

Your Ref.: A/YL-KTS/1084

Our Ref.: P25012/TL25361

27 October 2025

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)

**Proposed Temporary Warehouse (excluding Dangerous Goods Godown)
With Ancillary Office and Associated Filling of Land for a Period of 3 Years in
“Agriculture” Zone, Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B,
1015 RP, 1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113,
Kam Tin, Yuen Long, New Territories
(Application No. A/YL-KTS/1084)**

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.



Francis Lau

Encl.

c.c.

DPO/FSYLE, PlanD (Attn.: Ms. Anna TONG)

Further Information for Planning Application No. A/YL-KTS/1084**Response-to-Comments****Comments from the Chief Engineer/Mainland North, Drainage Services Department**

Contact person: Mr. Kenneth CHAN (Tel.: 2300 1257)

I.	Comments	Responses
1.	The proposed development site is encroached onto an existing water retention pond for collecting surface runoff from the vicinity during rainfall. The applicant is required to submit a Drainage Impact Assessment (DIA) instead of the drainage proposal to record the existing pond details and address the impacts caused by the proposed development. The drainage impacts should include, but not limited to, the existing natural streams, drainage systems, village drains and ditches in the adjacent areas etc. The DIA should also address how the impacts caused by the proposed development could properly be mitigated. Please refer to the DIA requirement details as stipulated in “DSD Advice Note No.1” for preparation of the assessment.	The Site is the subject of a previous application No. A/YL-KTS/1011 for ‘Temporary Place of Recreation, Sports or Culture (Hobby Farm and Fishing Ground), Barbecue Site and Education Centre with Ancillary Eating Place’ use, which was approved by the Town Planning Board on 28.2.2025. The pond within the Site is an artificial pond constructed by the applicant in 2024, which was intended for fishing for the hobby farm business (layout plan of the previous application No. A/YL-KTS/1011 is enclosed for reference). The pond is not intended for collecting surface runoff from the vicinity during rainfall. Aerial photos dated 27.2.2023 (before the pond is constructed) and 23.10.2024 (after the pond is constructed) are also enclosed for reference.
2.	Please refer to paragraph 6 of DSD Technical Note No.1 for sizing of the drainage channels.	The proposed sizing of the drainage channels is updated to 400mm UC which is able to collect all the overland flow and the runoff of the subject site. Please refer to the revised drainage proposal (Plan 6.1) and hydraulic calculations for details.
3.	Please take into account the rainfall increase due to climate change etc., as stated in the Stormwater Drainage Manual Corrigendum No. 1/2022 for the design calculation.	Noted. Please refer to the revised hydraulic calculations for details.

- END -

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 5,381 m ²	(ABOUT)
COVERED AREA	: 950 m ²	(ABOUT)
UNCOVERED AREA	: 4,431 m ²	(ABOUT)
PLOT RATIO	: 0.2	(ABOUT)
SITE COVERAGE	: 18 %	(ABOUT)
NO. OF STRUCTURE	: 10	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 1,060 m ²	(ABOUT)
TOTAL GFA	: 1,060 m ²	(ABOUT)
BUILDING HEIGHT	: 3m - 6m	(ABOUT)
NO. OF STOREY	: 1 - 2	

PARKING AND LOADING/UNLOADING PROVISIONS

NO. OF PRIVATE CAR PARKING SPACE	: 11
DIMENSION OF PARKING SPACE	: 5m (L) X 2.5m (W)
NO. OF L/U.L. SPACE FOR LIGHT GOODS VEHICLE	: 1
DIMENSION OF L/U.L. SPACE	: 7m (L) X 3.5m (W)
NO. OF L/U.L. SPACE FOR LIGHT BUS	: 1
DIMENSION OF L/U.L. SPACE	: 8m (L) X 3m (W)

