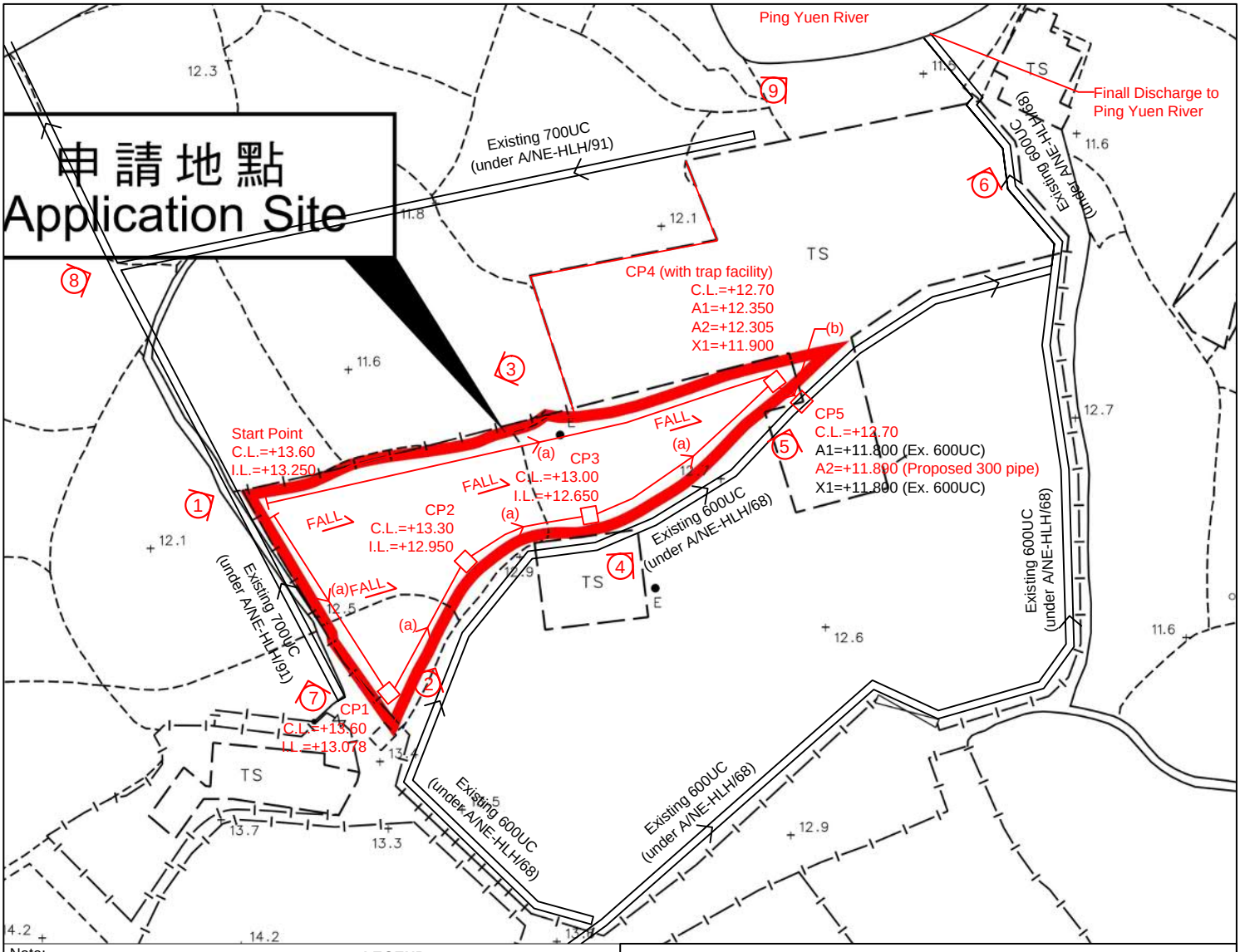
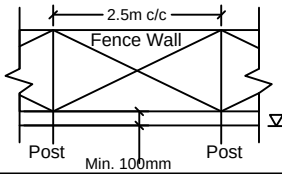



Note:

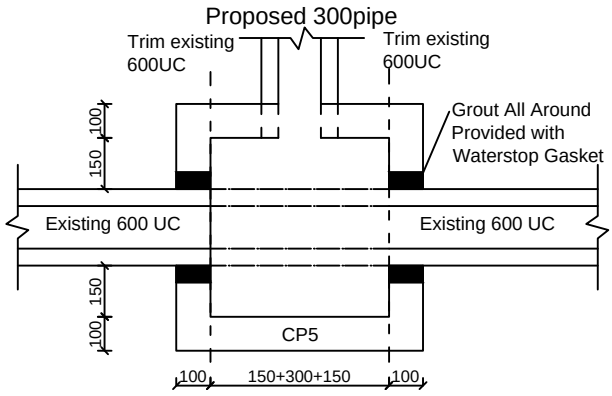
1. Catchpits (CP4) with trap facility shall follow CEDD standard drawing No. C2406I.
2. Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
3. Fence Wall to be erected (if any) shall be Open-bottom type.
4. No site formation/levelling works to be carried out..

