寄件者:	sun wo wong [redacted]
寄件日期:	2026年05月26日星期二 18:39
收件者:	[redacted]
主旨:	A/YL-PH/1091
附件:	A 1091 DIA REPORT-1_已压缩.pdf

我等現向貴會提交新一份
雨水排放建議書給貴會轉
交渠務署審議。

我等在上述地段申請作為商店及服務行業只要係收集A/YL-PH/1090回收回來尚可重用的鋼通架，經他們篩選後還可重用的鋼通架會交由我等進行銷售或出租，我等場地不會將鋼通架進行清洗，維修的工序，即代表有關鋼通架必然可作重用我等才會接收因此不需要進行任何的加工程序，絕對不會產生噪音及影響周邊環境。

同時我等銷售或出租方式全部以電話或網上聯系，客人不需要到來我等場地購買或租用，我等會安排本公司的輕型貨車送貨到客戶的工地，因此我等場地只有我等自已公司的輕型貨車進出申請場地，外來車輛一概不准進入申請地點包括超越5.5公吨的貨車。

是次的排水報告書係我等聘請沈[redacted]資深工程師代為設計及制定，望貴署能批准我等是次申請，如有不足之處，在日後履行附帶條件上給與我等再作補充的機會，懇請渠務署給與同意有關申請。

沈樂年建築工程設計有限公司
SLN And Associates Ltd. [redacted]

PROPOSED TEMPORARY RECYCLABLE COLLECTION CENTER WITH ANCILLARY FACILITIES
at
LOT102 IN D.D.108, PAT HEUNG, YUEN LONG

APPLICATION NO: A/YL-PH/1091

DRAINAGE IMPACT ASSESSMENT

May 2026

CONTENTS

1.0 INTRODUCTION

This report is prepared by SLN & Associates Ltd. on behalf of owner. and concludes the investigation of the drainage impact for the proposed temporary recyclable center in Lots 91(Part), 98, 99, 100 and 101 in D.D.108, Pat Heung, Yuen Long.

2.0 THE SITE

The proposed temporary recyclable center (hereinafter referred to as the proposed development site) is located at Lot 102 in D.D.108, Pat Heung, Yuen Long. The proposed development site has an area of about 6380m^2, as shown in ***Figure 1.***

Presently, the site is vacant land and will be developed into a temporary recyclable center for a period of **3** years.

The overall development parameters are summarised in **Table 1.**

Table 1: Development Parameters

Development Parameters	
Site Area	1660 (m^2)
Site condition	Presently fenced and unoccupied
Proposed Development	Temporary recyclable center

METHODOLOGY OF DRAINAGE IMPACT ASSESSMENT

The DIA is carried out to assess the possible drainage impact arising from the change in land-use. Assessment will be carried out in accordance with the requirements stated in "Advice Note No.1 – Application of the Drainage Impact Assessment Process to Private Sector Projects" issued by Drainage Services Department (DSD). Design parameters as suggested by Stormwater Drainage Manual (SDM) are adopted and are summarized in **Table 2**.

Rational Method has been used for estimation of surface runoff for the proposed development and the associated catchment area. The drainage system for the proposed extension would be designed for 1 in 50-year rainfall event according to SDM, Table 10.

Table 2: Adopted Parameters in Drainage Assessment

Design Standard	1 in 50-years
Runoff Coefficient	0.9 for paved area 0.2 for flat area 0.3 for steep grassland

4.0 POSSIBLE IMPACT ARISING FROM PROPOSED DEVELOPMENT SITE

4.1 Existing Drainage Characteristics

The proposed site is located in an area with ground levels ranging from +41.0mPD to +40.0mPD.

The site is unpaved and vacant and enclosed by chain link fence. Surface runoff is collected by Proposed 400 running along outside boundary. Site photographs showing the condition of the surface channel are enclosed in ***Appendix A***.

According to the drainage system layout plan, these existing channels are found to connect to the existing manhole and discharge to the existing stream course. The drainage system layout plan is enclosed in ***Appendix A***.