STRUCTURE

USE

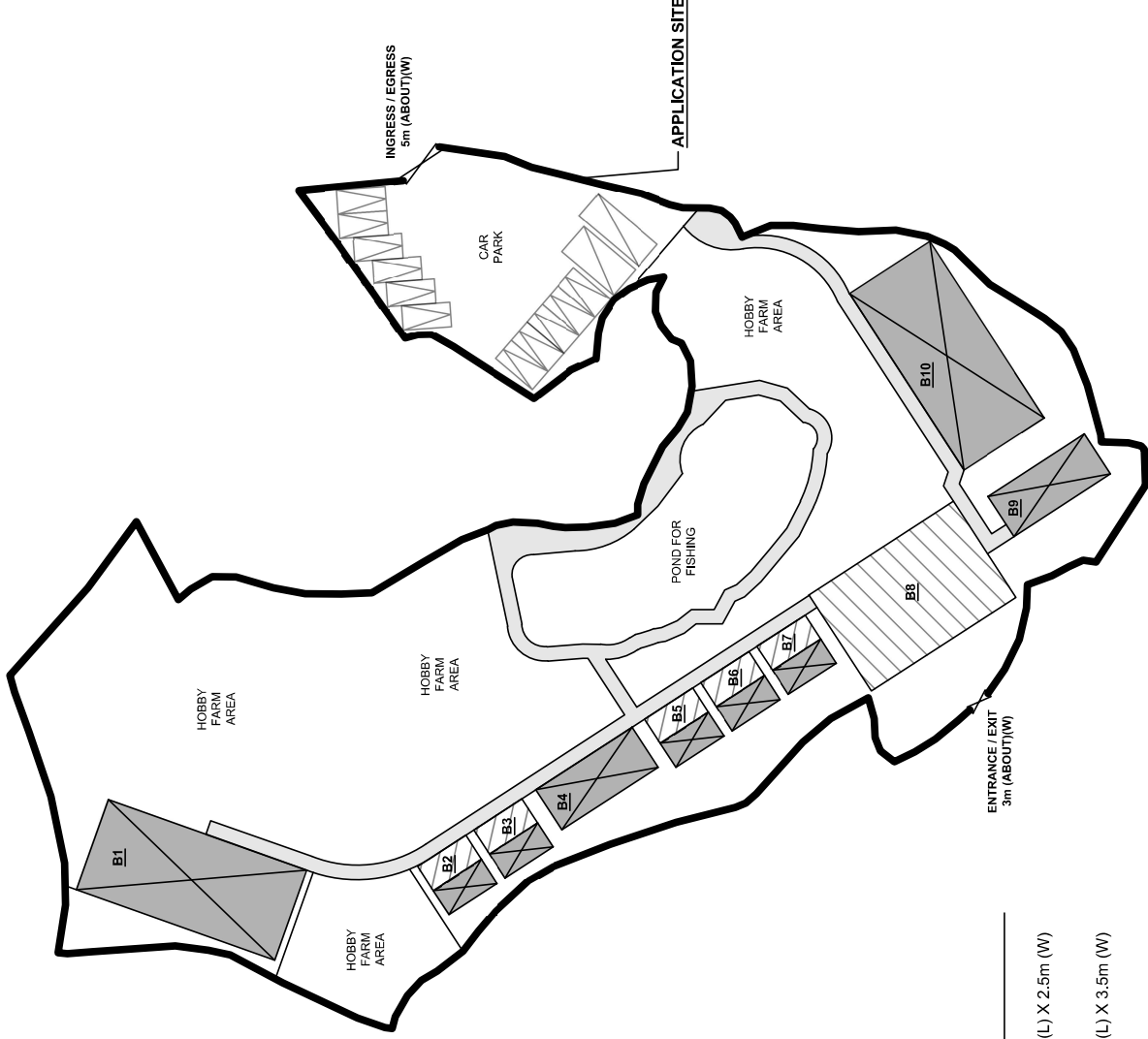
COVERED AREA

GFA

BUILDING HEIGHT

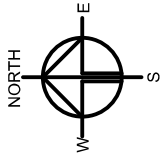
B1	AGRICULTURAL EDUCATION CENTRE	220m ² (ABOUT)	220m ² (ABOUT)	6m (ABOUT)(1-STOREY)
B2	AGR. ACTIVITIES ROOM WITH RAIN SHELTER	36m ² (ABOUT)	36m ² (ABOUT)	3m (ABOUT)(1-STOREY)
B3	AGR. ACTIVITIES ROOM WITH RAIN SHELTER	36m ² (ABOUT)	36m ² (ABOUT)	3m (ABOUT)(1-STOREY)
B4	REFRESHMENT KIOSK AND STORAGE OF TOOLS	55m ² (ABOUT)	110m ² (ABOUT)	6m (ABOUT)(2-STOREY)
B5	AGR. ACTIVITIES ROOM WITH RAIN SHELTER	36m ² (ABOUT)	36m ² (ABOUT)	3m (ABOUT)(1-STOREY)
B6	AGR. ACTIVITIES ROOM WITH RAIN SHELTER	36m ² (ABOUT)	36m ² (ABOUT)	3m (ABOUT)(1-STOREY)
B7	AGR. ACTIVITIES ROOM WITH RAIN SHELTER	36m ² (ABOUT)	36m ² (ABOUT)	3m (ABOUT)(1-STOREY)
B8	BARBEQUE AREA WITH RAIN SHELTER	220m ² (ABOUT)	220m ² (ABOUT)	6m (ABOUT)(1-STOREY)
B9	SITE OFFICE AND STORAGE OF TOOLS	55m ² (ABOUT)	110m ² (ABOUT)	6m (ABOUT)(2-STOREY)
B10	ANCILLARY EATING PLACE, WASHROOM AND CHANGING ROOM	220m ² (ABOUT)	220m ² (ABOUT)	6m (ABOUT)(1-STOREY)

TOTAL 950 m² (ABOUT) 1,060 m² (ABOUT)