**LEGEND**

- Existing Drains (size as shown)
- CP — Proposed CatchPit
- (a) — Proposed 300UC (1:150) with Cast Iron Cover
- (b) — Proposed 300mm dia. concrete pipe (1:100)
- (1) — Photo Viewport




TYPICAL DETAIL OF OPEN-BOTTOM TYPE FENCE WALL




CONNECTION DETAILS

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Title: Drainage Proposal - LAYOUT

D01

Drawn by: DM

Date: 15-10-2026

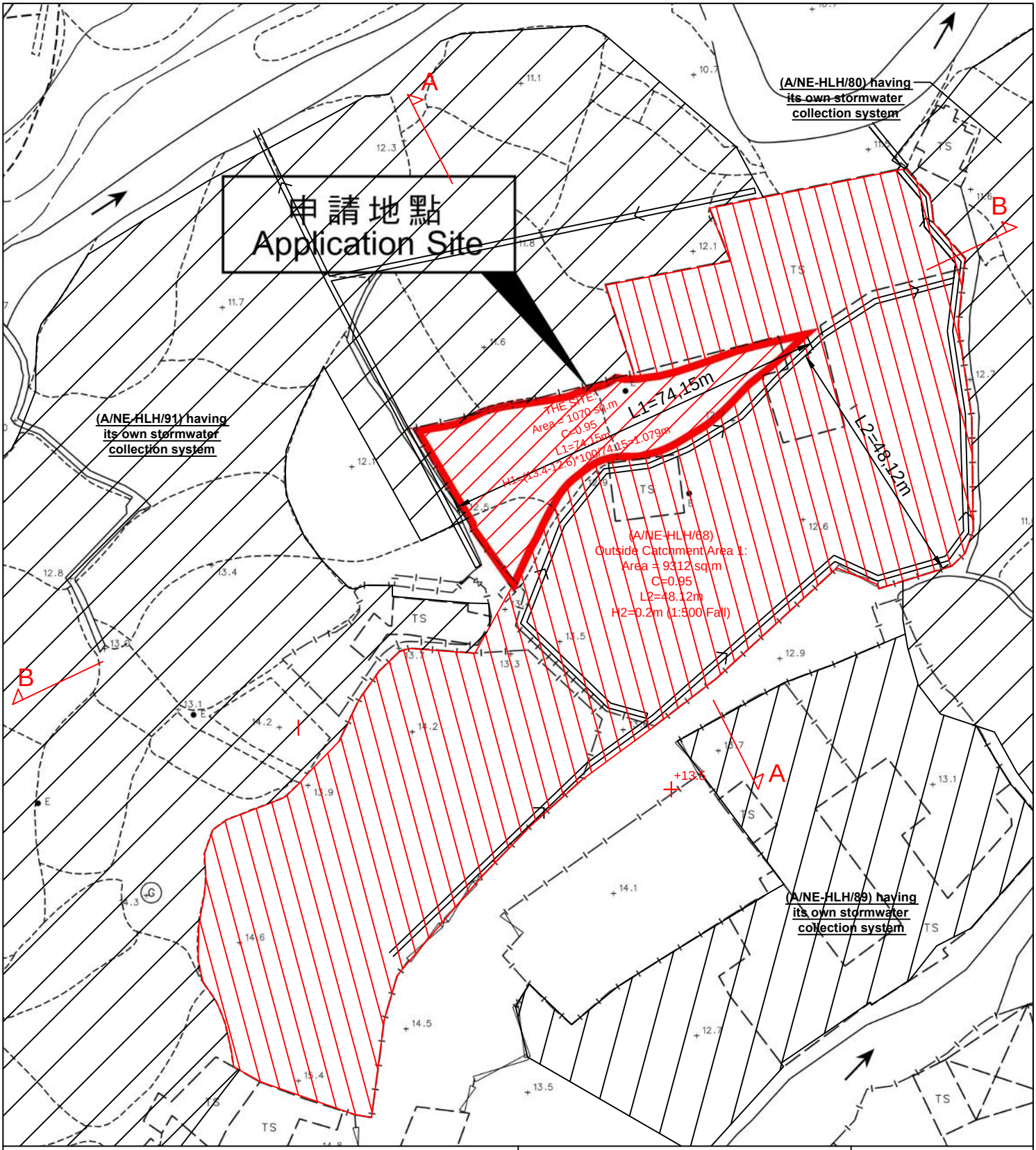
Check by: DM

Scale: ----

Project:

**Proposed Temporary Open Storage of Construction Machinery and Construction Materials for a Period of 3 Years atLot 160 (Part) in D.D. 87, Hung Lung Hang, New Territories**

**(Application Number:A/NE-HLH/66)**




# 正宏工程顧問公司

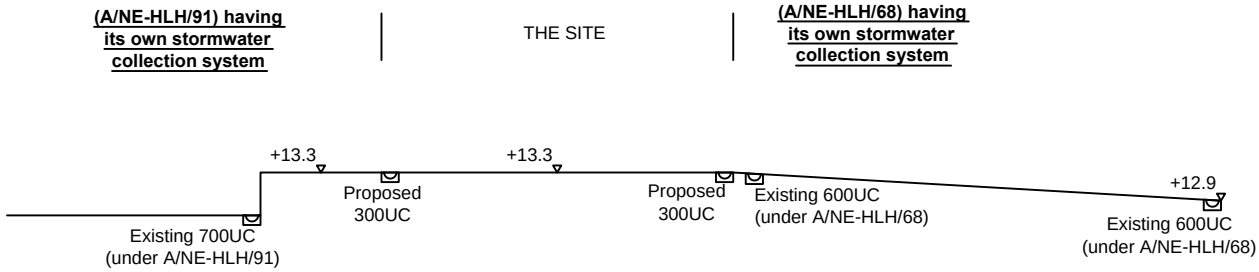
CHING WAN ENGINEERING CONSULTANT COMPANY

| | | |
|---|---|---|
| Title: Drainage Proposal - CATCHEMTN AREA PLAN | | D02 |
| Drawn by: DM | Date: 4–8–2026 | |
| Check by: DM | Scale: ———— | |

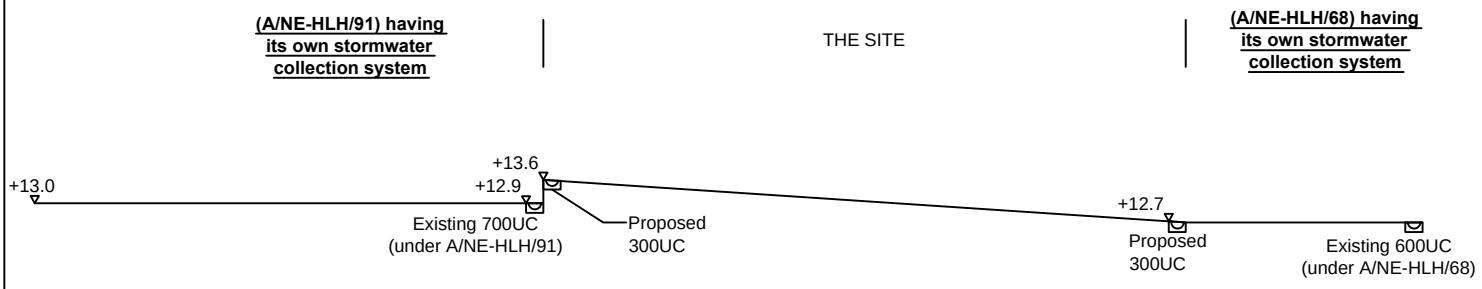
Project:

**Proposed Temporary Open Storage of Construction Machinery and Construction Materials for a Period of 3 Years atLot 160 (Part) in D.D. 87, Hung Lung Hang, New Territories**

**(Application Number:A/NE-HLH/66)**




SECTION A-A




SECTION B-B

| | | |
|---|---|---|
| 正宏工程顧問公司<br>CHING WAN ENGINEERING CONSULTANT COMPANY | Title:<br>Drainage Proposal - SECTIONS | D03 |
| | Drawn by:<br>DM | Date:<br>4–8–2026 |
| Project:<br>**Proposed Temporary Open Storage of Construction Machinery and Construction Materials for a Period of 3 Years atLot 160 (Part) in D.D. 87, Hung Lung Hang, New Territories**<br><br>**(Application Number:A/NE-HLH/66)** | Check by:<br>DM | Scale:<br>———— |

