

LIST OF APPENDICES

Appendix I	Drainage Impact Assessment accepted under the previous application
Appendix II	Fire service installations proposal
Appendix III	Traffic management measures accepted under the previous application

Appendix I

Drainage Impact Assessment
accepted under previous application

規 劃 署

沙田、大埔及北區規劃處
香港新界沙田上禾輦路一號
沙田政府合署
十三樓 1301-1314 室



Planning Department

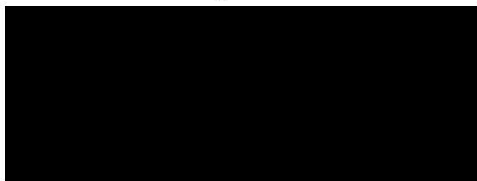
Sha Tin, Tai Po & North
District Planning Office
Rooms 1301-1314, 13/F,
Shatin Government Offices,
1 Sheung Wo Che Road, Sha Tin,
N.T., Hong Kong

來函檔號 Your Reference DD78 Lot 1366 RP & VL
本署檔號 Our Reference () in TPB/A/NE-TKLN/86
電話號碼 Tel. No. : 2158 6220
傳真機號碼 Fax No. : 2691 2806

By Post & Fax (2323 3662)

17 October 2024

Tai Wah Development Consultants Ltd.



Dear Sir/Madam,

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
(Compliance with Approval Condition (d) for Planning Application No. A/NE-TKLN/86)

I refer to your submission dated 23.9.2024 for compliance with approval condition (d) in relation to the submission of a drainage impact assessment before the commencement of any construction works or operations including site formation works to the satisfaction of the Director of Drainage Services or of the Town Planning Board under the captioned planning application.

Chief Engineer/Mainland North, Drainage Services Department (Contact person: Mr. Wilson TAI; Tel.: 2300 1693) has been consulted and considered the approval condition (d) has been complied with. His advisory comments are attached at **Appendix I**. Please proceed to implement the accepted drainage impact assessment for compliance with approval condition (e).

Should you have any queries related to planning matters, please contact Mr. Timothy WU of this department at 2158 6031.

Yours faithfully,

(Rico TSANG)

for Director of Planning

Advisory comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD) (Contact person: Mr. Wilson TAI; Tel.: 2300 1693):

- (a) the diversion u-channel should be constructed prior to the removal of the existing channel located within the application site;
- (b) please be advised that the limited desk-top checking by DSD on the drainage proposal covers only the fundamental aspects of the drainage design which will by no means relieve the project proponent's obligations to ensure that (i) the proposed drainage works will not cause any adverse drainage or environmental impacts in the vicinity; and (ii) the proposed drainage works and the downstream drainage systems have the adequate capacity and are in good conditions to receive the flows collected from his lot and all upstream catchments;
- (c) the cover levels of proposed u-channels, manholes, and catch pits should be flush with the adjoining ground level;
- (d) the applicant should check and ensure that the existing drainage system to which the proposed connection will be made have adequate capacity and satisfactory condition to cater for the additional discharge from the captioned lot. The applicant should also ensure that the flow from this site will not overload the existing drainage system;
- (e) the applicant is reminded that where walls are erected or kerbs are laid along the boundary of the site, peripheral channels should be provided on both sides of the walls or kerbs with details to be agreed by DSD;
- (f) 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;
- (g) the proposed drainage works, whether within or outside the lot boundary, should be constructed and maintained by the lot owner at their own expense;
- (h) for works to be undertaken outside the lot boundary, the applicant should obtain prior consent and agreement from District Lands Officer/North, Lands Department and/or relevant private lot owners;
- (i) the applicant should make good all the adjacent affected areas upon the completion of the drainage works;

- (j) 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;
- (k) as usual, Government should be empowered to inspect conditions of the private drainage system (including the petrol interceptor if any) and to enforce its cleansing by the owners, if necessity arises (e.g. upon receipt of complaints);
- (l) the applicant should conduct site checking to confirm invert levels of the public drainage system to which the stormwater from the subject site is proposed to be discharged;
- (m) upon completion of the works, the applicant should apply to DSD for audit of the drainage connections, using an “HBP1” form. The applicant may visit DSD’s website (www.dsd.gov.hk) for details of connection audit fees and arrangements. Then, a joint inspection with the Mainland North Division, DSD shall be arranged and those as-built drainage connection records and materials certificates should be furnished to the Mainland North Division, DSD for record purpose; and
- (n) the existing drainage facilities, watercourse, river, channel and the like should not be affected and obstructed by the construction materials, waste or debris from the proposed development.

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

23 September 2024

Dear Sir,

Compliance with Approval Condition (d)

**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 a drainage impact assessment (DIA) for compliance with approval condition (d) of the subject application, i.e. *the submission of a DIA (enclosed)*. The same DIA, whereof the Chief Engineer/Mainland North, Drainage Services Department had no objection to, was submitted to the Town Planning Board as Further Information on 29.08.2024.

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

Yours faithfully,

Christian CHIM
Town Planner

cc DPO/STN, PlanD

(Attn.: Mr. Timothy WU

email: twpwu@pland.gov.hk)

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

Table of Content

1.	Introduction	1
1.1	Background	1
1.2	The Site	1
2.	Development Proposal.....	2
2.1	The Proposed Development	2
3.	Assessment Criteria	2
4.	Proposed Drainage System	5
5.	Conclusion	5

List of Table

Table 1 - Key Development Parameters	2
Table 2– Design Return Periods under SDM	2

List of Figure

Figure 1 – Site Location Plan
Figure 2 - Existing Drainage Plan
Figure 3 – Proposed Drainage System
Figure 4.1 – Existing Catchment Plan
Figure 4.2 – Proposed Catchment Plan

List of Appendix

Appendix A – Drainage Calculation
Appendix B - Development Layout Plan

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 m². 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 m². 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)	24,446
Assume all proposed site area as paved area for assessment purpose	

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:

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

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:

$$\text{Colebrook-White Equation: } \frac{1}{\sqrt{f}} = -\sqrt{32gRS} \log \log \left(\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRSf}} \right)$$

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

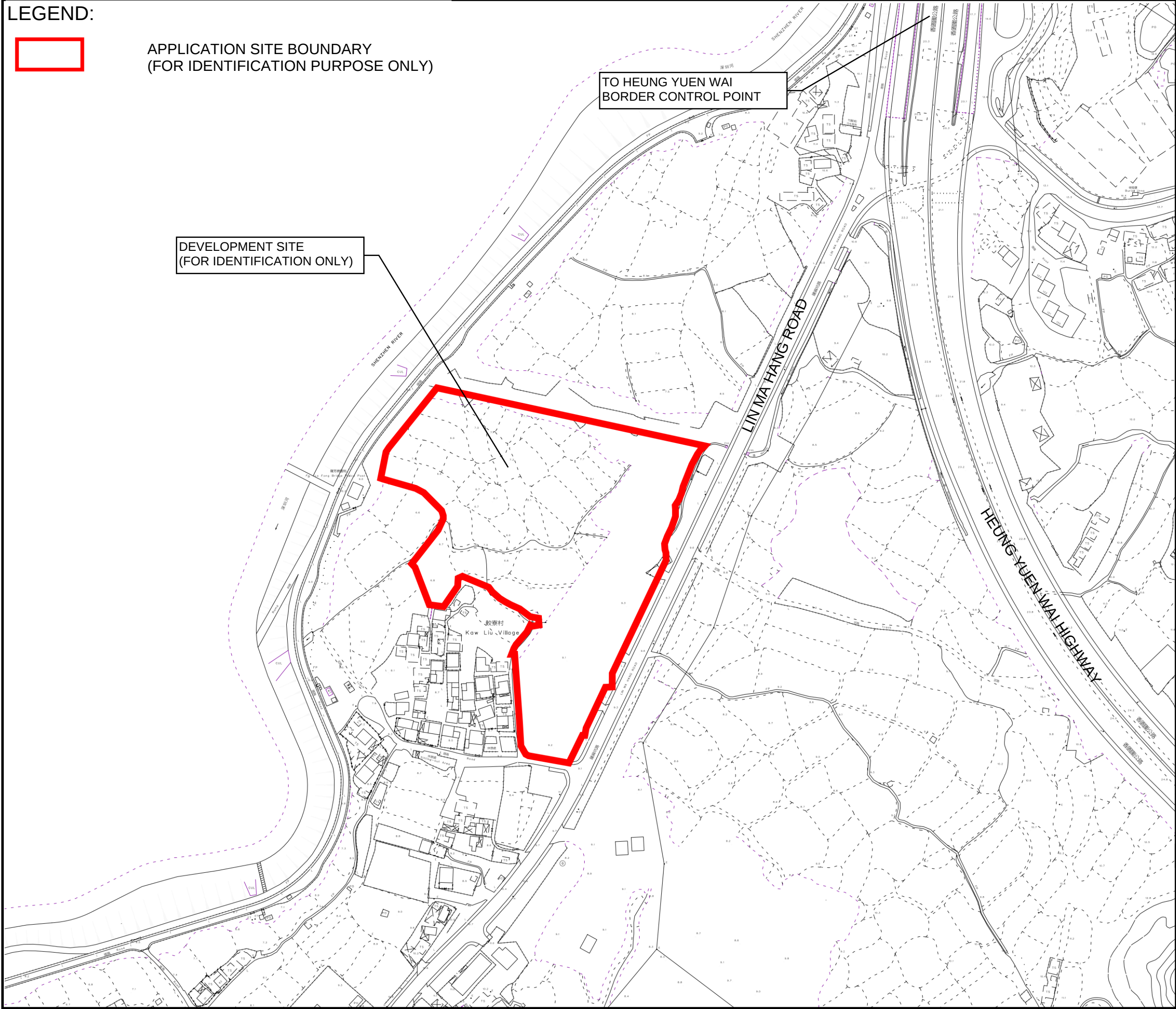
LEGEND:



APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

DEVELOPMENT SITE
(FOR IDENTIFICATION ONLY)

TO HEUNG YUEN WAI
BORDER CONTROL POINT

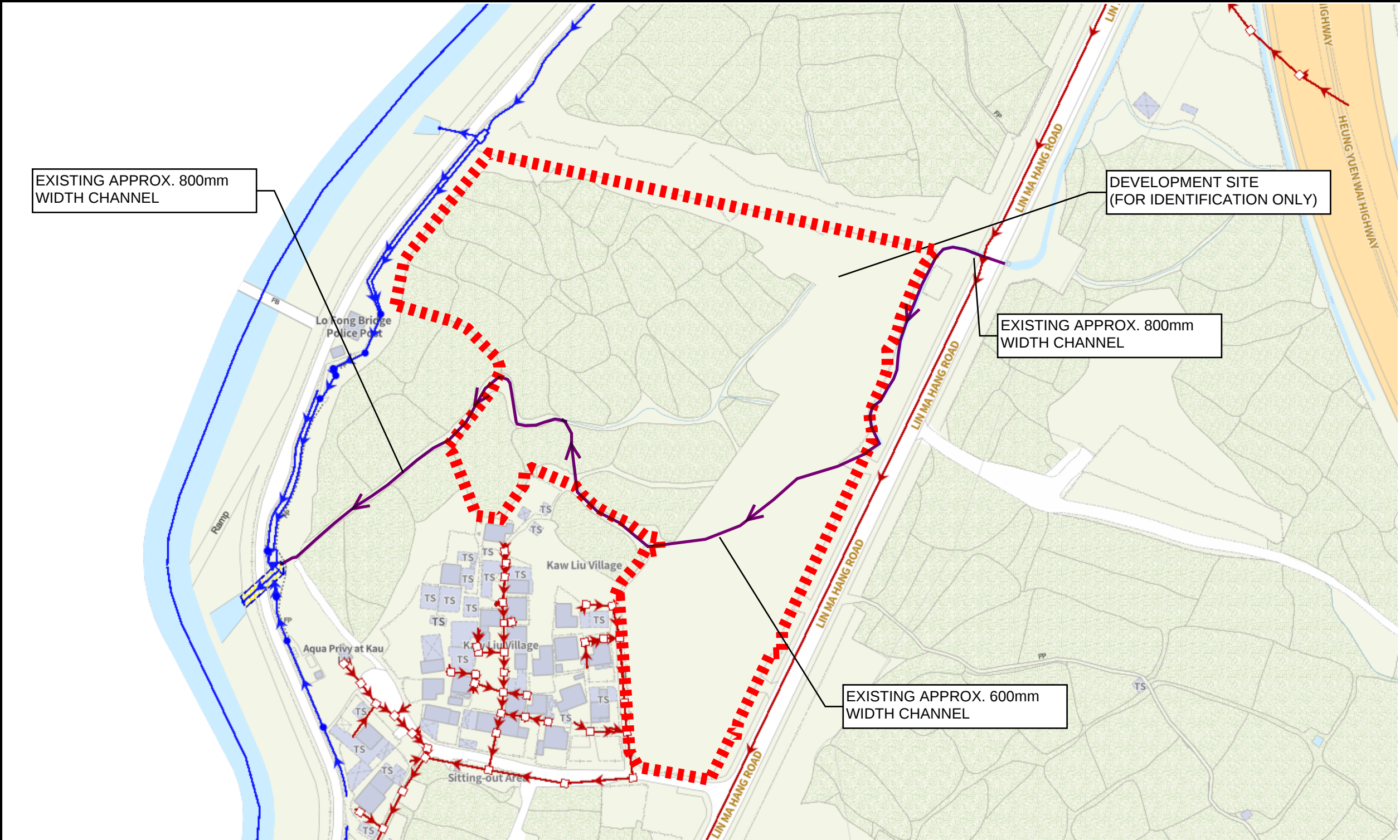


PROJECT:
Proposed Temporary
Warehouse (Excluding D.G.G.)
with Ancillary Facilities for a
Period of 3 Years in “Recreation”
Zone, Various Lots in D.D.78 and
Adjoining GL, Lin Ma Hang, New
Territories

