Temporary Shop & Services (Real Estate Agency) and Associated Excavation of Land for a Period of 3 Years
at
Lot 1586 in D.D. 121 & Adjoining Government Land, 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 355m^2.

1.1.2 The application site will be occupied for a real estate agency.

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

1.1.3 The highest point of the site is at the southwestern part which is about +9.6mPD. The lowest point of the site is at the northeastern part which is about +9.3mPD.

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 west. The land to the immediate south of the land (i.e. +9.4mPD) is slightly lower than the application site (+9.6mPD). 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 public drain (i.e. 600mm surface channel) is found along the vehicular access abutting the 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 is approximately 1,025m^2 including the application site area with 355m^2; (**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.

Difference in Land Datum = 9.7m – 9.3m = 0.4m

$$L = 60m$$

$$\therefore \text{ Average fall } = 0.4m \text{ in } 60m \text{ or } 1m \text{ in } 150m$$

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

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

$$t_c = 0.14465 \left[60/ (0.67^{0.2} \times 1{,}025^{0.1}) \right]$$

$$t_c = 4.7 \text{ minutes}$$

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 280mm/hr

$$\textbf{\textit{By Rational Method}}, Q_1 = 1 \times 280 \times 1{,}025 / 3{,}600$$

$$\therefore Q_1 = 79.72 \text{ l/s} = 4{,}783.33 \text{ l/min} = 0.079 m^3/s$$

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", 300mm surface U-channel at 1:125 gradient 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 300mm concrete surface U-channel at gradient of about 1:125 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 600mm wide and deep public drain abutting the site via the terminal catchpit with sand trap.

1.3.3 All the proposed drainage facilities have been provided and maintained at the applicant's own expense. Also, 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 Sand trap or alike has been provided at the terminal catchpit to avoid the addition of load into public drainage.

1.3.5 All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.

1.3.6 The development would neither obstruct overland flow nor adversely affect existing natural streams, village drains, ditches and the adjacent areas, etc.

1.3.7 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.

1.3.8 100mm gap has been reserved at the toe of the site hoarding to allow free flowing of surface runoff to and from the application site.

Annex 2 Estimated Traffic Generation

2.1 The application site is accessible via a vehicular track leading from Shan Ha Road. In view of that the proposed development is target for the nearby residents and villagers, 2 parking spaces of 5m x 2.5m for private car is deemed sufficient to cater for the operation need of the proposed development.

