

寄件者: Rich Gold [REDACTED]  
寄件日期: 2026年03月30日星期一 16:34  
收件者: tpbpd/PLAND  
副本: Andrea Wing Yin YAN/PLAND  
主旨: Planning Application No. A/YL-KTN/1164 - Submission of Further Information  
附件: KTN1164\_P22034\_FI\_DSD\_30.3.2026.pdf  
  
類別: Internet Email

Dear Sir/Madam,

Attached please find our further information for the captioned application. Thank you.

Regards,  
Janice Tang

--  
[REDACTED]

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Your Ref.: A/YL-KTN/1164

Our Ref.: P22034/TL26124

30 March 2026

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

By E-mail  
tpbpd@pland.gov.hk

Dear Sir,

**Submission of Further Information (FI)**

**Temporary Place of Recreation, Sports or Culture and Animal Boarding  
Establishment with Ancillary Facilities and Associated Filling of Land and Pond  
for a Period of 3 Years in "Agriculture" Zone, Lots 1464 (Part), 1466 (Part), 1486 (Part),  
1489 (Part) and 1494 (Part) in D.D. 107 and Adjoining Government Land,  
Kam Tin, Yuen Long, New Territories  
(Application No. A/YL-KTN/1164)**

We write to submit FI in response to departmental comment(s) conveyed by the Planning Department for the captioned application.

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



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Francis LAU

Encl.

c.c.

DPO/FS&YLE, PlanD (Attn.: Ms. Andrea YAN)

**Further Information for Planning Application No. A/YL-KTN/1164**

**Response-to-Comments**

**Comments from Drainage Services Department**

Contact person: Ms. Jessica KWAN (Tel.: 3965 8924)

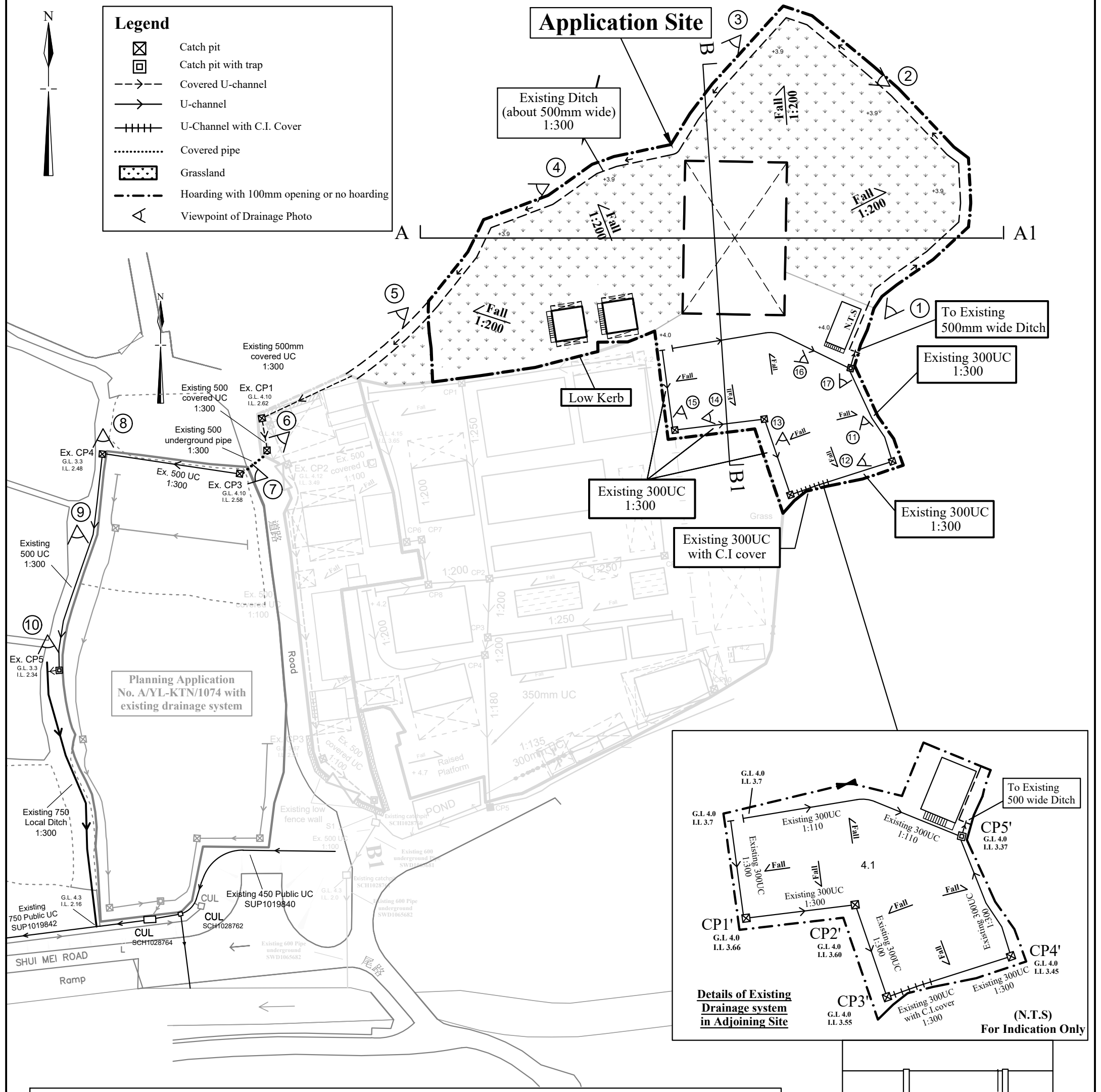
<b>I.</b>	<b>Comments</b>	<b>Responses</b>
1.	Drawing (No.: Plan 5.1): the applicant should clarify discrepancy of gradient of the surface channels connecting catchpits CP3' and CP5'.	Please refer to the revised drainage proposal ( <b>Plan 5.1a</b> ) for details.
2.	Since the submitted site photos No. 1-10 are same as those submission via the previous application No. A/YL-KTN/894, the previous comments conveyed to the applicant - <i>“According to our site inspection on 25 April and 2 May 2025, it was observed that some channel depths do not tally with the agreed drainage proposal (particular the 500mm u-channel). The applicant should review the size of constructed channels.”</i> , are still valid.	<p>After the site inspection on 25 April and 2 May 2025, we received verbal comments from the authority stated that the depth of the channel at site photos 2-4 is not tally with the agreed drainage proposal.</p> <p>The applicant has rectified the situation of site photos 2-4. Please refer to the updated site photos 2-4.</p> <p>Other locations of the channel are acceptable by the authority and remain the same.</p>

