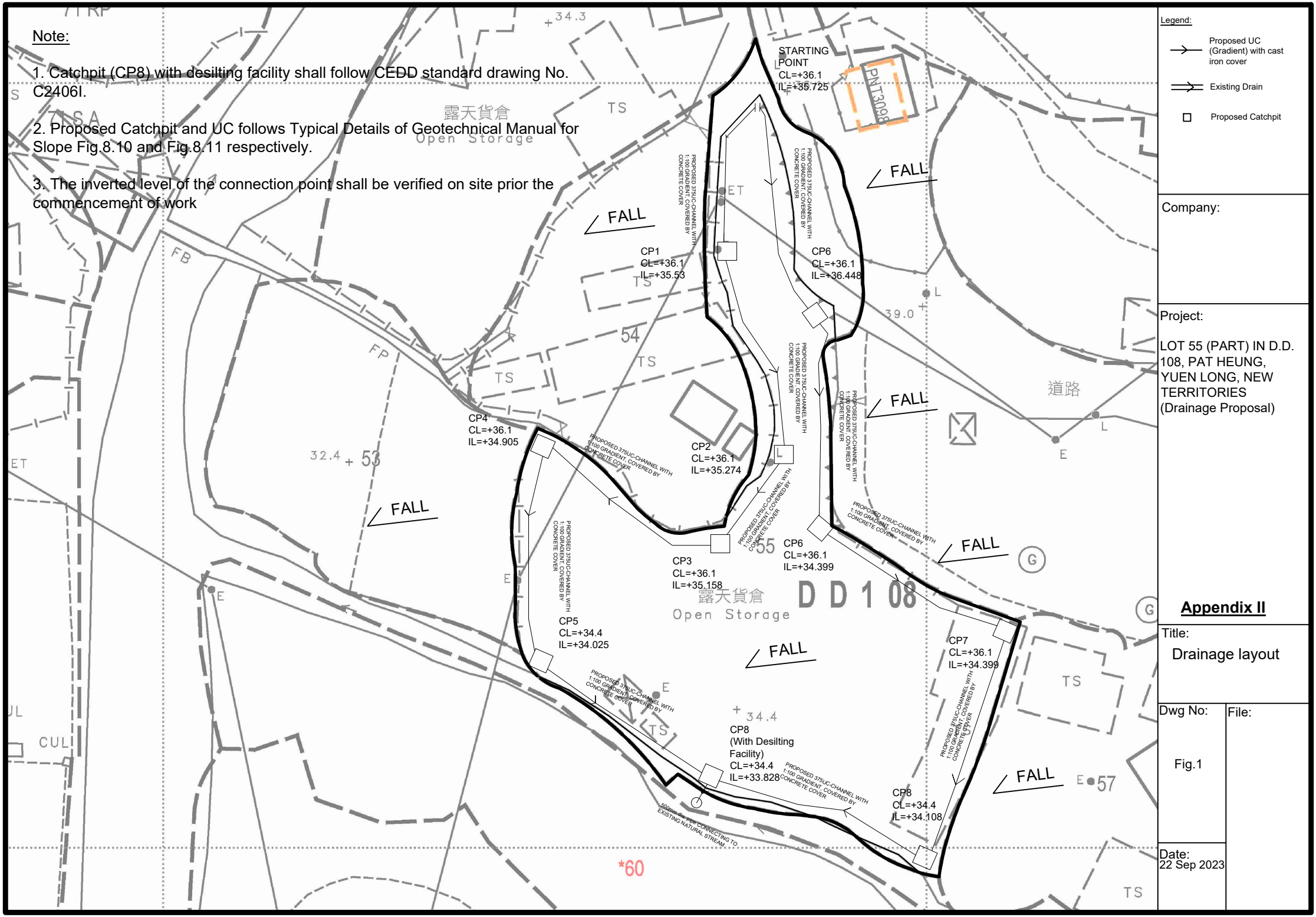
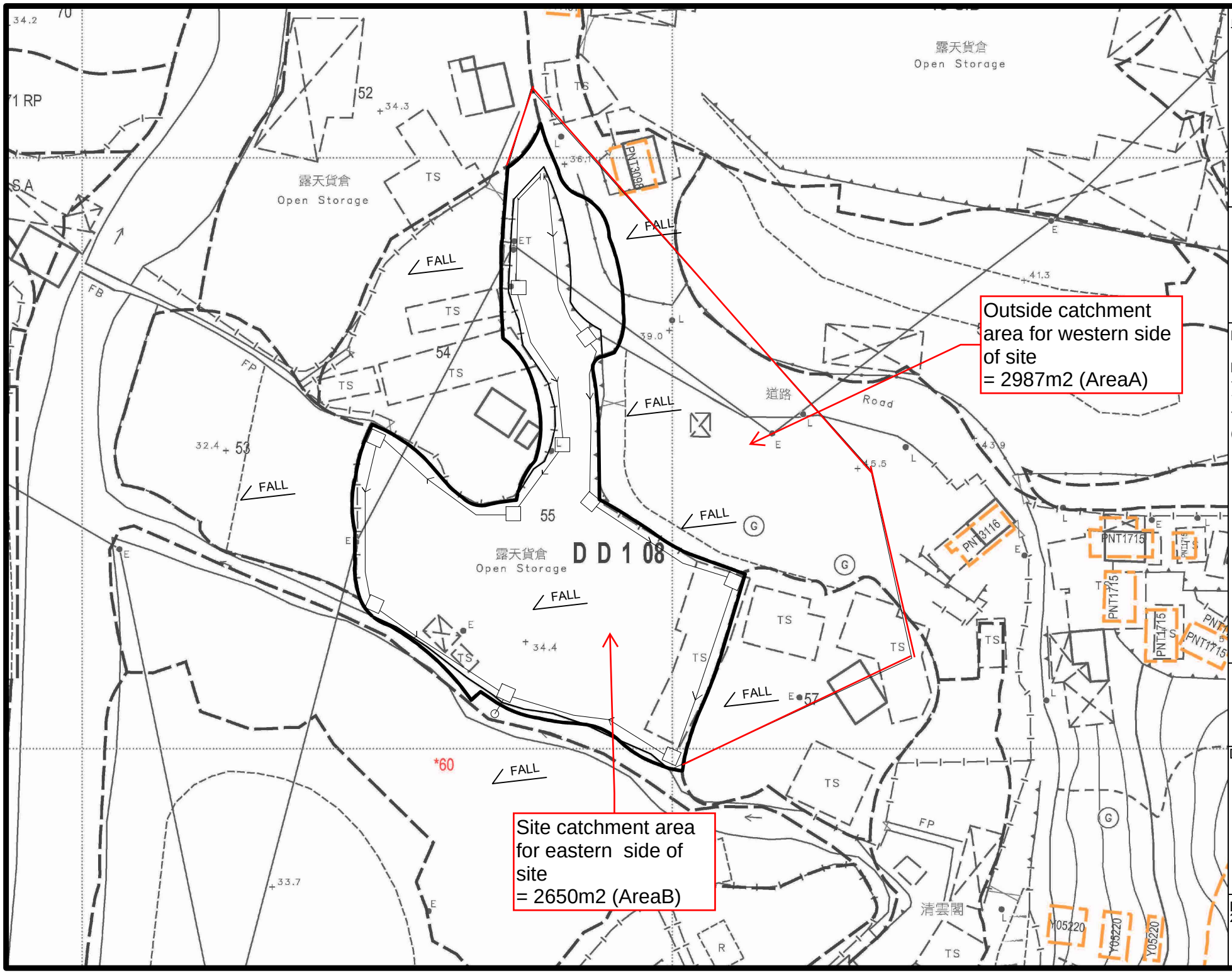