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

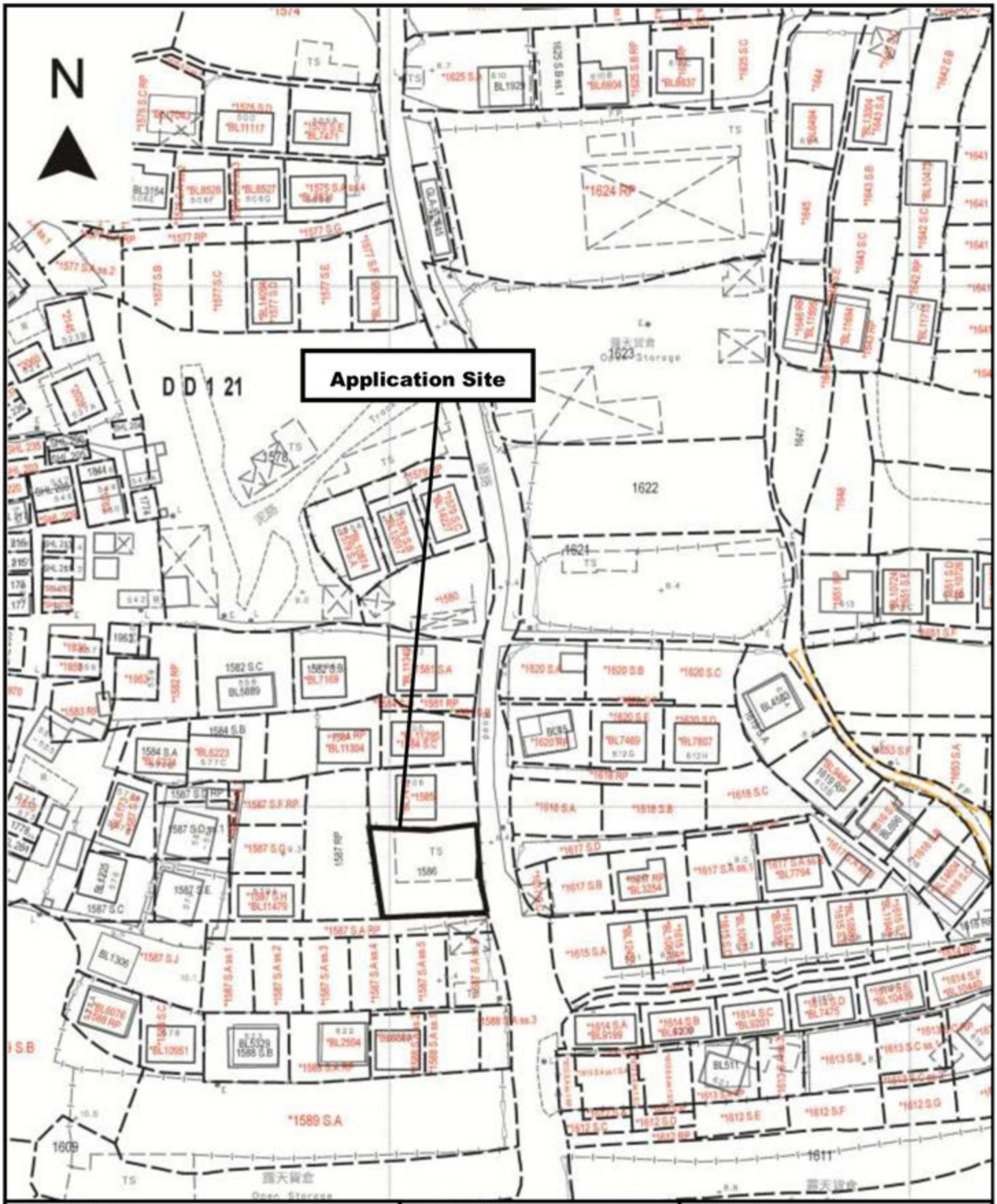
Type of Vehicle	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at Peak Hours (pcu/hr)	Traffic Attraction