**Photo 1**



**Photo 2**

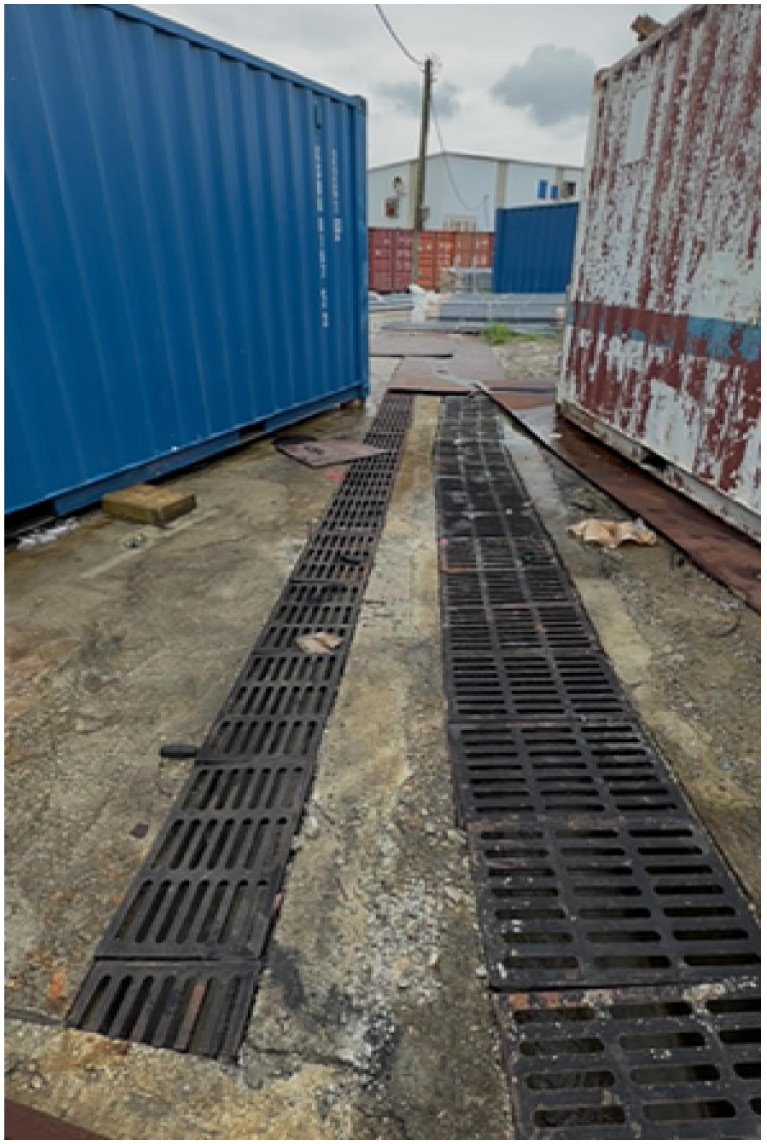


**Photo 3**



**Photo 4**



**Photo 5**



**Photo 6**

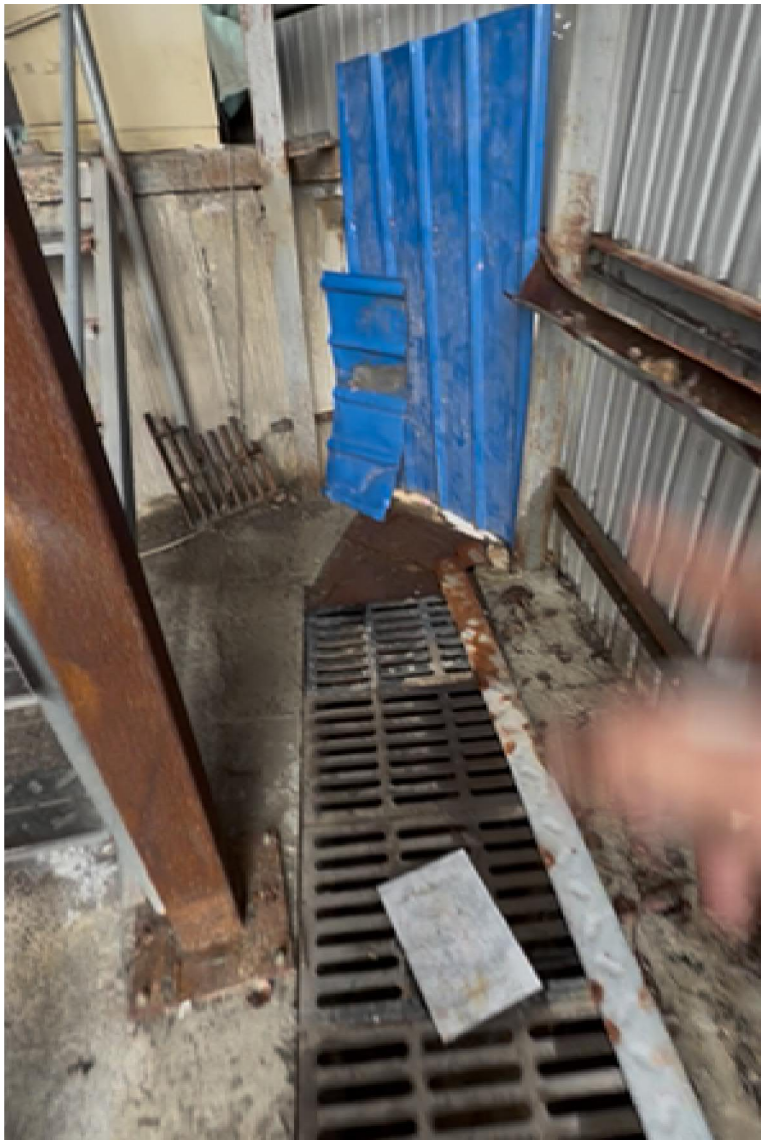


**Photo 7**



**Photo 8**



## Photo 9



The Site, Area = 1070 $m^2$ (C= 0.95 ) L1= 74.15 m

Outside Catchment Area 1, Area = 9312 $m^2$ (C= 0.95 ) L2= 48.12 m

**Design Runoff from The Site**

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

A = 1070 $m^2$
= 1070
= 0.00107 $km^2$

t = $0.14465\ L1/\ H1^{0.2}A^{0.1}$ H1=(13.4-12.6)*100/74.15= 1.079 m
= $0.14465*74.15/1.079^{0.2}*1070^{0.1}$
= 5.259 min

i = $1.16*a/(t+b)^{c}$ (50 yrs return period, Table 3d, Corrigendum
= $1.16*474.6/(5.259+2.90)^{0.371}$ 2024, SDM) and (16% increase due to climate
= 251.7 mm/hr

Therefore, Q1 = 0.278*0.95*251.7*0.00107 (0.9 factor for sediment)
= **0.0711** $m^3/sec$

**Design Runoff from Outside Catchment Area 1**

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

A = 9312 $m^2$
= 9312
= 0.009312 $km^2$

t = $0.14465\ L2/\ H2^{0.2}A^{0.1}$
= $0.14465*48.12/0.2^{0.2}*9312^{0.1}$
= 3.851 min

i = $1.16*a/(t+b)^{c}$ (50 yrs return period, Table 3d, Corrigendum
= $1.16*474.6/(3.851+2.90)^{0.371}$ 2024, SDM) and (16% increase due to climate