LEGEND

	APPLICATION SITE
	STRUCTURE (ENCLOSED)
	STRUCTURE (CANOPY)
	PARKING SPACE
	LOADING / UNLOADING SPACE
	INGRESS / EGRESS



PLANNING CONSULTANT

R-RICHES PROPERTY
CONSULTANTS LIMITED

PROJECT

PROPOSED TEMPORARY PLACE
OF RECREATION, SPORTS OR
CULTURE (HOBBY FARM AND
FISHING GROUND), BARBEQUE
SITE, EDUCATION CENTRE WITH
ANCILLARY EATING PLACE FOR
A PERIOD OF 3 YEARS AND
LAND FILLING

SITE LOCATION

VARIOUS LOTS IN D.D. 113, KAM
TIN, YUEN LONG, NEW
TERRITORIES

SCALE

1 : 800 @ A4

DRAWN BY

MN

DATE

11.5.2022

REVISED BY

MN

DATE

21.7.2022

APPROVED BY

DATE

DWG. TITLE

LAYOUT PLAN

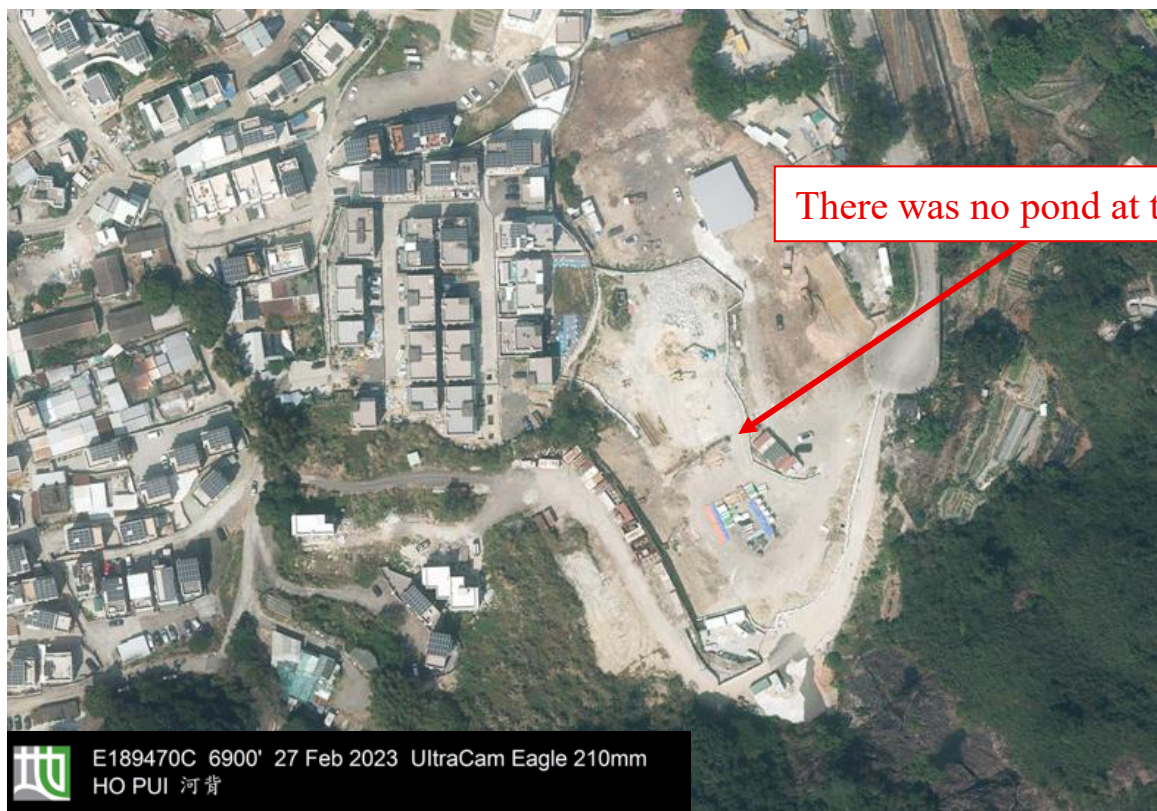
DWG. NO.

Plan 1

VER.

