Tai Wah Development Consultants Limited

Our Ref.: DD78 Lot 1366 RP & VL
Your Ref.: TPB/A/NE-TKLN/86

The Secretary,
Town Planning Board,
15/F, North Point Government Offices,
333 Java Road,
North Point, Hong Kong

By Email

29 August 2024

Dear Sir,

1st Further Information

Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, Ta Kwu Ling North, New Territories

(S.16 Planning Application No. A/NE-TKLN/86)

We write to submit further information to address the departmental comments of the subject application (**Appendix I**).

Should you require more information regarding the application, please contact the undersigned at your convenience. Thank you for your kind attention.

Yours faithfully,

Matthew NG
Tai Wah Development Consultants Limited

cc DPO/STN, PlanD (Attn.: Mr. Timothy WU email: twpwu@pland.gov.hk)

Responses-to-Comments

Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, Ta Kwu Ling North, New Territories

(Application No. A/NE-TKLN/86)

(i) A RtoC Table:

	Departmental Comments	Applicant's Responses
1.	**Comments of the Director of Agriculture, Fisheries and Conservation (DAFC)**	
(a)	Based on the aerial photo, the subject site is largely vacant with a watercourse located within the subject site. The applicant should clarify whether there will be any impact to the watercourse and measures to be proposed for our further consideration.	It is noted that an existing engineering channel is located within the application site (the Site) (site photos at **Annex 1** refers). The said channel is proposed to be diverted as illustrated in Figure 3B of the revised Drainage Impact Assessment (DIA) (**Annex 2**). Please also be advised that with the implementation of the proposed drainage system and upgrade of the existing downstream U-channels, no adverse impact to the existing channel is anticipated.
2.	**Comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD)**	
(a)	There are pre-existing drainage channels located on government land within the site and along the planned access road in the north. These channels currently receive flows from outside the site and direct them downstream. The proposed drainage plan involves the removal of these existing channels and relies on the newly proposed channels situated on private lots to accommodate the upstream flow. This approach would require the applicant to undertake additional maintenance efforts and could potentially expose the site and the adjacent areas to unnecessary flood risks.	Further to the discussion with DSD, a 1,750 mm channel is proposed for diversion of the upstream channel to divert to existing manhole SSH1004962 at the north-west side of the Site. Such that the channel is located on government land as far as possible. DSD also commented to connect the site drainage to the existing downstream channel in the southwest instead of the proposed 1,750 mm. As the upstream flow is diverted, the overall flow to the downstream channel is reduced. Therefore, no adverse drainage impact to the downstream channel is anticipated.

	To address this concern, it is recommended to implement a diversion scheme that includes drainage alignments on government land wherever feasible. This approach would allow the government to continue carrying out necessary maintenance works effectively. A suggested alignment is appended below for consideration. 	The proposed diversion and calculation are shown in Figure 3B and Appendix A of the revised DIA respectively for your perusal (**Annex 2**). DSD also suggested to install railing at the top of 1,750 mm channel if cover is not provided for safety consideration.
(b)	To avoid flooding at the site and to the adjacent lots, the proposed diversion scheme should be designed to receive the upstream flows entering the site according to the assessment criteria in Section 3. The assumed 80% full of the upstream channel in Appendix A should be justified with catchment delineation at the upstream.	Further to the discussion with DSD, the upstream catchment and estimated flow of the upstream channel is calculated. The updated calculation of the diversion as discussed in item (a) is shown in Appendix A of the revised DIA for your perusal (**Annex 2**).
(c)	You are suggested to refer to "Technical Note to prepare a Drainage Submission" in preparing drainage submission in future. The key general requirements are extracted below for your easy reference (https://www.dsd.gov.hk/EN/Files/Technical_Manual/dsd_guideline/Drainage_Submission.pdf). - The cover levels of proposed channels should be flush with the existing adjoining ground level. ● The formation levels and fall direction of the subject site and the areas in the vicinity should be clearly shown on the plan for reference.	Noted.

	- The applicant should check and ensure that the existing drainage channel downstream to which the proposed connection will be made have adequate capacity and satisfactory condition to cater for the additional discharge from the captioned lot. He should also ensure that the flow from this site will not overload the existing drainage system. - The applicant is reminded that where walls are erected or kerbs are laid along the boundary of the same, peripheral channels should be provided on both sides of the walls or kerbs with details to be agreed by DSD. - The applicant is reminded that all existing flow paths as well as the run-off falling onto and passing through the site should be intercepted and disposed of via proper discharge points. The applicant shall also ensure that no works, including any site formation works, shall be carried out as may adversely interfere with the free flow condition of the existing drain, channels and watercourses on or in the vicinity of the subject site any time during or after the works. - The proposed drainage works, whether within or outside the lot boundary, should be constructed and maintained by the lot owner at their own expense. - For works to be undertaken outside the lot boundary, the applicant should obtain prior consent and agreement from DLO/N and/or relevant private lot owners.	

	- The applicant should make good all the adjacent affected areas upon the completion of the drainage works. - The applicant should construct and maintain the proposed drainage works properly and rectify the system if it is found to be inadequate or ineffective during operation. ● The applicant should construct and maintain the proposed drainage works properly and rectify the system if it is found to be inadequate or ineffective during operation. ● The applicant should construct and maintain the proposed drainage works properly and rectify the system if it is found to be inadequate or ineffective during operation.	
3.	**Comments of the Chief Highway Engineer/New Territories West, Highways Department (CHE/NTW, HyD)**	
(a)	The area between the application site and the footway of Lin Ma Hang Road is not and will not be maintained by HyD.	Noted.
(b)	The applicant should maintain the existing run-in/out in accordance with prevailing HyD Standard Drawings to the satisfaction of TD and HyD.	
(c)	The access arrangement of the application site should be commented and approved by TD.	
(d)	Adequate drainage measures should be provided to prevent surface water running from the application site to the nearby public roads and drains.	

4.	**Comments of the Commissioner for Transport (C for T)**	
(a)	The planned and committed developments listed in Table 4-2 of the TIA should be confirmed with PlanD.	Noted.
(b)	The applicant shall demonstrate the satisfactory manoeuvring of the goods vehicles entering and exiting the subject site, it seems that left turns of long vehicles entering/leaving the site need to encroach onto the opposite lane.	The swept path analysis at Appendix A of the Traffic Impact Assessment (TIA) report (**Annex 3**) has been revised to avoid left turns of long vehicles encroaching onto the opposite lane when entering/leaving the Site.
(c)	The applicant shall advise the provision and management of pedestrian facilities to ensure pedestrian safety.	Sections 2.4.5 and 2.4.6 of the TIA report have been revised. Staff will be deployed by the applicant to direct vehicle entering/exiting the Site. "STOP AND GIVE WAY" and "BEWARE OF PEDESTRIANS" signs will be erected to ensure pedestrian safety to/from the Site. In addition, flashing light and alarm system will be installed at the entrance of the Site, whenever vehicles are to be accessed to/exit from the Site, the flashing light and alarm system will work immediately to alert the pedestrians. Adequate lights will be provided for safety concerns.
(d)	The proposed vehicular access road between Lin Ma Hang Road and the application site is not managed by TD. The applicant should seek comments/approvals from the responsible parties (particularly LandsD on the land matters) to validate the feasibility to form the proposed vehicular access road.	Noted. The applicant will liaise with relevant authorities, including the Lands Department (LandsD), regarding the proposed vehicular access road.
(e)	The applicant shall advise whom shall be undertaking the design and construction of the proposed vehicular road.	The detail design and construction of the proposed vehicular access road will be conducted by the applicant at a later stage. The applicant undertakes to open the vehicular access road for 24-hour public use and manage/maintain the vehicular access road upon its completion.

5.	**Comments of the Chief Town Planner/Urban Design & Landscape, Planning Department (CTP/UD&L, PlanD)**	
(a)	With reference to the aerial photo of 2023, the site is located in an area of rural inland plains landscape character comprising of farmlands, small houses, clusters of tree groups and vegetated areas. Noticeable change of landscape character arising from the proposed use within the "REC" zone is anticipated. Based on our site record taken on 29.7.2024, the site is partly hard paved to the east and partly covered by wild grasses and existing trees to the west. Existing trees of common and undesirable species are observed within the site. Two large trees, *Celtis sinensis* 朴樹, with approximately 750 to 900mm DBH are observed to the northern and southern periphery within the site, and may be in conflict with the proposed structure. According to Para. 5.12 of the Planning Statement, all existing trees will be affected and it is not proposed to retain any of the existing trees at the site. However, there is no information on the existing trees within the site, proposed tree treatment and landscape treatment/mitigation measures. Potential impact on the existing landscape resources cannot be ascertained.	The site inspection conducted on 22.08.2024 identified 17 nos. of tree, including 1 no. of dead tree (T15), within the Site. The tree survey report is enclosed at **Annex 4a**. The applicant is an affected operator who is desperately in need of identifying a suitable site for relocation due to land resumption for the Northern Link (NOL) Main Line project. All existing trees are of common species. T1 to T11 are in direct conflict with structure B1, whilst T12 to T17 overlaps the vehicle manoeuvring path, which is essential to the operation of the proposed development at the Site. As such, all existing trees are proposed to be felled. 1 no. of dead tree (T15) was spot at the Site. The current condition of T15 is a broken trunk which is apparently dead and covered with some climbing plants. Tree photos showing the broken trunk of T15 are enclosed in **Annex 4b**. In order to mitigate the potential adverse landscape impact that would have arisen from the proposed development, the applicant proposes to plant 17 nos. of new tree i.e. *Senna surattensis* along the western periphery of the Site. Spacing of not less than 4 m apart will be reserved for the proposed new trees (landscape plan at **Annex 5** refers). Regular horticultural maintenance on the proposed new trees will be provided.
(b)	The applicant is advised to provide broad-brush survey with basic information (e.g. numbers, species, size, general conditions and tree photos) on existing trees within and along the site boundary, proposed tree treatment and proposed mitigation measures, if any, for TPB's consideration.	
(c)	The applicant should be advised that approval of the application does not imply approval of tree works such as pruning, transplanting and felling. The applicant is reminded to seek approval for any	Noted.

	proposed tree works from relevant authority prior to commencement of the works.	
6.	**Comments of the District Lands Officer/North (DLO/N), LandsD**	
(a)	The application site comprises Old Schedule Agricultural Lots held under the Block Government Lease which contains the restriction that no structures are allowed to be erected without the prior approval of the Government. No right of access via Government Land (GL) is granted to the application site.	Noted. The applicant will submit applications for Short Term Waiver and Short Term Tenancy to DLO/N, LandsD to rectify the current situation upon obtaining planning approval from the Town Planning Board.
(b)	No consent is given for inclusion of GL (about 4,150 m^2 mentioned in the application form) in the application site. The Applicant should be reminded that any occupation of GL without Government's prior approval is an offence. For direct grant of Short Term Tenancy (STT) of the adjoining GL to the Applicant for temporary uses, prior policy support from the relevant Bureau has to be obtained. As the application does not provide any details on the policy support, please seek comments from the relevant Bureau, especially the application highlights the existing business operation is affected by the development of the Northern Link Main Line.	
(c)	<u>Unauthorised structures within the said private lots covered by the planning application</u> There are unauthorised structures on the private lots. The lot owners should immediately rectify the lease breaches and this office reserves the rights to take necessary lease enforcement action against the breaches without further notice.	

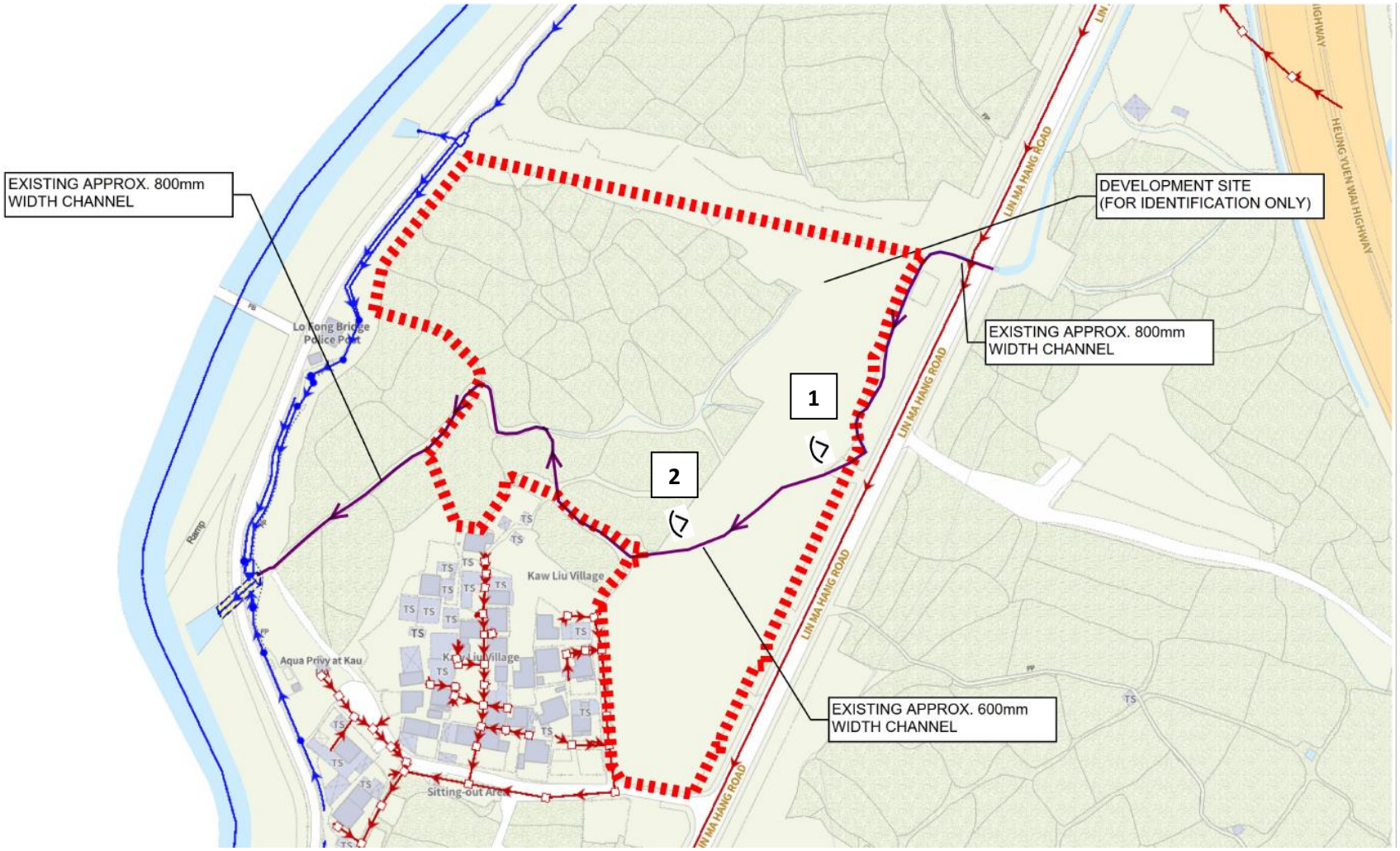
(d)	<u>Unlawful occupation of Government land covered by the planning application</u> The Government land within the application site (about 4,150 m^2 as mentioned in the application form) has been fenced off without any permission. Any occupation of GL without Govermnent's prior approval is an offence under Cap. 28. LandsD objects to the planning application since there is illegal occupation of Government Land (GL) which regularization would not be considered according to the prevailing land policy. The lot owners should immediately cease the illegal occupation of GL and remove the unauthorised structures as demanded by LandsD. This office reserves the rights to take necessary land control action against the illegal occupation of Government land without further notice. The lot owners/applicant shall cease the illegal occupation of G.L.. If the planning application is approved and subject to the availability of policy support as mentioned in para.2 above, the lot owners should apply to this office for Short Term Waiver (STW) and STT to permit the structures erected and occupation of G.L.. The applications for STW and STT will be considered by the Government in its capacity as a landlord and there is no guarantee that they will be approved. Application for STWs have to be submitted by all lot owners (approx. 31 lots). The STW will be considered on a whole lot basis and unauthorised structures have to be demolished. The STW and STT, if approved, will be subject to such terms and conditions including the payment of waiver fee/rent and administrative fee as considered appropriate to be imposed by LandsD. In addition, LandsD reserves the right to take enforcement action against the lot owners/applicant for any breach of the lease conditions, including the breaches	

	already in existence or to be detected at any point of time in future and land control action for any unlawful occupation of Government land. Besides, given the proposed use is temporary in nature, only erection of temporary structures will be considered.	
(e)	Unless and until the unlawful occupation of Government land are duly rectified by the lot owners/applicant, please take it as this office's objection to the application which must be brought to the attention of the Town Planning Board when they consider the application.	

Annex 1

Photos showing the existing engineering channel at the Site

Annex 1 – Photos showing the existing engineering channel at the Site



*(extracted from Figure 2 of the Drainage Impact Assessment at **Annex 2** of this FI)*

1

2

Annex 2

Revised Drainage Impact Assessment

Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

Drainage Impact Assessment Report

August 24

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1. Introduction

1.1 Background

1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) under Section (S.) 16 of the Town Planning Ordinance (Cap. 131)(the Ordinance) to use Various Lots in D.D. 78 and Adjoining Government Land (GL), Lin Ma Hang, New Territories (the Site) for 'Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years'.

1.1.2 This Drainage Impact Assessment aim to support the development in drainage aspect.

1.2 The Site

1.2.1 The Application Site situate between Lin Ma Hang Road and Shenzhen River. It has an area of about 24,446 m^2. The site is partially hard-paved at the south east corner and the remaining area is covered by vegetation. The site location plan is shown in **Figure 1**.

1.2.2 The existing site ground levels beside Lin Ma Hang Road is about +9.1 mPD. The site generally falling towards Shenzhen river to about +6.6 mPD. There is no major site level changes proposed.

1.2.3 There is an existing 800mm channel to the northeast of the site and beside Lin Ma Hang Road. Shenzhen River is situated at the west side of the site. This existing channel pass through the site and discharge toward Shenzhen River at the west. Existing Drainage Plan are shown in **Figure 2** for reference.

1.2.4 Proposed Development Layout plan is shown in **Appendix B** for reference.

2. Development Proposal

2.1 The Proposed Development

2.1.1 The total site area is approximately 24,446 m^2. The indicative development schedule is summarized in **Table 1** below for technical assessment purpose. The catchment plan is shown in **Figure 4.1** and **Figure 4.2**.

Proposed Development	
Total Site Area (m^2)	24,446
Paved Area (m^2) Assume all proposed site area as paved area for assessment purpose	24,446

Table 1 - Key Development Parameters

3. Assessment Criteria

3.1.1 The Recommended Design Return Period based on Flood Level from SDM (Table 10) is adopted for this DIA. The recommendation is summarized in **Table 2** below.

Description	Design Return Periods
Intensively Used Agricultural Land	2 – 5 Years
Village Drainage Including Internal Drainage System under a polder Scheme	10 Years
Main Rural Catchment Drainage Channels	50 Years
Urban Drainage Trunk System	200 Years
Urban Drainage Branch System	50 Years

Table 2– Design Return Periods under SDM

3.1.2 The proposed drainage system intended to collect runoff from internal site and external catchment. 1 in 50 years return period is adopted for the drainage design.

3.1.3 Stormwater drainage design will be carried out in accordance with the criteria set out in the Stormwater Drainage Manual published by DSD. The proposed design criteria to be adopted for design of this stormwater drainage system and factors which have been considered are summarised below.

1. Intensity-Duration-Frequency Relationship – The Recommended Intensity-Duration-Frequency relationship is used to estimate the intensity of rainfall. It can be expressed by the following algebraic equation.

$$i = \frac{a}{(t_d + b)^c}$$

The site is located within the North District Zone. Therefore, for 50 years return period, the following values are adopted.

a	=	474.6
b	=	2.9
c	=	0.371

(Corrigendum_No.1_2024)

2. The peak runoff is calculated by the Rational Method
   i.e. $Q_p = 0.278CiA$

where	Q_p	=	peak runoff in m^3/s
	C	=	runoff coefficient (dimensionless)
	i	=	rainfall intensity in mm/hr
	A	=	catchment area in km^2

3. The run-off coefficient (C) of surface runoff are taken as follows:

   1. Paved Area: C = 0.95
   2. Unpaved Area: C = 0.35

4. Manning's Equation is used for calculation of velocity of flow inside the channels:

Manning's Equation: $v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Where,

V = velocity of the pipe flow (m/s)
S_f = hydraulic gradient
n = manning's coefficient
R = hydraulic radius (m)

5. Colebrook-White Equation is used for calculation of velocity of flow inside the pipes:

Colebrook-White Equation: $\underline{v} = -\sqrt{32gRS}\ log\ log\ (\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRS_f}})$

where,

V	=	velocity of the pipe flow (m/s)
S_f	=	hydraulic gradient
k_f	=	roughness value (m)
v	=	kinematics viscosity of fluid
D	=	pipe diameter (m)
R	=	hydraulic radius (m)

4. Proposed Drainage System and Mitigation Measure

4.1. Proposed Diversion of Upstream Channel

4.1.1 The existing upstream U-channel is proposed to be diverted starting at the northeast of the application site and connect to proposed 1750mm channel along the northern site boundary. It would discharge to the existing manhole SSH1004962 and eventually fall to Shenzhen River. The design calculations of proposed UChannels are shown in **Appendix A**.

4.2. Proposed U Channels

4.2.1 Proposed U-channels are designed for collection of runoff within and near the Development Site. Please refer to the **Figure 4.2** for proposed catchment plan. The U-channels of the site are proposed to be connect to original existing channel to the southwest. The runoff would eventually discharge to Shenzhen River. The design calculations of proposed UChannels are shown in **Appendix A**.

4.3. Checking of Existing Downstream Channel

4.3.1 As the original flow from existing upstream channel in section 4.1.1 is diverted. The flow to the downstream channel is much less. The runoff discharge to the existing downstream channel after the development is reduced. Please refer to the checking in **Appendix A**. It is noted there is no adverse impact on the existing downstream channel.

4.3.2 The alignment, size, gradient and details of the proposed drains are shown in **Figure 3.**

4.3.3 The reference standard drawings of drains are shown in **Appendix C**.

5. Conclusion

5.1.1 Drainage impact assessment has been conducted for the Proposed Development. With implementation of proposed diversion, proposed drainage system and upgrade of existing downstream U-channels, no adverse drainage impact is anticipated.

- End of Text -

FIGURES

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

TO HEUNG YUEN WAI
BORDER CONTROL POINT

DEVELOPMENT SITE
(FOR IDENTIFICATION ONLY)

SHENZHEN RIVER

LIN MA HANG ROAD

HEUNG YUEN WAI HIGHWAY

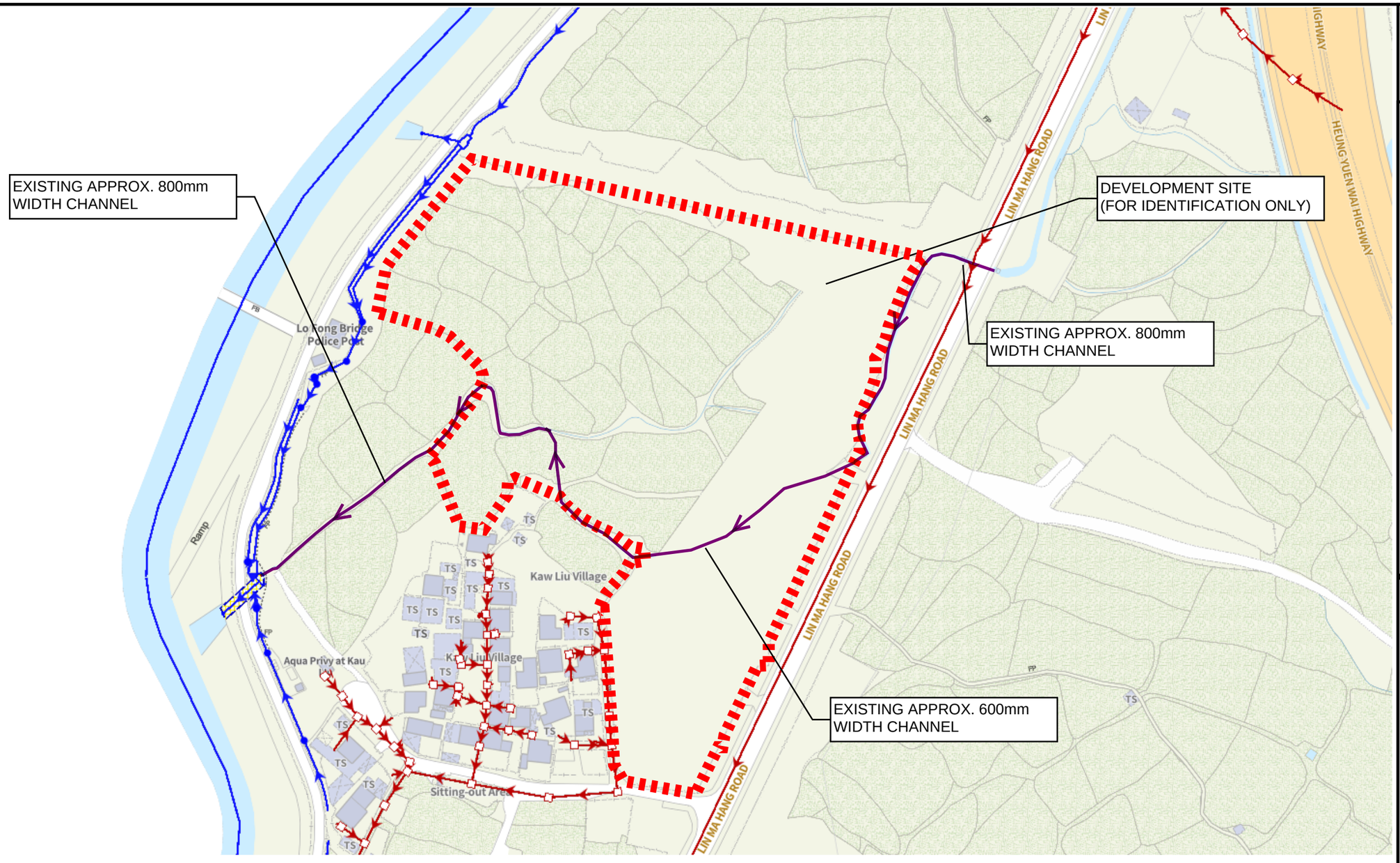
Kaw Liu Village

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
SITE LOCATION PLAN

DRAWING NUMBER
FIGURE 1



LEGEND:

Combined Manhole	Tapping Point (Sewer)	Tapping Point (Storm)	APPLICATION SITE BOUNDARY (FOR IDENTIFICATION PURPOSE ONLY)
Overflow (Combined)	Sewer Terminal Manhole	Storm Water Terminal Manhole	EXISTING CHANNELS TOWARDS SHENZHEN RIVER
Pipe (Combined)	Catchpit	Tunnel Protection Zone (100m / 200m)	
Interface Valve Chamber	Inlet	Tunnel Protection Zone (General Range)	
Sewer Manhole	Storm Water Manhole	Tunnel / Box Culvert (Sewer)	
Oil / Petrol Interceptor	Outlet	Tunnel / Box Culvert (Storm)	
Overflow (Sewer)	Pipe (Storm)		
Pipe (Sewer)	Sand Trap		

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
EXISTING DRAINAGE PLAN

DRAWING NUMBER
FIGURE 2

LEGEND:

- APPLICATION SITE BOUNDARY (FOR IDENTIFICATION PURPOSE ONLY)
- EXISTINGUCHANNEL
- PROPOSED CATCHPIT
- PROPOSED UCHANNEL
- PROPOSED CATCHPIT W/ TRAP
- DIVERSION UCHANNEL ALONG OUTSIDE NORTHERN SITE BOUNDARY

CONNECTION TO EXISTING SSH1004962

CONNECTION TO EXISTING U CHANNEL

UC 1750, 1 IN 122

DP2.1
CL +7.61
IL +7.09

UC2 525, 1 IN 200

IL +7.60

DP1.3
CL +8.2
IL +7.53

UC1 675, 1 IN 200

CL +9.0
IL +7.25

DP1.2
CL +9.0
IL +8.03

UC1 675, 1 IN 200

DP1.1
CL +9.0
IL +8.30

LIN MA HANG ROAD

DP2.2
CL +7.6
IL +6.75

UC2 525, 1 IN 200

UC1 675, 1 IN 200

DP1.5
CL +7.8
IL +6.50

UC6 800, 1 IN 71

IL +7.12

DP1.4
CL +8.2
IL +6.87

IL +6.74

UC1 675, 1 IN 200

IL +8.70

EXISTING CHANNEL TO BE MAINTAINED

EXISTING CHANNEL TO BE CONNECTED TO UC3

DP4.1
CL +8.2
IL +7.55

UC4 800, 1 IN 200

UC5 450, 1 IN 200

DP3.4
CL +8.3
IL +7.10

DP3.1
CL +9.46
IL +7.67

DP4.4
CL +8.0
IL +6.91

DP3.3
CL +8.7
IL +7.29

UC3 800, 1 IN 300

UC3 800, 1 IN 300

DP4.3
CL +8.0
IL +7.05

DP4.2
CL +8.0
IL +7.45

DP3.5
CL +8.2
IL +7.03

Kaw Liu Village

IL +7.68

UC7 525, 1 IN 200

DP7.3
CL +9.0
IL +7.86

DP3.2
CL +9.6
IL +7.47

DP7.2
CL +9.0
IL +7.97

UC7 525, 1 IN 200

UC7 525, 1 IN 200

UC7 525, 1 IN 200

DP7.1
CL +9.0
IL +8.27

IL +8.4

IL +8.4

NOTE:
1. CONNECTION LEVELSHOULD BE VERTIFIED ON SITE.

