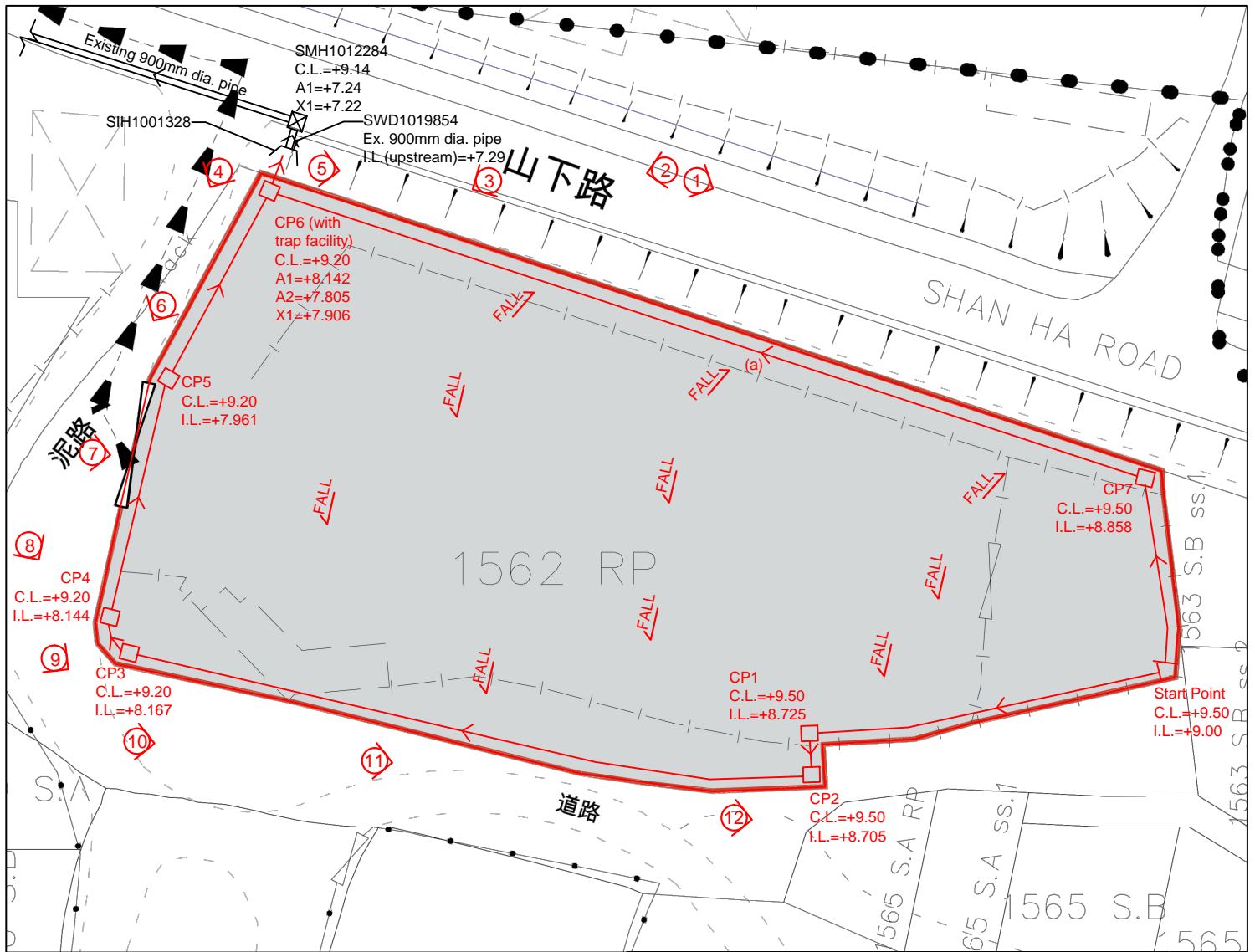


Annex 2

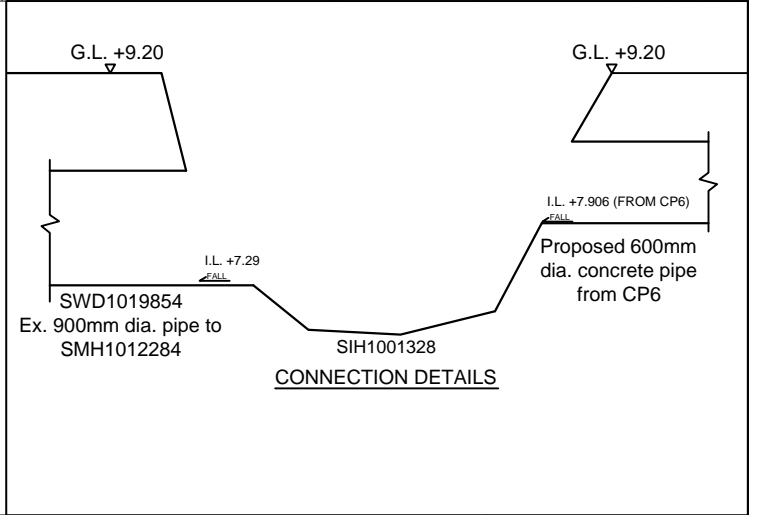
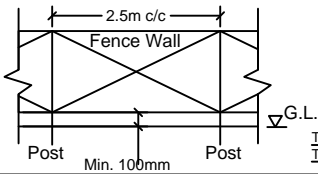
Drainage Proposal



- Note:**
- Catchpits (CP6) with desilting facility shall follow CEED standard drawing No. C2406I.
 - Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
 - Fence Wall to be erected (if any) shall be Open-bottom type.
 - No site formation works/ land filling to be carried out.

LEGEND

- Existing Catchpit
- Existing 900mm dia. pipe
- Proposed Catchpit
- Proposed 450UC (1:100) with Cast Iron Cover
- Proposed 600mm dia. concrete pipe (1:150)
- Photo Viewport



