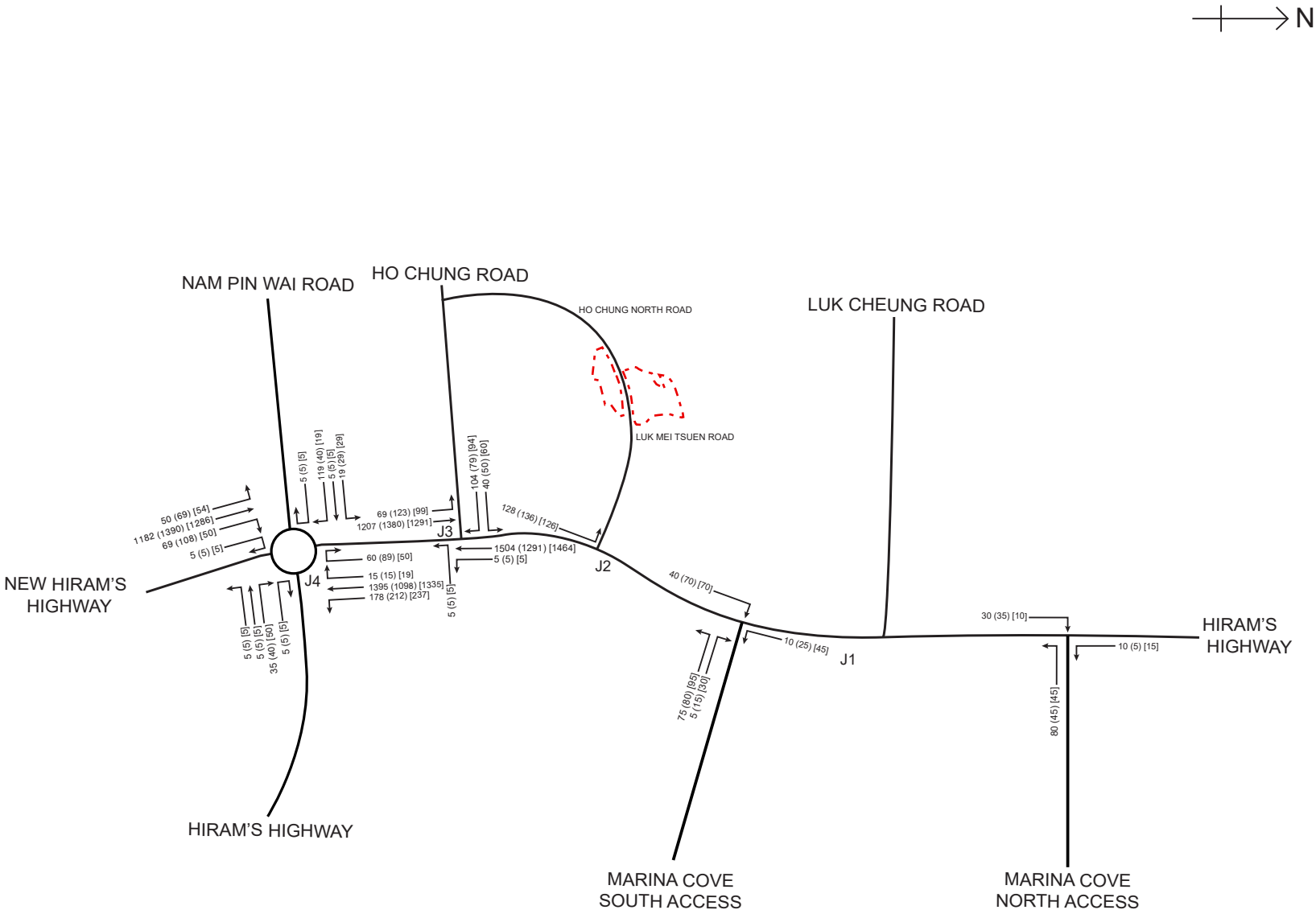
Figure 4.1 2028 Net Peak Hours Development Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

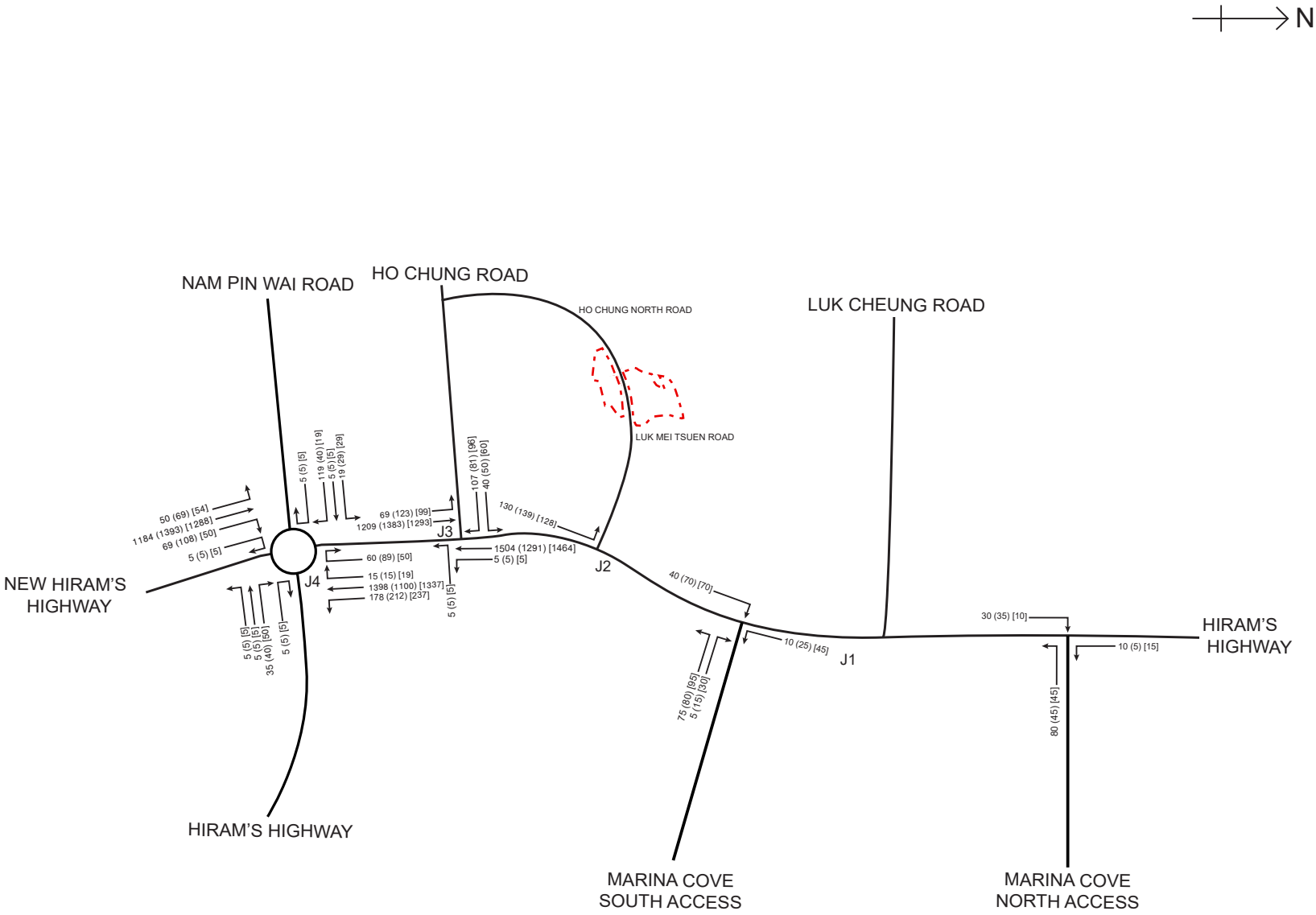
Figure 4.2 2028 Reference Peak Hours Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

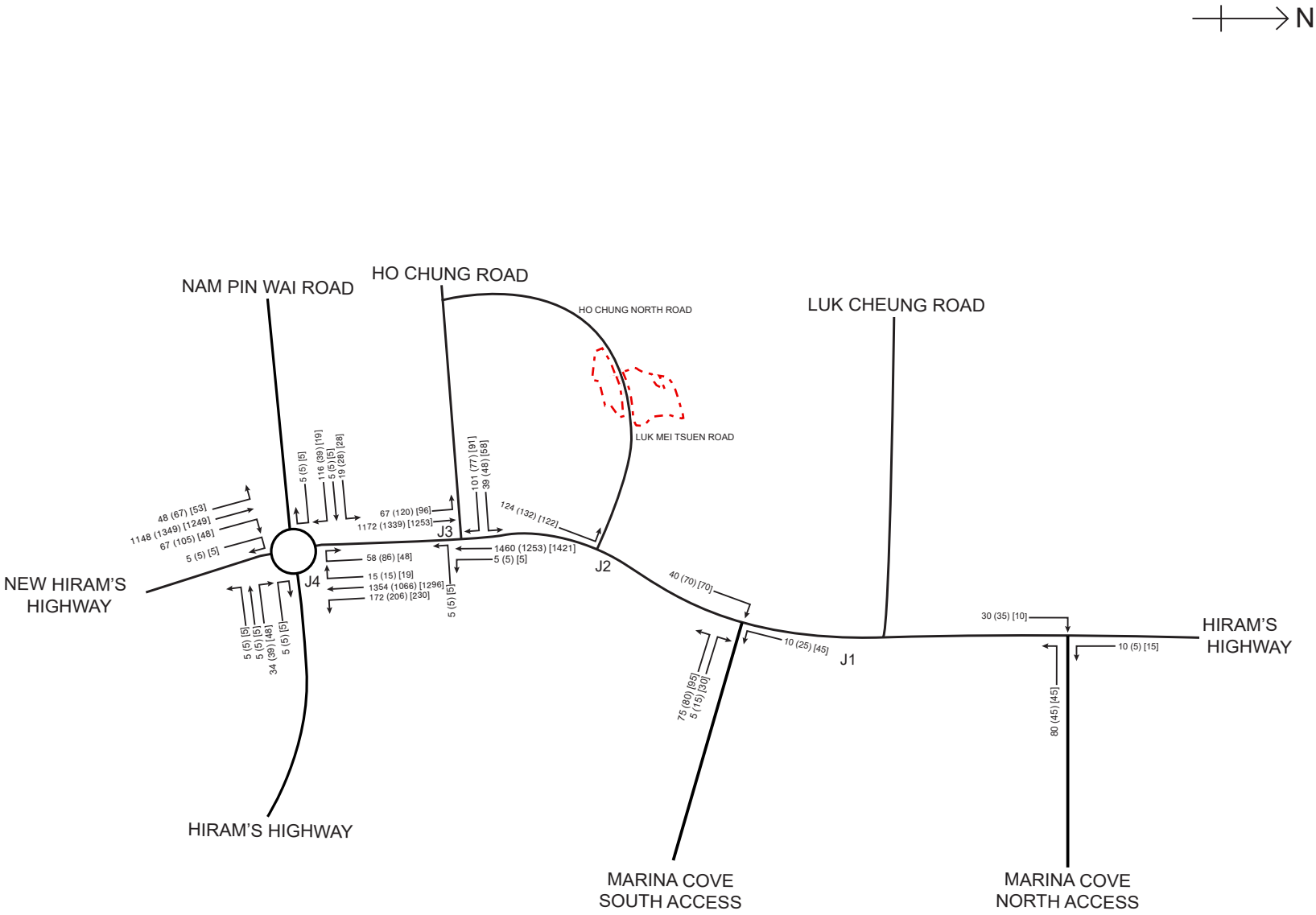
Figure 4.3 2028 Design Peak Hours Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

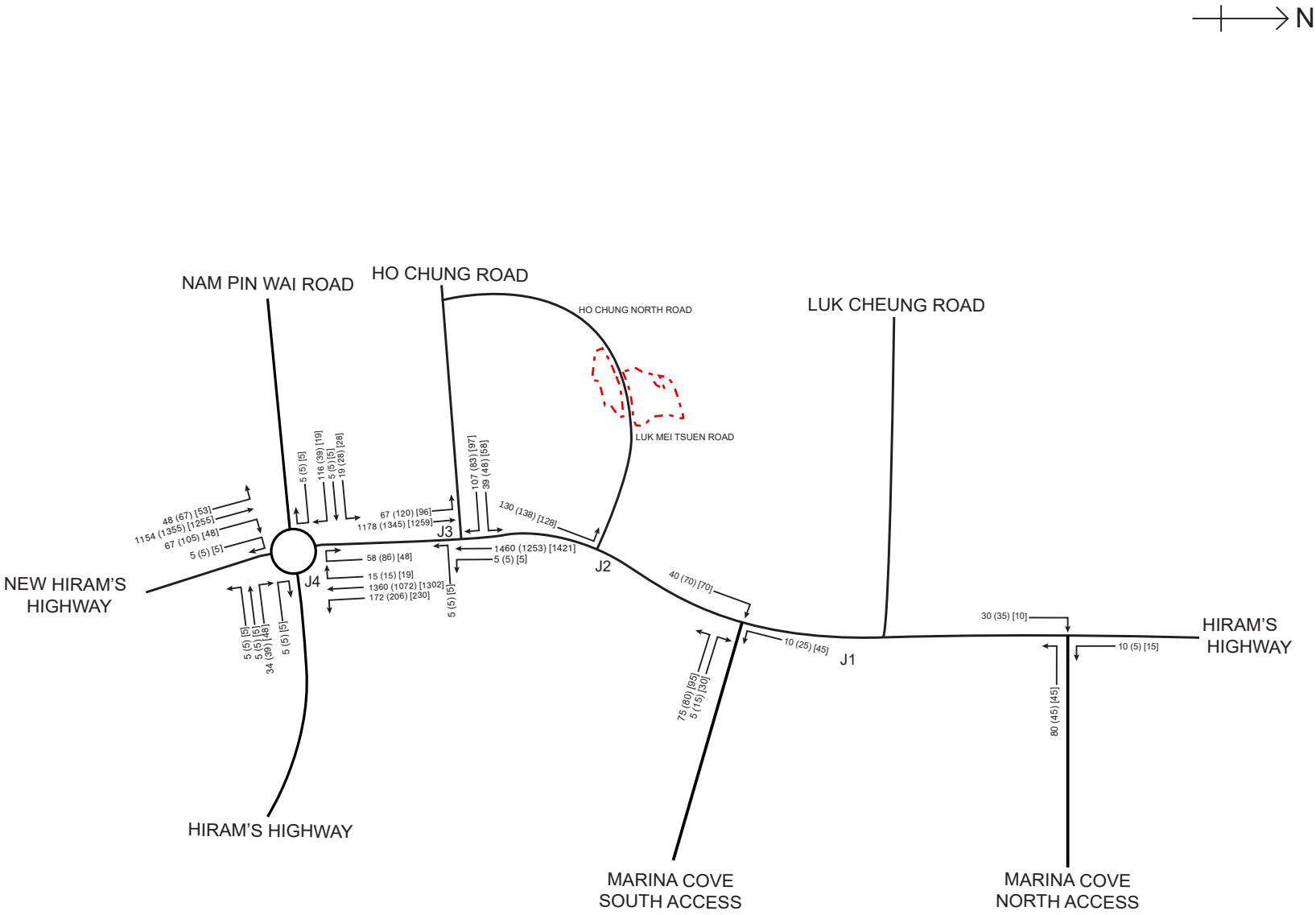
Figure 4.4 2025 Reference Peak Hours Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

