Date: 3 July 2026

TPB Ref.: A/YL-TT/781

By Email

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

Dear Sir,

Proposed Temporary Warehouse & Open Storage (Excluding Dangerous Goods) with Ancillary Facilities & Associated Filling of Land for a Period of 3 Years at Lots 1299, 1305 S.A (Part), 1305 S.B RP (Part), 1306 S.A, 1306 S.B (Part), 1307, 1308, 1309 RP, 1310, 1317 RP, 1318, 1360 (Part), 1392 (Part), 1393 (Part), 1394, 1395, 1396, 1397, 1398 S.A & B, 1399 (Part), 1402 (Part), 1403 (Part), 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428 (Part), 1429, 1430, 1431, 1433, 1434 (Part), 1435 (Part), 1538 (Part), 1539 (Part) and 1540 in D.D.118 and Adjoining Government Land, Tai Shu Ha Road West, Tai Tong, Yuen Long, N.T.

This letter intends to supersede our letter dated 25.6.2026. Our response to the comments of Transport Department is found in the attachment. The attached estimated traffic generation and attraction is intended to replace the estimated traffic generation (Annex 1) submitted earlier.

We are also glad to submit the attached Drainage Impact Assessment (DIA) for the consideration of the CE/MN, DSD.

Our response to the comments of the Director of Environmental Protection (DEP) is shown below:

Comments of Director of Environmental Protection (DEP)	Applicant's response
a) clarify the types of construction materials that will be stored on the Site; and b) confirm whether any dusty construction materials will be stored in the open storage area.	Construction materials packed in cartons such as sanitary ware and stones will be stored at the application site. No dusty construction materials will be stored in the open storage area.

Our response to the comments of the District Lands Office/Yuen Long (DLO/YL) is shown below:

The applicant will apply for Short Term Waiver (STW) and Short Term Tenancy (STT) to DLO/YL upon planning approval.

The maximum stacking height at the open storage area would be 8m. The applicant confirms that there will be no workshop activities within the application site. The land at the application site has been filled so that the current application is an application for the regularization of the filling of land. No further land filling will be carried out upon planning approval.

Should you have any enquiries, please feel free to contact our Mr. Patrick Tsui at [redacted] at your convenience.

Yours faithfully,



Patrick Tsui

c.c. Tuen Mun and Yuen Long West District Planning Office (Attn: Mr. Kevin LAM) – By Email

申請地點開放時間為星期一至星期六，上午八時至下午七時，星期日及公眾假期休息，夜間並不會產生噪音。申請地點設有6個中型/ 重型貨車上落貨車位，每個面積11米 x 3.5米以供所屬車輛輪候上落貨，作短暫停泊之用。

由於儲存貨物涉及貴重物品，基於保安考慮，申請地點不歡迎閒雜車輛進入，進入申請地點的車輛都會在進場前由職員預約通知，故不會出現排隊輪候或阻塞公共道路的情況。申請地點有足夠空間供車輛迴轉，可避免車輛以倒車方式進出場地，加上申請地點可以完全控制貨物交收時間。在良好的管理下，不會出現任何交通問題，不會對附近交通構成壓力。

總括而言，車輛流量極為穩定。除標題發展所涉及的交通活動外，不會有其他運輸工作。申請人亦承諾車輛只會於非繁忙時段，即早上10:30至中午12:30及下午13:30至17:00 才進出場地。由於進出申請地點的車輛數目極為穩定，故此車輛流量都可在預計之內。以下是申請地點的交通流量預算，詳細如下：

	星期一至六		
	中型/重型貨車		
	入	出	每小時車輛出入次數
08:00 - 08:30	0	0	0
08:30 - 09:30	0	0	0
09:30 - 10:30	0	0	0
10:30 - 11:30	**4**	**4**	**8**
11:30 - 12:30	**2**	**2**	**4**
12:30 - 13:30	0	0	0
13:30 - 14:30	0	0	0
14:30 - 15:30	**4**	**4**	**8**
15:30 - 16:30	**2**	**2**	**4**

16:30 - 17:30	0	0	0
17:30 - 18:30	0	0	0
18:30 - 19:30	0	0	0
19:30 - 20:00	0	0	0

以上數字為預算車輛進出場地記錄，
假設當天附近地區沒有交通事故，進出場地車輛數量正常。

申請地點的運輸工作並無迫切性，可以完全控制貨物交收時間。運輸工作可按交通情況靈活調配，必要的交收運輸工作，會安排在日間非繁忙時間進行。按實際經驗，每天早上九時至十時（場地開放後）及下午四時至六時（場地關門前），屬繁忙時間。加上上午十二時下午至二時為午膳時間，不會有裝卸貨櫃工作。而晚上六時以後，亦不會進行任何運輸工作。故此，上述每小時 4 -8 架中型 / 重型貨車流量，只會出現在每天早上十時至上午十二時及下午二時至四時的非繁忙時間進行。

申請地點發展性質為靜態，不會對環境產生噪聲干擾社區。貨物裝卸所產生的音量非常少。另外，此交通流量不會產生交通噪音，對周邊道路網絡沒有不利影響。

Issue No. : 1
Issue Date : Jun 2026
Project No. : 2287

DRAINAGE IMPACT ASSESSMENT

FOR

TEMPERORY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Prepared by

Allied Environmental Consultants Limited

COMMERCIAL-IN-CONFIDENCE

[redacted]

Document Verification

Project Title	TEMPERORY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG	**Project No.**	2287
Document Title	DRAINAGE IMPACT ASSESSMENT		

Issue No.	Issue Date	Description	Prepared by	Checked by	Approved by
1	Jun 2026	1st Submission	Various	Cathy Man	Grace Kwok

[redacted]

Table of Contents

1. INTRODUCTION 4
1.1. Background 4
1.2. Objectives 4
1.3. Report Structure 4
2. DRAINAGE IMPACT ASSESSMENT 5
2.1. Peak Flow Estimation 5
2.2. Hydraulic Calculation 6
2.3. Potential Impact on Public Stormwater System due to Surface Runoff 7
3. MAINTENANCE OF THE PROPOSED STORMWATER DRAINAGE SYSTEMS 8
4. CONCLUSION 8

List of Tables

Table 2-1 Summary of Peak Flow and Drainage Proposal of Catchments 7
Table 2-2 Estimation of Peak Flow and Drainage Capacity Check 8

List of Figures

Figure 1.1 Application Site Location & Its Environs
Figure 2.1 Overview of Proposed Drainage
Figure 2.2 Overview of Existing Drainage and Catchment Area
Figure 2.4 Overview of Flow Pattern

List of Appendices

Appendix A Layout Plan of Proposed Development
Appendix B Peak Runoff Estimation of Catchments after the completion of Proposed Development
Appendix C Estimation of Drainage Flow from Proposed Development and Detailed Hydraulic Calculation

1. INTRODUCTION

1.1. Background

1.1.1. Allied Environmental Consultants Limited ("AEC") has been appointed to conduct a Drainage Impact Assessment ("DIA") to support of a Section 16 application for a temporary warehouse with ancillary facilities and open storage of unlicensed vehicles, construction machinery and construction materials for a period of 3 years and associated filling of land at Various Lots in D.D. 118, Tai Shu Ha Road West, Yuen Long (hereinafter referred to as "Application Site").

1.1.2. According to the Approved Tai Tong Outline Zoning Plan (OZP No.: S/YL-TT/20) gazette on 15/12/2023, the Application Site is currently zoned as "Agriculture" ("AGR").

1.1.3. The site is accessed from Tai Shu Ha Road West and the total site area is about 23,202 m^2. The Application Site has a gentle sloping from East and Northeast to West from approximate +22.4 mPD to +19.6 mPD. ***Figure 1.1*** and ***Appendix A*** show the Site location, Layout and its environs.

1.2. Objectives

1.2.1. The objectives of this DIA are to review the proposed drainage facilities in the vicinity of the Proposed Development at the Application Site, evaluate potential impacts based on the catchment, recommend appropriate options for stormwater discharge, if necessary.

1.3. Report Structure

1.3.1. The remaining chapters of this report are shown below:

Chapter 2 – The Drainage Impact Assessment
Chapter 3 – Maintenance of the Proposed Stormwater Drainage Systems
Chapter 4 – Conclusion

2. DRAINAGE IMPACT ASSESSMENT

2.1. Peak Flow Estimation

2.1.1. The main access of the site is from the southwest via accessed road connecting with Tai Shu Ha Road West. There is an existing drainage running along the west of the site, along Tai Shu Ha Road West collecting the runoff from surrounding areas. There are no major changes on the topography of the Application Site after the Proposed Development.

2.1.2. To manage the surface runoff from the Application Site, U-channel system is proposed within the Application Site to collect the runoff from the uncovered and open area. The gutter system is proposed on the covered warehouse (Structure 1, Structure 2, Structure 3 and Structure 7) and the site office with F.S. water tank and water pump (Structure 4 and Structure 5) to collect rainwater from roof of the structure. The Structure Layout are presented in ***Figure 2-1***.

