

寄件日期: 2026年09月30日星期三 11:42
收件者: tpbpd/PLAND

主旨: Fw: (Update) S.16 Planning Application No. A/YL-KTN/1289
附件: AYL-KTN 1289 20260930.pdf

From: Tang Lok San [REDACTED]

Subject: (Update) S.16 Planning Application No. A/YL-KTN/1289

Christy,

Thank you for the phone call. Please see the attachment for the further information and Drainage Proposal. Please contact Mr. Tang on phone [REDACTED] or email to [REDACTED] if you have any question regarding to the proposal.

Your Sincerely,
Mr. Tang

城市規劃委員會：

有關城市規劃委員會對 A/YL-KTN/1289 的查詢

收悉 貴委員會對 A/YL-KTN/1289 申請的查詢，現書面回覆。

貨倉內只會存放私家車及不超 5.5 噸的輕型貨車。

貨倉內不會存放粉塵性材料。

貨倉內會存放小型機械及水電工程所包含的工程材料，例如排水管、水喉及電箱、挖掘機、升降台等。

貨倉會使用金屬物料興建，以工字鐵作承重及金屬實心物料「鋅鐵」板作貨倉外牆。

此申請不允許超過 5.5 噸的貨車進入申請地點。

本申請範圍只會用在存放用途，不會進行任何有關回收、清潔、修理、拆解或其他工場作業。

希望此附加文件能釋除 貴委員會的查詢，並支持本申請。

Comments from Drainage Services Department

(Contact Person: Mr. Fanco TSANG; Tel.: 3965 8926) fktsang@dsd.gov.hk

(a) Drawing No. D02: The existing 1000 (W) x 750 (D) open channel is missing in Section A-A. Please update. **Section A-A is revised accordingly.**

(b) Please supplement the details of the stormwater collecting system of A/YL-KTN/995, 1181 and 1167 for reference. **It is provided in Appendix A.**

(c) Please supplement more site photos at different locations from viewpoint 3 to viewpoint 5 to demonstrate the presence and existing condition of the existing drains with measurement record. Please ensure that there is no overgrown vegetation, silt, or debris inside the existing drains, and that the locations and angles of the photos taken are shown on the layout plan. **This location is inaccessible and site inspection was carried out on 4-9-2026 and it is confirmed that the flow from the site and its upstream is discharged to the existing drains in the north (as shown in Appendix B)**

(d) Please demonstrate that the open channel as shown in Photo 4 is not an isolated channel, i.e. demonstrate the existence of the drainage pipe or U-channel between the site and viewpoint 4. **Site inspection was carried out on 4-9-2026. It is found that the open channel as shown in Photo 4 is not an isolated channel because continuous flow was observed (as shown in Appendix B)**

(e) The submitted drainage plan did not reflect current condition of the existing drain, to which the applicant proposed to discharge the stormwater from the application site. Only portion of existing drain adjacent to the application site was found on site. Downstream of the existing channel could not be found on site and might be disturbed by Concrete paving material. The applicant should ensure stormwater from the application site could be properly discharged to the ultimate discharge point (e.g. a well-established stream course/public drainage system). Proposal for any necessary diversion of existing drain(s) Should be submitted by the applicant and designed to the satisfaction of this Division or the Town Planning Board and such agreed diversion works should be carried out by the applicant at the cost of his/her project. Sufficient allowance for future maintenance of the existing drain(s) should be provided. The applicant should review the discharge path and clearly indicate its full alignment from the application site all the way down to the ultimate discharge point (e.g. a well-established stream course/public drainage system) on the proposed drainage plan. The applicant should provide site photos to demonstrate

the presence and reflect condition of the existing drainage system. **Site inspection was carried out on 4-9-2026. The full flow path of the existing drains in the north is identified (Photo 13~16 are provided)**

(f) The applicant should demonstrate the existing facilities to be discharged to be in good condition and have sufficient capacity to cater for any additional flow generated due to the subject application. **Calculation is provided.**

(g) The existing drainage facilities, to which the applicant proposed to discharge the stormwater from the application site was not maintained by his office. The applicant should identify the owner of the existing watercourse and seek agreement from the owner prior to commencement of the proposed works. In the case that it is a local village drains, District Officer/Yuen Long should be consulted. **Noted.**

(h) The applicant is required to rectify the drainage system if they are found to be inadequate or ineffective during operation. The applicant shall also be liable for and shall indemnify claims and demands arising out of damage or nuisance caused by a failure of the drainage system. **Noted.**

(i) The applicant should consult District Lands Officer/Yuen Long and seek consent from the relevant owners for any drainage works to be carried out outside his lot boundary before commencement of the drainage works. **Noted.**

(j) Drawing (No; C2406/2) was not up-to-date. **Updated Drawing (No; C2406/2) is provided.**

(k) It is noted that persistent flooding complaints have been recorded based on his records. This situation should probably be due to the land filling activity at the application site, which was carried out before the acceptance of the drainage proposal by his Division or the Town Planning Board. Therefore, reservation from his office has made on the proposed application from drainage point of view unless the applicant can submit satisfactory drainage proposal to mitigate the flooding susceptibility of the area to the satisfaction of his Division or the Town Planning Board. For any change of existing ground level and associated works proposed by the applicant that could affect adjacent land and cause other impacts and/or other issues to public, the applicant is considered to submit technical assessment(s) in other aspect(s) and seek comment from relevant departments as necessary. The applicant

shall be liable for any adverse drainage impact due to his/her proposed development. Base on the designed drains in the site and supporting calculation, it is considered that the proposed development would not cause drainage impact to the surrounding area.

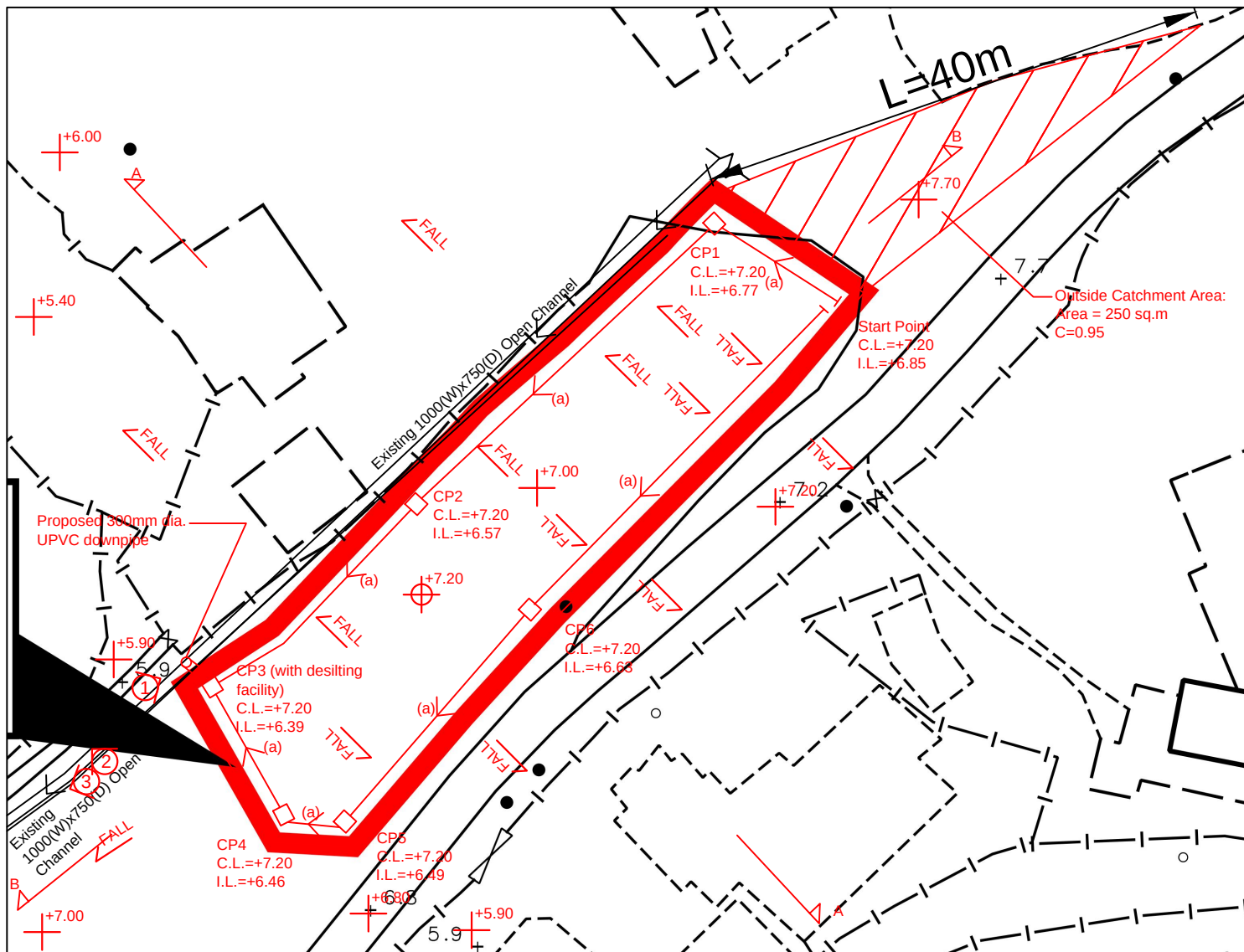
(l) Environmental Protection Department should be consulted as regards the sewage disposal aspects of the subject application. **Noted.**

(m) For other comments and reminders, please see Appendix A.
Comments from Drainage Services Department
(Contact Person: Mr. Fanco TSANG; Tel.: 3965 8926)

Further supplementation with the following comments:

(l) Please supplement the detailed capacity assessment of the existing drainage channels, with consideration of the discharge from the upstream application sites of A/YL-KTN/995, 1181 and 1167. Please also discuss the flow distribution between two existing drainage channels mentioned. The upstream application sites of A/YL-KTN/995, 1181 and 1167 have their design drain (Appendix A) discharge to the existing stream in the further northeast. There is no drainage impact from these three cases the concerned drains in this application.