Note:
1. Catchpit (CP8) with desilting facility shall follow CEDD standard drawing No. C2406I.
2. Proposed Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
3. The inverted level of the connection point shall be verified on site prior the commencement of work
STARTING POINT
CL=+36.1
IL=+35.725
CP1
CL=+36.1
IL=+35.53
CP2
CL=+36.1
IL=+35.274
CP3
CL=+36.1
IL=+35.158
CP4
CL=+36.1
IL=+34.905
CP5
CL=+34.4
IL=+34.025
CP6
CL=+36.1
IL=+36.448
CP6
CL=+36.1
IL=+34.399
CP7
CL=+36.1
IL=+34.399
CP8
(With Desilting Facility)
CL=+34.4
IL=+33.828
CP8
CL=+34.4
IL=+34.108
PROPOSED 375UC-CHANNEL WITH 1:100 GRADIENT, COVERED BY CONCRETE COVER
500mm dia. PIPE CONNECTING TO EXISTING NATURAL STREAM
FALL
露天貨倉
Open Storage
道路
DD 108
Legend:
Proposed UC (Gradient) with cast iron cover
Existing Drain
Proposed Catchpit
Company:
Project:
LOT 55 (PART) IN D.D. 108, PAT HEUNG, YUEN LONG, NEW TERRITORIES (Drainage Proposal)
Appendix II
Title:
Drainage layout
Dwg No:
Fig.1
File:
Date:
22 Sep 2023