= 269.8 mm/hr

Therefore, Q2 = 0.278*0.95*269.8*0.009312 (0.9 factor for sediment)
= **0.6634** $m^3/sec$

**Check Proposed 300UC by Manning Equation**

Design Q = **Q1**
= **0.0711** $m^3/sec$

V = $R^{2/3}*S_f^{0.5}/n$

where R = $(\pi r^2/2+2r^2)/(\pi r+2r)$ r= 0.15 m
= 0.1042 m A= 0.0803 $m^2$

n = 0.014 $s/m^{1/3}$ (Talbe 13 of Stormwater Drainage Manual)

$S_f$ = 0.01 (1: 150 )

Therefore, V = $0.1042^{2/3}*0.01^{0.5}/0.014$
= 1.291 m/sec

Maximum Capacity (Qmax) = V*A
= **0.1037**
> **0.0711**
% Utilization = **68.6%** **(<90% Section 9.3 SDM2018, OK)**

**Check Proposed 300mm 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/s2 | gravitational acceleration (m/s2) |
| D | = | 0.3 | m | internal pipe diameter (m) |
| ks | = | 0.00006 | m | hydraulic pipeline roughness (m) (Table14, from DSD SDM 2018, concrete pipe) |
| v | = | 1.14E-06 | m2/s | kinematic viscosity of fluid (m2/s) |
| s | = | 0.01000 | | hydraulic gradient (1: 100 ) |

Therefore, design V of pipe capacity = 1.96 m/s

Q = VA (0.8 factor for sedimentation)
= **0.1382** m3/s
> **0.0711** lit/min Ok
% Utilization = **51.5%** **(<90% Section 9.3 SDM2018, OK)**

