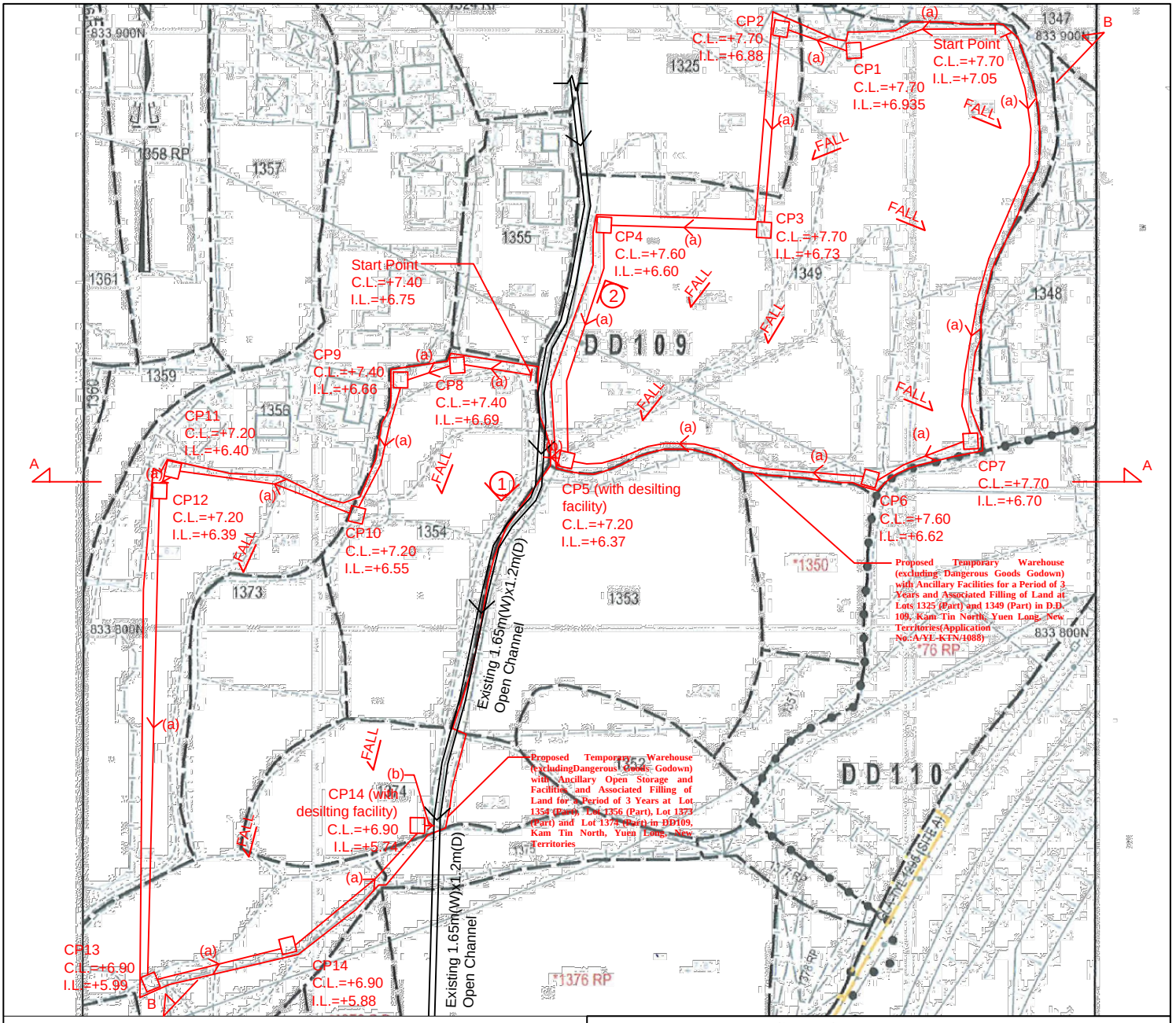
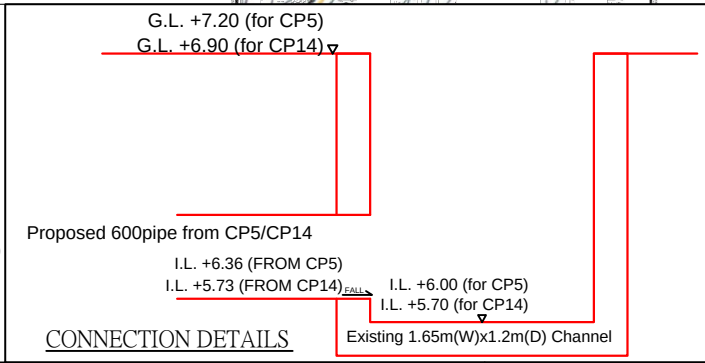


Note:

1. Catchpits (CP5 & CP14) with desilting 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. Open-bottom type fence wall to be erected.
4. There is no site formation works. Filling works to be carried out to leveling the site.

