

Appendix 3

TRAFFIC IMPACT ASSESSMENT

Reference number CHK50812010

**PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE
(PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT
GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL
SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA
TSK-500 (PART))**

TRAFFIC IMPACT ASSESSMENT



Report (Rev. 0)

PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))

TRAFFIC IMPACT ASSESSMENT

IDENTIFICATION TABLE	
Client/Project owner	The Hong Kong Jockey Club
Project	Proposed Place of Recreation, Sports or Culture (Public Riding School) with Ancillary Facilities at Government Land in D.D. 233, The Restored Landfill Site (TKOL II/III) in TKO Area 105, Tseung Kwan O (GLA TSK-500 (Part))
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1. INTRODUCTION

1.1 Background

- 1.1.1 This XXX (Assessment) is prepared in support of the Section 16 (“**S16**”) Planning Application to allow for the development of a Public Riding School with ancillary facilities (e.g. utility trench) (collectively as the “**PRS**”) at Government Land in D.D. 233, The Restored Landfill Site (TKOL II/III) in TKO Area 105, New Territories (“**TKOL II/III**”) for the HKJC Public Riding Schools Limited (the “**Applicant**”). The Application Site comprises of three (3) existing platforms and land required for the provision of ancillary utility trench connecting to the three (3) platforms (collectively as the “**Application Site**”) within TKOL II/III. The PRS aligns with the Government’s policy objectives in fostering more public participation in the community through wider visibility and popularity of horse riding, supporting equestrian as an elite sport, and maintaining Hong Kong as a centre for major international sports events.
- 1.1.2 The Application Site is predominately zoned “Open Space” (“**O**”) on the Approved Tseung Kwan O Outline Zoning Plan No. S/TKO/32 (“**Approved OZP**”), whilst a strip of area at the north is zoned “Green Belt” (“**GB**”) and a minor portion abutting Chun Sing Street is zoned “Other Specified Uses” annotated “Industrial Estate” (“**OU(Industrial Estate)**”) on the Approved OZP. The PRS with ancillary facilities (‘Horse Riding School’ subsumed under ‘Place of Recreation, Sports or Culture’ use) is a Column 2 use under the “**O**”, “**GB**” and “**OU(Industrial Estate)**” zones that may be permitted with or without conditions on Application under S16 of the Town Planning Ordinance (“**TPO**”). There are no plot ratio (“**PR**”), building height (“**BH**”), and site coverage (“**SC**”) restrictions imposed on the “**O**”, “**GB**” and “**OU(Industrial Estate)**” zones of the Approved OZP. While a portion of TKOL II/III falls within the Clear Water Bay Country Park (“**CWBCP**”), the Application Site does not involve any areas falling within the Country Park Boundary.
- 1.1.3 The PRS is located on three (3) platforms, namely the Lower Platform (i.e. Reception and Hospitality Lounges) (approx.+6.0mPD), Middle Platform (i.e. Pony Paddock & Pavilion I)(approx. +40.0mPD) and Upper Platform (i.e. Horse Paddock & Pavilion II) (approx.140.0mPD), with a proposed total GFA of approx. 9,000m² and a proposed building height of 4.8m to 7.7m. An ancillary utility trench connecting to the three (3) platforms is also proposed to accommodate various essential utilities services in support of the PRS operations.

1.2 Study Objectives

- 1.2.1 The objectives of this Traffic Impact Assessment (TIA) study are summarised as follows:
- Present the development schedule of the Proposed PRS Development and suggest the required internal transport provisions;
 - Review the vehicular access arrangement of the proposed development;
 - Conduct the manual classified count traffic surveys to determine the existing traffic conditions in the vicinity;
 - Assess the existing junction capacities in the local area;

- Estimate the traffic generations and attractions from the Proposed PRS Development and carry traffic distribution and assignment of the traffic generated;
- Estimate the future traffic flows for the design year on the local road network;
- Assess the traffic impact of the Proposed PRS Development on the local road network and the junctions for the design year; and
- Recommend traffic improvement measures, if considered necessary, to alleviate the potential traffic problem on the surrounding road networks.

1.3 Report Structure

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

- **Chapter 2** – The proposed development, which presents the development schedule, proposed vehicular access arrangement and internal facility, including car parking and layby provisions;
- **Chapter 3** – Existing Traffic Context, which reviews the current traffic condition at local road network in the vicinity, presents the findings from traffic count surveys and assesses the existing conditions;
- **Chapter 4** – Traffic Forecast, which discusses the potential traffic generation and attraction of the Proposed PRS Development and summarizes the methodology of the future traffic forecasts for the design year based on the proposed implementation programme;
- **Chapter 5** – Traffic Impact Assessment, which presents the traffic assessment the findings of the traffic impact assessments in the local networks for the operation of the Proposed PRS Development in the future design year and recommends improvement measures, if necessary;
- **Chapter 6** – Public Transport Provision Services, which discusses the potential public transport demand of the proposed development and the occupancy of existing public transport services;
- **Chapter 7** – Future Pedestrian Conditions, which discussed the potential pedestrian generation and attraction of the proposed development and presents the pedestrian assessment findings of the pedestrian crossing and footpaths;
- **Chapter 8** – Summary and Conclusion, which summarises the findings of the study and present the conclusions regarding the traffic issues for the Proposed PRS Development in the study findings.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

- 2.1.1 As indicated in **Drawing No. 1.1**, the Proposed PRS Development is located at TKOL II/III adjacent to the LOHAS Park and Tseung Kwan O Industrial Estate. Chun Yat Street is direct access road connecting with the Proposed PRS Development at the lower platform.
- 2.1.2 At present, there is an existing access road connecting the three platforms. Under the consultancy study “Provision of Infrastructure to Support Potential After uses Development at Restored Landfills” by EPD, it is recommended to upgrade the existing access road with local road widening.
- 2.1.3 The existing vehicular access at Chun Yat Street will serve the Proposed PRS Development as well as the existing EDP facilities at the lower platform. The vehicular access of the Proposed PRS Development is shown in **Drawing No. 2.1**.

2.2 Development Schedule

- 2.2.1 The Proposed PRS Development comprises of three platforms namely, the lower platform, middle platform and upper platform. The Welcome Hub is located at the lower platform for guest reception and pony viewing area. Visitor parking spaces are provided at the lower platform.
- 2.2.2 The Middle Platform is planned for the Pony Paddock & Pavilion I offering pony riding, and riding lessons for beginners and persons with disabilities while the Upper Platform is planned for the Horse Paddock & Pavilion II offering the majority of the PRS riding activities. Shuttle services will be provided serving the transportation among the three platforms within the proposed development.
- 2.2.3 The development parameters are summarized in **Table 2.1**.

Table 2.1 Development Parameters

Component	Proposed Development Parameters
Site Area	46,500 m ² (consisting areas of the three platforms and ancillary utility trench)
Lower Platform	10,200 m ²
Middle Platform	12,800 m ² + 24 nos. of stalls
Upper Platform	20,700 m ² + 50 nos. of stalls
Ancillary Utility Trench	2,800 m ²

- 2.2.4 The Proposed PRS Development is scheduled to be completed by year 2030. The layout plan of the Proposed PRS Development is shown in **Drawing No. 2.1**. The layout of each platform is shown in **Drawing Nos. 2.2 to 2.4**.
- 2.2.5 The proposed PRS development will operation all year round. Lectures and training classes will be available everyday while event day (i.e. Annual Open Day) will be arranged at a weekend.

2.3 Proposed Internal Transport Facilities

2.3.1 The Proposed PRS Development is mainly served as a public riding school. As there is no relevant requirement for the Proposed PRS Development specified in Hong Kong Planning Standard Guideline (HKPSG). Reference has been made with existing Tuen Mun Public Riding School (TMPRS). The proposed parking and servicing facilities for the Proposed PRS Development are summarized in **Table 2.2**.

Table 2.2 Proposed Parking and Servicing Facilities of the Proposed Development

Parking Facilities	Dimension	Location ⁽⁷⁾	Proposed Provision
Car Parking Space (Staff/Visitor/Maintenance)	5m (L) x 2.5m (W)	L	50
		M	3
		U	5
Accessible Car Parking Space	5m (L) x 3.5m (W)	L	4
		M	2
		U	2
Motorcycle Parking Space	2.4m (L) x 1.0m (W)	L	4 ⁽¹⁰⁾
Coach Parking Space	12m (L) x 3.5m (W)	L	2 ⁽³⁾
Golf Cart Parking Space	4m (L) x 2m (W)	L	7
		M	3
		U	4
Shuttle Parking Space	8m (L) x 3m (W)	L	3 ⁽⁵⁾
Loading/Unloading Bay	9.6m (L) x 3.0m (W)	M	1
		U	1
Loading/Unloading Bay	5.3m (L) x 2.5m (W)	M	1 ⁽⁶⁾
Loading/Unloading Bay	11m (L) x 3.5m (W)	L	1 ⁽⁹⁾
Loading/Unloading Bay	16m (L) x 3.5m (W)	L	1 ⁽⁶⁾
Loading/Unloading Bay	12m (L) x 5.0m (W)	M	1 ⁽⁹⁾
General Lay-by	25m (L) x 2.5m (W)	L	1

Note: (1) Under Tuen Mun PRS, 49 nos. of parking spaces has been provided for 95 horse stalls. With reference to the parking ratio in Tuen Mun PRS, a minimum of 39 parking spaces will be required at TKO PRS. Considering there will be internal transportation between the three platforms at TKO PRS and additional parking spaces have been provided (i.e. Total 59 nos.)

(2) With reference HKSPG, minimum 1 accessible parking space should be provided for every 50 parking spaces.

(3) Operation need for group visitors

(4) Operation need for staff transportation between 3 platforms

(5) Operational need for visitors transportation between 3 platforms

(6) Operational need for hay/beddings delivery

(7) L: Lower Platform, M: Middle Platform, U: Upper Platform

(8) Operational need for Horse

(9) Operational need for Refuse Collection Vehicle

(10) 5% of the total no. of car parking space provided

Remark: It is proposed to provide 14 nos. cycle parking spaces near the end of cycle track at Chun Yat Street. The exact number and location will be further agreed with Transport Department separately.

2.4 Vehicular Access Arrangement of the Proposed PRS Development

2.4.1 The proposed vehicular access of the proposed PRS development is located at the intersection of Chun Yat Street and Chun Sing Street. The vehicular access arrangement is shown in **Drawing No. 2.5**. Swept path analysis of 12m coaches have also been conducted and illustrated in **Drawing No. 2.5A**.

2.5 Pedestrian Access Arrangement of the Proposed PRS Development

- 2.5.1 At present, there is no proper crossing facilities at Chun Yat Street near main entrance of the proposed development. To enhance pedestrian accessibility to the proposed PRS development, a cautionary pedestrian crossing across Chun Yat Street has been proposed. The indicative location of pedestrian crossing is as indicated in **Drawing No. 2.5**.
- 2.5.2 With the proposed crossing facility, the pedestrian to/from proposed development can walk conveniently to the new bus stop at Chun Sing Street. The proposed pedestrian routing is presented below and illustrated in **Annex A**.

3. EXISTING TRAFFIC CONTEXT

3.1 Local Road Network

- 3.1.1 Chun Yat Street is a single 2-lane carriageway, which connects with Wan Po Road and Chun Choi Street. It is the main access to HKCOLO and Tai Chik Sha Ambulance Depot.
- 3.1.2 Wan Po Road is a dual 2-lane local distributor linking Tseung Kwan O Industrial Estate and Tseung Kwan O other areas, running in north-south direction.
- 3.1.3 Chun Sing Street is a single 2-lane carriageway connecting Chun Yat Street to the north and ends with cul-de-sac to the south. It provides the direct access for HSBC building.

3.2 Critical Junctions

- 3.2.1 Total of five local critical junctions along Wan Po Road, as listed in **Table 3.1**, are identified for assessment purpose in this study. The locations of the critical junctions are indicated in **Drawing No. 3.1**.

Table 3.1 Locations of Critical Junctions

Ref. ⁽¹⁾	Junction	Type	Drawing No.
A	Wan Po Road / Chun Yat Street	Signal	3.2
B	Wan Po Road / Wan O Road	Signal	3.3
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	Signal	3.4
D	Wan Po Road / LOHAS Park Road	Signal	3.5
E	Wan O Road / Sunrise Boulevard	Signal	3.6

Note: (1) Locations refer to **Drawing no. 3.1**.

- 3.2.2 The existing layout arrangements of these five local critical junctions are shown in **Drawing Nos. 3.2 to 3.6**.
- 3.2.3 In order to appraise the existing traffic conditions of these junctions, a manual classified traffic count was conducted at the identified key junctions to establish the current traffic condition. The survey was undertaken on a typical weekday on November 2024 during the AM peak hour of 07:30 to 10:30 and PM peak hour of 15:30 to 21:00 and on a typical weekend on October 2025 from 16:30 to 18:30. Analysis of the observed traffic data indicates that the AM and PM peak hour flows occurred from 08:00 to 09:00 and from 17:00 to 18:00 on weekday, and peak hour flows occurred from 17:00 to 18:00 at weekend respectively. The observed traffic flows are shown in **Drawing No. 3.7** and **Drawing No. 3.8** respectively.
- 3.2.4 Existing operational performance of the critical junctions during weekday and weekend and the results are listed in **Table 3.2** and **Table 3.3**.

Table 3.2 Existing Junction Operational Performance – Weekday

Ref.	Junction	RC/ RFC	
		AM Peak	PM Peak
A	Wan Po Road / Chun Yat Street	81%	69%
B	Wan Po Road / Wan O Road	43%	85%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	68%	>100%
D	Wan Po Road / LOHAS Park Road	>100%	>100%
E	Wan O Road / Sunrise Boulevard	60%	>100%

Remark: RC = Reserve Capacity, RFC = Ratio to Flow capacity

Table 3.3 Existing Junction Operational Performance – Weekend

Ref.	Junction	RC/ RFC
		PM Peak
A	Wan Po Road / Chun Yat Street	>100%
B	Wan Po Road / Wan O Road	>100%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	>100%
D	Wan Po Road / LOHAS Park Road	>100%
E	Wan O Road / Sunrise Boulevard	79%

Remark: RC = Reserve Capacity, RFC = Ratio to Flow capacity

- 3.2.5 **Table 3.2** and **Table 3.3** indicate that all the key local junctions are operating within capacity during peak hour periods.

3.3 Existing Road Links

- 3.3.1 Road links within the study area were identified for assessment of traffic impact for the proposed PRS development and summarized in **Table 3.4**.

Table 3.4 Existing Road Links for Assessment

Ref.	Road Link	Direction
S1	Wan Po Road (between LOHAS Park Road and Shek Kok Road)	Northbound
		Southbound
S2	Wan Po Road (between Shek Kok Road and Wan O Road)	Northbound
		Southbound
S3	Wan Po Road (between Wan O Road and Chun Yat Street)	Northbound
		Southbound
S4	Wan O Road	Eastbound
		Westbound
S5	Chun Yat Street (between Wan Po Road and Chun)	Eastbound
		Westbound

- 3.3.2 The locations of the above 4 road links are illustrated in **Drawing No. 3.1**.

- 3.3.3 Existing operational performance of the road links during weekday and weekend and the results are listed in **Table 3.5** and **Table 3.6**.

Table 3.5 Existing Road Link Operational Performance in 2024 - Weekday

Index	Dir.	2024 Obs. Flows (pcu/hr)		Design Capacity (Veh/hr)	2024 Obs. Flows (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	645	810	2,800	475	630	0.17	0.23
	SB	1,110	735	2,600	865	580	0.33	0.22
S2	NB	440	530	2,800	310	400	0.11	0.14
	SB	935	480	2,600	725	340	0.28	0.13
S3	NB	1,080	1,170	2,800	620	785	0.22	0.28
	SB	1,450	880	2,800	990	515	0.35	0.18
S4	EB	840	660	4,200	550	430	0.13	0.10
	WB	965	900	2,600	610	620	0.24	0.24
S5	EB	130	65	1,100	105	50	0.10	0.05
	WB	115	80	1,100	85	60	0.08	0.06

Table 3.6 Existing Road Link Operational Performance in 2025 - Weekend

Index	Dir.	2025 Obs. Flows (pcu/hr)	Design Capacity (Veh/hr)	2025 Obs. Flows (Veh/hr)	V/C Ratio
S1	NB	635	2,800	505	0.18
	SB	650	2,600	520	0.20
S2	NB	455	2,800	335	0.12
	SB	435	2,600	300	0.12
S3	NB	910	2,800	570	0.20
	SB	710	2,800	385	0.14
S4	EB	580	4,200	380	0.09
	WB	760	2,600	515	0.20
S5	EB	50	1,100	35	0.03
	WB	55	1,100	45	0.04

3.3.4 The results in **Table 3.5** and **Table 3.6** indicated that all the identified road links are at present operating with ample space capacity.

3.4 Existing Pedestrian Conditions

3.4.1 In order to appraise the existing condition of footpaths in the close proximity of the proposed development, pedestrian head count survey has been conducted in the vicinity of the proposed development at a typical weekday and weekend in October 2025 to ascertain the pedestrian demand at existing pedestrian facilities. Analysis of the observed pedestrian flows data indicates that the AM and PM peak 15-minute flows occurred from 08:45 to 09:00 and from 18:10 to 18:25 at weekday, and peak 15-minute flows occurred from 17:00 to 17:15 at weekend respectively. The location of existing pedestrian facilities connecting the proposed development are indicated in **Drawing No. 3.9**.

3.4.2 The footpaths along the major routes are identified for assessment and are summarised in **Table 3.7**.

Table 3.7 Existing Pedestrian Facilities for Assessment

Ref.	Pedestrian Facilities
Footpaths	
F1	Northern Footpath of Sunrise Blvd near Wan Po Road
F2	Western Footpath of Wan Po Road near Sunrise Blvd
F3	Western Footpath of Wan Po Road near Chun Yat Street EB
F4	Southern Footpath of Chun Yat Street near Wan Po Road NB
F5	Western Footpath of Wan Po Road near Chun Yat Street WB
F6	Southern Footpath of Chun Yat Street near Wan Po Road SB
F7	Southern Footpath of Wan Po Road near Wan O Road

3.4.3 Operational assessment for the footpaths at the observed peak 15-minute flows and existing signalized crossing during weekday and weekend have been carried out and the results are summarised in **Table 3.8** and **Table 3.9** respectively.

Table 3.8 Existing Footpath Operational Performance in 2025 - Weekday

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)		Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾		Level of Service (LOS) ⁽⁴⁾	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
F1	3.50	2.50	20	30	0.53	0.80	A	A
F2	3.60	2.60	30	60	0.77	1.54	A	A
F3	3.60	2.60	75	55	1.92	1.41	A	A
F4	4.50	3.50	110	55	2.10	1.05	A	A
F5	3.50	2.50	60	25	1.60	0.67	A	A
F6	5.00	4.00	5	5	0.08	0.08	A	A
F7	3.90	2.90	10	10	0.23	0.23	A	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

Table 3.9 Existing Footpath Operational Performance in 2025 - Weekend

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)	Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾	Level of Service (LOS) ⁽⁴⁾
F1	3.50	2.50	70	1.87	A
F2	3.60	2.60	25	0.64	A
F3	3.60	2.60	20	0.51	A
F4	4.50	3.50	10	0.19	A
F5	3.50	2.50	5	0.13	A
F6	5.00	4.00	5	0.08	A
F7	3.90	2.90	10	0.23	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

3.4.4 According to the results in **Table 3.8** and **Table 3.9**, all assessed footpaths are operating within capacity.

4. TRAFFIC FORECAST (CONSTRUCTION AND OPERATION)

4.1 Design Year

- 4.1.1 It is anticipated that the Proposed PRS Development will be completed and operated by year 2030.
- 4.1.2 In order to assess the impact of the construction traffic on the local road network, year 2030 has been adopted for the design year for construction traffic impact assessment during construction stage.
- 4.1.3 In order to assess the impact of the operation traffic on the local road network, it is necessary to forecast the traffic flows for design year 2033, the adopted design year, which is 3 years upon completion of proposed PRS development during operation stage for normal operation on weekday and event day at weekend.
- 4.1.4 To investigate the traffic impact of the proposed PRS development on the surrounding road network, the operational performance of the critical junctions and footpaths that is based on the forecast peak hour vehicular traffic flows during construction stage and operation stage were assessed under the following scenarios:

Construction Stage

- 2030 Reference Traffic Forecast (without construction works)
- 2030 Design Traffic Forecast (with construction works)

Operation Stage

- 2033 Reference Traffic Forecast (without proposed PRS development) – Weekday
- 2033 Reference Traffic Forecast (without proposed PRS development) – Weekend
- 2033 Design Traffic Forecast (with proposed PRS development) – Normal Operation
- 2033 Design Traffic Forecast (with proposed PRS development) – Event Day

4.2 Traffic Forecast Assumptions

- 4.2.1 To estimate the 2030 reference traffic flows (without construction works) and 2033 reference traffic flows (without proposed PRS development) in the local road network, an appropriate growth factor has to be identified for the area in the first instance with reference to the following information.
- Historical Trend - Historical traffic data of the Annual Traffic Census (ATC) reports published annually by Transport Department;
 - Planning Data - Base and future years (2021, 2026 & 2031) of planning data for 2021-based Territorial Population and Employment Data Matrix (TPEDM) published by Planning Department; and
 - Hong Kong Population Projection 2022 – 2046 published by Census and Statistics Department.

Historical Trend

- 4.2.2 The transport department has traffic count station in the vicinity of the proposed development. The concerned traffic count station located within the study area have been selected between years 2018 and 2023. The record of traffic flows and the annual percentage change at the concerned traffic count station have been extracted from the ATC, to establish the historical growth trend and summarized in **Table 4.1**.

Table 4.1 ATC Traffic Counts between Year 2018 to Year 2023

Station No.	Road Name	Average Annual Daily Traffic (AADT)					
		2018	2019	2020	2021	2022	2023
5304	Wan Po Road	40,700	44,800	43,100	45,130	43,160	30,420
Annual Average Growth Rate (%)		-5.66%					

Planning Data

- 4.2.3 Reference has been made to the latest 2021-Based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department for years 2021, 2026 and 2031 in the study area. The average annual growth rate from years 2021 to 2031 is illustrated in **Table 4.2**.

Table 4.2 Population and Employment Growth in the Local Area

TPEDM Zone	Population & Employment Growth				Growth Rate per annum (%)
	2021	2024 ⁽¹⁾	2026	2031	2024-2031
Sai Kung	600,600	631,200	643,350	662,250	0.69%

Note: (1) interpolated from years 2019 and 2026

Hong Kong Population Projection

- 4.2.4 For years beyond 2031, reference has been made to planning data from Hong Kong Population Projection 2022 – 2046 published by Census and Statistics Department for 2031 and 2036. The average annual growth rate from years 2031 - 2036 is illustrated in **Table 4.3**.

Table 4.3 Hong Kong Population Projection 2022 – 2046

Hong Kong	Population		Growth Rate per annum (%)
	2031	2036	2031-2036
	7,820,200	8,022,400	+0.51%

Adopted Growth Rate

- 4.2.5 The annual growth rate of +0.69% derived from TPEDM data for years from 2024 to 2031 is the highest. For year beyond 2031, the annual growth rate derived from Hong Kong Population Projection is +0.51% p.a..
- 4.2.6 For conservative, an annual growth of +0.69% for 2024 to 2031 and +0.51% 2031 to 2033 were adopted to project the 2024 observed traffic flows to 2033 traffic flows. An annual growth of +0.69% for 2024 to 2030 was adopted to project the 2024 observed traffic flows to 2030 traffic flows.

4.3 Committed and Potential Development

4.3.1 In the vicinity of the proposed development, there are some planned/committed developments. It is anticipated that the major traffic growth in the area will be contributed by these planned/committed developments. The design parameters, estimated vehicular trips of the committed developments are summarised in **Table 4.4**.

Table 4.4 Trip Generation / Attraction of Committed/Planned in the Vicinity

Index	Planned/ Committed Development	Adopted Trip Rates (pcu/hr/flats or pcu/hr/rooms or pcu/hr/100m ² GFA)				Trip Generation (pcu/hr)			
		AM		PM		AM		PM	
		Gen	Att	Gen	Att	Gen	Att	Gen	Att
1	LOHAS Park Development (Package 11 to 13) ⁽¹⁾ -Average Flat size ~60m ² -No. of Units: 6,400	0.0718 ⁽²⁾	0.0425 ⁽²⁾	0.0286 ⁽²⁾	0.0370 ⁽²⁾	460	272	183	237
2	Development at GIC Site (RTHK Site) on Wan Po Road ⁽³⁾	-	-	-	-	22 ⁽⁴⁾	39 ⁽⁴⁾	42 ⁽⁴⁾	41 ⁽⁴⁾
3	Data Centre Development Site at TKOTL 131 ⁽⁵⁾ -112,640 m ² of GFA	0.0045 ⁽⁶⁾	0.0114 ⁽⁶⁾	0.0114 ⁽⁶⁾	0.0045 ⁽⁶⁾	6	13	13	6
4	Government Laboratory	-	-	-	-	30 ⁽⁷⁾	30 ⁽⁷⁾	30 ⁽⁷⁾	30 ⁽⁷⁾
5	Public Housing Development at Pak Shing Kok Road, Tseung Kwan O ⁽⁸⁾ -Average Flat size ~40m ² -No. of Units: 3,024 -Retail: 1,715m ² of GFA	0.0432 ⁽⁹⁾	0.0326 ⁽⁹⁾	0.0237 ⁽⁹⁾	0.0301 ⁽⁹⁾	131	99	72	91
		0.2296 ⁽¹⁰⁾	0.2434 ⁽¹⁰⁾	0.3100 ⁽¹⁰⁾	0.3563 ⁽¹⁰⁾	4	4	5	6
6	Chinese Medicine Hospital Development and Government Chinese Medicines Testing institute (GCMTI) ⁽¹¹⁾								
	-No. of beds: 400	0.2125 ⁽¹²⁾	0.3281 ⁽¹²⁾	0.3294 ⁽¹²⁾	0.1706 ⁽¹²⁾	85	132	132	69
	-No. of public carpark space: 146	0.2621 ⁽¹³⁾	0.2863 ⁽¹³⁾	0.1613 ⁽¹³⁾	0.2379 ⁽¹³⁾	38	42	24	35
7	Public Housing Development at Chiu Shun Road -Average Flat size <50m ² -No. of Units: 594	0.0622 ⁽¹⁴⁾	0.0426 ⁽¹⁴⁾	0.0297 ⁽¹⁴⁾	0.0401 ⁽¹⁴⁾	37	26	18	24
8	Residential Development at Pak Shing Kok Ventilation Building ⁽¹⁵⁾ -Average Flat size <60m ² -No. of Units: 610	0.0718 ⁽¹⁶⁾	0.0425 ⁽¹⁶⁾	0.0286 ⁽¹⁶⁾	0.0370 ⁽¹⁶⁾	44	26	18	23

Note:

- (1) Refer to the approved planning application by TPB in 6 February 2015 (No.:A/TKO/98) and MTR official website
- (2) TPDM mean trip rates for Private Housing average flat size 60m².
- (3) Refer to Legislative Council Agenda A 17/18- The government has downgraded the project from Category B to Category C according to the official record of proceeding for the Legislative Council meeting on 8 November 2017.
- (4) Although the development scheme is uncertain, it is assumed that the site would be still reserved for the new broadcasting house of RTHK. In-house trip rates as surveyed from the existing RTHK sites (including Television House, Broadcasting House and Educational TV).
- (5) Refer to the clause of Building Covenant in Conditions of Sale for the lot as available on Lands Departments Website.
- (6) Trip Rate obtained from in-house trip rate survey conducted at existing data centre in TKOTL 122
- (7) Reference to meeting minutes of Sai Kung District Council Meetings on 7 May 2018, it is anticipated 20 veh/hr during peak hours, pcu factor of 1.5pcu/veh is adopted.
- (8) Reference to the planning brief from Hong Kong Housing Authority on 15 July 2022.

- (9) TPDM mean trip rates for Subsidised Housing: Public Rental flat size 40m².
- (10) TPDM mean trip rates for retail.
- (11) Reference to approved planning application by TPB in 25 Nov 2022 (No.:A/TKO/127).
- (12) Trip Rate obtained from in-house trip rate survey conducted at Prince of Wales Hospital.
- (13) Trip Rate obtained from in-house trip rate survey conducted at Cheung Sha Wan Government Offices Carpark.
- (14) Reference to "Subsidised Housing with 50sqm average flat size" from TPDM
- (15) Refer to MTR Properties (https://www.mtr.com.hk/ch/corporate/properties/tkol_hanghau.html)
- (16) Reference to "Private Housing with 60sqm average flat size" from TPDM

4.4 Reference Traffic Forecast

- 4.4.1 Based on an annual growth rate between 2024 to 2030 is +0.69% p.a., 2030 reference traffic flows (without construction works) have been projected from 2024 observed flows and shown in **Drawing No. 4.1**.

2030 Reference Flows (without construction works) = 2024 Observed Traffic Flows x Growth Factor (+0.69% for 6 years)

- 4.4.2 Based on an annual growth rate between 2024 to 2031 is +0.69% p.a. and 2031 to 2033 is +0.51% p.a. and the traffic generation of committed and potential developments shown in **Table 4.4**, 2033 reference traffic flows (without PRS development) have been projected from 2024 observed flows on weekday and at weekend shown in **Drawing Nos. 4.2** and **4.3** respectively.

2033 Reference Flows (without PRS development) – Weekday = 2024 Observed Traffic Flows (Weekday) x Growth Factor (+0.69% for 7 years and +0.51% for 2 years) + Committed Development Traffic

2033 Reference Flows (without PRS development) – Weekend = 2025 Observed Traffic Flows (Weekend) x Growth Factor (+0.69% for 6 years and +0.51% for 2 years) + Committed Development Traffic

4.5 Construction Traffic Generation of Proposed PRS Development

- 4.5.1 According to construction programme, the proposed PRS development will generate and attract 75 trucks/day (i.e. 10 working hours) or 7.5 trucks/hour one-way. **Table 4.5** summarizes the construction traffic generations for the construction works at the AM and PM peak hour.

Table 4.5 Construction Traffic Generation of the Proposed PRS Development (pcu/hr)

Peak Hour Construction Traffic AM(PM)	
Generation	Attraction
19(19)	19(19)

Remark: Adopted pcu factor 2.5 for construction vehicle

- 4.5.2 Construction of the Proposed PRS Development would generate a two-way total of 38 pcu/hr in the AM and PM peak.

4.6 Proposed PRS Development Traffic Trips

Normal Operation

- 4.6.1 In order to estimate the traffic generation and attraction for normal operation of the proposed PRS development, reference has been made to the trip rate survey conducted at existing TMPRS on a typical weekday in November 2024. The adopted trip rate is shown in **Table 4.6**.

Table 4.6 Adopted Trip Rates for the Proposed PRS Development (pcu/hr/horse stall)

Reference Site	AM Peak ⁽¹⁾		PM Peak ⁽¹⁾	
	Generation	Attraction	Generation	Attraction
Tuen Mun Public Riding School (95 horse stalls)	0.108	0.149	0.176	0.149

Note: (1) AM and PM peak hourly flows occurred at 09:00 to 10:00 and 16:15 to 17:15 respectively.

- 4.6.2 Based on the adopted trip rates given in **Table 4.6**, the total trips generated by the proposed PRS development was computed and shown in **Table 4.7**.

Table 4.7 Trip Generation for Normal Operation of Proposed PRS Development (pcu/hr)

Development Parameter	AM Peak ⁽¹⁾		PM Peak ⁽¹⁾	
	Generation	Attraction	Generation	Attraction
Proposed PRS Development (74 horse stalls)	8	11	13	11

Note: (1) AM and PM peak hourly flows occurred at 09:00 to 10:00 and 16:15 to 17:15 respectively.

- 4.6.3 The Proposed PRS Development would generate a two-way total of 19 pcu/hr and 24 pcu/hr in the AM and PM peak respectively under normal operation.

Event Day

- 4.6.4 Apart from the normal operation, assessment has been conducted for the maximum capacity for the proposed development during the open day. The PRS open day will be held once in a year with a maximum of 660 visitors in hour. With reference to previous riding school, the open day will be held in the afternoon of a typical weekend.
- 4.6.5 In order to estimate the trip generation and attraction for event day of the proposed PRS development, the anticipated transport mode of the visitor on open day has made reference to visitor data at Tuen Mun PRS as summarised in **Table 4.8**.

Table 4.8 Trip Generation for Event Day of Proposed PRS Development

Mode of Transport	Visitors		Traffic Flow (pcu/hr)	
	Generation	Attraction	Generation	Attraction
Private Car	96 ⁽²⁾	96 ⁽²⁾	32 ⁽³⁾	32 ⁽³⁾
Taxi	138 ⁽¹⁾	297 ⁽¹⁾	46 ⁽²⁾	99 ⁽²⁾
Public Transport	426 ⁽¹⁾	267 ⁽¹⁾	— ⁽⁴⁾	— ⁽⁴⁾
Total	660⁽⁵⁾	660⁽⁵⁾	78	131

Note:

- (1) Based on surveyed public transport modal split at existing TMPRS
- (2) Assumed occupancy per private car will be 3 ppl
- (3) All visitor car parking spaces of the proposed PRS development are assumed to be occupied on Event Day under a prebooking system (32 nos)
- (4) Public transport demand will be absorbed by existing public transport services. Details refer to **Section 6.2**.
- (5) Maximum nos. of visitors of event at TKOPRS

- 4.6.6 The Proposed PRS Development would generate a two-way total of 159pcu/hr in the peak hour on event day.