Rate at Peak Hours (pcu/hr)
Private car	0.2	0.2	1	0

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

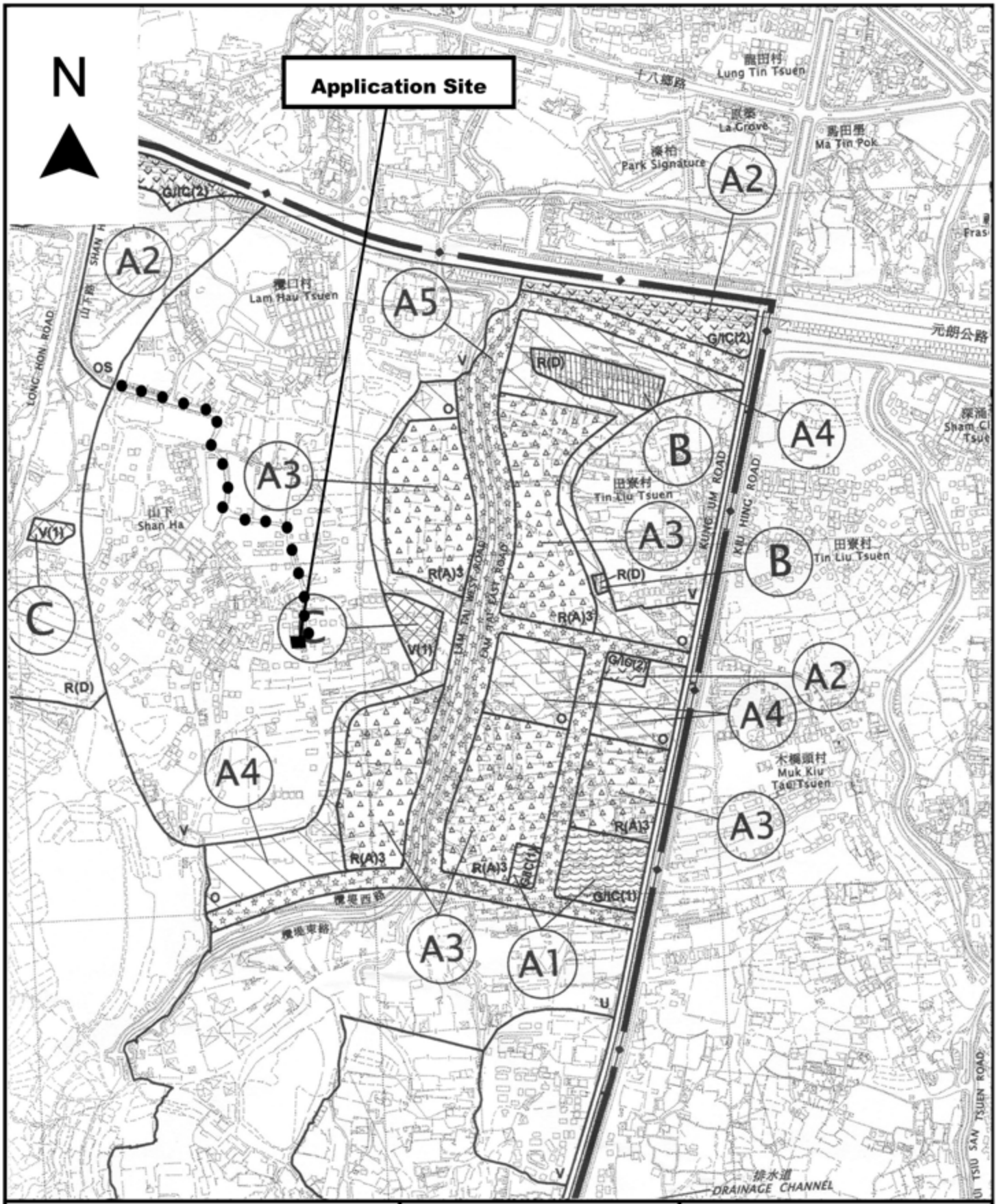
Note 2: The pcu of private car are taken as 1.

