Proposed Temporary Public Vehicle Park for Private Car with Electric Vehicle Charging Facility for a Period of 3 Years and Filling of Land at
Lots 2841 S.A RP (Part) & 2841 S.B RP (Part) in D.D.129, Sha Kong Wai, Yuen Long, N.T.

Annex 1 Drainage Assessment

1.1 Introduction

A. Site particulars

1.1.1 The application site is situated at Sha Kong Wai. (**Figure 1**) It possesses an area of approximately 1,180m^2.

1.1.2 The application site is intended for public parking of private cars with electric vehicle charging facility.

1.1.3 Sha Kong Wai is an indigenous village. It is noted that village houses were found to the west of the application site. A recreation use is found to the immediate north 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 1,180m^2. It has a very gradient sloping from northwest to southeast from about +4.5mPD to +4.1mPD.

1.1.5 As demonstrated in the calculation in **Annex 1.3** hereunder, 450mm surface U-channel will be capable to drain surface runoff accrued at the subject site and the same passing through the site from adjacent area.

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

1.1.6 The level of the land to the northwest is progressively higher. However, the land to the northwest is occupied by a recreation use with structures so that the stormwater from higher ground is blocked by the said structures. The level of the land to the east and west is lower than the application site. The land to the south is a public drain.

1.1.7 As such, an external catchment has been identified to the northwest of the Site.

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, there is a public drain to the south of the application site (**Figure 4**).

1.2 Runoff Estimation & Proposed Drainage Facilities

A. Proposed drainage facilities

1.2.1 Subject to the calculations below, it is determined that 450mm surface U-channel is required along the site periphery to intercept storm water generated at the application site. (**Figure 4**)

1.2.2 The collected surface runoff will be conveyed to public drain to the south of the application site via the proposed 450mm surface U-channel outside the application site. (**Figure 4**)

1.2.3 The calculations in **Annex 1.3** shows that the proposed 450mm surface U-channel has adequate capacity to cater for the surface runoff generated at the subject site.

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 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.

1.2.6 100mm openings has been provided at the toe of hoarding so as to allow unobstructed flow of surface runoff from adjacent area.

Annex 1.3 Drainage Calculation for the Proposed Provision of Drainage Facilities at Application 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 2,150m^2;
ii. The value of run-off co-efficient (k) is taken as 1 for conservative reason.

Difference in Land Datum = 4.7m – 4.1m = 0.6m

L = 66m

$\therefore$ Average fall = 0.6m in 66m or 1m in 110m

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

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

$$t_c = 0.14465 \left[66/ (0.91^{0.2} \times 2{,}150^{0.1}) \right]$$

$$t_c = 4.52 \text{ minutes}$$

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 280 mm/hr

$$\textbf{\textit{By Rational Method}}, Q = 1.0 \times 280 \times 2{,}150 / 3{,}600$$

$$\therefore Q = 167.22 \text{ l/s} = 10{,}033.33 \text{ l/min}$$

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", 450mm surface U-channel at gradient 1:175 and 1:200 is considered adequate to dissipate all the stormwater accrued by the application site. The intercepted stormwater will then be discharged to the public drain to the east of the application site.

Annex 2 Minimal Traffic Impact

2.1 The application site is accessible via a well formed local track leading from Tin Wah Road.

2.2 Neither light goods vehicle, medium goods vehicle, heavy goods vehicles as defined in the Road Traffic Ordinance nor container tractor/trailer will be allowed to enter the application site.

