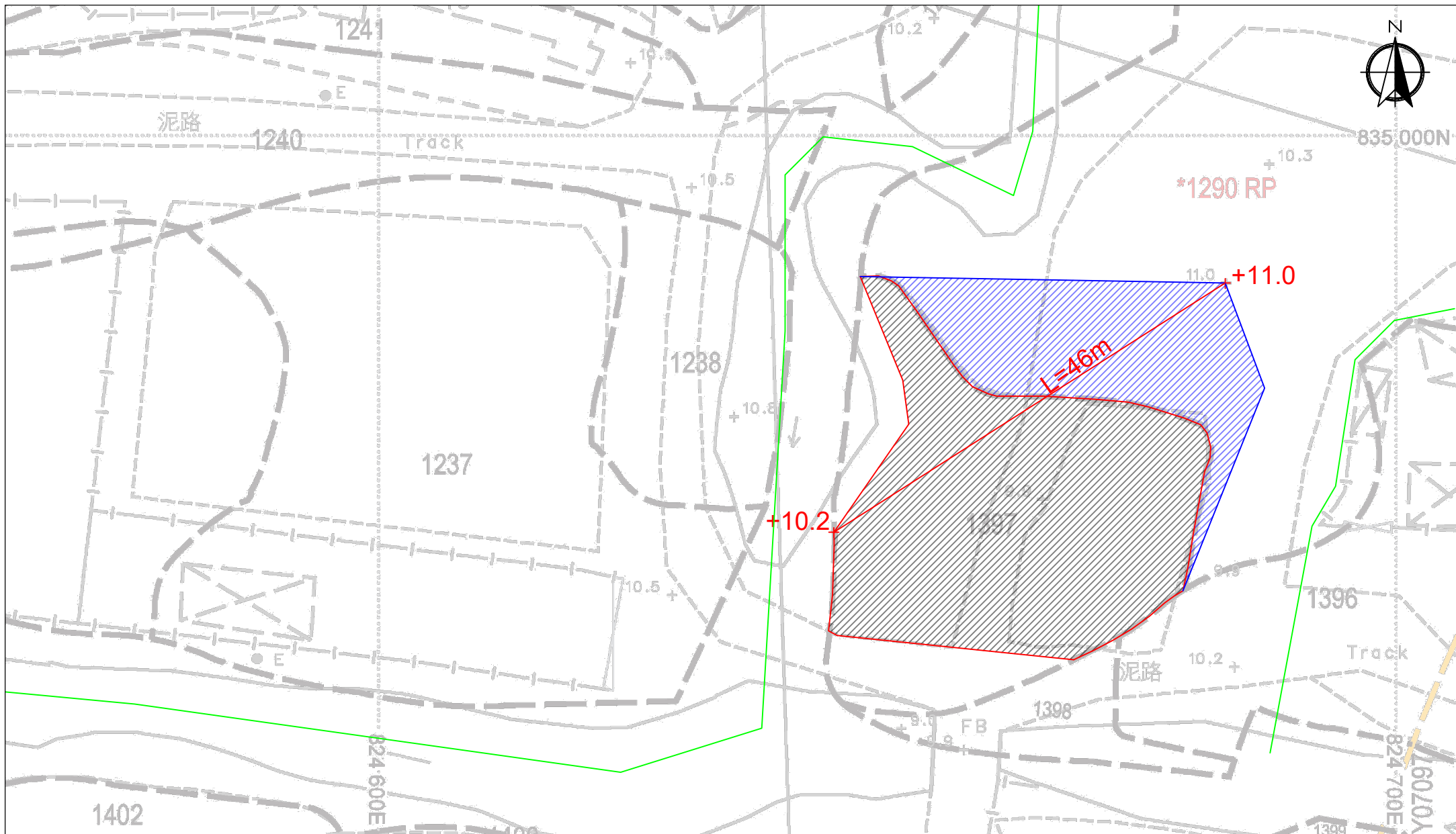