4.2 Examination of Possible Drainage Impact

The site is proposed to be developed into a temporary recyclable center and will eventually be concrete paved. According to drainage layout plan, the Proposed 400 channels will be proposed to collect the runoff and connected to the existing stream course.

The proposed development will change the original area to paved surface for the temporary public vehicle park but the change in site area is relatively small compared with the overall catchments area.

Hydraulic analysis would be divided into two parts, namely the beginning and the end of the existing stream course. **Table 3** show the comparison of surface runoff under scenarios of existing situation and after development for the two parts of hydraulic analysis.

Table 3: Calculation on Change in Runoff

	Existing Situation	After Development
Discharge from developed site (m^3/s)	0.25	0.51
Lot 102 in D.D.108	0.03	0.10
Total discharge (m^3/s)	0.28	0.61

Details of calculation are enclosed in ***Appendix B***.

The capacity of the existing stream course based on the available and level is estimated to be $65.22m^3/s$ according to the Manning equation, which is larger than the total discharge both in existing situation and after development and improvement.

Accordingly to the calculation, the capacities of the existing stream course is considered sufficient to cater for the runoff arising from the catchment including the increased runoff from the proposed development site and the drainage improvement works. Thus, there will be no adverse drainage impact on the existing system due to the development.

Since the duration of permission applied for this application is only 3 years, the long term effect of extreme weather is not considered of a too much concern. The estimation of rainfall intensity based on SDM Table 10 for 50 years return period is already considered on the safe side. However the situation should be reviewed in the next application of renewal.

5.0 MAINTENANCE AND DRAINAGE CONNECTION RESPONSIBILITY

The owner of the site will maintain all stormwater pipes within the proposed development before the outlet of the terminal manhole.

The connection can either be done by the government at the developer's cost or done by the developer himself at his own cost with works technically audited by the DSD.

The client desires to select the latter arrangement.

Open channel or surface runoff collection system will be provided at the periphery of the proposed development site for prevention of any ponding problem within the site. The drainage layout plan shown in ***Figure 2***, the details will be subject to approved by both DSD and BD.

7.0 CONCLUSION

This DIA is prepared in support of the temporary recyclable center.

