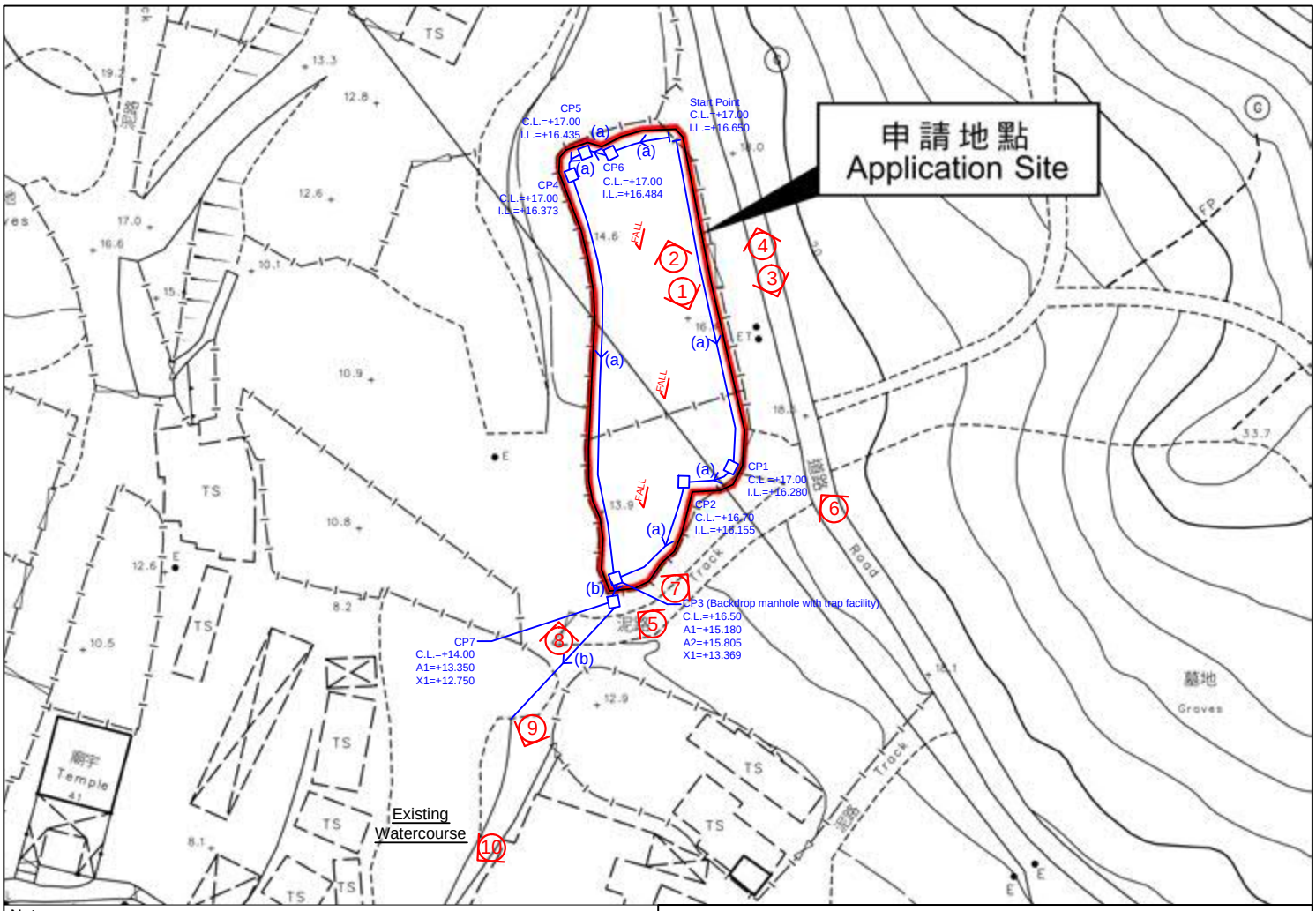


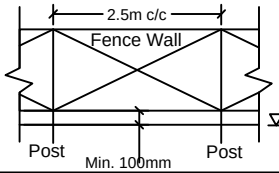
Note:

1. Catchpits (CP3) with desilting facility shall follow CEDD standard drawing No. C2406I. Backdrop detail shall follow DSD standard drawing DS 1020E.

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.

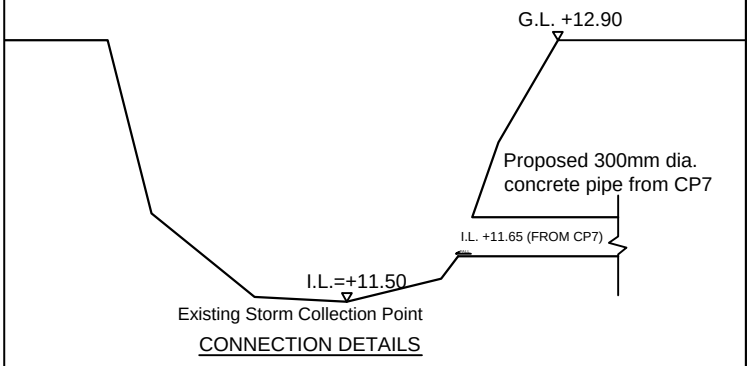
4. No site formation works/levelling works to be carried out.



TYPICAL DETAIL OF OPEN-BOTTOM TYPE FENCE WALL

LEGEND

- Existing Watercourse
- CP — Proposed CatchPit
- (a) — Proposed 300UC (1:50) with Cast Iron Cover
- (b) — Proposed 300mm dia. concrete pipe (1:100)
- 1 — Photo Viewport



CONNECTION DETAILS

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Title: Drainage Proposal - LAYOUT

