

**Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years**  
**at**  
**Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.**

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**Annex 1 Drainage Assessment**

A. Site particulars

- 1.1.1 The application site is abutting a local vehicular access leading to Kung Um Road. **(Figure 1)** It possesses an area of approximately 1,250m<sup>2</sup>.
- 1.1.2 The application site had been hard paved. Similar warehouses were found to the south and west of the application site.

B. Level and gradient of the subject site & proposed surface channel

- 1.1.3 The subject site has been hard paved and occupied an area of approximately 1,250m<sup>2</sup>. It has a gradient sloping from southwest to northeast from about +25.1mPD to +24.3mPD.
- 1.1.4 In order to follow the topography of the application site, the proposed surface channel will be constructed following the gradient of the site. As demonstrated in the calculation in **Annex 1.3** hereunder, 300mm surface U-channel will be capable to drain the surface runoff accrued at the subject site.

C. Catchment area of the proposed drainage provision at the subject site

- 1.1.5 It is found that the land at the application site is comparatively higher than the adjoining land except to the higher land to the west. However, the surface runoff is flowing to the south instead of flowing to the site because the level to the south is lower than the application site. The land to the north, east and south of the site is lower than the application site. As such, no external catchment has been identified.

D. Particulars of the existing drainage facilities to accept the surface runoff collected at the application site

- 1.1.6 According to recent site inspection, a natural drain is found to the west of the site. **(Figure 4)**

## 1.2 **Runoff Estimation & Proposed Drainage Facilities**

### A. Proposed drainage facilities

- 1.2.1 Subject to the above calculations, it is determined that 300mm surface U-channel which is made of concrete along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 5**).
- 1.2.2 The intercepted stormwater will then be discharged to natural drain to the west via the proposed 300mm surface U-channel outside the application site for dissipation. (**Figure 5**)
- 1.2.3 The calculations in **Annex 1.3** shows that the proposed 300mm surface channel has adequate capacity to cater for the surface runoff generated at the subject site. A sand trap is proposed at the terminal catchpit.
- 1.2.4 All the proposed drainage facilities, including the section of surface channel proposed in between of the subject site to the open drain, will be provided and maintained at the applicant's own expense. Also, surface U-channel will be cleaned at regular interval to avoid the accumulation of rubbish/debris which would affect the dissipation of storm water.
- 1.2.5 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.
- 1.2.6 The provision of the proposed surface U-channel will follow the gradient of the application site. All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.
- 1.2.7 All proposed works at the site periphery would not obstruct the flow of surface runoff from the adjacent areas, the provision of trees and surface U-channel at site boundary is detailed hereunder:
- (a) Soil excavation at site periphery, although at minimal scale, is inevitably for the provision of surface U-channel and landscaping. In the reason that the accumulation of excavated soil at the site periphery would obstruct the free flow of the surface runoff from the surroundings, the soil will be cleared at the soonest possible after the completion of the excavation process.
  - (b) No leveling work will be carried at the site periphery. The level of the site periphery will be maintained during and after the works. As such, the works at the site periphery would not either alter or obstructed the flow of surface runoff from adjacent areas.
  - (c) Some holes will be provided at the toe of hoarding so as to allow unobstructed flow of surface runoff to and from adjacent area.

## Annex 1.3 Drainage Calculation for the Proposed Provision of Drainage Facilities at Subject Site

### 1. Runoff Estimation

1.1 Rational method is adopted for estimating the designed run-off

$$Q = k \times i \times A / 3,600$$

Assuming that:

- i. The area of the entire catchment is approximately 1,250m<sup>2</sup>; &
- ii. The application site is totally hard paved and therefore the value of run-off co-efficient (k) is taken as 1.

$$\text{Difference in Land Datum} = 25.1\text{m} - 24.3\text{m} = 0.8\text{m}$$

$$L = 52\text{m}$$

$$\therefore \text{Average fall} = 1\text{m in } 65\text{m}$$

According to the Brandsby-Williams Equation adopted from the “Stormwater Drainage Manual – Planning, Design and Management” published by the Drainage Services Department (DSD),

$$\text{Time of Concentration } (t_c) = 0.14465 [ L / (H^{0.2} \times A^{0.1}) ]$$

$$t_c = 0.14465 [ 52 / (1.54^{0.2} \times 1,250^{0.1}) ]$$

$$t_c = 3.38 \text{ minutes}$$

With reference to the Intensity-Duration-Frequency Curves provided in the abovementioned manual, the mean rainfall intensity (i) for 1 in 50 recurrent flooding period is found to be 300 mm/hr

$$\text{By Rational Method, } Q = 1 \times 300 \times 1,250 / 3,600$$

$$\therefore Q = 104.17 \text{ l/s} = 6,250 \text{ l/min}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, 300mm surface U-channel in 1:80 and 1:95 gradient is considered adequate to dissipate all the stormwater accrued by the application site. The intercepted stormwater will then be discharged to the natural drain to the west of the application site for dissipation.