LEGEND

CP	Proposed CatchPit
(a)	Proposed 600UC (1:200) with Cast Iron Cover
(b)	Proposed 600mm dia. concrete pipe (1:100)
	Existing 1.65m(W)x1.2m(D) Open Channel
1	Photo Viewport



CONNECTION DETAILS

Project:

Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lots 1325 (Part) and 1349 (Part) in D.D. 109, Kam Tin North, Yuen Long, New Territories(Application No.:A/YL-KTN/1088)

&

Proposed Temporary Warehouse (excludingDangerous Goods Godown) with Ancillary Open Storage and Facilities and Associated Filling of Land for a Period of 3 Years at Lot 1354 (Part), Lot 1356 (Part), Lot 1373 (Part) and Lot 1374 (Part) in DD109, Kam Tin North, Yuen Long, New Territories

Title:

Drainage Proposal - LAYOUT

D01

Drawn by:

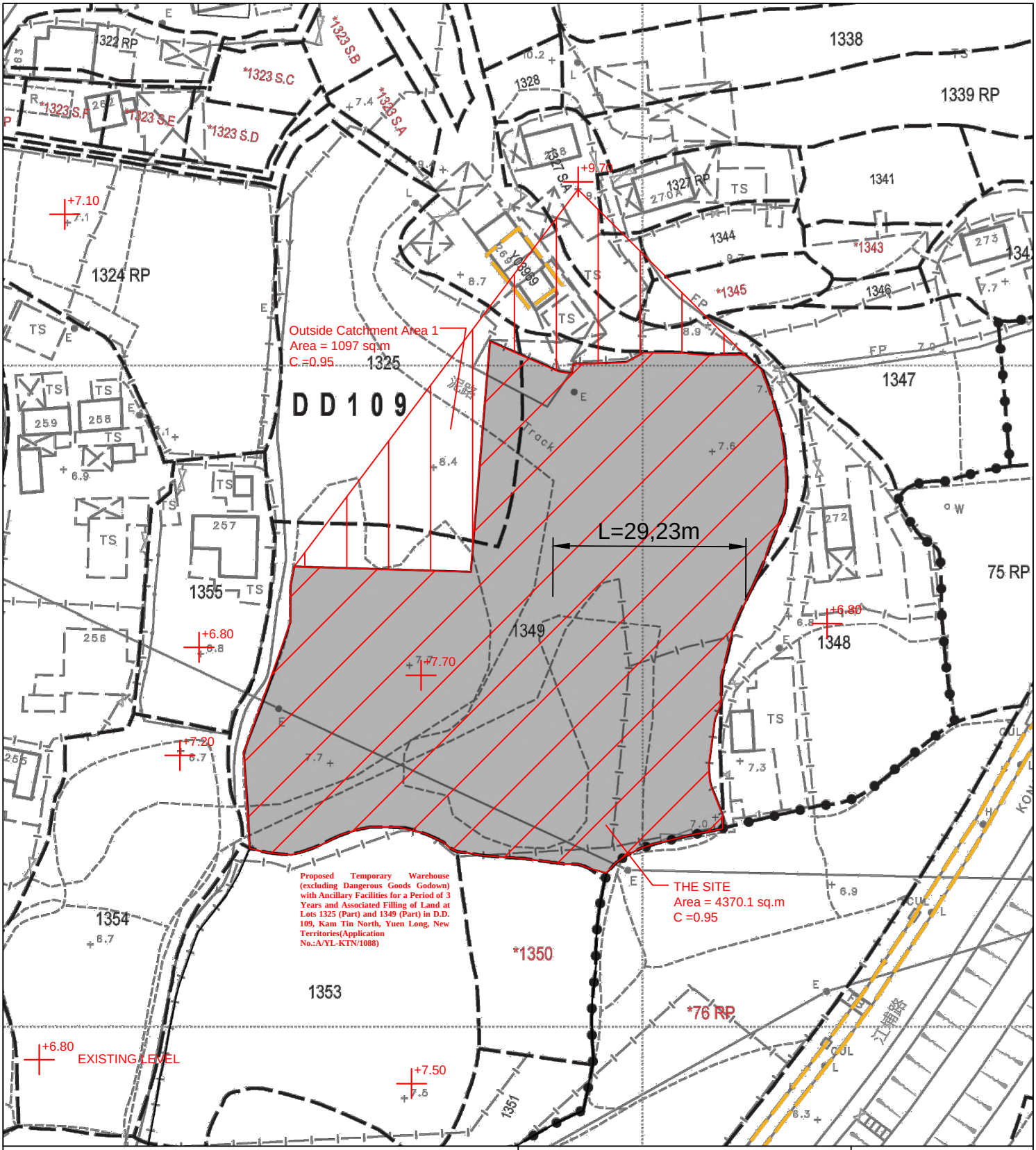
DM

Date:

28-4-2025

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY



Project:

Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lots 1325 (Part) and 1349 (Part) in D.D. 109, Kam Tin North, Yuen Long, New Territories(Application No.:A/YL-KTN/1088)