D01

Drawn by: DM

Date: 10–9–2026

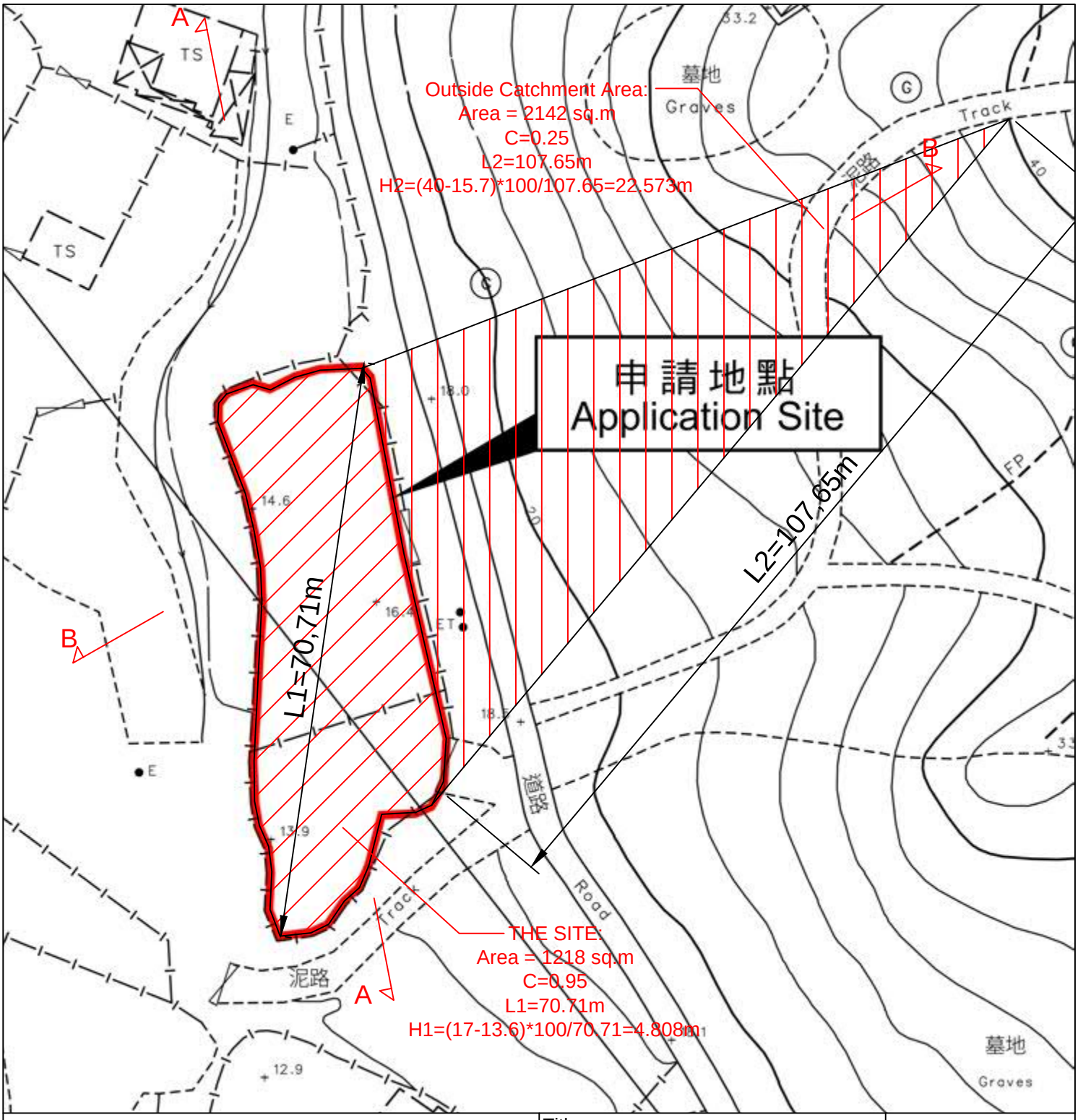
Check by: DM

Scale: ----

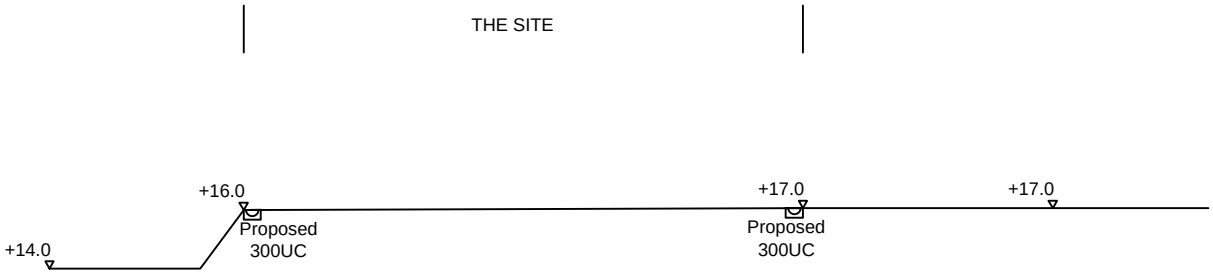
Project:

Proposed Temporary Vehicle Repair Workshop for Private Cars for a Period of 3 Years at Lot 143 (Part) in D.D. 52, Sheung Shui

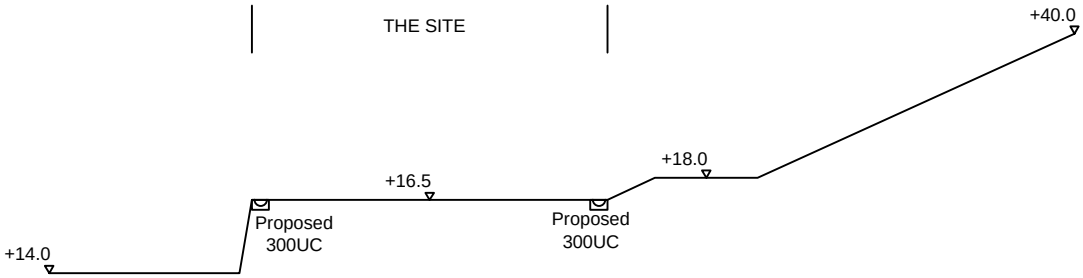
(Application Number:A/NE-FTA/284)



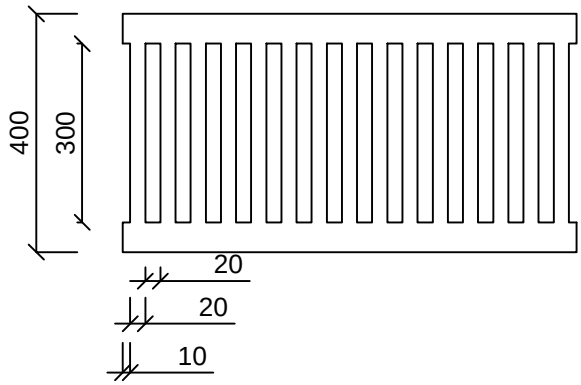
正宏工程顧問公司 CHING WAN ENGINEERING CONSULTANT COMPANY	Title: Drainage Proposal - CATCHEMTN AREA PLAN	D02
	Drawn by: DM	Date: 10−9−2026
Project: **Proposed Temporary Vehicle Repair Workshop for Private Cars for a Period of 3 Years at Lot 143 (Part) in D.D. 52, Sheung Shui** **(Application Number:A/NE-FTA/284)**	Check by: DM	Scale: −−−−