## Annex 2 Estimated Traffic Generation

- 2.1 The application site is abutting Kung Um Road. Having mentioned that the site is intended for warehouse for storage of construction materials and exhibition materials which is static in nature, traffic generated by the proposed development is extremely insignificant.
- 2.2 The estimated average traffic generation and traffic generation rate at peak hours are as follow:

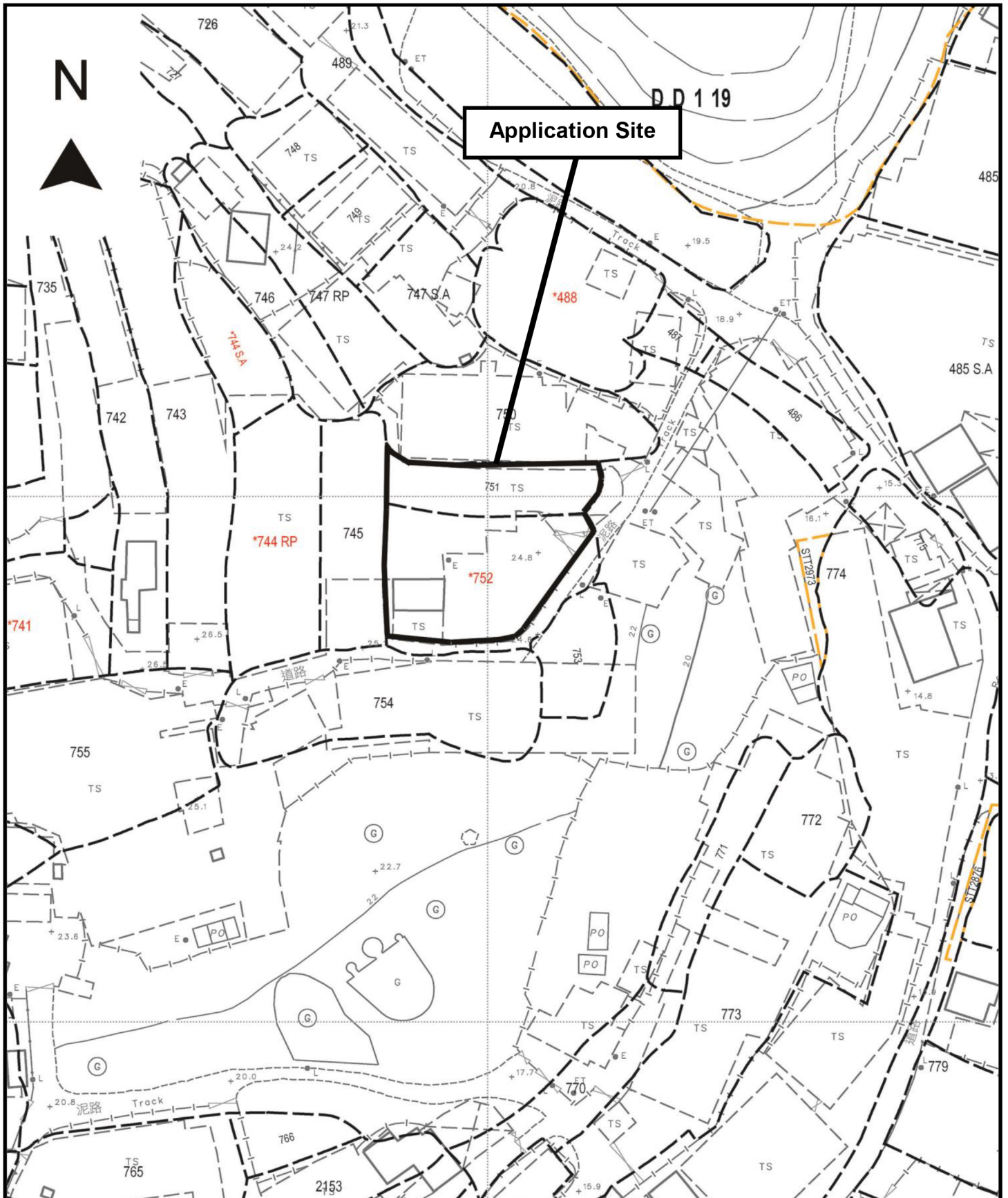
Type of Vehicle	Average Traffic	Average Traffic	Traffic	Traffic
	Generation Rate (pcu/hr)	Attraction Rate (pcu/hr)	Generation Rate at <u>Peak Hours</u> (pcu/hr)	Attraction Rate at <u>Peak Hours</u> (pcu/hr)
Light goods vehicle	0.38	0.38	0	0

Note 1: The opening hour of the proposed development is restricted to 9:00 a.m. to 5:00 p.m. from Mondays to Saturdays. No operation will be held on Sundays and public holidays.

