Proposed Temporary Public Vehicle Park for Private Cars for a Period of 3 Years
at
Lots 2040 & 2054 (Part) in D.D. 119, Muk Kiu Tau Tsuen, Yuen Long, N.T.

Annex 1 Drainage Assessment

A. Site particulars

1.1.1 The application site is accessible via an existing vehicular track leading from Kiu Hing Road. (**Figure 2**) It possesses an area of approximately 1,980m^2.

1.1.2 The application site had been hard paved.

1.1.3 The application site is surrounded by a New Territories Village House so that there is an acute demand for private car parking spaces.

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

1.1.4 The subject site has been hard paved and occupied an area of approximately 1,980m^2. It has a gradient sloping from southeast to southwest from about +9.2mPD to +8.4mPD.

1.1.5 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, 450mm 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

1.1.6 It is noted that the level to the north, south, east and west of the site is lower than or about the same as the application site.

1.1.7 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

1.1.8 According to recent site inspection, an open drain is found to the immediate southwest of the application site as shown in the proposed drainage path plan in **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 450mm 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 4**).

1.2.2 The intercepted stormwater will then be discharged to the natural drain to the immediate northeast of the application site via a proposed 450mm surface U-channal outside the application site. (**Figure 4**)

1.2.3 The calculations in **Annex 1.3** shows that the proposed 450mm surface channel has adequate capacity to cater for the surface runoff generated at the subject site and the external catchment. 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 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) 100mm openings 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 1,980m^2; & (**Figure 4**)
ii. The application site is totally hard paved and therefore the value of run-off co-efficient (k) is taken as 1.

Difference in Land Datum = 9.2m – 8.4m = 0.8m

L = 61m

∴ Average fall = 0.4m in 61m or 1m in 76.25

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

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

$$t_c = 0.14465 \left[61/ (1.31^{0.2} \times 1{,}980^{0.1}) \right]$$

$$t_c = 3.91 \text{ minutes}$$

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 295 mm/hr

By Rational Method, $Q = 1 \times 295 \times 1{,}980 / 3{,}600$

∴ $Q = 162.5$ l/s = 9,735l/min

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", 450mm surface U-channel in 1:90 and 1:150 gradient is considered adequate to dissipate all the stormwater accrued by the application site and the adjacent land.

Annex 2 Estimated Traffic Generation

2.1 The application site is serviced by a vehicular access leading from Kiu Hing Road. (**Figure 1**)

2.2 The application site will be opened for parking of private car only. No light goods vehicle, medium goods vehicle and heavy goods vehicle exceeding 5.5 tonnes including container trailer and tractor will allow to enter/park at the application site. Also, vehicles without valid licences issued under the Road Traffic Ordinance will not be permitted to park at the application site.

2.3 The traffic generation will be solely contributed by the public vehicle park The estimated average traffic generation and traffic generation rate at peak hours are as follow:

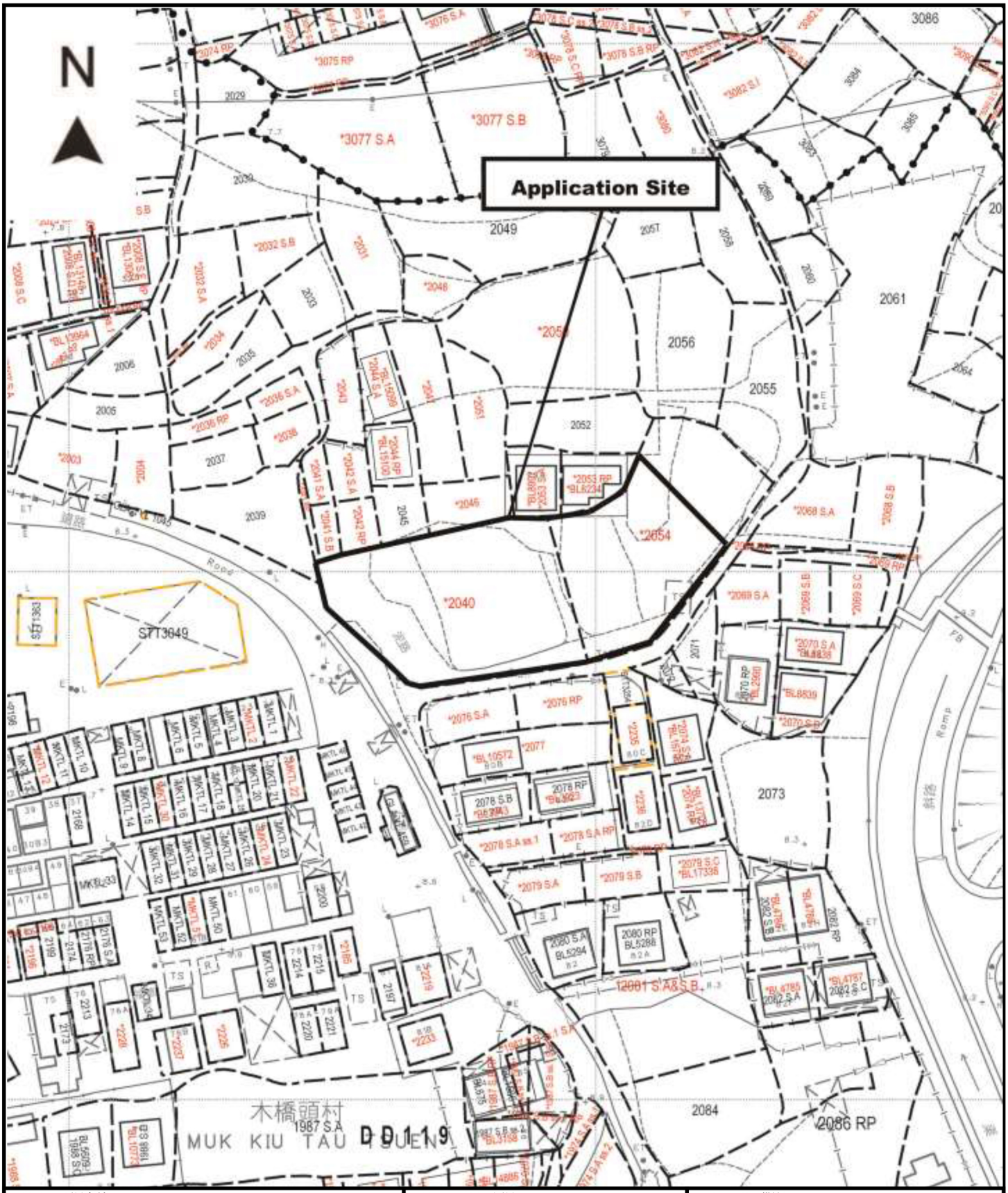
Type of Vehicle	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at Peak Hours (pcu/hr)	Traffic Attraction Rate at Peak Hours (pcu/hr)
Private car	1.67	1.67	18	12

Note 1: The proposed public vehicle park operates 24 hours on Mondays to Sundays including public holidays;