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REV	DESCRIPTION	DATE

DRAWING TITLE
PROPOSED DRAINAGE SYSTEM

DRAWING NUMBER
FIGURE 3B

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

ZONE E2
19,010 m²
(UNPAVED)

ZONE E1
5,436 m²
(PAVED)

較寮村
Kaw Liu Village

羅芳橋警崗
Lo Fong Bridge Police Post

深圳河

Ramp 斜路

Road 道路

Track 徑

休憩處
Sitting-out Area

LIN MA HANG ROAD

通菉坑路

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REV	DESCRIPTION	DATE

DRAWING TITLE
EXISTING CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4.1

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

FALL

ZONE E1
9,688m^2
(PAVED)

ZONE B4
4,967 m^2
(PAVED)

ZONE B3
2,329 m^2
(PAVED)

ZONE B2
2,935 m^2
(PAVED)

ZONE B1
3,377 m^2
(PAVED)

ZONE A1
1,064 m^2
(10%PAVED)

ZONE C4
1,424 m^2
(PAVED)

ZONE C3
1,053 m^2
(PAVED)

ZONE C2
2,561 m^2
(PAVED)

ZONE C1
1,821 m^2
(PAVED)

ZONE A2
604 m^2
(20%PAVED)

ZONE D2
1,437 m^2
(50%PAVED)

ZONE D1
3,930 m^2
(PAVED)

LIN MA HANG ROAD

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
PROPOSED CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4.2A

APPENDIX

Appendix A - Design Calculation

Diversion of Existing Channel U/S at Northwest to Existing SSH1004962 (Upstream Catchment shown in Page 3. Catchment E1)

Runoff Estimation

Design Return Period		1 in	50	years
Paved Area	9688 x 0.05 + 380794 x 0.2 =		76643	(m2)
Unpaved Area	9688 x 0.95 + 380794 x 0.8 =		313839	(m2)
Total Equivalent Area	76643 x 0.95 + 313839 x 0.35 =		182655	(m2)
Time of Concentration			26.95	min
Rainfall Intensity, I *			135	mm/hr
Design Discharge Rate, Q	0.278 x 182655 x 135 / 1000000 =		6.836	m3/s

* $i = \frac{a}{(t_d + b)^c}$

Design checking for diversion channal along the northern boundary is shown in Page 3.

Checking of Flow to Existing Downstream Channel Before and After Development

Runoff Estimation from site (before development)

Design Return Period		1 in	50	years
Paved Area	5436 + 380794 x 0.2=		81595	(m2)
Unpaved Area	19010 + 380794 x 0.8=		323645	(m2)
Total Equivalent Area	81595 x 0.95 + 323645 x 0.35 =		190791	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 323645 x 220 / 1000000 =		11.693	m3/s

Catchment in Figure 4.1 & Catchment from existing U/S Channel

* $i = \frac{a}{(t_d + b)^c}$

Runoff Estimation from site (after development)

Design Return Period		1 in	50	years
Paved Area	1064 x 0.1 + 604 x 0.2 + 1437 x 0.5 + 24446 =		25392	(m2)
Unpaved Area	1064 x 0.9 + 604 x 0.8 + 1437 x 0.5 + 0 =		2159	(m2)
Total Equivalent Area	25392 x 0.95 + 2159 x 0.25 =		24662	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 24662 x 220 / 1000000 =		1.511	m3/s

Catchment from whole site after the development

* $i = \frac{a}{(t_d + b)^c}$

Flow the the channel is reduced by 1.511 - 11.693 = -10.182 m3/s
No Additional flow and advserse impact is induced to the D/S channel.

* The original runoff from existing U/S channel is proposed to be diverted. The flow to this D/S channel is much less.

U Channel 1 (Zone B1 + B2 + B3)

Runoff Estimation

Design Return Period		1 in	50	years
Paved Area	3377 + 2935 + 2329=		8641	(m2)
Unpaved Area	2159 =		2159	(m2)
Total Equivalent Area	8641 x 0.95 + 2159 x 0.35 =		8965	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	0.278 x 8965 x 220 / 1000000 =		0.549	m3/s

* $i = \frac{a}{(t_d + b)^c}$

U Channel

Channel Size			675	(mm)
Gradient		1 in	200	
Area	π x 0.68^2 /8 + 0.68 x 0.68/2 =		0.407	(m2)
Wetted Perimeter	π x 0.68 / 2 + 0.68/2 x 2 =		1.735	(m)
R	0.407 / 1.735 =		0.234	(m)
Velocity			1.68	m/s
Capacity			0.683	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	0.549 / 0.683	=	**80.40**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 2 (ZONE B4)

Runoff Estimation

Design Return Period		1 in	50	years
Paved Area	4967 =		4967	(m2)
Unpaved Area			0	(m2)
Total Equivalent Area	4967 x 0.95 + 0 x 0.35 =		4719	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 4719 x 220 / 1000000 =		0.289	m3/s

* $i = \frac{a}{(t_d + b)^c}$

U Channel

Channel Size			525	(mm)
Gradient		1 in	200	
Area	π x 0.53^2 /8 + 0.53 x 0.53/2 =		0.246	(m2)
Wetted Perimeter	π x 0.53 / 2 + 0.53/2 x 2 =		1.350	(m)
R	0.246 / 1.35 =		0.182	(m)
Velocity			1.42	m/s
Capacity			0.350	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	0.289 / 0.35	=	**82.71**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 3 (Zone A1 + A2 + C1 + D1)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	1821 + 1064 x 0.1 + 604 x 0.2 + 3930=		5978	(m2)
Unpaved Area	0 + 1064 x 0.9 + 604 x 0.8 =		1441	(m2)
Total Equivalent Area	5978 x 0.95 + 1441 x 0.35 =		6184	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 6184 x 220 / 1000000 =		0.379	m3/s

$$* \quad i = \frac{a}{(t_d + b)^c}$$

U Channel				
Channel Size			800	(mm)
Gradient		1 in	300	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			1.54	m/s
Capacity			0.878	m3/s
Utilization	0.379 / 0.878	=	**43.18**	%

$$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

OK (less than 90%, for 10% siltation allowance)

U Channel 4 (Zone [A1 + A2 + C1 + D1] + C2 + C3 + D2)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	5978 + 2561 + 1053 + 1437 x 0.5 =		10311	(m2)
Unpaved Area	1441 + 1053 + 1437 x 0.5 =		2159	(m2)
Total Equivalent Area	10311 x 0.95 + 2159 x 0.35 =		10551	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 10551 x 220 / 1000000 =		0.647	m3/s

$$* \quad i = \frac{a}{(t_d + b)^c}$$

U Channel				
Channel Size			800	(mm)
Gradient		1 in	200	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			1.88	m/s
Capacity			1.075	m3/s
Utilization	0.647 / 1.075	=	**60.15**	%

$$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

OK (less than 90%, for 10% siltation allowance)

U Channel 5 (Zone C4 + D2)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	1424 + 1437 x 0.5 =		2143	(m2)
Unpaved Area	0 + 1437 x 0.5 =		719	(m2)
Total Equivalent Area	2143 x 0.95 + 719 x 0.35 =		2287	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 2287 x 220 / 1000000 =		0.140	m3/s

$$* \quad i = \frac{a}{(t_d + b)^c}$$

U Channel				
Channel Size			450	(mm)
Gradient		1 in	200	
Area	π x 0.45^2 /8 + 0.45 x 0.45/2 =		0.181	(m2)
Wetted Perimeter	π x 0.45 / 2 + 0.45/2 x 2 =		1.157	(m)
R	0.181 / 1.157 =		0.156	(m)
Velocity			1.28	m/s
Capacity			0.232	m3/s
Utilization	0.14 / 0.232	=	**60.47**	%

$$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

OK (less than 90%, for 10% siltation allowance)

U Channel 6 (Whole Site + A1 + A2 + D2)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	24446 + 1064 x 0.1 + 604 x 0.2+ 1437 x 0.5=		25392	(m2)
Unpaved Area	1064 x 0.9 + 604 x 0.8+ 1437 x 0.5=		2159	(m2)
Total Equivalent Area	25392 x 0.95 + 2159 x 0.35 =		24878	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	0.278 x 24878 x 220 / 1000000 =		1.525	m3/s

$$* \quad i = \frac{a}{(t_d + b)^c}$$

U Channel				
Channel Size			800	(mm)
Gradient		1 in	71	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			3.16	m/s
Capacity			1.804	m3/s
Utilization	1.525 / 1.804	=	**84.50**	%

$$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

OK (less than 90%, for 10% siltation allowance)

U Channel 7 (Zone A2, D1)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	3930 + 604 x 0.2=		4051	(m2)
Unpaved Area	0 + 604 x 0.8 =		483	(m2)
Total Equivalent Area	4051 x 0.95 + 483 x 0.35 =		4017	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 4017 x 220 / 1000000 =		0.246	m3/s

$$* \quad i = \frac{a}{(t_d + b)^c}$$

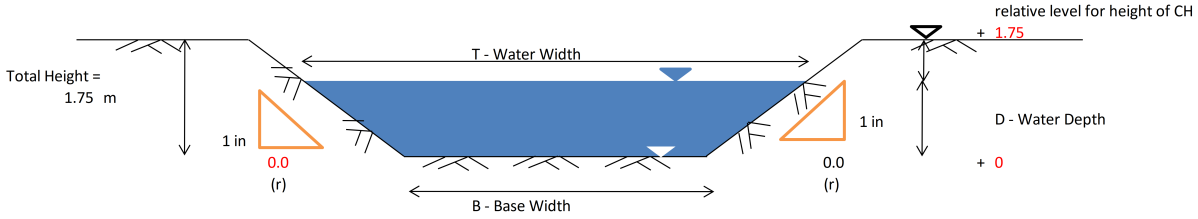
U Channel				
Channel Size			525	(mm)
Gradient		1 in	200	
Area	π x 0.53^2 /8 + 0.53 x 0.53/2 =		0.246	(m2)
Wetted Perimeter	π x 0.53 / 2 + 0.53/2 x 2 =		1.350	(m)
R	0.246 / 1.35 =		0.182	(m)
Velocity			1.42	m/s
Capacity			0.350	m3/s
Utilization	0.246 / 0.35	=	**70.42**	%

$$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

OK (less than 90%, for 10% siltation allowance)

Manning's to estimate Capacity of Proposed Channel Along Northern Boundary for Channel Diversion

Checking of Capacity of Channel



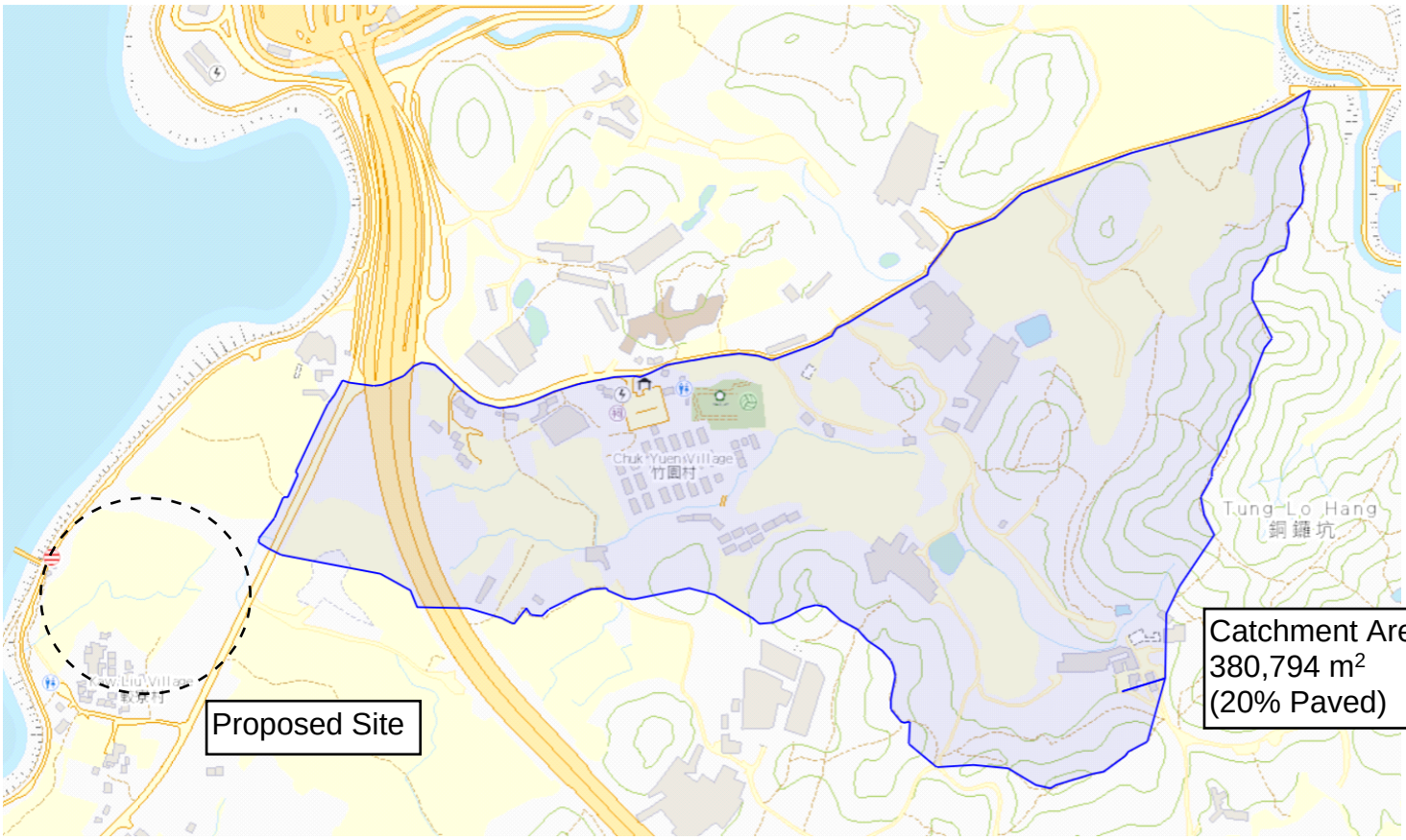
Scenario & Case	Assumed Water Depth (m)	Water Width (m)	Base Width (m)	Area (m^2)	Wetted Perimeter (m)	Hydralic Radius (m)	Manning's Roughness n	Friction Slope S_f (1 in)	Velocity (m/s)	Capacity (m^3/s)
A	D_1	T	B	A_1	P_1	R_1	n	S_f	V_1	Q_1
	1.45	1.75	1.75	2.54	4.65	0.55	0.016	122	3.7786	9.588

Runoff from Existing Catchment for U/S Channel				=	6.84	m^3/s
Utilitization	=	6.84 / 9.59	71.29	%	OK	(less than 90%, for 10% siltation allowance)

Therefore, proposed 1.75 m, 1 in 122 Rectanglar Channel is sufficient for the diversion channel

Time of Concentration for Existing Catchement

Catchment	Flow Distance	Highest Level	Lowest Level	Gradient (per 100m) = (H1-H2)/L x 100	to (min) = 0.14465L/ ($H^{0.2}A^{0.1}$)	tc = to + tf
A	L			H		
(m2)	(m)	(mPD)	(mPD)		(min)	(min)
380794	1012	86.6	9	7.668	26.946	26.946

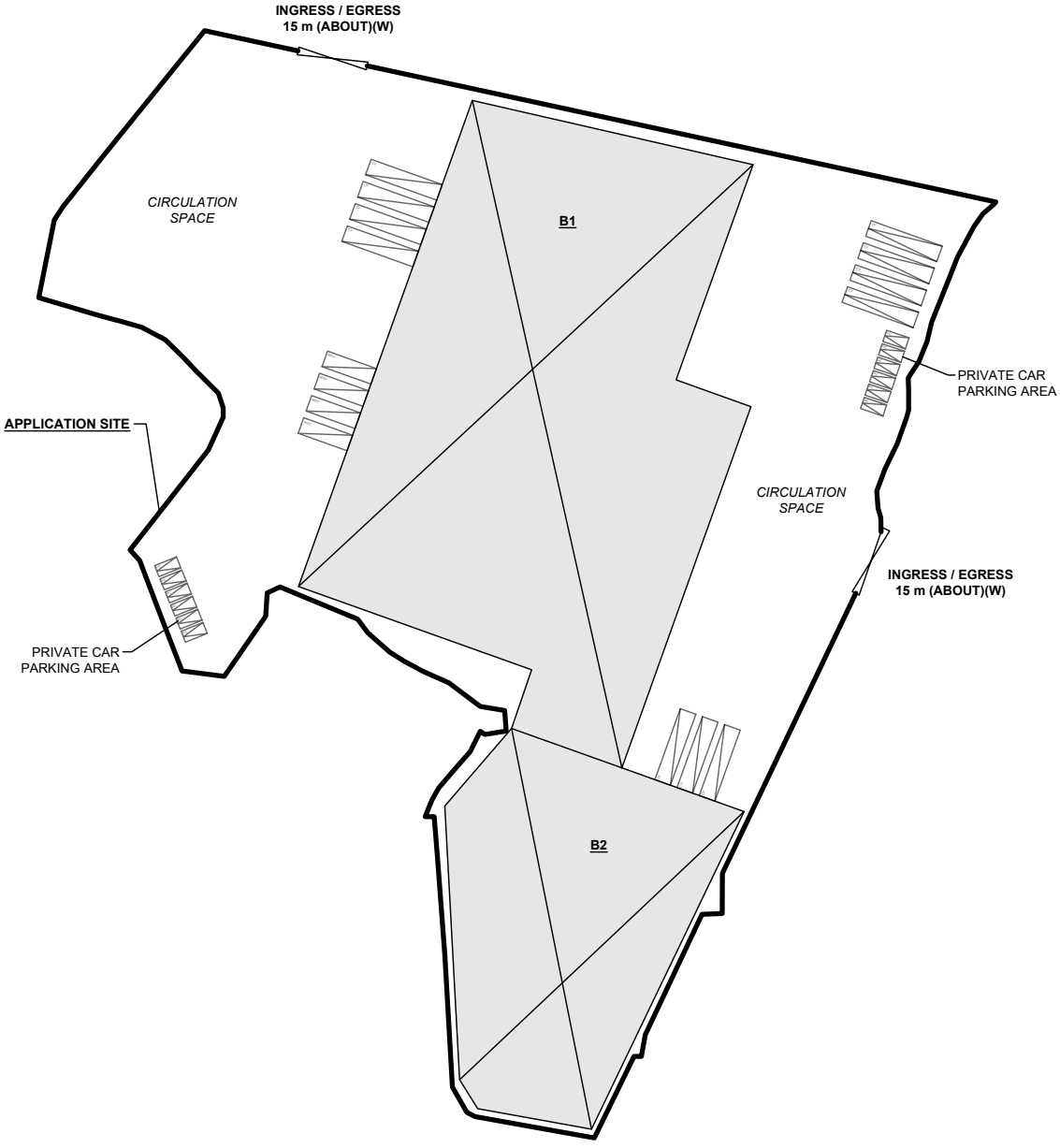


Appendix B - Proposed Development Layout Plan

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 24,446 m^2	(ABOUT)
COVERED AREA	: 11,879 m^2	(ABOUT)
UNCOVERED AREA	: 12,567 m^2	(ABOUT)
PLOT RATIO	: 0.97	(ABOUT)
SITE COVERAGE	: 49 %	(ABOUT)
NO. OF STRUCTURE	: 2	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 23,758 m^2	(ABOUT)
TOTAL GFA	: 23,758 m^2	(ABOUT)
BUILDING HEIGHT	: 15 m	(ABOUT)
NO. OF STOREY	: 2	

STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	WAREHOUSE (EXCL. D.G.G.) SITE OFFICE AND WASHROOM	8,332 m^2 (ABOUT)	16,664 m^2 (ABOUT)	15 m (ABOUT)(2-STOREY)
B2	WAREHOUSE (EXCL. D.G.G.) SITE OFFICE AND WASHROOM	3,547 m^2 (ABOUT)	7,094 m^2 (ABOUT)	15 m (ABOUT)(2-STOREY)
	TOTAL	**11,879 m^2 (ABOUT)**	**23,758 m^2 (ABOUT)**	



PARKING AND LOADING / UNLOADING (L/UL) PROVISIONS

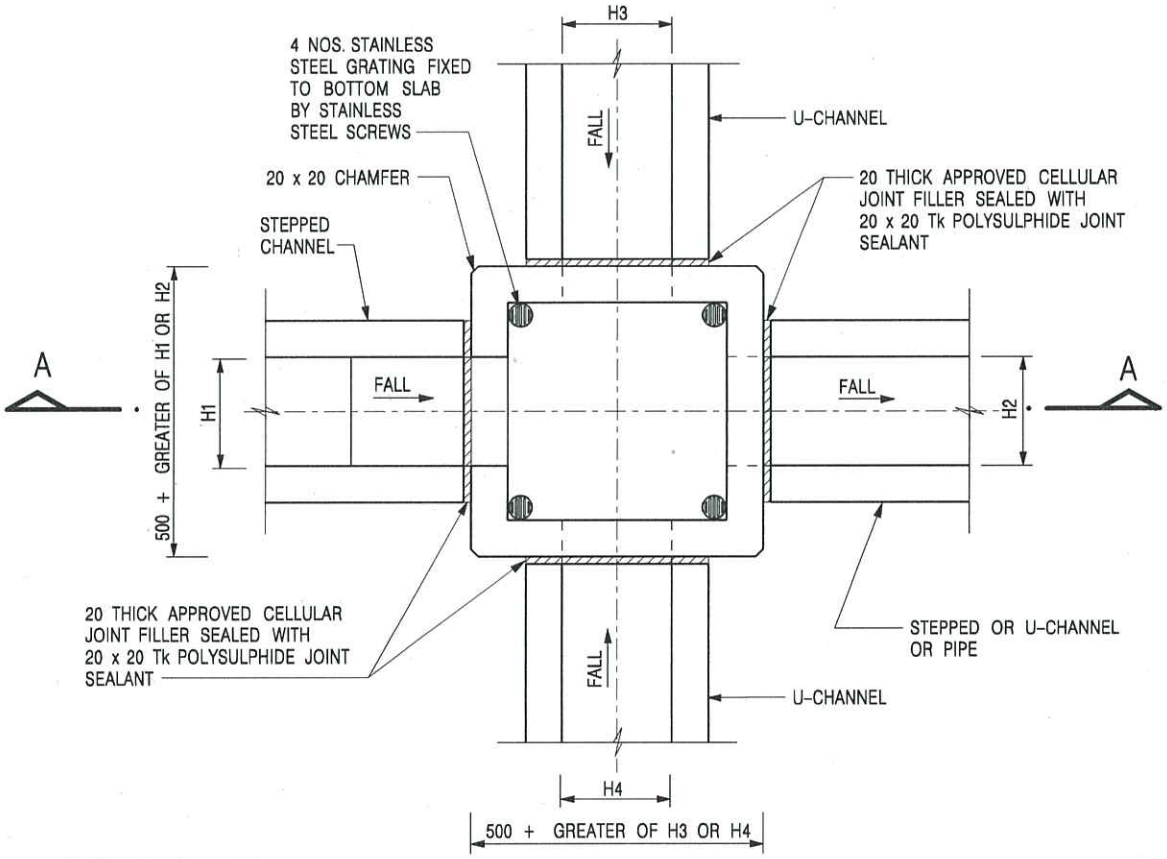
NO. OF PRIVATE CAR PARKING SPACE	: 10
DIMENSION OF PARKING SPACE	: 5 m (L) x 2.5 m (W)
NO. OF CONTAINER VEHICLE PARKING SPACE	: 4
DIMENSION OF LOADING/UNLOADING SPACE	: 16 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR MEDIUM GOODS VEHICLE (MGV)	: 4
DIMENSION OF LOADING/UNLOADING SPACE	: 11 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR CONTAINER VEHICLE	: 7
DIMENSION OF LOADING/UNLOADING SPACE	: 16 m (L) x 3.5 m (W)