SECTION A-A



SECTION B-B



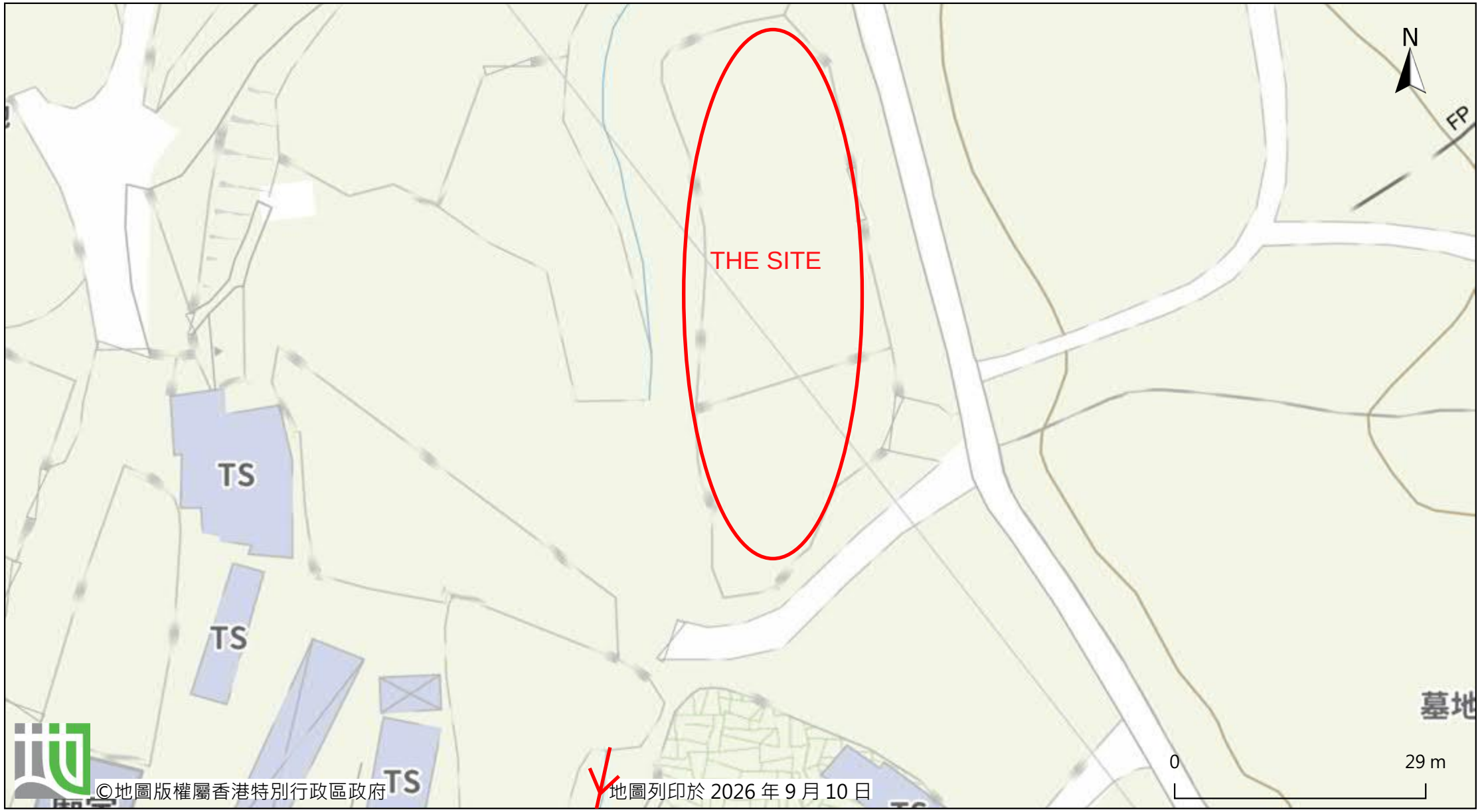
CAST IRON GRATING

正宏工程顧問公司 CHING WAN ENGINEERING CONSULTANT COMPANY	Title: Drainage Proposal - SECTIONS	D03
	Drawn by: DM	Date: 10−9−2026
Project: **Proposed Temporary Vehicle Repair Workshop for Private Cars for a Period of 3 Years at Lot 143 (Part) in D.D. 52, Sheung Shui** **(Application Number:A/NE-FTA/284)**	Check by: DM	Scale: −−−−

GEOINFO MAP
地理資訊地圖

前往地圖: https://www.map.gov.hk/gm/geo:22.5184,114.1279?z=1128

Ultimate Discharge Path (1/4)



由「地理資訊地圖」網站提供: https://www.map.gov.hk

注意: 使用此地圖受「地理資訊地圖」的使用條款及條件以及知識產權告示約束。

GEOINFO MAP
地理資訊地圖

前往地圖: https://www.map.gov.hk/gm/geo:22.5176,114.1274?z=1128

Ultimate Discharge Path (2/4)



