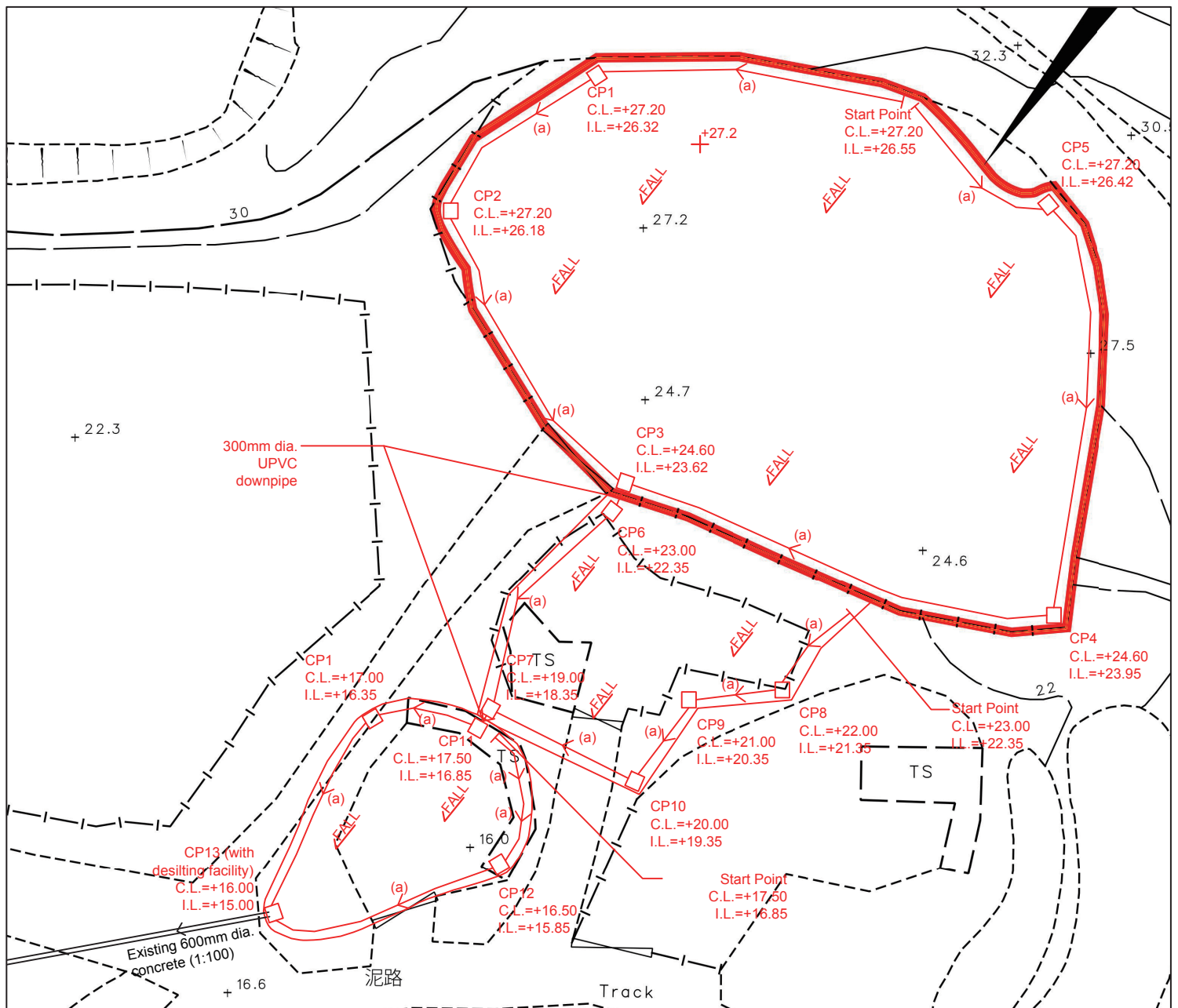




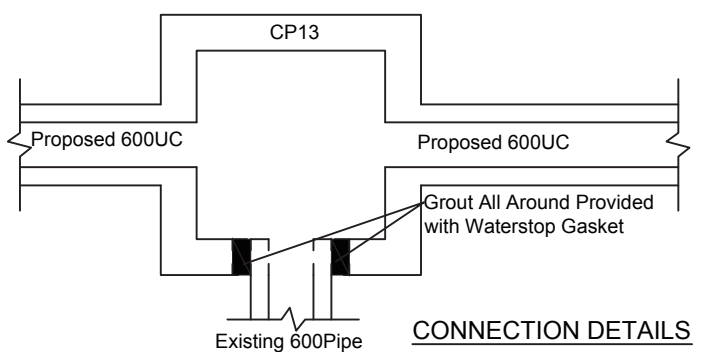
Note:
1. Catchpits (CP13) with desilting facility shall follow CEDD standard drawing No. C24061.

