Proposed Temporary Shop and Services (Real Estate Agency) for a Period of 3 Years
at
Lots 1618 (Part), 1619 (Part) & 1626 RP (Part) in D.D. 119, 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 1**) It possesses an area of approximately 610m^2.

1.1.2 The application site had been hard paved.

1.1.3 The application site is surrounded by a good number of open storage yards and warehouses. Some residential dwellings are found to the north and south of the application site.

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 610m^2. It has a very gentle gradient sloping from southwest to northeast from about +10.9mPD to +10.6mPD.

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, 300mm 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, west and east of the site is slightly lower than the application site. The land to the south of the application site is about the same level 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 existing natural drain is found to the east of the application site. (**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 300mm 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 existing natural drain to the east of the application site. (**Figure 4**)

1.2.3 The calculations in **Annex 1.3** shows that the proposed 300mm 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 trees and 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) Some 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 610m^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 = 10.9m – 10.6m = 0.3m

L = 35m

$\therefore$ Average fall = 0.3m in 35m or 1m in 116.67

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

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

$$t_c = 0.14465 \left[35/ (0.86^{0.2} \times 610^{0.1}) \right]$$

$$t_c = 2.79 \text{ minutes}$$

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 315mm/hr

By Rational Method, $Q = 1 \times 315 \times 610 / 3{,}600$

$\therefore$ $Q = 53.38$ l/s = 3,202.5 l/min

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", 300mm surface U-channel in 1:150 gradient is considered adequate to dissipate all the stormwater accrued by the application site. The intercepted stormwater will then be discharged to the existing natural drain via the proposed 300mm surface U-channel outside the application site.

Annex 2 Estimated Traffic Generation

2.1 The application site is accessible via a short vehicular access leading from Kiu Hing Road. Having mentioned that the site is intended for shop and services, traffic generated by the proposed development is extremely insignificant. No light goods vehicle, medium goods vehicle and heavy goods vehicle and container trailer/tractor will access the application site.

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

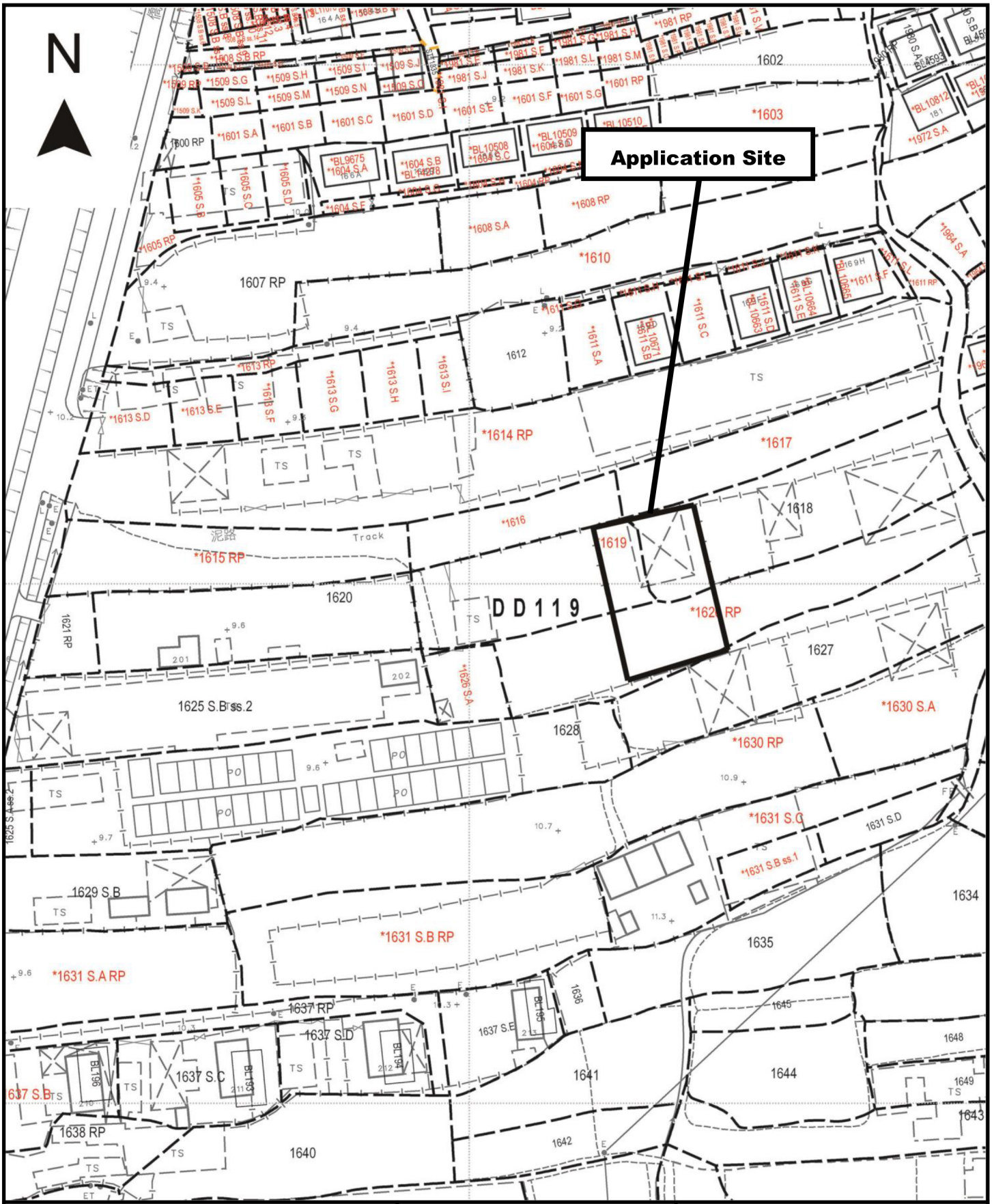
Type of Vehicle	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at Peak Hours (pcu/hr)	Traffic Attraction Rate at Peak Hours (pcu/hr)
Private car	0.38	0.38	0	0