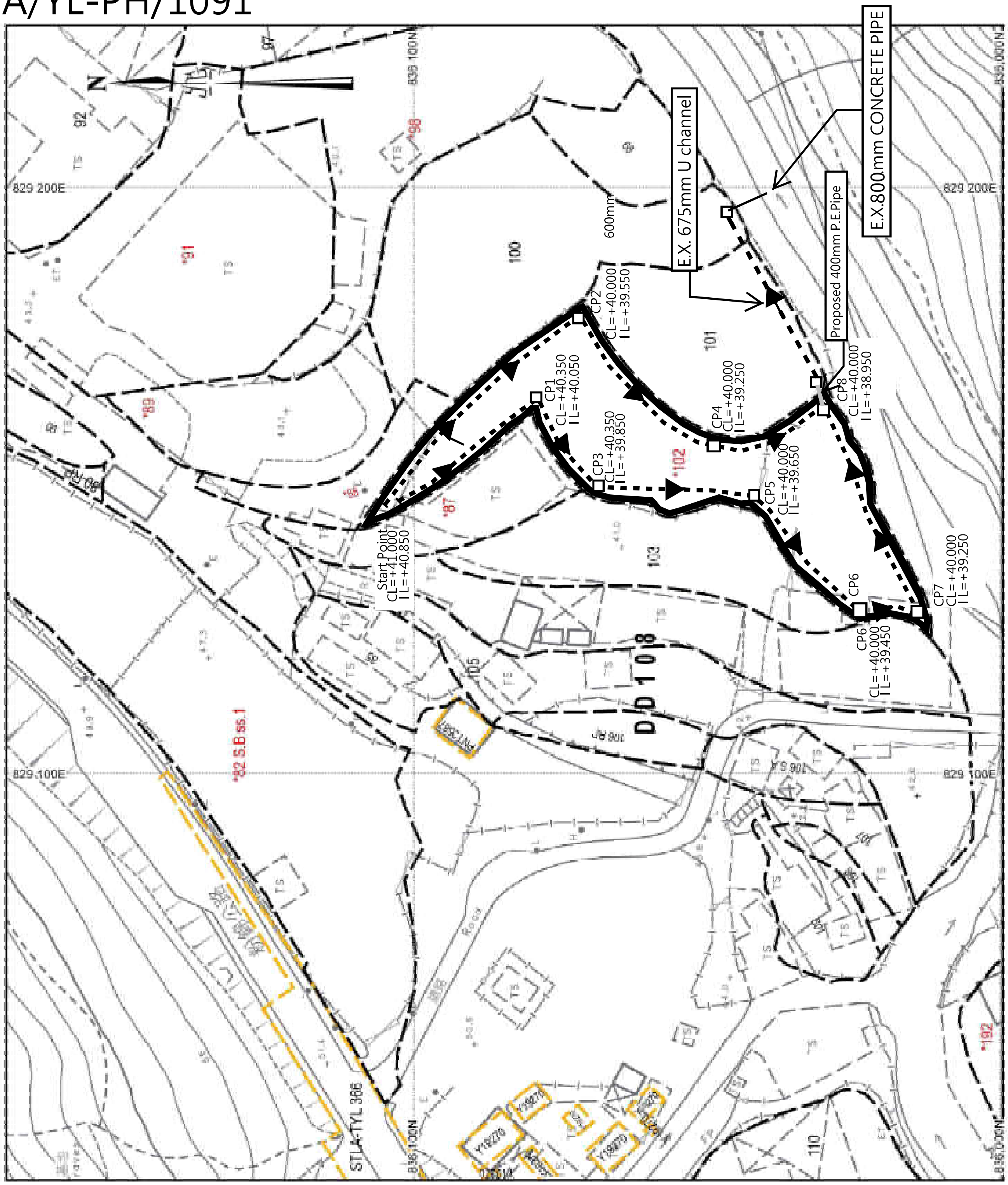
Hydraulic analysis shows that the minor increase in surface runoff due to development as compared to the flow capacity of the existing stream course will be insignificant. It can be concluded that there will be no major drainage impact anticipated arising from the proposed development site.

The internal drainage system will be submitted to Buildings Department and various government departments for approval in the detailed design stage of the development.

Figures

雨水排放建議圖

A/YL-PH/1091



Proposed 400mm U channel
(1:100)with
concrete cover

比 例 尺 SCALE 1 : 1 000
米 metres 10 0 10 20 30 40 50 米 metres

Catchment Area of site

Site Catchment Area = 1660 m^2 = 0.001660 km^2

Peak runoff in m^3/s = 0.278 x 0.95 x 240 mm/hr x 0.001660 km^2 = 0.10522 m^3/s

= 6576 liter/min

Note:
1. Catchpit (CP8) with desilting facility shall follow CEDD's standard drawing No. C2406/I.C2406/2A
2. Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
3. The inverted level of the connection point shall be verified on site prior the commencement of work
4.Grating Concrete Cover follows CEDD's standard drawing No. C2412E: U-CHANNELS WITH PRECAST CONCRETE SLABS