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

3. Open-bottom type Fence Wall to be erected..

LEGEND

- CP Proposed CatchPit
- (a) Proposed 600UC (1:150) with Cast Iron Cover
- Existing 600mm dia. concrete (1:100)



CONNECTION DETAILS

Project:
Proposed Temporary Open Storage of Construction Materials for a Period of 3 Years at

Title:
Drainage Proposal - LAYOUT

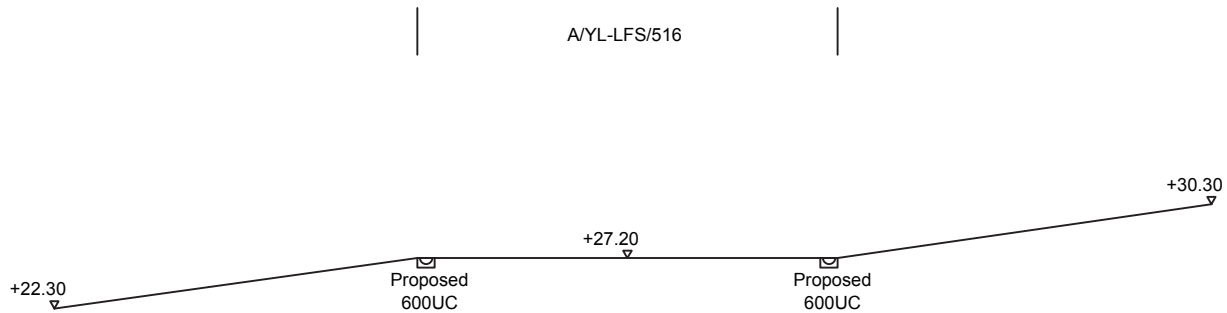
D01

Drawn by:
DM

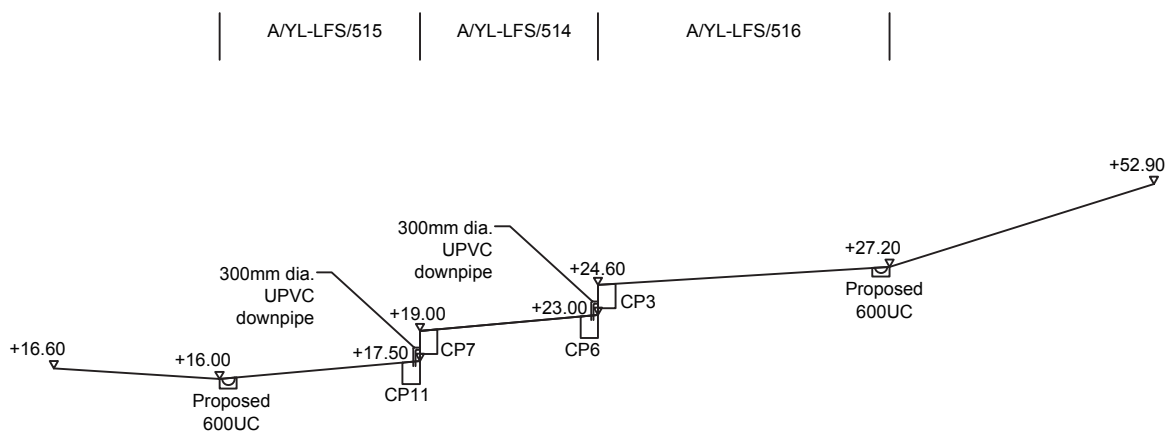
Date:

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY



SECTION A-A



SECTION B-B

Project: Proposed Temporary Open Storage of Construction Materials for a Period of 3 Years at	Title: Drainage Proposal - SECTIONS	D03
	Drawn by: DM	Date:
	正宏工程顧問公司 CHING WAN ENGINEERING CONSULTANT COMPANY	