Note 1: The opening hour of the proposed development is restricted to 9:00 a.m. to 5:00 p.m. from Mondays to Sundays including public holidays.

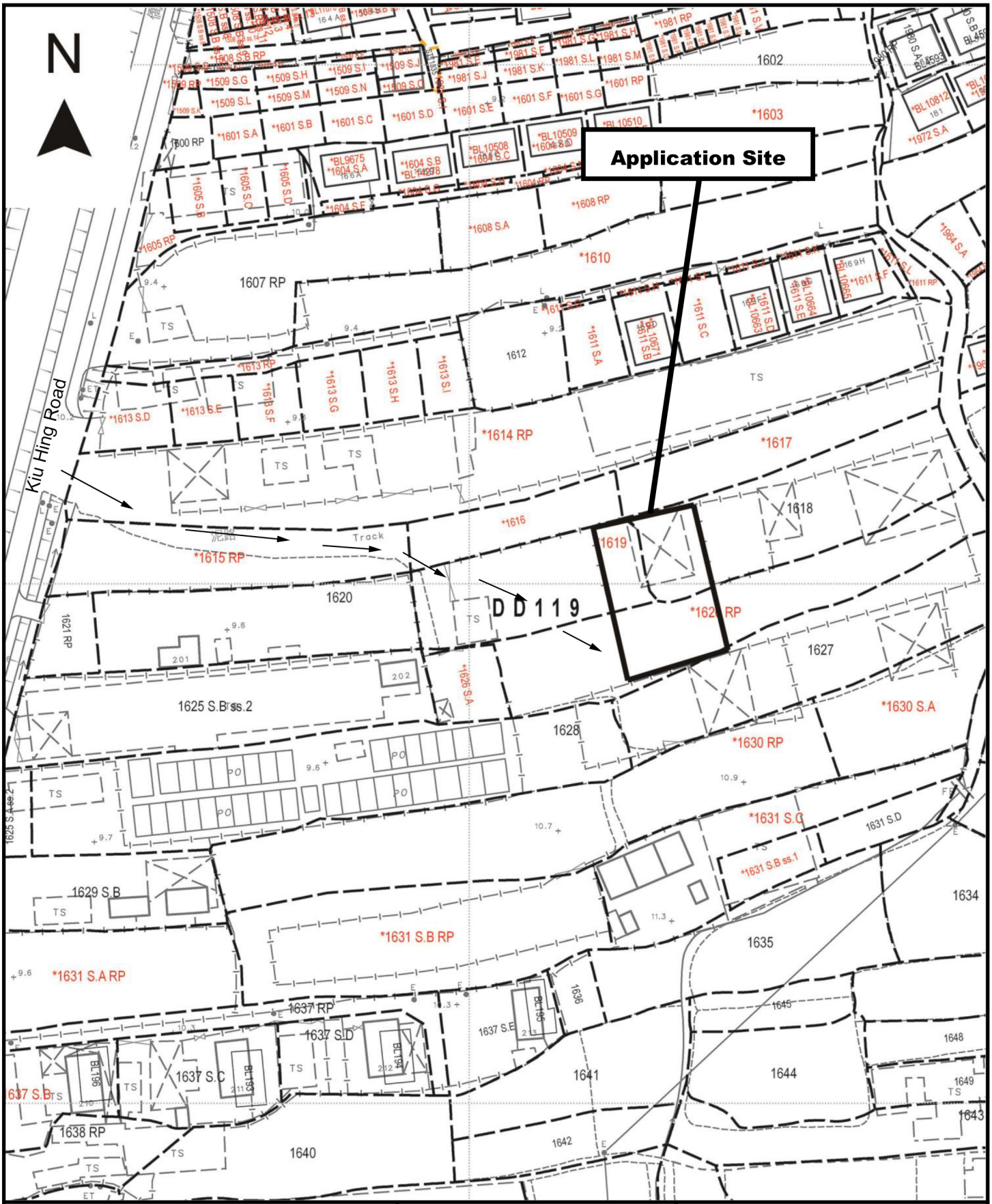
Note 2: The pcu of private car is taken as 1.