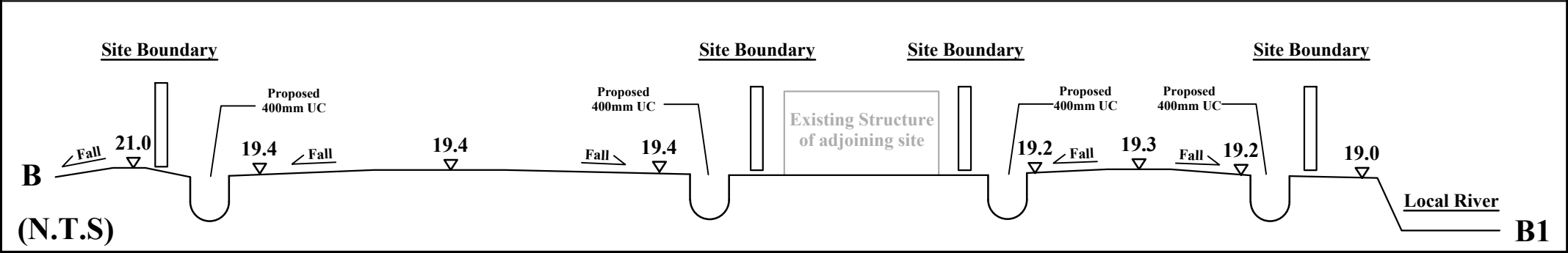
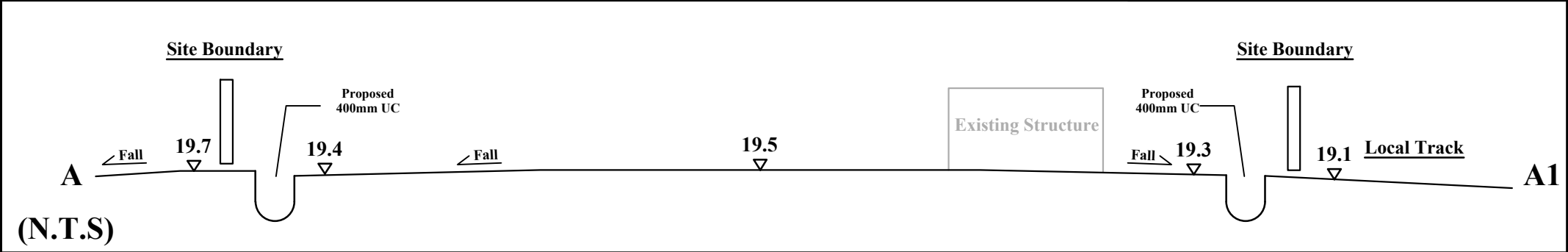
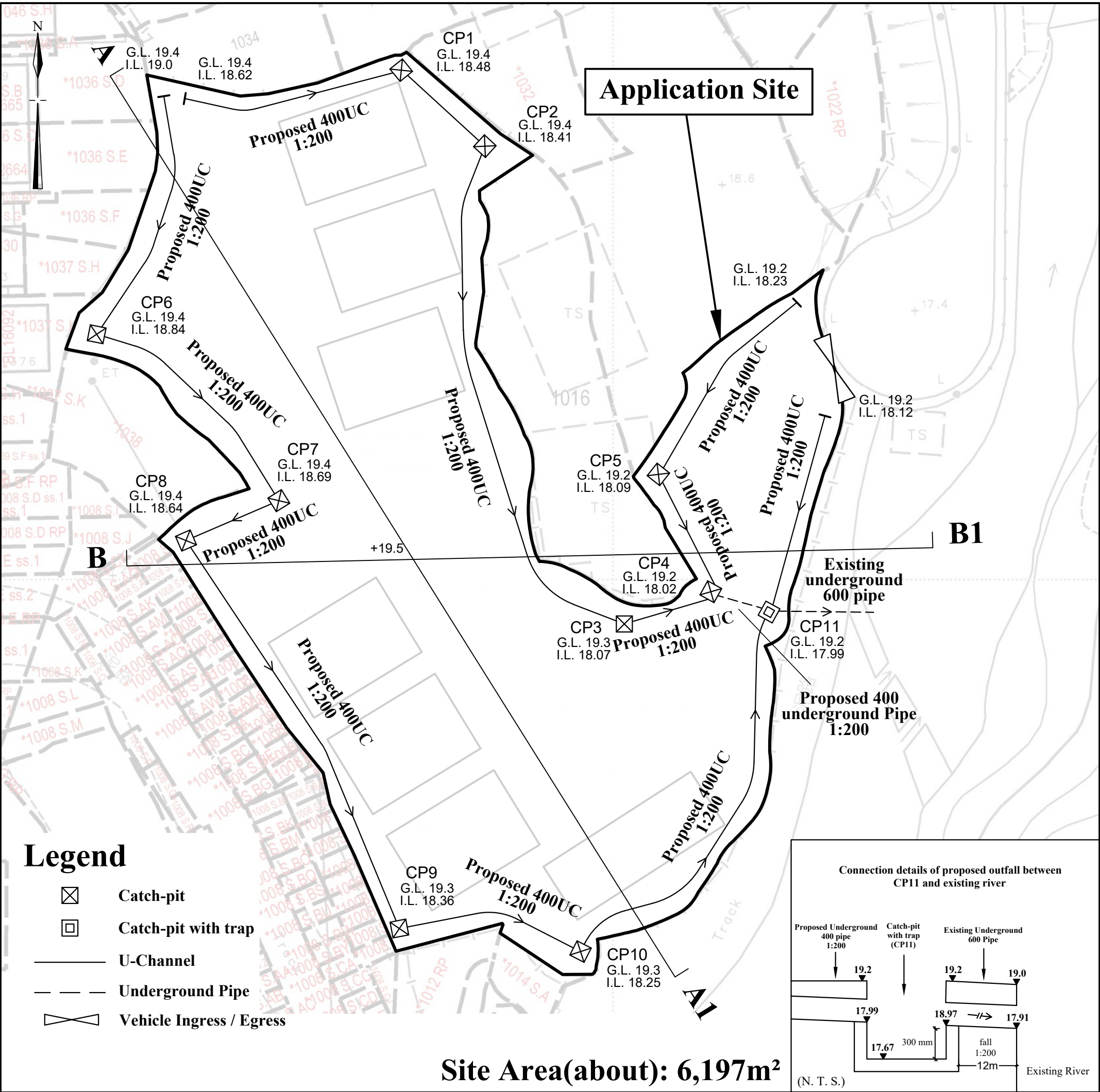
001