Legend:

- Proposed UC (Gradient) with cast iron cover
- Existing Drain
- Proposed Catchpit

Company:

Project:

LOT 55 (PART) IN D.D. 108, PAT HEUNG, YUEN LONG, NEW TERRITORIES (Drainage Proposal)

Title:

Catchment Zone

Dwg No:

Fig.2

File:

Date:
22 Sep 2023

Company:
Project :

Date:

Calculation for channels:

Catchment Area of site

Area A	=	2987	m^2							
	=	0.002987	km^2							
Peak runoff in m^3/s	=	0.278	x	0.95	x	250	mm/hr	x	0.002987	km^2
	=	0.197217	m^3/s							
	=	11833	liter/min							
Area B	=	2650	m^2							
	=	0.00265	km^2							
Peak runoff in m^3/s	=	0.278	x	0.95	x	250	mm/hr	x	0.00265	km^2
	=	0.174966	m^3/s							
	=	10498	liter/min							

According to (Figure 8.7 - Chart for the Rapid Design of Channels),
For gradient 1:100, 375UC will be suitable for the site at the western site.
For gradient 1:100, 375UC will be suitable for the site at eastern side.

Total Peak Runoff of site area	=	0.372183	m^3/s
	=	22331	liter/min

Check 450mm dia. Pipe 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	=	0.45	m	internal pipe diameter (m)
ks	=	0.000003	m	hydraulic pipeline roughness (m) (Table 5, from DSD Sewerage Manual, uPVC)
v	=	1.14E-06	m2/s	kinematic viscosity of fluid (m2/s)
s	=	0.01		hydraulic gradient

Therefore, design V of pipe capacity	=	2.7541	m/s	>	Design velocity from catchment area	= 0.372183 = 2.340138	m3 / m/s	0.45^2 * pi/4 **==>O.K.**

