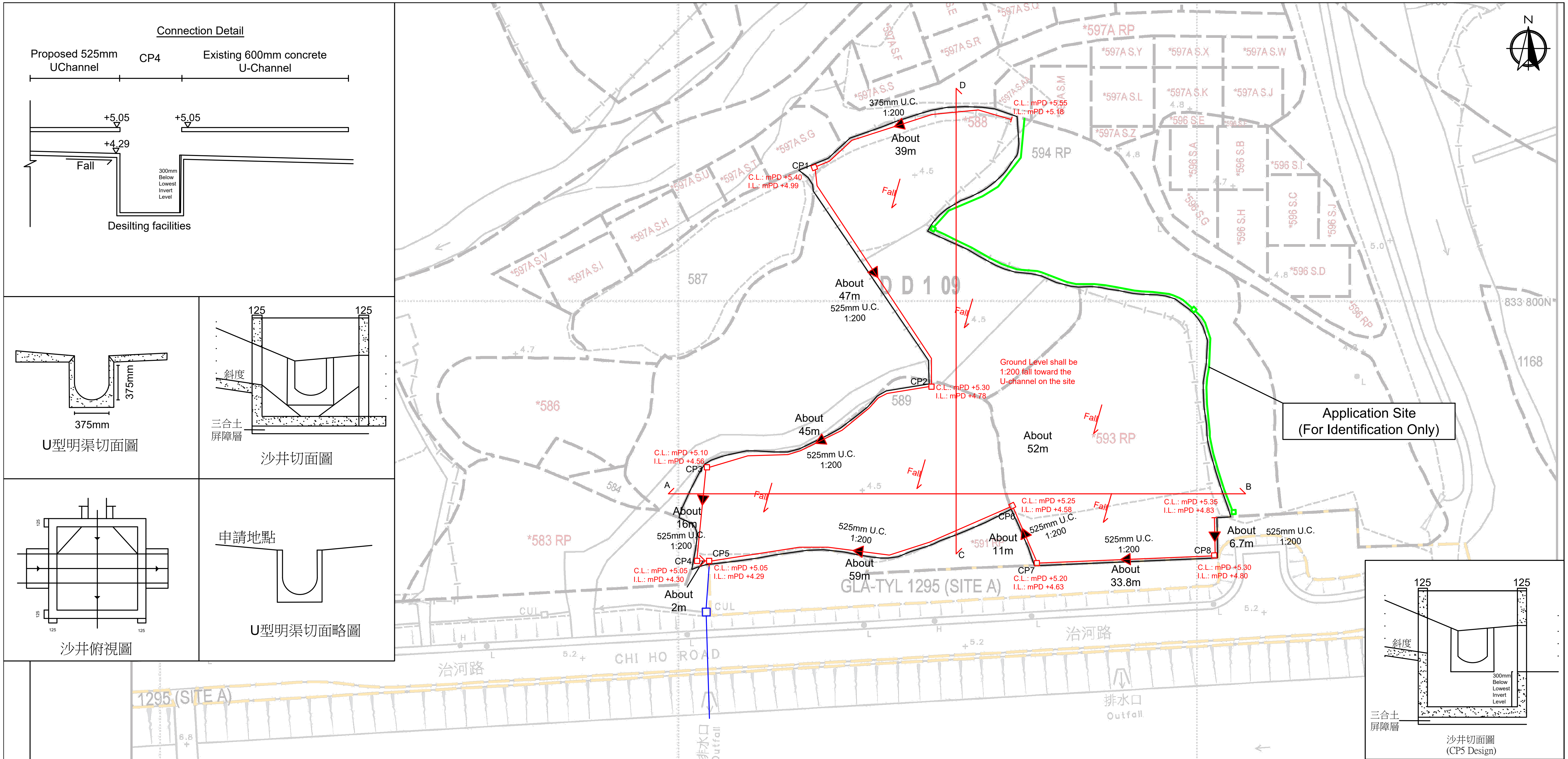
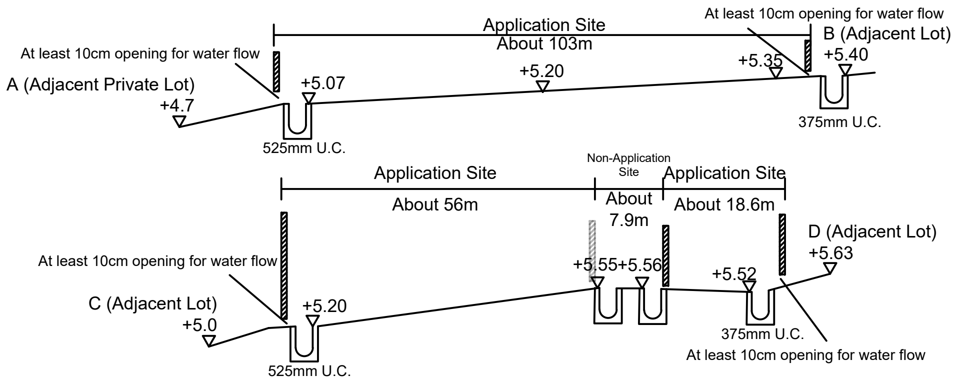
寄件者: [redacted]
寄件日期: 2025年10月21日星期二 14:28
收件者: tpbpd/PLAND
副本: [redacted]
主旨: Fw: s.16 Planning Application No. A/YL-KTN/1173
附件: KTN 1173 dp.pdf