2.3 The estimated traffic generation of the proposed development is as follows:

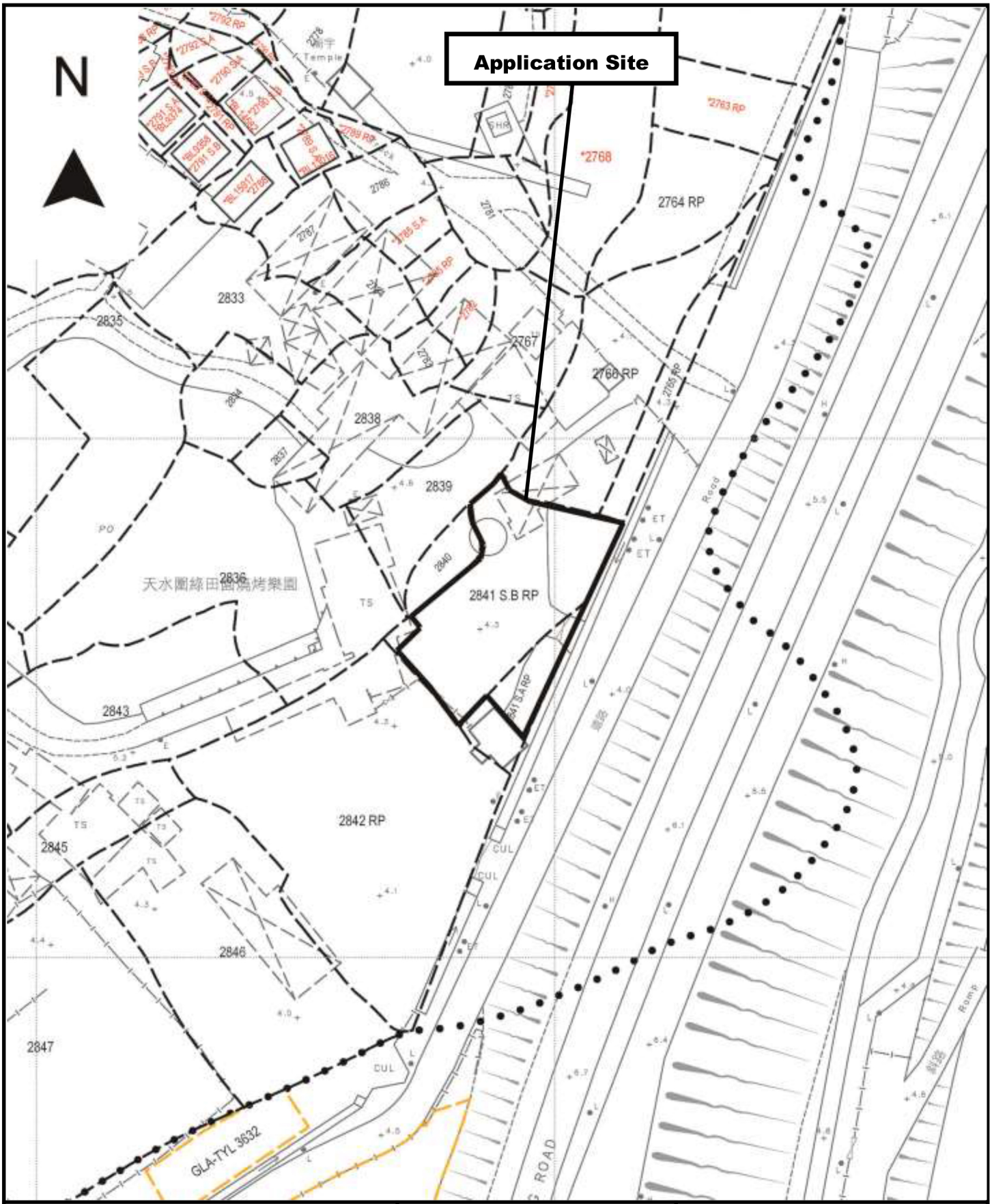
Use	Average Traffic Generation Rate (pcu/hr)	Average Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at Peak Hours (pcu/hr)	Traffic Attraction Rate at Peak Hours (pcu/hr)
Private car	0.94	0.94	6	4

Note 1: The operation hour of the application site is 7:00a.m. to 11:00p.m. from Mondays to Sundays including public holidays

