Proposed Temporary Vehicle Repair Workshop for Private Car for a Period of 3 Years
at
Lot 143 (Part) in D.D. 52 & Adjoining Government Land, Sheung Shui, New Territories

Annex 1 Drainage Proposal

1.1 Existing Situation

A. Site particulars

1.1.1 The application site occupies an area of about 1,230m^2.

1.1.2 The site is serviced by a vehicular access leading from Man Kam To Road. The area adjacent to the proposed development is mainly rural in nature.

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

1.1.3 It has a gradient sloping from the northeast to southwest from about +17.0mPD to +13.6mPD. (**Figure 4**)

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

1.1.4 The land to the south, west and north is found lower in level than the application site or about the same level as the application site. However, a knoll is found to the east of the application site. As such, an external catchment has been identified in **Figure 4**.

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 natural drain is found to the southwest of the application site. The stormwater intercepted by the proposed surface drain at the application site will be dissipated to the said natural drain.

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 catchment including the external catchment is approximately 1,050 and 3,240m^2; (**Figure 4**)
ii. The application site has been fully paved. It is assumed that the value of run-off co-efficient (k) is taken as 0.7 because the external catchment is vegetated.

Difference in Land Datum = 40m – 13.6m = 26.4m

L = 126m

∴ Average fall = 26.4m in 126m or 1m in 4.77m

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

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

$t_c = 0.14465 [126/ (20.95^{0.2} \times 3{,}240^{0.1})]$

t_c = 4.42 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 290 mm/hr

By Rational Method, $Q_1 = 1 \times 290 \times 3{,}240 / 3{,}600$

$\therefore Q_1$ = 182.7 l/s = 10,962 l/min = 0.18m^3/s

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", for an approximate gradient of about 1:22 in order to follow the gradient of the application site, 300mm surface U-channel along the site periphery 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 concrete surface U-channel 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 directly to the natural drain to the southwest of the application site.

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

1.3.4 The provision of the proposed surface 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.

1.3.5 Prior to the commencement of the drainage works, the applicant will seek consent from District Lands Office/North and relevant land owners for the provision of drainage facilities outside the application site.

1.3.6 The proposed development would not affect the existing ditches, drains and obstruct the flow of the flow of surface runoff.

1.3.7 The provision of trees and surface channel at site boundary is detailed hereunder:

(a) Soil excavation at site periphery, is inevitably for the provision of surface channel and landscaping. The accumulation of excavated soil at the site periphery would obstruct the free flow of the surface runoff from the surroundings. Hence, 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. The works at the site periphery would not either alter the flow of surface runoff from adjacent areas.

(d) Holes will be provided at the toe of site hoarding to allow unobstructed flow of surface runoff.

Annex 2 Estimated Traffic Generation

2.1 The application site is serviced by a vehicular access leading from Man Kam To Road. Having mentioned that the site is intended for vehicle repair workshop for private car only, traffic generated by the proposed development is not significant.