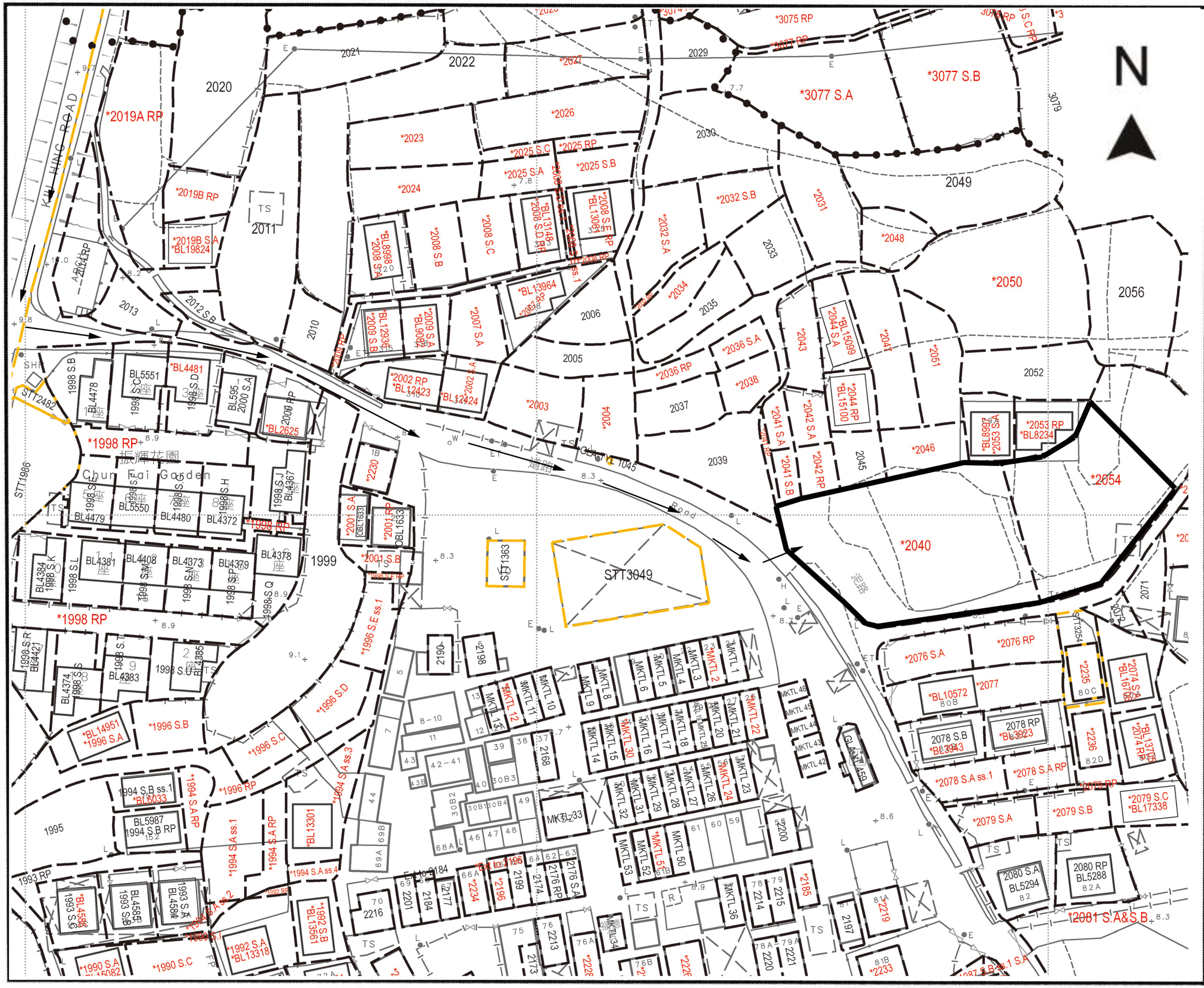
Note 2: The pcu of private car is taken as 1; &

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.

2.4 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 especially that the proposed carpark will be designated for the villagers of Muk Kiu Tau Tsuen only.



Project 項目名稱:	Drawing Title 圖目:	Remarks 備註:
Proposed Temporary Public Vehicle Park for Private Cars for a Period of 3 Years at Lots 2040 & 2054 (Part) in D.D. 119, Muk Kiu Tau Tsuen, Yuen Long, N.T.	Application Site	
	Drawing No. 圖號: Figure 1	Scale 比例: 1:1000



Drawing No.

Figure 2

Project

Proposed Temporary Public Vehicle Park for Private Cars for a Period of 3 Years at Lots 2040 & 2054 (Part) in D.D. 119, Muk Kiu Tau Tsuen, Yuen Long, N.T.