- END -

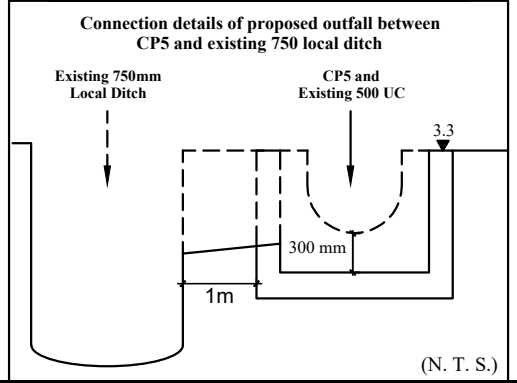
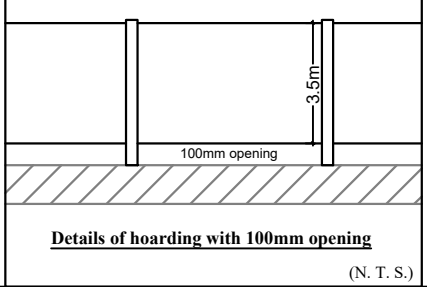
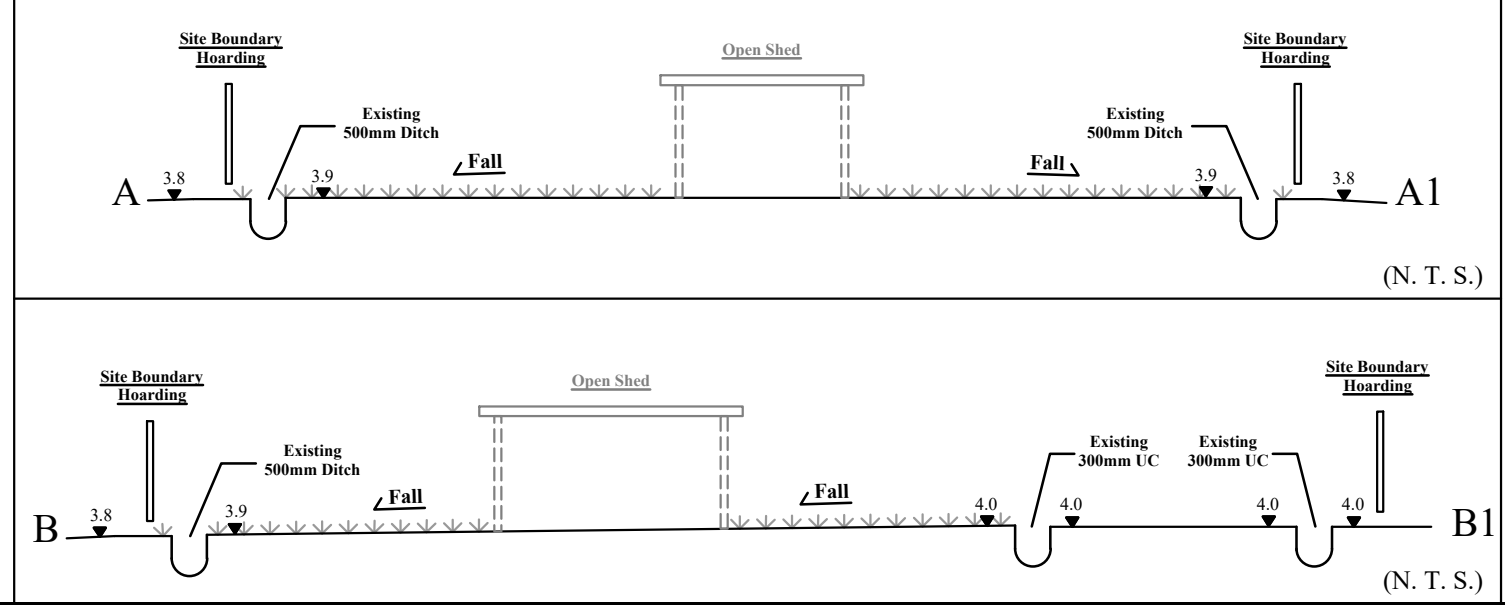
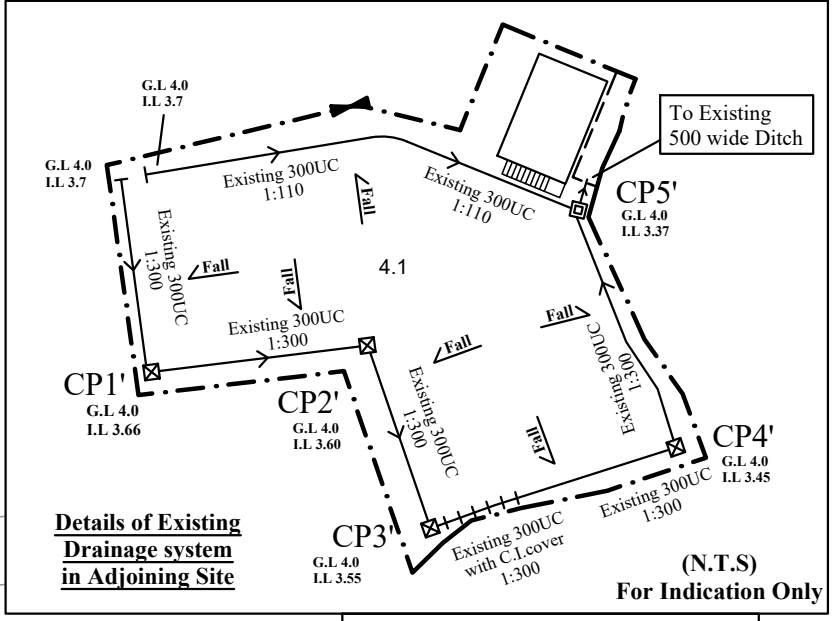
**Legend**

- Catch pit
- Catch pit with trap
- Covered U-channel
- U-channel
- U-Channel with C.I. Cover
- Covered pipe
- Grassland
- Hoarding with 100mm opening or no hoarding
- Viewpoint of Drainage Photo

**Application Site**



Planning Application No. A/YL-KTN/1074 with existing drainage system



1:750 (A3)

**Drainage Proposal**

Goldrich Planners & Surveyors Ltd.



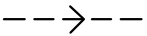
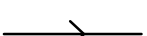

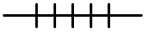
October 2025

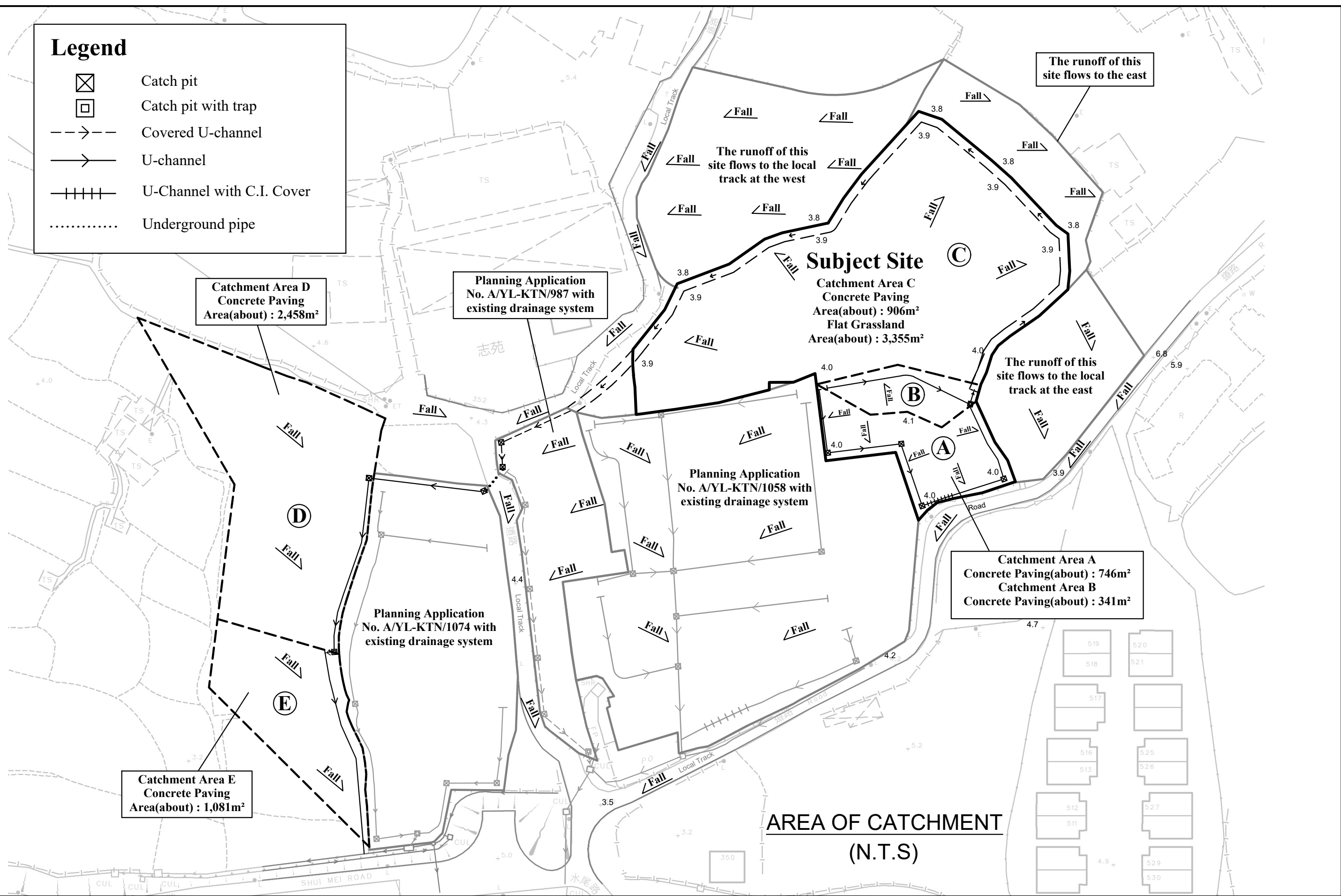
Lots 1464(part), 1466(part), 1486(Part), 1489(Part), 1494(part)  
and adjoining Government Land in D. D. 107  
Yuen Long, New Territories