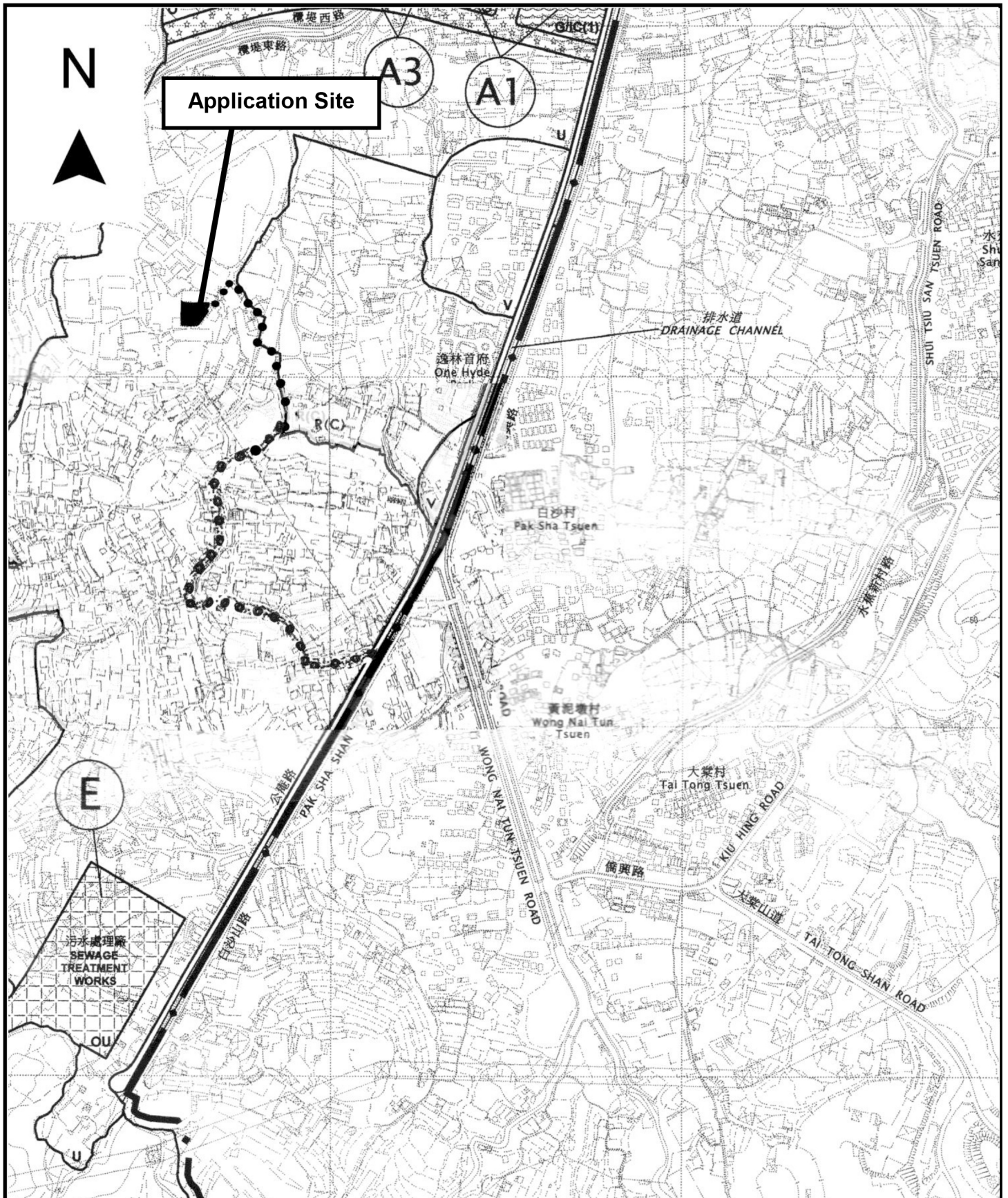
Note 2: The pcu of light goods vehicle is taken as 1.5.

Note 3: Morning peak is defined as 7:00a.m. to 9:00a.m. whereas afternoon peak is defined as 5:00p.m. to 7:00p.m.