4.7 Design Traffic Forecast

2030 Design Traffic Flows (with construction works)

- 4.7.1 The construction traffic flows of the proposed PRS development in **Table 4.5** were then superimposed onto the 2030 reference traffic flows (without construction works) as shown in **Drawing No. 4.1**.

2030 Design Flows (with construction works) = 2030 Reference Flows + Construction Traffic of Proposed PRS Development

- 4.7.2 The forecasted Year 2033 Design Traffic Flows are shown in **Drawing No. 4.4**.

2033 Design Traffic Flows (with proposed PRS development)

- 4.7.3 The development flows of the proposed PRS development were then superimposed onto the 2033 reference traffic flows (without PRS development) as shown in **Drawing Nos. 4.2 and 4.3**.

2033 Design Flows (with proposed PRS development) – Normal Operation = 2033 Reference Flows - Weekday + Proposed PRS Development Traffic (Normal Operation)

2033 Design Flows (with proposed PRS development) – Event Day = 2033 Reference Flows - Weekend + Proposed PRS Development Traffic (Event Day)

- 4.7.4 The forecasted Year 2033 Design Traffic Flows for Normal Operation and Event Day are shown in **Drawing Nos. 4.5 and 4.6** respectively.

4.8 Sensitivity Traffic Forecast for TKO Area 137

- 4.8.1 Under the Agreement No. CE40/2023 (CE), Civil Engineering and Development Department (CEDD) has conducted the technical assessments for the development of Tsuen Kwan O Area 137 and associated Reclamation sites. The planned development targeted to produce 50,000 flats, located at the southern end of Wan Po Road, Tseung Kwan O.
- 4.8.2 The population intake will take place in phases from year 2030 to year 2041 tentatively. To ascertain the potential traffic impact of TKO Area 137, the associated development traffic generations have been estimated and summarised in **Table 4.9**.

Table 4.9 Traffic Generation / Attraction of TKO Area 137

Planned/ Committed Development	Adopted Trip Rates (pcu/hr/flats or pcu/hr/rooms or pcu/hr/100m ² GFA)				Trip Generation (pcu/hr)			
	AM		PM		AM		PM	
	Gen	Att	Gen	Att	Gen	Att	Gen	Att
Tseung Kwan O Area 137 <i>Public Housing</i> ⁽¹⁾⁽²⁾ - Average Flat size ~55m ² -No. of Units: 34,500	0.0622 ⁽³⁾	0.0426 ⁽³⁾	0.0297 ⁽³⁾	0.0401 ⁽³⁾	2,146	1,470	1,025	1,384
<i>Private Housing</i> ⁽¹⁾⁽²⁾ -Average Flat size ~82.5m ² -No. of Units: 15,500	0.1058 ⁽⁴⁾	0.0605 ⁽⁴⁾	0.0426 ⁽⁴⁾	0.0590 ⁽⁴⁾	1,640	938	661	915
<i>Retail/Commercial</i> ⁽¹⁾⁽²⁾ -194,080m ²	0.2296 ⁽⁵⁾	0.2434 ⁽⁵⁾	0.3100 ⁽⁵⁾	0.3563 ⁽⁵⁾	446	473	602	692
Total					4,232	2,881	2,288	2,991

Note:

- (1) Refer to Proposed Amendments to the Approved Tseung Kwan O Outline Zoning Plan No. S/TKO/30 (https://www.tpb.gov.hk/en/meetings/TPB/Agenda/1330_tpb_agenda.html)
- (2) Refer to LC Paper No. CB(1)44/2035(05) (<https://www.legco.gov.hk/yr2023/english/panels/dev/papers/dev20230131cb1-44-5-e.pdf>)
- (3) TPDM mean trip rates for HOS/PRPS with average flat size 50m².
- (4) TPDM mean trip rates for Private Housing with average flat size 80m².
- (5) TPDM mean trip rates for Retail.

- 4.8.3 Based on the latest available information, the full population of TKO Area 137 has been assumed in year 2033 as a conservative approach.
- 4.8.4 The development flows of the TKO Area 137 were then superimposed onto the 2033 Design Flows (with proposed PRS development) under Normal Operation (**Drawing No. 4.5**).
- 4.8.5 The forecasted Year 2033 Design Traffic Flows (with TKO Area 137 development) for sensitivity test are shown in **Drawing No. 4.7**.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Construction Traffic Impact Assessment

- 5.1.1 To assess the traffic impact due to the construction traffic of the Proposed PRS Development on the local road network, capacity analysis of the identified critical junctions and road links in the study area for both reference and design scenarios in year 2030 has been carried out based on the existing junction layouts. The results are summarised and presented in **Table 5.1**, **Table 5.2** and **Table 5.3**.

Table 5.1 Operation Performance of Critical Junctions in 2030

Ref.	Junction	RC/RFC ⁽¹⁾			
		2030 Reference		2030 Design	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Wan Po Road / Chun Yat Street	74%	62%	70%	58%
B	Wan Po Road / Wan O Road	37%	60%	35%	58%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	20%	54%	20%	53%
D	Wan Po Road / LOHAS Park Road	88%	>100%	87%	>100%
E	Wan O Road / Sunrise Boulevard	19%	79%	18%	79%

Note: (1) RC = Reserve Capacity, RFC = Ratio to Flow capacity

- 5.1.2 **Table 5.1** indicates that all the critical junctions will be operating within capacity during the peak periods under reference and design scenario in year 2030.

Table 5.2 Road Link Operational Performance in 2030 (without Construction Works)

Index	Dir.	2030 Ref. Flows (pcu/hr)		Design Capacity (Veh/hr)	2030 Ref. Flows (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	920	1070	2,800	680	835	0.24	0.30
	SB	1,545	1,010	2,600	1,200	800	0.46	0.31
S2	NB	670	745	2,800	470	560	0.17	0.20
	SB	1,325	730	2,600	1,030	520	0.40	0.20
S3	NB	1,125	1,220	2,800	645	820	0.23	0.29
	SB	1,515	920	2,800	1,035	540	0.37	0.19
S4	EB	1,085	880	4,200	710	570	0.17	0.14
	WB	1,355	1,170	2,600	860	805	0.33	0.31
S5	EB	135	70	1,100	110	55	0.10	0.05
	WB	120	85	1100	90	65	0.08	0.06

Table 5.3 Road Link Operational Performance in 2030 (with Construction Works)

Index	Dir.	2030 Des. Flows (pcu/hr)		Design Capacity (Veh/hr)	2030 Des. Flows (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	925	1,075	2,800	685	840	0.25	0.30
	SB	1,550	1,015	2,600	1,205	805	0.46	0.31
S2	NB	675	750	2,800	475	565	0.17	0.20
	SB	1,330	735	2,600	1,030	520	0.40	0.20
S3	NB	1,145	1,240	2,800	660	830	0.24	0.30
	SB	1,535	940	2,800	1,045	550	0.37	0.20
S4	EB	1,100	895	4,200	720	580	0.17	0.14
	WB	1,370	1,185	2,600	870	815	0.34	0.31
S5	EB	155	90	1,100	125	70	0.11	0.06
	WB	140	105	1,100	105	80	0.10	0.07

5.1.3 Table 5.2 and Table 5.3 indicates that all the road links will be operating within capacity during the peak periods under reference and design scenario in year 2030.

5.2 Operational Traffic Impact Assessment

5.2.1 In order to evaluate the traffic impact due to the Proposed PRS Development on the local road network, capacity analysis of the identified critical junctions and road links in the study area for both reference and design scenarios in year 2033 has been carried out based on the existing junction layouts. The results are summarised and presented in Table 5.4 to Table 5.9.

Table 5.4 Operation Performance of Critical Junctions in 2033

Ref.	Junction	RC/RFC ⁽¹⁾			
		2033 Reference (Weekday)		2033 Design (Normal Operation)	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Wan Po Road / Chun Yat Street	71%	59%	69%	57%
B	Wan Po Road / Wan O Road	35%	58%	34%	57%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	19%	51%	19%	50%
D	Wan Po Road / LOHAS Park Road	86%	>100%	85%	>100%
E	Wan O Road / Sunrise Boulevard	18%	77%	17%	77%

Note: (1) RC = Reserve Capacity, RFC = Ratio to Flow capacity

Table 5.5 Operation Performance of Critical Junctions in 2033

Ref.	Junction	RC/RFC ⁽¹⁾	
		2033 Reference (Weekend)	2033 Design (Event Day)
A	Wan Po Road / Chun Yat Street	>100%	96%
B	Wan Po Road / Wan O Road	76%	73%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	79%	69%
D	Wan Po Road / LOHAS Park Road	>100%	>100%
E	Wan O Road / Sunrise Boulevard	42%	42%

Note: (1) RC = Reserve Capacity, RFC = Ratio to Flow capacity

Table 5.6 Road Link Operational Performance in 2033 (without Proposed Development) – Weekday

Index	Dir.	2033 Ref. Flows (pcu/hr)		Design Capacity (Veh/hr)	2033 Ref. Flows (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	930	1,085	2,800	690	845	0.25	0.30
	SB	1,570	1,025	2,600	1,220	810	0.47	0.31
S2	NB	680	755	2,800	475	570	0.17	0.20
	SB	1,340	745	2,600	1,040	530	0.40	0.20
S3	NB	1,145	1,245	2,800	660	835	0.24	0.30
	SB	1,540	935	2,800	1,050	545	0.38	0.20
S4	EB	1,100	890	4,200	720	580	0.17	0.14
	WB	1,375	1,190	2,600	870	820	0.34	0.32
S5	EB	140	70	1,100	115	55	0.11	0.05
	WB	120	85	1,100	90	65	0.08	0.06

Table 5.7 Road Link Operational Performance in 2033 (with Proposed Development) – Normal Operation

Index	Dir.	2033 Des. Flows (pcu/hr)		Design Capacity (Veh/hr)	2033 Des. Flows (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	935	1,095	2,800	690	855	0.25	0.31
	SB	1,575	1,030	2,600	1,225	815	0.47	0.31
S2	NB	685	765	2,800	480	575	0.17	0.21
	SB	1,345	750	2,600	1,045	535	0.40	0.21
S3	NB	1,155	1,260	2,800	665	845	0.24	0.30
	SB	1,550	945	2,800	1,055	555	0.38	0.20
S4	EB	1,105	895	4,200	725	580	0.17	0.14
	WB	1,380	1,195	2,600	875	825	0.34	0.32
S5	EB	150	80	1,100	120	60	0.11	0.06
	WB	130	100	1,100	95	75	0.09	0.07

Table 5.8 Road Link Operational Performance in 2033 (without Proposed Development) – Weekend

Index	Dir.	2033 Ref. Flows (pcu/hr)	Design Capacity (Veh/hr)	2033 Ref. Flows (Veh/hr)	V/C Ratio
S1	NB	890	2,800	710	0.25
	SB	925	2,600	740	0.29
S2	NB	665	2,800	490	0.18
	SB	685	2,600	475	0.18
S3	NB	955	2,800	595	0.21
	SB	745	2,800	405	0.15
S4	EB	800	4,200	525	0.13
	WB	1,030	2,600	700	0.27
S5	EB	55	1,100	40	0.04
	WB	60	1,100	50	0.05

Table 5.9 Road Link Operational Performance in 2033 (with Proposed Development) – Event Day

Index	Dir.	2033 Des. Flows (pcu/hr)	Design Capacity (Veh/hr)	2033 Des. Flows (Veh/hr)	V/C Ratio
S1	NB	935	2,800	745	0.27
	SB	985	2,600	785	0.30
S2	NB	710	2,800	525	0.19
	SB	745	2,600	515	0.20
S3	NB	1,035	2,800	645	0.23
	SB	875	2,800	475	0.17
S4	EB	875	4,200	570	0.14
	WB	1,065	2,600	720	0.28
S5	EB	185	1,100	135	0.12
	WB	140	1,100	115	0.11

5.2.2 **Table 5.4** to **Table 5.9** indicates that all the critical junctions and road links will operate within capacity during the peak periods under reference and design scenario in year 2033.

5.3 Sensitivity Test for TKO Area 137

5.3.1 To evaluate the potential impact upon intake of TKO Area 137, sensitivity test has been carried out at Year 2033 with the planned development TKO Area 137. Based on the latest available information, the full population of TKO Area 137 has been assumed in year 2033 as a conservative approach. The results are summarised and presented in **Table 5.10** and **Table 5.11**.

Table 5.10 Operation Performance of Critical Junctions in 2033 - Normal Operation

Ref.	Junction	RC/RFC ⁽¹⁾	
		2033 Design (w/ TKO Area 137) (Normal Operation)	
		AM Peak	PM Peak
A	Wan Po Road / Chun Yat Street	-54%	-28%
B	Wan Po Road / Wan O Road	-66%	-55%
C	Wan Po Road / Shek Kok Road / Sunrise Boulevard	-8%	11%
D	Wan Po Road / LOHAS Park Road	50%	71%
E	Wan O Road / Sunrise Boulevard	-47%	-40%

5.3.2 Note: (1) RC = Reserve Capacity, RFC = Ratio to Flow capacity in **Table 5.10** and **Table 5.11**. **Table 5.10** indicates that Junctions A, B, C and E will operate beyond its capacity during the peak periods under reference and design scenario in year 2033.

Table 5.11 Road Link Operational Performance in 2033 (with TKO Area 137 development) – Normal Operation

Index	Dir.	2033 Des. Flows (w/ TKO Area 137) (Normal Operation) (pcu/hr)		Design Capacity (Veh/hr)	2033 Des. Flows (w/ TKO Area 137) (Normal Operation) (Veh/hr)		V/C Ratio	
		AM	PM		AM	PM	AM	PM
S1	NB	1,360	1,440	2,800	1,005	1,120	0.36	0.40
	SB	2,010	1,480	2,600	1,565	1,170	0.60	0.45
S2	NB	1,110	1,110	2,800	780	835	0.28	0.30
	SB	1,780	1,200	2,600	1,380	855	0.53	0.33
S3	NB	5,390	3,550	2,800	3,100	2,385	1.11	0.85
	SB	4,430	3,935	2,800	3,020	2,305	1.08	0.82
S4	EB	3,555	3,440	4,200	2,330	2,235	0.56	0.53
	WB	5,190	3,140	2,600	3,290	2,165	1.27	0.83
S5	EB	150	80	1,100	120	60	0.11	0.06
	WB	130	100	1,100	95	75	0.09	0.07

5.3.3 **Table 5.11** indicates that all the road links, except S3 northbound and southbound during AM peak, and S4 westbound during AM peak, will operate within capacity during the peak periods under reference and design scenario in year 2033.

5.3.4 It is understood that necessary local road improvement works will be determined from a separated holistic study based on the actual traffic demand to better cater for changing circumstances including the population and traffic demand.

5.3.5 It is worth noting that the above situation is due the potential traffic impact from the planned development, instead of the proposed PRS development. Therefore, no additional traffic improvement works will be required for the proposed PRS development under this sensitivity test.

6. PUBLIC TRANSPORT PROVISION SERVICES

6.1 Public Transport Services

- 6.1.1 At present, there are bus routes and GMB routes operating in the near vicinity to the proposed development. The nearest bus stops are located at Wan Po Road, which is about 300m from the proposed development.
- 6.1.2 Details of the existing public transport services in the vicinity are summarised in **Table 6.1** and illustrated in **Drawing No. 6.1**.

Table 6.1 Existing Public Transport Services in the vicinity

Route	Service	Destinations	Peak Hour Frequency (minutes)
MTR (Drawing No. 6.1)			
TKO Line	MTR	LOHAS Park ↔ North Point	6-7
Buses (Drawing No. 6.1)			
49 ⁽¹⁾	KMB	Ching Fu Court ↔ Tseung Kwan O Industrial Estate	07:00, 07:30, 17:10, 17:30
98	KMB	Tseung Kwan O Industrial Estate ↔ Ngau Tau Kok Station (Circular)	15-20
98D ⁽¹⁾⁽⁴⁾	KMB	LOHAS Park Station → Tsim Sha Tsui East	07:05, 07:30, 07:55, 08:25
290E ⁽¹⁾⁽³⁾	KMB	Tsung Kwan O Industrial Estate ↔ Tsuen Wan West Station	06:55, 07:15, 07:35, 17:05, 17:20, 17:30, 17:50
290X	KMB	LOHAS Park Station ↔ Tsuen Wan West Station	12-40
298E ⁽³⁾	KMB	Hang Hau (North) → Tseung Kwan O Industrial Estate (Circular)	15-30
298F ⁽³⁾	KMB	Hang Hau (North) → Tseung Kwan O Industrial Estate (Circular)	15-25
298X ⁽¹⁾	KMB	Hang Hau (North) (Tseung Kwan O Hospital) ↔ Mei Foo	20-30
690S ⁽¹⁾⁽³⁾	KMB/CTB	Hang Hau (Ming Tak Estate) ↔ Central (Exchange Square)	07:30, 07:36, 07:42, 07:48, 07:54, 08:02, 08:10, 08:20, 08:40, 09:00, 17:40, 18:00, 18:15, 18:30
694S ⁽¹⁾⁽³⁾	CTB	Tiu Keng Leng Station (via: LOHAS Park) ↔ Siu Sai Wan Estate	07:50, 08:10, 17:45, 18:05
790	CTB	Oscar By The Sea (via: LOHAS Park) ↔ Tsim Sha Tsui (Mody Road)	20
793	CTB	Tseung Kwan O Industrial Estate ↔ So Uk	15-60
795 ⁽¹⁾⁽³⁾	CTB	Tseung Kwan O Industrial Estate (via: LOHAS Park) ↔ Cheung Sha Wan (Hoi Tat)	07:30, 07:50, 08:10, 17:50, 18:05, 18:20
796X	CTB	Tseung Kwan O Industrial Estate / Tseung Kwan O Station ↔ Tsim Sha Tsui (East)	12-30
797	CTB	LOHAS Park / Tseung Kwan O Industrial Estate ↔ San Po Kong	20-30

Route	Service	Destinations	Peak Hour Frequency (minutes)
798P ⁽¹⁾⁽³⁾	CTB	Tseung Kwan O Industrial Estate ↔ Tai Wai Station (via: Sha Tin)	06:40, 08:15
798X ⁽¹⁾⁽³⁾	CTB	Tseung Kwan O Industrial Estate ↔ Fo Tan (Chun Yeung Estate) (via: Sha Tin)	07:00, 07:55, 18:20
A28	CTB	LOHAS Park ↔ Airport (via HZMB Hong Kong Port)	55-60
N290 ⁽²⁾	KMB	LOHAS Park Station ↔ Tsuen Wan West Station	00:50, 01:20, 04:20, 04:40
N796 ⁽²⁾	CTB	LOHAS Park ↔ Mongkok (via Tsim Sha Tsui)	20 - 30
GMB (Drawing No. 6.1)			
112M	GMB	LOHAS Park Station ↔ Tseung Kwan O Industrial Estate	12 - 30
112S ⁽²⁾	GMB	Tseung Kwan O Station ↔ Tseung Kwan O Industrial Estate	30
113	GMB	The Beaumont ↔ Hang Hau Station Public Transport Interchange	4 - 15
115	GMB	Tseung Kwan O Industrial Estate (Chun Cheong Street) Terminus ↔ Po Lam	15 - 30

Note: (1) Mon to Fri (except Public Holiday)
(2) Overnight Service
(3) AM/PM Service
(4) Special Departure
(5) Monday to Saturday (except Public Holiday)

6.1.3 The walking distance and time from the nearby public transport have been estimated and summarised in **Table 6.2** and presented diagrammatically in **Annex A**.

Table 6.2 Walking Distance and Time to/from nearby Public Transport Facilities

Index	Location	Walking Distance (m)	Estimated Time Required (min)
1	Bus Stop and GMB stop at Chun Yat St near Wan Po Rd	350	5
2	Bus Stop at Wan O Rd EB	600	9
3	Bus Stop and GMB stop at Wan Po Rd SB near Mega Plus	650	9
4	Bus Stop at Wan Po Rd NB near Chun Cheong St	400	5
5	Bus Stop at Wan O Rd WB	600	9
6	Bus Stop and GMB stop at Wan Po Rd NB near LOHAS Park	700	11

6.1.4 As shown in above, there are comprehensive bus and GMB services provided within the catchment of the proposed development.

6.1.5 Apart from the bus and GMB services, the MTR LOHAS Park Station is the nearest railway station. At present, the walking time between the MTR LOHAS Park Station and proposed development is estimated to be 20min as shown in **Annex A**.

6.1.6 It is anticipated some future users will possibly walk along the existing pedestrian facilities to/from MTR LOHAS Park Station. Nevertheless, to enhance the accessibility to/from MTR Station, potential improvement could be considered. The details will be discussed in **Section 6.3**.

6.2 Public Transport Demand by the Proposed PRS Development

6.2.1 The Peak Hourly Public Transport Demand of the proposed PRS development under the normal operation and event day have been derived and summarised in **Table 6.3**.

Table 6.3 Anticipated PT Demand attracted by Proposed PRS Development for in Year 2033

Normal Operation				Event Day			
AM Peak		PM Peak		Peak Inbound		Peak Outbound	
Inbound	Outbound	Inbound	Outbound				
7 ⁽¹⁾	3 ⁽¹⁾	4 ⁽¹⁾	7 ⁽¹⁾	426 ⁽¹⁾		267 ⁽¹⁾	
				Rail	328 ⁽²⁾	Rail	206 ⁽²⁾
				Bus/GMB	98 ⁽²⁾	Bus/GMB	61 ⁽²⁾

Note: (1) Based on survey public transport demand (pax/stall) collected in TMPRS

(2) Reference to population data on mode of transport in 2021 Population Census, the modal split between railway and road-base transport.

6.2.2 To review the current demand on public transport services in the vicinity of subject PRS, the occupancies of the existing franchised buses and GMB at Wan O Road, Wan Po Road, Chun Yat Street were recorded. The existing occupancy of each bus route are summarised in **Table 6.4** to **Table 6.7** for normal operation and **Table 6.8** to **Table 6.9** for event day respectively.

Normal Operation

Table 6.4 Bus Occupancy in Inbound Direction during AM Peak Hour on Weekday

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 49	Tsing Yi	Wan Po Road SB near MEGA Plus	1 trip	14	76
Bus 98	Ngau Tau Kok		6 trips	239	301
Bus 797	San Po Kong		1 trip	36	54
Bus 798X	Fo Tan		0 trip	-	0
Bus 793	So Uk		3 trips	104	166
Bus 98D	MTR LOHAS Park Station	Wan Po Road SB near LOHAS Park	0 trip	0	0
Bus 298E	Po Lam / Hang Hau	Chun Yat St near Wan Po Rd	4 trips	136	224
Bus 298F		Chun Yat St near Wan Po Rd	0 trip	0	0
GMB 115		Chun Yat St near Wan Po Rd	1 trip	14	2
Bus 790	Tsim Sha Tsui	Wan O Road EB	0 trip	0	0
Bus 796X		Chun Yat St near Wan Po Rd	1 trip	27	63
Bus 290E	Tsuen Wan West	Chun Yat St near Wan Po Rd	0 trip	0	0
Bus 290X		Wan Po Road SB near MEGA Plus	2 trips	23	157
Bus 298X	Mei Foo	Wan O Road EB	0 trip	0	0
Bus 690S	Central		0 trip	0	0
Bus 694S	Siu Sai Wan		0 trip	0	0
Bus 795	Cheung Sah Wan		0 trip	0	0
Bus A28	Airport	Wan Po Road SB near MEGA Plus	0 trip	0	0
Bus 798P	Tai Wai	Wan Po Road SB near MEGA Plus	0 trip	0	0
GMB 112M	Tseung Kwan O Industrial Estate	Wan Po Road NB near LOHAS Park	2 trips	16	16
Total					1,059

Note: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats
(2) Refer to Drawing 6.1

Table 6.5 Bus Occupancy in Outbound Direction during AM Peak Hour on Weekday

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾	
Bus 98	Tseung Kwan O Industrial Estate	Wan Po Rd NB near LOHAS Park	4 trips	163	197	
Bus 290E			0 trip	0	0	
Bus 298E			4 trips	82	278	
Bus 298F			0 trip	0	0	
Bus 796X			2 trips	63	117	
GMB 115			4 trips	30	34	
Bus 49		Wan Po Rd NB near Chun Cheong St	0 trip	0	0	
Bus 793			4 trips	42	318	
Bus 798P			0 trip	0	0	
Bus 798X			0 trip	0	0	
Bus 795		Wan O Rd WB	0 trip	0	0	
Bus A28	MTR LOHAS Park Station LOHAS Park	Wan Po Rd NB near LOHAS Park	1 trip	0	90	
Bus 290X			3 trips	37	233	
Bus 797			1 trip	68	22	
Bus 98D			1 trip	2	88	
Bus 298X	Hang Hau	Wan O Rd WB	2 trips	32	148	
Bus 690S			3 trips	104	166	
Bus 694S	1 trip		27	63		
Bus 790	2 trips		41	139		
GMB 112M	MTR LOHAS Park Station		Wan Po Road SB near MEGA Plus	1 trip	16	0
Total					1,893	

Note: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats
(2) Refer to **Drawing 6.1**

Table 6.6 Bus Occupancy in Inbound Direction during PM Peak Hour on Weekday

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 49	Tsing Yi	Wan Po Road SB near MEGA Plus	0 trip	0	0
Bus 98	Ngau Tau Kok		5 trips	178	272
Bus 797	San Po Kong		2 trips	90	90
Bus 798X	Fo Tan		0 trip	0	0
Bus 793	So Uk		4 trips	78	282
Bus 98D	MTR LOHAS Park Station	Wan Po Road SB near LOHAS Park	0 trip	0	0
Bus 298E	Po Lam / Hang Hau	Chun Yat St near Wan Po Rd	0 trip	0	0
Bus 298F		Chun Yat St near Wan Po Rd	3 trips	28	242
GMB 115		Chun Yat St near Wan Po Rd	5 trips	53	27
Bus 790	Tsim Sha Tsui	Wan O Road EB	2 trips	23	157
Bus 796X		Chun Yat St near Wan Po Rd	3 trips	55	215

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 290E	Tsuen Wan West	Chun Yat St near Wan Po Rd	0 trip	0	0
Bus 290X		Wan Po Road SB near MEGA Plus	3 trips	37	233
Bus 298X	Mei Foo	Wan O Road EB	0 trip	0	0
Bus 690S	Central		0 trip	0	0
Bus 694S	Siu Sai Wan		0 trip	0	0
Bus 795	Cheung Sah Wan		0 trip	0	0
Bus A28	Airport		1 trip	5	85
Bus 798P	Tai Wai	Wan Po Road SB near MEGA Plus	0 trip	0	0
GMB 112M	Tseung Kwan O Industrial Estate	Wan Po Road NB near LOHAS Park	3 trips	24	24
Total					1,627

Noted: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats

(2) Refer to **Drawing 6.1**

Table 6.7 Bus Occupancy in Outbound Direction during PM Peak Hour on Weekday

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 98	Tseung Kwan O Industrial Estate	Wan Po Rd NB near LOHAS Park	6 trips	267	273
Bus 290E			0 trip	0	0
Bus 298E			0 trip	0	0
Bus 298F			3 trips	109	161
Bus 796X			3 trips	37	233
GMB 115			3 trips	40	8
Bus 49		Wan Po Rd NB near Chun Cheong St	1 trip	2	88
Bus 793			3 trips	37	233
Bus 798P			0 trip	0	0
Bus 798X			0 trip	0	0
Bus 795		Wan O Rd WB	0 trip	0	0
Bus A28	MTR LOHAS Park Station	Wan Po Rd NB near LOHAS Park	1 trip	2	88
Bus 290X			2 trips	28	152
Bus 797			4 trips	55	305
Bus 98D			0 trip	0	0
Bus 298X	Hang Hau	Wan O Rd WB	0 trip	0	0
Bus 690S			0 trip	0	0
Bus 694S	Tseung Kwan O		0 trip	0	0
Bus 790			2 trips	28	152
GMB 112M	MTR LOHAS Park Station	Wan Po Road SB near MEGA Plus	0 trip	0	0
Total					1,693

Note: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats

(2) Refer to Drawing 6.1

6.2.3 **Table 6.4 to Table 6.7** indicate that all of existing bus and GMB services has sufficient capacity (i.e., 1,059 > 7 patronage/hr and 1,893 > 3 patronage/hr during AM peak hour inbound and outbound, 1,627 > 4 patronage/hr and 1,693 > 7 patronage/hr during PM peak hour inbound and outbound respectively) to cater for the additional public transport demand due to the proposed PRS development under the normal operation.

Event Day

Table 6.8 Bus Occupancy in Inbound Direction during Peak Hour on Weekend

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 98	Ngau Tau Kok	Wan Po Road SB near MEGA Plus	2 trips	37	143
Bus 797	San Po Kong		2 trips	18	162
Bus 793	So Uk		2 trips	45	135
Bus 298E	Po Lam / Hang Hau	Chun Yat St near Wan Po Rd	1 trip	41	49
Bus 298F		Chun Yat St near Wan Po Rd	2 trips	50	130
GMB 115		Chun Yat St near Wan Po Rd	2 trips	8	27
Bus 790	Tsim Sha Tsui	Wan O Road EB	2 trips	50	130
Bus 796X	Tsim Sha Tsui	Chun Yat St near Wan Po Rd	0 trip	0	0
Bus 290X	Tsuen Wan West	Wan Po Road SB near MEGA Plus	1 trip	5	85
Bus 298X	Mei Foo	Wan O Road EB	0 trips	0	0
Bus A28	Airport	Wan Po Road SB near LOHAS Park	1 trip	5	85
GMB 112M	Tseung Kwan O Industrial Estate	Wan Po Road NB near LOHAS Park	3 trips	34	14
Total					960

Note: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats
(2) Refer to Drawing 6.1

Table 6.9 Bus Occupancy in Outbound Direction during Peak Hour on Weekend

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
Bus 98	Tseung Kwan O Industrial Estate	Wan Po Rd NB near LOHAS Park	5 trips	423	27
GMB 115			3 trips	42	6
Bus 793		Wan Po Rd NB near Chun Cheong St	2 trips	104	76
Bus 796X			1 trip	45	45
Bus 298E			0 trip	0	0
Bus 298F			2 trips	54	126
Bus A28	MTR LOHAS Park Station	Wan Po Rd NB near LOHAS Park	1 trip	5	85
Bus 290X			3 trips	78	192
Bus 797			2 trips	108	72
Bus 298X	Hang Hau	Wan O Rd WB	0 trips	0	0
Bus 790	Tseung Kwan O		3 trips	19	251

Route No.	Origin(s)	Location ⁽²⁾	Observed peak hour Frequency	Existing Average Occupancy (Patronage / hr) ⁽¹⁾	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾
GMB 112M	MTR LOHAS Park Station	Wan Po Road SB near Mega Plus	3 trips	39	9
Total					889

Note: (1) Based on a Bus Capacity of 90 (120 x 75%) passengers/hr and GMB capacity of 16/19 seats
(2) Refer to **Drawing 6.1**

6.2.4 **Table 6.8** and **Table 6.9** indicate that all of existing bus and GMB services has sufficient capacity (i.e., 960 > 98 patronage/hr during peak hour inbound, 889 > 61 patronage/hr during peak hour outbound) to cater for the additional public transport demand due to the proposed PRS development under the event day.

6.2.5 Based on the above assessment results, there will be sufficient bus and GMB capacity to serve the public transport demand of the proposed PRS.

6.3 Proposed Additional Bus Stop at Chun Sing Street

6.3.1 With reference to **Table 6.3**, the railway related demand are summarised in **Table 6.10**.

Table 6.10 Anticipated PT Demand by railway of the Proposed PRS Development

Observed Peak Hour Frequency					
Weekday				Weekend	
AM		PM		Peak Hour	
From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station
7 ⁽¹⁾	3 ⁽¹⁾	4 ⁽¹⁾	7 ⁽¹⁾	328 ⁽²⁾	206 ⁽²⁾

Note: (1) For conservative, assume all public transport (i.e. rail, bus and GMB) demand on weekday.
(2) Refer to **Table 6.3**, for public transport demand on weekend.

6.3.2 As mentioned in **Section 6.1.6**, some future users will possibly walk along the existing pedestrian facilities to/from LOHAS Park Station. To enhance the accessibility to/from MTR Station, it is proposed to study the feasibility to provide some bus services at Chun Sing Street.

6.3.3 At present, there are some existing bus route nos. A28(CTB), 290X (KMB) and 797 (CTB) running along MTR LOHAS Park Station, Chun Yat Street and Chun Sing Street, as shown in **Annex B**.

6.3.4 It is recommended to add a new stop at Chun Sing Street for the above 3 routes to serve the visitors from the proposed PRS development to the MTR LOHAS Park Station. The location of proposed additional stop is **Drawing No. 6.2**.

6.3.5 The observed frequencies and remaining capacities of these 3 bus routes are extracted from to **Table 6.9** and summarised in **Table 6.11** and **Table 6.12**.