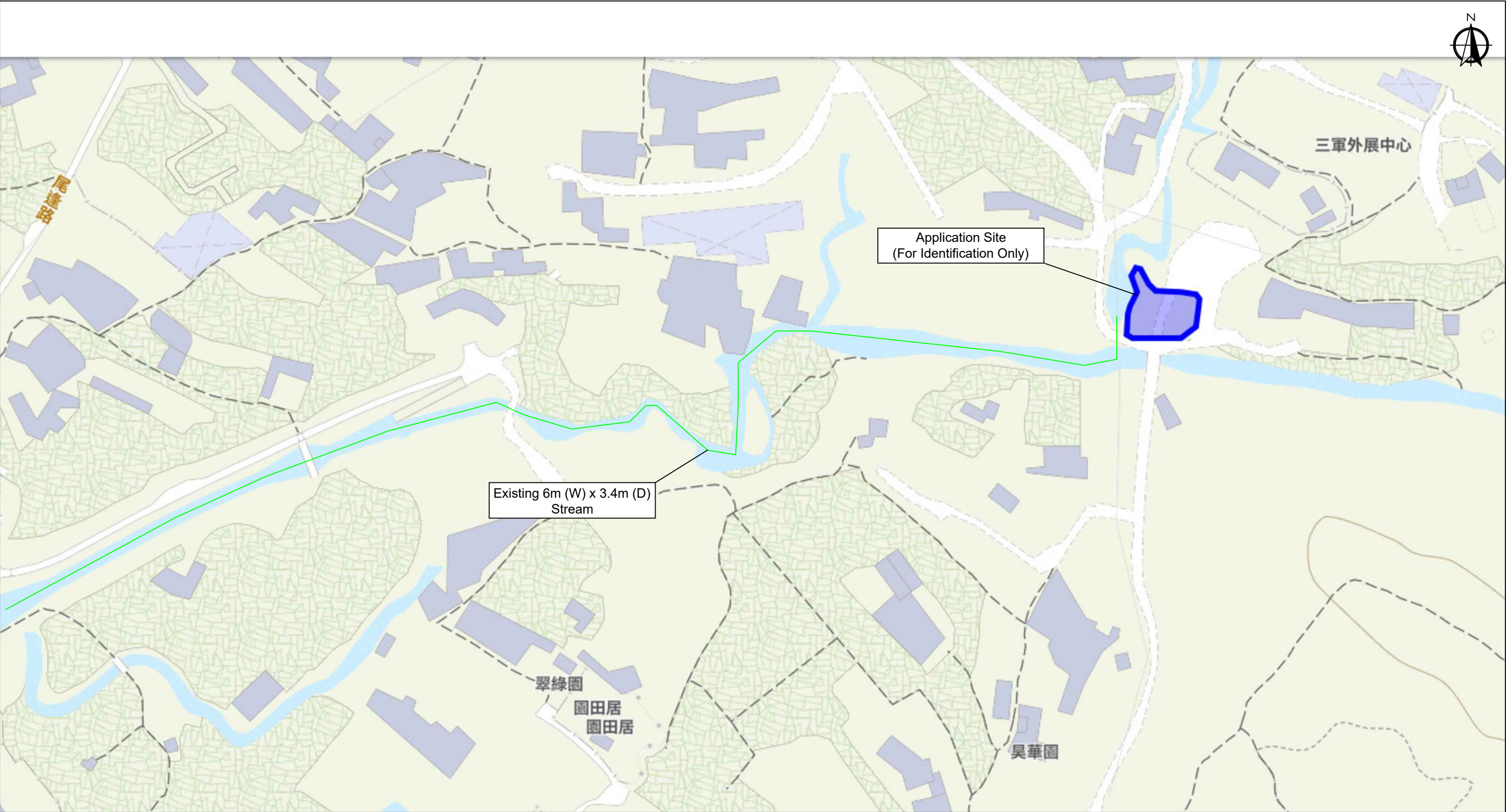