2.1.3. The collected runoff from gutter system and open space will be directed to the proposed drainage system along the western and southwest boundary of the site. The overview of proposed U-channel drainage and roof gutter system are shown in ***Figure 2-2a*** and ***Figure 2-2b*** respectively.

2.1.4. Catchment areas formed and flow patterns are summarised as follows.

2.1.5. Catchment A consists of uncovered area, 2 open storage areas and the security room (Structure 6), with total area of 7,502 m^2. The runoff from northern part of this catchment will flow south and east towards the proposed drainage along the western boundary of the site. Runoff from the southwest portion of catchment will be collected by the proposed drainage along the southwest boundary of the site.

2.1.6. Catchment B1 to B4 consists of 4 covered warehouses and 2 site offices with F.S. water tank and water pump, with a total area of 15,700 m^2. Roof runoff will be collected via a proposed gutter system. Estimated half of the runoff from the roof covered area is expected to collect by the gutter along one side of the warehouse, while another half of the runoff will be collected by the gutter along the other side of the warehouse roof. The collected runoff will be combined and conveyed to the proposed drainage along the west and southwest boundary, then combined with the proposed drainage along the western boundary before

discharging into the existing drainage along Tai Shu Ha Road West.

2.1.7. There are several catchments at the vicinity of the Application Site. Catchment C and Catchment D are located at the upstream of the Application Site, the runoff from the Catchment C and D are collected by the existing public drainage channel along Tai Shu Ha Road West (SHP1002203). Catchment E and Catchment F are the downstream catchments of the Application Site. The surface runoff from these catchments is collected by existing drainage channel along Tai Shu Ha Road West (SHP1003502).

2.1.8. The overview of catchment areas is shown in ***Figure 2-3***. The flow patterns are shown in ***Figure 2-4***.

2.1.9. The drainage calculations can referred to ***Appendix B***, the calculations are in accordance with the Stormwater Drainage Manual (Fifth Edition, January 2018 and Corrigendum No. 1/2022) published by Drainage Services Department (DSD). Rational Method shall be applied to estimate the peak surface runoff values. The idea behind the Rational Method is that for a spatially and temporally uniform intensity *i*, which continues indefinitely, the runoff at the outlet of a catchment will increase until the time concentration t_c, when the whole catchment is contributing flow to the outlet. The peak runoff is calculated as follows.

$$Q_P = 0.278\ C\ i\ A \quad \ldots\ldots (1)$$

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

2.1.10. Runoff coefficient C depends on the permeability, slope and pond character of the surface; rainfall intensity i, is the average rainfall intensity selected on the basis of the design rainfall duration and return period.

2.2. Hydraulic Calculation

2.2.1. The hydraulic calculation of runoff from the catchment areas is calculated to assess the drainage proposal. The surface runoff from the catchment areas within the Application Site is expected to collected by proposed drainage, and discharged to existing drainage system along Tai Shu Ha Road West. The calculation is shown in ***Appendix B*** and ***Appendix C,*** summarized in ***Table 2-1***.

Table 2-1 Summary of Peak Flow and Drainage Proposal of Catchments

Catchments	Peak Runoff, Q (m^3/s)	Drainage Proposal	Remarks
Catchment A (Uncovered Area + Open Storage + Structure 6)	0.673	Provided 600mm UC (1:100)	-
Catchment B1 (Structure 1 + 4)	0.406	Provided 350mm (W) x 300mm (D) Gutter (1:100)	-
Catchment B2 (Structure 2 + 5)	0.667	Provided 400mm (W) x 400mm (D) Gutter (1:100)	-
Catchment B3 (Structure 3)	0.170	Provided 250mm (W) x 250mm (D) Gutter (1:100)	
Catchment B6 (Structure 7)	0.024	Provided 150mm (W) x 100mm (D) Gutter (1:100)	
Catchment A + B	1.940	Provided 900mm dia. underground pipe (1:40)	Connected from Application Site to existing drainage system along Tai Shu Ha Road West
Catchment C	0.263	-	-
Catchment D	0.521	-	-
Catchment E	1.135	-	-
Catchment F	1.353	-	-

2.3. Potential Impact on Public Stormwater System due to Surface Runoff

2.3.1. Drainage information was obtained from the GeoInfo Map services of the Lands Department to gather the background information on drainage infrastructure in the vicinity of the Application Site. Concerned drainage network was identified for estimation of the potential impact to the downstream drainage associated with the proposed development. Stormwater runoff from Proposed Development is collected at the terminal manhole and discharged to existing public drainage (SHP1002203) along Tai Shu Ha Road West at the west of the site, flowing to northwest direction.

2.3.2. According to the calculations presented in ***Appendix B***, it is anticipated that the peak runoff from the Application Site under 1 in 50 years storm event is found to be 1.940 m^3/s. The hydraulic calculation of runoff from Application site and surrounding catchments is included in the calculation to assess the adequacy of the proposed stormwater pipe, the calculation is shown in ***Appendix C*** and summarized in ***Table 2-2***.

Table 2-2 Estimation of Peak Flow and Drainage Capacity Check

Drainage ID	Catchment	Total Flow from Catchment (m^3/s)	Percentage of Capacity
SHP1002203	Application Site (Catchment A to D)	2.724	7%
SHP1003502	Application Site (Catchment A to F)	5.212	13%
SHP1003501	Application Site (Catchment A to C)	5.212	13%

2.3.3. Based on the hydraulic calculation shown in ***Appendix C*** and ***Table 2-2***, the percentage capacity of the stormwater flow for existing public drainage occupied by surface runoff from the Application Site after proposed development ranged from 7% to 13%. Since the percentage of capacity occupied is small, thus no drainage impact is anticipated.

3. MAINTENANCE OF THE PROPOSED STORMWATER DRAINAGE SYSTEMS

3.1.1. The applicant of the Application Site will undertake the following construction/maintenance works for the proposed drainage facilities at his own costs.

3.1.2. Prior to the commencement of drainage works, the applicant will seek the consent of the District Lands Office/Yuen Long and the registered land owner for any drainage works outside the application site or outside the jurisdiction of the applicant.

3.1.3. Inspection, cleaning and desilting will be carried out regularly and before/after the rainy season each year to ensure the drainage facilities function efficiently. Since the system is designed to operate under gravity, the maintenance will be straightforward.

4. CONCLUSION

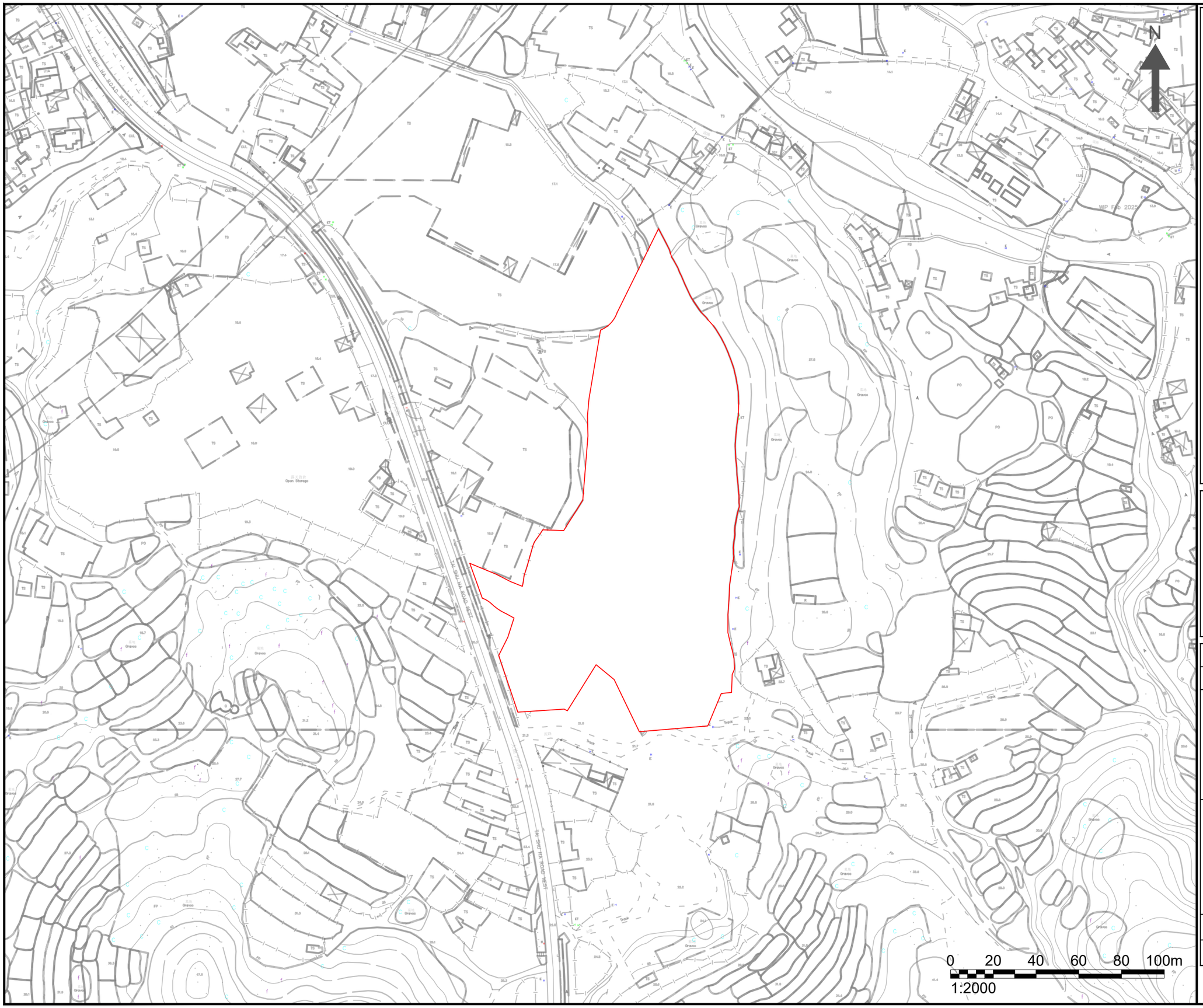
4.1.1. A Drainage Impact Assessment (DIA) has been conducted to evaluate the possible impacts on the public drainage network due to the proposed development. The proposed project will involve installation of proposed drainage along the western and southwest boundary of Application Site to collect stormwater from the Catchment A to F then discharged into the public channel along Tai Shu Ha Road West.