Table 6.11 Observed Remaining Capacities of Route Nos. A28, 290X and 797

Route No.	Observed Remaining Capacities (Patronage / hr) ⁽¹⁾					
	Weekday				Weekend	
	AM		PM		Peak	
	From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station
Bus 797	22	54	305	90	162	72
Bus 290X	233	157	152	233	85	192
Bus A28	90	0	88	85	85	85
Total	345	211	545	408	332	349

Note: (1) Based on a Bus Capacity of 120 passengers/hr and GMB capacity of 16/19 seats

Table 6.12 Observed Peak Hour Frequency of Route Nos. A28, 290X and 797

Route No.	Observed Peak Hour Frequency					
	Weekday				Weekend	
	AM		PM		Peak	
	From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station	From MTR LOHAS Park Station	To MTR LOHAS Park Station
Bus 797	1	1	4	2	2	2
Bus 290X	3	2	2	3	1	3
Bus A28	1	0	1	1	1	1
Total	5	3	7	6	4	6
Total (2-way)	8		13		10	

- 6.3.6** Table 6.10 and Table 6.11, indicate that the above three bus routes (A28, 290X and 797) have sufficient capacity (i.e., 332 > 328 patronage/hr during peak hour inbound, 349 > 206 patronage/hr during peak hour outbound) on weekend to cater for the additional public transport demand due to the proposed PRS development for the event day.
- 6.3.7** With reference to the observed frequency under Table 6.12, the maximum arrival rate for Bus Route Nos. A28, 290X and 797 is 13 trips per hour (i.e., arrive every 4.6min in average). To serve the 13 bus trips per hour at Chun Sing Street, 1 no. of road-side bus bay with length of 14m will be sufficient.

7. FUTURE PEDESTRIAN CONDITIONS

7.1 Design Year

- 7.1.1 In order to assess the impact of the development related pedestrian flows on the local road network, it is necessary to forecast the pedestrian flows for design year 2033, the adopted design year, which is 3 years upon completion of the proposed development.

7.2 Reference Pedestrian Flow

- 7.2.1 As mentioned in **Section 4.2.6**, a natural growth rate of +0.69% p.a. was adopted for years the 2025 to 2031 and +0.51% p.a. was adopted for years 2031 to 2033 to project the 2025 observed pedestrian flows to 2033 reference pedestrian flows.
- 7.2.2 Based on the adopted growth rate, the 2025 observed pedestrian flows (weekday and weekend) are projected to produce the 2033 reference pedestrian flows.
- 7.2.3 The 2033 Reference Pedestrian Flows (without proposed PRS development) will be derived as follows.

2033 Reference Pedestrian Flows (weekday) = 2025 Pedestrian Flows x Growth Factor (+0.69% p.a. for 6 years and +0.51% p.a. for 2 year)

2033 Reference Pedestrian Flows (weekend) = 2025 Pedestrian Flows x Growth Factor (+0.69% p.a. for 6 years and +0.51% p.a. for 2 year)

7.3 Development Pedestrian Trip Generation

- 7.3.1 In order to estimate the pedestrian trip generation and attraction of the proposed development, reference has been made to the public transport demand of the proposed development during AM and PM peak hours. The pedestrian trip generation and attractions are summarized in **Table 7.1**.

Table 7.1 Pedestrian Trip Generation and Attraction of the Proposed Development (ped/15-min)

Proposed Development	Normal Operation ⁽¹⁾				Event Day ⁽¹⁾	
	AM		PM		Gen.	Att.
	Gen.	Att.	Gen.	Att.		
	2	1	1	2		
					107	67

Note: (1) Refer to estimated public transport demand on event day in **Table 6.3**.

- 7.3.2 It is estimated that the proposed PRS development will generate a two-way total of 3 ped/15-min in the AM peak hour and 3 ped/15-min in the PM peak hour under normal operation, and generate a two-way total of 174 ped/15-min in peak hour on event day respectively.

7.4 Design Pedestrian Forecasts

7.4.1 In order to estimate the pedestrian trip generation and attraction of the proposed development, reference has been made to the public transport demand of the proposed development during AM and PM peak hours. The pedestrian trip generation and attractions are summarized in **Table 7.1**.

7.4.2 The pedestrian trip generation and attractions of the proposed development are then superimposed onto the 2033 reference pedestrian flows to derive the 2033 design pedestrian traffic forecasts (with proposed PRS development).

2033 Design Pedestrian Flows (normal operation) = 2033 Reference Pedestrian Flows (weekday) + Proposed PRS Development Pedestrian Trip Generation (Normal Operation)

2033 Design Pedestrian Flows (event day) = 2033 Reference Pedestrian Flows (weekend) + Proposed PRS Development Pedestrian Trip Generation (Event Day)

7.5 Pedestrian Facilities Assessment

7.5.1 Operational assessment for the footpaths and signalised crossing for reference and design scenarios in year 2033 have been carried out and the results are summarised in **Table 7.2** to **Table 7.5** respectively.

Table 7.2 Footpath Operational Performance in 2033 (without Proposed Development) – Weekday

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)		Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾		Level of Service (LOS) ⁽⁴⁾	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
F1	3.50	2.50	20	30	0.53	0.80	A	A
F2	3.60	2.60	30	65	0.77	1.67	A	A
F3	3.60	2.60	80	60	2.05	1.54	A	A
F4	4.50	3.50	115	60	2.19	1.14	A	A
F5	3.50	2.50	65	25	1.73	0.67	A	A
F6	5.00	4.00	5	5	0.08	0.08	A	A
F7	3.90	2.90	10	10	0.23	0.23	A	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

Table 7.3 Footpath Operational Performance in 2033 (without Proposed Development) – Weekend

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)	Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾	Level of Service (LOS) ⁽⁴⁾
F1	3.50	2.50	75	2.00	A
F2	3.60	2.60	25	0.64	A
F3	3.60	2.60	20	0.51	A
F4	4.50	3.50	10	0.19	A
F5	3.50	2.50	5	0.13	A

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)	Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾	Level of Service (LOS) ⁽⁴⁾
F6	5.00	4.00	5	0.08	A
F7	3.90	2.90	10	0.23	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

Table 7.4 Footpath Operational Performance in 2033 (with Proposed Development) – Normal Operation

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)		Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾		Level of Service (LOS) ⁽⁴⁾	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
F1	3.50	2.50	25	35	0.67	0.93	A	A
F2	3.60	2.60	35	70	0.90	1.79	A	A
F3	3.60	2.60	84	65	2.15	1.67	A	A
F4	4.50	3.50	115	60	2.19	1.14	A	A
F5	3.50	2.50	65	25	1.73	0.67	A	A
F6	5.00	4.00	10	10	0.17	0.17	A	A
F7	3.90	2.90	10	10	0.23	0.23	A	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

Table 7.5 Footpath Operational Performance in 2033 (with Proposed Development) – Event Day

Footpath Section ⁽¹⁾	Clear Width (Approx. in metres)	Effective Width (Approx. in meters) ⁽²⁾	Two-way Pedestrian Flows (in ped/15min)	Two-way hourly Pedestrian Flow Rate (in ped/min/m) ⁽³⁾	Level of Service (LOS) ⁽⁴⁾
F1	3.50	2.50	205	5.47	A
F2	3.60	2.60	155	3.97	A
F3	3.60	2.60	160	4.10	A
F4	4.50	3.50	20	0.38	A
F5	3.50	2.50	15	0.40	A
F6	5.00	4.00	180	3.00	A
F7	3.90	2.90	25	0.57	A

Note: (1) Footpath sections refer to **Drawing No. 3.9**.
(2) Effective width of footpath is defined as the actual width of footpath by excluding the dead widths on both sides.
(3) Two-way pedestrian flow rate = Two-way 15-mins pedestrian flows / 15 min / Effective width of footpath.
(4) Details of Pedestrian Walkway LOS refer to T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

7.5.2 According to the results in **Table 7.2** to **Table 7.5**, all assessed footpaths are operating within capacity in design year 2033.

8. CONCLUSION

8.1 Summary

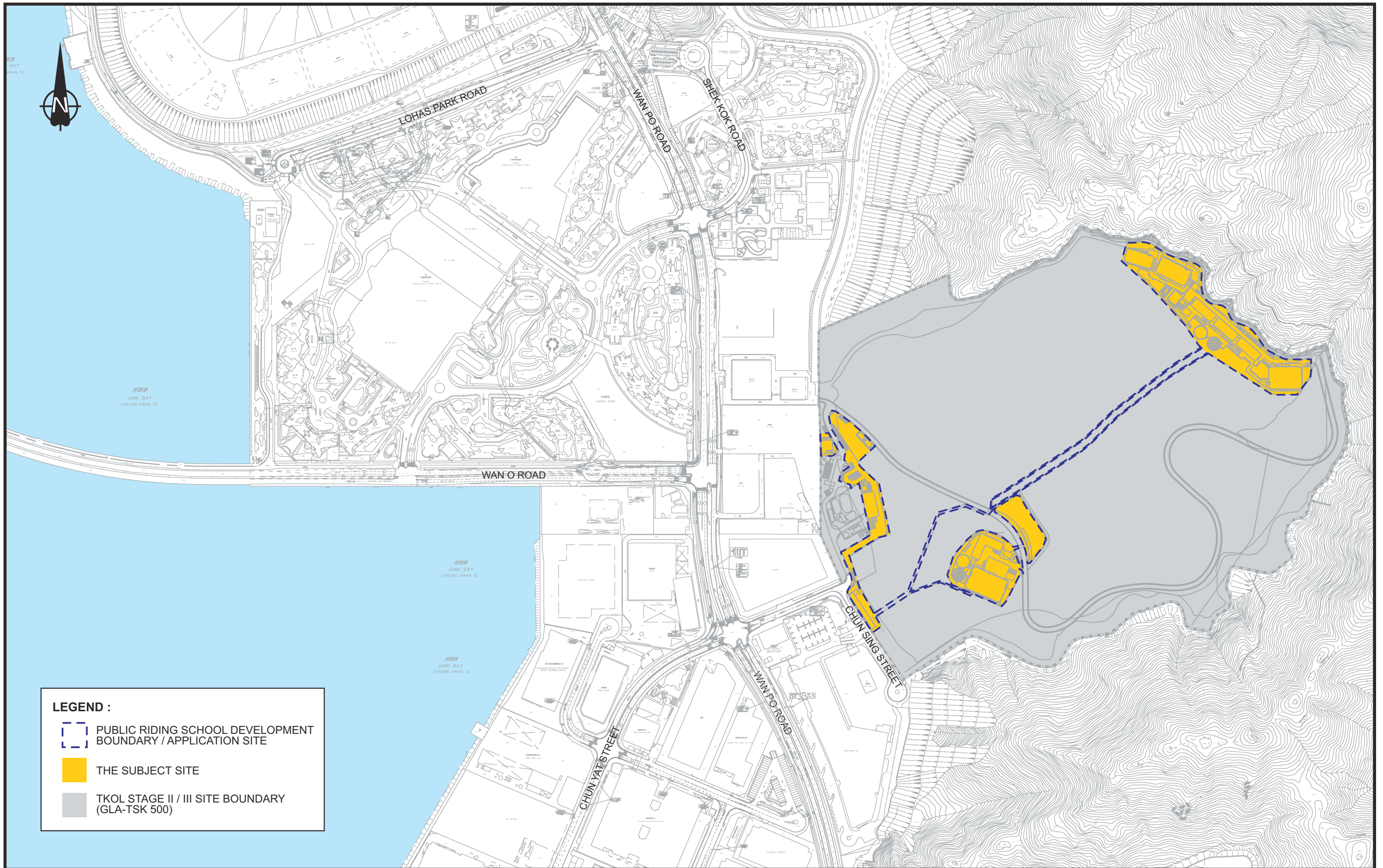
- 8.1.1 The Hong Kong Jockey Club (HKJC) made a commitment to support the development of equestrian sport in Hong Kong after the 2008 Olympic and Paralympic Games.
- 8.1.2 Wong Tung & Partners Limited is commissioned by HKJC as the lead-consultant and MVA Hong Kong Limited is the traffic sub-consultant to undertake the Traffic Impact Assessment (TIA) for the proposed development. The purpose of this TIA report is to review the traffic condition and examine the impact of the traffic generated by the Proposed PRS Development on the local road network to support Section 16 Application of the proposed development.
- 8.1.3 The Proposed PRS Development is scheduled to be completed by year 2030.
- 8.1.4 In order to appraise the existing traffic conditions of these junctions, a manual classified traffic count was conducted at the identified key junctions to establish the current traffic condition. The survey was undertaken on a typical weekday on November 2024 during the AM peak hour of 07:30 to 09:30 and PM peak hour of 17:00 to 19:00 and a typical weekend on September 2025 during 16:30 to 18:30. Analysis of the observed traffic data on weekday indicates that the AM and PM peak hour flows occurred from 08:00 to 09:00 and from 17:00 to 18:00 respectively, observed data at weekend indicates the peak hour flows occurred from 17:00 to 18:00.
- 8.1.5 Traffic forecasts for years 2030 and 2033 have been derived. It is revealed that the major traffic growth in the area is mainly due to trip generations of the planned and committed developments to/from LOHAS Park Development along Sunrise Boulevard and LOHAS Park Road. Apart from the trip generations due to the planned and committed developments to/from LOHAS Park Development along Sunrise Boulevard and LOHAS Park Road, the future background growth for traffic movements to/from other destinations/origins have also been considered.
- 8.1.6 It is anticipated that the construction of Proposed PRS Development would generate two-way traffic of 38 pcu/hr during AM and PM peak hours during construction.
- 8.1.7 The assessment results revealed that all critical junctions will still operate within their capacities in design year 2030.
- 8.1.8 It is anticipated that the Proposed PRS Development would generate two-way traffic of 19 pcu/hr and 24 pcu/hr during AM and PM peak hours respectively under normal operation, 174 pcu/hr during peak hour on event day.
- 8.1.9 The assessment results revealed that all critical junctions and road links will still operate within their capacities in design year 2033.
- 8.1.10 To ascertain the potential traffic impact of TKO Area 137, a sensitivity test has been conducted. The results indicated some road junctions and road link will operate beyond its capacities. It is worth noting that this situation is due the potential traffic impact from the planned development, instead of the proposed PRS development. Therefore, no additional

traffic improvement works will be required for the proposed PRS development under this sensitivity test.

- 8.1.11 It is estimated that the proposed PRS development will generate a two-way total of 3 ped/15-min in the AM peak hour and 3 ped/15-min in the PM peak hour under normal operation, and generate a two-way total of 159 ped/15-min in peak hour on event day respectively.
- 8.1.12 The assessment results reveal that all assessed footpaths are operating within capacity in design year 2033.
- 8.1.13 In view of the comprehensive coverage of the public transport services and the available different choices on transport modes, the Proposed PRS Development is considered to have very good accessibility via the public transport.

8.2 Conclusion

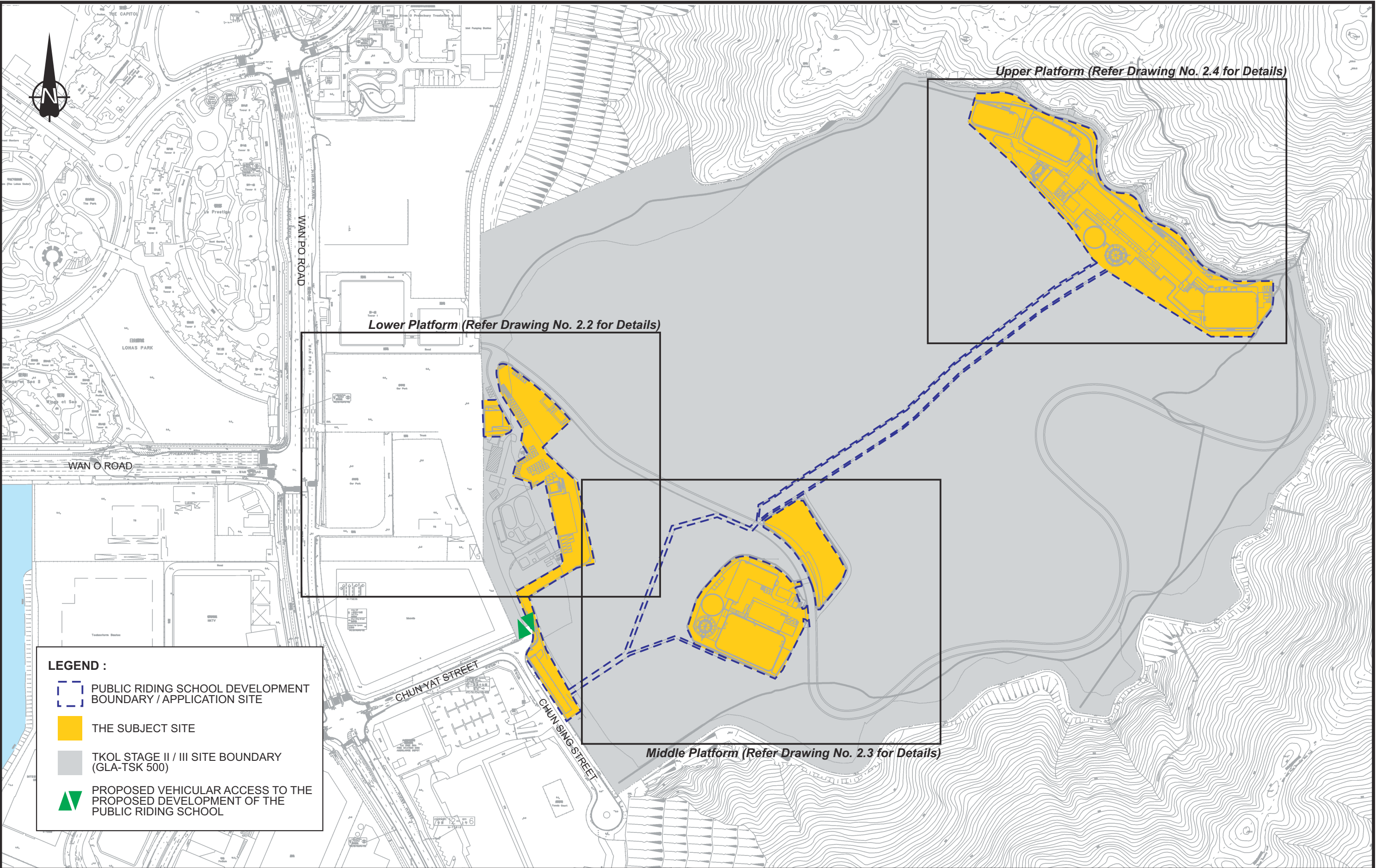
- 8.2.1 Based on the traffic analysis, the Proposed PRS Development would generate minimal traffic during the proposed peak periods and have minimal impact on the junction performance.
- 8.2.2 In view of that, the Proposed PRS Development is considered acceptable in traffic point of view.



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A	MINOR AMENDMENT	GPH	28JAN26
Rev.	Description	Checked	Date

Project Title
PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))

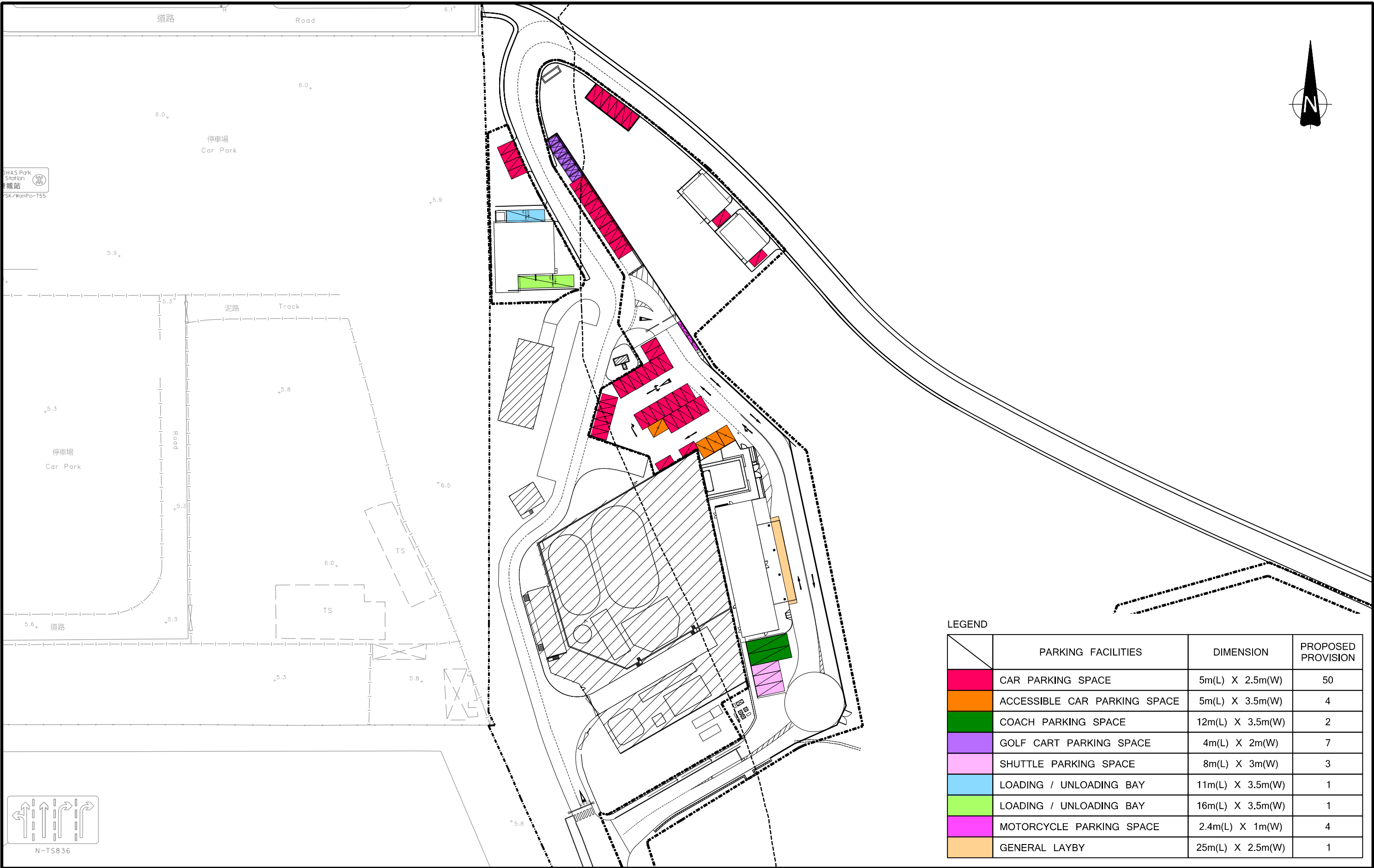
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Rev.	Description	Checked	Date

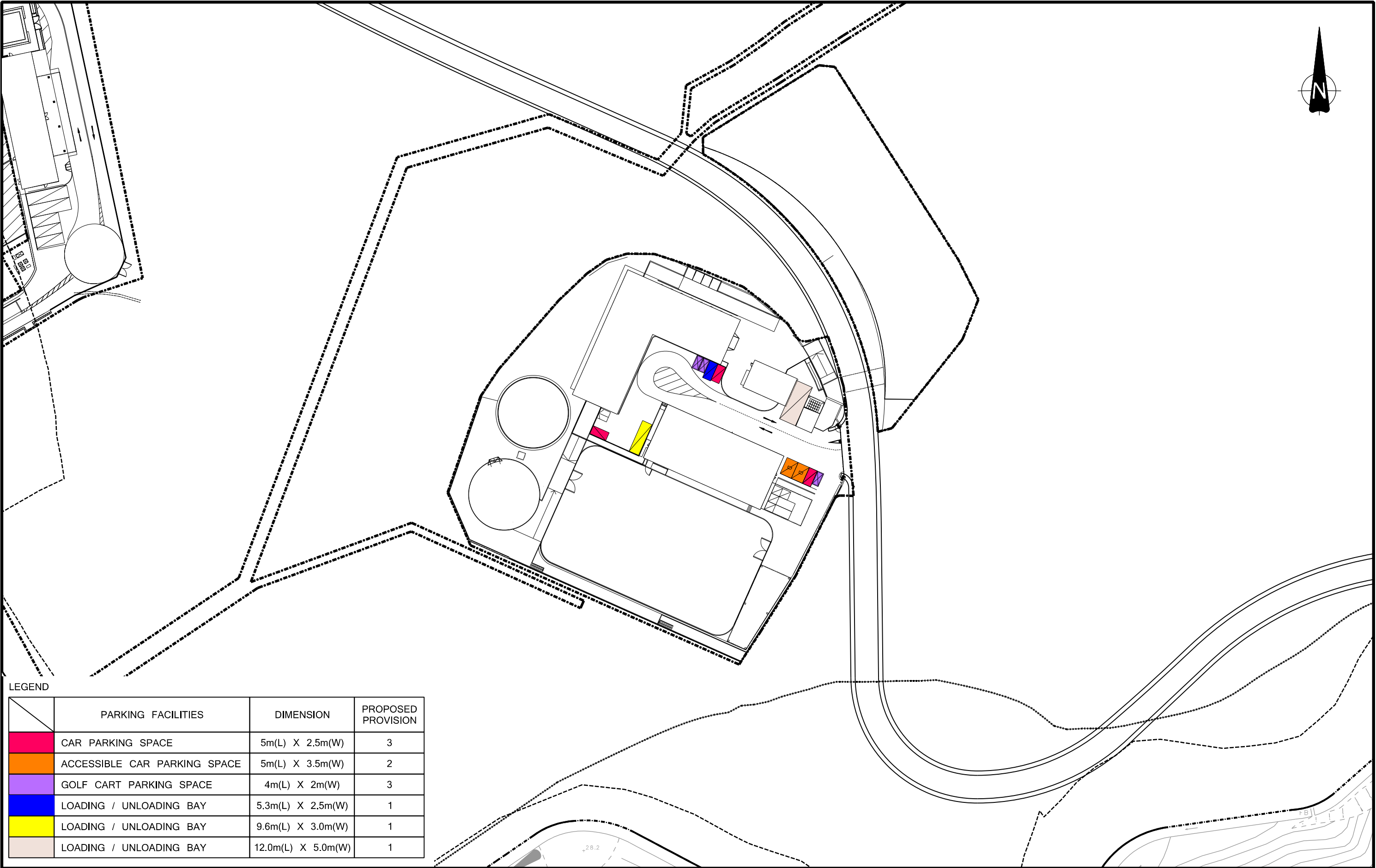
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PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))

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Designed	LRV	Checked	GPH	Scale	NTS	Date	JUL 2025
Drawing No.		2.1		Rev.		A	



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	PARKING FACILITIES	DIMENSION	PROPOSED PROVISION
	CAR PARKING SPACE	5m(L) X 2.5m(W)	50
	ACCESSIBLE CAR PARKING SPACE	5m(L) X 3.5m(W)	4
	COACH PARKING SPACE	12m(L) X 3.5m(W)	2
	GOLF CART PARKING SPACE	4m(L) X 2m(W)	7
	SHUTTLE PARKING SPACE	8m(L) X 3m(W)	3
	LOADING / UNLOADING BAY	11m(L) X 3.5m(W)	1
	LOADING / UNLOADING BAY	16m(L) X 3.5m(W)	1
	MOTORCYCLE PARKING SPACE	2.4m(L) X 1m(W)	4
	GENERAL LAYBY	25m(L) X 2.5m(W)	1

-	-	-	-	Project Title PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D.233, THE RESTORED LANDFILL SITE(TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500(PART))	Drawing Title PROPOSED LOWER PLATFORM						
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Rev.	Description	Checked	Date								



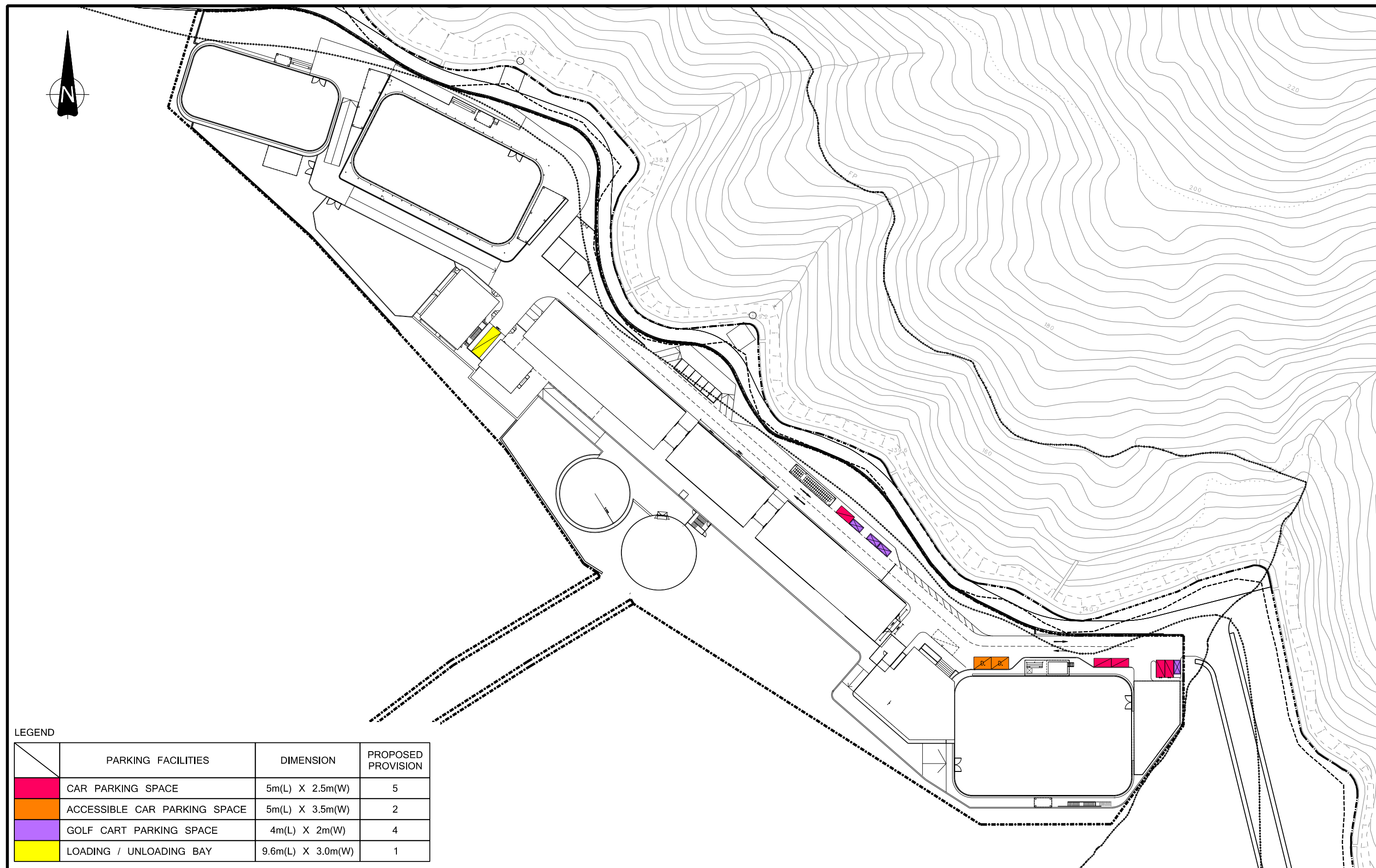
LEGEND


	PARKING FACILITIES	DIMENSION	PROPOSED PROVISION
	CAR PARKING SPACE	5m(L) X 2.5m(W)	3
	ACCESSIBLE CAR PARKING SPACE	5m(L) X 3.5m(W)	2
	GOLF CART PARKING SPACE	4m(L) X 2m(W)	3
	LOADING / UNLOADING BAY	5.3m(L) X 2.5m(W)	1
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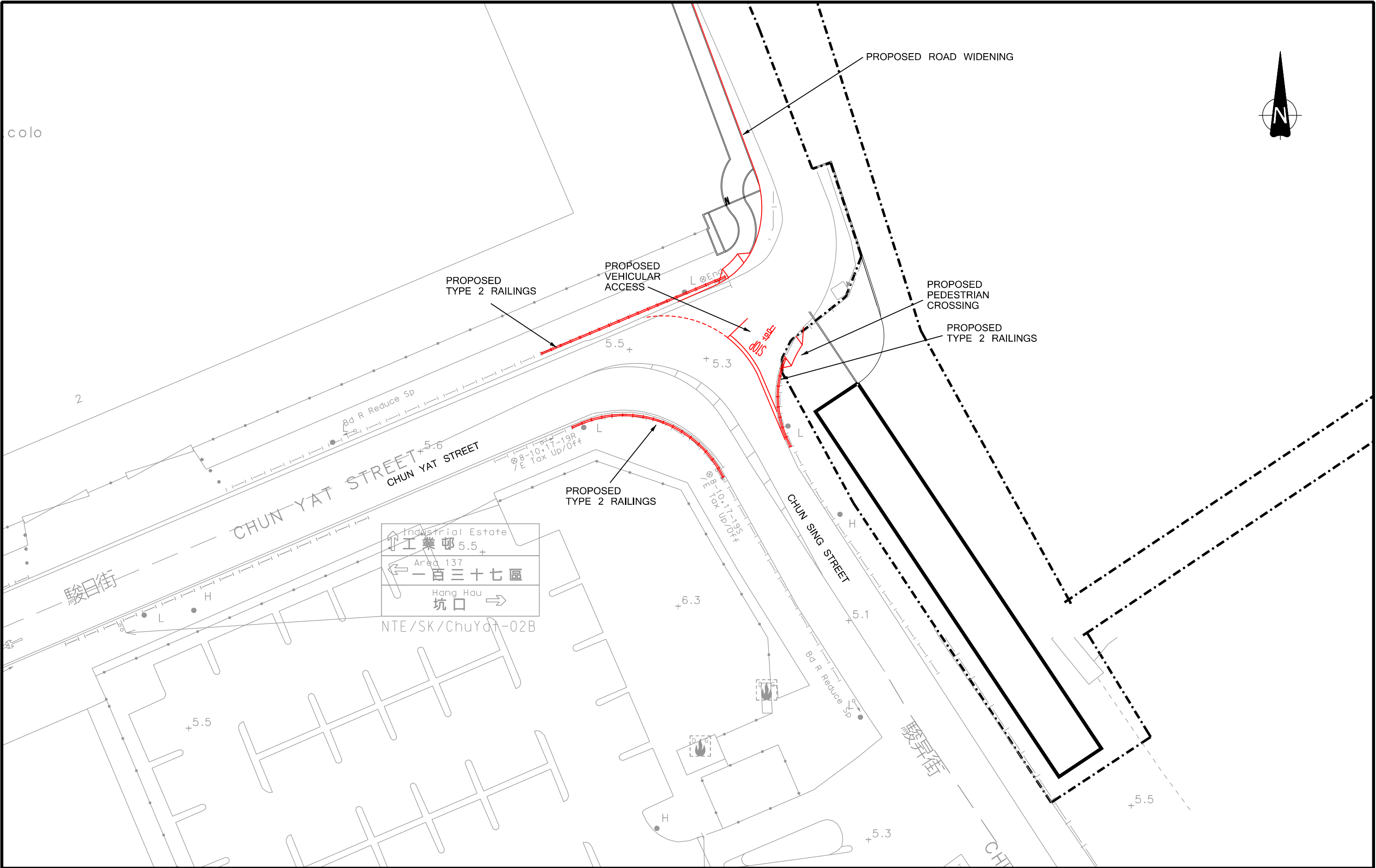
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Rev.	Description	Checked	Date