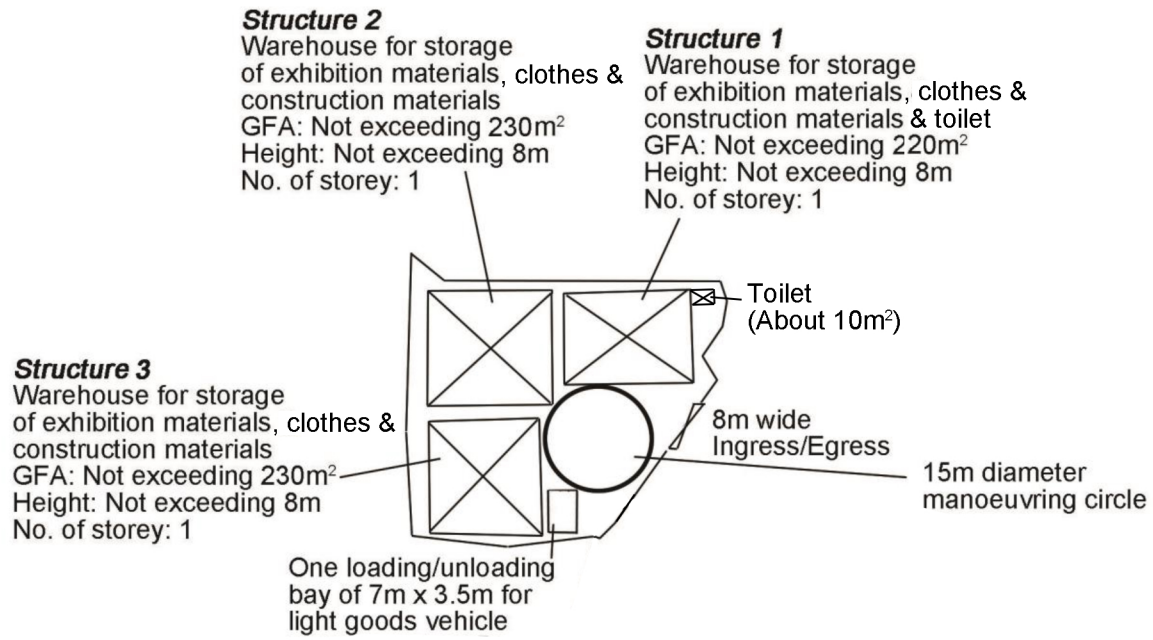
- 2.3 As shown in the above estimation, it is estimated that the proposed development would not generate significant amount of traffic. It would not affect the traffic condition of Kung Um Road.
- 2.4 In association with the intended purpose, adequate space for manoeuvring of vehicle would be provided within the application site and queueing up of traffic would not be the result especially that the traffic generated is insignificant. The negligible increase in traffic would not aggravate the traffic condition of Kung Um Road and nearby road networks.