REV	DESCRIPTION	DATE
-----	-------------	------

DRAWING TITLE SITE LOCATION PLAN		
-------------------------------------	--	--

DRAWING NUMBER FIGURE 1		
----------------------------	--	--



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

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				

REV	DESCRIPTION	DATE
DRAWING TITLE EXISTING DRAINAGE PLAN		
DRAWING NUMBER FIGURE 2		

LEGEND:

 APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

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

ZONE E2
19,010 m²
(UNPAVED)

ZONE E1
5,436 m²
(PAVED)

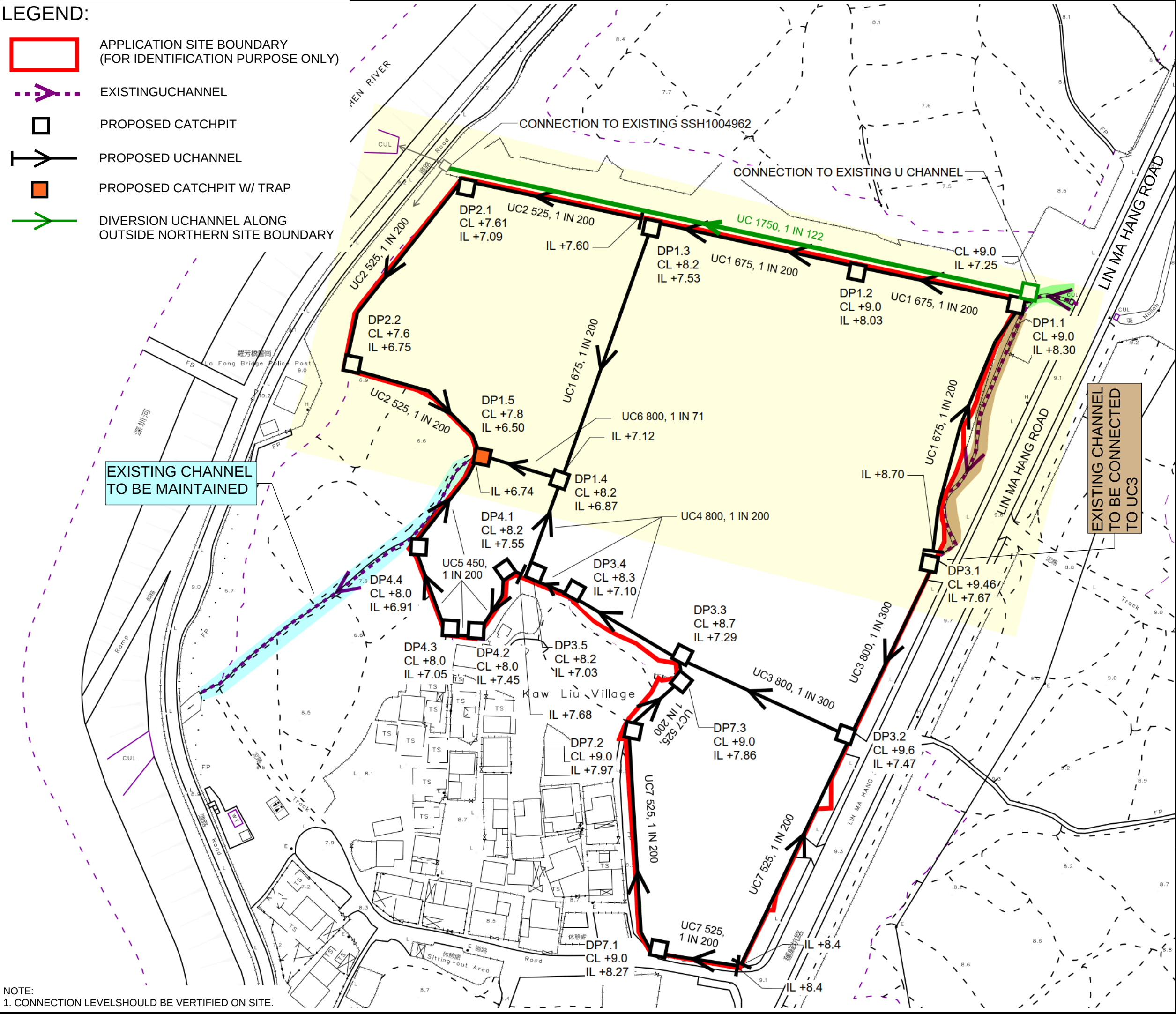
較寮村
Kaw Liu Village

REV	DESCRIPTION	DATE
DRAWING TITLE EXISTING CATCHMENT PLAN		
DRAWING NUMBER FIGURE 4.1		

LEGEND:

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

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

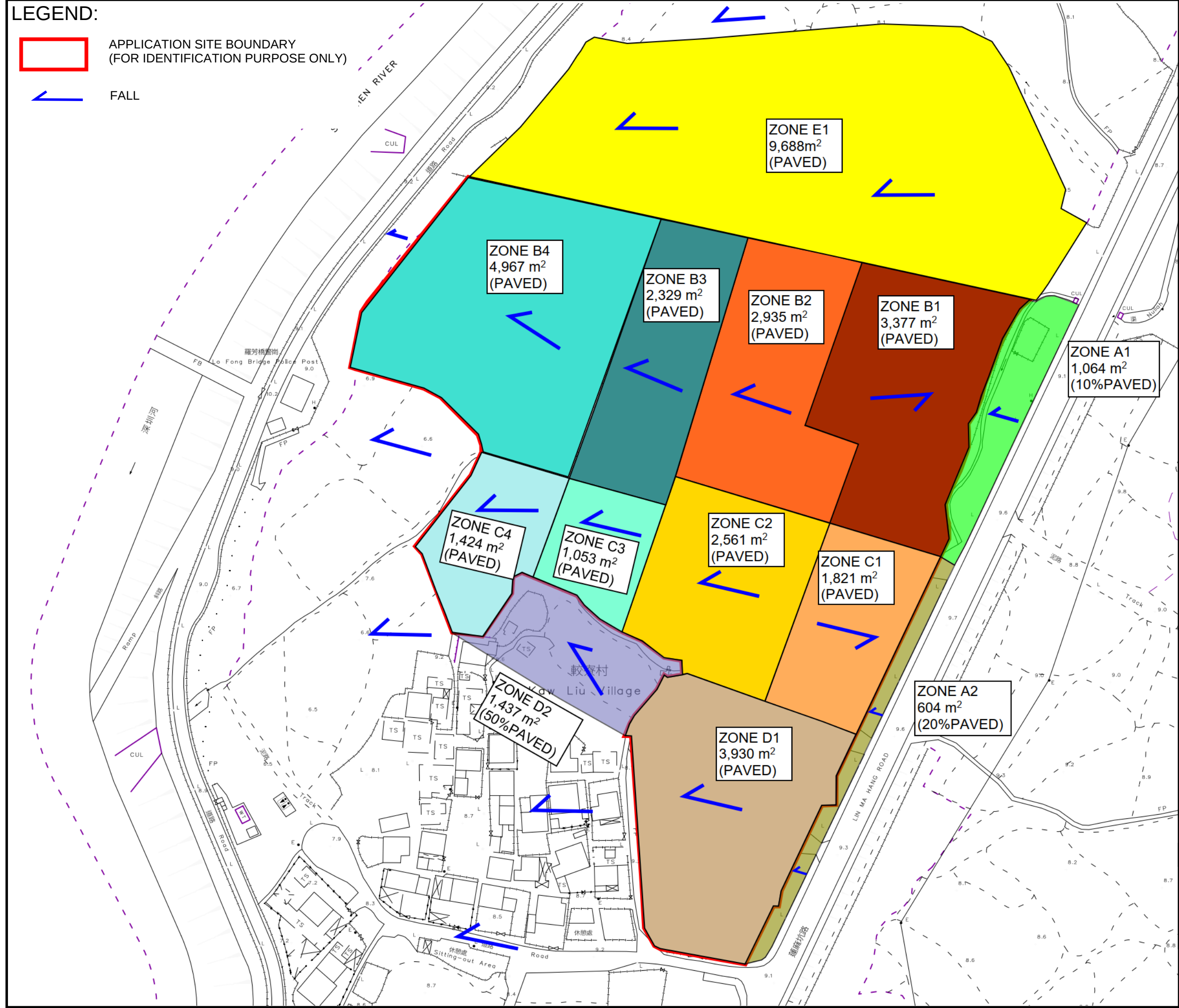


NOTE:
1. CONNECTION LEVELS SHOULD BE VERIFIED ON SITE.

REV	DESCRIPTION	DATE
DRAWING TITLE PROPOSED DRAINAGE SYSTEM		
DRAWING NUMBER FIGURE 3B		

LEGEND:

- APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)
- FALL



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	$9688 \times 0.05 + 380794 \times 0.2 =$		76643	(m2)
Unpaved Area	$9688 \times 0.95 + 380794 \times 0.8 =$		313839	(m2)
Total Equivalent Area	$76643 \times 0.95 + 313839 \times 0.35 =$		182655	(m2)
Time of Concentration			26.95	min
Rainfall Intensity, I *			135	mm/hr
Design Discharge Rate, Q	$0.278 \times 182655 \times 135 / 1000000 =$		6.836	m3/s

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

Design checking for diversion channel 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	$5436 + 380794 \times 0.2 =$		81595	(m2)
Unpaved Area	$19010 + 380794 \times 0.8 =$		323645	(m2)
Total Equivalent Area	$81595 \times 0.95 + 323645 \times 0.35 =$		190791	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 323645 \times 220 / 1000000 =$		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	$1064 \times 0.1 + 604 \times 0.2 + 1437 \times 0.5 + 24446 =$		25392	(m2)
Unpaved Area	$1064 \times 0.9 + 604 \times 0.8 + 1437 \times 0.5 + 0 =$		2159	(m2)
Total Equivalent Area	$25392 \times 0.95 + 2159 \times 0.25 =$		24662	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 24662 \times 220 / 1000000 =$		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 adverse 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	$8641 \times 0.95 + 2159 \times 0.35 =$		8965	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	$0.278 \times 8965 \times 220 / 1000000 =$		0.549	m3/s

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

U Channel

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

$$v = \frac{R^{2/3}}{n} R^{2/3} S_f^{1/2}$$

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	$4967 \times 0.95 + 0 \times 0.35 =$		4719	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 4719 \times 220 / 1000000 =$		0.289	m3/s

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

U Channel

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

$$v = \frac{R^{2/3}}{n} R^{2/3} S_f^{1/2}$$

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	$1821 + 1064 \times 0.1 + 604 \times 0.2 + 3930 =$		5978	(m2)
Unpaved Area	$0 + 1064 \times 0.9 + 604 \times 0.8 =$		1441	(m2)
Total Equivalent Area	$5978 \times 0.95 + 1441 \times 0.35 =$		6184	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 6184 \times 220 / 1000000 =$		0.379	m3/s

U Channel

Channel Size		1 in	800	(mm)
Gradient			300	
Area	$\pi \times 0.8^2 / 8 + 0.8 \times 0.8 / 2 =$		0.571	(m2)
Wetted Perimeter	$\pi \times 0.8 / 2 + 0.8 / 2 \times 2 =$		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	%

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

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

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	$5978 + 2561 + 1053 + 1437 \times 0.5 =$		10311	(m2)
Unpaved Area	$1441 + 1053 + 1437 \times 0.5 =$		2159	(m2)
Total Equivalent Area	$10311 \times 0.95 + 2159 \times 0.35 =$		10551	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 10551 \times 220 / 1000000 =$		0.647	m3/s

U Channel

Channel Size		1 in	800	(mm)
Gradient			200	
Area	$\pi \times 0.8^2 / 8 + 0.8 \times 0.8 / 2 =$		0.571	(m2)
Wetted Perimeter	$\pi \times 0.8 / 2 + 0.8 / 2 \times 2 =$		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	%