**Provide 300UC (1:150) and 300mm dia. concrete pipe (1:100) is OK**

**Check Existing 600UC by Manning Equation**

Design Q = **Q1+Q2**
= **0.7345** $m^3/sec$

V = $R^{2/3}*S_f^{0.5}/n$

where R = $(\pi r^2/2+2r^2)/(\pi r+2r)$ r= 0.3 m
= 0.2083 m A= 0.3214 $m^2$

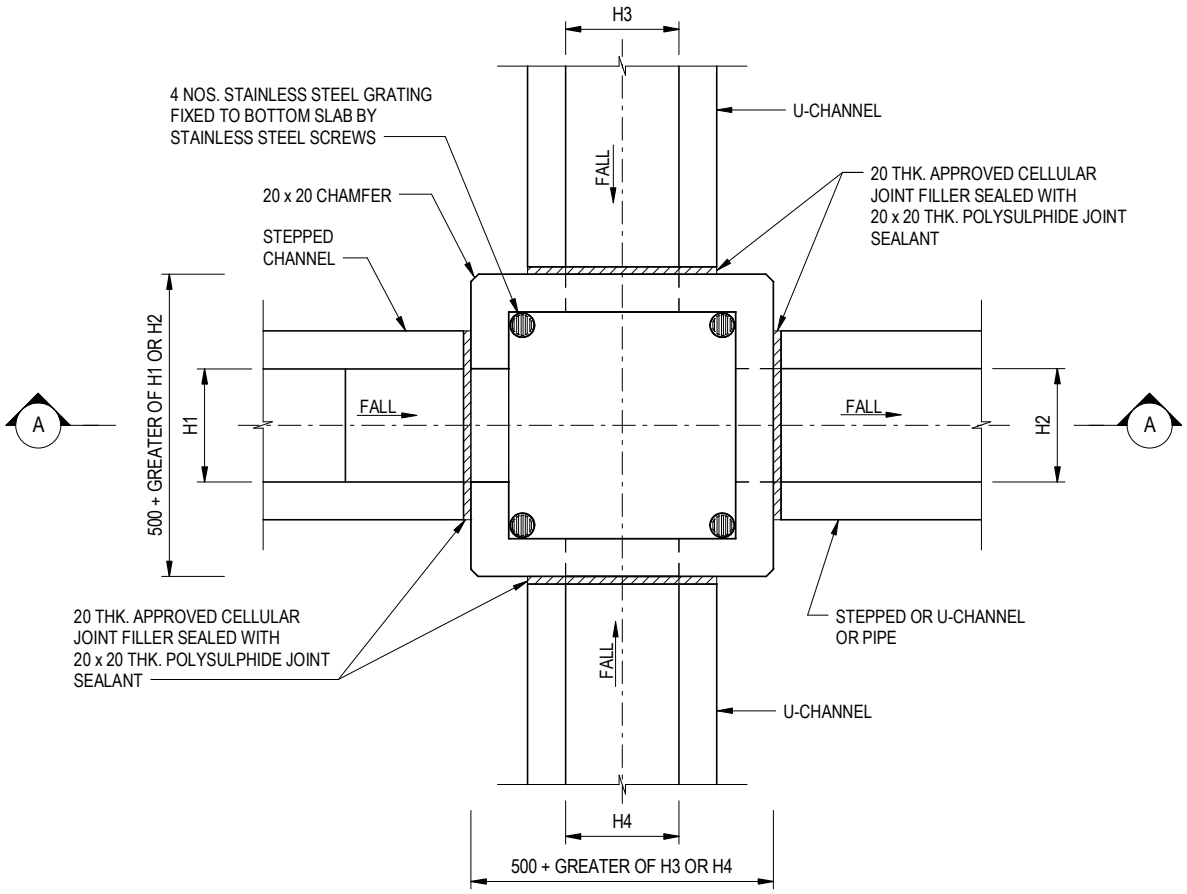
n = 0.014 $s/m^{1/3}$ (Talbe 13 of Stormwater Drainage Manual)

$S_f$ = 0.0133 (1: 75 )