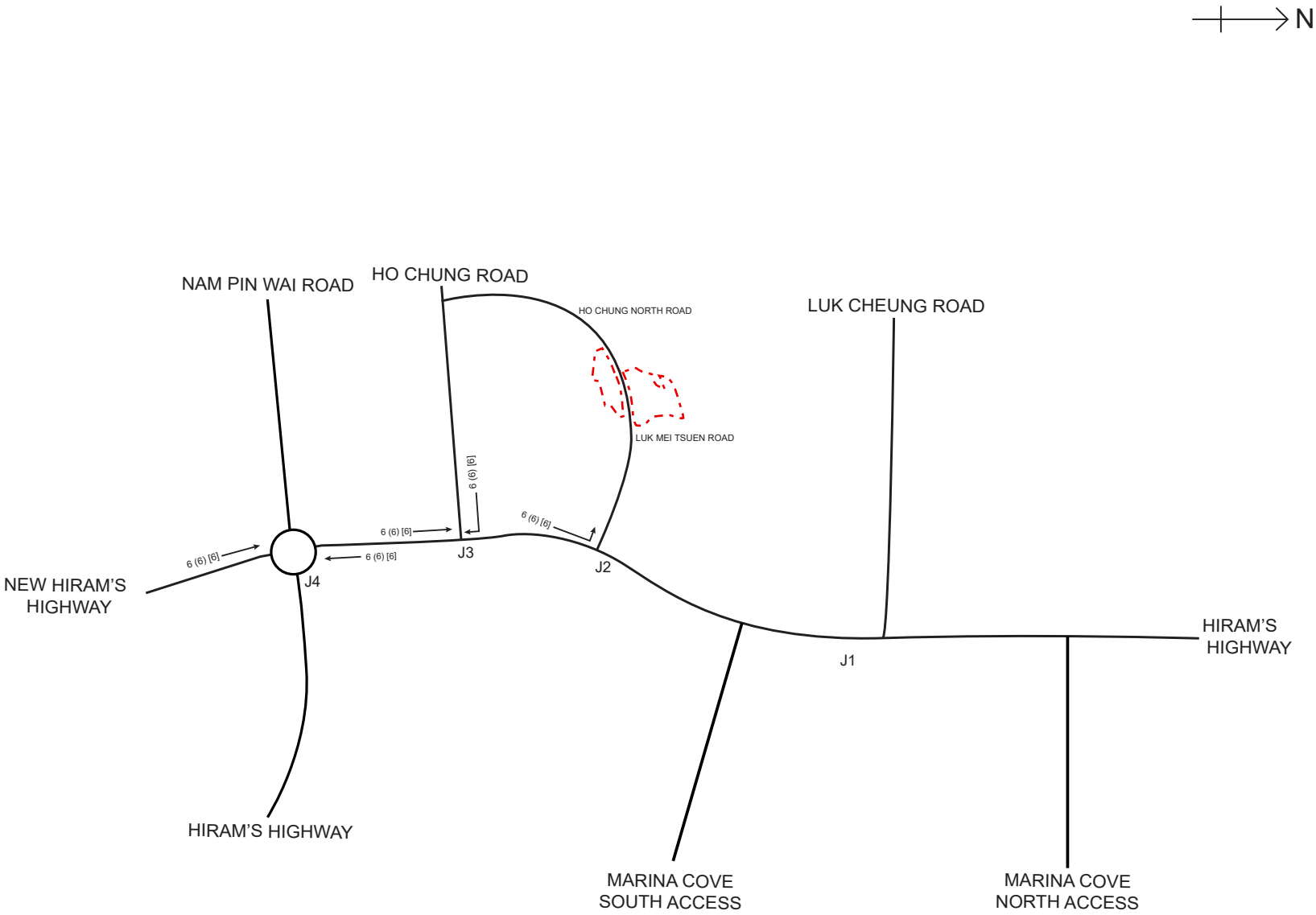
Figure 4.5 2025 Design Peak Hours Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:



LEGEND

Application Site Boundary (for indicative purpose only)

J1 Key Junction

850(960)[1015] WEEKDAY AM (WEEKDAY PM) [WEEKEND PM] PEAK HOUR TRAFFIC FLOW IN PCU/HR

CONSULTANT :

測建行

PRUDENTIAL SURVEYORS (INTL) LTD

TEL. 25078333 FAX. 25986576

PROJECT TITLE :

Traffic Impact Assessment For Section 16 Application For Minor Relaxation of Plot Ratio Restriction for Proposed 'House' use within "Residential Group (D)" zone, "Residential Group (E)" and an area shown as 'Road' at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government Land, Ho Chung, Sai Kung, New Territories, Hong Kong

FIGURE :

Figure 4.6 2025 Net Peak Hours Construction Traffic Flows

DATE	DRAWN	CHECKED	SCALE
2023.06	SC	RT	N.T.S

JOB NO. :

DRAWING NO. :

FILING CODE:

N

LEGEND

- SITE BOUNDARY
- AREA TO BE DEDICATED AS RIGHT OF WAY
- GREEN NOISE BARRIER
- PRIVATE GARDEN
- BUILDING FOOTPRINT
- PRIVATE OPEN SPACE

DEDICATED PEDESTRIAN FOOTPATH FOR PUBLIC USE

1500

PRIVATE GARDEN

PRIVATE OPEN SPACE (NOT LESS THAN 1sqm / PERSON AS PER HKPSG

LOADING & UNLOADING

ROAD (EVA)

7300

14.70

7300

1500

DEDICATED PEDESTRIAN FOOTPATH FOR PUBLIC USE

PRIVATE GARDEN

GUARD HOUSE

RCP

PROPOSED XYZ

PROPOSED XYZ

PRIVATE GARDEN

RCP

PRIVATE GARDEN

GUARD HOUSE

6000

13.97

PRIVATE GARDEN

File Name : -
Source : -

PRUDENTIAL 測建行
SURVEYING · LAND ADVISORY · VALUATION
ADDRESS: 2/F & 3/F TUNG HIP COMMERCIAL BUILDING 244 DES VOEUX ROAD CENTRAL HONG KONG
TEL: 2507 8333
FAX: 2598 6576

JOB TITLE:
Amendment of Plan to Rezone from "Residential (Group D)" ("R(D)"), "Residential (Group E)" ("R(E)") and an area shown as 'Road' to "Residential (Group C)3) ("R(C)3") on the Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11 at Various Lots in Demarcation District 210 and Demarcation District 244 and Adjoining Government land, Ho Chung, Sai Kung, New Territories, Hong Kong

Drawing Title
INTERNAL TRAFFIC LAYOUT

Rev	Description	Date

Drawn	Date	Drawing No.
CN	26/07/2023	Figure 5.1
Checked	Approved	
RT	RT	
Scale		Rev.
1:350 @ A3		-

Appendix A

Junction Analysis

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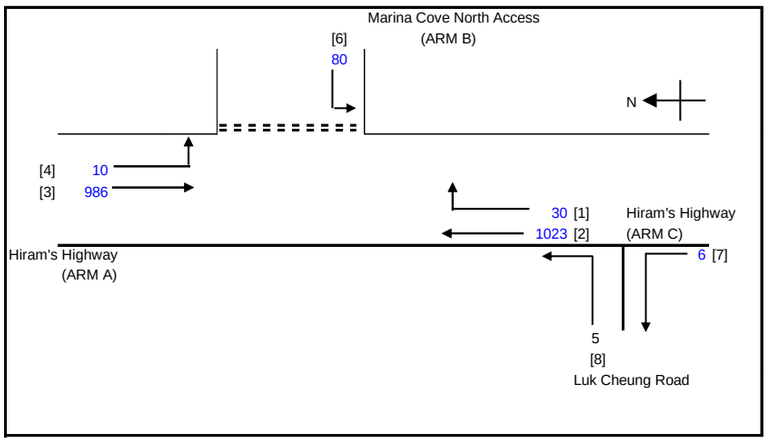
PRIORITY JUNCTION CALCULATION

				INITIALS	DATE
		2020AM	PROJECT NO.: PREPARED BY:		
J1 Hiram's Highway / Marina Cove North Access			FILENAME : CHECKED BY:		
2020 Weekday AM Peak			J1-LukCheungRoad-MCN.xls REVIEWED BY:		



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
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	=	22.00	(metres)
W cr	=	7	(metres)
q a-b	=	10	(pcu/hr)
q a-c	=	986	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	5.00	(metres)
Vr c-b	=	100	(metres)
q c-a	=	1023	(pcu/hr)
q c-b	=	30	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=		(metres)
W b-c	=	4.40	(metres)
Vl b-a	=		(metres)
Vr b-a	=		(metres)
Vr b-c	=	30	(metres)
q b-a	=		(pcu/hr)
q b-c	=	80	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.5332189
E	=	0.9837895
F	=	1.1066158
Y	=	0.241

THE CAPACITY OF MOVEMENT :

Q b-a	=	308			
Q b-c	=	647	Q b-c (O) =	647	
Q c-b	=	728			

TOTAL FLOW = 2129 (PCU/HR)

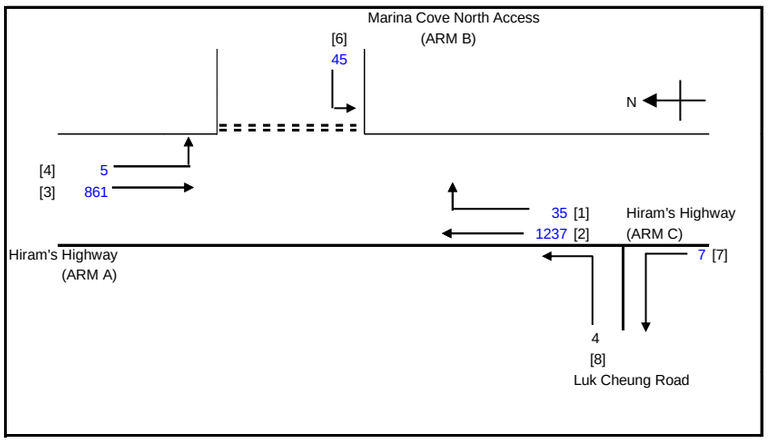
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.1236
DFC c-b	=	0.0412

CRITICAL DFC = 0.12

PRIORITY JUNCTION CALCULATION

					INITIALS	DATE
		2020PM	PROJECT NO.:	PREPARED BY:		
J1 Hiram's Highway / Marina Cove North Access			FILENAME :	CHECKED BY:		
2020 Weekday PM Peak			J1-LukCheungRoad-MCN.xls	REVIEWED BY:		



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
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	=	22.00	(metres)
W cr	=	7	(metres)
q a-b	=	5	(pcu/hr)
q a-c	=	861	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	5.00	(metres)
Vr c-b	=	100	(metres)
q c-a	=	1237	(pcu/hr)
q c-b	=	35	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=		(metres)
W b-c	=	4.40	(metres)
Vl b-a	=		(metres)
Vr b-a	=		(metres)
Vr b-c	=	30	(metres)
q b-a	=		(pcu/hr)
q b-c	=	45	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.5332189
E	=	0.9837895
F	=	1.1066158
Y	=	0.241

THE CAPACITY OF MOVEMENT :

Q b-a	=	307			
Q b-c	=	658	Q b-c (O) =	658	
Q c-b	=	740			

TOTAL FLOW = 2183 (PCU/HR)

COMPARISION OF DESIGN FLOW TO CAPACITY:

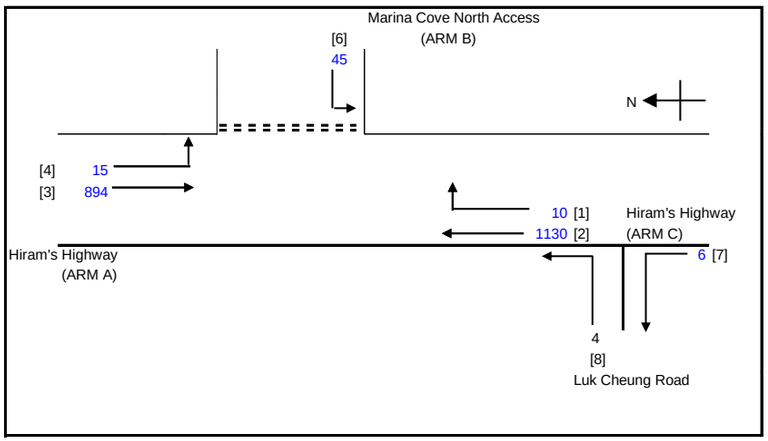
DFC b-a	=	0.0000
DFC b-c	=	0.0684
DFC c-b	=	0.0473

CRITICAL DFC = 0.07

PRIORITY JUNCTION CALCULATION

		2020weekend	PROJECT NO.:	PREPARED BY:	
J1 Hiram's Highway / Marina Cove North Access			FILENAME :	CHECKED BY:	
2020 Weekend Peak			J1-LukCheungRoad-MCN.xls	REVIEWED BY:	

INITIALS | DATE



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
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	=	22.00	(metres)
W cr	=	7	(metres)
q a-b	=	15	(pcu/hr)
q a-c	=	894	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	5.00	(metres)
Vr c-b	=	100	(metres)
q c-a	=	1130	(pcu/hr)
q c-b	=	10	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=		(metres)
W b-c	=	4.40	(metres)
Vl b-a	=		(metres)
Vr b-a	=		(metres)
Vr b-c	=	30	(metres)
q b-a	=		(pcu/hr)
q b-c	=	45	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.5332189
E	=	0.9837895
F	=	1.1066158
Y	=	0.241

THE CAPACITY OF MOVEMENT :

Q b-a	=	311			
Q b-c	=	655	Q b-c (O) =	655	
Q c-b	=	736			

TOTAL FLOW = 2094 (PCU/HR)

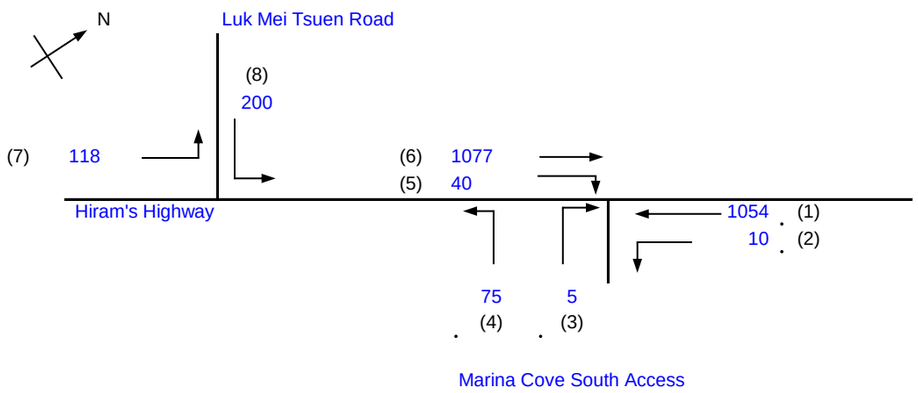
COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0687
DFC c-b	=	0.0136

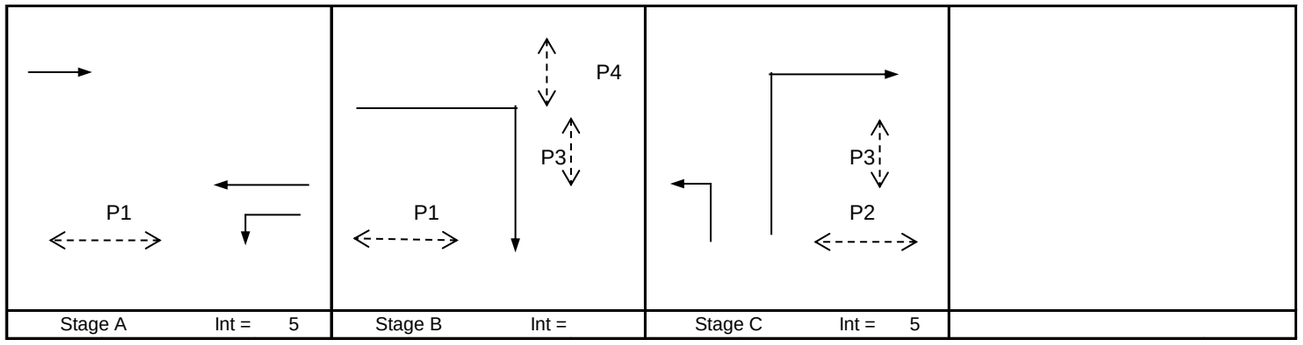
CRITICAL DFC = 0.07

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
	2020AM	PROJECT NO.:	Prepared By:		
J2 Hiram's Highway / Marina Cove South Access		FILENAME :	Checked By:		
2020 Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	120	sec
Sum(y)		Y =	0.309	
Loss time		L =	18	sec
Total Flow		=	2261	pcu
Co	= (1.5*L+5)/(1-Y)	=	46.3	sec
Cm	= L/(1-Y)	=	26.1	sec
Yult		=	0.765	
R.C.ult	= (Yult-Y)/Y*100%	=	147.3	%
Cp	= 0.9*L/(0.9-Y)	=	27.4	sec
Ymax	= 1-L/C	=	0.850	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	147	%