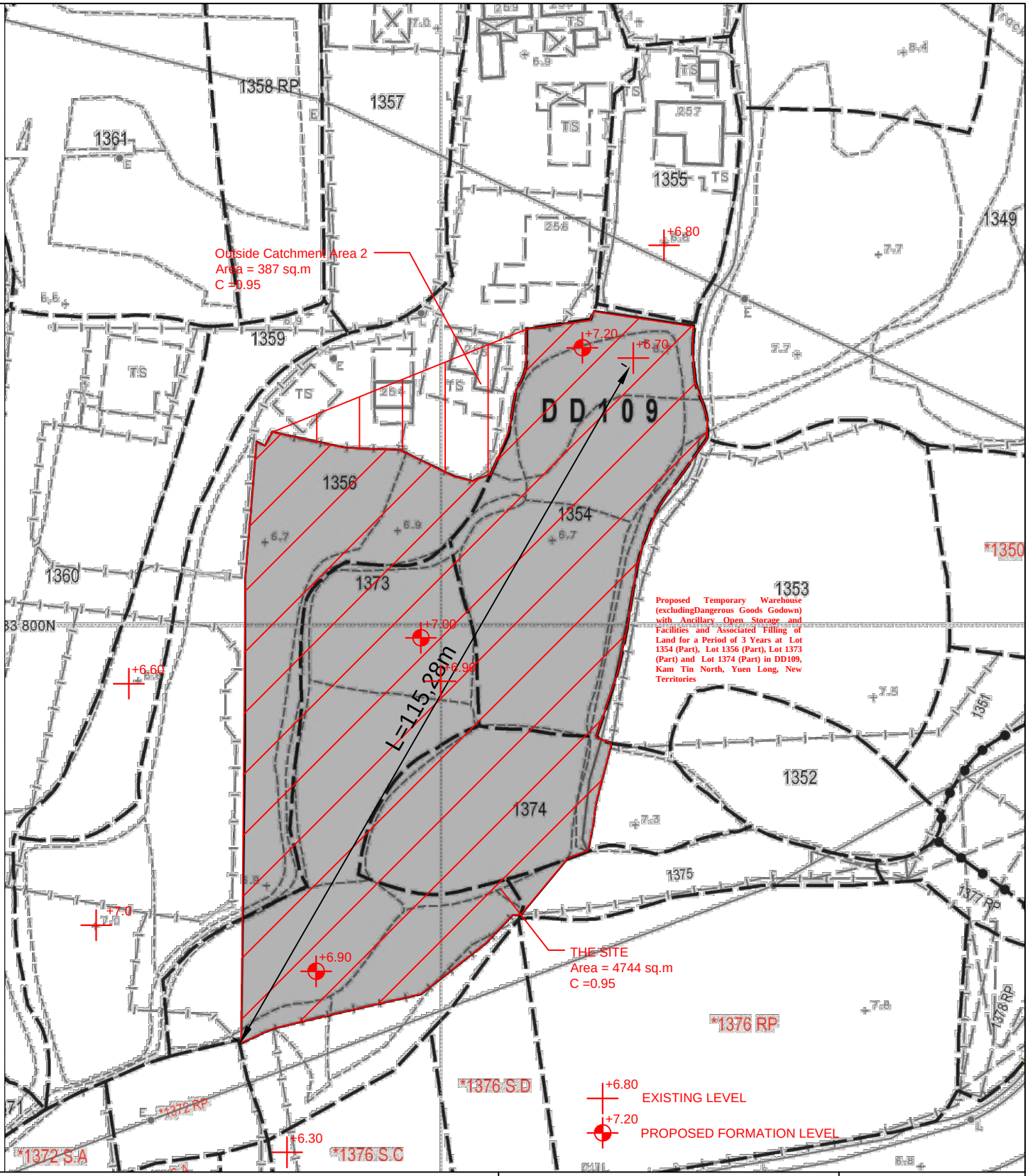
&

Proposed Temporary Warehouse (excludingDangerous Goods Godown) with Ancillary Open Storage and Facilities and Associated Filling of Land for a Period of 3 Years at Lot 1354 (Part), Lot 1356 (Part), Lot 1373 (Part) and Lot 1374 (Part) in DD109, Kam Tin North, Yuen Long, New Territories

Title:	
Catchment Area Plan 1	D02
Drawn by: DM	Date: 28–4–2025

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY



Project:

Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lots 1325 (Part) and 1349 (Part) in D.D. 109, Kam Tin North, Yuen Long, New Territories(Application No.:A/YL-KTN/1088)

&

Proposed Temporary Warehouse (excludingDangerous Goods Godown) with Ancillary Open Storage and Facilities and Associated Filling of Land for a Period of 3 Years at Lot 1354 (Part), Lot 1356 (Part), Lot 1373 (Part) and Lot 1374 (Part) in DD109, Kam Tin North, Yuen Long, New Territories

Title:

Catchment Area Plan 2

D03

Drawn by:

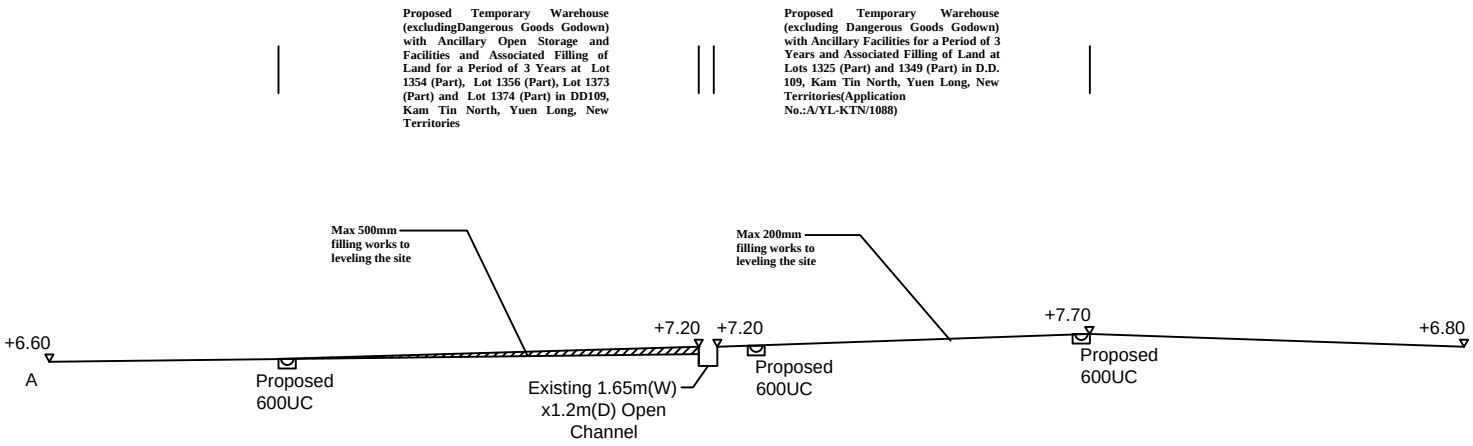
DM

Date:

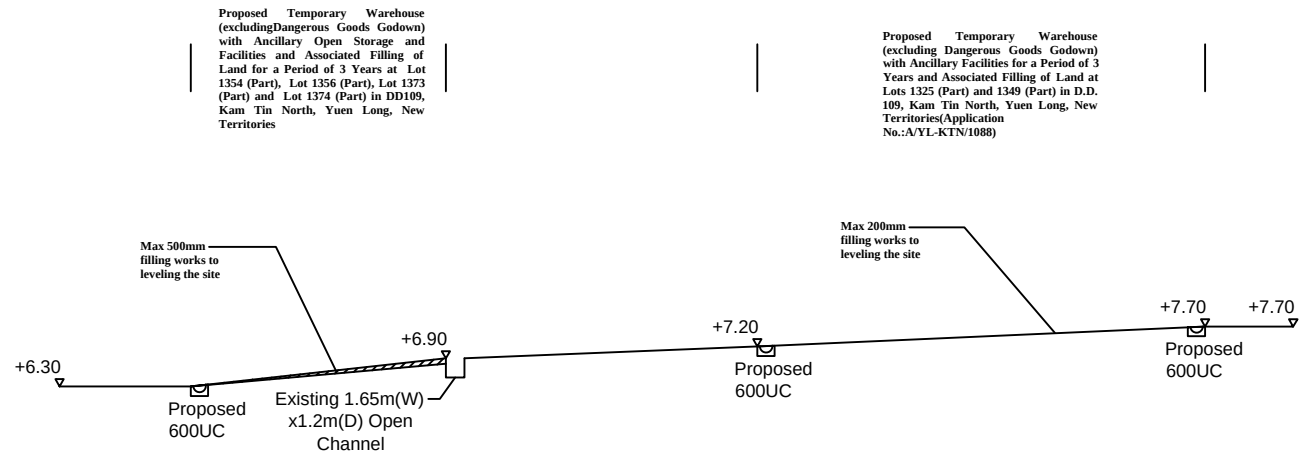
28–4–2025

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY



SECTION A-A



SECTION B-B

Project: **Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lots 1325 (Part) and 1349 (Part) in D.D. 109, Kam Tin North, Yuen Long, New Territories(Application No.:A/YL-KTN/1088)** **&** **Proposed Temporary Warehouse (excludingDangerous Goods Godown) with Ancillary Open Storage and Facilities and Associated Filling of Land for a Period of 3 Years at Lot 1354 (Part), Lot 1356 (Part), Lot 1373 (Part) and Lot 1374 (Part) in DD109, Kam Tin North, Yuen Long, New Territories**	Title: SECTIONS	D04
	Drawn by: DM	Date: 28−4−2025
	正宏工程顧問公司 CHING WAN ENGINEERING CONSULTANT COMPANY	

