

## Annex 6

**Section 16 Application for Temporary Public Vehicle Park (Private Cars Only) with Ancillary Electric Vehicle Charging Facilities and Ancillary Solar Panels and Associated Filling of Land for a Period of 3 Years at Lot No. 241 in D.D. 23 at Ting Kok, Tai Po, New Territories**

**Calculation for channels:**

Catchment Zone A	Lot 241								
Area	=	337 sqm							
	=	0.000337 sqkm							
Peak runoff in m <sup>3</sup> /s	=	0.278 x	0.95 x	250 mm/hr x	0.00034 sqkm				
	=	0.022252 m <sup>3</sup> /s							
	=	1335 liter/min							
Total Peak runoff in m <sup>3</sup> /s	=	1,335							
According to Figure 7.1 Chart for the rapid design of channels, For gradient 1:125, 175UC will be suitable for the subject site									
<b>Terminal</b>									
Peak runoff of whole site in m <sup>3</sup> /s	=	1335 liter/min							
Manning Equation	V	=	$R^{2/3} \times S_f^{0.5} / n$	dia	175 mm				
where	R	=	$\frac{\pi r^2}{2\pi r}$	r=	0.088 m				
		=	$\frac{r}{2}$						
		=	0.04375 m						
	n	=	0.012 (Based on Table 13 of Stormwater Drainage Manual)						
1/ 125	Sf	=	0.0125						
Thus,	V	=	$\frac{0.04375^{2/3} \times 0.0125^{0.5}}{1.16}$	m/sec					
Provide 175mm dia underground pipe (1:200)									
Maximum Capacity (Q <sub>max</sub> )	=	V x A							
	=	$1.16 \times \frac{\pi r^2}{4}$							
	=	0.0278102 m/sec							
1 nos of pipe	=	1,669 liter/min	>	1,335	OK	80%			

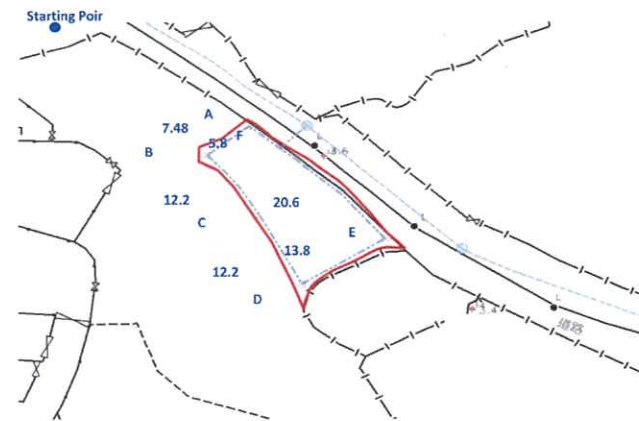
	<b>Site (Lot 241)</b>
slope	25.8
gradient	0.001550388
Length of catchpit A to catchpit B	1 in 645
slope	7.48
gradient	0.002673797
Length of catchpit B to catchpit C	1 in 574
slope	12.2
gradient	0.002459016
Length of catchpit C to catchpit D	1 in 407
slope	12.2
gradient	0.002459016
Length of catchpit D to catchpit E	1 in 407
slope	13.8
gradient	0.001449275
Length of catchpit E to catchpit F	1 in 690
slope	5.8
gradient	0.013793103
Length of catchpit F to terminal manhole	1 in 72.5
slope	20.6
gradient	0.001941748
Length of catchpit F to terminal manhole	1 in 515
slope	5
gradient	0.008
Length of catchpit F to terminal manhole	1 in 175