LEGEND

- APPLICATION SITE
- STRUCTURE
- PARKING SPACE (PC)
- PARKING SPACE (CV)
- LOADING / UNLOADING SPACE (MGV)
- LOADING / UNLOADING SPACE (CV)
- INGRESS / EGRESS

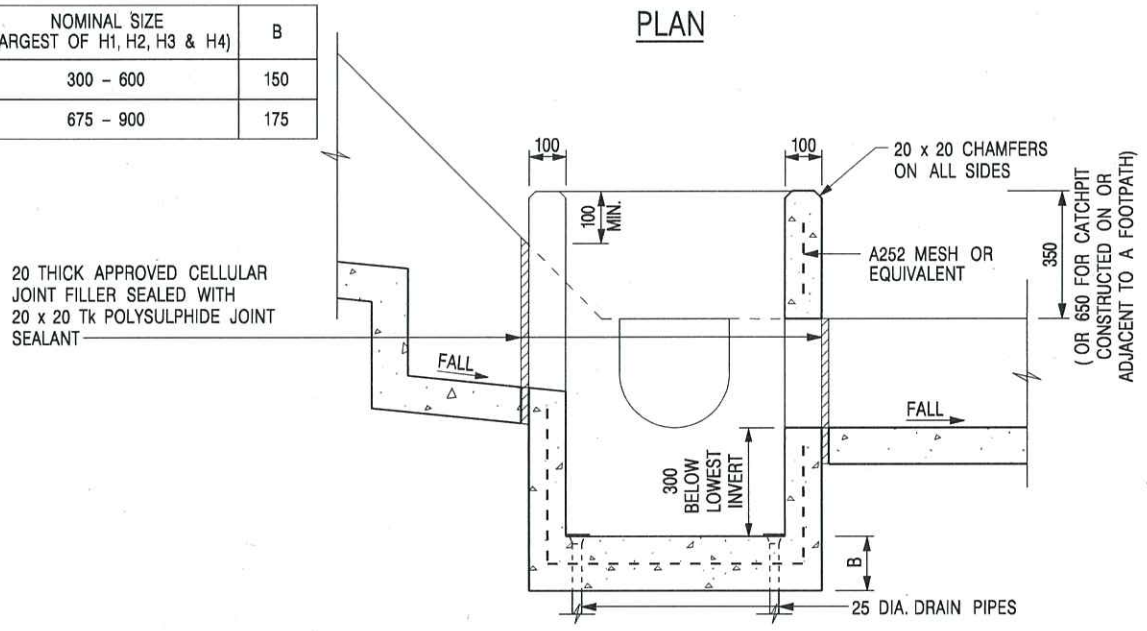
PLANNING CONSULTANT: R-Riches Property Consultants Ltd.	PROJECT: PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS	ADDRESS: VARIOUS LOTS IN D.D. 78 AND ADJOINING GOVERNMENT LAND, LIN MA HANG, NEW TERRITORIES	SCALE: 1 : 1500 @ A4	TITLE: LAYOUT PLAN	NORTH
			DRAWN BY: MN / DATE: 14.5.2024		
			REVISED BY / DATE	DWG NO.: PLAN 9 / VER.: 001	

Appendix C - Reference Drawings



PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 – 600	150
675 – 900	175



SECTION A – A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2406J.	Original Signed	03.2015

CATCHPIT WITH TRAP

(SHEET 1 OF 2)

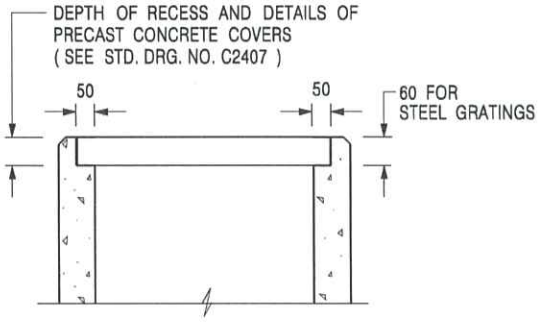
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1

卓越工程 建設香港 We Engineer Hong Kong's Development



ALTERNATIVE TOP SECTION
FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.
7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.
8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 /2) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 /5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 /4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

REF.	REVISION	SIGNATURE	DATE
A	MINOR AMENDMENT.	Original Signed	04.2016
–	FORMER DRG. NO. C2406J.	Original Signed	03.2015

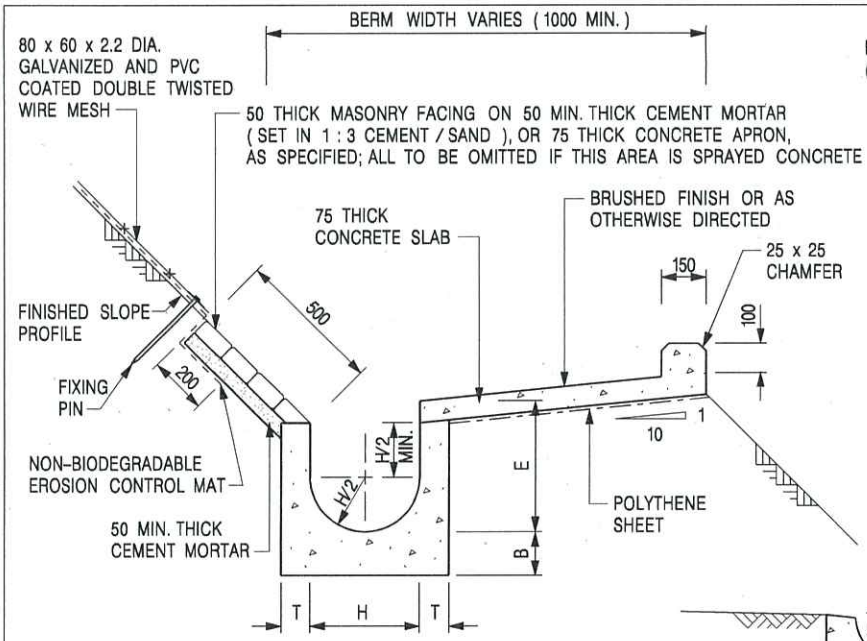
CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

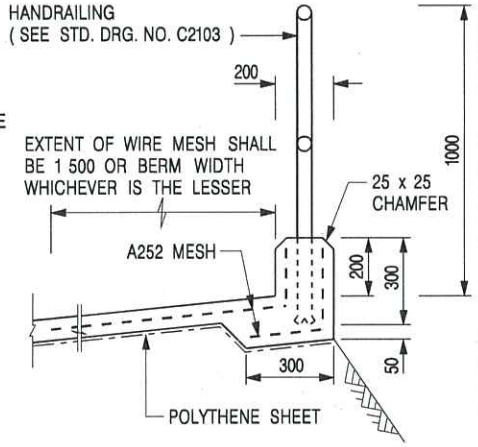
SCALE 1 : 20

DATE JAN 1991

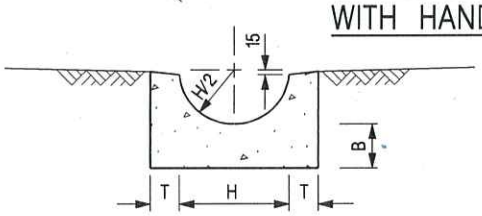
DRAWING NO. C2406 /2A



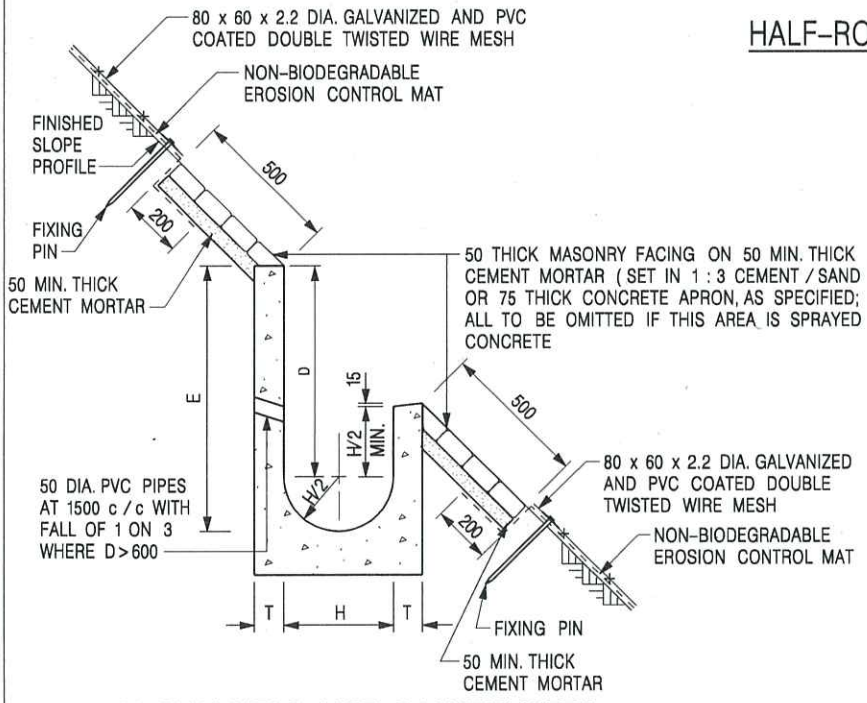
U-CHANNELS CONSTRUCTED ON BERM



DETAILS OF BERM WITH HANDRAILING



HALF-ROUND CHANNEL



U-CHANNELS NOT CONSTRUCTED ON BERM

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. BIODEGRADABLE EROSION CONTROL MAT IF REQUIRED, SEE STD. DRG. NO. C2511/1E.
8. CONCRETE TO BE COLOURED AS SPECIFIED.
9. CONCRETE U-CHANNEL CAN BE CAST IN-SITU OR PRECAST CONCRETE SUBJECT TO THE ENGINEER'S AGREEMENT ON THE DETAILS.
10. DETAILS OF EROSION CONTROL MAT AND WESH MESH ON BERM. (SEE STD DRG. NO. C2511/1E)

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

REF.	REVISION	SIGNATURE	DATE
I	MINOR AMENDMENT.	Original Signed	07.2018
H	THICKNESS OF MASONRY FACING AMENDED.	Original Signed	01.2005
G	MINOR AMENDMENT.	Original Signed	01.2004
F	GENERAL REVISION.	Original Signed	12.2002
E	DRAWING TITLE AMENDED.	Original Signed	11.2001
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENTS.	Original Signed	3.94

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A - WITH MASONRY APRON)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

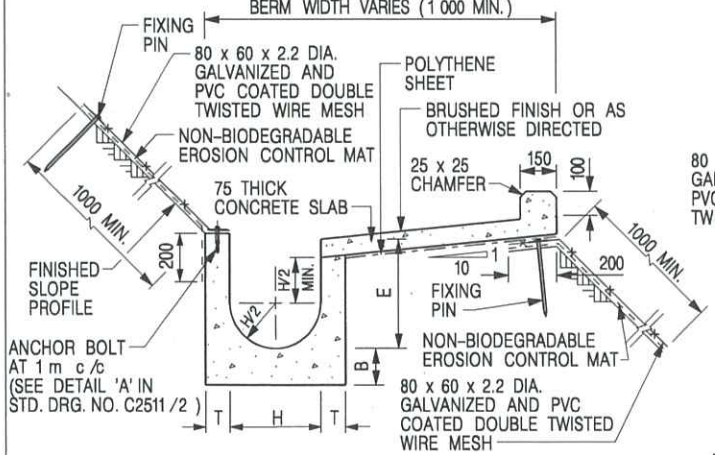
SCALE 1 : 25

DATE JAN 1991

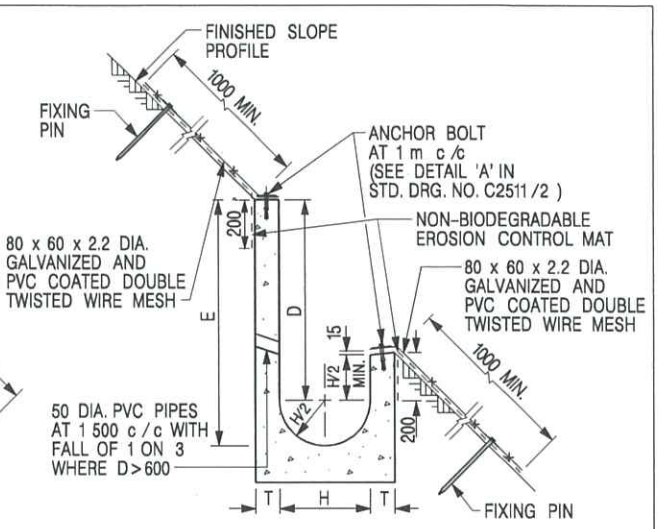
DRAWING NO. C2409I

卓越工程 建設香港

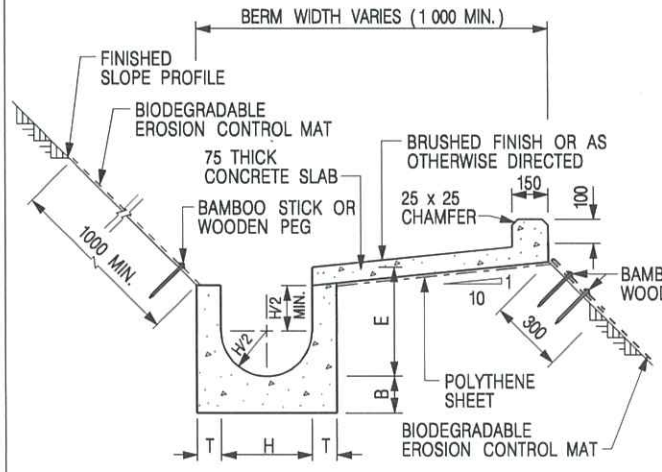
We Engineer Hong Kong's Development



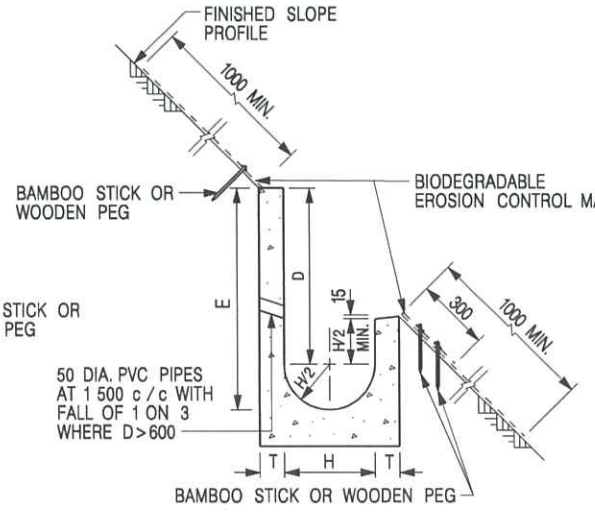
U-CHANNELS CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS NOT CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS CONSTRUCTED ON BERM WITH BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS NOT CONSTRUCTED ON BERM WITH BIODEGRADABLE EROSION CONTROL MAT

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. FOR TYPICAL FIXING PIN DETAILS, SEE STD. DRG. NO. C2511/2.
8. MINIMUM SIZE OF 25 x 50 x 300mm SHALL BE PROVIDED FOR WOODEN PEG.
9. MINIMUM SIZE OF 10mm DIAMETER WITH 200mm LONG SHALL BE PROVIDED FOR BAMBOO STICK.
10. THE FIXING DETAILS OF NON-BIODEGRADABLE AND BIODEGRADABLE EROSION CONTROL MATS ON EXISTING BERM SHALL REFER TO STD. DRG. NO. C2511/1.

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

REF.	REVISION	SIGNATURE	DATE
I	MINOR AMENDMENT.	Original Signed	07.2018
H	FIXING DETAILS OF BIODEGRADABLE EROSION CONTROL MAT ADDED.	Original Signed	12.2017
G	DIMENSION TABLE AMENDED.	Original Signed	01.2005
F	MINOR AMENDMENT.	Original Signed	01.2004
E	GENERAL REVISION.	Original Signed	12.2002
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENT.	Original Signed	3.94
A	MINOR AMENDMENT.	Original Signed	10.92

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE B - WITH EROSION CONTROL MAT APRON)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

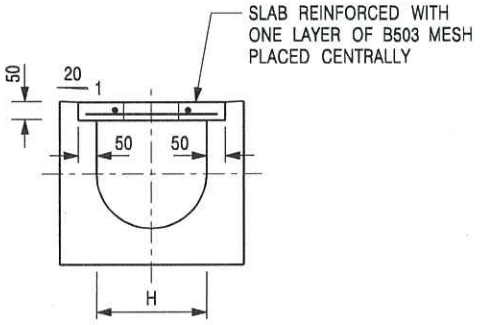
SCALE DIAGRAMMATIC

DATE JAN 1991

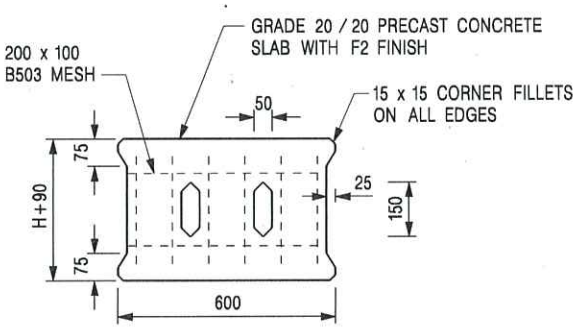
DRAWING NO. C2410I

卓越工程 建設香港

We Engineer Hong Kong's Development



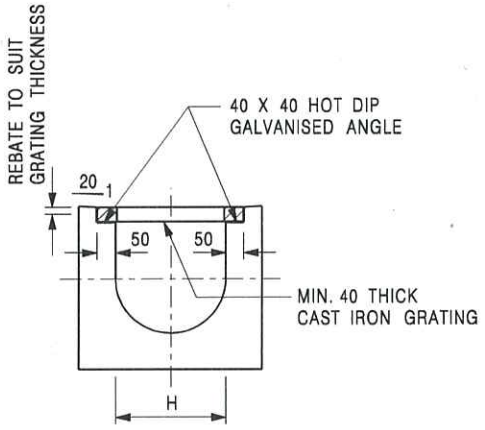
TYPICAL SECTION



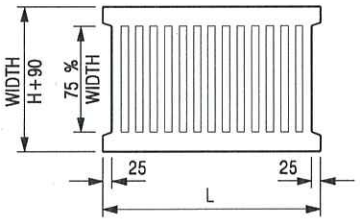
PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



L = 600mm FOR H ≤ 375mm
L = 400mm FOR H > 375mm

CAST IRON GRATING

(DIMENSIONS ARE FOR GUIDANCE ONLY, CONTRACTOR MAY SUBMIT EQUIVALENT TYPE)

U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. H = NOMINAL CHANNEL SIZE.
3. ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
4. FOR COVERED CHANNELS TO BE HANDED OVER TO HIGHWAYS DEPARTMENT FOR MAINTENANCE, THE GRATING DETAILS SHALL FOLLOW THOSE AS SHOWN ON HyD STD. DRG. NO. H3156.

REF.	REVISION	SIGNATURE	DATE
E	NOTES 3 & 4 AMENDED.	Original Signed	12.2014
D	NOTE 4 ADDED.	Original Signed	06.2008
C	MINOR AMENDMENT. NOTE 3 ADDED.	Original Signed	12.2005
B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	CAST IRON GRATING AMENDED.	Original Signed	12.2002

COVER SLAB AND CAST IRON GRATING FOR CHANNELS

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2412E

Annex 3

Revised Traffic Impact Assessment

Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years

Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, New Territories

Final TIA Report
August 2024

Ozzo Technology (HK) Ltd
15/F, Heng Shan Centre
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Section 16 Planning Application

Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years

Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, New Territories

Final TIA Report
August 2024

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Prepared / Date	Checked / Date	Approved / Date
R0a	Final TIA	10/07/2024 TC	12/07/2024 DP	12/07/2024 SC
R1a	Final TIA	15/08/2024 TC	16/08/2024 DP	16/08/2024 SC

Content

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Appendices

Appendix A Layout Plan and Swept Path Analysis

Appendix B 2024 Junction Calculation Sheets

Appendix C 2029 Junction Calculation Sheets

Appendix D 2026 Junction Calculation Sheets

1 INTRODUCTION

1.1 General

1.1.1 Ozzo Technology (HK) Limited was commissioned to undertake a Traffic Impact Assessment (TIA) Study in support of the S16 planning application for the Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years ("Application Site").

1.2 Project Descriptions

1.2.1 The Application Site is located at Lin Ma Hang, abutting Lin Ma Hang Road which can be accessed via Heung Yuen Wai Highway.

1.3 Study Objectives

1.3.1 The main objectives of this Traffic Impact Assessment ("TIA") Study are to:

(i) evaluate the existing vehicular traffic and transport conditions of the project site and to assess the traffic and transport implications of the development to the adjacent road network and pedestrian facilities for the operation of the Application Site;

(ii) identify any existing and potential traffic and transport problems and to recommend possible mitigation measures and advise any necessary traffic arrangement;

(iii) recommend traffic improvement measures for the Application Site, as necessary.

1.4 Report Structure

1.4.1 Following this introductory chapter, this report is arranged as follow:

- Chapter 2 describes the Application Site;
- Chapter 3 outlines the existing traffic conditions;
- Chapter 4 presents the finding of traffic forecast;
- Chapter 5 illustrates the result of Construction TIA;
- Chapter 6 provides the conclusion of the TIA.

2 DESCRIPTONS OF THE APPLICATION SITE

2.1 Site Location

2.1.1 The site is located in Lin Ma Hang and can be accessed via Lin Ma Hang Road which serve as the ingress / egress route of site as shown in **Figure 2-1**.

2.2 Development Parameters for the Application Site

2.2.1 The Application Site consisting of various Lots in D.D. 78 in Lin Ma Hang, with a Site area of 24,446m^2.

2.2.2 The Site involves a temporary warehouse with ancillary facilities excluding dangerous goods.The current application is intended to facilitate the relocation of the applicant's affected business premises in Ngau Tam Mei to the Application Site.

2.2.3 The operation hours of the proposed development are Monday to Saturday from 07:00 to 20:00. No operations on Sunday and public holiday. It is anticipated to accommodate not more than 30 staff. Visitor is not anticipated at the Site.

2.3 Parking and Loading/Unloading Facilities

2.3.1 As franchised bus (KMB route no. 79K) would be the main mode of transport for staffs travelling to the warehouse, private car generation/ attraction is expected to be minimal. **Table 2-1** presents the traffic induced by the operation of the warehouse.

Table 2-1 Development Traffic

Time Period	Trip Generation and Attraction (veh/hr)					
	PC		MGV		CV	
	In	Out	In	Out	In	Out
Trip at AM Peak hour	10	1	2	1	2	1
Trip at PM Peak hour	0	6	1	2	2	2
Trip at Non-peak per hour (average)	2	2	1	1	1	1

2.3.2 **Table 2-2** summarizes the internal transport facilities to be provided in the Application Site. As there are no specific parking and loading/unloading requirements for temporary warehouse development in accordance to HKPSG, ancillary transport facilities are provided based on users' requirements to meet operational needs.

Table 2-2 Ancillary Transport Facilities Based on User's Requirement

Type of Ancillary Transport Facilities	Size	Provision based on User's Requirement
Private Car Parking Space	2.5m (W) x 5m (L)	12
Container Vehicle Parking Space	3.5m (W) x 16m (L)	4
Total Parking Facilities	**-**	**16**
L/UL Spaces for MGV	3.5m (W) x 11m (L)	4
L/UL Spaces for Container Vechicle	3.5m (W) x 16m (L)	7
Total L/UL Facilities	**-**	**11**

2.3.3 The conceptual layout plan of the Project Site is included in **Appendix A** for easy reference.

2.4 Vehicular Access Arrangement and Proposed Access Road

2.4.1 The Application Site consist of two vehicular accesses which are located at the north of the site and at the east of the site (hereinafter named as "North Gate" and "East Gate") as shown in **Figure 2.2**. Vehicles can access the site via both gates and pedestrian can only access the site via the East Gate. The East Gate can be accessed by Lin Ma Hang Road while the North Gate is currently inaccessible by vehicles.

2.4.2 To facilitate the vehicular access of the North Gate, a 4.5m wide single track access road with a 12m long passing bay is proposed. Layout of the proposed access road is also presented in **Figure 2-2**. The 12m long passing bay is able to accommodate two light vehicles (or a MGV), as overhead traffic of two 16m long container vehicles is very unlikely, a 12m long passing bay is considered to be adequate.

2.4.3 Swept path analysis is also conducted for the vehicular accesses and the proposed access road, indicating sufficient turning spaces for goods vehicles. **Appendix A** presents the swept path analysis for the vehicular access of the Application Site, as well as internal circulation to/from the parking spaces/ L/UL spaces within the site.

2.4.4 Staffs will be deployed to conduct traffic management/ control measures at the accesses of the site to ensure smooth maneuvering of vehicles entering/ exiting the site and to ensure no queueing of vehicles outside the site. In case there are overlapping traffic (e.g. vehicles entering/ exiting the site at the same time, which should be very unlikely), traffic entering the site will have priority over the leaving traffic in order to minimize the impact to public road.