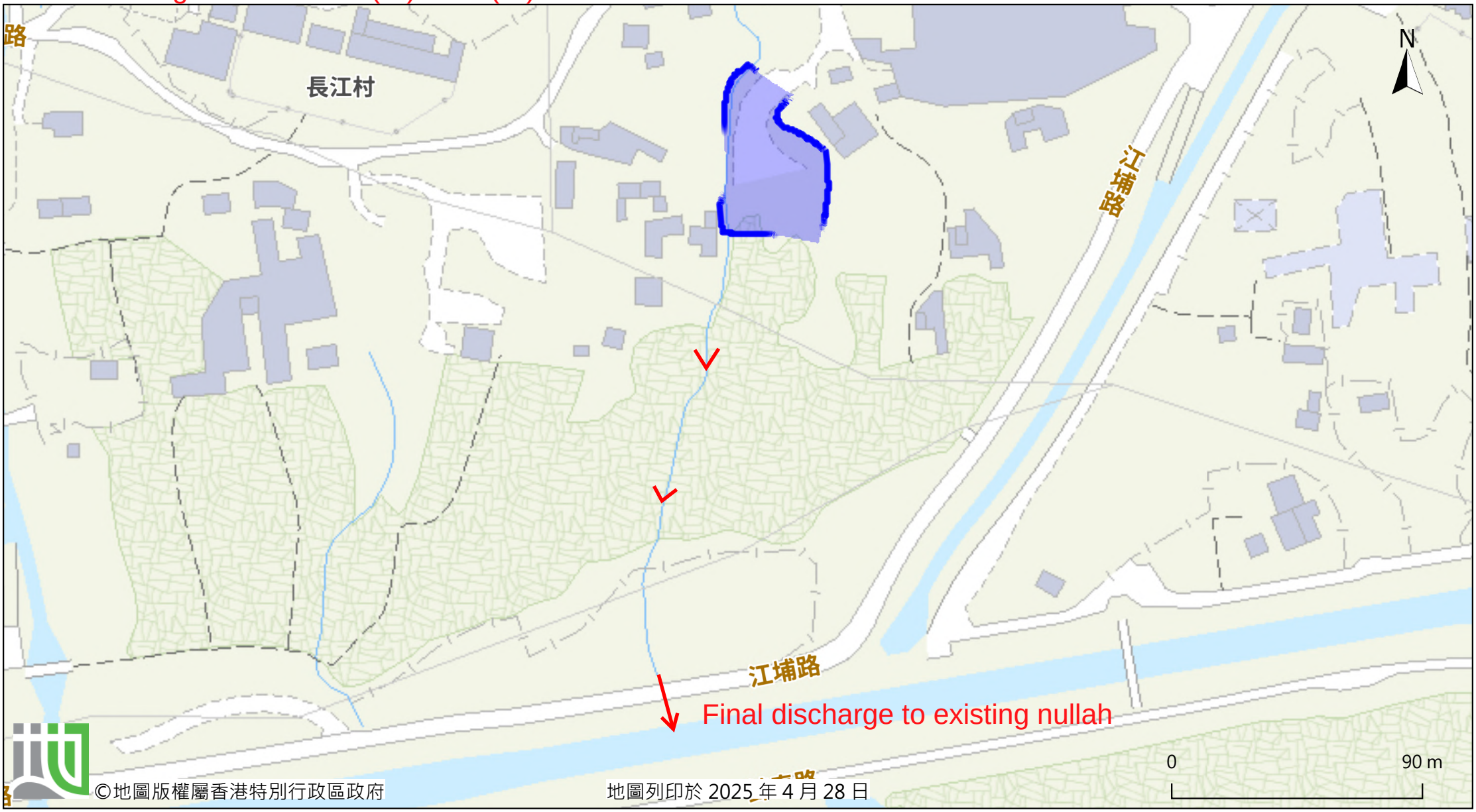
PHOTO 2

PHOTO 1

GEOINFO MAP
地理資訊地圖

前往地圖: https://www.map.gov.hk/gm/geo:22.4436,114.0735?z=2257

Final discharge of Ex. 1.65m(W)x1.2D(W)



由「地理資訊地圖」網站提供: https://www.map.gov.hk

Outside Catchment Area 1, Area	=	1097	m^2	(C=	0.95	)
THE SITE, Area	=	4370.1	m^2	(C=	0.95	)

Calculation of Design Runoff of the Proposed Development,
For the design of drains at KTN-1088, Catchment Area 1 + The Site

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

A	=	1097+4370.1	m^2	
	=	5467.1		
	=	0.0054671	km^2	
t	=	$0.14465\ L/\ H^{0.2}A^{0.1}$		
	=	$0.14465*29.23/1^{0.2}*5467.1^{0.1}$		
	=	1.788	min	
i	=	$1.111*a/(t+b)^c$		(50 yrs return period, Table 3a, Corrigendum 2024, SDM) and (11.1% increase due to climate change)
	=	$1.111*505.5/(1.788+3.29)^{0.355}$		
	=	315.4	mm/hr	
Therefore, Q	=	0.278*0.95*315.4*0.0054671		
	=	0.4554	m^3/sec	
	=	27327	lit/min	

Provide 600UC (1:200) is OK

Outside Catchment Area 2, Area	=	387	m^2	(C=	0.95	)
THE SITE, Area	=	4744	m^2	(C=	0.95	)

Calculation of Design Runoff of the Proposed Development,
For the design of drains of southwestern side of the site, Catchment Area 2 + The Site

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

A = 387+4744 m^2
= 5131
= 0.005131 km^2

t = $0.14465\ L/\ H^{0.2}A^{0.1}$
= $0.14465*115.28/1^{0.2}*5131^{0.1}$
= 7.097 min

i = $1.111*a/(t+b)^c$ (50 yrs return period, Table 3a, Corrigendum 2024, SDM) and (11.1% increase due to climate change)
= $1.111*505.5/(7.097+3.29)^{0.355}$
= 244.7 mm/hr