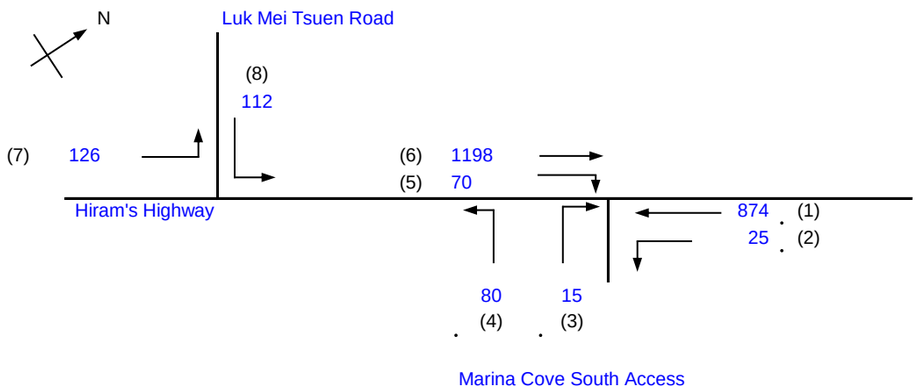
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B	6	5	5			
P2	C	8	5	5			
P3	B,C	8	5	5			
P4	B	9	5	5			

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				8					
→	A	3.30	6	2			N	4030		1077		1077	0.00	4030			4030	0.267	0.267		88	**88**	**0.364**	**27**	**6**
←	A	3.80	1	1				2135		551		551	0.00	2135			2135	0.258			85	**85**	**0.364**	**30**	**7**
←	A	3.80	1,2	1	10		N	1995	10	503		513	0.02	1989			1989	0.258			85	**85**	**0.364**	**24**	**7**
→	B	3.50	5	1	15			2105			40	40	1.00	1914			1914	0.021			7	**7**	**0.364**	**6**	**57**
←	C	3.00	3	1	30			2055			5	5	1.00	1957			1957	0.003			1	**1**	**0.364**	**0**	**121**
←	C	3.00	4	1	20		N	1915	75			75	1.00	1781			1781	0.042	0.042		14	**14**	**0.364**	**12**	**49**
	B		P4																	10					

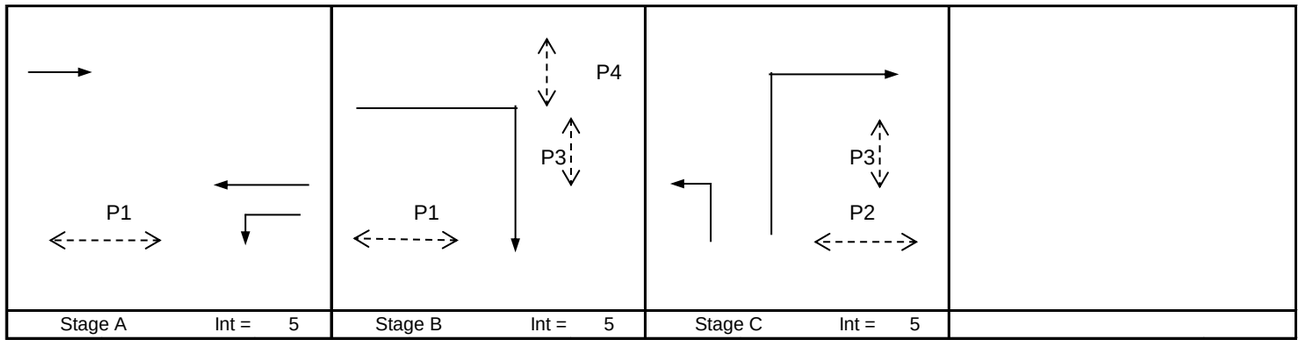
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
	2020PM	PROJECT NO.:	Prepared By:		
J2 Hiram's Highway / Marina Cove South Access		FILENAME :	Checked By:		
2020 Weekday PM Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	120 sec	
Sum(y)		Y =	0.342	
Loss time		L =	23 sec	
Total Flow		=	2262 pcu	
Co	= (1.5*L+5)/(1-Y)	=	60.0 sec	
Cm	= L/(1-Y)	=	35.0 sec	
Yult		=	0.728	
R.C.ult	= (Yult-Y)/Y*100%	=	112.6 %	
Cp	= 0.9*L/(0.9-Y)	=	37.1 sec	
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	113 %	



Stage A Int = 5 | Stage B Int = 5 | Stage C Int = 5

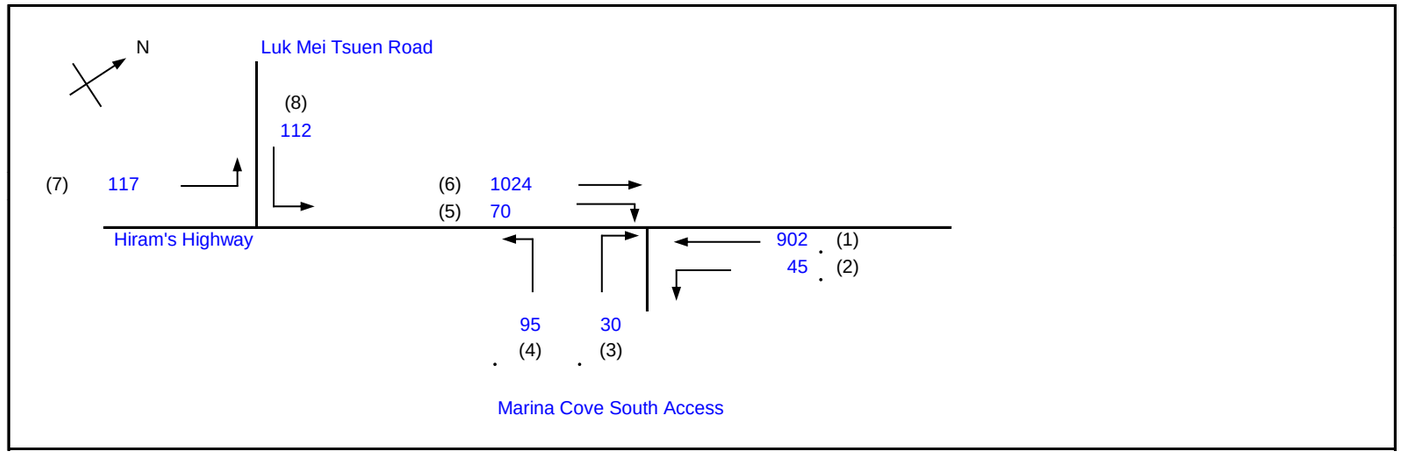
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B	6	5	5			
P2	C	8	5	5			
P3	B,C	8	5	5			
P4	B	9	5	5			

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				13					
→	A	3.30	6	2			N	4030		1198		1198	0.00	4030			4030	0.297	0.297		84	**84**	**0.423**	**33**	**7**
←	A	3.80	1	1				2135		467		467	0.00	2135			2135	0.219			62	**62**	**0.423**	**42**	**17**
←	A	3.80	1,2	1	10		N	1995	25	407		432	0.06	1978			1978	0.219			62	**62**	**0.423**	**36**	**17**
↓	B	3.50	5	1	15			2105			70	70	1.00	1914			1914	0.037			10	**10**	**0.423**	**12**	**54**
↱	C	3.00	3	1	30			2055			15	15	1.00	1957			1957	0.008			2	**2**	**0.423**	**0**	**86**
←	C	3.00	4	1	20		N	1915	80			80	1.00	1781			1781	0.045	0.045		13	**13**	**0.423**	**12**	**51**
↑	B		P4																	10					

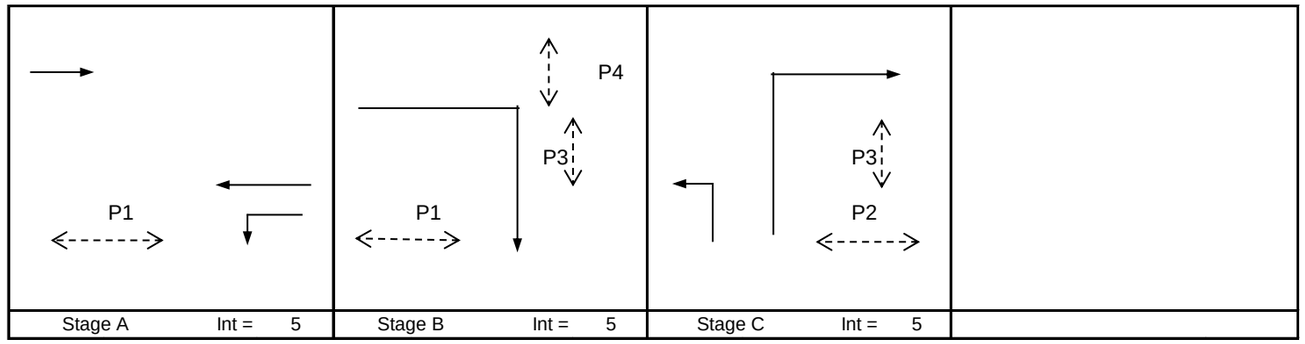
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
	2020weekend	PROJECT NO.:	Prepared By:		
J2 Hiram's Highway / Marina Cove South Access		FILENAME :	Checked By:		
2020 Weekend Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	120 sec	
Sum(y)		Y =	0.344	
Loss time		L =	12 sec	
Total Flow		=	2166 pcu	
Co	= (1.5*L+5)/(1-Y)	=	35.1 sec	
Cm	= L/(1-Y)	=	18.3 sec	
Yult		=	0.810	
R.C.ult	= (Yult-Y)/Y*100%	=	135.5 %	
Cp	= 0.9*L/(0.9-Y)	=	19.4 sec	
Ymax	= 1-L/C	=	0.900	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	135 %	



Stage A Int = 5 | Stage B Int = 5 | Stage C Int = 5

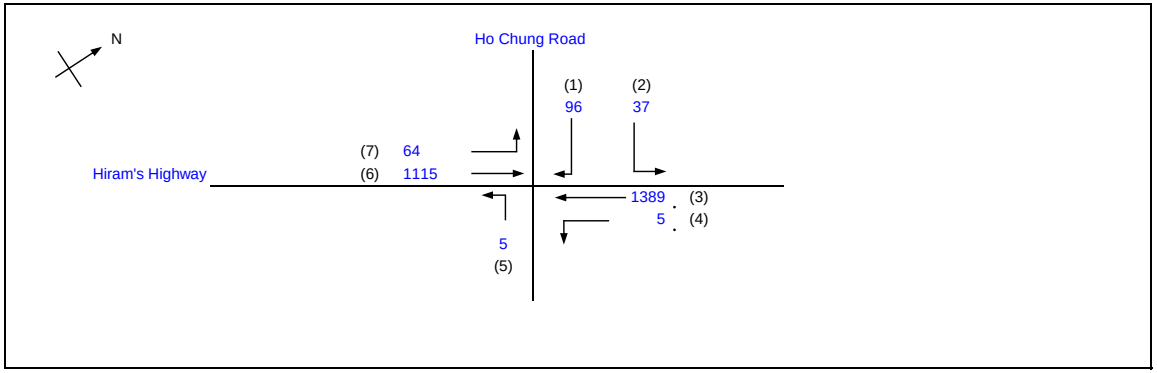
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG
P1	A,B	6	5	5			
P2	C	8	5	5			
P3	B,C	8	5	5			
P4	B	9	5	5			

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				12					
→	A	3.30	6	2			N	4030		1024		1024	0.00	4030			4030	0.254	0.254		80	**80**	**0.382**	**33**	**9**
←	A	3.80	1	1				2135		493		493	0.00	2135			2135	0.231			73	**73**	**0.382**	**36**	**12**
←	A	3.80	1,2	1	10		N	1995	45	409		454	0.10	1966			1966	0.231			73	**73**	**0.382**	**30**	**12**
→	B	3.50	5	1	15			2105			70	70	1.00	1914			1914	0.037	0.037		11	**11**	**0.382**	**12**	**51**
→	C	3.00	3	1	30			2055			30	30	1.00	1957			1957	0.015			5	**5**	**0.382**	**6**	**63**
←	C	3.00	4	1	20		N	1915	95			95	1.00	1781			1781	0.053	0.053		17	**17**	**0.382**	**12**	**46**
↓	B		P4																						

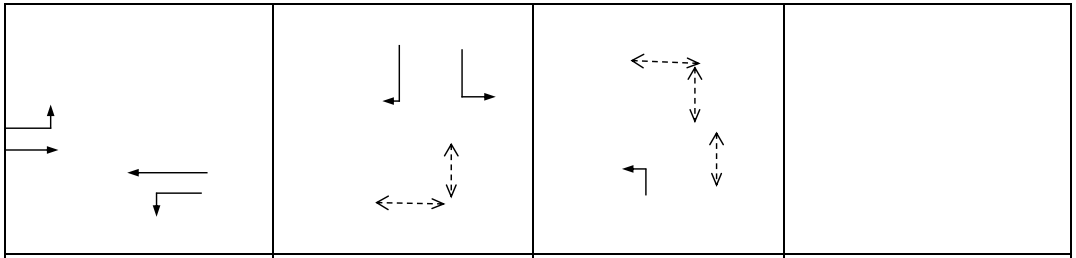
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
	2020AM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2020 Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.398	
Loss time		L =	25	sec
Total Flow		=	2711	pcu
Co	= (1.5*L+5)/(1-Y)	=	70.6	sec
Cm	= L/(1-Y)	=	41.5	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	79.1	%
Cp	= 0.9*L/(0.9-Y)	=	44.8	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	83	%



Stage A	Int = 5	Stage B	Int = 8	Stage C	Int = 5

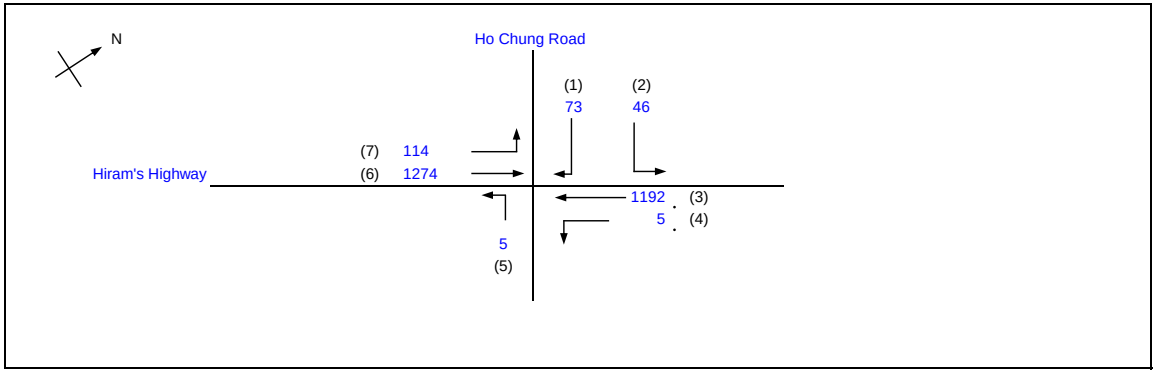
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	64			64	1.00	1691		-500	1191	0.054	0.346		14	**13**	**0.530**	**12**	**65**
6	A	3.30		2				4170		1115		1115	0.00	4170			4170	0.267			71	**70**	**0.500**	**54**	**18**
4,3	A	3.30		1	30		N	1945	5	668		673	0.01	1944			1944	0.346			91	**90**	**0.498**	**42**	**10**
3	A	3.30		1				2085		721		721	0.00	2085			2085	0.346			91	**90**	**0.498**	**42**	**9**
2	B	3.30		1	10		N	1945	37			37	1.00	1691		-500	1191	0.031	0.049		8	**7**	**0.561**	**6**	**85**
1	B	3.30		1	25			2085			96	96	1.00	1967			1967	0.049			13	**12**	**0.534**	**18**	**61**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

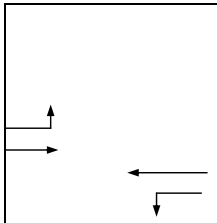
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

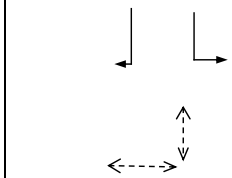
				INITIALS	DATE
	2020PM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2020 Weekday PM Peak		REFERENCE NO.:	Reviewed By:		



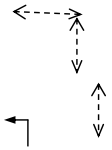
			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.347	
Loss time		L =	25	sec
Total Flow		=	2709	pcu
Co	= (1.5*L+5)/(1-Y)	=	65.1	sec
Cm	= L/(1-Y)	=	38.3	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	105.3	%
Cp	= 0.9*L/(0.9-Y)	=	40.7	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	109	%