4.1.2. Based on the result, the percentage capacity of stormwater flow for existing public drainage

(SHP1002203 to SHP1003501) occupied by surface runoff from the Application Site after proposed development ranged from 7% to 13%. Since the percentage of capacity occupied is small, thus no drainage impact is anticipated.

4.1.3. It is concluded that the proposed drainage will have no adverse impacts to the site and surrounding areas. The drainage impact arising from the proposed development should be acceptable.

Figures



NOTES :

APPLICATION SITE

Consultant

Allied Environmental Consultants Limited

Project No. : 2287

Drawing By : CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

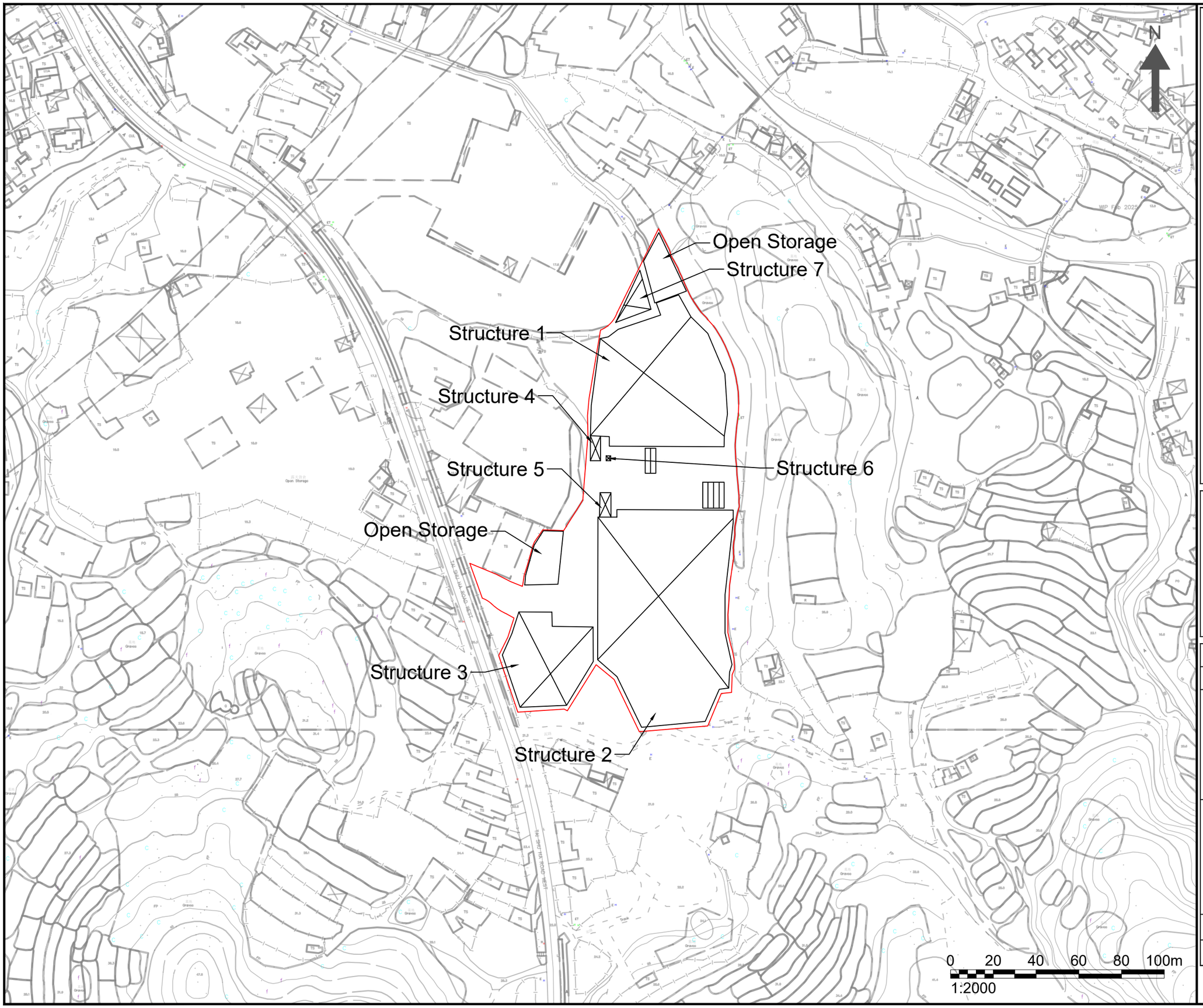
APPLICATION SITE LOCATION

Drawing No :	Revision :
FIGURE 1.1	0
Scale :	Date :
AS SHOWN	JUN 2026

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG



NOTES :

APPLICATION SITE

STRUCTURE BUILDING

Consultant

Allied Environmental Consultants Limited

Project No. :	2287
Drawing By :	CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

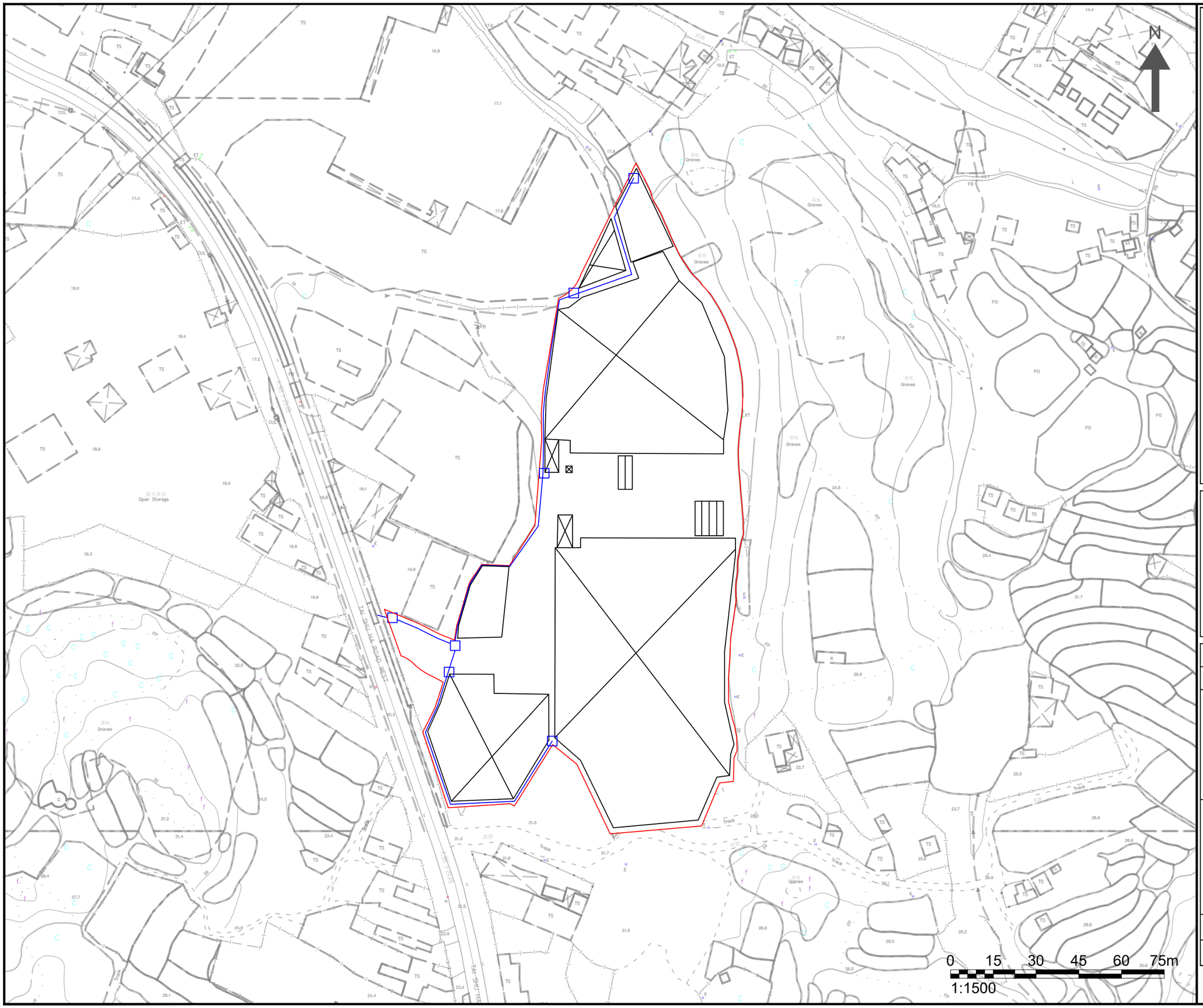
STRUCTURE LAYOUT

Drawing No : FIGURE 2.1	Revision : 0
Scale : AS SHOWN	Date : JUN 2026

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED
ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG



NOTES :

APPLICATION SITE

STRUCTURE BUILDING

PROPOSED U-CHANNEL AND CATCHPIT

Consultant

Allied Environmental Consultants Limited

Project No. :	2287
Drawing By :	CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

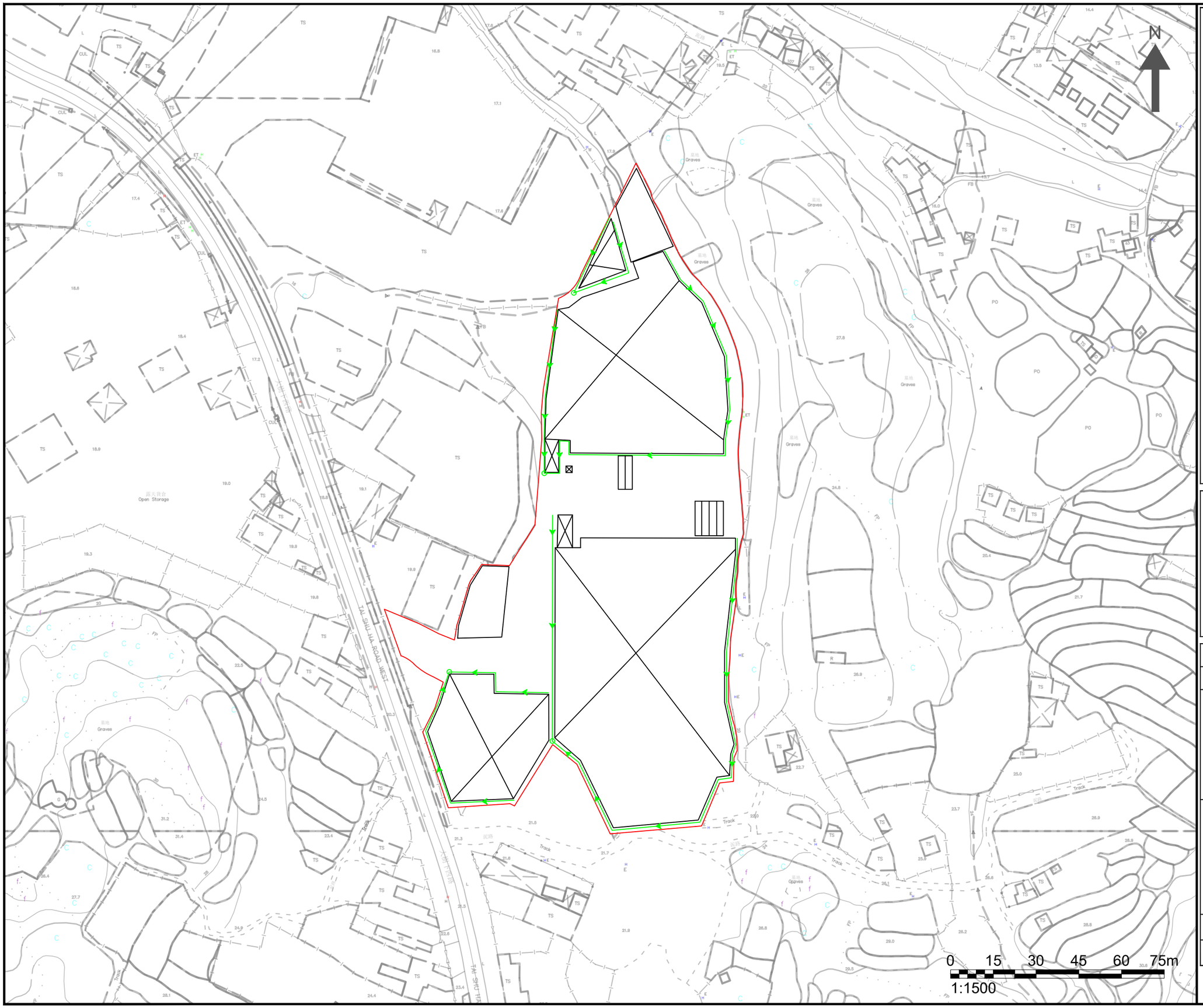
OVERVIEW OF PROPOSED DRAINAGE (U-CHANNEL)

Drawing No :	Revision :
FIGURE 2.2a	0
Scale :	Date :
AS SHOWN	JUN 2026

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG



NOTES :

APPLICATION SITE

STRUCTURE BUILDING

PROPOSED GUTTER AND DOWNPIPE LOCATION

Consultant

Allied Environmental Consultants Limited

Project No. :	2287
Drawing By :	CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

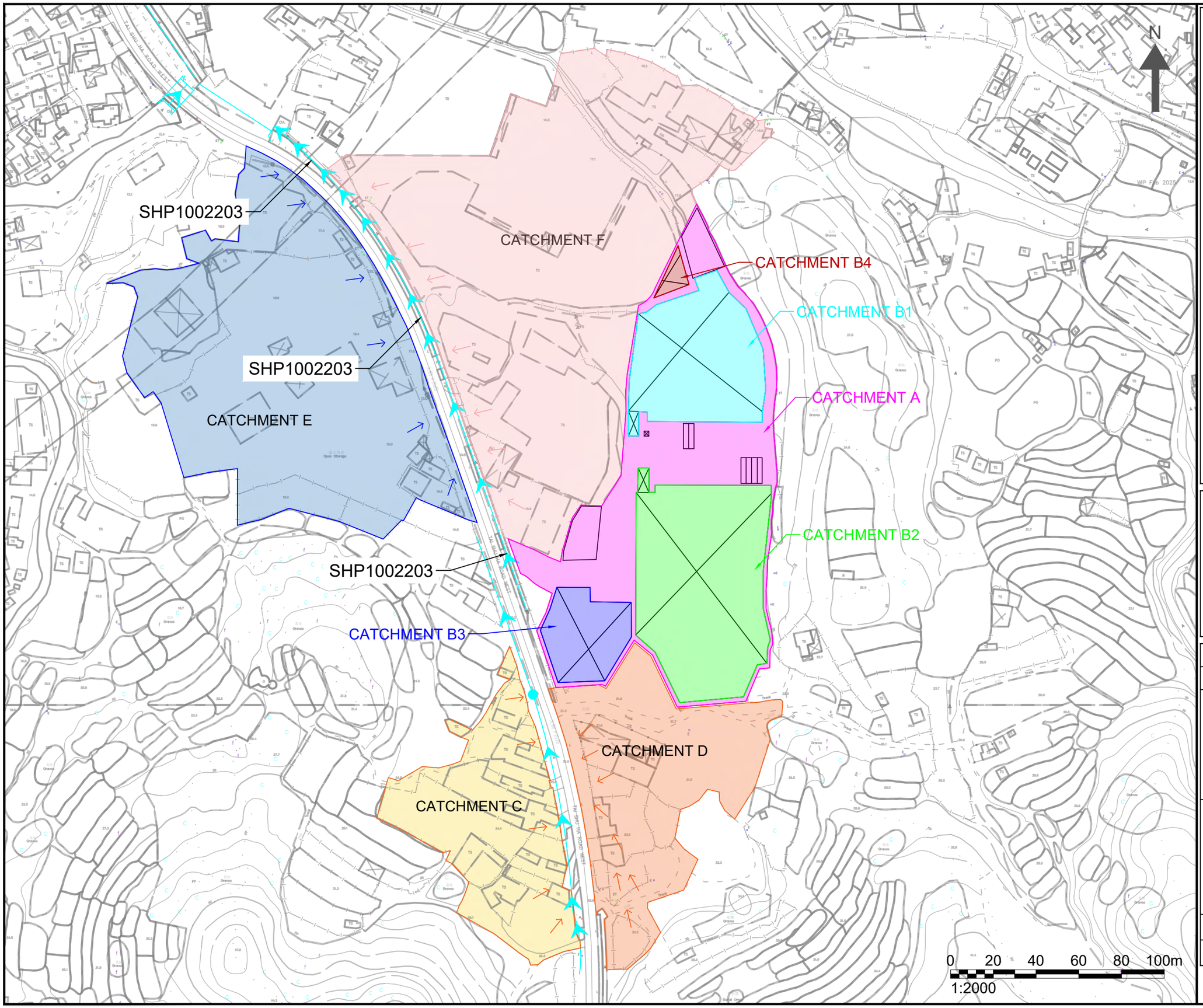
OVERVIEW OF PROPOSED DRAINAGE (GUTTER)

