

Proposed Temporary Warehouse for Storage of Food Provisions for a Period of 3 Years and Filling of Land at Lots 478 S.A RP, 482 (Part), 484 & 487 (Part) in D.D.90, Lin Ma Hang Road, Ta Kwu Ling, N.T.

Drainage Proposal

1.1 Existing Situation for Downstream Streamcourse

A. Site particulars

1.1.1 The catchment area is at least 54,816m² (see Figure A).

B. Level and gradient of the downstream streamcourse

1.1.3 It is sloping from south to north from about +61.1mPD to +9.9mPD.

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 54,816m²;
- ii. For conservative reason, it is assumed that the value of run-off co-efficient (k) is taken as 1.

$$\text{Difference in Land Datum} = 61.1\text{m} - 9.9\text{m} = 51.2\text{m}$$

$$L = 354.37\text{m}$$

$$\therefore \text{Average fall} = 51.2\text{m in } 354.37\text{m} \text{ or } 1\text{m in } 6.921\text{m}$$

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

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

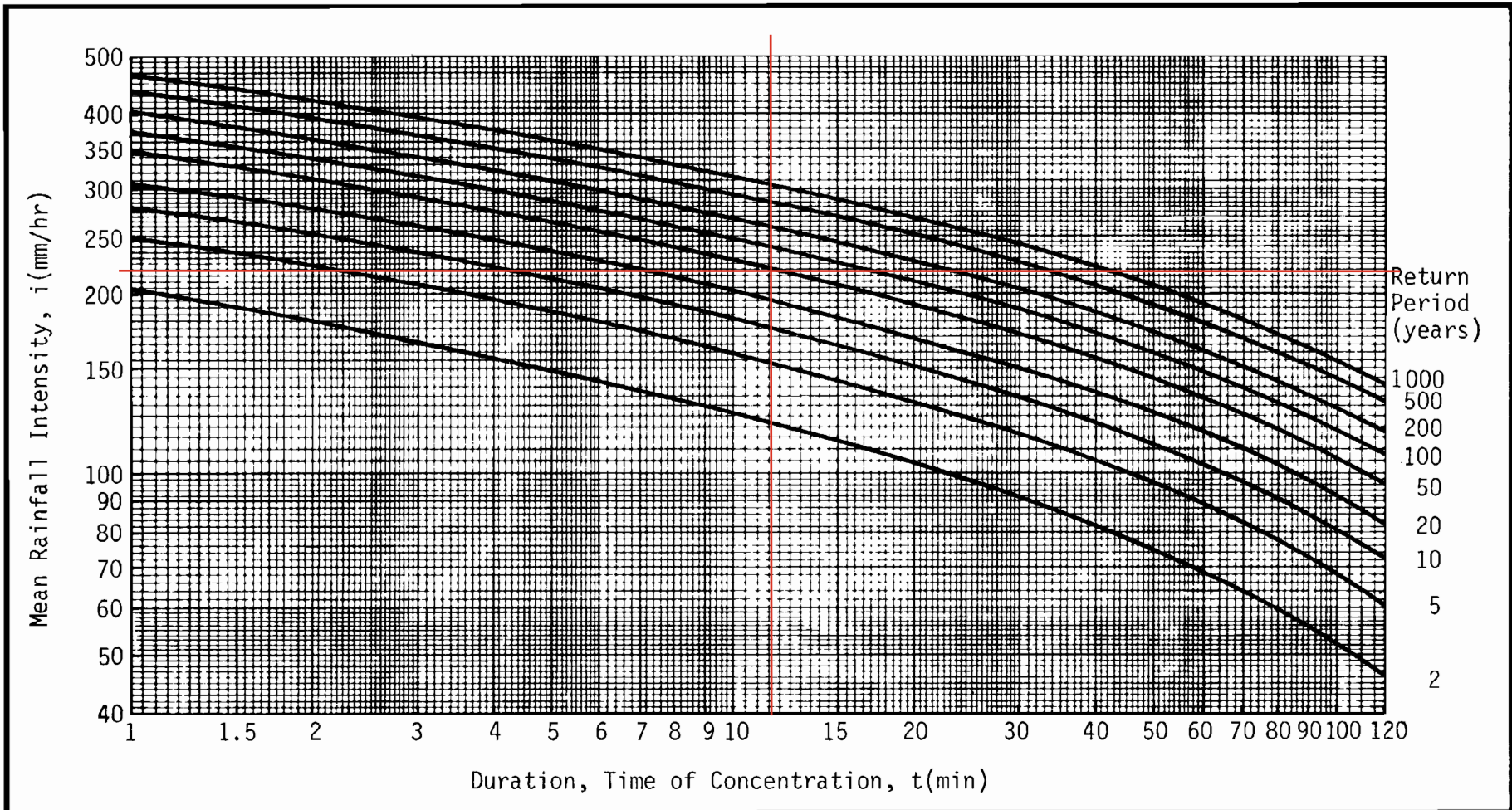
$$t_c = 0.14465 [354.37 / (6.921^{0.2} \times 54816^{0.1})]$$