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

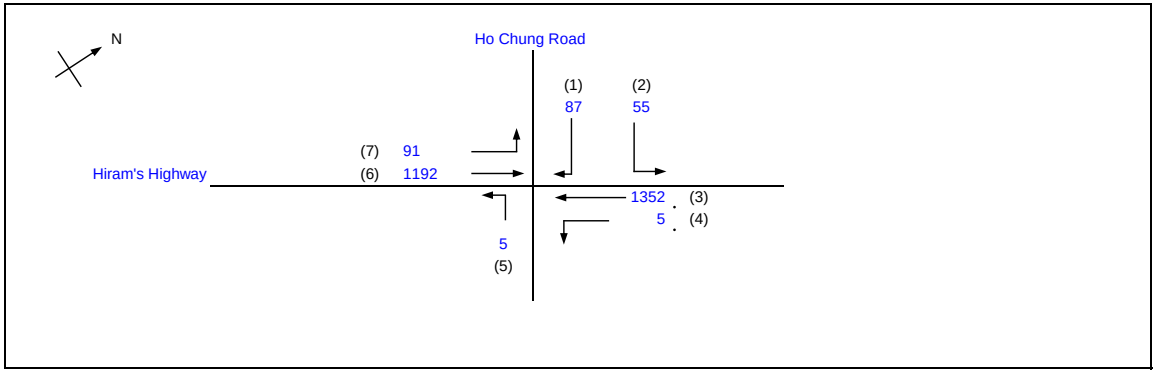
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	114			114	1.00	1691		-500	1191	0.096	0.306		29	**28**	**0.445**	**18**	**45**
6	A	3.30		2				4170		1274		1274	0.00	4170			4170	0.306			92	**91**	**0.434**	**39**	**8**
4,3	A	3.30		1	30		N	1945	5	573		578	0.01	1944			1944	0.297			90	**89**	**0.435**	**36**	**9**
3	A	3.30		1				2085		619		619	0.00	2085			2085	0.297			90	**89**	**0.435**	**42**	**9**
2	B	3.30		1	10		N	1945	46			46	1.00	1691		-500	1191	0.039	0.039		12	**11**	**0.470**	**6**	**66**
1	B	3.30		1	25			2085			73	73	1.00	1967			1967	0.037			11	**10**	**0.472**	**12**	**61**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

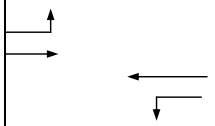
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

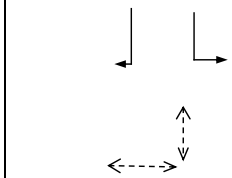
	2020Weekend	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2020 Weekend Peak		REFERENCE NO.:	Reviewed By:		



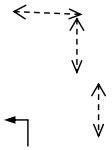
			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.386	
Loss time		L =	25	sec
Total Flow		=	2787	pcu
Co	= (1.5*L+5)/(1-Y)	=	69.2	sec
Cm	= L/(1-Y)	=	40.7	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	84.6	%
Cp	= 0.9*L/(0.9-Y)	=	43.8	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	88	%



Stage A Int = 5



Stage B Int = 8



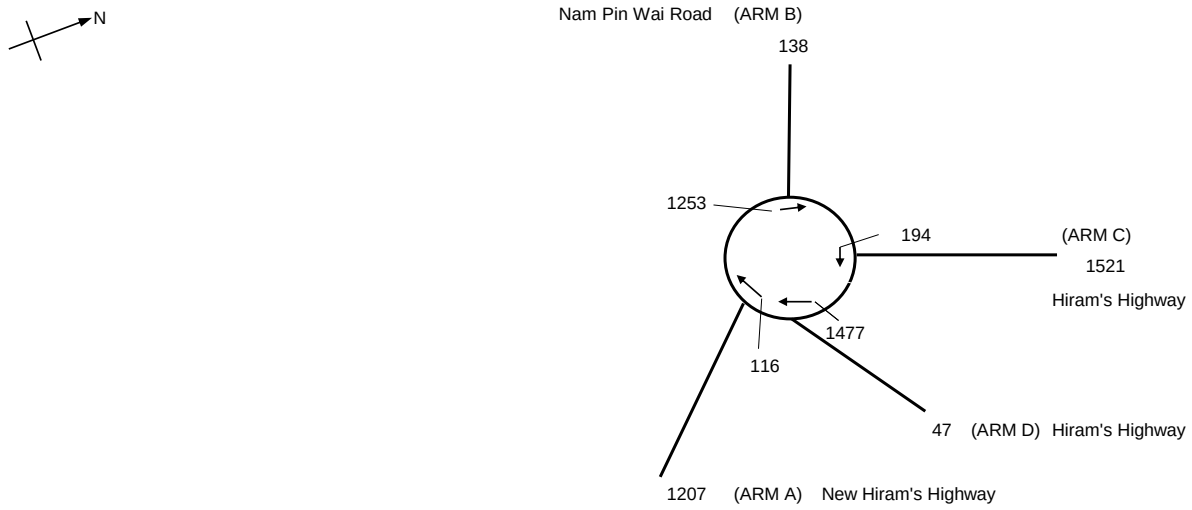
Stage C Int = 5

Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	91			91	1.00	1691		-500	1191	0.076	0.337		21	**20**	**0.502**	**12**	**55**
6	A	3.30		2				4170		1192		1192	0.00	4170			4170	0.286			78	**77**	**0.484**	**51**	**14**
4,3	A	3.30		1	30		N	1945	5	650		655	0.01	1944			1944	0.337			92	**91**	**0.483**	**42**	**9**
3	A	3.30		1				2085		702		702	0.00	2085			2085	0.337			92	**91**	**0.483**	**42**	**9**
2	B	3.30		1	10		N	1945	55			55	1.00	1691		-500	1191	0.046	0.046		13	**12**	**0.519**	**6**	**67**
1	B	3.30		1	25			2085			87	87	1.00	1967			1967	0.044			12	**11**	**0.521**	**12**	**62**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2020AM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2020 AM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



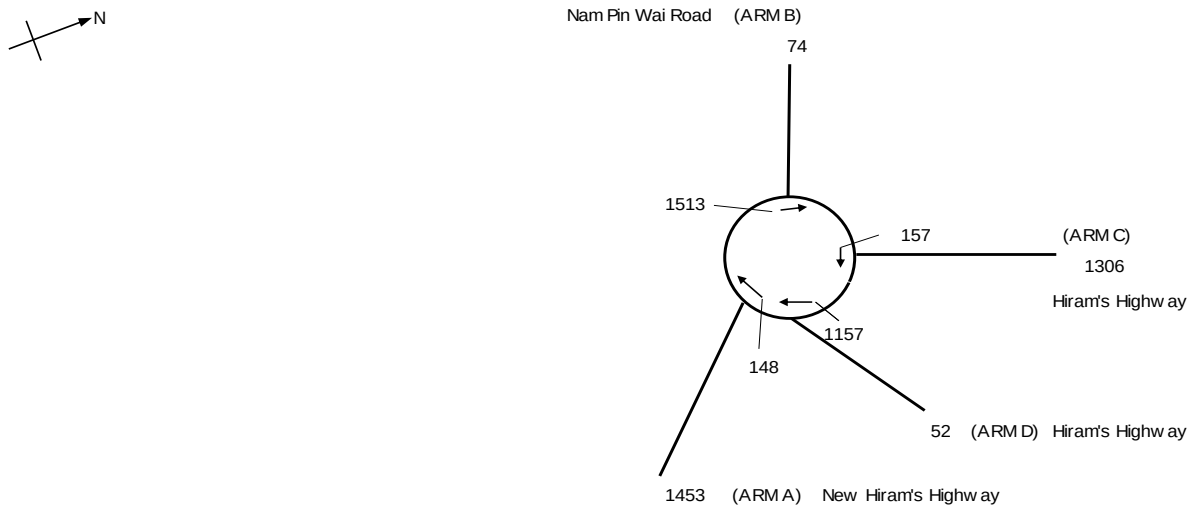
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1207	138	1521	47
Qc	=	Circulating flow across entry (pcu/h)	116	1253	194	1477
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2278	1312	2129	743
DFC	=	Design flow/Capacity = Q/Qe	0.53	0.11	0.71	0.06

Total In Sum = 2913 PCU

DFC of Critical Approach = 0.71

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2020PM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2020 PM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		

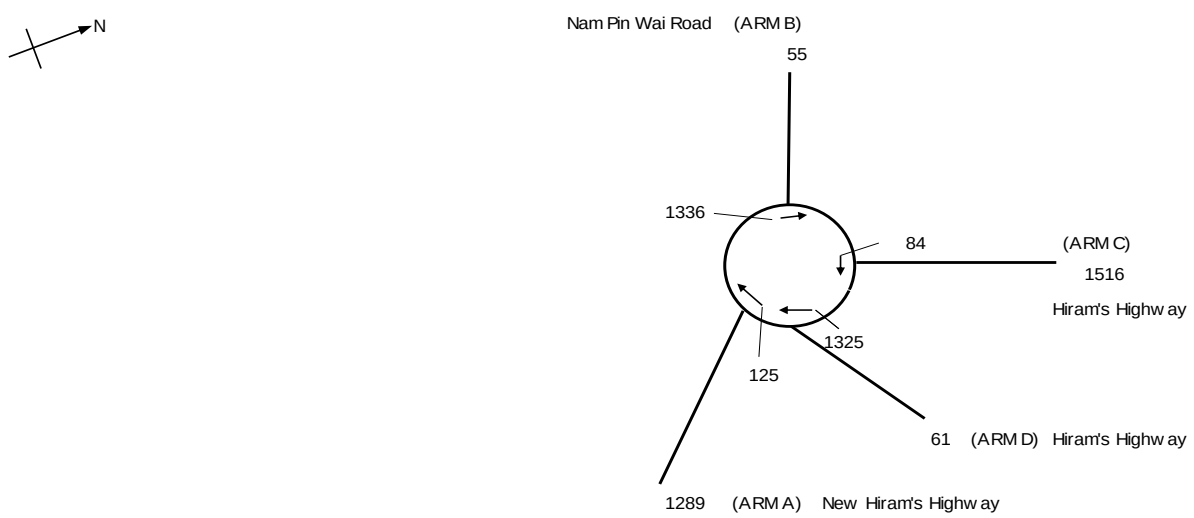


ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1453	74	1306	52
Qc	=	Circulating flow across entry (pcu/h)	148	1513	157	1157
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2260	1180	2149	879
DFC	=	Design flow/Capacity = Q/Qe	0.64	0.06	0.61	0.06

Total In Sum = 2885 PCU

DFC of Critical Approach = 0.64

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2020Weekend	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2020 Weekend Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



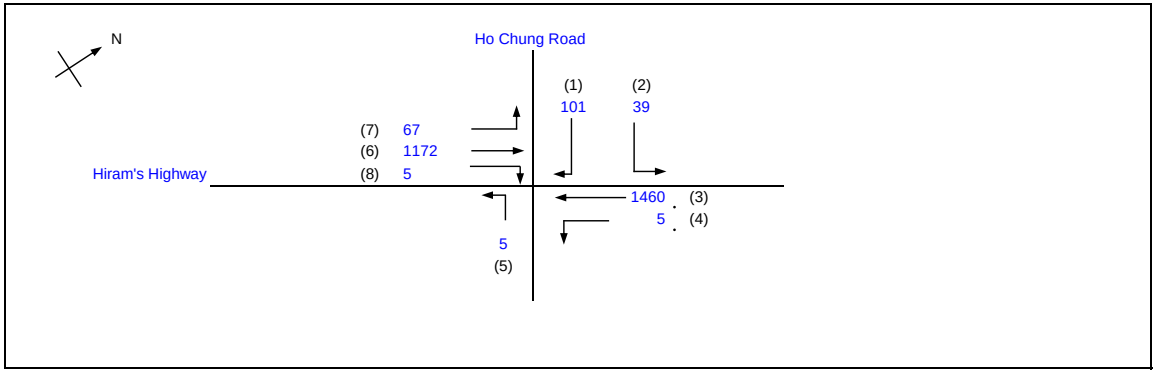
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1289	55	1516	61
Qc	=	Circulating flow across entry (pcu/h)	125	1336	84	1325
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2273	1270	2189	808
DFC	=	Design flow/Capacity = Q/Qe	0.57	0.04	0.69	0.08

Total In Sum = 2921 PCU

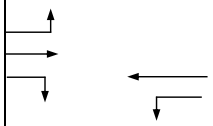
DFC of Critical Approach = 0.69

TRAFFIC SIGNAL CALCULATION

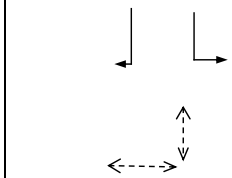
				INITIALS	DATE
	2025refAM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2025 Reference Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



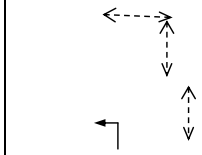
			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.418
Loss time		L =	25 sec
Total Flow		=	2854 pcu
Co	= (1.5*L+5)/(1-Y)	=	73.0 sec
Cm	= L/(1-Y)	=	42.9 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	70.5 %
Cp	= 0.9*L/(0.9-Y)	=	46.7 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	74 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

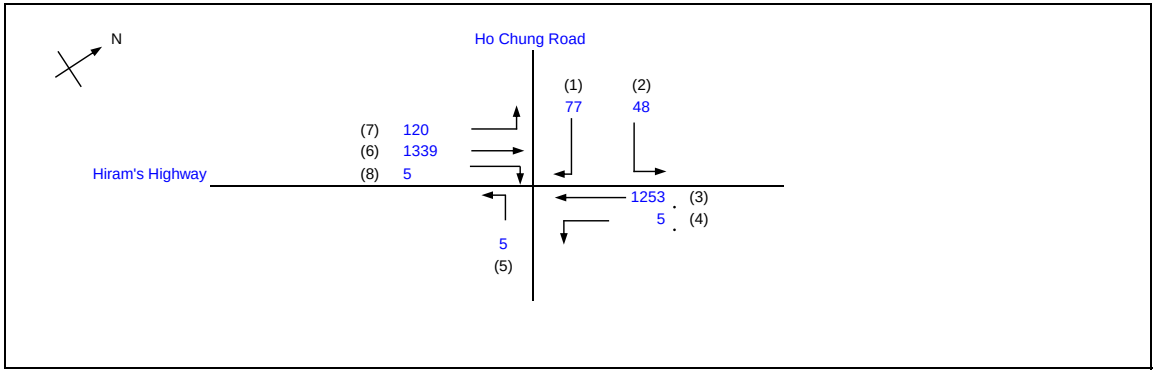
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	67			67	1.00	1691		-500	1191	0.056	0.364		14	**13**	**0.557**	**12**	**67**
6	A	3.30		1				2085		589		589	0.00	2085			2085	0.282			71	**70**	**0.525**	**54**	**19**
8	A	3.30		1	30			2085		583	5	588	0.01	2084			2084	0.282			71	**70**	**0.525**	**54**	**19**
4,3	A	3.30		1	30		N	1945	5	702		707	0.01	1944			1944	0.364			91	**90**	**0.523**	**42**	**10**
3	A	3.30		1				2085		758		758	0.00	2085			2085	0.364			91	**90**	**0.523**	**48**	**10**
2	B	3.30		1	10		N	1945	39			39	1.00	1691		-500	1191	0.033	0.051		8	**7**	**0.589**	**6**	**89**
1	B	3.30		1	25			2085			101	101	1.00	1967			1967	0.051			13	**12**	**0.561**	**18**	**62**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

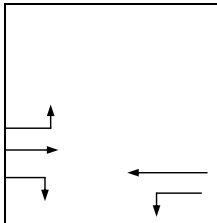
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

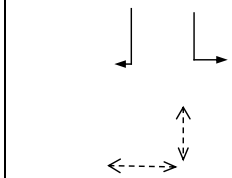
				INITIALS	DATE
	2025refPM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2025 Reference Weekday PM Peak		REFERENCE NO.:	Reviewed By:		



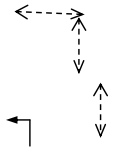
			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.366
Loss time		L =	25 sec
Total Flow		=	2852 pcu
Co	= (1.5*L+5)/(1-Y)	=	67.0 sec
Cm	= L/(1-Y)	=	39.4 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	94.9 %
Cp	= 0.9*L/(0.9-Y)	=	42.1 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	99 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