Drawing No :	Revision :
FIGURE 2.2b	0
Scale : AS SHOWN	Date : JUN 2026

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG



NOTES :

- APPLICATION SITE
- STRUCTURE BUILDING
- CATCHMENT A
- CATCHMENT B1
- CATCHMENT B2
- CATCHMENT B3
- CATCHMENT B4
- CATCHMENT C
- CATCHMENT D
- CATCHMENT E
- CATCHMENT F

Consultant

Allied Environmental Consultants Limited

Project No. :	2287
Drawing By :	CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

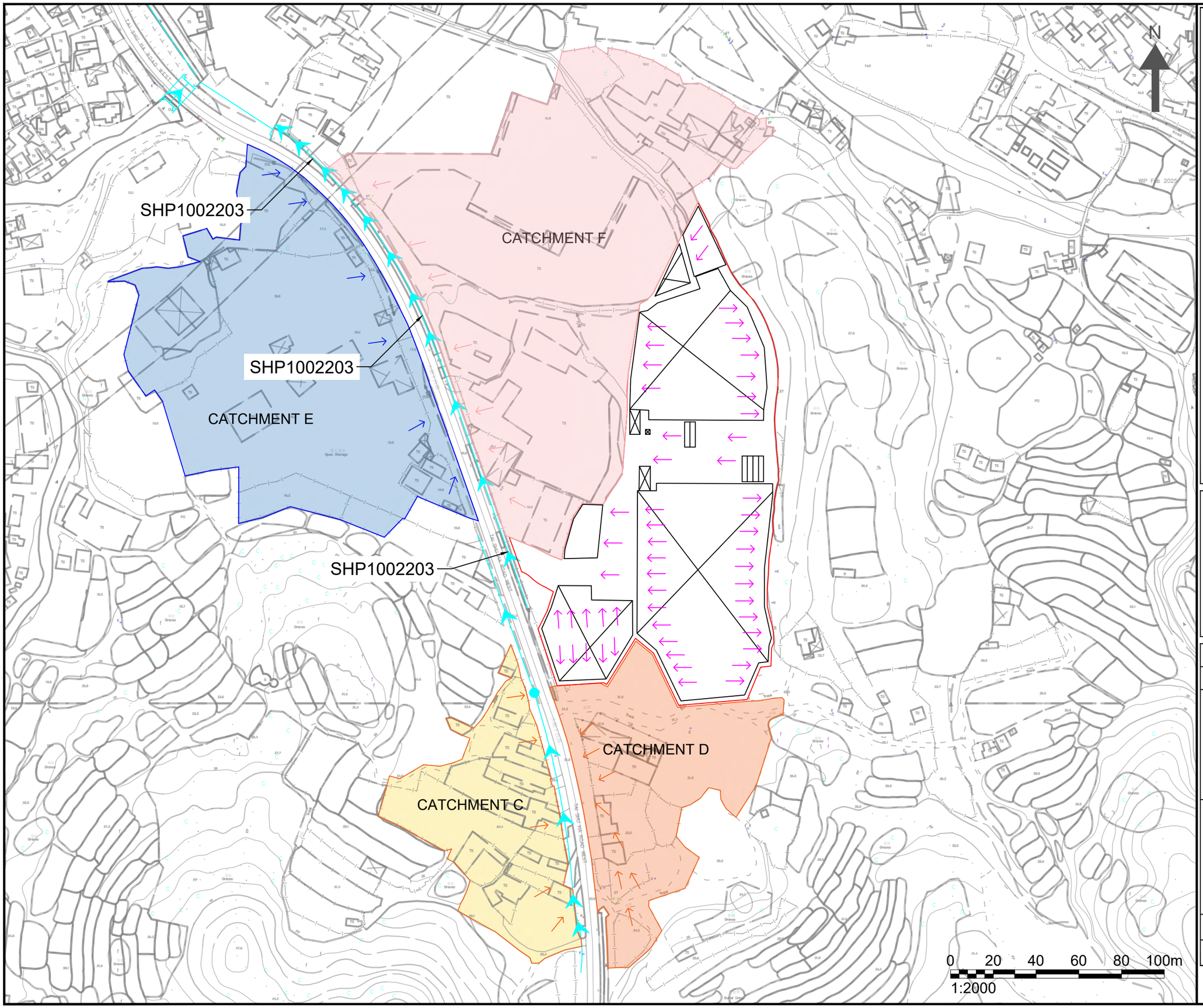
OVERVIEW OF EXISTING DRAINAGE & CATCHMENT AREA

Drawing No :	Revision :
FIGURE 2.3	0
Scale :	Date :
AS SHOWN	JUN 2026

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG



NOTES :

- APPLICATION SITE
- STRUCTURE BUILDING
- CATCHMENT C
- CATCHMENT D
- CATCHMENT E
- CATCHMENT F
- DIRECTON OF WATER FLOW

Consultant

Allied Environmental Consultants Limited

Project No. :	2287
Drawing By :	CS

Project :

TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :

OVERVIEW OF FLOW PATTERN

Drawing No :	Revision :
FIGURE 2.4	0
Scale : AS SHOWN	Date : JUN 2026

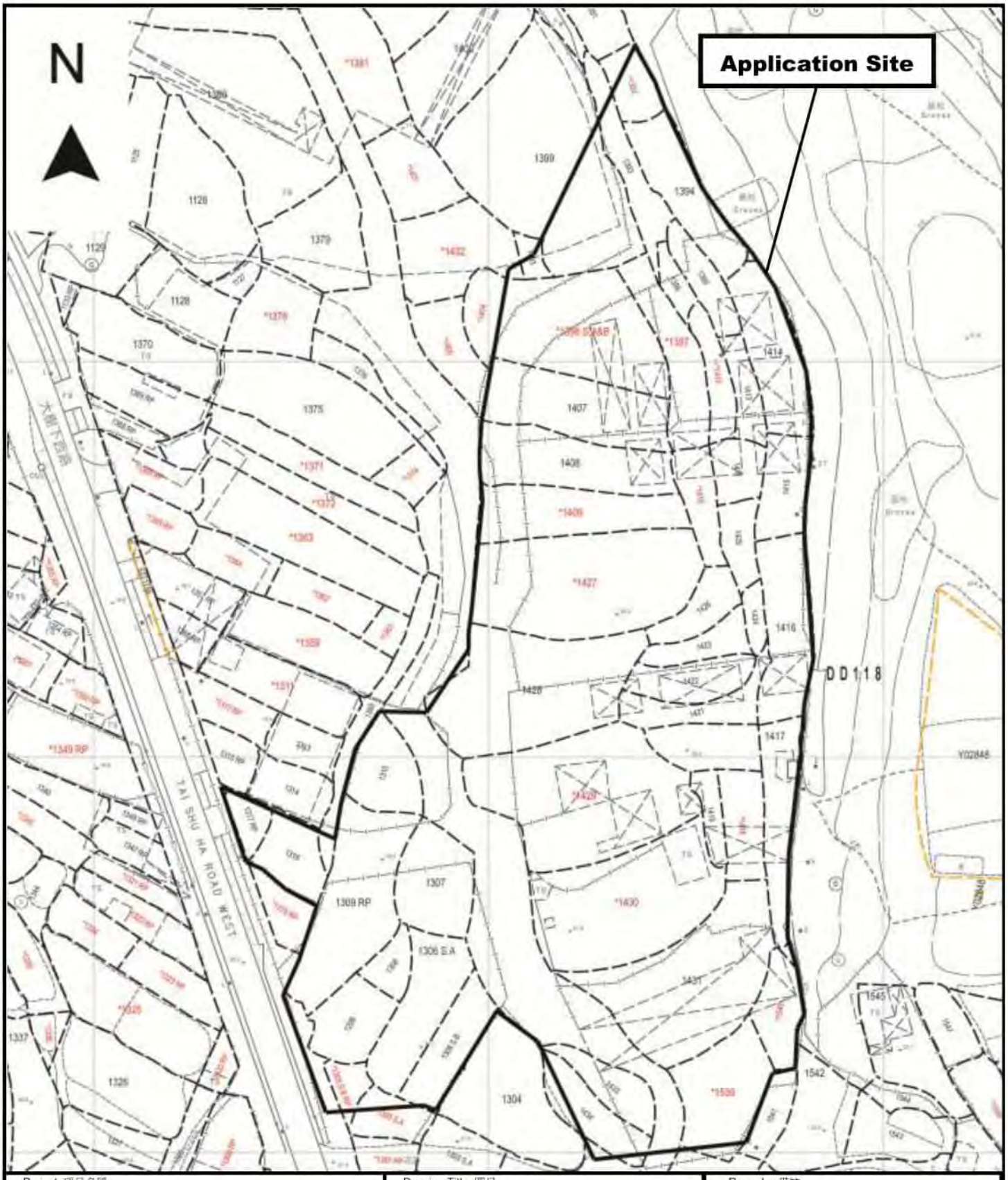
DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