Plan 5.1a  
( P 22034 )



### Legend

-  Catch pit
-  Catch pit with trap
-  Covered U-channel
-  U-channel
-  U-Channel with C.I. Cover
-  Underground pipe



Catchment Area D  
Concrete Paving  
Area(about) : 2,458m<sup>2</sup>

Planning Application  
No. A/YL-KTN/987 with  
existing drainage system

### Subject Site

Catchment Area C  
Concrete Paving  
Area(about) : 906m<sup>2</sup>  
Flat Grassland  
Area(about) : 3,355m<sup>2</sup>

The runoff of this  
site flows to the local  
track at the east

Planning Application  
No. A/YL-KTN/1058 with  
existing drainage system

Catchment Area A  
Concrete Paving(about) : 746m<sup>2</sup>  
Catchment Area B  
Concrete Paving(about) : 341m<sup>2</sup>

Planning Application  
No. A/YL-KTN/1074 with  
existing drainage system

Catchment Area E  
Concrete Paving  
Area(about) : 1,081m<sup>2</sup>

AREA OF CATCHMENT  
(N.T.S)

N.T.S

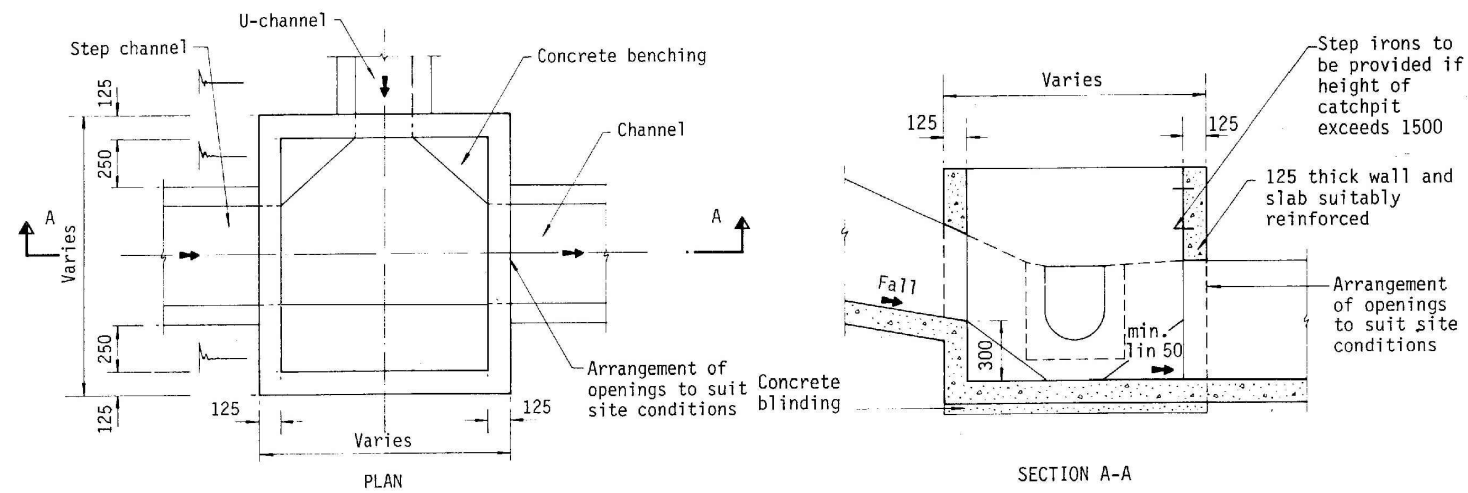
## Drainage Proposal

Goldrich Planners &  
Surveyors Ltd.

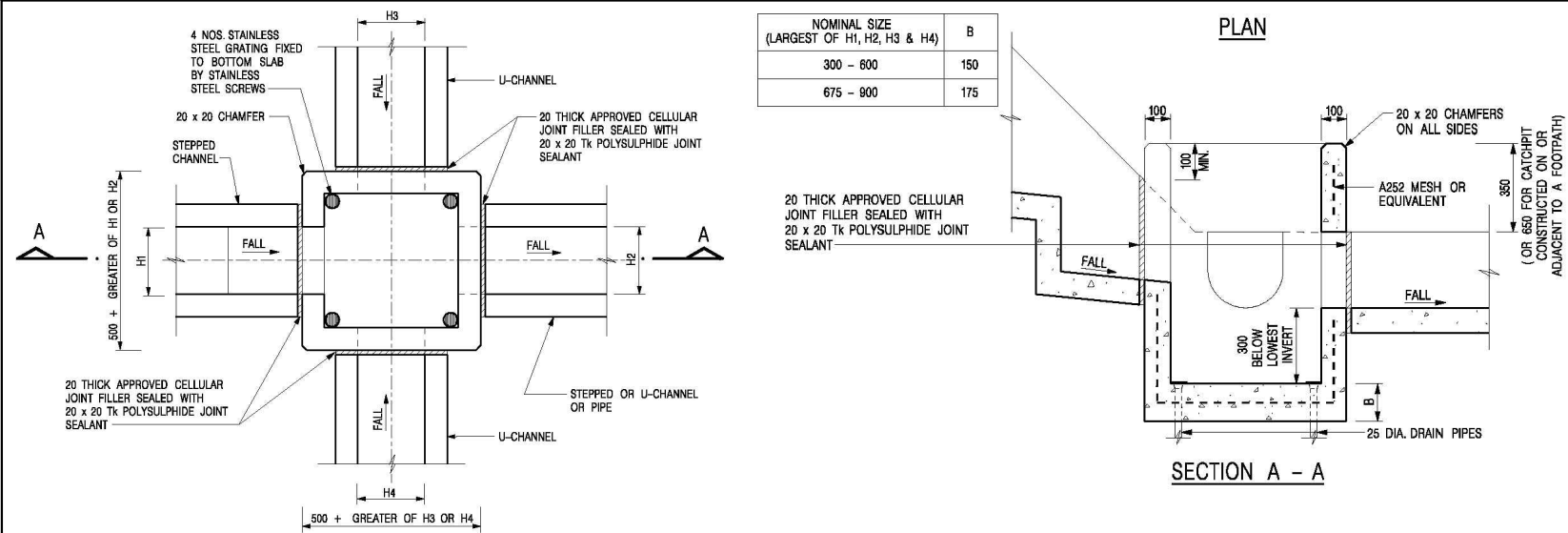
August 2025

Lots 1464(part), 1466(part), 1486(Part), 1489(Part), 1494(part)  
and adjoining Government Land in D. D. 107  
Yuen Long, New Territories