Aerial photo dated 27.2.2023



Aerial photo dated 23.10.2024





1:500 (A3)	Drainage Proposal Lots 1012 S.B, 1012 S.C, 1013, 1014RP, 1015 S.A, 1015 S.B, 1015 RP, 1016(part), 1018, 1034(part) and 1035 in D.D. 113 Yuen Long, N.T.	Goldrich Planners & Surveyors Ltd.
September 2025		Plan 6.1 (P 25012)

1 For Catchment Area A		Ref.																
Area, A = 2194 m ² Average slope, H = 0.1 m per 100m Distance on the line of natural flow, L = 22 m																		
Time of concentration, t ₀ = 0.14465L / (H ^{0.2} A ^{0.1}) = 0.14465 (22) / (0.1 ^{0.2} *2194 ^{0.1}) = 2.3 min		SDM 7.5.2 (d)																
2 For Proposed UC in Catchment Area A																		
<table><tr><td></td><td>From</td><td>To</td></tr><tr><td>Ground level (mPD)</td><td>19.40</td><td>19.20</td></tr><tr><td>Invert level (mPD)</td><td>18.62</td><td>18.02</td></tr></table> Width of u-channel, w = 400 mm Length of u-channel, L _c = 119.4 m Depth of vertical part of u-channel, d = 980 mm Gradient of u-channel, S _f = (18.62-18.02)/119.4 = 0.005 Cross-Section Area, a = 0.5 π r ² + w d = 0.5 x 3.14 x 200 ² + 400 x 980 = 0.455 m ² Wetted Perimeter, p = π r + 2 d = 3.14 x 200 + 2 x 980 = 2.588 m Hydraulic radius, R = a / p = 0.176 m		From	To	Ground level (mPD)	19.40	19.20	Invert level (mPD)	18.62	18.02		SDM 8.2.1							
	From	To																
Ground level (mPD)	19.40	19.20																
Invert level (mPD)	18.62	18.02																
3 Use Manning Equation for estimating velocity of stormwater																		
Take n = 0.016 for concrete lined channels:- Allowable velocity, v = R ^{1/6} x (RS _f) ^{1/2} / n = (0.176) ^{1/6} x (0.176 x 0.005) ^{1/2} / 0.016 = 1.39 m/s Time of flow, t _f = 1.4 min		SDM Table 13 SDM Table 12																
4 Use "Rational Method" for calculation of design flow																		
Design intensity, i = a / (t ₀ + t _f + b) ^c = 505.5 / (2.3+1.4+3.29) ^{0.355} for return period T = 50 years = 253		SDM 4.3.2 Corrigendum 1/2024 SDM Table 3a																
<table><tr><td>Type of surface</td><td>Runoff Coefficient C</td><td>Catchment Area A (m²)</td><td>C x A</td></tr><tr><td>Flat Glassland(heavy soil)</td><td>0.25</td><td>0.0</td><td>0.0</td></tr><tr><td>Concrete Paving</td><td>0.95</td><td>2194.0</td><td>2084.3</td></tr><tr><td></td><td></td><td>SUM =</td><td>2084.3</td></tr></table> Upstream flow, Q _u = 0 m ³ /s Design flow, Q _d = 1.16 x 0.278i Σ C _i A _i + Q _u where A _i is in km ² = 1.16 x 0.278 x 253 x 2084.3 / 1000000 + 0 = 0.170 m ³ /s Allowable flow, Q _a = a x v = 0.455 x 1.39 = 0.632 m ³ /s > Q _d (O.K.)	Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C x A	Flat Glassland(heavy soil)	0.25	0.0	0.0	Concrete Paving	0.95	2194.0	2084.3			SUM =	2084.3		SDM 7.5.2 (b)
Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C x A															
Flat Glassland(heavy soil)	0.25	0.0	0.0															
Concrete Paving	0.95	2194.0	2084.3															
		SUM =	2084.3															