2.4.5 To ensure pedestrian safety, staff will be deployed by the applicant to direct vehicle entering / exiting the site. “Stop and Give way” and “beware of pedestrians’ signs would be erected to ensure pedestrian safety to/from the Site.

2.4.6 In addition, flashing light and alarm systems will be set at the entrance of the Application Site, whenever vehicles are to be accessed to / exit from the Application Site, the flashing light and alarm will work immediately to alarm the pedestrians. Adequate lights would be provided by adding lights for safety concerns.

3 EXISTING TRAFFIC AND TRANSPORT CONDITIONS

3.1 Existing Road Network

3.1.1 The Site is bounded by Lin Ma Hang Road as shown in **Figure 2-1** which is a single 2-lanes carriageway and can be accessed via Heung Yuen Wai Highway.

3.2 Traffic Surveys

3.2.1 Vehicular count survey was conducted on a typical weekday in January 2024 at the critical junctions and links shown in **Figure 3.1** during the period of 0730-1000 for AM peak and 1700-1930 for PM peak. The details of the critical junction are listed in **Table 3-1** below.

Table 3-1 Critical Junctions and Links

Index	Location	Type
J1	Lin Ma Hang Road/ Slip road of Heung Yuen Wai Highway	Roundabout
J2	Lin Ma Hang Road/ Lin Chuk Road	Priority
L1	Lin Ma Hang Road (section between application site and Heung Yuen Wai Hwy Slip Road NB)	Road Link
L2	Heung Yuen Wai Hwy Slip Road NB	Road Link
L3	Lin Ma Hang Road (section between Lin Chuk Road and Heung Yuen Wai Hwy Slip Road SB)	Road Link

3.3 Existing Vehicle Traffic Conditions

All vehicle flows recorded during the traffic surveys have been converted to passenger car unit (PCU) based on the PCU factors as indicated in Table 2.3.1.1 of Volume 2 of Transport Planning and Design Manual (TPDM) as illustrated in **Table 3-2**.

Table 3-2 Passenger Car Unit Conversion Factors

Vehicle Type	PCU Conversion Factor(1)
	Priority junction/ Roundabout
Car / Taxi	1.00
Public Light Bus / Minibus / Light Goods Vehicle	1.50
Medium Goods Vehicle	2.00
Heavy Goods Vehicle	2.50
Bus / Coach	2.50

Notes: (1) Table 2.3.1.1, Chapter 2.3, Volume 2, TPDM-2023

3.3.1 By applying the above PCU factors, vehicular traffic flows in PCUs are calculated and the AM and PM peak hour is identified to occur at 08:45-09:45 and 16:30-17:30 for AM peak and PM peak respectively. **Figure 3-2** presents the 2024 observed Weekday AM and PM peak hour traffic flows on the road network in the vicinity of the Application Site.

3.3.2 Based on the existing traffic flows, the peak hour performances of the key junctions are assessed. The assessment results are indicated in **Table 3-3** and detailed junction calculation sheets are given in **Appendix B**.

Table 3-3 2024 Peak Hour Junction Capacity Assessment

Jn. ID.	Location(1)	Type	Capacity Index(2)	2024 Weekday	
				AM Peak	PM Peak
J1	Lin Ma Hang Road/ Slip road of Heung Yuen Wai Highway	Roundabout	DFC	0.20	0.18
J2	Lin Ma Hang Road/ Lin Chuk Road	Priority	DFC	0.07	0.07

Notes:
(1) Refer to Figure 3-1 for junction locations
(2) DFC = Design Flow to Capacity for priority junction and roundabout

3.3.3 The results reveal that all the assessed key junctions are operated satisfactorily during the peak hours.

3.3.4 Based on the existing traffic flows, the peak hour performances of the key road links in the vicinity of the Application Site are also assessed and the results are indicated in **Table 3-4**.

Table 3-4 2024 Peak Hour Road Link Capacity Assessment

No.	Location[1]	Direction	Design[2] Capacity (veh/hr)	Weekday AM Peak		Weekday PM Peak	
				Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]
L1	Lin Ma Hang Road (section between application site and Heung Yuen Wai Hwy Slip Road NB)	EB	400	167	0.42	159	0.4
		WB	400	142	0.36	132	0.33
L2	Heung Yuen Wai Hwy Slip Road	NB	1500	127	0.08	101	0.07
L3	Lin Ma Hang Road (section between Lin Chuk Road and Heung Yuen Wai Hwy Slip Road SB)	NB	400	69	0.17	77	0.19
		SB	400	166	0.42	156	0.39

Notes: (1) Refer to Figure 3-1 for road link locations
(2) TPDM Vol 2 Chapter 2.4.1.1
(3) P/Df = Peak Hourly Flows/Design Flow Ratios (P/Df) for road links

3.3.5 The results reveal that all the key road links in the vicinity of the Project Site operate within capacity during the peak hours.

4 TRAFFIC FORCAST

4.1 Design Year

4.1.1 According to current programme, the proposed warehouse development will commission in the year of 2026 and last for 3 years, the design year for traffic forecast is therefore set to be 2029.

4.2 Methodology

4.2.1 In forecasting the future traffic flows on the road network in the Study Area, due considerations are given to the following information and factors:

- Historical traffic data from Annual Traffic Census (ATC) published by Transport Department;
- The forecasted population and employment from the 2019-based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department;
- Committed and planned developments in the Study Area.

4.2.2 The following steps are undertaken to derive the 2029 Peak Hour Reference Flows (i.e. without the Project Site) and Design Flows (i.e. with the Application Site).

2029 Background Flows = 2024 Flows x annual growth factors

2029 Reference Flows = 2029 Background Flows + additional traffic by planned and committed developments

2029 Design Flows = 2029 Reference Flows + development traffic

4.2.3 The traffic impact to be induced by the Development is assessed by comparing the Peak Hour Reference Traffic Flows against the Peak Hour Design Traffic Flows for the Design Year.

4.3 Future Year Traffic Flows

Historical Traffic Growth

4.3.1 The TPEDM data in NENT(others) covers larger scale of the North East area. Considering the application site is located in the rural area (close to boundary area) and is not in the proximity to town centre or other planned NDA, the TPEDM data in NENT(others) is deemed to be less relevant to reflect the population and employment situations of the vicinity of the Application Site.

4.3.2 To obtain a more relevant growth rate, reference is also made to the historical traffic data from Annual Traffic Census (ATC) published by Transport Department. The historical trend of traffic growth on the nearby road network over the 5-year period of 2018 to 2022 are extracted from the Annual Traffic Census (ATC) Reports for the ATC stations in the vicinity of the site. **Table 4-1** describes the locations of the nearby ATC stations and provides the corresponding traffic data.

Table 4-1 Traffic Data from ATC in the vicinity of the site

Station	Road	Between		2018	2019	2020	2021	2022	Average Annual Growth 2018-2022
6653	Ping Che Rd	Sha Tau Kok Rd	Lin Ma Hang Rd	11,430	11,820	11,030	11,870	11,510	0.17%
5041	Lung Shan Tunnel (1)	Fanling Highway	Sha Tau Kok Road – Wo Hang	-	13,540	13,840	16,870	16,400	6.60%
Total				11,430	25,360	24,870	28,740	27,910	**3.25%**

Note: (1) Station 5041 started to record since year 2019 when the Heung Yuen Wai Highway commissioned

4.3.3 As indicated in **Table 4-1**, the traffic on the road network in the vicinity of the Application Site is increased by 3.25% p.a. on average over the period from 2019 – 2022. This will be adopted as annual growth rate to project future traffic flow.

Planned and Committed Developments

4.3.4 By referring to the TPB website, it is known that there would be other planned developments commissioned in the vicinity of the application site, as listed in **Table 4-2**.

Table 4-2 Planned / Committed Developments in the Site Vicinity

Application No.	Location	Land Use	Site Area (m^2)
A/NE-TKLN/85	Lots 1364 S.B RP and 1364 S.B ss.1 RP in D.D. 78, Ta Kwu Ling North, Lin Ma Hang Road, New Territories	Proposed Temporary Warehouse (Storage of Building Materials and Metal)	1,105

A/NE-TKLN/77	Various Lots in D.D. 78 and 82 and Adjoining Government Land, Ta Kwu Ling North, Lin Ma Hang Road, New Territories	Proposed Temporary Logistic Centre, Warehouse (Excluding Dangerous Goods Godown) and Container Vehicle Park	122,819
A/NE-TKLN/63	Lots 1309 S.B ss.3 and 1313 RP in D.D. 78 and Adjoining Government Land, Ta Kwu Ling North, New Territories	Proposed Temporary Private Club	451.5

2029 Reference Flows

4.3.5 By incorporating the planned development traffic and annual growth mentioned in **Section 4.3.4** and **Section 4.3.2** respectively, the 2029 Reference Traffic Flow are presented in **Figure 4-1**.

2029 Design Flows

4.3.6 The additional development traffic mentioned in **Section 2.3** is then assigned onto the nearby road network in addition to the Reference Traffic Flow presented in **Figure 4-1**. The resulting 2029 Design Traffic Flow are shown in **Figure 4-2.**

4.4 Future Year Junction Capacity Assessments

4.4.1 The critical road junction as identified in **Section 3.2** are assessed in the light of traffic forecast for the design year 2029 defined in **Section 4.1**. The results are shown in in **Table 4-3** with detailed junction calculation sheets provided in **Appendix C**.

Table 4-3 2029 Peak Hour Junction Capacity Assessment

Jn. ID.	Location(1)	Type	Capacity Index(2)	2029 Reference Scenario		2029 Design Scenario	
				AM Peak	PM Peak	AM Peak	PM Peak
J1	Lin Ma Hang Road/ Slip road of Heung Yuen Wai Highway	Roundabout	DFC	0.33	0.31	0.34	0.32
J2	Lin Ma Hang Road/ Lin Chuk Road	Priority	DFC	0.09	0.08	0.09	0.08

Notes:
(1) Refer to Figure 3-1 for junction locations
(2) DFC = Design Flow to Capacity for priority junction and roundabout

4.4.2 It is indicated in the above **Table 4-3** that the identified critical junctions would operate satisfactorily during peak hours in the design years of 2029 without and with the Development in place, taking account of the known planned/ committed major developments in the vicinity of the Application Site.

4.5 Future Year Link Capacity Assessments

4.5.1 The critical road links as identified in **Section 3.2** are also assessed based on the future year traffic flow derived in **Section 4.3** and the results are presented in **Table 4-4**.

Table 4-4 2029 Peak Hour Road Link Capacity Assessment

No.	Location[1]	Dir.	Design[2] Capacity (veh/hr)	2029 Reference Scenario (AM Peak)		2029 Reference Scenario (PM Peak)		2029 Design Scenario (AM Peak)		2029 Design Scenario (PM Peak)	
				Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]
L1	Lin Ma Hang Road (section between application site and Heung Yuen Wai Hwy Slip Road NB)	EB	400	219	0.55	244	0.61	222	0.56	254	0.64
		WB	400	223	0.56	178	0.45	237	0.59	181	0.45
L2	Heung Yuen Wai Hwy Slip Road	NB	1500	172	0.11	176	0.12	175	0.12	186	0.12
L3	Lin Ma Hang Road (section between Lin Chuk Road and Heung Yuen Wai Hwy Slip Road SB)	NB	400	81	0.2	91	0.23	81	0.20	91	0.23
		SB	400	251	0.63	207	0.52	265	0.66	210	0.53

Notes: (1) Refer to Figure 3-1 for road link locations
(2) TPDM Vol 2 Chapter 2.4.1.1 and
(3) P/Df = Peak Hourly Flows/Design Flow Ratios (P/Df) for road links

4.5.2 The results in the above **Table 4-4** indicate that all the key road links would be operating within their capacity in the design year of 2029.

5 CONSTRUCTION TRAFFIC IMPACT ASSESSMENT

5.1 Design Year Peak Hour Construction Traffic

5.1.1 Under current programme, the construction works will be completed in the year of 2026. Thus 2026 is adopted as the design year for construction traffic impact assessment.

5.1.2 The construction traffic mainly consists of concrete delivery and dump trucks. A conservative estimation of 8 veh/hr, which is equivalent to 16 pcu/hr is adopted in this Construction Traffic Impact Assessment.

5.1.3 The same approach in forecasting the 2029 Design Peak Hour Traffic (refers to Chapter 4) is adopted to forecast the 2026 Design Peak Hour Traffic as summarized below:

2026 Background Flows = 2024 Flows x annual growth factors

2026 Reference Flows = 2026 Background Flows + additional traffic by planned and committed developments

2026 Design Flows = 2026 Reference Flows + construction traffic

5.2 Construction Traffic Impact Assessment

5.2.1 The 2026 Peak Hour Traffic Flows during construction period are shown in **Figure 5-1** and **Figure 5-2** respectively. Based on the traffic forecasts, results of the junctions and links capacity assessments during the construction year are presented in **Table 5-1** and **Table 5-2** respectively. Detailed calculation sheets of the junction assessments are provided in **Appendix D**.

Table 5-1 2026 Peak Hour Junction Capacity Assessment

Jn. ID.	Location(1)	Type	Capacity Index(2)	2026 Reference Scenario		2026 Design Scenario	
				AM Peak	PM Peak	AM Peak	PM Peak
J1	Lin Ma Hang Road/ Slip road of Heung Yuen Wai Highway	Roundabout	DFC	0.31	0.29	0.32	0.30
J2	Lin Ma Hang Road/ Lin Chuk Road	Priority	DFC	0.08	0.07	0.08	0.07

Notes:
(1) Refer to Figure 3-1 for junction locations
(2) DFC = Design Flow to Capacity for priority junction and roundabout

Table 5-2 2026 Peak Hour Road Link Capacity Assessment

No.	Location[1]	Dir.	Design[2] Capacity (veh/hr)	2026 Reference Scenario (AM Peak)		2026 Reference Scenario (PM Peak)		2026 Design Scenario (AM Peak)		2026 Design Scenario (PM Peak)	
				Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]	Flows (veh/hr)	P/Df[3]
L1	Lin Ma Hang Road (section between application site and Heung Yuen Wai Hwy Slip Road NB)	EB	400	201	0.50	226	0.57	209	0.52	234	0.59
		WB	400	207	0.52	164	0.41	215	0.54	172	0.43
L2	Heung Yuen Wai Hwy Slip Road	NB	1500	158	0.11	165	0.11	166	0.11	173	0.12
L3	Lin Ma Hang Road (section between Lin Chuk Road and Heung Yuen Wai Hwy Slip Road SB)	NB	400	74	0.19	82	0.21	74	0.19	82	0.21
		SB	400	233	0.58	189	0.47	241	0.60	197	0.49

Notes: (1) Refer to Figure 3-1 for road link locations
(2) TPDM Vol 2 Chapter 2.4.1.1
(3) P/Df = Peak Hourly Flows/Design Flow Ratios (P/Df) for road links

5.2.2 The results indicate that the key junctions and road links in the vicinity of the application site would operate at an acceptable level during the weekday AM and PM peak hours even with the construction traffic to be generated during the construction period.

6 SUMMARY AND CONCLUSION

6.1 Summary

6.1.1 Ozzo Technology (HK) Limited is commissioned to undertake this Traffic Impact Assessment (TIA) Study to assess the traffic impact to be induced by the Application Site on the nearby road network.

6.1.2 Capacity assessments are undertaken to reveal the AM and PM peak hour traffic conditions for year 2024 and 2029 in the vicinity of the Application Site. The assessment results indicate that all the key junctions and road links perform satisfactorily during the AM and PM peak hours on a normal weekday for both the Reference and Design scenarios.

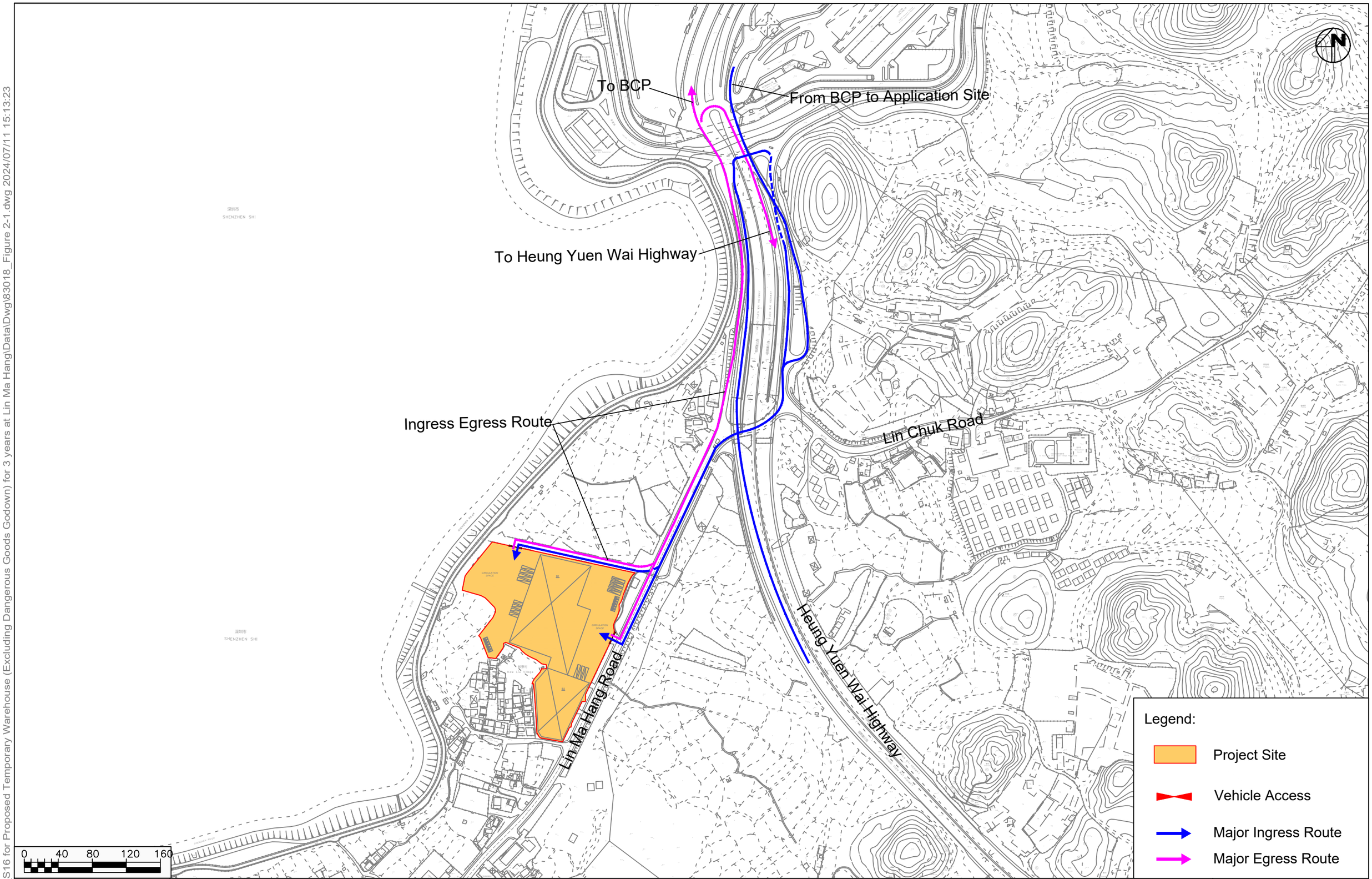
6.1.3 To facilitate the vehicular access of the North Gate, a single track access road with a 12m long passing bay is proposed.

6.1.4 Construction traffic impact assessment is also conducted and indicates that the key junctions and road links in the vicinity of the project site would operate at an acceptable level during the weekday AM and PM peak hours even with the construction traffic to be generated during the construction period.

6.2 Conclusion

6.2.1 The impact assessment results indicate that the Application Site would not induce significant traffic impacts and considered acceptable from traffic engineering viewpoint.

Figures



X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_Figure 2-1.dwg 2024/07/11 15:13:23

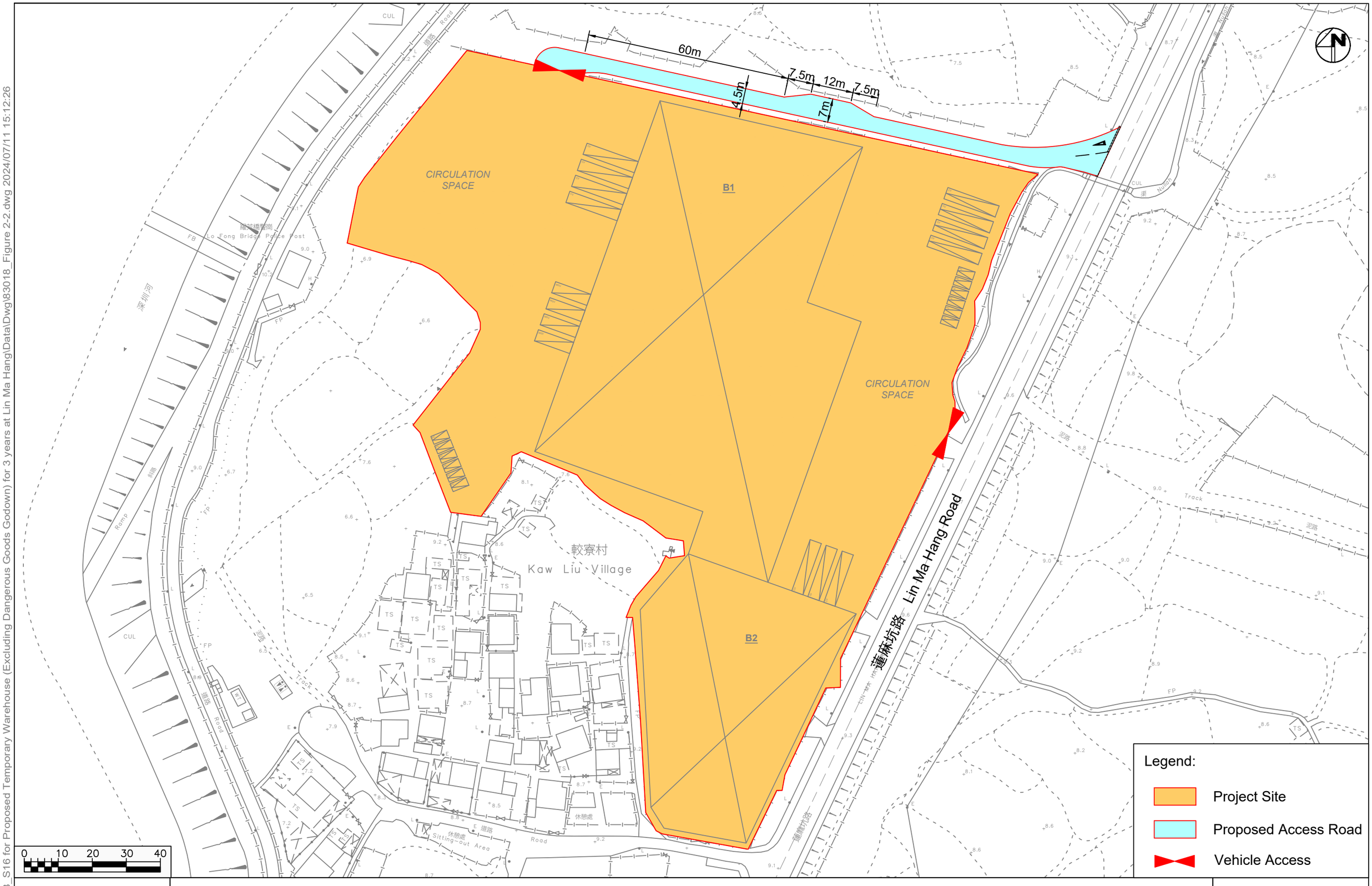
OZZO TECHNOLOGY

Date	Scale
11/07/2024	1:4000

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Major Ingress / Egress Route

Project No.	83018	Rev.
Dwg No.	Figure 2-1	-



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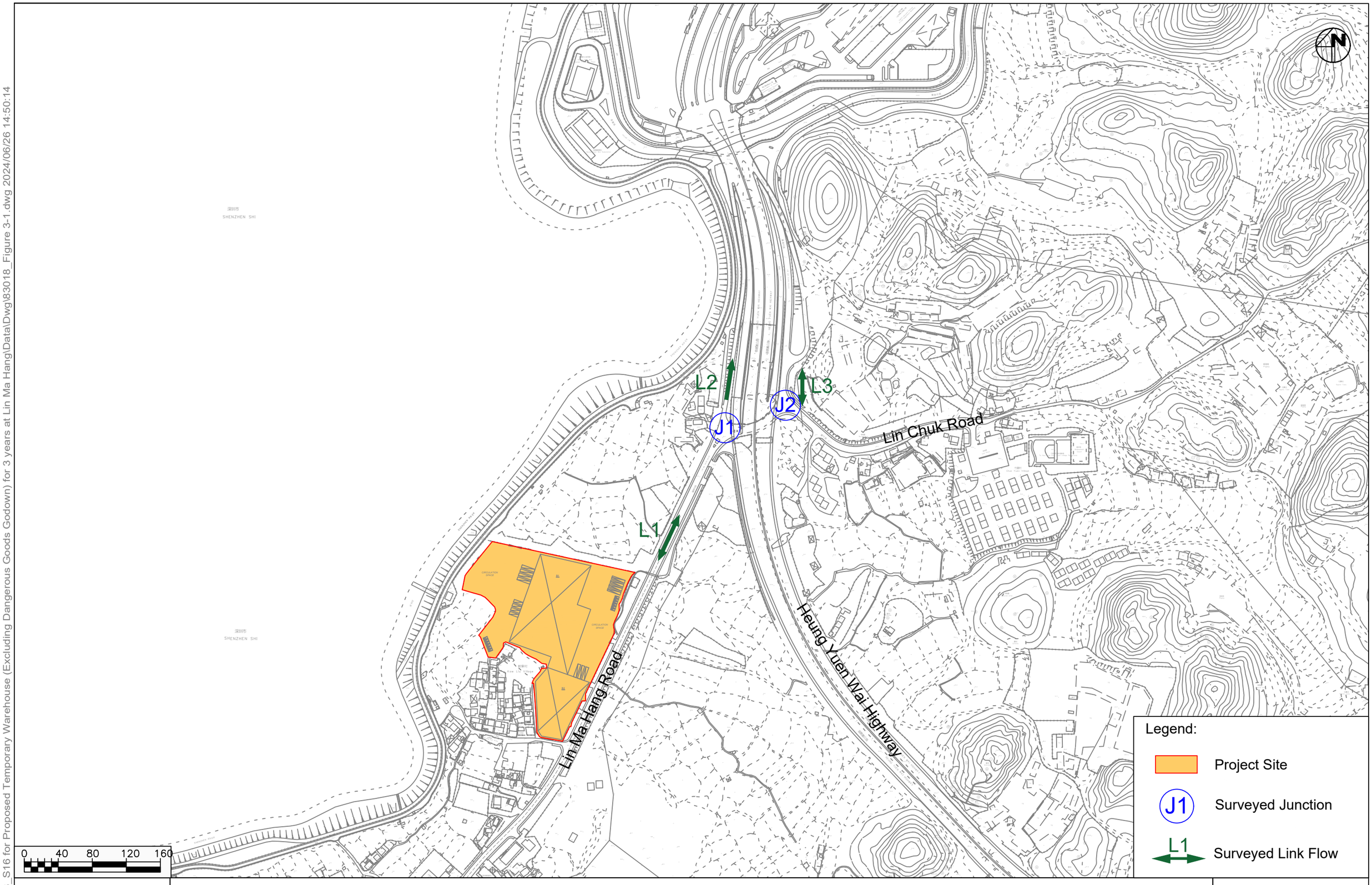
OZZO TECHNOLOGY

