

Total: 47 pages

Date: 28 September 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.**

In response to the further comments of CE/MN, DSD, we are glad to submit the response to comments in the attachment.

Although the application site is covered by a valid planning permission No. A/YL-TT/695, warehouses are proposed in the current application which is not covered by the last planning permission No. A/YL-TT/695. Also, the boundary of the application site has been updated due to the further negotiation with different land owners.

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

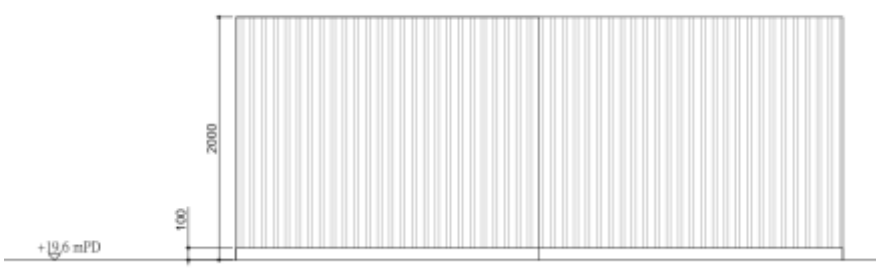
Yours faithfully,



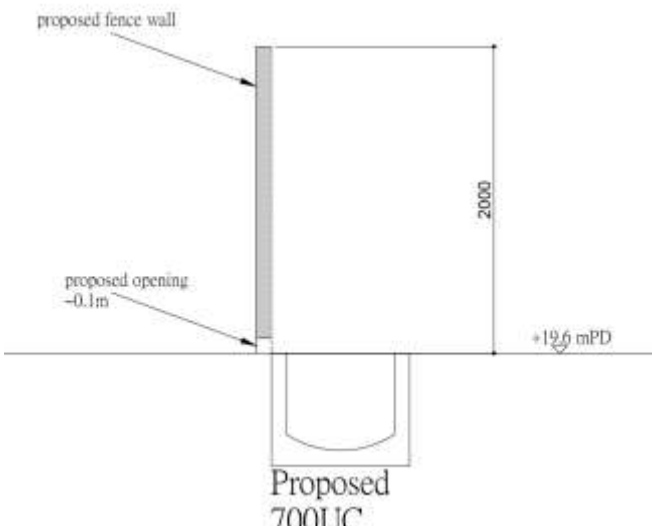
Patrick Tsui

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

**Temporary 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**

| Comments                                                                                                                         | Responses                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments from Drainage Services Department received 25 Aug 2026 via email<br>[Contact person: Mr. LOU Tai-yeong, Tel: 3965 8929] |                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>General</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1. R-to-C item 1 – Please state who is the registered professional engineer (RPE) in charge and add the RPE number for clarity.  | Noted. The name of the RPE in charge and the number will be provided soon.                                                                                                                                                                                                                                                                                                                                      |
| 2. R-to-C item 3 – Please clarify which part of Figure 2.2a is revised for the grating of surface channels.                      | The surface channel with cast iron cover shown in legend of Fig 2.2a.                                                                                                                                                                                                                                                                                                                                           |
| 3. R-to-C item 11 – Please provide details of the fence wall openings in the drawing.                                            | <p>Noted. The section diagrams are provided as follow. The fence wall of about 2mH will be erected along the Site boundary, with about 0.1m above the footing would be reserved as openings to intercept the overland flow passing through the site. In the diagram, the site level of +19.6mPD is for reference only.</p>  |

**Temporary 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**

|    |                                                                                                                                                                                                                                                                                                               |                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                                               |  |
| 4. | R-to-C item 13 – Standard details of the catchpit with sand trap is missing in Appendix E, please review.                                                                                                                                                                                                     | Standard drawing of catchpit with trap is added in App E.                           |
| 5. | Section 2.1 – The existing underground pipe within the application site should be properly maintained by the applicant to ensure no obstruction to nor adversely affect the existing discharge path of the upstream areas, please update Section 3 accordingly. Please also review if Appendix XX is correct. | Noted, S.2.1.3 is revised accordingly, Appendix D is added. S.3.1.4 is added.       |
| 6. | Table 2-1 – The proposed channel size of 600mm for Catchment A is not consistent with 700mm in Figure 2.2a. Please review.                                                                                                                                                                                    | Table 2-1 is revised accordingly.                                                   |
| 7. | Figure 2.2a – Catchpit should be provided at the turning point of the proposed u-channel between CP17 and CP18. Please review.                                                                                                                                                                                | Noted, catchpit is added.                                                           |

**Temporary 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**

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                               |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 8.  | Figure 2.2a – Please provide details of connection/section of the proposed 900mm underground pipe connecting the proposed sand trap and the existing channel (including the gradient and invert levels of the inlets, outlets and channel). Please also indicate the proposed 900mm underground pipe accordingly.                                                                                                                              | The details of connection is provided in Figure 2.4, the proposed 1200mm underground pipe is indicated in Fig 2.2a.                           |
| 9.  | Figure 2.2a – Please indicate the existing drainage facilities (including its type and size) in the vicinity of the application site for clarity.                                                                                                                                                                                                                                                                                              | Noted, existing box culvert were shown in Figure 2.2a                                                                                         |
| 10. | Appendix C, rows labeled “Velocity” – Please be advise that Table 14 in SDM should be the recommended Roughness Values instead of kinematic viscosity. Please check and amend accordingly.                                                                                                                                                                                                                                                     | Revised accordingly.                                                                                                                          |
| 11. | Appendix C, rows labeled “Return Periods” – The value field proposes a 200-year return period, while the remark suggests a 50-year return period. In addition, the recommended design return period should be referred to Table 10 of SMD instead of Table 3. Please check and amend accordingly.                                                                                                                                              | Revised accordingly.                                                                                                                          |
| 12. | Figure 2.2a & Appendix C – There is a discrepancy between Figure 2.2a and Appendix C. Figure 2.2a suggests a 700mm u-channel around the site, while Appendix C mentions a 375mm U-channel between CP10 and CP21. Please check and amend accordingly.                                                                                                                                                                                           | Noted, Figure 2.2a and App C are revised and tally.                                                                                           |
| 13. | “Catchment B1 (Half of Structure 1 + Half of Structure 4)”, “Catchment B2 (Half of Structure 2 + Half of Structure 5)”, “Catchment B3 (Half of Structure 3)” & “Catchment B4 (Half of Structure 7)” – For conservative, the Manning coefficient for concrete-lined channels should be 0.014 (instead of 0.012). In addition, the utilization shall be designed lower than 85% for a conservative approach. Please check and amend accordingly. | Appendix C is revised accordingly, the utilization of the gutter and U-channel are designed to be lower than 85% for a conservative approach. |

**Temporary 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**

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                 |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | “Catchment A + B + external Catchment G” in Appendix C – The flow velocity of 5.35m/s is very fast and not stable, hence not desirable from drainage point of view. Please review the pipe gradient and limit the velocity to 3m/s.                                                                                                                                                                                                                                                                                       | Appendix C is revised accordingly. Based on the calculation, provided 1200mm dia. underground pipe (1:200) is acceptable                                        |
| 15. | “Calculation for Depth of Flow, y” in Appendix C – Please be advised that the Corrigenda for the SDM have been issued (e.g. Corrigendum No. 1/2022, Corrigendum No. 1/2024, & Corrigendum No. 2/2024). It is necessary to incorporate these Corrigenda in assessing the drainage impact due to the proposed planning application. For example, the design 10-year extreme sea level at Tsim Bei Tsui in Table 8 of Corrigendum No. 1/2022 should be “+3.52mPD” instead of “+3.51mPD”. Please check and amend accordingly. | Noted, “+3.52mPD is adopted in App C.                                                                                                                           |
| 16. | “Calculation for Depth of Flow, y” in Appendix C – Please review the width of the existing channel which seems to be less than 11m based on Photos 5 & 6 in Appendix D. Please also provide further site photos along the proposed discharge path to ascertain your assumed channel width.                                                                                                                                                                                                                                | The actual width and depth of the existing channel are assumed to be 2m in width and 1m in depth, the relevant section and calculation are revised accordingly. |
| 17. | Section 2.4 and Appendix C – To assist the Applicant in assessing the drainage impact on the public stormwater system due to the Application, I herewith provide the water levels, flow rates, and bank levels for the relevant drainage channel under both a 50-year return period and a 200-year return period in the baseline scenario (i.e., without the proposed development).<br><i>[See attachment "attachment (Water levels).xlsx"]</i>                                                                           | Noted, the relevant calculation in Appendix C and S.2.4 are updated accordingly.<br>The water level after development is presented in figure in App C.          |
| 18. | The applicant is reminded to submit a duly completed Form HBP1 together with a cheque to DSD for either a technical audit by DSD or self-certification by registered professional at the applicant’s cost on the completed connection works. The applicant is also reminded to submit a duly completed declaration form (Form HBP1_CC) and                                                                                                                                                                                | Noted.                                                                                                                                                          |

**Temporary 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**

|  |                                                                                                                                                                                                                                                                                               |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | to provide latest approved and certified as-built drainage plans as well as relevant construction records to DSD at least 9 days before each technical audit by DSD. The applicant may refer to DSD Advice Note No.2 – How to make Drainage Connections which is available on DSD’s homepage. |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

Issue No. : 2  
Issue Date : Aug 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**



## 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  |
| 2         | Aug 2026   | 2nd Submission | Various     | Cathy Man  | Grace Kwok  |



## Table of Contents

|                                                                               |    |
|-------------------------------------------------------------------------------|----|
| 1. INTRODUCTION .....                                                         | 5  |
| 1.1. Background .....                                                         | 5  |
| 1.2. Objectives.....                                                          | 5  |
| 1.3. Report Structure .....                                                   | 5  |
| 2. DRAINAGE IMPACT ASSESSMENT .....                                           | 6  |
| 2.1. Site Condition.....                                                      | 6  |
| 2.2. Peak Flow Estimation .....                                               | 6  |
| 2.3. Hydraulic Calculation .....                                              | 8  |
| 2.4. Potential Impact on Public Stormwater System due to Surface Runoff ..... | 9  |
| 3. MAINTENANCE OF THE PROPOSED STORMWATER DRAINAGE SYSTEMS .....              | 10 |
| 4. CONCLUSION.....                                                            | 10 |

## List of Tables

|           |                                                                |   |
|-----------|----------------------------------------------------------------|---|
| Table 2-1 | Summary of Peak Flow and Drainage Proposal of Catchments ..... | 8 |
| Table 2-2 | Estimation of Peak Flow and Drainage Capacity Check .....      | 9 |

## List of Figures

Figure 1.1 Application Site Location

Figure 2.1 Structure Layout

Figure 2.2 Overview of Proposed Drainage

Figure 2.3 Overview of Existing Drainage, Catchment Area and Flow Pattern

Figure 2.4 Site Elevation and Connection Details

Figure 2.5 Drainage Proposal of Nearby Planning Applications

## 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

Appendix D      Site Photo

Appendix E      CEDD's Standard Drawing

## 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<sup>2</sup>. 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. Site Condition

- 2.1.1. Based on the available information, two nearby planning applications, A/YL-TT/770 and A/YL-TT/782, have been identified. The proposed drainage discharge path of both planning applications passed through the Application Site via the existing underground drainage system.
- 2.1.2. As no additional site formation or levelling works are proposed under the Proposed Development, the existing ground levels and underground drainage system within the Application Site will remain unchanged. The existing underground pipes will be retained. The Proposed Development is therefore not expected to obstruct or adversely affect the existing drainage flow paths serving the Application Site and the nearby planning applications.
- 2.1.3. The locations of the nearby planning applications and the existing drainage flow paths within the Application Site are shown in **Figure 2.5**. The condition of the existing drainage system is presented in **Appendix D**.

### 2.2. Peak Flow Estimation

- 2.2.1. 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.
- 2.2.2. 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**.
- 2.2.3. 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.

- 2.2.4. Catchment areas formed and flow patterns are summarised as follows.
- 2.2.5. Catchment A consists of uncovered area, 2 open storage areas and the security room (Structure 6), with total area of 7,502 m<sup>2</sup>. 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.
- 2.2.6. 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<sup>2</sup>. 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.
- 2.2.7. 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).
- 2.2.8. Catchment G is located to the east of the Application Site, which the elevation level is generally higher than the Application Site. the runoff from the Catchment G is expected to overflow to the Application Site and to be collected by the proposed drainage within the Application Site.
- 2.2.9. The overview of catchment areas and flow pattern are shown in **Figure 2-3**.
- 2.2.10. 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.

$$Q_p = 0.278 C i A \dots\dots\dots (1)$$

Where

$Q_p$  = peak runoff in  $m^3/s$

$C$  = runoff coefficient (dimensionless)

$i$  = rainfall intensity in mm/hr

$A$  = catchment area in  $km^2$

2.2.11. 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.

## 2.3. Hydraulic Calculation

2.3.1. 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 be 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, $Q$<br>( $m^3/s$ ) | Drainage Proposal                             | Remarks                                                                                |
|--------------------------------------------------------------|---------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|
| Catchment A<br>(Uncovered Area + Open Storage + Structure 6) | 0.713                           | Provided 700mm UC (1:100)                     | -                                                                                      |
| Catchment B1<br>(Structure 1 + 4)                            | 0.436                           | Provided 400mm (W) x 400mm (D) Gutter (1:100) | -                                                                                      |
| Catchment B2<br>(Structure 2 + 5)                            | 0.715                           | Provided 500mm (W) x 450mm (D) Gutter (1:100) | -                                                                                      |
| Catchment B3<br>(Structure 3)                                | 0.182                           | Provided 300mm (W) x 250mm (D) Gutter (1:100) |                                                                                        |
| Catchment B4<br>(Structure 7)                                | 0.026                           | Provided 150mm (W) x 150mm (D) Gutter (1:100) |                                                                                        |
| Catchment A + B                                              | 2.071                           | Provided 1200mm dia. underground pipe (1:200) | Connected from Application Site to existing drainage system along Tai Shu Ha Road West |
| Catchment C                                                  | 0.298                           | -                                             | -                                                                                      |
| Catchment D                                                  | 0.591                           | -                                             | -                                                                                      |
| Catchment E                                                  | 1.290                           | -                                             | -                                                                                      |

| Catchments  | Peak Runoff, Q (m <sup>3</sup> /s) | Drainage Proposal | Remarks                                                              |
|-------------|------------------------------------|-------------------|----------------------------------------------------------------------|
| Catchment F | 1.540                              | -                 | -                                                                    |
| Catchment G | 0.252                              | -                 | Runoff is collected by the proposed drainage within Application Site |

## 2.4. Potential Impact on Public Stormwater System due to Surface Runoff

- 2.4.1. 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.
- 2.4.2. According to the calculations presented in **Appendix B**, it is anticipated that the peak runoff from the Application Site under 1 in 200 years storm event is found to be 2.071 m<sup>3</sup>/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 (m <sup>3</sup> /s) | Percentage of Capacity |
|-------------------------------------|---------------------------------------------------------------|--------------------------------|------------------------|
| SHP1002203<br>(Link 822042831254.1) | Application Site<br>(Catchment A to D + G +<br>Existing Flow) | 4.47                           | 25%                    |
| SHP1003502<br>(Link 822042831254.1) | Application Site<br>(Catchment A to G +<br>Existing Flow)     | 7.30                           | 41%                    |

- 2.4.3. 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 and the surrounding catchments after proposed development ranged from 25% to 42%. The results shows that the capacity of the existing drainage is enough to cater the additional runoff induced by proposed development, thus no drainage impact is anticipated.