[redacted]

Thank you for the phone call. Please see the attachment for the drainage proposal. Please contact Mr. Tang on phone [redacted] or email to [redacted] if you have any question regarding to the proposal.

Your Sincerely,
Mr. Tang



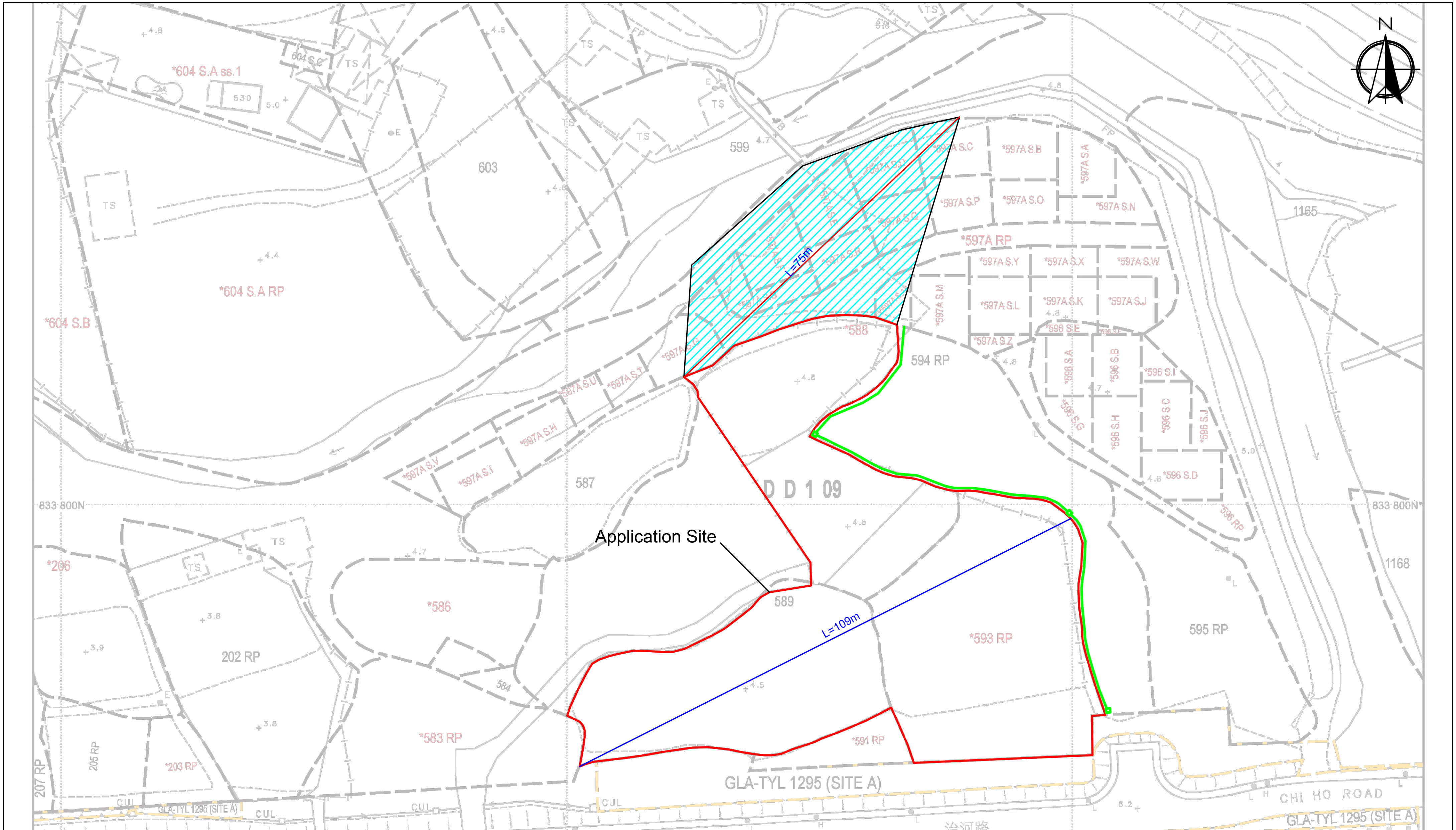


Note:
1. Adequate opening will be provided around the application site.
2. Catchpit design shall follow CEDD standard drawing No. C2406I.
3. All proposed U-channel and Catchpit must maintain in good shape (i.e. Inspection and maintenance regularly).
4. Grating Cover is provided to reduce the irregular road surface from entering the site.

Legend:
- Proposed Catchpit
- Proposed U-Channel
- Water Flow

*Invert Level of Connection Point Should Be Verified On Site Before Construction.
*Cover Level Are Indicative Only Which Should Be Verified On Site.

Appendix 6	Location: DD 109 Lot 588 (Part), 589 (Part) and 593 RP App. No.: A/YL-KTN/1173 OZP: S/YL-KTN/11 District: Kam Tin North Zoning: Village Type Development	Project: Proposed Temporary Shop and Services with Ancillary Facilities and Car Park for a Period of 5 Years	Proposed Drainage Plan and Cross Section	Scale: 1:750 @A3	Drawing No. 6-01 For Identification Only Date: 20 October 2025



Appendix 6.2 Catchment Area	Location: D.D. 109 Lot 588 (Part), 589 (Part) and 593 RP OZP: S/YL-KTN/11 District: Kam Tin North Zoning: Village Type Development	Project: Proposed Temporary Shop and Services with Ancillary Facilities and Car Park for a Period of 5 Years	Around 6290.1 m^2 Scale: 1:1000 @A4	Drawing No.: 6.2-1 For Identification Only Date: 21/10/2025

Legend:

- Existing 375mm Channel
- Existing Channel
- Application Site