Project Title
PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D.233, THE RESTORED LANDFILL SITE(TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500(PART))

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Rev.				B



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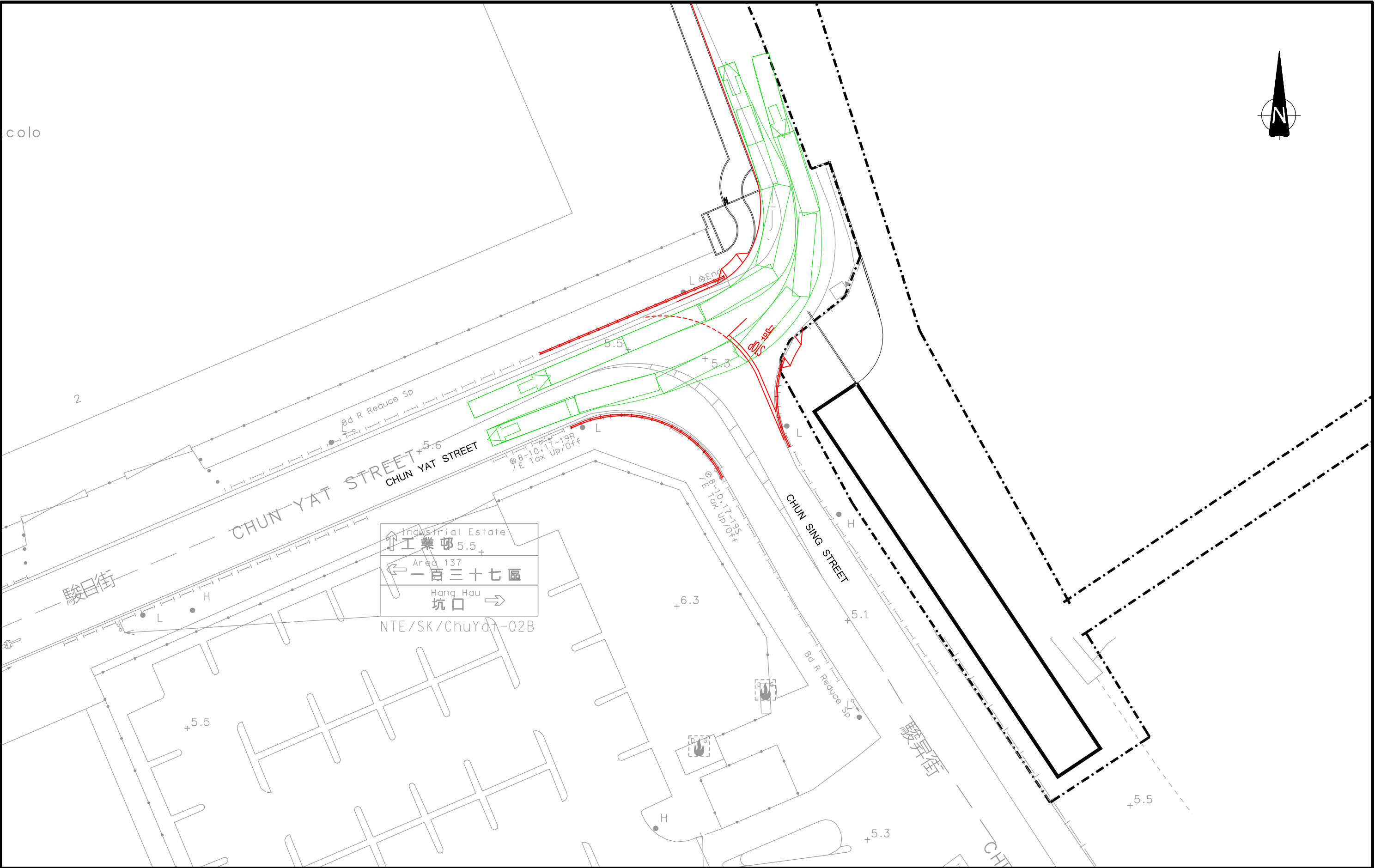
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Rev.	Description	Checked	Date

Project Title
PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D.233, THE RESTORED LANDFILL SITE(TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500(PART))

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SYSTRA

MVA



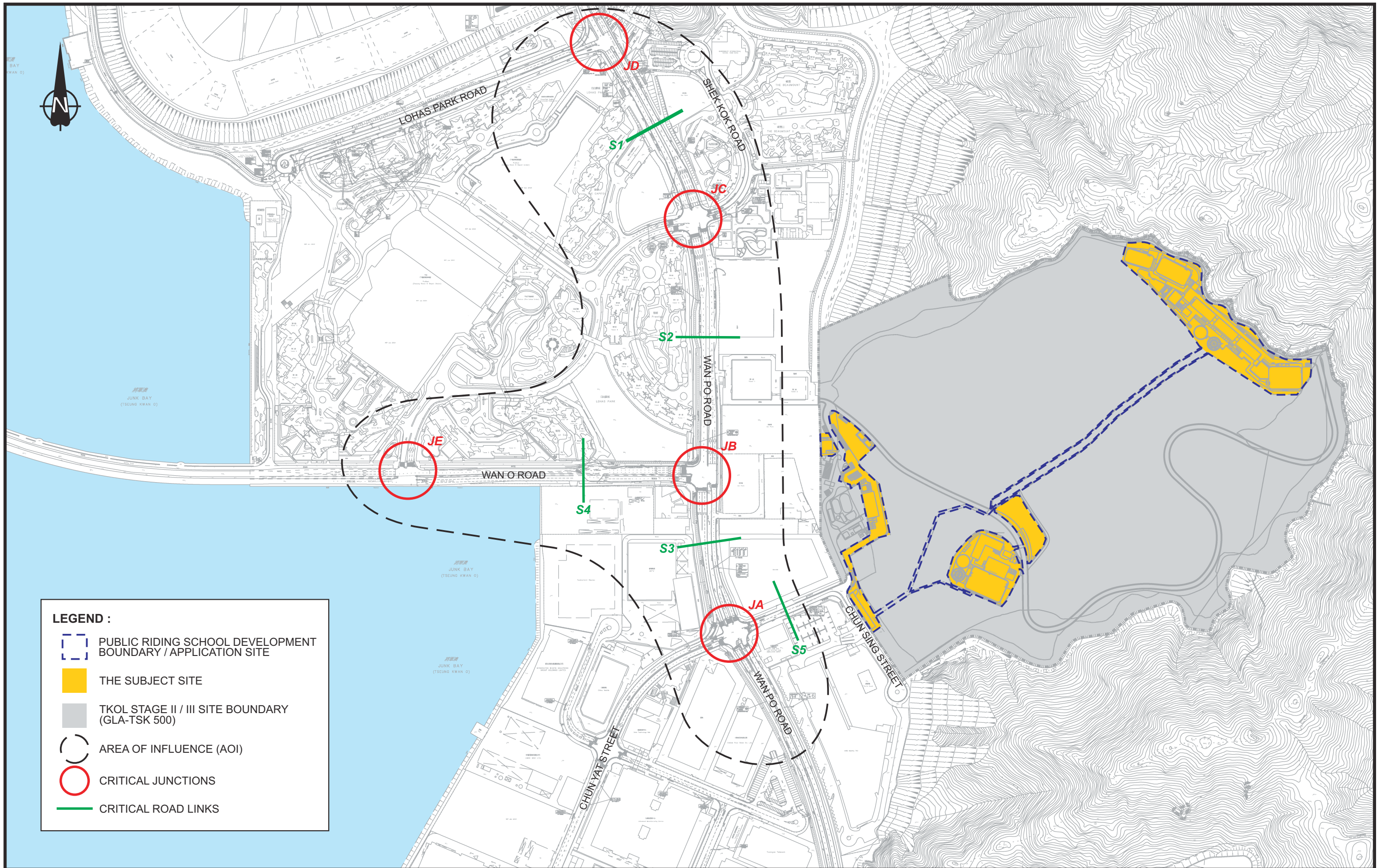
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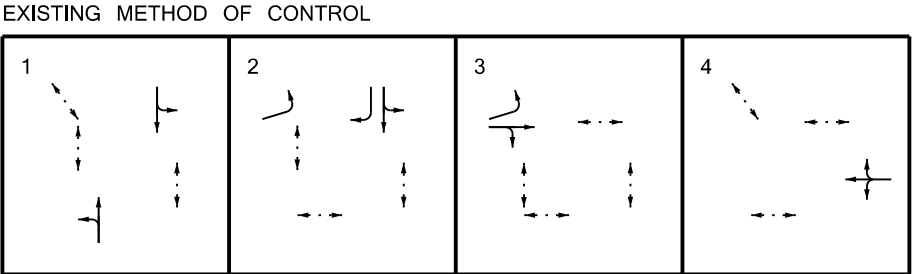
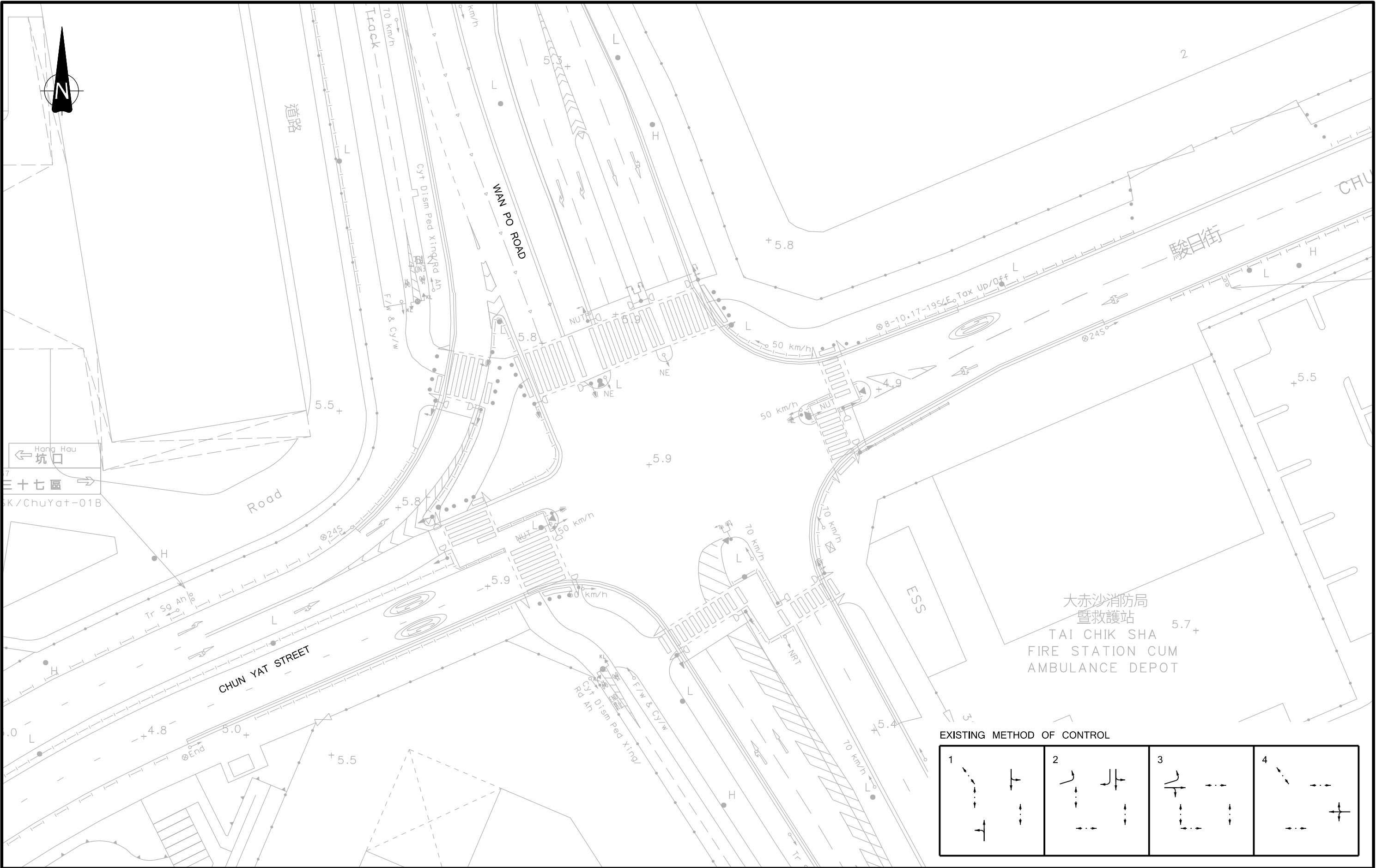
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Original Size : A3



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Rev.	Description	Checked		Date								



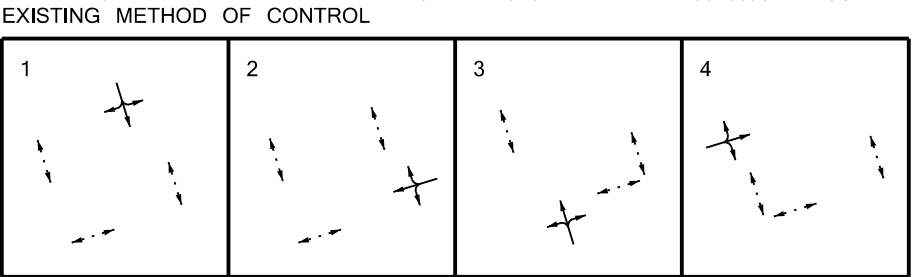
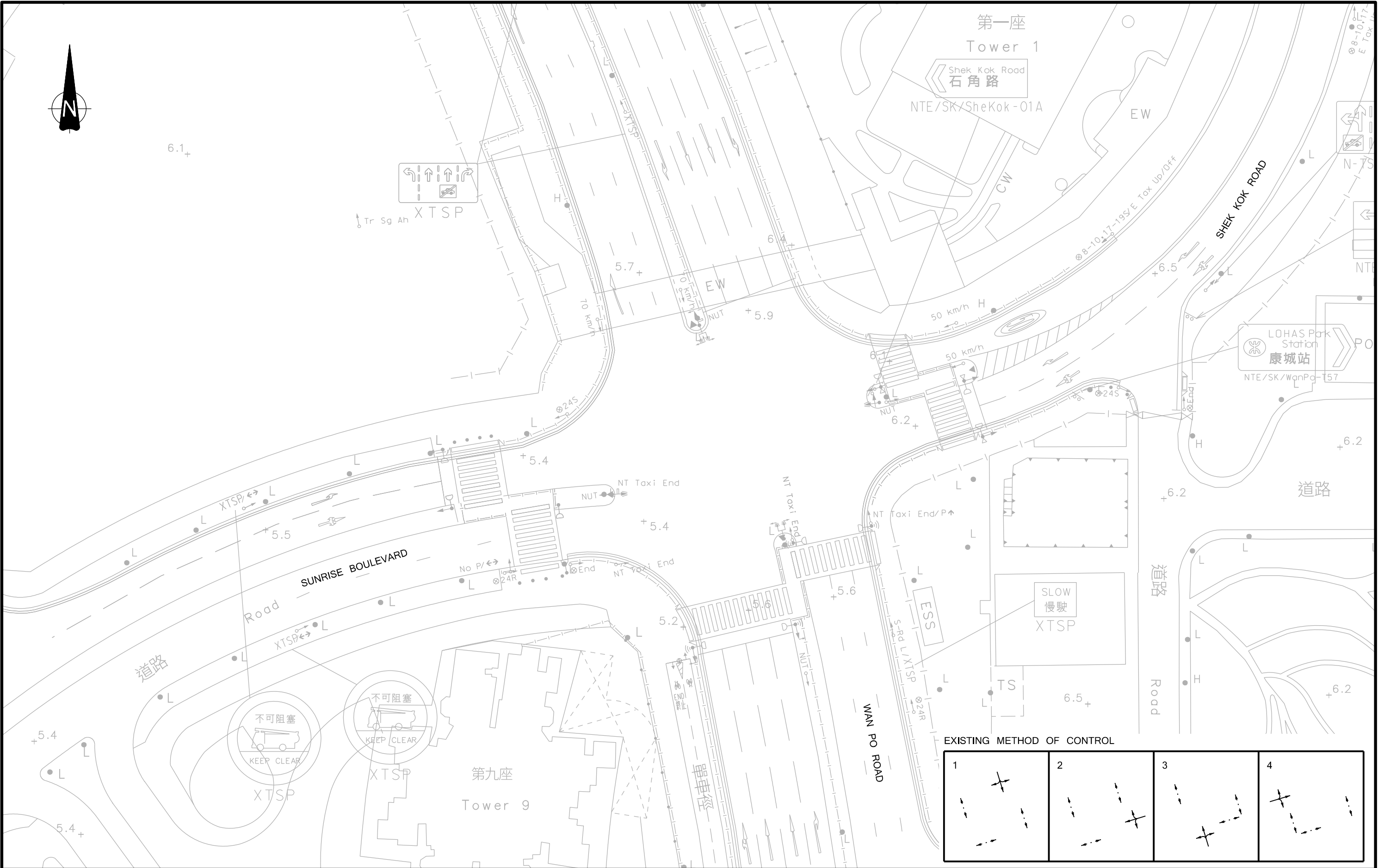
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Rev.	Description	Checked	Date

Project Title

PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D.233, THE RESTORED LANDFILL SITE(TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500(PART))

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3.2		Rev.	A	

Original Size : A3

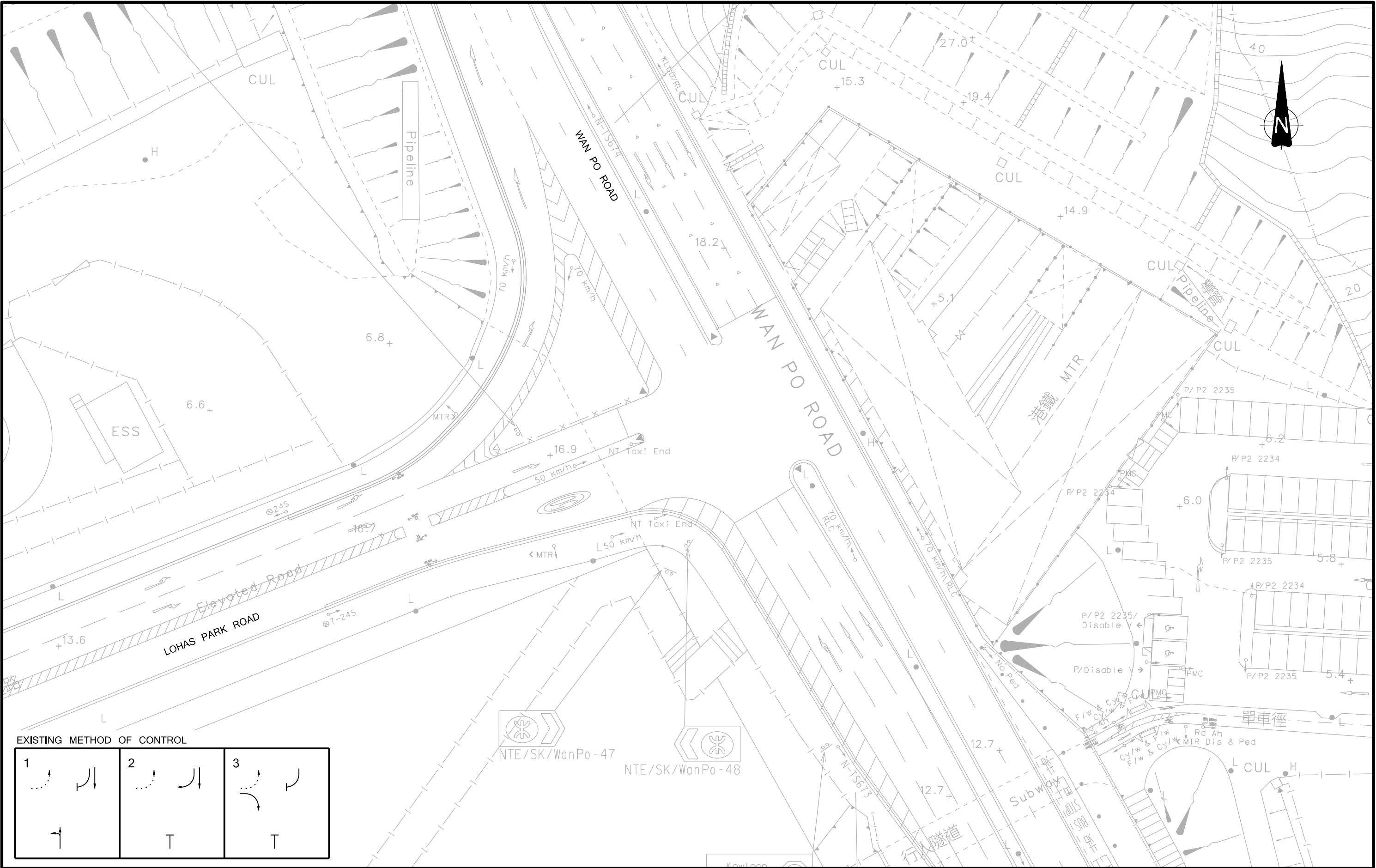



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Rev.	Description	Checked	Date

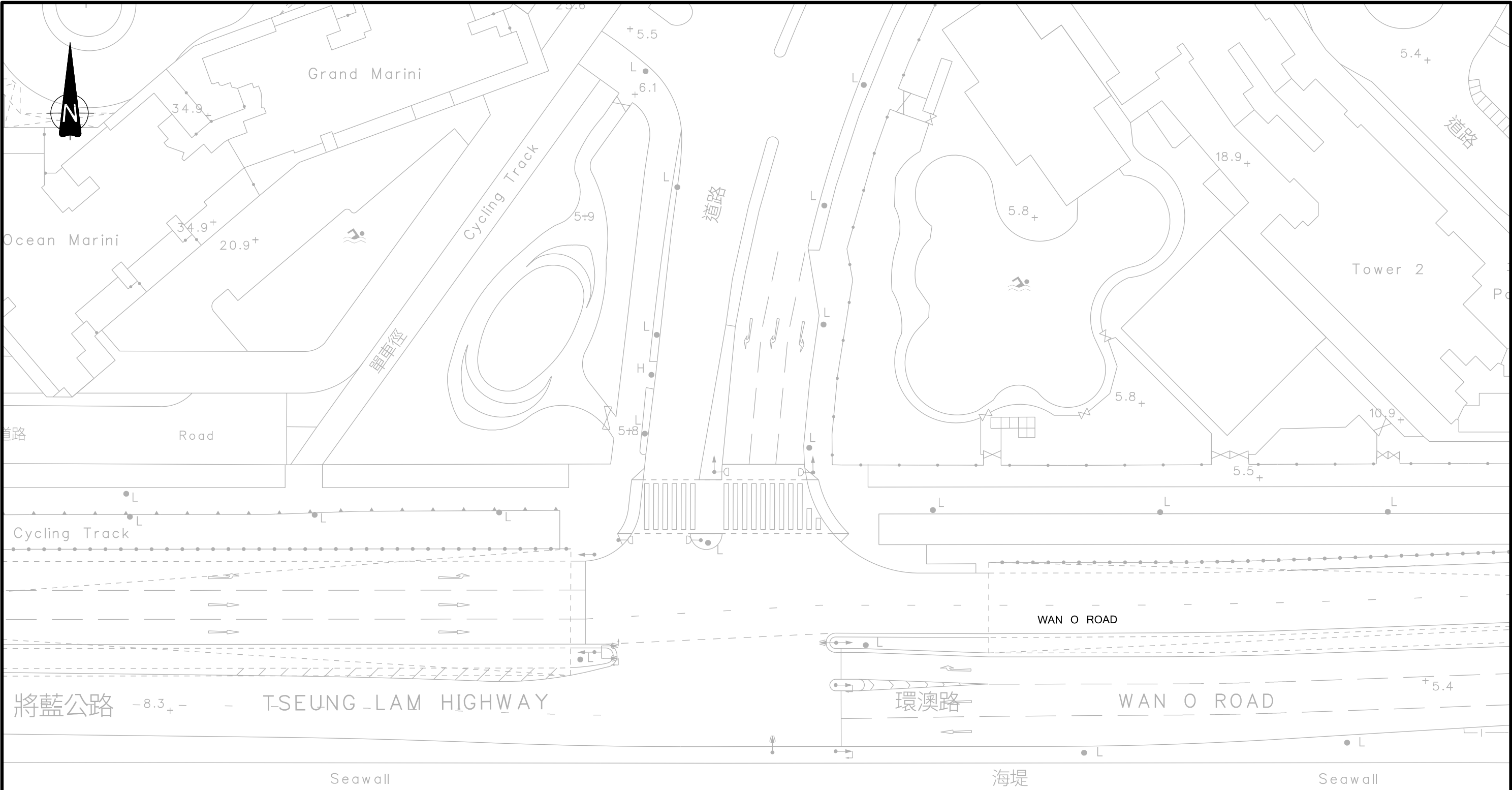
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Drawing Title					
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Date	NOV 2024	Drawing No.	3.4	Rev.	A

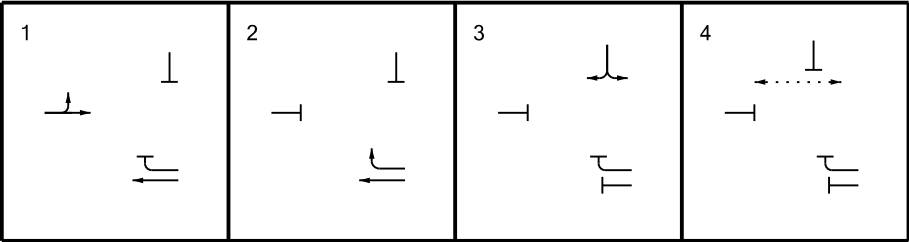





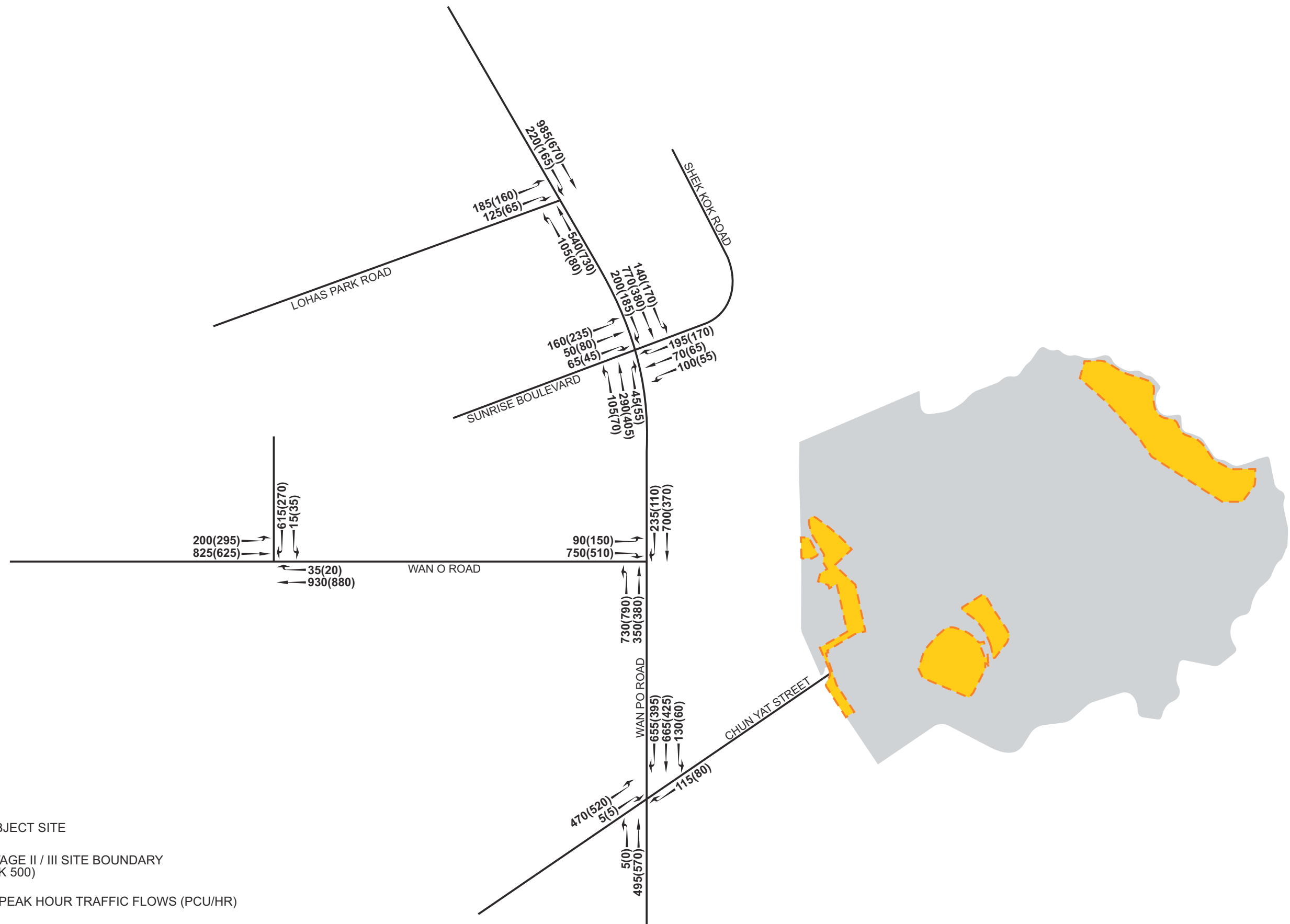
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Rev.	Description	Checked	Date								