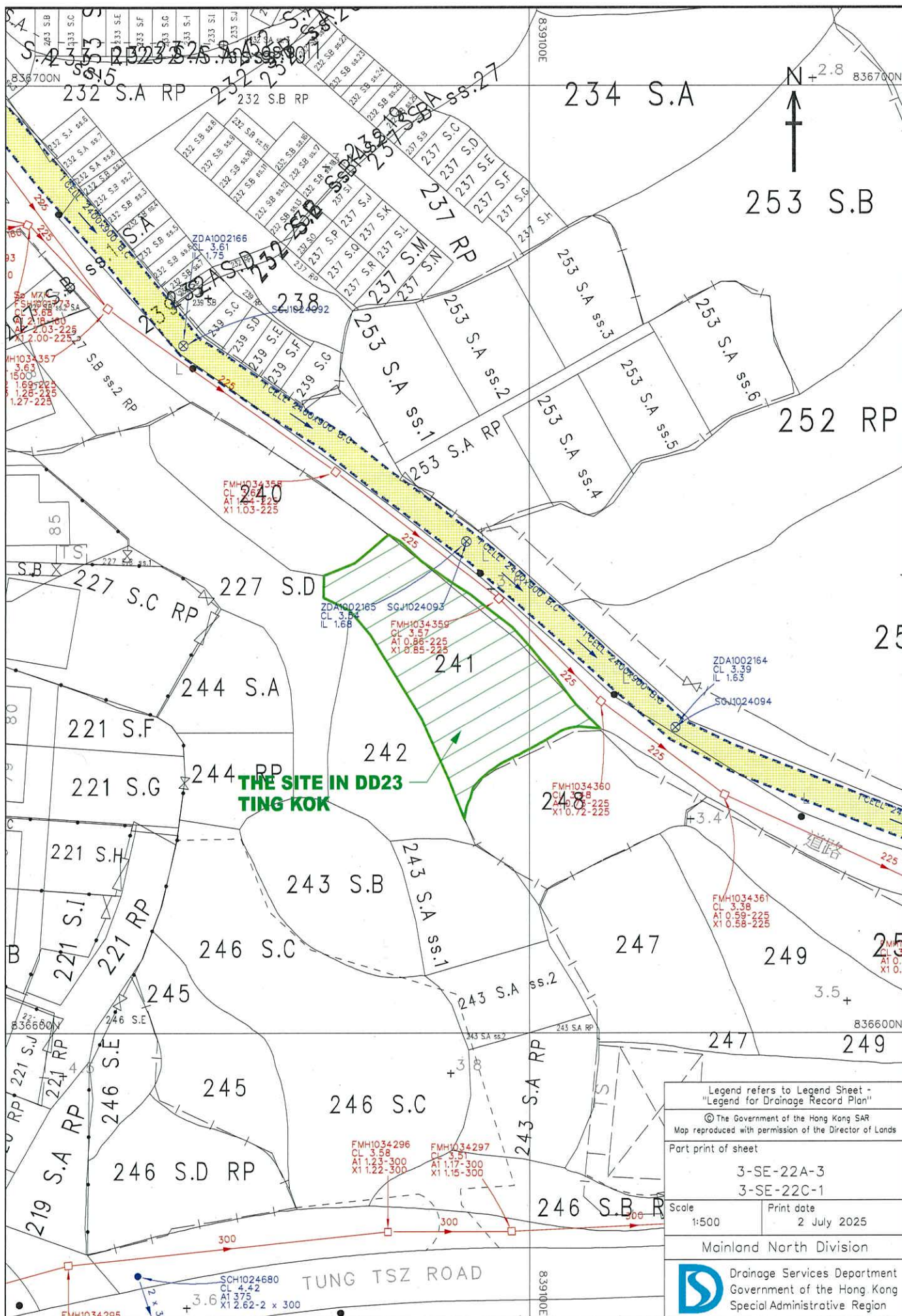
<https://www.archlogbook.co/post/drainage-design-basics>

spot height	
Starting point	
Catchpit A	3.66
Catchpit B	3.68
Catchpit C	3.65
Catchpit D	3.62
Catchpit E	3.6
Catchpit F	3.58
terminal manhole	3.51