Therefore, V = $0.2083^{2/3}*0.0133^{0.5}/0.014$
= 2.899 m/sec

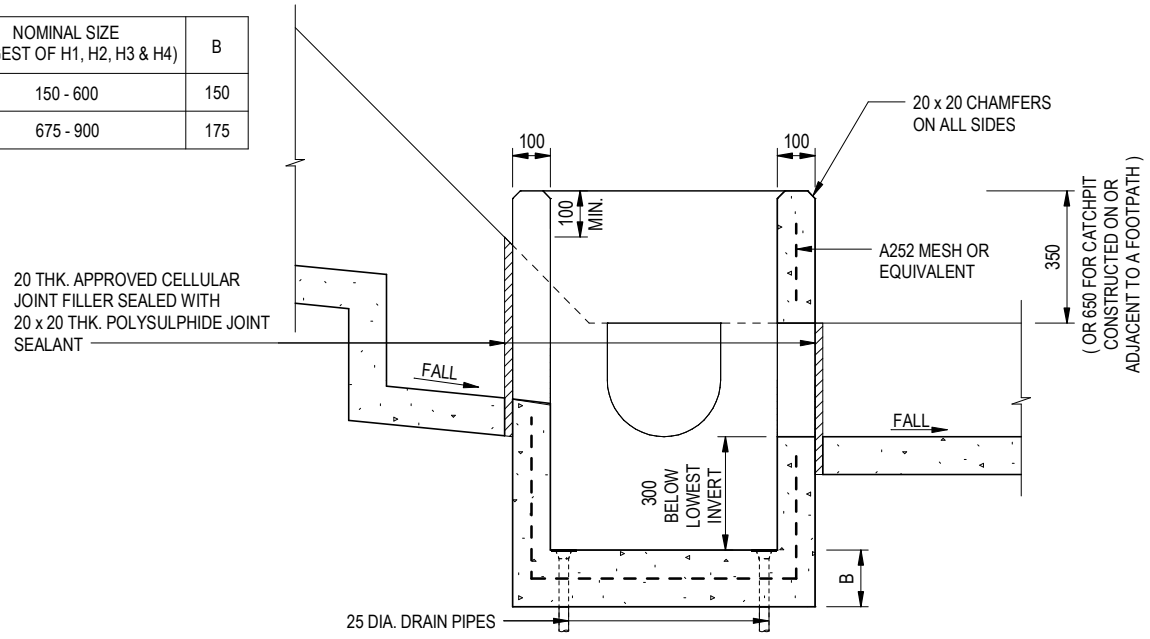
Maximum Capacity (Qmax) = V*A
= **0.9316** $m^3/sec$
> **0.7345** $m^3/sec$
% Utilization = **78.8%** **(<90% Section 9.3 SDM2018, OK)**

**Existing 600UC (1:75) is OK**




PLAN

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




SECTION A - A

NOTES:

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

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

# CATCHPIT WITH TRAP (SHEET 1 OF 2)

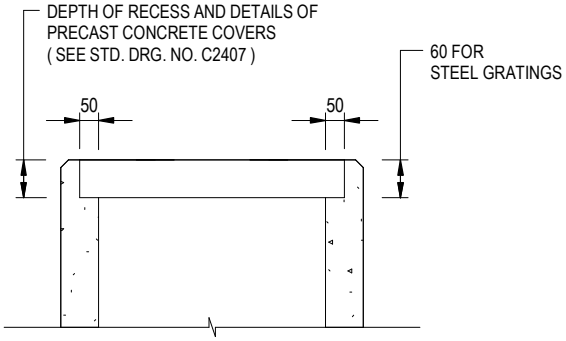
CEDD

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.