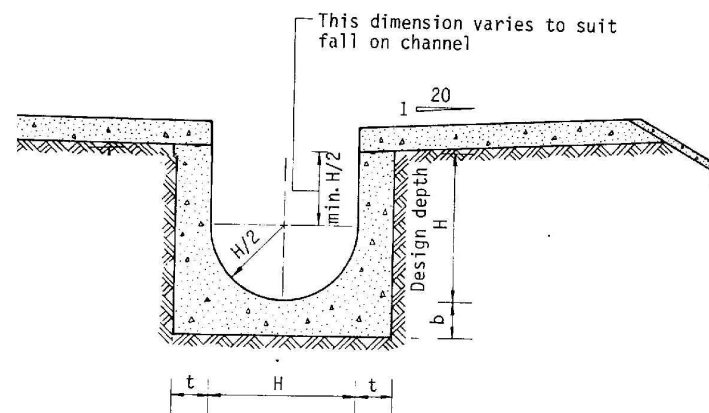
Plan 5.2  
( P 22034 )



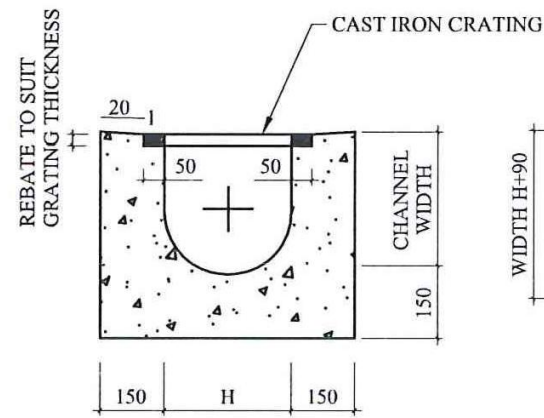
**TYPICAL DETAILS OF CATCHPIT**



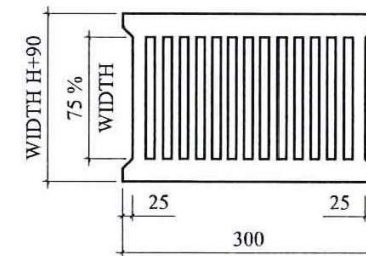
**DETAILS OF CATCHPIT WITH TRAP**  
(REFER TO CEDD'S STANDARD DWG. C2406/1)



**TYPICAL DETAILS OF U CHANNEL**



**TYPICAL SECTION OF U-CHANNEL WITH COVER**  
(N.T.S.)



**CAST IRON CRATING (HEAVY DUTY)**

N.T.S

August 2025

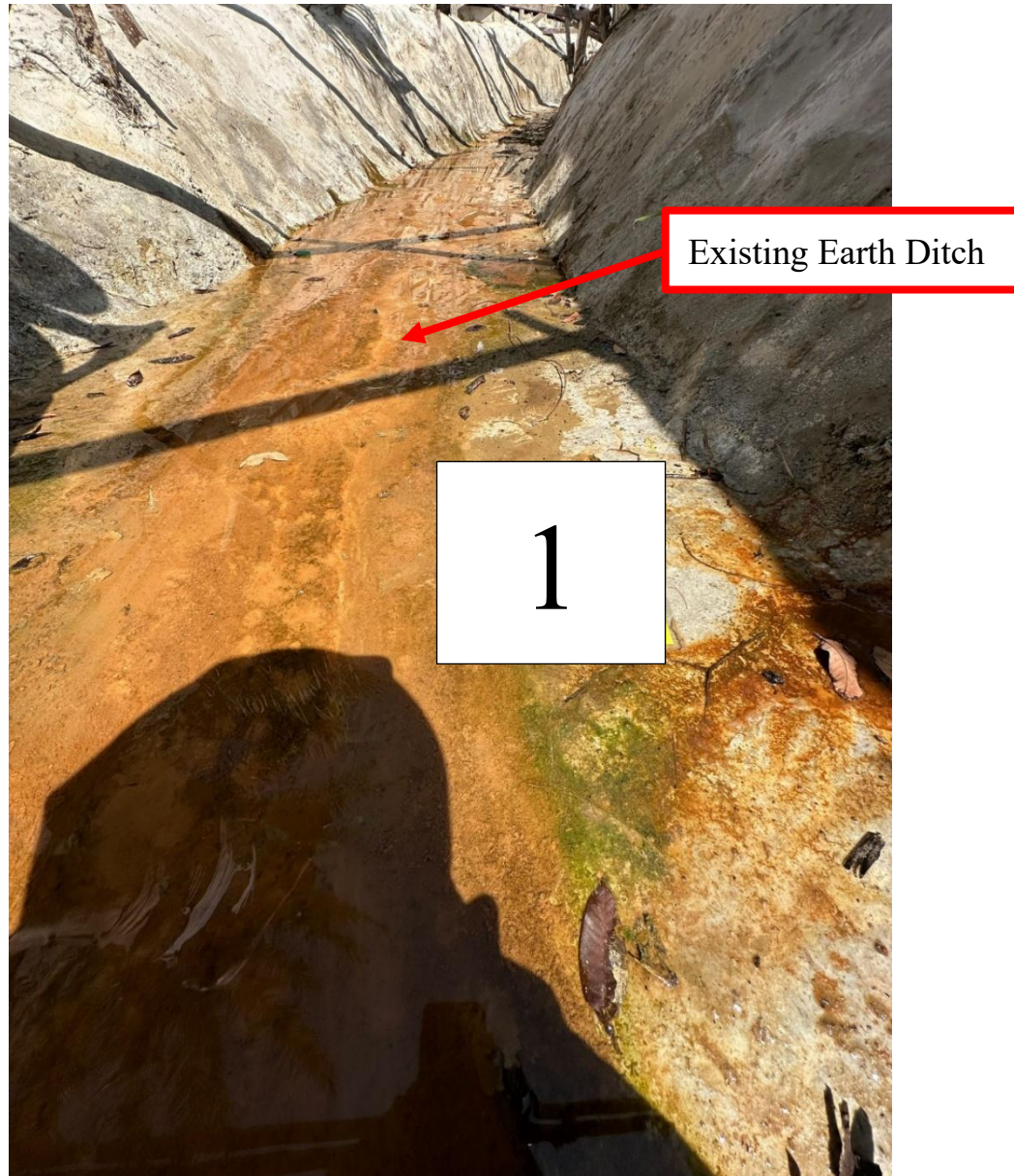
# Drainage Proposal

Lots 1464(part), 1466(part), 1486(Part), 1489(Part), 1494(part)  
and adjoining Government Land in D. D. 107  
Yuen Long, New Territories