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

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

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	$1424 + 1437 \times 0.5 =$		2143	(m2)
Unpaved Area	$0 + 1437 \times 0.5 =$		719	(m2)
Total Equivalent Area	$2143 \times 0.95 + 719 \times 0.35 =$		2287	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 2287 \times 220 / 1000000 =$		0.140	m3/s

U Channel

Channel Size		1 in	450	(mm)
Gradient			200	
Area	$\pi \times 0.45^2 / 8 + 0.45 \times 0.45 / 2 =$		0.181	(m2)
Wetted Perimeter	$\pi \times 0.45 / 2 + 0.45 / 2 \times 2 =$		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	%

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

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

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	$24446 + 1064 \times 0.1 + 604 \times 0.2 + 1437 \times 0.5 =$		25392	(m2)
Unpaved Area	$1064 \times 0.9 + 604 \times 0.8 + 1437 \times 0.5 =$		2159	(m2)
Total Equivalent Area	$25392 \times 0.95 + 2159 \times 0.35 =$		24878	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	$0.278 \times 24878 \times 220 / 1000000 =$		1.525	m3/s

U Channel

Channel Size		1 in	800	(mm)
Gradient			71	
Area	$\pi \times 0.8^2 / 8 + 0.8 \times 0.8 / 2 =$		0.571	(m2)
Wetted Perimeter	$\pi \times 0.8 / 2 + 0.8 / 2 \times 2 =$		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	%

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

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

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	$3930 + 604 \times 0.2 =$		4051	(m2)
Unpaved Area	$0 + 604 \times 0.8 =$		483	(m2)
Total Equivalent Area	$4051 \times 0.95 + 483 \times 0.35 =$		4017	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	$0.278 \times 4017 \times 220 / 1000000 =$		0.246	m3/s

U Channel

Channel Size		1 in	525	(mm)
Gradient			200	
Area	$\pi \times 0.53^2 / 8 + 0.53 \times 0.53 / 2 =$		0.246	(m2)
Wetted Perimeter	$\pi \times 0.53 / 2 + 0.53 / 2 \times 2 =$		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	%

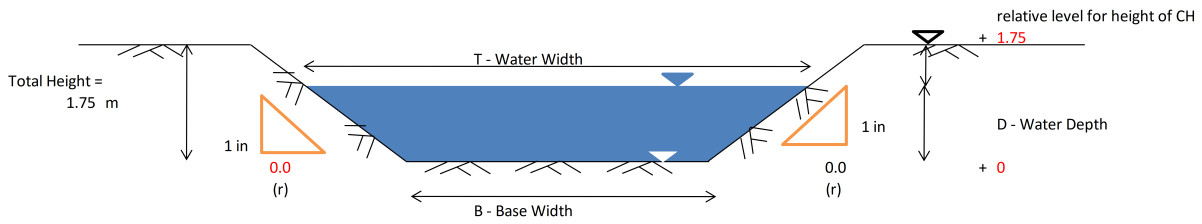
$$* i = \frac{a}{(t_d + b)^c}$$

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

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)	Hydraulic 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

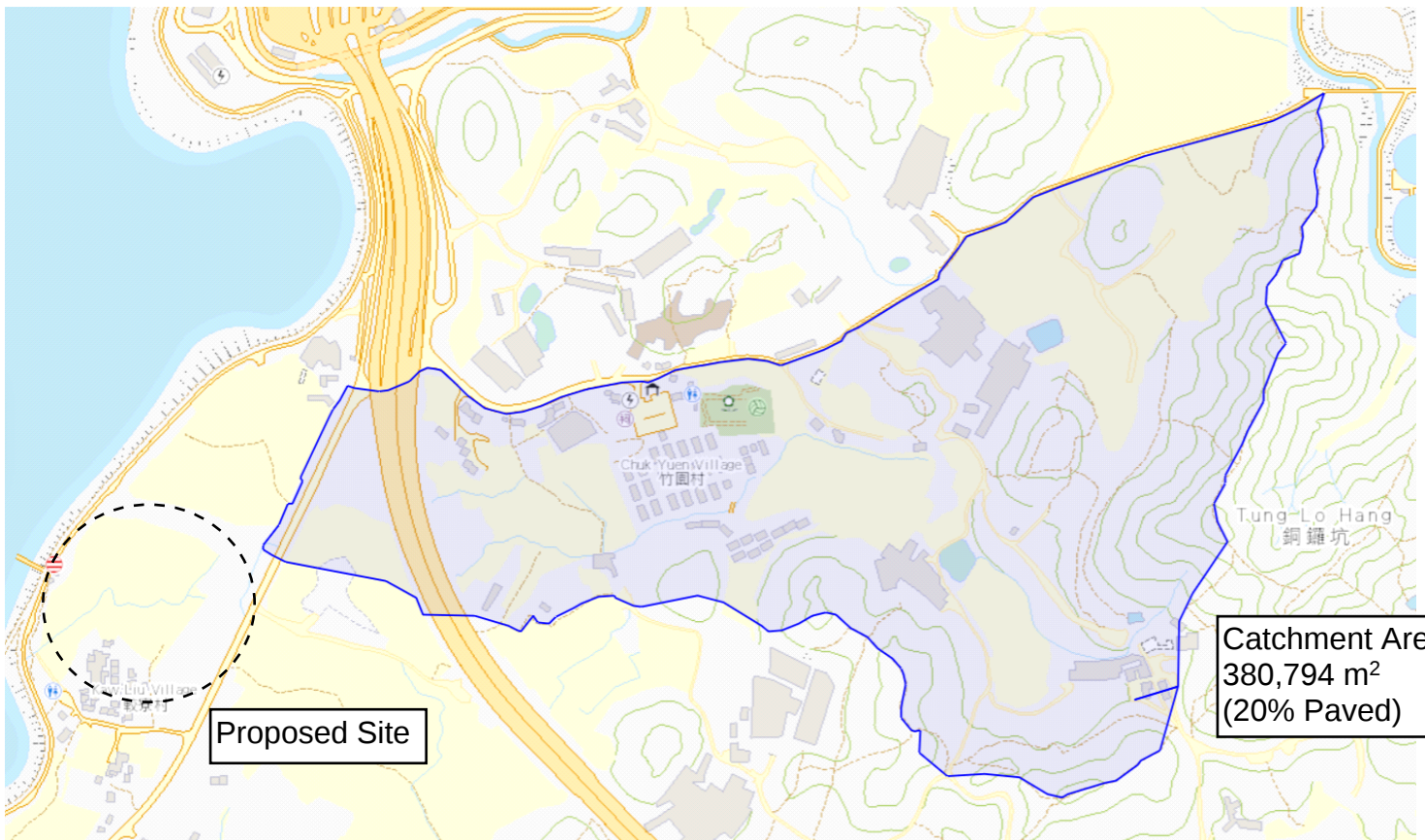
Runoff from Existing Catchment for U/S Channel

Utilitization = 6.84 / 9.59 71.29 % OK

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

Time of Concentration for Existing Catchment

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	(mPD)	(mPD)	H	(min)	(min)
(m2)	(m)					
380794	1012	86.6	9	7.668	26.946	26.946

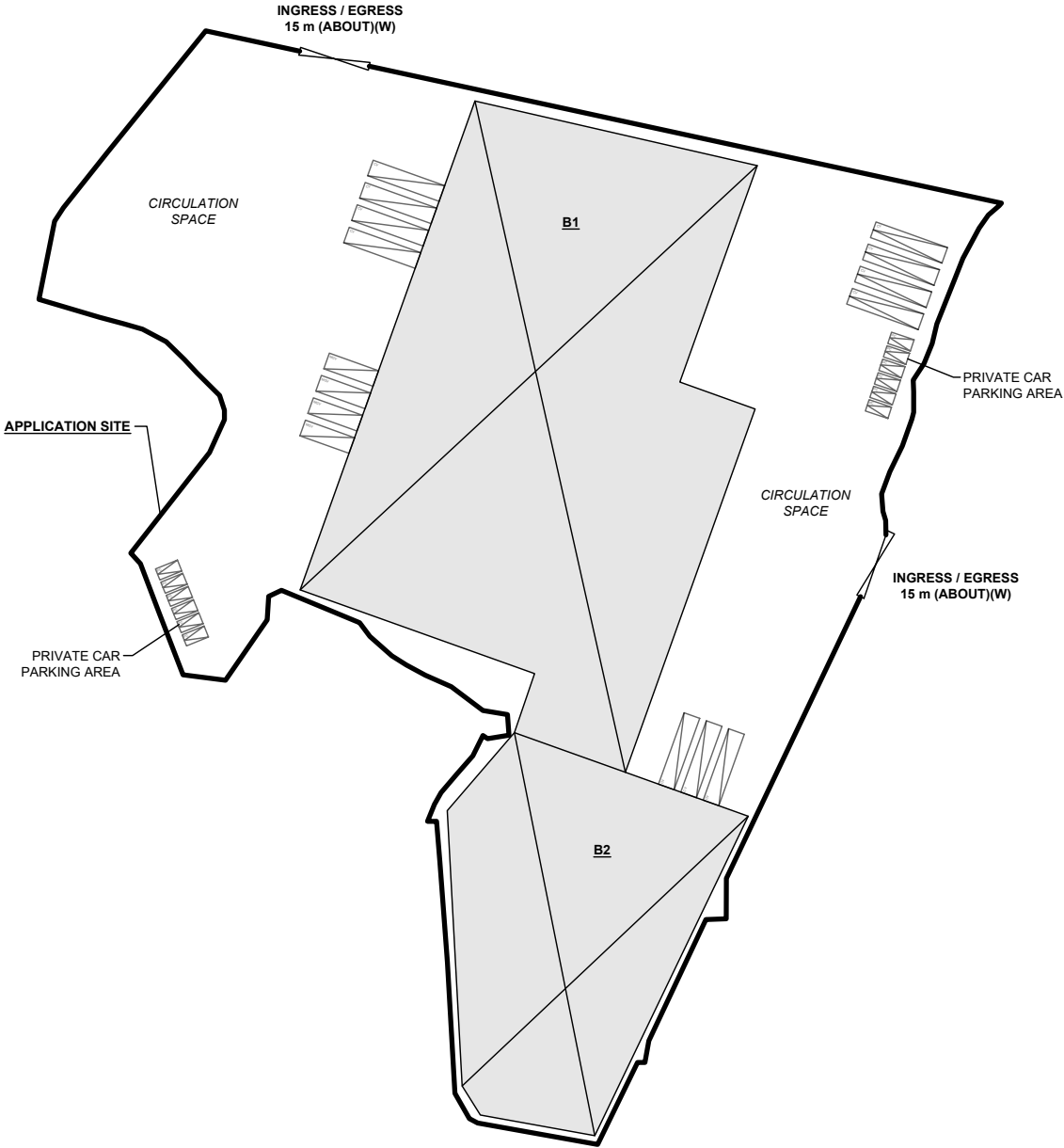


Appendix B - Proposed Development Layout Plan

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	

		AREA		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



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

DRAWN BY
MN

DATE
14.5.2024

REVISED BY

DATE

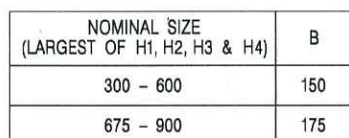
TITLE
LAYOUT PLAN

DWG NO.
PLAN 9

VER.
001



Appendix C - Reference Drawings



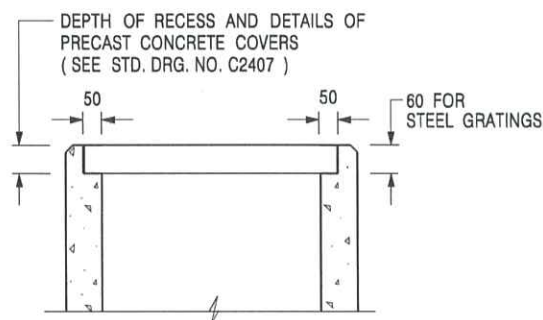
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

	CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	
	SCALE 1 : 20 DATE JAN 1991	DRAWING NO. C2406 /1

卓越工程 建設香港

C2406 /1

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.