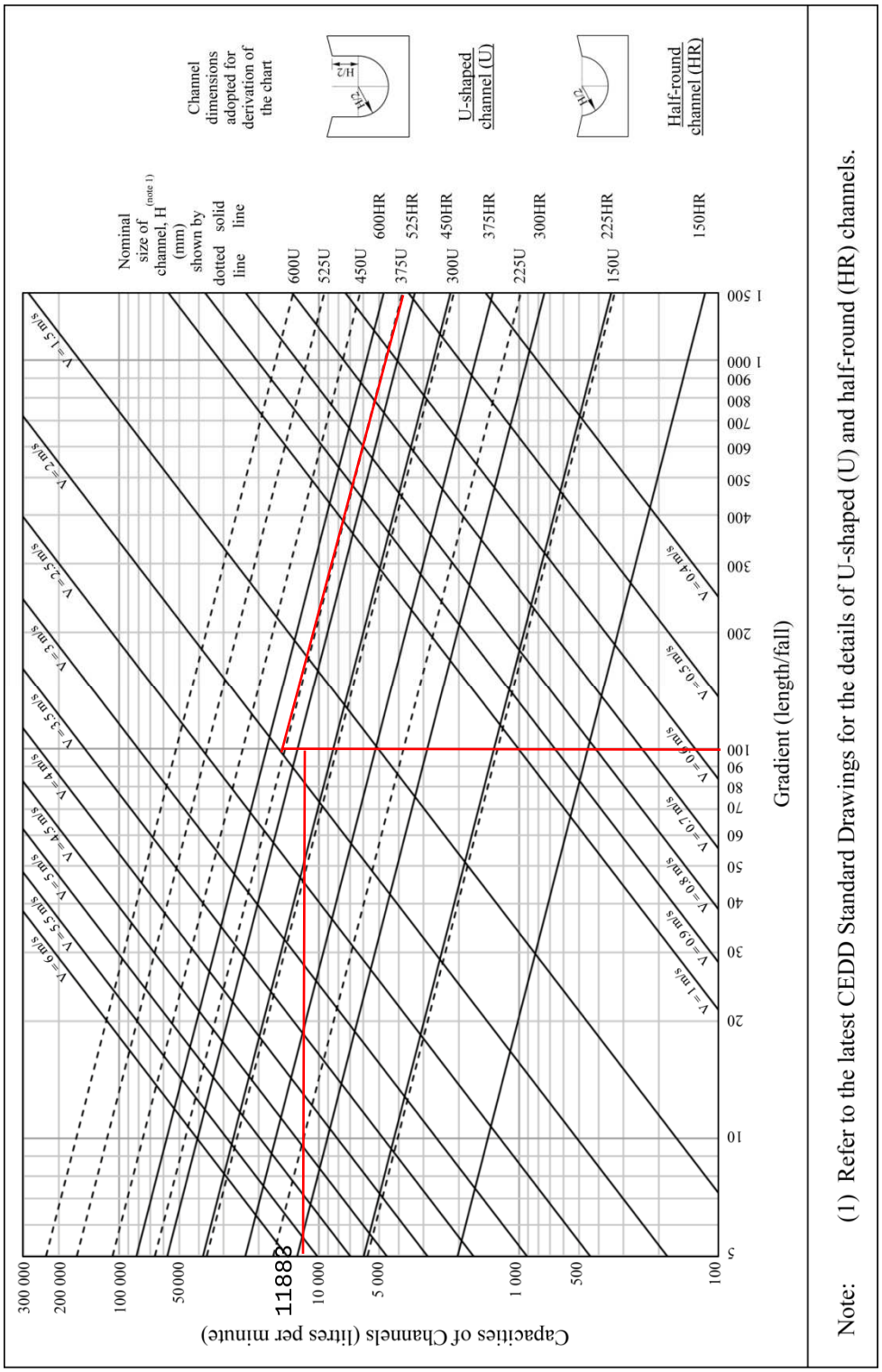
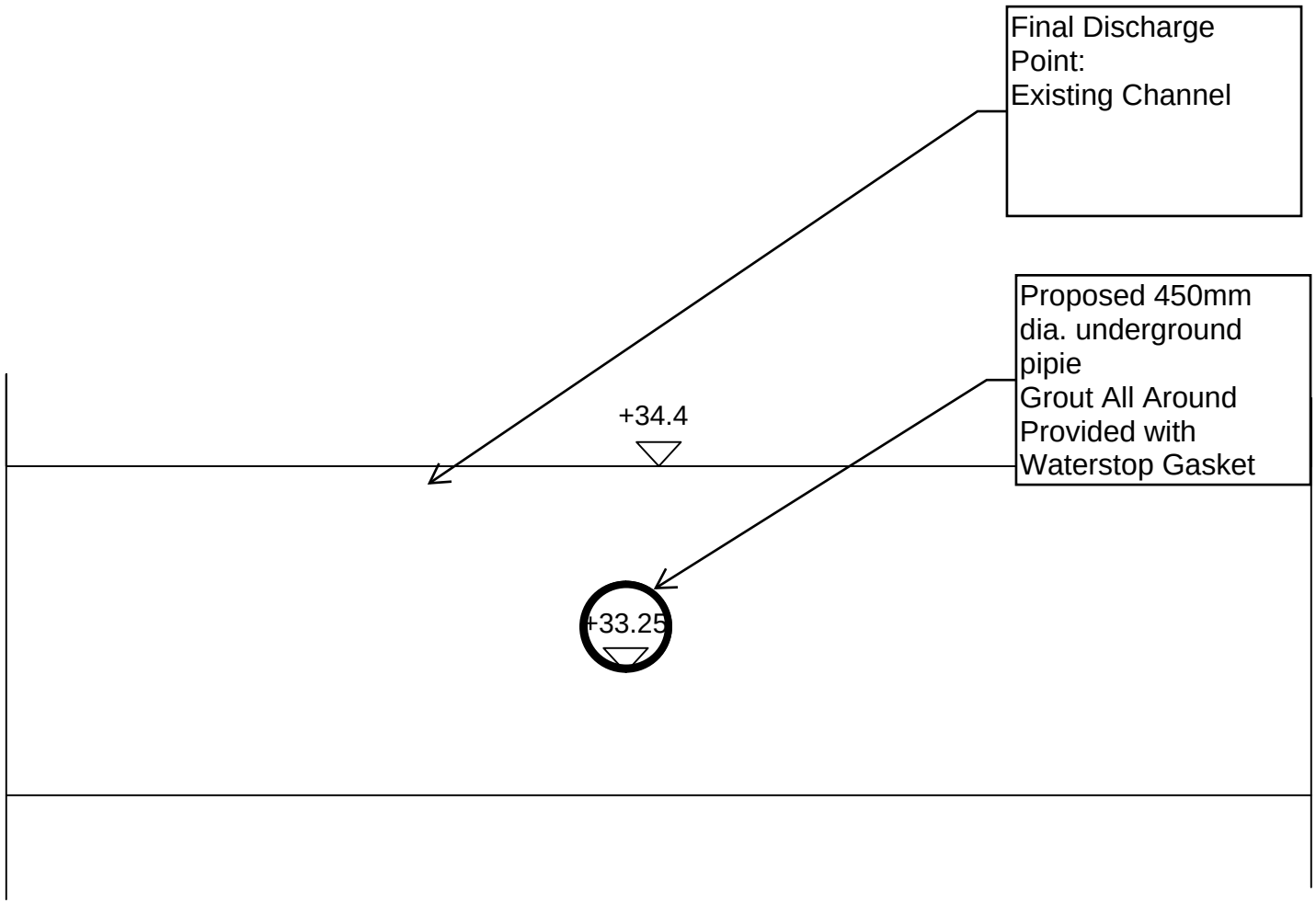
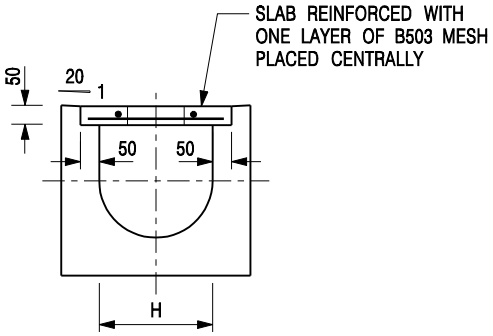