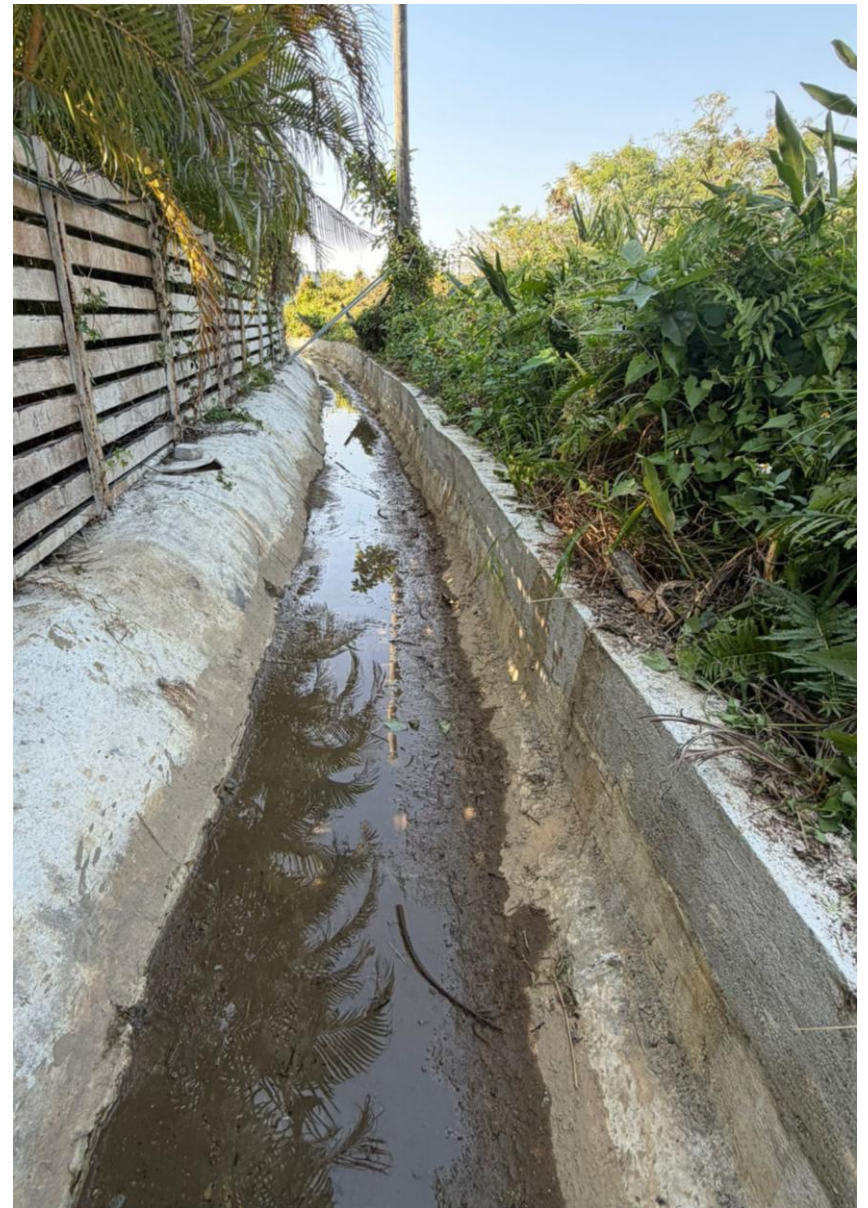
Goldrich Planners & Surveyors Ltd.

Plan 5.3  
( P 22034 )