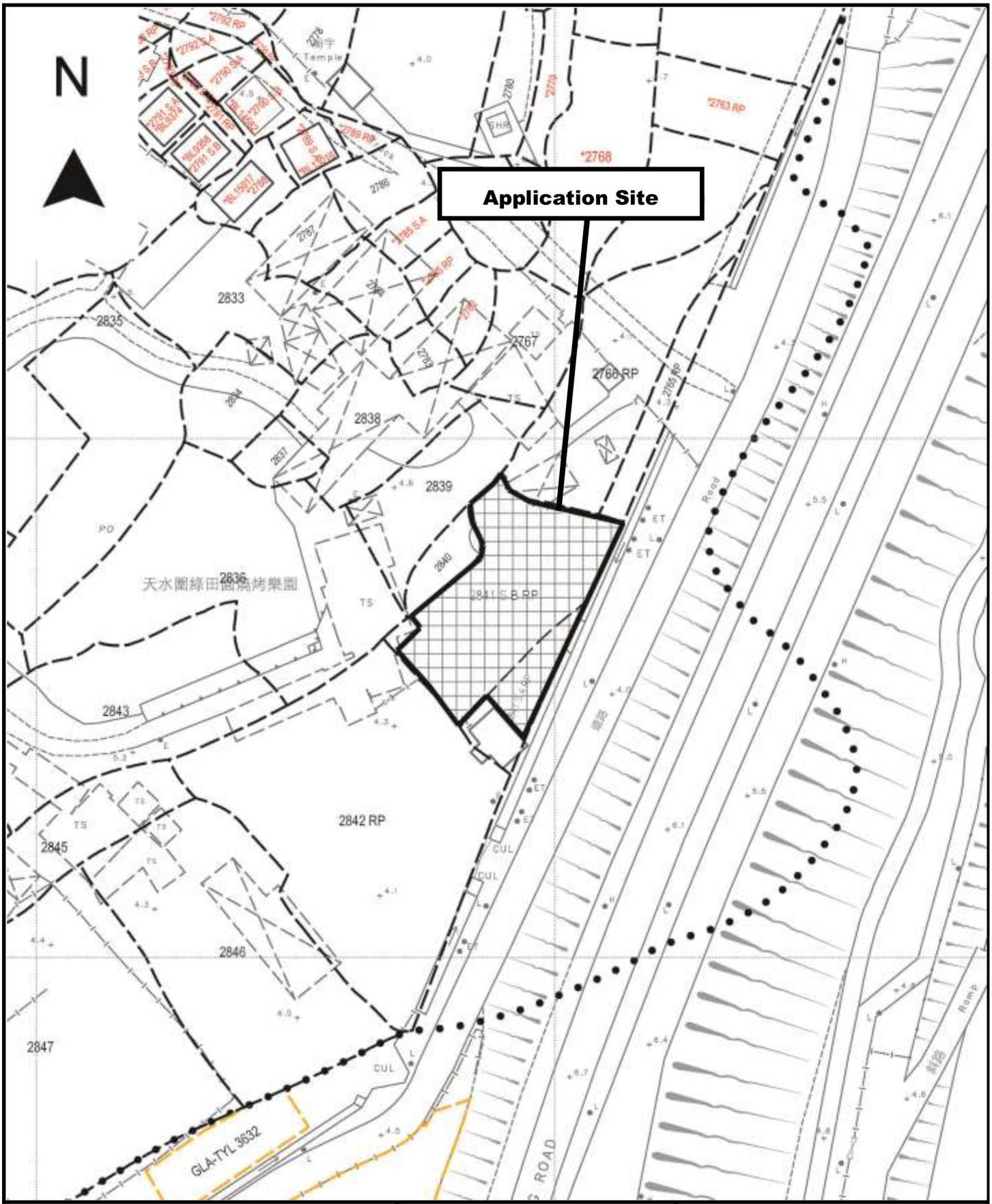
Note 2: The pcu of private car is taken as 1.

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.

2.4 In association with the intended parking purpose, adequate space for manoeuvring of vehicle would be provided. Referring to **Figure 3**, internal circulation path is provided which is adequate for internal movement. By virtue of the fact that the application site is directly linked to Tin Wah Road and Tin Ying Road with significant reserved capacity, the proposed development being applied would not aggravate the traffic condition in the vicinity.



Project 項目名稱:	Drawing Title 圖目:	Remarks 備註:
Proposed Temporary Public Vehicle Park for Private Car with Electric Vehicle Charging Facility for a Period of 3 Years and Filling of Land at Lots 2841 S.A RP (Part) & 2841 S.B RP (Part) in D.D.129, Sha Kong Wai, Yuen Long, N.T.	Site Plan	
	Drawing No. 圖號: Figure 1	Scale 比例: 1:1000



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Drawing Title 圖目:

Proposed Land Filling Plan

Drawing No. 圖號:

Figure 2

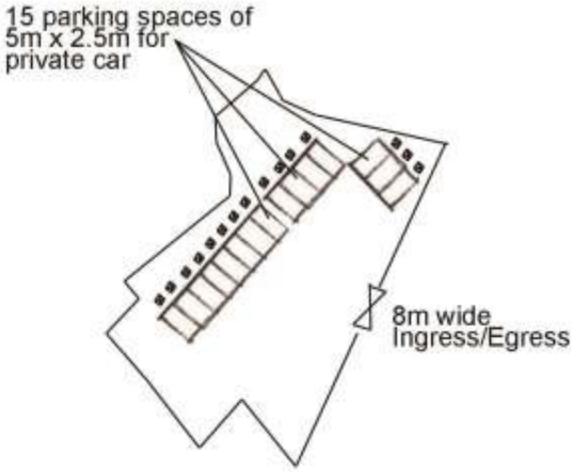
Remarks 備註:

Proposed filling of land with 200mm thick concrete

Scale 比例:

1:1000

N



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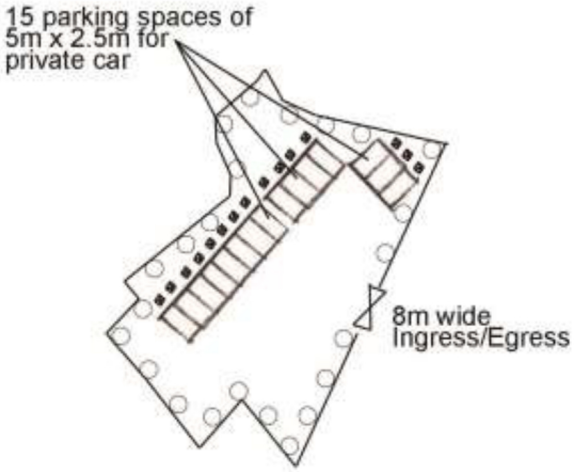
N