### 3. MAINTENANCE OF THE PROPOSED STORMWATER DRAINAGE SYSTEMS

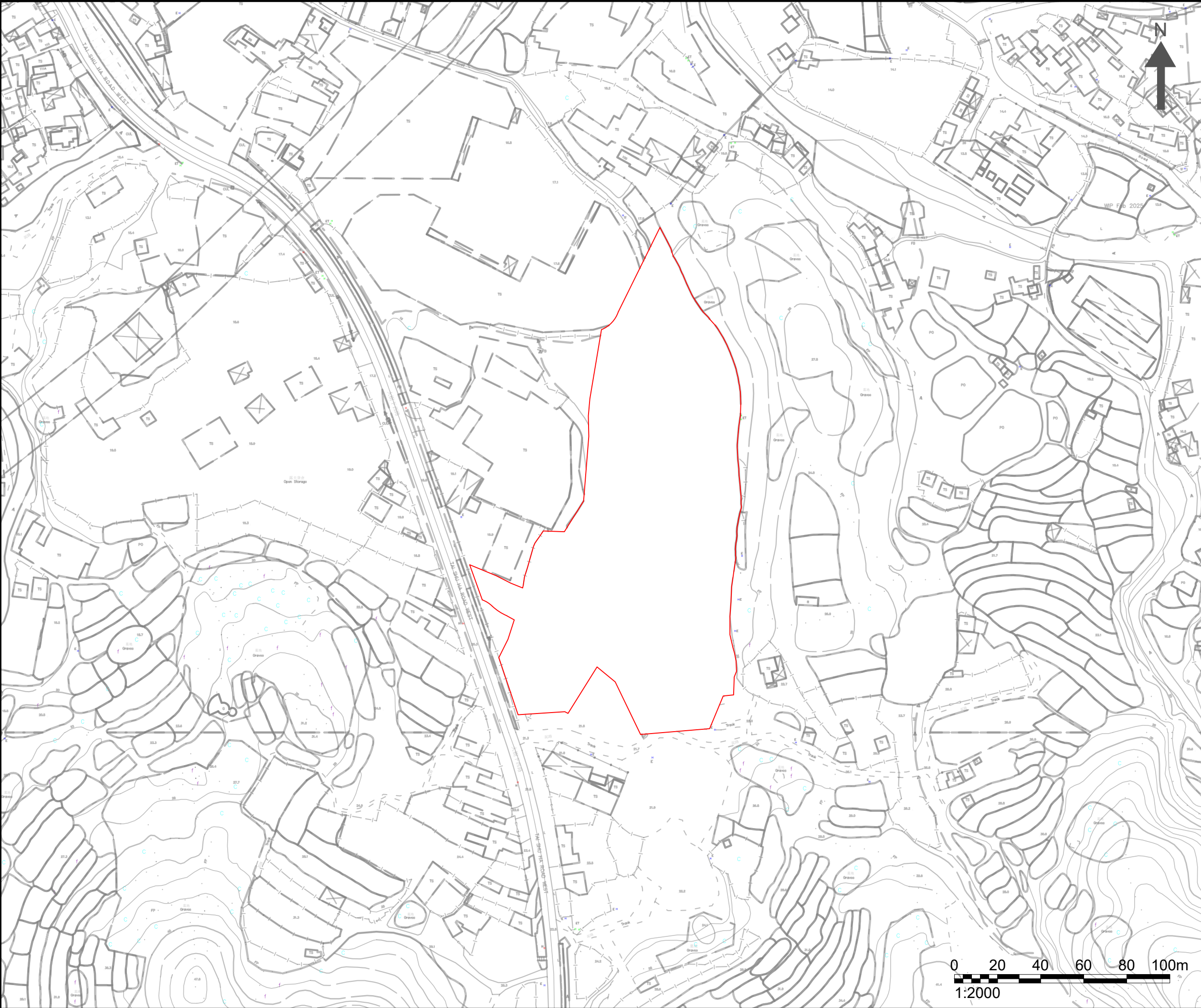
- 3.1.1. The applicant of the Application Site will undertake the following construction/maintenance works for the proposed drainage facilities at his own costs.
- 3.1.2. Prior to the commencement of drainage works, the applicant will seek the consent of the District Lands Office/Yuen Long and the registered 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.
- 3.1.4. The existing underground drainage system within the application site should be properly maintained by the applicant to ensure no obstruction to nor adversely affect the existing discharge path of the upstream areas.

### 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 G 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 SHP1003502) occupied by surface runoff from the Application Site after proposed development ranged from 25% to 41%. No exceedance shown based on the assessment results, 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***

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NOTES :

APPLICATION SITE

Consultant



**Allied Environmental Consultants Limited**

Project No. : 2287

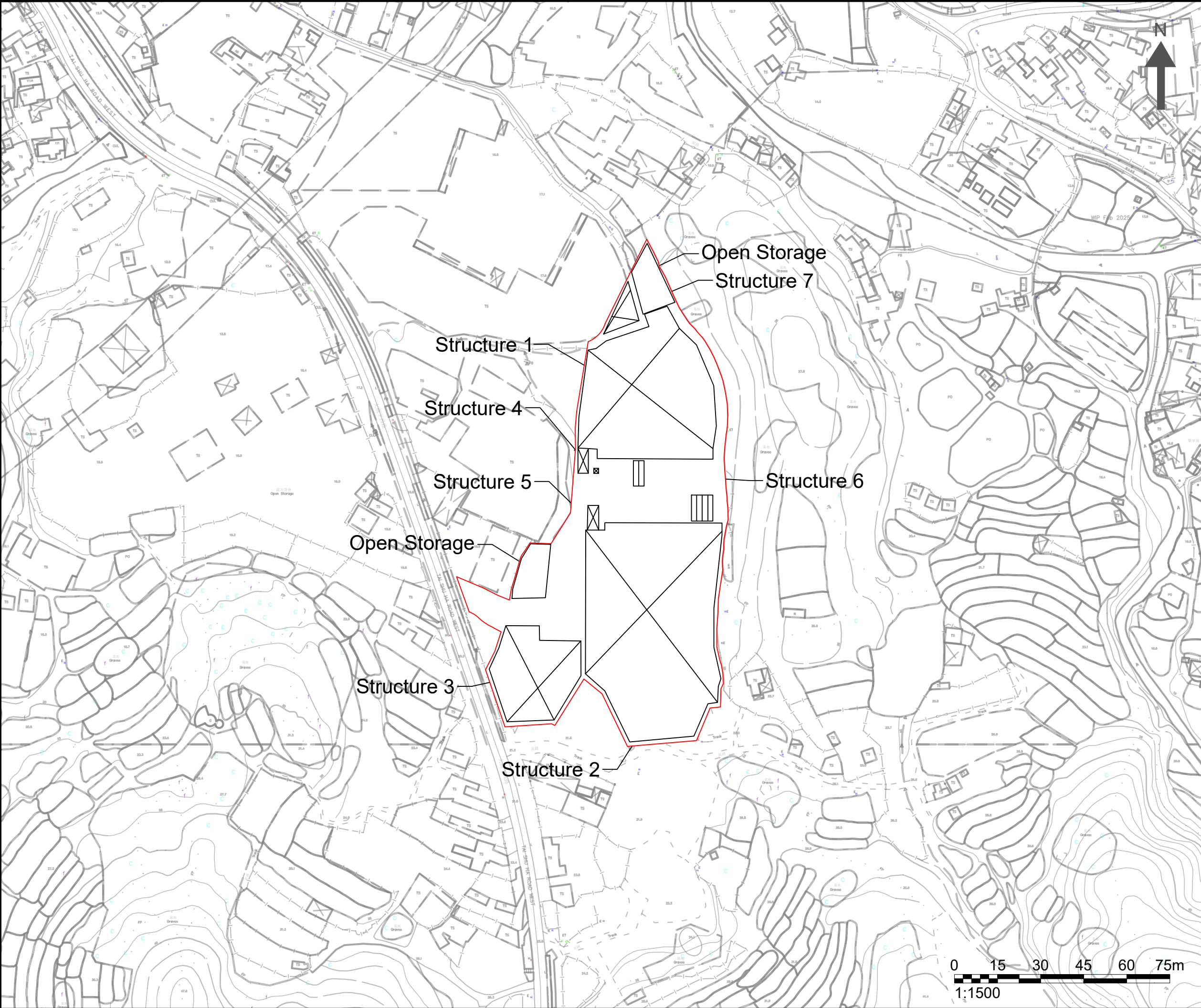
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TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :  
APPLICATION SITE LOCATION

|                            |                    |
|----------------------------|--------------------|
| Drawing No :<br>FIGURE 1.1 | Revision :<br>0    |
| Scale :<br>AS SHOWN        | Date :<br>JUN 2026 |

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NOTES :

APPLICATION SITE

STRUCTURE BUILDING

Consultant



**AEC**

**Allied Environmental Consultants Limited**

Project No. : 2287

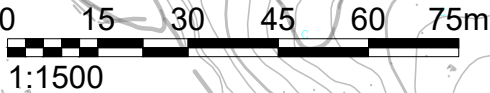
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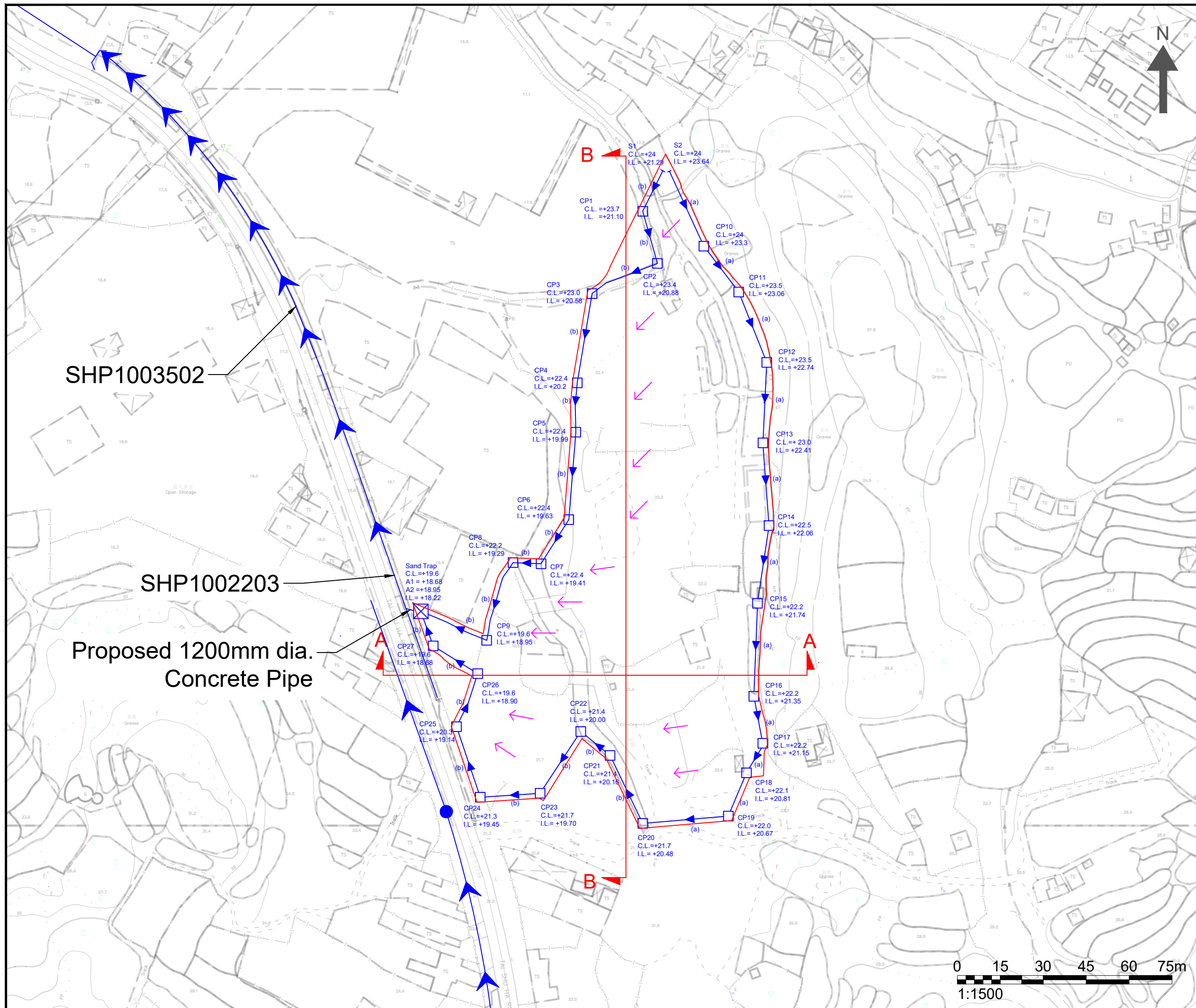
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TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :  
STRUCTURE LAYOUT

|                            |                    |
|----------------------------|--------------------|
| Drawing No :<br>FIGURE 2.1 | Revision :<br>0    |
| Scale :<br>AS SHOWN        | Date :<br>JUN 2026 |

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NOTES :

- APPLICATION SITE
- STRUCTURE BUILDING
- PROPOSED U-CHANNEL AND CATCHPIT
- PROPOSED SAND TRAP
- EXISTING BOX CULVERT (2M IN WIDTH; 2M IN DEPTH)
- DIRECTION OF WATER FLOW