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 within the application site and 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 Shan Ha Road and nearby road networks.



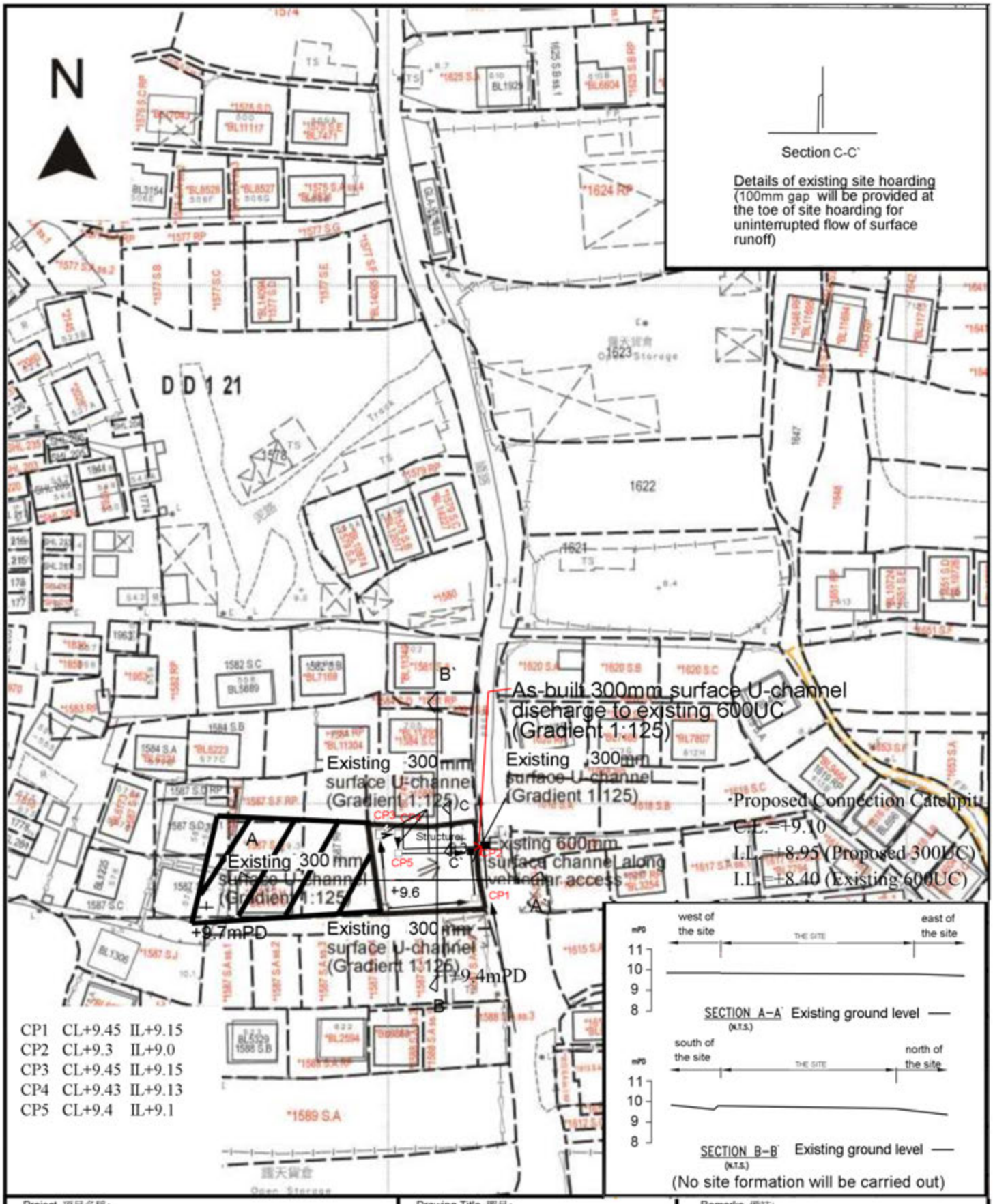
Project 項目名稱: Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.	Drawing Title 圖目: Site Plan	Remarks 備註:
	Drawing No. 圖號: Figure 1	Scale 比例: 1:1000