Appendix 6.3	Location: DD 109 Lot 588 (Part), 589 (Part) and 593 RP App. No.: A/YL-KTN/1173 OZP: S/YL-KTN/11 District: Kam Tin North Zoning: Village Type Development	Project: Proposed Temporary Shop and Services with Ancillary Facilities and Car Park for a Period of 5 Years	Existing Drainage Channel Plan and Viewing Point	Scale: Undefined @A3	Drawing No. 6.3-1 For Identification Only Date: 21 October 2025

The Application Site	=	4,850.1 m^2 (About)	C:	0.95 (Covered with Concrete)
Outside the app. Site	=	1,440.0 m^2 (About)	C:	0.95 (Covered with Concrete)

<u>Calculation of Desgin Runoff of the Proposed Development,</u>
<u>For the design of drains inside the site, For Concrete</u>

Q_p = 0.278C I A

A = 4,850.1 + 1,440.0 m^2
= 6,290.1 m^2
= 0.0062901 km^2

t = $0.14465L/H^{0.2}A^{0.1}$
= $0.14465*109/0.5^{0.2}*6290.1^{0.1}$
= 7.332 min

i = $1.16*a/(t+b)^c$
= $1.16*505.5/(7.332+3.29)^{0.355}$
= 253.44457

(50 years return period, Table 3a, Corrigendum 2024, SDM) and (16% increase due to climate change)

Q = 0.278*0.95*253*6290.1/1000000
= 0.421026 m^3/sec
= 25262 lit/min

Check 525mm dia. Pipes by Colebrook-White Equation

By Colebrook White Equation

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

where:	V	=	mean velocity (m/s)	
	g	=	gravitational acceleration (m/s^2)	
	D	=	internal pipe diameter (m)	
	k_s	=	hydraulic pipeline roughness (m)	(Table 14, from DSD SDM 2018, concrete pipe)
	v	=	kinematic viscosity of fluid (m^2/s)	(Transitional flow and water at 15 degree celcius)
	s	=	hydraulic gradient (energy loss per unit length due to friction)	

g	=	9.81	m/s^2
D	=	0.525	m
k_s	=	0.00015	m
v	=	1.14E-06	m/s^2
s	=	0.01	

Therefore, design V of pipe capacit	=	2.584201	m/s	
Q	=	0.8VA		(0.8 factor for sedimentation)
	=	0.508675	m^3/s	
	=	30520.48	lit/min	
	>	25262	lit/min	

Provide 525mm dia. pipe (1:200) has enough capacity to accomend the runoff of the proposed development