(a) PROPOSED 375MM U CHANNEL WITH CAST IRON COVER  
(b) PROPOSED 700MM U CHANNEL WITH CAST IRON COVER

Consultant

**AEC**

**Allied Environmental Consultants Limited**

Project No. : 2287

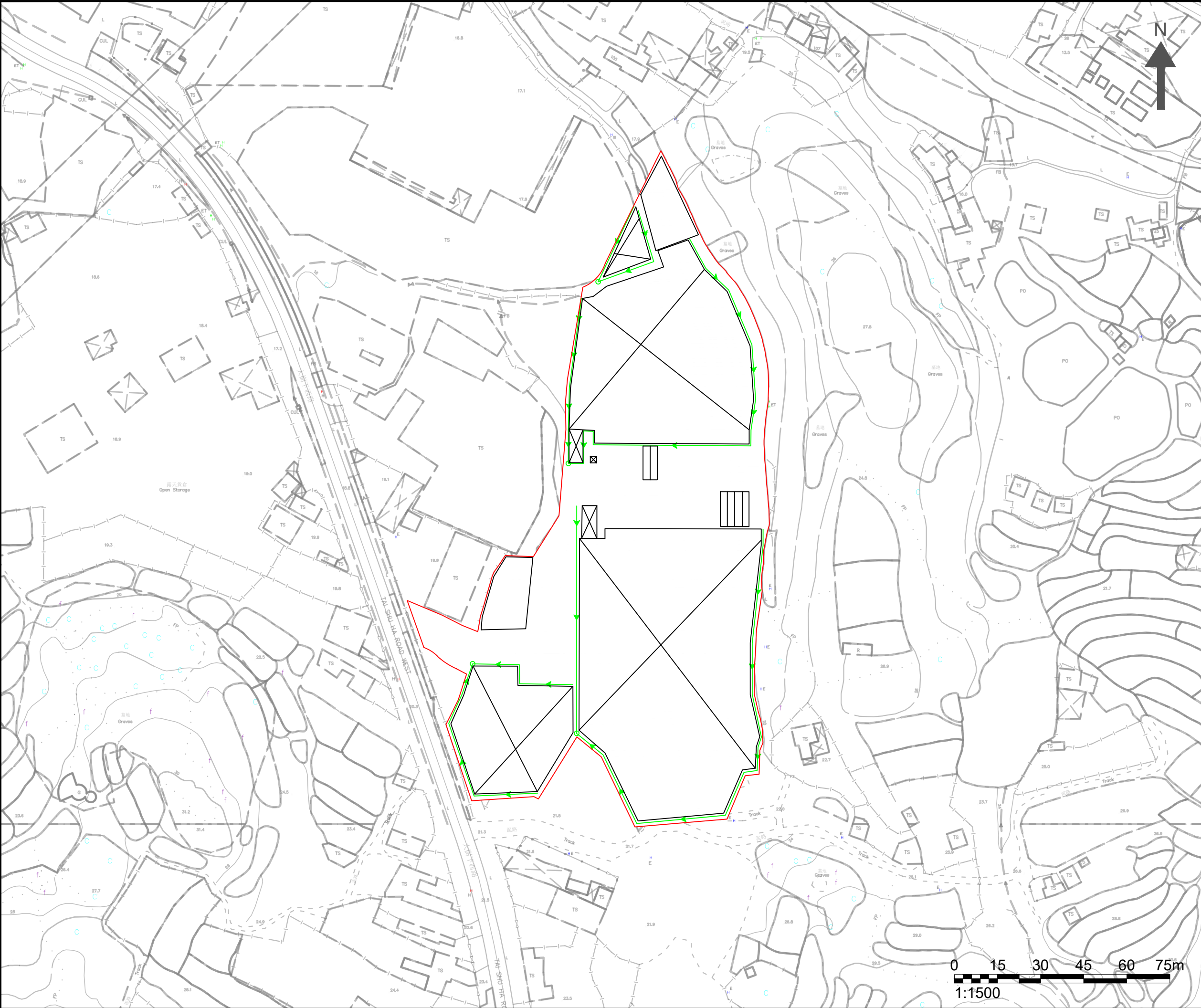
Drawing By : CS

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 :<br>FIGURE 2.2a | Revision :<br>0    |
| Scale :<br>AS SHOWN         | Date :<br>JUN 2026 |

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- NOTES :
- APPLICATION SITE
  - STRUCTURE BUILDING
  - PROPOSED GUTTER AND DOWNPIPE LOCATION

Consultant

**AEC**

**Allied Environmental Consultants Limited**

Project No. : 2287

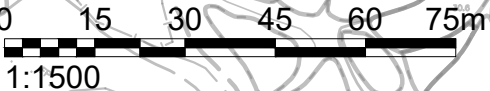
Drawing By : CS

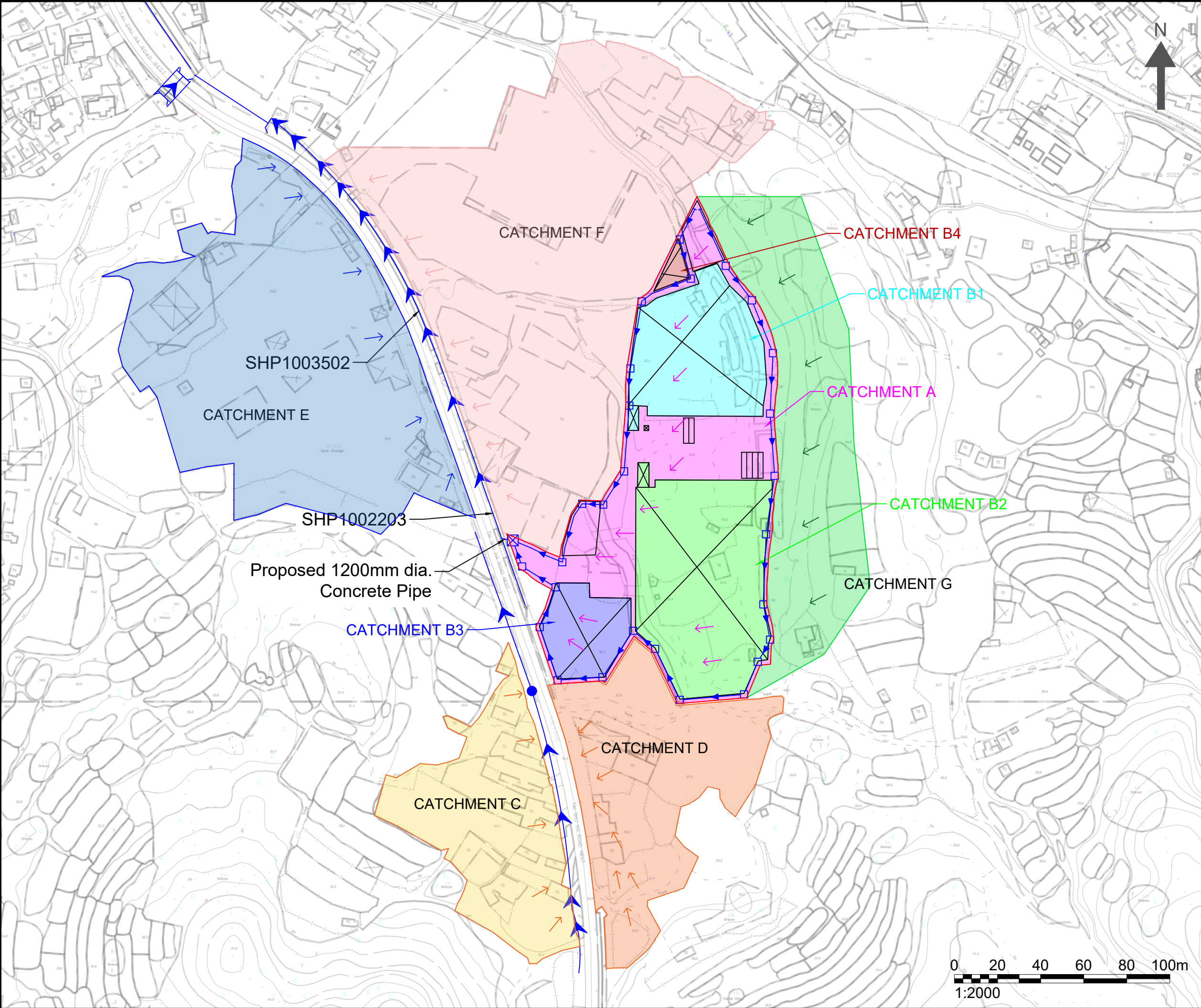
Project :  
TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :  
OVERVIEW OF PROPOSED DRAINAGE (GUTTER)

|                             |                    |
|-----------------------------|--------------------|
| Drawing No :<br>FIGURE 2.2b | Revision :<br>0    |
| Scale :<br>AS SHOWN         | Date :<br>JUN 2026 |

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- NOTES :
- APPLICATION SITE
  - STRUCTURE BUILDING
  - CATCHMENT A
  - CATCHMENT B1
  - CATCHMENT B2
  - CATCHMENT B3
  - CATCHMENT B4
  - CATCHMENT C
  - CATCHMENT D
  - CATCHMENT E
  - CATCHMENT F
  - CATCHMENT G
  - EXISTING DRAINAGE
  - WATER FLOW DIRECITON

Consultant

**AEC**

**Allied Environmental Consultants Limited**

Project No. : 2287

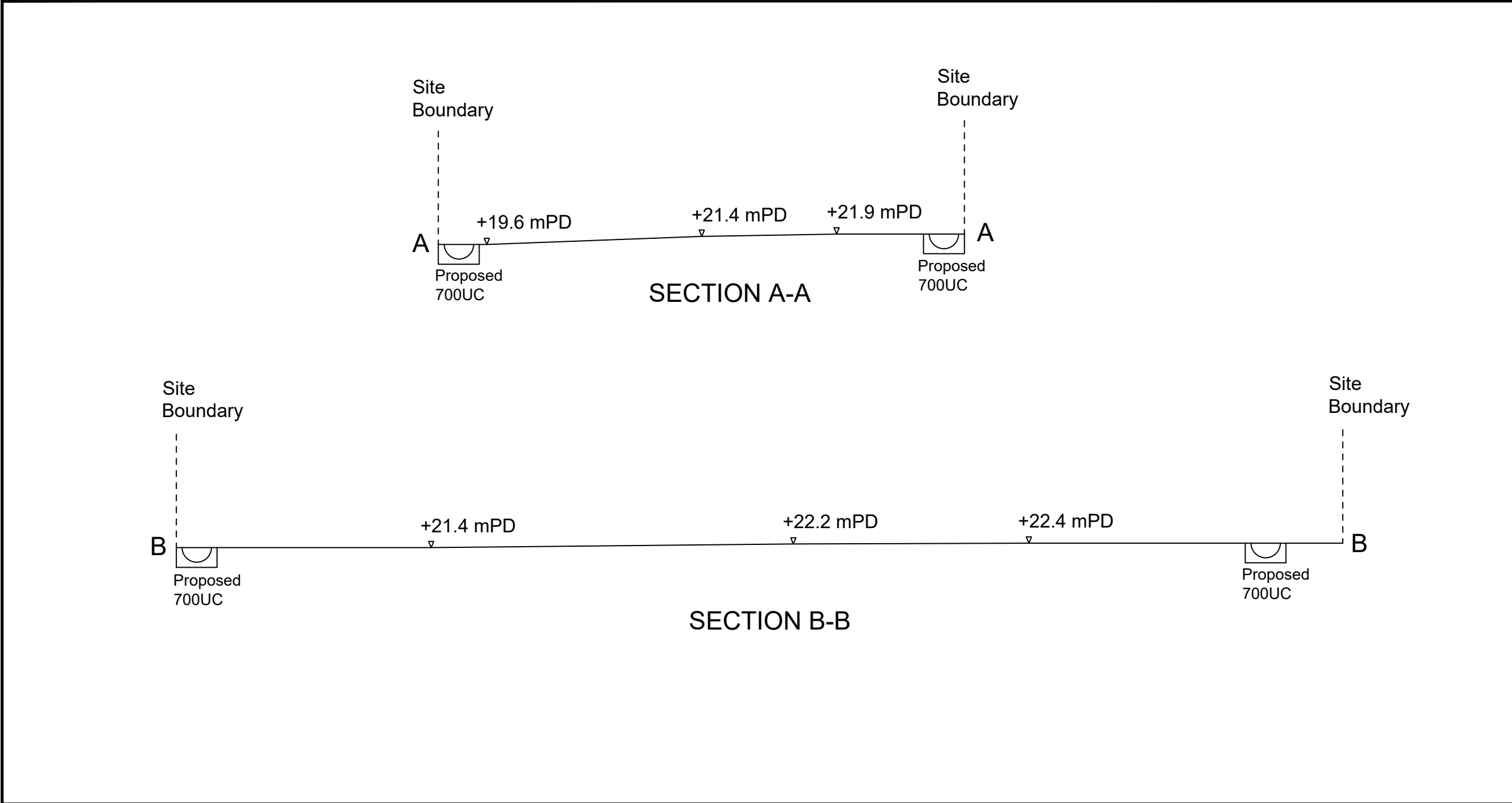
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Project :  
TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :  
OVERVIEW OF EXISTING DRAINAGE, CATCHMENT AREA & FLOW DIRECTION

|                            |                    |
|----------------------------|--------------------|
| Drawing No :<br>FIGURE 2.3 | Revision :<br>0    |
| Scale :<br>AS SHOWN        | Date :<br>JUN 2026 |

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NOTES :

Consultant



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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 :  
SITE ELEVATION AND CONNECTION DETAILS

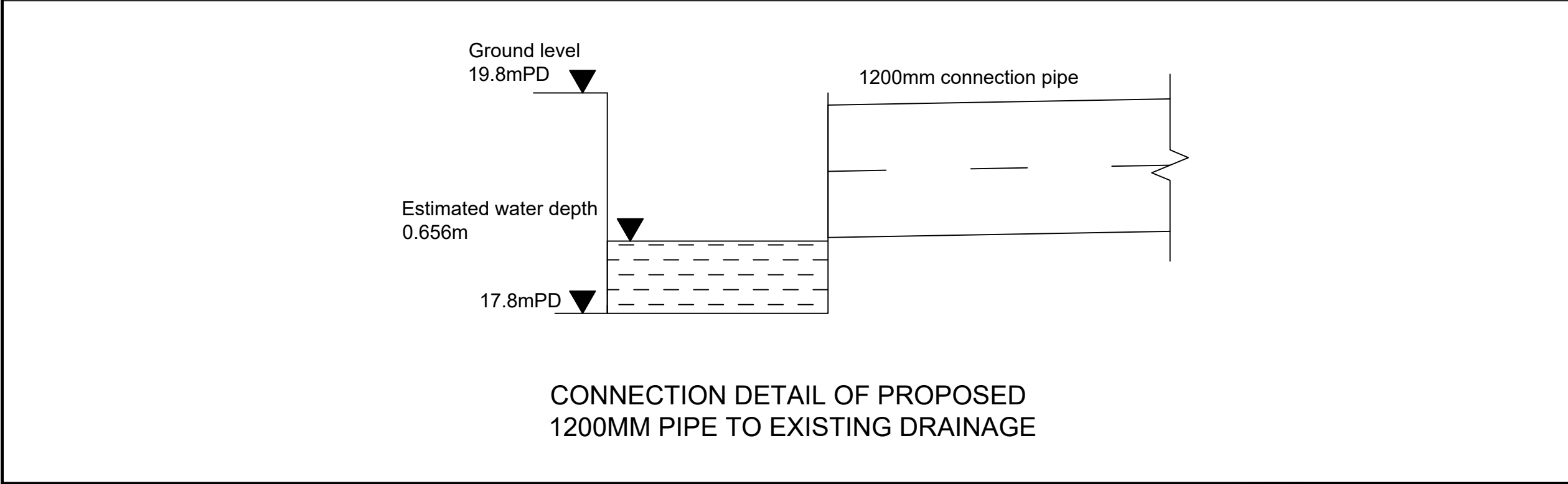
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FIGURE 2.4a