Appendix A

Photo Records

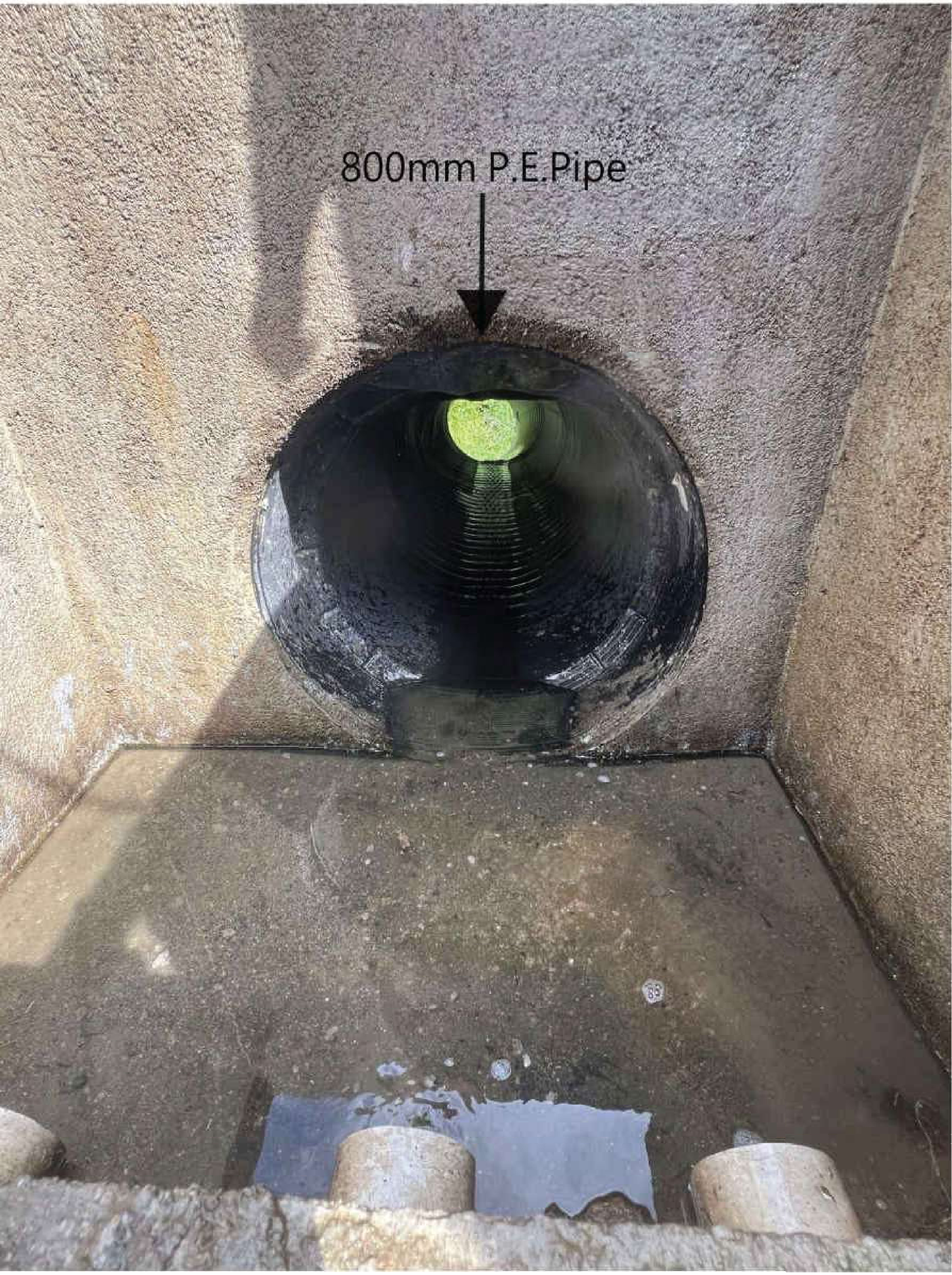

675PIPE
J


K段雨水渠
J段雨水渠
渠道內相片


800mmP.E. Pipe
CP9


K段
雨
水
渠
CP9集水井
J段內雨水渠

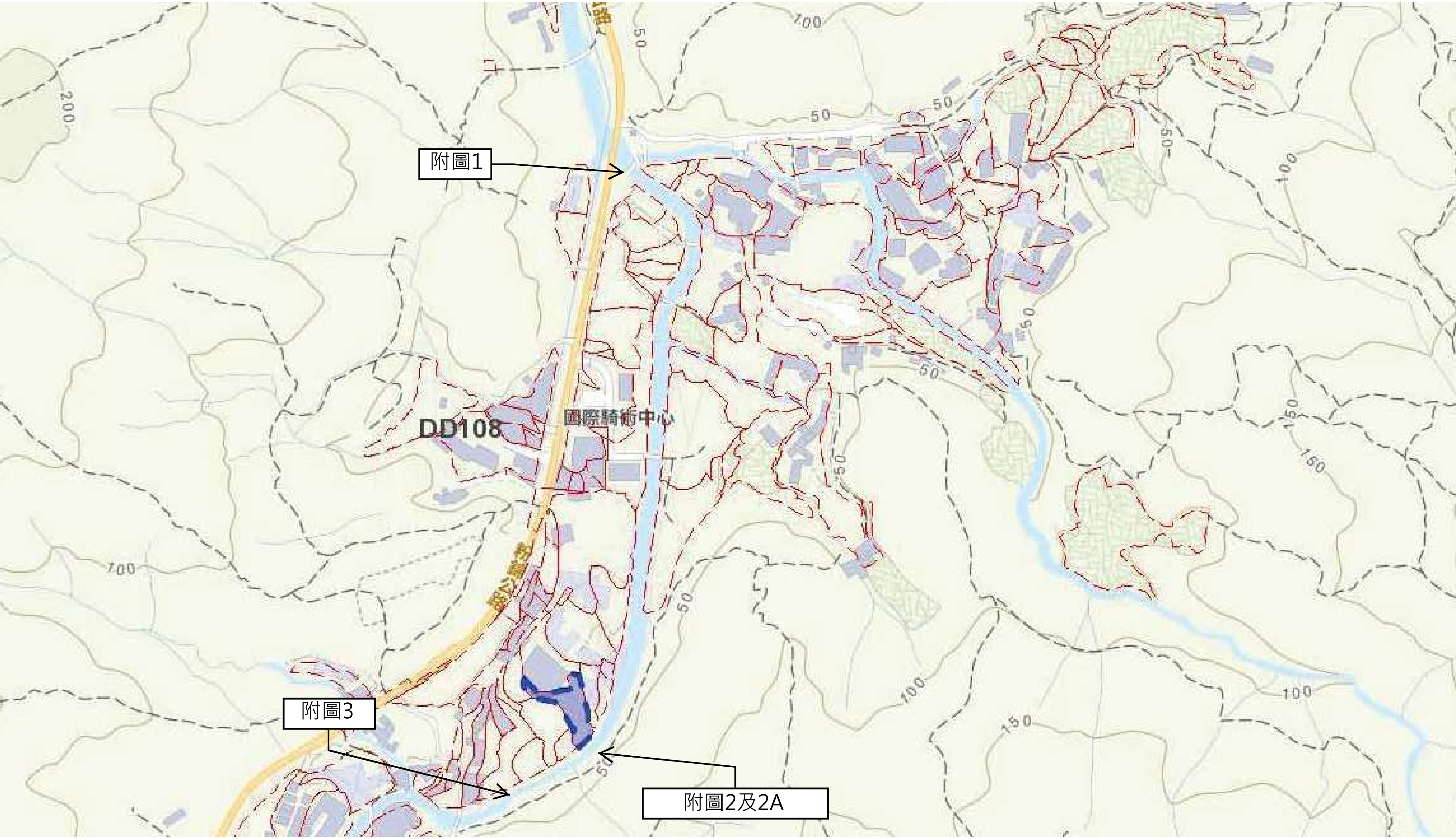

CP9集水井經由
800mmP.E.Pipe
引流至政府河道


800mm P.E.Pipe


800mmP.E.Pipe


80 S.C
STW3715
FAN KAM ROAD
80 RP
81 S.B
Graves
80 S.A
80 S.B
82 S.B RP
80 RP
90
92
93
94
STW2900
STW5635
91
82 S.B ss.1
89
88
85
87
268
95
97
96
98
100
99
A1
102
101
103
104
106 RP
105
109
108
107
108 S.A

政府河道相片說明位置圖



附圖1

附圖2

附圖2A


附圖3

Appendix B

Calculation

Computation of Drainage System (Before development)

Design of surface drainage in accordance with "Stormwater Drainage Manual"
Drainage system is designed to a frequency of 1 in 10 rainfall return period. (refer to "Stormwater Drainage Manual, 6.6.1")
Time of concentration is calculated based on the equation refer to "Stormwater Drainage Manual, 7.5.2)
Average rainfall intensity refer to "Stormwater Drainage Manual, Figure 4"
Peak discharge is calculated based on the "Stormwater Drainage Manual, 7.5.2"
The runoff coefficient for steep grassland = 0.3 (A1)