(o) It is noted the existing drainage channel (Viewpoint 7 to Viewpoint 12) was not maintained by this office. The applicant should identify the owner of the existing drainage facilities and seek agreement from the owner prior to commencement of the proposed works. In the case that it is a local village drains, District Officer/Yuen Long should be consulted. **Noted.**



Note:

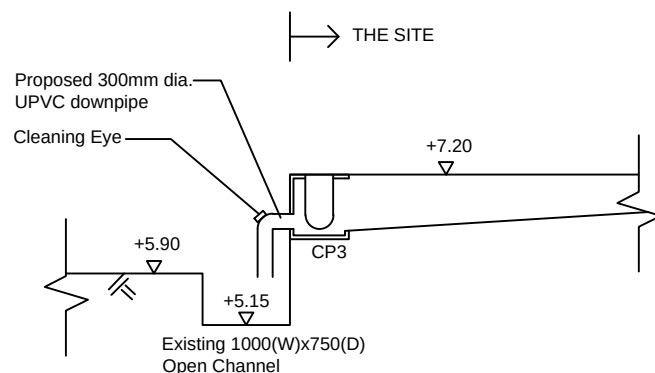
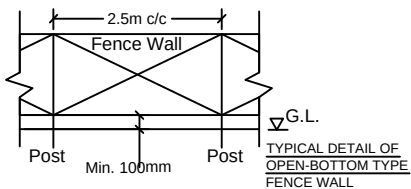
1. Catchpits (CP3) with desilting facility shall follow CEDD standard drawing No. C2406I.

2. Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.

3. Fence Wall to be erected (if any) shall be Open-bottom type.

4. Minor filling works to be carried out to leveling the site. Existing Formation Level is +7.00mPD. Proposed Formation Level is +7.20mPD.

- ☐ CP Proposed CatchPit
- (a) Proposed 300UC (1:150) with Cast Iron Cover
- Existing 1000(W)x750(D) Open Channel
- +7.00 Existing Level
- +7.20 Proposed Formation Level
- FALL Fall Direction
- 1 Photo Viewport



恆協工程有限公司

HANDSHIP ENGINEERING COMPANY LIMITED

Project:

Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a Period of 3 years at Lot 1864 (Part) in D.D. 107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories

(Application No.:A/YL-KTN/1289)

Title:

Drainage Proposal - LAYOUT

D01

Drawn by:

DM

Date:

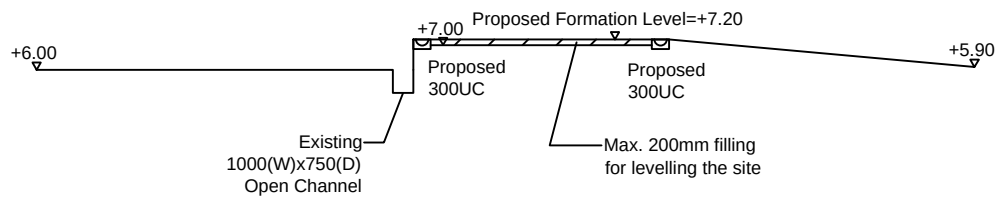
11-7-2026

Check by:

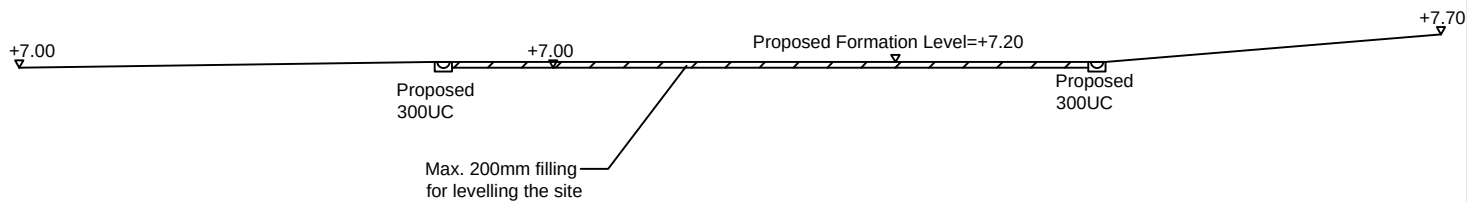
DM

Scale:

THS SITE



THS SITE



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HANDSHIP ENGINEERING COMPANY LIMITED

Project:
Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a Period of 3 years at Lot 1864 (Part) in D.D. 107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories
(Application No.:A/YL-KTN/1289)

Title:

SECTIONS

D02

Drawn by:

DM

Date:

30-9-2026

Check by:

DM

Scale:

申請地點
Application Site

Total Catchment Area:
Area = 11550 sq.m
C=0.95
L=131m

水尾路

SHI MEI ROAD

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANTS CO.

Project:

Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a Period of 3 years at Lot 1864 (Part) in D.D. 107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories

(Application No.:A/YL-KTN/1289)

Title:

Catchment Area Plan for Ex.
1000(W)x750(D) Open Channel

D03

Drawn by:

DM

Date:

11-7-2026

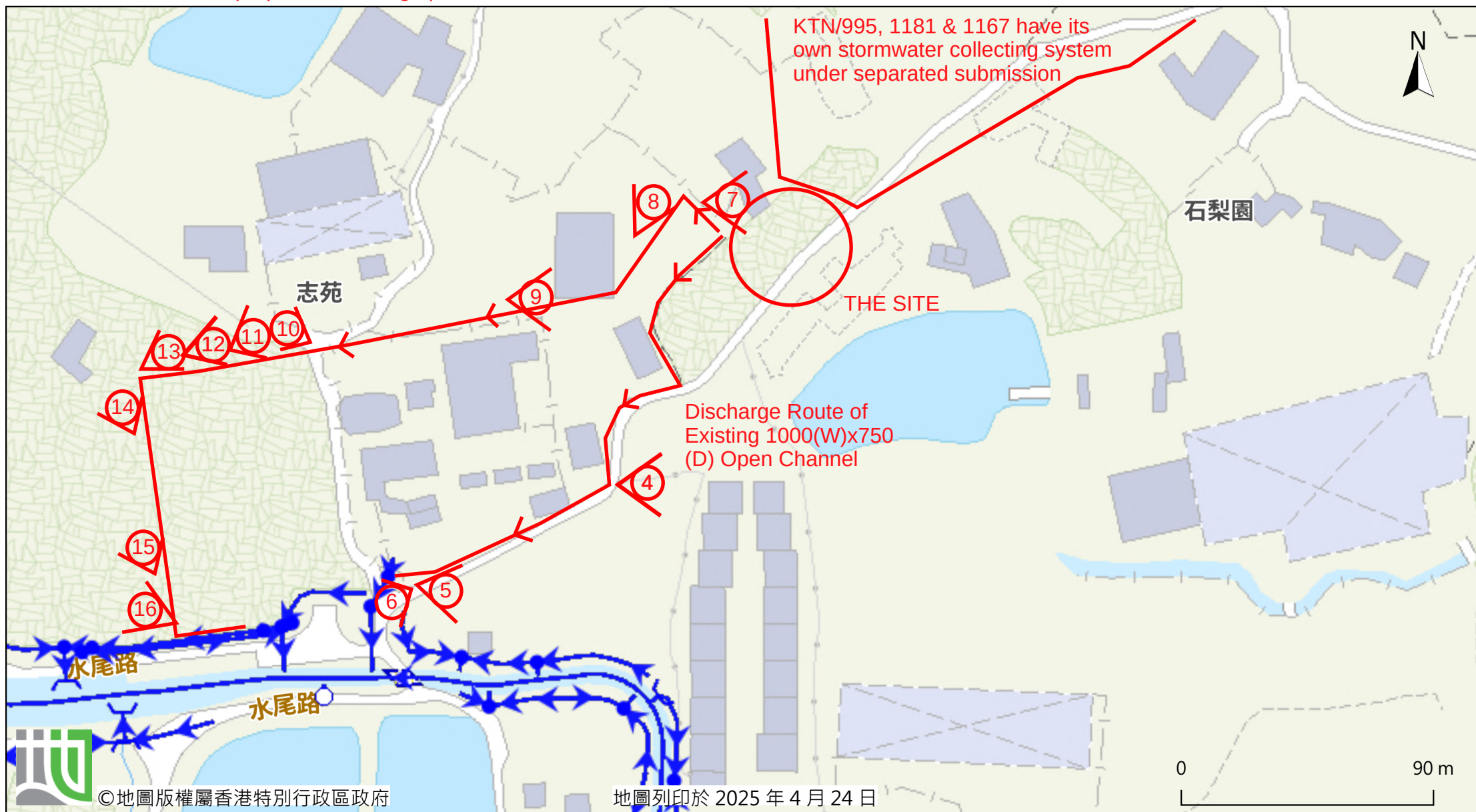
Check by:

DM

Scale:



Further downstream of proposed discharge point



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地圖列印於 2025 年 4 月 24 日

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Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10