Drawing Title

Vehicular Access Plan

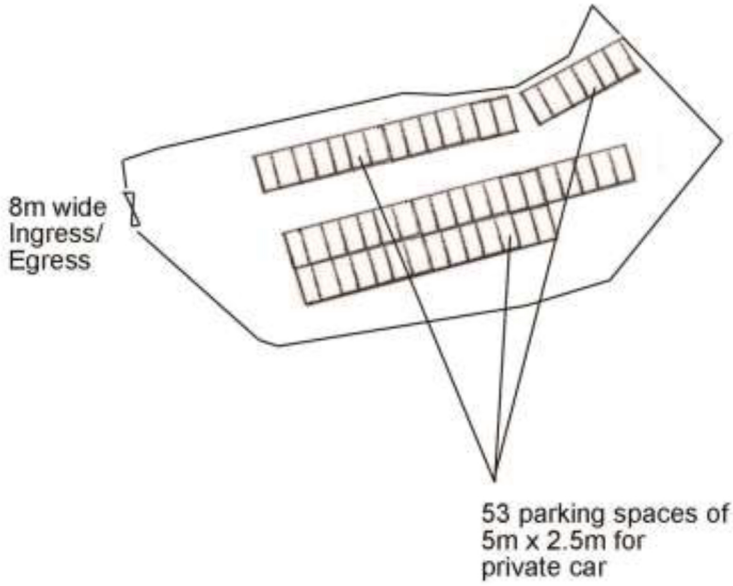
Scale

1:1000

Remarks

→ Vehicular access leading from Kiu Hing Road

N



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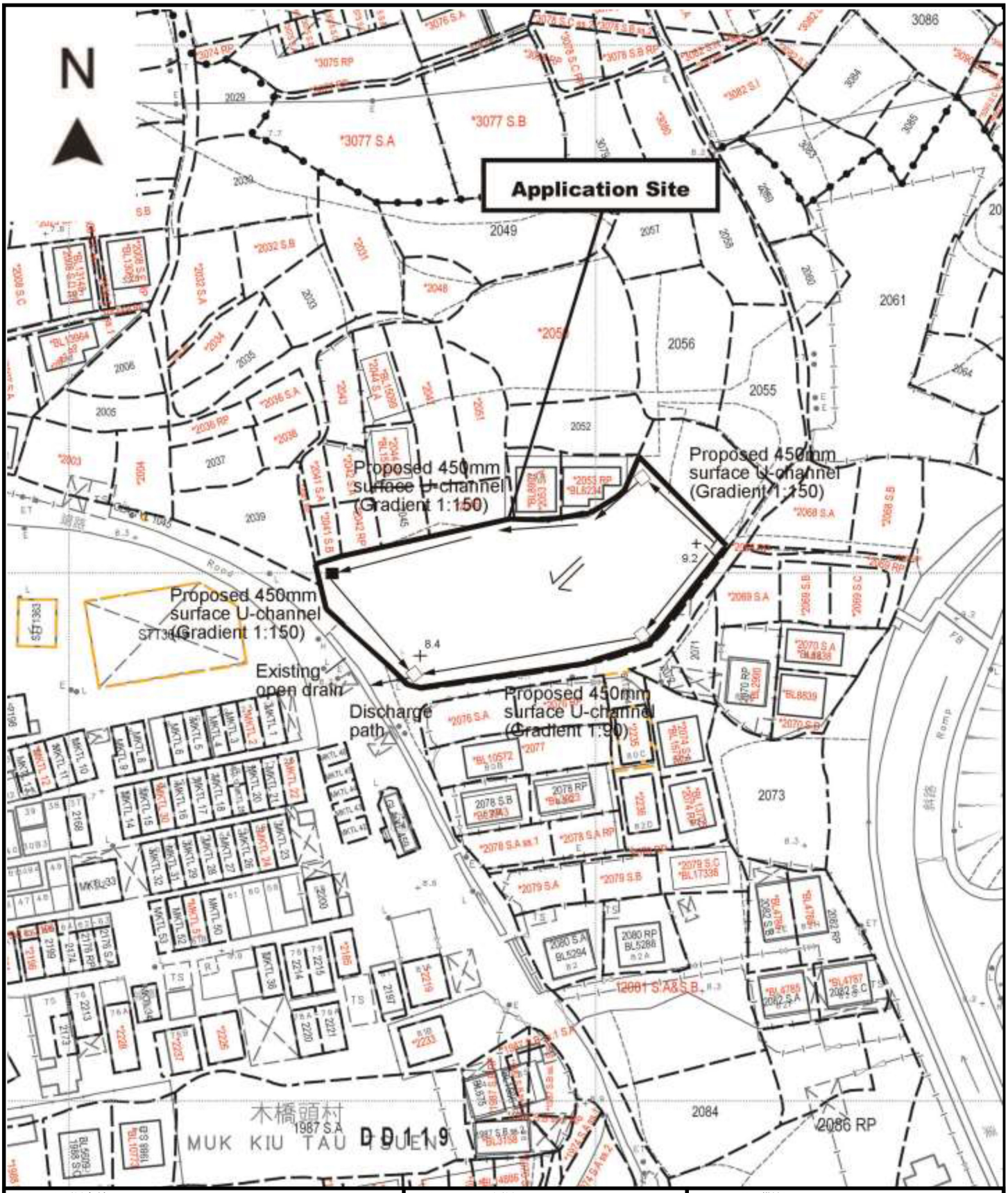
Proposed Temporary Public Vehicle Park for Private Cars for a Period of 3 Years at Lots 2040 & 2054 (Part) in D.D. 119, Muk Kiu Tau Tsuen, Yuen Long, N.T.	Proposed Layout Plan	
	Drawing No. 圖號: Figure 3	Scale 比例: 1:1000



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Drawing Title 圖目:

Proposed Drainage Plan

Drawing No. 圖號:

Figure 4

Remarks 備註:

+9.2 Level (in mPD)

□ Proposed catchpit

■ Carchpit with sand trap

⟸ Flow of surface runoff

Scale 比例:

1:1000