Date	Scale
11/07/2024	1:1000

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Proposed Access Road

Project No. 83018	Rev.
Dwg No. Figure 2-2	-



OZZO TECHNOLOGY

Date 26/06/2024

Scale 1:4000

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Survey Locations

Project No. 83018

Dwg No. Figure 3-1

Rev. -

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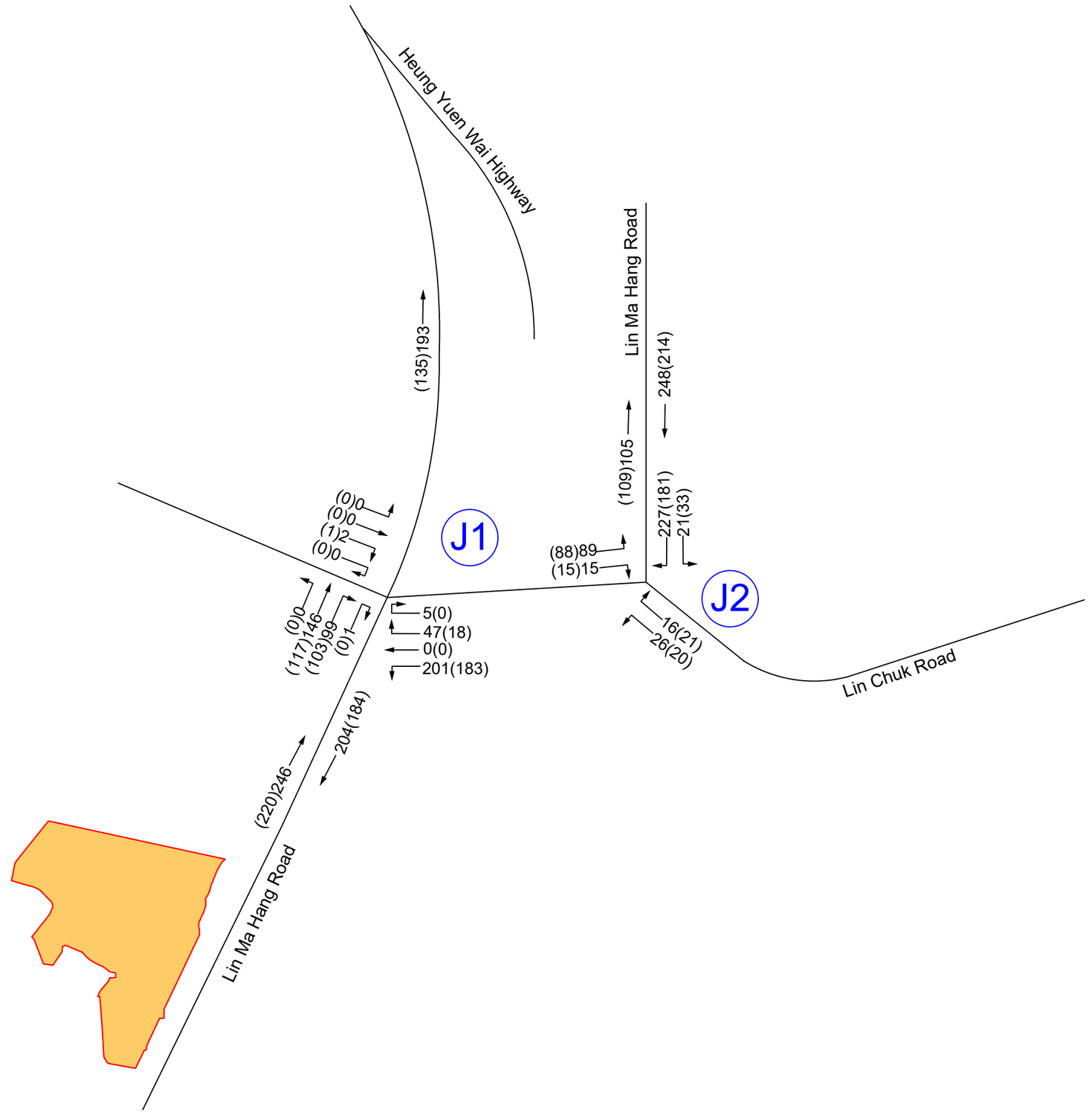

Legend:

- Application Site
- J1 Surveyed Junction
- Weekday AM Peak Hour Traffic Flow
- 123(123) Weekday PM Peak Hour Traffic Flow

Note: Traffic Flows at Junction in PCU values
Minor Road not shown for Clarity

OZZO TECHNOLOGY

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

2024 Existing Peak Hour Traffic Flows

Date	Scale
10/07/2024	N.T.S

Project No.	Rev.
83018	-
Dwg No. Figure 3-2	

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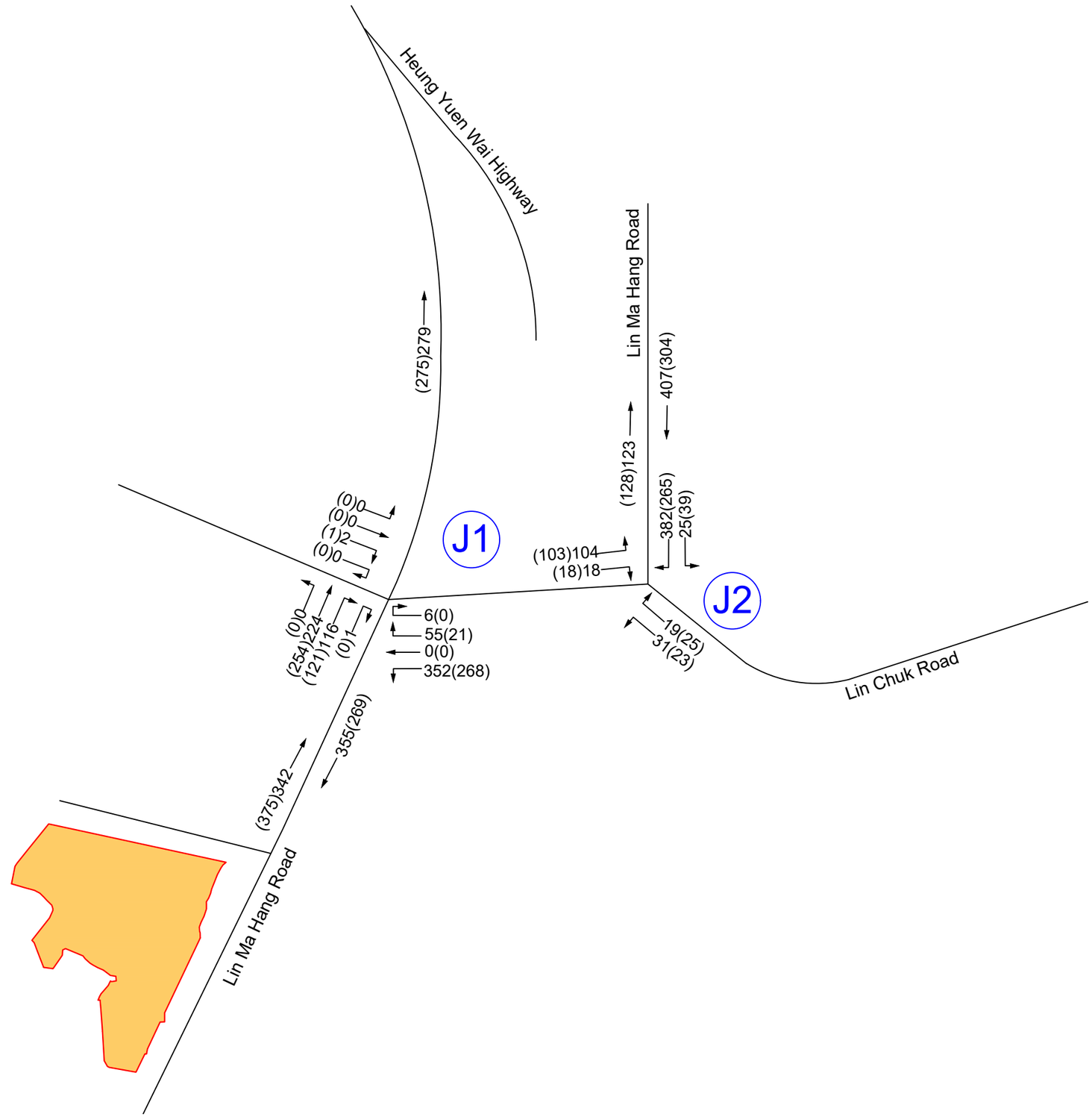


Legend:

- Application Site
- J1 Surveyed Junction
- Weekday AM Peak Hour Traffic Flow
- 123(123) Weekday PM Peak Hour Traffic Flow

Note: Traffic Flows at Junction in PCU values
Minor Road not shown for Clarity

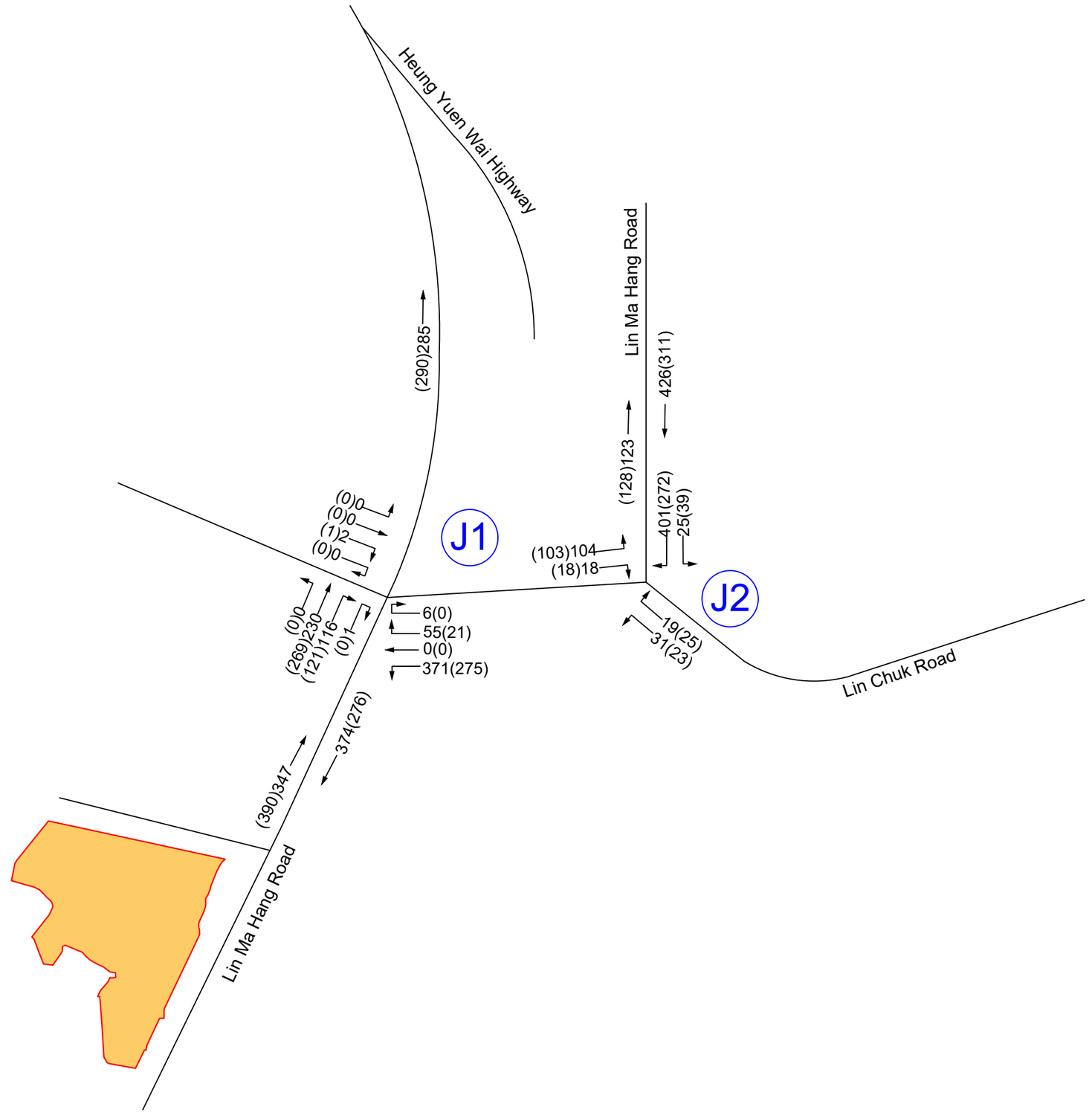
OZZO TECHNOLOGY

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

2029 Reference Peak Hour Traffic Flows

Date	Scale
10/07/2024	N.T.S

Project No.	83018	Rev.
Dwg No.	Figure 4-1	-



S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

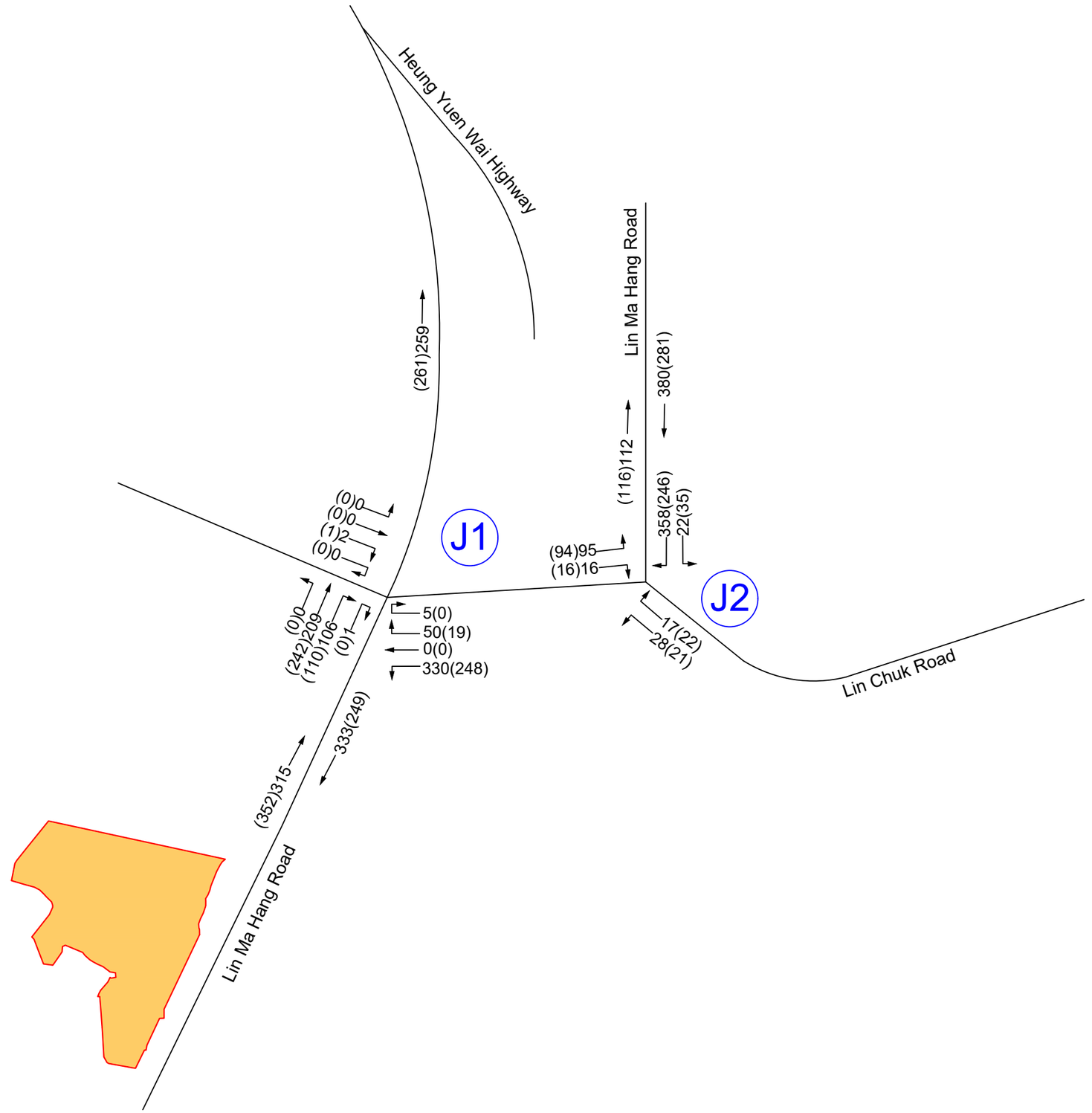
2029 Design Peak Hour Traffic Flows

OZZO TECHNOLOGY

Date	Scale
10/07/2024	N.T.S

Project No.	83018	Rev.
Dwg No.	Figure 4-2	-

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_Figure 4-2.dwg 2024/07/11 11:25:16



Legend:

- Application Site
- J1 Surveyed Junction
- Weekday AM Peak Hour Traffic Flow
- 123(123) Weekday PM Peak Hour Traffic Flow

Note: Traffic Flows at Junction in PCU values
Minor Road not shown for Clarity

OZZO TECHNOLOGY

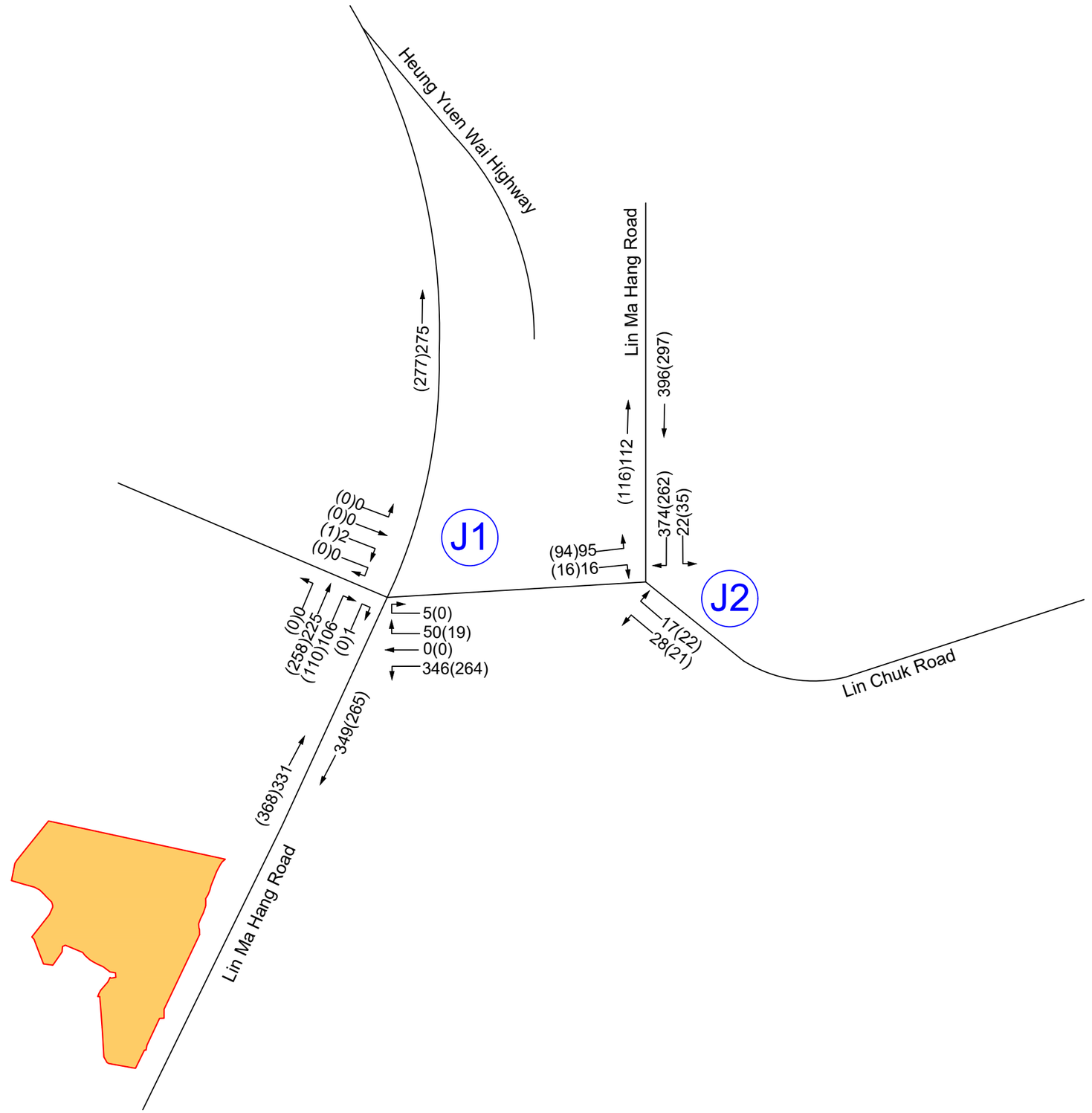
S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

2026 Reference Peak Hour Traffic Flows

Date	Scale
10/07/2024	N.T.S

Project No.	83018	Rev.
Dwg No.	Figure 5-1	-

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_Figure 5-1.dwg 2024/07/11 11:25:04



OZZO TECHNOLOGY

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

2026 Design Peak Hour Traffic Flows

Date	Scale
10/07/2024	N.T.S

Project No.	83018	Rev.
Dwg No.	Figure 5-2	-

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_Figure 5-2.dwg 2024/07/11 11:24:49

Appendix A

Conceptual Layout Plan and Swept Path Analysis

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_SP.dwg 2024/07/11 15:27:51

CIRCULATION SPACE

B1

CIRCULATION SPACE

B2

較寮村
Kaw Liu Village

Lo Fong Bridge Police Post

Lin Ma Hang Road

蓮麻坑路

深圳河

Legend:

- Application Site
- PC — Parking Space (PC)
- CV — Parking Space (CV)
- MGV — Loading / unloading Space (MGV)
- CV — Loading / unloading Space (CV)

0 10 20 30 40

OZZO TECHNOLOGY

Date 11/07/2024

Scale 1:1000

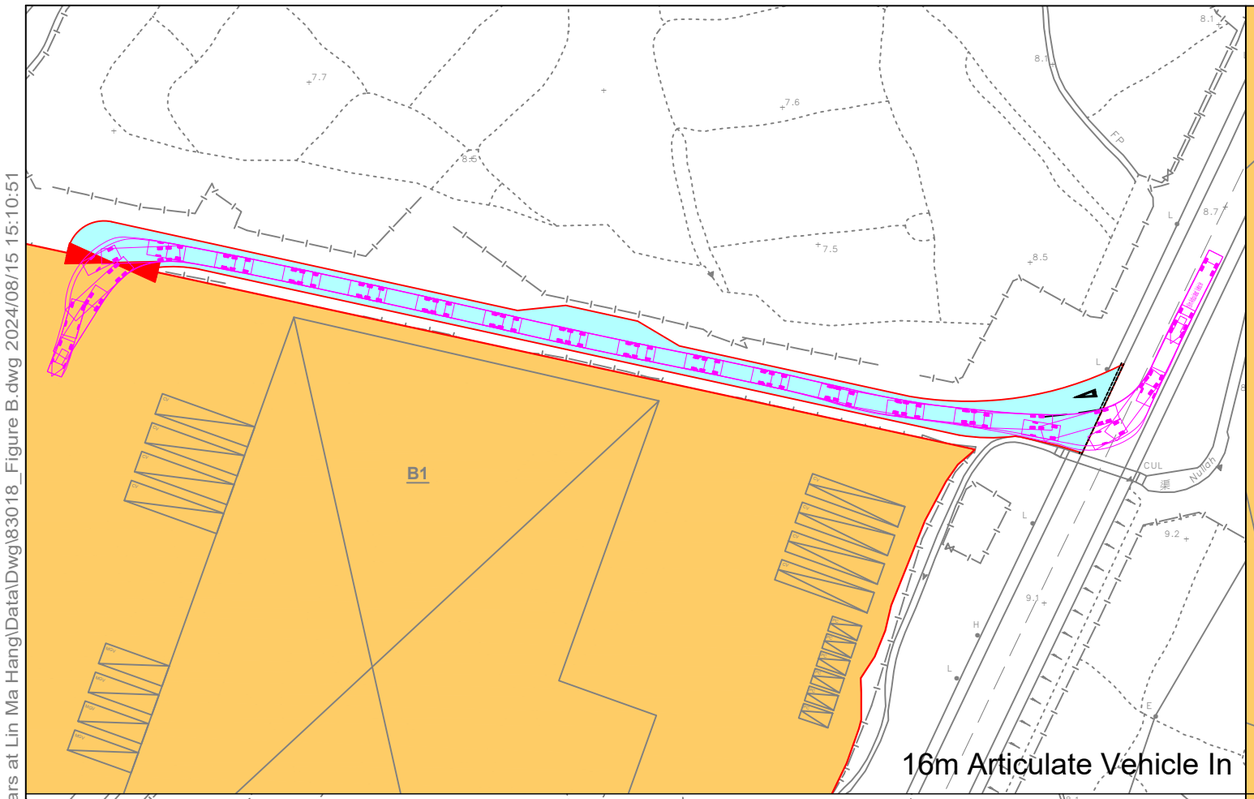
S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