The Application Site	=	4,850.1 m^2	(About)	C:	0.95 (Covered with Concrete)
Outside the app. Site	=	1,440.0 m^2	(About)	C:	0.95 (Covered with Concrete)

<u>Calculation of Desgin Runoff of the Proposed Development,</u>
<u>For the design of drains inside the site, North side</u>

Q_p = 0.278C I A

A = 1,440.0 m^2
= 1,440.0 m^2
= 0.0014400 km^2

t = $0.14465L/H^{0.2}A^{0.1}$
= $0.14465*75/0.133^{0.2}*1440^{0.1}$
= 5.846 min

i = $1.16*a/(t+b)^c$
= $1.16*505.5/(5.846+3.29)^{0.355}$
= 267.36894

(50 years return period, Table 3a, Corrigendum 2024, SDM) and (16% increase due to climate change)

Q = 0.278*0.95*267*1440/1000000
= 0.1016815 m^3/sec
= 6101 lit/min

Check 375mm dia. Pipes by Colebrook-White Equation

By Colebrook White Equation

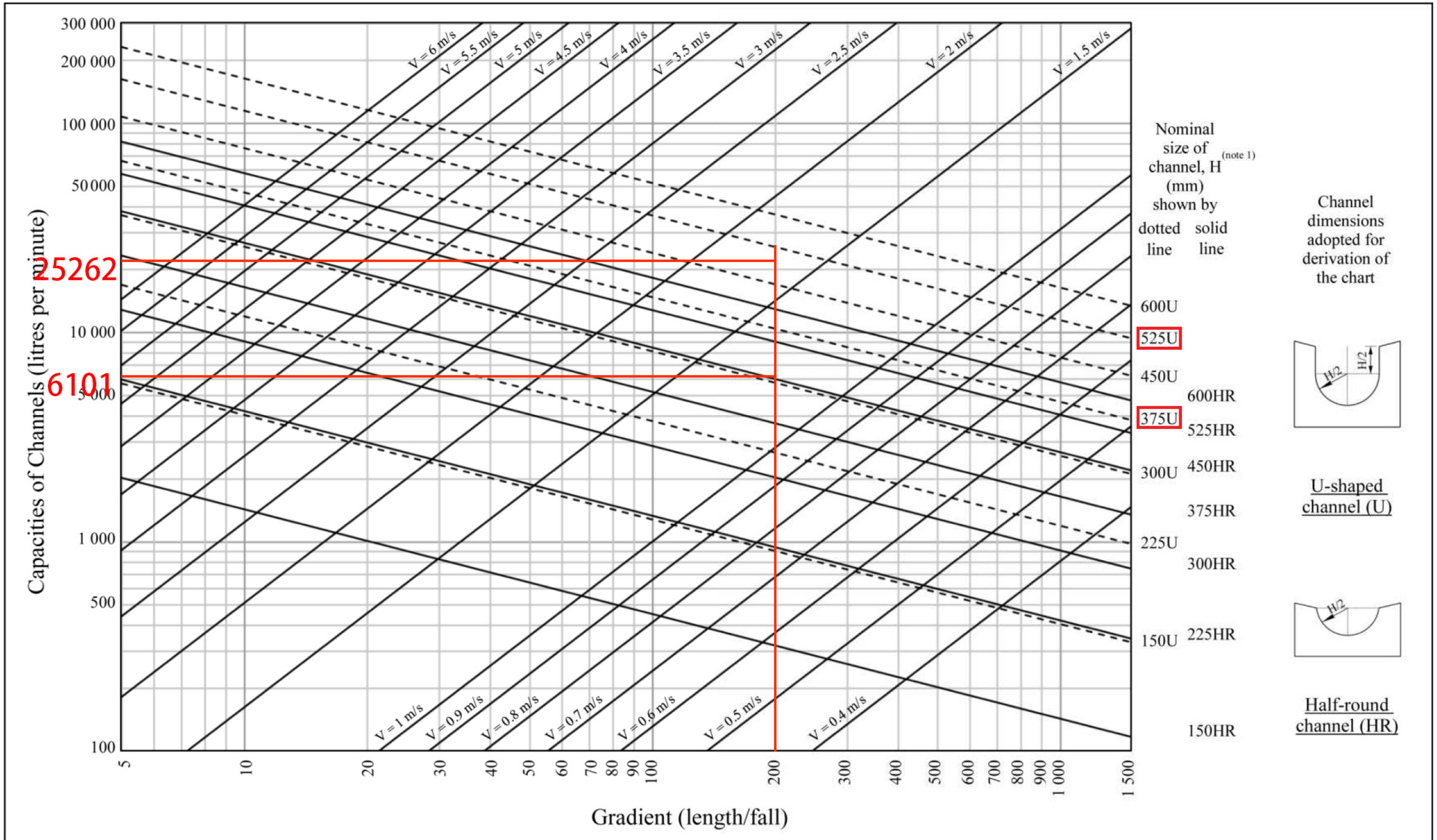
$$V = -\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where:	V	=	mean velocity (m/s)	
	g	=	gravitational acceleration (m/s^2)	
	D	=	internal pipe diameter (m)	
	k_s	=	hydraulic pipeline roughness (m)	(Table 14, from DSD SDM 2018, concrete pipe)
	v	=	kinematic viscosity of fluid (m^2/s)	(Transitional flow and water at 15 degree celcius)
	s	=	hydraulic gradient (energy loss per unit length due to friction)	