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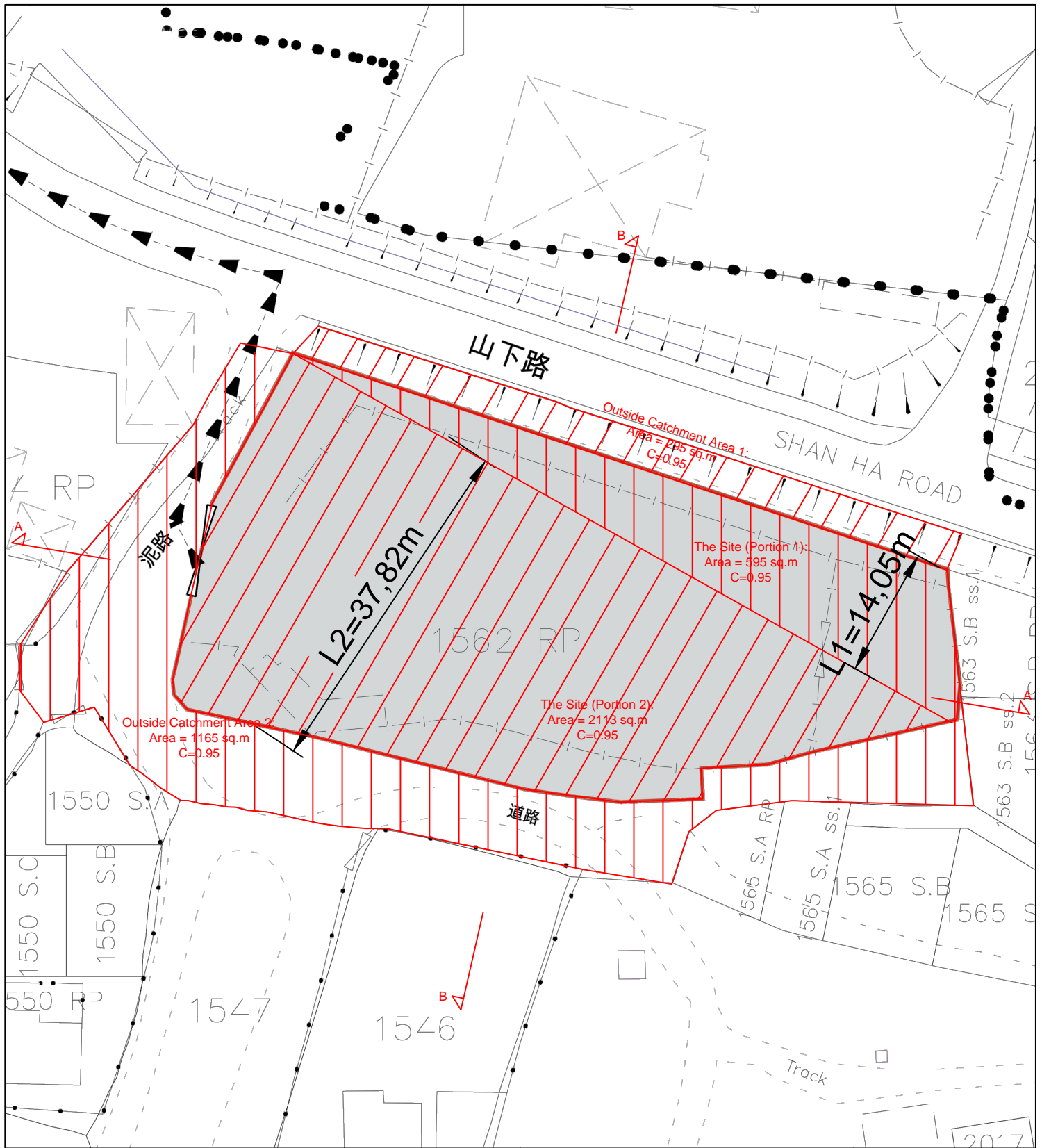
Project:
Proposed Temporary Public Vehicle Park (Excluding Container Vehicle) with Ancillary Electric Vehicle Charging Facilities for a Period of 3 Years at Lot 1562 RP(Part) in D.D. 121, Shan Ha Tsuen, Yuen Long, New Territories

(Application Number:)