Therefore, Q = 0.278*0.95*244.7*0.005131
= 0.3316 m^3/sec
= 19893 lit/min

Provide 600UC (1:200) is OK

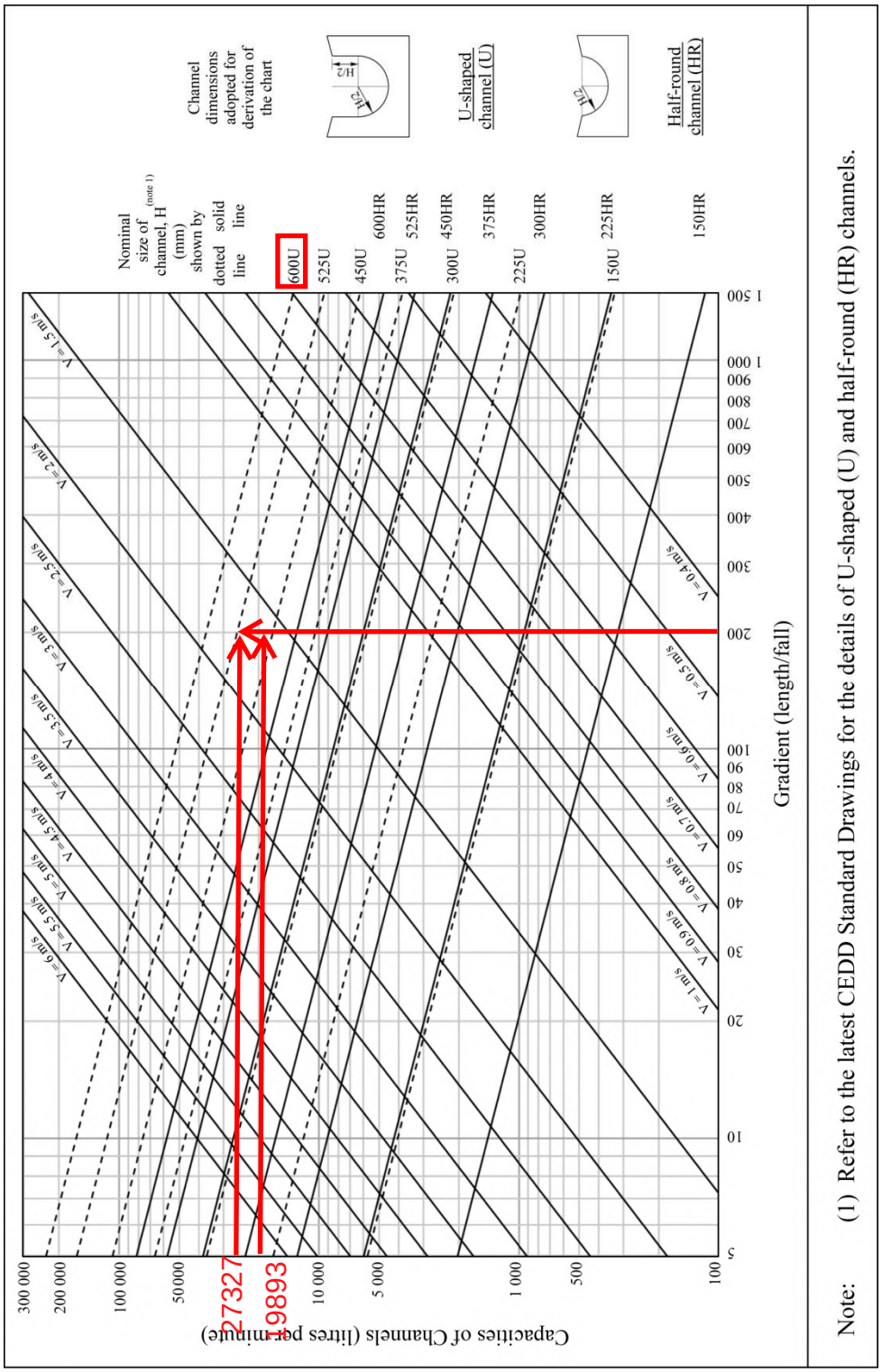


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

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

Check 600mm dia. Pipes by Colebrook-White Equation

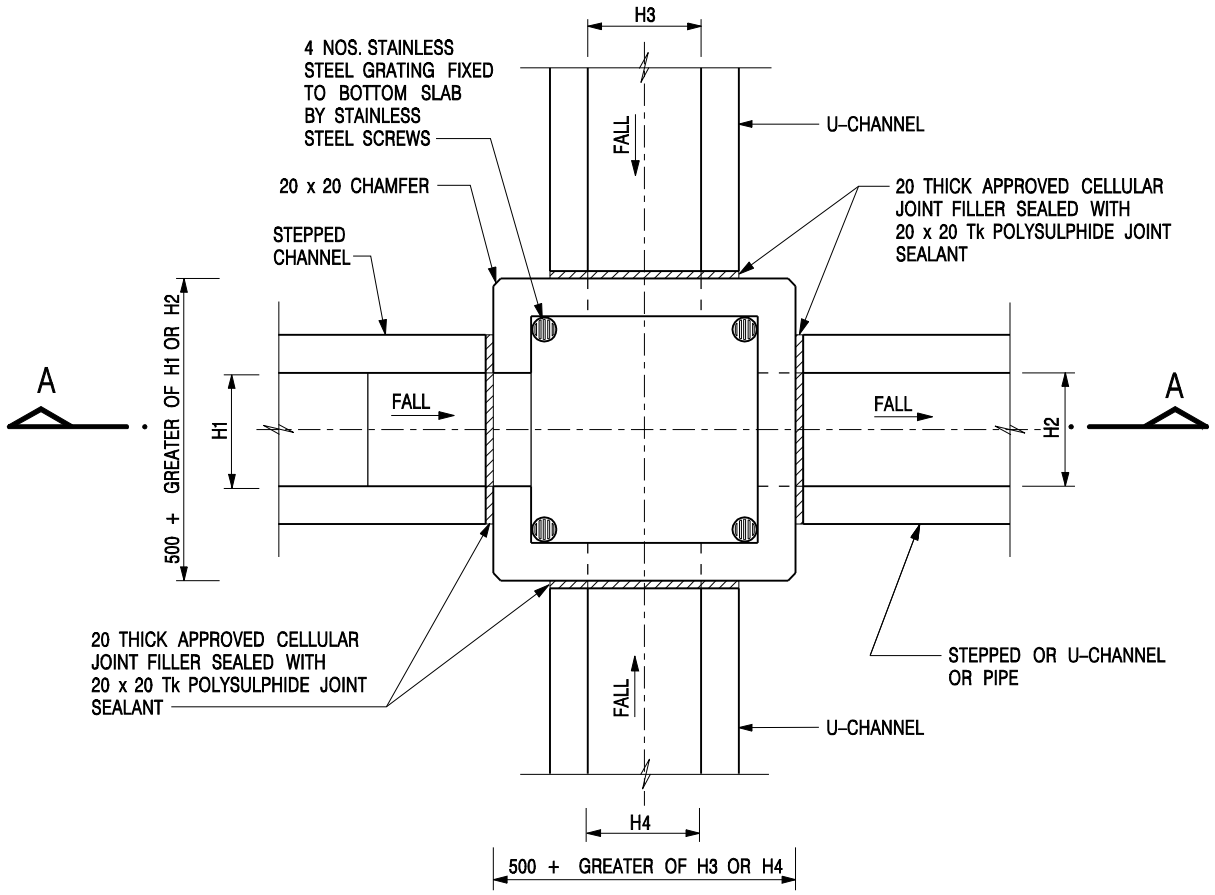
$$V = -\sqrt{(8gDs)}\log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

