

**Proposed Temporary Animal Boarding Establishment (Dog Kennel) for  
a Period of 3 Years and Filling of Land  
at  
Lots 1347 S.W & 1347 S.AD in D.D.107, Fung Kat Heung, Kam Tin,  
Yuen Long, N.T.**

---

**Annex 1 Drainage Proposal**

**1.1 Existing Situation**

**A. Site particulars**

- 1.1.1 The application site occupied an area of about 280m<sup>2</sup>.
- 1.1.2 The area adjacent to the proposed development is mainly rural in nature. It is surrounded by some temporary structures to the west and an approved animal boarding establishment to the north. An open drain is found to the south of the application site.

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

- 1.1.3 It has a very gentle gradient sloping from northwest to southeast from about +18.8mPD to +18.4mPD.

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

- 1.1.4 According to **Figure 5**, it is noted that the level of the application site is comparatively higher than the adjoining land except to the north. As such, an external catchment has been identified as shown in **Figure 5**. However, an approved animal boarding establishment with planning permission No. A/YL-KTN/755 is found to the further north of the application site as shown in **Figure 5** of which drainage facilities will be provided at the said has been provided so that the external catchment stops there.

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

- 1.1.5 As shown in **Figure 5**, an open drain is found to the south of the application 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 (including external catchment) is approximately 820m<sup>2</sup>;
- ii. Although the majority of the catchment is vegetated in nature, it is assumed that the value of run-off co-efficient (k) is taken as 1 for conservative reason.

$$\text{Difference in Land Datum} = 19.6\text{m} - 18.4\text{m} = 1.2\text{m}$$

$$L = 42\text{m}$$

$$\therefore \text{Average fall} = 1.2\text{m in } 42\text{m} \text{ or } 1\text{m in } 35\text{m}$$

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

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

$$t_c = 0.14465 [ 42 / (2.86^{0.2} \times 820^{0.1}) ]$$

$$t_c = 2.52 \text{ minutes}$$

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 180 mm/hr

**By Rational Method,**  $Q_1 = 1 \times 325 \times 820 / 3,600$

$$\therefore Q_1 = 74.02 \text{ l/s} = 4,441.67 \text{ l/min} = 0.074\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, for an approximate gradient of about 1:80 in order to follow the gradient of the application site, 300mm surface U-channel is considered adequate to dissipate all the stormwater accrued by the application site.

### **1.3 Proposed Drainage Facilities**

1.3.1 Subject to the calculations in 1.2 above, it is determined that proposed 300mm surface U-channel along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 5**).

1.3.2 Catchpit will be provided at the turning point of the surface U-channel. Sand trap or alike will be provided at the terminal catchpit.

1.3.3 The collected stormwater will then be dissipate to the open drain to the immediate south of the application site.

1.3.4 All the proposed drainage facilities will be provided and maintained at the

applicant's own expense.

- 1.3.5 The provision of the proposed surface channel will follow the gradient of the application site.
- 1.3.6 Prior to the commencement of drainage works, the applicant will seek the consent of the District Lands Office/Yuen Long and relevant registered land owner for works outside the application site or outside the jurisdiction of the applicant.
- 1.3.7 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 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 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) 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) 100mm will be reserved at the toe of the site hoarding to allow unobstructed flow of surface runoff.