Proposed Temporary Shop & Services and Associated Excavation of Land for a Period of 3 Years
at
Lots 312 S.A, 312 S.B, 312 S.C, 312 S.D, 312 S.E, 312 S.F & 312 RP in D.D. 119, Shan Ha Tsuen, Yuen Long, N.T.

Annex 1   DRAINAGE PROPOSAL

1.1   Existing Situation

A.   Site particulars

1.1.1   The application site had been paved and occupied an area of about 1,000m².

1.1.2   The application site will be occupied for a shop & services.

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

1.1.3   The lowest point of the site is at the southeastern part which is about +9.9mPD. The highest point of the site is at the northwestern part which is about +9.4mPD.

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

1.1.4   According to **Figure 4**, it is noted that the land to surrounding the application site commands a lower level or about the same level as the application site.   As such, no external catchment is identified.

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

1.1.5   As shown in **Figure 4,** a public drain (i.e. 600mm surface channel) is found along the vehicular access abutting the site.

1.2   Runoff Estimation

1.2.1   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 1,000m²; (**Figure 4**)
ii. Though the catchment is predominant rural in character, it is assumed that the value of run-off co-efficient (k) is taken as 1.

Difference in Land Datum   =   9.9m – 9.4m   = 0.5m

L   =   100m

$$\therefore \quad \text{Average fall} \quad = \quad 0.5\text{m in } 100\text{m} \quad \text{or} \quad 1\text{m in } 200\text{m}$$

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

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

$$t_c = 0.14465 \, [\, 100/ (0.5^{0.2} \times 1{,}000^{0.1}) \,]$$

$$t_c = 8.33 \text{ minutes}$$

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 245mm/hr

$$\textit{By Rational Method}, Q_1 = 1 \times 245 \times 1{,}000 / 3{,}600$$

$$\therefore Q_1 = 68.06 \text{ l/s} = 4{,}083.33 \text{ l/min} = 0.068\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", <u>375mm surface U-channel at 1:180 gradient is considered adequate to dissipate all the stormwater accrued by the application site and adjacent land.</u>

1.3   <u>Proposed Drainage Facilities</u>

1.3.1   Subject to the calculations in 1.2 above, it is determined that proposed 375mm concrete surface U-channel at gradient of about 1:180 along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 4**).

1.3.2   The collected stormwater will then be discharged to the existing 600mm sirface channel abutting the site via the terminal catchpit with sand trap.

1.3.3   All the proposed drainage facilities will be provided and maintained at the applicant's own expense.   Also, surface channel will be cleaned at regular interval to avoid the accumulation of rubbish/debris which would affect the dissipation of storm water.

1.3.4   Sand trap or alike will be provided at the terminal catchpit to avoid the addition of load into public drainage.

1.3.5   <u>All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.</u>

1.3.6   For the drainage works outside the jurisdiction of the applicant, the applicant will seek the consent of land owners or District Lands Office/Yuen Long for works outside application site prior to the commencement of works.

1.3.7   The development would neither obstruct overland flow nor adversely affect existing natural streams, village drains, ditches and the adjacent areas, etc.

1.3.8   All proposed works at the site periphery would not obstruct the flow of surface runoff from the adjacent areas, the provision of surface channel at site boundary is detailed hereunder:

(a)   Soil excavation at site periphery, although at minimal scale, is inevitably for the provision of surface channel. 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)   In view of that soil excavation may be continued for several working days, surface channel will be dug in short sections and all soil excavated will be cleared before the excavation of another short section.

(c)   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.

(d)   Adequate gap, say 100mm, will be reserved at the toe of the site hoarding to allow free flowing of surface runoff to and from the application site.

Annex 2 Estimated Traffic Generation

2.1   The application site is accessible via a vehicular track leading from Shan Ha Road. In view of that the proposed development is target for the nearby residents and villagers, 2 loading/unloading spaces of 7m x 3.5m for light goods vehicle are deemed sufficient to cater for the operation need of the proposed development.