EXISTING METHOD OF CONTROL



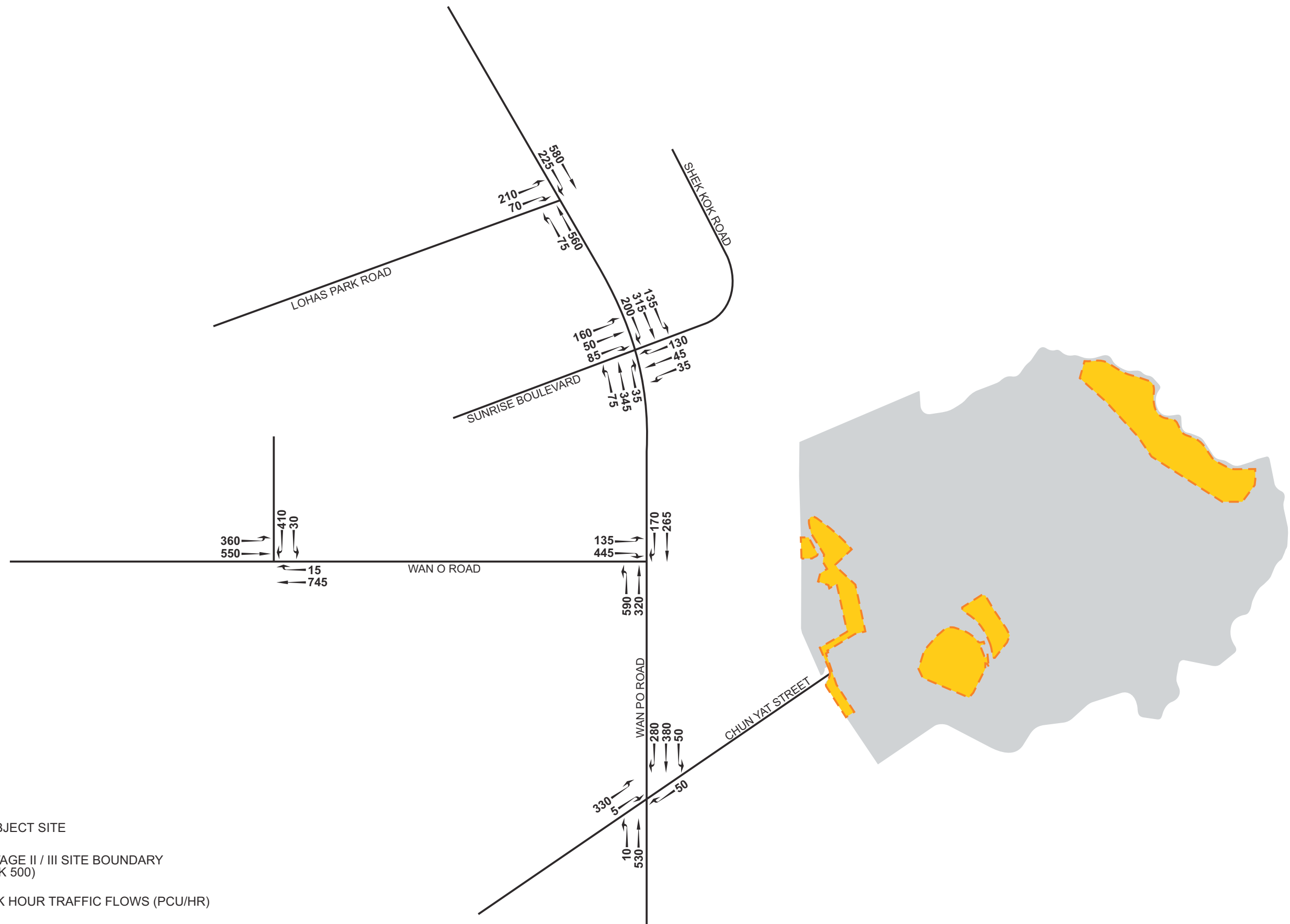
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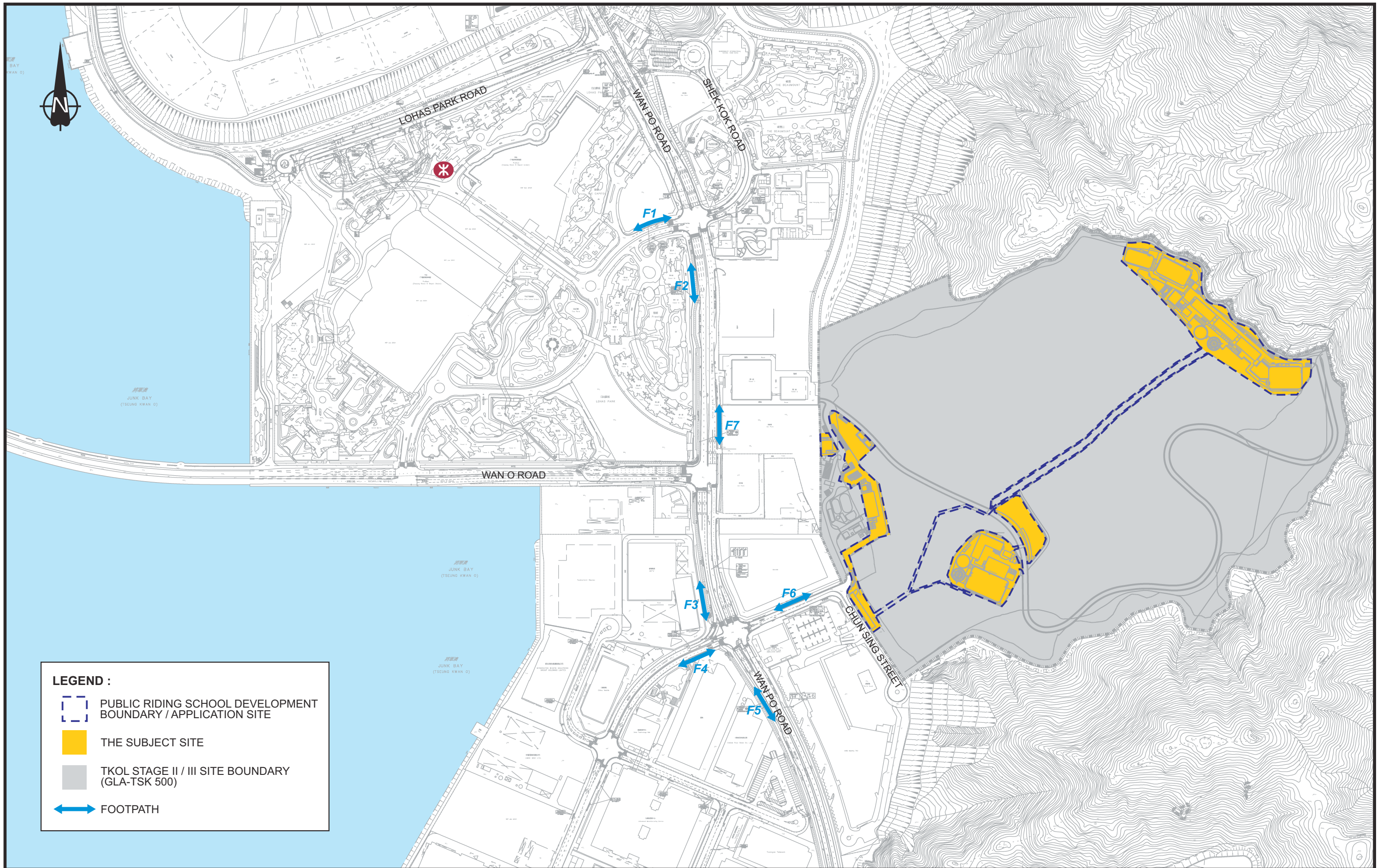
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Rev.	Description	Checked	Date	

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Original Size : A3



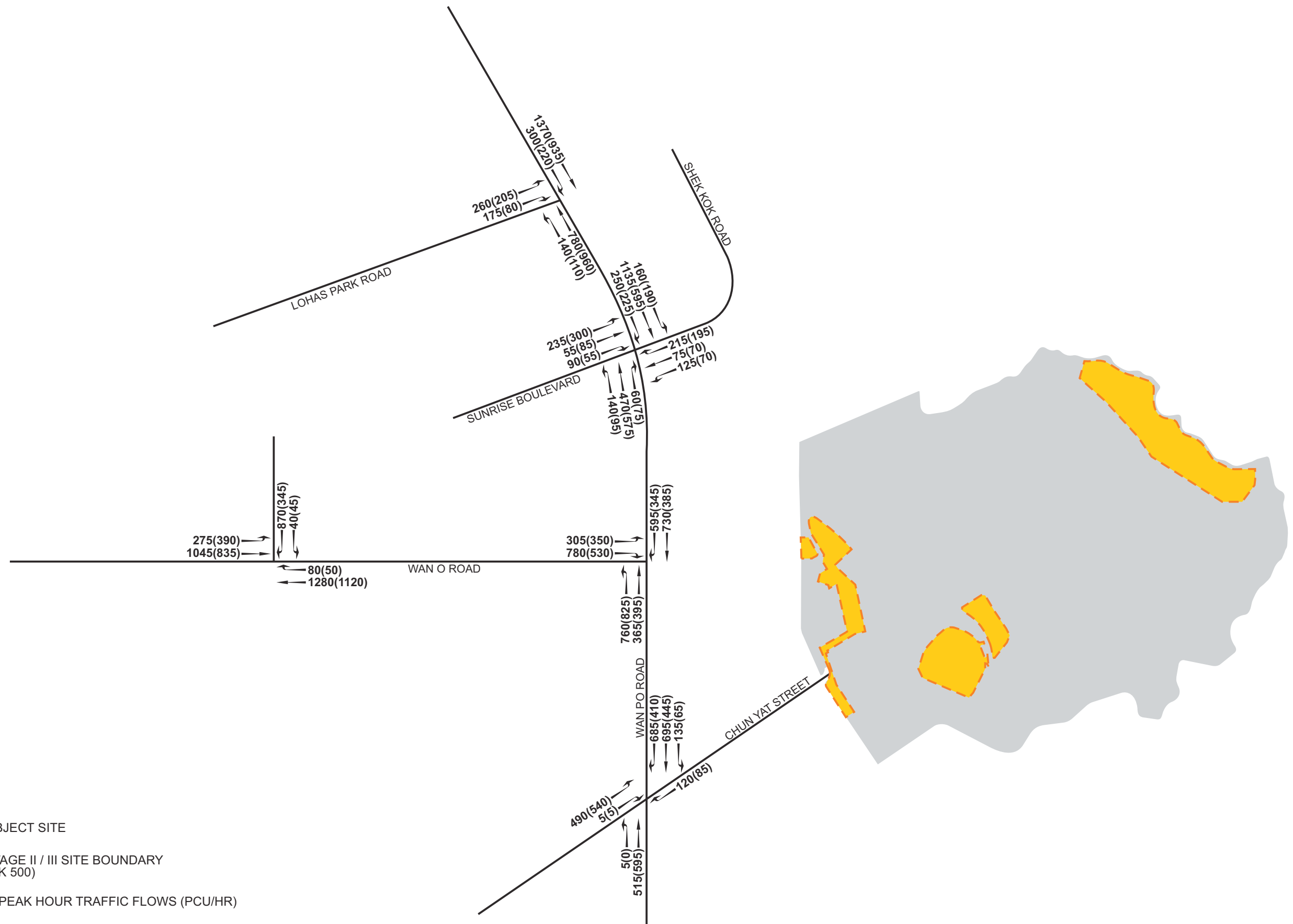
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-	-	-	-													
-	-	-	-													
A	MINOR AMENDMENT	GPH	28JAN26													
Rev.	Description	Checked	Date		Designed	LRY	Checked	GPH	Scale	NTS	Date	OCT 2025	Drawing No.	3.8	Rev.	A





-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	GPH	28JAN26
A	MINOR AMENDMENT	GPH	24NOV25
Rev.	Description	Checked	Date

Project Title
PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))

Drawing Title											
LOCATION OF EXISTING PEDESTRIAN FACILITIES											
Designed	LRY	Checked	GPH	Scale	NTS	Date	OCT 2025	Drawing No.	3.9	Rev.	B



LEGEND :

-  THE SUBJECT SITE
-  TKOL STAGE II / III SITE BOUNDARY (GLA-TSK 500)

305(350) AM(PM) PEAK HOUR TRAFFIC FLOWS (PCU/HR)


-	-	-	-
-	-	-	-
B	MINOR AMENDMENT	GPH	28JAN26
A	MINOR AMENDMENT	PML	9OCT25
Rev.	Description	Checked	Date

Project Title
PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))

Drawing Title											
YEAR 2030 REFERENCE TRAFFIC FLOWS (WITHOUT CONSTRUCTION WORKS)											
Designed	LRY	Checked	GPH	Scale	NTS	Date	JUL 2025	Drawing No.	4.1	Rev.	B

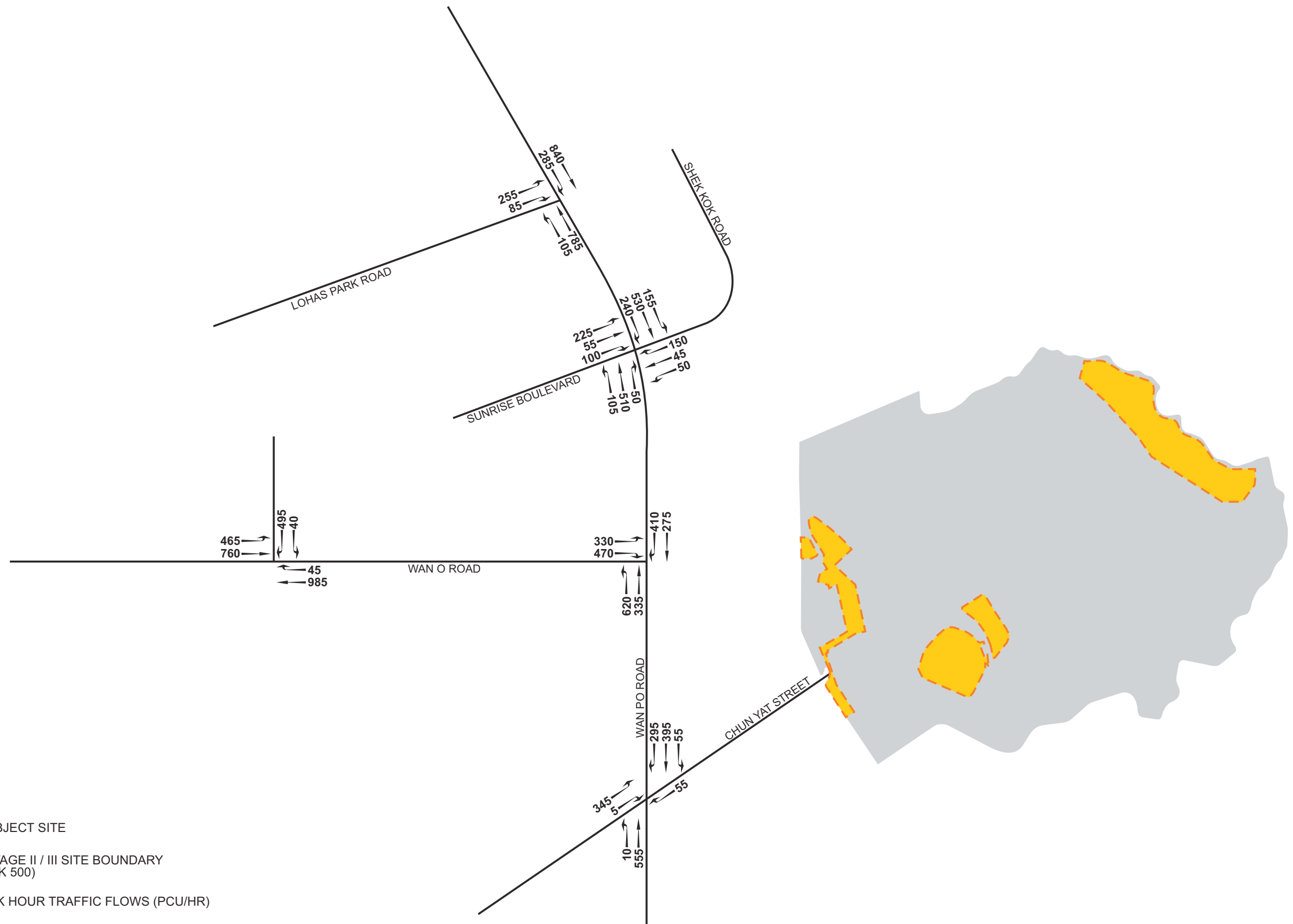




-	-	-	-	Project Title PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))	Drawing Title YEAR 2033 REFERENCE TRAFFIC FLOWS (WITHOUT PROPOSED PRS DEVELOPMENT) - WEEKDAY					
B	MINOR AMENDMENT	GPH	28JAN26							
A	MINOR AMENDMENT	PML	9OCT25							
Rev.	Description	Checked	Date							

CHK50812010/TIA/F42-B.CDR/LLH/28JAN26

Original Size : A3




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-	-	-	-							
B	MINOR AMENDMENT	GPH	28JAN26							
A	MINOR AMENDMENT	PML	9OCT25							
Rev.	Description	Checked	Date							

CHK50812010/TIA/F43-B.CDR/LLH/28JAN26

Original Size : A3



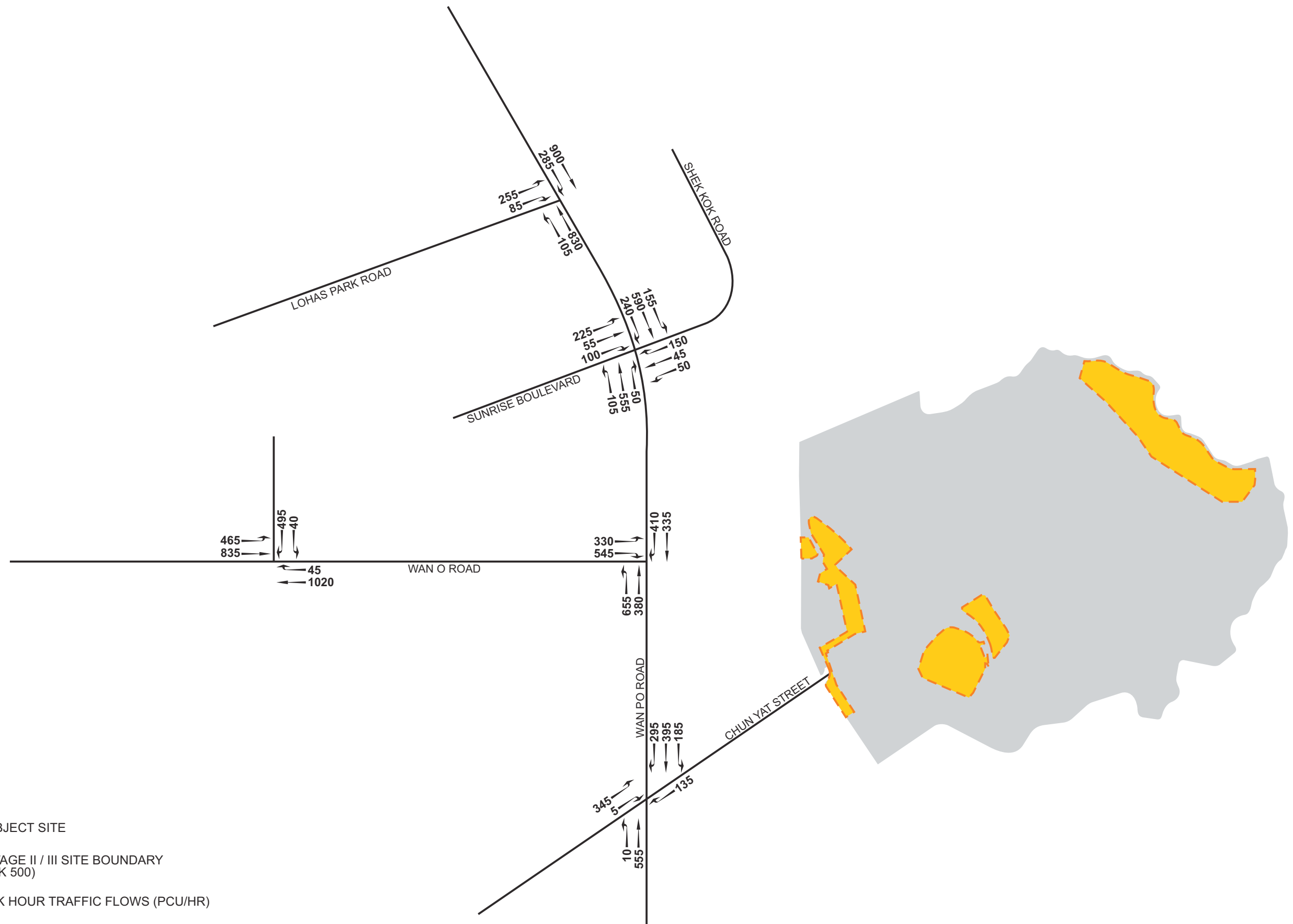
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-	-	-	-										
B	MINOR AMENDMENT	GPH	28JAN26										
A	MINOR AMENDMENT	PML	9OCT25										
Rev.	Description	Checked	Date										



CHK50812010/TIA/F44-B.CDR/LLH/28JAN26


Original Size : A3

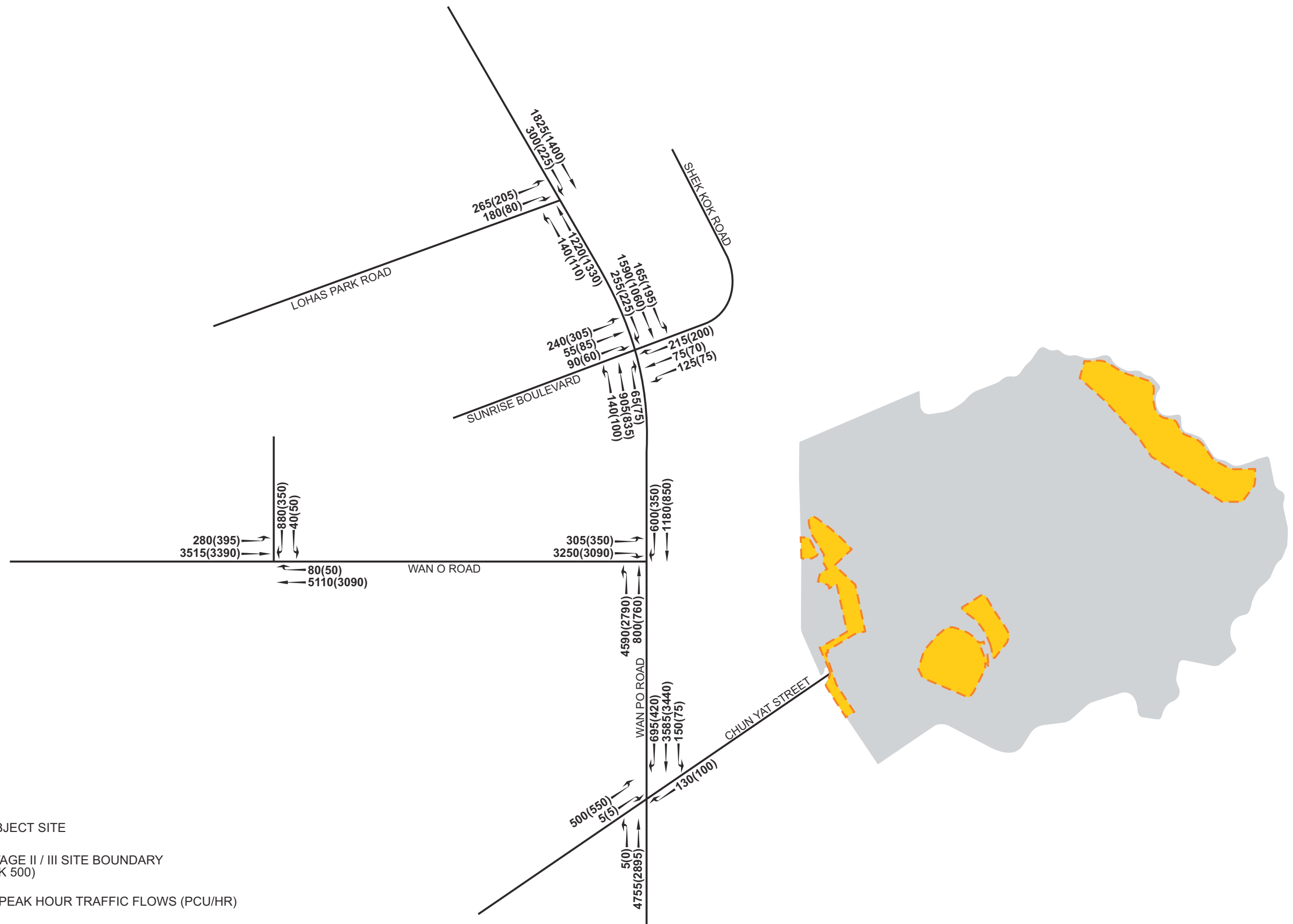


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B	MINOR AMENDMENT	GPH	28JAN26		Designed	LRY	Checked	GPH	
A	MINOR AMENDMENT	GPH	24NOV25		Scale	NTS	Date	OCT 2025	
Rev.	Description	Checked	Date		Drawing No.	4.5	Rev.	B	

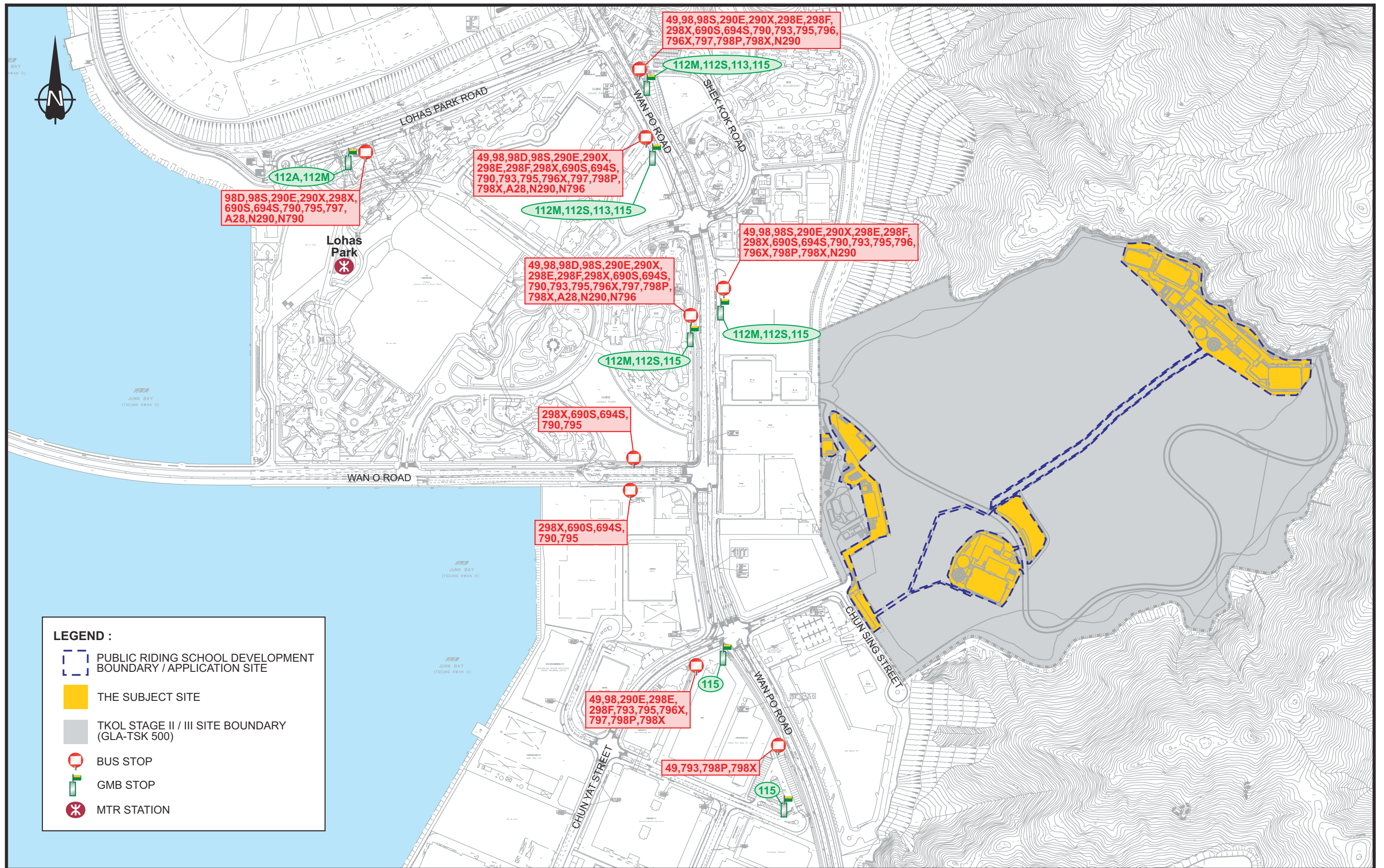



- LEGEND :**
-  THE SUBJECT SITE
 -  TKOL STAGE II / III SITE BOUNDARY (GLA-TSK 500)
 - 330** PM PEAK HOUR TRAFFIC FLOWS (PCU/HR)

-	-	-	-	Project Title PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))	Drawing Title YEAR 2033 DESIGN TRAFFIC FLOWS (WITH PROPOSED PRS DEVELOPMENT) - EVENT DAY											
-	-	-	-													
B	MINOR AMENDMENT	GPH	28JAN26													
A	MINOR AMENDMENT	GPH	24NOV25													
Rev.	Description	Checked	Date		Designed	LRY	Checked	GPH	Scale	NTS	Date	OCT 2025	Drawing No.	4.6	Rev.	B

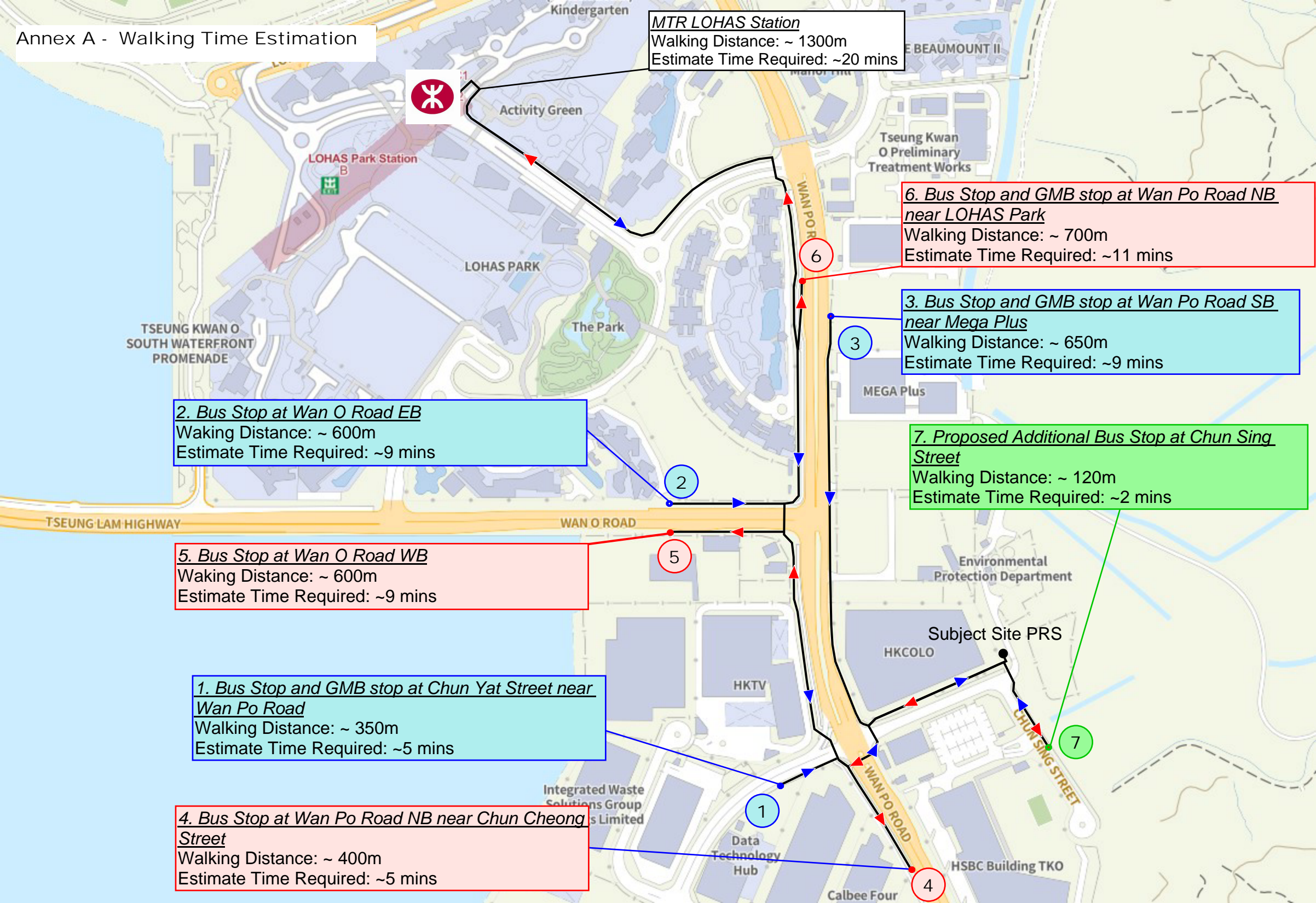


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-	-	-	-								
-	-	-	-								
A	MINOR AMENDMENT	GPH	28JAN26								
Rev.	Description	Checked	Date								



-	-	-	-	Project Title PROPOSED PLACE OF RECREATION, SPORTS OR CULTURE (PUBLIC RIDING SCHOOL) WITH ANCILLARY FACILITIES AT GOVERNMENT LAND IN D.D. 233, THE RESTORED LANDFILL SITE (TKOL II/III) IN TKO AREA 105, TSEUNG KWAN O (GLA TSK-500 (PART))	Drawing Title EXISTING PUBLIC TRANSPORT SERVICE IN THE VICINITY								
-	-	-	-										
B	MINOR AMENDMENT	PML	28JAN26										
A	MINOR AMENDMENT	PML	10OCT25										
Rev.	Description	Checked	Date										
CHK50812010/TIA/F61-B.CDR/LLH/28JAN26					Designed LRY Checked GPH Scale NTS Date JUL 2025 Drawing No. 6.1 Rev. B								
					Original Size : A3								