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

# CATCHPIT WITH TRAP
# (SHEET 2 OF 2)

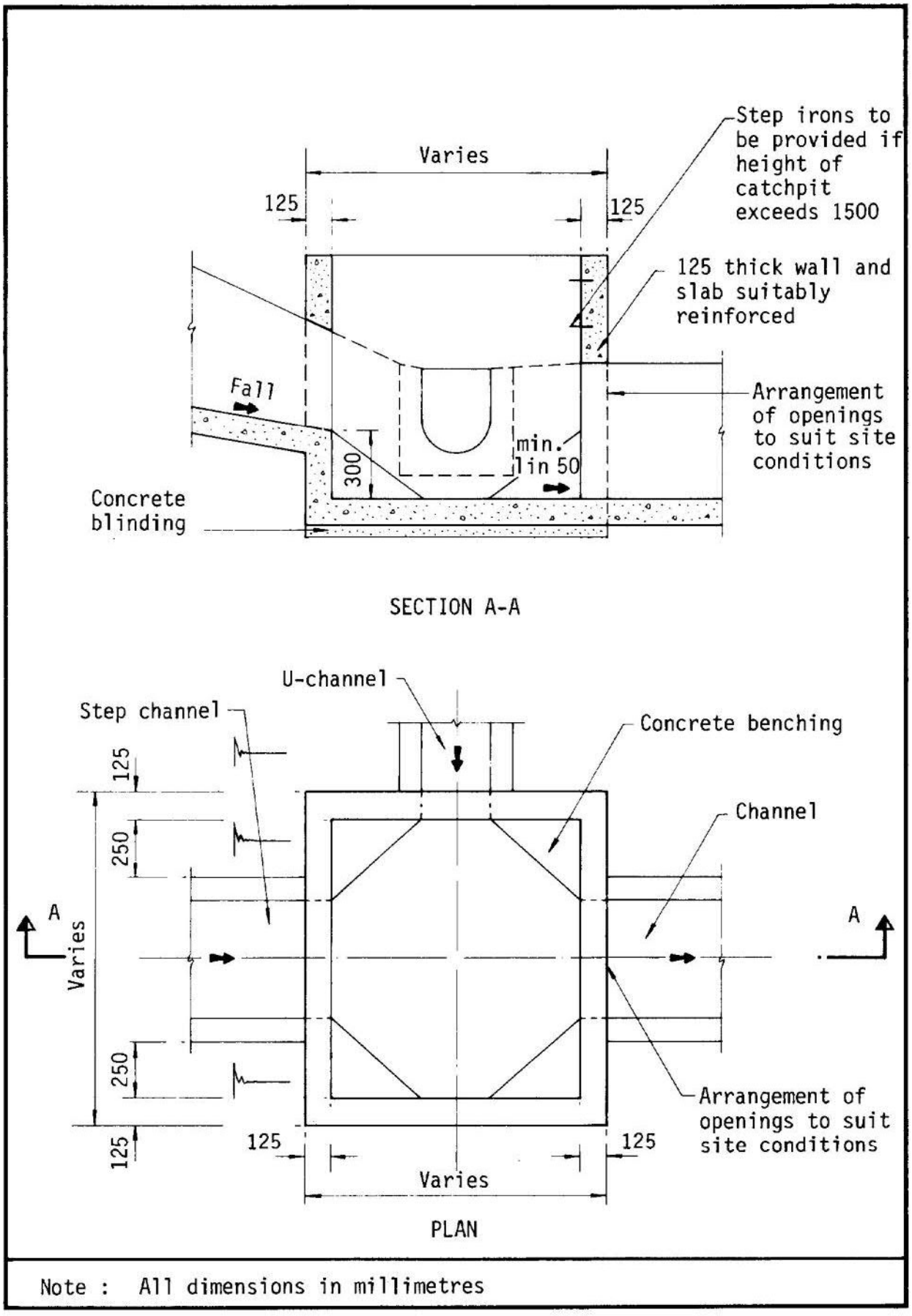
CEDD

**CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

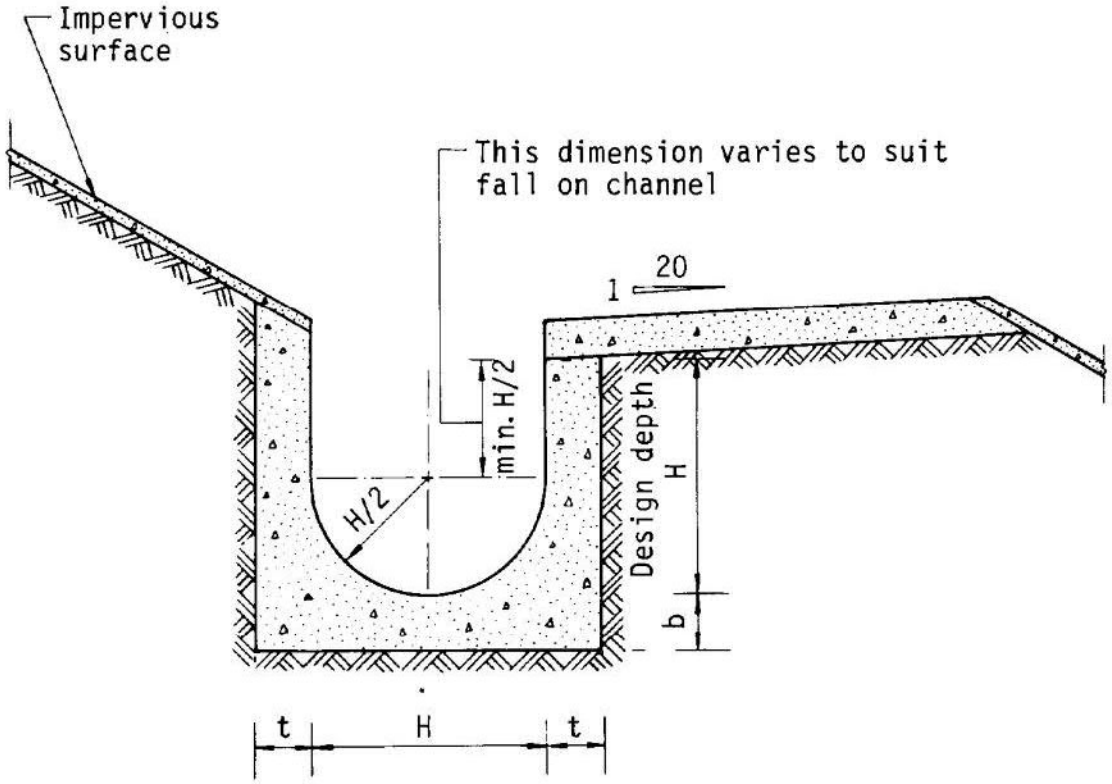
**DATE** JAN 1991

**DRAWING NO.**
C2406 /2B




Note : All dimensions in millimetres

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