A3 420 x 297

C:\USERS\NGANCHUNSANG\SYNOLOGYDRIVE\2287 - TAI SHU HA ROAD WEST - DIA\05 REPORT\01 AEC REPORT\ISSUE 3\2287 FIG 2.1 CATCHMENT & EXISTING DRAINAGE_20260622.DWG

Appendix A

Layout Plan of Proposed Development



Project 項目名稱:

Proposed Temporary Open Storage & Warehouse (Excluding Dangerous Goods) & Associated Filling of Land for a Period of 3 Years at Lots 1299, 1305 S.A (Part), 1305 S.B RP (Part), 1306 S.A, 1306 S.B (Part), 1307, 1308, 1309 RP, 1310, 1317 RP, 1318, 1360 (Part), 1392 (Part), 1393 (Part), 1394, 1395, 1396, 1397, 1398 S.A & B, 1399 (Part), 1402 (Part), 1403 (Part), 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428 (Part), 1429, 1430, 1431, 1433, 1434 (Part), 1435 (Part), 1538 (Part), 1539 (Part) and 1540 in D.D.118 and Adjoining Government Land, Tai Shu Ha Road West, Tai Tong, Yuen Long, N.T.

Drawing Title 圖目:

Site Plan

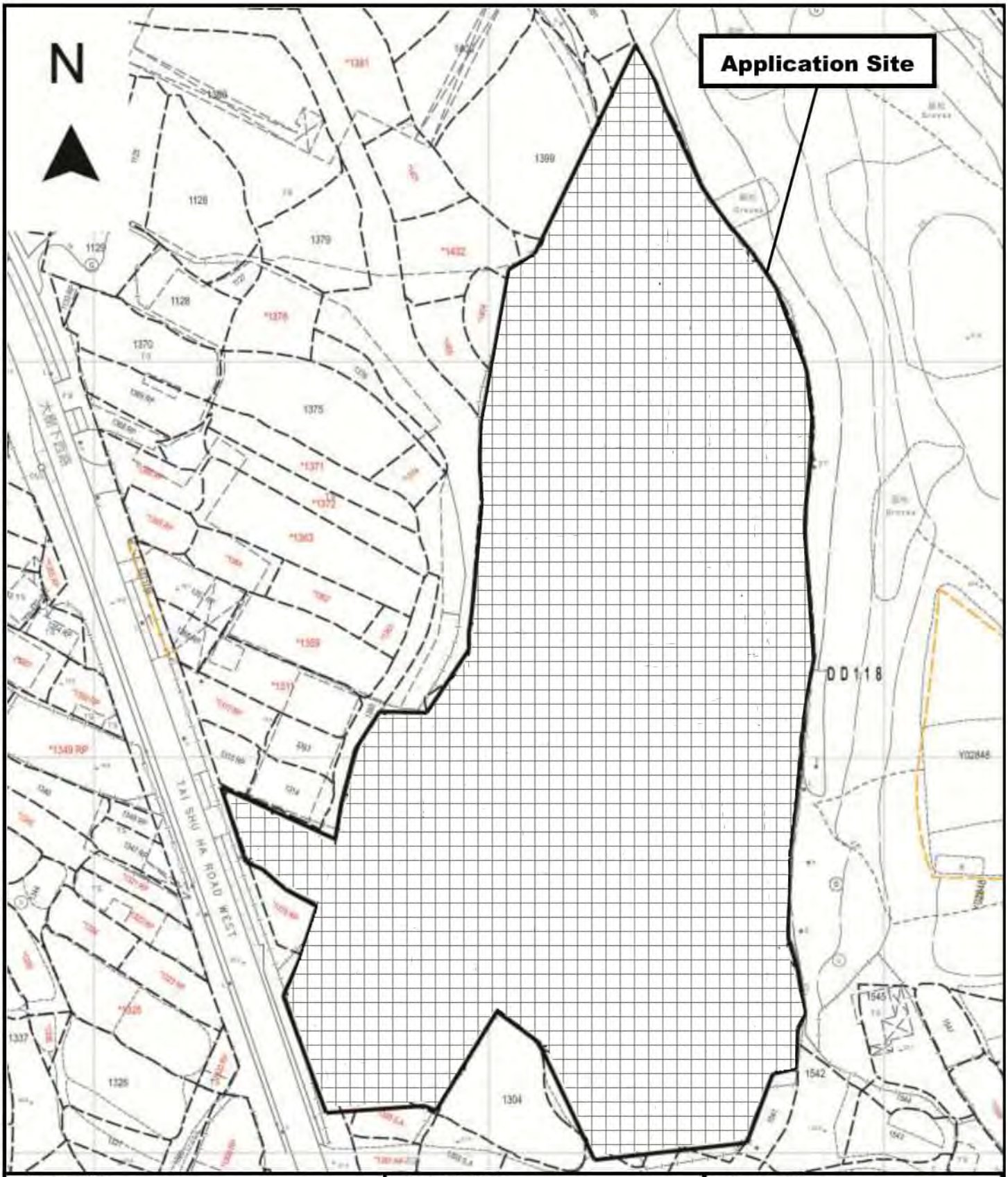
Drawing No. 圖號:

Figure 1

Remarks 備註:

Scale 比例:

1:1500



Project 項目名稱:

Proposed Temporary Open Storage & Warehouse (Excluding Dangerous Goods) & Associated Filling of Land for a Period of 3 Years at Lots 1299, 1305 S.A (Part), 1305 S.B RP (Part), 1306 S.A, 1306 S.B (Part), 1307, 1308, 1309 RP, 1310, 1317 RP, 1318, 1360 (Part), 1392 (Part), 1393 (Part), 1394, 1395, 1396, 1397, 1398 S.A & B, 1399 (Part), 1402 (Part), 1403 (Part), 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428 (Part), 1429, 1430, 1431, 1433, 1434 (Part), 1435 (Part), 1538 (Part), 1539 (Part) and 1540 in D.D.118 and Adjoining Government Land, Tai Shu Ha Road West, Tai Tong, Yuen Long, N.T.

Drawing Title 圖目:

Filling of Land Plan

Drawing No. 圖號:

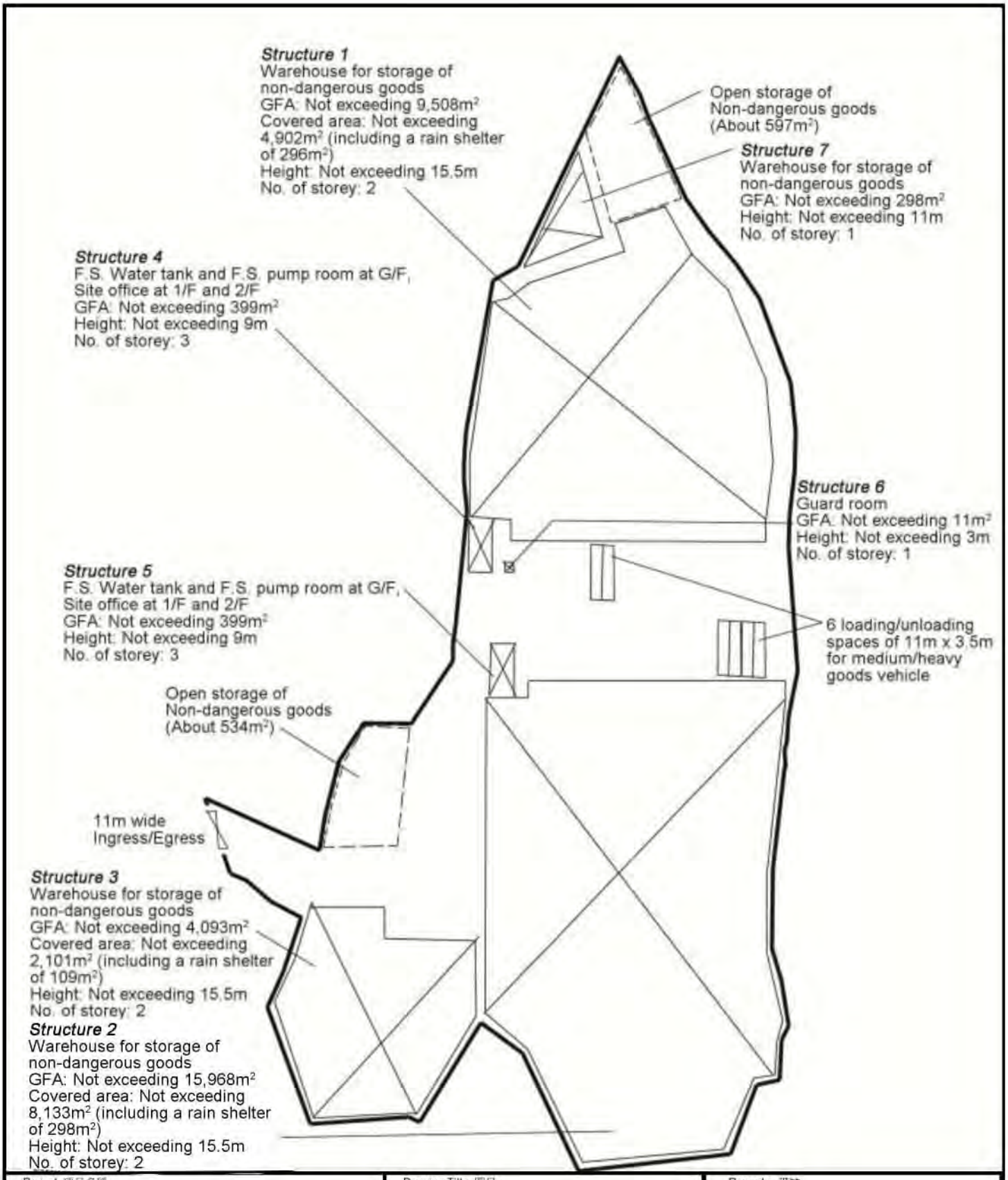
Figure 2

Remarks 備註:

Proposed filling of land (0.2m)

Scale 比例:

1:1500



Project 項目名稱:

Proposed Temporary Open Storage & Warehouse (Excluding Dangerous Goods) & Associated Filling of Land for a Period of 3 Years at Lots 1299, 1305 S.A (Part), 1305 S.B RP (Part), 1306 S.A, 1306 S.B (Part), 1307, 1308, 1309 RP, 1310, 1317 RP, 1318, 1360 (Part), 1392 (Part), 1393 (Part), 1394, 1395, 1396, 1397, 1398 S.A & B, 1399 (Part), 1402 (Part), 1403 (Part), 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428 (Part), 1429, 1430, 1431, 1433, 1434 (Part), 1435 (Part), 1538 (Part), 1539 (Part) and 1540 in D.D.118 and Adjoining Government Land, Tai Shu Ha Road West, Tai Tong, Yuen Long, N.T.

Drawing Title 圖目:

Proposed Layout Plan

Drawing No. 圖號:

Figure 3

Remarks 備註:

Scale 比例:

1:1500

Appendix B

Peak Runoff Estimation of Catchments after the completion of Proposed Development

Appendix B Peak Runoff Estiamtion

Peak Runoff Estimation of Subcatchments and Subject Site **after** the completion of Proposed Development

Catchment	Total Area of the Catchment (m^2)	Land Use		Topography		Average Slope, H (m per 100m)	Flow Distance, L (m)	Inlet Time, t_o (min) [1]	Flow Time, t_f (min) [2]	Duration, t_c (min) [3]	50 - year return period				Runoff Coefficient, C [6]	Rainfall Increase due to Climate Change, % [7]	50 - year return period	
		Surface Characteristics	Area (m^2)	Inlet invert level (mPD)	Outlet invert level (mPD)						Storm Constant, a [4]	Storm Constant, b [4]	Storm Constant, c [4]	Extreme Mean Intensity, i (mm/hr) [5]			Peak Runoff, Qp (m3/s) [8]	Total Peak Runoff, Qp (m3/s) [8]
Application Site																		
Catchment A (Uncovered Area + Open Storages+ Structure 6)	7502	Concrete	7502	22.4	19.6	4.31	65	2.88	0	2.88	505.5	3.29	0.355	265.01	0.95	28.1	0.673	0.673
		Grass	0												0.35		0.000	
Catchment B1 (Structure 1 + Structure 4)	5035	Concrete	5035	-	-	-	-	-	0	5.00	505.5	3.29	0.355	238.58	0.95	28.1	0.406	0.406
		Grass	0												0.35		0.000	
Catchment B2 (Structure 2 + Structure 5)	8266	Concrete	8266	-	-	-	-	-	0	5.00	505.5	3.29	0.355	238.58	0.95	28.1	0.667	0.667
		Grass	0												0.35		0.000	
Catchment B3 (Structure 3)	2101	Concrete	2101	-	-	-	-	-	0	5.00	505.5	3.29	0.355	238.58	0.95	28.1	0.170	0.170
		Grass	0												0.35		0.000	
Catchment B4 (Structure 7)	298	Concrete	298	-	-	-	-	-	0	5.00	505.5	3.29	0.355	238.58	0.95	28.1	0.024	0.024
		Grass	0												0.35		0.000	
Nearby Catchment																		
Catchment C	9103	Concrete	1577	29.1	21.3	4.38	178	7.70	0	7.70	474.6	2.9	0.371	197.67	0.95	16.0	0.095	0.263
		Grass	7526												0.35		0.168	
Catchment D	11016	Concrete	7993	24.2	21.3	1.59	182	9.46	0	9.46	474.6	2.9	0.371	186.74	0.95	16.0	0.457	0.521
		Grass	3023												0.35		0.064	
Catchment E	24666	Concrete	19924	19.9	17.4	1.02	244	12.78	0	12.78	474.6	2.9	0.371	170.96	0.95	16.0	1.044	1.135
		Grass	4742												0.35		0.092	
Catchment F	32163	Concrete	23980	19.9	17.2	0.95	285	14.76	0	14.76	474.6	2.9	0.371	163.56	0.95	16.0	1.202	1.353
		Grass	8183												0.35		0.151	

Note:

[1] Brandsby William's equation is referenced from Section 7.5.2 in DSD Stormwater Drainage Manual (Fifth Edition).

$$t_o = \frac{0.1446 L}{H^{0.2} A^{0.1}}$$

where t_o = time of concentration of a natural catchment (min.)

A = catchment area (m^2)

H = average slope (m per 100 m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

Time of concentraction for subject site is assumed as 5 min.

[2] t_f is assumed to be 0 for conservative estimation.

[3] $t_c = t_o + t_f$

[4] Storm constants are referenced to Table 3d in DSD Stormwater Drainage Manual (Fifth Edition) and its Corrigendum No. 1/2024 based on corresponding return periods.

[5] Intensity-Duration-Frequency calculation is referenced from Section 4.3.3 in DSD Stormwater Drainage Manual (Fifth Edition) and its Corrigendum 1/2024.

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

where i = extreme mean intensity in mm/hr,

t_d = duration in minutes ($t_d \leq 240$), and

a, b, c = storm constants given in Tables 3a, 3b, 3c and 3d.

[6] Runoff coefficient is referenced from Section 7.5.2 in DSD Stormwater Drainage Manual (Fifth Edition). For conservative estimation, coefficient of 0.35 is assumed for unpaved area while that of 0.95 for paved area.

[7] Rainfall increase precentage due to climate change is referenced from Table 28 in DSD Stormwater Drainage Manual (Fifth Edition) and Corrigendum No. 1/2022. 16.0% for End of 21st Century is adopted as worst case scenario.

[8] Rational method for peak runoff estimation is referenced from Section 4.3.3 in DSD Stormwater Drainage Manual (Fifth Edition).

$$Q_p = 0.278\, C\, i\, A$$

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

Appendix C

Estimation of Drainage Flow from Proposed Development and Detailed Hydraulic Calculation

Appendix C Hydraulic Calculation

Catchment A (Uncovered Area)

Peak Runoff	0.673	m^3/s	
	40356	L/min	
Slope, s	0.01		

Provided 600mm UC (1:100) is acceptable According to Figure 7.1 Chart for the Rapid Design of U-shaped and Half-round Channels up to 600 mm in GEO Report No. 320 Review of Hydraulic Design of U-shaped and Half-round Channels on Slopes

Catchment B1 (Half of Structure 1 + Half of Structure 4)

Peak Runoff	0.203	m^3/s	
	12192	L/min	
Width, W	0.35	m	
Depth, D	0.35	m	
Cross-section Area, A [2]	0.123	m^2	
Hydraulic radius, R [3]	0.117	m	Hydraulic Radius = Cross-section Area / Wetted Perimeter
Slope, s	0.010		
Mannig Coefficient, n	0.012		With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition).
Velocity, V (m/s) [6]	1.99	m/s	Velocity is calculated based on Manning equations.
Full Capacity, Q	0.244	m^3/s	Capacity = Cross-sectional Area × Velocity

0.244 > 0.203

Provided 350mm (W) x 300mm (D) Gutter (1:100) is acceptable

Catchment B2 (Half of Structure 2 + Half of Structure 5)

Peak Runoff	0.334	m^3/s	
	20016	L/min	
Width, W	0.40	m	
Depth, D	0.40	m	
Cross-section Area, A [2]	0.160	m^2	
Hydraulic radius, R [3]	0.133	m	Hydraulic Radius = Cross-section Area / Wetted Perimeter
Slope, s	0.010		
Mannig Coefficient, n	0.012		With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition).
Velocity, V (m/s) [6]	2.17	m/s	Velocity is calculated based on Manning equations.
Full Capacity, Q	0.348	m^3/s	Capacity = Cross-sectional Area × Velocity

0.348 > 0.334

Provided 400mm (W) x 400mm (D) Gutter (1:100) is acceptable

Catchment B3 (Half of Structure 3)

