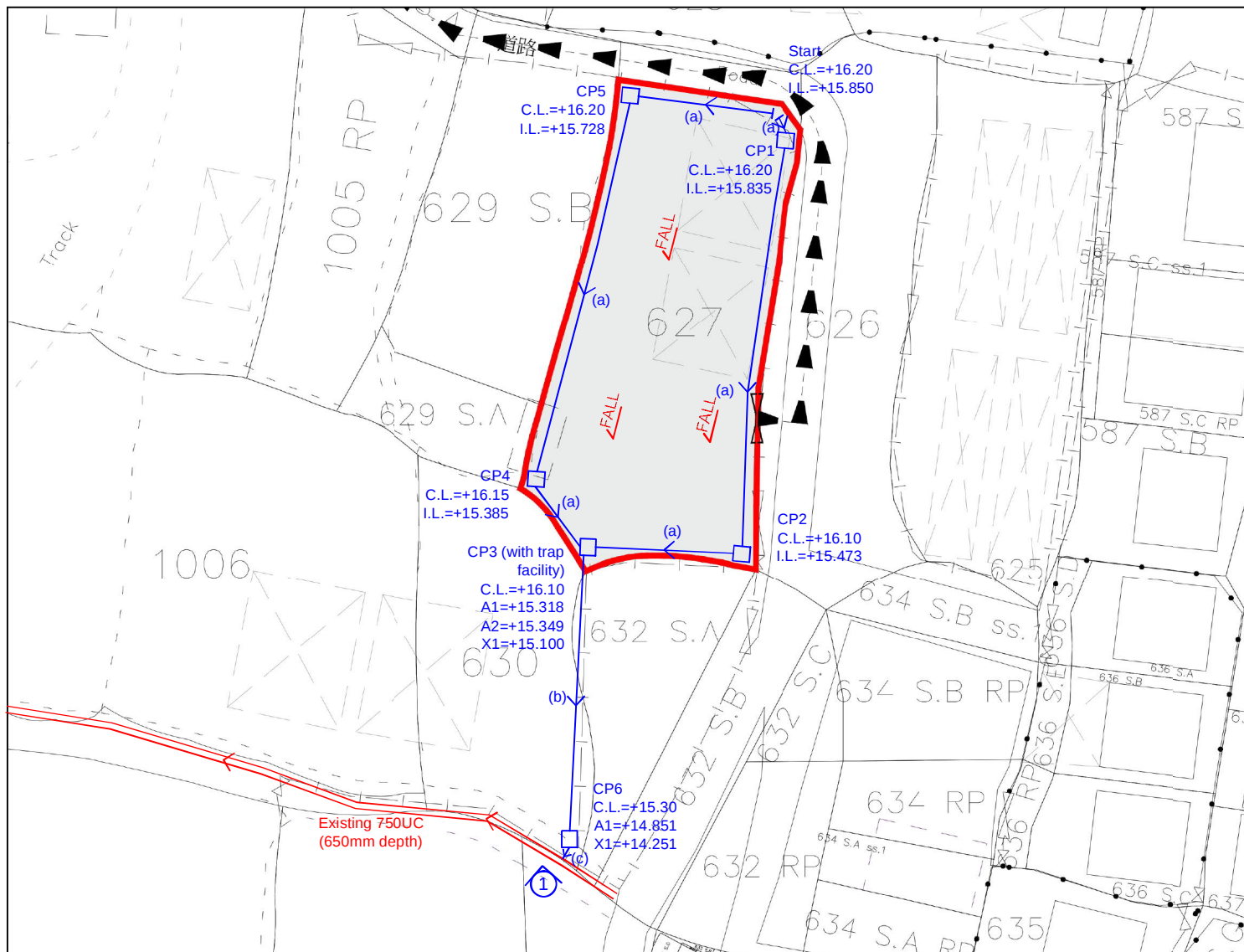


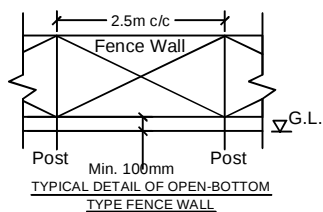
Appendix 1

Drainage Proposal



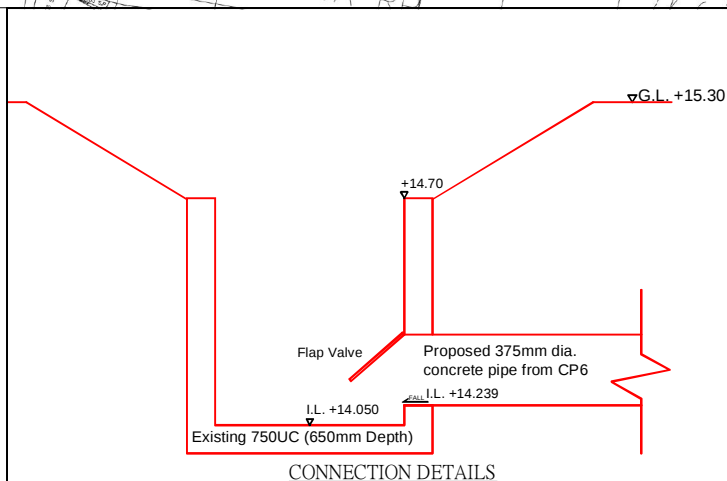
Note:

1. Catchpits (CP3) with desilting facility shall follow CEDD standard drawing No. C24061.
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. Max. 300mm land filled.