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

**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**



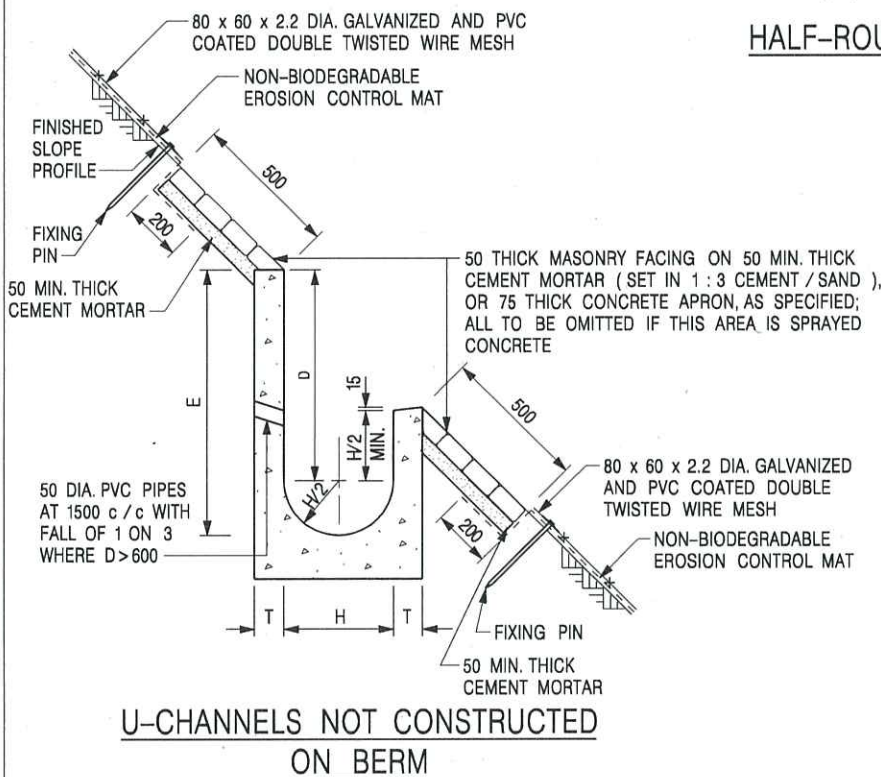
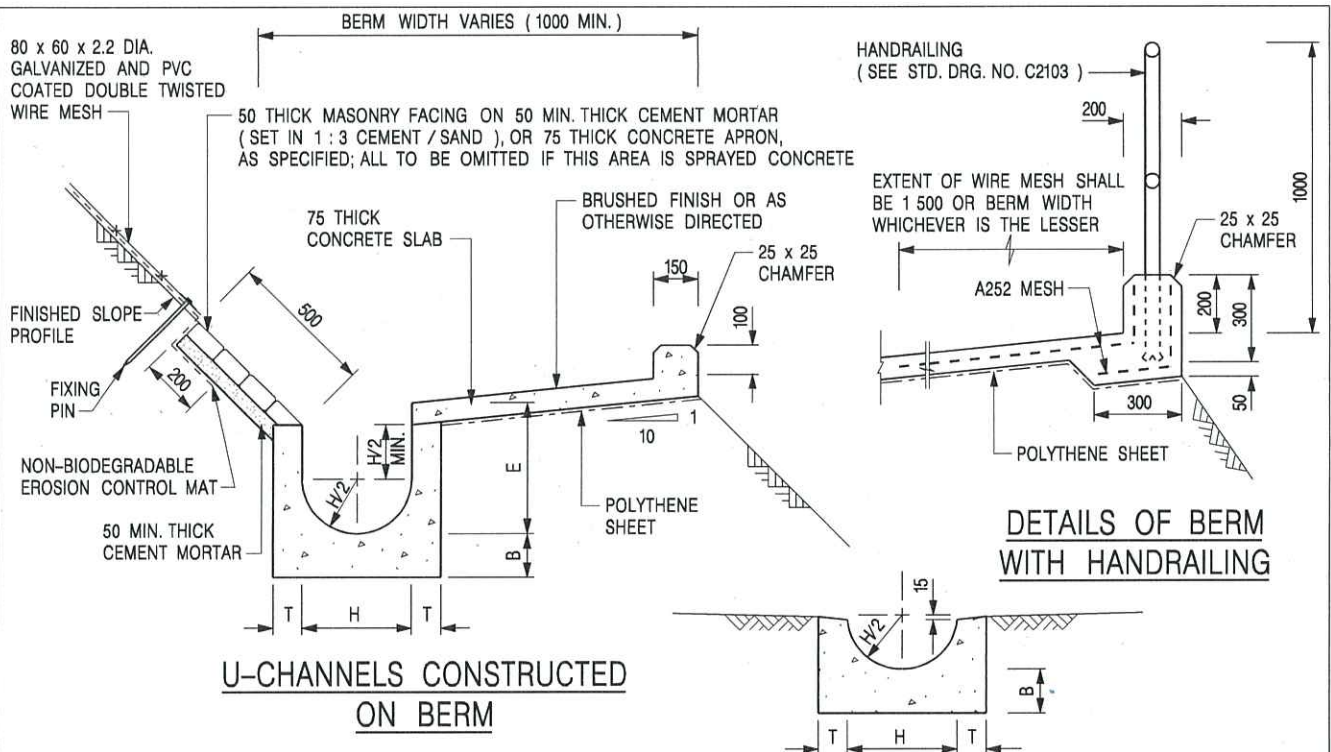
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DRAWING NO.

DATE JAN 1991

C2406 /2A



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/E.
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/E)

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

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
REF.	REVISION	SIGNATURE	DATE

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



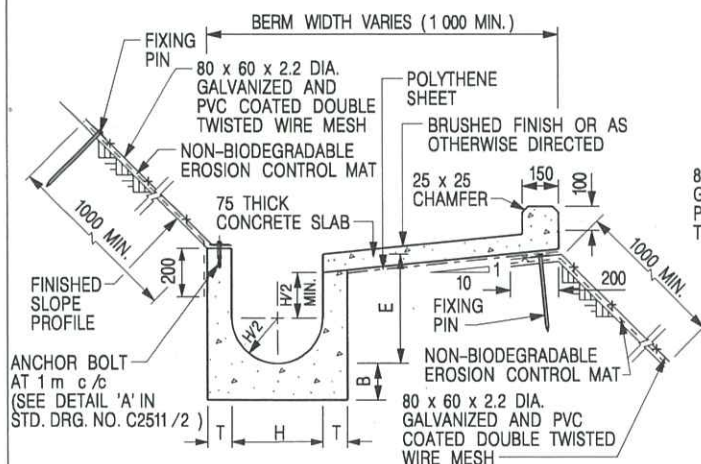
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

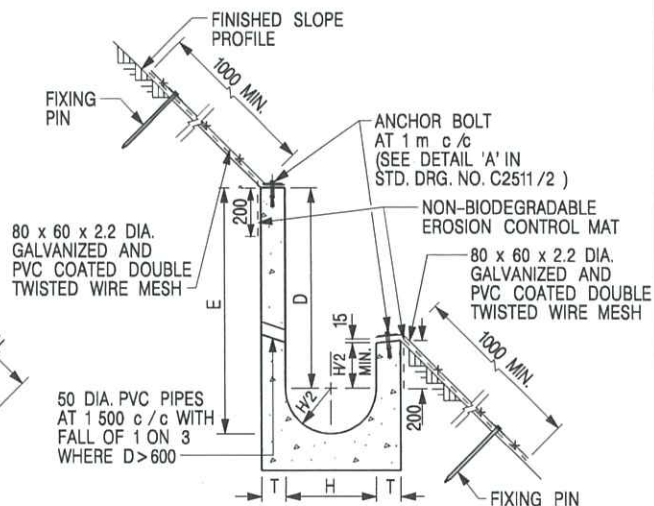
DRAWING NO.

DATE JAN 1991

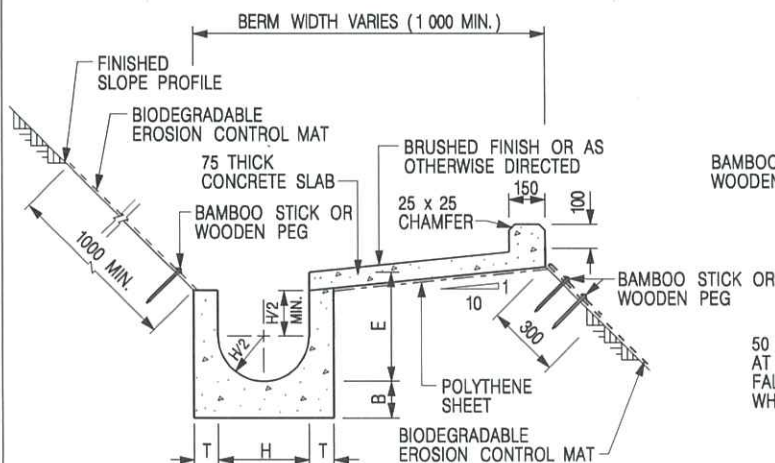
C2409I



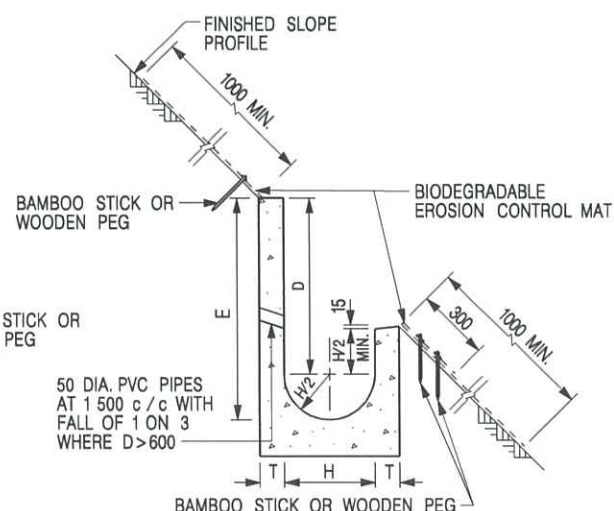
**U-CHANNELS CONSTRUCTED ON BERM
WITH NON-BIODEGRADABLE
EROSION CONTROL MAT**



**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:

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



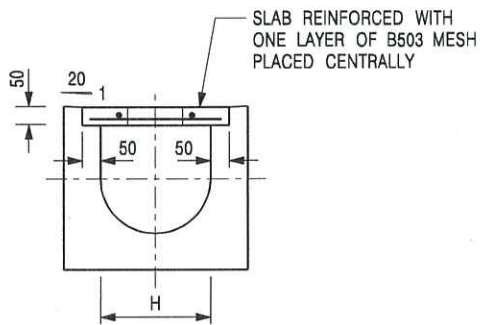
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE DIAGRAMMATIC

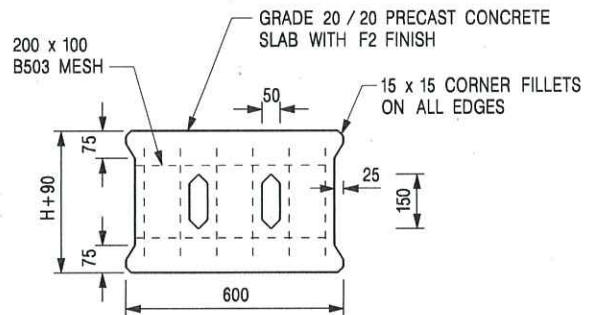
DRAWING NO.

DATE JAN 1991

C24101



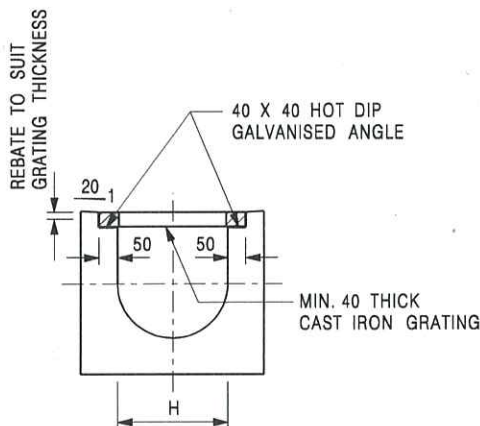
TYPICAL SECTION



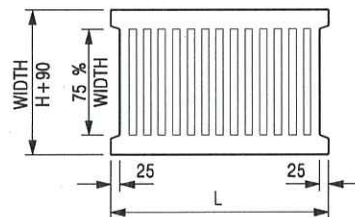
PLAN OF SLAB

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.