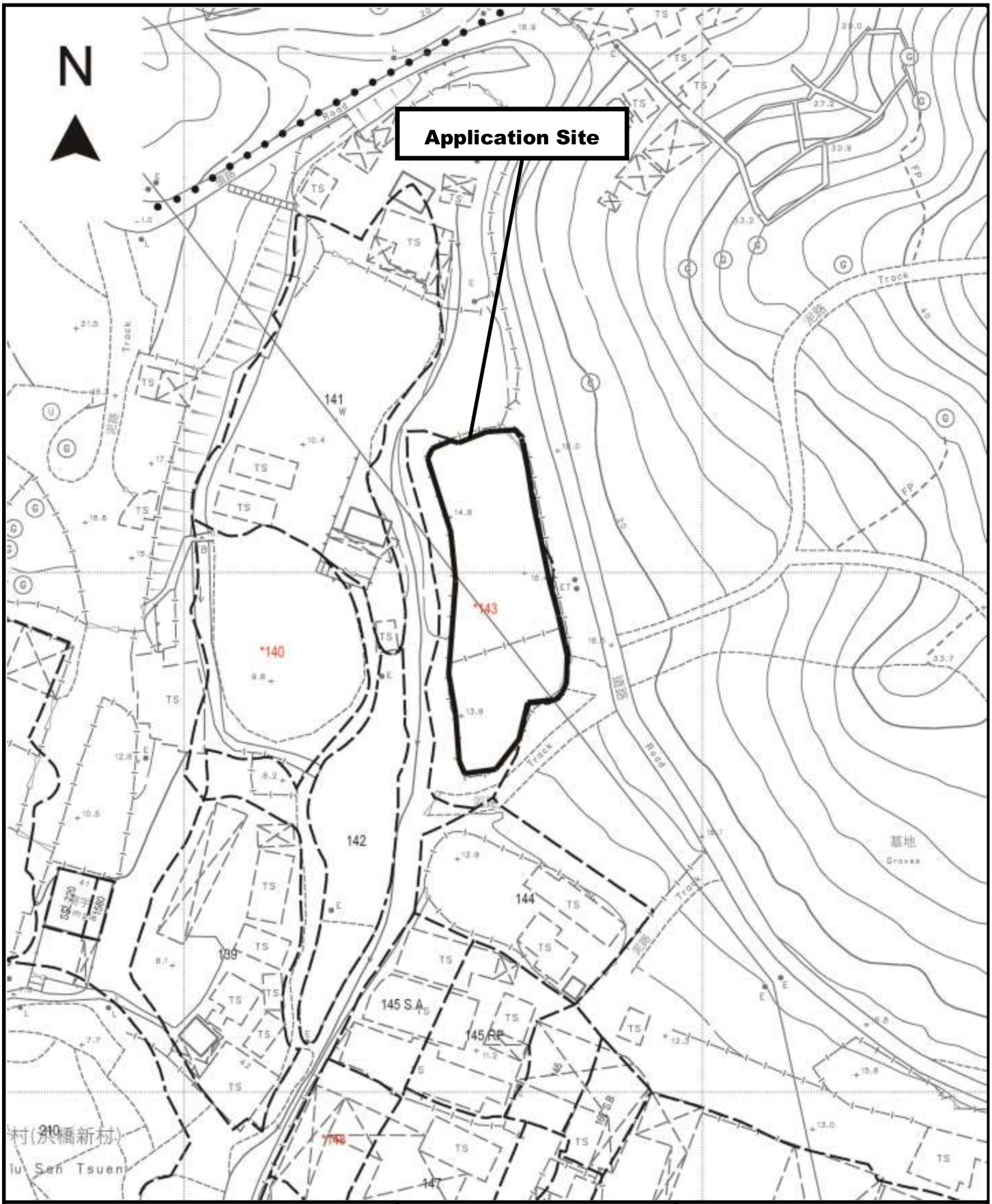
2.2 There will be 2 parking space of 5m x 2.5m for private car/light van for loading/unloading of vehicle parts. The estimated traffic