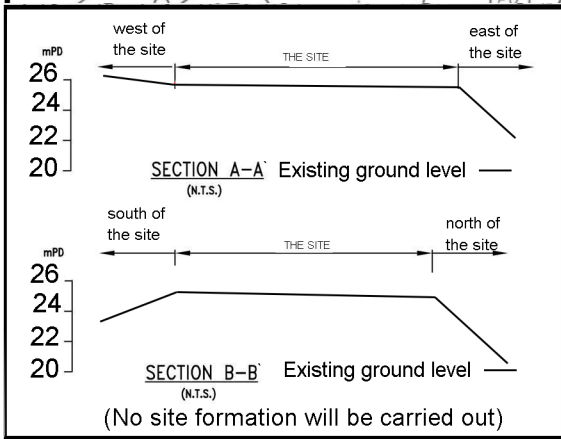
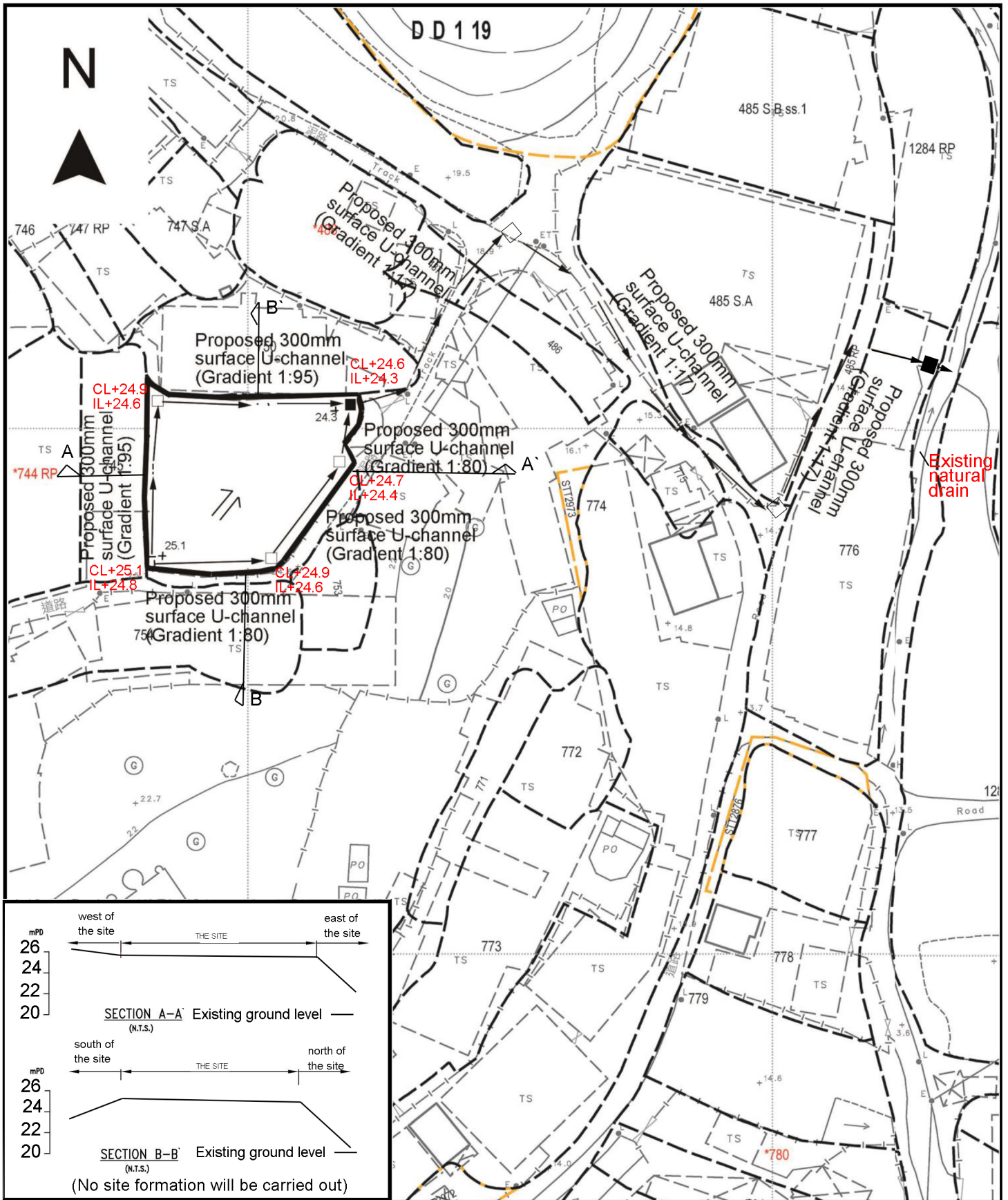
<p>Project 項目名稱:  <b>Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 &amp; 752 (Part) in D.D. 119, Yuen Long, N.T.</b></p>	<p>Drawing Title 圖目:  <b>Site Plan</b></p> <p>Drawing No. 圖號:  <b>Figure 1</b></p>	<p>Remarks 備註:</p> <p>Scale 比例:  <b>1:1000</b></p>
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<p>Project 項目名稱:</p> <p>Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 &amp; 752 (Part) in D.D. 119, Yuen Long, N.T.</p>	<p>Drawing Title 圖目:</p> <p>Location Plan</p> <p>Drawing No. 圖號:</p> <p>Figure 2</p>	<p>Remarks 備註:</p> <p>●●● Vehicular access leading from Kung Um Road</p> <p>Scale 比例:</p> <p>1:7500</p>
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Project 項目名稱: Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: Proposed Layout Plan	Remarks 備註:
	Drawing No. 圖號: Figure 3	



Project 項目名稱:  
**Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.**

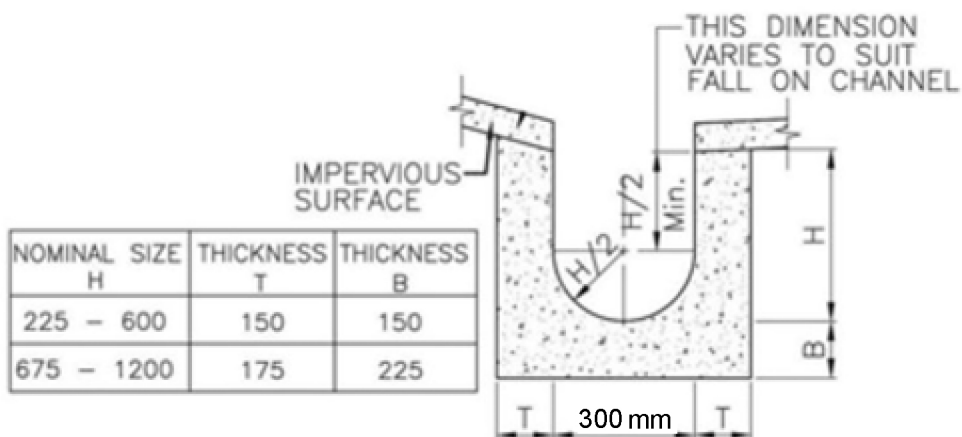
Drawing Title 圖目:  
**Proposed Drainage Plan**

