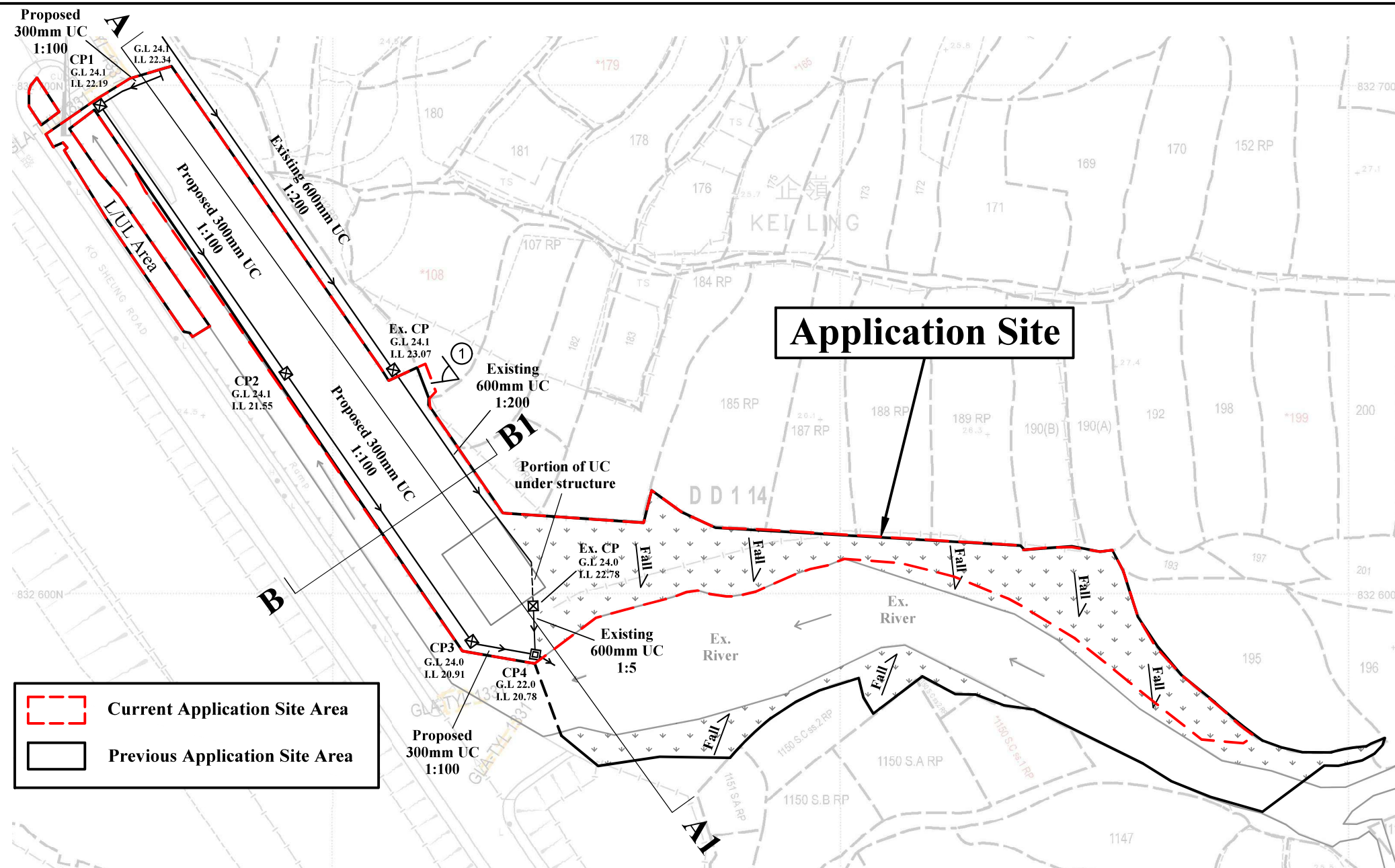


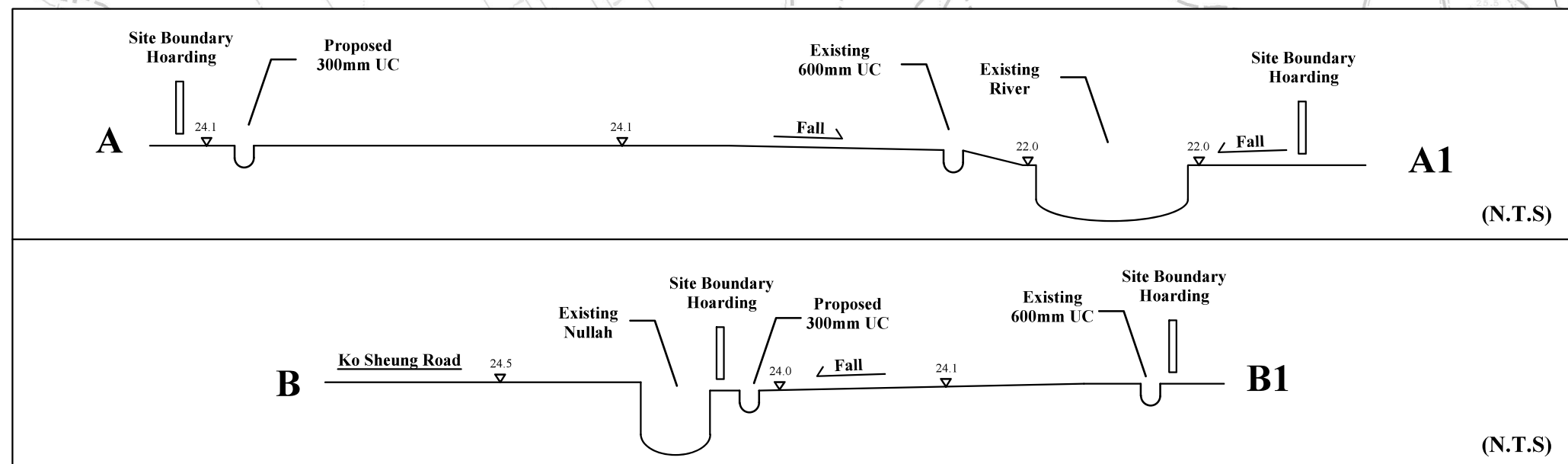
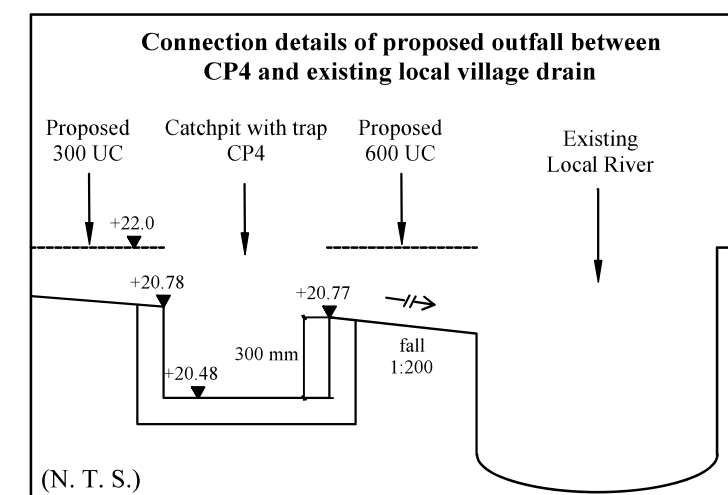


- Current Application Site Area
- Previous Application Site Area

Legend

- U-Channel
- Catch-pit with trap
- Catch-pit
- Viewpoint of drainage photo
- Ex.

Existing



1:1000 (A3)

