

Proposed Temporary Shop and Services and Associated Excavation of Land for a Period of 3 Years

at

Lots 1552, 1553 RP & 1554 RP in D.D.121, 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 1,580m².
- 1.1.2 The application site will be occupied for selling of second hand private car and car beauty services. Some New Territories Exempted Houses were found to the south of the application site. The land to the east is vacant at the moment. An existing open drain is found to the immediate west of the application site.

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

- 1.1.3 The highest point of the site is at the northeastern part which is about +9.2mPD. The lowest point of the site is at the northwestern part which is about +8.8mPD.

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 except to the south. 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**, an existing open drain (SNP1000325) is found to the immediate west of the application site. The surface runoff collected at the application site would be dissipated to the said open 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 entire catchment is approximately 3,600m²; (**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.

$$\text{Difference in Land Datum} = 9.7m - 8.8m = 0.9m$$

$$L = 81m$$

$$\therefore \text{Average fall} = 0.9m \text{ in } 81m \text{ or } 1m \text{ in } 90m$$

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

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

$$t_c = 0.14465 [81 / (1.11^{0.2} \times 3,600^{0.1})]$$

$$t_c = 5.06 \text{ minutes}$$

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 275mm/hr

$$\text{By Rational Method, } Q_1 = 1 \times 275 \times 3,600 / 3,600$$

$$\therefore Q_1 = 275 \text{ l/s} = 16,500 \text{ l/min} = 0.275 \text{ m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, for an approximate gradient of about 1:50 & 1:180 in order to follow the gradient of the application site, 450mm surface U-channel is considered adequate to dissipate all the stormwater accrued by the application site and adjacent land.

1.3 Proposed Drainage Facilities

1.3.1 Subject to the calculations in 1.2 above, it is determined that proposed 450mm concrete surface U-channel at gradient of about 1:50 & 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 open drain (SNP1000325) to the immediate west of the application site. Sand trap or alike will be provided at the terminal catchpit before the stormwater is discharged to the public drainage.

1.3.3 All the proposed drainage facilities will be provided and maintained at the applicant's own expense. Also, sand trap and 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 All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.

1.3.5 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) 100mm openings will be provided at the toe of site hoarding so as to allow unobstructed flow of surface runoff from adjacent area.

Annex 2 Estimated Traffic Generation

2.1 The application site is served by a vehicular track leading from Shan Ha Road. **(Figure 1)**

2.2 According to the proposed layout plan in **Figure 3**, four 5m x 2.5m parking spaces are proposed for the convenience of clients. According to the applicant's information, there is about 12 vehicles visiting the application site on weekdays and about 18 vehicles visiting the application in weekends.

2.3 No light goods vehicle, medium goods vehicle, heavy goods vehicle and container trailer/tractor will allow to enter/park at the site.