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地圖列印於 2026 年 9 月 10 日

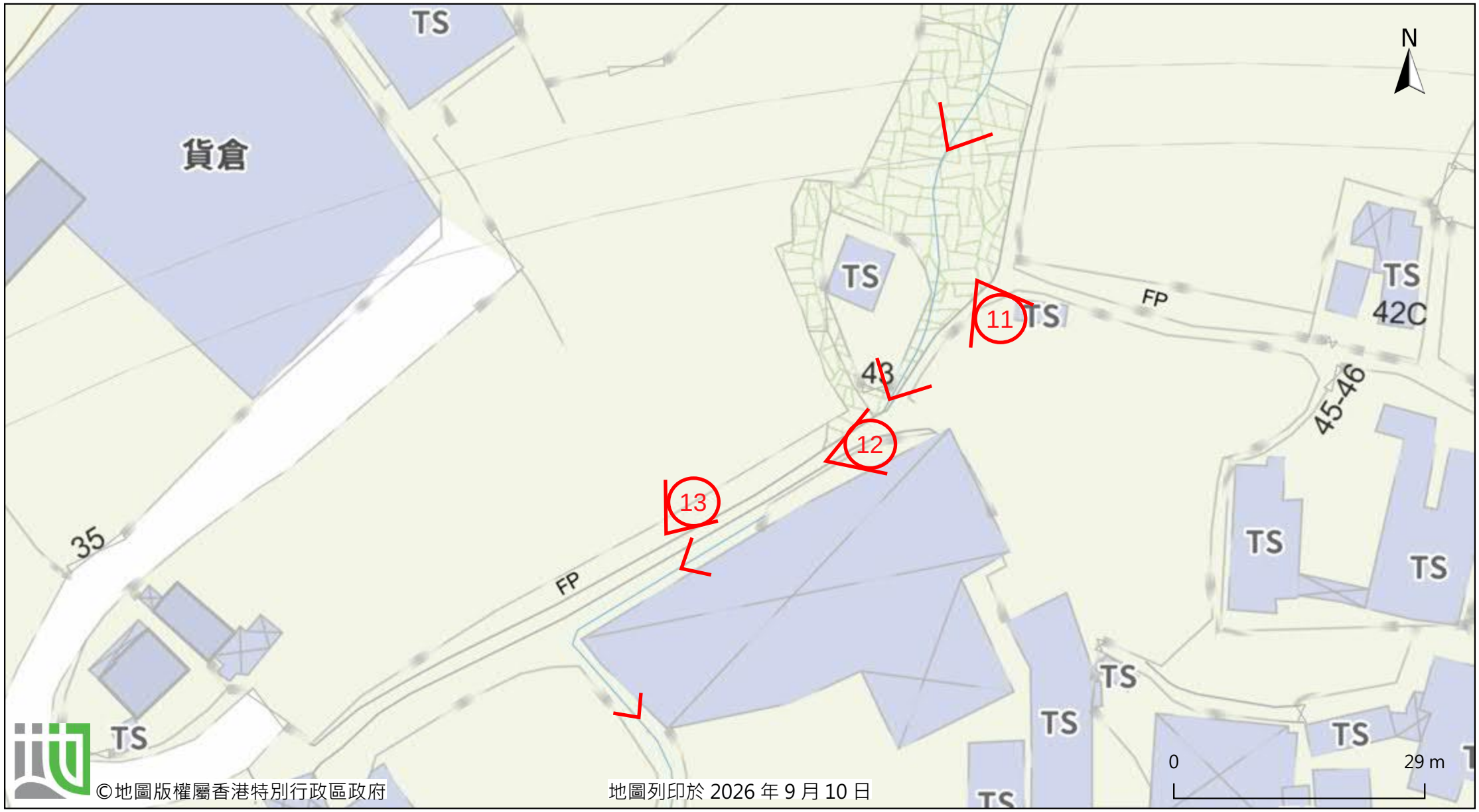
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GEOINFO MAP
地理資訊地圖

前往地圖: https://www.map.gov.hk/gm/geo:22.5171,114.1271?z=1128

Ultimate Discharge Path (3/4)



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地圖列印於 2026 年 9 月 10 日

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GEOINFO MAP
地理資訊地圖

前往地圖: https://www.map.gov.hk/gm/geo:22.5164,114.1269?z=1128

Ultimate Discharge Path (4/4)



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地圖列印於 2026 年 9 月 10 日

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Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Runoff Calculation

After Development

	Catchment ID	Area (A) km2	Average Slope (H), m/100	Flow Path (L), m	Inlet time (to), min	Storm constants a	b	c	Runoff intensity (i), mm/hr	Runoff Coefficient (C)	Q=1.111*0.278CiA/0.9, (m3/s), extra 11.1% for climate change
Q1	The Site (Portion 1)	0.001218	4.808	70.71	4.622	474.6	2.9	0.371	224.495	0.95	0.0802
Q2	The Site (Portion 2)	0.002142	22.573	107.65	4.881	474.6	2.9	0.371	221.691	0.25	0.0367
										Total=	0.1169

Design Q for the design drain inside the site

Q = **0.1169** m3/s

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

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

$R = 0.1042$ m A= 0.0803 m^2

$n = 0.016$ $s/m^{1/3}$ (Talbe 13 of Stormwater Drainage Manual)

$S_f = 0.02$ (1: 50)

Therefore, $V = 0.1042^{2/3} * 0.02^{0.5} / 0.016$

$V = 1.957$ m/sec

Maximum Capacity (Q_{max}) = V*A

= **0.1572** m^3/sec

> **0.1169** m^3/sec

% Utilization = **74%** **<90%, OK**

Provide 300UC (1:50) is OK

Design Q for oufall

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	=	0.020		hydraulic gradient	(1: 50)

Therefore, design V of pipe capacity = 2.805 m/s

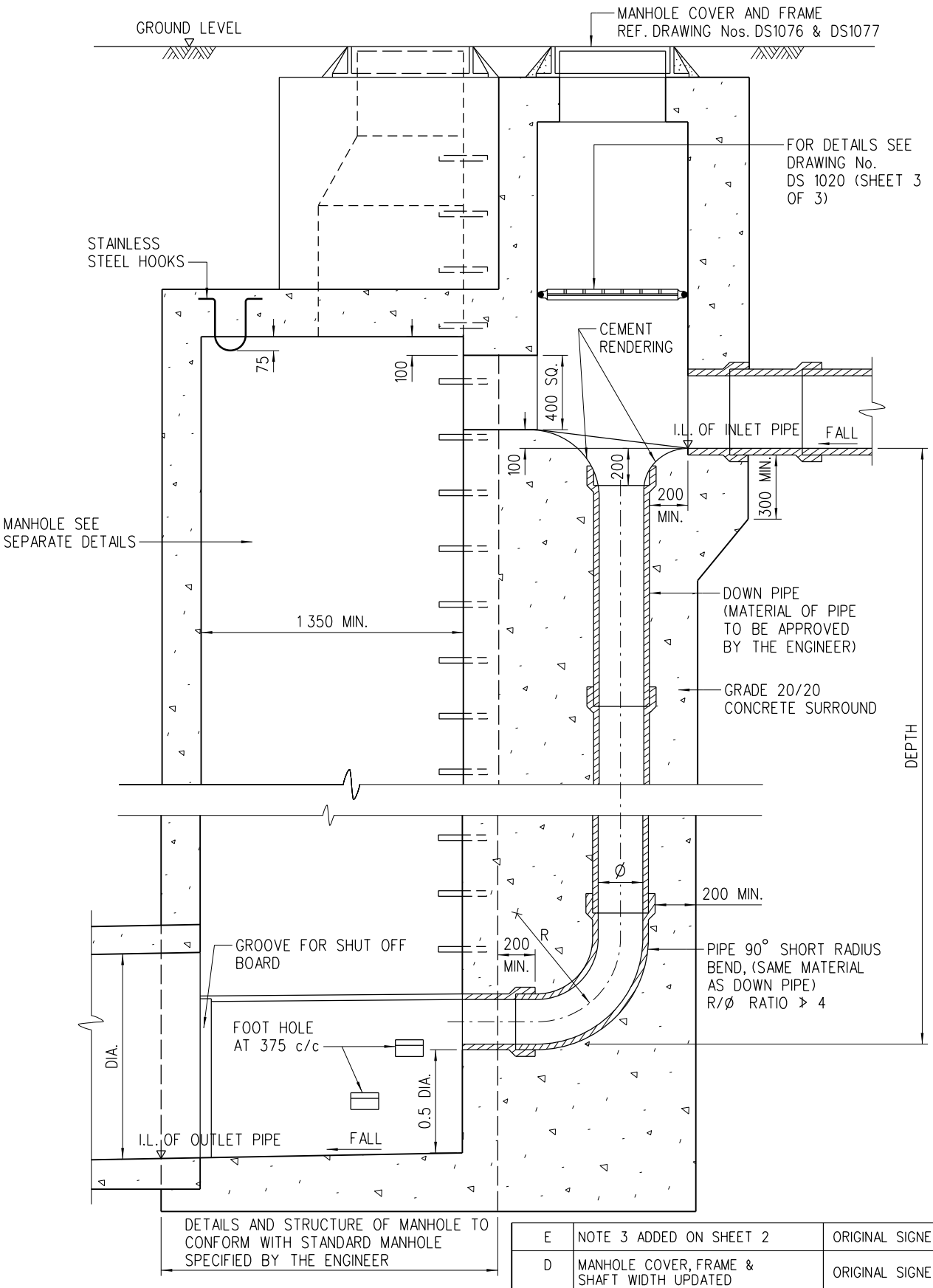
Q= VA (0.8 factor for sedimentation)