Drawing No. 圖號:  
**Figure 4**

Remarks 備註:  
 +25.1 Level (in mPD)  
 Flow of Surface Runoff  
 Proposed catchpit  
 Proposed catchpit with Sand trap

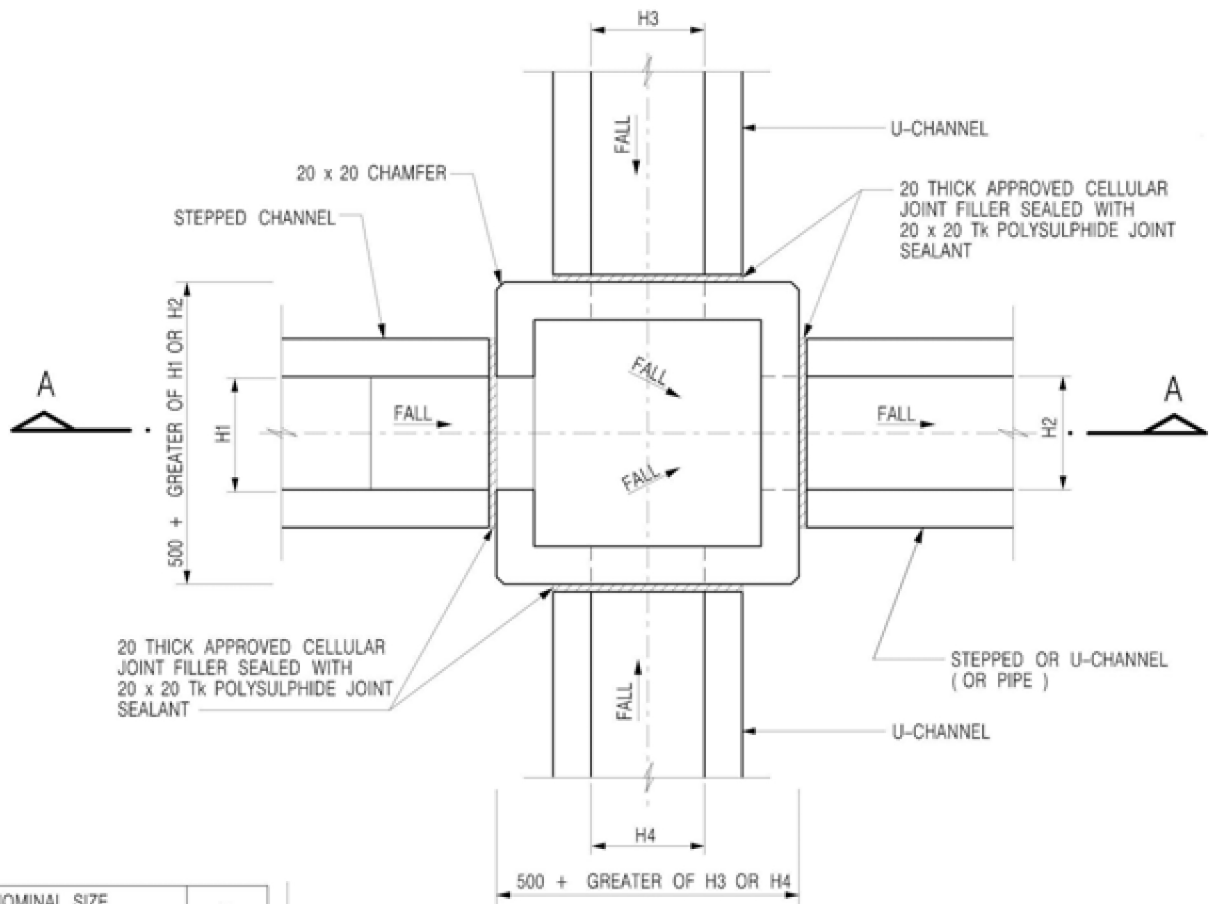
Scale 比例:  
 1:1000





**DETAILS OF U-CHANNEL**  
 (REFERENCE : FIG. 8.11 OF  
 GEOTECHNICAL MANUAL FOR SLOPES)  
 (N.T.S.)

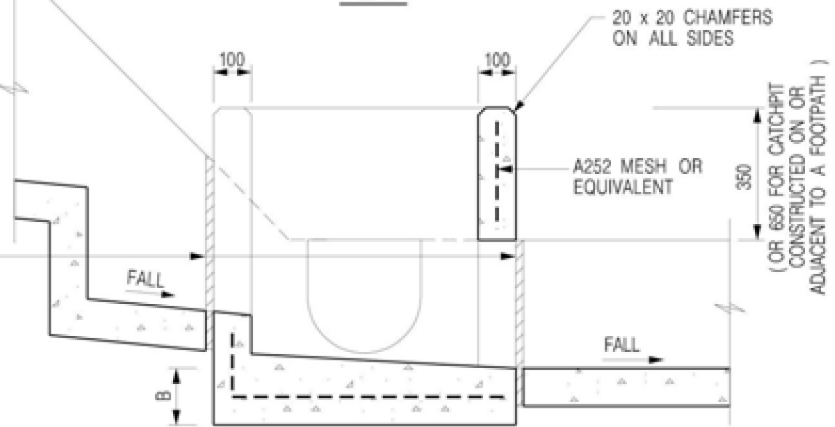