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.

2.3 In association with the intended purpose, adequate space for manoeuvring of vehicle would be provided and so 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 Kiu Hing Road and nearby road networks.



Project 項目名稱: Proposed Temporary Shop and Services (Real Estate Agency) for a Period of 3 Years at Lots 1618 (Part), 1619 (Part) & 1626 RP (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: Application Site	Remarks 備註:
	Drawing No. 圖號: Figure 1	Scale 比例: 1:1000



Project 項目名稱: Proposed Temporary Shop and Services (Real Estate Agency) for a Period of 3 Years at Lots 1618 (Part), 1619 (Part) & 1626 RP (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: Vehicular Access Plan	Remarks 備註: → Vehicular access leading from Kiu Hing Road
	Drawing No. 圖號: Figure 2	Scale 比例: 1:1000

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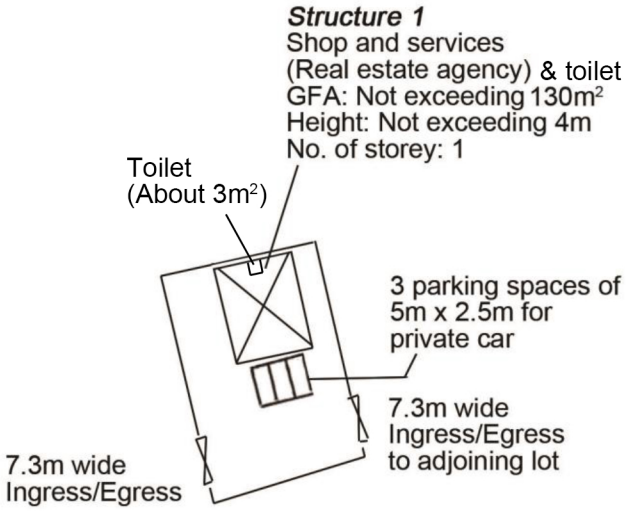