2.2   The estimated average traffic generation and traffic generation rate at peak hours are as follow:

Type of Vehicle	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at Peak Hours (pcu/hr)	Traffic Attraction Rate at Peak Hours (pcu/hr)
Light goods vehicle	0.3	0.3	1.5	1.5

Note 1: The opening hour of the proposed development is restricted to 9:00 a.m. to 7:00 p.m. at all days including Sundays and public holidays.

Note 2: The pcu of light goods vehicle are 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   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 Shan Ha Road and nearby road networks.
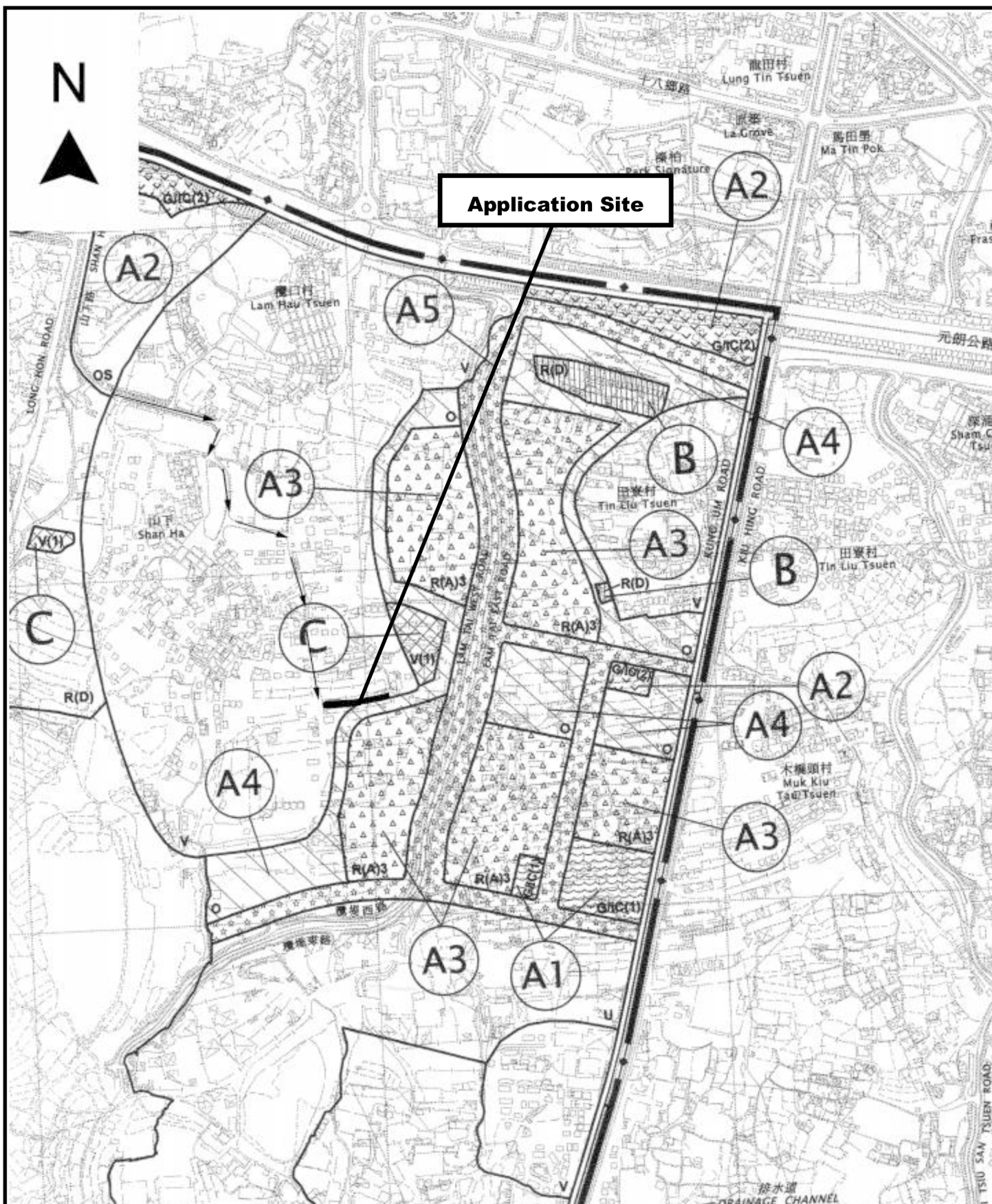
Application Site