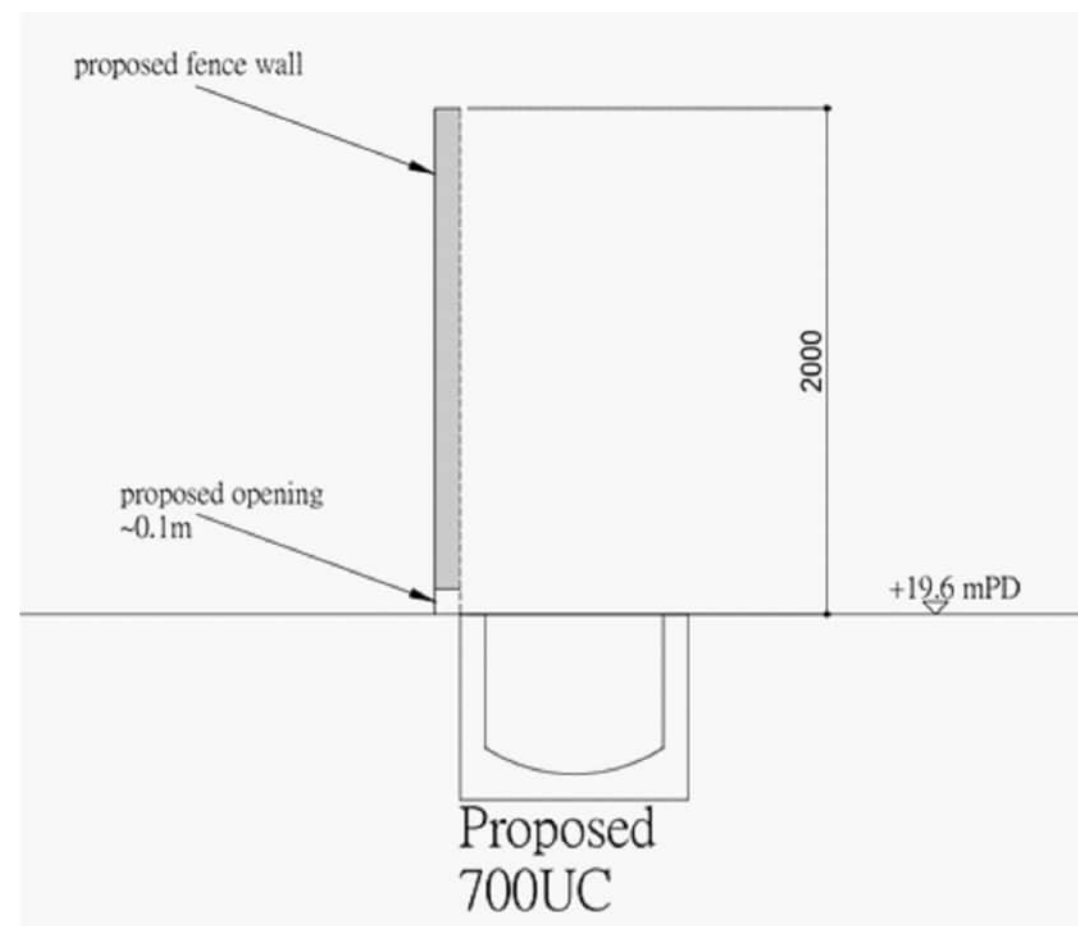
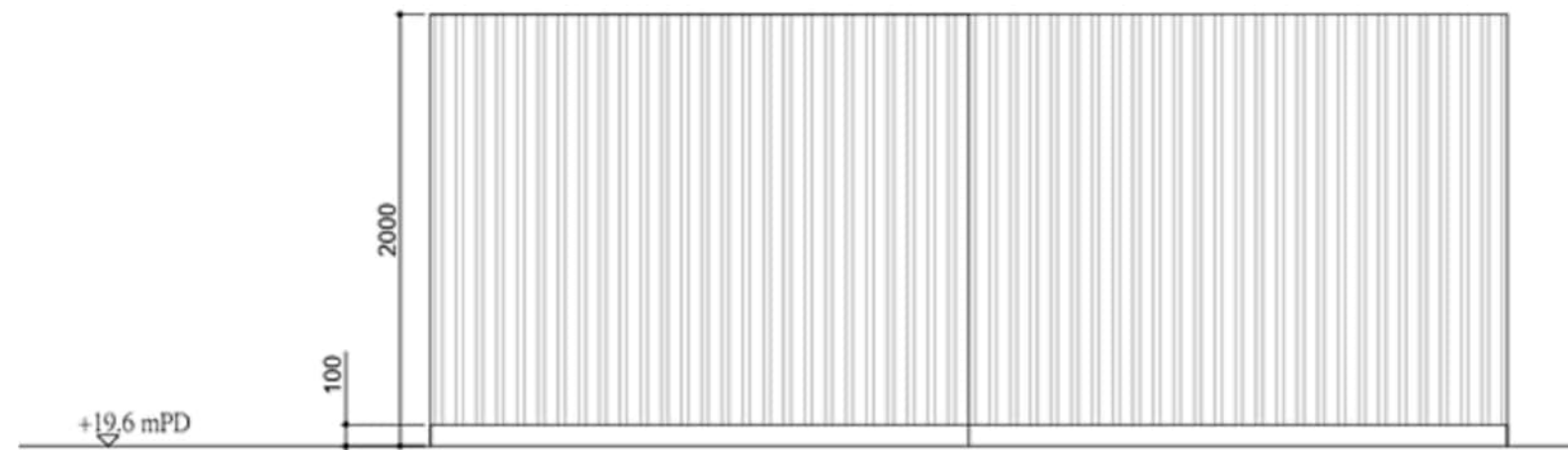
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Scale :  
AS SHOWN

Date :  
JUL 2026

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DETAILS OF FENCE WALL OPENINGS

NOTES :

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 :  
DETAILS OF FENCE WALL OPENINGS

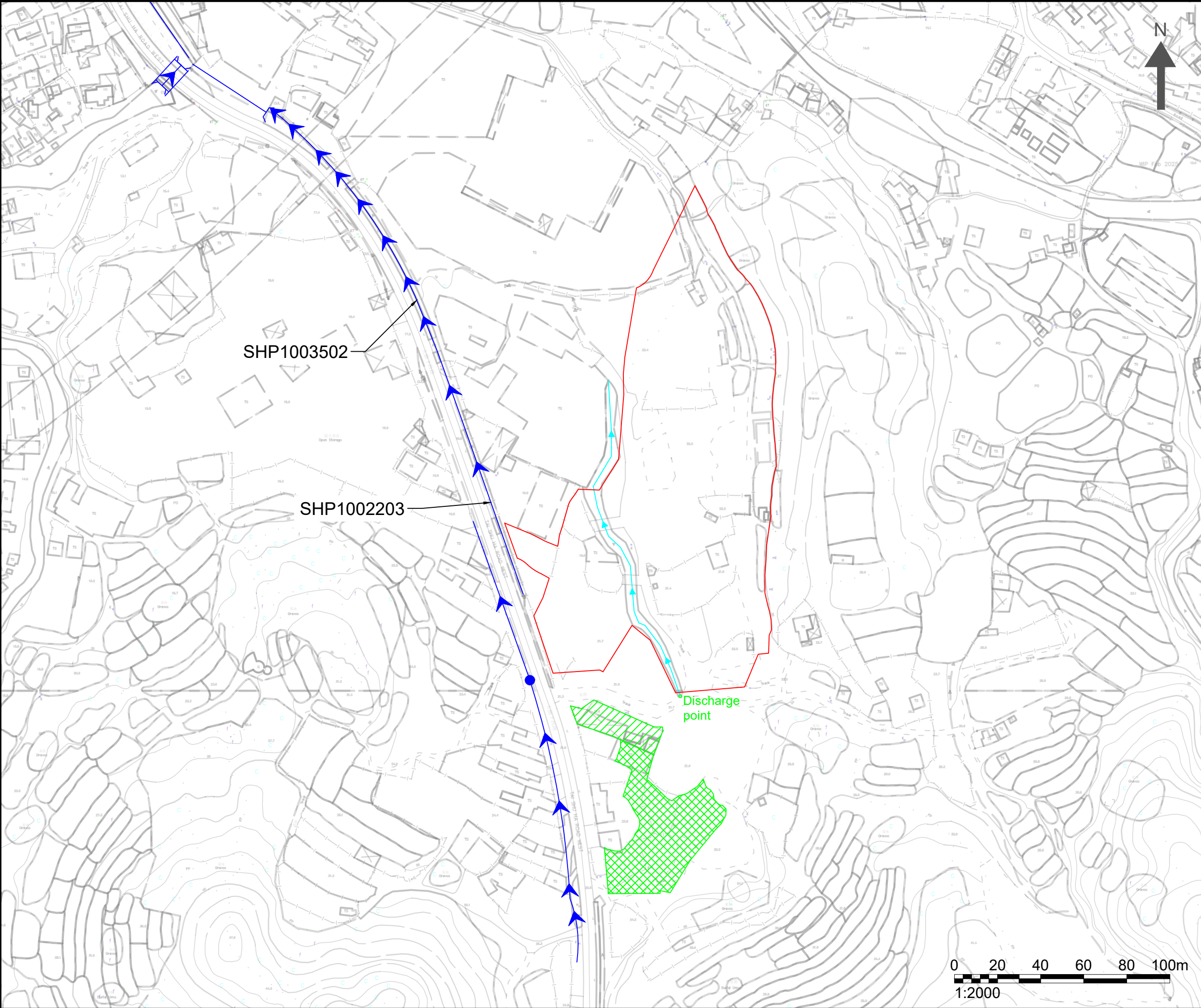
Drawing No :  
FIGURE 2.4b

Revision :  
0

Scale :  
AS SHOWN

Date :  
JUL 2026

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- NOTES :
- APPLICATION SITE
  - NEARBY PLANNING APPLICATION
  - EXISTING UNDERGROUND DRAINAGE

Consultant

**AEC**

**Allied Environmental Consultants Limited**

Project No. : 2287

Drawing By : CS

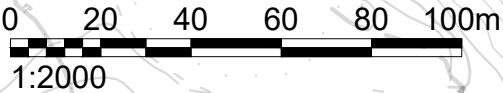
Project :  
TEMPERARY WAREHOUSE WITH ANCILLARY FACILITIES FOR A PERIOD OF YEARS AND ASSOCIATED FILLING OF LAND AT VARIOUS LOTS IN D.D. 118, TAI SHU HA ROAD WEST, YUEN LONG

Drawing Title :  
DRAINAGE PROPOSAL OF NEARBY PLANNING APPLICATION

|                            |                 |
|----------------------------|-----------------|
| Drawing No :<br>FIGURE 2.5 | Revision :<br>0 |
|----------------------------|-----------------|

|                     |                    |
|---------------------|--------------------|
| Scale :<br>AS SHOWN | Date :<br>JUL 2026 |
|---------------------|--------------------|

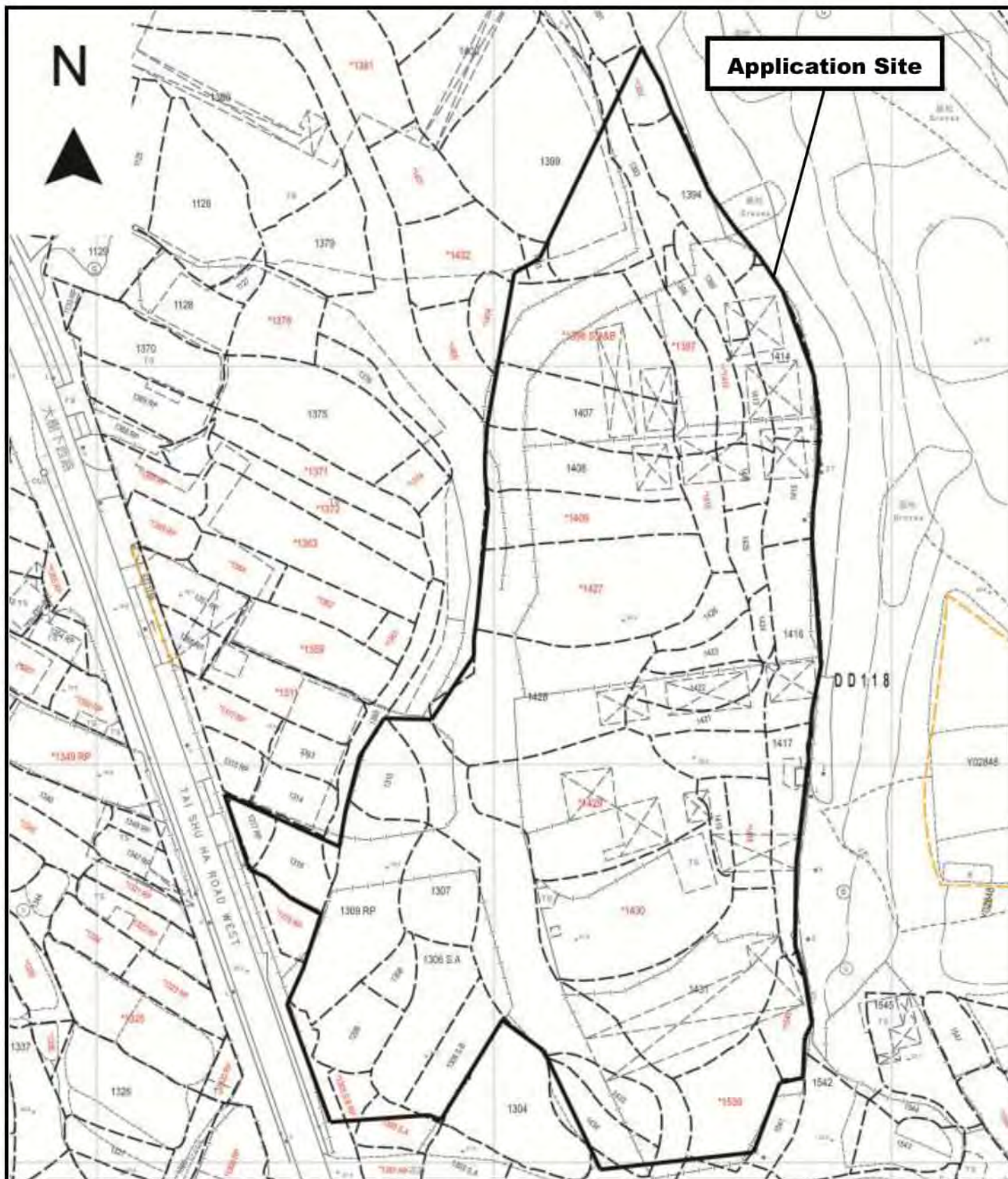
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## ***Appendix A***