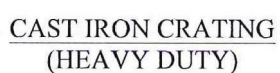
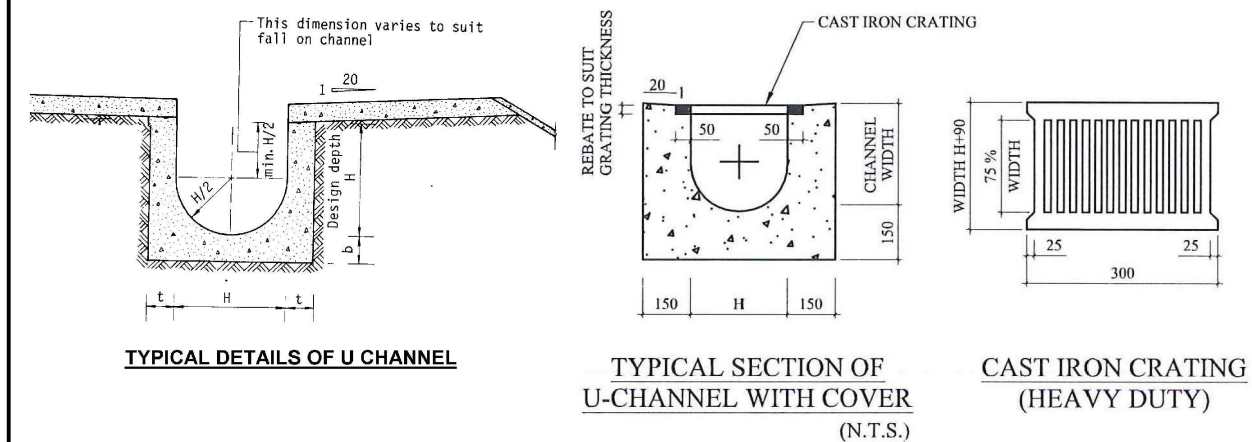
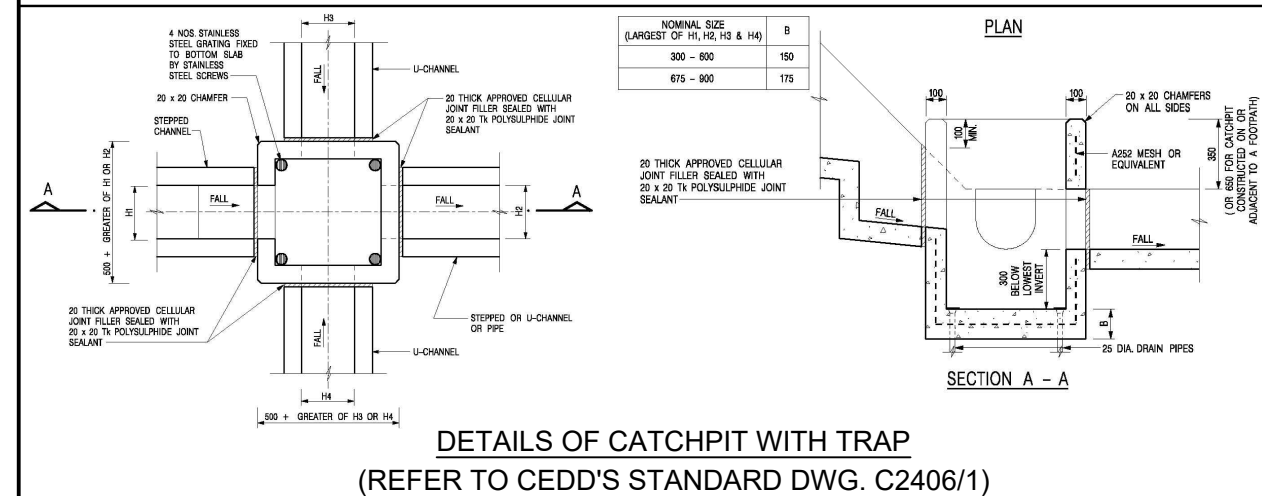