LEGEND

- ☒ MH Existing Manhole
- Existing 750UC (650mm depth)
- ☐ CP Proposed CatchPit
- (a) Proposed 300UC (1:100) with Cast Iron Cover
- (b) Proposed 375UC (1:100) with Cast Iron Cover
- (c) Proposed 375mm dia. concrete pipe (1:100)
- Photo Viewport



正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Project:

PROPOSED TEMPORARY EATING PLACE, SHOP AND SERVICES AND ASSOCIATED FILLING OF LAND FOR A PERIOD OF 3 YEARS at LOT 627 (PART) IN D.D.112, SHUI LAU TIN TSUEN, SHEK KONG, YUEN LONG, NEW TERRITORIES
(Application Number:)

Title:

Drainage Proposal - LAYOUT

D01-1

Drawn by:

DM

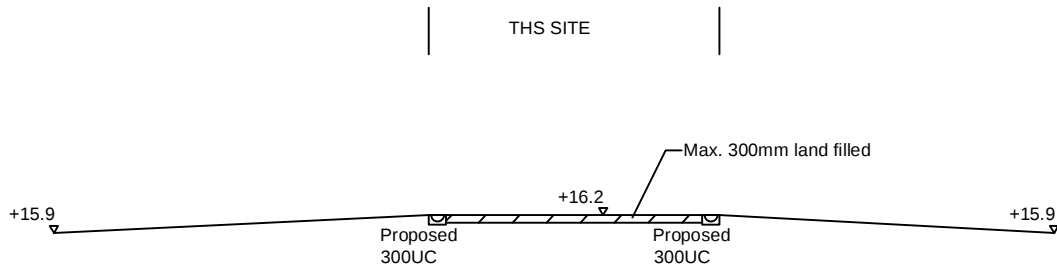
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23-6-2026

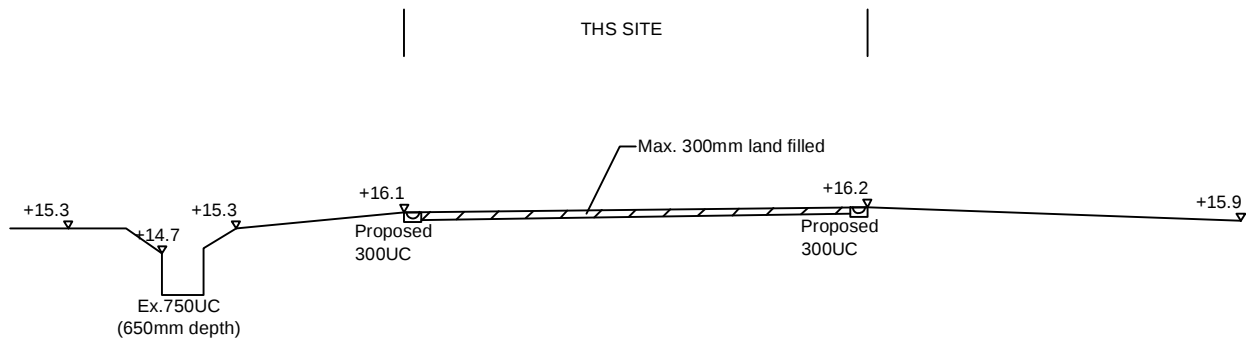
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DM

Scale:



SECTION A-A



SECTION B-B

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PROPOSED TEMPORARY EATING PLACE, SHOP AND SERVICES AND ASSOCIATED FILLING OF LAND FOR A PERIOD OF 3 YEARS at LOT 627 (PART) IN D.D.112, SHUI LAU TIN TSUEN, SHEK KONG, YUEN LONG, NEW TERRITORIES
(Application Number:)

Title:

Drainage Proposal -
SECTIONS

D03

Drawn by:

DM

Date:

23-6-2026

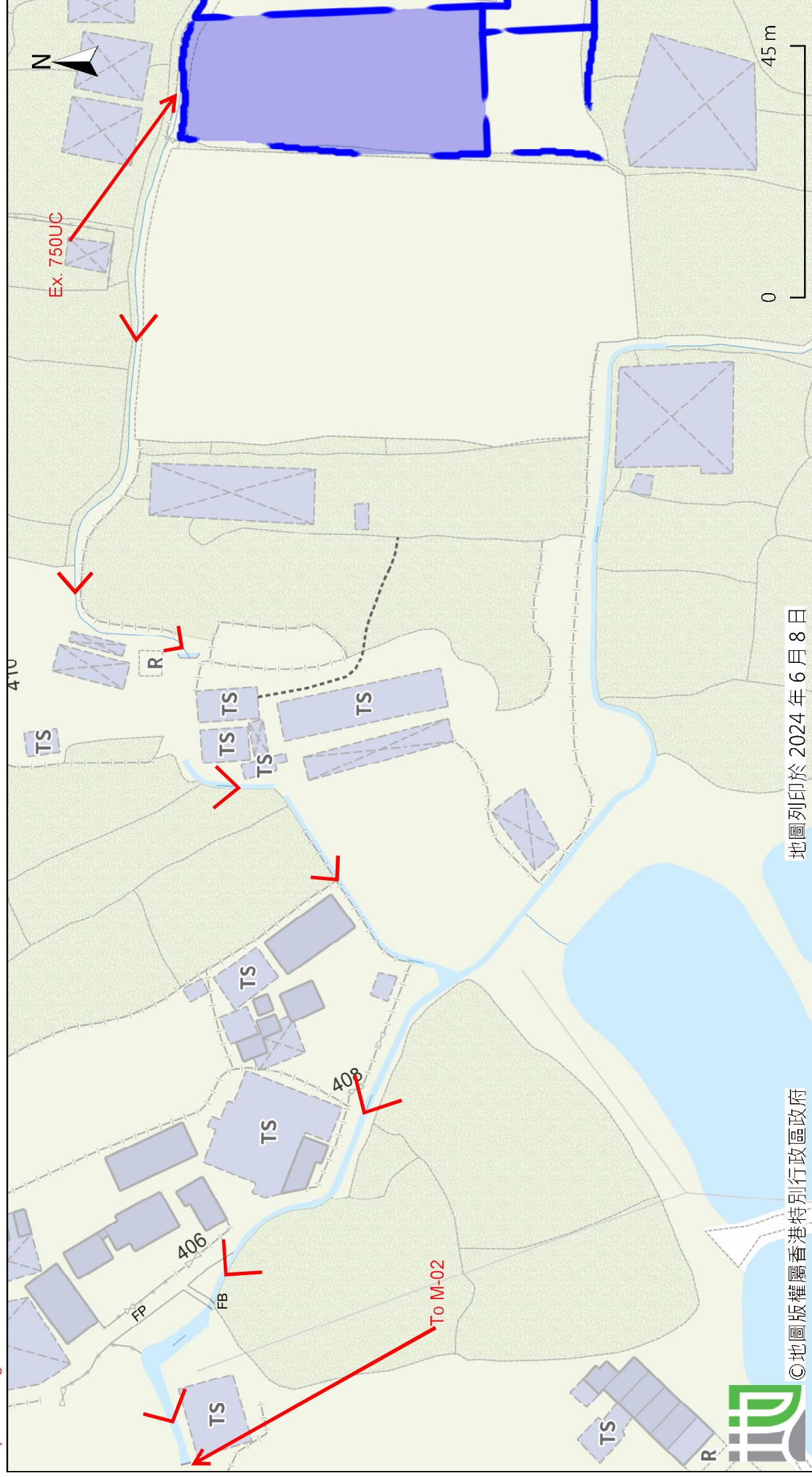
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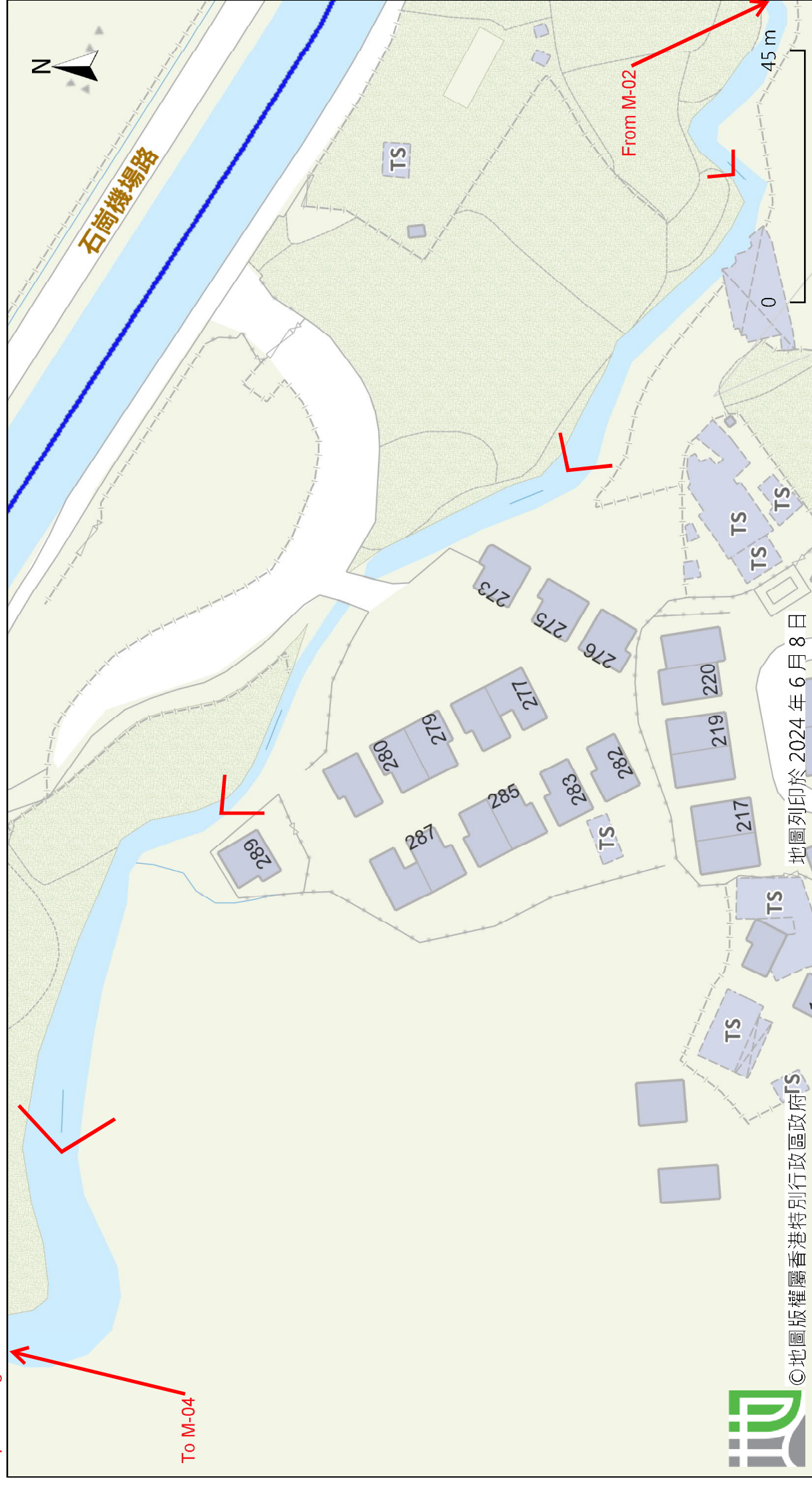