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

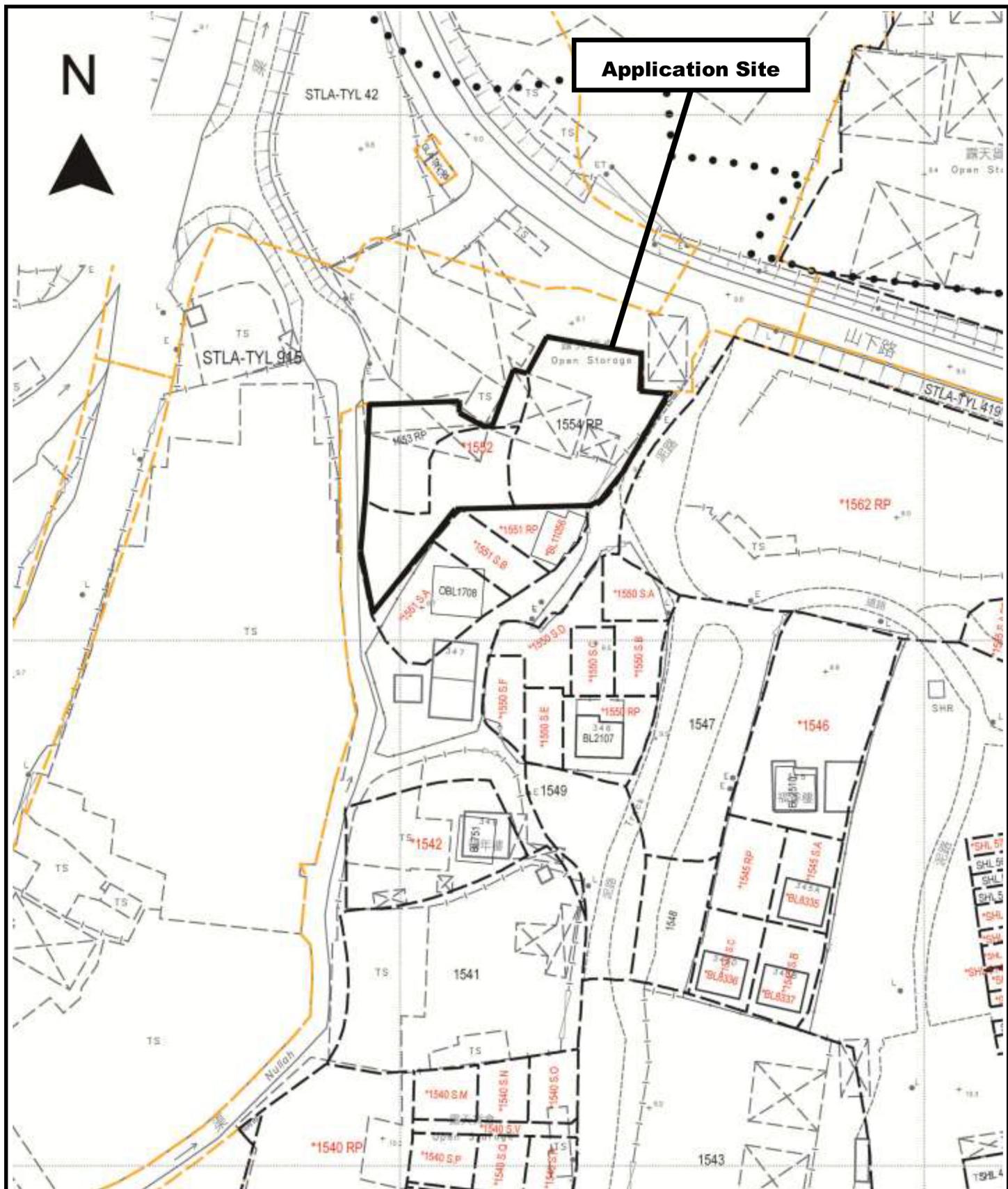
Type of Vehicle	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at <u>Peak Hours</u> (pcu/hr)	Traffic Attraction Rate at <u>Peak Hours</u> (pcu/hr)
Private car	1.6	1.6	2	3

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

Note 2: The pcu of private car is taken as 1.

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.

2.5 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 the area because of the limited size and nature of the proposed development.