### Viewpoint 1



### Viewpoint 2



### Viewpoint 3



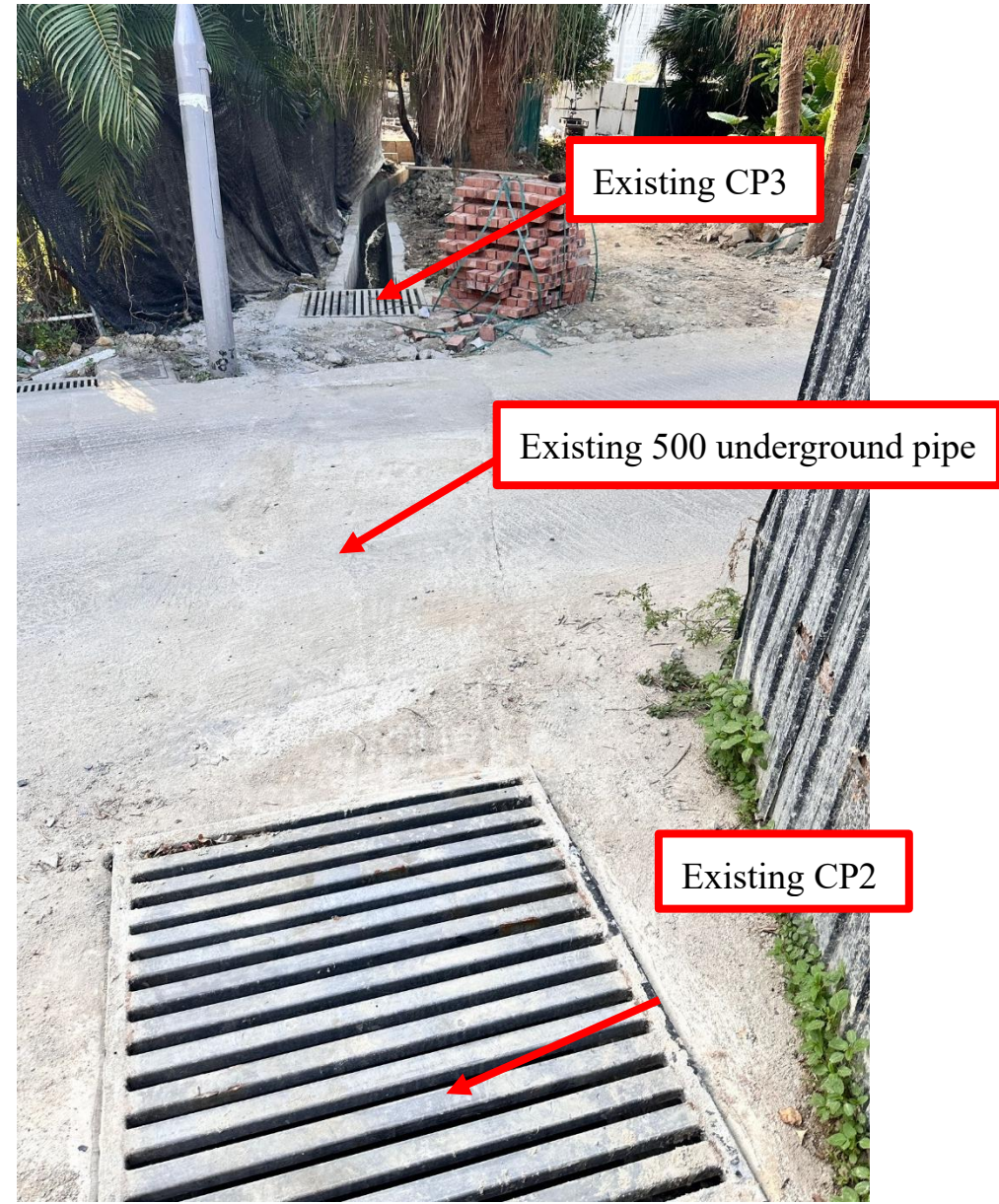
### Viewpoint 4



### Viewpoint 5



### Viewpoint 6



**Viewpoint 7**



**Viewpoint 8**



### Viewpoint 9



Existing 500 UC

### Viewpoint 10



Existing 750  
Local Ditch

Existing CP5

**Viewpoint 11**



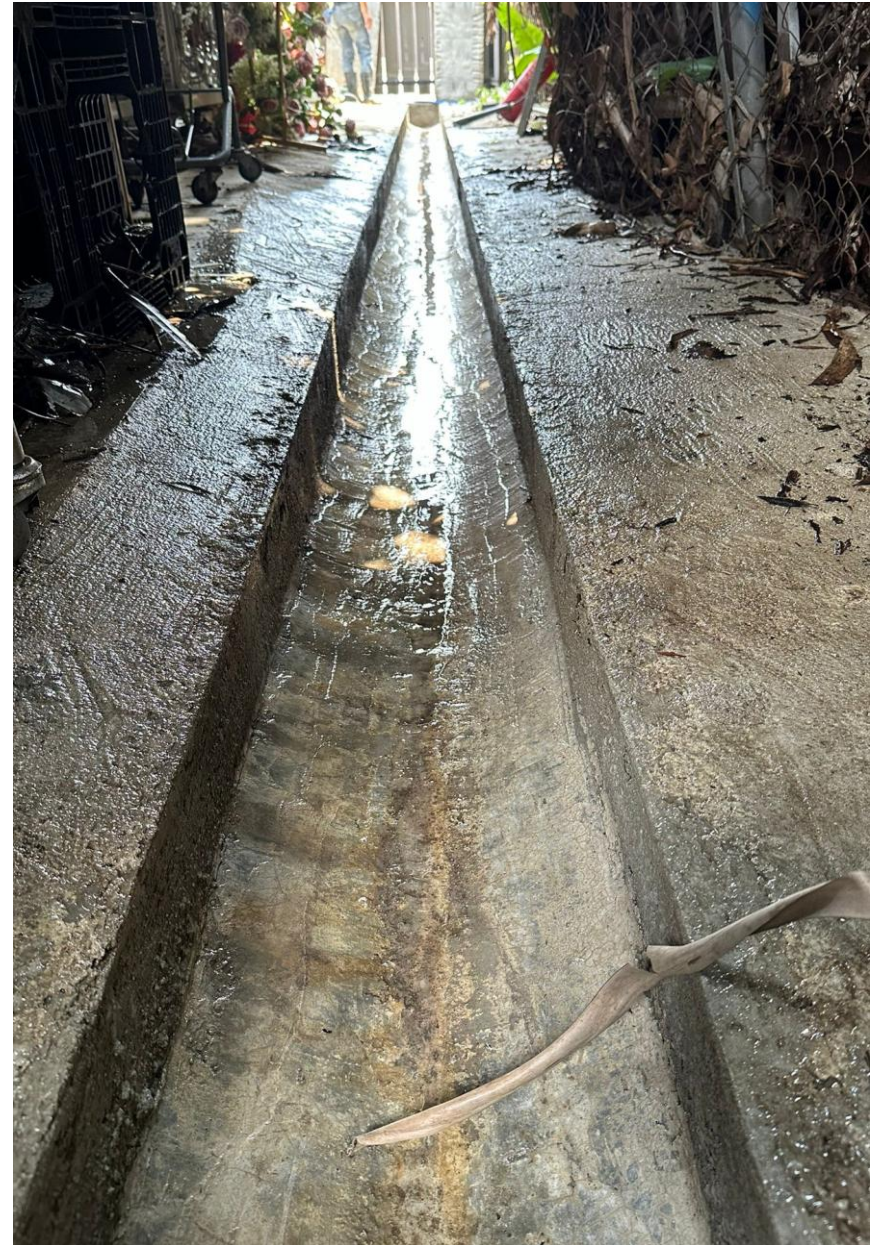
**Viewpoint 12**



**Viewpoint 13**



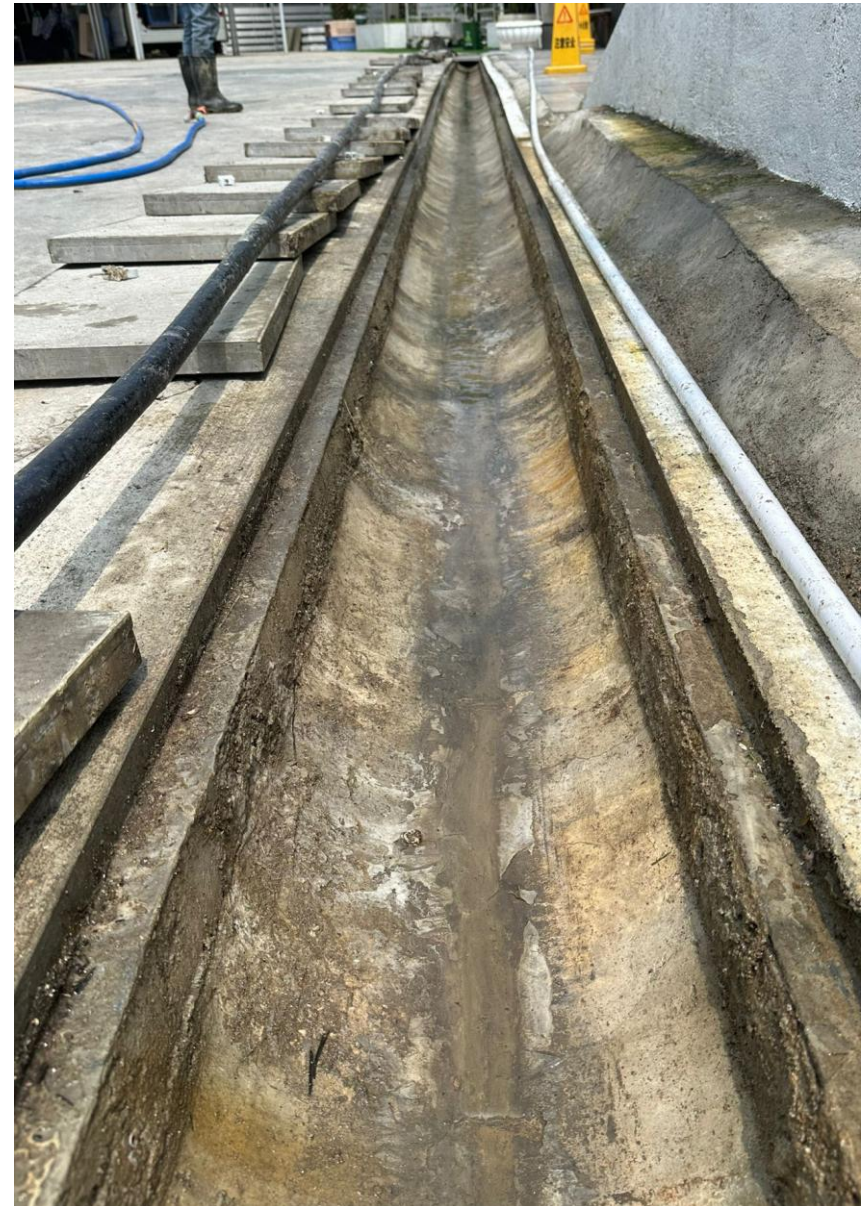
**Viewpoint 14**



**Viewpoint 15**



**Viewpoint 16**



## Viewpoint 17



### 1 For Catchment Area A

Area, A = 742 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 21 m

Time of concentration, t<sub>0</sub> = 0.14465L / (H<sup>0.2</sup>A<sup>0.1</sup>) = 0.14465 (21) / (0.1<sup>0.2</sup>\*742<sup>0.1</sup>)  
 = 2.5 min

Ref.  
  
  
  
  
SDM 7.5.2 (d)

### 2 For Existing U-Channel in catchment area A

	From	To
Ground level (mPD)	4.00	4.00
Invert level (mPD)	3.70	3.37

Width of u-channel, w = 300 mm  
 Length of u-channel, L<sub>c</sub> = 97.8 m  
 Depth of vertical part of u-channel, d = 476 mm  
 Gradient of u-channel, S<sub>f</sub> = (3.7-3.374)/97.8 = 0.0033

Cross-Section Area, a = 0.5 π r<sup>2</sup> + w d = 0.5 x 3.14 x 150<sup>2</sup> + 300 x 476  
 = 0.178 m<sup>2</sup>  
 Wetted Perimeter, p = π r + 2 d = 3.14 x 150 + 2 x 476  
 = 1.423 m  
 Hydraulic radius, R = a / p  
 = 0.125 m

SDM 8.2.1

### 3 Use Manning Equation for estimating velocity of stormwater

Take n = 0.016 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (0.125)<sup>1/6</sup> x (0.125 x 0.003)<sup>1/2</sup> / 0.016  
 = 0.90 m/s  
 Time of flow, t<sub>f</sub> = 1.8 min

SDM Table 13  
SDM Table 12

### 4 Use "Rational Method" for calculation of design flow

Design intensity, i = a / (t<sub>0</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.5+3.29)<sup>0.35</sup> for return period T = 50 years  
 = 246

SDM 4.3.2  
Corrigendum 1/2024  
SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	742.0	704.9
			SUM = 704.9