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
REF.	REVISION	SIGNATURE	DATE

COVER SLAB AND CAST IRON
GRATING FOR CHANNELS



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2412E

Appendix II

Fire service installations proposal

FS NOTES:

1. AUTOMATIC SPRINKLER SYSTEM
- 1.1 AUTOMATIC SPRINKLER SYSTEM SUPPLIED BY A 135,000L SPRINKLER WATER TANK AND HAZARD CLASS OH3 SHALL BE PROVIDED TO THE ENTIRE BUILDING/ STRUCTURE IN ACCORDANCE WITH LPC RULES INCORPORATING BS EN12845: 2015 AND FSD CIRCULAR LETTER 5/2020. THE SPRINKLER TANK, SPRINKLER PUMP ROOM, SPRINKLER INLET AND SPRINKLER CONTROL VALVE GROUP SHALL BE CLEARLY MARKED ON PLANS.
- 1.2 THE CLASSIFICATION OF THE AUTOMATIC SPRINKLER INSTALLATION TO BE ORDINARY HAZARD GROUP III.
- 1.3 ONE NUMBER 135,000 LITRES SPRINKLER WATER TANK TO BE PROVIDED AS INDICATED ON PLANS.
- 1.4 SPRINKLER CONTROL VALVE SET AND SPRINKLER INLET TO BE PROVIDED AS INDICATED ON PLANS.
- 1.5 SECONDARY ELECTRICITY SUPPLY DIRECTLY TEE OFF BEFORE CLP'S INCOMING MAIN SWITCH SHALL BE PROVIDED FOR THE FH/HR PUMPS.
- 1.5 TYPE OF STORAGE METHOD FOR THE BUILDING IS AS FOLLOWS:

(A) HAZARD CLASS: ORDINARY HAZARD GROUP III

(B) TYPE OF STORAGE: POST-PALLET (ST2)

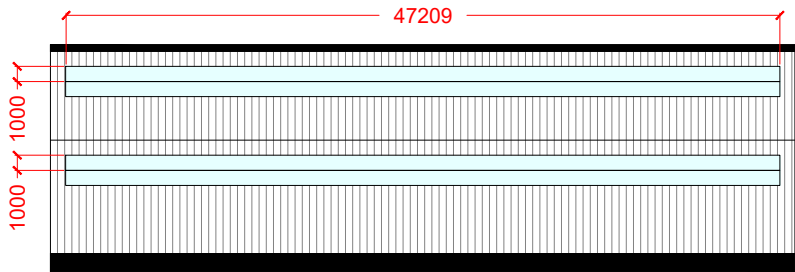
(C) STORAGE CATEGORY: CATEGORY (I)

(D) STORAGE HEIGHT: NOT EXCEEDING 3.5 m

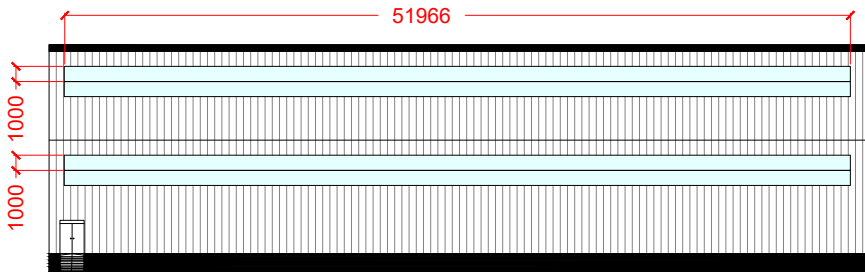
(E) SPINKLER PROTECTION: CEILING PROTECTION ONLY

(F) MAXIMUM STORAGE AREAS SHALL BE 50 m² FOR SINGLE BLOCK

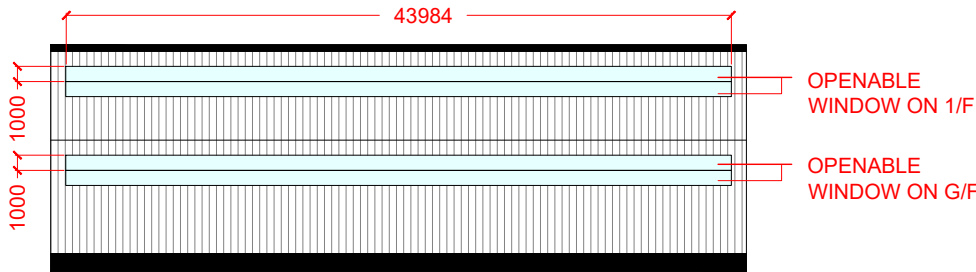
(G) MINIMUM CLEARANCE AROUND EACH SINGLE STORAGE BLOCK: 2.4 m
2. FIRE DETECTOR SYSTEM
- 2.1 THE STANDALONE FIRE DETECTOR SHALL BE PROVIDED IN ACCORDANCE WITH THE STAND-ALONE FIRE DETECTOR GENERAL GUIDELINES ON PURCHASE, INSTALLATION AND MAINTENANCE [SEP 2021].
- 2.2 IN RELATION TO 1) ABOVE, WHERE TWO OR MORE STAND-ALONE FIRE DETECTORS ARE INSTALLED IN AN ENCLOSED STRUCTURE, ALL STAND-ALONE DETECTORS SHALL BE INTERCONNECTED (EITHER WIRED OR WIRELESSLY) SUCH THAT WHEN ONE OF THE STAND-ALONE FIRE DETECTOR IS TRIGGERED, ALL CONNECTED STAND-ALONE FIRE DETECTORS SHALL SOUND AN ALARM SIMULTANEOUSLY.
3. EMERGENCY LIGHTING
- 3.1 SUFFICIENT EMERGENCY LIGHTING SHALL BE PROVIDED THROUGHOUT THE ENTIRE BUILDINGS/STRUCTURES IN ACCORDANCE WITH BS 5266-1:2016, BS EN 1838:2013 AND FSD CIRCULAR LETTER NO. 4/2021. EMERGENCY LIGHTINGS SHALL BE BACKED UP BY BUILT-IN BATTERY AND CAPABLE OF MAINTAINING FUNCTION OF NOT LESS THAN 2 HOURS.
4. DIRECTIONAL AND EXIT SIGN
- 4.1 SUFFICIENT DIRECTIONAL AND EXIT SIGN SHALL BE PROVIDED IN ACCORDANCE WITH BS 5266-1:2016 AND FSD CIRCULAR LETTER NO. 5/2008. DIRECTIONAL AND EXIT SIGNS SHALL BE BACKED UP BY BUILT-IN BATTERY AND CAPABLE OF MAINTAINING FUNCTION OF NOT LESS THAN 2 HOURS.
5. MISCELLANEOUS F.S. INSTALLATION
- 5.1 PORTABLE FIRE EXTINGUISHER WITH SPECIFIED TYPE AND CAPACITY TO BE PROVIDED AT LOCATIONS AS INDICATED ON PLANS. 20KG WHEELED TYPE DRY CHEMICAL FIRE EXTINGUISHER IN EVERY 500M² OF EVERY FLOOR OF THE PREMISES AND SHALL BE PROVIDED TO ENSURE THAT EVERY PART OF THE PREMISES CAN BE REACHED BY WHEELED TYPE DRY CHEMICAL FIRE EXTINGUISHER FROM A DISTANCE OF NOT MORE THAN 30M.
- 5.2 NO EMERGENCY GENERATOR TO BE PROVIDED FOR SERVING THE EMERGENCY POWER. DUPLICATED POWER SUPPLIES FOR ALL FIRE SERVICES INSTALLATIONS COMPRISING A CABLE CONNECTED FROM ELECTRICITY MAINS DIRECTLY BEFORE THE MAIN SWITCH.
- 5.3 WHEN A VENTILATION/ AIR CONDITIONING CONTROL SYSTEM TO A BUILDING IS PROVIDED, IT SHALL STOP MECHANICALLY INDUCED AIR MOVEMENT WITHIN A DESIGNATED FIRE COMPARTMENT.
- 5.4 NO DYNAMIC SMOKE EXTRACTION SYSTEM SHALL BE PROVIDED SINCE FIRE COMPARTMENT NOT EXCEEDING 7000 CUBIC METRES AND THE AGGREGATE AREA OF OPENABLE WINDOWS OF THE RESPECTIVE COMPARTMENT EXCEEDS 6.25% OF THE FLOOR AREA OF THAT COMPARTMENT.
- 5.5 ACCESS IS PROVIDED FOR EMERGENCY VEHICLE TO REACH 30M OF ALL PART OF STRUCTURES.



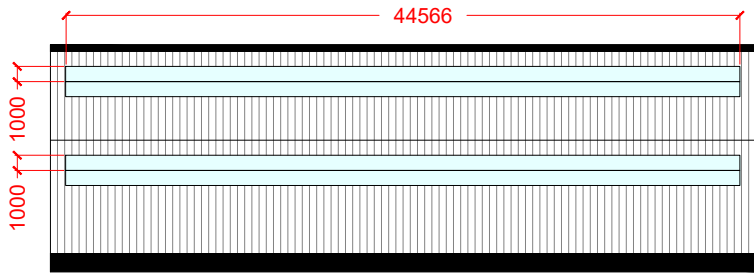
SECTION A-A



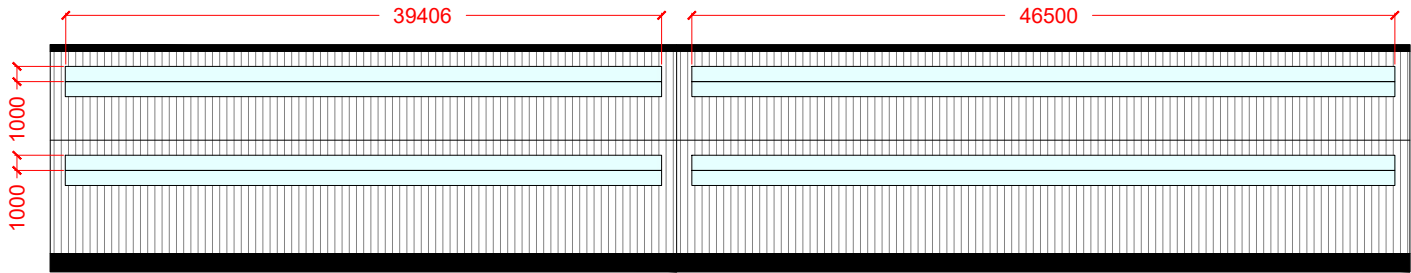
SECTION B-B



SECTION C-C



SECTION D-D

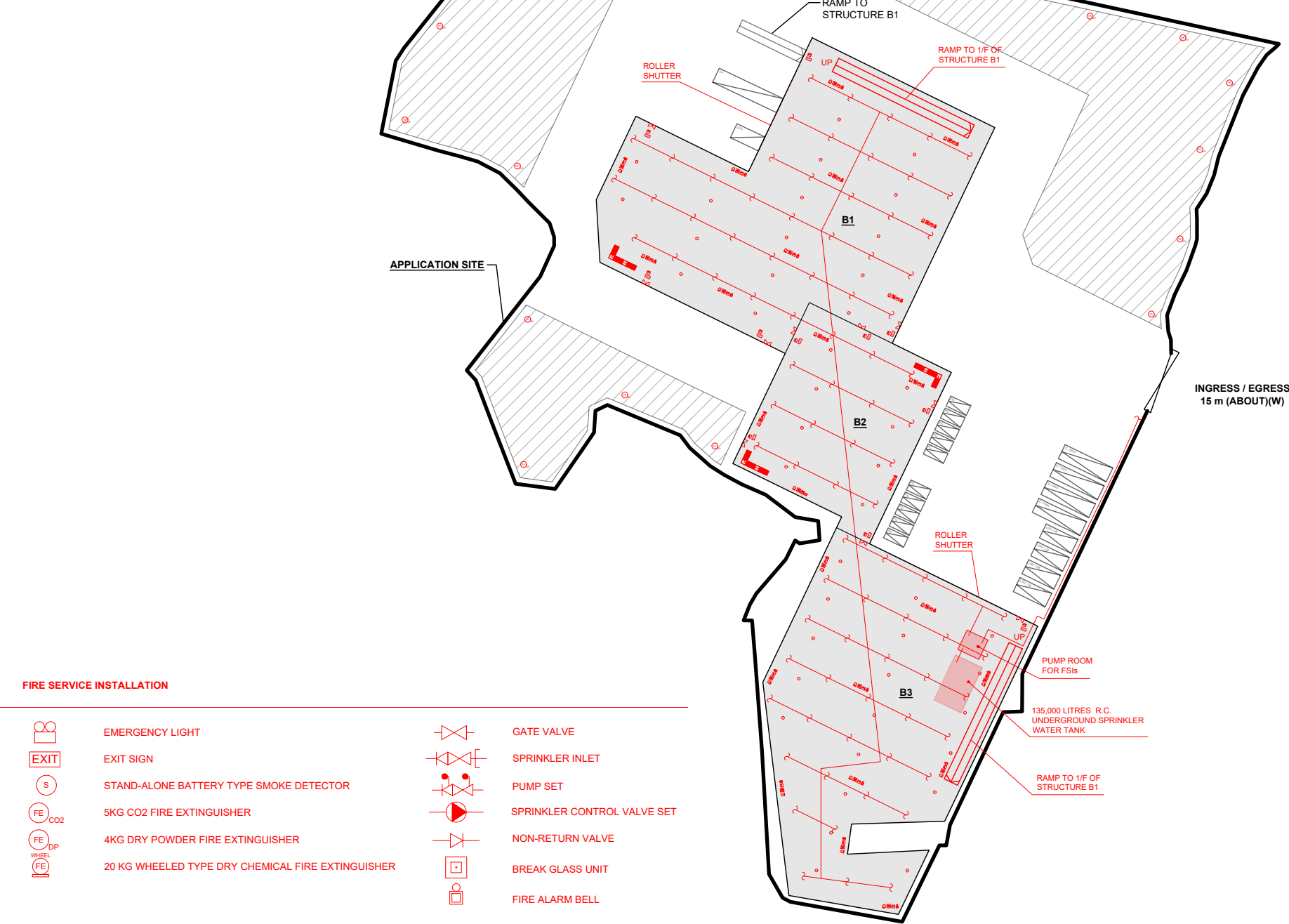


SECTION E-E

OPENABLE WINDOW AREA CALCULAION UNDER F.S.D. REQUIREMENT FOR COMPARTMENT EXCEEDING 7000m ³	
LOCATION	STRUCTURES B1, B2 AND B3 (INTEGRATED STRUCTURE)
GFA	8,432 m ² (G/F) 8,432 m ² (1/F)
OPENABLE WINDOW AREA REQUIRED	8,432 m ² X 6.25% = 527 m ² (G/F) 8,432 m ² X 6.25% = 527 m ² (1/F) TOTAL: 1,054 m² (G/F + 1/F)
OPENABLE WINDOW AREA PROVIDED	REFER TO ELEVATION - (A-A) = 189 m² REFER TO ELEVATION - (B-B) = 208 m² REFER TO ELEVATION - (C-C) = 176 m² REFER TO ELEVATION - (D-D) = 178 m² REFER TO ELEVATION - (E-E) = 344 m²
	TOTAL = 1,095 m² > 1,054 m²