Title: Drainage Proposal - LAYOUT D01-1

Drawn by: DM Date: 31-3-2026

Check by: DM Scale: ----



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at Lot 1562 RP(Part) in D.D. 121, Shan Ha Tsuen, Yuen Long, New
Territories

(Application Number:)

Title:

Drainage Proposal -
CATCHMENT AREA PLAN

D02

Drawn by:

DM

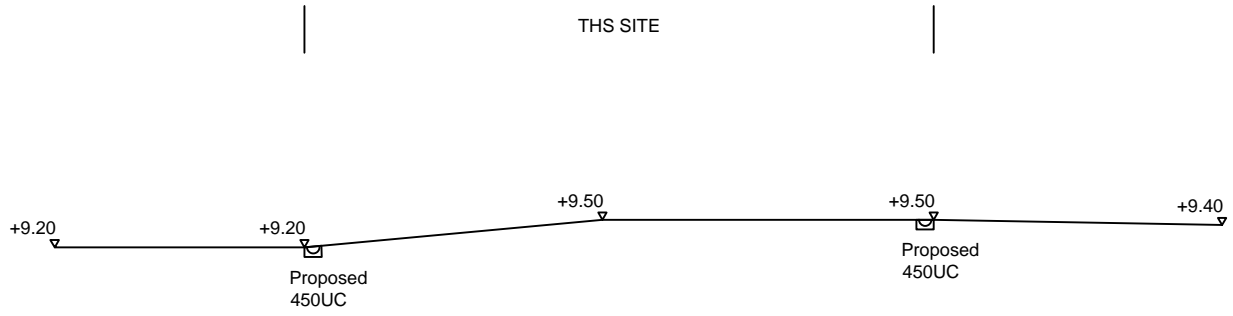
Date:

31-3-2026

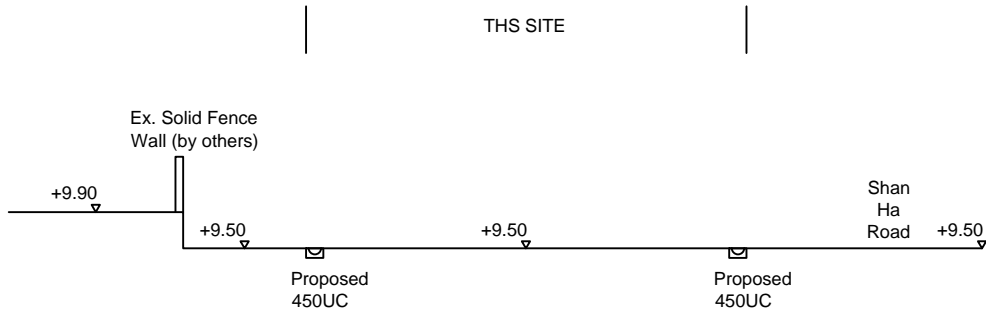
Check by:

DM

Scale:



SECTION A-A



SECTION B-B

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Project:
Proposed Temporary Public Vehicle Park (Excluding Container Vehicle) with Ancillary Electric Vehicle Charging Facilities for a Period of 3 Years at Lot 1562 RP(Part) in D.D. 121, Shan Ha Tsuen, Yuen Long, New Territories

(Application Number:)

Title:

Drainage Proposal -
 SECTIONS

D03

Drawn by:

DM

Date:

31-3-2026

Check by:

DM

Scale:

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Outside Catchment Area 1, Area	=	295	m ²	(C= 0.95)	L1= 14.05	m
Outside Catchment Area 2, Area	=	1165	m ²	(C= 0.95)	L2= 38.72	m
THE SITE (Portion 1), Area	=	595	m ²	(C= 0.95)	H= 1	m
THE SITE (Portion 2), Area	=	2113	m ²	(C= 0.95)		

Calculation of Design Runoff of the Proposed Development.

For the design of drains inside The Site (Portion 1), Consider The Site (Portion 1) + Outside Catchment Area 1

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

$$A = 595+295 \quad \text{m}^2$$

$$= 890$$

$$= 0.00089 \quad \text{km}^2$$

$$t = 0.14465 L1/ H^{0.2} A^{0.1}$$

$$= 0.14465*14.05/1^{0.2}*890^{0.1}$$

$$= 1.031 \quad \text{min}$$

$$i = 1.16*a/(t+b)^c \quad (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)}$$

$$= 1.16*505.5/(1.031+3.29)^{0.355}$$

$$= 348.8 \quad \text{mm/hr}$$

Therefore, Q1 = 0.278*0.95*348.8*0.00089/0.9 (0.9 factor is adopted for sedimentation)

$$= 0.0911 \quad \text{m}^3/\text{sec}$$

$$= \mathbf{5466} \quad \text{lit/min}$$

Provide 450UC (1:100) is OK

Calculation of Design Runoff of the Proposed Development.

For the design of drains inside The Site (Portion 2), Consider The Site (Portion 2) + Outside Catchment Area 2

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

$$A = 2113+1165 \quad \text{m}^2$$

$$= 3278$$

$$= 0.003278 \quad \text{km}^2$$

$$t = 0.14465 L2/ H^{0.2} A^{0.1}$$

$$= 0.14465*38.72/1^{0.2}*3278^{0.1}$$

$$= 2.493 \quad \text{min}$$

$$i = 1.16*a/(t+b)^c \quad (50 \text{ yrs return period, Table 3a, Corrigendum 2024, SDM) and (16\% increase due to climate change)}$$

$$= 1.16*505.5/(2.493+3.29)^{0.355}$$

$$= 314.5 \quad \text{mm/hr}$$

Therefore, Q2 = 0.278*0.95*314.5*0.003278/0.9 (0.9 factor is adopted for sedimentation)