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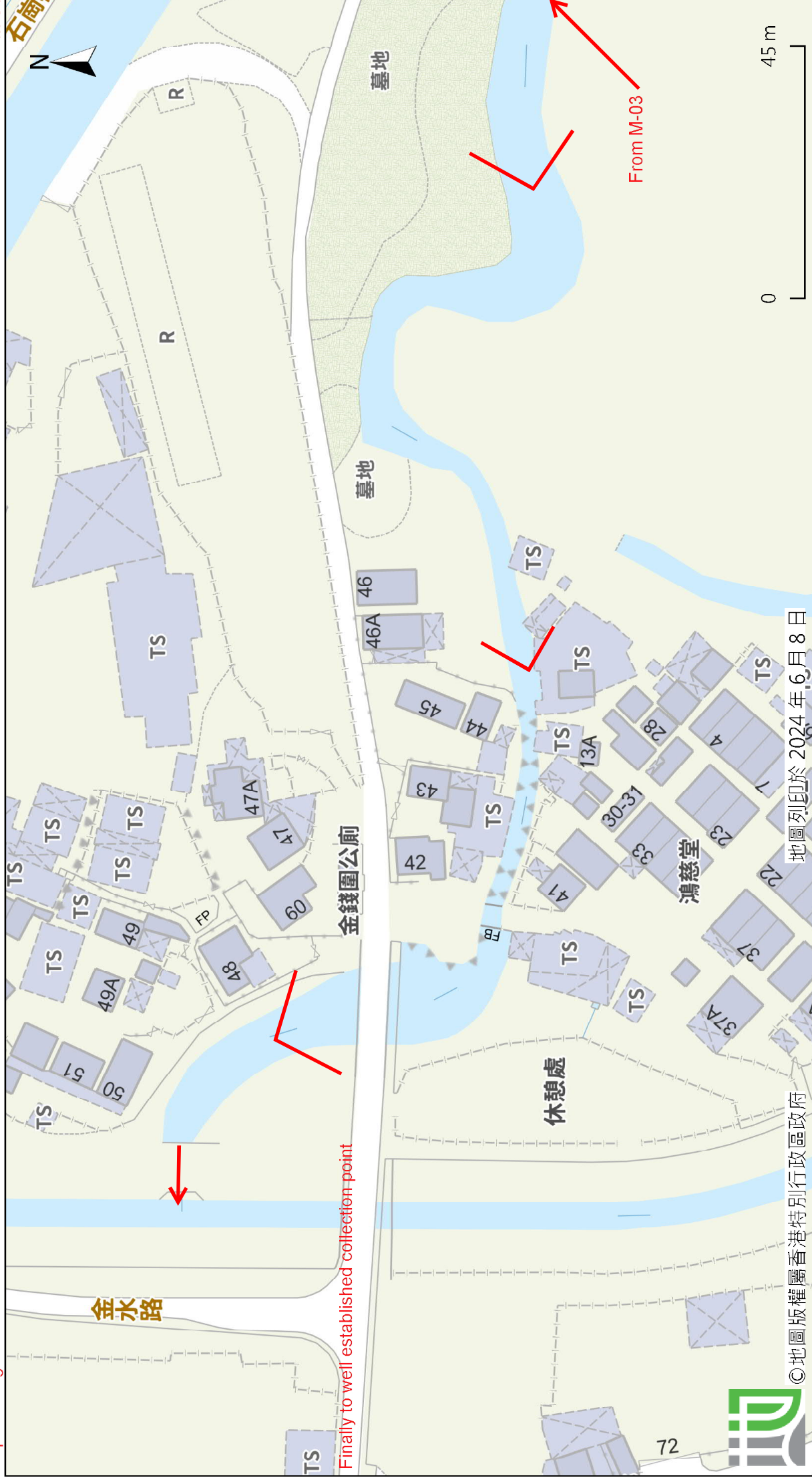
PHOTO 1