Appendix 6.2 Catchment Area	Location: D.D. 107 Lot 1397 (Part) OZP: S/YL-KTN/11 District: Kam Tin North Zoning: Agriculture	Project: Proposed Temporary Open Storage and associated Filling of Land for a Period of 3 Years	Around 1,253.1 m² Scale: 1:500 @A4	Drawing No.: 6.2-1 For Identification Only Date: 06/11/2025
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- Legend:
- Existing Channel
 - Application Site

Captured from map.gov.hk on 27th October 2025

Appendix 6.4	Location: DD 107 Lot 1397 (Part)	Project: Proposed Temporary Open Storage and associated Filling of Land for a Period of 3 Years	<u>Existing Drainage Channel and Ultimate Discharge Point</u>		Drawing No.
	OZP: S/YL-KTN/11 District: Kam Tin North Zoning: Agriculture				6.4-1
	For Identification Only				
	Date: 10 November 2025				

The Application Site	=	846.3 m ² (About)	C:	0.95 (Covered with Concrete)
Outside of Application Site	=	406.8 m ² (About)	C:	0.95 (Covered with Concrete)
	=	1253.1		

Calculation of Design Runoff of the Proposed Development,
For the design of drains inside the site, For Concrete

$$Q_p = 0.278 C I A$$

$$\begin{aligned} A &= 846.3 + 406.8 \text{ m}^2 \\ &= 1,253.1 \text{ m}^2 \\ &= 0.0012531 \text{ km}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 46 / 1.74^{0.2} * 1253.1^{0.1} \\ &= 3.636 \text{ min} \end{aligned}$$

$$\begin{aligned} i &= 1.16 * a / (t + b)^c \\ &= 1.16 * 505.5 / (3.636 + 3.29)^{0.355} \\ &= 294.99441 \end{aligned}$$