Annex A - Walking Time Estimation



Annex B - ROUTING OF BUS ROUTE
NOS. A28, 290X and 797



Appendix A - Calculation Sheets

2024 Observed Traffic Flows (Weekday)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA) Design Year: 2024
Description: 2024 Observe Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)							
					Left	Right						Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↕	A	1,2	3.200	20			35%	26%	1885	1900	375	0.199		229	0.121	
		A	1,2	3.600						2115	2115	420	0.199		256	0.121	
Wan Po Road (SB)	↙↘	C	2	3.300	25					1965	1965	330	0.168		199	0.101	
		C	2	3.300	20					1940	1940	325	0.168		196	0.101	
Wan Po Road (NB)	↕↑	B	1	3.700	15			2%	0%	1980	1985	241	0.122	0.122	275	0.139	0.139
		B	1	3.700						2125	2125	259	0.122		295	0.139	
Chun Yat Street (EB)	↗	D	2,3	3.600	35					1895	1895	470	0.248	0.248	520	0.274	0.274
Chun Yat Street (EB)	↕	E	3	3.600	25			100%	50%	1995	2055	5	0.003		10	0.005	
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	115	0.058	0.058	80	0.041	0.041
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Ip	3	MIN GREEN + FLASH =		5	+	7	=	12							
		Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13							
		Kp	2	MIN GREEN + FLASH =		5	+	6	=	11							
		Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11							
		Mp	2	MIN GREEN + FLASH =		5	+	5	=	10							
		Np	3	MIN GREEN + FLASH =		8	+	7	=	15							

Notes:	<p>Flow: (pcu/hr)</p>	Group		B,D,F	Group		B,D,F
		y		0.428	y		0.454
		L (sec)		18	L (sec)		18
		C (sec)		130	C (sec)		120
		y pract.		0.775	y pract.		0.765
		R.C. (%)		81%	R.C. (%)		69%

Stage / Phase Diagrams							
I/G= 7		I/G= 9		I/G=		I/G= 5	
I/G= 7		I/G= 9		I/G=		I/G= 5	

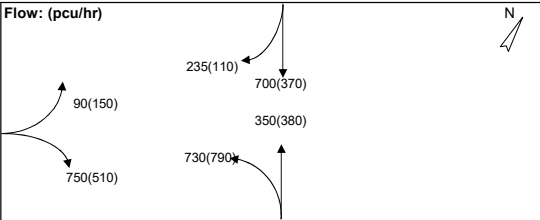
Date: 5 Nov 2024 Junction: Wan Po Road / Chun Yat Street (JA) JA

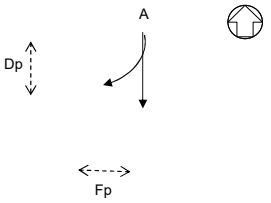
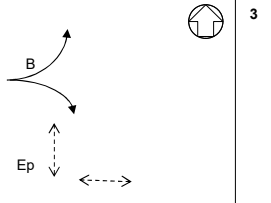
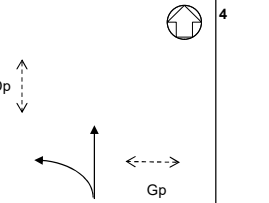
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB) Design Year: 2024
Description: 2024 Observe Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↖	C	3	4.100	15					1840	1840	348	0.189		377	0.205	
	↗	C	3	4.100	20					2015	2015	382	0.190	0.190	413	0.205	0.205
	↑	C	3	4.000						2155	2155	175	0.081		190	0.088	
	↓	C	3	4.100						2165	2165	175	0.081		190	0.088	
Wan O Road (EB)	↘	B	2	3.500	20					1830	1830	90	0.049		150	0.082	
	↙	B	2	3.200		25				1825	1825	365	0.200	0.200	248	0.136	0.136
	↓	B	2	3.200		20				1930	1930	385	0.199		262	0.136	
Wan Po Road (SB)	↓	A	1	3.400						2095	2095	350	0.167	0.167	185	0.088	0.088
	↘	A	1	3.400						2095	2095	350	0.167		185	0.088	
	↙	A	1	3.400		15				1905	1905	120	0.063		56	0.029	
	↖	A	1	3.400		20				1820	1820	115	0.063		54	0.030	
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =			5	+	9	=	14						
		Ep	2	MIN GREEN + FLASH =			5	+	10	=	15						
		Fp	1,2	MIN GREEN + FLASH =			8	+	15	=	23						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						

Notes:	Flow: (pcu/hr)				Group		A,B,C	Group		A,B,C
					y		0.557	y		0.429
					L (sec)		14	L (sec)		14
					C (sec)		120	C (sec)		120
					y pract.		0.795	y pract.		0.795
					R.C. (%)		43%	R.C. (%)		85%

Stage / Phase Diagrams														
1			2			3			4			5		
														
I/G= 6			I/G= 5			I/G= 6			I/G=			I/G=		
I/G= 6			I/G= 5			I/G= 6			I/G=			I/G=		

Date: 5 Nov 2024 Junction: Wan Po Road / Wan O Road (JB) JB

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

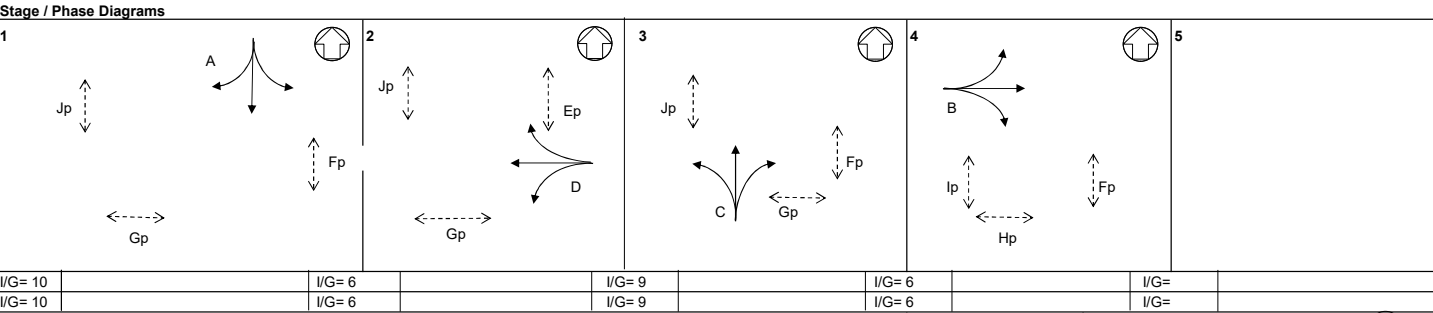
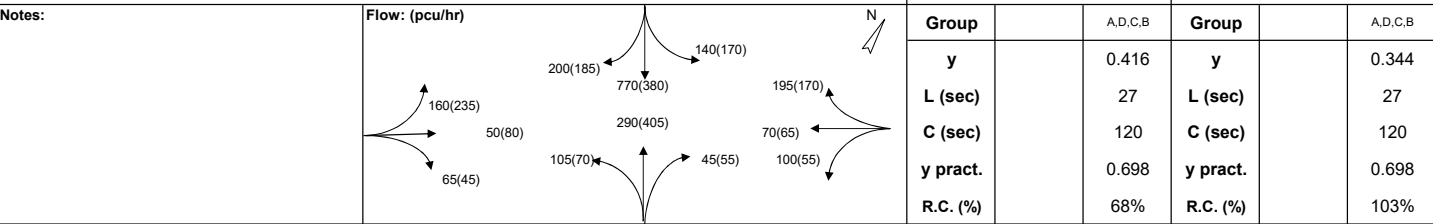
Design Year: 2024

Description: 2024 Observe Flows (Weekday)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15					1775	1775	127	0.072	0.072	166	0.094	0.094
		B	2	4.100	20	25		22% / 44%	36% / 23%	2075	2080	148	0.071		194	0.093	
Wan Po Road (SB)		A	1	3.100	15					1750	1750	140	0.080		170	0.097	0.097
		A	1	3.500						2105	2105	385	0.183	0.183	190	0.090	
		A	1	3.500						2105	2105	385	0.183		190	0.090	
		A	1	3.200		25				1960	1960	200	0.102		185	0.094	
Shek Kok Road (WB)		D	4	3.600	10	30		53% / 9%	37% / 20%	1950	1985	187	0.096		150	0.076	0.076
		D	4	3.500		25				1855	1855	178	0.096	0.096	140	0.075	
Wan Po Road (NB)		C	3	3.600	15			88%	48%	1815	1885	119	0.066	0.066	147	0.078	0.078
		C	3	3.500						2105	2105	138	0.066		164	0.078	
		C	3	3.500						2105	2105	138	0.066		164	0.078	
		C	3	3.600		25				1995	1995	45	0.023		55	0.028	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						



TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / LOHAS Park Road (JD) Design Year: 2024
Description: 2024 Observe Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	476	0.242		323	0.164	
	↓	B	1,2	3.500						2105	2105	509	0.242		347	0.165	
	↙	C	2	3.500		15				1915	1915	220	0.115	0.115	165	0.086	0.086
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	270	0.128	0.128	365	0.173	0.173
	↑	A	1	3.500						2105	2105	270	0.128		365	0.173	
	↖	A	1	3.500	10					1710	1710	105	0.061		80	0.047	
Lohas Park Road (EB)	→	E	1,2,3	3.500	35					1885	1885	185	0.098		160	0.085	
	↘	D	3	4.000		15				1960	1960	125	0.064	0.064	65	0.033	0.033

Notes:	Flow: (pcu/hr) 		Group		A,C,D	Group		A,C,D
			y		0.307	y		0.293
			L (sec)		12	L (sec)		12
			C (sec)		120	C (sec)		120
			y pract.		0.810	y pract.		0.810
			R.C. (%)		164%	R.C. (%)		177%

Stage / Phase Diagrams																			
1				2				3				4				5			
I/G= 5				I/G= 5				I/G= 5				I/G=				I/G=			
I/G= 5				I/G= 5				I/G= 5				I/G=				I/G=			
Date: 5 Nov 2024										Junction: Wan Po Road / LOHAS Park Road (JD)									

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2024

Description: 2024 Observe Flows (Weekday)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	→	A	1	3.800	20					1855	1855	200	0.108	0.196	295	0.159	0.159
	→	A	1	3.500						2105	2105	413	0.196		313	0.149	
	→	A	1	3.500						2105	2105	412	0.196		312	0.148	
Wan O Road (WB)	←	C	2	4.000	25					2035	2035	35	0.017		20	0.010	
	←	B	1,2,4	3.800						2135	2135	481	0.225		455	0.213	
	←	B	1,2,4	3.800						1995	1995	449	0.225		425	0.213	
Sunrise Boulevard (SB)	↓	E	3	3.500	18					1815	1815	15	0.008	0.154	35	0.019	
	↓	D	3	3.500						1985	1985	306	0.154		134	0.068	
	↓	D	3	3.500						2005	2005	309	0.154		136	0.068	0.068
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16		+	12	=	28			*			*

Notes:	Flow: (pcu/hr) 		Group		A,C,D,Fp	Group		A,C,D,Fp
			y		0.350	y		0.227
			L (sec)		49	L (sec)		49
			C (sec)		130	C (sec)		120
			y pract.		0.561	y pract.		0.533
			R.C. (%)		60%	R.C. (%)		135%

Stage / Phase Diagrams									
1		2		3		4		5	
I/G= 2		I/G= 5	5	I/G= 5		I/G= 6	28	I/G=	
I/G= 2		I/G= 5	5	I/G= 5		I/G= 6	28	I/G=	

2025 Observed Traffic Flows (Weekend)

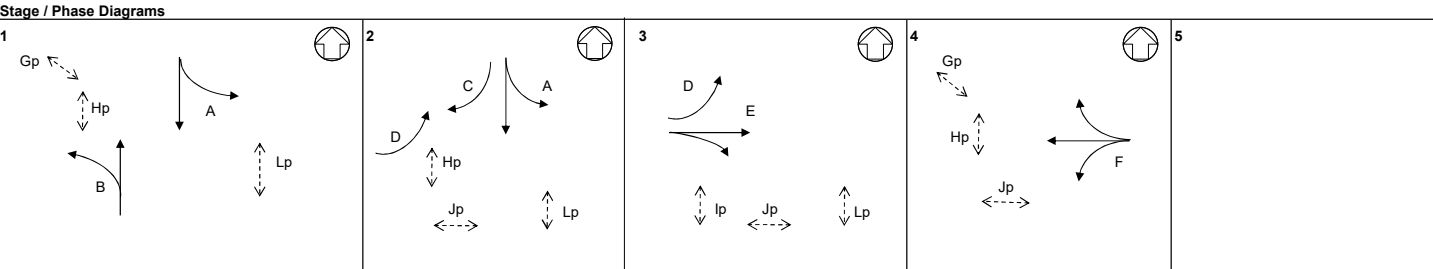
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA) Design Year: 2025
Description: 2025 Observe Flows (Weekend) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak		
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)		A	1,2	3.200	20			25%		1900					203	0.107	
		A	1,2	3.600						2115					227	0.107	
Wan Po Road (SB)		C	2	3.300	25					1965					141	0.072	
		C	2	3.300	20					1940					139	0.072	
Wan Po Road (NB)		B	1	3.700	15			4%		1975					260	0.132	0.132
		B	1	3.700						2125					280	0.132	
Chun Yat Street (EB)		D	2,3	3.600	35					1895					330	0.174	0.174
Chun Yat Street (EB)		E	3	3.600	25			100%		1995					5	0.003	
Chun Yat Street (WB)		F	4	5.100	25	20		0% / 91%		1990					55	0.028	0.028
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5		+	5	=		10					
		Hp	1,2,4	MIN GREEN + FLASH =		5		+	5	=		10					
		Ip	3	MIN GREEN + FLASH =		5		+	7	=		12					
		Jp	2,3,4	MIN GREEN + FLASH =		5		+	8	=		13					
		Kp	2	MIN GREEN + FLASH =		5		+	6	=		11					
		Lp	1,2,3	MIN GREEN + FLASH =		5		+	6	=		11					
		Mp	2	MIN GREEN + FLASH =		5		+	5	=		10					
		Np	3	MIN GREEN + FLASH =		8		+	7	=		15					

Notes:			Group			Group		B,D,F
			y			y		0.334
			L (sec)			L (sec)		18
			C (sec)			C (sec)		120
			y pract.			y pract.		0.765
			R.C. (%)			R.C. (%)		129%



I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=	
Date: 5 Nov 2024					Junction: Wan Po Road / Chun Yat Street (JA)				

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB)

Design Year: 2025

Description: 2025 Observe Flows (Weekend)

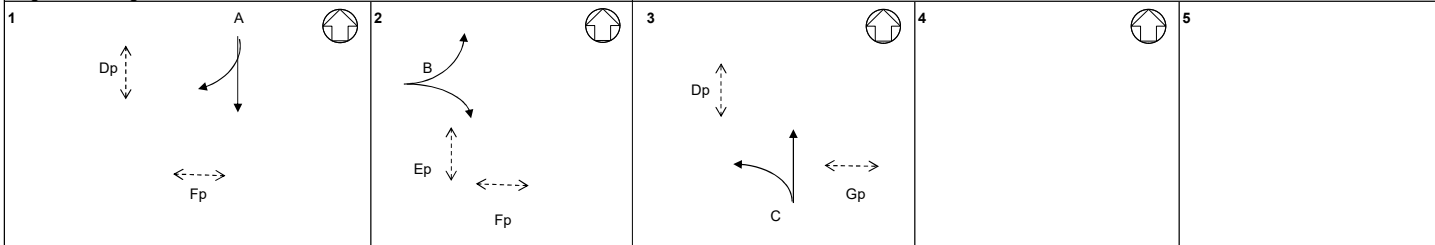
Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak					
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↱	C	3	4.100	15						1840									
	↲	C	3	4.100	20						2015									
	↑	C	3	4.000							2155									
	↑	C	3	4.100							2165									
Wan O Road (EB)	↗	B	2	3.500	20						1830									
	→	B	2	3.200		25					1825									
	↘	B	2	3.200		20					1930					0.119				
Wan Po Road (SB)	↓	A	1	3.400							2095									
	↓	A	1	3.400							2095						0.063			
	↶	A	1	3.400		15					1905									
	↷	A	1	3.400		20					1820									
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =	5	+	9	=	14											
		Ep	2	MIN GREEN + FLASH =	5	+	10	=	15											
		Fp	1,2	MIN GREEN + FLASH =	8	+	15	=	23											
		Gp	3	MIN GREEN + FLASH =	5	+	9	=	14											

Notes:	<p>Flow: (pcu/hr)</p> <p>(135)</p> <p>(445)</p> <p>(170)</p> <p>(265)</p> <p>(320)</p> <p>(590)</p> <p>N</p>	Group			Group		A,B,C
		y			y		0.335
		L (sec)			L (sec)		14
		C (sec)			C (sec)		120
		y pract.			y pract.		0.795
		R.C. (%)			R.C. (%)		137%

Stage / Phase Diagrams



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

Date:
5 Nov 2024

Junction:	Wan Po Road / Wan O Road (JB)
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JE

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC) Design Year: 2025
Description: 2025 Observe Flows (Weekend) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak		
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15						1775				136	0.077	
		B	2	4.100	20	25		15% / 53%			2075				159	0.077	0.077
Wan Po Road (SB)		A	1	3.100	15						1750				135	0.077	
		A	1	3.500							2105				158	0.075	
		A	1	3.500							2105				157	0.075	
		A	1	3.200		25					1960				200	0.102	0.102
Shek Kok Road (WB)		D	4	3.600	10	30		32% / 27%			1995				109	0.055	0.055
		D	4	3.500		25					1855				101	0.054	
Wan Po Road (NB)		C	3	3.600	15			58%			1865				129	0.069	
		C	3	3.500							2105				146	0.069	0.069
		C	3	3.500							2105				145	0.069	
		C	3	3.600		25					1995				35	0.018	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:				Group			Group		A,D,C,B
				y			y		0.303
				L (sec)			L (sec)		27
				C (sec)			C (sec)		120
				y pract.			y pract.		0.698
				R.C. (%)			R.C. (%)		130%

Stage / Phase Diagrams																			
1				2				3				4				5			

I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
Date: 5 Nov 2024					Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)				

Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2025

Description: 2025 Observe Flows (Weekend)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak		
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500							1965				280	0.142	
	↓	B	1,2	3.500							2105				300	0.143	
	↙	C	2	3.500		15					1915				225	0.117	0.117
Wan Po Road (NB)	↑	A	1	3.500							2105				280	0.133	0.133
	↑	A	1	3.500							2105				280	0.133	
	↖	A	1	3.500	10						1710				75	0.044	
Lohas Park Road (EB)	→	E	1,2,3	3.500	35						1885				210	0.111	
	↘	D	3	4.000		15					1960				70	0.036	0.036

Notes:

Flow: (pcu/hr)

Group			Group		A,C,D
y			y		0.286
L (sec)			L (sec)		12
C (sec)			C (sec)		120
y pract.			y pract.		0.810
R.C. (%)			R.C. (%)		183%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 5

I/G= 5

I/G= 5

I/G=

I/G=

Date:
5 Nov 2024

Junction:
Wan Po Road / LOHAS Park Road (JD)

JD

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2025

Description: 2025 Observe Flows (Weekend)

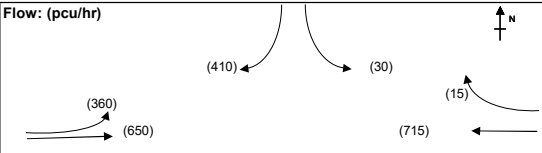
Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak		
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	↗	A	1	3.800	20							1855			360	0.194	0.194
	→	A	1	3.500								2105			325	0.154	
	→	A	1	3.500								2105			325	0.154	
Wan O Road (WB)	↖	C	2	4.000	25							2035			15	0.007	
	←	B	1,2,4	3.800								2135			370	0.173	
	←	B	1,2,4	3.800								1995			345	0.173	
Sunrise Boulevard (SB)	↘	E	3	3.500	18							1815			30	0.017	
	↓	D	3	3.500								1985			204	0.103	0.103
	↙	D	3	3.500								2005			206	0.103	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16		+	12	=	28						*

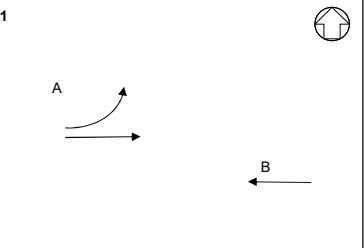
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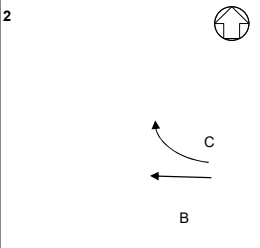
Flow: (pcu/hr)

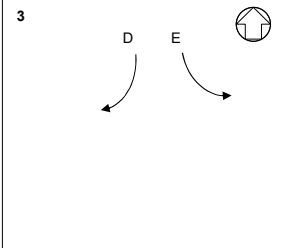


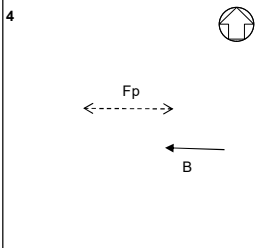
Group			Group		A,C,D,Fp
y			y		0.297
L (sec)			L (sec)		49
C (sec)			C (sec)		120
y pract.			y pract.		0.533
R.C. (%)			R.C. (%)		79%

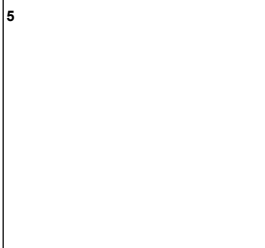
Stage / Phase Diagrams

1

2

3

4

5

I/G= 2		I/G= 5	5	I/G= 5		I/G= 6	28	I/G=	
Date: 5 Nov 2024							Junction: Wan O Road / Sunrise Boulevard (JE)		

2030 Reference Traffic Forecast (without construction works)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

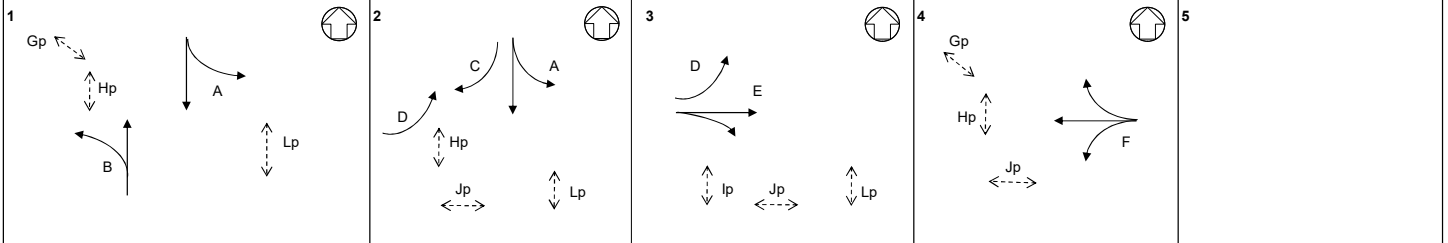
MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)Design Year: 2030Description: 2030 Reference Flows (Weekday)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↕	A	1,2	3.200	20			35%	27%	1885	1895	391	0.207		241	0.127	
	↕	A	1,2	3.600						2115	2115	439	0.208		269	0.127	
Wan Po Road (SB)	↙	C	2	3.300	25					1965	1965	345	0.176		206	0.105	
	↙	C	2	3.300	20					1940	1940	340	0.175		204	0.105	
Wan Po Road (NB)	↗	B	1	3.700	15			2%	0%	1980	1985	251	0.127	0.127	287	0.145	
	↗	B	1	3.700						2125	2125	269	0.127		308	0.145	0.145
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895	1895	490	0.259	0.259	540	0.285	0.285
Chun Yat Street (EB)	↕	E	3	3.600	25			100%	50%	1995	2055	5	0.003		10	0.005	
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	120	0.061	0.061	85	0.043	0.043
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Ip	3	MIN GREEN + FLASH =		5	+	7	=	12							
		Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13							
		Kp	2	MIN GREEN + FLASH =		5	+	6	=	11							
		Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11							
		Mp	2	MIN GREEN + FLASH =		5	+	5	=	10							
		Np	3	MIN GREEN + FLASH =		8	+	7	=	15							

Notes:	Flow: (pcu/hr)		Group	B,D,F	Group	B,D,F
			y		y	
			L (sec)		L (sec)	
			C (sec)		C (sec)	
			y pract.		y pract.	
			R.C. (%)	74%	R.C. (%)	62%

Stage / Phase Diagrams



I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=	
I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=	

Date:
5 Nov 2024Junction:
Wan Po Road / Chun Yat Street (JA)

JA

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB) Design Year: 2030
Description: 2030 Reference Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↖	C	3	4.100	15					1840	1840	363	0.197	0.197	394	0.214	0.214
	↗	C	3	4.100	20					2015	2015	397	0.197		431	0.214	
	↕	C	3	4.000						2155	2155	182	0.084		197	0.091	
	↕	C	3	4.100						2165	2165	183	0.085		198	0.091	
Wan O Road (EB)	↗	B	2	3.500	20					1830	1830	305	0.167		350	0.191	0.191
	↕	B	2	3.200		25				1825	1825	379	0.208		258	0.141	
	↖	B	2	3.200		20				1930	1930	401	0.208	0.208	272	0.141	
Wan Po Road (SB)	↕	A	1	3.400						2095	2095	365	0.174	0.174	193	0.092	
	↖	A	1	3.400						2095	2095	365	0.174		192	0.092	
	↗	A	1	3.400		15				1905	1905	304	0.160		176	0.092	
	↗	A	1	3.400		20				1820	1820	291	0.160		169	0.093	0.093
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =			5	+	9	=	14						
		Ep	2	MIN GREEN + FLASH =			5	+	10	=	15						
		Fp	1,2	MIN GREEN + FLASH =			8	+	15	=	23						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						

Notes:	Flow: (pcu/hr) 		Group		A,B,C	Group		A,B,C
			y		0.579	y		0.498
			L (sec)		14	L (sec)		14
			C (sec)		120	C (sec)		120
			y pract.		0.795	y pract.		0.795
			R.C. (%)		37%	R.C. (%)		60%

Stage / Phase Diagrams																			
1				2				3				4				5			
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=			
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=			

Date: 5 Nov 2024 Junction: Wan Po Road / Wan O Road (JB)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

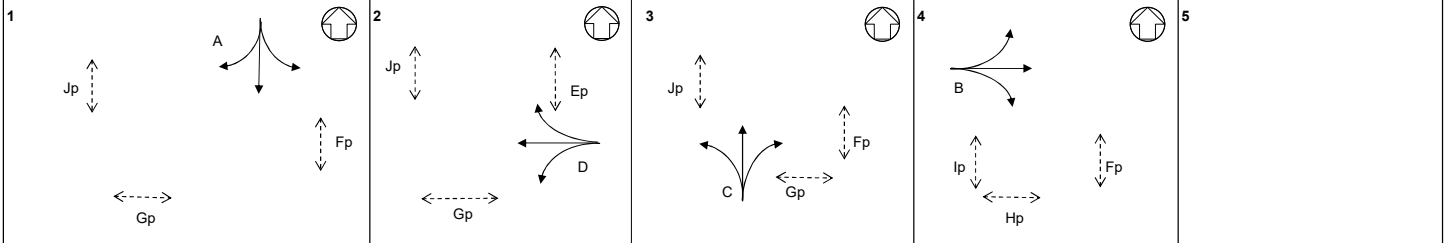
MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)Design Year: 2030Description: 2030 Reference Flows (Weekday)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15					1775	1775	176	0.099	0.099	203	0.114	0.114
		B	2	4.100	20	25		29% / 44%	41% / 23%	2065	2075	204	0.099		237	0.114	
Wan Po Road (SB)		A	1	3.100	15					1750	1750	160	0.091		190	0.109	
		A	1	3.500						2105	2105	568	0.270	0.270	298	0.142	0.142
		A	1	3.500						2105	2105	567	0.269		297	0.141	
		A	1	3.200		25				1960	1960	250	0.128		225	0.115	
Shek Kok Road (WB)		D	4	3.600	10	30		59% / 6%	40% / 19%	1940	1975	212	0.109		173	0.088	0.088
		D	4	3.500		25				1855	1855	203	0.109	0.109	162	0.087	
Wan Po Road (NB)		C	3	3.600	15			76%	46%	1835	1890	185	0.101		207	0.110	
		C	3	3.500						2105	2105	213	0.101	0.101	232	0.110	0.110
		C	3	3.500						2105	2105	212	0.101		231	0.110	
		C	3	3.600		25				1995	1995	60	0.030		75	0.038	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:			Group		A,D,C,B	Group		A,D,C,B
			y		0.580	y		0.454
			L (sec)		27	L (sec)		27
			C (sec)		120	C (sec)		120
			y pract.		0.698	y pract.		0.698
			R.C. (%)		20%	R.C. (%)		54%

Stage / Phase Diagrams



I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	

Date:
5 Nov 2024Junction:
Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

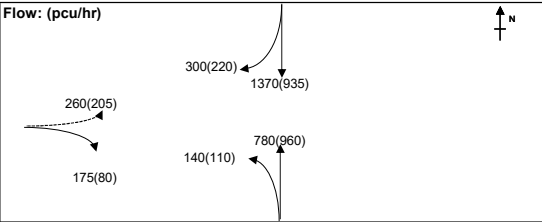
JC

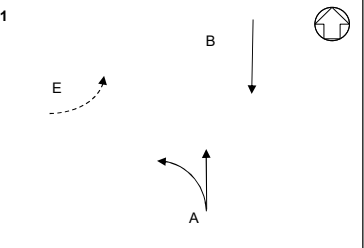
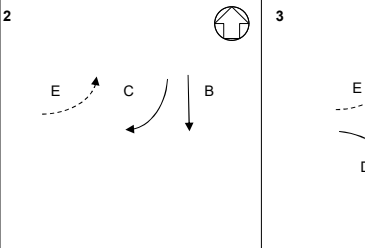
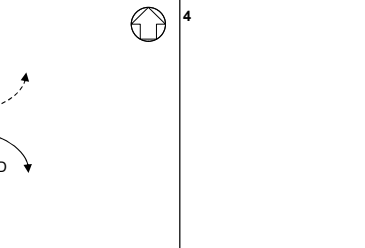
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / LOHAS Park Road (JD) Design Year: 2030
Description: 2030 Reference Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	661	0.336		451	0.230	
	↙	B	1,2	3.500						2105	2105	709	0.337		484	0.230	
	↘	C	2	3.500		15				1915	1915	300	0.157	0.157	220	0.115	0.115
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	390	0.185	0.185	480	0.228	0.228
	↖	A	1	3.500						2105	2105	390	0.185		480	0.228	
	↗	A	1	3.500	10					1710	1710	140	0.082		110	0.064	
Lohas Park Road (EB)	↔	E	1,2,3	3.500	35					1885	1885	260	0.138		205	0.109	
	↕	D	3	4.000		15				1960	1960	175	0.089	0.089	80	0.041	0.041

Notes:		Group		A,C,D	Group		A,C,D
		y		0.431	y		0.384
		L (sec)		12	L (sec)		12
		C (sec)		120	C (sec)		120
		y pract.		0.810	y pract.		0.810
		R.C. (%)		88%	R.C. (%)		111%

Stage / Phase Diagrams									
1		2		3		4		5	
									
I/G= 5		I/G= 5		I/G= 5		I/G=		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=		I/G=	
Date: 5 Nov 2024						Junction: Wan Po Road / LOHAS Park Road (JD)			

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2030

Description: 2030 Reference Flows (Weekday)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	→	A	1	3.800	20					1855	1855	275	0.148	0.248	390	0.210	0.210
	→	A	1	3.500						2105	2105	523	0.248		418	0.199	
	→	A	1	3.500						2105	2105	522	0.248		417	0.198	
Wan O Road (WB)	←	C	2	4.000	25					2035	2035	80	0.039	0.039	50	0.025	
	←	B	1,2,4	3.800						2135	2135	662	0.310		579	0.271	
	←	B	1,2,4	3.800						1995	1995	618	0.310		541	0.271	
Sunrise Boulevard (SB)	↓	E	3	3.500	18					1815	1815	40	0.022	0.218	45	0.025	
	↓	D	3	3.500						1985	1985	433	0.218		172	0.087	0.087
	↓	D	3	3.500						2005	2005	437	0.218		173	0.086	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16		+	12	=	28			*			*

Notes:

Flow: (pcu/hr)

Group		A,C,D,Fp	Group		A,C,D,Fp
y		0.506	y		0.297
L (sec)		43	L (sec)		49
C (sec)		130	C (sec)		120
y pract.		0.602	y pract.		0.533
R.C. (%)		19%	R.C. (%)		79%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 2

I/G= 5

I/G= 5

I/G= 6

I/G= 6

I/G=

5

28

28

Date:
5 Nov 2024

Junction:
Wan O Road / Sunrise Boulevard (JE)

JB

2030 Design Traffic Forecast (with construction works)

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)

Design Year: 2030

Description: 2030 Design Flows (Construction Stage)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	A	1,2	3.200	20			39%	34%	1880	1885	400	0.213		250	0.133	
		A	1,2	3.600						2115	2115	450	0.213		280	0.132	
Wan Po Road (SB)	↓	C	2	3.300	25					1965	1965	345	0.176		206	0.105	
		C	2	3.300						1940	1940	340	0.175		204	0.105	
Wan Po Road (NB)	↑	B	1	3.700	15			2%	0%	1980	1985	251	0.127	0.127	287	0.145	0.145
		B	1	3.700						2125	2125	269	0.127		308	0.145	
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895	1895	490	0.259	0.259	540	0.285	0.285
Chun Yat Street (EB)	↓	E	3	3.600	25			100%	50%	1995	2055	5	0.003		10	0.005	
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	140	0.071	0.071	105	0.053	0.053
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Ip	3	MIN GREEN + FLASH =		5	+	7	=	12							
		Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13							
		Kp	2	MIN GREEN + FLASH =		5	+	6	=	11							
		Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11							
		Mp	2	MIN GREEN + FLASH =		5	+	5	=	10							
		Np	3	MIN GREEN + FLASH =		8	+	7	=	15							