<p>Project 項目名稱:          Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 &amp; 752 (Part) in D.D. 119, Yuen Long, N.T.</p>	<p>Drawing Title 圖目:          Details of Proposed Surface U-channel</p>	<p>Remarks 備註:</p>
	<p>Drawing No. 圖號:          Figure 5</p>	<p>Scale 比例:          Not to scale</p>



PLAN

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

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT

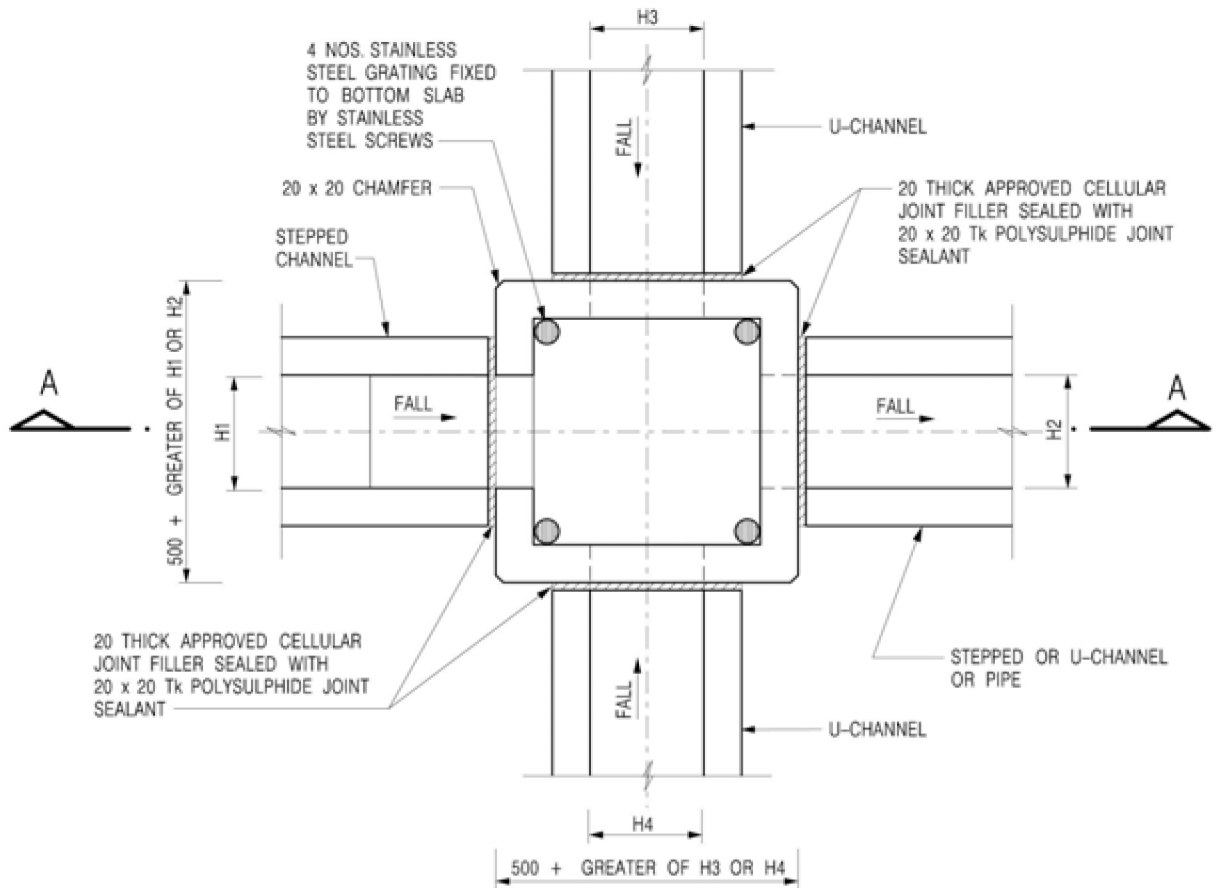


SECTION A - A

NOTES:

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

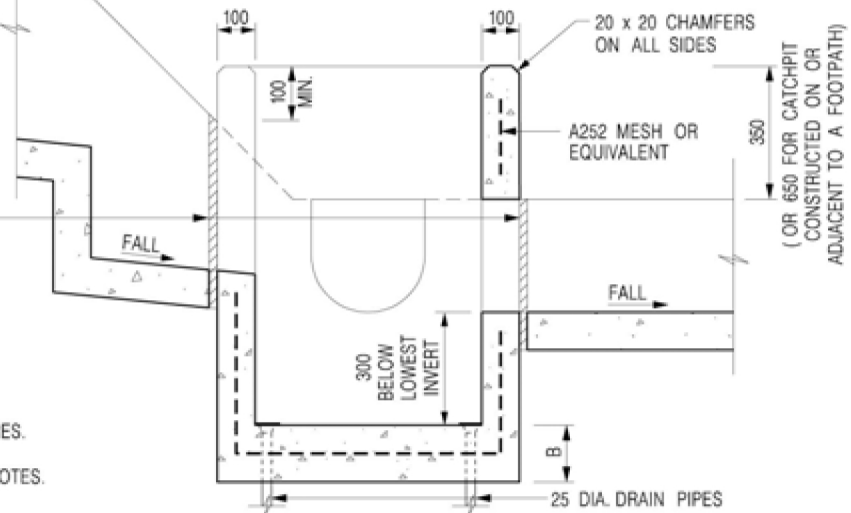
Project 項目名稱: Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: <b>The Details of the Proposed Catchpit</b>	Remarks 備註:
	Drawing No. 圖號: <b>Figure 6</b>	Scale 比例: <b>Not to scale</b>



PLAN

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

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT



SECTION A - A

NOTES:

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

Project 項目名稱:

Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.

Drawing Title 圖名:

The Details of Catchpit with Desilting Function

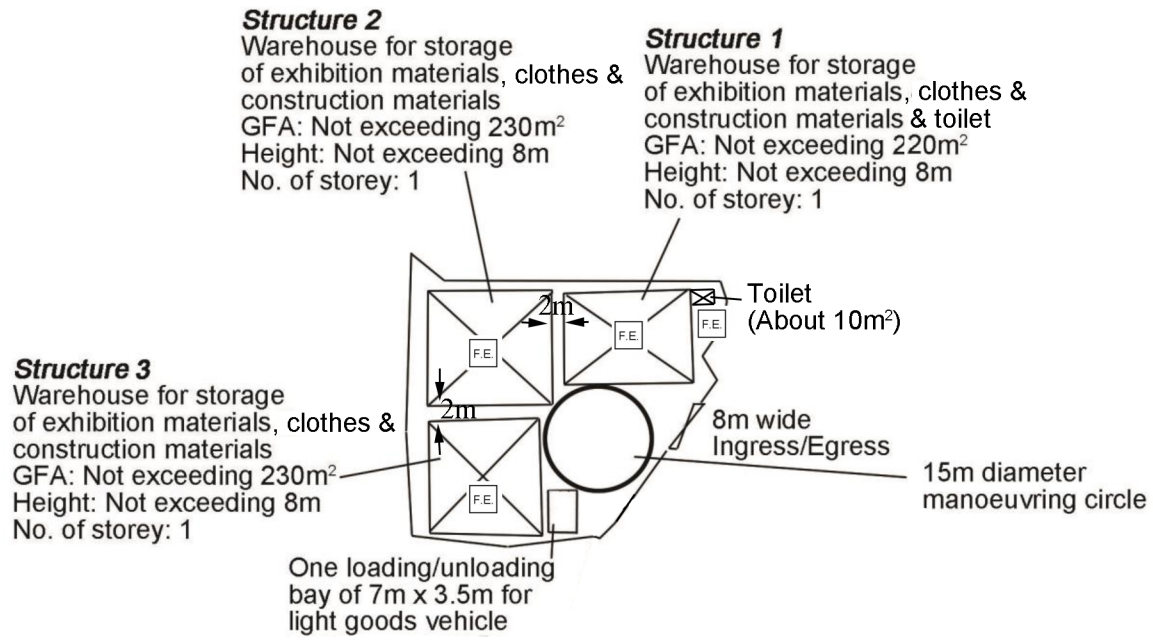
Remarks 備註:

Drawing No. 圖號:

Figure 7

Scale 比例:

Not to scale



Project 項目名稱: Proposed Temporary Warehouse for Storage of Exhibition Materials, Clothes and Construction Materials for a Period of 3 Years at Lots 751 & 752 (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: Proposed Fire Service Installations Plan	Remarks 備註: [F.E.] 5kg carbon dioxide fire extinguisher
	Drawing No. 圖號: Figure 8	Scale 比例: 1:1000