	Catchment Area (A) (m^2)	Gradient (H) (m/100m)	Maximum Length form the summit (L) (m)	Time of Concentration (t_o) (min)	Rainfall Intensity (i) (mm/hr)	Rainfall increase due to climate change (11.1%)	Estimated Peak Discharge (Qp) (m^3/sec)
A1	1750	0.99	101.00	6.94	225.000	249.975	0.033

$$t_o = \frac{0.14465L}{H^{0.2} A^{0.1}}$$

where t_o = time of concentration of a natural catchment (min.)

A = catchment area (m^2)

H = average slope (m per 100 m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

$$Q_p = 0.278\ C\ i\ A$$

where Q_p = peak runoff in m^3/s
C = runoff coefficient (dimensionless)
i = rainfall intensity in mm/hr
A = catchment area in km^2

Computation of Drainage System (After development)

Computation of Drainage System (After development)

Design of surface drainage in accordance with "Stormwater Drainage Manual"
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Time of concentration is calculated based on the equation refer to "Stormwater Drainage Manual, 7.5.2)
Average rainfall intensity refer to "Stormwater Drainage Manual, Figure 4"
Peak discharge is calculated based on the "Stormwater Drainage Manual, 7.5.2"
The runoff coefficient for concrete pavement = 0.9 (A1)

	Catchment Area (A) (m^2)	Gradient (H) (m/100m)	Maximum Length form the summit (L) (m)	Time of Concentration (t_o) (min)	Rainfall Intensity (i) (mm/hr)	Rainfall increase due to climate change (11.1%)	Estimated Peak Discharge (Qp) (m^3/sec)
A1	1750	0.99	101.00	6.94	225.000	249.975	0.099
					Increased Discharge =		0.066

$$t_o = \frac{0.14465L}{H^{0.2} A^{0.1}}$$

$$Q_p = 0.278\ C\ i\ A$$

where t_o = time of concentration of a natural catchment (min.)

A = catchment area (m^2)

H = average slope (m per 100 m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

where Q_p = peak runoff in m^3/s
C = runoff coefficient (dimensionless)
i = rainfall intensity in mm/hr
A = catchment area in km^2

Computation of Drainage System (Before development)

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Time of concentration is calculated based on the equation refer to "Stormwater Drainage Manual, 7.5.2)
Average rainfall intensity refer to "Stormwater Drainage Manual, Figure 4"
Peak discharge is calculated based on the "Stormwater Drainage Manual, 7.5.2"
The runoff coefficient for steep grassland = 0.3 (A1) and concrete pavement = 0.9 (A2)

	Catchment Area (A) (m^2)	Gradient (H) (m/100m)	Maximum Length form the summit (L) (m)	Time of Concentration (t_o) (min)	Rainfall Intensity (i) (mm/hr)	Rainfall increase due to climate change (11.1%)	Estimated Peak Discharge (Qp) (m^3/sec)
A1	6380	1.55	116.00	6.40	220.000	244.420	0.130
A2	1585	4.89	36.80	1.85	275.000	305.525	0.121
Lot 102 in D.D.108							0.033
					Total Pak Discharge =		**0.28**

$$t_o = \frac{0.14465L}{H^{0.2} A^{0.1}}$$

where t_o = time of concentration of a natural catchment (min.)