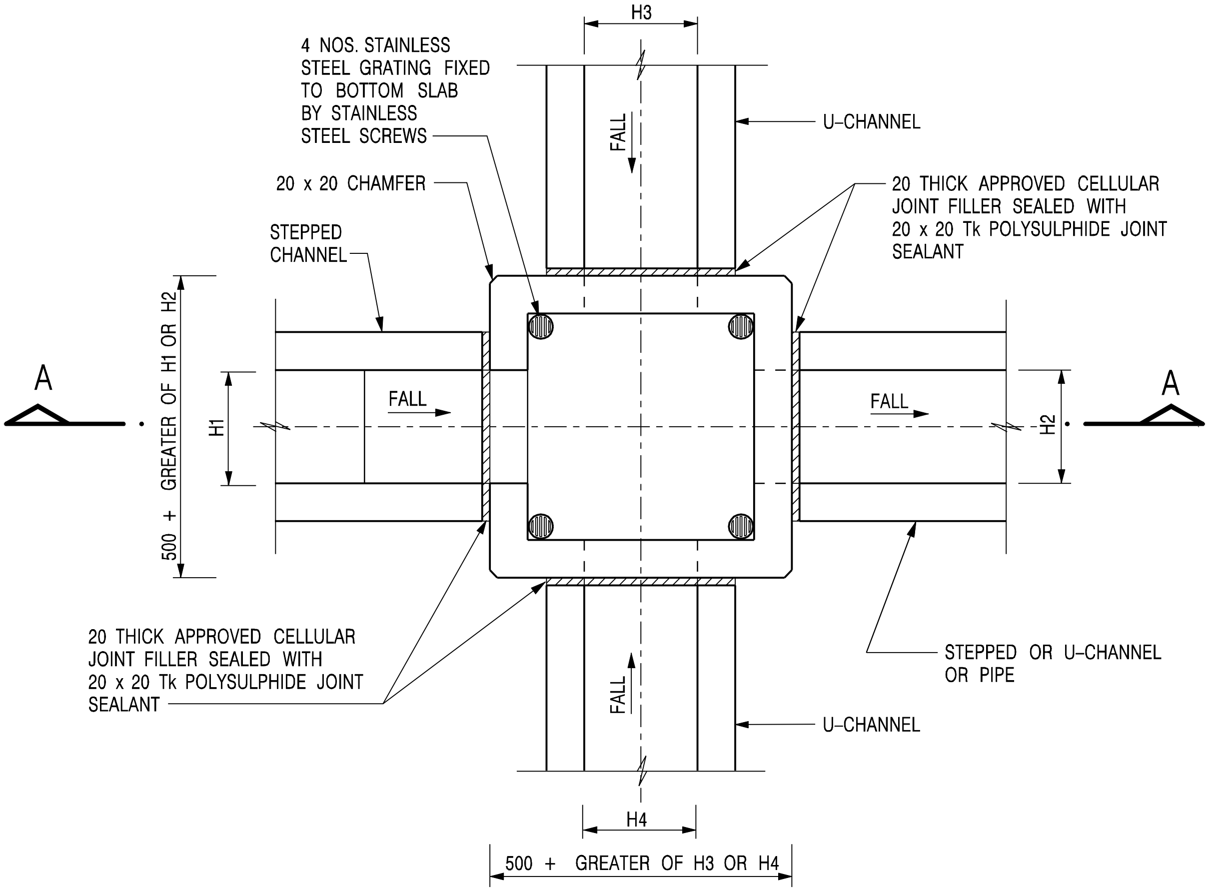
	g	=	9.81	m/s^2
	D	=	0.375	m
	k_s	=	0.00015	m
	v	=	1.14E-06	m/s^2
	s	=	0.01	
Therefore, design V of pipe capacit		=	2.097119	m/s
	Q	=	0.8VA	(0.8 factor for sedimentation)
		=	0.210611	m^3/s
		=	12636.65	lit/min
		>	6101	lit/min