Tree	Approximate Height	Spacing
◯ Existing *Melaleuca leucadendron*	3m	4m



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Drawing Title 圖目:

Proposed Landscape Plan

Drawing No. 圖號:

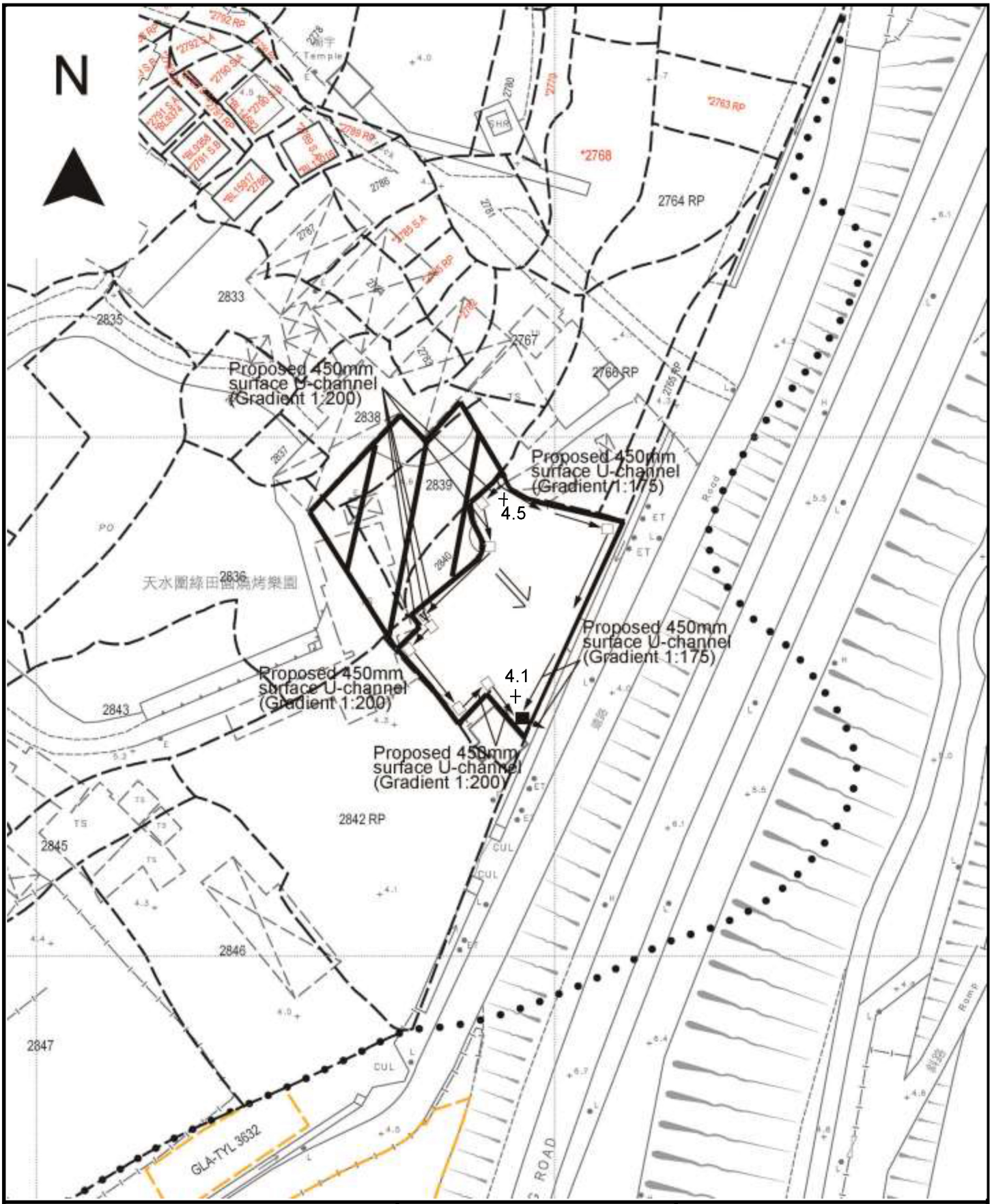
Figure 4

Remarks 備註:

☒ 15 Electric charging facility (2m(W) x 2m(L) x 2.5m(H) each)

Scale 比例:

1:1000



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Drawing Title 圖目:

Proposed Drainage Plan

Drawing No. 圖號:

Figure 5

Remarks 備註:

- Proposed catchpit
- Flow of surface runoff
- +4.1 Level (in mPD)
- Catchpit with sand trap
- External catchment

Scale 比例:

1:1000