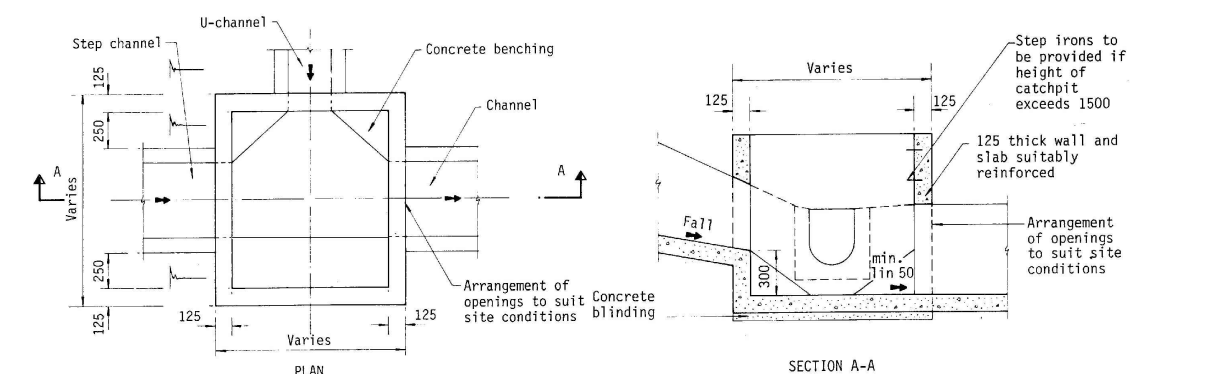
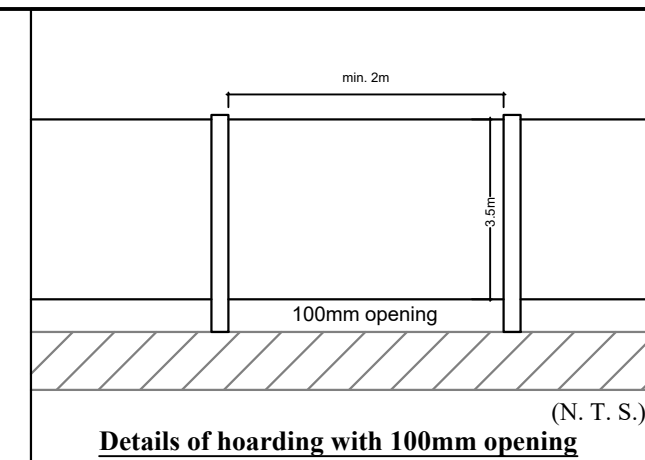
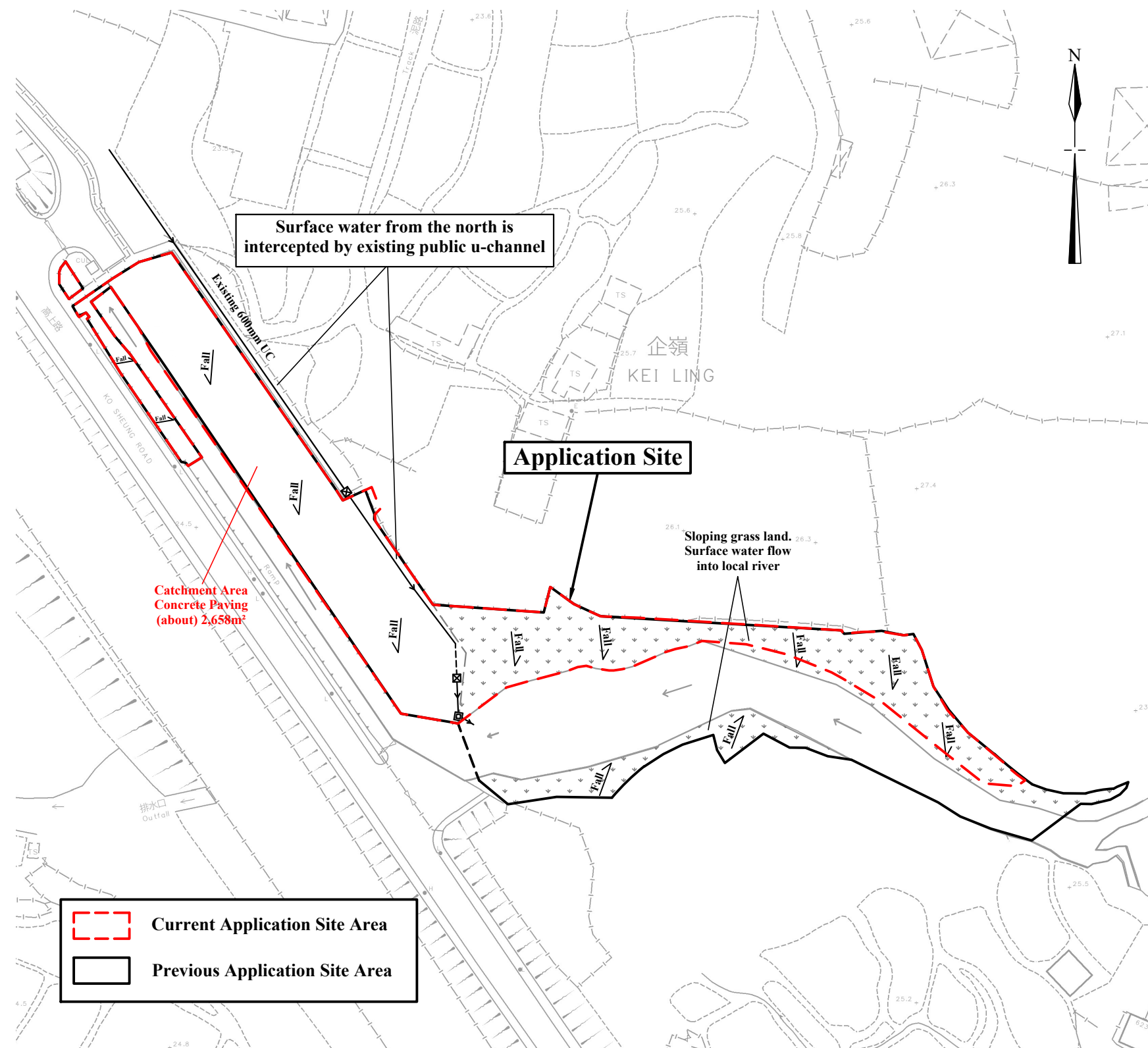
July 2026