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i Σ C<sub>j</sub>A<sub>j</sub> + Q<sub>u</sub> where A<sub>j</sub> is in km<sup>2</sup>  
 = 0.278 x 246 x 704.9 / 1000000 + 0  
 = 0.048 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = a x v  
 = 0.178 x 0.9  
 = 0.161 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

**1 For Catchment Area B**

Area, A = 343 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 25 m

Time of concentration, t<sub>0</sub> = 0.14465L / (H<sup>0.2</sup>A<sup>0.1</sup>) = 0.14465 (25) / (0.1<sup>0.2</sup>\*343<sup>0.1</sup>)  
 = 3.2 min

SDM 7.5.2 (d)

**2 For Existing U-Channel in catchment area B**

	From	To
Ground level (mPD)	4.00	4.00
Invert level (mPD)	3.70	3.37

Width of u-channel, w = 300 mm  
 Length of u-channel, L<sub>c</sub> = 36.2 m  
 Depth of vertical part of u-channel, d = 480 mm  
 Gradient of u-channel, S<sub>f</sub> = (3.7-3.37)/36.2 = 0.009

Cross-Section Area, a = 0.5 π r<sup>2</sup> + w d = 0.5 x 3.14 x 150<sup>2</sup> + 300 x 480  
 = 0.179 m<sup>2</sup>

Wetted Perimeter, p = π r + 2 d = 3.14 x 150 + 2 x 480  
 = 1.431 m

Hydraulic radius, R = a / p  
 = 0.125 m

SDM 8.2.1

**3 Use Manning Equation for estimating velocity of stormwater**

Take n = 0.016 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (0.125)<sup>1/6</sup> x (0.125 x 0.009)<sup>1/2</sup> / 0.016  
 = 1.49 m/s  
 Time of flow, t<sub>f</sub> = 0.4 min

SDM Table 13  
 SDM Table 12

**4 Use "Rational Method" for calculation of design flow**

Design intensity, i = a / (t<sub>0</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.5+3.29)<sup>0.35</sup>:for return period T = 50 years  
 = 255

SDM 4.3.2  
 Corrigendum 1/2024  
 SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	343.0	325.9
			SUM = 325.9

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i Σ C<sub>j</sub>A<sub>j</sub> + Q<sub>u</sub> where A<sub>j</sub> is in km<sup>2</sup>  
 = 0.278 x 255 x 325.85 / 1000000 + 0  
 = 0.023 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = a x v  
 = 0.179 x 1.49  
 = 0.268 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

**1 For Catchment Area C**

Area, A = 3944 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 66 m

Time of concentration, t<sub>o</sub> =  $0.14465L / (H^{0.2}A^{0.1})$  = 0.14465 (66) / (0.1<sup>0.2</sup>\*3944<sup>0.1</sup>)  
 = 6.6 min

**Ref.**

SDM 7.5.2 (d)

**2 For Existing Ditch in catchment area C**

	From	To
Ground level (mPD)	4.00	3.90
Invert level (mPD)	3.37	2.68

Width of u-channel, w = 500 mm  
 Length of u-channel, L<sub>c</sub> = 206.7 m  
 Depth of vertical part of u-channel, d = 969 mm  
 Gradient of u-channel, S<sub>f</sub> = (3.37-2.681)/206.7 = 0.0033

Cross-Section Area, a =  $0.5 \pi r^2 + w d$  = 0.5 x 3.14 x 250<sup>2</sup> + 500 x 969  
 = 0.583 m<sup>2</sup>  
 Wetted Perimeter, p =  $\pi r + 2 d$  = 3.14 x 250 + 2 x 969  
 = 2.723 m  
 Hydraulic radius, R = a / p  
 = 0.214 m

SDM 8.2.1

**3 Use Manning Equation for estimating velocity of stormwater**

Take n = 0.0225 for earth lined channels:-  
 Allowable velocity, v =  $R^{1/6} \times (RS_f)^{1/2} / n$  = (0.214)<sup>1/6</sup> x (0.214 x 0.003)<sup>1/2</sup> / 0.0225  
 = 0.92 m/s  
 Time of flow, t<sub>f</sub> = 3.8 min

SDM Table 13  
 SDM Table 12

**4 Use "Rational Method" for calculation of design flow**

Design intensity, i = a / (t<sub>o</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.5+3.29)<sup>0.355</sup> for return period T = 50 years  
 = 200

SDM 4.3.2  
 Corrigendum 1/2024  
 SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	2765.0	691.3
Concrete Paving	0.95	1179.0	1120.1
SUM =			1811.3

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0.071 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i Σ C<sub>j</sub>A<sub>j</sub> + Q<sub>u</sub> where A<sub>j</sub> is in km<sup>2</sup>  
 = 0.278 x 200 x 1811.3 / 1000000 + 0.071  
 = 0.172 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = a x v  
 = 0.583 x 0.92  
 = 0.535 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

Scale: NA

**Hydraulic Calculation**

Goldrich Planners &  
 Surveyors Ltd.

December 2024

Lots 1464 (Part), 1486 (Part), 1489 (Part), 1494 (Part)  
 and adjoining Government Land in D. D. 107  
 Yuen Long, N. T.

Page 3  
 (P22034)

**1 For Catchment Area between Existing Ditch and CP2**

Area, A = 0 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 0 m

Time of concentration, t<sub>0</sub> = 0.14465L / (H<sup>0.2</sup>A<sup>0.1</sup>) = 0.14465 (0) / (0.1<sup>0.2</sup>0<sup>0.1</sup>)  
 = 0.0 min

**Ref.**  
  
  
  
  
SDM 7.5.2 (d)

**2 For Existing U-Channel between Existing Ditch and CP2**

	From	To
Ground level (mPD)	3.90	4.10
Invert level (mPD)	2.68	2.59

Width of u-channel, w = 500 mm  
 Length of u-channel, L<sub>c</sub> = 27.7 m  
 Depth of vertical part of u-channel, d = 1260 mm  
 Gradient of u-channel, S<sub>f</sub> = (2.68-2.59)/27.7 = 0.0033

Cross-Section Area, a = 0.5 π r<sup>2</sup> + w d = 0.5 x 3.14 x 250<sup>2</sup> + 500 x 1260  
 = 0.728 m<sup>2</sup>

Wetted Perimeter, p = π r + 2 d = 3.14 x 250 + 2 x 1260  
 = 3.305 m

Hydraulic radius, R = a / p  
 = 0.220 m

SDM 8.2.1

**3 Use Manning Equation for estimating velocity of stormwater**

Take n = 0.0160 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (0.22)<sup>1/6</sup> x (0.22 x 0.003)<sup>1/2</sup> / 0.016  
 = 1.31 m/s  
 Time of flow, t<sub>f</sub> = 0.4 min

SDM Table 13  
 SDM Table 12

**4 Use "Rational Method" for calculation of design flow**

Design intensity, i = a / (t<sub>0</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.5+3.29)<sup>0.355</sup> for return period T = 50 years  
 = 319

SDM 4.3.2  
 Corrigendum 1/2024  
 SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	0.0	0.0
SUM =			0.0

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0.172 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i Σ C<sub>j</sub>A<sub>j</sub> + Q<sub>u</sub> where A<sub>j</sub> is in km<sup>2</sup>  
 = 0.278 x 319 x 0 / 1000000 + 0.172  
 = 0.172 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = a x v  
 = 0.728 x 1.31  
 = 0.951 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

**1 For Catchment Area between CP2 and CP3**

Area, A = 0 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 0 m

Time of concentration, t<sub>0</sub> = 0.14465L / (H<sup>0.2</sup>A<sup>0.1</sup>) = 0.14465 (0) / (0.1<sup>0.2</sup>\*0<sup>0.1</sup>)  
 = 0.0 min

Ref.  
  