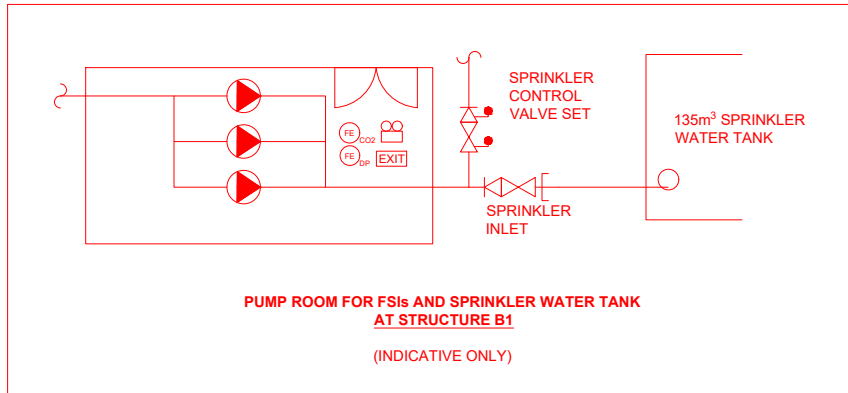
PROJECT	
PROPOSED TEMPORARY SHOP AND SERVICES, VEHICLE REPAIR WORKSHOP AND WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) AND OPEN STORAGE OF VEHICLE WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS	
SITE LOCATION	
VARIOUS LOTS IN D.D. 78 AND ADJOINING GOVERNMENT LAND, LIN MA HANG, NEW TERRITORIES	
SCALE	
1 : 500 @ A3	
DRAWN BY	DATE
MN	6.8.2026
CHECKED BY	DATE
APPROVED BY	DATE
DWG. TITLE	
FSIs PROPOSAL (1/2)	
DWG NO.	VER.
APPENDIX	001

DEVELOPMENT PARAMETERS			
APPLICATION SITE AREA	: 24,446 m ²	(ABOUT)	
COVERED AREA	: 8,367 m ²	(ABOUT)	
UNCOVERED AREA	: 16,079 m ²	(ABOUT)	
PLOT RATIO	: 0.68	(ABOUT)	
SITE COVERAGE	: 34 %	(ABOUT)	
NO. OF STRUCTURE	: 3		
DOMESTIC GFA	: N/A		
NON-DOMESTIC GFA	: 16,734 m ²	(ABOUT)	
TOTAL GFA	: 16,734 m ²	(ABOUT)	
BUILDING HEIGHT	: 15 m	(ABOUT)	
NO. OF STOREY	: 2		
OPEN STORAGE AREA	: 5,924 m ²	(ABOUT)	
FE AT OS AREA	: 5,924 m ² x 0.003		
	=18		

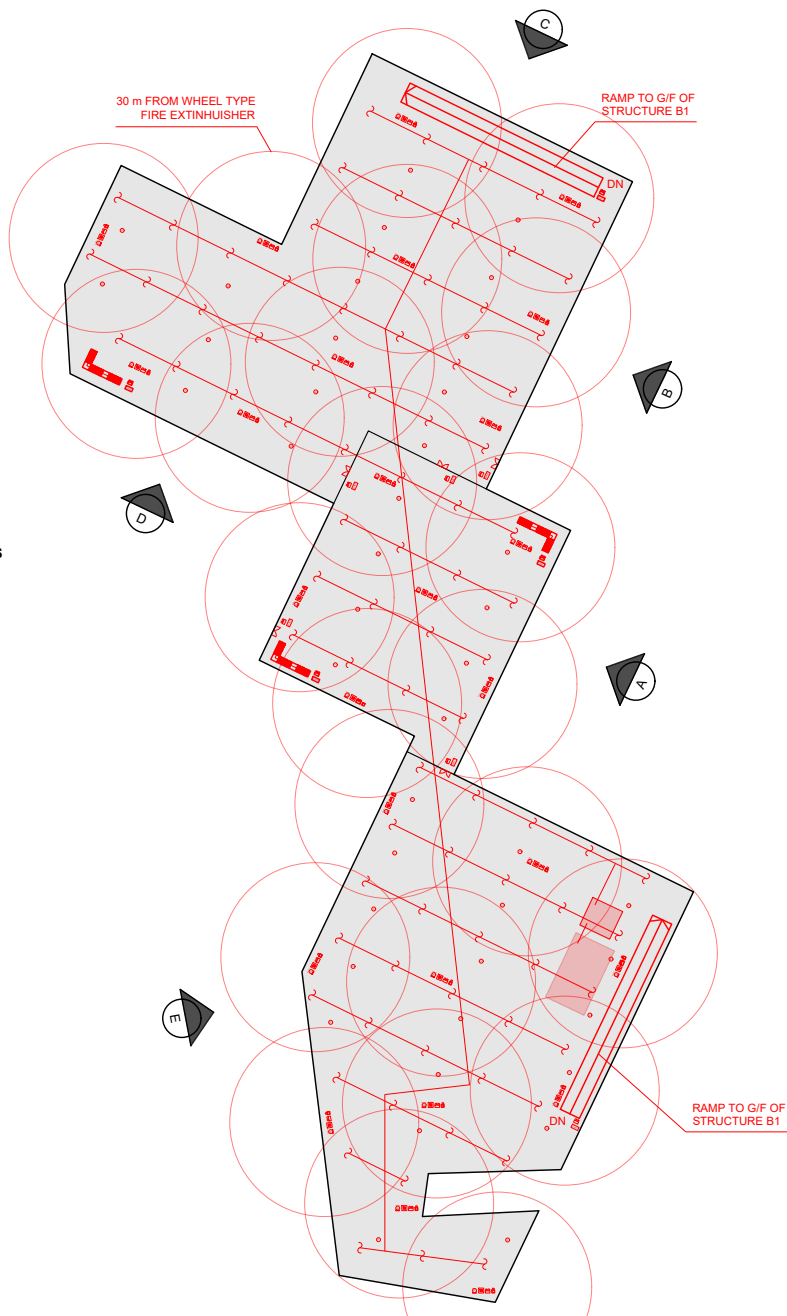


FIRE SERVICE INSTALLATION

	EMERGENCY LIGHT		GATE VALVE
	EXIT SIGN		SPRINKLER INLET
	STAND-ALONE BATTERY TYPE SMOKE DETECTOR		PUMP SET
	5KG CO2 FIRE EXTINGUISHER		SPRINKLER CONTROL VALVE SET
	4KG DRY POWDER FIRE EXTINGUISHER		NON-RETURN VALVE
	20 KG WHEELED TYPE DRY CHEMICAL FIRE EXTINGUISHER		BREAK GLASS UNIT
			FIRE ALARM BELL

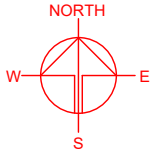


STRUCTURE	USE	COVERED AREA	GROSS FLOOR AREA	BUILDING HEIGHT
B1	WAREHOUSE (EXCL D. G. G.)	3,706 m ² (ABOUT)	7,412 m ² (ABOUT)	15 m (ABOUT)(2-STOREY)
B2	VEHICLE REPAIR WORKSHOP	1,461 m ² (ABOUT)	2,922 m ² (ABOUT)	15 m (ABOUT)(2-STOREY)
B3	SHOP AND SERVICES, OFFICE, WASHROOM AND VEHICLE REPAIR WORKSHOP	3,200 m ² (ABOUT)	6,400 m ² (ABOUT)	15 m (ABOUT)(2-STOREY)
TOTAL		8,367 m ² (ABOUT)	16,734 m ² (ABOUT)	



LEGEND

	APPLICATION SITE
	STRUCTURE
	OPEN STORAGE AREA
	PARKING SPACE (PRIVATE CAR)
	PARKING SPACE (LGV / LB SHARED)
	PARKING SPACE (C / HGV SHARED)
	L/U/L SPACE (LIGHT GOODS VEHICLE)
	L/U/L SPACE (CONTAINER VEHICLE)
	INGRESS / EGRESS



PROJECT
PROPOSED TEMPORARY SHOP AND SERVICES, VEHICLE REPAIR WORKSHOP AND WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) AND OPEN STORAGE OF VEHICLE 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 : 1200 @ A3

DRAWN BY
MN

DATE
6.8.2026

CHECKED BY

DATE

APPROVED BY

DATE

DWG. TITLE
FSIs PROPOSAL (2/2)

DWG NO.

VER.

APPENDIX

001

Appendix III

Traffic management measure accepted under previous application

規 劃 署

沙田、大埔及北區規劃處
香港新界沙田上禾輋路一號
沙田政府合署
十三樓 1301 1314 室

**Planning Department**

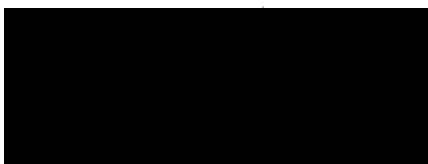
Sha Tin, Tai Po & North
District Planning Office
Rooms 1301-1314, 13/F,
Shatin Government Offices,
1 Sheung Wo Che Road, Sha Tin,
N.T., Hong Kong

來函檔號 Your Reference () in DD78 Lot 1366 RP & VL
本署檔號 Our Reference () in TPB/A/NE-TKLN/86
電話號碼 Tel. No. : 2158 6220
傳真機號碼 Fax No. : 2691 2806

By Post and Fax (2323 3662)

24 February 2025

Tai Wah Development Consultants Ltd.



Dear Sir/Madam,

**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
(Compliance with Approval Condition (i) for Planning Application No. A/NE-TKLN/86)**

I refer to your submission dated 21.1.2025 for compliance with approval condition (i) in relation to the submission of traffic improvement and management measures to the satisfaction of the Commissioner for Transport or of the Town Planning Board under the captioned planning application.

The Commissioner for Transport (Contact person: Mr. TAM Kam-fai; Tel.: 2399 2405) has been consulted and considered the approval condition (i) has been complied with.

Should you have any other queries related to planning matters, please contact Mr. Timothy WU of this Office at 2158 6031.

Yours faithfully,

(Rico TSANG)
for Director of Planning

規劃署35周年
Planning Department 35th Anniversary

劃出更多可能 · 創造無限機遇
Planning a Future of Boundless Opportunities

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

21 January 2025

Dear Sir,

Compliance with Approval Condition (i)

**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 a revised traffic improvement and management measures proposal for compliance with approval condition (i) of the subject application, i.e. *the submission of traffic improvement and management measures (enclosed)*.

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

Yours faithfully,

Danny NG
Town Planner

Project	<u>Section 16 Planning Application [A/NE-TKLN/86]</u>	Date	20 January 2025
	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		
Note	Traffic Improvement and Management Measures	Page	1 of 3

1 Introduction

- 1.1 The following text states the proposed traffic improvement and management measures for 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
- 1.2 The primary goal of this proposal is to implement effective traffic improvement and management measures to smoothen the traffic and transport operations for vehicles entering/ leaving the application site, enhance safety and minimize the impact of public road.

2 Proposed Access

- 2.1 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. Sliding Gates will also be installed to minimize the obstruction of vehicular movement. Layout and detail dimensions of the proposed access at the North Gate and East Gate are shown in **Appendix A as TN5**. A comparison table is provided below to justify the proposed access with TPDM standard.