1 For Catchment Area B			Ref.	
Area, A	=	457 m ²	SDM 7.5.2 (d)	
Average slope, H	=	0.1 m per 100m		
Distance on the line of natural flow, L	=	12 m		
Time of concentration, t _o	=	0.14465L / (H ^{0.2} A ^{0.1}) = 0.14465 (12) / (0.1 ^{0.2} *457 ^{0.1}) = 1.5 min		
2 For Proposed UC in Catchment Area B				
	From	To		
Ground level (mPD)	19.20	19.20		
Invert level (mPD)	18.23	18.02		
Width of u-channel, w	=	400 mm	SDM 8.2.1	
Length of u-channel, L _c	=	42.5 m		
Depth of vertical part of u-channel, d	=	980 mm		
Gradient of u-channel, S _f	=	(18.23-18.02)/42.5 = 0.005		
Cross-Section Area, a	=	0.5 π r ² + w d = 0.5 x 3.14 x 200 ² + 400 x 980 = 0.455 m ²		
Wetted Perimeter, p	=	π r + 2 d = 3.14 x 200 + 2 x 980 = 2.588 m		
Hydraulic radius, R	=	a / p = 0.176 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} x (RS _f) ^{1/2} / n = (0.176) ^{1/6} x (0.176 x 0.005) ^{1/2} / 0.016 = 1.38 m/s	SDM Table 12	
Time of flow, t _f	=	0.5 min		
4 Use "Rational Method" for calculation of design flow				
Design intensity, i	=	a / (t _o + t _f + b) ^c = 505.5 / (1.5+0.5+3.29) ^{0.355} for return period T = 50 years = 280	SDM 4.3.2 Corrigendum 1/2024 SDM Table 3a	
Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C x A	SDM 7.5.2 (b)
Flat Glassland(heavy soil)	0.25	0.0	0.0	
Concrete Paving	0.95	457.0	434.2	
		SUM =	434.2	
Upstream flow, Q _u	=	0 m ³ /s		
Design flow, Q _d	=	0.278i Σ C _i A _i + Q _u where A _i is in km ² = 1.16 x 0.278 x 280 x 434.15 / 1000000 + 0 = 0.039 m ³ /s		SDM 7.5.2 (a) Corrigendum 1/2022
Allowable flow, Q _a	=	a x v = 0.455 x 1.38 = 0.627 m ³ /s		
	>	Q _d (O.K.)		
Reference was made to Stormwater Drainage Manual (SDM) by DSD				
Scale: NA	Hydraulic Calculation		Goldrich Planners & Surveyors Ltd.	
September 2025	Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B, 1015 RP, 1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113, Kam Tin, Yuen Long, New Territories		Page 2 (P25012)	

1 For Connection between CP4 and CP11 Area, A = 0 m² Average slope, H = 0.1 m per 100m Distance on the line of natural flow, L = 0 m Time of concentration, t₀ = 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (0) / (0.1^{0.2}*0^{0.1}) = 0.0 min			Ref.																								
2 For Proposed Pipe after CP4 Size(Diameter) w = 400 mm Length of Pipe = 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 πr^2 $\theta - \sin(\theta)$ = 0.2 π θ = 1.63 rad = 93.4° (By trial and error) Area A = 0.9 πr^2 = 0.9 x 3.14 x 400² = 452160 mm² = 0.452 m² Wetted Perimeter P = 2 $\pi r - r \theta$ = 1861 mm Hydraulic radius R = A/P = 242.9 mm			SDM 7.5.2 (d)																								
3 Use Manning Equation for estimating velocity of stormwater Fall S = 1: 200 Take n = 0.016 for concrete lined channels:- Allowable velocity, v = R^{1/6} x (RS)^{1/2} / n = (0.243)^{1/6} * (0.243/200)^{1/2} / 0.016 = 1.72 m/s Time of flow, t_f = 0.06 min			SDM 8.2.1																								
4 Use "Rational Method" for calculation of design flow Design intensity, i = a / (t₀ + t_f + b)^c = 505.5 / (0.0+0.06+3.29)^{0.355} for return period T = 50 years = 329 <table> <tr> <th>Type of surface</th><th>Runoff Coefficient C</th><th>Catchment Area A (m²)</th><th>C x A</th></tr> <tr> <td>Flat Grassland (heavy soil)</td><td>0.25</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Concrete Paving</td><td>0.95</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Macadam Roadways</td><td>0.425</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Wooded Areas</td><td>0.105</td><td>0.0</td><td>0.0</td></tr> <tr> <td colspan="3">SUM =</td><td>0.0</td></tr> </table> Upstream flow, Q_u = 0.209 m³/s Design flow, Q_d = 0.278i $\Sigma C_i A_i$ + Q_u where A_i is in km² = 1.16 x 0.278 x 329 x 0 / 1000000 + 0.209 = 0.209 m³/s Allowable flow, Q_a = a x v = 0.45 x 1.72 = 0.778 m³/s > Q_d (O.K.)			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	0.0	0.0	Macadam Roadways	0.425	0.0	0.0	Wooded Areas	0.105	0.0	0.0	SUM =			0.0	SDM Table 13 SDM Table 12
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	0.0	0.0																								
Macadam Roadways	0.425	0.0	0.0																								
Wooded Areas	0.105	0.0	0.0																								
SUM =			0.0																								
Reference was made to Stormwater Drainage Manual (SDM) by DSD			SDM 4.3.2 Corrigendum 1/2024 SDM Table 3a																								
			SDM 7.5.2 (b)																								
			SDM 7.5.2 (a) Corrigendum 1/2022																								
Scale: NA	Hydraulic Calculation Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B, 1015 RP, 1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113, Kam Tin, Yuen Long, New Territories	Goldrich Planners & Surveyors Ltd.																									
September 2025		Page 3 (P25012)																									