---

### 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

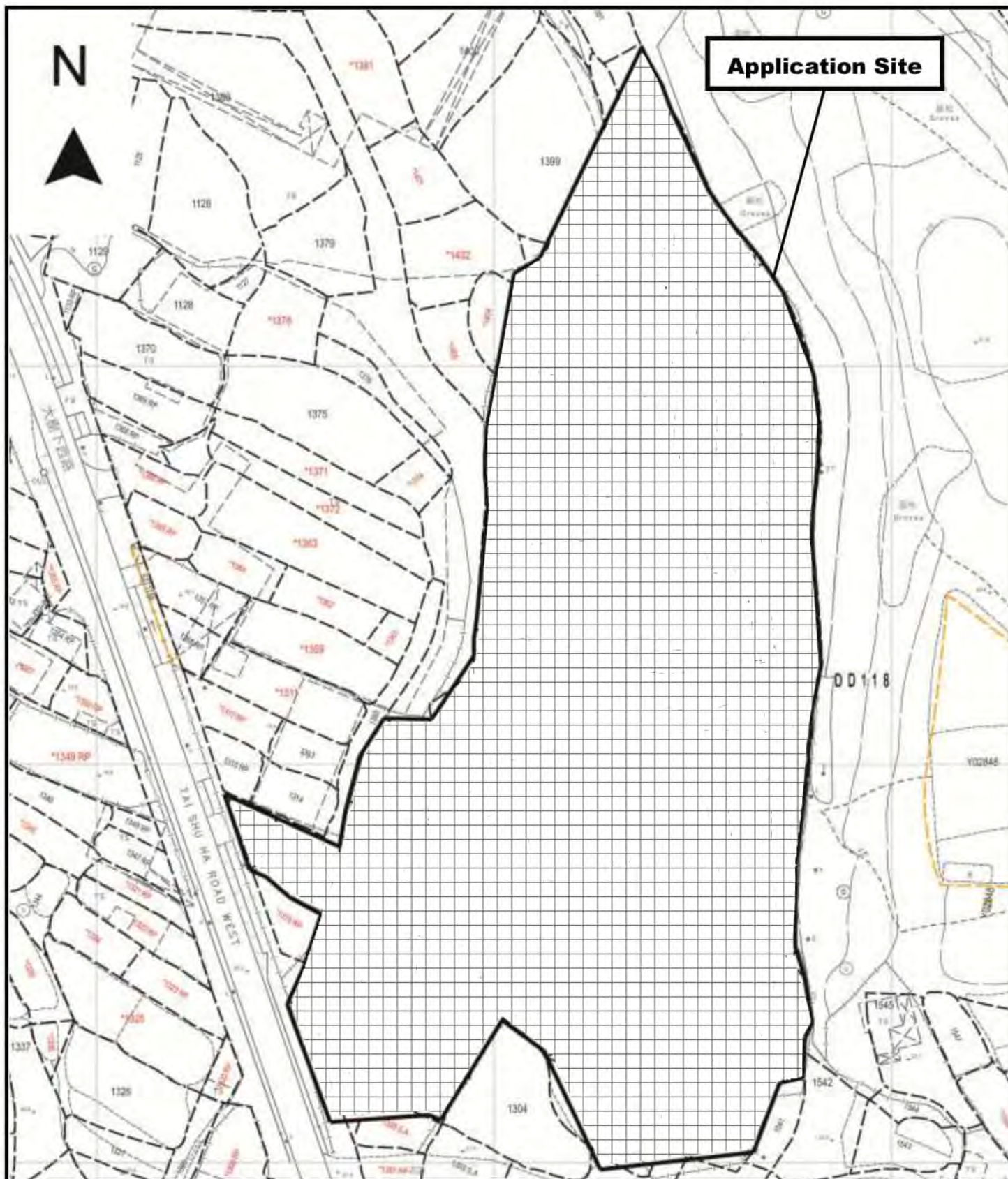
Drawing No. 圖號:

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

**Structure 1**  
Warehouse for storage of non-dangerous goods  
GFA: Not exceeding 9,508m<sup>2</sup>  
Covered area: Not exceeding 4,902m<sup>2</sup> (including a rain shelter of 296m<sup>2</sup>)  
Height: Not exceeding 15.5m  
No. of storey: 2

Open storage of Non-dangerous goods (About 597m<sup>2</sup>)

**Structure 7**  
Warehouse for storage of non-dangerous goods  
GFA: Not exceeding 298m<sup>2</sup>  
Height: Not exceeding 11m  
No. of storey: 1

**Structure 4**  
F.S. Water tank and F.S. pump room at G/F,  
Site office at 1/F and 2/F  
GFA: Not exceeding 399m<sup>2</sup>  
Height: Not exceeding 9m  
No. of storey: 3

**Structure 5**  
F.S. Water tank and F.S. pump room at G/F,  
Site office at 1/F and 2/F  
GFA: Not exceeding 399m<sup>2</sup>  
Height: Not exceeding 9m  
No. of storey: 3

**Structure 6**  
Guard room  
GFA: Not exceeding 11m<sup>2</sup>  
Height: Not exceeding 3m  
No. of storey: 1

Open storage of Non-dangerous goods (About 534m<sup>2</sup>)

6 loading/unloading spaces of 11m x 3.5m for medium/heavy goods vehicle

11m wide Ingress/Egress

**Structure 3**  
Warehouse for storage of non-dangerous goods  
GFA: Not exceeding 4,093m<sup>2</sup>  
Covered area: Not exceeding 2,101m<sup>2</sup> (including a rain shelter of 109m<sup>2</sup>)  
Height: Not exceeding 15.5m  
No. of storey: 2

**Structure 2**  
Warehouse for storage of non-dangerous goods  
GFA: Not exceeding 15,968m<sup>2</sup>  
Covered area: Not exceeding 8,133m<sup>2</sup> (including a rain shelter of 298m<sup>2</sup>)  
Height: Not exceeding 15.5m  
No. of storey: 2

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

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

| Catchment                                                 | Total Area of the Catchment (m <sup>2</sup> ) | Land Use                |                        | Topography               |                           | Average Slope, H (m per 100m) | Flow Distance, L (m) | Inlet Time, t <sub>i</sub> (min) [1] | Flow Time, t <sub>f</sub> (min) [2] | Duration, t <sub>c</sub> (min) [3] | 200 - year return period |                       |                       |                                       | Runoff Coefficient, C [6] | Rainfall Increase due to Climate Change, % [7] | 200 - year return period               |                                              |
|-----------------------------------------------------------|-----------------------------------------------|-------------------------|------------------------|--------------------------|---------------------------|-------------------------------|----------------------|--------------------------------------|-------------------------------------|------------------------------------|--------------------------|-----------------------|-----------------------|---------------------------------------|---------------------------|------------------------------------------------|----------------------------------------|----------------------------------------------|
|                                                           |                                               | Surface Characteristics | Area (m <sup>2</sup> ) | 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, Q <sub>p</sub> (m3/s) [8] | Total Peak Runoff, Q <sub>p</sub> (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                               | 508.8                    | 3.46                  | 0.322                 | 280.77                                | 0.95                      | 28.1                                           | 0.713                                  | 0.713                                        |
|                                                           |                                               | Grass                   | 0                      |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.000                                  |                                              |
| Catchment B1 (Structure 1 + Structure 4)                  | 5035                                          | Concrete                | 5035                   | -                        | -                         | -                             | -                    | -                                    | 0                                   | 5.00                               | 508.8                    | 3.46                  | 0.322                 | 255.82                                | 0.95                      | 28.1                                           | 0.436                                  | 0.436                                        |
|                                                           |                                               | Grass                   | 0                      |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.000                                  |                                              |
| Catchment B2 (Structure 2 + Structure 5)                  | 8266                                          | Concrete                | 8266                   | -                        | -                         | -                             | -                    | -                                    | 0                                   | 5.00                               | 508.8                    | 3.46                  | 0.322                 | 255.82                                | 0.95                      | 28.1                                           | 0.715                                  | 0.715                                        |
|                                                           |                                               | Grass                   | 0                      |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.000                                  |                                              |
| Catchment B3 (Structure 3)                                | 2101                                          | Concrete                | 2101                   | -                        | -                         | -                             | -                    | -                                    | 0                                   | 5.00                               | 508.8                    | 3.46                  | 0.322                 | 255.82                                | 0.95                      | 28.1                                           | 0.182                                  | 0.182                                        |
|                                                           |                                               | Grass                   | 0                      |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.000                                  |                                              |
| Catchment B4 (Structure 7)                                | 298                                           | Concrete                | 298                    | -                        | -                         | -                             | -                    | -                                    | 0                                   | 5.00                               | 508.8                    | 3.46                  | 0.322                 | 255.82                                | 0.95                      | 28.1                                           | 0.026                                  | 0.026                                        |
|                                                           |                                               | 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                               | 501.4                    | 2.45                  | 0.348                 | 223.84                                | 0.95                      | 16.0                                           | 0.108                                  | 0.298                                        |
|                                                           |                                               | Grass                   | 7526                   |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.190                                  |                                              |
| Catchment D                                               | 11016                                         | Concrete                | 7993                   | 24.2                     | 21.3                      | 1.59                          | 182                  | 9.46                                 | 0                                   | 9.46                               | 501.4                    | 2.45                  | 0.348                 | 211.75                                | 0.95                      | 16.0                                           | 0.519                                  | 0.591                                        |
|                                                           |                                               | Grass                   | 3023                   |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.072                                  |                                              |
| Catchment E                                               | 24666                                         | Concrete                | 19924                  | 19.9                     | 17.4                      | 1.02                          | 244                  | 12.78                                | 0                                   | 12.78                              | 501.4                    | 2.45                  | 0.348                 | 194.38                                | 0.95                      | 16.0                                           | 1.186                                  | 1.290                                        |
|                                                           |                                               | Grass                   | 4742                   |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.104                                  |                                              |
| Catchment F                                               | 32163                                         | Concrete                | 23980                  | 19.9                     | 17.2                      | 0.95                          | 285                  | 14.76                                | 0                                   | 14.76                              | 501.4                    | 2.45                  | 0.348                 | 186.26                                | 0.95                      | 16.0                                           | 1.368                                  | 1.540                                        |
|                                                           |                                               | Grass                   | 8183                   |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.172                                  |                                              |
| Catchment G                                               | 12326                                         | Concrete                | 0                      | 19.9                     | 17.2                      | 0.95                          | 285                  | 16.25                                | 0                                   | 16.25                              | 501.4                    | 2.45                  | 0.348                 | 180.97                                | 0.95                      | 16.0                                           | 0.000                                  | 0.252                                        |
|                                                           |                                               | Grass                   | 12326                  |                          |                           |                               |                      |                                      |                                     |                                    |                          |                       |                       |                                       | 0.35                      |                                                | 0.252                                  |                                              |

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

$$t_c = \frac{0.1446 \sqrt{A}}{H^{0.52} A^{0.17}}$$

where t<sub>c</sub> = time of concentration of a natural catchment (min.)

A = catchment area (m<sup>2</sup>)

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 concentration for subject site is assumed as 5 min.

[2] t<sub>f</sub> 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<sub>d</sub> = duration in minutes ( t<sub>d</sub> ≤ 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 percentage 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).

$$Q_{p,r} = 0.278 C i A$$

where Q<sub>p</sub> = peak runoff in m<sup>3</sup>/s

C = runoff coefficient (dimensionless)

i = rainfall intensity in mm/hr

A = catchment area in km<sup>2</sup>

## ***Appendix C***

---

Estimation of Drainage Flow from Proposed Development and  
Detailed Hydraulic Calculation

Appendix C Hydraulic Calculation

|                                                                                                          |         |                   |                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------|---------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Runoff of external Catchment G collected via CP10 - CP20</b>                                          |         |                   |                                                                                                                                                                                                                                                                                    |
| Peak Runoff                                                                                              | 0.252   | m <sup>3</sup> /s |                                                                                                                                                                                                                                                                                    |
|                                                                                                          | 15106   | L/min             |                                                                                                                                                                                                                                                                                    |
| Slope, s                                                                                                 | 0.010   |                   |                                                                                                                                                                                                                                                                                    |
| <b>Provided 375mm UC (1:100) is acceptable</b>                                                           |         |                   | 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                                                                                 |
| <b>Runoff of Proposed Development (Catchment B2) + external Catchment G via CP20 - CP24</b>              |         |                   |                                                                                                                                                                                                                                                                                    |
| Height, H                                                                                                | 0.700   | m                 |                                                                                                                                                                                                                                                                                    |
| Cross-section Area, A [2]                                                                                | 0.394   | m <sup>2</sup>    | 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]                                                                                  | 1.800   | 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]                                                                                  | 0.219   | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                                                                                                                                                                                                                           |
| Slope, s                                                                                                 | 0.010   |                   |                                                                                                                                                                                                                                                                                    |
| Pipe Roughnss, k                                                                                         | 0.00015 | m                 | Surface roughness is assumed to be 0.15mm for prestressed concrete 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]                                                                                    | 3.53    | m/s               | Velocity is calculated based on Colebrook-White equations. With Reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition), surface roughness is assumed to be 0.15mm.<br>Kinematic viscosity is 0.000001306 m/s. Gravitational acceleration is 9.8m/s <sup>2</sup> . |
| Full Capacity, Q                                                                                         | 1.388   | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                                                                                                                                                                                                                         |
| Return Periods (Year) [9]                                                                                | 200     | Year              | With reference to Table 10 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 200 years of return period has been adopted.                                                                                                                                        |
| Total Peak Runoff                                                                                        | 0.967   | m <sup>3</sup> /s |                                                                                                                                                                                                                                                                                    |
| Occupancy(%)                                                                                             | 69.7%   |                   |                                                                                                                                                                                                                                                                                    |
| <b>Provided 700mm UC (1:100) is acceptable</b>                                                           |         |                   |                                                                                                                                                                                                                                                                                    |
| <b>Runoff of Proposed Development (Catchment B2 + B3) + external Catchment G via CP24 - Sand Trap</b>    |         |                   |                                                                                                                                                                                                                                                                                    |
| Height, H                                                                                                | 0.700   | m                 |                                                                                                                                                                                                                                                                                    |
| Cross-section Area, A [2]                                                                                | 0.394   | m <sup>2</sup>    | 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]                                                                                  | 1.800   | 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]                                                                                  | 0.219   | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                                                                                                                                                                                                                           |
| Slope, s                                                                                                 | 0.010   |                   |                                                                                                                                                                                                                                                                                    |
| Pipe Roughnss, k                                                                                         | 0.00015 | m                 | Surface roughness is assumed to be 0.15mm for prestressed concrete 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]                                                                                    | 3.53    | m/s               | Velocity is calculated based on Colebrook-White equations. With Reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition), surface roughness is assumed to be 0.15mm.<br>Kinematic viscosity is 0.000001306 m/s. Gravitational acceleration is 9.8m/s <sup>2</sup> . |
| Full Capacity, Q                                                                                         | 1.388   | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                                                                                                                                                                                                                         |
| Return Periods (Year) [9]                                                                                | 200     | Year              | With reference to Table 10 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 200 years of return period has been adopted.                                                                                                                                        |
| Total Peak Runoff                                                                                        | 1.149   | m <sup>3</sup> /s |                                                                                                                                                                                                                                                                                    |
| Occupancy(%)                                                                                             | 82.8%   |                   |                                                                                                                                                                                                                                                                                    |
| <b>Provided 700mm UC (1:100) is acceptable</b>                                                           |         |                   |                                                                                                                                                                                                                                                                                    |
| <b>Runoff of Proposed Development (Catchment A + B1 + B4) + external Catchment G via CP1 - Sand Trap</b> |         |                   |                                                                                                                                                                                                                                                                                    |
| Height, H                                                                                                | 0.700   | m                 |                                                                                                                                                                                                                                                                                    |
| Cross-section Area, A [2]                                                                                | 0.394   | m <sup>2</sup>    | 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]                                                                                  | 1.800   | 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]                                                                                  | 0.219   | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                                                                                                                                                                                                                           |
| Slope, s                                                                                                 | 0.010   |                   |                                                                                                                                                                                                                                                                                    |
| Pipe Roughnss, k                                                                                         | 0.00015 | m                 | Surface roughness is assumed to be 0.15mm for prestressed concrete 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]                                                                                    | 3.53    | m/s               | Velocity is calculated based on Colebrook-White equations. With Reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition), surface roughness is assumed to be 0.15mm.<br>Kinematic viscosity is 0.000001306 m/s. Gravitational acceleration is 9.8m/s <sup>2</sup> . |
| Full Capacity, Q                                                                                         | 1.388   | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                                                                                                                                                                                                                         |
| Return Periods (Year) [9]                                                                                | 200     | Year              | With reference to Table 10 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 200 years of return period has been adopted.                                                                                                                                        |
| Total Peak Runoff                                                                                        | 1.174   | m <sup>3</sup> /s |                                                                                                                                                                                                                                                                                    |
| Occupancy(%)                                                                                             | 84.6%   |                   |                                                                                                                                                                                                                                                                                    |
| <b>Provided 700mm UC (1:100) is acceptable</b>                                                           |         |                   |                                                                                                                                                                                                                                                                                    |