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

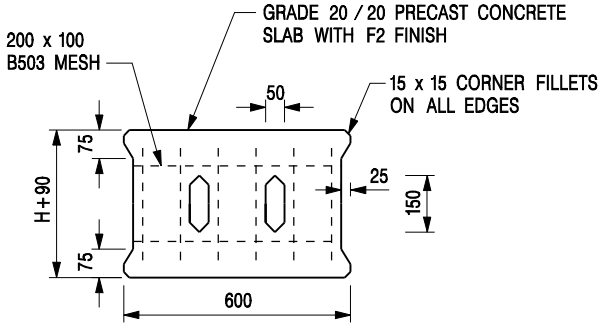
Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.



Connection Detail of Existing channel



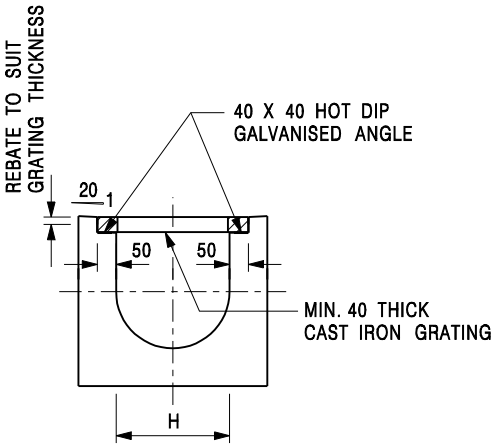
TYPICAL SECTION



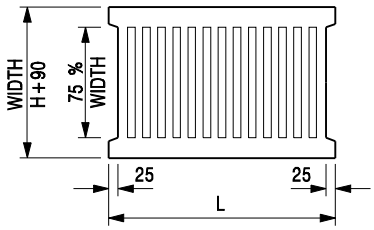
PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



L = 600mm FOR H ≤ 375mm
L = 400mm FOR H > 375mm

CAST IRON GRATING

(DIMENSIONS ARE FOR GUIDANCE ONLY, CONTRACTOR MAY SUBMIT EQUIVALENT TYPE)

U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. H = NOMINAL CHANNEL SIZE.
3. ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
4. FOR COVERED CHANNELS TO BE HANDED OVER TO HIGHWAYS DEPARTMENT FOR MAINTENANCE, THE GRATING DETAILS SHALL FOLLOW THOSE AS SHOWN ON HyD STD. DRG. NO. H3156.

REF.	REVISION	SIGNATURE	DATE
E	NOTES 3 & 4 AMENDED.	Original Signed	12.2014
D	NOTE 4 ADDED.	Original Signed	06.2008
C	MINOR AMENDMENT. NOTE 3 ADDED.	Original Signed	12.2005
B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	CAST IRON GRATING AMENDED.	Original Signed	12.2002