generation/attraction rate is shown below:

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)
Private car/light van	0.3	0.3	2	0

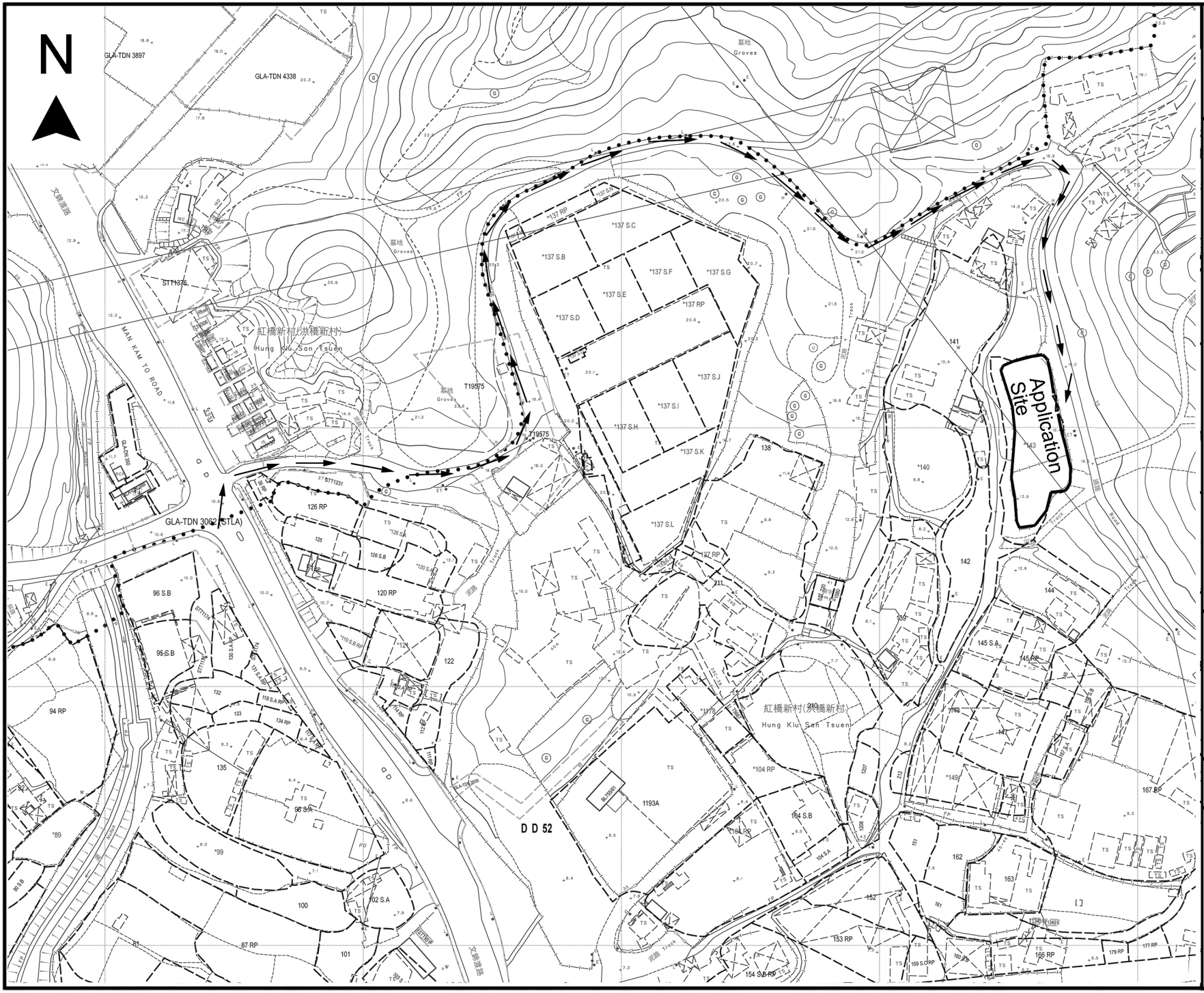
Note:

1. The operation hours of the proposed development is from 9:00a.m. to 7:00p.m. from Mondays to Saturdays. No operation will be held on Sundays and public holidays;
2. The pcu of private car/light van is taken as 1; &
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 would be provided within the application site. Sufficient space within the application site is provided so that no queueing up of vehicle would be occurred outside the application site.



Project 項目名稱: Temporary Vehicle Repairing Workshop for Private Car for a Period of 3 Years at Lot 143 (Part) & Adjoining Government Land in D.D. 52, Sheung Shui, New Territories	Drawing Title 圖目: Site Plan	Remarks 備註:
	Drawing No. 圖號: Figure 1	Scale 比例: 1:1000



Drawing No.

Figure 2

Project

Temporary Vehicle Repair Workshop for Private Car for a Period of 3 Years at Lot 143 (Part) in D.D. 52 & Adjoining Government Land, Sheung Shui, New Territories

Drawing Title

Proposed Vehicular Access Plan

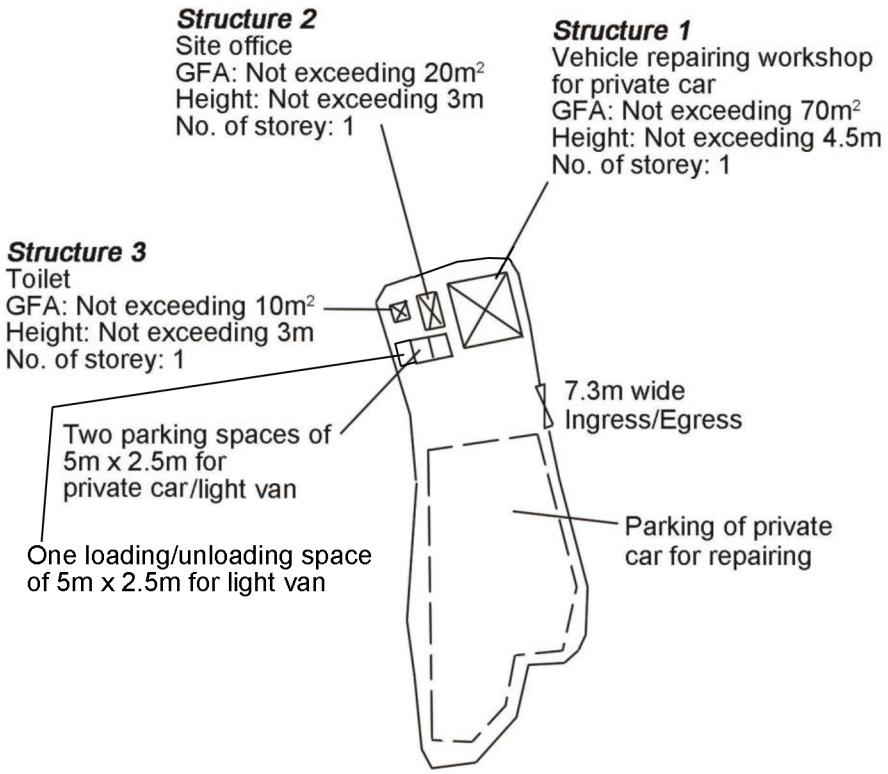
Scale

1:2000

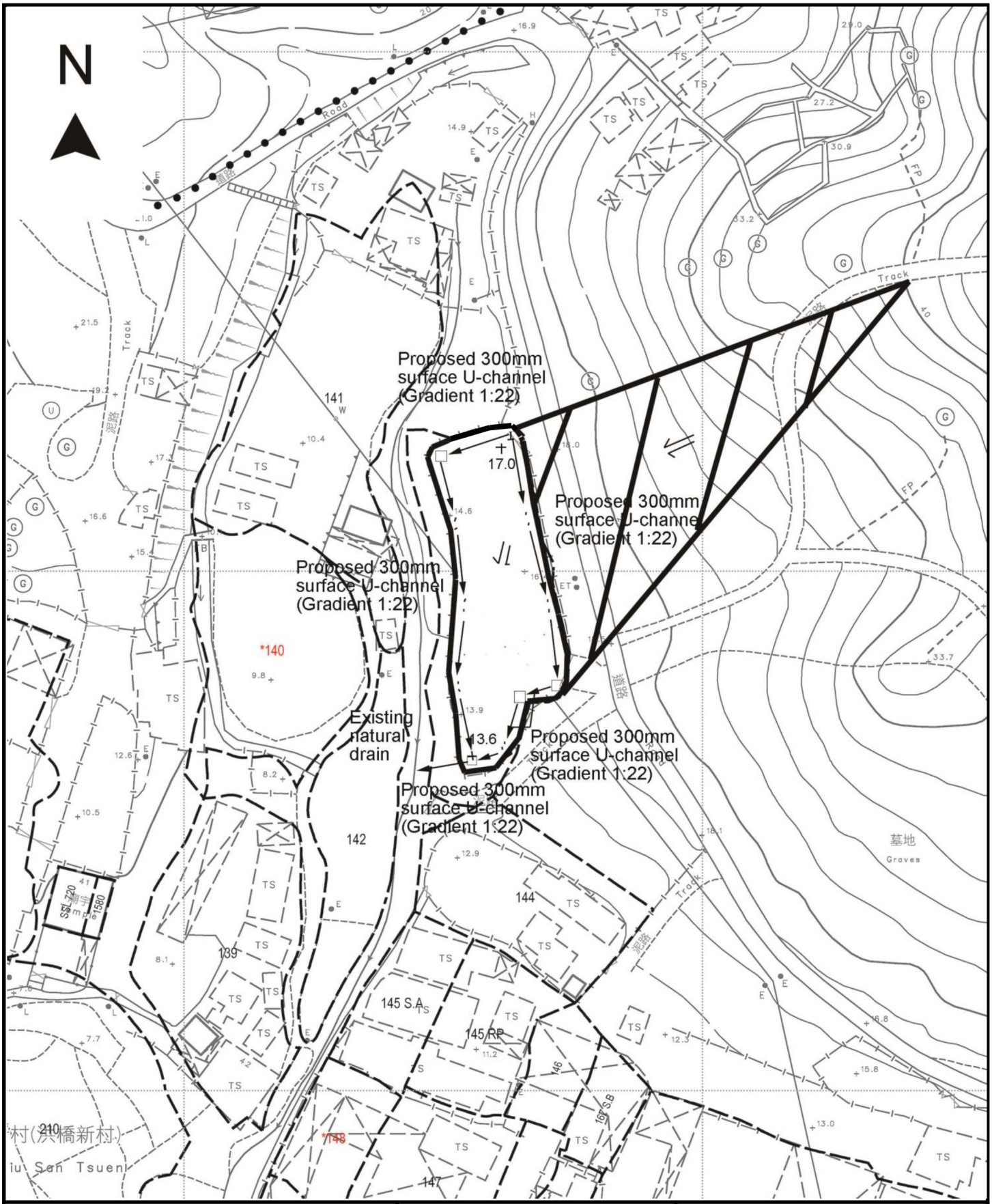
Remarks

→ Vehicular access leading to application site from Man Kam To Road

N



Project 項目名稱:	Drawing Title 圖目:	Remarks 備註:
Temporary Vehicle Repairing Workshop for Private Car for a Period of 3 Years at Lot 143 (Part) & Adjoining Government Land in D.D. 52, Sheung Shui, New Territories	Layout Plan	
	Drawing No. 圖號: Figure 3	Scale 比例: 1:1000



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Drawing Title 圖目:

Drainage Plan

Drawing No. 圖號:

Figure 4

Remarks 備註:

- External catchment
- Application site
- Proposed catchpit
- +13.6 Level (in mPD)
- ⇐ Flow of surface runoff

Scale 比例:

1:1000