$$t_c = 11.69 \text{ minutes}$$

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 220 mm/hr

$$\text{By Rational Method, } Q_1 = 1 \times 220 \times 54,816 / 3,600$$

$$\therefore Q_1 = 3349.87 \text{ l/s} = 200,992 \text{ l/min}$$



Note : The intensity-duration rainfall curves are from Peterson & Kwong (1981) - A design rainstorm profile for Hong Kong, Technical Note No. 58, Royal Observatory, Hong Kong. Data from tilting siphon records 1947-1980 (Royal Observatory) and instantaneous rate-of-rainfall records 1952-1980 (King's Park).

Figure 8.2 - Curves Showing Duration and Intensity of Rainfall in Hong Kong for Various Return Periods

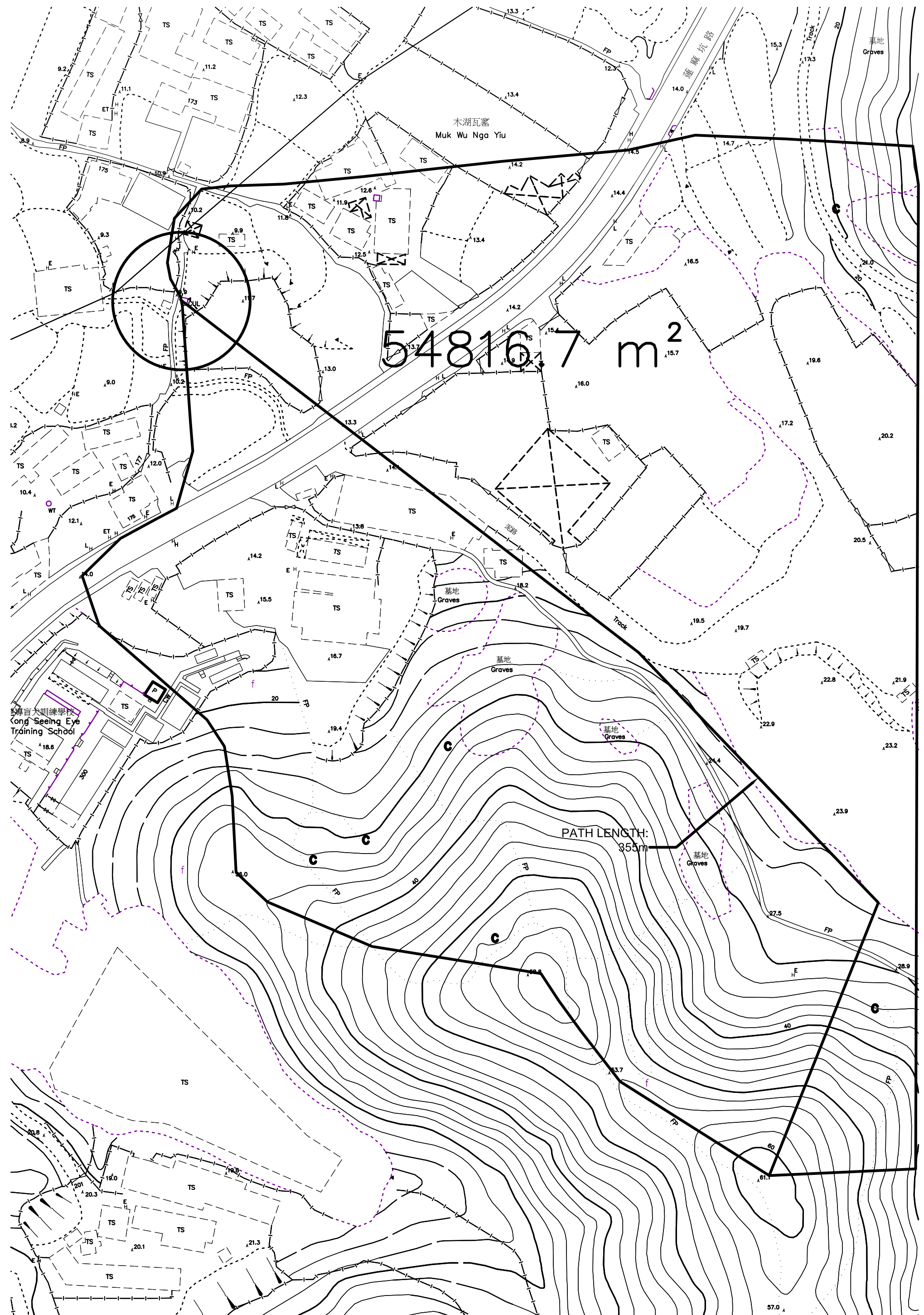


Figure A

RECORD PHOTOGRAPHS



Photo View - P1
(Existing streamcourse blocked by other lot owner)

Taken at: 12 November 2024



Photo View - P2

Taken at: 12 November 2024

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RECORD PHOTOGRAPHS



Photo View - P3

Taken at: 12 November 2024



Photo View - P4 (Existing CUL)

Taken at: 12 November 2024

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Drawing No.