$$= 0.3025 \quad \text{m}^3/\text{sec}$$

$$= \mathbf{18151} \quad \text{lit/min}$$

Provide 450UC (1:100) is OK

For the design of drains outfall from the site, All Runoff

$$Q = Q1 + Q2$$

$$= 5466 + 18151$$

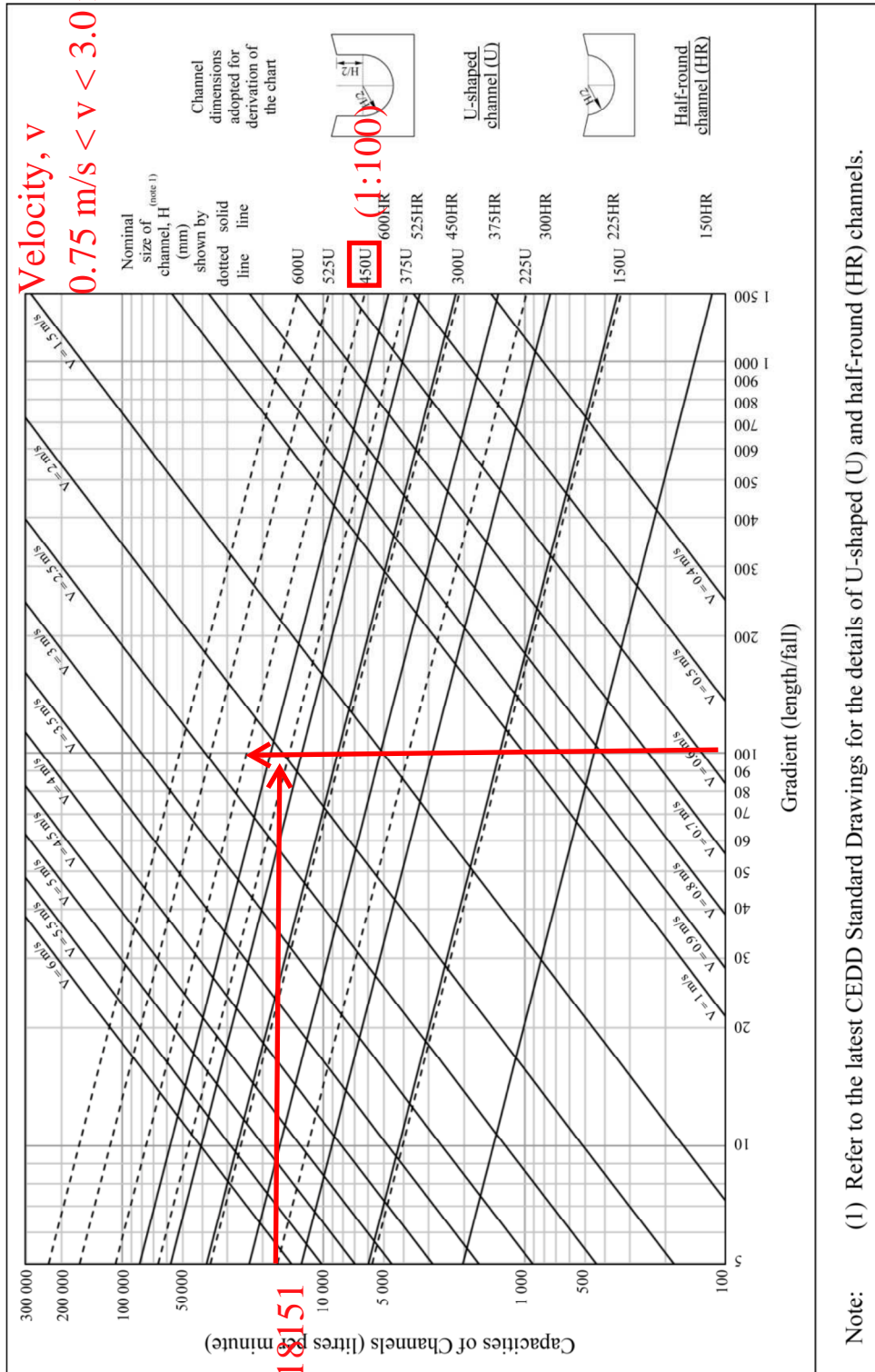
$$= \mathbf{23617} \quad \text{lit/min}$$