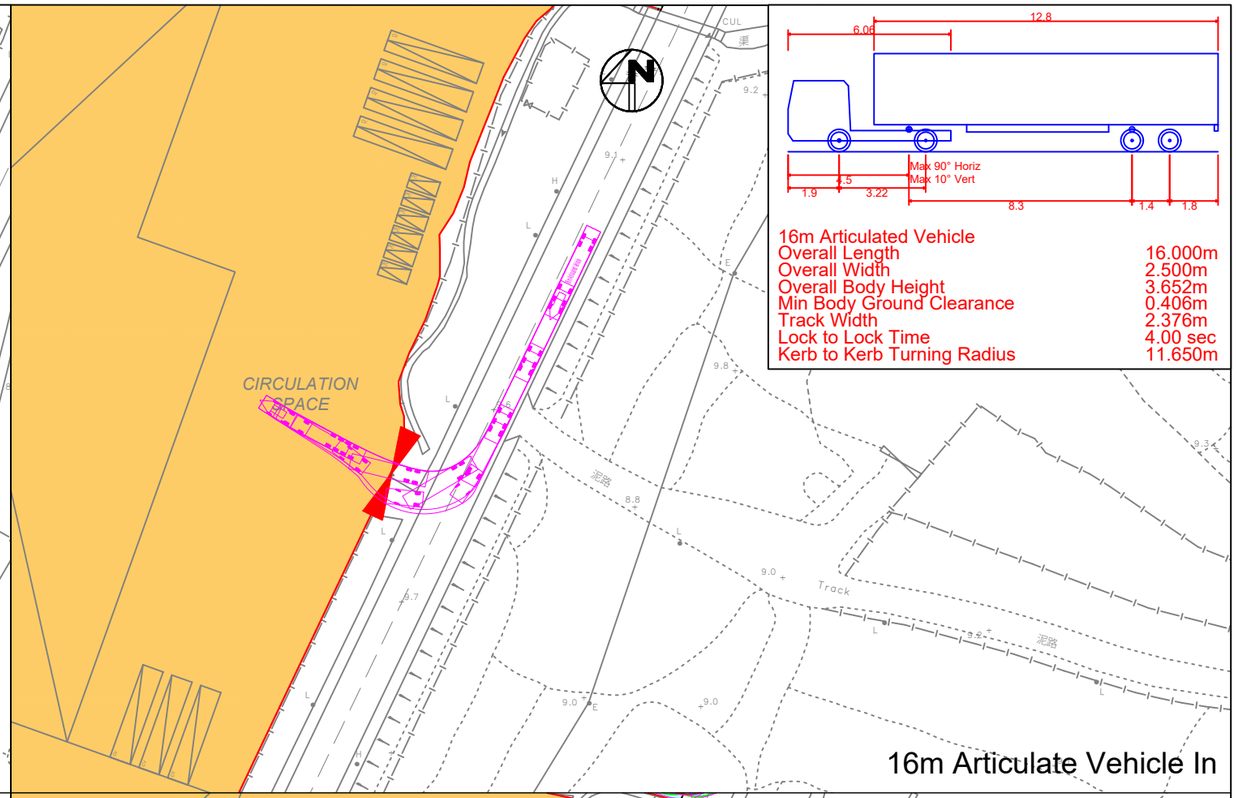
Layout Plan

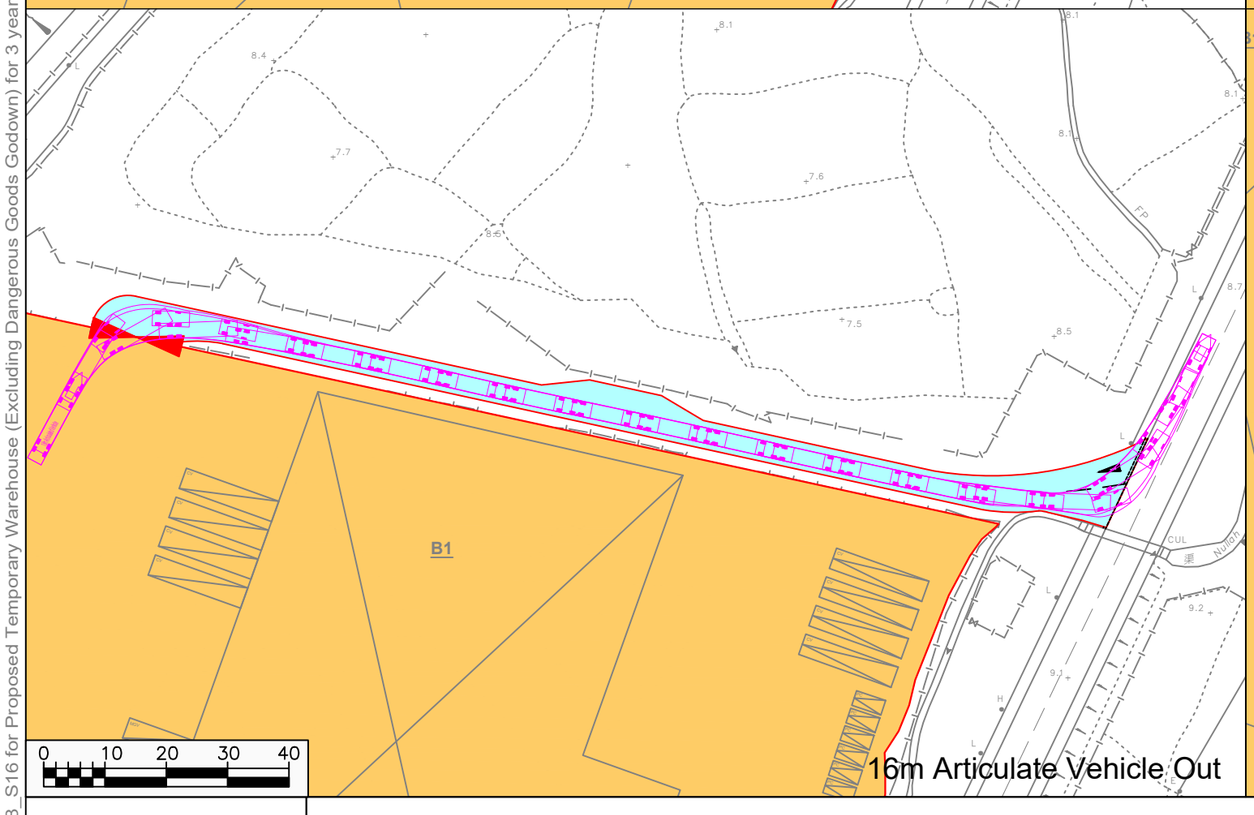
Project No. 83018

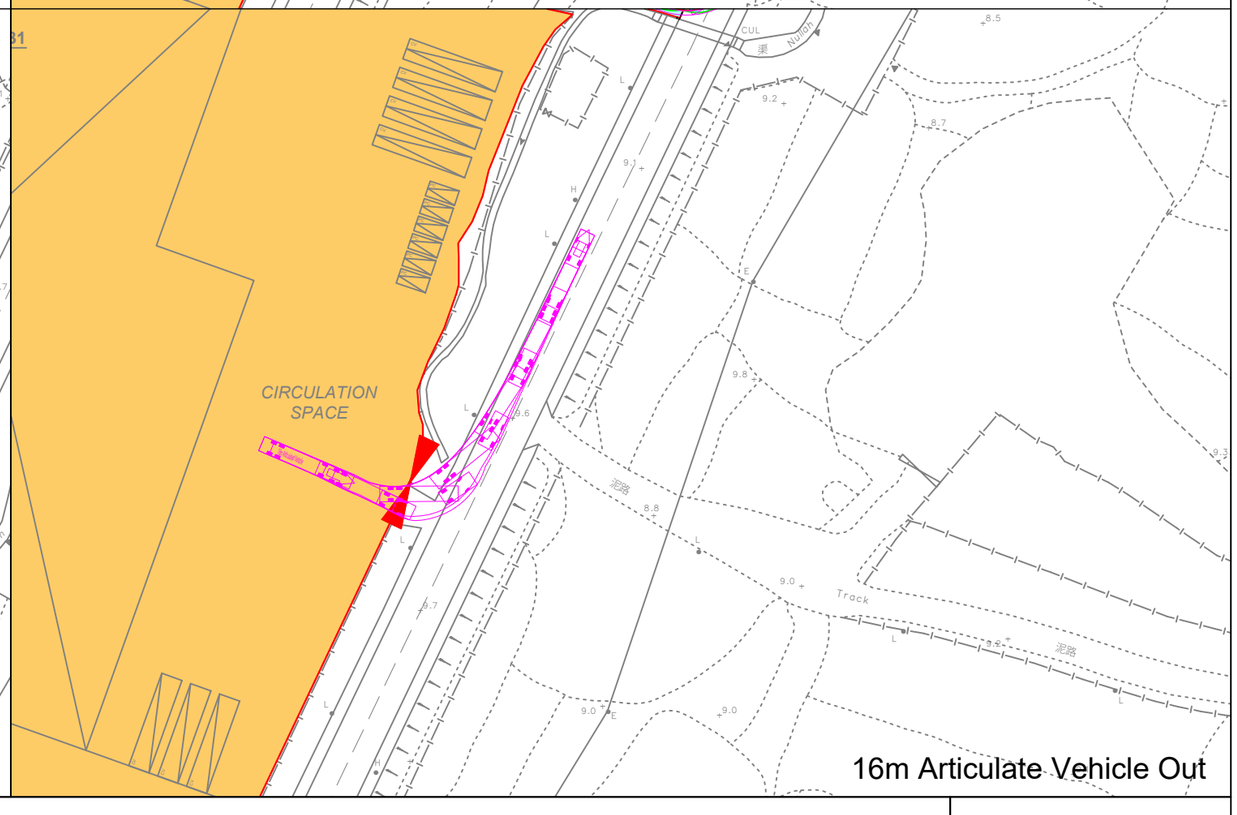
Dwg No. Figure A

Rev. -









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OZZO TECHNOLOGY

Date	Scale
11/07/2024	1:1000

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Proposed Access Road and 16m Articulate Vehicle Swept Path

Project No. 83018	Rev.
Dwg No. Figure B	-

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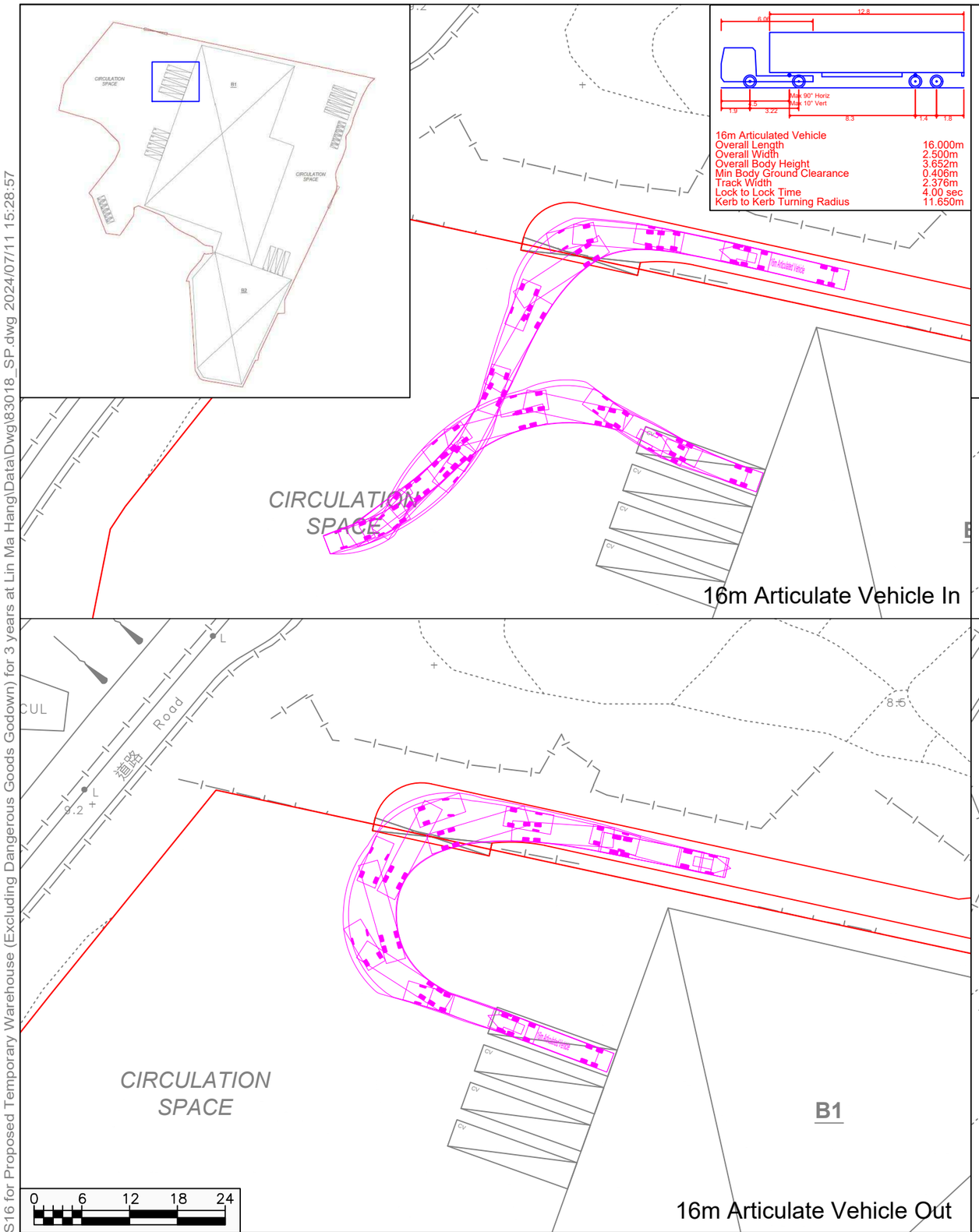

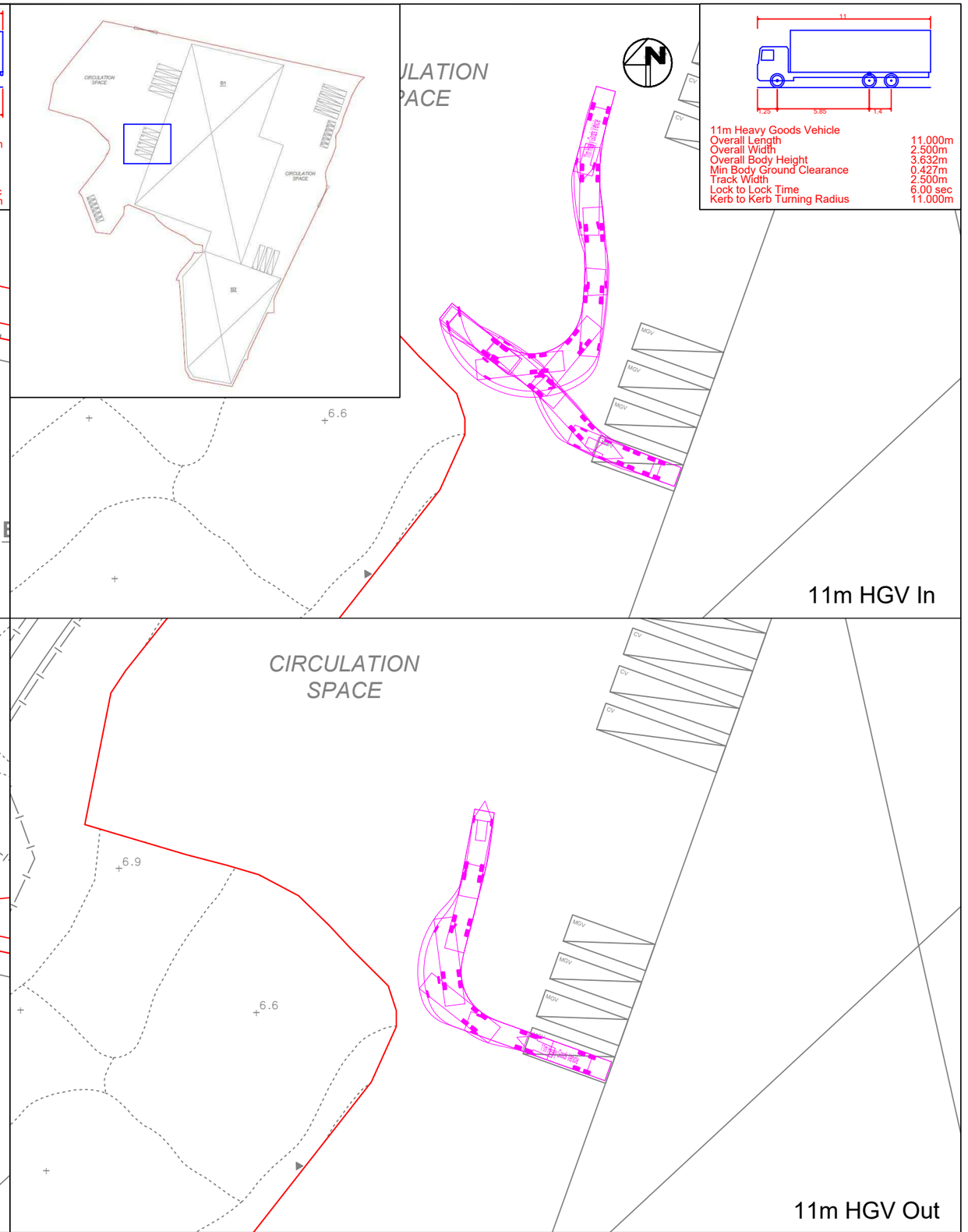

0 6 12 18 24

OZZO TECHNOLOGY

Date 11/07/2024 | Scale 1:600

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Swept Path Assessments 16m Articulate Vehicle and 11m Heavy Goods Vehicle

Project No. 83018 | Rev. -

Dwg No. Figure C

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_SP.dwg 2024/07/11 15:28:57

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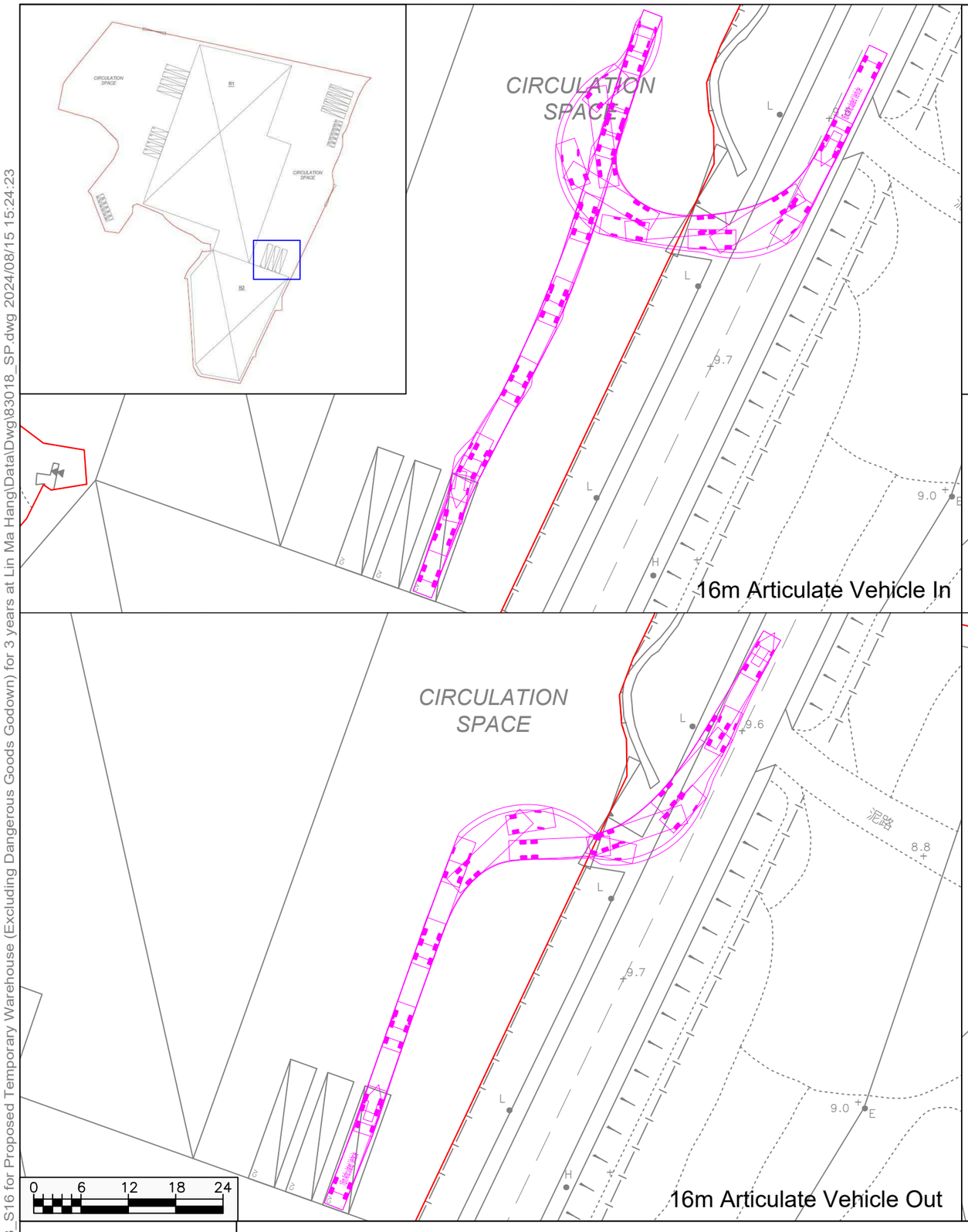
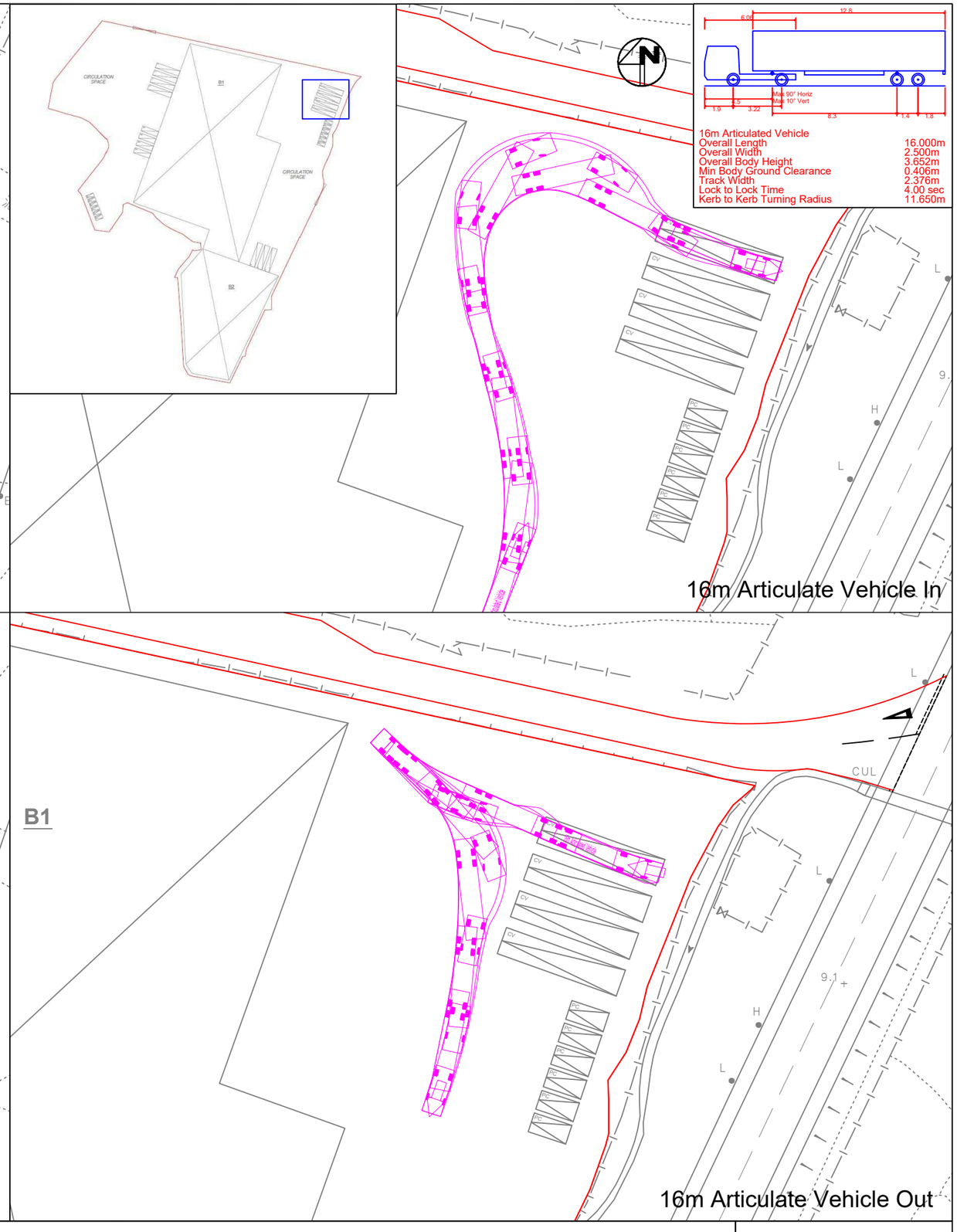




0 6 12 18 24

OZZO TECHNOLOGY

Date 11/07/2024 | Scale 1:600

S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Swept Path Assessments 16m Articulate Vehicle