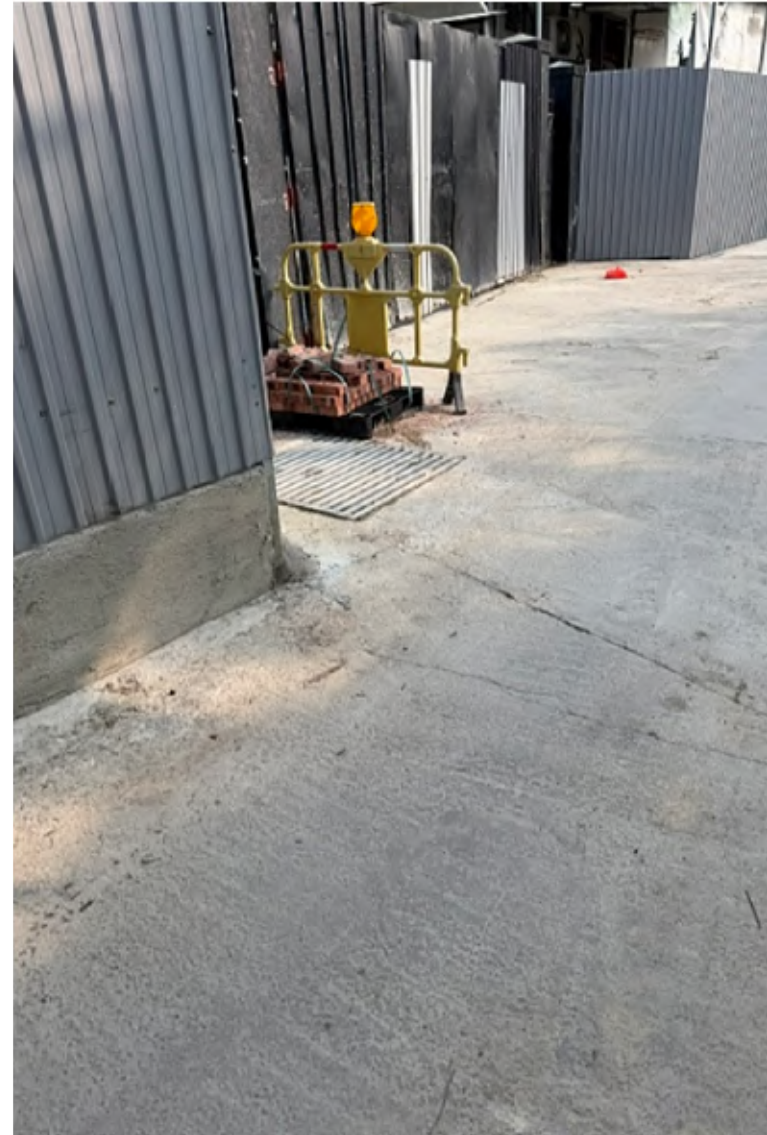


Photo 11



Photo 12



Photo 13



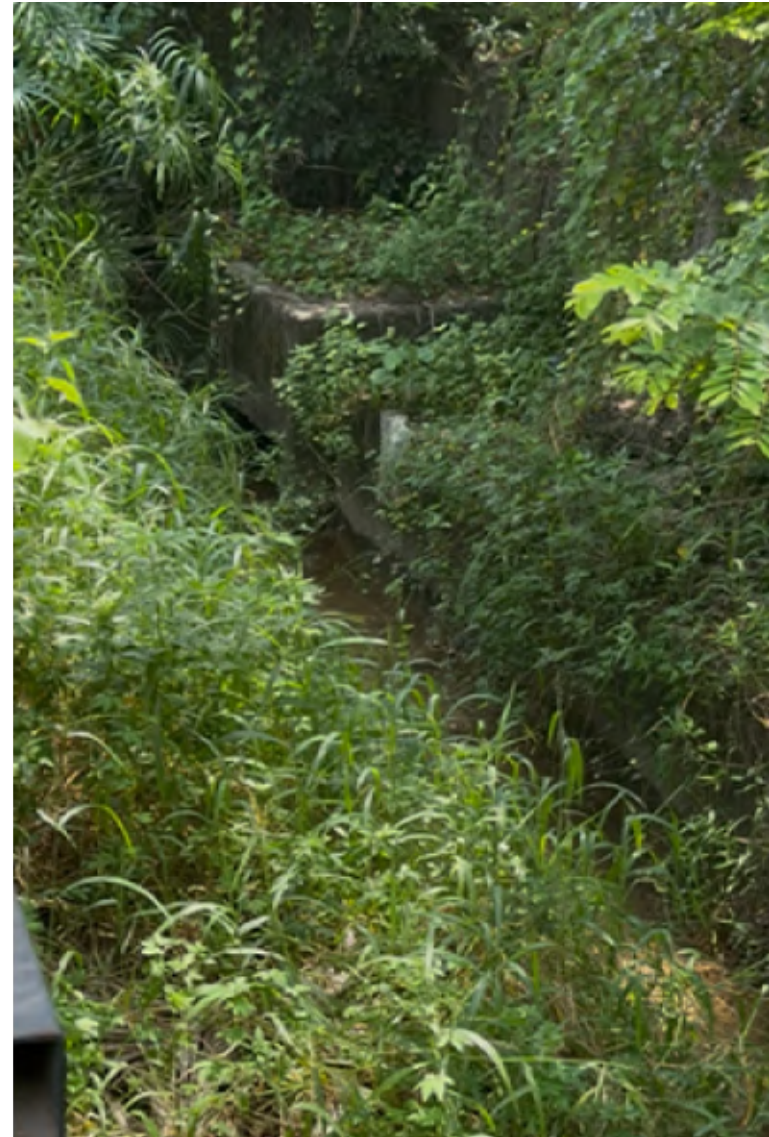
Photo 14



Photo 15



Photo 16



$$\text{THE SITE, Area} = 911.8 \quad \text{m}^2 \quad (\text{C} = 0.95)$$

$$\text{Outside Catchment Area} = 250 \quad \text{m}^2 \quad (\text{C} = 0.95)$$

Calculation of Design Runoff of the Proposed Development.

For the design of drains inside the site

$$\Sigma Q = \Sigma 0.278 C i A$$

$$\begin{aligned} A &= 911.8 + 250 \quad \text{m}^2 \\ &= 1161.8 \quad \text{km}^2 \\ &= 0.0011618 \quad \text{m}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 40 / 1^{0.2} * 1161.8^{0.1} \\ &= 2.857 \quad \text{min} \end{aligned}$$

$$\begin{aligned} i &= 1.16 * a / (t + b)^c \quad (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)} \\ &= 1.16 * 505.5 / (2.857 + 3.29)^{0.355} \\ &= 307.8 \quad \text{mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q &= 0.278 * 0.95 * 307.8 * 0.0011618 \\ &= \underline{\underline{0.0944}} \quad \text{m}^3/\text{sec} \end{aligned}$$

Check Proposed 300UC (1:150)

$$\text{Manning Equation} \quad V = R^{2/3} * S_f^{0.5} / n$$

$$\begin{aligned} \text{where } R &= (\pi r^2 / 2 + 2r^2) / (\pi r + 2r) \quad r = 0.15 \quad \text{m} \\ &= 0.104 \quad \text{m} \quad A = 0.080 \quad \text{m}^2 \end{aligned}$$

$$n = 0.012 \quad \text{s/m}^{1/3} \quad (\text{Table 13 of Stormwater Drainage Manual})$$

$$S_f = 0.0067$$

$$\begin{aligned} \text{Therefore, } V &= 0.104^{2/3} * 0.0067^{0.5} / 0.012 \\ &= 1.506 \quad \text{m/sec} \end{aligned}$$

$$\begin{aligned} \text{Maximum Capacity (Q}_{\text{max}}) &= V * A \\ &= \underline{\underline{0.1210}} \quad \text{m}^3/\text{sec} \end{aligned}$$

$$\begin{aligned} \text{Utilization} &= 0.0944 / 0.1210 \\ &= 78\% \\ &< 90\% \quad \text{OK} \quad (\text{Section 9.3 SDM 2018}) \end{aligned}$$

Provide 300UC (1:150) is OK

$$\text{Total Catchment Area} = 11550 \text{ m}^2 \quad (C = 0.95)$$

Calculation of Design Runoff

$$\Sigma Q = \Sigma 0.278 C i A$$

$$\begin{aligned} A &= 11550 \text{ m}^2 \\ &= 11550 \text{ km}^2 \\ &= 0.01155 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 113 / 1^{0.2} * 36091^{0.1} \\ &= 6.414 \text{ min} \end{aligned}$$

$$\begin{aligned} i &= 1.16 * a / (t + b)^c \quad (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)} \\ &= 1.16 * 505.5 / (6.414 + 3.29)^{0.355} \\ &= 261.7 \text{ mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q &= 0.278 * 0.95 * 261.7 * 0.011550 / 0.9 \quad (0.9 \text{ factor is adopted for sediment)} \\ &= 0.8870 \text{ m}^3/\text{sec} \\ &= \underline{\underline{53219}} \text{ lit/min} \end{aligned}$$

Calculation Maximum Capacity of Existing 1000mm(W)x750mm(D) Open Channel

$$\text{Manning Equation} \quad V = R^{2/3} * S_f^{0.5} / n$$

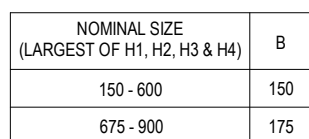
$$\begin{aligned} \text{where } R &= A / (W + 2D) \quad W = 1 \text{ m} \\ &= 0.2619 \text{ m} \quad D = 0.55 \text{ m} \quad (200\text{mm freeboard considered}) \\ &\quad A = 0.55 \text{ m}^2 \end{aligned}$$

$$n = 0.035 \text{ s/m}^{1/3} \quad (\text{Table 13 of Stormwater Drainage Manual})$$

$$S_f = 0.02$$

$$\begin{aligned} \text{Therefore, } V &= 0.05625^{2/3} * 0.01^{0.5} / 0.012 \\ &= 1.654 \text{ m/sec} \end{aligned}$$

$$\begin{aligned} \text{Maximum Capacity } (Q_{\max}) &= V * A \\ &= 0.90971 \text{ m}^3/\text{sec} \\ &= 54583 \text{ lit/min} \\ &> 53219 \text{ lit/min} \end{aligned}$$



- SECTION A - A

CATCHPIT WITH TRAP (SHEET 1 OF 2)

A	BIM OBJECT REVISION.	Original Signed	12.2025
—	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE



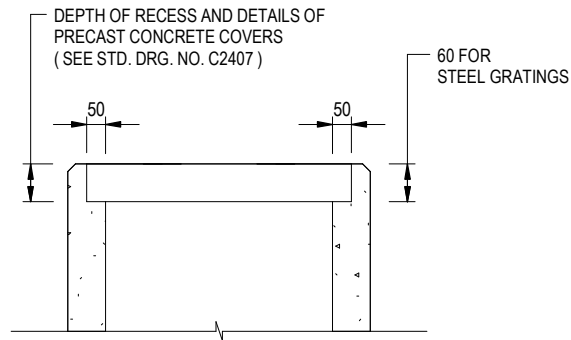
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE	JAN 1991
------	----------

DRAWING NO.