A = catchment area (m^2)

H = average slope (m per 100 m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

$$Q_p = 0.278\ C\ i\ A$$

where Q_p = peak runoff in m^3/s
C = runoff coefficient (dimensionless)
i = rainfall intensity in mm/hr
A = catchment area in km^2

Computation of Drainage System (After development)

Computation of Drainage System (After development)

Design of surface drainage in accordance with "Stormwater Drainage Manual"
Drainage system is designed to a frequency of 1 in 10 rainfall return period. (refer to "Stormwater Drainage Manual, 6.6.1")
Time of concentration is calculated based on the equation refer to "Stormwater Drainage Manual, 7.5.2)
Average rainfall intensity refer to "Stormwater Drainage Manual, Figure 4"
Peak discharge is calculated based on the "Stormwater Drainage Manual, 7.5.2"
The runoff coefficient for concrete pavement = 0.9 (A1&A2)

	Catchment Area (A) (m^2)	Gradient (H) (m/100m)	Maximum Length form the summit (L) (m)	Time of Concentration (t_o) (min)	Average Rainfall Intensity (i) (mm/hr)	Rainfall increase due to climate change (11.1%)	Estimated Peak Discharge (Qp) (m^3/sec)
A1	6380	1.55	116.00	6.40	220.000	244.420	0.390
A2	1585	4.89	36.80	1.85	275.000	305.525	0.121
Lot 102 in D.D.108							0.099
					Total Pak Discharge =		0.61
					Increased Discharge =		0.33

$$t_o = \frac{0.14465L}{H^{0.2}A^{0.1}}$$

where t_o = time of concentration of a natural catchment (min.)

A = catchment area (m^2)

H = average slope (m per 100 m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

$$Q_p = 0.278\ C\ i\ A$$

where Q_p = peak runoff in m^3/s
C = runoff coefficient (dimensionless)
i = rainfall intensity in mm/hr
A = catchment area in km^2

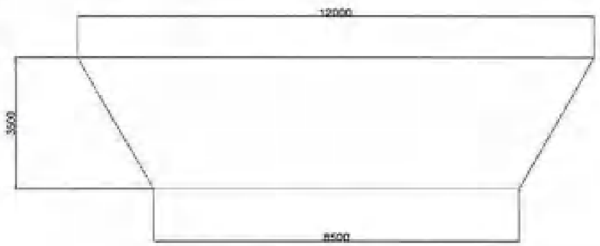
Checking existing stream course

Width (m)	Depth (m)	Inlet level (mPD)	Outlet level (mPD)	Length (m)	Gradient (S_f)	Hydraulic radius (R)	Manning coefficient (n)	Velocity (m/s)	Max. Discharge (m^3/s)
4.80	3.50	36.50	32.20	435.00	0.010	1.27	0.030	3.88	65.22

Maximun design flow velocity of pipe is based on Mannings's formula (Refer to "Stormwater Drainage Manual, Table 12 and 13)