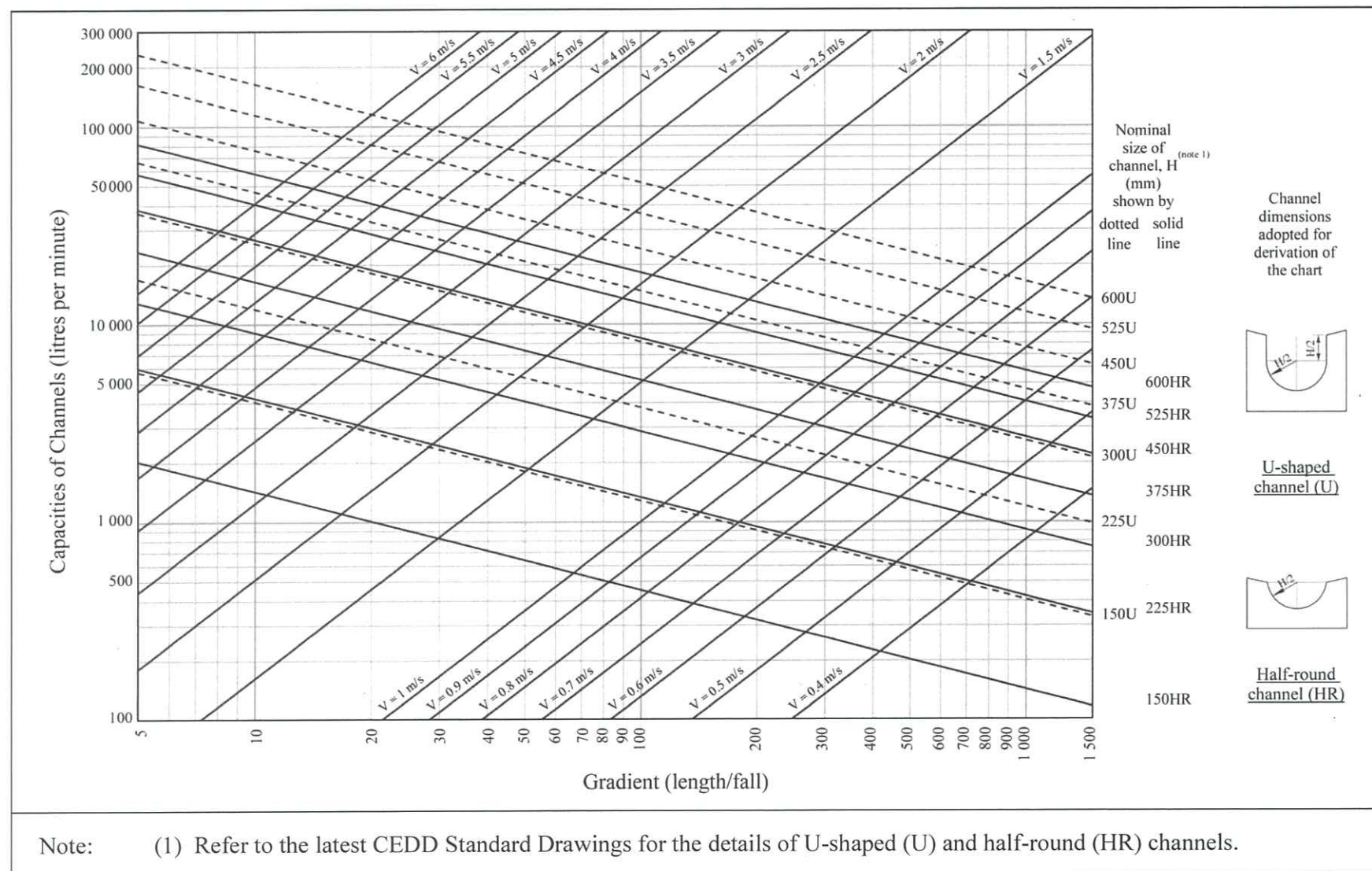
<b>Site (Lot 241)</b>	<b>CL</b>	<b>IL</b>	<b>depth</b>
A	3.65	3.525	0.125
B	3.7	3.488	0.212
C	3.6	3.427	0.173
D	3.5	3.366	0.134
E	3.45	3.268	0.182
F	3.6	3.297	0.303