V	=			mean velocity (m/s)	
g	=	9.81	m/s2	gravitational acceleration (m/s2)	
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	m2/s	kinematic viscosity of fluid (m2/s)	
s	=	0.01		hydraulic gradient	

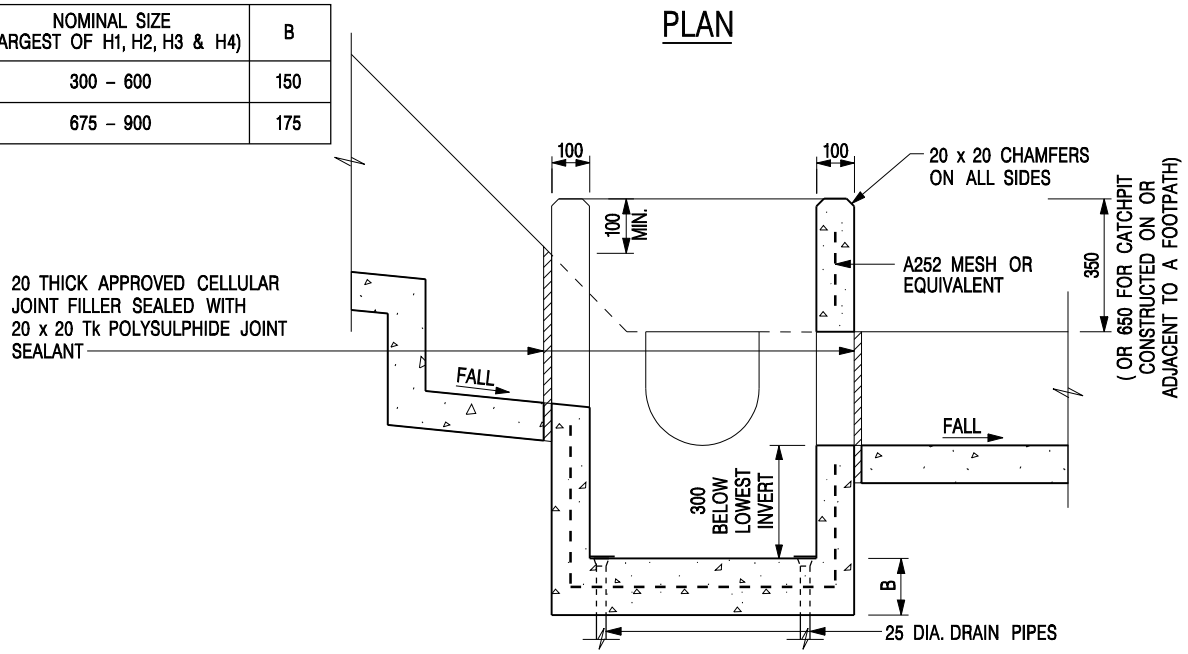
Therefore, design V of pipe capacity = 2.8059 m/s

Q= 0.8VA (0.8 factor for sedimentation)
= 0.635 m3/s
= 38081 lit/min
> 27327 lit/min Ok



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

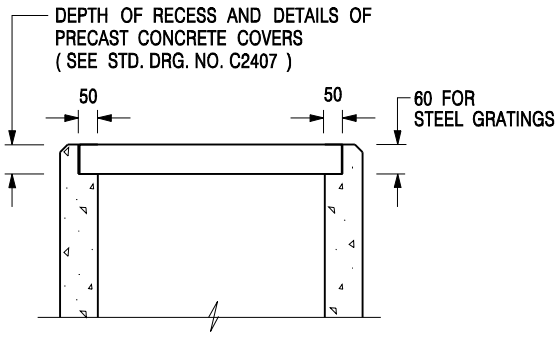
(SHEET 1 OF 2)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1