(50 years return period, Table 3a, Corrigendum 2024, SDM) and (16% increase due to climate change)

$$\begin{aligned} Q &= 0.278 * 0.95 * 295 * 1253.1 / 1000000 \\ &= 0.0976265 \text{ m}^3/\text{sec} \\ &= 5858 \text{ lit/min} \end{aligned}$$

Check 375mm dia. Pipes by Colebrook-White Equation

By Colebrook White Equation

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

where:

- | | | | |
|----------------|---|--|--|
| V | = | mean velocity (m/s) | |
| g | = | gravitational acceleration (m/s ²) | |
| D | = | internal pipe diameter (m) | |
| k _s | = | hydraulic pipeline roughness (m) | (Table 14, from DSD SDM 2018, concrete pipe) |
| v | = | kinematic viscosity of fluid (m ² /s) | (Transitional flow and water at 15 degree celcius) |
| s | = | hydraulic gradient (energy loss per unit length due to friction) | |
| | | | |
| g | = | 9.81 | m/s ² |
| D | = | 0.375 | m |
| k _s | = | 0.00015 | m |
| v | = | 1.14E-06 | m/s ² |
| s | = | 0.01 | |

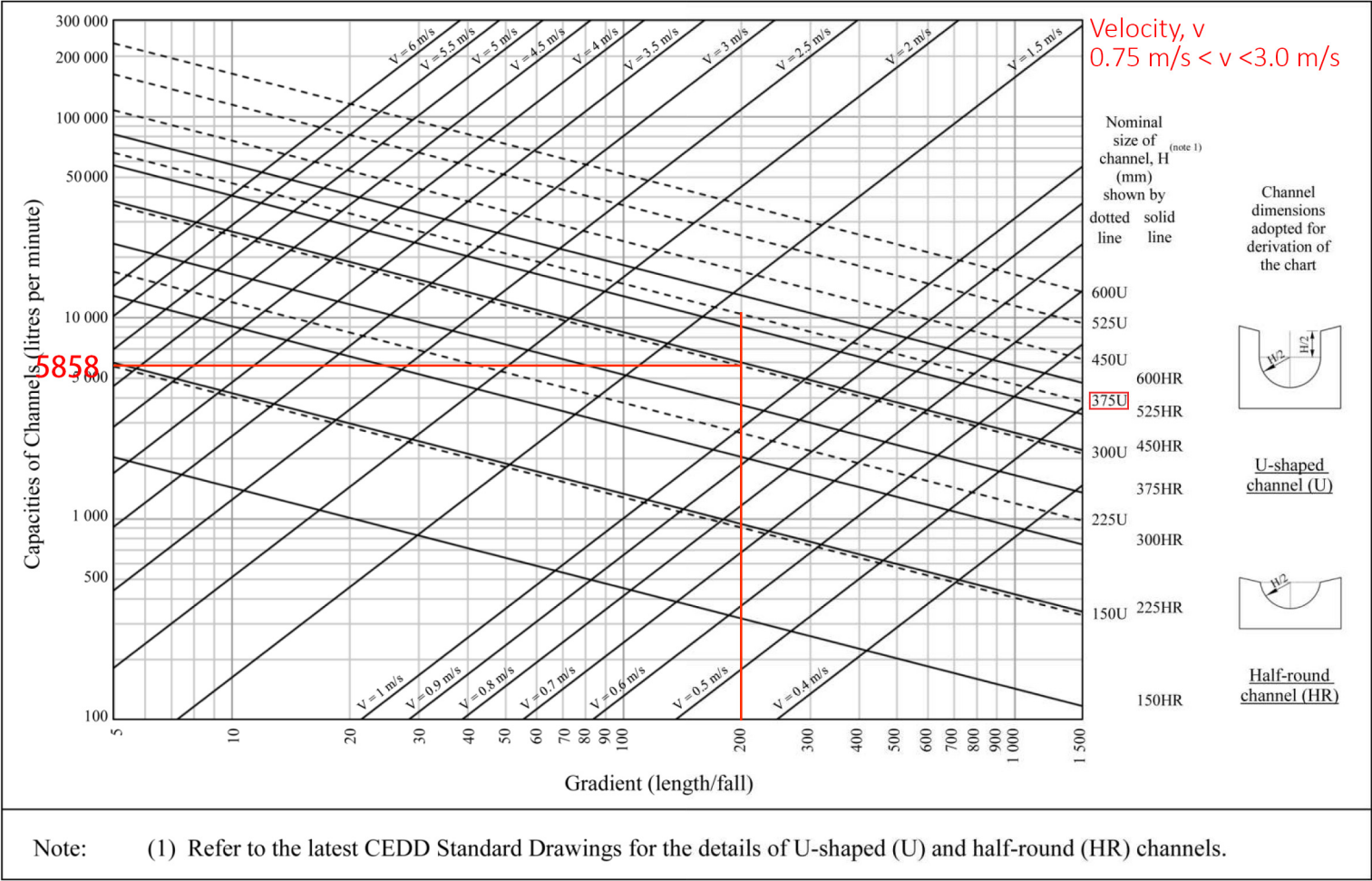
Therefore, design V of pipe capacit = 2.097119 m/s