Drainage Proposal

(Approved under previous application A/YL-PH/969)
Government Land in D.D.114
Pat Heung, Yuen Long

Goldrich Planners &
Surveyors Ltd.

Plan 7.1
(P 23009)



N.T.S

July 2026

Drainage Proposal

(Approved under previous application A/YL-PH/969)
Government Land in D.D.114
Pat Heung, Yuen Long

**Goldrich Planners &
Surveyors Ltd.**

Plan 7.2
(P 23009)

1 For the Catchment Area

$$\begin{aligned}\text{Area, } A &= 2658 \text{ m}^2 \\ \text{Average slope, } H &= 0.1 \text{ m per 100m} \\ \text{Distance on the line of natural flow, } L &= 10 \text{ m}\end{aligned}$$

$$\begin{aligned}\text{Time of concentration, } t_o &= 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (10) / (0.13^{0.2} \times 2658^{0.1}) \\ &= 1.0 \text{ min}\end{aligned}$$

SDM 7.5.2 (d)

2 For Proposed U-Channel in the catchment area

	From	To
Ground level (mPD)	24.10	22.00
Invert level (mPD)	22.34	20.78

$$\begin{aligned}\text{Width of u-channel, } w &= 300 \text{ mm} \\ \text{Length of u-channel, } L_c &= 156 \text{ m} \\ \text{Depth of vertical part of u-channel, } d &= 1070 \text{ mm} \\ \text{Gradient of u-channel, } S_f &= (22.34 - 20.78) / 156 = 0.0100\end{aligned}$$

$$\begin{aligned}\text{Cross-Section Area, } a &= 0.5 \pi r^2 + w d = 0.5 \times 3.14 \times 150^2 + 300 \times 1070 \\ &= 0.356 \text{ m}^2 \\ \text{Wetted Perimeter, } p &= \pi r + 2 d = 3.14 \times 150 + 2 \times 1070 \\ &= 2.611 \text{ m} \\ \text{Hydraulic radius, } R &= a / p \\ &= 0.136 \text{ m}\end{aligned}$$

SDM 8.2.1

3 Use Manning Equation for estimating velocity of stormwater

$$\begin{aligned}\text{Take } n &= 0.016 \text{ for concrete lined channels:-} \\ \text{Allowable velocity, } v &= R^{1/6} \times (RS_f)^{1/2} / n = (0.136)^{1/6} \times (0.136 \times 0.01)^{1/2} / 0.016 \\ &= 1.66 \text{ m/s} \\ \text{Time of flow, } t_f &= 1.6 \text{ min}\end{aligned}$$

SDM Table 13

SDM Table 12

4 Use "Rational Method" for calculation of design flow

$$\begin{aligned}\text{Design intensity, } i &= a / (t_o + t_f + b)^c \\ &= 474.6 / (2.9 + 0.5 + 2.9)^{0.42} \text{ for return period } T = 50 \text{ years} \\ &= 308\end{aligned}$$

SDM 4.3.2

SDM Table 3

Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C x A
Flat Grassland (heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	2658.0	2525.1
SUM =			2525.1

SDM 7.5.2 (b)

$$\text{Upstream flow, } Q_u = 0 \text{ m}^3/\text{s}$$

$$\begin{aligned}\text{Design flow, } Q_d &= 0.278i \sum C_j A_j + Q_u \text{ where } A_j \text{ is in km}^2 \\ &= 0.278 \times 308 \times 2525.1 / 1000000 + 0 \\ &= 0.216 \text{ m}^3/\text{s}\end{aligned}$$

SDM 7.5.2 (a)

$$\begin{aligned}\text{Allowable flow, } Q_a &= a \times v \\ &= 0.356 \times 1.66 \\ &= 0.590 \text{ m}^3/\text{s}\end{aligned}$$

$$> Q_d \text{ (O.K.)}$$

Reference was made to Stormwater Drainage Manual (SDM) by DSD

Scale: NA

Drainage Calculation

Goldrich Planners &
Surveyors Ltd.

July 2026

Government Land in D. D. 114
Pat Heung, Yuen Long

Page 1
(P23009)

GoldRich PLANNERS & SURVEYORS LTD.