Provide 600mm dia. underground concrete pipe (1:150) is OK

GEO Technical Guidance Note No. 43 (TGN 43)
Guidelines on Hydraulic Design of U-shaped and Half-round Channels on Slopes

Issue No.: 1 Revision: - Date: 05.06.2014 Page: 3 of 3

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



Check 600mm dia. Pipes by Colebrook-White Equation

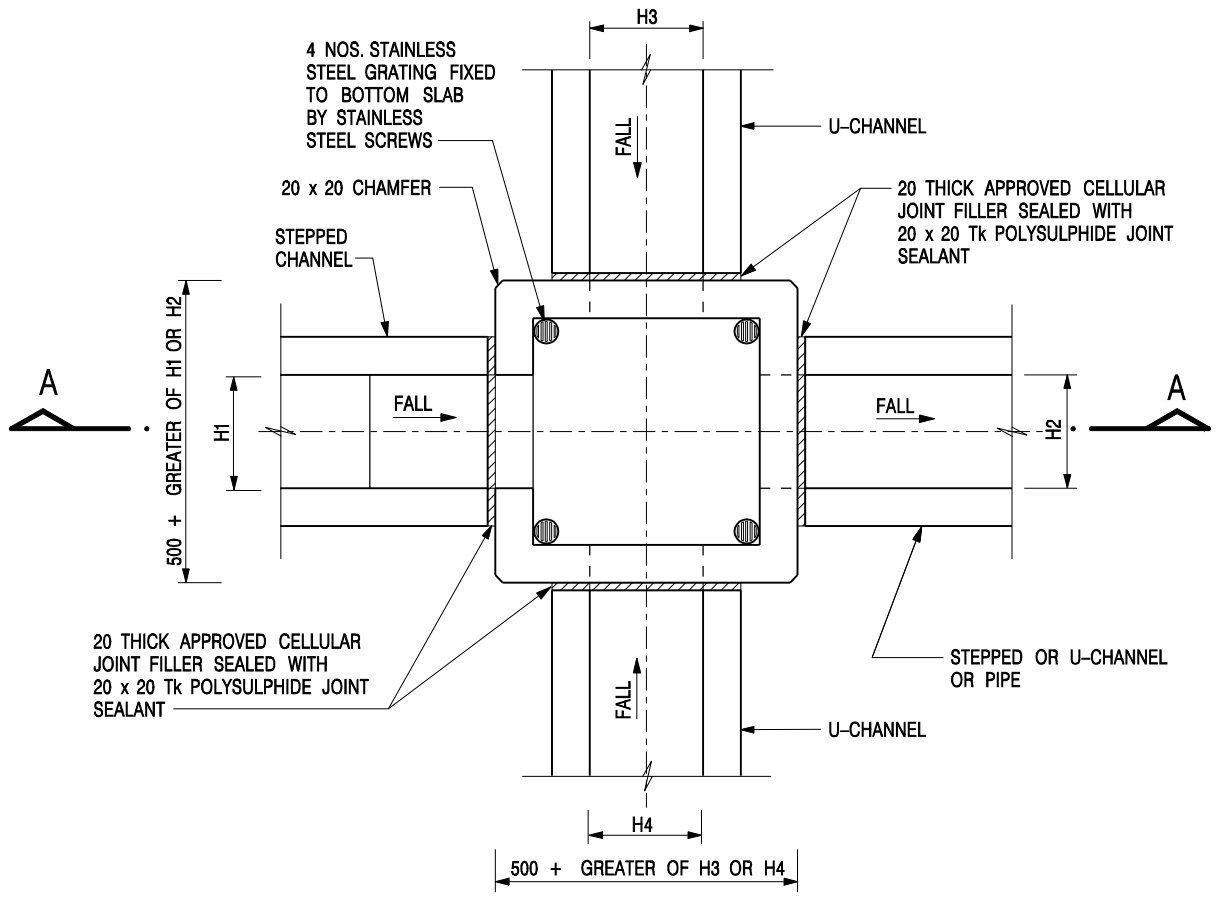
$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