ALTERNATIVE TOP SECTION
FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

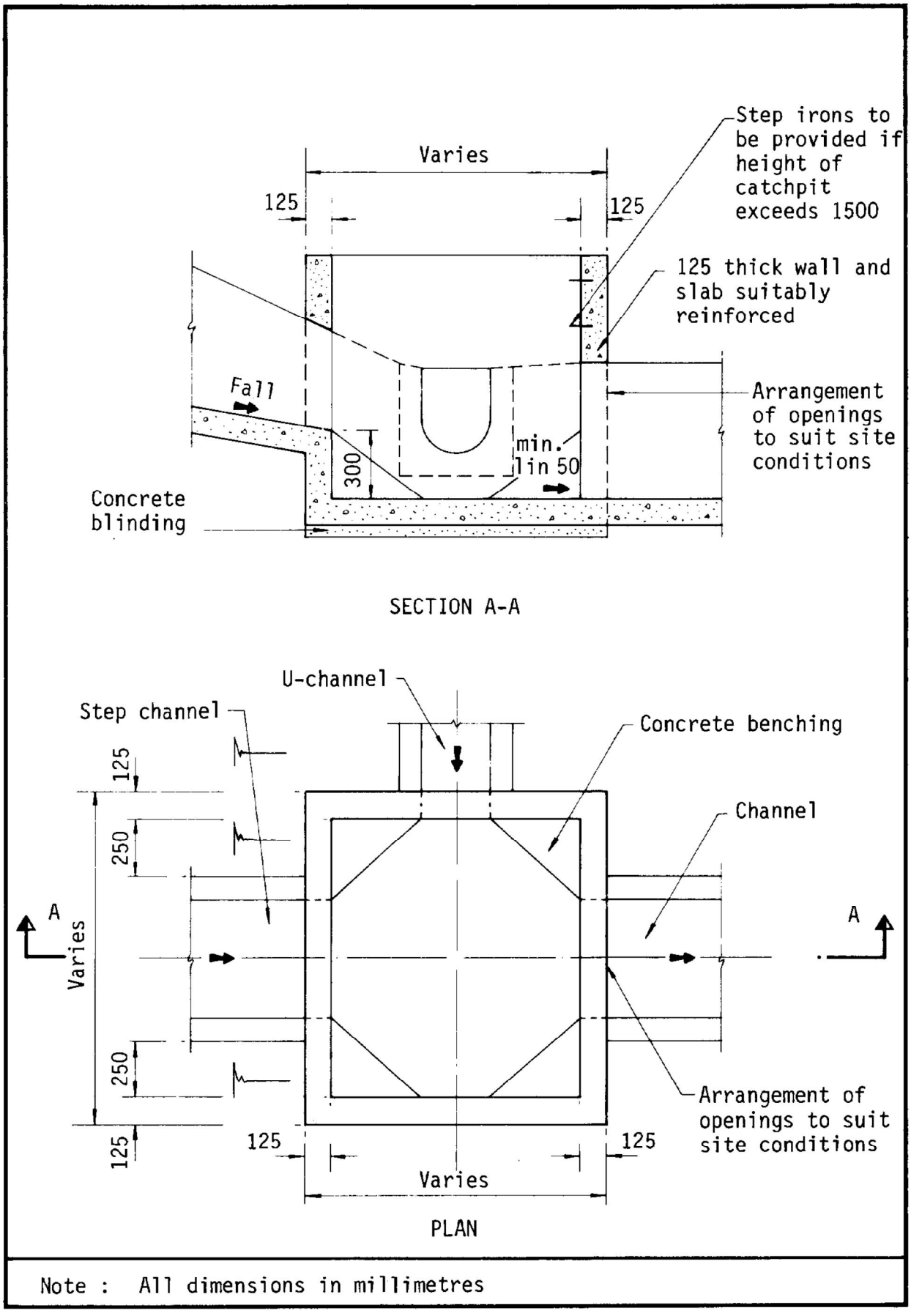
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED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

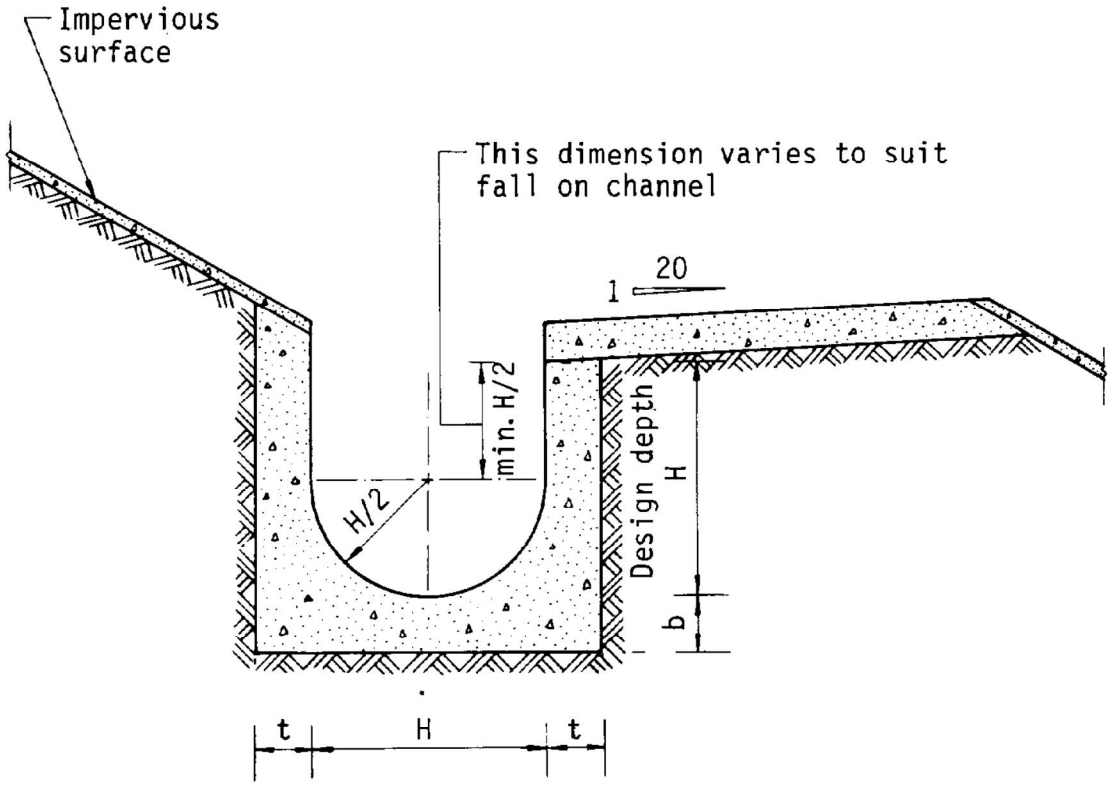
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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



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