金 潤 規 劃 測 量 師 行 有 限 公 司



12 November 2024

The Secretary
Town Planning Board
15/F, North Point Government Offices
333 Java Road, North Point, Hong Kong

By Post and Email:
tpbpd@pland.gov.hk

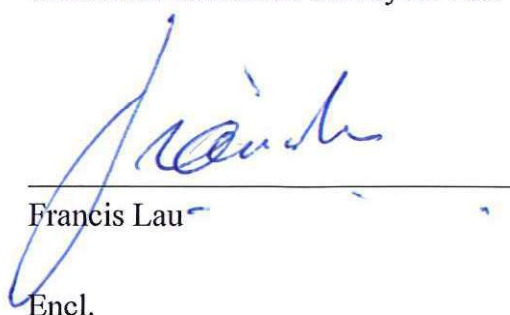
Dear Sir,

A/YL-PH/969
Compliance with Approval Condition (f)
Submission of a Drainage Proposal

Proposed Temporary Animal Boarding Establishment with Ancillary Facilities
for a Period of 5 Years and Filling of Land
on Government Land in D.D. 114, Kei Ling
Pat Heung, Yuen Long

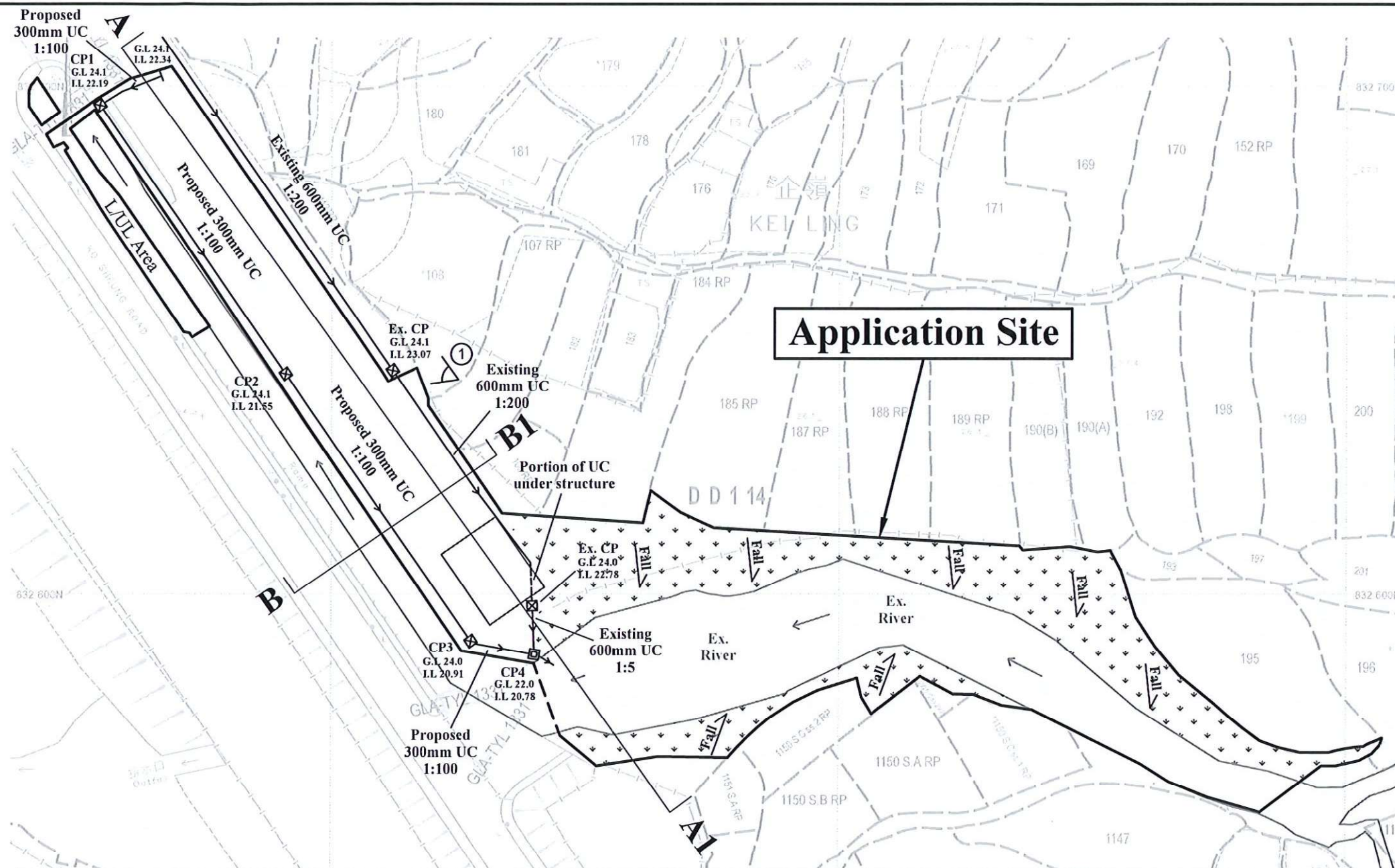
We would like to submit a drainage proposal (Plan 11.1 and Plan 11.2) in compliance with approval condition (f) regarding the submission of a drainage proposal for the captioned application.

Yours faithfully,
For and on behalf of
Goldrich Planners & Surveyors Ltd.