Project 項目名稱：	Drawing Title 圖目：	Remarks 備註：
Proposed Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lots 312 S.A, 312 S.B, 312 S.C, 312 S.D, 312 S.E, 312 S.F & 312 RP in D.D. 119, Shan Ha Tsuen, Yuen Long, N.T.	Site Plan	
	Drawing No. 圖號：	Scale 比例：
	Figure 1	1:1000

Application Site

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Proposed Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lots 312 S.A, 312 S.B, 312 S.C, 312 S.D, 312 S.E, 312 S.F & 312 RP in D.D. 119, Shan Ha Tsuen, Yuen Long, N.T.	Location Plan	⟶ Vehicular access leading to the application site from Shan Ha Road
	Drawing No. 圖號: Figure 2	Scale 比例: 1:7500
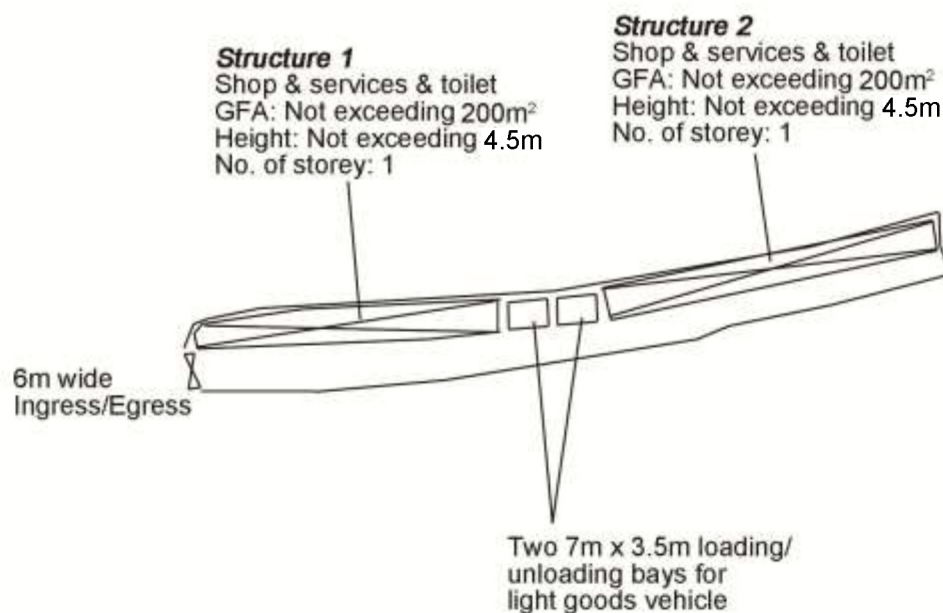
N

Structure 1
Shop & services & toilet
GFA: Not exceeding 200m²
Height: Not exceeding 4.5m
No. of storey: 1

Structure 2
Shop & services & toilet
GFA: Not exceeding 200m²
Height: Not exceeding 4.5m
No. of storey: 1

6m wide
Ingress/Egress

Two 7m x 3.5m loading/
unloading bays for
light goods vehicle

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	Drawing No. 圖號: Figure 3	Scale 比例: 1:1000

N

Proposed 375mm
surface channel
(Gradient 1:180)

Existing 600mm
open channel

Proposed 375mm
surface channel
(Gradient 1:180)

9.9

Proposed 375mm
surface channel
(Gradient 1:180)

+9.4

Proposed 375mm
surface channel
(Gradient 1:180)

露天貨倉
Open Storage