$$\begin{aligned} Q &= 0.8VA && (0.8 \text{ factor for sedimentation}) \\ &= 0.210611 \text{ m}^3/\text{s} \\ &= 12636.65 \text{ lit/min} \\ &> 5858 \text{ lit/min} \end{aligned}$$

Provide 375UC (1:200) has enough capacity to accomend the runoff of the proposed development

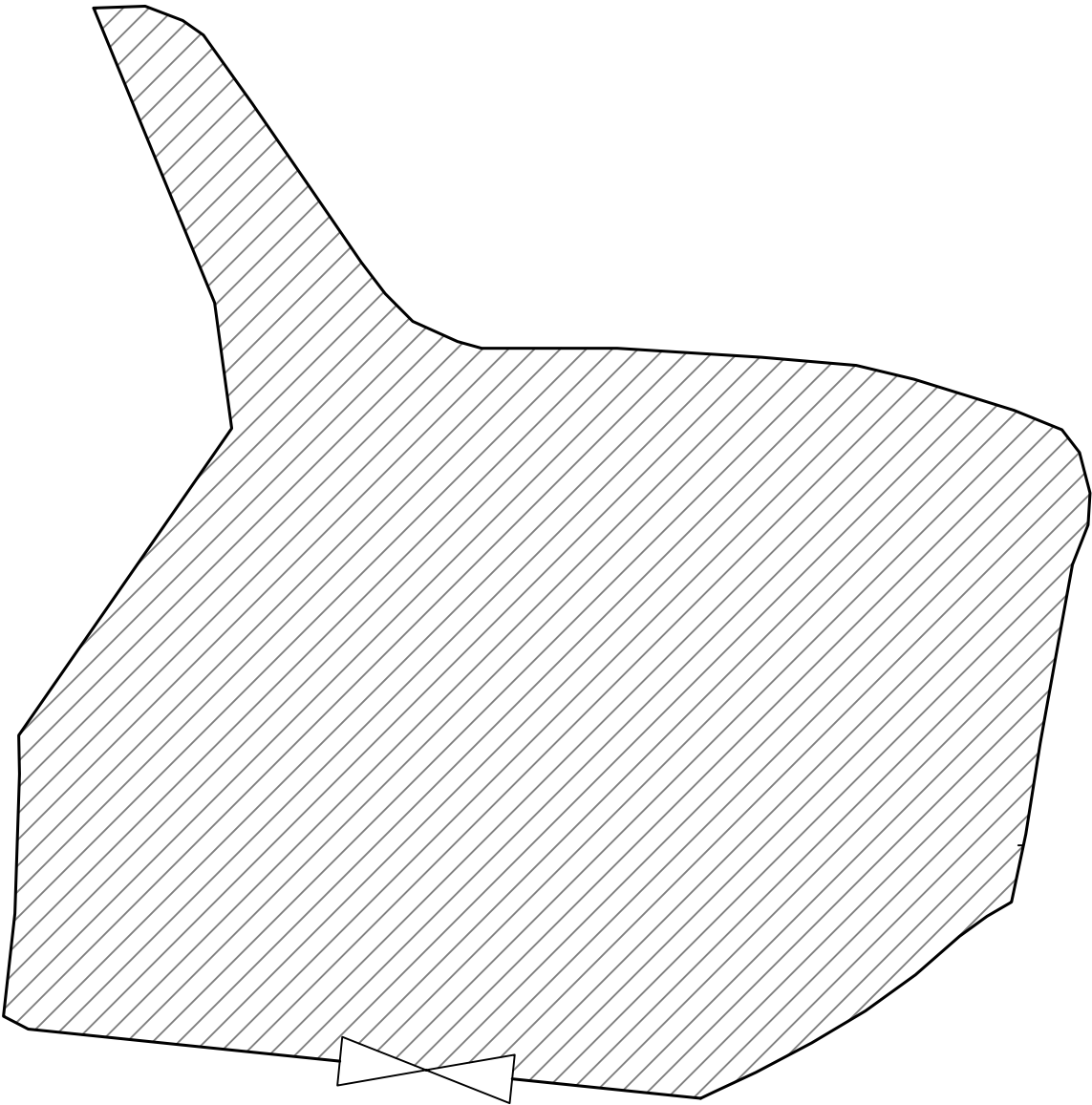
GEO Technical Guidance Note No. 43 (TGN 43)
Guidelines on Hydraulic Design of U-shaped and Half-round Channels on Slopes

Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm



Proposed Filling of Land Perimeter

Application Site Area: 846.3 m²(About)
Proposed Land Filling Area: 846.3 m² (About)
Depth of Land Filling: About 0.5 m
Existing Site Levels: +9.9 mPD (About)
Proposed Site Levels: +10.4 mPD (About)
Material of Filling: Soil (About 0.3m under concrete) and Concrete (About 0.2m above Soil)
Proposed Use: Open Storage Area, structures building and Circulation Space



Legend:

 Paved Area 平整範圍

Appendix 4

Location: DD 107 Lot 1397 (Part)

OZP: S/YL-KTN/11
District: Kam Tin North
Zoning: Agriculture

Date: 30 October 2025

Paved Area

平整位置圖

擬議臨時露天存放連附屬設施
及相關填土工程(為期3年)

Proposed Temporary Open Storage with Ancillary
Facilities and associated Filling of Land
for a Period of 3 Years

SCALE

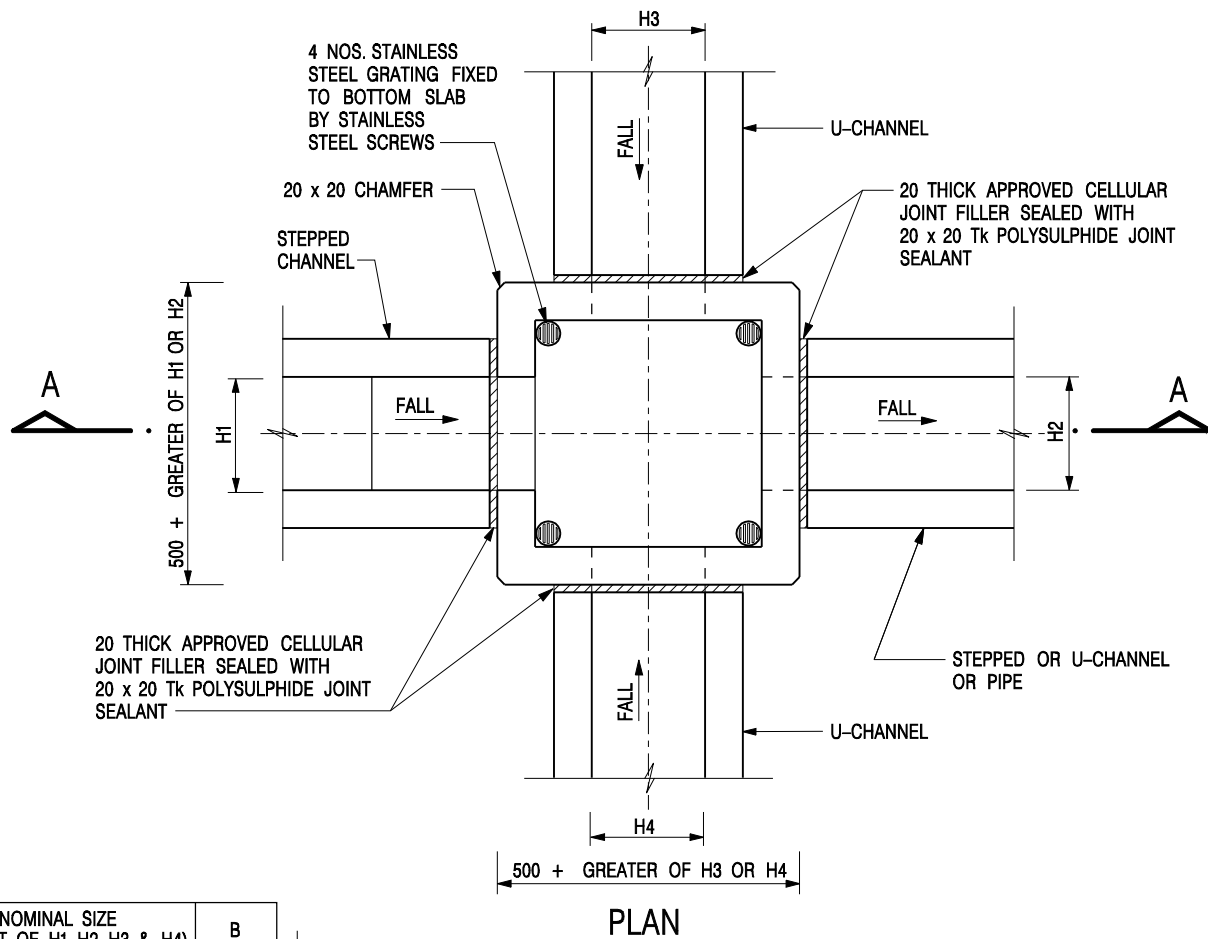
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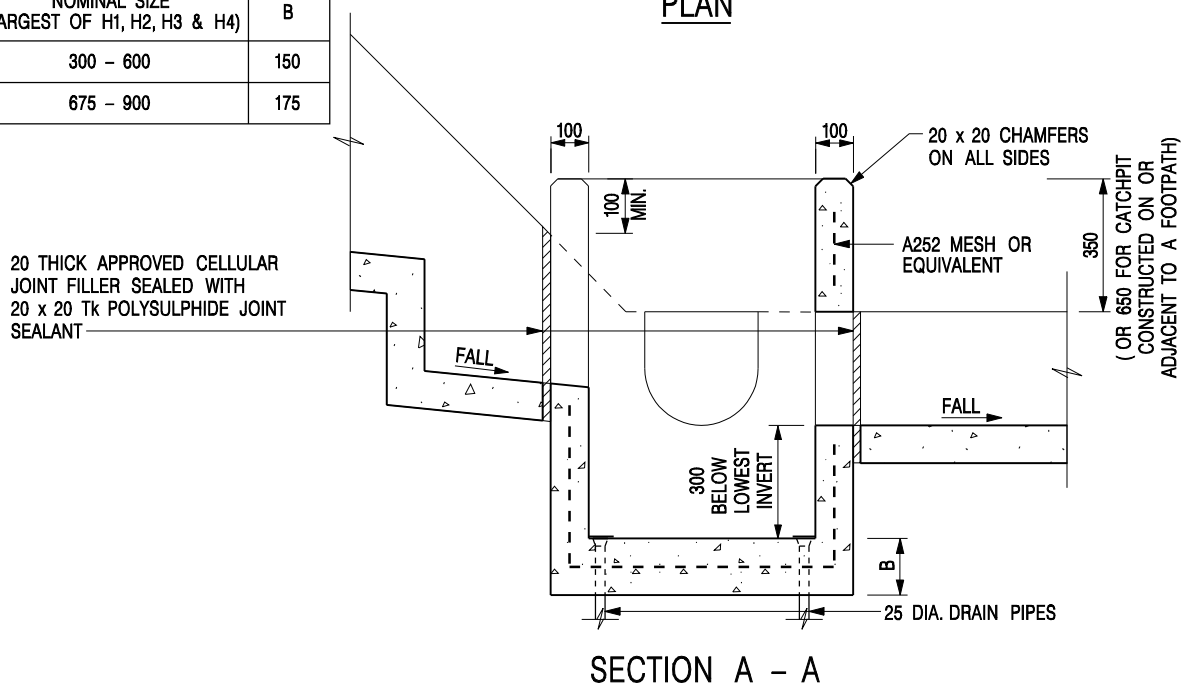
For Identification Only