$$\overline{V} = \frac{R^{1/6}}{n}\sqrt{RS_f}$$

where R = Area / Perimeter



Reference

Corrigendum No.1/2024

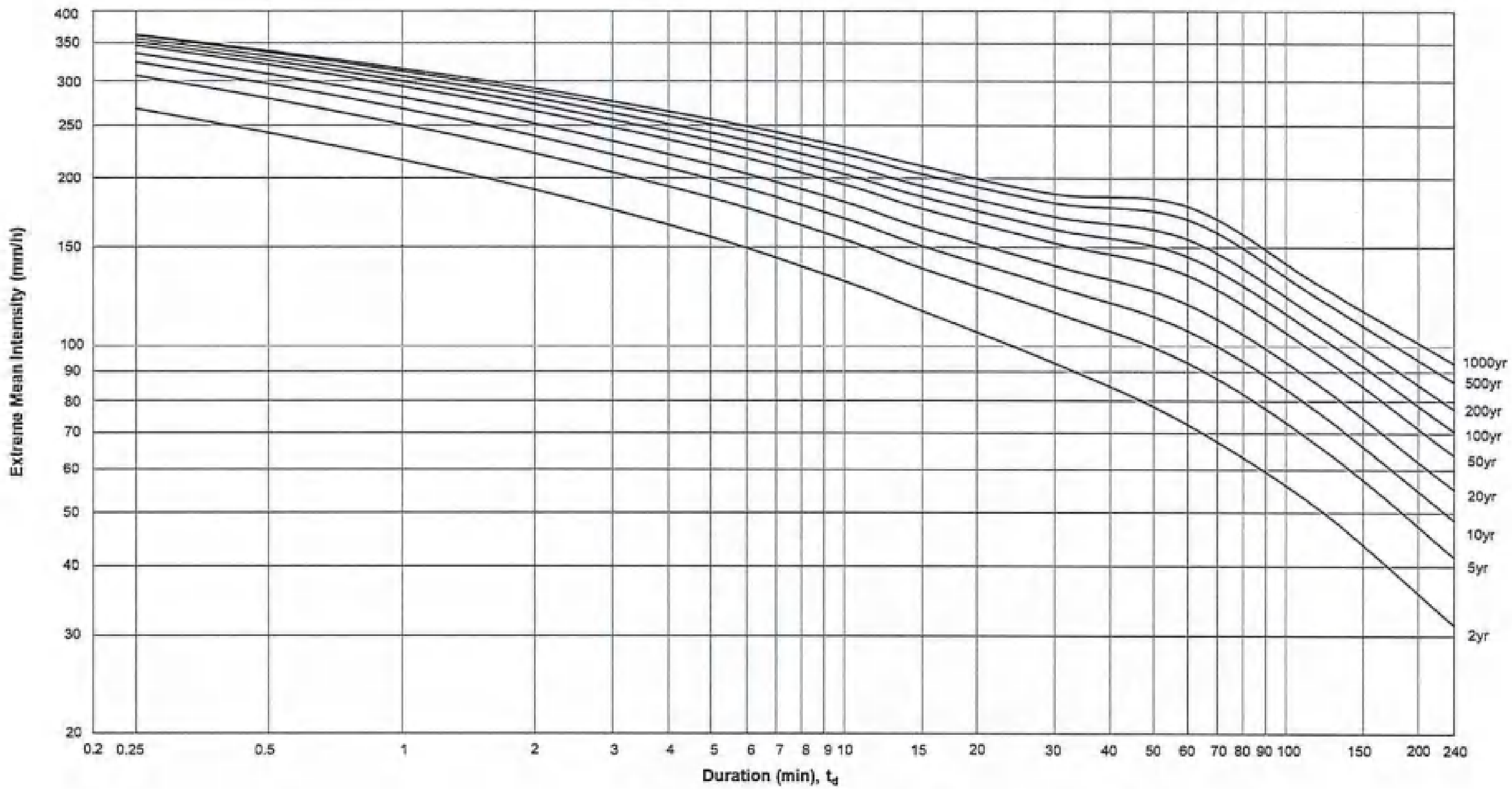


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

(k) Table 28 Rainfall Increase due to Climate Change

Replace the table with the following:

Table 28 – Rainfall Increase due to Climate Change

	Rainfall Increase
Mid 21st Century	11.1%
End of 21st Century	16.0%

Notes:
1. The rainfall increase is relative to the average of 1995-2014.
2. Mean projection values are adopted in the table.
3. Mid 21st century refers to years 2041 – 2060; end of 21st century refers to years 2081 – 2100.

(l) Table 29 Mean Sea Level Rise due to Climate Change

Add the following table:

Table 29 – Mean Sea Level Rise due to Climate Change

	Mean Sea Level Rise
Mid 21st Century	0.20 m
End of 21st Century	0.47 m

Notes:
1. The mean sea level rise is relative to the average of 1995-2014.
2. Median projection values are adopted in the table.
3. Mid 21st century refers to period around 2050; end of 21st century refers to period around 2090.

(m) Table 30 Storm Surge Increase due to Climate Change

Add the following table:

Table 30 –Storm Surge Increase due to Climate Change

Table 30a Storm Surge Increase in Mid 21st Century

Return Period (Years)	North Point/ Quarry Bay (m)	Tai Po Kau (m)	Tsim Bei Tsui (m)	Tai O (m)
2	0.04	0.05	0.05	0.03
5	0.05	0.07	0.06	0.05
10	0.06	0.08	0.08	0.05
20	0.07	0.10	0.09	0.06
50	0.08	0.13	0.11	0.08
100	0.09	0.15	0.12	0.09
200	0.10	0.17	0.13	0.10

Notes: Mid 21st century refers to period around 2050.