= **0.198** m3/s

> **0.117** lit/min Ok

% of capacity utilization = **59%**

Provide 300mm dia. concrete pipe (1:50) is OK



SECTIONAL ELEVATION A-A

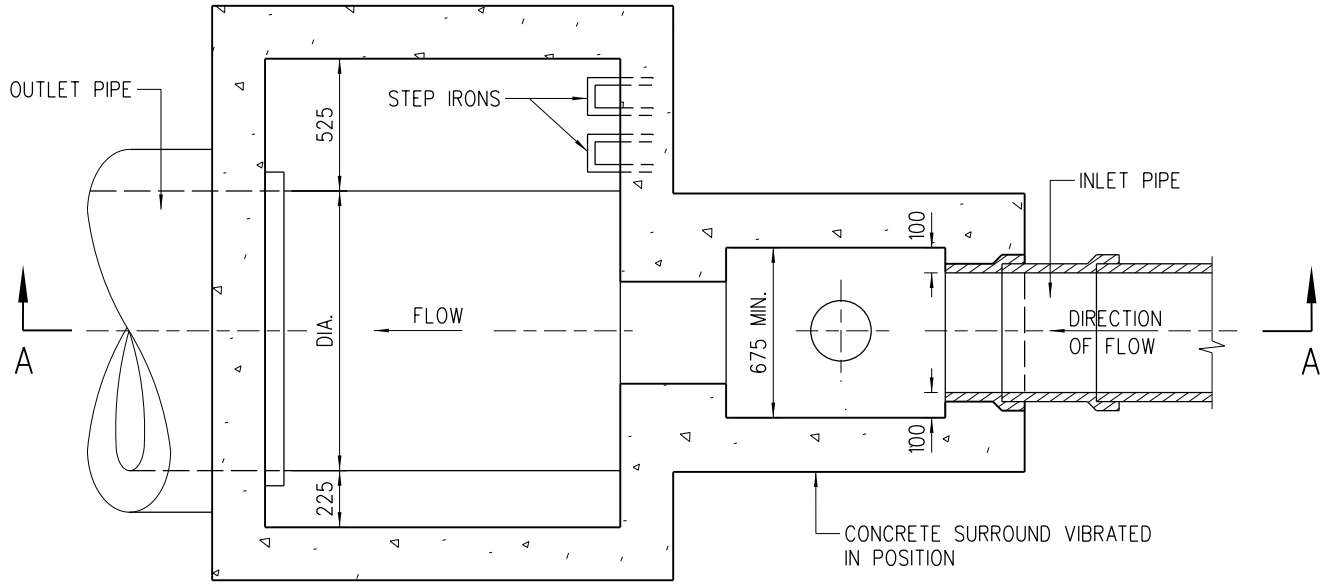
REV.	DESCRIPTION	SIGNATURE	DATE
E	NOTE 3 ADDED ON SHEET 2	ORIGINAL SIGNED	2.8.2022
D	MANHOLE COVER, FRAME & SHAFT WIDTH UPDATED	ORIGINAL SIGNED	10.5.2010
C	REDRAWN BY CAD	ORIGINAL SIGNED	8.8.2001
B	GENERAL REVIEW	ORIGINAL SIGNED	2.2.2001
A	GENERAL REVISION	ORIGINAL SIGNED	22.7.1994

BACKDROP MANHOLE
TYPE 3

DRAINAGE SERVICES DEPARTMENT

REFERENCE	DRAWING No.
SCALE 1 : 30	DS 1020E (SHEET 1 OF 3)

DIA. OF INLET PIPE	DIA. OF DOWN PIPE
150	150
225	225
300	225
375	300
450	300



SECTIONAL PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THIS TYPE OF BACKDROP MANHOLE IS PREFERABLY USED IN FOUL SEWER.
3. RECESS WITH SQUARE STEEL ROD SHALL BE PROVIDED AT TOP OF MANHOLE CHAMBER FOR INSTALLING MONITORING DEVICE(S). DETAILS REFER TO DSD STANDARD DRAWING NO. DS 1099.