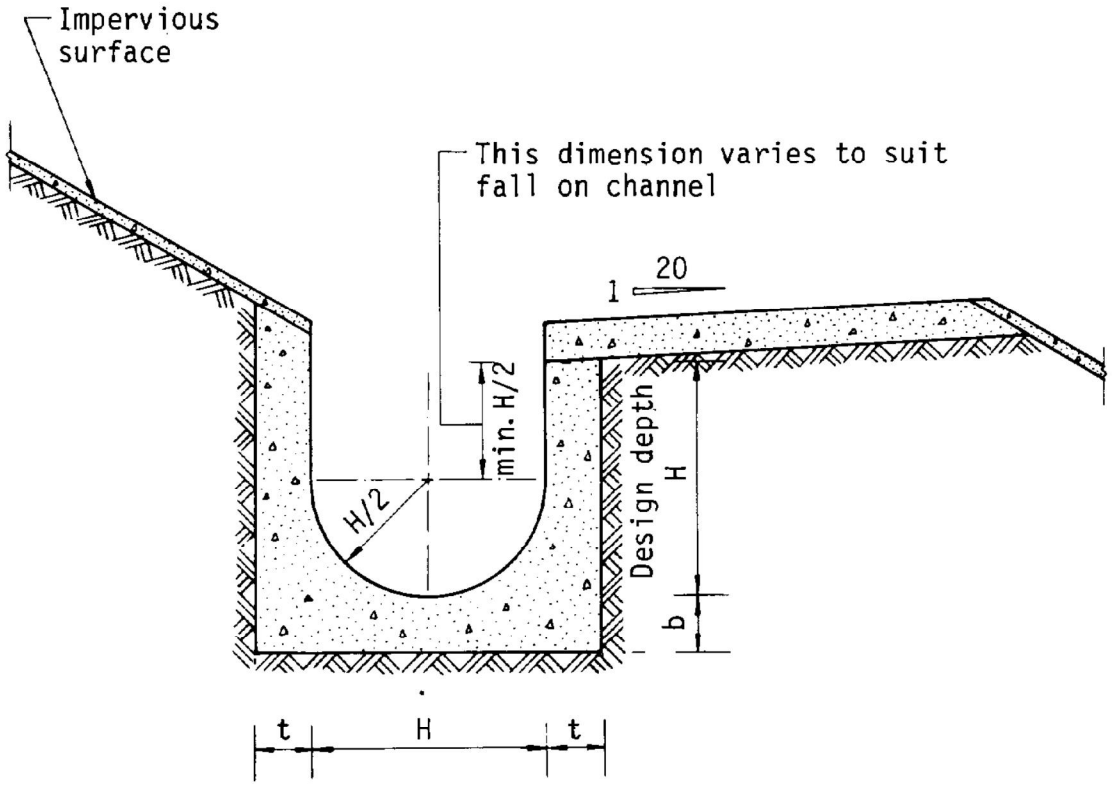
COVER SLAB AND CAST IRON GRATING FOR CHANNELS