THE SITE, Area	= 769	m ²	(C= 0.95)	L1= 11.88 m, H1= 1 m
Outside Catchment Area 1, Area	= 323	m ²	(C= 0.95)	L2= 14.47 m, H2= 1 m
Calculation of Design Runoff of the Proposed Development.				
For the design of drains inside The Site				
	ΣQ	=	$\Sigma 0.278 C i A$	
A	= 769	m ²		
	= 769			
	= 0.000769	km ²		
t	= 0.14465 L1/ H1 ^{0.2} A ^{0.1}			
	= 0.14465*11.88/1 ^{0.2} *769 ^{0.1}			
	= 0.884	min		
i	= 1.16*a/(t+b) ^f		(50 yrs return period, Table 3a, Corrigendum 2024, SDM) and (16% increase due to climate change)	
	= 1.16*505.5/(3.668+3.29) ^{0.355}			
	= 353.1	mm/hr		
Therefore, Q1	= 0.278*0.95*353.1*0.000769/0.9		(0.9 factor is adopted for sedimentation)	
	= 0.0797	m ³ /sec		
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 A= 0.0803 m ²	
	= 0.1042	m		
n	= 0.014	s/m ^{1/3}	(Talbe 13 of Stormwater Drainage Manual)	
S _f	= 0.01	(1:100)		
Therefore, V	= 0.01042 ^{2/3} *0.01 ^{0.5} /0.014			
	= 1.291	m/sec		
Maximum Capacity (Q _{max})	= V*A			
	= 0.104	m ³ /sec		
	> 0.0797	m ³ /sec		
Provide 300UC (1:100) is OK				
Calculation of Design Runoff of the Proposed Development.				
For the design of Outfall, (The Site + Outside Catchment Area 1)				
	ΣQ	=	$\Sigma 0.278 C i A$	
A	= 323	m ²		
	= 323			
	= 0.000323	km ²		
t	= 0.14465 L2/ H2 ^{0.2} A ^{0.1}			
	= 0.14465*14.47/1 ^{0.2} *323 ^{0.1}			
	= 1.175	min		
i	= 1.16*a/(t+b) ^f		(50 yrs return period, Table 3a, Corrigendum 2024, SDM) and (16% increase due to climate change)	
	= 1.16*505.5/(1.175+3.29) ^{0.355}			
	= 344.8	mm/hr		
Therefore, Q2	= Q1+0.278*0.95*344.8*0.000323/0.9		(0.9 factor is adopted for sedimentation)	
	= 0.112	m ³ /sec		
Manning Equation	V	= R ^{2/3} *S _f ^{0.5} /n		
where	R	= ($\pi r^2/2+2r^2$)/($\pi r+2r$)	r= 0.1875 m A= 0.1255 m ²	
	= 0.1302	m		
n	= 0.014	s/m ^{1/3}	(Talbe 13 of Stormwater Drainage Manual)	
S _f	= 0.01	(1:100)		
Therefore, V	= 0.1302 ^{2/3} *0.01 ^{0.5} /0.014			
	= 1.498	m/sec		
Maximum Capacity (Q _{max})	= V*A			
	= 0.188	m ³ /sec		
	> 0.112	m ³ /sec		
Provide 375UC (1:100) is OK				
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	= 0.375	m	intemal 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	= 0.010		hydraulic gradient (1: 100)	
Therefore, V	= 2.249	m/s		
Q= V A			(0.8 factor for sedimentation)	
	= 0.248	m ³ /s		
	> 0.112	lit/min	Ok	
% of capacity utilization	= 45%			
Proposed 375mm dia. concrete pipe (1:100) is OK				