Provide 375mm dia. pipe (1:200) has enough capacity to accomend the runoff of the proposed development

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

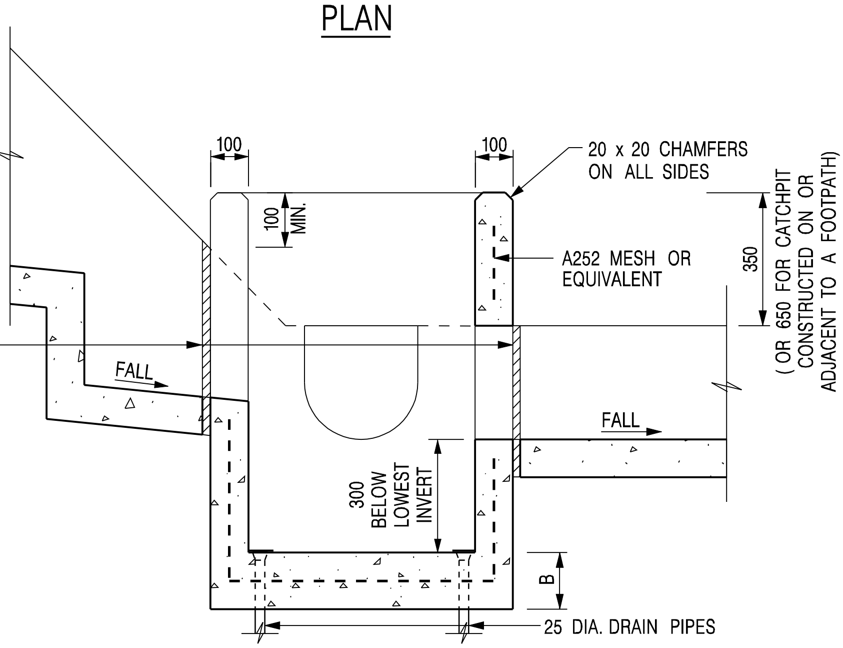


Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.



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

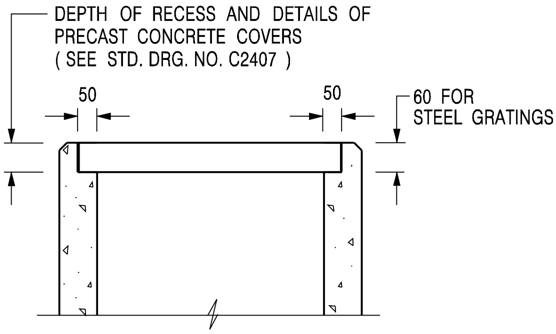
(SHEET 1 OF 2)

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:

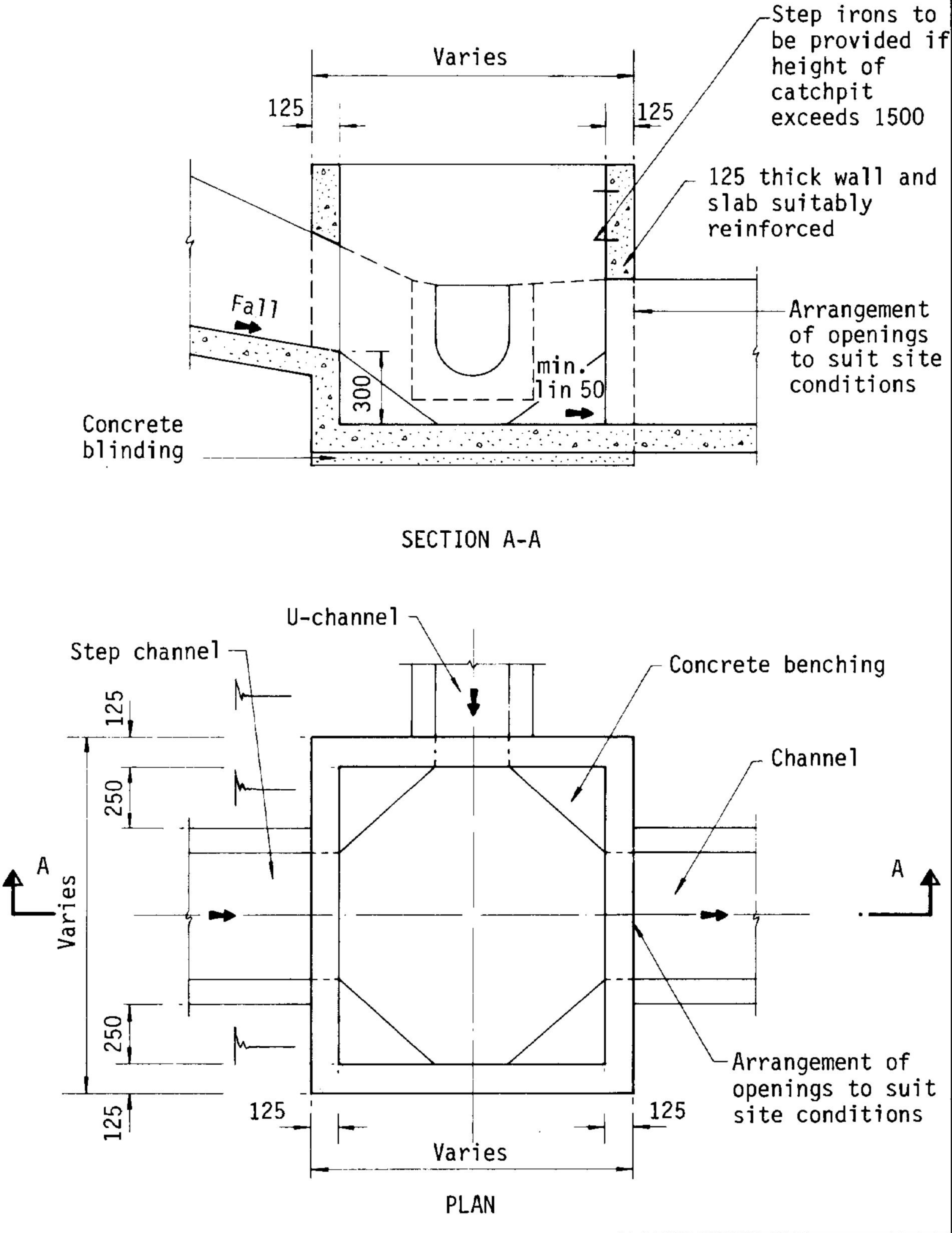
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED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

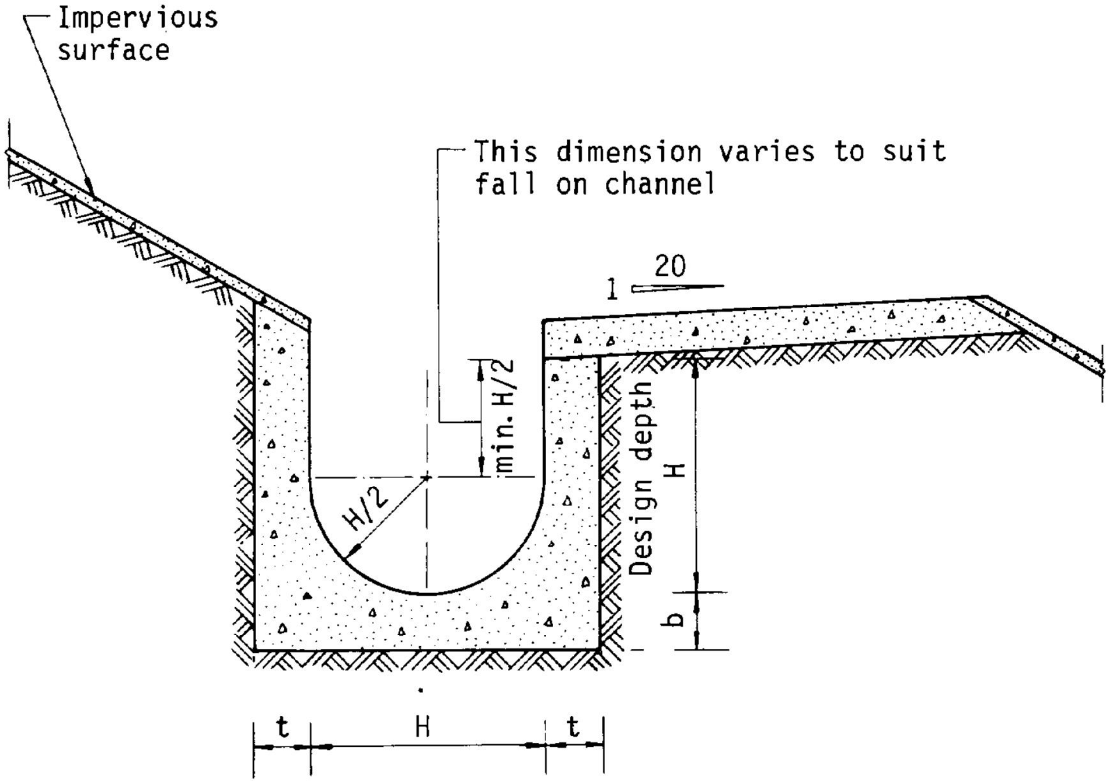
CEDD
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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