Figure 3

Project

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Drawing Title

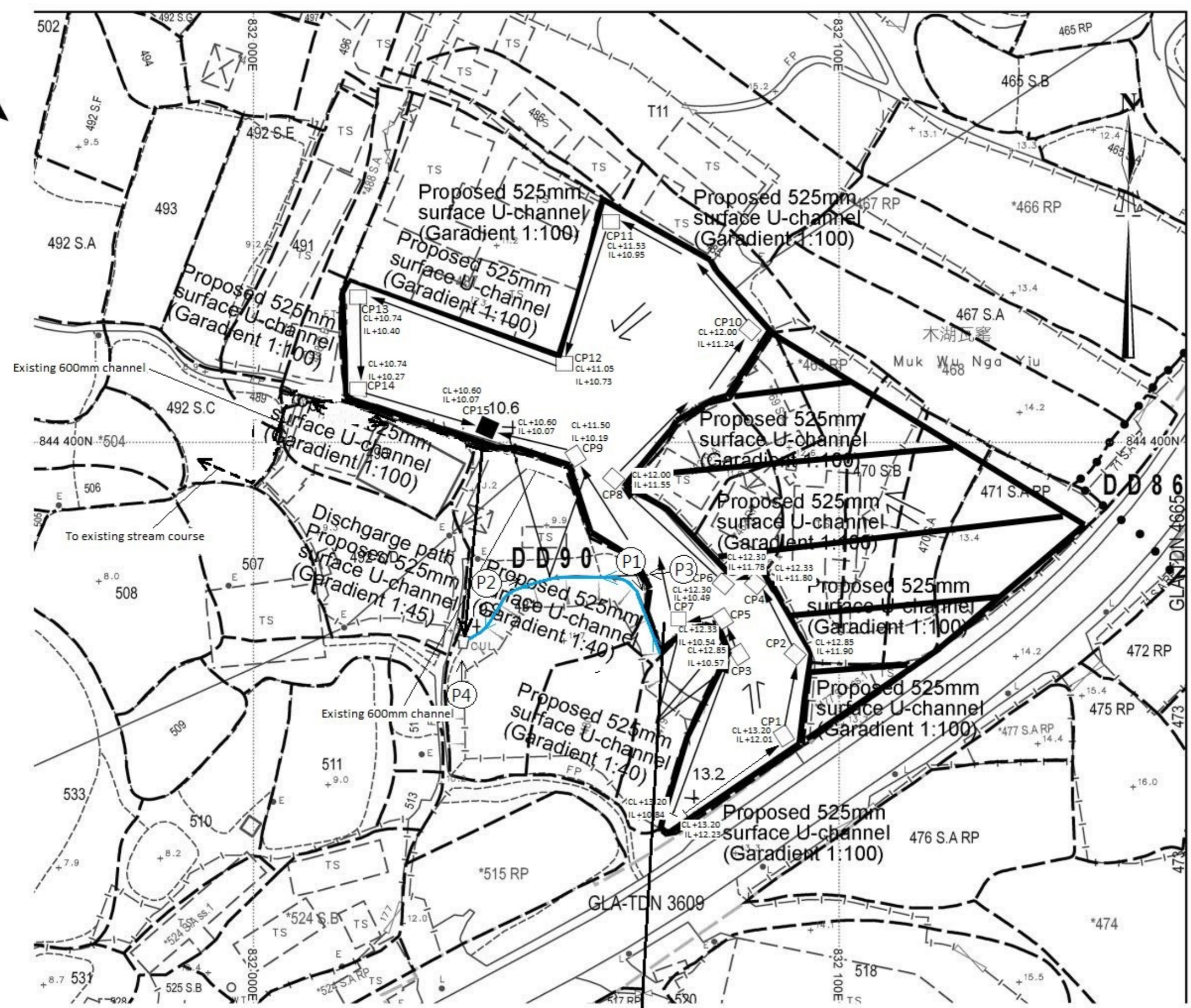
Proposed Drainage Plan

Scale

1:1000

Remarks

- + 12.5 Level (in mPD)
- Proposed catchpit
- ← Flow of surface runoff
- Catchpit with sand trap
- ▨ External catchment
- Ⓟ Photo view
- Existing streamcourse



Proposed U-channel and catchpit will be constructed 3m away from the existing streamcourse