Project 項目名稱: Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.	Drawing Title 圖目: Location Plan	Remarks 備註: ●●● Vehicular access leading to the application site from Shan Ha Road
	Drawing No. 圖號: Figure 2	Scale 比例: 1:7500

N

Project 項目名稱:	Drawing Title 圖目:	Remarks 備註:
Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.	Proposed Layout Plan	
	Drawing No. 圖號: Figure 3	Scale 比例: 1:1000



Project 項目名稱:

Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.

Drawing Title 圖目:

As-built Drainage Plan

Drawing No. 圖號:

Figure 4

Remarks 備註:

+9.6 Level (in mPD)

Proposed catchpit

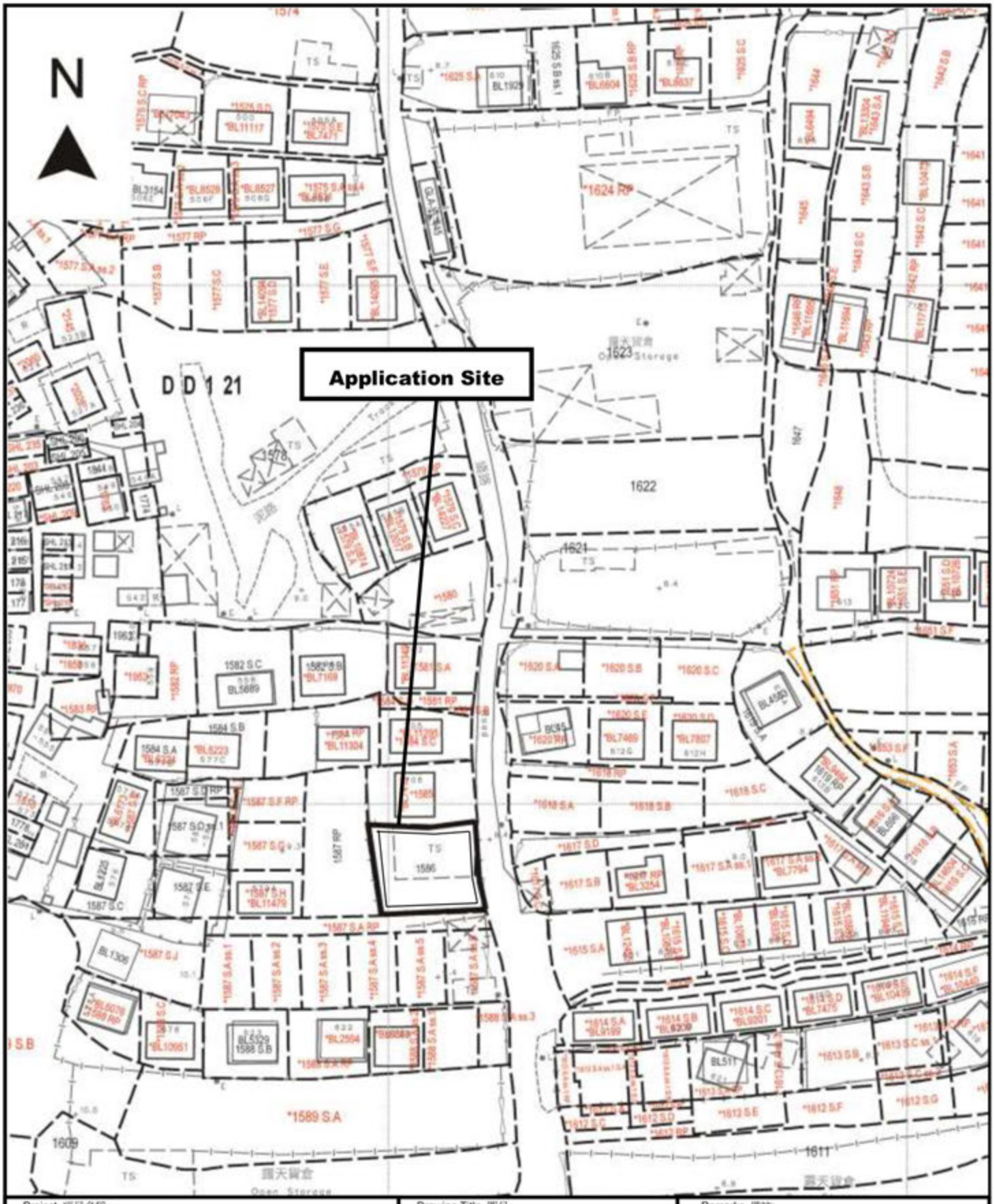
Catchpit with sand trap

Flow of surface runoff

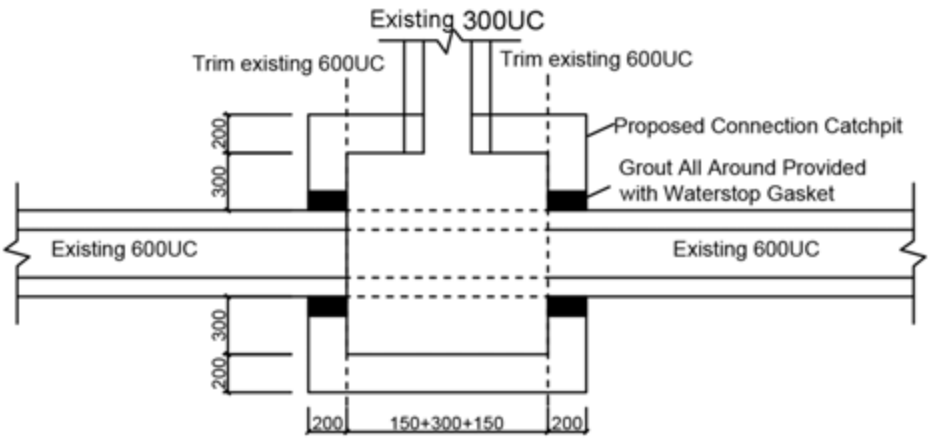
External cacthment

Scale 比例:

1:1000



Project 項目名稱: Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.	Drawing Title 圖目: Excavation of Land Plan	Remarks 備註: —— Excavation of land of 225mm for the provision of the as-built drainage facilities
	Drawing No. 圖號: Figure 5	Scale 比例: 1:1000



CONNECTION DETAILS

Project 項目名稱: Temporary Shop & Services & Associated Excavation of Land for a Period of 3 Years at Lot 1586 in D.D. 121 & Adjoining Government Land, Shan Ha Tsuen, Yuen Long, N.T.	Drawing Title 圖目: Connection Details	Remarks 備註:
	Drawing No. 圖號: Figure 6	Scale 比例: Not to scale