REV.	DESCRIPTION	SIGNATURE	DATE
E	NOTE 3 ADDED ON SHEET 2	ORIGINAL SIGNED	2.8.2022
D	MANHOLE COVER, FRAME & SHAFT WIDTH UPDATED	ORIGINAL SIGNED	10.5.2010
C	REDRAWN BY CAD	ORIGINAL SIGNED	8.8.2001
B	GENERAL REVIEW	ORIGINAL SIGNED	2.2.2001
A	GENERAL REVISION	ORIGINAL SIGNED	22.7.1994

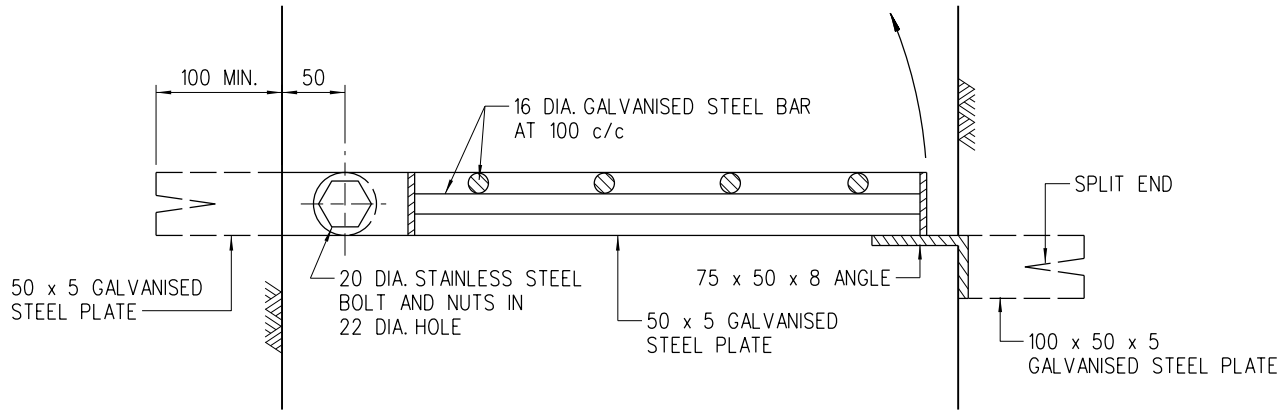
BACKDROP MANHOLE TYPE 3

DRAINAGE SERVICES DEPARTMENT

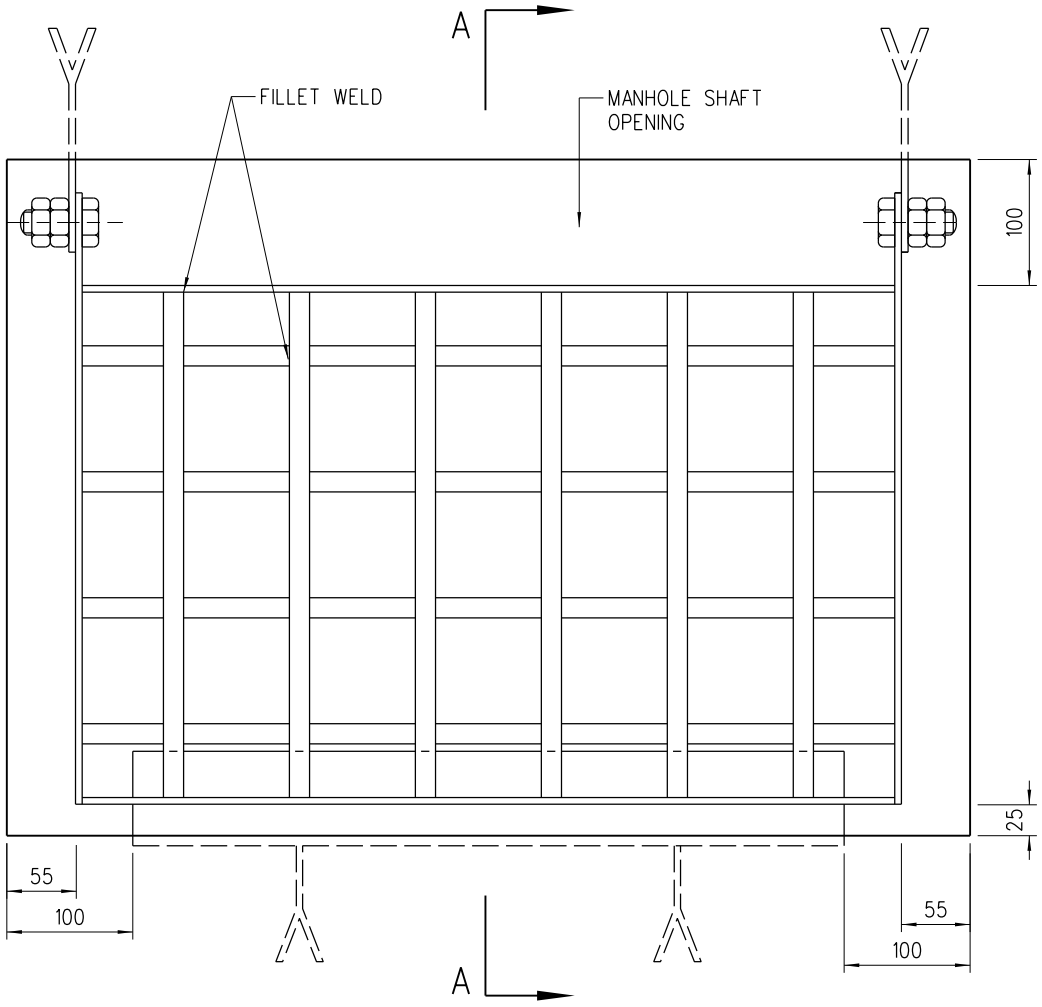
REFERENCE

SCALE 1 : 30

DRAWING No. DS 1020E



SECTION A-A



PLAN

NOTES:

1. ALL STEELWORKS SHOULD BE GALVANISED AFTER COMPLETION OF WELDING.

REV.	DESCRIPTION	SIGNATURE	DATE
E	NOTE 3 ADDED ON SHEET 2	ORIGINAL SIGNED	2.8.2022
D	MANHOLE COVER, FRAME & SHAFT WIDTH UPDATED	ORIGINAL SIGNED	10.5.2010
C	REDRAWN BY CAD	ORIGINAL SIGNED	8.8.2001
B	GENERAL REVIEW	ORIGINAL SIGNED	2.2.2001
A	GENERAL REVISION	ORIGINAL SIGNED	22.7.1994