<b>Site (Lot 241)</b>	<b>Distance</b>	<b>Starting Height</b>	<b>Slope</b>	<b>End Height</b>	<b>U Channel</b>
A to B	7.18	<b>3.525</b>	200	3.488	175
B to C	12.20	3.488	200	3.427	175
C to D	12.20	3.427	200	3.366	175
D to E	13.80	3.366	200	3.297	175
A to F	5.80	3.297	200	3.268	175
E to F	20.60	3.268	200	3.297	175



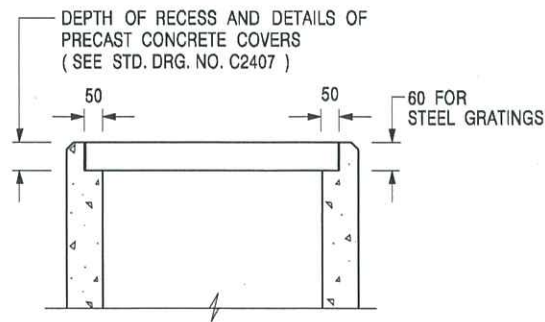






**Figure 7.1 Chart for the Rapid Design of U-shaped and Half-round Channels up to 600 mm**






**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.

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

-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p><b>CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT</b></p> </div> <div style="text-align: center;"> <p><b>SCALE</b> 1 : 20</p> <p><b>DATE</b> JAN 1991</p> </div> <div style="text-align: center;"> <p><b>DRAWING NO.</b></p> <p><b>C2406 /2</b></p> </div> </div>			