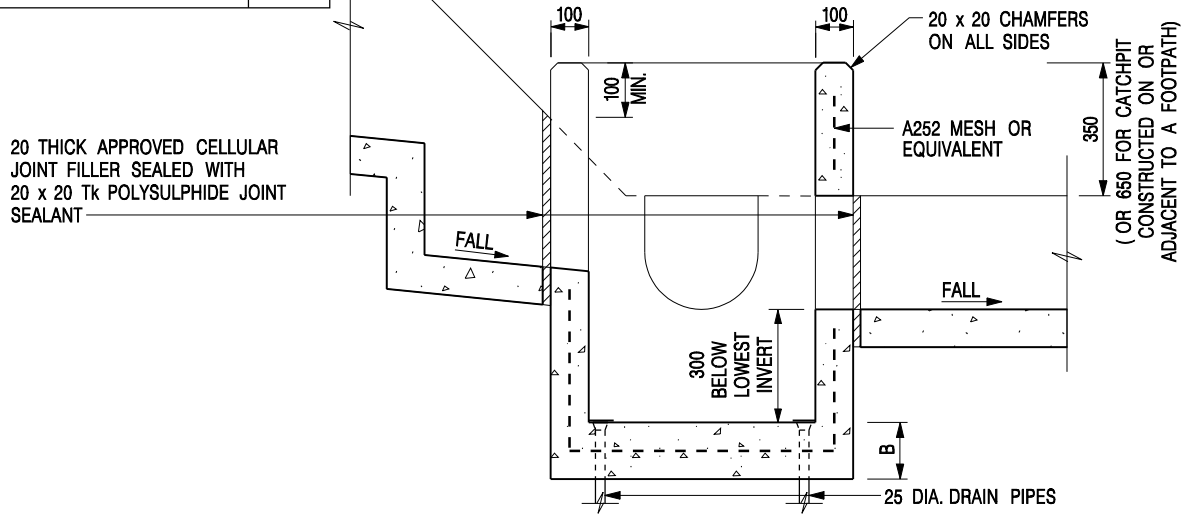
V	=		mean velocity (m/s)
g	=	9.81	m/s ² gravitational acceleration (m/s ²)
D	=	0.6	m internal pipe diameter (m)
ks	=	0.00006	m hydraulic pipeline roughness (m) (Table14, from DSD SDM 2018, concrete pipe)
v	=	1.14E-06	m ² /s kinematic viscosity of fluid (m ² /s)
s	=	0.006667	hydraulic gradient (1: 150)

Therefore, design V of pipe capacity = 2.44 m/s

Q= 0.8VA		(0.8 factor for sedimentation)
= 0.552	m ³ /s	
= 33123	lit/min	
> 23617	lit/min	Ok



NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 - 600	150
675 - 900	175



SECTION A - A

NOTES:

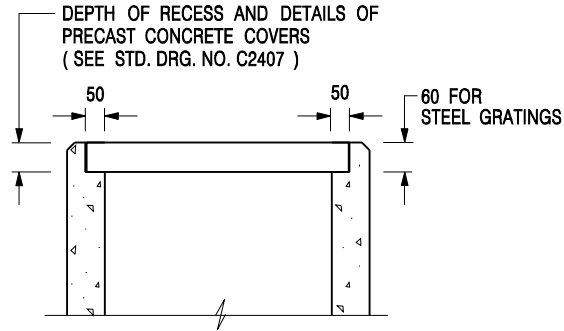
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

**CATCHPIT WITH TRAP
(SHEET 1 OF 2)**

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



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




**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 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 'G' ON STD. DRG. NO. C2405 /4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

A	MINOR AMENDMENT.	Original Signed	04.2016
-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE

**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**

 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	
SCALE 1 : 20	DRAWING NO.
DATE JAN 1991	C2406 /2A