Table 1 TPDM Standard Comparison

Parameter	TPDM Standard	Proposed Standard
Width of Site Access (North and East) ⁽¹⁾	7.3m	15m
Width of Single-Track Access Road ⁽²⁾	3.5m	4.5m
Width of Access Road at Junction ⁽²⁾	6m	19.6m
Width of Access Road at Passing Bay ⁽³⁾	6m	7m
Length of Passing Bay ⁽³⁾	12m	12m
Passing Bay Tapers ⁽³⁾	1:3	1:3
Passing Bay Distance ⁽³⁾	Approximately 60m	60m
Design Flow ⁽⁴⁾	100 veh/ hr (2-	<20 veh/ hr (2-

	way) or less	way)
Gradient ⁽⁵⁾	10%	<2%
Visibility ⁽⁶⁾	70m	>100m

Note: (1) Taking reference to 2024 TPDM Volume 2 Chapter 3.6 Section 3.6.3

(2) Taking reference to 2024 TPDM Volume 2 Chapter 3.11 Section 3.11.7

(3) Taking reference to 2024 TPDM Volume 2 Chapter 3.11 Section 3.11.9

(4) Taking reference to 2024 TPDM Volume 2 Chapter 3.11 Section 3.11.3

(5) Taking reference to 2024 TPDM Volume 2 Chapter 3.11 Section 3.11.6

(6) Taking reference to 2024 TPDM Volume 2 Chapter 4.3 Section 4.3.8

3 Vehicular operational details

East Gate

- 3.1 To ensure no queuing of vehicles outside the subject site, management / control measures are to be implemented as the followings:
- Staffs will be deployed to conduct traffic management/ control measures at the accesses of the site to ensure smooth manoeuvring of vehicles entering/ exiting the site and to ensure no queueing of vehicles outside the site.
 - The staff will keep the unobstructed area (refers to **Appendix A TN1**) clear to make sure vehicles can access smoothly and avoid any queueing outside the Application Site. The unobstructed area, with dimension of 15m(W) x 20m(L), is able to accommodate a 16m Long vehicle that accessing 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 (the leaving traffic will be instructed by the staff to wait within the site) in order to minimize the impact to public road.
- 3.2 As shown in the swept path assessment in **Appendix A**, there are sufficient space for vehicles to manoeuvre within the site and at the access of the site.
- 3.3 To avoid queuing at the public road, physical gate and drop barrier would not be proposed nor installed. Instead, a kiosk for staff is proposed at the entrance / exit points with CCTV installed for management purpose.
- 3.4 To ensure pedestrian safety, the deployed staff will direct vehicles entering / exiting the site and assist pedestrians crossing by the access of the site. "Beware of Pedestrians" signs would be erected on movable stands for

internal use to alert drivers when entering / exiting the Site to enhance pedestrian safety.

- 3.5 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.
- 3.6 The staffs at the entrance will manage to prevent on street illegal parking to avoid affecting vehicles accessing/ leaving the site.
- 3.7 To smoothen the traffic operations of the site, appointments would be required for arrival of goods vehicles/ visitors to avoid vehicles entering/ exiting the site at the same time.

North Gate/ Access Road

- 3.8 The North Gate will only be used for vehicular access and no pedestrian will be allowed to enter/ exist the site via the North Gate. The access road, as presented in the TIA report, is a 4.5m wide single track access road with a 12m long passing bay.
- 3.9 Staff will be deployed near the access road (refers to **Appendix TN4**) to assist vehicles entering/ existing the site via the access road. In case there are overlapping traffic, the staff would instruct the leaving vehicle to wait at the passing bay as vehicles entering the site has higher priority to avoid queuing at public road. Whistle would also be used by the staff to perform traffic control.
- 3.10 To ensure pedestrian safety, the deployed staff would also assist pedestrian crossing when passing by the access road.
- 3.11 The design drawing for the proposed traffic improvement and management measures mentioned above is supplemented in **Appendix A as TN4**.

Internal Circulation

- 3.12 As shown in the swept path assessment in **Appendix A**, sufficient turning spaces are provided for goods vehicles travelling to/from the parking spaces/ L/UL spaces within the Application Site.

Staff Training and Awareness

- 3.13 Regular safety training sessions will be conducted for staffs, to introduce them with the car park layout and traffic management measures, to familiarize them the procedure to handle emergency events, to handle the drivers' queries and to provide assistance as needed.
- 3.14 In addition, a feedback mechanism for drivers and staff to identify areas for improvement will be implemented, necessary adjustment will be made upon regular review on the operation situations.

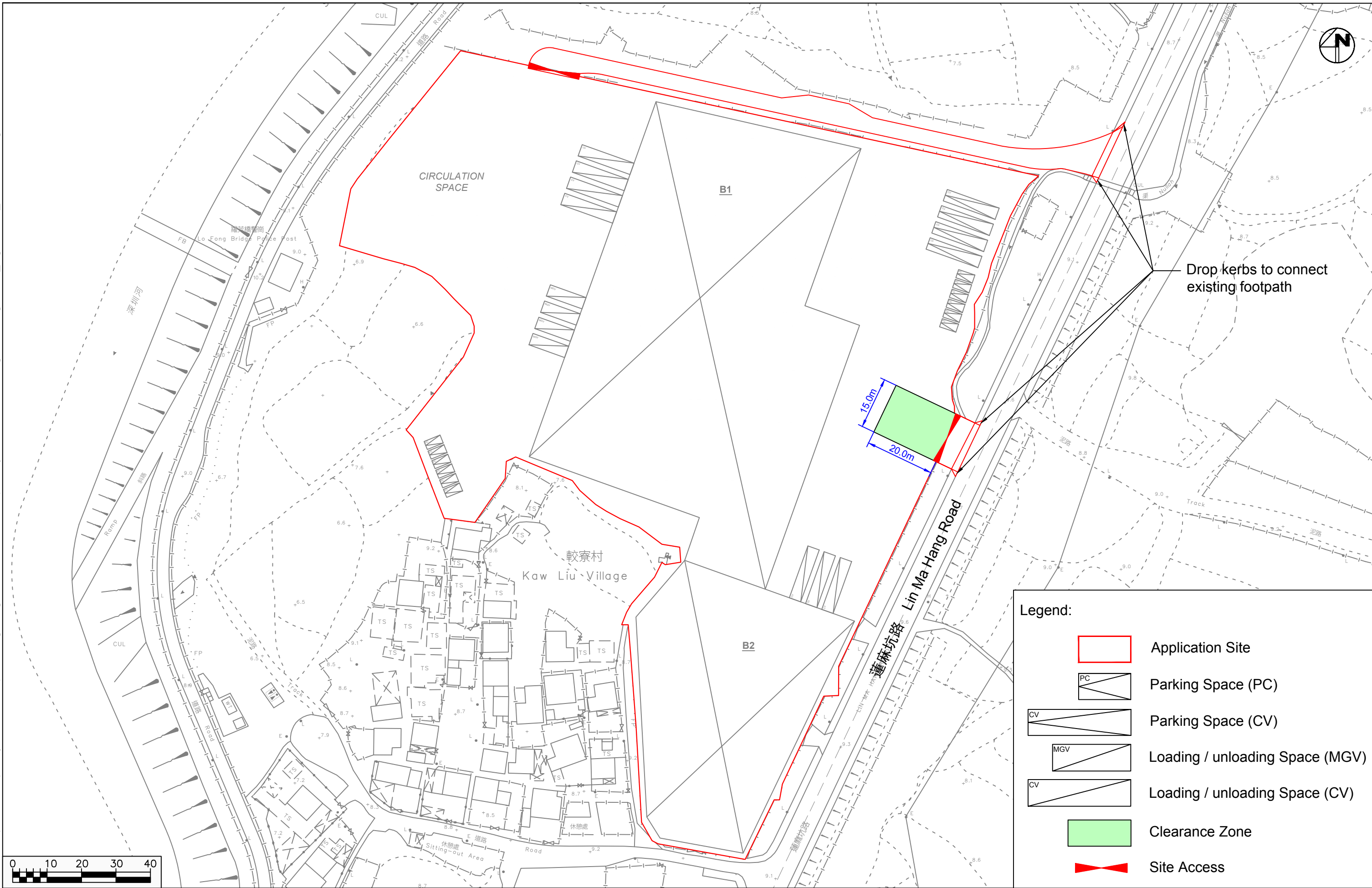
4 Conclusion

- 4.1 Implementing these traffic improvement and management measures will significantly enhance the operations efficiency and safety of the Application Site, and impact to public road users will be minimized.

Appendix A

Traffic Improvement and Management Measures Plan

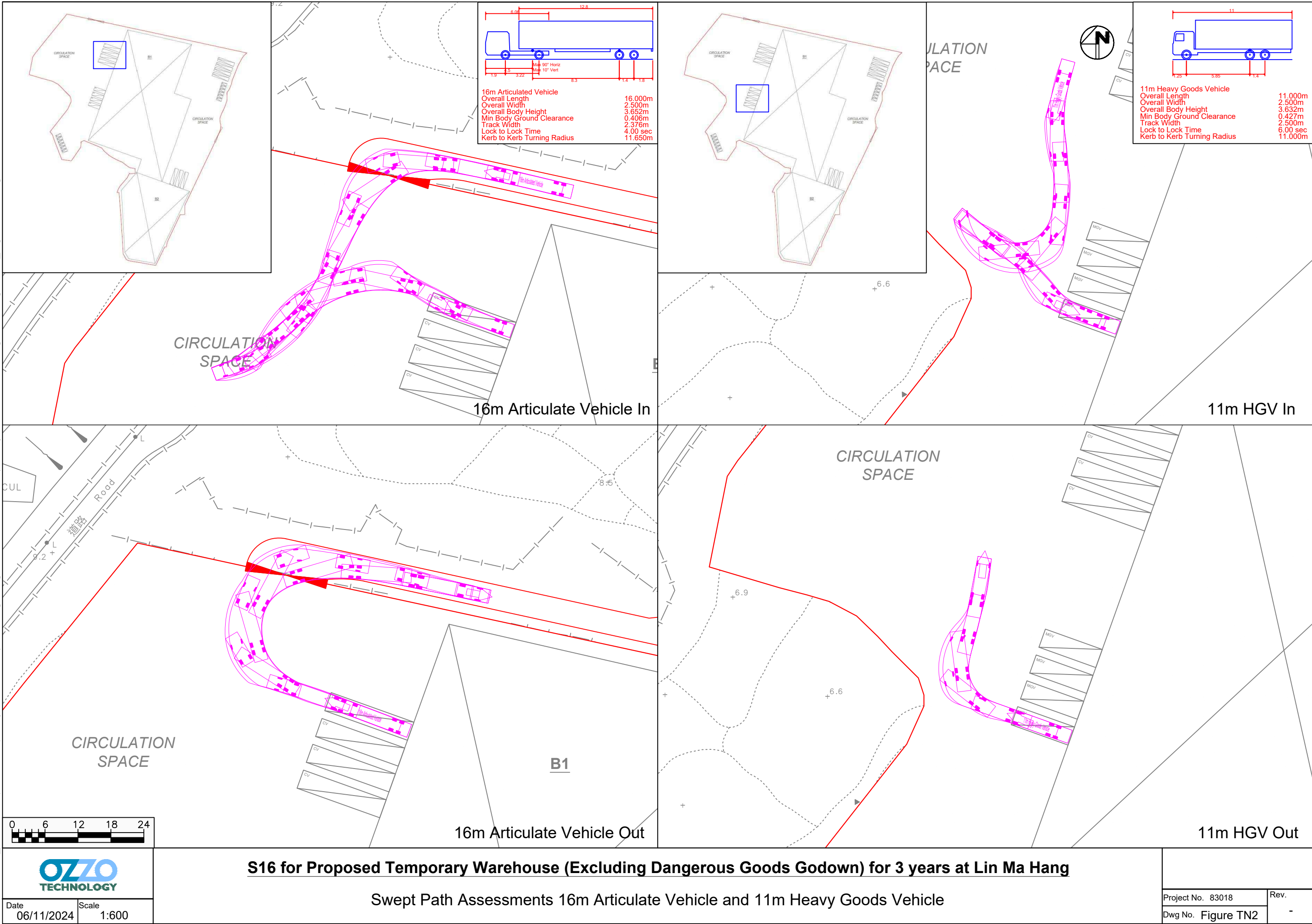
X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Drawings\Figure TN1_20250120.dwg 2025/01/20 15:38:25



Legend:

	Application Site
	Parking Space (PC)
	Parking Space (CV)
	Loading / unloading Space (MGV)
	Loading / unloading Space (CV)
	Clearance Zone
	Site Access