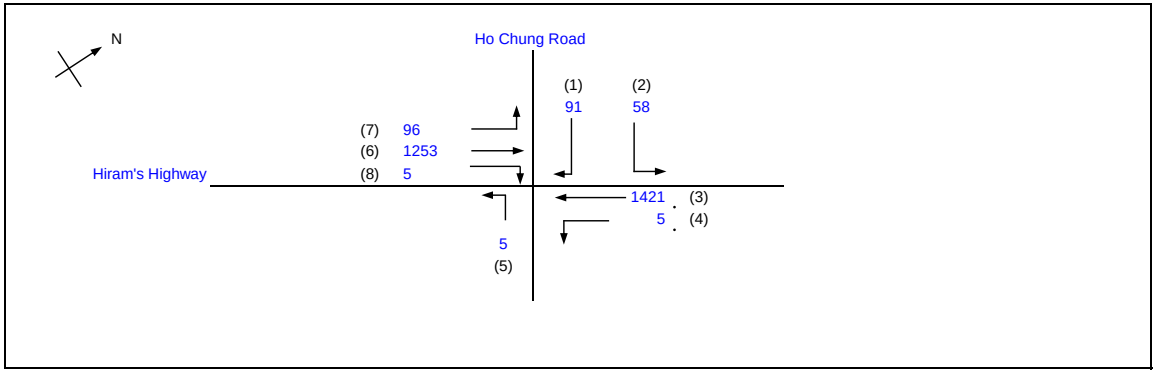
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	120			120	1.00	1691		-500	1191	0.101	0.322		29	28	0.469	18	46
6	A	3.30		1				2085		672		672	0.00	2085			2085	0.322			93	92	0.458	42	8
8	A	3.30		1	30			2085		667	5	672	0.01	2084			2084	0.322			93	92	0.458	42	8
4,3	A	3.30		1	30		N	1945	5	602		607	0.01	1944			1944	0.312			90	89	0.458	36	10
3	A	3.30		1				2085		651		651	0.00	2085			2085	0.312			90	89	0.458	42	10
2	B	3.30		1	10		N	1945	48			48	1.00	1691		-500	1191	0.040	0.040		12	11	0.495	6	68
1	B	3.30		1	25			2085			77	77	1.00	1967			1967	0.039			11	10	0.497	12	62
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	12	0.032	0	49

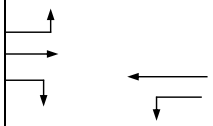
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

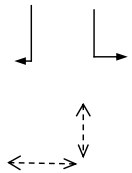
	2025refWeekend	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2025 Reference Weekend Peak		REFERENCE NO.:	Reviewed By:		



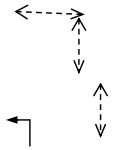
		Existing Cycle Time
No. of stages per cycle	N =	3
Cycle time	C =	130 sec
Sum(y)	Y =	0.406
Loss time	L =	25 sec
Total Flow	=	2934 pcu
Co = (1.5*L+5)/(1-Y)	=	71.5 sec
Cm = L/(1-Y)	=	42.1 sec
Yult	=	0.713
R.C.ult = (Yult-Y)/Y*100%	=	75.7 %
Cp = 0.9*L/(0.9-Y)	=	45.5 sec
Ymax = 1-L/C	=	0.808
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	79 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

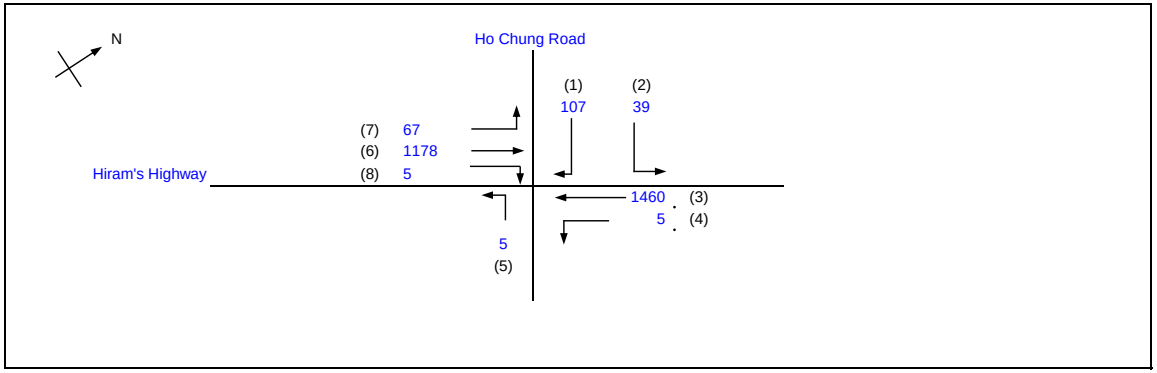
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	96			96	1.00	1691		-500	1191	0.081	0.354		21	**20**	**0.527**	**12**	**56**
6	A	3.30		1				2085		629		629	0.00	2085			2085	0.302			78	**77**	**0.509**	**54**	**15**
8	A	3.30		1	30			2085		624	5	629	0.01	2084			2084	0.302			78	**77**	**0.509**	**54**	**15**
4,3	A	3.30		1	30		N	1945	5	683		688	0.01	1944			1944	0.354			92	**91**	**0.508**	**42**	**10**
3	A	3.30		1				2085		738		738	0.00	2085			2085	0.354			92	**91**	**0.508**	**48**	**9**
2	B	3.30		1	10		N	1945	58			58	1.00	1691		-500	1191	0.049	0.049		13	**12**	**0.545**	**12**	**69**
1	B	3.30		1	25			2085			91	91	1.00	1967			1967	0.046			12	**11**	**0.548**	**18**	**63**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

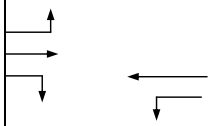
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

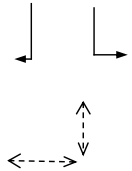
	2025desAM	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2025 Design Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



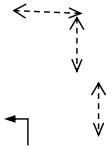
			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.421
Loss time		L =	25 sec
Total Flow		=	2866 pcu
Co	= (1.5*L+5)/(1-Y)	=	73.4 sec
Cm	= L/(1-Y)	=	43.2 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	69.3 %
Cp	= 0.9*L/(0.9-Y)	=	47.0 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	73 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

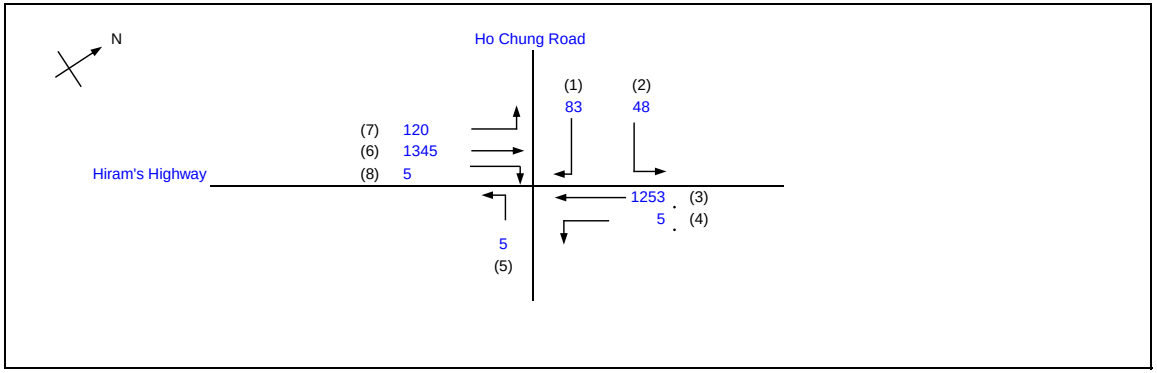
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	67			67	1.00	1691		-500	1191	0.056	0.364		14	**13**	**0.561**	**12**	**68**
6	A	3.30		1				2085		592		592	0.00	2085			2085	0.284			71	**70**	**0.529**	**54**	**19**
8	A	3.30		1	30			2085		586	5	591	0.01	2084			2084	0.284			71	**70**	**0.529**	**54**	**19**
4,3	A	3.30		1	30		N	1945	5	702		707	0.01	1944			1944	0.364			91	**90**	**0.527**	**42**	**10**
3	A	3.30		1				2085		758		758	0.00	2085			2085	0.364			91	**90**	**0.527**	**48**	**10**
2	B	3.30		1	10		N	1945	39			39	1.00	1691		-500	1191	0.033	0.054		8	**7**	**0.594**	**6**	**90**
1	B	3.30		1	25			2085			107	107	1.00	1967			1967	0.054			14	**13**	**0.563**	**18**	**61**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

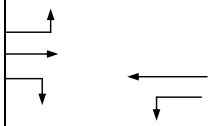
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

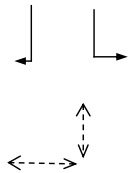
	2025desPM	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2025 Design Weekday PM Peak		REFERENCE NO.:	Reviewed By:		



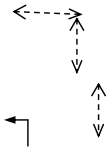
			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.369
Loss time		L =	25 sec
Total Flow		=	2864 pcu
Co	= (1.5*L+5)/(1-Y)	=	67.3 sec
Cm	= L/(1-Y)	=	39.6 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	93.1 %
Cp	= 0.9*L/(0.9-Y)	=	42.4 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	97 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

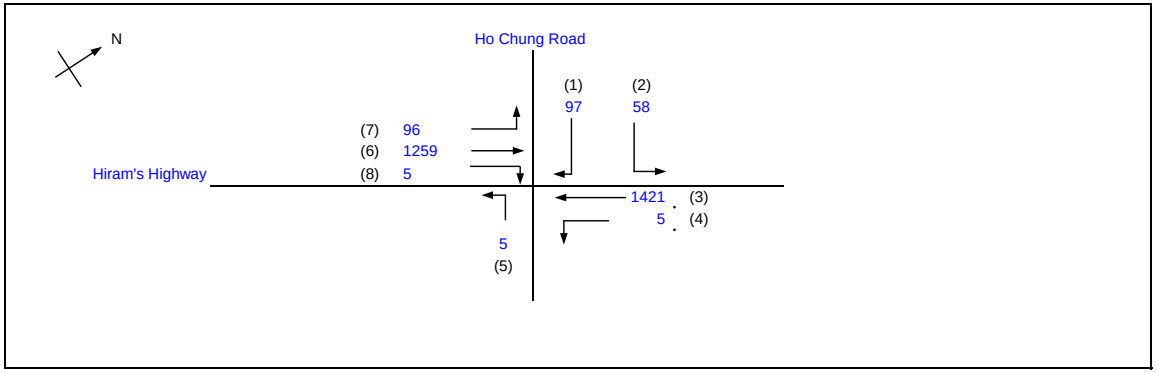
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	120			120	1.00	1691		-500	1191	0.101	0.324		29	28	0.473	18	46
6	A	3.30		1				2085		675		675	0.00	2085			2085	0.324			92	91	0.462	42	9
8	A	3.30		1	30			2085		670	5	675	0.01	2084			2084	0.324			92	91	0.462	42	9
4,3	A	3.30		1	30		N	1945	5	602		607	0.01	1944			1944	0.312			89	88	0.462	42	10
3	A	3.30		1				2085		651		651	0.00	2085			2085	0.312			89	88	0.462	42	10
2	B	3.30		1	10		N	1945	48			48	1.00	1691		-500	1191	0.040	0.042		11	10	0.500	6	68
1	B	3.30		1	25			2085			83	83	1.00	1967			1967	0.042			12	11	0.498	12	61
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	12	0.032	0	49

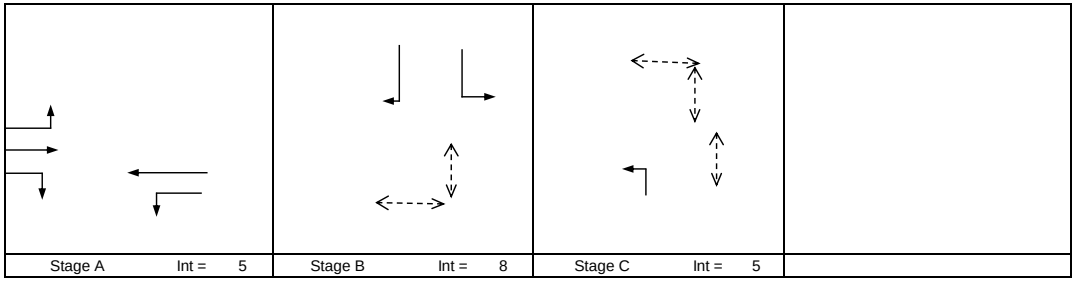
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road	**2025desWeekend**	PROJECT NO.:	Prepared By:		
2025 Design Weekend Peak		FILENAME :	Checked By:		
		REFERENCE NO.:	Reviewed By:		



Existing Cycle Time			
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.406
Loss time		L =	25 sec
Total Flow		=	2946 pcu
Co	= (1.5*L+5)/(1-Y)	=	71.6 sec
Cm	= L/(1-Y)	=	42.1 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	75.4 %
Cp	= 0.9*L/(0.9-Y)	=	45.6 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	79 %

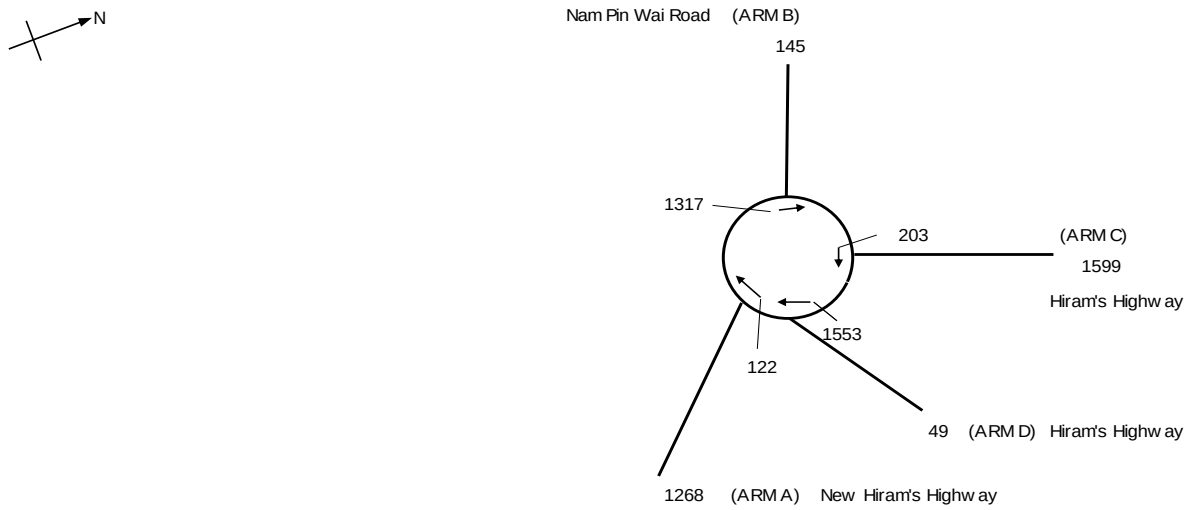


Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	96			96	1.00	1691		-500	1191	0.081	0.354		21	**20**	**0.528**	**12**	**56**
6	A	3.30		1				2085		632		632	0.00	2085			2085	0.303			78	**77**	**0.509**	**54**	**15**
8	A	3.30		1	30			2085		627	5	632	0.01	2084			2084	0.303			78	**77**	**0.509**	**54**	**15**
4,3	A	3.30		1	30		N	1945	5	683		688	0.01	1944			1944	0.354			91	**90**	**0.508**	**42**	**10**
3	A	3.30		1				2085		738		738	0.00	2085			2085	0.354			91	**90**	**0.508**	**48**	**10**
2	B	3.30		1	10		N	1945	58			58	1.00	1691		-500	1191	0.049	0.049		13	**12**	**0.546**	**12**	**69**
1	B	3.30		1	25			2085			97	97	1.00	1967			1967	0.049			13	**12**	**0.546**	**18**	**62**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2025refAM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Reference AM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