Total Catchment Area, Area = 17519 m² (C= 0.95) L= 113.1 m, H= 1.357 m

**Calculation of Design Runoff of the Existing 750UC (650mm depth),
For the design of drains inside The Site**

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

A = 17519 m²
 = 17519
 = 0.017519 km²

t = 0.14465 L/ H^{0.2} A^{0.1}
 = 0.14465*113.1/1.357^{0.2}*17519^{0.1}
 = 5.793 min

i = 1.16*a/(t+b)^c (50 yrs return period, Table 3a, Corrigendum 2024,
 = 1.16*505.5/(5.793+3.29)^{0.355} SDM) and (16% increase due to climate change)
 = 267.9 mm/hr

Therefore, Q = 0.278*0.95*267.9*0.017519/0.9 (0.9 factor is adopted for sedimentation)
 = **1.3773** m³/sec

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

where R = A/(W+2D) W= 0.75 m
 = 0.5209 m D= 0.65 m
 A= 0.4875 m²

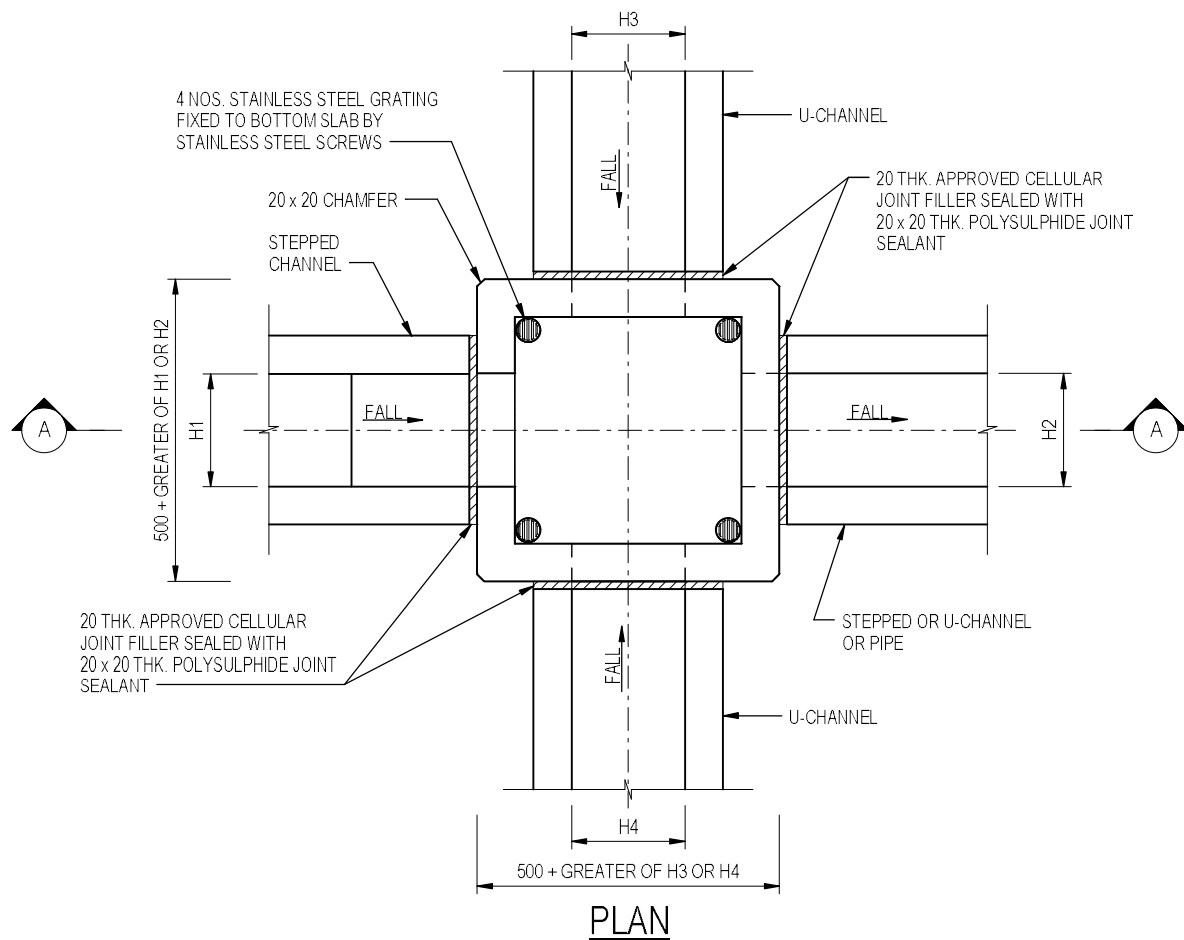
n = 0.014 s/m^{1/3} (Talbe 13 of Stormwater Drainage Manual)

S_f = 0.01 (1:100)