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

|                           |       |                   |                                                                               |
|---------------------------|-------|-------------------|-------------------------------------------------------------------------------|
| Peak Runoff               | 0.218 | m <sup>3</sup> /s |                                                                               |
|                           | 13073 | L/min             |                                                                               |
| Width, W                  | 0.40  | m                 |                                                                               |
| Depth, D                  | 0.40  | m                 |                                                                               |
| Cross-section Area, A [2] | 0.160 | m <sup>2</sup>    |                                                                               |
| Hydraulic radius, R [3]   | 0.133 | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                      |
| Slope, s                  | 0.010 |                   |                                                                               |
| Mannig Coefficient, n     | 0.014 |                   | With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition). |
| Velocity, V (m/s) [6]     | 1.86  | m/s               | Velocity is calculated based on Manning equations.                            |
| Full Capacity, Q          | 0.298 | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                    |

0.298 &gt; 0.218

Occupancy 73%

**Provided 350mm (W) x 300mm (D) Gutter (1:100) is acceptable****Catchment B2 (Half of Structure 2 + Half of Structure 5)**

|                           |       |                   |                                                                               |
|---------------------------|-------|-------------------|-------------------------------------------------------------------------------|
| Peak Runoff               | 0.358 | m <sup>3</sup> /s |                                                                               |
|                           | 21462 | L/min             |                                                                               |
| Width, W                  | 0.50  | m                 |                                                                               |
| Depth, D                  | 0.45  | m                 |                                                                               |
| Cross-section Area, A [2] | 0.225 | m <sup>2</sup>    |                                                                               |
| Hydraulic radius, R [3]   | 0.161 | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                      |
| Slope, s                  | 0.010 |                   |                                                                               |
| Mannig Coefficient, n     | 0.014 |                   | With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition). |
| Velocity, V (m/s) [6]     | 2.11  | m/s               | Velocity is calculated based on Manning equations.                            |
| Full Capacity, Q          | 0.475 | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                    |

0.475 &gt; 0.358

Occupancy 75%

**Provided 450mm (W) x 400mm (D) Gutter (1:100) is acceptable****Catchment B3 (Half of Structure 3)**

|                           |       |                   |                                                                               |
|---------------------------|-------|-------------------|-------------------------------------------------------------------------------|
| Peak Runoff               | 0.091 | m <sup>3</sup> /s |                                                                               |
|                           | 5455  | L/min             |                                                                               |
| Width, W                  | 0.30  | m                 |                                                                               |
| Depth, D                  | 0.25  | m                 |                                                                               |
| Cross-section Area, A [2] | 0.075 | m <sup>2</sup>    |                                                                               |
| Hydraulic radius, R [3]   | 0.094 | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                      |
| Slope, s                  | 0.010 |                   |                                                                               |
| Mannig Coefficient, n     | 0.014 |                   | With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition). |
| Velocity, V (m/s) [6]     | 1.47  | m/s               | Velocity is calculated based on Manning equations.                            |
| Full Capacity, Q          | 0.111 | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                    |

0.111 &gt; 0.091

Occupancy 82%

**Provided 250mm (W) x 250mm (D) Gutter (1:100) is acceptable****Catchment B4 (Half of Structure 7)**

|                           |       |                   |                                                                               |
|---------------------------|-------|-------------------|-------------------------------------------------------------------------------|
| Peak Runoff               | 0.013 | m <sup>3</sup> /s |                                                                               |
|                           | 774   | L/min             |                                                                               |
| Width, W                  | 0.15  | m                 |                                                                               |
| Depth, D                  | 0.15  | m                 |                                                                               |
| Cross-section Area, A [2] | 0.023 | m <sup>2</sup>    |                                                                               |
| Hydraulic radius, R [3]   | 0.050 | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                      |
| Slope, s                  | 0.010 |                   |                                                                               |
| Mannig Coefficient, n     | 0.014 |                   | With reference to Table 13 in DSD Stormwater Drainage Manual (Fifth Edition). |
| Velocity, V (m/s) [6]     | 0.97  | m/s               | Velocity is calculated based on Manning equations.                            |
| Full Capacity, Q          | 0.022 | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                    |

0.022 &gt; 0.013

Occupancy 59%

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

**Catchment A + B + external Catchment G**

|                           |         |                   |                                                                                                                                                                                                                                     |
|---------------------------|---------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Diameter, D               | 1.200   | m                 |                                                                                                                                                                                                                                     |
| Cross-section Area, A [2] | 1.018   | m <sup>2</sup>    | 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]   | 3.770   | 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]   | 0.270   | m                 | Hydraulic Radius = Cross-section Area / Wetted Perimeter                                                                                                                                                                            |
| Length of Pipe, L         | 6.200   | m                 |                                                                                                                                                                                                                                     |
| Slope, s                  | 0.005   |                   |                                                                                                                                                                                                                                     |
| Pipe Roughness, k         | 0.00015 | m                 | Surface roughness is assumed to be 0.15mm for prestressed concrete 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]     | 2.82    | m/s               | Velocity is calculated based on Colebrook-White equations. With Reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition), kinematic viscosity is 0.000001306 m/s.                                                    |
| Full Capacity, Q          | 2.867   | m <sup>3</sup> /s | Capacity = Cross-sectional Area × Velocity                                                                                                                                                                                          |
| Return Periods (Year) [9] | 200     | 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         | 2.323   | m <sup>3</sup> /s |                                                                                                                                                                                                                                     |
| Occupancy(%)              | 81.0%   |                   |                                                                                                                                                                                                                                     |

**Provided 1200mm dia. underground pipe (1:200) is acceptable**

**Calculation for Depth of Flow, y**

With reference to Table 11 of DSD's Stormwater Drainage Manual, 200-year rain + 10-year sea level design return period are adopted.

**With reference to Table 8 of DSD' Stormwater Drainage Manual, the design 10-year extreme sea level at Tsim Bei Tsui of +3.52 mPD is adopted (Yuen Long Area)**

Site Elevation Level = Approximately +19 to +22 mPD  
Based on the elevation level, no tidal backwater effect is expected at Application Site.

The depth of flow is calculated based on Manning's formula.

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

|                                    |       |   |                                                |
|------------------------------------|-------|---|------------------------------------------------|
| Manning's roughness coefficient, n | 0.016 |   | Assumed concrete surface with "bad" condition) |
| Width, B                           | 2     | m |                                                |
| Slope, S                           | 0.018 |   |                                                |

Cross Sectional Area, A = By  
Hydraulic Radius, R = A/P  
Wetted perimeter, P = B+2y

|                                          |              |                        |
|------------------------------------------|--------------|------------------------|
| <b>Flow Rate, Q of Catchment A-D + G</b> | <b>3.212</b> | <b>m<sup>3</sup>/s</b> |
| <b>Depth of Flow, y</b>                  | <b>0.427</b> | <b>m</b>               |

|                                      |              |                        |
|--------------------------------------|--------------|------------------------|
| <b>Flow Rate, Q of Catchment A-G</b> | <b>6.043</b> | <b>m<sup>3</sup>/s</b> |
| <b>Depth of Flow, y</b>              | <b>0.663</b> | <b>m</b>               |

**Peak Runoff Estimation of Subcatchments and Subject Site & Occupancy of Existing Drainage after the completion of Proposed Development**

|                                            |       |                   |                                                                                                                   |
|--------------------------------------------|-------|-------------------|-------------------------------------------------------------------------------------------------------------------|
| Maximum depth of Drainage                  | 2.000 | m                 | Assumed based on Site Photo and Water Level Information provided by DSD ( <i>attachment (Water levels).xlsx</i> ) |
| Freeboard                                  | 0.500 | m                 |                                                                                                                   |
| Allowable flow depth                       | 1.500 | m                 |                                                                                                                   |
| Highest Water Depth at Link 822042831254.1 | 0.229 | m                 | Referred to Water Level Information provided by DSD ( <i>attachment (Water levels).xlsx</i> )                     |
| Existing Flow Rate, Q                      | 1.258 | m <sup>3</sup> /s | Calculated based on Manning's Formula, derived based on existing depth of flow                                    |

|                                                                  |              |          |
|------------------------------------------------------------------|--------------|----------|
| <b>Depth of Flow of Catchment A-D + G + Existing water level</b> | <b>0.656</b> | <b>m</b> |
| <b>Depth Occupancy</b>                                           | <b>44%</b>   |          |

|                                                              |              |          |
|--------------------------------------------------------------|--------------|----------|
| <b>Depth of Flow of Catchment A-G + Existing Water Level</b> | <b>0.892</b> | <b>m</b> |
| <b>Depth Occupancy</b>                                       | <b>59%</b>   |          |

|                     |        |                   |
|---------------------|--------|-------------------|
| Flow Area, A        | 3.000  | m <sup>2</sup>    |
| Wetted Parameter, P | 5.000  | m                 |
| Hydraulic Radius, R | 0.600  | m                 |
| Max Flow Rate, Qmax | 17.963 | m <sup>3</sup> /s |

|                                                        |              |                        |
|--------------------------------------------------------|--------------|------------------------|
| <b>Total flow of Catchment A-D + G + Existing Flow</b> | <b>4.470</b> | <b>m<sup>3</sup>/s</b> |
| <b>Occupancy</b>                                       | <b>25%</b>   | <b>acceptable</b>      |

|                                                    |              |                        |
|----------------------------------------------------|--------------|------------------------|
| <b>Total flow of Catchment A-G + Existing Flow</b> | <b>7.301</b> | <b>m<sup>3</sup>/s</b> |
| <b>Occupancy</b>                                   | <b>41%</b>   | <b>acceptable</b>      |

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

| ID                  | From               | ID     | To           | Diameter, D<br>(m) | Width, B (m)<br>[1] | Depth of Flow,<br>y | Manning's<br>roughness<br>coefficient, n<br>[3] [4] | Inlet Invert<br>Level<br>(mPD) [1] | Outlet Invert<br>Level<br>(mPD) [1] | Slope, S [5] | Length of Pipe,<br>L<br>(m) [1] | Cross<br>Sectional Area,<br>A [6] | Wetted<br>Perimeter, P<br>(m) [7] | Hydraulic<br>Radius, R [8] | Velocity, V<br>(m/s) [11] | Max Flow Rate,<br>Q (m3/s) [9] | Existing Flow<br>Rate (m3/s) | Contributing Catchment<br>Area                      | Return Periods<br>(Year) [10] | Total Flow from<br>All Catch-ment<br>Area (m <sup>3</sup> /s) | Occupancy<br>(%) |
|---------------------|--------------------|--------|--------------|--------------------|---------------------|---------------------|-----------------------------------------------------|------------------------------------|-------------------------------------|--------------|---------------------------------|-----------------------------------|-----------------------------------|----------------------------|---------------------------|--------------------------------|------------------------------|-----------------------------------------------------|-------------------------------|---------------------------------------------------------------|------------------|
| Trapezoidal channel |                    |        |              |                    |                     |                     |                                                     |                                    |                                     |              |                                 |                                   |                                   |                            |                           |                                |                              |                                                     |                               |                                                               |                  |
| P1                  | Proposed Sand Trap | D2     | SHP1003502   | 1.2                | -                   | -                   | 0.00015                                             | 18.11                              | 18.08                               | 0.005        | 6.20                            | 1.02                              | 3.77                              | 0.27                       | 2.82                      | 2.87                           | -                            | Catchment A + B + G                                 | 200                           | 2.323                                                         | 81%              |
| Node 1              | 822042831254       | Node 2 | 821974831446 | -                  | 2.0                 | 0.427               | 0.016                                               | 18.5                               | 14.8                                | 0.018        | 204.0                           | 3.00                              | 5.00                              | 0.60                       | 5.99                      | 17.96                          | 1.26                         | Catchment A to D,<br>Catchment G + Existing<br>Flow | 200                           | 3.212                                                         | 25%              |
| Node 1              | 822042831254       | Node 2 | 821974831446 | -                  | 2.0                 | 0.663               | 0.016                                               | 18.5                               | 14.8                                | 0.018        | 204.0                           | 3.00                              | 5.00                              | 0.60                       | 5.99                      | 17.96                          | 1.26                         | Catchment A to F + Existing<br>Flow                 | 200                           | 6.044                                                         | 41%              |

Note:

- [1] With reference to Geoinfo Map and assumption from site photo.
- [2] The information for max depth of flow is unavailable, assumed ymax to be 1m.
- [3] With reference to table 13 of DSD's Stormwater Drainage Manual, Manning's roughness coefficient , n = 0.016 (assumed concrete surface with "bad" condition)
- [4] Surface roughness is assumed to be 0.15mm for prestressed concrete pipe with poor condition as worst case scenario, with reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition).
- [5] Slope =1/200 (assumed based on DSD Drainage Submission Technical Note 1)
- [6] Cross sectional area, A  
A =y(B +zy), for trapezoidal channel  
z = side slope (assume 1:1)
- [7] Wetted perimeter, P  
P = B+(2y x SQRT(1 + z^2)) (trapezoidal channel)
- [8] Hydraulic Radius, R = Area /Wetted Perimeter
- [9] Flow rate of channel is calculated based on Manning's formula

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

- [10] With reference to Table 3 of Section 6.6.2 in DSD Stormwater Drainage Manual (Fifth Edition), 200 years of return period has been adopted.
- [11] Velocity is calculated based on Colebrook-White equations.  
By Colebrook-White Equation,

$$F = \sqrt{32gRS_f} \log \left[ \frac{k_s}{4.5R} + \frac{1.25\nu}{R\sqrt{32gRS_f}} \right]$$