1 For Catchment Area C

Area, A = 3325 m²
Average slope, H = 0.1 m per 100m
Distance on the line of natural flow, L = 25 m

$$\text{Time of concentration, } t_o = 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (25) / (0.1^{0.2} \times 3325^{0.1}) = 2.5 \text{ min}$$

SDM 7.5.2 (d)

2 For Proposed UC in Catchment Area C

	From	To
Ground level (mPD)	19.40	19.20
Invert level (mPD)	19.00	17.99

Width of u-channel, w = 400 mm
Length of u-channel, L_c = 203 m
Depth of vertical part of u-channel, d = 1010 mm
Gradient of u-channel, S_r = (19-17.99)/203 = 0.005

$$\begin{aligned} \text{Cross-Section Area, } a &= 0.5 \pi r^2 + w d = 0.5 \times 3.14 \times 200^2 + 400 \times 1010 \\ &= 0.467 \text{ m}^2 \\ \text{Wetted Perimeter, } p &= \pi r + 2 d = 3.14 \times 200 + 2 \times 1010 \\ &= 2.648 \text{ m} \\ \text{Hydraulic radius, } R &= a / p \\ &= 0.176 \text{ m} \end{aligned}$$

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^{1/6} × (RS_r)^{1/2} / n = (0.176)^{1/6} × (0.176 × 0.005)^{1/2} / 0.016 = 1.39 m/s
Time of flow, t_f = 2.4 min

SDM Table 13
SDM Table 12

4 Use "Rational Method" for calculation of design flow

$$\begin{aligned} \text{Design intensity, } i &= a / (t_o + t_f + b)^c \\ &= 505.5 / (2.5 + 2.4 + 3.29)^{0.355} \text{ for return period } T = 50 \text{ years} \\ &= 239 \end{aligned}$$

SDM 4.3.2
Corrigendum 1/2024
SDM Table 3a

Type of surface	Runoff Coefficient C	Catchment Area A (m ²)	C × A
Flat Grassland (heavy soil)	0.25	0.0	0.0
Concrete Paving	0.95	3325.0	3158.8
SUM =			3158.8

SDM 7.5.2 (b)

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

$$\begin{aligned} \text{Design flow, } Q_d &= 0.278i \sum C_i A_i + Q_u \quad \text{where } A_i \text{ is in km}^2 \\ &= 1.16 \times 0.278 \times 239 \times 3158.75 / 1000000 + 0 \\ &= 0.243 \text{ m}^3/\text{s} \end{aligned}$$

SDM 7.5.2 (a)
Corrigendum 1/2022

$$\begin{aligned} \text{Allowable flow, } Q_a &= a \times v \\ &= 0.467 \times 1.39 \\ &= 0.647 \text{ m}^3/\text{s} \\ &> Q_d \text{ (O.K.)} \end{aligned}$$

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

Scale: NA

Hydraulic Calculation

Goldrich Planners &
Surveyors Ltd.

September 2025

Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B, 1015 RP,
1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113, Kam Tin, Yuen Long,
New Territories

Page 4
(P25012)

1 For Catchment Area D

Area, A = 221 m²
 Average slope, H = 0.1 m per 100m
 Distance on the line of natural flow, L = 10 m

$$\text{Time of concentration, } t_o = 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (10) / (0.1^{0.2} \times 221^{0.1}) = 1.3 \text{ min}$$

SDM 7.5.2 (d)

2 For Proposed UC in Catchment Area D

	From	To
Ground level (mPD)	19.20	19.20
Invert level (mPD)	18.12	17.99

Width of u-channel, w = 400 mm
 Length of u-channel, L_c = 25.2 m
 Depth of vertical part of u-channel, d = 1010 mm
 Gradient of u-channel, S_f = (18.12-17.99)/25.2 = 0.005

$$\text{Cross-Section Area, } a = 0.5 \pi r^2 + w d = 0.5 \times 3.14 \times 200^2 + 400 \times 1010 = 0.467 \text{ m}^2$$

$$\text{Wetted Perimeter, } p = \pi r + 2 d = 3.14 \times 200 + 2 \times 1010 = 2.648 \text{ m}$$

$$\text{Hydraulic radius, } R = a / p = 0.176 \text{ m}$$

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^{1/6} x (RS_f)^{1/2} / n = (0.176)^{1/6} x (0.176 x 0.005)^{1/2} / 0.016 = 1.41 m/s
 Time of flow, t_f = 0.3 min