Drawing No.:

4-01



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

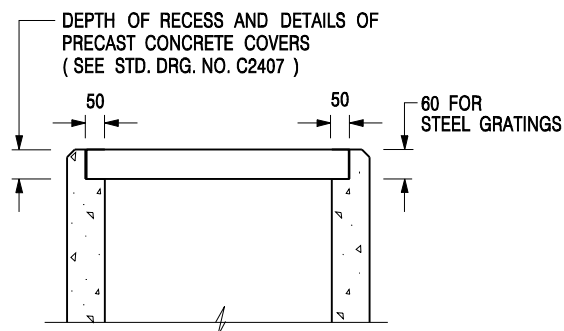


NOTES:

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) 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 'G' ON STD. DRG. NO. C2405; 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 'F' ON STD. DRG. NO. C2405.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

-	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 /2

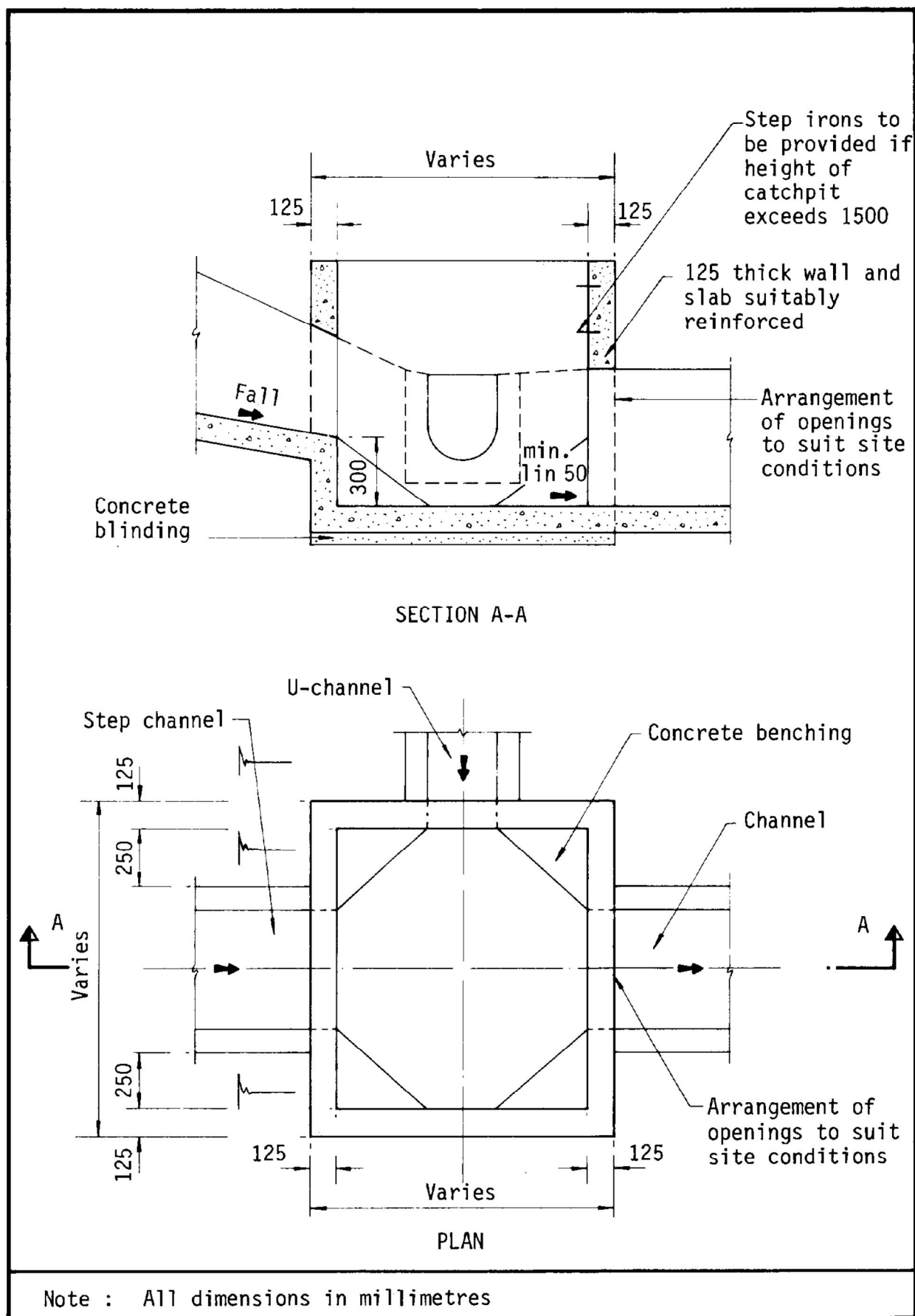
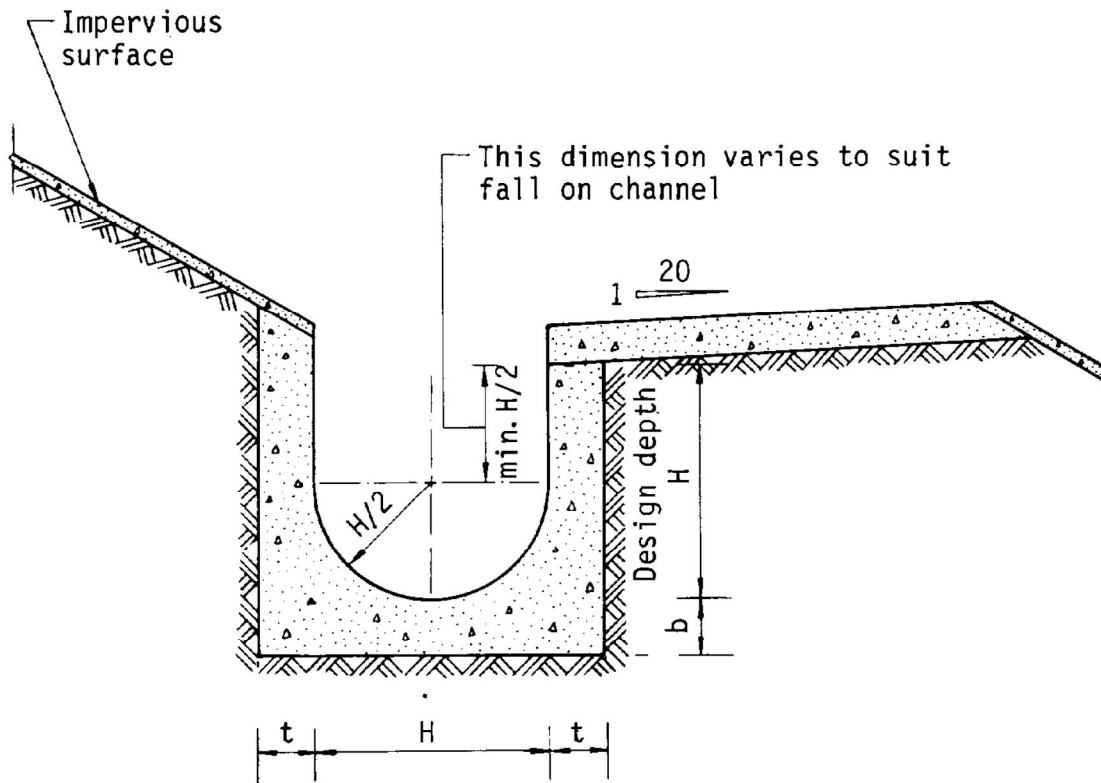