Table 3a – Storm Constants for Different Return Periods of HKO Headquarters

Return Period T (years)	2	5	10	20	50	100	200	500	1000
a	446.1	470.5	485.0	496.0	505.5	508.6	508.8	504.6	498.7
b	3.38	3.11	3.11	3.17	3.29	3.38	3.46	3.53	3.55
c	0.463	0.419	0.397	0.377	0.355	0.338	0.322	0.302	0.286

Table 3d – Storm Constants for Different Return Periods of North District Area

Return Period T (years)	2	5	10	20	50	100	200
a	439.1	448.1	454.9	462.3	474.6	486.6	501.4
b	4.10	3.67	3.44	3.21	2.90	2.67	2.45
c	0.484	0.437	0.412	0.392	0.371	0.358	0.348

Table 13 - Values of n to be used with the Manning equation

Source: Brater, E.F. & King, H.W. (1976)

Surface	**Best**	**Good**	**Fair**	**Bad**
Uncoated cast-iron pipe	0.012	0.013	0.014	0.015
Coated cast-iron pipe	0.011	0.012*	0.013*	
Commercial wrought-iron pipe, black	0.012	0.013	0.014	0.015
Commercial wrought-iron pipe, galvanized	0.013	0.014	0.015	0.017
Smooth brass and glass pipe	0.009	0.010	0.011	0.013
Smooth lockbar and welded "OD" pipe	0.010	0.011*	0.013*	
Riveted and spiral steel pipe	0.013	0.015*	0.017*	
Vitrified sewer pipe	0.010	0.013*	0.015	0.017
Common clay drainage tile	0.011	0.012*	0.014*	0.017
Glazed brickwork	0.011	0.012	0.013*	0.015
Brick in cement mortar; brick sewers	0.012	0.013	0.015*	0.017
Neat cement surfaces	0.010	0.011	0.012	0.013
Cement mortar surfaces	0.011	0.012	0.013*	0.015
Concrete pipe	0.012	0.013	0.015*	0.016
Wood stave pipe	0.010	0.011	0.012	0.013
Plank flumes - Planed	0.010	0.012*	0.013	0.014
- Unplaned	0.011	0.013*	0.014	0.015
- With battens	0.012	0.015*	0.016	
Concrete-lined channels	0.012	0.014*	0.016*	0.018
Cement-rubble surface	0.017	0.020	0.025	0.030
Dry-rubble surface	0.025	0.030	0.033	0.035
Dressed-ashlar surface	0.013	0.014	0.015	0.017
Semicircular metal flumes, smooth	0.011	0.012	0.013	0.015
Semicircular metal flumes, corrugated	0.0225	0.025	0.0275	0.030
Canals and ditches				
1. Earth, straight and uniform	0.017	0.020	0.0225*	0.025
2. Rock cuts, smooth and uniform	0.025	0.030	0.033*	0.035
3. Rock cuts, jagged and irregular	0.035	0.040	0.045	
4. Winding sluggish canals	0.0225	0.025*	0.0275	0.030
5. Dredged-earth channels	0.025	0.0275*	0.030	0.033
6. Canals with rough stony beds, weeds on earth banks	0.025	0.030	0.035*	0.040
7. Earth bottom, rubble sides	0.028	0.030*	0.033*	0.035
Natural-stream channels				
1. Clean, straight bank, full stage, no rifts or deep pools	0.025	0.0275	0.030	0.033
2. Same as (1) but some weeds and stones	0.030	0.033	0.035	0.040
3. Winding some pools and shoals, clean	0.033	0.035	0.040	0.045
4. Same as (3), lower stages, more ineffective slope and sections	0.040	0.045	0.050	0.055

Table 13 (Cont'd)

Surface	**Best**	**Good**	**Fair**	**Bad**
5. Same as (3) some weeds and stones	0.035	0.040	0.045	0.050
6. Same as (4) stony sections	0.045	0.050	0.055	0.060
7. Sluggish river reach, rather weedy or with very deep pools	0.050	0.060	0.070	0.080
8. Very weedy reaches	0.075	0.100	0.125	0.150

Notes: *Values commonly used for design.