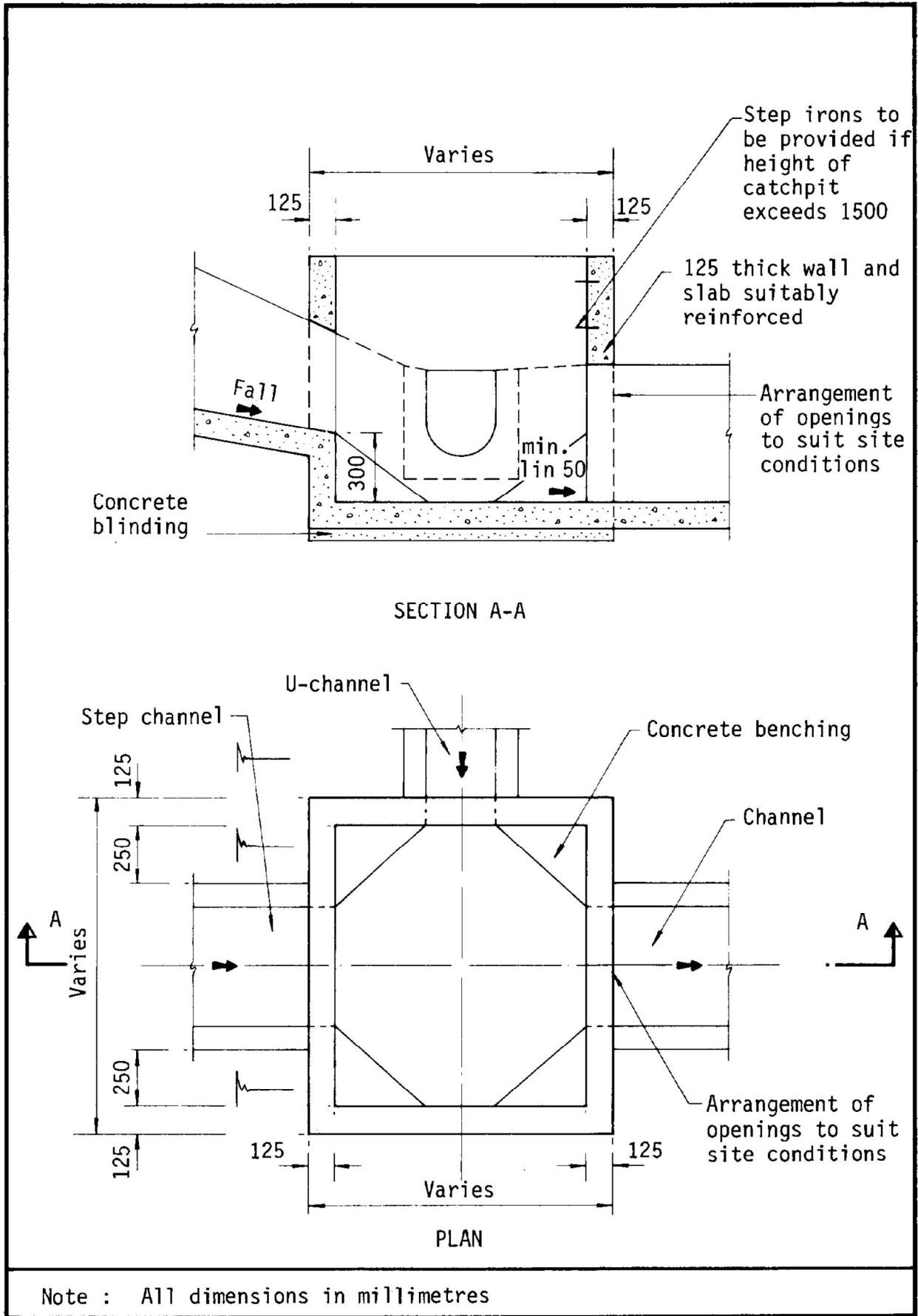


Figure 8.10 - Typical Details of Catchpits