Figure 8.10 - Typical Details of Catchpits



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

Table 3a – Storm Constants for Different Return Periods of HKO Headquarters

Return Period T (years)	2	5	10	20	50	100	200	500	1000
a	446.1	470.5	485.0	496.0	505.5	508.6	508.8	504.6	498.7
b	3.38	3.11	3.11	3.17	3.29	3.38	3.46	3.53	3.55
c	0.463	0.419	0.397	0.377	0.355	0.338	0.322	0.302	0.286

Table 3d – Storm Constants for Different Return Periods of North District Area

Return Period T (years)	2	5	10	20	50	100	200
a	439.1	448.1	454.9	462.3	474.6	486.6	501.4
b	4.10	3.67	3.44	3.21	2.90	2.67	2.45
c	0.484	0.437	0.412	0.392	0.371	0.358	0.348

Table 13 - Values of n to be used with the Manning equation

Source: Brater, E.F. & King, H.W. (1976)

Surface	Best	Good	Fair	Bad
Uncoated cast-iron pipe	0.012	0.013	0.014	0.015
Coated cast-iron pipe	0.011	0.012*	0.013*	
Commercial wrought-iron pipe, black	0.012	0.013	0.014	0.015
Commercial wrought-iron pipe, galvanized	0.013	0.014	0.015	0.017
Smooth brass and glass pipe	0.009	0.010	0.011	0.013
Smooth lockbar and welded "OD" pipe	0.010	0.011*	0.013*	
Riveted and spiral steel pipe	0.013	0.015*	0.017*	
Vitrified sewer pipe	0.010	0.013*	0.015	0.017
Common clay drainage tile	0.011	0.012*	0.014*	0.017
Glazed brickwork	0.011	0.012	0.013*	0.015
Brick in cement mortar; brick sewers	0.012	0.013	0.015*	0.017
Neat cement surfaces	0.010	0.011	0.012	0.013
Cement mortar surfaces	0.011	0.012	0.013*	0.015
Concrete pipe	0.012	0.013	0.015*	0.016
Wood stave pipe	0.010	0.011	0.012	0.013
Plank flumes - Planed	0.010	0.012*	0.013	0.014
- Unplaned	0.011	0.013*	0.014	0.015
- With battens	0.012	0.015*	0.016	
Concrete-lined channels	0.012	0.014*	0.016*	0.018
Cement-rubble surface	0.017	0.020	0.025	0.030
Dry-rubble surface	0.025	0.030	0.033	0.035
Dressed-ashlar surface	0.013	0.014	0.015	0.017
Semicircular metal flumes, smooth	0.011	0.012	0.013	0.015
Semicircular metal flumes, corrugated	0.0225	0.025	0.0275	0.030
Canals and ditches				
1. Earth, straight and uniform	0.017	0.020	0.0225*	0.025
2. Rock cuts, smooth and uniform	0.025	0.030	0.033*	0.035
3. Rock cuts, jagged and irregular	0.035	0.040	0.045	
4. Winding sluggish canals	0.0225	0.025*	0.0275	0.030
5. Dredged-earth channels	0.025	0.0275*	0.030	0.033
6. Canals with rough stony beds, weeds on earth banks	0.025	0.030	0.035*	0.040
7. Earth bottom, rubble sides	0.028	0.030*	0.033*	0.035
Natural-stream channels				
1. Clean, straight bank, full stage, no rifts or deep pools	0.025	0.0275	0.030	0.033
2. Same as (1) but some weeds and stones	0.030	0.033	0.035	0.040
3. Winding some pools and shoals, clean	0.033	0.035	0.040	0.045
4. Same as (3), lower stages, more ineffective slope and sections	0.040	0.045	0.050	0.055

Table 13 (Cont'd)

Surface	Best	Good	Fair	Bad
5. Same as (3) some weeds and stones	0.035	0.040	0.045	0.050
6. Same as (4) stony sections	0.045	0.050	0.055	0.060
7. Sluggish river reach, rather weedy or with very deep pools	0.050	0.060	0.070	0.080
8. Very weedy reaches	0.075	0.100	0.125	0.150

Notes: *Values commonly used for design.