Notes:	Flow: (pcu/hr)	Group	y	L (sec)	C (sec)	y pract.	R.C. (%)	B,D,F	Group	y	L (sec)	C (sec)	y pract.	R.C. (%)
								0.456						
				18										
					130									
						0.775								
							70%							

Stage / Phase Diagrams															
1				2				3				4			
I/G= 7				I/G= 9				I/G=				I/G= 5			
I/G= 7				I/G= 9				I/G=				I/G= 5			

Date: 5 Nov 2024 Junction: Wan Po Road / Chun Yat Street (JA) JA

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB) Design Year: 2030
Description: 2030 Design Flows (Construction Stage) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↖	C	3	4.100	15					1840	1840	370	0.201	0.201	401	0.218	0.218
	↗	C	3	4.100	20					2015	2015	405	0.201		439	0.218	
	↑	C	3	4.000						2155	2155	185	0.086		200	0.093	
	↓	C	3	4.100						2165	2165	185	0.085		200	0.092	
Wan O Road (EB)	↖	B	2	3.500	20					1830	1830	305	0.167		350	0.191	0.191
	↗	B	2	3.200		25				1825	1825	386	0.212		265	0.145	
	↓	B	2	3.200		20				1930	1930	409	0.212	0.212	280	0.145	
Wan Po Road (SB)	↓	A	1	3.400						2095	2095	368	0.176	0.176	195	0.093	0.093
	↖	A	1	3.400						2095	2095	367	0.175		195	0.093	
	↗	A	1	3.400		15				1905	1905	304	0.160		176	0.092	
	↘	A	1	3.400		20				1820	1820	291	0.160		169	0.093	
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =		5	+	9	=	14							
		Ep	2	MIN GREEN + FLASH =		5	+	10	=	15							
		Fp	1,2	MIN GREEN + FLASH =		8	+	15	=	23							
		Gp	3	MIN GREEN + FLASH =		5	+	9	=	14							

Notes:	<div>Flow: (pcu/hr)</div>	Group		A,B,C	Group		A,B,C
		y		0.589	y		0.502
		L (sec)		14	L (sec)		14
		C (sec)		120	C (sec)		120
		y pract.		0.795	y pract.		0.795
		R.C. (%)		35%	R.C. (%)		58%

Stage / Phase Diagrams																													
1						2						3						4						5					
I/G= 6						I/G= 5						I/G= 6						I/G=						I/G=					
I/G= 6						I/G= 5						I/G= 6						I/G=						I/G=					

Date: 5 Nov 2024 Junction: Wan Po Road / Wan O Road (JB)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

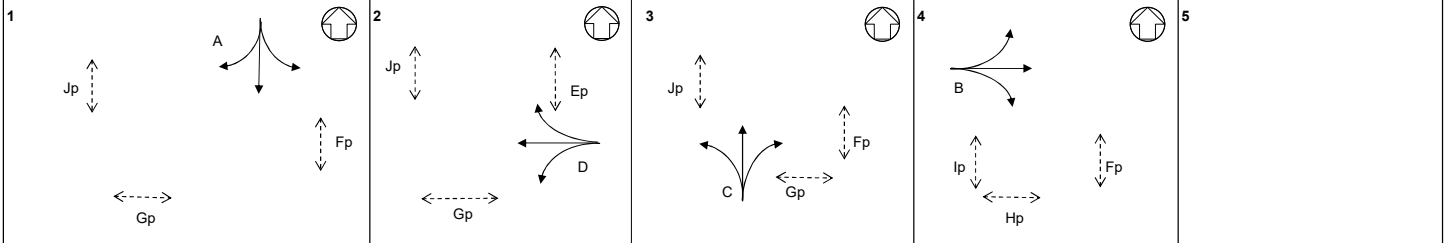
MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)Design Year: 2030Description: 2030 Design Flows (Construction Stage)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15					1775	1775	176	0.099	0.099	203	0.114	0.114
		B	2	4.100	20	25		29% / 44%	41% / 23%	2065	2075	204	0.099		237	0.114	
Wan Po Road (SB)		A	1	3.100	15					1750	1750	160	0.091		190	0.109	
		A	1	3.500						2105	2105	570	0.271	0.271	300	0.143	0.143
		A	1	3.500						2105	2105	570	0.271		300	0.143	
		A	1	3.200		25				1960	1960	250	0.128		225	0.115	
Shek Kok Road (WB)		D	4	3.600	10	30		59% / 6%	40% / 19%	1940	1975	212	0.109		173	0.088	0.088
		D	4	3.500		25				1855	1855	203	0.109	0.109	162	0.087	
Wan Po Road (NB)		C	3	3.600	15			75%	45%	1835	1890	187	0.102	0.102	209	0.111	
		C	3	3.500						2105	2105	214	0.102		233	0.111	0.111
		C	3	3.500						2105	2105	214	0.102		233	0.111	
		C	3	3.600		25				1995	1995	60	0.030		75	0.038	
Pedestrian Crossing	Ep	2		MIN GREEN + FLASH =			5	+	6	=	11						
	Fp	1,3,4		MIN GREEN + FLASH =			5	+	7	=	12						
	Gp	3		MIN GREEN + FLASH =			5	+	9	=	14						
	Hp	1,2,4		MIN GREEN + FLASH =			7	+	13	=	20						
	Ip	4		MIN GREEN + FLASH =			5	+	7	=	12						
	Jp	1,2,3		MIN GREEN + FLASH =			5	+	7	=	12						

Notes:				Group		A,D,C,B	Group		A,D,C,B
				y		0.581	y		0.455
				L (sec)		27	L (sec)		27
				C (sec)		120	C (sec)		120
				y pract.		0.698	y pract.		0.698
				R.C. (%)		20%	R.C. (%)		53%

Stage / Phase Diagrams



I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	

Date:
5 Nov 2024Junction:
Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

JC

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / LOHAS Park Road (JD) Design Year: 2030
Description: 2030 Design Flows (Construction Stage) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	664	0.338		454	0.231	
	↙	B	1,2	3.500						2105	2105	711	0.338		486	0.231	
	↘	C	2	3.500		15				1915	1915	300	0.157	0.157	220	0.115	0.115
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	393	0.187	0.187	483	0.229	0.229
	↖	A	1	3.500						2105	2105	392	0.186		482	0.229	
	↗	A	1	3.500	10					1710	1710	140	0.082		110	0.064	
Lohas Park Road (EB)	→	E	1,2,3	3.500	35					1885	1885	260	0.138		205	0.109	
	↘	D	3	4.000		15				1960	1960	175	0.089	0.089	80	0.041	0.041

Notes:	Flow: (pcu/hr) 			Group		A,C,D	Group		A,C,D
				y		0.433	y		0.385
				L (sec)		12	L (sec)		12
				C (sec)		120	C (sec)		120
				y pract.		0.810	y pract.		0.810
				R.C. (%)		87%	R.C. (%)		110%

Stage / Phase Diagrams														
1			2			3			4			5		
I/G= 5			I/G= 5			I/G= 5			I/G=			I/G=		
I/G= 5			I/G= 5			I/G= 5			I/G=			I/G=		

Date: 5 Nov 2024 Junction: Wan Po Road / LOHAS Park Road (JD)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan O Road / Sunrise Boulevard (JE) Design Year: 2030
Description: 2030 Design Flows (Construction Stage) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	→	A	1	3.800	20					1855	1855	275	0.148	0.252	390	0.210	0.210
	→	A	1	3.500						2105	2105	530	0.252		425	0.202	
	→	A	1	3.500						2105	2105	530	0.252		425	0.202	
Wan O Road (WB)	←	C	2	4.000	25					2035	2035	80	0.039	0.039	50	0.025	
	←	B	1,2,4	3.800						2135	2135	669	0.313		587	0.275	
	←	B	1,2,4	3.800						1995	1995	626	0.314		548	0.275	
Sunrise Boulevard (SB)	↓	E	3	3.500	18					1815	1815	40	0.022	0.218	45	0.025	
	↓	D	3	3.500						1985	1985	433	0.218		172	0.087	0.087
	↓	D	3	3.500						2005	2005	437	0.218		173	0.086	
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16		+	12	=	28			*			*

Notes:	Flow: (pcu/hr) 		Group		A,C,D,Fp	Group		A,C,D,Fp
			y		0.509	y		0.297
			L (sec)		43	L (sec)		49
			C (sec)		130	C (sec)		120
			y pract.		0.602	y pract.		0.533
			R.C. (%)		18%	R.C. (%)		79%

Stage / Phase Diagrams									
1		2		3		4		5	
I/G= 2		I/G= 5		I/G= 5		I/G= 6	28	I/G=	
I/G= 2		I/G= 5	5	I/G= 5		I/G= 6	28	I/G=	
Date: 5 Nov 2024							Junction: Wan O Road / Sunrise Boulevard (JE)		

**2033 Reference Traffic Forecast
(without Proposed PRS Development)
- Weekday**

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)Design Year: 2033Description: 2033 Reference Flows (Weekday)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	A	1,2	3.200	20			35%	27%	1885	1895	398	0.211		244	0.129	
		A	1,2	3.600						2115	2115	447	0.211		271	0.128	
Wan Po Road (SB)	↓	C	2	3.300	25					1965	1965	350	0.178		211	0.107	
		C	2	3.300						1940	1940	345	0.178		209	0.108	
Wan Po Road (NB)	↑	B	1	3.700	15			2%	0%	1980	1985	256	0.129	0.129	292	0.147	0.147
		B	1	3.700						2125	2125	274	0.129		313	0.147	
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895	1895	500	0.264	0.264	550	0.290	0.290
Chun Yat Street (EB)	↓	E	3	3.600	25			100%	50%	1995	2055	5	0.003		10	0.005	
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	120	0.061	0.061	85	0.043	0.043
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10							
		Ip	3	MIN GREEN + FLASH =		5	+	7	=	12							
		Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13							
		Kp	2	MIN GREEN + FLASH =		5	+	6	=	11							
		Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11							
		Mp	2	MIN GREEN + FLASH =		5	+	5	=	10							
		Np	3	MIN GREEN + FLASH =		8	+	7	=	15							

Notes:	Flow: (pcu/hr) 		Group		B,D,F	Group		B,D,F
			y		0.454	y		0.481
			L (sec)		18	L (sec)		18
			C (sec)		130	C (sec)		120
			y pract.		0.775	y pract.		0.765
			R.C. (%)		71%	R.C. (%)		59%

Stage / Phase Diagrams											
1		2		3		4		5			
I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=			
I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=			

Date:
5 Nov 2024Junction:
Wan Po Road / Chun Yat Street (JA)

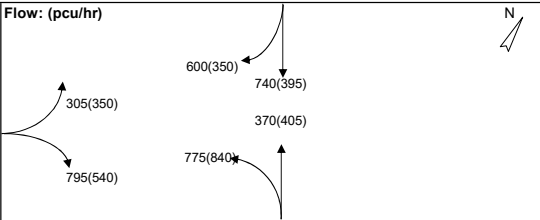
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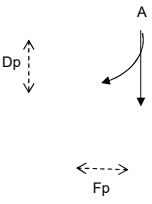
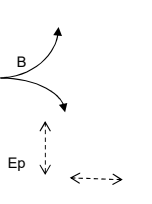
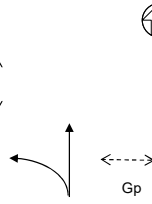
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB) Design Year: 2033
Description: 2033 Reference Flows (Weekday) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↖	C	3	4.100	15					1840	1840	370	0.201	0.201	401	0.218	0.218
	↗	C	3	4.100	20					2015	2015	405	0.201		439	0.218	
	↑	C	3	4.000						2155	2155	185	0.086		202	0.094	
	↓	C	3	4.100						2165	2165	185	0.085		203	0.094	
Wan O Road (EB)	↖	B	2	3.500	20					1830	1830	305	0.167		350	0.191	0.191
	↗	B	2	3.200		25				1825	1825	386	0.212		262	0.144	
	↓	B	2	3.200		20				1930	1930	409	0.212	0.212	278	0.144	
Wan Po Road (SB)	↓	A	1	3.400						2095	2095	370	0.177	0.177	198	0.095	0.095
	↖	A	1	3.400						2095	2095	370	0.177		197	0.094	
	↗	A	1	3.400		15				1905	1905	307	0.161		179	0.094	
	↘	A	1	3.400		20				1820	1820	293	0.161		171	0.094	
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =		5	+	9	=	14							
		Ep	2	MIN GREEN + FLASH =		5	+	10	=	15							
		Fp	1,2	MIN GREEN + FLASH =		8	+	15	=	23							
		Gp	3	MIN GREEN + FLASH =		5	+	9	=	14							

Notes:	Flow: (pcu/hr)				Group		A,B,C	Group		A,B,C
					y		0.590	y		0.504
					L (sec)		14	L (sec)		14
					C (sec)		120	C (sec)		120
					y pract.		0.795	y pract.		0.795
					R.C. (%)		35%	R.C. (%)		58%






Stage / Phase Diagrams									
1		2		3		4		5	
									
I/G= 6		I/G= 5		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 5		I/G= 6		I/G=		I/G=	
Date: 5 Nov 2024						Junction: Wan Po Road / Wan O Road (JB)			

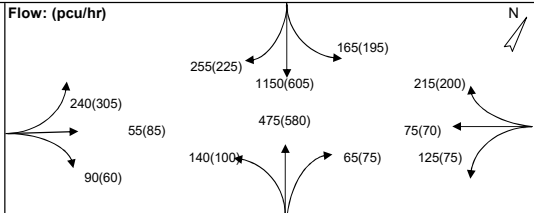
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

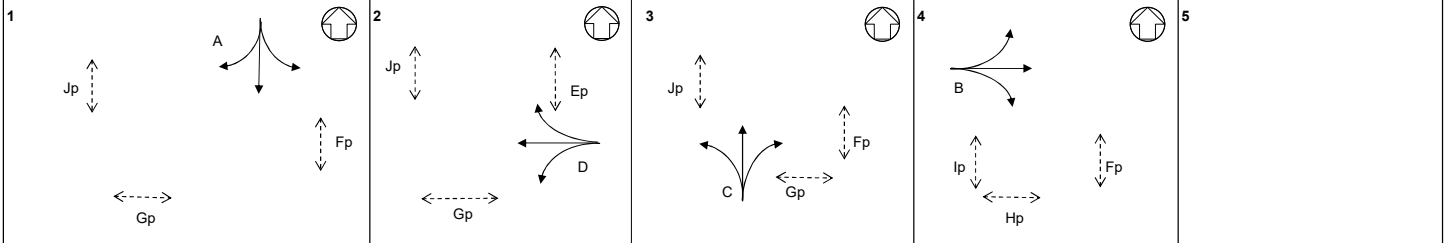
MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)Design Year: 2033Description: 2033 Reference Flows (Weekday)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15					1775	1775	178	0.100	0.100	208	0.117	0.117
		B	2	4.100	20	25		30% / 43%	40% / 25%	2065	2070	207	0.100		242	0.117	
Wan Po Road (SB)		A	1	3.100	15					1750	1750	165	0.094		195	0.111	
		A	1	3.500						2105	2105	575	0.273	0.273	303	0.144	0.144
		A	1	3.500						2105	2105	575	0.273		302	0.143	
		A	1	3.200		25				1960	1960	255	0.130		225	0.115	
Shek Kok Road (WB)		D	4	3.600	10	30		59% / 6%	42% / 19%	1940	1970	212	0.109		178	0.090	0.090
		D	4	3.500		25				1855	1855	203	0.109	0.109	167	0.090	
Wan Po Road (NB)		C	3	3.600	15			75%	48%	1835	1885	187	0.102	0.102	210	0.111	
		C	3	3.500						2105	2105	214	0.102		235	0.112	0.112
		C	3	3.500						2105	2105	214	0.102		235	0.112	
		C	3	3.600		25				1995	1995	65	0.033		75	0.038	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:			Group		A,D,C,B	Group		A,D,C,B
			y		0.585	y		0.463
			L (sec)		27	L (sec)		27
			C (sec)		120	C (sec)		120
			y pract.		0.698	y pract.		0.698
			R.C. (%)		19%	R.C. (%)		51%

Stage / Phase Diagrams



I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	

Date:
5 Nov 2024Junction:
Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

JC

Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2033

Description: 2033 Reference Flows (Weekday)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	669	0.340		456	0.232	
	↘	B	1,2	3.500						2105	2105	716	0.340		489	0.232	
	↙	C	2	3.500		15				1915	1915	300	0.157	0.157	225	0.117	0.117
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	395	0.188	0.188	488	0.232	0.232
	↗	A	1	3.500						2105	2105	395	0.188		487	0.231	
	↖	A	1	3.500	10					1710	1710	140	0.082		110	0.064	
Lohas Park Road (EB)	→	E	1,2,3	3.500	35					1885	1885	265	0.141		205	0.109	
	↘	D	3	4.000		15				1960	1960	180	0.092	0.092	80	0.041	0.041

Notes:

Flow: (pcu/hr)

Group		A,C,D	Group		A,C,D
y		0.436	y		0.390
L (sec)		12	L (sec)		12
C (sec)		120	C (sec)		120
y pract.		0.810	y pract.		0.810
R.C. (%)		86%	R.C. (%)		108%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 5

I/G= 5

I/G= 5

I/G=

I/G=

Date:
5 Nov 2024

Junction:
Wan Po Road / LOHAS Park Road (JD)

JD

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2033

Description: 2033 Reference Flows (Weekday)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	→	A	1	3.800	20					1855	1855	280	0.151	0.252	395	0.213	0.213
	→	A	1	3.500						2105	2105	530	0.252		423	0.201	
	→	A	1	3.500						2105	2105	530	0.252		422	0.200	
Wan O Road (WB)	←	C	2	4.000	25					2035	2035	80	0.039	0.039	50	0.025	
	←	B	1,2,4	3.800						2135	2135	669	0.313		587	0.275	
	←	B	1,2,4	3.800						1995	1995	626	0.314		548	0.275	
Sunrise Boulevard (SB)	↓	E	3	3.500	18					1815	1815	40	0.022	0.221	50	0.028	
	↓	D	3	3.500						1985	1985	438	0.221		174	0.088	
	↓	D	3	3.500		30				2005	2005	442	0.220		176	0.088	0.088
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16		+	12	=	28			*			*

Notes:

Flow: (pcu/hr)

Group		A,C,D,Fp	Group		A,C,D,Fp
y		0.512	y		0.301
L (sec)		43	L (sec)		49
C (sec)		130	C (sec)		120
y pract.		0.602	y pract.		0.533
R.C. (%)		18%	R.C. (%)		77%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 2

I/G= 5

I/G= 5

I/G= 6

I/G= 6

I/G=

5

28

28

Date:
5 Nov 2024

Junction:
Wan O Road / Sunrise Boulevard (JE)

JB

**2033 Design Traffic Forecast
(with Proposed PRS Development)
- Normal Operation**

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)Design Year: 2033Description: 2033 Design Flows (Normal Operation)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak				
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Wan Po Road (SB)	↕	A	1,2	3.200	20			37%	30%	1880	1890	403	0.214		248	0.131			
		A	1,2	3.600						2115	2115	452	0.214		277	0.131			
Wan Po Road (SB)	↙	C	2	3.300		25				1965	1965	350	0.178		211	0.107			
	↘	C	2	3.300		20				1940	1940	345	0.178		209	0.108			
Wan Po Road (NB)	↕	B	1	3.700	15			2%	0%	1980	1985	256	0.129	0.129	292	0.147			
	↑	B	1	3.700						2125	2125	274	0.129		313	0.147	0.147		
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895	1895	500	0.264	0.264	550	0.290	0.290		
Chun Yat Street (EB)	↕	E	3	3.600		25		100%	50%	1995	2055	5	0.003		10	0.005			
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	130	0.066	0.066	100	0.051	0.051		
Pedestrian Crossing																			
	Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10										
	Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10										
	Ip	3	MIN GREEN + FLASH =		5	+	7	=	12										
	Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13										
	Kp	2	MIN GREEN + FLASH =		5	+	6	=	11										
	Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11										
	Mp	2	MIN GREEN + FLASH =		5	+	5	=	10										
	Np	3	MIN GREEN + FLASH =		8	+	7	=	15										
Notes:				Flow: (pcu/hr) 								Group		B,C,Ip,F	B,D,F	Group		B,C,Ip,F	B,D,F
												y	0.373	0.459	y	0.306	0.488		
												L (sec)	35	18	L (sec)	35	18		
												C (sec)	130	130	C (sec)	120	120		
												y pract.	0.658	0.775	y pract.	0.638	0.765		
												R.C. (%)	76%	69%	R.C. (%)	109%	57%		
Stage / Phase Diagrams																			
I/G= 7				I/G= 9				I/G=				I/G= 5				I/G=			
I/G= 7				I/G= 9				I/G=				I/G= 5				I/G=			
Date: 5 Nov 2024												Junction: Wan Po Road / Chun Yat Street (JA)							

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB)Design Year: 2033Description: 2033 Design Flows (Normal Operation)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak																																										
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																																								
Wan Po Road (NB)		C	3	4.100	15					1840	1840	372	0.202	0.202	403	0.219	0.219																																								
		C	3	4.100	20			2015	2015	408	0.202	442	0.219																																												
		C	3	4.000				2155	2155	187	0.087	207	0.096																																												
		C	3	4.100				2165	2165	188	0.087	208	0.096																																												
Wan O Road (EB)		B	2	3.500	20					1830	1830	305	0.167	0.213	350	0.191	0.191																																								
		B	2	3.200		25		1825	1825	389	0.213	265	0.145																																												
		B	2	3.200		20		1930	1930	411	0.213	280	0.145																																												
Wan Po Road (SB)		A	1	3.400						2095	2095	373	0.178	0.178	200	0.095	0.095																																								
		A	1	3.400				2095	2095	372	0.178	200	0.095																																												
		A	1	3.400		15		1905	1905	307	0.161	179	0.094																																												
		A	1	3.400		20		1820	1820	293	0.161	171	0.094																																												
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =		5	+	9	=	14																																															
		Ep	2	MIN GREEN + FLASH =		5	+	10	=	15																																															
		Fp	1,2	MIN GREEN + FLASH =		8	+	15	=	23																																															
		Gp	3	MIN GREEN + FLASH =		5	+	9	=	14																																															
Notes:				Flow: (pcu/hr)												<table border="1"> <thead> <tr> <th>Group</th> <th>A,B,Gp</th> <th>A,B,C</th> <th>Group</th> <th>A,B,Gp</th> <th>A,B,C</th> </tr> </thead> <tbody> <tr> <td>y</td> <td>0.391</td> <td>0.594</td> <td>y</td> <td>0.287</td> <td>0.506</td> </tr> <tr> <td>L (sec)</td> <td>35</td> <td>14</td> <td>L (sec)</td> <td>35</td> <td>14</td> </tr> <tr> <td>C (sec)</td> <td>120</td> <td>120</td> <td>C (sec)</td> <td>120</td> <td>120</td> </tr> <tr> <td>y pract.</td> <td>0.638</td> <td>0.795</td> <td>y pract.</td> <td>0.638</td> <td>0.795</td> </tr> <tr> <td>R.C. (%)</td> <td>63%</td> <td>34%</td> <td>R.C. (%)</td> <td>122%</td> <td>57%</td> </tr> </tbody> </table>						Group	A,B,Gp	A,B,C	Group	A,B,Gp	A,B,C	y	0.391	0.594	y	0.287	0.506	L (sec)	35	14	L (sec)	35	14	C (sec)	120	120	C (sec)	120	120	y pract.	0.638	0.795	y pract.	0.638	0.795	R.C. (%)	63%	34%	R.C. (%)	122%	57%
Group	A,B,Gp	A,B,C	Group	A,B,Gp	A,B,C																																																				
y	0.391	0.594	y	0.287	0.506																																																				
L (sec)	35	14	L (sec)	35	14																																																				
C (sec)	120	120	C (sec)	120	120																																																				
y pract.	0.638	0.795	y pract.	0.638	0.795																																																				
R.C. (%)	63%	34%	R.C. (%)	122%	57%																																																				
Stage / Phase Diagrams																																																									
1		2		3		4		5																																																	
I/G= 6		I/G= 5		I/G= 6		I/G=		I/G=																																																	
I/G= 6		I/G= 5		I/G= 6		I/G=		I/G=																																																	
Date: 5 Nov 2024						Junction: Wan Po Road / Wan O Road (JB)																																																			

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

Design Year: 2033

Description: 2033 Design Flows (Normal Operation)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)	↔	B	2	3.400	15					1775	1775	178	0.100	0.100	208	0.117	0.117
	↔	B	2	4.100	20	25		30% / 43%	40% / 25%	2065	2070	207	0.100		242	0.117	
Wan Po Road (SB)	↓	A	1	3.100	15					1750	1750	165	0.094		195	0.111	
	↓	A	1	3.500						2105	2105	578	0.275	0.275	305	0.145	0.145
	↓	A	1	3.500						2105	2105	577	0.274		305	0.145	
	↘	A	1	3.200		25				1960	1960	255	0.130		225	0.115	
Shek Kok Road (WB)	↔	D	4	3.600	10	30		59% / 6%	42% / 19%	1940	1970	212	0.109		178	0.090	0.090
	↔	D	4	3.500		25				1855	1855	203	0.109	0.109	167	0.090	
Wan Po Road (NB)	↑	C	3	3.600	15			74%	47%	1840	1885	188	0.102		214	0.114	0.114
	↑	C	3	3.500						2105	2105	216	0.103	0.103	238	0.113	
	↑	C	3	3.500						2105	2105	216	0.103		238	0.113	
	↗	C	3	3.600		25				1995	1995	65	0.033		75	0.038	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:	Flow: (pcu/hr)		Group	A,D,C,Ip	A,D,C,B	Group	A,Ep,C,B	A,D,C,B
			y			y		
			L (sec)			L (sec)		
			C (sec)			C (sec)		
			y pract.			y pract.		
			R.C. (%)			R.C. (%)		
			0.487		0.587	0.376		0.466
			38		27	34		27
			120		120	120		120
			0.615		0.698	0.645		0.698
			26%		19%	72%		50%

Stage / Phase Diagrams									
1		2		3		4		5	

I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	

Date: **5 Nov 2024** Junction: **Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)**

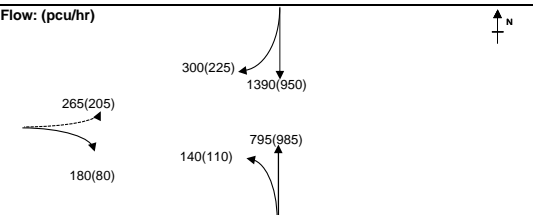
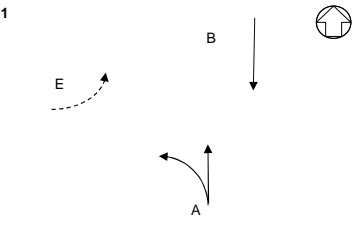
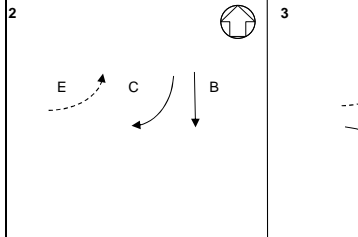
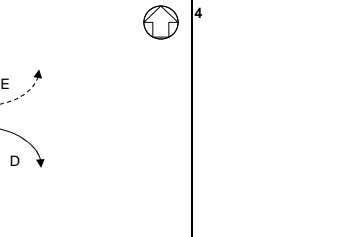
Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2033

Description: 2033 Design Flows (Normal Operation)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	671	0.341		459	0.234	
	↓	B	1,2	3.500						2105	2105	719	0.342		491	0.233	
	↘	C	2	3.500		15				1915	1915	300	0.157	0.157	225	0.117	0.117
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	398	0.189	0.189	493	0.234	0.234
	↑	A	1	3.500						2105	2105	397	0.189		492	0.234	
	↗	A	1	3.500	10					1710	1710	140	0.082		110	0.064	
Lohas Park Road (EB)	↗	E	1,2,3	3.500	35					1885	1885	265	0.141		205	0.109	
	↘	D	3	4.000		15				1960	1960	180	0.092	0.092	80	0.041	0.041
Notes:				<div>Flow: (pcu/hr)</div> 								Group	B,D	A,C,D	Group	B,D	A,C,D
												y	0.433	0.438	y	0.274	0.393
												L (sec)	10	12	L (sec)	10	12
												C (sec)	120	120	C (sec)	120	120
												y pract.	0.825	0.810	y pract.	0.825	0.810
												R.C. (%)	90%	85%	R.C. (%)	201%	106%
												Stage / Phase Diagrams					
1				2				3				4				5	
																	
I/G= 5				I/G= 5				I/G= 5				I/G=			I/G=		
I/G= 5				I/G= 5				I/G= 5				I/G=			I/G=		

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2033

Description: 2033 Design Flows (Normal Operation)

Designed By: HKH

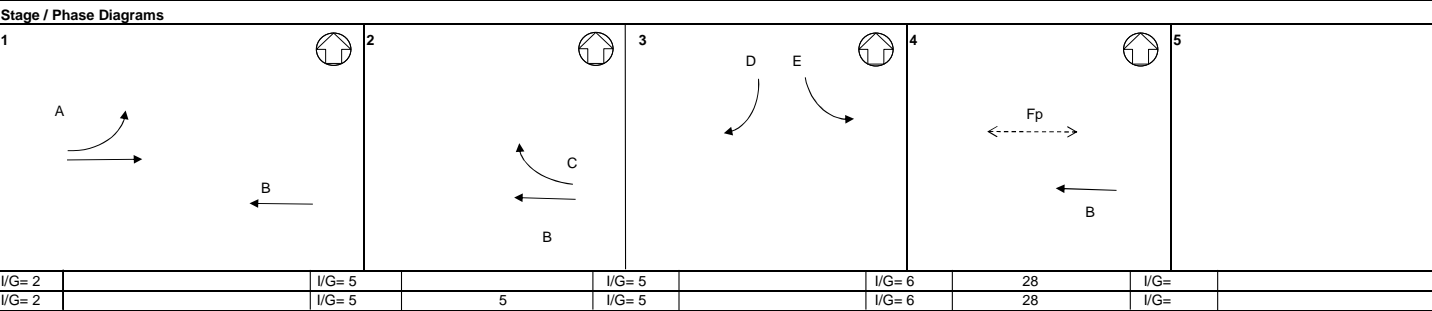
Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	↘	A	1	3.800	20					1855	1855	280	0.151		395	0.213	0.213
	→	A	1	3.500						2105	2105	533	0.253	0.253	425	0.202	
	→	A	1	3.500						2105	2105	532	0.253		425	0.202	
Wan O Road (WB)	↖	C	2	4.000	25					2035	2035	80	0.039	0.039	50	0.025	
	←	B	1,2,4	3.800						2135	2135	672	0.315		589	0.276	
	←	B	1,2,4	3.800						1995	1995	628	0.315		551	0.276	
Sunrise Boulevard (SB)	↙	E	3	3.500	18					1815	1815	40	0.022		50	0.028	
	↓	D	3	3.500		25				1985	1985	438	0.221	0.221	174	0.088	
	↘	D	3	3.500			30			2005	2005	442	0.220		176	0.088	0.088
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16	+	12	=	28				*			*

Notes:

Flow: (pcu/hr)

Group	B,D	A,C,D,Fp	Group	B,D	A,C,D,Fp
y	0.535	0.513	y	0.364	0.301
L (sec)	15	43	L (sec)	15	49
C (sec)	130	130	C (sec)	120	120
y pract.	0.796	0.602	y pract.	0.788	0.533
R.C. (%)	49%	17%	R.C. (%)	116%	77%