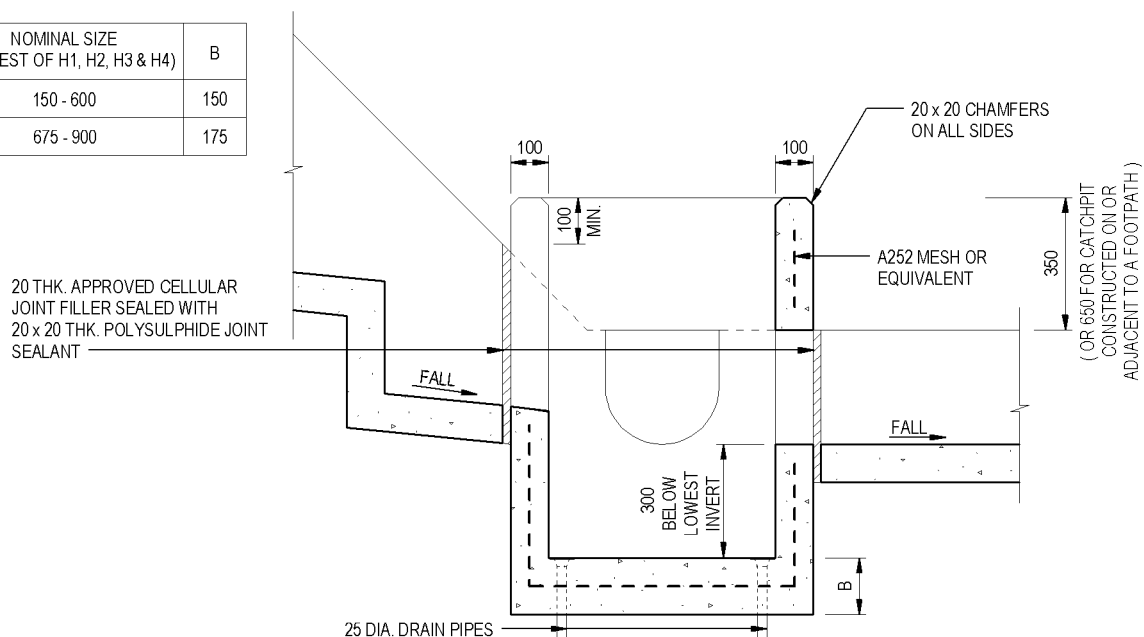
Therefore, V = 0.5209^{2/3}*0.01^{0.5}/0.014
 = 3.776 m/sec

Maximum Capacity (Q_{max}) = V*A
 = **1.841** m³/sec
 > **1.3773** m³/sec

Existing 750UC (650mm depth) is OK



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



NOTES:

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

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

A	BIM OBJECT REVISION.	Original Signed	12.2025
—	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE



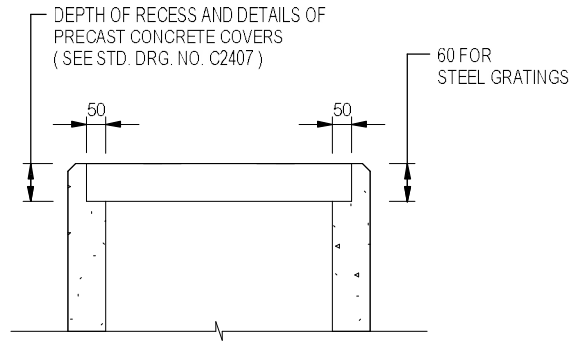
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2406 /1A



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 / 3; 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.

B	BIM OBJECT REVISION.	Original Signed	12.2025
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

DATE JAN 1991

DRAWING NO.