SDM Table 13
 SDM Table 12

4 Use "Rational Method" for calculation of design flow

$$\text{Design intensity, } i = a / (t_o + t_f + b)^c = 505.5 / (1.3 + 0.3 + 3.29)^{0.355} \text{ for return period } T = 50 \text{ years} = 287$$

SDM 4.3.2
 Corrigendum 1/2024
 SDM Table 3a

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	221.0	210.0
SUM =			210.0

SDM 7.5.2 (b)

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

$$\begin{aligned} \text{Design flow, } Q_d &= 0.278i \sum C_i A_i + Q_u \quad \text{where } A_i \text{ is in km}^2 \\ &= 1.16 \times 0.278 \times 287 \times 209.95 / 1000000 + 0 \\ &= 0.019 \text{ m}^3/\text{s} \end{aligned}$$

SDM 7.5.2 (a)
 Corrigendum 1/2022

$$\begin{aligned} \text{Allowable flow, } Q_a &= a \times v \\ &= 0.467 \times 1.41 \\ &= 0.659 \text{ m}^3/\text{s} \end{aligned}$$

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

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

Scale: NA

Hydraulic Calculation

Goldrich Planners &
 Surveyors Ltd.

September 2025

Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B, 1015 RP, 1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113, Kam Tin, Yuen Long, New Territories

Page 5
 (P25012)

1 For Connection between CP11 to existing river Area, A = 0 m² Average slope, H = 0.1 m per 100m Distance on the line of natural flow, L = 0 m Time of concentration, t₀ = 0.14465L / (H^{0.2}A^{0.1}) = 0.14465 (0) / (0.1^{0.2}0^{0.1}) = 0.0 min			Ref.																								
2 For Pipe after Cp11 Size(Diameter) w = 600 mm Length of Pipe = 12 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 πr^2 $\theta - \sin(\theta)$ = 0.2 π θ = 1.63 rad = 93.4^o (By trial and error) Area A = 0.9 πr^2 = 0.9 x 3.14 x 600² = 1017360 mm² = 1.017 m² Wetted Perimeter P = 2 $\pi r - r \theta$ = 2792 mm Hydraulic radius R = $\frac{A}{P}$ = 364.4 mm			SDM 7.5.2 (d)																								
3 Use Manning Equation for estimating velocity of stormwater Fall S = 1: 200 Take n = 0.016 for concrete lined channels:- Allowable velocity, v = $R^{1/6} \times (RS)^{1/2} / n$ = (0.364)^{1/6} * (0.364/200)^{1/2} / 0.016 = 2.25 m/s Time of flow, t_f = 0.089 min			SDM 8.2.1																								
4 Use "Rational Method" for calculation of design flow Design intensity, i = a / (t₀ + t_f + b)^c = 505.5 / (0.0+0.09+3.29)^{0.355} for return period T = 50 years = 328 <table> <tr> <th>Type of surface</th><th>Runoff Coefficient C</th><th>Catchment Area A (m²)</th><th>C x A</th></tr> <tr> <td>Flat Grassland(heavy soil)</td><td>0.25</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Concrete Paving</td><td>0.95</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Macadam Roadways</td><td>0.425</td><td>0.0</td><td>0.0</td></tr> <tr> <td>Wooded Areas</td><td>0.105</td><td>0.0</td><td>0.0</td></tr> <tr> <td colspan="3">SUM =</td><td>0.0</td></tr> </table> Upstream flow, Q_u = 0.471 m³/s Design flow, Q_d = 0.278i $\Sigma C_i A_i$ + Q_u where A_i is in km² = 1.16 x 0.278 x 328 x 0 / 1000000 + 0.471 = 0.471 m³/s Allowable flow, Q_a = a x v = 1.02 x 2.25 = 2.294 m³/s > Q_d (O.K.)			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	0.0	0.0	Macadam Roadways	0.425	0.0	0.0	Wooded Areas	0.105	0.0	0.0	SUM =			0.0	SDM Table 13 SDM Table 12
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	0.0	0.0																								
Macadam Roadways	0.425	0.0	0.0																								
Wooded Areas	0.105	0.0	0.0																								
SUM =			0.0																								
Reference was made to Stormwater Drainage Manual (SDM) by DSD			SDM 4.3.2 Corrigendum 1/2024 SDM Table 3a																								
			SDM 7.5.2 (b)																								
			SDM 7.5.2 (a) Corrigendum 1/2022																								

Scale: NA	Hydraulic Calculation Lots 1012 S.B, 1012 S.C, 1013, 1014 RP, 1015 S.A, 1015 S.B, 1015 RP, 1016 (Part), 1018, 1034 (Part) and 1035 in D.D.113, Kam Tin, Yuen Long, New Territories	Goldrich Planners & Surveyors Ltd.
September 2025		Page 6 (P25012)