**2033 Reference Traffic Forecast
(without Proposed PRS Development)
- Weekend**

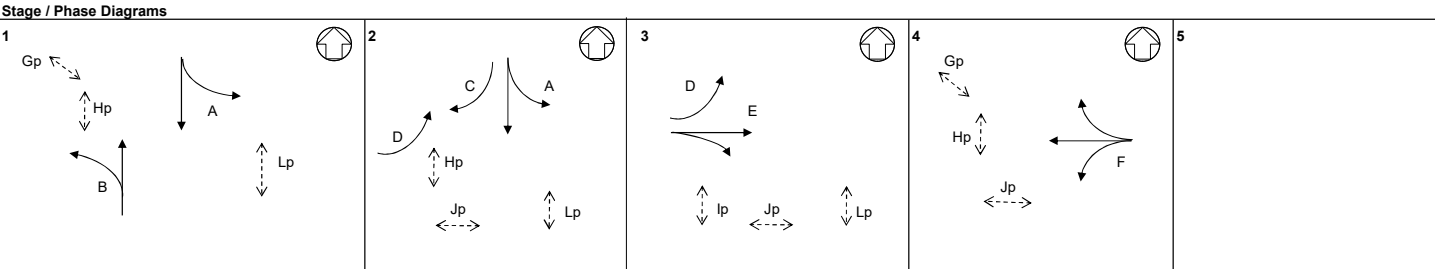
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA) Design Year: 2033
Description: 2033 Reference Flows (Weekend) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak			
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)
Wan Po Road (SB)		A	1,2	3.200	20			26%		1900						213	0.112	
		A	1,2	3.600													2115	
Wan Po Road (SB)		C	2	3.300						1965						148	0.075	
		C	2	3.300												20	1940	
Wan Po Road (NB)		B	1	3.700	15			4%		1980						272	0.137	0.138
		B	1	3.700												2125	293	
Chun Yat Street (EB)		D	2,3	3.600	35					1895						345	0.182	0.182
Chun Yat Street (EB)		E	3	3.600	25			100%		1995						5	0.003	
Chun Yat Street (WB)		F	4	5.100	25	20		0% / 92%		1990						60	0.030	0.030
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =			5	+	5	=	10							
		Hp	1,2,4	MIN GREEN + FLASH =			5	+	5	=	10							
		Ip	3	MIN GREEN + FLASH =			5	+	7	=	12							
		Jp	2,3,4	MIN GREEN + FLASH =			5	+	8	=	13							
		Kp	2	MIN GREEN + FLASH =			5	+	6	=	11							
		Lp	1,2,3	MIN GREEN + FLASH =			5	+	6	=	11							
		Mp	2	MIN GREEN + FLASH =			5	+	5	=	10							
		Np	3	MIN GREEN + FLASH =			8	+	7	=	15							

Notes:	Flow: (pcu/hr) 		Group			Group		B,D,F
			y			y		0.350
			L (sec)			L (sec)		18
			C (sec)			C (sec)		120
			y pract.			y pract.		0.765
			R.C. (%)			R.C. (%)		119%

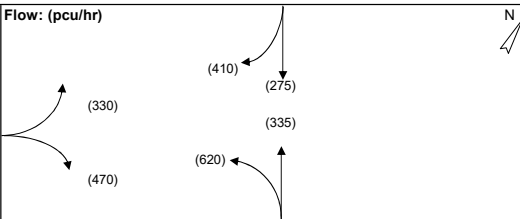
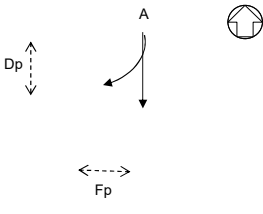
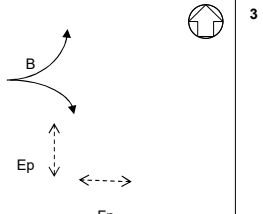
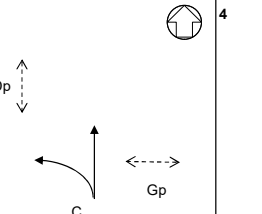



I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=	
Date: 5 Nov 2024					Junction: Wan Po Road / Chun Yat Street (JA)				

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB) Design Year: 2033
Description: 2033 Reference Flows (Weekend) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak		
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (NB)	↖	C	3	4.100	15						1840				296	0.161	0.161
	↗	C	3	4.100	20						2015				324	0.161	
	↑	C	3	4.000							2155				167	0.077	
	↑	C	3	4.100							2165				168	0.078	
Wan O Road (EB)	↘	B	2	3.500	20						1830				330	0.180	0.180
	↙	B	2	3.200		25					1825				228	0.125	
	→	B	2	3.200		20					1930				242	0.125	
Wan Po Road (SB)	↓	A	1	3.400							2095				138	0.066	
	↓	A	1	3.400							2095				137	0.065	
	↘	A	1	3.400		15					1905				210	0.110	0.110
	↙	A	1	3.400		20					1820				200	0.110	
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =			5	+	9	=	14						
		Ep	2	MIN GREEN + FLASH =			5	+	10	=	15						
		Fp	1,2	MIN GREEN + FLASH =			8	+	15	=	23						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
Notes:				<div>Flow: (pcu/hr)</div> 								Group			Group		A,B,C
												y			y		0.451
												L (sec)			L (sec)		14
												C (sec)			C (sec)		120
												y pract.			y pract.		0.795
												R.C. (%)			R.C. (%)		76%
Stage / Phase Diagrams																	
1				2				3				4				5	
																	
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=	
Date: 5 Nov 2024												Junction: Wan Po Road / Wan O Road (JB)					

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

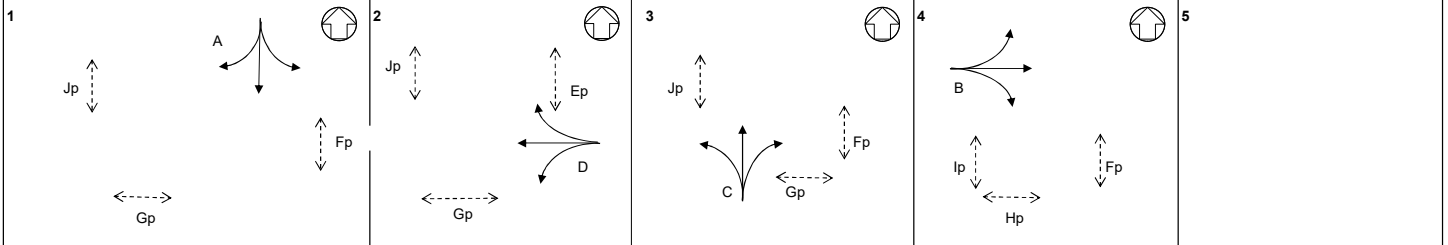
MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)Design Year: 2033Description: 2033 Reference Flows (Weekend)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak		
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y
Access Road (EB)		B	2	3.400	15						1775				176	0.099	0.099
		B	2	4.100	20	25		24% / 49%			2065				204	0.099	
Wan Po Road (SB)		A	1	3.100	15						1750				155	0.089	
		A	1	3.500							2105				265	0.126	0.126
		A	1	3.500							2105				265	0.126	
		A	1	3.200		25					1960				240	0.122	
Shek Kok Road (WB)		D	4	3.600	10	30		40% / 25%			1975				126	0.064	
		D	4	3.500		25					1855				119	0.064	0.064
Wan Po Road (NB)		C	3	3.600	15			56%			1870				189	0.101	
		C	3	3.500							2105				213	0.101	0.101
		C	3	3.500							2105				213	0.101	
		C	3	3.600		25					1995				50	0.025	
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14						
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20						
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12						
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:				Group			Group		A,D,C,B
				y			y		0.390
				L (sec)			L (sec)		27
				C (sec)			C (sec)		120
				y pract.			y pract.		0.698
				R.C. (%)			R.C. (%)		79%

Stage / Phase Diagrams



I/G= 10		I/G= 6		I/G= 9		I/G= 6		I/G=	
Date: 5 Nov 2024					Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)				

Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2033

Description: 2033 Reference Flows (Weekend)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak		
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500							1965				406	0.207	
	↓	B	1,2	3.500							2105				434	0.206	
	↘	C	2	3.500		15					1915				285	0.149	0.149
Wan Po Road (NB)	↑	A	1	3.500							2105				393	0.187	0.187
	↑	A	1	3.500							2105				392	0.186	
	↙	A	1	3.500	10						1710				105	0.061	
Lohas Park Road (EB)	↗	E	1,2,3	3.500	35						1885				255	0.135	
	↘	D	3	4.000		15					1960				85	0.043	0.043

Notes:

Flow: (pcu/hr)

Group			Group		A,C,D
y			y		0.379
L (sec)			L (sec)		12
C (sec)			C (sec)		120
y pract.			y pract.		0.810
R.C. (%)			R.C. (%)		114%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 5

I/G= 5

I/G= 5

I/G=

I/G=

Date:
5 Nov 2024

Junction:
Wan Po Road / LOHAS Park Road (JD)

JD

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010 MVA HONG KONG LIMITED

Junction: Wan O Road / Sunrise Boulevard (JE) Design Year: 2033
Description: 2033 Reference Flows (Weekend) Designed By: HKH Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		Flow (pcu/hr)	y Value	Critical y	PM Peak		
					Left	Right			PM		PM				Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	↗	A	1	3.800	20						1855				465	0.251	0.251
	→		1	3.500							2105				433	0.206	
	↘	A	1	3.500							2105				432	0.205	
Wan O Road (WB)	↖	C	2	4.000		25					2035				45	0.022	
	←	B	1,2,4	3.800							2135				494	0.231	
	↙	B	1,2,4	3.800							1995				461	0.231	
Sunrise Boulevard (SB)	↘	E	3	3.500	18						1815				40	0.022	
	↓	D	3	3.500		25					1985				246	0.124	
	↖	D	3	3.500		30					2005				249	0.124	0.124
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =				16	+	12	=	28					*

Notes:

Flow: (pcu/hr)

Group			Group		A, C, D, Fp
y			y		0.375
L (sec)			L (sec)		49
C (sec)			C (sec)		120
y pract.			y pract.		0.533
R.C. (%)			R.C. (%)		42%

Stage / Phase Diagrams

1

2

3

4

5

I/G= 2		I/G= 5	5	I/G= 5		I/G= 6	28	I/G=	
Date: 5 Nov 2024							Junction: Wan O Road / Sunrise Boulevard (JE)		

**2033 Design Traffic Forecast
(with Proposed PRS Development)
- Event Day**

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)Design Year: 2033Description: 2033 Design Flows (Event Day)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak																																			
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																																	
Wan Po Road (SB)	↓	A	1,2	3.200	20			69%		1840					270	0.147																																		
	↓	A	1,2	3.600						2115					310	0.147																																		
Wan Po Road (SB)	↓	C	2	3.300		25				1965					148	0.075																																		
	↓	C	2	3.300		20				1940					147	0.076																																		
Wan Po Road (NB)	↑	B	1	3.700	15			4%		1980					272	0.137																																		
	↑	B	1	3.700						2125					293	0.138	0.138																																	
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895					345	0.182	0.182																																	
Chun Yat Street (EB)	→	E	3	3.600		25		100%		1995					5	0.003																																		
Chun Yat Street (WB)	←	F	4	5.100	25	20		0% / 96%		1980					140	0.071	0.071																																	
Pedestrian Crossing		Gp	1,4	MIN GREEN + FLASH =		5	+	5	=	10																																								
		Hp	1,2,4	MIN GREEN + FLASH =		5	+	5	=	10																																								
		Ip	3	MIN GREEN + FLASH =		5	+	7	=	12																																								
		Jp	2,3,4	MIN GREEN + FLASH =		5	+	8	=	13																																								
		Kp	2	MIN GREEN + FLASH =		5	+	6	=	11																																								
		Lp	1,2,3	MIN GREEN + FLASH =		5	+	6	=	11																																								
		Mp	2	MIN GREEN + FLASH =		5	+	5	=	10																																								
		Np	3	MIN GREEN + FLASH =		8	+	7	=	15																																								
Notes:	Flow: (pcu/hr)											<table border="1"> <thead> <tr> <th>Group</th> <th></th> <th></th> <th>Group</th> <th>B,C,Ip,F</th> <th>B,D,F</th> </tr> </thead> <tbody> <tr> <td>y</td> <td></td> <td></td> <td>y</td> <td>0.284</td> <td>0.391</td> </tr> <tr> <td>L (sec)</td> <td></td> <td></td> <td>L (sec)</td> <td>35</td> <td>18</td> </tr> <tr> <td>C (sec)</td> <td></td> <td></td> <td>C (sec)</td> <td>120</td> <td>120</td> </tr> <tr> <td>y pract.</td> <td></td> <td></td> <td>y pract.</td> <td>0.638</td> <td>0.765</td> </tr> <tr> <td>R.C. (%)</td> <td></td> <td></td> <td>R.C. (%)</td> <td>124%</td> <td>96%</td> </tr> </tbody> </table>			Group			Group	B,C,Ip,F	B,D,F	y			y	0.284	0.391	L (sec)			L (sec)	35	18	C (sec)			C (sec)	120	120	y pract.			y pract.	0.638	0.765	R.C. (%)			R.C. (%)	124%	96%
Group			Group	B,C,Ip,F	B,D,F																																													
y			y	0.284	0.391																																													
L (sec)			L (sec)	35	18																																													
C (sec)			C (sec)	120	120																																													
y pract.			y pract.	0.638	0.765																																													
R.C. (%)			R.C. (%)	124%	96%																																													
Stage / Phase Diagrams																																																		
<div> <div>1 </div> <div>2 </div> <div>3 </div> <div>4 </div> <div>5 </div> </div>																																																		
I/G= 7		I/G= 9		I/G=		I/G= 5		I/G=		Date: <u>5 Nov 2024</u> Junction: <u>Wan Po Road / Chun Yat Street (JA)</u> <u>JA</u>																																								

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB)Design Year: 2033Description: 2033 Design Flows (Event Day)Designed By: HKHChecked By: PML

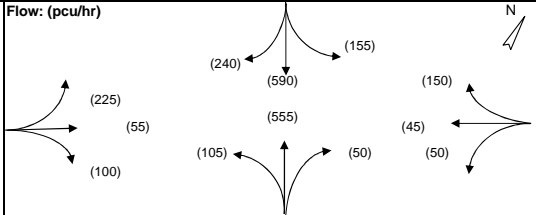
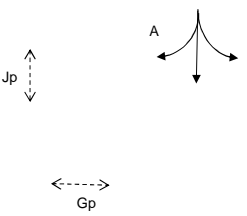
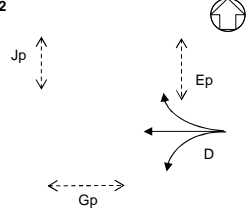
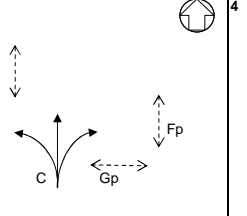
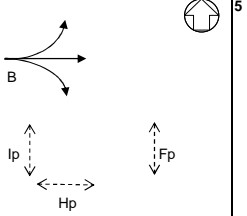
Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak				
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Wan Po Road (NB)	↕	C	3	4.100	15						1840				313	0.170	0.170		
	↕	C	3	4.100	20					2015				342	0.170				
	↕	C	3	4.000						2155				190	0.088				
	↕	C	3	4.100						2165				190	0.088				
Wan O Road (EB)	↕	B	2	3.500	20					1830				330	0.180	0.180			
	↕	B	2	3.200		25				1825				265	0.145				
	↕	B	2	3.200		20				1930				280	0.145				
Wan Po Road (SB)	↕	A	1	3.400						2095				168	0.080				
	↕	A	1	3.400						2095				167	0.080				
	↕	A	1	3.400		15				1905				210	0.110	0.110			
	↕	A	1	3.400		20				1820				200	0.110				
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =		5	+	9	=	14									
		Ep	2	MIN GREEN + FLASH =		5	+	10	=	15									
		Fp	1,2	MIN GREEN + FLASH =		8	+	15	=	23									
		Gp	3	MIN GREEN + FLASH =		5	+	9	=	14									
Notes:				Flow: (pcu/hr)								Group y L (sec) C (sec) y pract. R.C. (%)		Group y L (sec) C (sec) y pract. R.C. (%)		A,B,Gp 0.291 35 120 0.638 119%		A,B,C 0.461 14 120 0.795 73%	
Stage / Phase Diagrams																			
1				2				3				4				5			
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=			
Date: 5 Nov 2024												Junction: Wan Po Road / Wan O Road (JB)							

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)Design Year: 2033Description: 2033 Design Flows (Event Day)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak									
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Access Road (EB)	↔	B	2	3.400	15			#DIV/0!	24% / 49%	#DIV/0!	1775				176	0.099	0.099							
	↔	B	2	4.100	20	25					2065				204	0.099								
Wan Po Road (SB)	↓	A	1	3.100	15						1750				155	0.089								
	↓	A	1	3.500							2105				295	0.140	0.140							
	↓	A	1	3.500							2105				295	0.140								
	↘	A	1	3.200		25					1960				240	0.122								
Shek Kok Road (WB)	↔	D	4	3.600	10	30		#DIV/0!	40% / 25%	#DIV/0!	1975				126	0.064								
	↔	D	4	3.500		25					1855				119	0.064	0.064							
Wan Po Road (NB)	↑	C	3	3.600	15			#DIV/0!	51%	#DIV/0!	1880				204	0.109	0.109							
	↑	C	3	3.500							2105				228	0.108								
	↑	C	3	3.500							2105				228	0.108								
	↗	C	3	3.600		25					1995				50	0.025								
Pedestrian Crossing		Ep	2	MIN GREEN + FLASH =			5	+	6	=	11													
		Fp	1,3,4	MIN GREEN + FLASH =			5	+	7	=	12													
		Gp	3	MIN GREEN + FLASH =			5	+	9	=	14													
		Hp	1,2,4	MIN GREEN + FLASH =			7	+	13	=	20													
		Ip	4	MIN GREEN + FLASH =			5	+	7	=	12													
		Jp	1,2,3	MIN GREEN + FLASH =			5	+	7	=	12													
Notes:				Flow: (pcu/hr) 								Group				Group	A,Ep,C,B	A,D,C,B						
												y			y	0.348	0.412							
												L (sec)			L (sec)	34	27							
												C (sec)			C (sec)	120	120							
												y pract.			y pract.	0.645	0.698							
												R.C. (%)			R.C. (%)	85%	69%							
Stage / Phase Diagrams																								
1					2					3					4					5				
I/G= 10				I/G= 6				I/G= 9				I/G= 6				I/G=								
Date: 5 Nov 2024																								
Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)																								

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2033

Description: 2033 Design Flows (Event Day)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak		
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500							1965				435	0.221	
	↓	B	1,2	3.500							2105				465	0.221	
	↘	C	2	3.500		15					1915				285	0.149	0.149
Wan Po Road (NB)	↑	A	1	3.500							2105				415	0.197	0.197
	↑	A	1	3.500							2105				415	0.197	
	↗	A	1	3.500	10						1710				105	0.061	
Lohas Park Road (EB)	↗	E	1,2,3	3.500	35						1885				255	0.135	
	↘	D	3	4.000		15					1960				85	0.043	0.043
Notes:				<div>Flow: (pcu/hr)</div>								Group			Group	B,D	A,C,D
												y			y	0.265	0.389
												L (sec)			L (sec)	10	12
												C (sec)			C (sec)	120	120
												y pract.			y pract.	0.825	0.810
												R.C. (%)			R.C. (%)	212%	108%
Stage / Phase Diagrams																	
1			2			3			4			5					
I/G= 5			I/G= 5			I/G= 5			I/G=			I/G=					

Date: 5 Nov 2024

Junction: Wan Po Road / LOHAS Park Road (JD)

JD

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2033

Description: 2033 Design Flows (Event Day)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)					PM Peak				
					Left	Right			PM		PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Wan O Road (EB)	→	A	1	3.800	20						1855				465	0.251	0.251		
	→	A	1	3.500							2105				470	0.223			
	→	A	1	3.500							2105				470	0.223			
	←	C	2	4.000		25					2035				45	0.022			
	←	B	1,2,4	3.800							2135				512	0.240			
	←	B	1,2,4	3.800							1995				478	0.240			
	↓	E	3	3.500	18						1815				40	0.022			
	↓	D	3	3.500		25					1985				246	0.124			
	↓	D	3	3.500		30					2005				249	0.124	0.124		
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =		16	+	12	=	28							*		
Notes:				Flow: (pcu/hr)								Group				Group		B,D	A,C,D,Fp
												y				y		0.364	0.375
												L (sec)				L (sec)		15	49
												C (sec)				C (sec)		120	120
												y pract.				y pract.		0.788	0.533
												R.C. (%)				R.C. (%)		116%	42%
Stage / Phase Diagrams																			
1				2				3				4				5			
I/G= 2				I/G= 5		5		I/G= 5				I/G= 6		28		I/G=			
Date: 5 Nov 2024												Junction: Wan O Road / Sunrise Boulevard (JE)							

**2033 Design Traffic Forecast
(with TKO Area 137 Development)
- Sensitivity Test**

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50812010

MVA HONG KONG LIMITED

Junction: Wan Po Road / Chun Yat Street (JA)

Design Year: 2033

Description: 2033 Design Flow (Sensitivity Test)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak																																																																		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																																																																
Wan Po Road (SB)	↕	A	1,2	3.200	20			8%	4%	1925	1930	1779	0.924		1676	0.868																																																																	
		A	1,2	3.600						2115	2115	1956	0.925		1839	0.870																																																																	
Wan Po Road (SB)	↙	C	2	3.300	25					1965	1965	350	0.178	0.178	211	0.107																																																																	
	↘	C	2	3.300	20					1940	1940	345	0.178		209	0.108																																																																	
Wan Po Road (NB)	↗	B	1	3.700	15			0%	0%	1985	1985	2299	1.158	1.158	1398	0.704																																																																	
	↖	B	1	3.700						2125	2125	2461	1.158		1497	0.704	0.704																																																																
Chun Yat Street (EB)	→	D	2,3	3.600	35					1895	1895	500	0.264		550	0.290	0.290																																																																
Chun Yat Street (EB)	↕	E	3	3.600	25			100%	50%	1995	2055	5	0.003		10	0.005																																																																	
Chun Yat Street (WB)	↔	F	4	5.100	25	20		0% / 100%	0% / 100%	1975	1975	130	0.066		100	0.051																																																																	
<div>Pedestrian Crossing</div> <table><tr><td>Gp</td><td>1,4</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>5</td><td>=</td><td>10</td></tr><tr><td>Hp</td><td>1,2,4</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>5</td><td>=</td><td>10</td></tr><tr><td>Ip</td><td>3</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>7</td><td>=</td><td>12</td></tr><tr><td>Jp</td><td>2,3,4</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>8</td><td>=</td><td>13</td></tr><tr><td>Kp</td><td>2</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>6</td><td>=</td><td>11</td></tr><tr><td>Lp</td><td>1,2,3</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>6</td><td>=</td><td>11</td></tr><tr><td>Mp</td><td>2</td><td>MIN GREEN + FLASH =</td><td>5</td><td>+</td><td>5</td><td>=</td><td>10</td></tr><tr><td>Np</td><td>3</td><td>MIN GREEN + FLASH =</td><td>8</td><td>+</td><td>7</td><td>=</td><td>15</td></tr></table>																		Gp	1,4	MIN GREEN + FLASH =	5	+	5	=	10	Hp	1,2,4	MIN GREEN + FLASH =	5	+	5	=	10	Ip	3	MIN GREEN + FLASH =	5	+	7	=	12	Jp	2,3,4	MIN GREEN + FLASH =	5	+	8	=	13	Kp	2	MIN GREEN + FLASH =	5	+	6	=	11	Lp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11	Mp	2	MIN GREEN + FLASH =	5	+	5	=	10	Np	3	MIN GREEN + FLASH =	8	+	7	=	15
																		Gp	1,4	MIN GREEN + FLASH =	5	+	5	=	10																																																								
																		Hp	1,2,4	MIN GREEN + FLASH =	5	+	5	=	10																																																								
																		Ip	3	MIN GREEN + FLASH =	5	+	7	=	12																																																								
																		Jp	2,3,4	MIN GREEN + FLASH =	5	+	8	=	13																																																								
																		Kp	2	MIN GREEN + FLASH =	5	+	6	=	11																																																								
																		Lp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11																																																								
																		Mp	2	MIN GREEN + FLASH =	5	+	5	=	10																																																								
Np	3	MIN GREEN + FLASH =	8	+	7	=	15																																																																										
<div>Notes:</div>		<div>Flow: (pcu/hr)</div>										Group	B,C,E,F	B,C,Ip,F	Group	B,C,Ip,F	B,D,F																																																																
												y	1.336	1.336	y	0.812	0.995																																																																
												L (sec)	35	41	L (sec)	41	24																																																																
												C (sec)	130	130	C (sec)	120	120																																																																
												y pract.	0.658	0.616	y pract.	0.593	0.720																																																																
												R.C. (%)	-51%	-54%	R.C. (%)	-27%	-28%																																																																
												Stage / Phase Diagrams																																																																					
1				2				3				4				5																																																																	
I/G= 7		I/G= 5		I/G= 12		12		I/G= 2		5		I/G=		I/G=		I/G=																																																																	
I/G= 7		I/G= 9		I/G=				I/G= 5		5		I/G=		I/G=		I/G=																																																																	
Date: 5 Nov 2024													Junction: Wan Po Road / Chun Yat Street (JA)																																																																				

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Wan O Road (JB)Design Year: 2033Description: 2033 Design Flow (Sensitivity Test)Designed By: HKHChecked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak				
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Wan Po Road (NB)	↕	C	3	4.100	15					1840	1840	2191	1.191	1.191	1332	0.724	0.724		
	↖	C	3	4.100	20					2015	2015	2399	1.191		1458	0.724			
	↘	C	3	4.000						2155	2155	399	0.185		379	0.176			
	↙	C	3	4.100						2165	2165	401	0.185		381	0.176			
Wan O Road (EB)	↗	B	2	3.500	20					1830	1830	305	0.167		350	0.191			
	↘	B	2	3.200		25				1825	1825	1580	0.866	0.866	1502	0.823	0.823		
	↙	B	2	3.200		20				1930	1930	1670	0.865		1588	0.823			
Wan Po Road (SB)	↕	A	1	3.400						2095	2095	590	0.282	0.282	425	0.203	0.203		
	↖	A	1	3.400						2095	2095	590	0.282		425	0.203			
	↘	A	1	3.400		15				1905	1905	307	0.161		179	0.094			
	↙	A	1	3.400		20				1820	1820	293	0.161		171	0.094			
Pedestrian Crossing		Dp	1,3	MIN GREEN + FLASH =		5	+	9	=	14									
		Ep	2	MIN GREEN + FLASH =		5	+	10	=	15									
		Fp	1,2	MIN GREEN + FLASH =		8	+	15	=	23									
		Gp	3	MIN GREEN + FLASH =		5	+	9	=	14									
Notes:				<div>Flow: (pcu/hr)</div>							Group	A,B,Gp	A,B,C	Group	A,B,Gp	A,B,C			
											y	1.147	2.338	y	1.026	1.750			
											L (sec)	35	14	L (sec)	35	14			
											C (sec)	120	120	C (sec)	120	120			
											y pract.	0.638	0.795	y pract.	0.638	0.795			
											R.C. (%)	-44%	-66%	R.C. (%)	-38%	-55%			
Stage / Phase Diagrams																			
1				2				3				4				5			
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=			
I/G= 6				I/G= 5				I/G= 6				I/G=				I/G=			
Date: 5 Nov 2024												Junction: Wan Po Road / Wan O Road (JB)							

TRAFFIC SIGNALS CALCULATION

Job No.: **CHK50812010**

MVA HONG KONG LIMITED

Junction: Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)

Design Year: 2033

Description: 2033 Design Flow (Sensitivity Test)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road (EB)	↩ ↪	B B	2 2	3.400 4.100	15 20	25		30% / 43%	40% / 25%	1775 2065	1775 2070	178 207	0.100 0.100	0.100	208 242	0.117 0.117	0.117
Wan Po Road (SB)	↓ ↓ ↓ ↓	A A A A	1 1 1 1	3.100 3.500 3.500 3.200	15	25				1750 2105 2105 1960	1750 2105 2105 1960	165 795 795 255	0.094 0.378 0.378 0.130	0.378	195 530 530 225	0.111 0.252 0.252 0.115	0.252
Shek Kok Road (WB)	↩ ↪	D D	4 4	3.600 3.500	10	30		59% / 6%	42% / 19%	1940 1855	1970 1855	212 203	0.109 0.109	0.109	178 167	0.090 0.090	0.090
Wan Po Road (NB)	↑ ↑ ↑ ↑	C C C C	3 3 3 3	3.600 3.500 3.500 3.600	15	25		43%	31%	1895 2105 2105 1995	1915 2105 2105 1995	324 361 360 65	0.171 0.171 0.171 0.033	0.171	324 356 355 75	0.169 0.169 0.169 0.038	0.169
Pedestrian Crossing		Ep Fp Gp Hp Ip Jp	2 1,3,4 3 1,2,4 4 1,2,3	MIN GREEN + FLASH = MIN GREEN + FLASH = MIN GREEN + FLASH = MIN GREEN + FLASH = MIN GREEN + FLASH = MIN GREEN + FLASH =	5 5 5 7 5 5	+ + + + + +	6 7 9 13 7 7	= = = = = =	11 12 14 20 12 12								

Notes:	Flow: (pcu/hr)					
	Group	A,D,C,Ip	A,D,C,B	Group	A,Ep,C,B	A,D,C,B
	y	0.659	0.759	y	0.538	0.629
	L (sec)	38	27	L (sec)	34	27
	C (sec)	120	120	C (sec)	120	120
	y pract.	0.615	0.698	y pract.	0.645	0.698
R.C. (%)	-7%	-8%	R.C. (%)	20%	11%	

Stage / Phase Diagrams				
1 	2 	3 	4 	5

I/G= 10	I/G= 6	I/G= 9	I/G= 6	I/G=
I/G= 10	I/G= 6	I/G= 9	I/G= 6	I/G=

Date: **5 Nov 2024** Junction: **Wan Po Road / Shek Kok Road / Sunrise Boulevard (JC)**

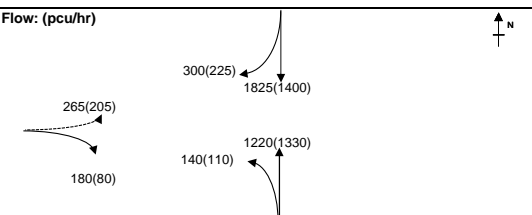
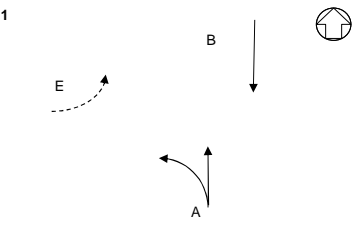
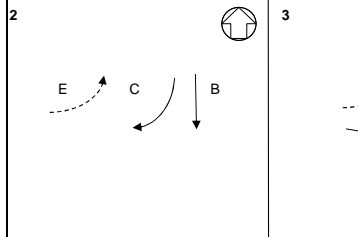
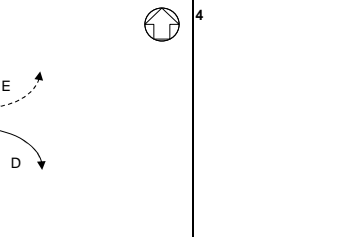
Junction: Wan Po Road / LOHAS Park Road (JD)

Design Year: 2033

Description: 2033 Design Flow (Sensitivity Test)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan Po Road (SB)	↓	B	1,2	3.500						1965	1965	881	0.448		676	0.344	
	↓	B	1,2	3.500						2105	2105	944	0.448		724	0.344	
	↘	C	2	3.500		15				1915	1915	300	0.157	0.157	225	0.117	0.117
Wan Po Road (NB)	↑	A	1	3.500						2105	2105	610	0.290	0.290	665	0.316	0.316
	↑	A	1	3.500						2105	2105	610	0.290		665	0.316	
	↗	A	1	3.500	10					1710	1710	140	0.082		110	0.064	
Lohas Park Road (EB)	↗	E	1,2,3	3.500	35					1885	1885	265	0.141		205	0.109	
	↘	D	3	4.000		15				1960	1960	180	0.092	0.092	80	0.041	0.041
Notes:				<div>Flow: (pcu/hr)</div> 								Group	B,D	A,C,D	Group	B,D	A,C,D
												y	0.540	0.538	y	0.385	0.474
												L (sec)	10	12	L (sec)	10	12
												C (sec)	120	120	C (sec)	120	120
												y pract.	0.825	0.810	y pract.	0.825	0.810
												R.C. (%)	53%	50%	R.C. (%)	114%	71%
Stage / Phase Diagrams																	
1		2		3		4		5									
																	
I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5	
I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5		I/G= 5	

Junction: Wan O Road / Sunrise Boulevard (JE)

Design Year: 2033

Description: 2033 Design Flow (Sensitivity Test)

Designed By: HKH

Checked By: PML

Approach	Movements	Phase	Stage	Width (m)	Radius (m)		Gradient (%)	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
					Left	Right		AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wan O Road (EB)	↘	A	1	3.800	20					1855	1855	280	0.151		395	0.213	
	→	A	1	3.500						2105	2105	1758	0.835	0.835	1698	0.807	0.807
	↗	A	1	3.500						2105	2105	1757	0.835		1697	0.806	
Wan O Road (WB)	↖	C	2	4.000	25					2035	2035	80	0.039		50	0.025	
	←	B	1,2,4	3.800						2135	2135	2642	1.237		1595	0.747	
	↙	B	1,2,4	3.800						1995	1995	2468	1.237		1490	0.747	
Sunrise Boulevard (SB)	↘	E	3	3.500	18					1815	1815	40	0.022		50	0.028	
	↙	D	3	3.500	25					1985	1985	438	0.221	0.221	174	0.088	
	↖	D	3	3.500	30					2005	2005	442	0.220		176	0.088	0.088
Pedestrian Crossing		Fp	4	MIN GREEN + FLASH =			16	+	12	=	28			*			*

Notes:

Flow: (pcu/hr)

Group	B,D	A,C,D,Fp	Group	B,D	A,C,D,Fp
y	1.458	1.056	y	0.835	0.894
L (sec)	15	49	L (sec)	15	49
C (sec)	130	130	C (sec)	120	120
y pract.	0.796	0.561	y pract.	0.788	0.533
R.C. (%)	-45%	-47%	R.C. (%)	-6%	-40%