BACKDROP MANHOLE TYPE 3

DRAINAGE SERVICES DEPARTMENT

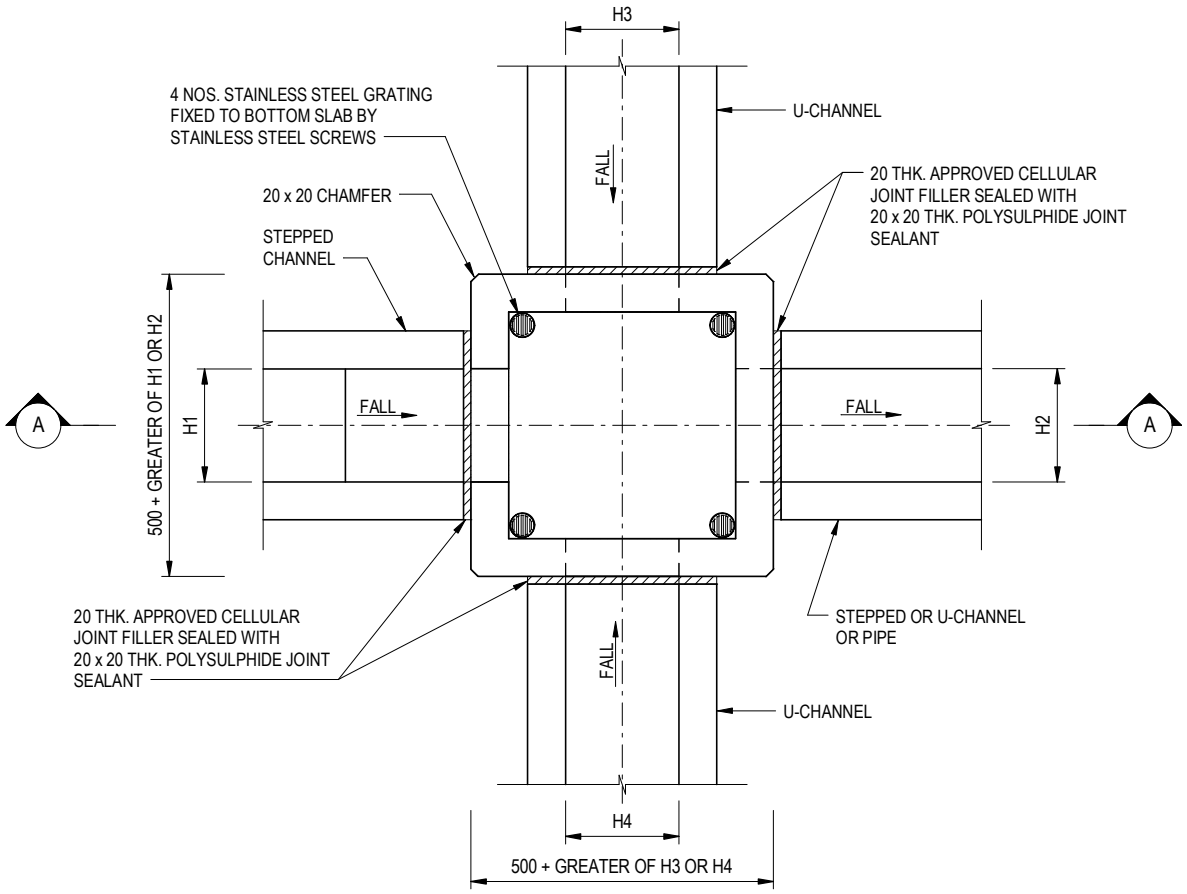
REFERENCE

DRAWING No.

DS 1020E

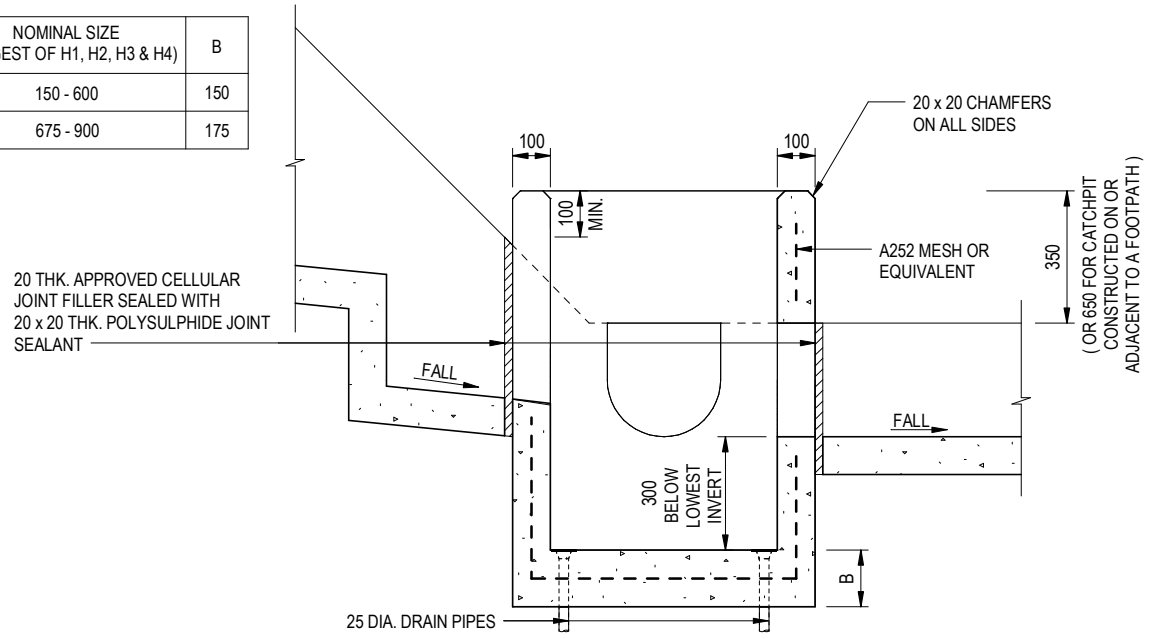
(SHEET 3 OF 3)

SCALE 1 : 6



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)

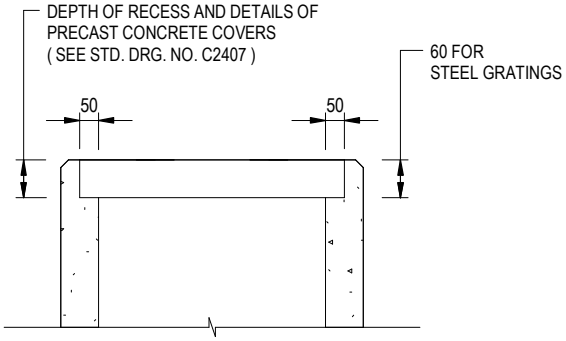
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1A

致力建設香港成為可持續發展、具抗禦力、宜居、宜業、宜樂的世界級城市
We build to make Hong Kong a world-class sustainable and resilient city for living, working and playing



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)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.
C2406 /2B