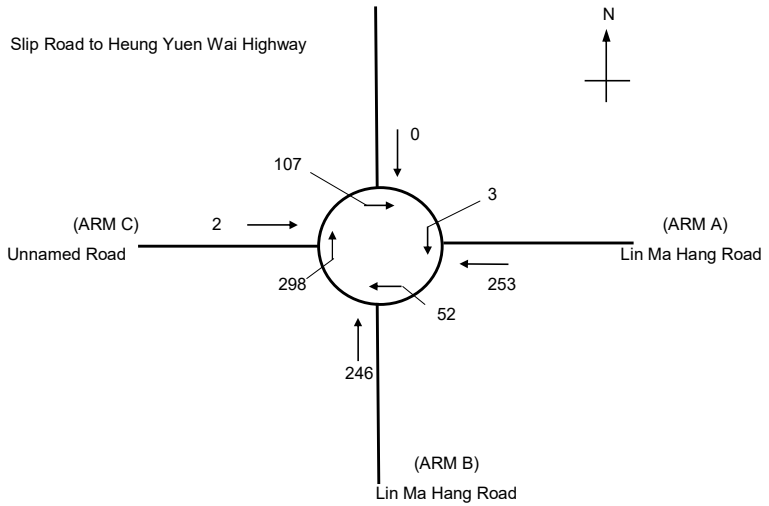
Project No. 83018 | Rev. -

Dwg No. Figure D

Appendix B

2024 Junction Calculations

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2024_AM**	FILENAME :	CHECKED BY:	DP	Jul-24
2024 Observed AM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

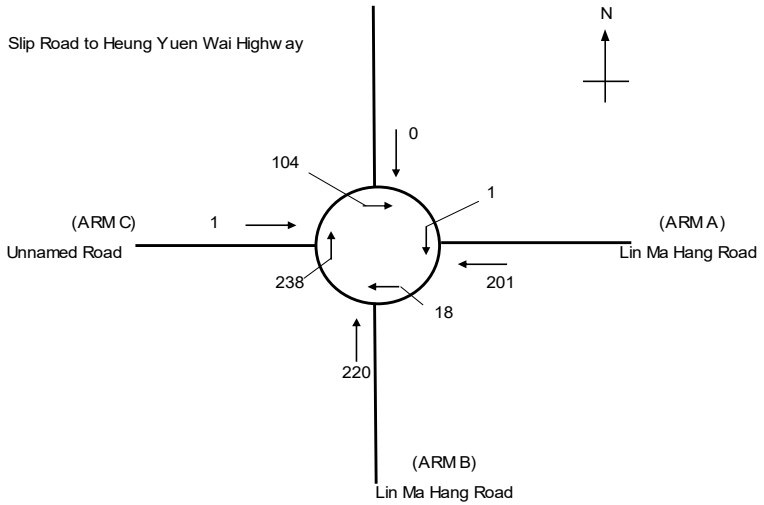


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	253	246	2
Qc	=	Circulating flow across entry (pcu/h)	3	52	298
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1262	1202	995
DFC	=	Design flow/Capacity = Q/Qe	0.20	0.20	0.00

Total In Sum = 501 PCU

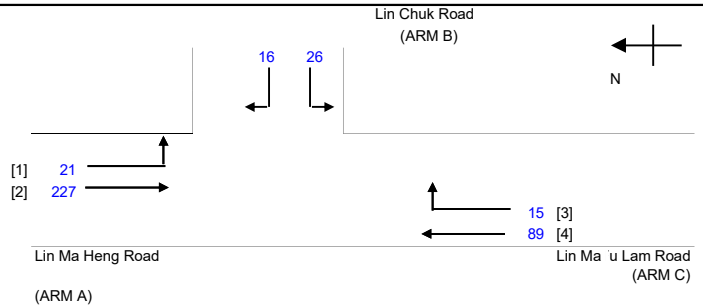
DFC of Critical Approach = **0.20**

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2024_PM**	FILENAME :	CHECKED BY:	DP	Jul-24
2024 Observed PM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24



ARM			A	B	C		
INPUT PARAMETERS:							
V	=	Approach half width (m)	3.6	3.8	3.6		
E	=	Entry width (m)	4.1	3.9	3.9		
L	=	Effective length of flare (m)	4.3	2.6	4.0		
R	=	Entry radius (m)	46.0	100.0	20.0		
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0		
A	=	Entry angle (degree)	23.0	28.0	31.0		
Q	=	Entry flow (pcu/h)	201	220	1		
Qc	=	Circulating flow across entry (pcu/h)	1	18	238		
OUTPUT PARAMETERS:							
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12		
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00		
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84		
M	=	EXP((D-60)/10)	0.01	0.01	0.01		
F	=	303*X2	1201	1178	1164		
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49		
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56		
Qe	=	K(F-Fc*Qc)	1263	1222	1028	Total In Sum =	422 PCU
DFC	=	Design flow/Capacity = Q/Qe	0.16	0.18	0.00	DFC of Critical Approach =	**0.18**

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2024 AM**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2024 Observed AM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	21	(pcu/hr)
q a-c	=	227	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	89	(pcu/hr)
q c-b	=	15	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	16	(pcu/hr)
q b-c	=	26	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.6190476

THE CAPACITY OF MOVEMENT :

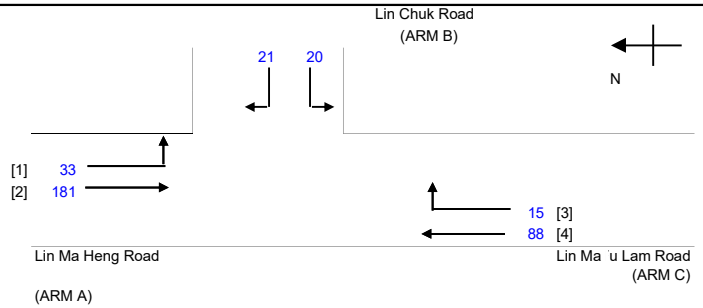
Q b-a	=	542		
Q b-c	=	702	Q b-c (O) =	696.8
Q c-b	=	679		
Q b-ac	=	631		
TOTAL FLOW	=	394	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0295
DFC b-c	=	0.0370
DFC c-b	=	0.0221
DFC b-ac	=	0.0666

CRITICAL DFC = 0.07

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2024 PM**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2024 Observed PM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	33	(pcu/hr)
q a-c	=	181	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	88	(pcu/hr)
q c-b	=	15	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	21	(pcu/hr)
q b-c	=	20	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.4878049

THE CAPACITY OF MOVEMENT :

Q b-a	=	554		
Q b-c	=	714	Q b-c (O) =	707.2
Q c-b	=	689		
Q b-ac	=	622		
TOTAL FLOW	=	358	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

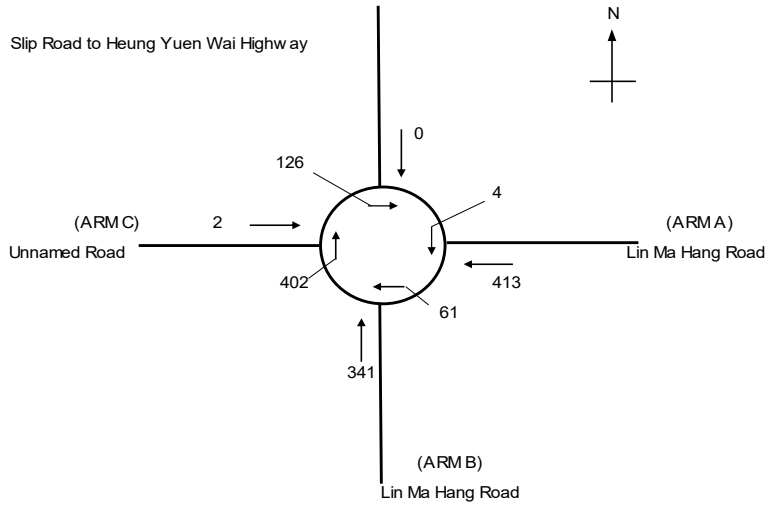
DFC b-a	=	0.0379
DFC b-c	=	0.0280
DFC c-b	=	0.0218
DFC b-ac	=	0.0659

CRITICAL DFC = 0.07

Appendix C

2029 Junction Calculations

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2029_AM_Ref**	FILENAME :	CHECKED BY:	DP	Jul-24
2029 Reference AM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

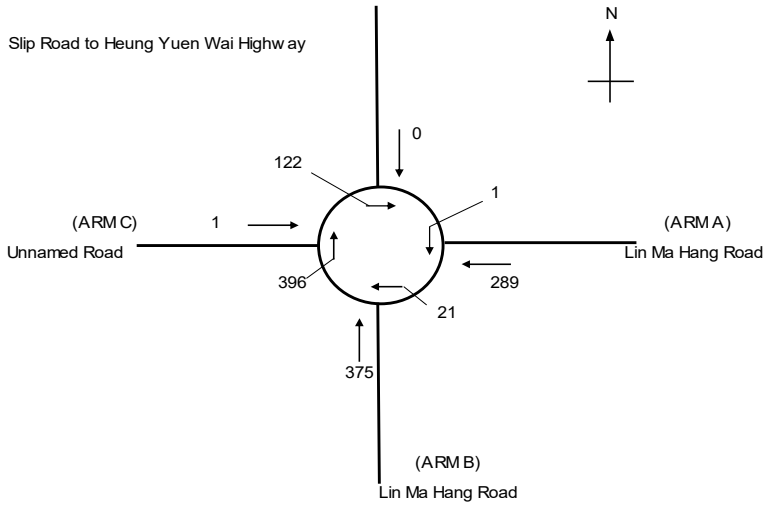


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	413	341	2
Qc	=	Circulating flow across entry (pcu/h)	4	61	402
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1261	1197	938
DFC	=	Design flow/Capacity = Q/Qe	0.33	0.28	0.00

Total In Sum = 756 PCU

DFC of Critical Approach = **0.33**

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2029_PM_Ref**	FILENAME :	CHECKED BY:	DP	Jul-24
2029 Reference PM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

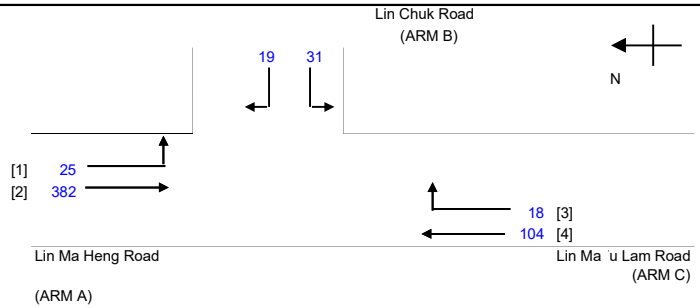


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	289	375	1
Qc	=	Circulating flow across entry (pcu/h)	1	21	396
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1263	1220	941
DFC	=	Design flow/Capacity = Q/Qe	0.23	0.31	0.00

Total In Sum = 665 PCU

DFC of Critical Approach = **0.31**

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2029 AM_Ref**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2029 Reference AM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	25	(pcu/hr)
q a-c	=	382	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	104	(pcu/hr)
q c-b	=	18	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	19	(pcu/hr)
q b-c	=	31	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.62

THE CAPACITY OF MOVEMENT :

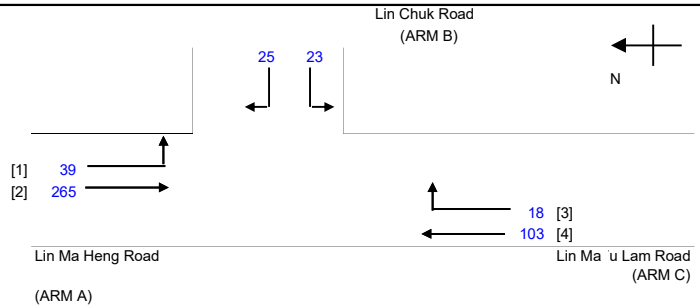
Q b-a	=	496		
Q b-c	=	659	Q b-c (O) =	652.7
Q c-b	=	636		
Q b-ac	=	585.8		
TOTAL FLOW	=	579	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0383
DFC b-c	=	0.0470
DFC c-b	=	0.0283
DFC b-ac	=	0.0853

CRITICAL DFC = 0.09

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2029 PM_Ref**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2029 Referenced PM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	39	(pcu/hr)
q a-c	=	265	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	103	(pcu/hr)
q c-b	=	18	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	25	(pcu/hr)
q b-c	=	23	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.4791667

THE CAPACITY OF MOVEMENT :

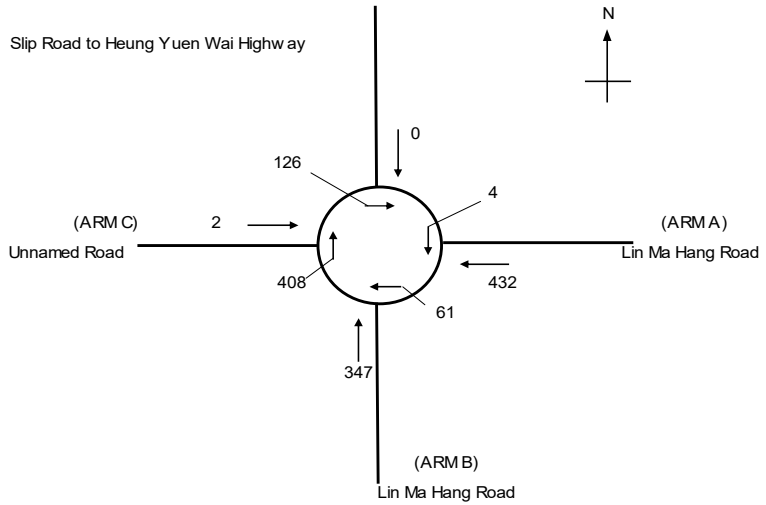
Q b-a	=	527		
Q b-c	=	690	Q b-c (O) =	681.8
Q c-b	=	664		
Q b-ac	=	594.3		
TOTAL FLOW	=	473	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0474
DFC b-c	=	0.0333
DFC c-b	=	0.0271
DFC b-ac	=	0.0808

CRITICAL DFC = 0.08

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2029_AM_Des**	FILENAME :	CHECKED BY:	DP	Jul-24
2029 Design AM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

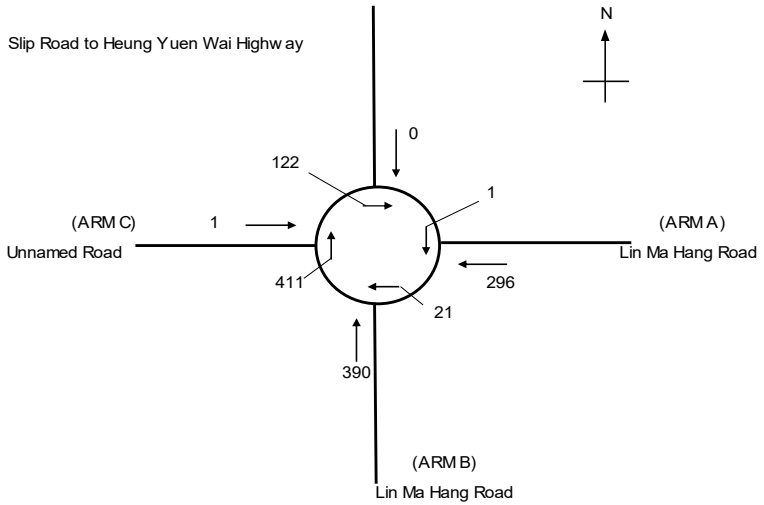


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	432	347	2
Qc	=	Circulating flow across entry (pcu/h)	4	61	408
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1261	1197	934
DFC	=	Design flow/Capacity = Q/Qe	0.34	0.29	0.00

Total In Sum = 781 PCU

DFC of Critical Approach = **0.34**

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2029_PM_Des**	FILENAME :	CHECKED BY:	DP	Jul-24
2029 Design PM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

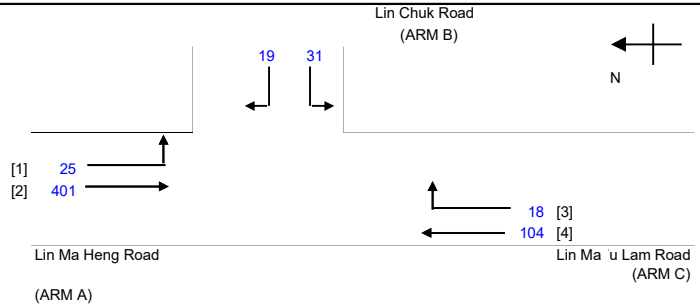


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	296	390	1
Qc	=	Circulating flow across entry (pcu/h)	1	21	411
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1263	1220	933
DFC	=	Design flow/Capacity = Q/Qe	0.23	0.32	0.00

Total In Sum = 687 PCU

DFC of Critical Approach = **0.32**

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2029 AM_Des**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2029 Design AM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	25	(pcu/hr)
q a-c	=	401	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	104	(pcu/hr)
q c-b	=	18	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	19	(pcu/hr)
q b-c	=	31	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.62

THE CAPACITY OF MOVEMENT :

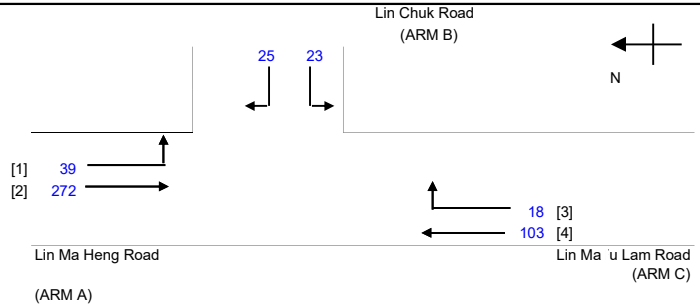
Q b-a	=	491		
Q b-c	=	653	Q b-c (O) =	646.7
Q c-b	=	631		
Q b-ac	=	580.3		
TOTAL FLOW	=	598	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0387
DFC b-c	=	0.0475
DFC c-b	=	0.0285
DFC b-ac	=	0.0862

CRITICAL DFC = 0.09

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2029 PM_Des**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2029 Design PM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	39	(pcu/hr)
q a-c	=	272	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	103	(pcu/hr)
q c-b	=	18	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	25	(pcu/hr)
q b-c	=	23	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.4791667

THE CAPACITY OF MOVEMENT :

Q b-a	=	525		
Q b-c	=	688	Q b-c (O) =	679.8
Q c-b	=	662		
Q b-ac	=	592.2		
TOTAL FLOW	=	480	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

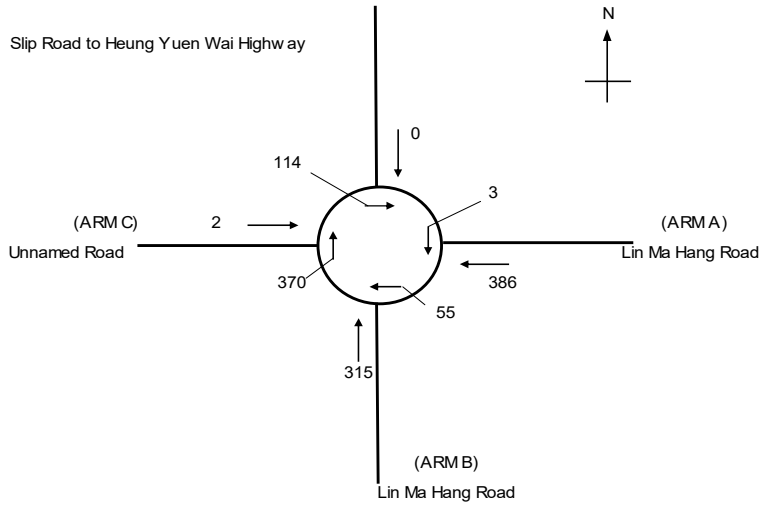
DFC b-a	=	0.0476
DFC b-c	=	0.0334
DFC c-b	=	0.0272
DFC b-ac	=	0.0810

CRITICAL DFC = 0.08

Appendix D

2026 Junction Calculations

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2026_AM_Ref**	FILENAME :	CHECKED BY:	DP	Jul-24
2026 Reference AM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

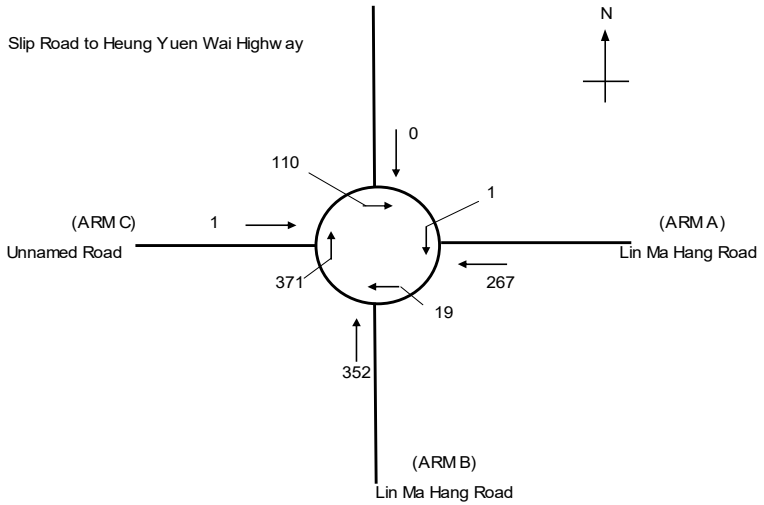


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	386	315	2
Qc	=	Circulating flow across entry (pcu/h)	3	55	370
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1262	1201	955
DFC	=	Design flow/Capacity = Q/Qe	0.31	0.26	0.00

Total In Sum = 703 PCU

DFC of Critical Approach = **0.31**

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2026_PM_Ref**	FILENAME :	CHECKED BY:	DP	Jul-24
2026 Reference PM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

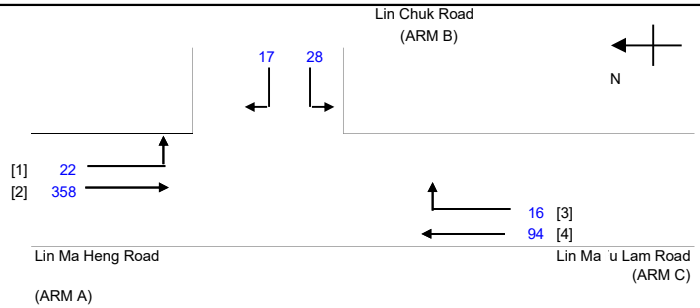


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	267	352	1
Qc	=	Circulating flow across entry (pcu/h)	1	19	371
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1263	1222	955
DFC	=	Design flow/Capacity = Q/Qe	0.21	0.29	0.00

Total In Sum = 620 PCU

DFC of Critical Approach = **0.29**

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2026 AM_Ref**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2026 Reference AM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	22	(pcu/hr)
q a-c	=	358	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	94	(pcu/hr)
q c-b	=	16	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	17	(pcu/hr)
q b-c	=	28	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.6222222

THE CAPACITY OF MOVEMENT :

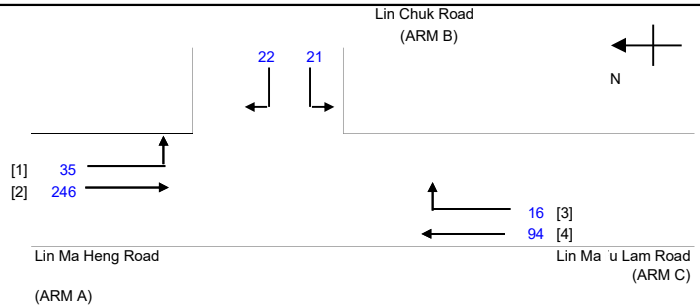
Q b-a	=	505		
Q b-c	=	666	Q b-c (O) =	660.4
Q c-b	=	643		
Q b-ac	=	594.4		
TOTAL FLOW	=	535	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0337
DFC b-c	=	0.0420
DFC c-b	=	0.0249
DFC b-ac	=	0.0757

CRITICAL DFC = 0.08

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2026 PM_Ref**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2026 Referenced PM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	35	(pcu/hr)
q a-c	=	246	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	94	(pcu/hr)
q c-b	=	16	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	22	(pcu/hr)
q b-c	=	21	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.4883721

THE CAPACITY OF MOVEMENT :

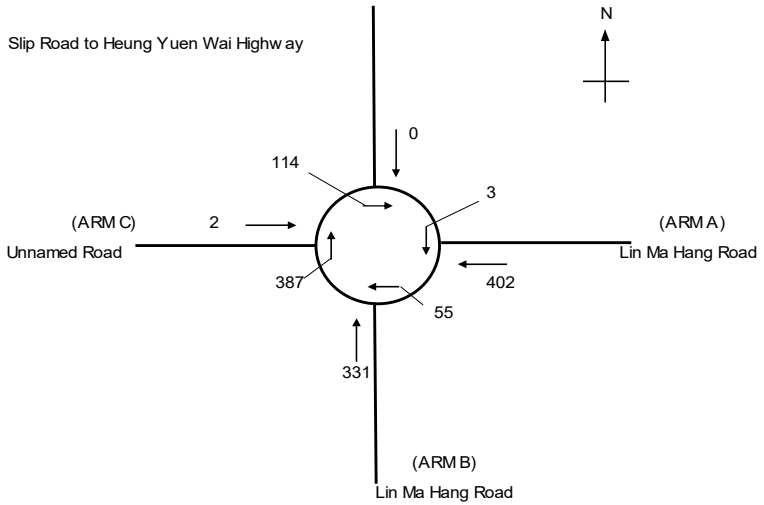
Q b-a	=	534		
Q b-c	=	696	Q b-c (O) =	688.8
Q c-b	=	670		
Q b-ac	=	602.5		
TOTAL FLOW	=	434	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0412
DFC b-c	=	0.0302
DFC c-b	=	0.0239
DFC b-ac	=	0.0714

CRITICAL DFC = 0.07

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2026_AM_Des**	FILENAME :	CHECKED BY:	DP	Jul-24
2026 Design AM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