Where

$F$

=

Friction factor

$k_s$

=

Equivalent sand grain size

$R$

=

Hydraulic radius

$S_f$

=

Friction slope

$\nu$

=

Kinematic viscosity

$g$

=

Gravitational acceleration

$n$

=

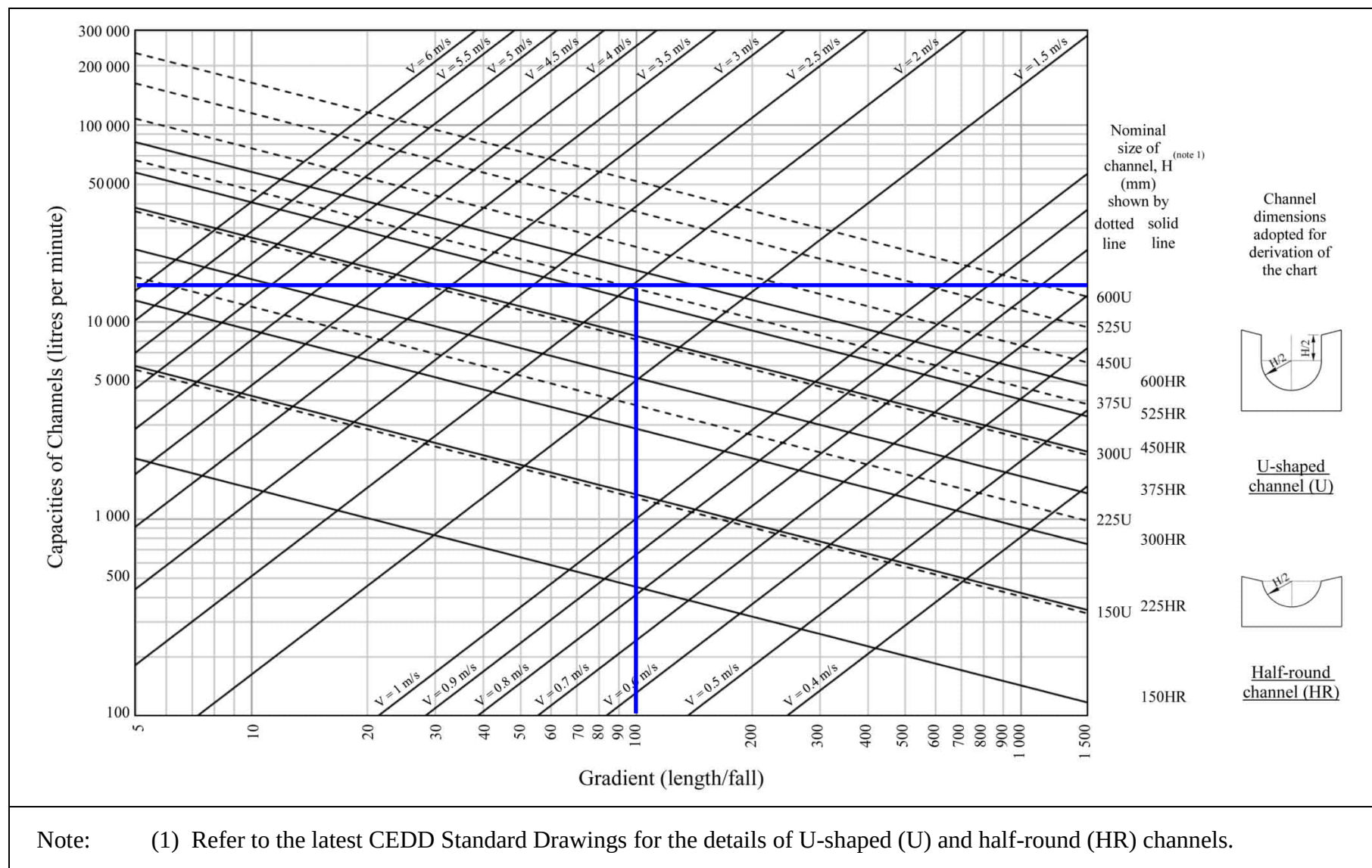
Manning's roughness coefficient

$C_{DW}$

=

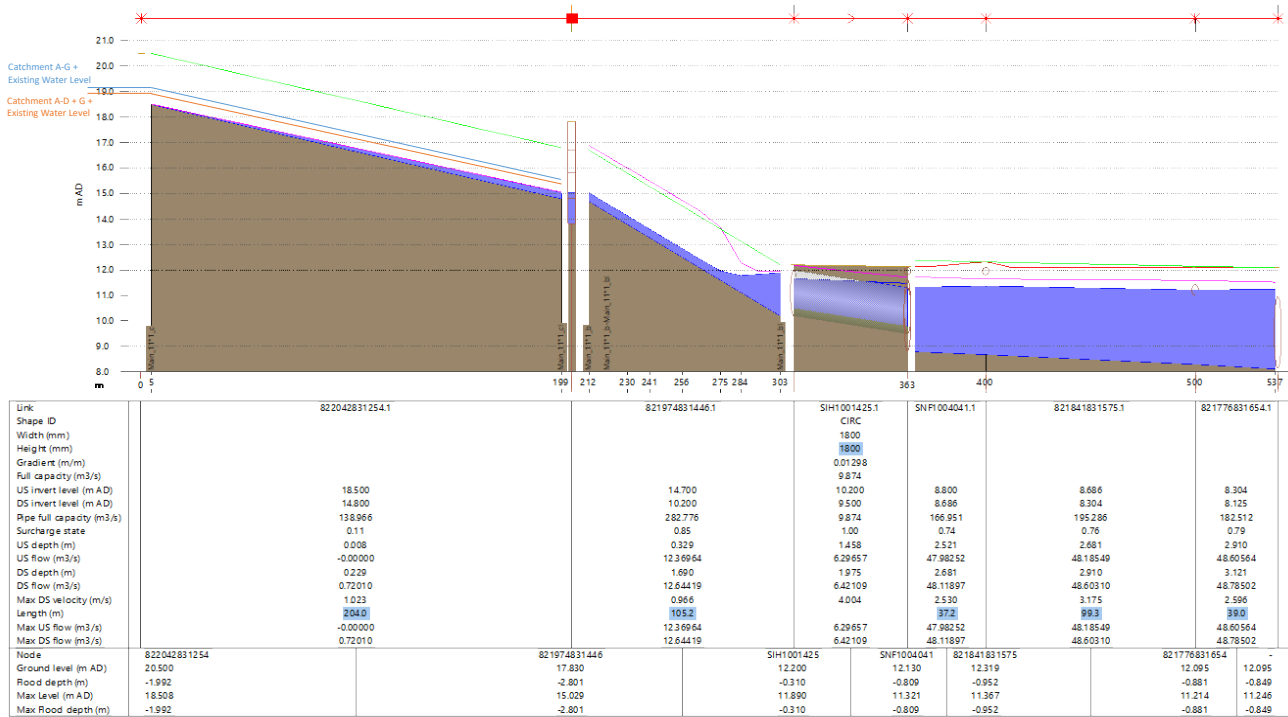
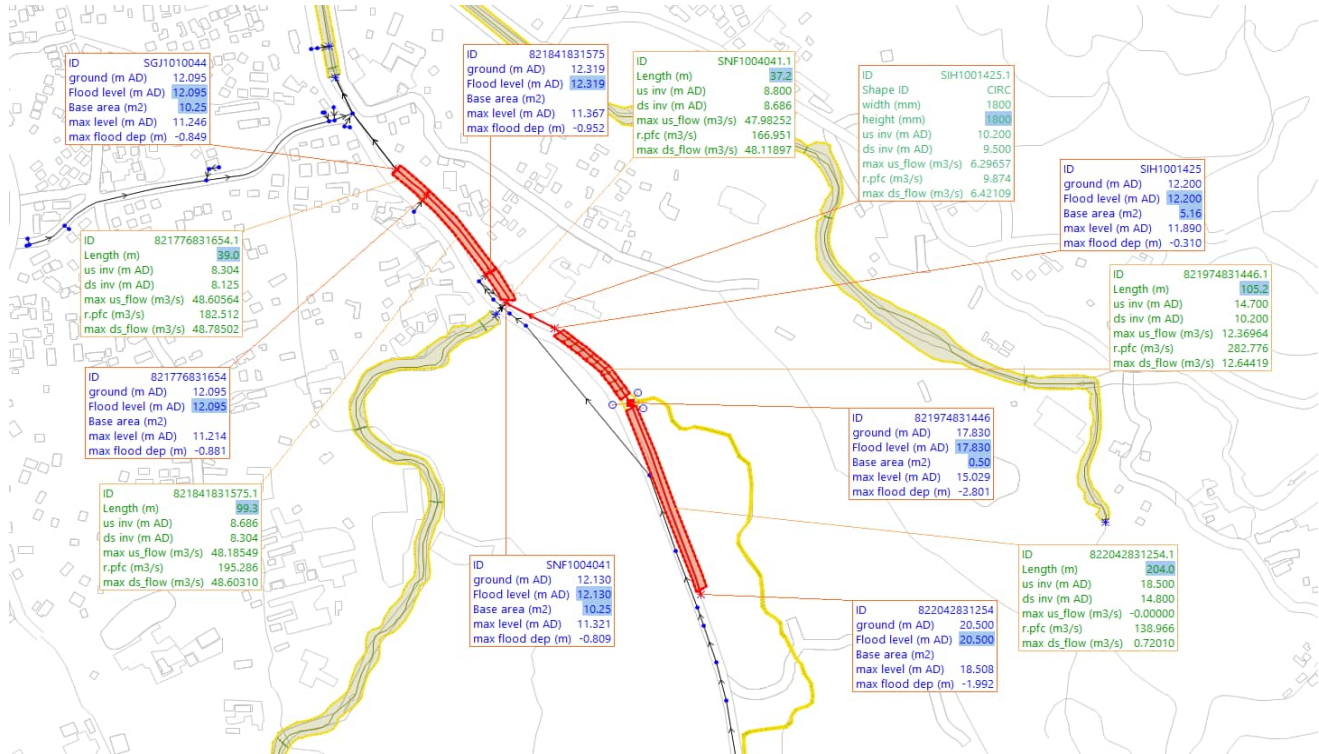
Colebrook-White equation

With Reference to Table 14 in DSD Stormwater Drainage Manual (Fifth Edition), surface roughness is assumed to be 0.15mm.  
Kinematic viscosity is 0.000001306 m/s.  
Gravitational acceleration is 9.8m/s².