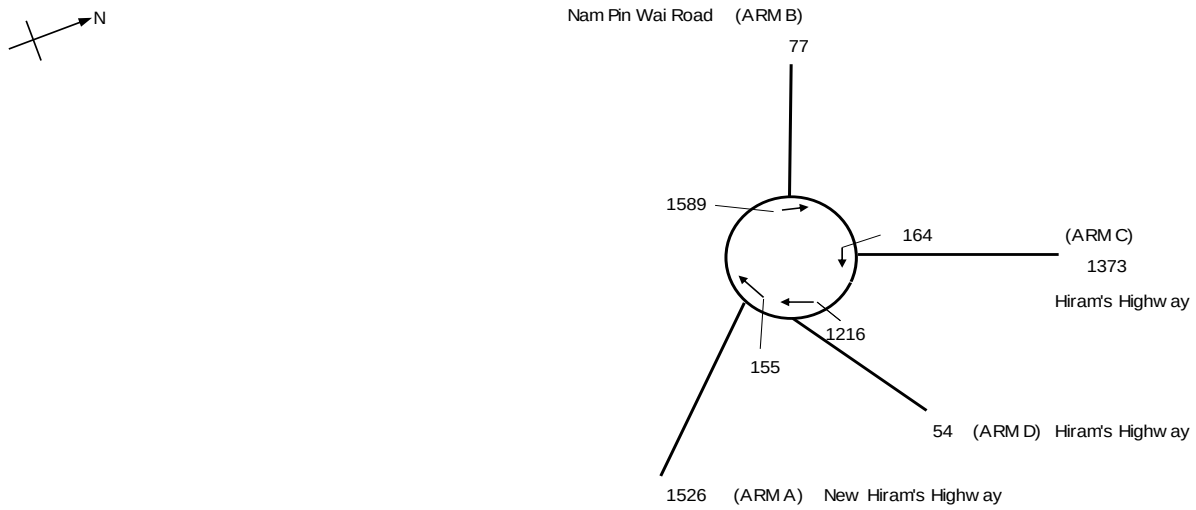
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1268	145	1599	49
Qc	=	Circulating flow across entry (pcu/h)	122	1317	203	1553
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2275	1279	2124	710
DFC	=	Design flow/Capacity = Q/Qe	0.56	0.11	0.75	0.07

Total In Sum = 3061 PCU

DFC of Critical Approach = 0.75

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2025refPM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Reference PM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		

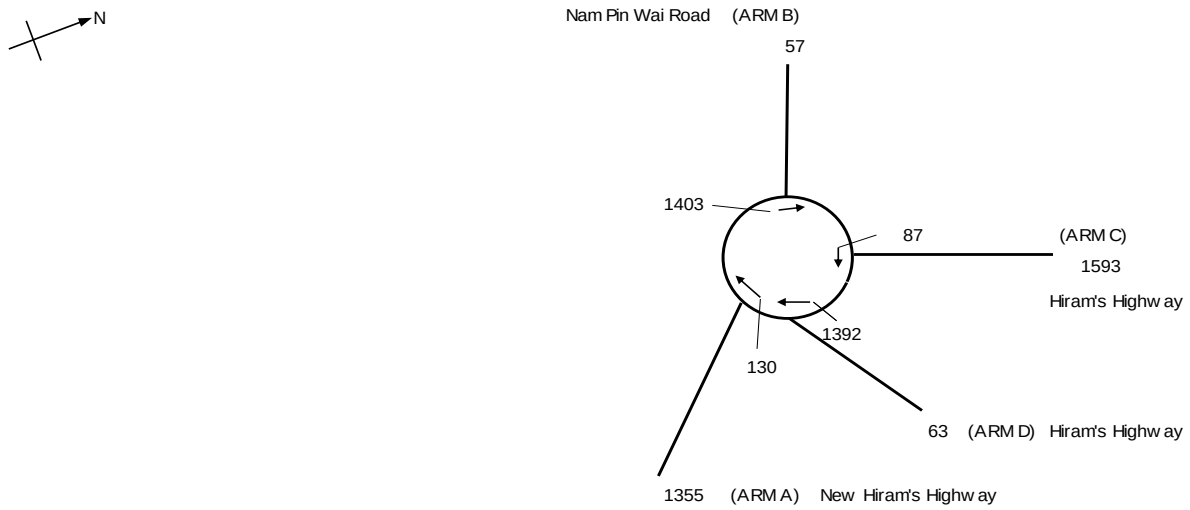


ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1526	77	1373	54
Qc	=	Circulating flow across entry (pcu/h)	155	1589	164	1216
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2256	1142	2145	854
DFC	=	Design flow/Capacity = Q/Qe	0.68	0.07	0.64	0.06

Total In Sum = 3030 PCU

DFC of Critical Approach = 0.68

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2025refWeekend	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Reference Weekend Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		

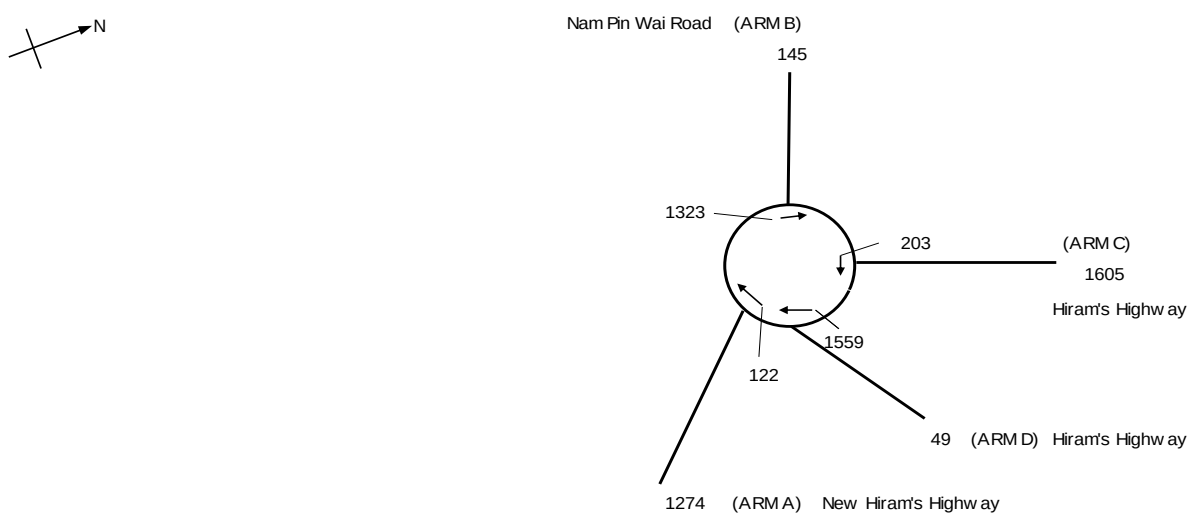


ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1355	57	1593	63
Qc	=	Circulating flow across entry (pcu/h)	130	1403	87	1392
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2270	1236	2188	779
DFC	=	Design flow/Capacity = Q/Qe	0.60	0.05	0.73	0.08

Total In Sum = 3068 PCU

DFC of Critical Approach = 0.73

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2025desAM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Design AM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



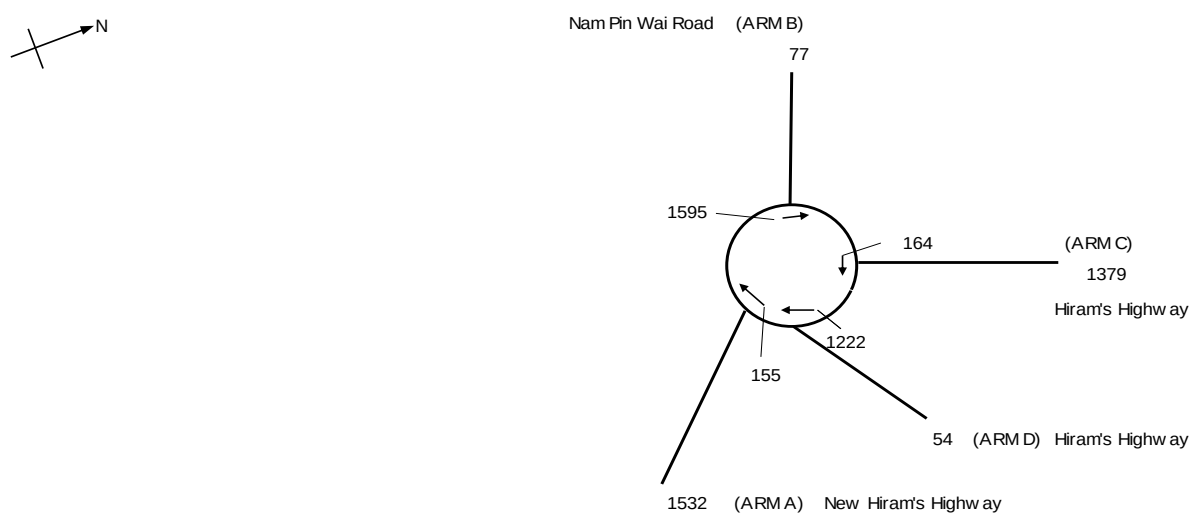
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1274	145	1605	49
Qc	=	Circulating flow across entry (pcu/h)	122	1323	203	1559
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2275	1276	2124	708
DFC	=	Design flow/Capacity = Q/Qe	0.56	0.11	0.76	0.07

Total In Sum = 3073 PCU

DFC of Critical Approach = 0.76

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2025desPM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Design PM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



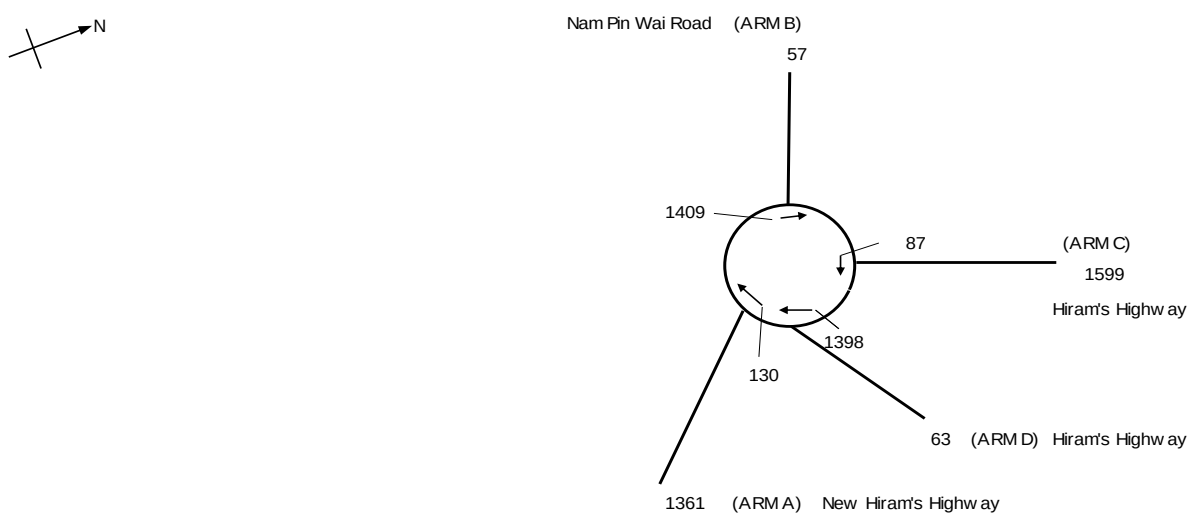
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1532	77	1379	54
Qc	=	Circulating flow across entry (pcu/h)	155	1595	164	1222
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2256	1139	2145	852
DFC	=	Design flow/Capacity = Q/Qe	0.68	0.07	0.64	0.06

Total In Sum = 3042 PCU

DFC of Critical Approach = 0.68

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2025desWeekend	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2025 Design Weekend Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



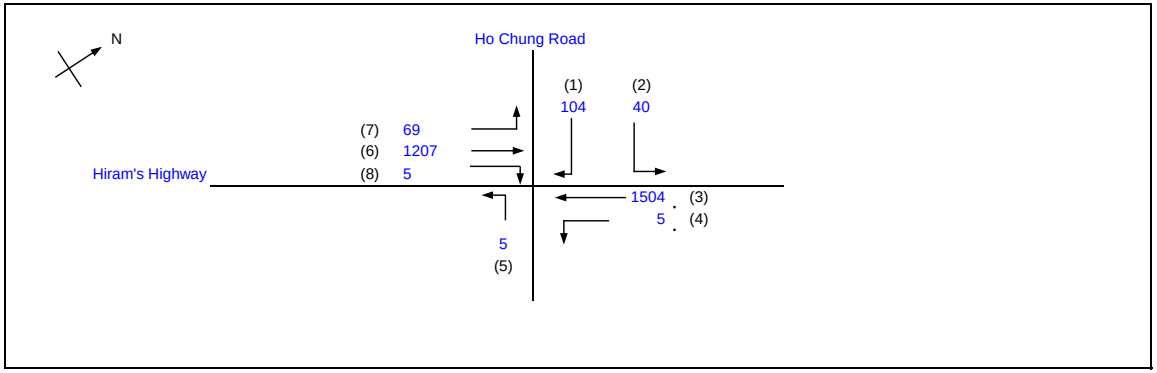
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1361	57	1599	63
Qc	=	Circulating flow across entry (pcu/h)	130	1409	87	1398
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2270	1233	2188	777
DFC	=	Design flow/Capacity = Q/Qe	0.60	0.05	0.73	0.08

Total In Sum = 3080 PCU

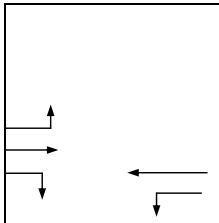
DFC of Critical Approach = 0.73

TRAFFIC SIGNAL CALCULATION

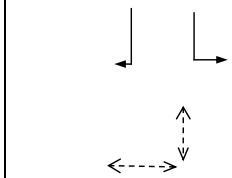
				INITIALS	DATE
	2028refAM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2028 Reference Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.430	
Loss time		L =	25	sec
Total Flow		=	2939	pcu
Co	= (1.5*L+5)/(1-Y)	=	74.6	sec
Cm	= L/(1-Y)	=	43.9	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	65.6	%
Cp	= 0.9*L/(0.9-Y)	=	47.9	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	69	%



Stage A Int = 5



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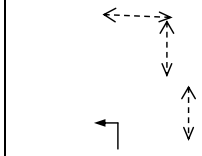


Stage C Int = 5

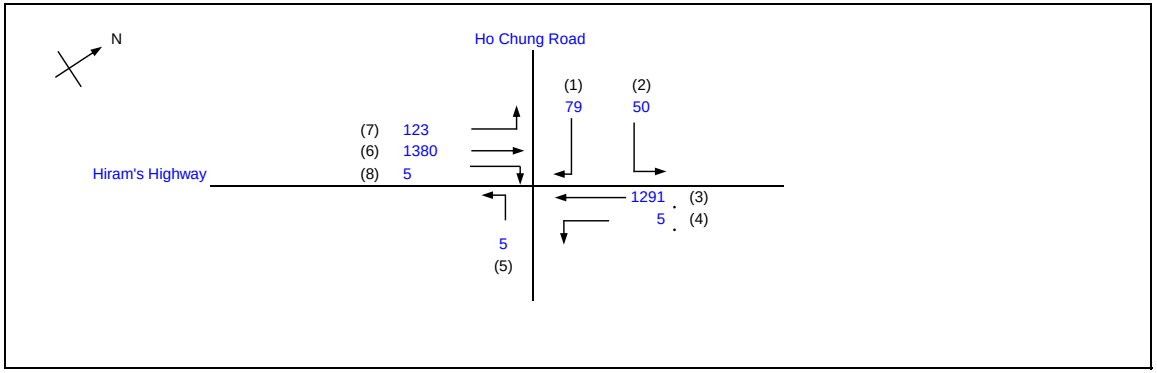
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	69			69	1.00	1691		-500	1191	0.058	0.375		14	**13**	**0.573**	**12**	**68**
6	A	3.30		1				2085		606		606	0.00	2085			2085	0.291			71	**70**	**0.540**	**60**	**19**
8	A	3.30		1	30			2085		601	5	606	0.01	2084			2084	0.291			71	**70**	**0.540**	**60**	**19**
4,3	A	3.30		1	30		N	1945	5	723		728	0.01	1944			1944	0.375			91	**90**	**0.539**	**48**	**10**
3	A	3.30		1				2085		781		781	0.00	2085			2085	0.375			91	**90**	**0.539**	**48**	**10**
2	B	3.30		1	10		N	1945	40			40	1.00	1691		-500	1191	0.034	0.053		8	**7**	**0.607**	**6**	**92**
1	B	3.30		1	25			2085			104	104	1.00	1967			1967	0.053			13	**12**	**0.578**	**18**	**63**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