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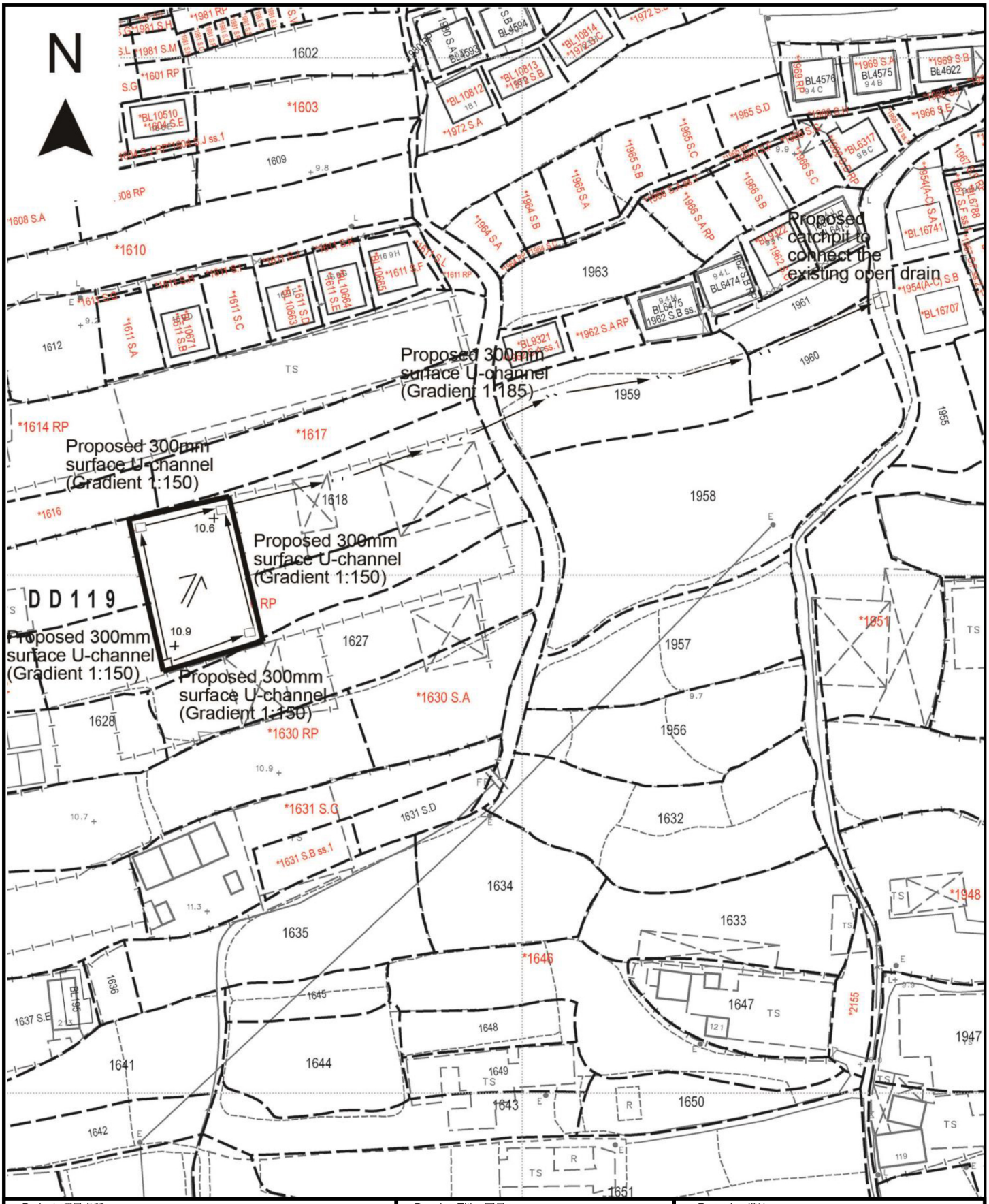
Proposed Temporary Shop and Services (Real Estate Agency) for a Period of 3 Years at Lots 1618 (Part), 1619 (Part) & 1626 RP (Part) in D.D. 119, Yuen Long, N.T.	Proposed Layout Plan	
	Drawing No. 圖號: Figure 3	Scale 比例: 1:1000



Project 項目名稱: Proposed Temporary Shop and Services (Real Estate Agency) for a Period of 3 Years at Lots 1618 (Part), 1619 (Part) & 1626 RP (Part) in D.D. 119, Yuen Long, N.T.	Drawing Title 圖目: Proposed Drainage Plan	Remarks 備註: +10.9 Level (mPD) □ Proposed catchpit ⇐ Flow of surface runoff
	Drawing No. 圖號: Figure 4	Scale 比例: 1:1000