  
  
SDM 7.5.2 (d)

**2 For Underground Pipe between CP2 and CP3**

Size(Diameter) w = 500 mm  
 Length of Pipe = 3.6 m  
 Design the pipe to 9/10 full bore capacity, then  
 Area of ventilated portion = 0.1 of pipe area  
 $\frac{1}{2} r^2 \theta - \frac{1}{2} r^2 \sin(\theta) = 0.1 \pi r^2$   
 $\theta - \sin(\theta) = 0.2 \pi$   
 $\theta = 1.63 \text{ rad} = 93.4^\circ$  (By trial and error)

Area A = 0.9  $\pi r^2$   
 = 0.9 x 3.14 x 500<sup>2</sup>  
 = 0.707 m<sup>2</sup>

Wetted Perimeter P = 2  $\pi r - r \theta$  = 2327 mm  
 Hydraulic radius R = A/P  
 = 303.7 mm

SDM 8.2.1

**3 Use Manning Equation for estimating velocity of stormwater**

Fall S = 1: 300  
 Take n = 0.016 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (303.7)<sup>1/6</sup> \* (303.7/300)<sup>1/2</sup> / 0.016  
 = 1.35 m/s  
 Time of flow, t<sub>f</sub> = 0.04 min

SDM Table 13  
SDM Table 12

**4 Use "Rational Method" for calculation of design flow**

Design intensity, i = a / (t<sub>0</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.04+3.29)<sup>0.355</sup> for return period T = 50 years  
 = 330

SDM 4.3.2  
Corrigendum 1/2024  
SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	0.0	0.0
Macadam Roadways	0.425	0.0	0.0
Wooded Areas	0.105	0.0	0.0
SUM =			0.0

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0.172 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i  $\Sigma C_i A_i$  + Q<sub>u</sub> where A<sub>i</sub> is in km<sup>2</sup>  
 = 0.278 x 330 x 0 / 1000000 + 0.172  
 = 0.172 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = 0.9 x a x v (10% reduction in flow area due to deposition of sediment)  
 = 0.9 x 0.3974 x 1.35  
 = 0.856 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

### 1 For Catchment Area D

Area, A = 2458 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 33 m

$$\text{Time of concentration, } t_o = 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (33) / (0.1^{0.2} \times 2458^{0.1}) = 0.0 \text{ min}$$

SDM 7.5.2 (d)

### 2 For U-channel between Existing CP3 and CP5

	From	To
Ground level (mPD)	4.10	3.30
Invert level (mPD)	2.58	2.34

Width of u-channel, w = 500 mm  
 Length of u-channel, L<sub>c</sub> = 71.1 m  
 Depth of vertical part of u-channel, d = 710 mm  
 Gradient of u-channel, S<sub>f</sub> = (2.58-2.34)/71.1 = 0.0034

$$\text{Cross-Section Area, } a = 0.5 \pi r^2 + w d = 0.5 \times 3.14 \times 250^2 + 500 \times 710 = 0.453 \text{ m}^2$$

$$\text{Wetted Perimeter, } p = \pi r + 2 d = 3.14 \times 250 + 2 \times 710 = 2.205 \text{ m}$$

$$\text{Hydraulic radius, } R = a / p = 0.205 \text{ m}$$

SDM 8.2.1

### 3 Use Manning Equation for estimating velocity of stormwater

Take n = 0.0160 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (0.205)<sup>1/6</sup> x (0.205 x 0.003)<sup>1/2</sup> / 0.016 = 1.26 m/s  
 Time of flow, t<sub>f</sub> = 0.9 min

SDM Table 13  
 SDM Table 12

### 4 Use "Rational Method" for calculation of design flow

$$\text{Design intensity, } i = a / (t_o + t_f + b)^c = 505.5 / (2.9 + 0.9 + 3.29)^{0.355} \text{ for return period } T = 50 \text{ years} = 303$$

SDM 4.3.2  
 Corrigendum 1/2024  
 SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland (heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	2458.0	2335.1
			SUM = 2335.1

SDM 7.5.2 (b)

$$\text{Upstream flow, } Q_u = 0.172 \text{ m}^3/\text{s}$$

$$\text{Design flow, } Q_d = 0.278i \sum C_j A_j + Q_u \text{ where } A_j \text{ is in km}^2 = 0.278 \times 303 \times 2335.1 / 1000000 + 0.172 = 0.369 \text{ m}^3/\text{s}$$

SDM 7.5.2 (a)

$$\text{Allowable flow, } Q_a = a \times v = 0.453 \times 1.26 = 0.573 \text{ m}^3/\text{s}$$

> Q<sub>d</sub> (O.K.)

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

Scale: NA

## Hydraulic Calculation

Goldrich Planners &  
 Surveyors Ltd.

December 2024

Lots 1464 (Part), 1486 (Part), 1489 (Part), 1494 (Part)  
 and adjoining Government Land in D. D. 107  
 Yuen Long, N. T.

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### 1 For Catchment Area E

Area, A = 1081 m<sup>2</sup>  
 Average slope, H = 0.1 m per 100m  
 Distance on the line of natural flow, L = 33 m

Time of concentration, t<sub>o</sub> = 0.14465L / (H<sup>0.2</sup>A<sup>0.1</sup>) = 0.14465 (33) / (0.1<sup>0.2</sup>\*1081<sup>0.1</sup>)  
 = 3.8 min

Ref.

SDM 7.5.2 (d)

### 2 For Existing Local Ditch in catchment area E

	From	To
Ground level (mPD)	3.30	4.30
Invert level (mPD)	2.34	2.16

Width of u-channel, w = 750 mm  
 Length of u-channel, L<sub>c</sub> = 53 m  
 Depth of vertical part of u-channel, d = 1765 mm  
 Gradient of u-channel, S<sub>f</sub> = (2.34-2.16)/53 = 0.0034

Cross-Section Area, a = 0.5 π r<sup>2</sup> + w d = 0.5 x 3.14 x 375<sup>2</sup> + 750 x 1765  
 = 1.545 m<sup>2</sup>

Wetted Perimeter, p = π r + 2 d = 3.14 x 375 + 2 x 1765  
 = 4.708 m

Hydraulic radius, R = a / p  
 = 0.328 m

SDM 8.2.1

### 3 Use Manning Equation for estimating velocity of stormwater

Take n = 0.016 for concrete lined channels:-  
 Allowable velocity, v = R<sup>1/6</sup> x (RS<sub>f</sub>)<sup>1/2</sup> / n = (0.328)<sup>1/6</sup> x (0.328 x 0.003)<sup>1/2</sup> / 0.016  
 = 1.73 m/s  
 Time of flow, t<sub>f</sub> = 0.5 min

SDM Table 13

SDM Table 12

### 4 Use "Rational Method" for calculation of design flow

Design intensity, i = a / (t<sub>o</sub> + t<sub>f</sub> + b)<sup>c</sup>  
 = 505.5 / (2.9+0.5+3.29)<sup>0.355</sup> for return period T = 50 years  
 = 246

SDM 4.3.2

Corrigendum 1/2024

SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m <sup>2</sup> )	C x A
Flat Glassland(heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	1081.0	1027.0
			SUM = 1027.0

SDM 7.5.2 (b)

Upstream flow, Q<sub>u</sub> = 0.369 m<sup>3</sup>/s

Design flow, Q<sub>d</sub> = 0.278i Σ C<sub>f</sub>A<sub>j</sub> + Q<sub>u</sub> where A<sub>j</sub> is in km<sup>2</sup>  
 = 0.278 x 246 x 1026.95 / 1000000 + 0.369  
 = 0.439 m<sup>3</sup>/s

SDM 7.5.2 (a)

Allowable flow, Q<sub>a</sub> = a x v  
 = 1.545 x 1.73  
 = 2.676 m<sup>3</sup>/s

> Q<sub>d</sub> (O.K.)

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

Scale: NA

## Hydraulic Calculation

Goldrich Planners &  
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