由「地理資訊地圖」網站提供: <https://www.map.gov.hk>

注意: 使用此地圖受「地理資訊地圖」的使用條款及條件以及知識產權告示約束。







Outside Catchment Area 1, Area	=	9465	m ²	(C=	0.25	)
A/YL-LFS/514	=	810	m ²	(C=	0.95	)
A/YL-LFS/515	=	550	m ²	(C=	0.95	)
A/YL-LFS/516	=	3470	m ²	(C=	0.95	)
Total:	=	14295	m ²			

Calculation of Design Runoff of the Proposed Development,

For the design of drains inside the site, All Catchment Area

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

$$\begin{aligned} A &= 14295 \text{ m}^2 \\ &= 0.014295 \text{ km}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 85 / 1^{0.2} * 14295^{0.1} \\ &= 4.723 \text{ min} \end{aligned}$$

$$\begin{aligned} i &= 1.111 * a / (t+b)^c && (50 \text{ yrs return period, Table 3a, Corrigendum 2024,} \\ &= 1.111 * 505.5 / (4.723+3.29)^{0.355} && \text{SDM) and (11.1\% increase due to climate change)} \\ &= 268.3 \text{ mm/hr} \end{aligned}$$

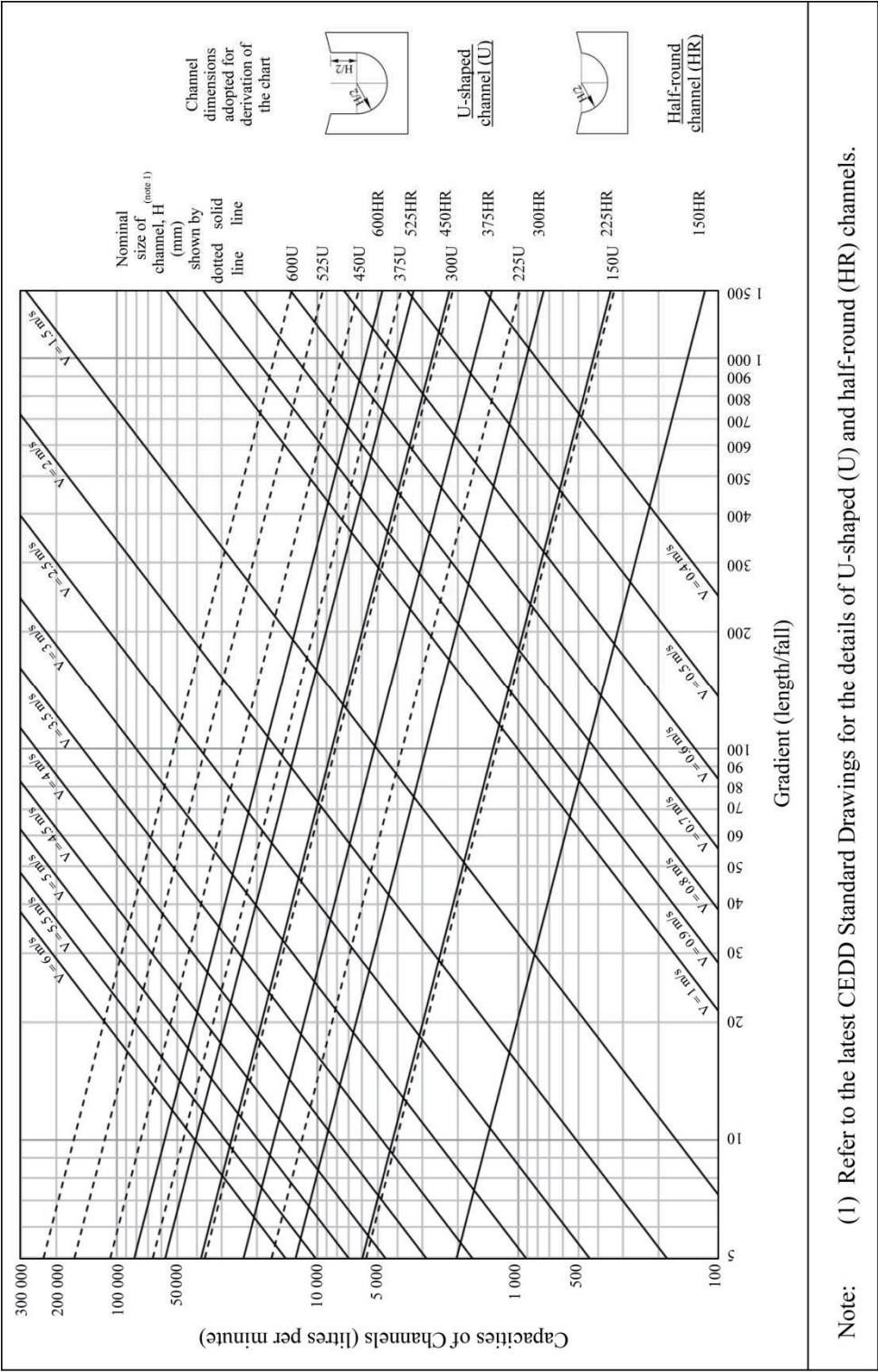
$$\begin{aligned} \text{Therefore, } Q &= 0.278 * 0.25 * 268.3 * 0.009465 + 0.278 * 0.95 * 268.3 * 0.004830 \\ &= 0.5187 \text{ m}^3/\text{sec} \\ &= \underline{\underline{31122}} \text{ lit/min} \end{aligned}$$