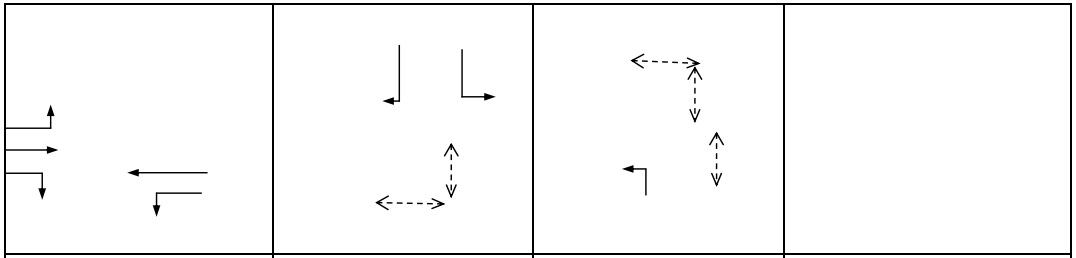
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road	2028refPM	PROJECT NO.:	Prepared By:		
2028 Reference Weekday PM Peak		FILENAME :	Checked By:		
		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.377	
Loss time		L =	25	sec
Total Flow		=	2938	pcu
Co	= (1.5*L+5)/(1-Y)	=	68.2	sec
Cm	= L/(1-Y)	=	40.1	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	88.9	%
Cp	= 0.9*L/(0.9-Y)	=	43.0	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	93	%



Stage A	Int = 5	Stage B	Int = 8	Stage C	Int = 5

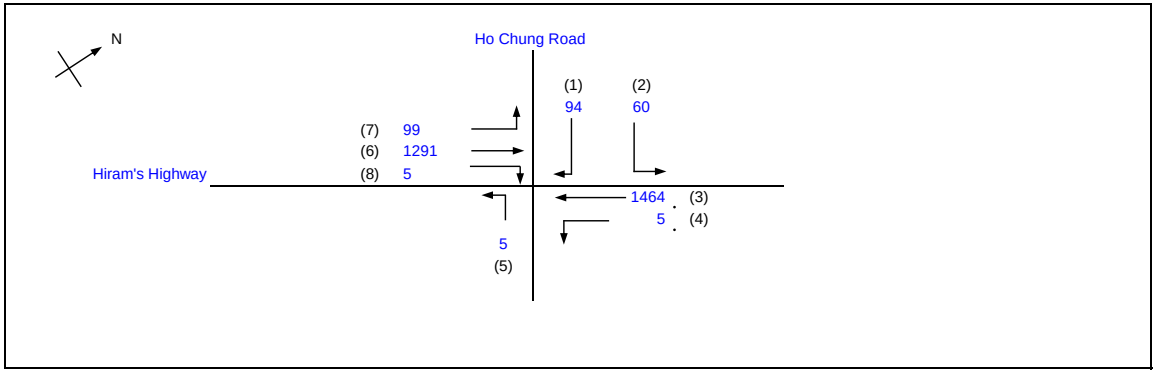
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	123			123	1.00	1691		-500	1191	0.103	0.332		29	28	0.484	18	46
6	A	3.30		1				2085		693		693	0.00	2085			2085	0.332			92	91	0.472	42	9
8	A	3.30		1	30			2085		687	5	692	0.01	2084			2084	0.332			92	91	0.472	42	9
4,3	A	3.30		1	30		N	1945	5	620		625	0.01	1944			1944	0.322			90	89	0.472	42	10
3	A	3.30		1				2085		671		671	0.00	2085			2085	0.322			90	89	0.472	42	10
2	B	3.30		1	10		N	1945	50			50	1.00	1691		-500	1191	0.042	0.042		12	11	0.511	6	69
1	B	3.30		1	25			2085			79	79	1.00	1967			1967	0.040			11	10	0.513	12	63
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	12	0.032	0	49

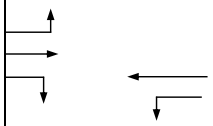
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

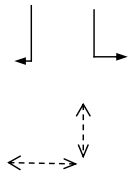
				INITIALS	DATE
	2028refWeekend	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2028 Reference Weekend Peak		REFERENCE NO.:	Reviewed By:		



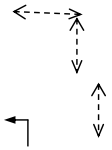
			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.418
Loss time		L =	25 sec
Total Flow		=	3023 pcu
Co	= (1.5*L+5)/(1-Y)	=	73.0 sec
Cm	= L/(1-Y)	=	42.9 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	70.5 %
Cp	= 0.9*L/(0.9-Y)	=	46.7 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	74 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

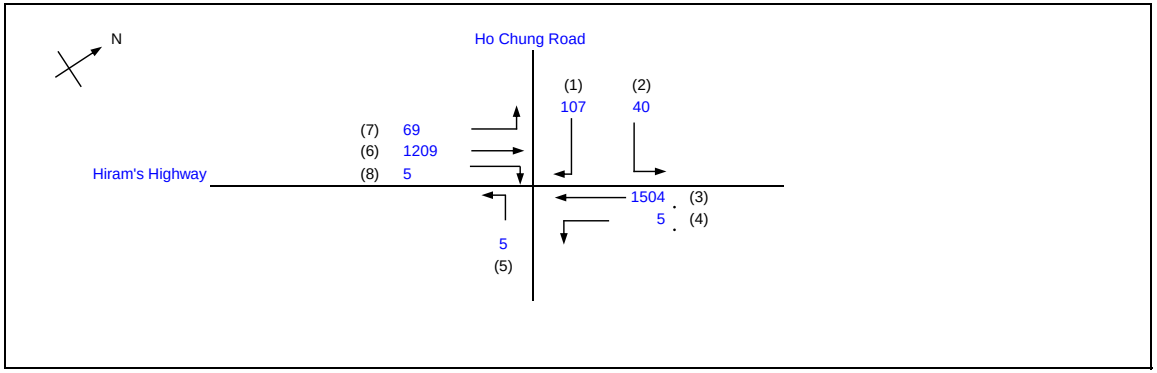
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	99			99	1.00	1691		-500	1191	0.083	0.365		21	**20**	**0.543**	**18**	**56**
6	A	3.30		1				2085		648		648	0.00	2085			2085	0.311			78	**77**	**0.524**	**54**	**15**
8	A	3.30		1	30			2085		643	5	648	0.01	2084			2084	0.311			78	**77**	**0.524**	**54**	**15**
4,3	A	3.30		1	30		N	1945	5	704		709	0.01	1944			1944	0.365			92	**91**	**0.523**	**42**	**10**
3	A	3.30		1				2085		760		760	0.00	2085			2085	0.365			92	**91**	**0.523**	**48**	**10**
2	B	3.30		1	10		N	1945	60			60	1.00	1691		-500	1191	0.050	0.050		13	**12**	**0.562**	**12**	**70**
1	B	3.30		1	25			2085			94	94	1.00	1967			1967	0.048			12	**11**	**0.564**	**18**	**64**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

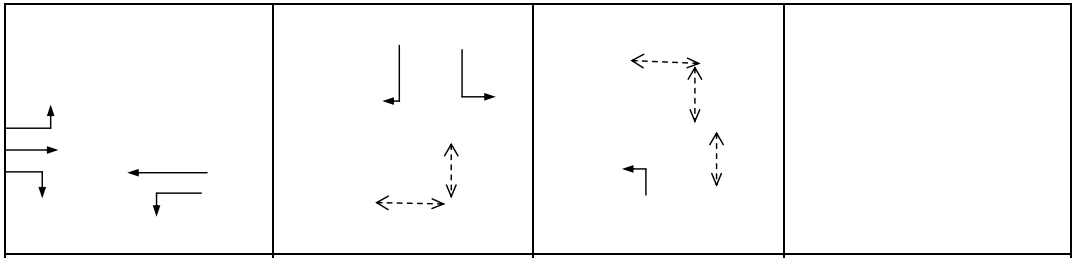
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

				INITIALS	DATE
	2028desAM	PROJECT NO.:	Prepared By:		
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2028 Design Weekday AM Peak		REFERENCE NO.:	Reviewed By:		



			Existing Cycle Time
No. of stages per cycle		N =	3
Cycle time		C =	130 sec
Sum(y)		Y =	0.432
Loss time		L =	25 sec
Total Flow		=	2944 pcu
Co	= (1.5*L+5)/(1-Y)	=	74.8 sec
Cm	= L/(1-Y)	=	44.0 sec
Yult		=	0.713
R.C.ult	= (Yult-Y)/Y*100%	=	65.0 %
Cp	= 0.9*L/(0.9-Y)	=	48.1 sec
Ymax	= 1-L/C	=	0.808
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	68 %



Stage A	Int = 5	Stage B	Int = 8	Stage C	Int = 5

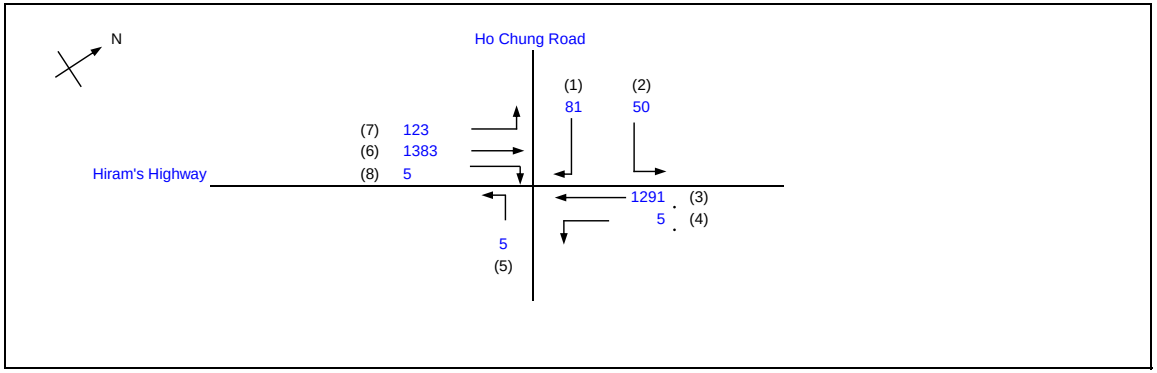
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	69			69	1.00	1691		-500	1191	0.058	0.375		14	**13**	**0.576**	**12**	**69**
6	A	3.30		1				2085		607		607	0.00	2085			2085	0.291			71	**70**	**0.542**	**60**	**19**
8	A	3.30		1	30			2085		602	5	607	0.01	2084			2084	0.291			71	**70**	**0.542**	**60**	**19**
4,3	A	3.30		1	30		N	1945	5	723		728	0.01	1944			1944	0.375			91	**90**	**0.541**	**48**	**10**
3	A	3.30		1				2085		781		781	0.00	2085			2085	0.375			91	**90**	**0.541**	**48**	**10**
2	B	3.30		1	10		N	1945	40			40	1.00	1691		-500	1191	0.034	0.054		8	**7**	**0.609**	**6**	**93**
1	B	3.30		1	25			2085			107	107	1.00	1967			1967	0.054			13	**12**	**0.578**	**18**	**63**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

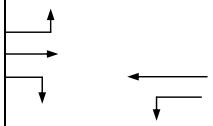
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

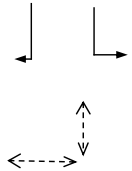
	2028desPM	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2028 Design Weekday PM Peak		REFERENCE NO.:	Reviewed By:		



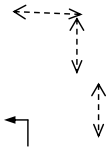
		Existing Cycle Time
No. of stages per cycle	N =	3
Cycle time	C =	130 sec
Sum(y)	Y =	0.378
Loss time	L =	25 sec
Total Flow	=	2943 pcu
Co = (1.5*L+5)/(1-Y)	=	68.3 sec
Cm = L/(1-Y)	=	40.2 sec
Yult	=	0.713
R.C.ult = (Yult-Y)/Y*100%	=	88.6 %
Cp = 0.9*L/(0.9-Y)	=	43.1 sec
Ymax = 1-L/C	=	0.808
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	92 %



Stage A Int = 5



Stage B Int = 8



Stage C Int = 5

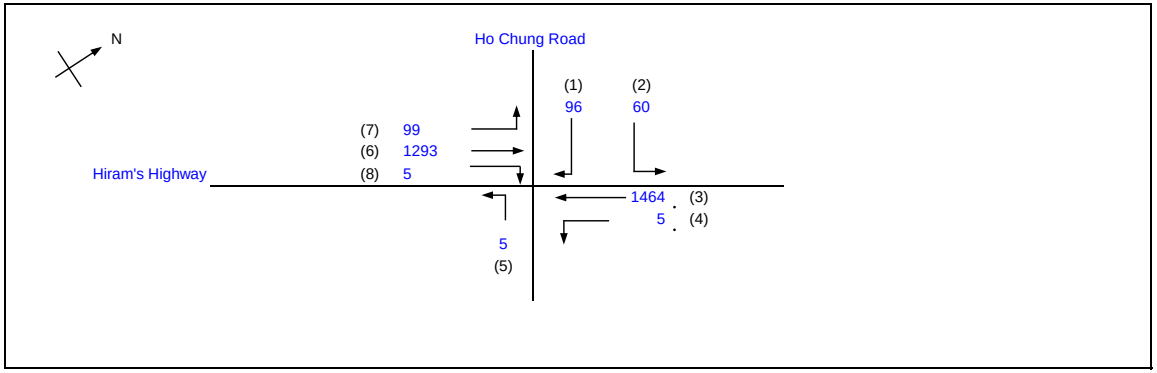
Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	123			123	1.00	1691		-500	1191	0.103	0.333		29	28	0.485	18	46
6	A	3.30		1				2085		694		694	0.00	2085			2085	0.333			93	92	0.473	42	9
8	A	3.30		1	30			2085		689	5	694	0.01	2084			2084	0.333			93	92	0.473	42	9
4,3	A	3.30		1	30		N	1945	5	620		625	0.01	1944			1944	0.322			89	88	0.473	42	10
3	A	3.30		1				2085		671		671	0.00	2085			2085	0.322			89	88	0.473	42	10
2	B	3.30		1	10		N	1945	50			50	1.00	1691		-500	1191	0.042	0.042		12	11	0.512	6	69
1	B	3.30		1	25			2085			81	81	1.00	1967			1967	0.041			11	10	0.513	12	62
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	12	0.032	0	49

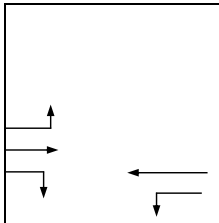
NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

TRAFFIC SIGNAL CALCULATION

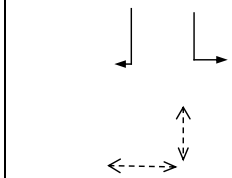
	2028desWeekend	PROJECT NO.:	Prepared By:	INITIALS	DATE
J3 Hiram's Highway / Ho Chung Road		FILENAME :	Checked By:		
2028 Design Weekend Peak		REFERENCE NO.:	Reviewed By:		



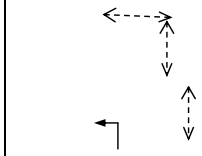
			Existing Cycle Time	
No. of stages per cycle		N =	3	
Cycle time		C =	130	sec
Sum(y)		Y =	0.418	
Loss time		L =	25	sec
Total Flow		=	3027	pcu
Co	= (1.5*L+5)/(1-Y)	=	73.0	sec
Cm	= L/(1-Y)	=	42.9	sec
Yult		=	0.713	
R.C.ult	= (Yult-Y)/Y*100%	=	70.5	%
Cp	= 0.9*L/(0.9-Y)	=	46.7	sec
Ymax	= 1-L/C	=	0.808	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	74	%