C2406 /1A



ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.
7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.
8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 /2) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 /5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 /4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

B	BIM OBJECT REVISION.	Original Signed	12.2025
A	MINOR AMENDMENT.	Original Signed	04.2016
—	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE

**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2406 /2B

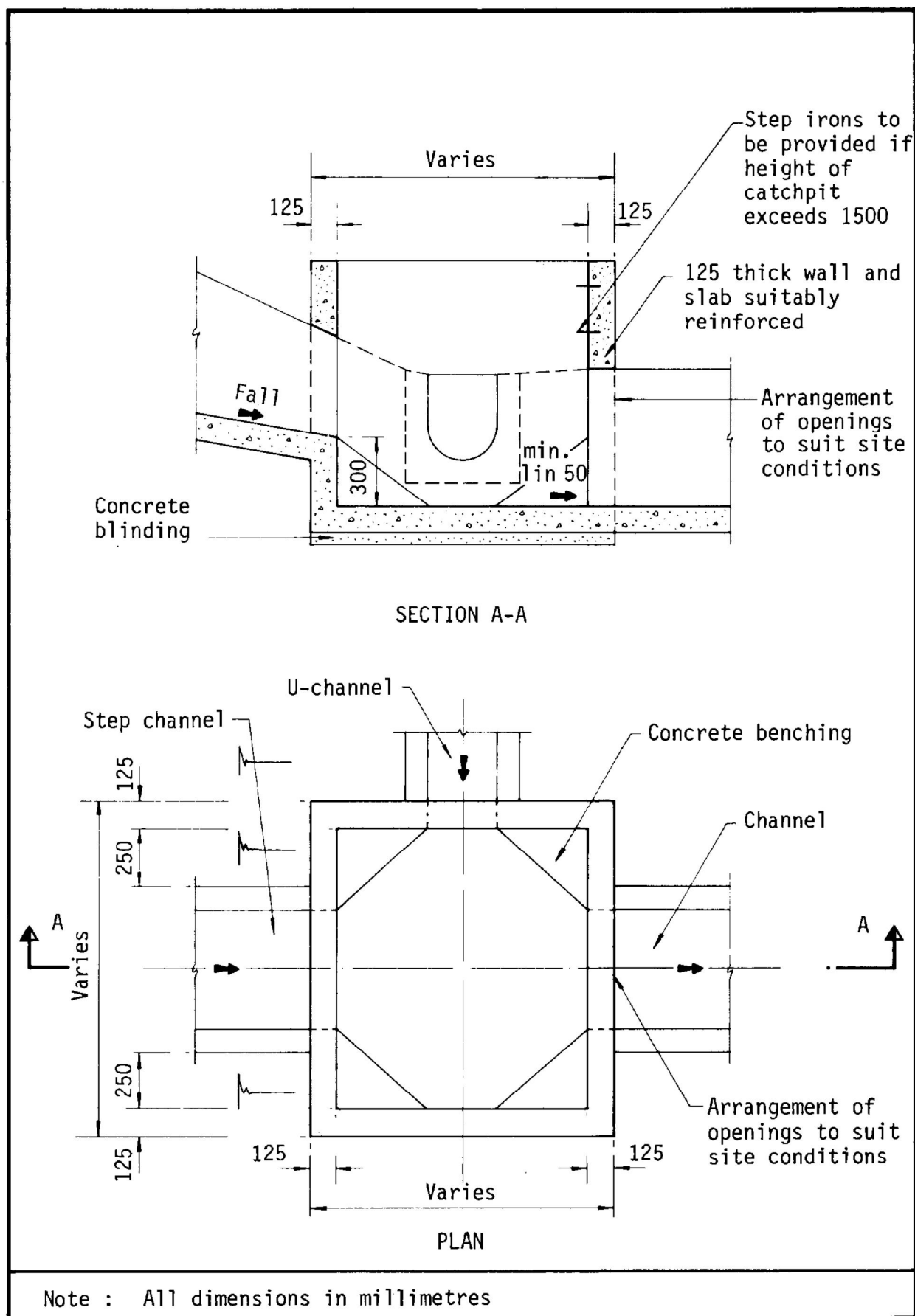
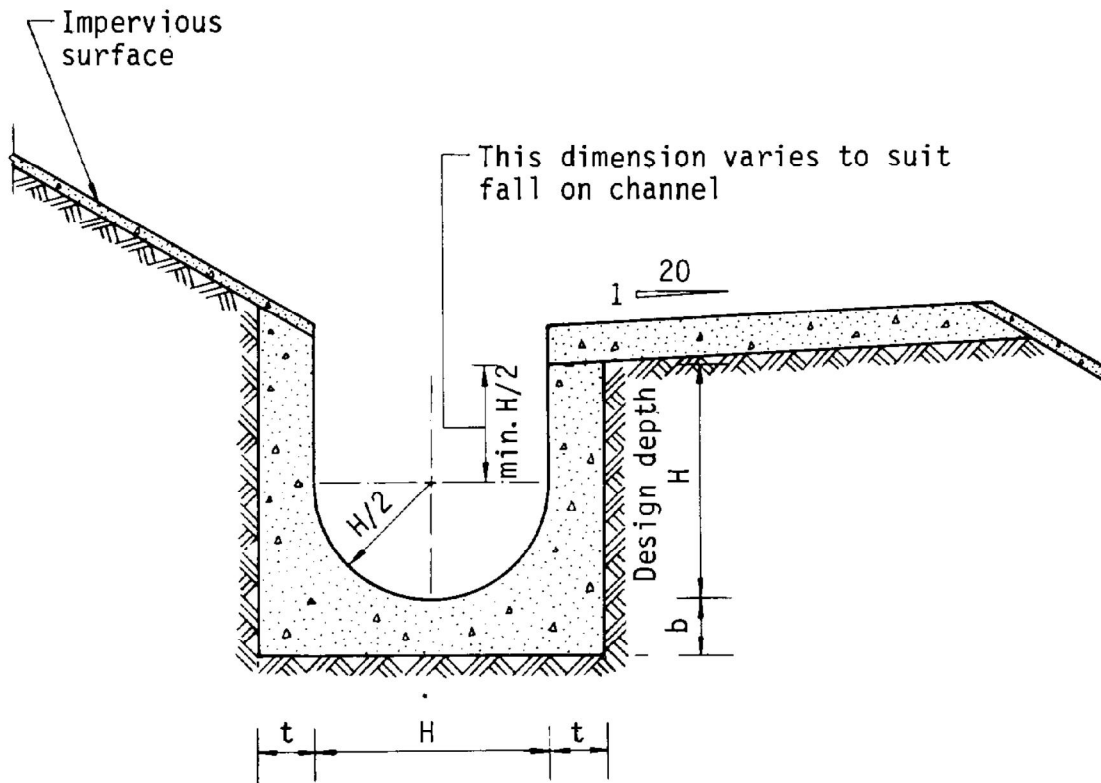