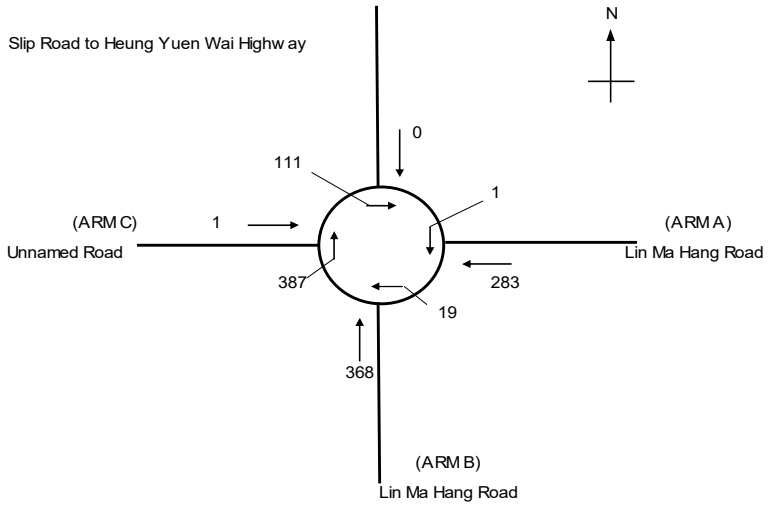


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	402	331	2
Qc	=	Circulating flow across entry (pcu/h)	3	55	387
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1262	1201	946
DFC	=	Design flow/Capacity = Q/Qe	0.32	0.28	0.00

Total In Sum = 735 PCU

DFC of Critical Approach = **0.32**

OZZO TECHNOLOGY (HK) LIMITED	TRAFFIC SIGNAL CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG		PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J1 Lin Ma Hang Road/Slip road of Heung Yuen Wai Highway	**2026_PM_Des**	FILENAME :	CHECKED BY:	DP	Jul-24
2026 Design PM Peak Hour Traffic Flows		ad of Heung Yuen Wai Highway_R_R1.xls	REVIEWED BY:	SC	Jul-24

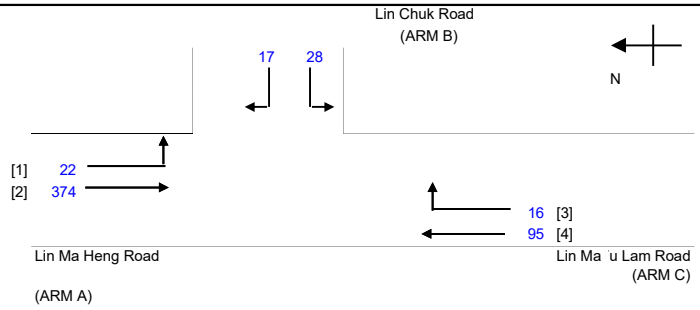


ARM			A	B	C
INPUT PARAMETERS:					
V	=	Approach half width (m)	3.6	3.8	3.6
E	=	Entry width (m)	4.1	3.9	3.9
L	=	Effective length of flare (m)	4.3	2.6	4.0
R	=	Entry radius (m)	46.0	100.0	20.0
D	=	Inscribed circle diameter (m)	15.0	15.0	15.0
A	=	Entry angle (degree)	23.0	28.0	31.0
Q	=	Entry flow (pcu/h)	283	368	1
Qc	=	Circulating flow across entry (pcu/h)	1	19	387
OUTPUT PARAMETERS:					
S	=	Sharpness of flare = 1.6(E-V)/L	0.19	0.06	0.12
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	1.05	1.05	1.00
X2	=	V + ((E-V)/(1+2S))	3.96	3.89	3.84
M	=	EXP((D-60)/10)	0.01	0.01	0.01
F	=	303*X2	1201	1178	1164
Td	=	1+(0.5/(1+M))	1.49	1.49	1.49
Fc	=	0.21*Td(1+0.2*X2)	0.56	0.56	0.56
Qe	=	K(F-Fc*Qc)	1263	1222	946
DFC	=	Design flow/Capacity = Q/Qe	0.22	0.30	0.00

Total In Sum = 652 PCU

DFC of Critical Approach = **0.30**

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2026 AM_Des**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2026 Design AM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	22	(pcu/hr)
q a-c	=	374	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	95	(pcu/hr)
q c-b	=	16	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	17	(pcu/hr)
q b-c	=	28	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.6222222

THE CAPACITY OF MOVEMENT :

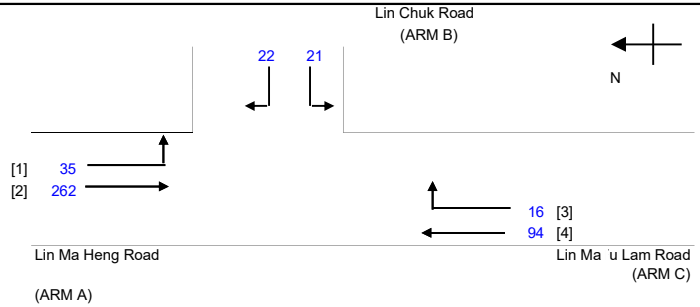
Q b-a	=	501			
Q b-c	=	661	Q b-c (O) =	655.4	
Q c-b	=	639			
Q b-ac	=	589.8			
TOTAL FLOW	=	552	(PCU/HR)		

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0339
DFC b-c	=	0.0424
DFC c-b	=	0.0250
DFC b-ac	=	0.0763

CRITICAL DFC = 0.08

OZZO TECHNOLOGY (HK) LIMITED	PRIORITY JUNCTION CALCULATION			INITIALS	DATE
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) In LIN MA HANG	**2026 PM_Des**	PROJECT NO.: 83018	PREPARED BY:	TC	Jul-24
J2 Lin Ma Hang Road/Lin Chuk Road		FILENAME :	CHECKED BY:	DP	Jul-24
2026 Design PM Peak Hour Traffic Flows		J2_Lin Ma Hang Road_Lin Chuk Road.xls	REVIEWED BY:	SC	Jul-24



NOTES : (GEOMETRIC INPUT DATA)

W	=	MAJOR ROAD WIDTH
W cr	=	CENTRAL RESERVE WIDTH
W b-a	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a
W b-c	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c
W c-b	=	LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b
Vl b-a	=	VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a
Vr b-a	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a
Vr b-c	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c
Vr c-b	=	VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b
D	=	STREAM-SPECIFIC B-A
E	=	STREAM-SPECIFIC B-C
F	=	STREAM-SPECIFIC C-B
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W	=	7.40	(metres)
W cr	=	0	(metres)
q a-b	=	35	(pcu/hr)
q a-c	=	262	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	3.90	(metres)
Vr c-b	=	97	(metres)
q c-a	=	94	(pcu/hr)
q c-b	=	16	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.60	(metres)
W b-c	=	3.60	(metres)
Vl b-a	=	100	(metres)
Vr b-a	=	160	(metres)
Vr b-c	=	160	(metres)
q b-a	=	22	(pcu/hr)
q b-c	=	21	(pcu/hr)

GEOMETRIC FACTORS :

D	=	1.0001969
E	=	1.0311308
F	=	1.0023136
Y	=	0.7447
F for (Qb-ac)	=	0.4883721

THE CAPACITY OF MOVEMENT :

Q b-a	=	530		
Q b-c	=	691	Q b-c (O) =	683.8
Q c-b	=	666		
Q b-ac	=	598.1		
TOTAL FLOW	=	450	(PCU/HR)	

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0415
DFC b-c	=	0.0304
DFC c-b	=	0.0240
DFC b-ac	=	0.0719

CRITICAL DFC = 0.07

Annex 4a

Tree Survey Report

永豪園綠化工程有限公司
WING HO YUEN LANDSCAPING CO., LTD.

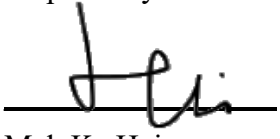
Tree Survey Report

Date of Survey: 22nd August 2024

Location:

Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, New Territories

Prepared by:



Mak Ka Hei

Registered Arborist

Date: 23rd August 2024

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Disclaimer:

The tree survey conducted indicates the condition of the surveyed trees at the time of inspection only. The assessments of amenity value, form, health and structural condition of the trees surveyed are based on visual inspection from the ground only. No aerial inspection, root digging or mapping, or diagnostic testing has been conducted as part of this survey. Wing Ho Yuen Landscaping Company Limited cannot accept responsibility for future failure or defects detected after the time of inspection of the trees surveyed in this report.

1. Introduction

The survey conducted is to record all the existing trees in the tree survey boundary. The survey include tree species identification, tree tagging with durable labels, the measurements of overall tree height, Diameter at Breast Height (DBH), average crown spread, the evaluation on amenity value, form, health and structural conditions.

The tree survey was conducted on 22nd August 2024. Plants with DBH less than 95mm were not recorded in the survey.

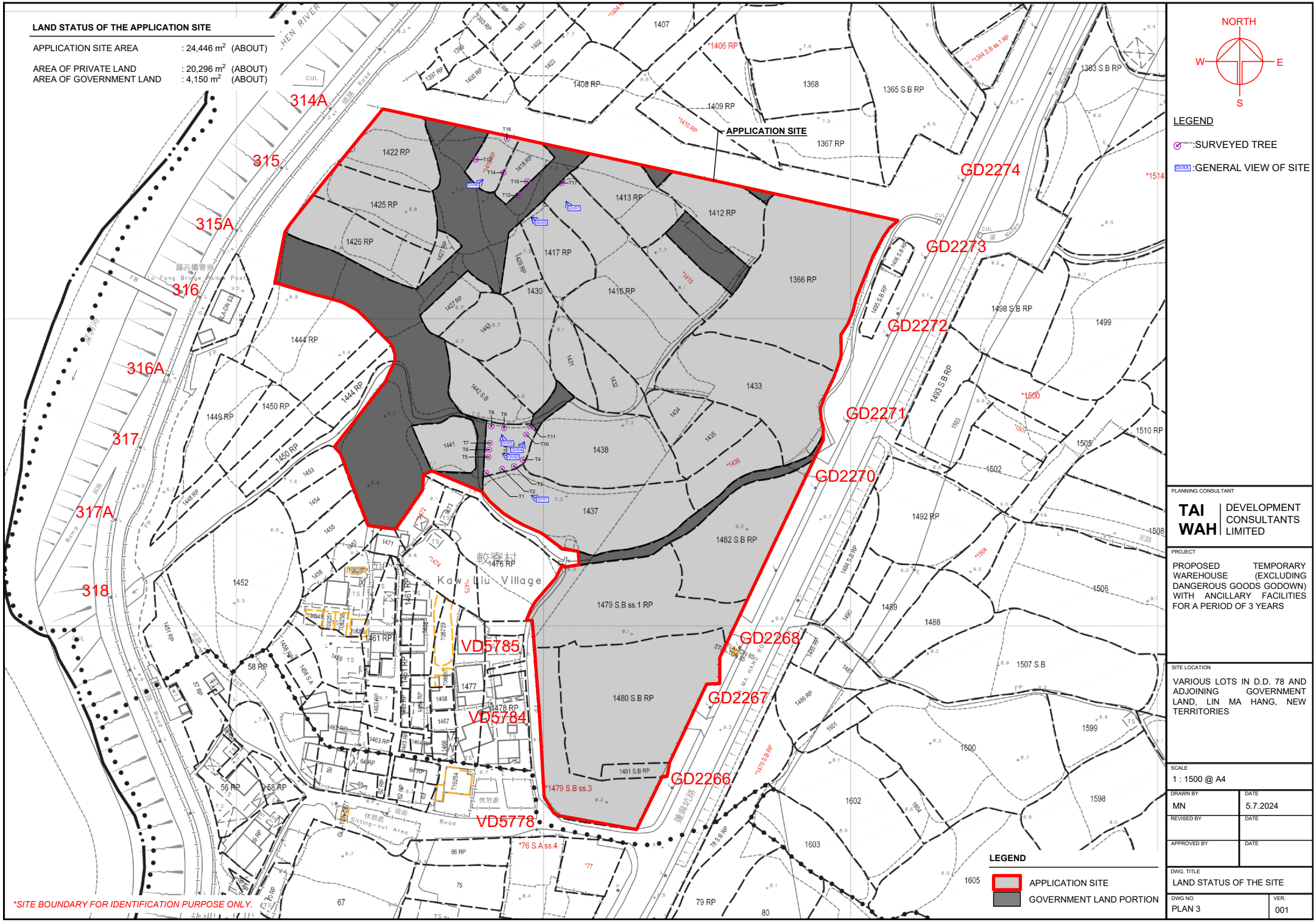
2. Summary of Existing Trees

The surveyed site is located at Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, New Territories.

At the time of inspection on 22nd August 2024, **17 nos.** tree were found within the Site. **1 no.** of dead tree (T15) was recorded in the surveyed area. Location of individual tree refers to Appendix I.

Details of tree conditions and photo records for individual tree are recorded in the Appendix II and Appendix III respectively.

Appendix I – Tree Survey Plan


LAND STATUS OF THE APPLICATION SITE
APPLICATION SITE AREA : 24,446 m² (ABOUT)
AREA OF PRIVATE LAND : 20,296 m² (ABOUT)
AREA OF GOVERNMENT LAND : 4,150 m² (ABOUT)
APPLICATION SITE
314A
315
315A
316
316A
317
317A
318
GD2274
GD2273
GD2272
GD2271
GD2270
GD2268
GD2267
GD2266
VD5785
VD5784
VD5778
較寮村
Kau Liu Village
*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.
NORTH
W
E
S
LEGEND
:SURVEYED TREE
:GENERAL VIEW OF SITE
LEGEND
APPLICATION SITE
GOVERNMENT LAND PORTION
PLANNING CONSULTANT
TAI WAH DEVELOPMENT CONSULTANTS LIMITED
PROJECT
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS
SITE LOCATION
VARIOUS LOTS IN D.D. 78 AND ADJOINING GOVERNMENT LAND, LIN MA HANG, NEW TERRITORIES
SCALE
1 : 1500 @ A4
DRAWN BY
MN
DATE
5.7.2024
REVISED BY
DATE
APPROVED BY
DATE
DWG. TITLE
LAND STATUS OF THE SITE
DWG NO.
PLAN 3
VER.
001

Appendix II –Tree Survey Schedule

Tree Survey Schedule

Location: Various Lots in D.D. 78 and Adjoining Government Land, Lin Ma Hang, New Territories
Tree surveyor(s): Mak Ka Hei
Field Survey was conducted on: 22 August 2024

永豪園綠化工程有限公司
WING HO YUEN LANDSCAPING CO., LTD.

Tree No.	Tree Species		Tree Size Measurements			Amenity Value	Form	Health Condition	Structural Condition	Suitability for Transplanting	Remarks
	Botanical Name	Chinese Name	Overall Height (m)	DBH (mm)	Average Crown Spread (m)	High /Med /Low	Good /Fair /Poor	Good /Fair /Poor /Dead	Good /Fair /Poor	High /Med /Low	
T1	*Celtis sinensis*	朴樹	9.0	550	10.0	Low	Poor	Poor	Fair	Low	decay at trunk, broken trunk, wound on trunk
T2	*Mangifera indica*	芒果	9.0	173	8.0	Med	Fair	Poor	Fair	Low	wound on trunk, co-dominant trunks
T3	*Mangifera indica*	芒果	8.0	187	7.0	Med	Fair	Fair	Fair	Low	co-dominant trunks
T4	*Celtis sinensis*	朴樹	7.0	164	7.0	Low	Poor	Poor	Poor	Low	dead trunk, multi-trunks, climber
T5	*Dimocarpus longan*	龍眼	6.0	135	5.0	Low	Fair	Fair	Fair	Low	wound on trunk
T6	*Dimocarpus longan*	龍眼	6.0	140	5.0	Med	Fair	Fair	Fair	Low	-
T7	*Mangifera indica*	芒果	6.5	148	5.0	Med	Poor	Poor	Fair	Low	wound on trunk, co-dominant trunks
T8	*Morus alba*	桑	9.0	205	8.0	Med	Fair	Fair	Fair	Low	co-dominant trunks
T9	*Dimocarpus longan*	龍眼	6.0	130	6.0	Med	Fair	Fair	Poor	Low	leaning
T10	*Mangifera indica*	芒果	8.0	153	7.0	Med	Fair	Fair	Poor	Low	co-dominant trunks, included bark
T11	*Psidium guajava*	番石榴	6.0	135	4.0	Med	Fair	Fair	Fair	Low	crooked trunk
T12	*Macaranga tanarius var. tomentosa*	血桐	8.0	195	5.0	Low	Poor	Fair	Fair	Low	climber
T13	*Celtis sinensis*	朴樹	12.0	800	11.0	Low	Fair	Fair	Fair	Low	-
T14	*Ficus hispida*	對葉榕(牛乳樹)	6.0	161	7.0	Med	Fair	Fair	Fair	Low	co-dominant trunks, hanger
T15	Dead Tree	死樹	5.0	300	2.0	-	-	Dead	-	-	dead
T16	*Leucaena leucocephala*	銀合歡	9.0	135	5.0	Low	Fair	Fair	Poor	Low	leaning
T17	*Mangifera indica*	芒果	5.0	110	4.0	Med	Fair	Fair	Fair	Low	-

Notes: Amenity Value, Form, Health Condition and Structural Condition of trees were obtained by Visual Assessment Only.

Appendix III – Photo Records

General View

General view 01

General view 02

General View

General view 03

General view 04

General View

General view 05

General view 06

General View

General view 07

Photo Records

T1 (Overview)

T1 Decay at trunk (Broken trunk)

T1 Wound on trunk

T2 (Overview)

Photo Records

T2 Wound on trunk (Co-dominant trunks)

T2 Wound on trunk_1

T3 (Overview)

T3 Co-dominant trunks

Photo Records

T4 (Overview)

T4 Dead trunk

T4 Multi-trunks (Climber)

T5 (Overview)

Photo Records

T6 (Overview)

T7 (Overview)

T7 Wound on trunk

T8 (Overview)

Photo Records

T8 Co-dominant trunks

T9 (Overview) (Leaning)

T10 (Overview)

T10 Co-dominant trunks (Included bark)

Photo Records

T11 (Overview) (Crooked trunk)

T12 (Overview) (Climber)

T13 (Overview)

T14 (Overview)

Photo Records

T14 Co-dominant trunks

T14 Hanger

T15 (Overview) (Broken trunk, Climber)

T16 (Overview) (Leaning)

Photo Records

T17 (Overview)

Annex 4b

Tree Photos of T15

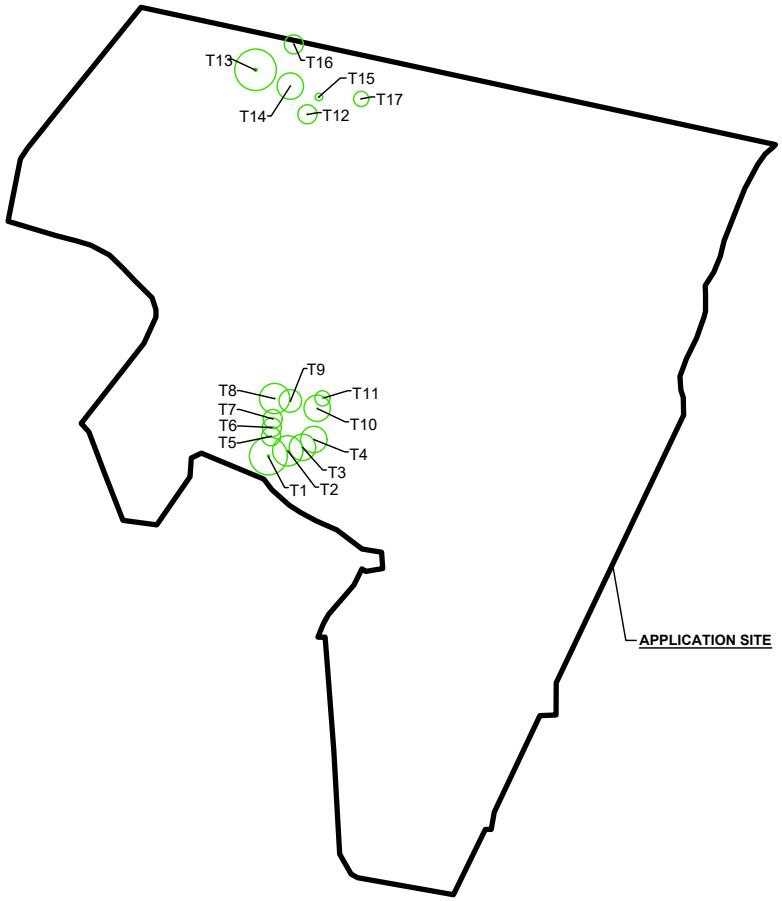
Annex 4b – Tree Photos of T15

Annex 5

Landscape Plan

LANDSCAPE PROPOSAL

APPLICATION SITE AREA	: 24,446 m^2 (ABOUT)	
NO. OF EXISTING TREES	: 17 (T1 TO T17)	
SPECIES OF TREE	: T1, T4, T13	- *Celtis sinensis*
	T2, T3, T7, T10, T17	- *Mangifera indica*
	T5, T6, T9	- *Dimocarpus longan*
	T8	- *Morus alba*
	T11	- *Psidium guajava*
	T12	- *Macaranga tanarius var. tomentosa*
	T14	- *Ficus hispida*
	T16	- *Leucaena leucocephala*
	T15	- DEAD TREE (BROKEN TRUNK)
NO. OF TREES TO BE FELLED	: 17 (T1 TO T17)	



*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

LEGEND

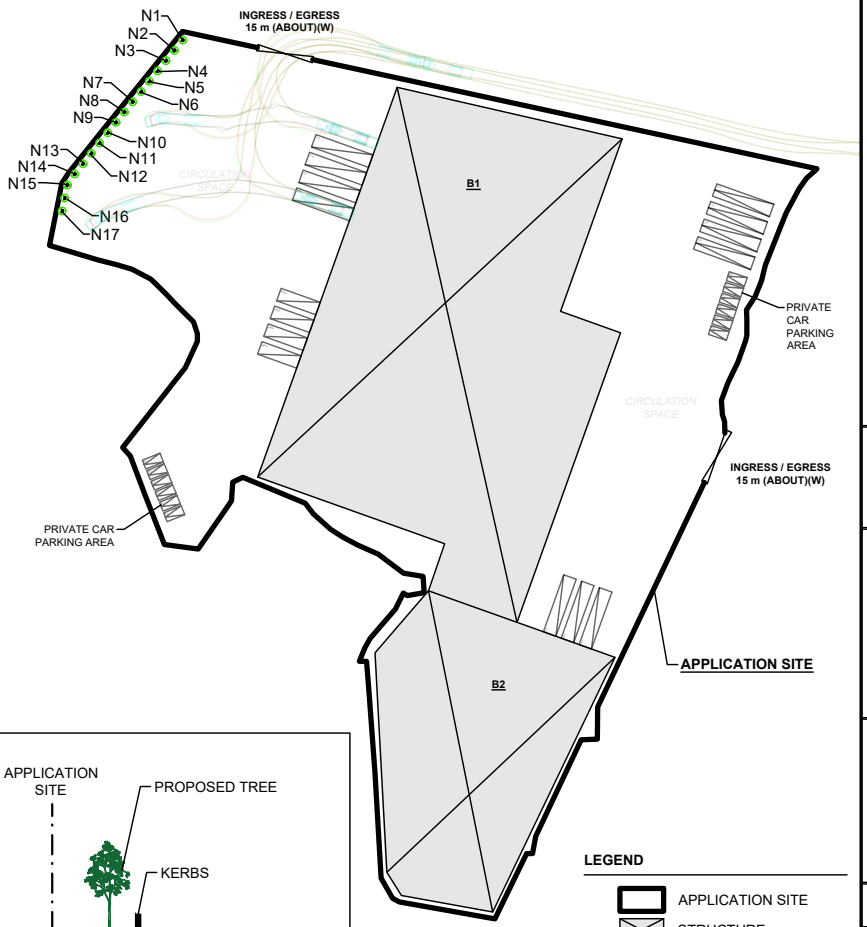
- APPLICATION SITE
- EXISTING TREE

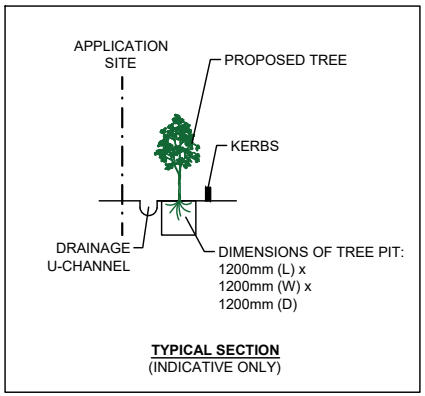
LANDSCAPE PROPOSAL

APPLICATION SITE AREA	: 24,446 m^2	(ABOUT)
NO. OF TREES TO BE PLANTED	: 17	(N1 TO N17)
SPECIES OF NEW TREES	: *SENNA SURATTENSIS*	
HEIGHT OF NEW TREES	: NOT LESS THAN 2.75 m	
SPACING OF NEW TREES	: NOT LESS THAN 4 m	
DIMENSION OF TREE PITS	: 1.2 m (W) X 1.2 m (L) X 1.2 m (D)	

NOTES:

1) THE APPLICANT WILL MAINTAIN TREES IN GOOD CONDITION DURING THE PLANNING APPROVAL PERIOD.
2) THE APPLICANT WILL REPLACE TREES WHICH ARE DYING OR DEAD DURING THE PLANNING APPROVAL PERIOD.
3) THE APPLICANT WILL PROVIDE ADEQUATE IRRIGATION FOR TREES.

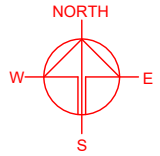




TYPICAL SECTION
(INDICATIVE ONLY)

LEGEND

- APPLICATION SITE
- STRUCTURE
- PARKING SPACE (PC)
- PARKING SPACE (CV)
- L/UL SPACE (MGV)
- L/UL SPACE (CV)
- INGRESS / EGRESS
- PROPOSED TREE



PLANNING CONSULTANT

TAI WAH | DEVELOPMENT CONSULTANTS LIMITED

PROJECT

PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS

SITE LOCATION

VARIOUS LOTS IN D.D. 78 AND ADJOINING GOVERNMENT LAND, LIN MA HANG, NEW TERRITORIES

SCALE	1 : 2000 @ A4
DRAWN BY	MN
DATE	29.8.2024
CHECKED BY	
DATE	
APPROVED BY	
DATE	
DWG. TITLE	LANDSCAPE PROPOSAL
DWG NO.	ANNEX 5
VER.	002