Stage A Int = 5



Stage B Int = 8



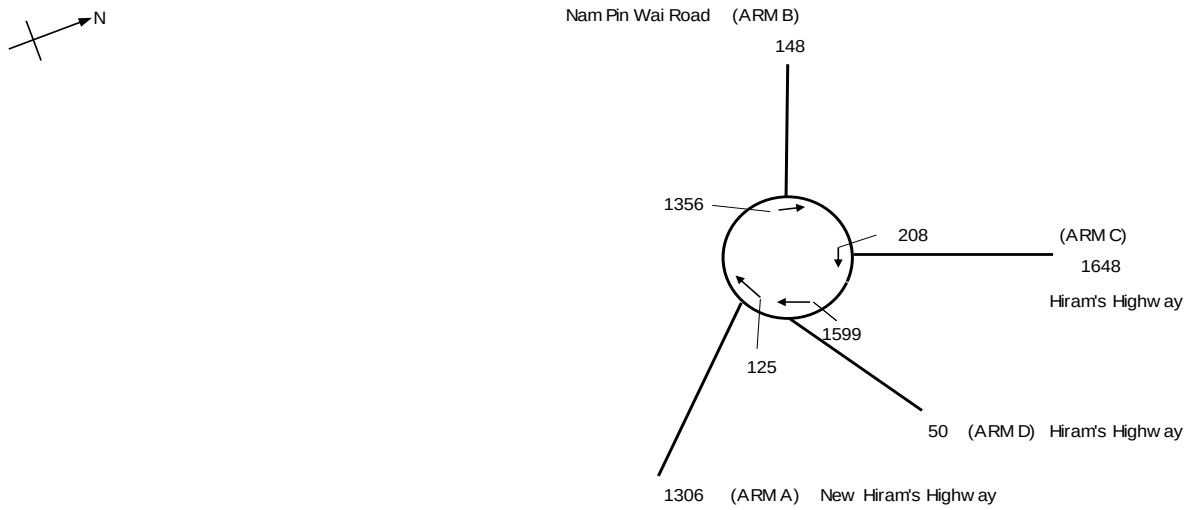
Stage C Int = 5

Pedestrian Phase	Stage	Width (m)	Green Time Required (s) SG	FG	Delay	Green Time Provided (s) SG	FG

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Movement Left pcu/h	Straight pcu/h	Right pcu/h	Total FLow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Share Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	G (input) sec	Degree of Saturation X	Queue Length (m / lane)	Average Delay (seconds)
																				15					
7	A	3.30		1	10		N	1945	99			99	1.00	1691		-500	1191	0.083	0.365		21	**20**	**0.543**	**18**	**56**
6	A	3.30		1				2085		649		649	0.00	2085			2085	0.311			78	**77**	**0.524**	**54**	**15**
8	A	3.30		1	30			2085		644	5	649	0.01	2084			2084	0.311			78	**77**	**0.524**	**54**	**15**
4,3	A	3.30		1	30		N	1945	5	704		709	0.01	1944			1944	0.365			92	**91**	**0.523**	**42**	**10**
3	A	3.30		1				2085		760		760	0.00	2085			2085	0.365			92	**91**	**0.523**	**48**	**10**
2	B	3.30		1	10		N	1945	60			60	1.00	1691		-500	1191	0.050	0.050		13	**12**	**0.562**	**12**	**70**
1	B	3.30		1	25			2085			96	96	1.00	1967			1967	0.049			12	**11**	**0.563**	**18**	**64**
5	C	3.30		1	10		N	1945	5			5	1.00	1691			1691	0.003	0.003	10	1	**12**	**0.032**	**0**	**49**

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2028refAM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Reference AM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



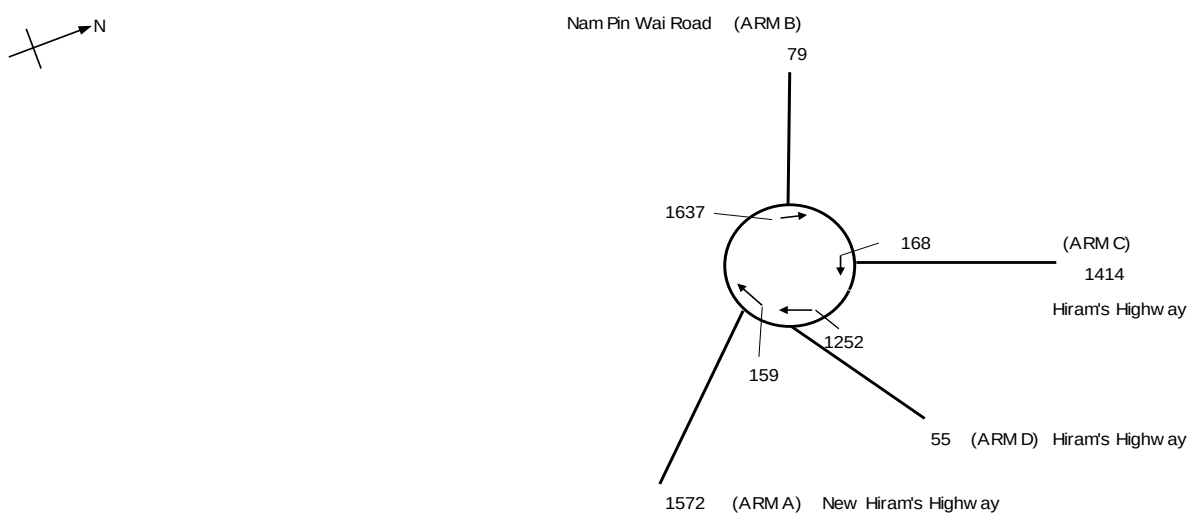
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1306	148	1648	50
Qc	=	Circulating flow across entry (pcu/h)	125	1356	208	1599
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2273	1260	2121	691
DFC	=	Design flow/Capacity = Q/Qe	0.57	0.12	0.78	0.07

Total In Sum = 3152 PCU

DFC of Critical Approach = 0.78

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2028refPM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Reference PM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		

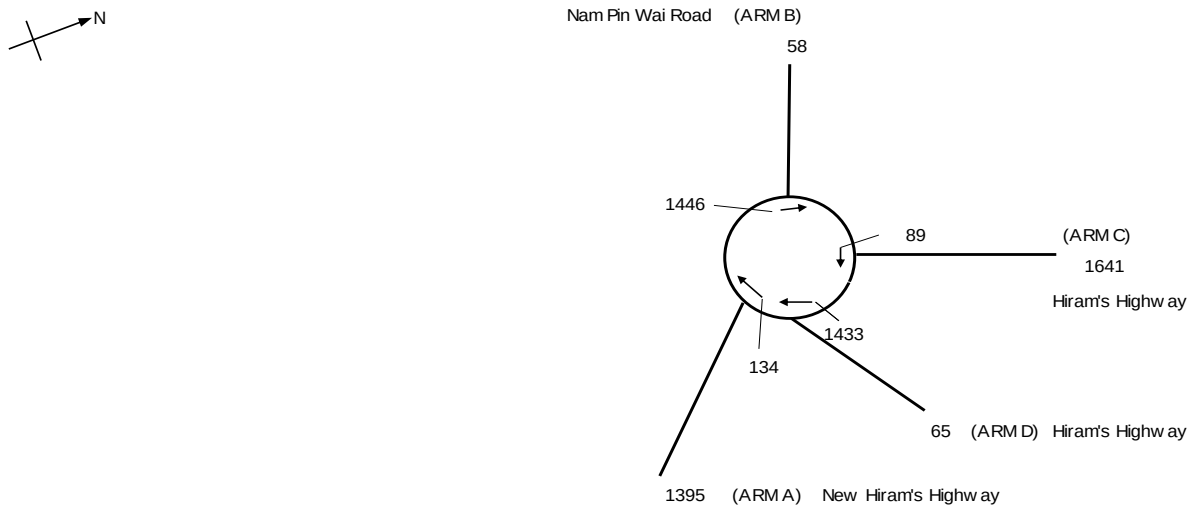


ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1572	79	1414	55
Qc	=	Circulating flow across entry (pcu/h)	159	1637	168	1252
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2254	1117	2143	839
DFC	=	Design flow/Capacity = Q/Qe	0.70	0.07	0.66	0.07

Total In Sum = 3120 PCU

DFC of Critical Approach = 0.70

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2028refWeekend	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Reference Weekend Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



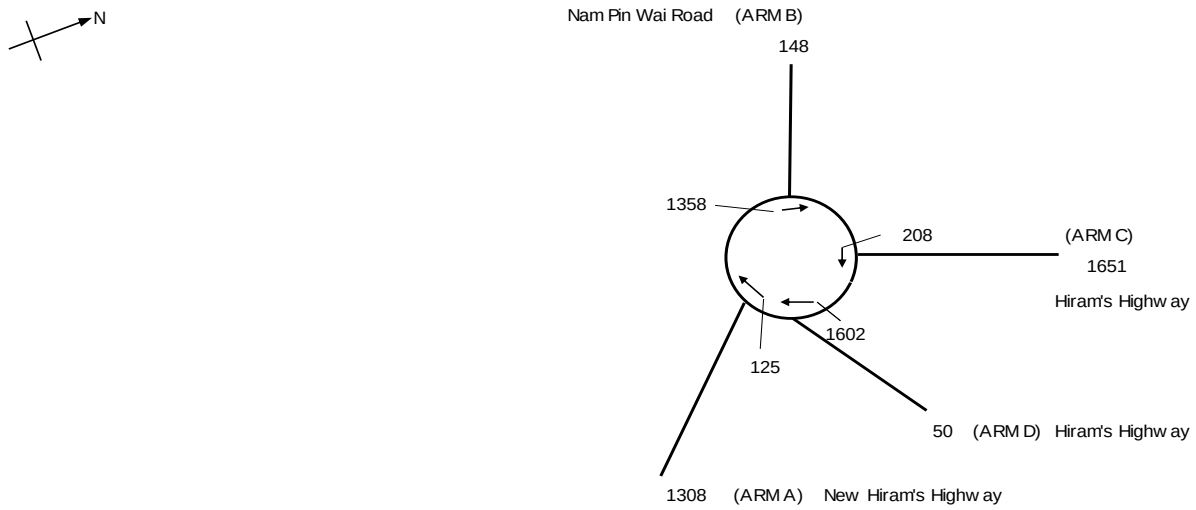
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1395	58	1641	65
Qc	=	Circulating flow across entry (pcu/h)	134	1446	89	1433
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2268	1214	2186	762
DFC	=	Design flow/Capacity = Q/Qe	0.62	0.05	0.75	0.09

Total In Sum = 3159 PCU

DFC of Critical Approach = 0.75

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2028desAM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Design AM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



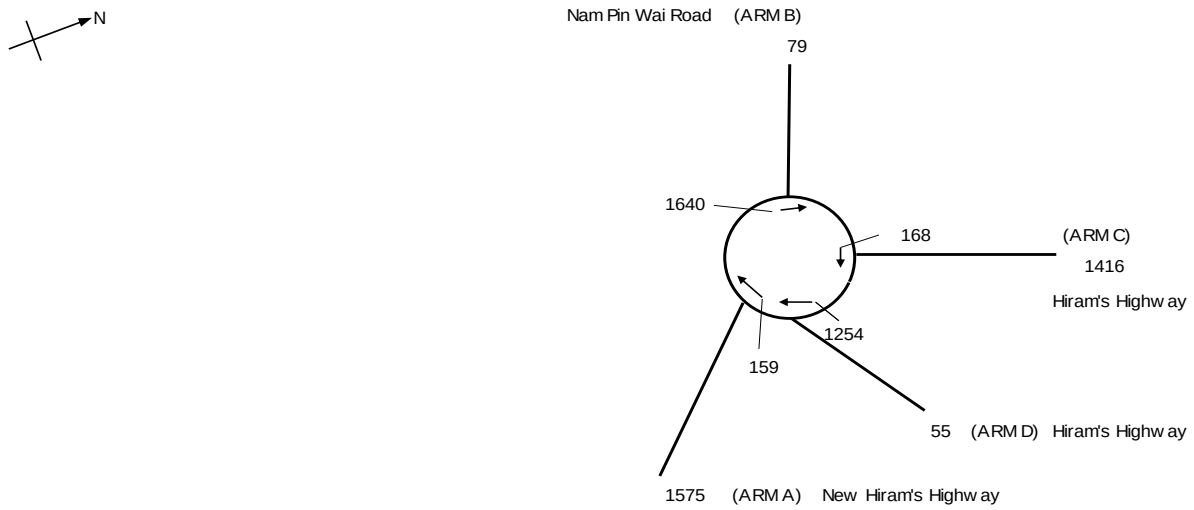
ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1308	148	1651	50
Qc	=	Circulating flow across entry (pcu/h)	125	1358	208	1602
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2273	1259	2121	689
DFC	=	Design flow/Capacity = Q/Qe	0.58	0.12	0.78	0.07

Total In Sum = 3157 PCU

DFC of Critical Approach = 0.78

ROUNDABOUT CAPACITY ASSESSMENT

				INITIALS	DATE
	2028desPM	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Design PM Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		

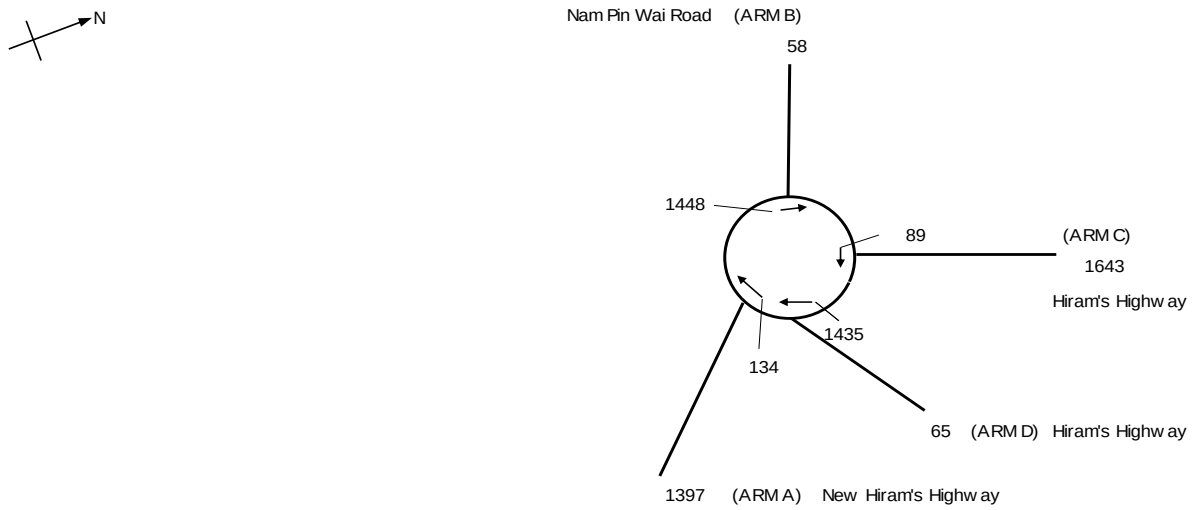


ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1575	79	1416	55
Qc	=	Circulating flow across entry (pcu/h)	159	1640	168	1254
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2254	1116	2143	838
DFC	=	Design flow/Capacity = Q/Qe	0.70	0.07	0.66	0.07

Total In Sum = 3125 PCU

DFC of Critical Approach = 0.70

ROUNDABOUT CAPACITY ASSESSMENT				INITIALS	DATE
	2028desWeekend	PROJECT NO.:	PREPARED BY:		
J4 Hiram's Highway / New Hiram's Highway		FILENAME :	CHECKED BY:		
2028 Design Weekend Peak		J4_New-HiramsHighway.xls	REVIEWED BY:		



ARM			A	B	C	D
INPUT PARAMETERS:						
V	=	Approach half width (m)	7.5	6.0	7.6	3.5
E	=	Entry width (m)	8.5	7.0	7.6	6.0
L	=	Effective length of flare (m)	13.5	6.0	0.0	6.0
R	=	Entry radius (m)	20.0	20.0	22.5	17.0
D	=	Inscribed circle diameter (m)	78.0	78.0	78.0	78.0
A	=	Entry angle (degree)	50.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)	1397	58	1643	65
Qc	=	Circulating flow across entry (pcu/h)	134	1448	89	1435
OUTPUT PARAMETERS:						
S	=	Sharpness of flare = 1.6(E-V)/L	0.12	0.27	0.00	0.67
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.93	0.97	0.97	0.99
X2	=	V + ((E-V)/(1+2S))	8.31	6.65	7.60	4.57
M	=	EXP((D-60)/10)	6	6	6	6
F	=	303*X2	2517	2016	2303	1385
Td	=	1+(0.5/(1+M))	1.07	1.07	1.07	1.07
Fc	=	0.21*Td(1+0.2*X2)	0.60	0.52	0.57	0.43
Qe	=	K(F-Fc*Qc)	2268	1213	2186	761
DFC	=	Design flow/Capacity = Q/Qe	0.62	0.05	0.75	0.09

Total In Sum = 3163 PCU

DFC of Critical Approach = 0.75