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

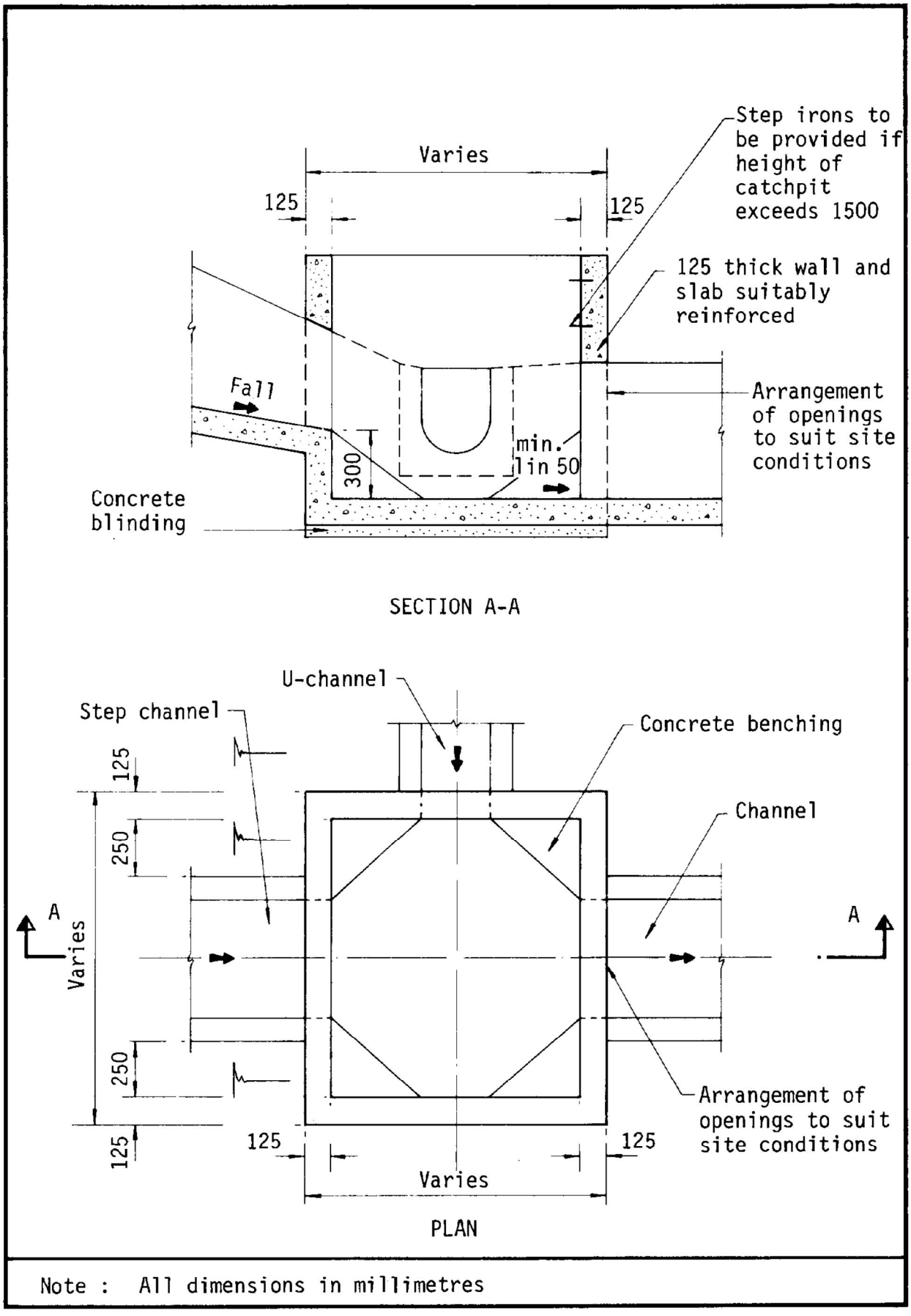
DATE JAN 1991

DRAWING NO. C2412E



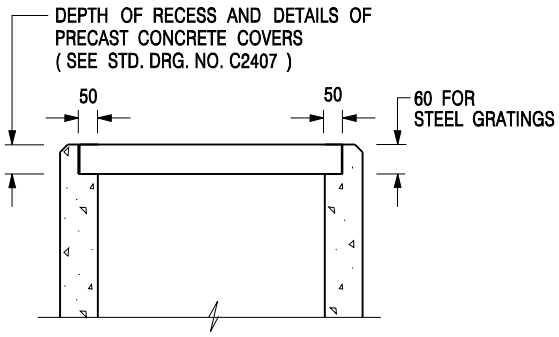
Dimensions of U - channel		
Nominal size of channel H (mm)	Thickness t (mm)	Thickness b (mm)
225 to 600	150	150
675 to 1200	175	225

Figure 8.11 - Typical U-channel Details



Note : All dimensions in millimetres

Figure 8.10 - Typical Details of Catchpits



ALTERNATIVE TOP SECTION
FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

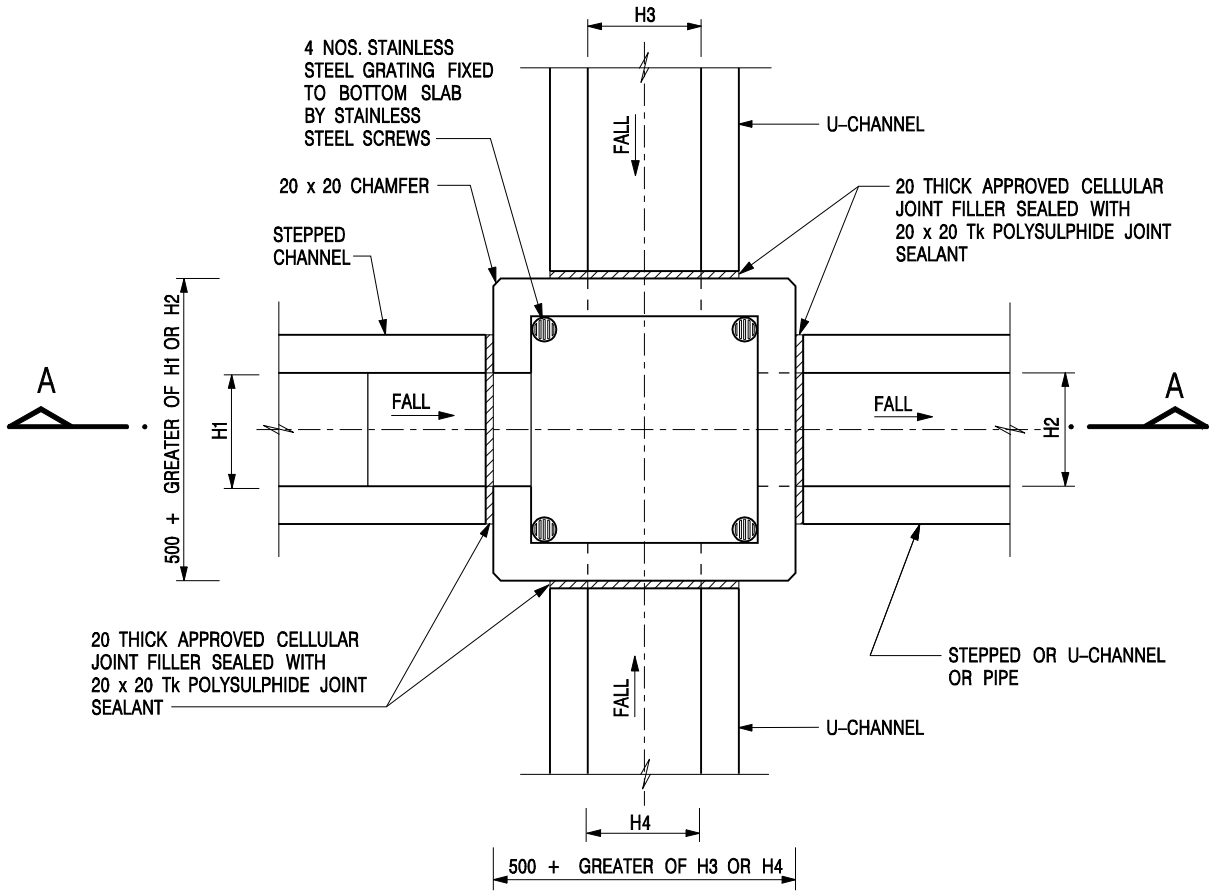
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED 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.