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

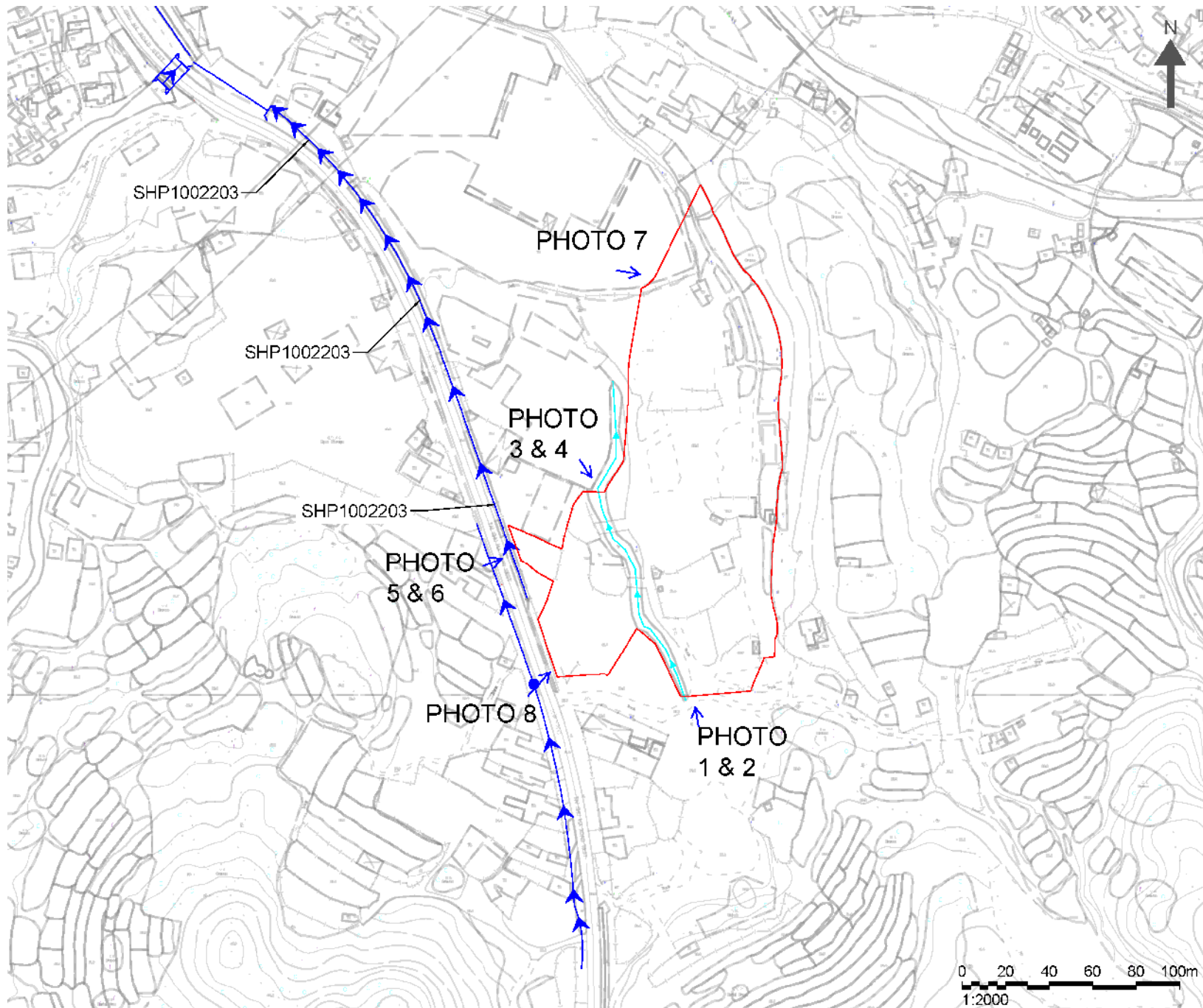
# 200A case



## ***Appendix D***

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Site Photo



## Appendix D



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

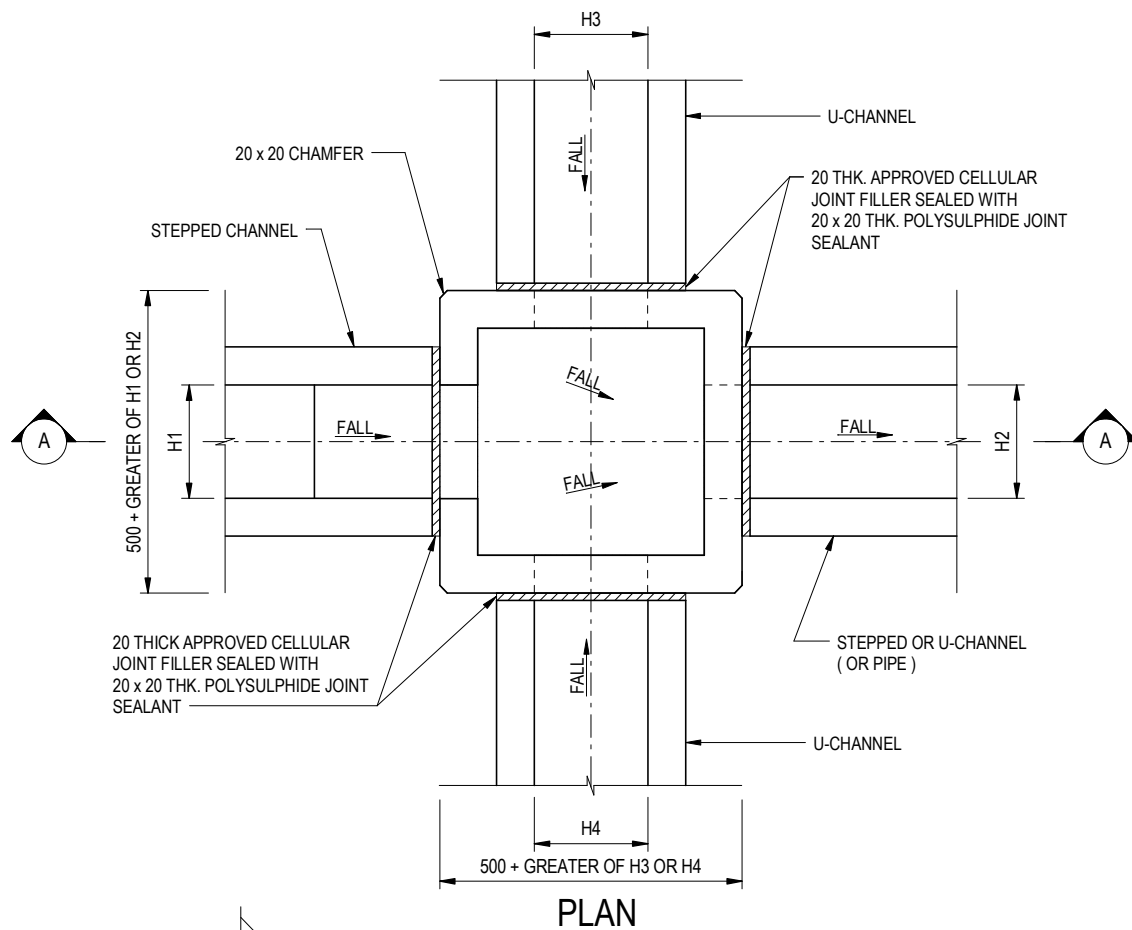


Photo 8

## ***Appendix E***

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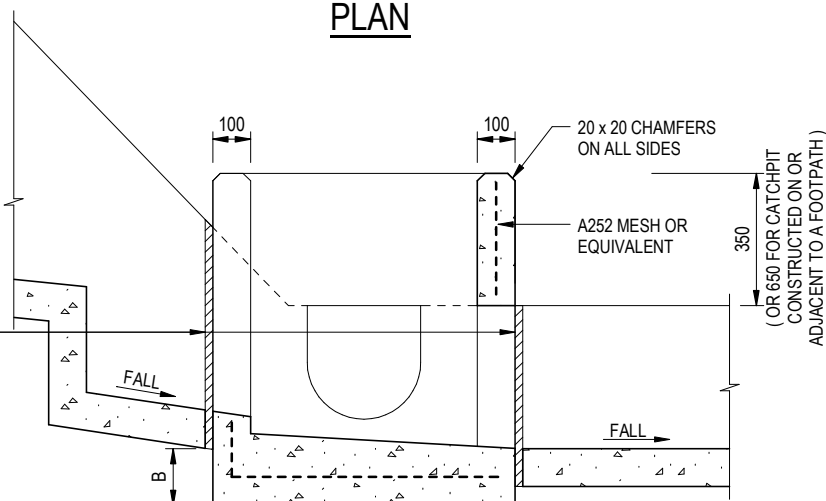
### CEDD's Standard Drawing



**PLAN**

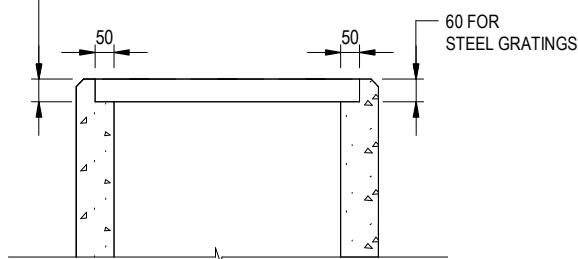
| NOMINAL SIZE<br>(LARGEST OF H1, H2, H3 & H4) | B   |
|----------------------------------------------|-----|
| 150 - 600                                    | 150 |
| 675 - 900                                    | 175 |

20 THICK APPROVED CELLULAR  
JOINT FILLER SEALED WITH  
20 x 20 THK. POLYSULPHIDE JOINT  
SEALANT



**SECTION A - A**

DEPTH OF RECESS AND DETAILS OF  
PRECAST CONCRETE COVERS  
(SEE STD. DRG. NO. C2407)



## ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

### NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES.
- REFER TO SHEET 5 FOR OTHER NOTES.

## STANDARD CATCHPIT DETAILS (SHEET 1 OF 5)

|      |                         |                 |         |
|------|-------------------------|-----------------|---------|
| A    | BIM OBJECT REVISION.    | Original Signed | 12.2025 |
| —    | FORMER DRG. NO. C2405J. | Original Signed | 03.2015 |
| REF. | REVISION                | SIGNATURE       | DATE    |



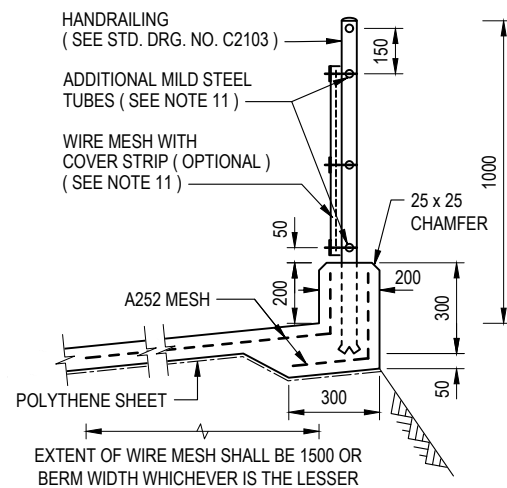
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

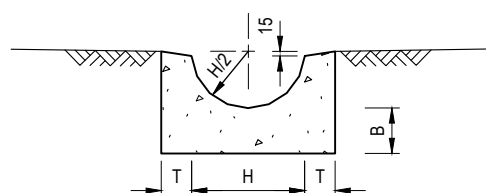
**DATE** JAN 1991

**DRAWING NO.**

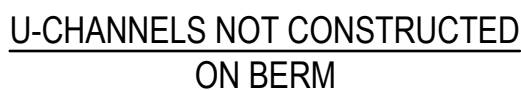
**C2405 /1A**



## DETAILS OF BERM WITH HANDRAILING



### HALF-ROUND CHANNEL



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

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

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 /1.
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 WIRE MESH ON BERM.  
(SEE STD DRG. NO. C2511 /1)
11. THE WIRE MESH ON HANDRAILING IS OPTIONAL. THE COVER STRIP AND ADDITIONAL MILD STEEL TUBES ARE NEEDED ONLY IF WIRE MESH IS PROVIDED.  
(SEE STD. DRG. NO. C2103)

|             |                                      |                  |             |
|-------------|--------------------------------------|------------------|-------------|
| K           | BIM OBJECT REVISION.                 | Original Signed  | 12.2025     |
| J           | DETAILS OF HANDRAILING AMENDED.      | Original Signed  | 08.2024     |
| 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     |
| <b>REF.</b> | <b>REVISION</b>                      | <b>SIGNATURE</b> | <b>DATE</b> |



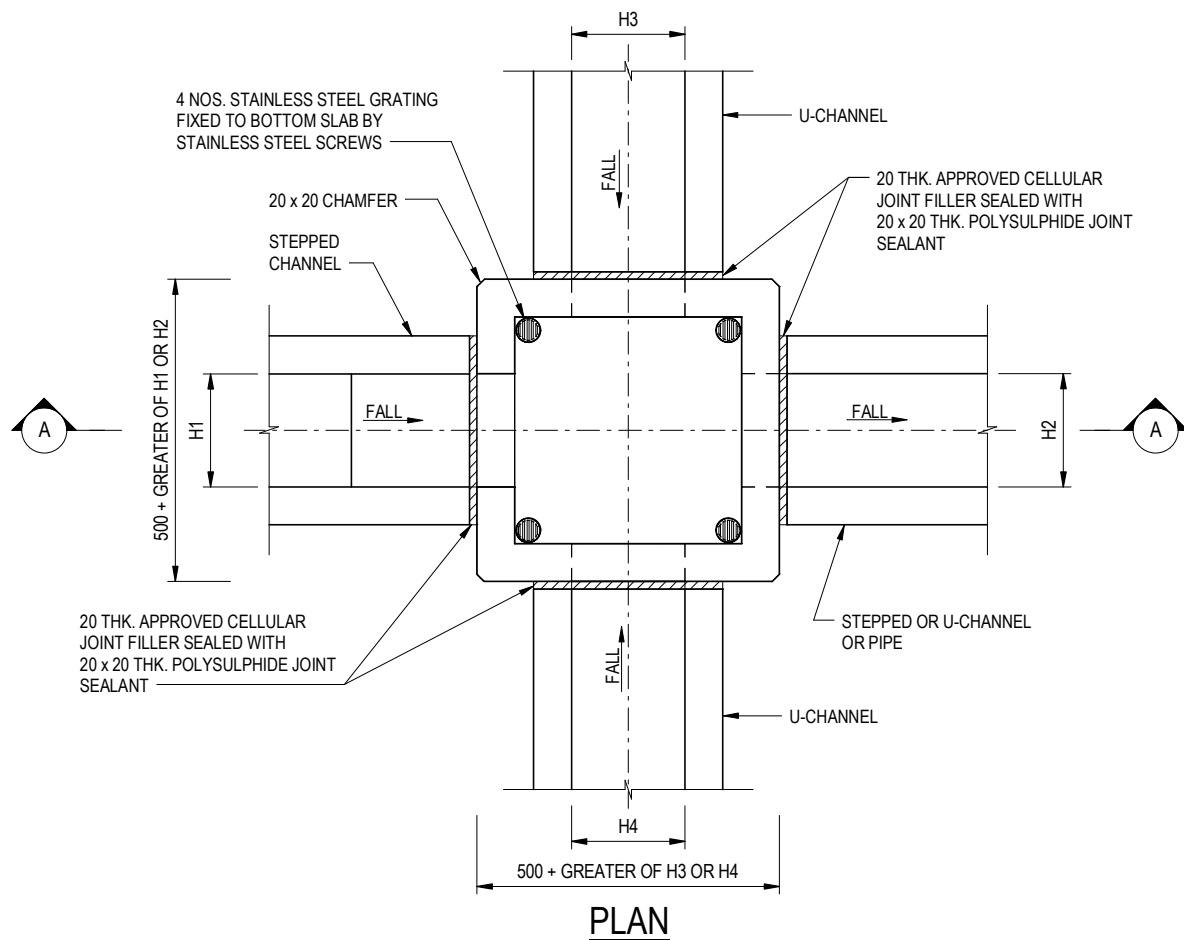
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 25

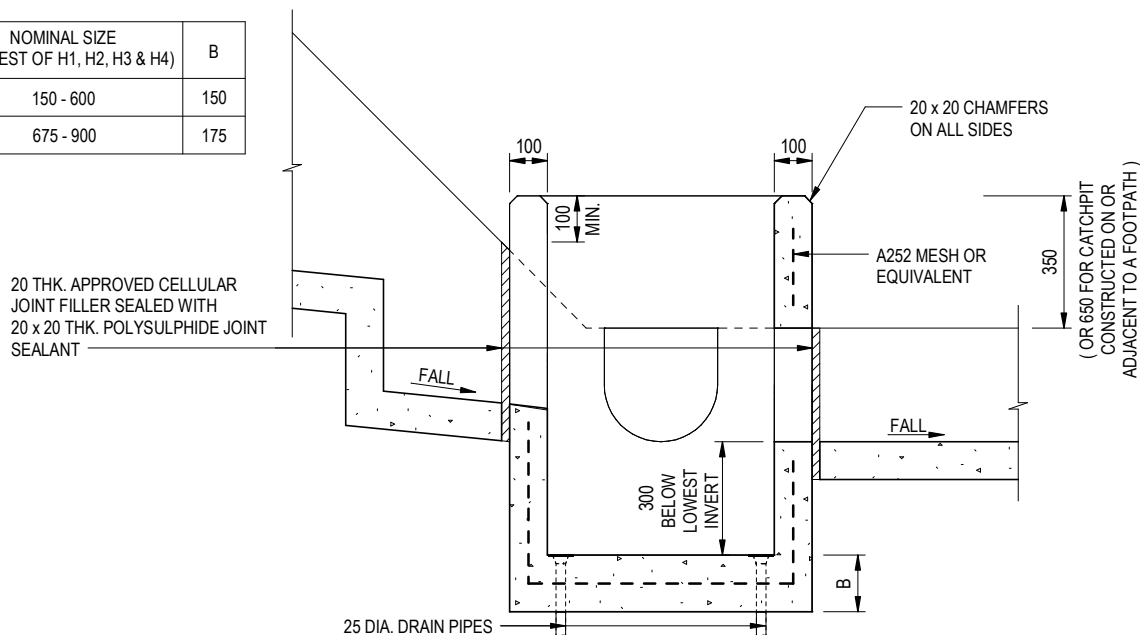
DATE JAN 1991

DRAWING NO.

C2409K



| NOMINAL SIZE<br>(LARGEST OF H1, H2, H3 & H4) | B   |
|----------------------------------------------|-----|
| 150 - 600                                    | 150 |
| 675 - 900                                    | 175 |



**NOTES:**

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

**CATCHPIT WITH TRAP  
(SHEET 1 OF 2)**

|      |                         |                 |         |
|------|-------------------------|-----------------|---------|
| A    | BIM OBJECT REVISION.    | Original Signed | 12.2025 |
| —    | FORMER DRG. NO. C2406J. | Original Signed | 03.2015 |
| REF. | REVISION                | SIGNATURE       | DATE    |



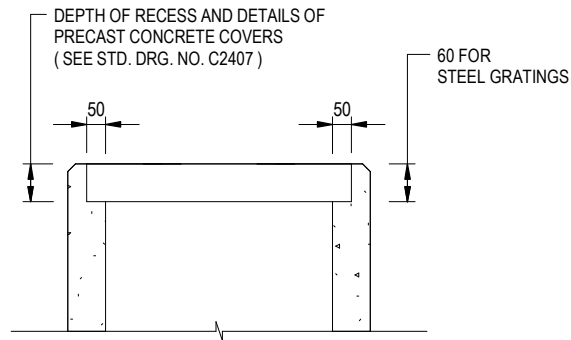
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

**DATE** JAN 1991

**DRAWING NO.**

**C2406 /1A**



## 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 1000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1000 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.

|      |                         |                 |         |
|------|-------------------------|-----------------|---------|
| B    | BIM OBJECT REVISION.    | Original Signed | 12.2025 |
| 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

**DATE** JAN 1991

**DRAWING NO.**

**C2406 /2B**