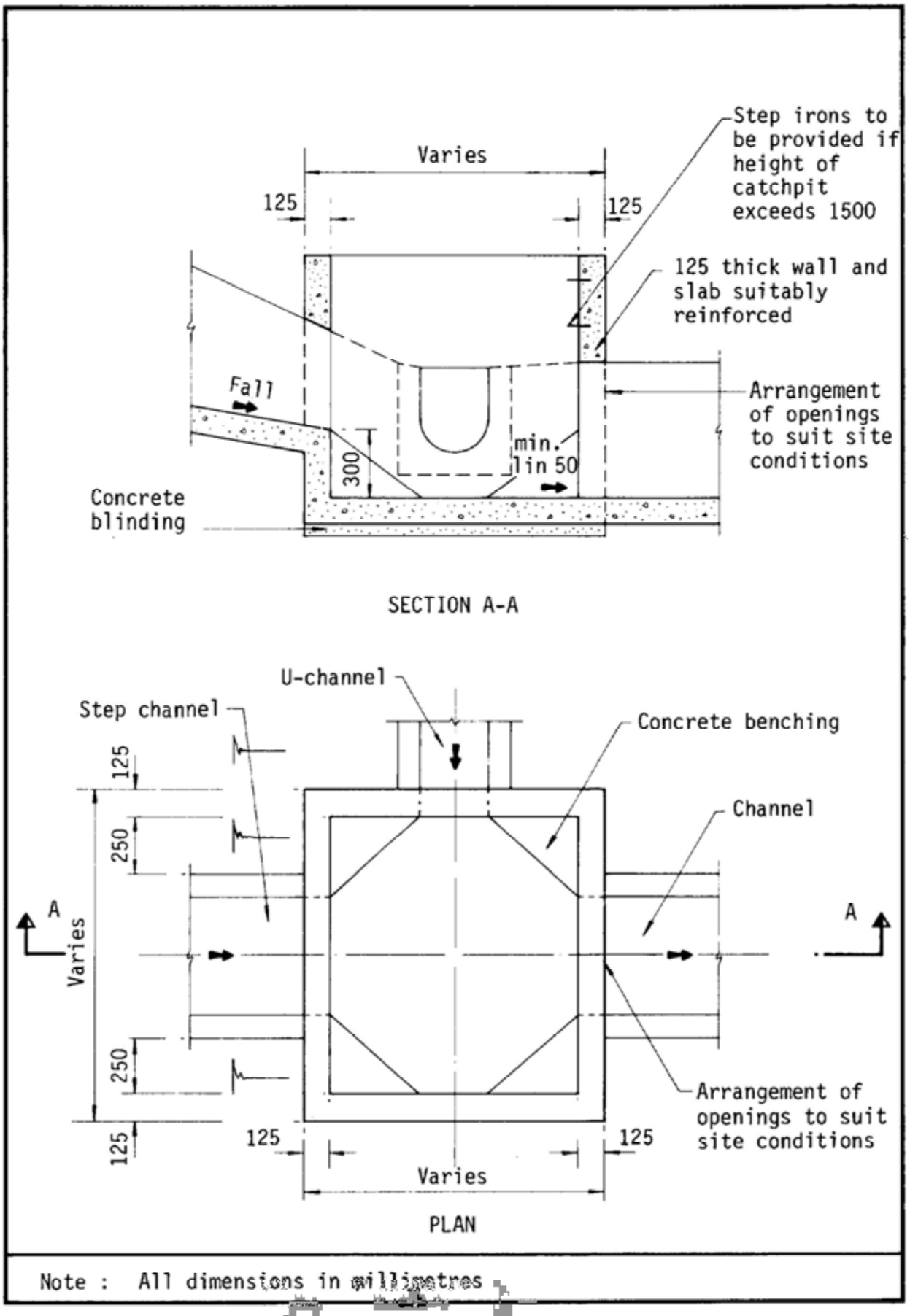
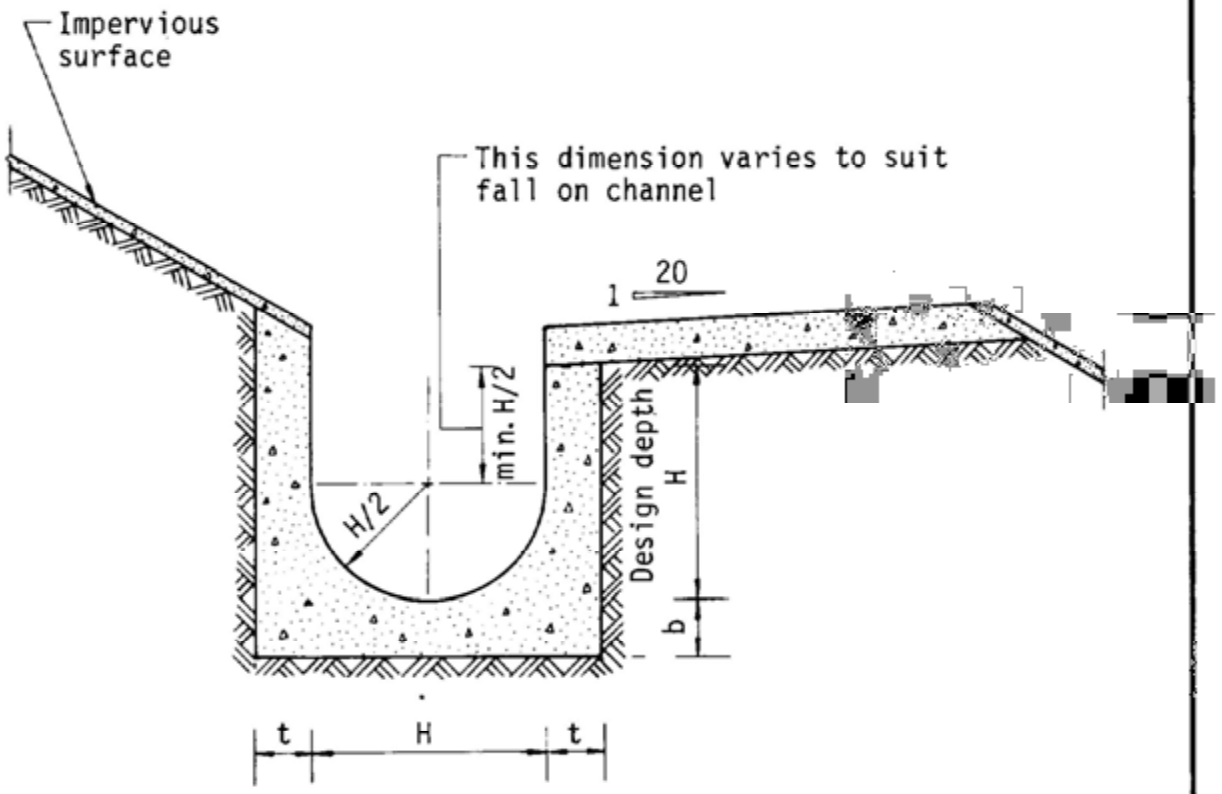


Figure 8.10 - Typical Details of Catchpits



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