C2406 / 2B

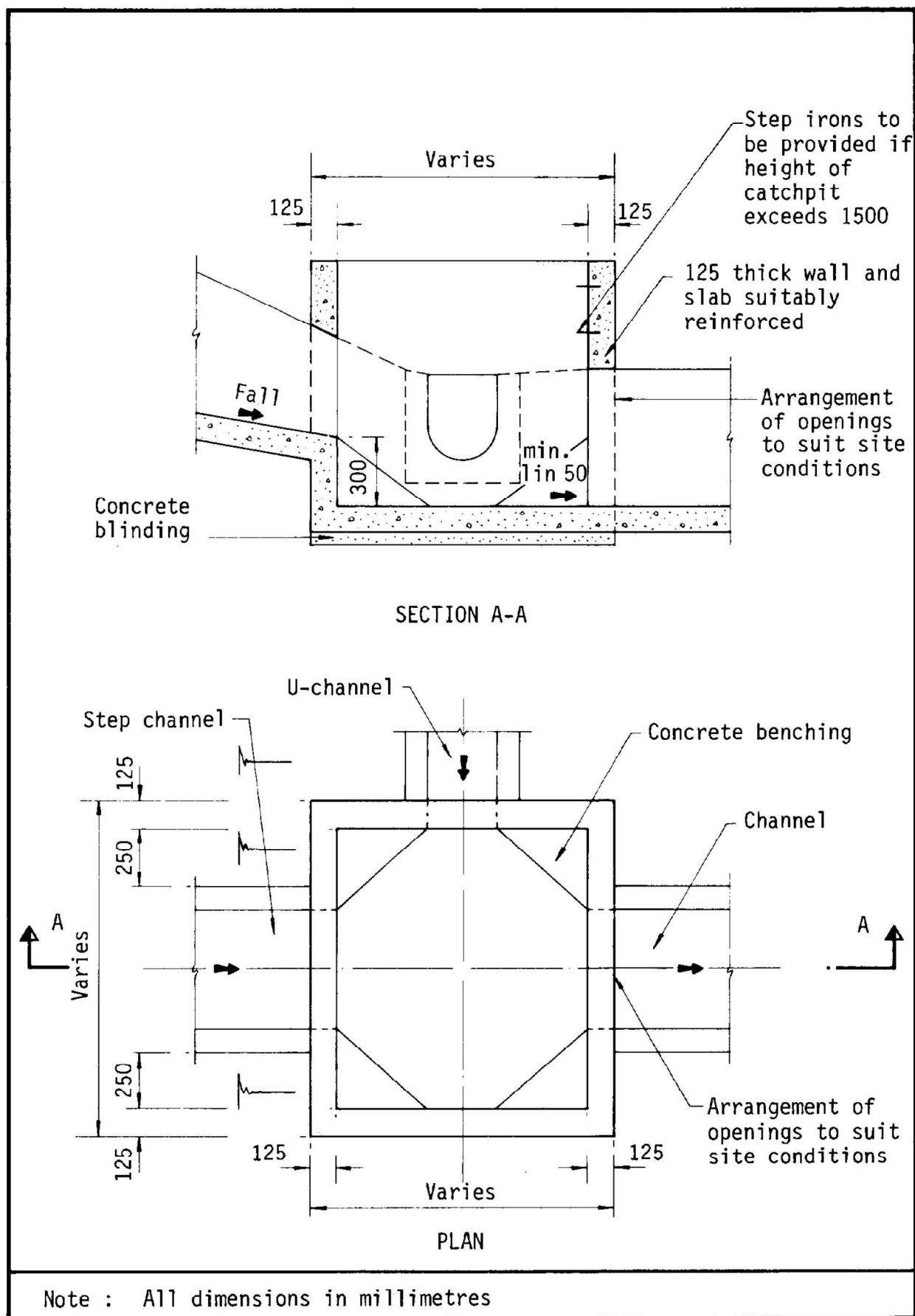
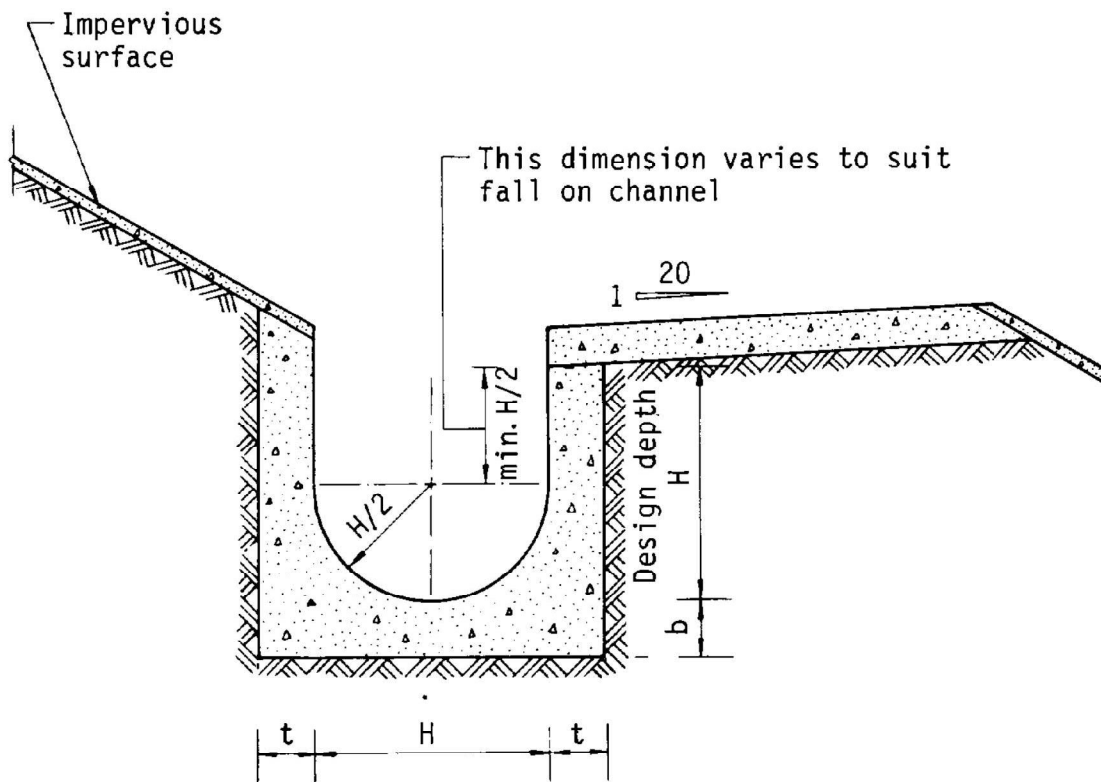


Figure 8.10 - Typical Details of Catchpits



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