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2406J.	Original Signed	03.2015

CATCHPIT WITH TRAP
(SHEET 2 OF 2)

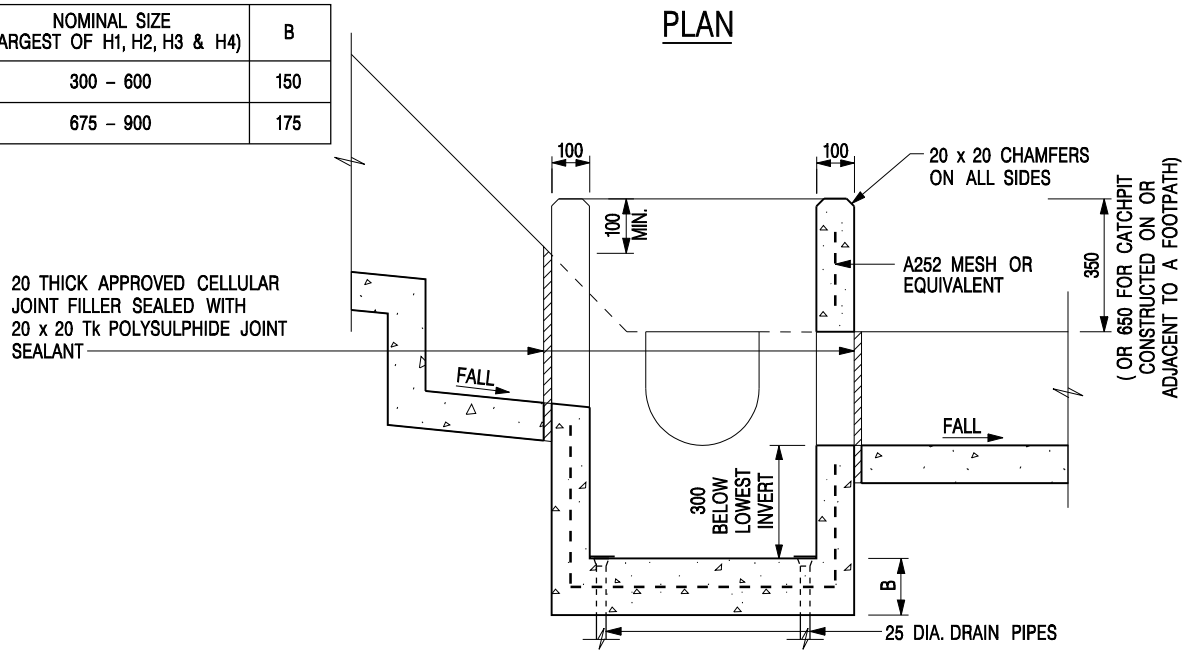
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20	DRAWING NO. C2406 /2
DATE JAN 1991	



PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 – 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
–	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 /1