Figure 8.10 - Typical Details of Catchpits



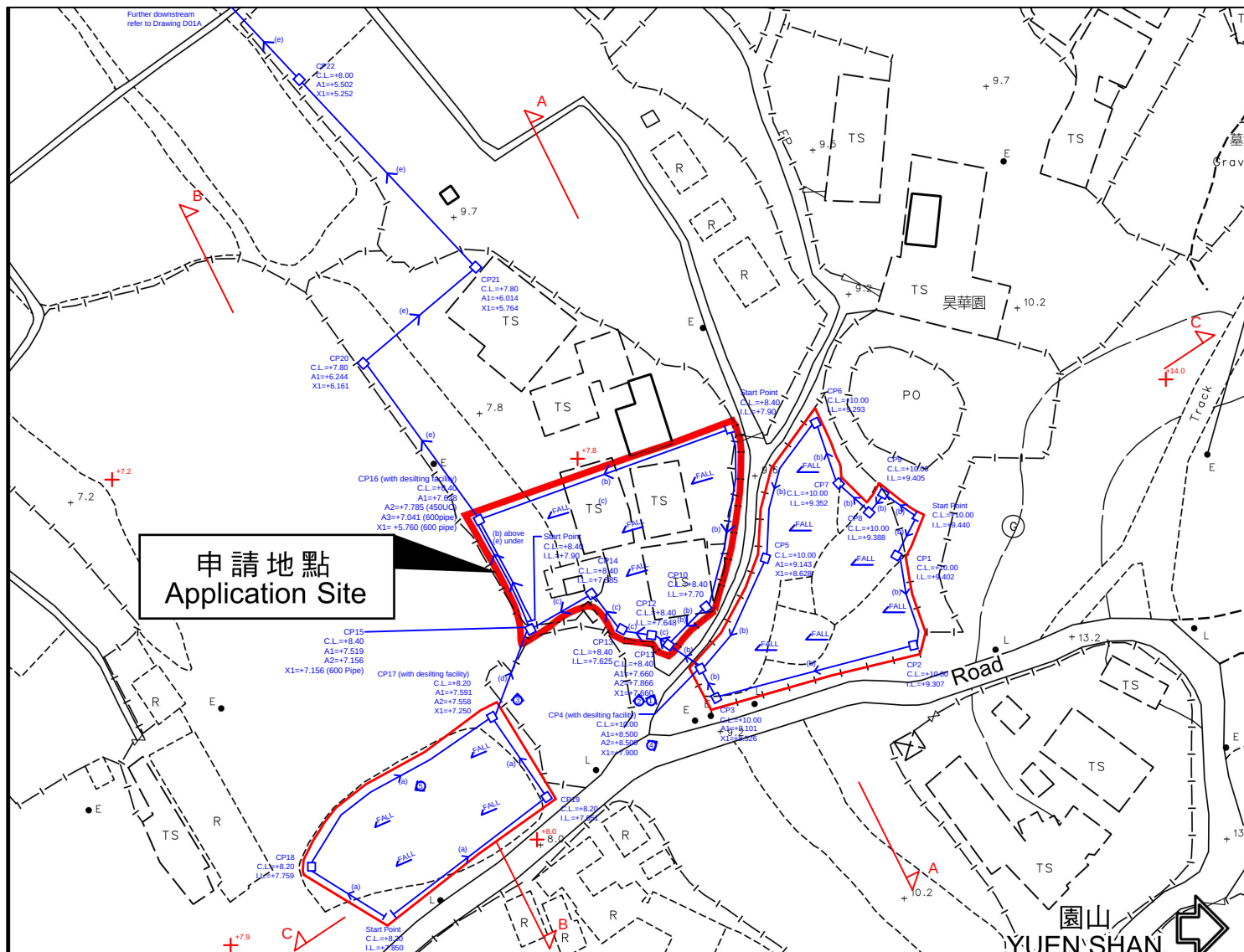
Dimensions of U - channel

Nominal size of channel H (mm)	Thickness t (mm)	Thickness b (mm)
225 to 600	150	150
675 to 1200	175	225

Figure 8.11 - Typical U-channel Details

Appendix A

Proposed Stormwater Collection System of
A/YL-KTN/995, 1181 and 1167



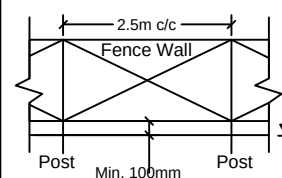
Note:

1. Catchpits (CP4, CP16 & CP17) with desilting facility shall follow CEDD standard drawing No. C2406I.

2. Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.

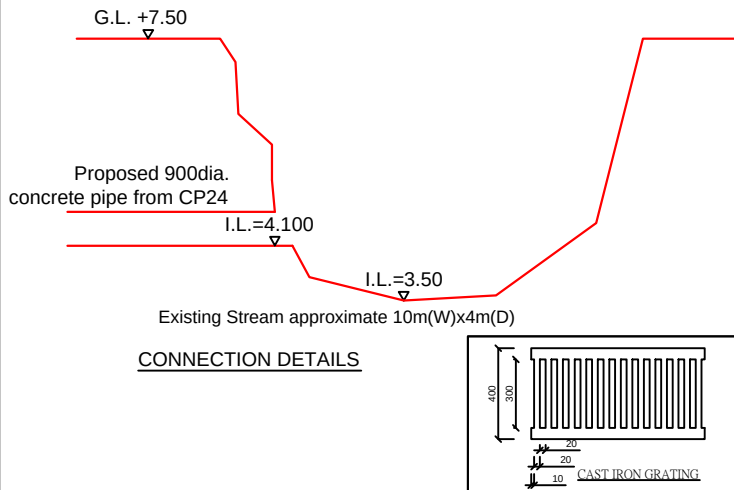
3. Fence Wall to be erected (if any) shall be Open-bottom type.

4. Max. 200mm, 600mm and 400mm concrete paving to be paved on A/YL-KTN/995, A/YL-KTN/1181 and A/YL-KTN/1167 respectively.



TYPICAL DETAIL OF
OPEN-BOTTOM TYPE
FENCE WALL

- ☐ CP Proposed CatchPit
- (a) Proposed 300UC (1:150) with Cast Iron Cover
- (b) Proposed 450UC (1:150) with Cast Iron Cover
- (c) Proposed 525UC (1:150) with Cast Iron Cover
- (d) Proposed 450mm dia. concrete pipe (1:150)
- (e) Proposed 600mm dia. concrete pipe (1:150)
- (f) Proposed 900mm dia. concrete pipe (1:200), as shown in Drawing D01a



恆協工程有限公司

HANDSHIP ENGINEERING COMPANY LIMITED

Project:

-Proposed Temporary Open Storage and Associated Filling of Land for a Period of 3 Years at Lot 1435 (Part) in D.D. 107, Kam Tin, Yuen Long, New Territories (Application No.:A/YL-KTN/1181)

-Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a Period of 3 Years at Lots 1434 (Part) and 1435 (Part) in D.D. 107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories (Application No.:A/YL-KTN/1167)

-Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lot 1452 (Part) in D.D. 107 and Adjoining Government Land, Fung Kat Heung, Kam Tin, Yuen Long, New Territories (Application No.:A/YL-KTN/995)

Title:

Drainage Proposal - LAYOUT

D01

Drawn by:

DM

Date:

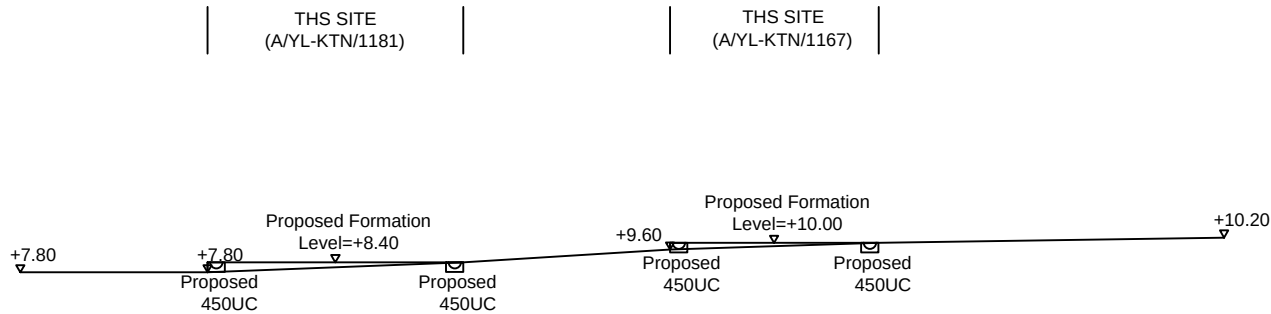
23-4-2026

Check by:

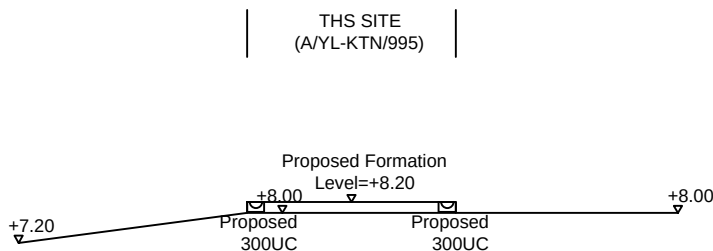
DM

Scale:

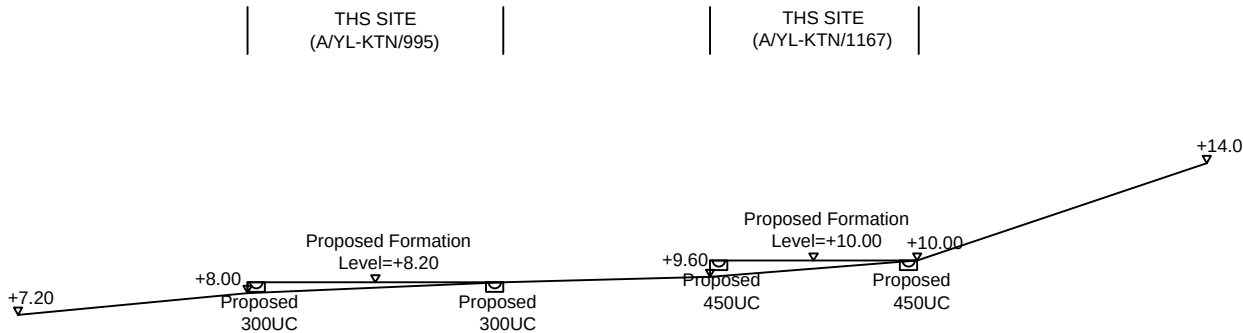
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SECTION A-A



SECTION B-B



SECTION C-C

恆協工程有限公司

HANDSHIP ENGINEERING COMPANY LIMITED

Project:

-Proposed Temporary Open Storage and Associated Filling of Land for a Period of 3 Years at Lot 1435 (Part) in D.D. 107, Kam Tin, Yuen Long, New Territories (Application No.:A/YL-KTN/1181)

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Title:

Drainage Proposal - SECTIONS

D02

Drawn by:

DM

Date:

23-4-2026

Check by:

DM

Scale:

Photo 1



Photo 2

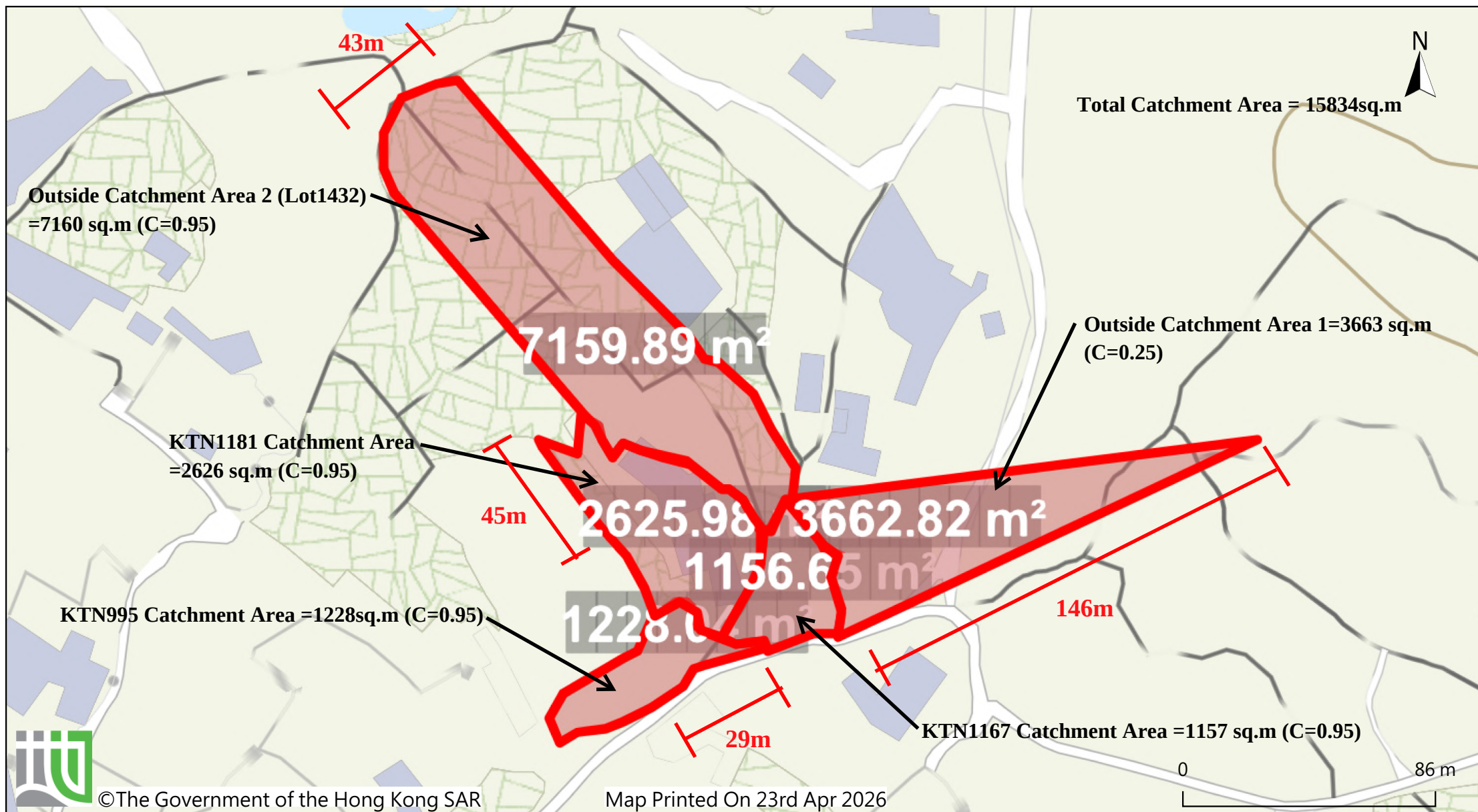


Photo 3





Catchment Area Plan



1	Catchment Area for KTN995, Area	= 1228	m ²	(C= 0.95),	L= 29 m
2	Catchment Area for KTN1167, Area	= 1157	m ²	(C= 0.95	
3	Catchment Area for KTN1181, Area	= 2626	m ²	(C= 0.95),	L= 45 m
4	Outside Catchment Area 1, Area	= 3663	m ²	(C= 0.25)	
5	Outside Catchment Area 2 (Lot1432), Area	= 7160	m ²	(C= 0.95),	L= 43 m
	H (for KTN1167)	= 18.767		(H=(37-9.6)/146*100))	
	L= (for KTN1167)	= 146	m		
Calculation of Design Runoff for KTN-1167, Catchment Area 2+4					
	ΣQ	=	$\Sigma 0.278 C i A$		
	A	= 1157+3663	km ²		
		= 4820	km ²		
		= 0.00482	m ²		
	t	= 0.14465 L/ H ^{0.2} A ^{0.1}	(H=(37-9.6)/146*100)		
		= 0.14465*146/18.767 ^{0.2} *4820 ^{0.1}	(L= 146 m)		
		= 5.031	min		
	i	= 1.16*a/(t+b) ^c	(50 yrs return period, Table 3a, Corrigendum 2024,		
		= 1.16*505.5/(5.031+3.29) ^{0.355}	SDM) and (16% increase due to climate change)		
		= 276.4	mm/hr		
Therefore,	Q1	= 0.278*0.95*276.4*0.001157+0.278*0.25*276.4*0.003663			
		= 0.1548	m ³ /sec		
		= 9289	lit/min		
	Provide 450UC (1:150)				
Calculation of Design Runoff for KTN-995, Catchment Area 1					
	ΣQ	=	$\Sigma 0.278 C i A$		
	A	= 1228	km ²		
		= 1228	km ²		
		= 0.001228	m ²		
	t	= 0.14465 L/ H ^{0.2} A ^{0.1}			
		= 0.14465*29/1 ^{0.2} *696 ^{0.1}	(L= 29 m)		
		= 2.060	min		
	i	= 1.16*a/(t+b) ^c	(50 yrs return period, Table 3a, Corrigendum 2024,		
		= 1.16*505.5/(2.060+3.29) ^{0.355}	SDM) and (16% increase due to climate change)		
		= 323.3	mm/hr		
Therefore,	Q2	= 0.278*0.95*323.3*0.001228			
		= 0.1049	m ³ /sec		
		= 6291	lit/min		
	Provide 300UC (1:150) or 450mm dia. concrete pipe (1:150)				

Calculation of Design Runoff for KTN-118 without collecting from others, Catchment Area 3

$$\Sigma Q = \Sigma 0.278 C i A$$

$$\begin{aligned} A &= 2626 && \text{km}^2 \\ &= 2626 && \text{km}^2 \\ &= 0.002626 && \text{m}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 45 / 1^{0.2} * 2626^{0.1} && (L = 45 \text{ m}) \\ &= 5.346 && \text{min} \end{aligned}$$

$$\begin{aligned} i &= 1.16 * a / (t + b)^c && (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)} \\ &= 1.16 * 505.5 / (5.346 + 3.29)^{0.355} \\ &= 272.8 && \text{mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q_3 &= 0.278 * 0.95 * 272.8 * 0.003645 \\ &= 0.1892 && \text{m}^3/\text{sec} \\ &= \mathbf{11350} && \text{lit/min} \end{aligned}$$

Provide 450UC (1:150)

Calculation of Design Runoff for KTN-118 from CP11 to CP15, Catchment Area 3 + Q1

$$\begin{aligned} Q_3 + Q_1 &= 11350 + 9289 \\ &= \mathbf{20639} && \text{lit/min} \end{aligned}$$

Provide 525UC (1:150)

Calculation of Design Runoff for KTN-118 from CP15 to CP16, Catchment Area 3 + Q1 + Q2

$$\begin{aligned} Q_3 + Q_1 + Q_2 &= 11350 + 9289 + 6291 \\ &= \mathbf{26930} && \text{lit/min} \end{aligned}$$

Provide 600mm dia. concrete pipe (1:150)

Calculation of Design Runoff from CP25 (final outfall to Nullah, Outside Catchment Area 2 (Lot1432) + Q1 + Q2 + Q3

$$\Sigma Q = \Sigma 0.278 C i A$$

$$\begin{aligned} A &= 7160 && \text{km}^2 \\ &= 7160 && \text{km}^2 \\ &= 0.00716 && \text{m}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} && (H = (37 - 9.6) / 146 * 100) \\ &= 0.14465 * 43 / 18.767^{0.2} * 7160^{0.1} && (L = 43 \text{ m}) \\ &= 4.836 && \text{min} \end{aligned}$$

$$\begin{aligned} i &= 1.16 * a / (t + b)^c && (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)} \\ &= 1.16 * 505.5 / (4.836 + 3.29)^{0.355} \\ &= 278.7 && \text{mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q_4 &= 0.278 * 0.95 * 278.7 * 0.00716 + Q_1 + Q_2 + Q_3 \\ &= 0.9759 && \text{m}^3/\text{sec} \\ &= \mathbf{58553} && \text{lit/min} \end{aligned}$$

Provide 900mm dia. concrete pipe (1:200)

Check Existing 450mm dia. Pipes by Colebrook-White Equation

$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

V	=		mean velocity (m/s)	
g	=	9.81	m/s ² gravitational acceleration (m/s ²)	
D	=	0.45	m internal pipe diameter (m)	
ks	=	0.00015	m hydraulic pipeline roughness (m)	(Table14, from DSD SDM 2018, concrete pipe)
v	=	1.14E-06	m ² /s kinematic viscosity of fluid (m ² /s)	
s	=	0.006667	hydraulic gradient (1:150)	

Therefore, design V of pipe capacity = 1.9091 m/s

Q= 0.8VA		(0.8 factor for sedimentation)
= 0.243	m ³ /s	
= 14574	lit/min	
> 6291	lit/min	Ok

Check Existing 600mm dia. Pipes by Colebrook-White Equation

$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

V	=		mean velocity (m/s)	
g	=	9.81	m/s ² gravitational acceleration (m/s ²)	
D	=	0.6	m internal pipe diameter (m)	
ks	=	0.00015	m hydraulic pipeline roughness (m)	(Table14, from DSD SDM 2018, concrete pipe)
v	=	1.14E-06	m ² /s kinematic viscosity of fluid (m ² /s)	
s	=	0.006667	hydraulic gradient (1:150)	