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Drawing Title 圖目：

Application Site

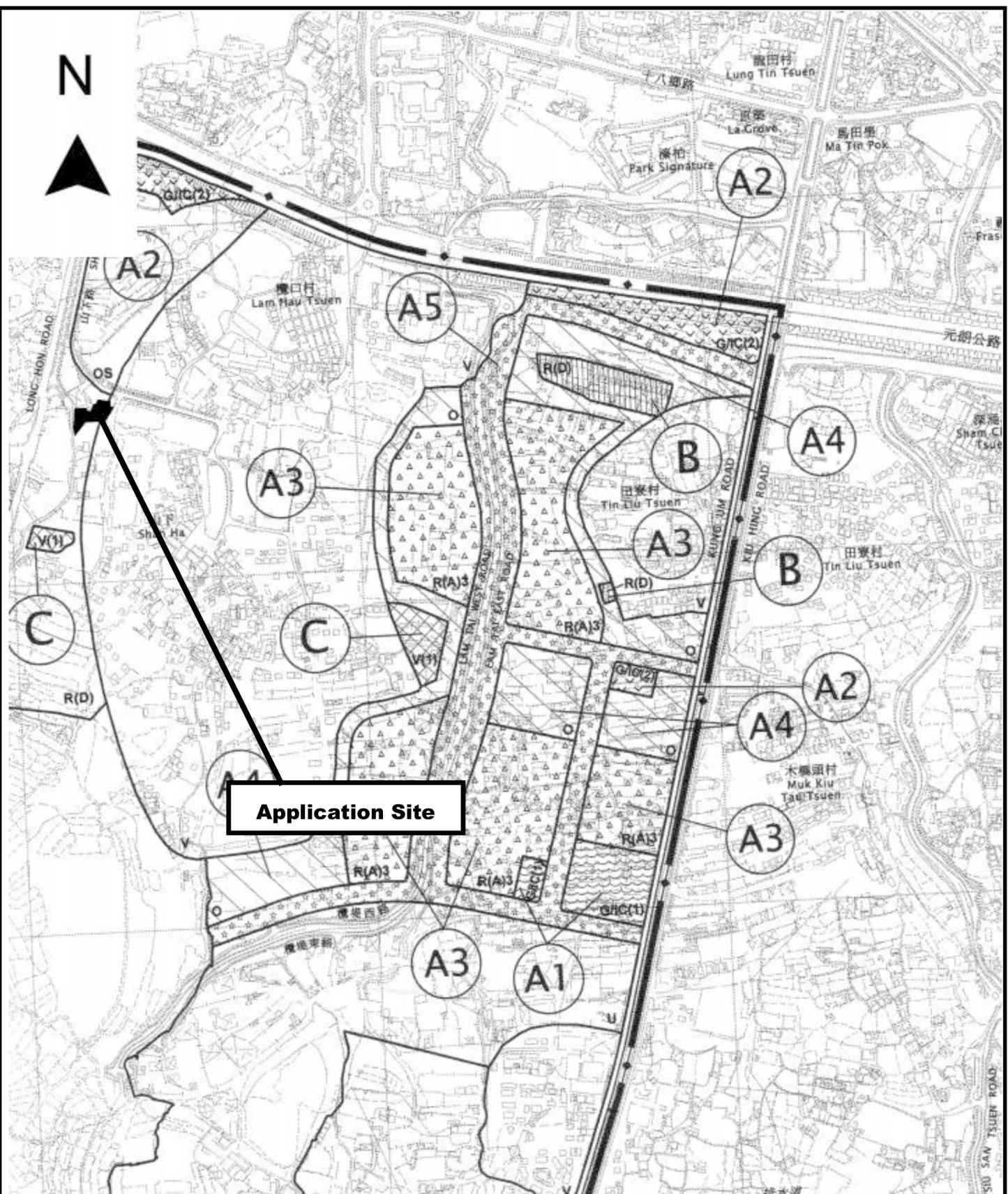
Remarks 備註:

Drawing No. 圖號:

Figure 1

Scale 比例:

1:1000



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Drawing Title 圖目:

Location Plan

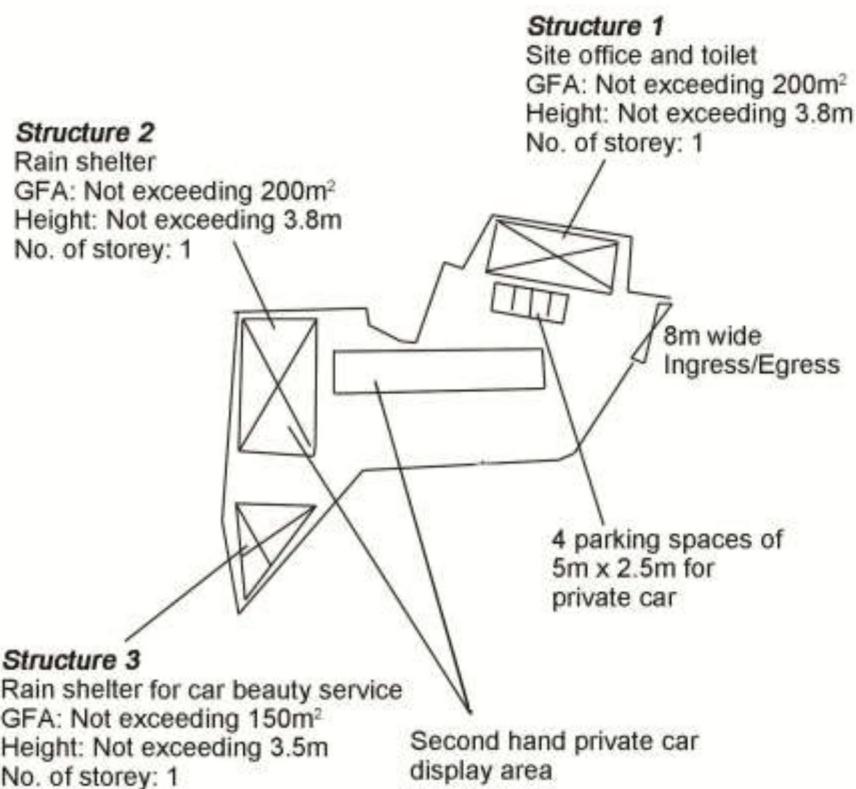
Remarks 備註:

Drawing No. 圖號:

Figure 2

Scale 比例:

1:7500



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Drawing Title 圖目:

Proposed Layout Plan

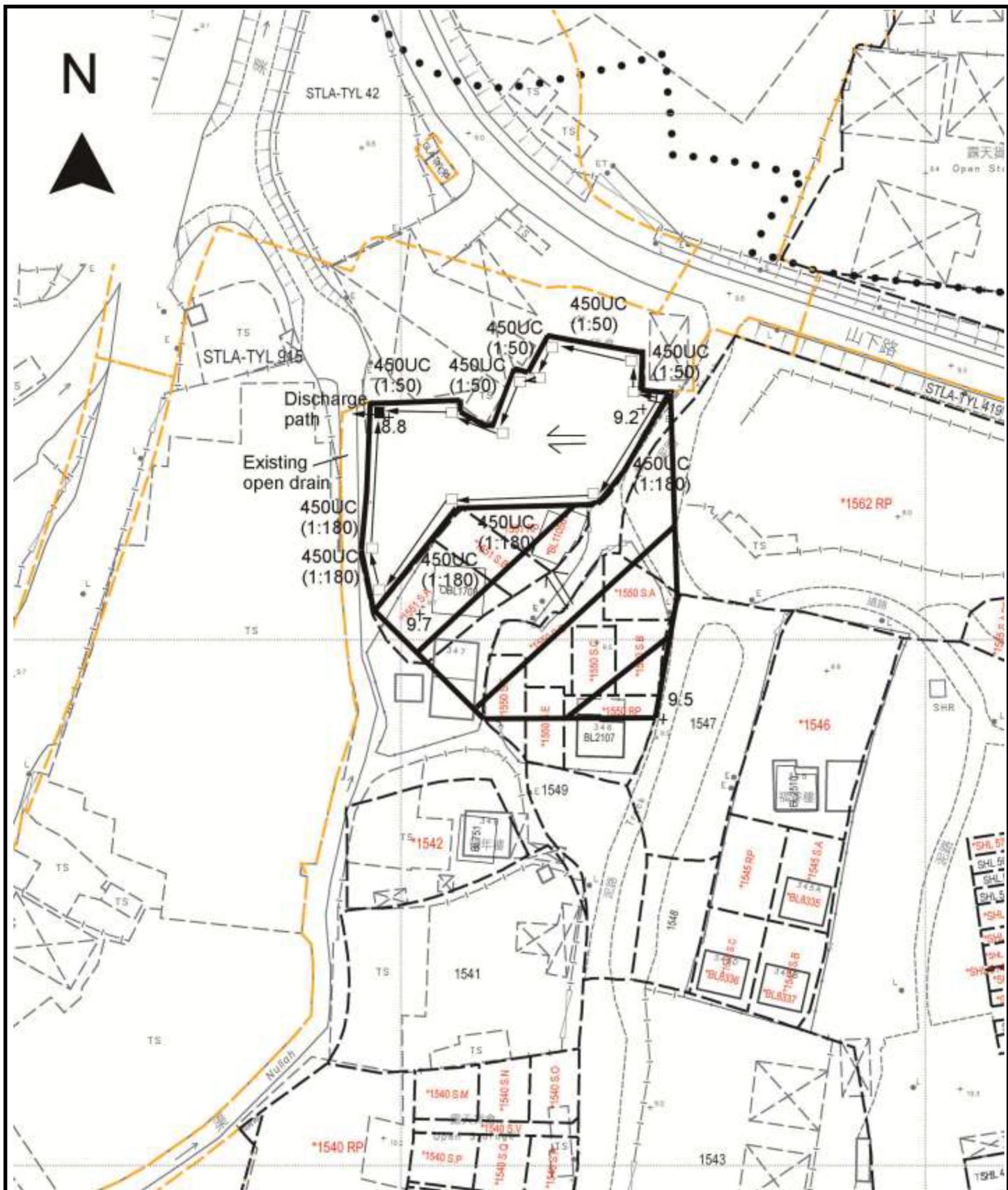
Remarks 備註:

Drawing No. 圖號:

Figure 3

Scale 比例:

1:1000



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Drawing Title 圖目：

Proposed Drainage Plan

Remarks 備註:

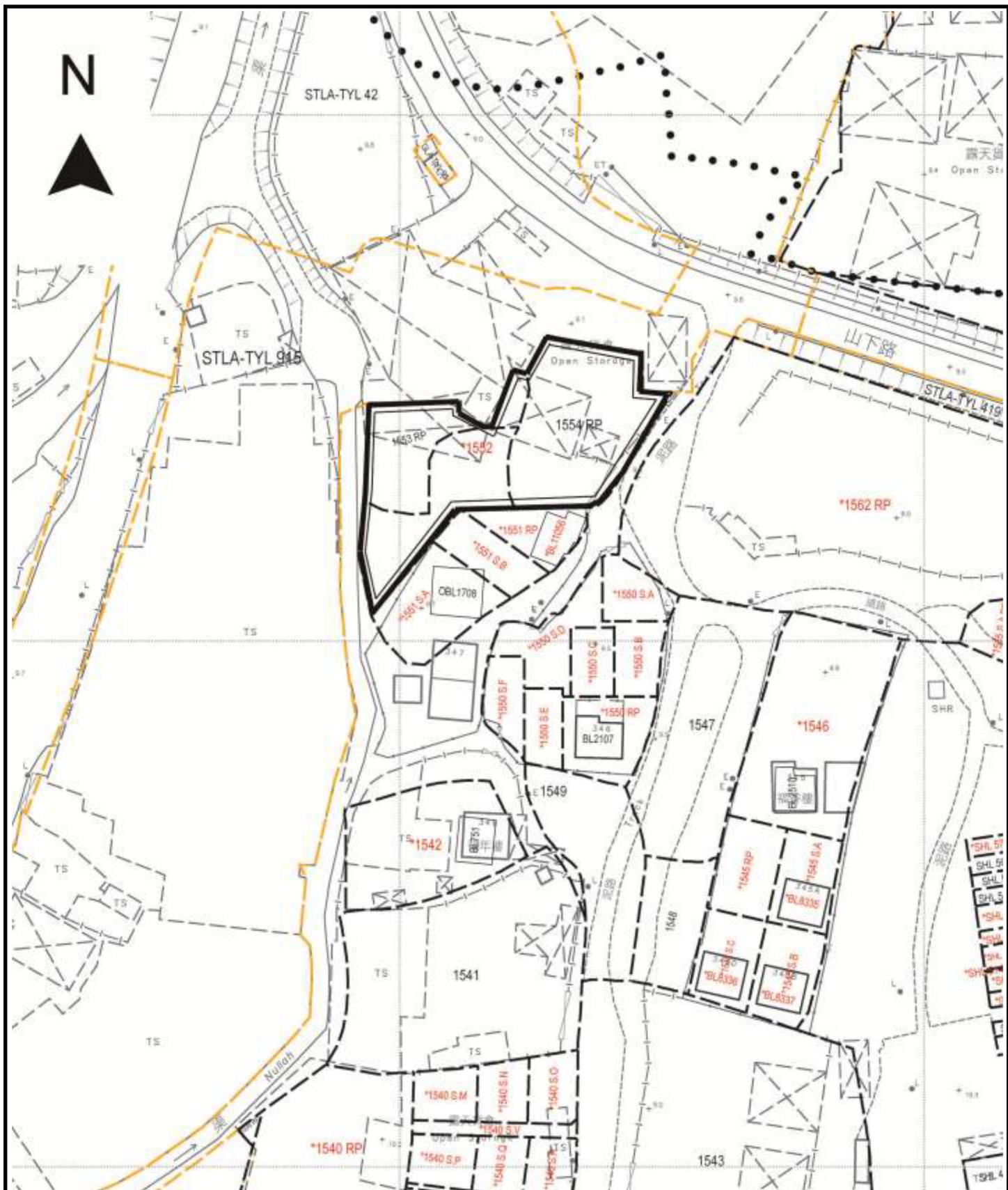
- Proposed catchpit
- Catchpit with sand trap
-  Flow of surface runoff
- +9.2 Level (in mPD)
-  External catchment

Drawing No. 圖號:

Figure 4

Scale 比例:

1:1000



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Drawing Title 圖目:

Excavation of Land Plan

Remarks 備註:

Proposed excavation of land (0.45m) for the provision of surface channel for interception of rain water

Drawing No. 圖號:

Figure 5

Scale 比例:

1:1000