Provide 600UC (1:150) is OK

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

Issue No.: 1 Revision: - Date: 05.06.2014 Page: 3 of 3

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



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

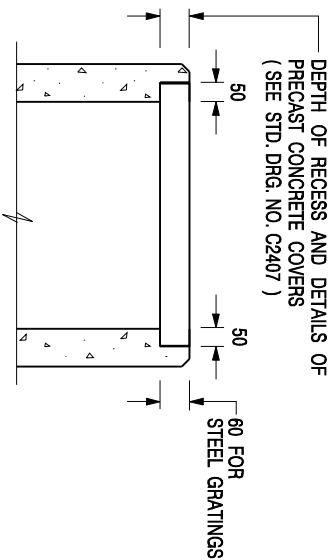
$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

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	=	0.01	hydraulic gradient	

Therefore, design V of pipe capacity = 2.8059 m/s

Q= 0.8VA		(0.8 factor for sedimentation)
= 0.635	m ³ /s	
= 38081	lit/min	
> 31122	lit/min	Ok



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

DRAWING NO.

DATE JAN 1991

C2406 /2

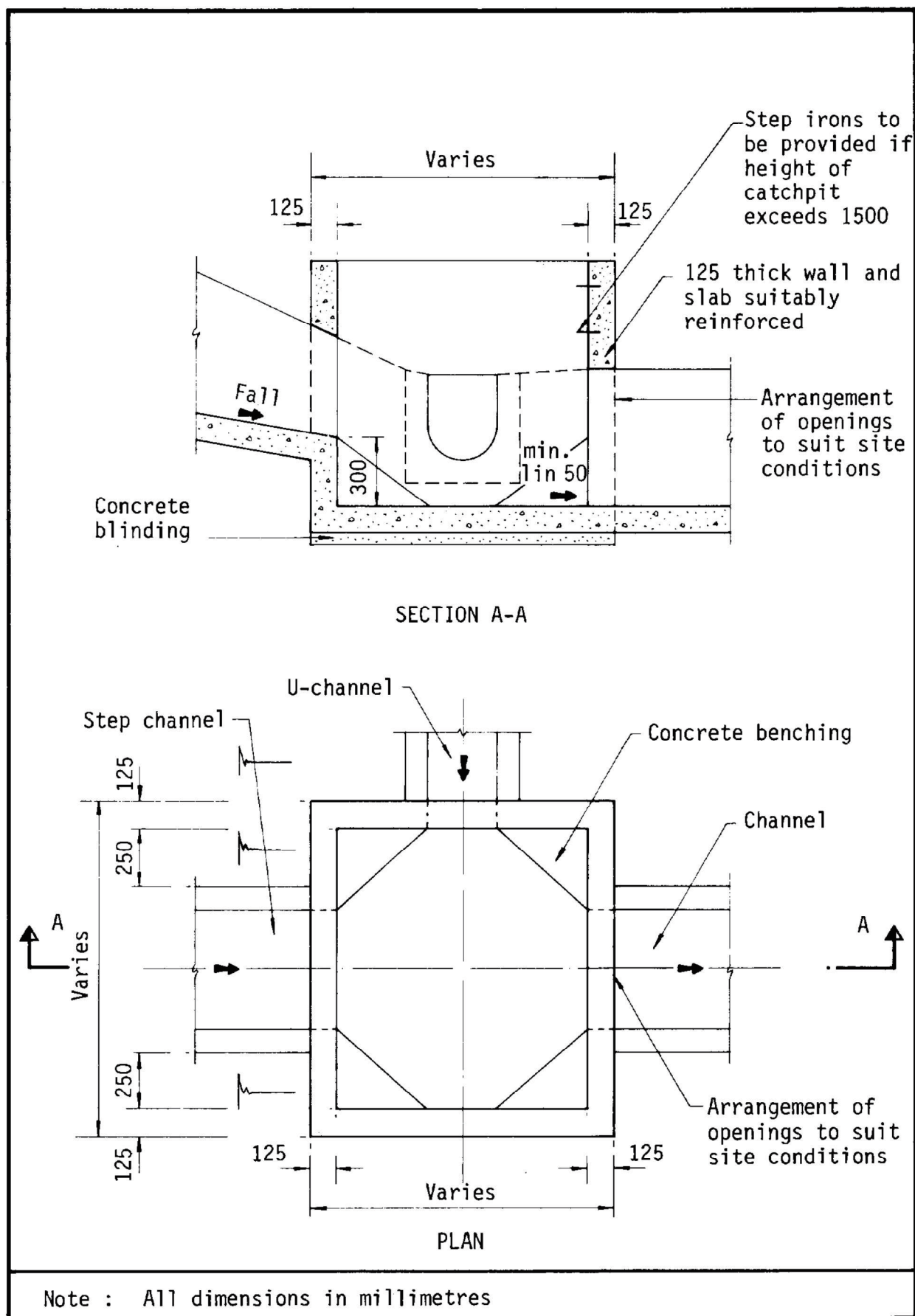
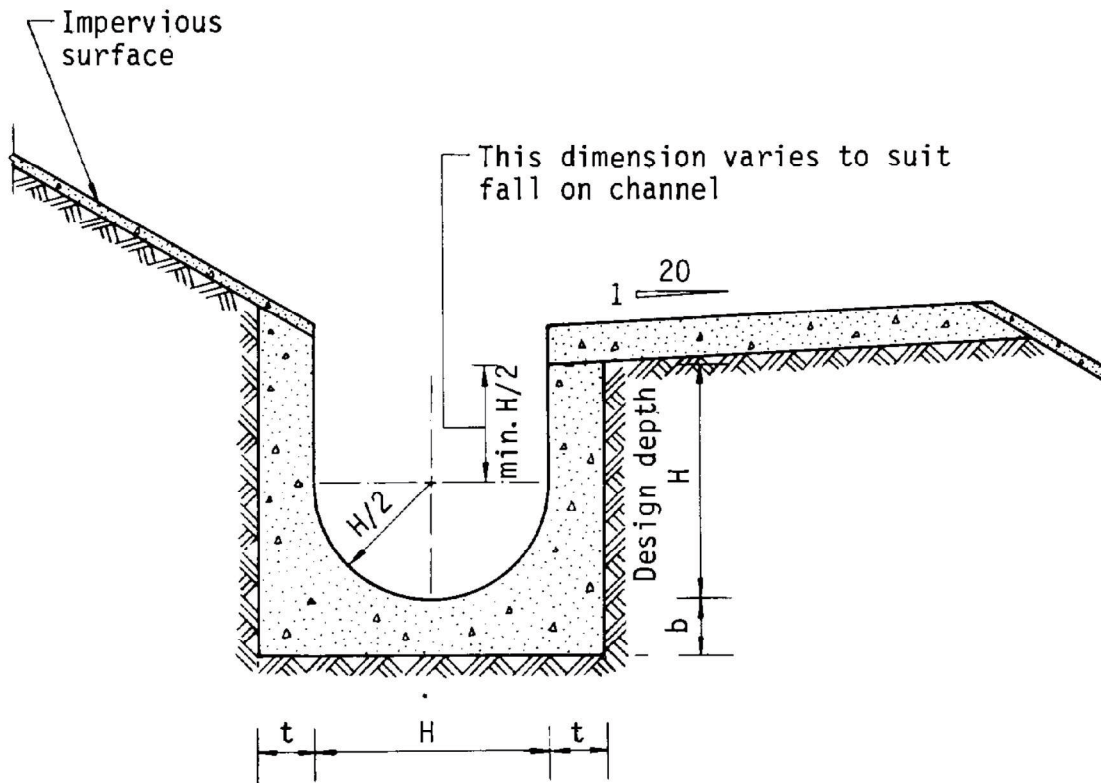


Figure 8.10 - Typical Details of Catchpits



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