Therefore, design V of pipe capacity = 2.2819 m/s

Q= 0.8VA		(0.8 factor for sedimentation)
= 0.516	m ³ /s	
= 30969	lit/min	
> 26930	lit/min	Ok

Check Proposed 900mm dia. Pipes by Colebrook-White Equation

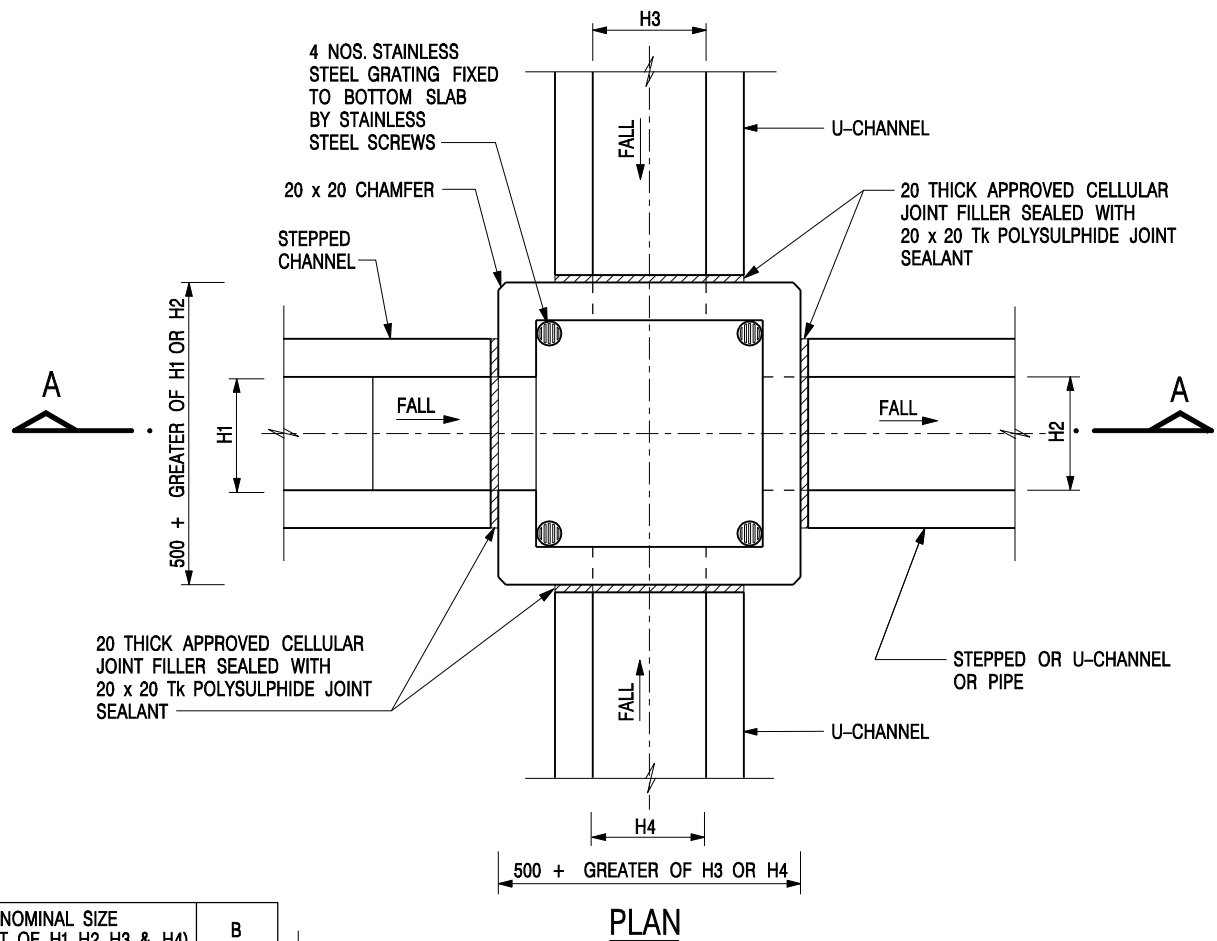
$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

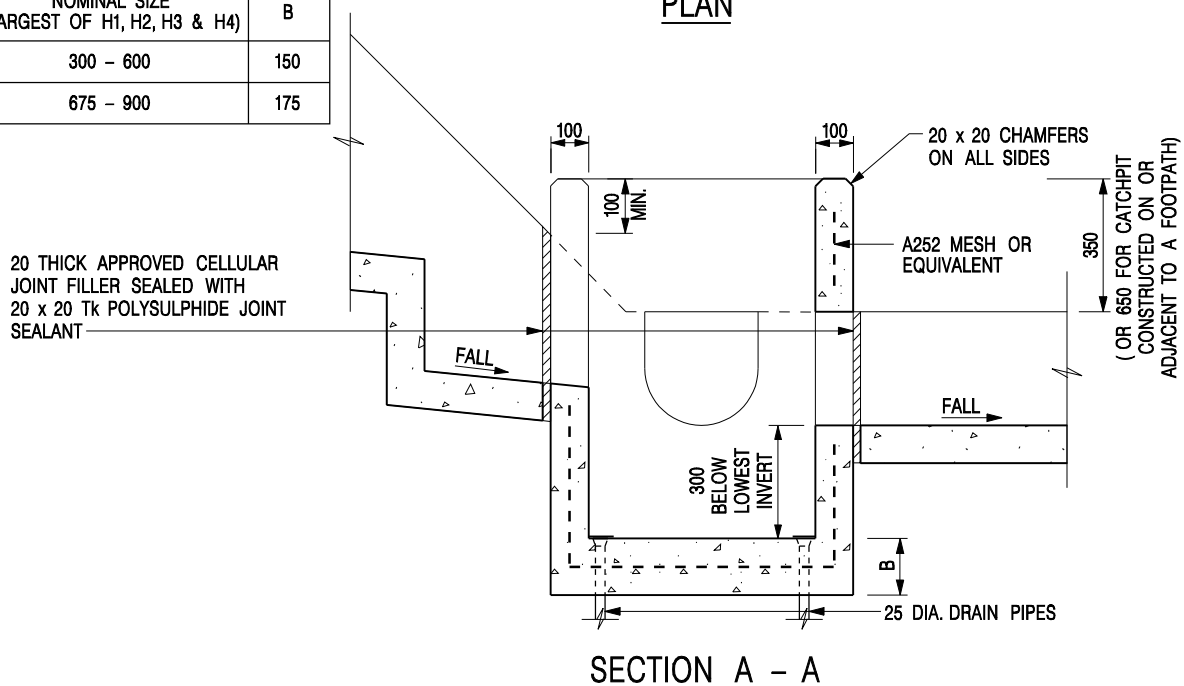
V	=		mean velocity (m/s)
g	=	9.81	m/s ² gravitational acceleration (m/s ²)
D	=	0.9	m internal pipe diameter (m)
ks	=	0.00015	m hydraulic pipeline roughness (m) (Table14, from DSD SDM 2018, concrete pipe)
v	=	1.14E-06	m ² /s kinematic viscosity of fluid (m ² /s)
s	=	0.005	hydraulic gradient (1: 200)

Therefore, design V of pipe capacity = 2.5279 m/s

Q= 0.8VA	(0.8 factor for sedimentation)
= 1.287	m ³ /s
= 77193	lit/min
> 58553	lit/min Ok



NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 - 600	150
675 - 900	175

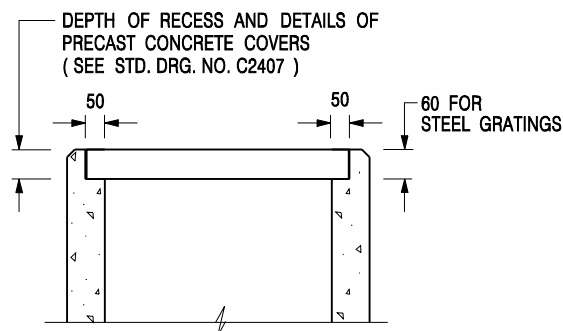


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

CATCHPIT WITH TRAP
(SHEET 1 OF 2)

-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT		SCALE 1 : 20	
		DATE JAN 1991	
		DRAWING NO. C2406 /1	



ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.
7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.
8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 /2) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 /5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 /4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

A	MINOR AMENDMENT.	Original Signed	04.2016
-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE

**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2406 /2A

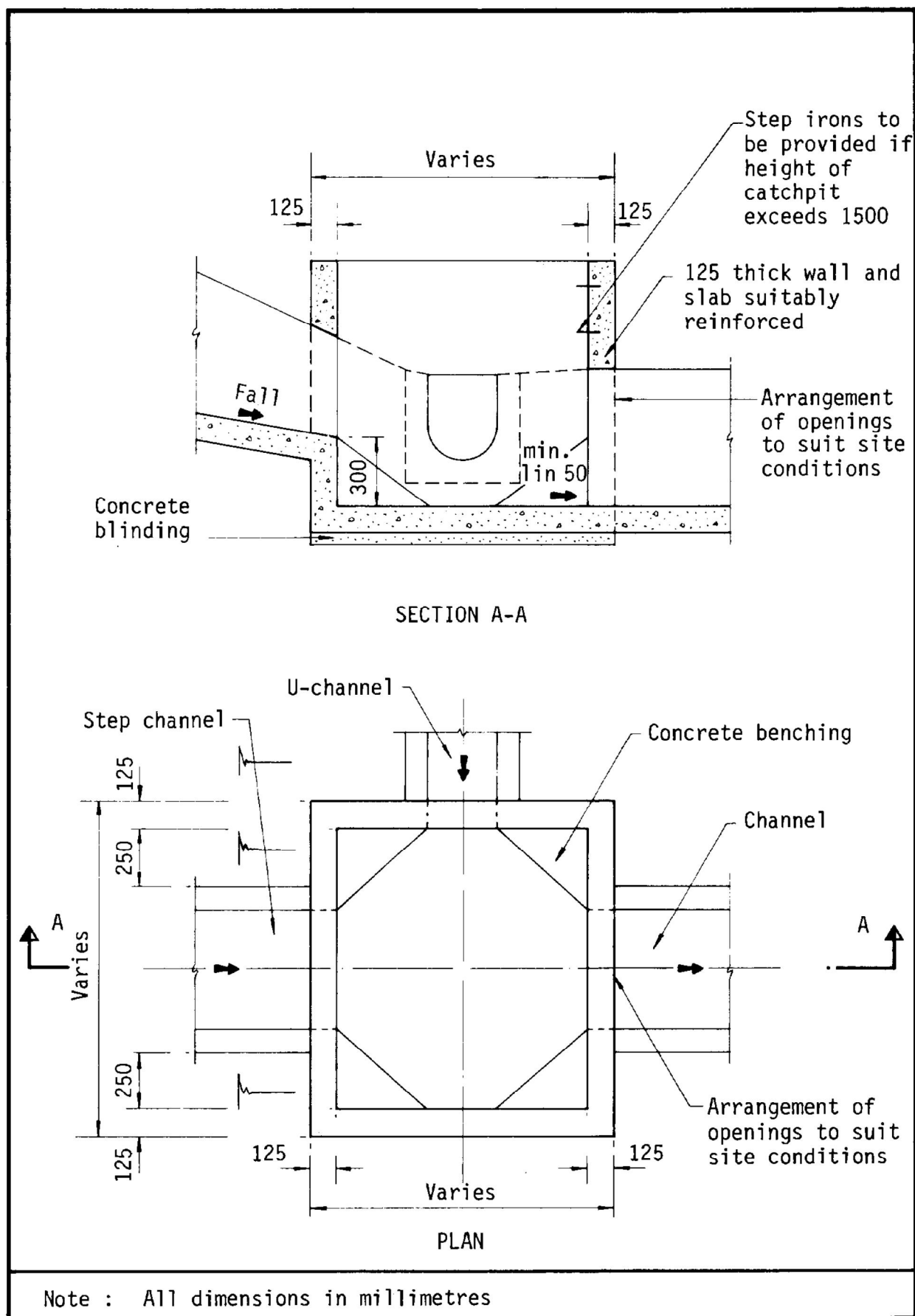
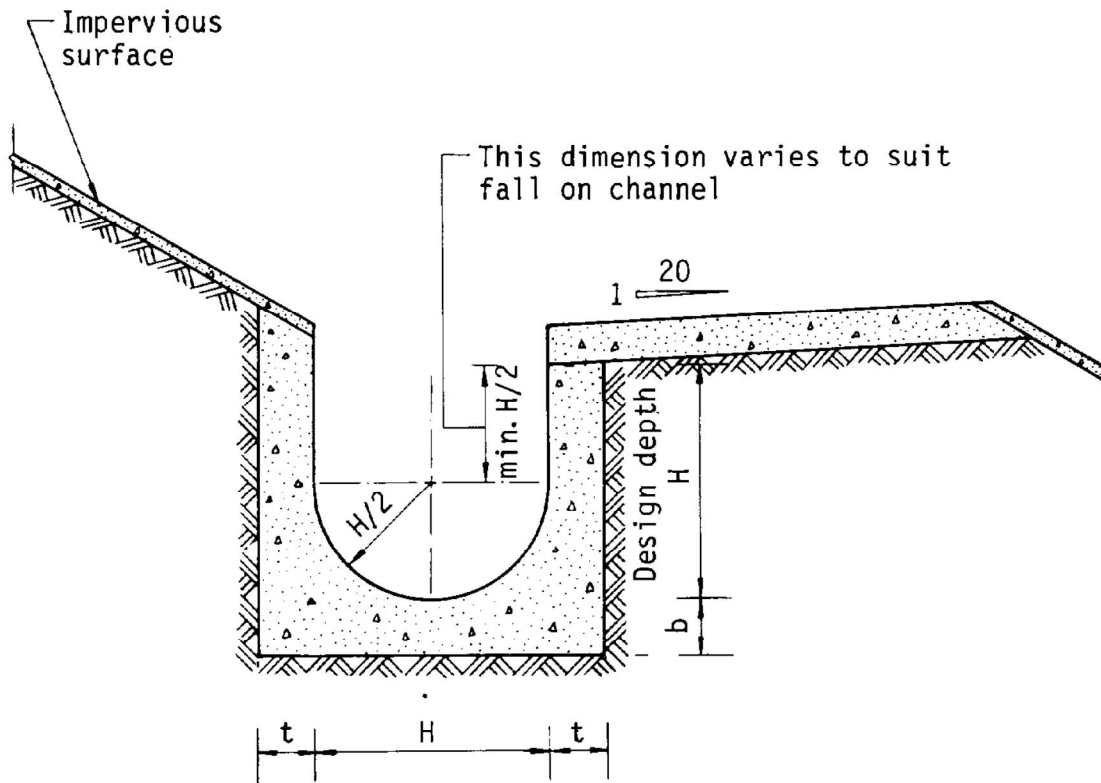


Figure 8.10 - Typical Details of Catchpits



Dimensions of U - channel

Nominal size of channel H (mm)	Thickness t (mm)	Thickness b (mm)
225 to 600	150	150
675 to 1200	175	225

Figure 8.11 - Typical U-channel Details

Appendix B

Inspection Record (inspection date:4-9-2026)



Inspection Record (inspection date: 4-9-2026)

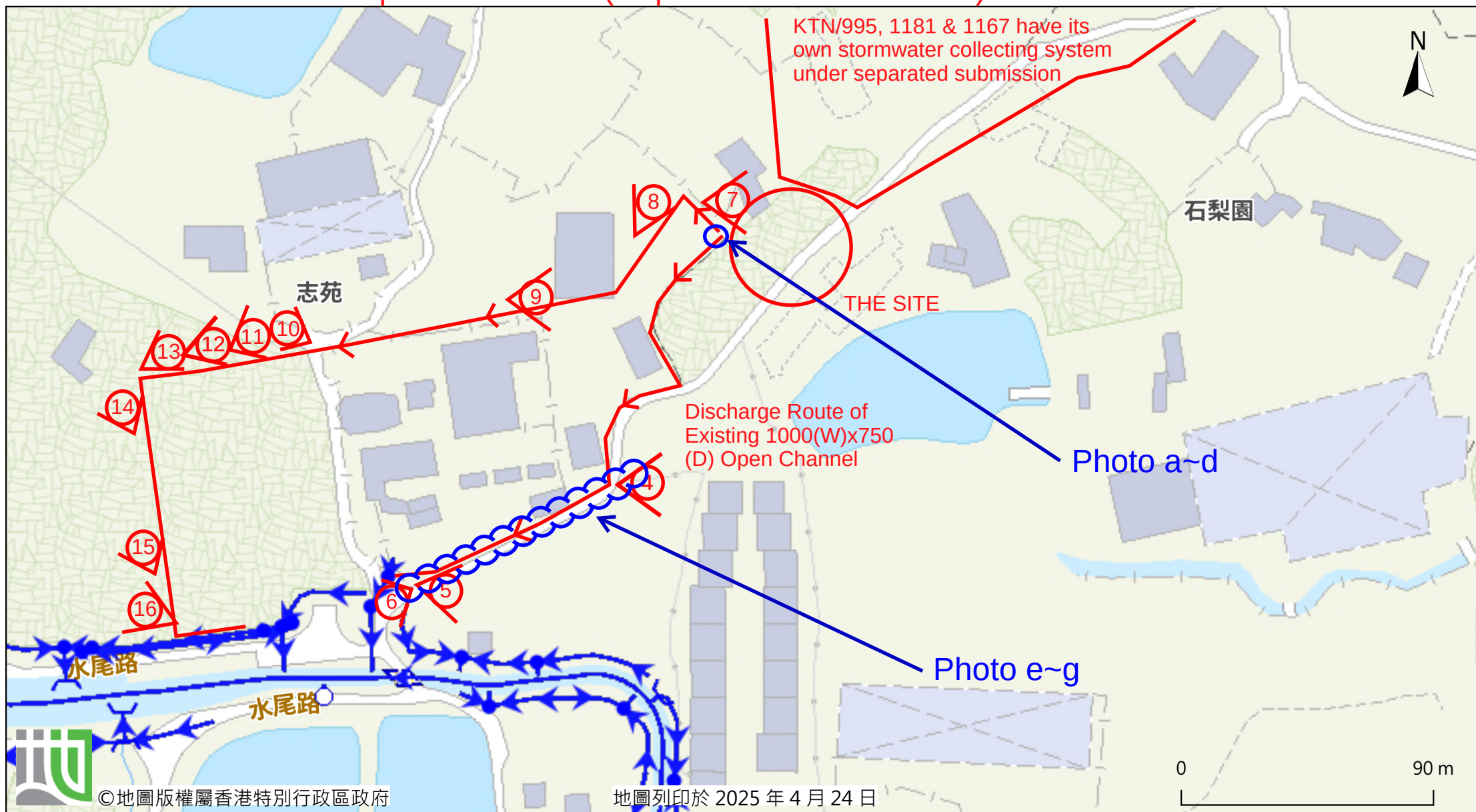


Photo a



Photo b



Photo c



Photo d



Inspection date: 4-9-2026:

It is observed that any flow from the site and upstream flow to the existing drain in the north. There is no drainage impact to the existing drain in the south

Photo e (upstream of photo 4)



Photo f (same location of photo 4)



Photo g (upstream of photo 6)



Inspection date: 4-9-2026:

Photos showing the start and end between Photo 4 and Photo 6. It is observed that flow is smooth.