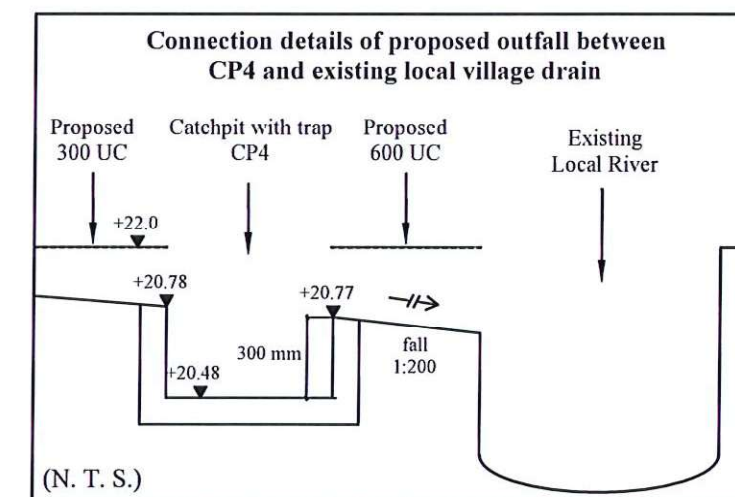
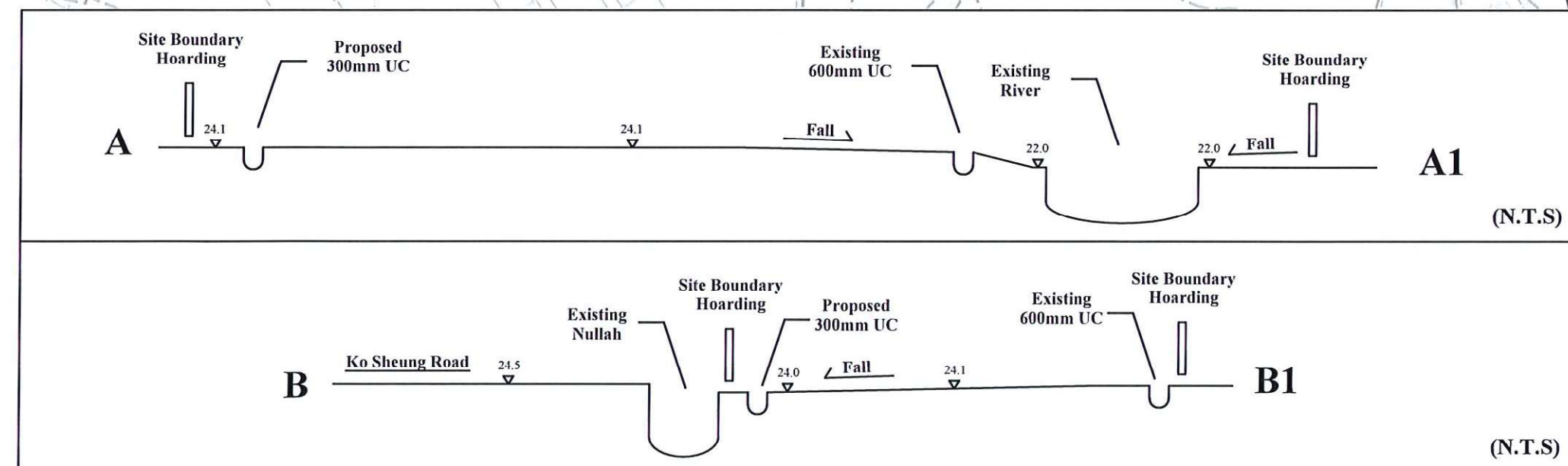
Francis Lau

Encl.



Legend

- U-Channel
- Catch-pit with trap
- ⊗ Catch-pit
- ◁ Viewpoint of drainage photo
- Ex. Existing



1:1000 (A3)

November 2024

Drainage Proposal

Government Land in D.D.114
Pat Heung, Yuen Long

Goldrich Planners &
Surveyors Ltd.