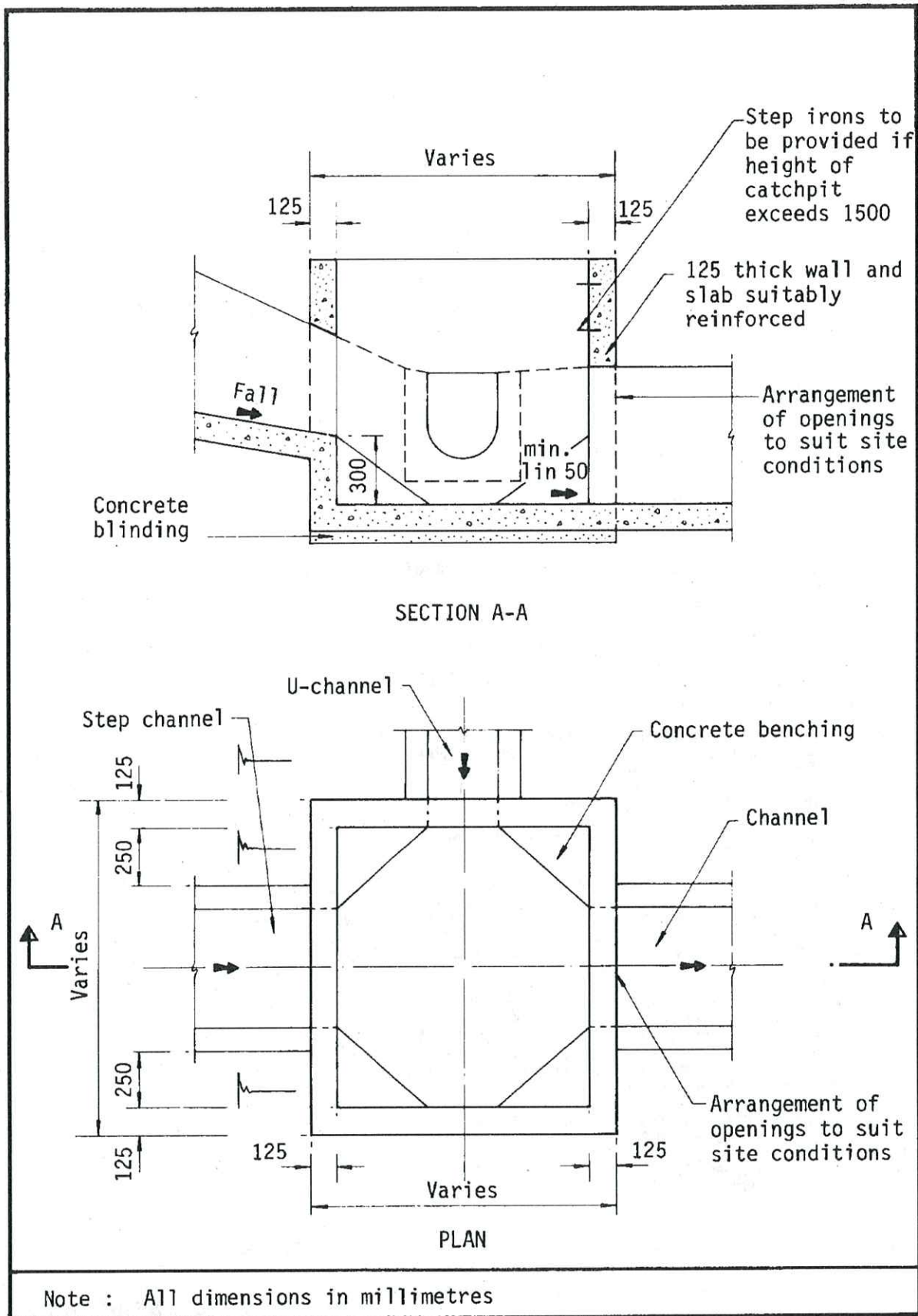
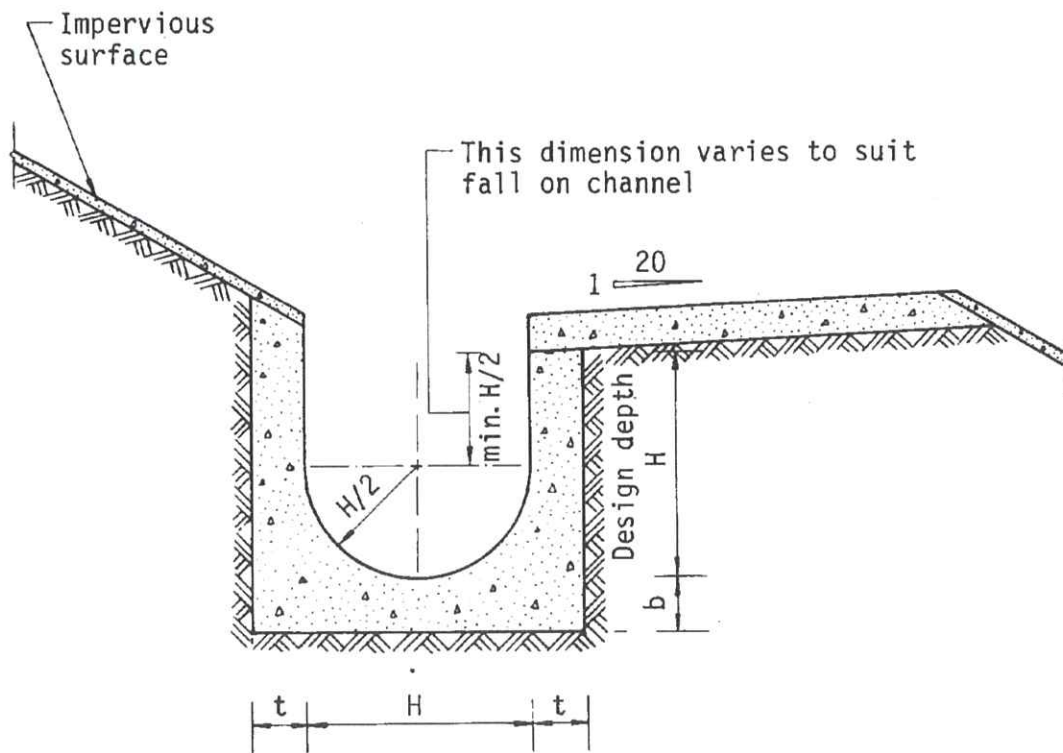


Figure 8.10 - Typical Details of Catchpits



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