Peak Runoff	0.085	m^3/s	
	5087	L/min	
Width, W	0.25	m	
Depth, D	0.25	m	
Cross-section Area, A [2]	0.063	m^2	
Hydraulic radius, R [3]	0.083	m	Hydraulic Radius = Cross-section Area / Wetted Perimeter
Slope, s	0.010		
Mannig Coefficient, n	0.012		With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition).
Velocity, V (m/s) [6]	1.59	m/s	Velocity is calculated based on Manning equations.
Full Capacity, Q	0.099	m^3/s	Capacity = Cross-sectional Area × Velocity

0.099 > 0.085

Provided 250mm (W) x 250mm (D) Gutter (1:100) is acceptable

Catchment B4 (Half of Structure 7)

Peak Runoff	0.012	m^3/s	
	722	L/min	
Width, W	0.15	m	
Depth, D	0.10	m	
Cross-section Area, A [2]	0.015	m^2	
Hydraulic radius, R [3]	0.043	m	Hydraulic Radius = Cross-section Area / Wetted Perimeter
Slope, s	0.010		
Mannig Coefficient, n	0.012		With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition).
Velocity, V (m/s) [6]	1.02	m/s	Velocity is calculated based on Manning equations.
Full Capacity, Q	0.015	m^3/s	Capacity = Cross-sectional Area × Velocity

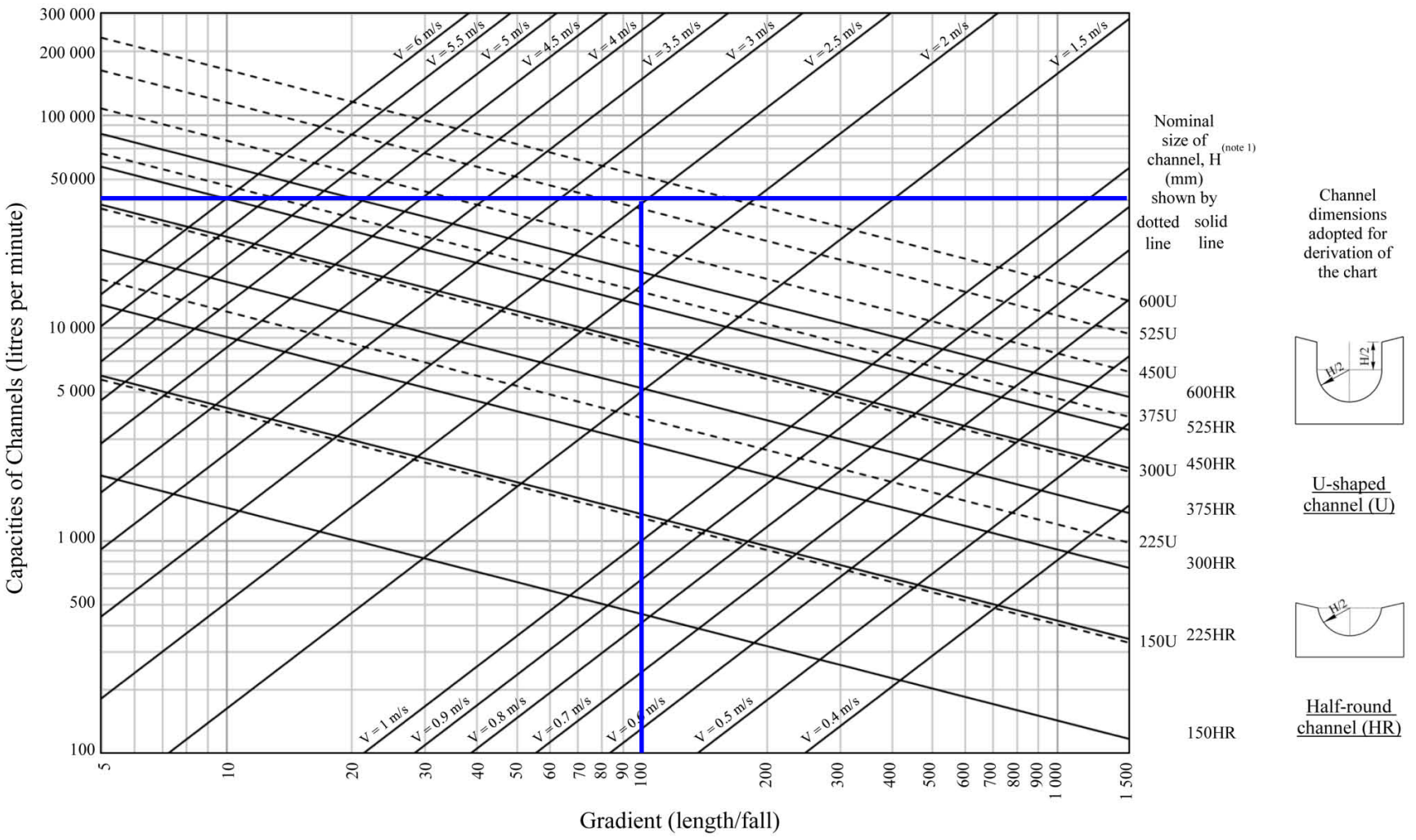
0.015 > 0.012

Provided 150mm (W) x 100mm (D) Gutter (1:100) is acceptable

Catchment A + B

Diameter, D	0.900	m	
Cross-section Area, A [2]	0.573	m^2	According to Section 9.3 in DSD Stormwater Drainage Manual (Fifth Edition), 5% / 10% reduction in flow area based on channel gradient is taken into account for the effects to flow capacity due to materials deposited on the bed.
Wetted Perimeter, P [2]	2.827	m	According to Section 9.3 in DSD Stormwater Drainage Manual (Fifth Edition), 5% / 10% reduction in flow area based on channel gradient is taken into account for the effects to flow capacity due to materials deposited on the bed.
Hydraulic radius, R [3]	0.203	m	Hydraulic Radius = Cross-section Area / Wetted Perimeter
Length of Pipe, L	4.310	m	
Slope, s	0.025		
Pipe Roughnss, k	0.0006	m	Surface roughness is assumed to be 0.6mm for clayware pipe with poor condition as worst case scenario, with reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition).
Velocity, V (m/s) [6]	4.64	m/s	Velocity is calculated based on Colebrook-White equations. With Reference to Table 14 in DSD Stromwater Drainage Manual (Fifth Edition), kinematic viscosity is 0.000001306 m/s.
Full Capacity, Q	2.658	m^3/s	Capacity = Cross-sectional Area × Velocity
Return Periods (Year) [9]	50	Year	With reference to Table 3 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 50 years of return period has been adopted.
Total Peak Runoff	1.940	m^3/s	
Occupancy(%)	73.0%		

Provided 900mm dia. underground pipe (1:40) is acceptable



Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Figure 7.1 Chart for the Rapid Design of U-shaped and Half-round Channels up to 600 mm

Peak Runoff Estimation of Subcatchments and Subject Site **after** the completion of Proposed Development

ID	From	ID	To	Width, T (m) [1]	Depth of Flow, y [2]	Manning's roughness coefficient, n [3]	Slope, S [4]	Length of Pipe, L (m) [1]	Cross Sectional Area, A [5]	Wetted Perimeter, P (m) [6]	Hydraulic Radius, R [7]	Flow Rate, Q (m3/s) [8]	Contributing Catchment Area [9]	Return Periods (Year) [10]	Total Flow from All Catch-ment Area (m^3/s)	Occupancy (%)
Trapezoidal channel																
D1	SHP1002203	D2	SHP1003502	11.0	1.000	0.016	0.005	62.0	9.50	11.61	0.82	36.74	Catchment A to D	50	2.724	7%
D2	SHP1003502	D3	SHP1003501	11.0	1.000	0.016	0.005	202.0	10.00	11.61	0.86	40.02	Catchment A to F	50	5.212	13%
D3	SHP1003501	D4	SCP1002793	11.0	1.000	0.016	0.005	49.1	10.00	11.61	0.86	40.02	Catchment A to F	50	5.212	13%

Note:

[1] With reference to Geoinfo Map.

[2] The information for depth of flow is unavailable, depths marked in red are assumed to be 1m.

[3] With reference to table 6 of DSD's Sewerage Manual, Manning's roughness coefficient , n = 0.013 (assumed concrete surface with "bad" condition)

[4] Slope =1/200 (assumed based on DSD Drainage Submission Technical Note 1)

[5] Cross sectional area, A
A =y(B +zy), for trapezoidal channel)
z = side slope (assume 1:1)

[6] Wetted perimeter, P
P = B+(2y x SQRT(1 + z^2))(trapezoidal channel)

[7] Hydrualic Radius, R = Area /Wetted Perimeter

[8] Flow rate of channel is calculated based on Manning's formula

$$Q = \frac{1}{n} \cdot A \cdot R^{2/3} \cdot S^{1/2}$$

[9] Bold and underlined subcatchment ID stands for stormwater in those subcatchments flowing into the corresponding pipe.

[10] With reference to Table 3 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 50 years of return period has been adopted.