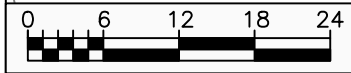
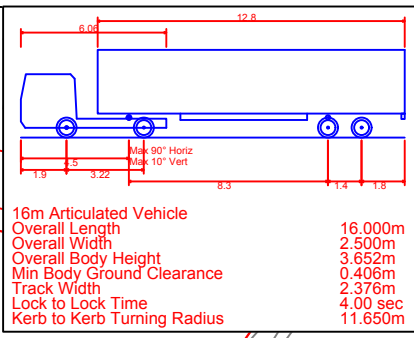
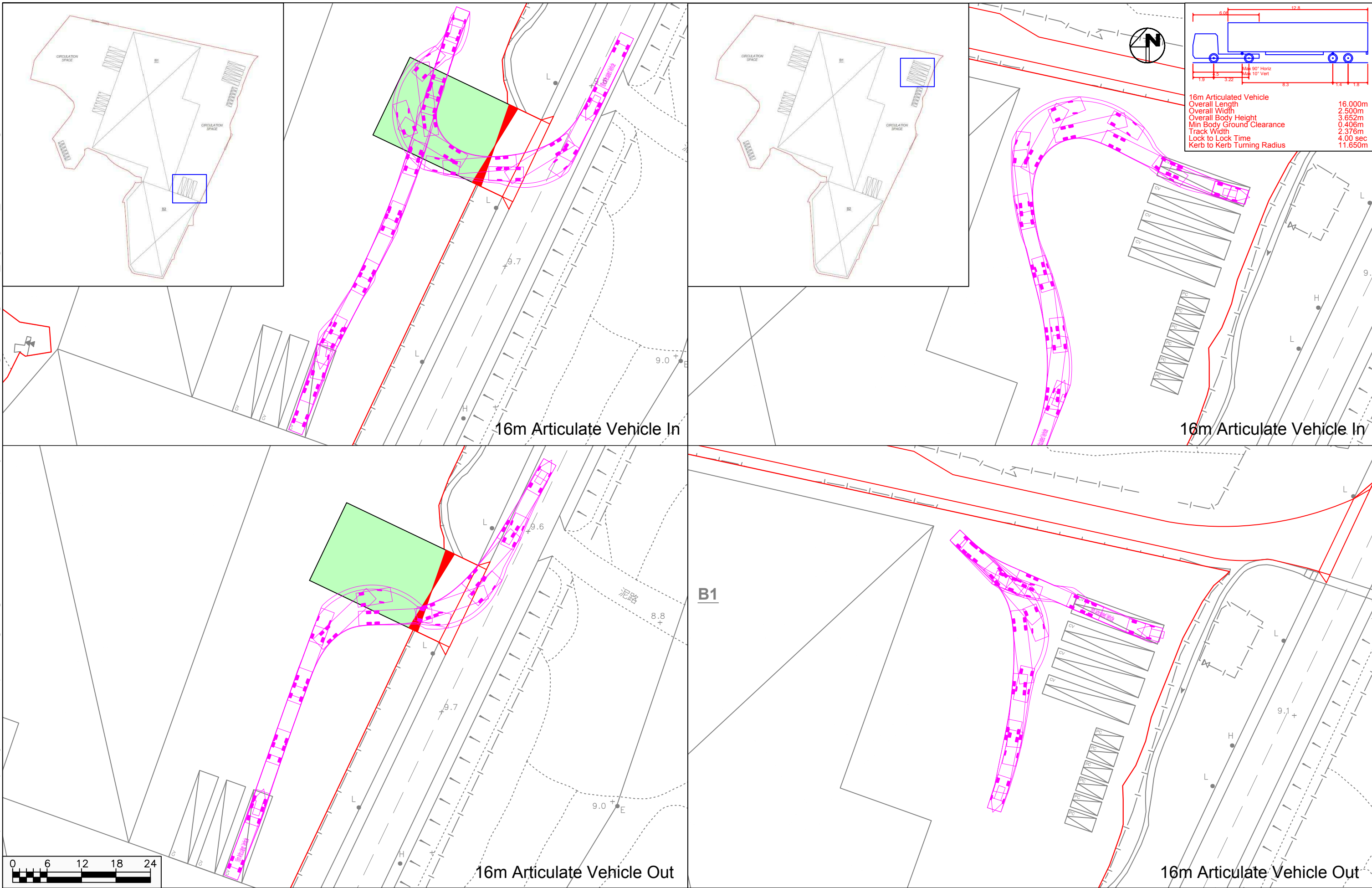
X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Drawings\Figure TN3.dwg 2024/11/06 14:17:32



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

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Data\Dwg\83018_Figure TN3_20250120.dwg TN3_20250120 15:30:30



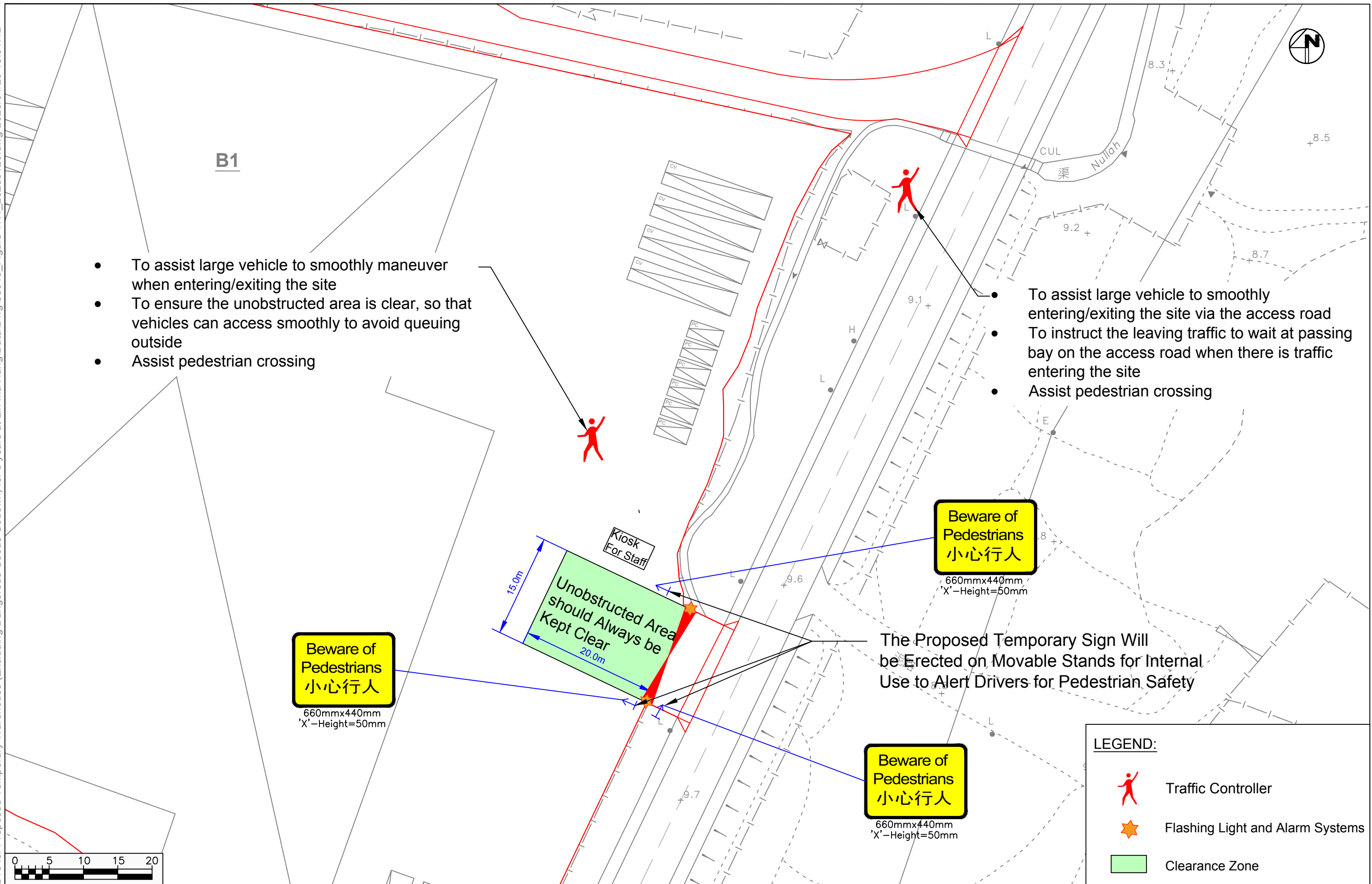
Date 20/01/2025 Scale 1:600

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 TN3	-

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\Drawings\Figure TN4_20250120.dwg 2025/01/20 15:31:42



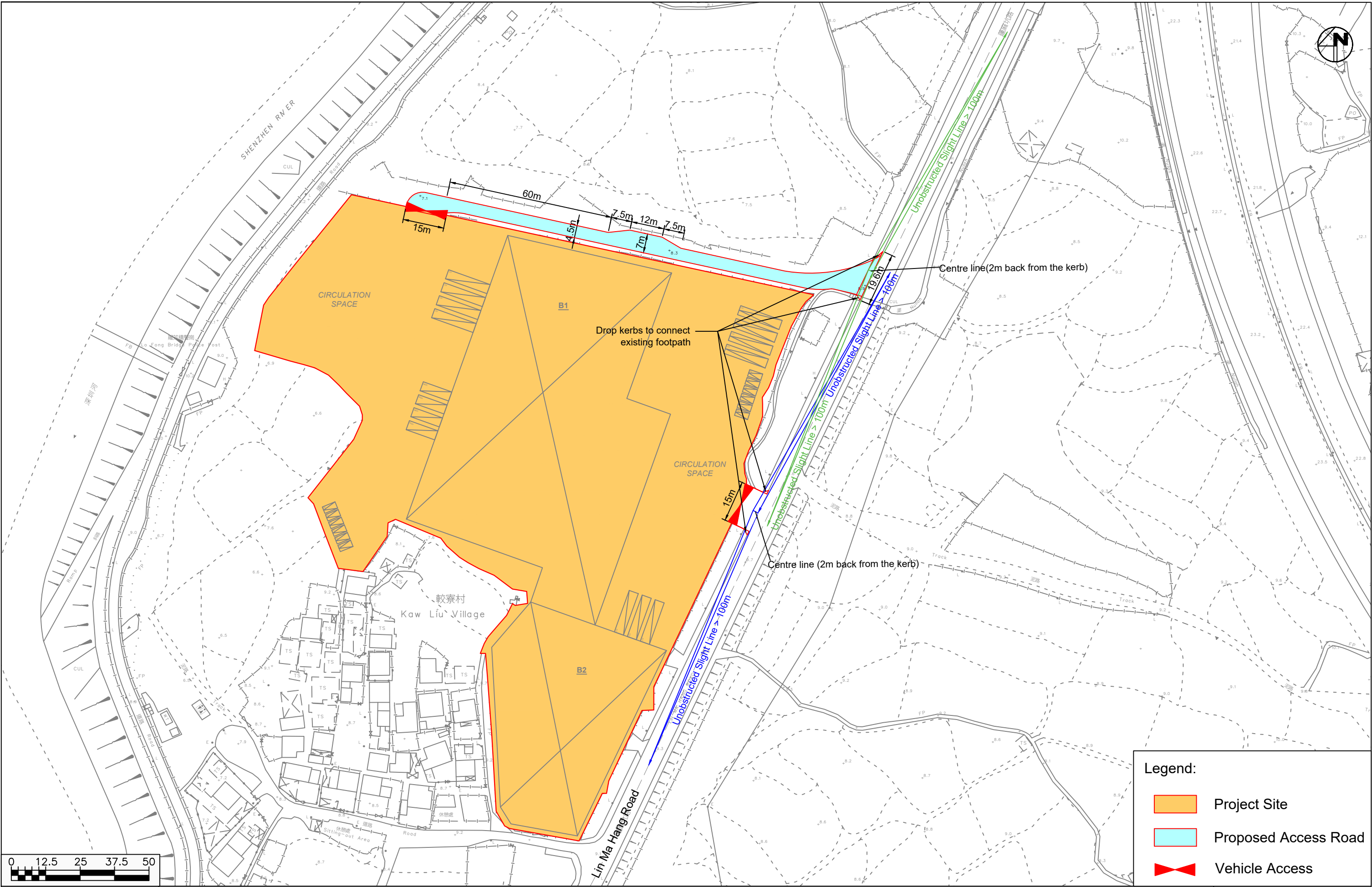
S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang

Proposed Management Measures at Entrance / Exit Points

Date 20/01/2025 Scale 1:500

Project No. 83018	Rev.
Dwg No. Figure TN4	-

X:\Ozzo\83018_S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang\83018_Figure TN5_20250120.dwg 2025/01/20 16:42:34



Legend:

- Project Site
- Proposed Access Road
- Vehicle Access

		S16 for Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) for 3 years at Lin Ma Hang	
Proposed Access			
Date 20/01/2025	Scale 1:1250	Project No. 83018 Dwg No. Figure TN5	Rev. -