Plan 11.1
(P 23009)

Viewpoint 1



1 For the Catchment Area			Ref.	
Area, A	=	2606 m ²		
Average slope, H	=	0.1 m per 100m		
Distance on the line of natural flow, L	=	10 m		
Time of concentration, t ₀	=	$0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (10) / (0.13^{0.2} \times 2606^{0.1})$	SDM 7.5.2 (d)	
	=	1.0 min		
2 For Proposed U-Channel in the catchment area				
	From	To		
Ground level (mPD)	24.10	22.00		
Invert level (mPD)	22.34	20.78		
Width of u-channel, w	=	300 mm		
Length of u-channel, L _c	=	156 m		
Depth of vertical part of u-channel, d	=	1070 mm		
Gradient of u-channel, S _f	=	$(22.34 - 20.78) / 156 = 0.0100$		
Cross-Section Area, a	=	$0.5 \pi r^2 + w d = 0.5 \times 3.14 \times 150^2 + 300 \times 1070$		
	=	0.356 m ²		
Wetted Perimeter, p	=	$\pi r + 2 d = 3.14 \times 150 + 2 \times 1070$		
	=	2.611 m		
Hydraulic radius, R	=	a / p	SDM 8.2.1	
	=	0.136 m		
3 Use Manning Equation for estimating velocity of stormwater				
Take n	=	0.016 for concrete lined channels:-	SDM Table 13	
Allowable velocity, v	=	$R^{1/6} \times (RS_f)^{1/2} / n = (0.136)^{1/6} \times (0.136 \times 0.01)^{1/2} / 0.016$	SDM Table 12	
	=	1.66 m/s		
Time of flow, t _f	=	1.6 min		
4 Use "Rational Method" for calculation of design flow				
Design intensity, i	=	$a / (t_0 + t_f + b)^c$	SDM 4.3.2	
	=	$474.6 / (2.9 + 0.5 + 2.9)^{0.42}$ for return period T = 50 years	SDM Table 3	
	=	308		
Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C x A	SDM 7.5.2 (b)
Flat Grassland (heavy soil)	0.25	0.0	0.0	
Concrete Paving	0.95	2606.0	2475.7	
		SUM =	2475.7	
Upstream flow, Q _u	=	0 m ³ /s		
Design flow, Q _d	=	$0.278i \sum C_i A_i + Q_u$ where A _i is in km ²		SDM 7.5.2 (a)
	=	$0.278 \times 308 \times 2475.7 / 1000000 + 0$		
	=	0.212 m ³ /s		
Allowable flow, Q _a	=	$a \times v$		
	=	0.356×1.66		
	=	0.590 m ³ /s		
	>	Q _d (O.K.)		
Reference was made to Stormwater Drainage Manual (SDM) by DSD				

Scale: NA	Drainage Calculation	Goldrich Planners & Surveyors Ltd.
November 2024		Page 1 (P23009)
	Government Land in D. D. 114 Pat Heung, Yuen Long	

規劃署

粉嶺、上水及元朗東規劃處
新界荃灣青山公路388號
中染大廈22樓2202室



Planning Department

Fanling, Sheung Shui & Yuen Long East
District Planning Office
Unit 2202, 22/F, CDW Building,
388 Castle Peak Road, Tsuen Wan, N.T.

來函檔號 Your Reference:
本署檔號 Our Reference: TPB/A/YL-PH/969
電話號碼 Tel. No. :
傳真機號碼 Fax No. :

6 March 2025

Dear Sir/Madam,

**Proposed Temporary Animal Boarding Establishment with Ancillary Facilities
For a Period of 5 Years and Filling of Land in "Agriculture" Zone,
Government Land in D.D. 114, Kei Ling, Pat Heung, Yuen Long
(Planning Application No. A/YL-PH/969)**

Compliance with Approval Condition (f) - Submission of a Drainage Proposal

I refer to your submission via email dated 12.11.2024 for compliance with the captioned approval condition. Relevant department has been consulted on your submission. Your submission is considered:

- ☒ Acceptable. The captioned condition **has been complied with**. Please find detailed departmental comment(s) in **Appendix**.
- ☐ Acceptable. Since the captioned condition requires both the submission and implementation of the proposal, it **has not been fully complied with**. Please proceed to implement the accepted proposal for full compliance with the approval condition.
- ☐ Not acceptable. The captioned condition **has not been complied with**.

Should you have any enquiries, please contact [redacted] of the Drainage Services Department at [redacted]

Yours faithfully,

(Josephine LO)

District Planning Officer/
Fanling, Sheung Shui and Yuen Long East
Planning Department



規劃署35周年
Planning Department 35 Anniversary

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Planning a Future of Boundless Opportunities



Detailed Comments of the Chief Engineer/Mainland North, Drainage Services Department

The applicant is reminded to implement the drainage facilities on the application site in accordance with the agreed drainage proposal. The applicant is required to maintain all the drainage facilities in good condition and ensure that the proposed development would neither obstruct overland flow nor adversely affect exiting natural streams, village drains, ditches and the adjacent areas etc. The applicant is also required to rectify the drainage system at their own expense to the satisfaction of government parties concerned if they are found to be inadequate or ineffective during operation.