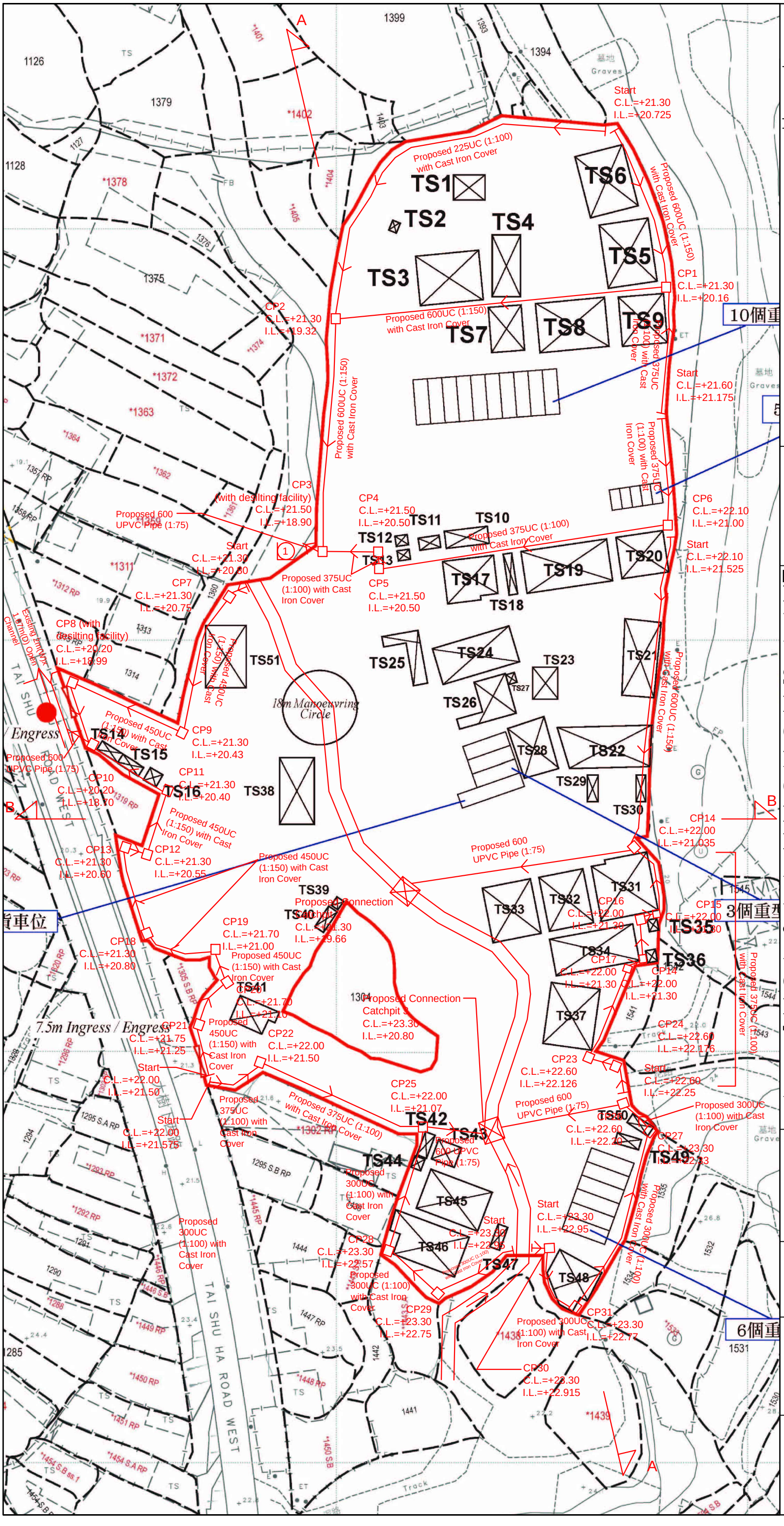


LEGEND

- CP — Proposed CatchPit
- Proposed UC with Cast Iron Cover (size as shown)
- Proposed Connection Catchpit to ex. 1000 dia pipe
- Existing 1000 dia pipe /Existing 2m(W)x 1.67m(D) Open Channel
- ① Photo Viewpot

Company:

正宏工程顧問公司

Ching Wan Engineering Consultants Company

PROJECT:

Proposed Temporary Vehicle Repair Workshop and Open Storage of Building Materials/Prefabricated Components, Recycling Materials, Construction Machinery and Used Electrical/Electronic Appliances with Ancillary Workshop and Packaging Activities for a Period of 3 Years at Various Lots in D.D. 118, Tai Tong, Yuen Long,

Application No.:

TITLE:

Drainage Layout Plan

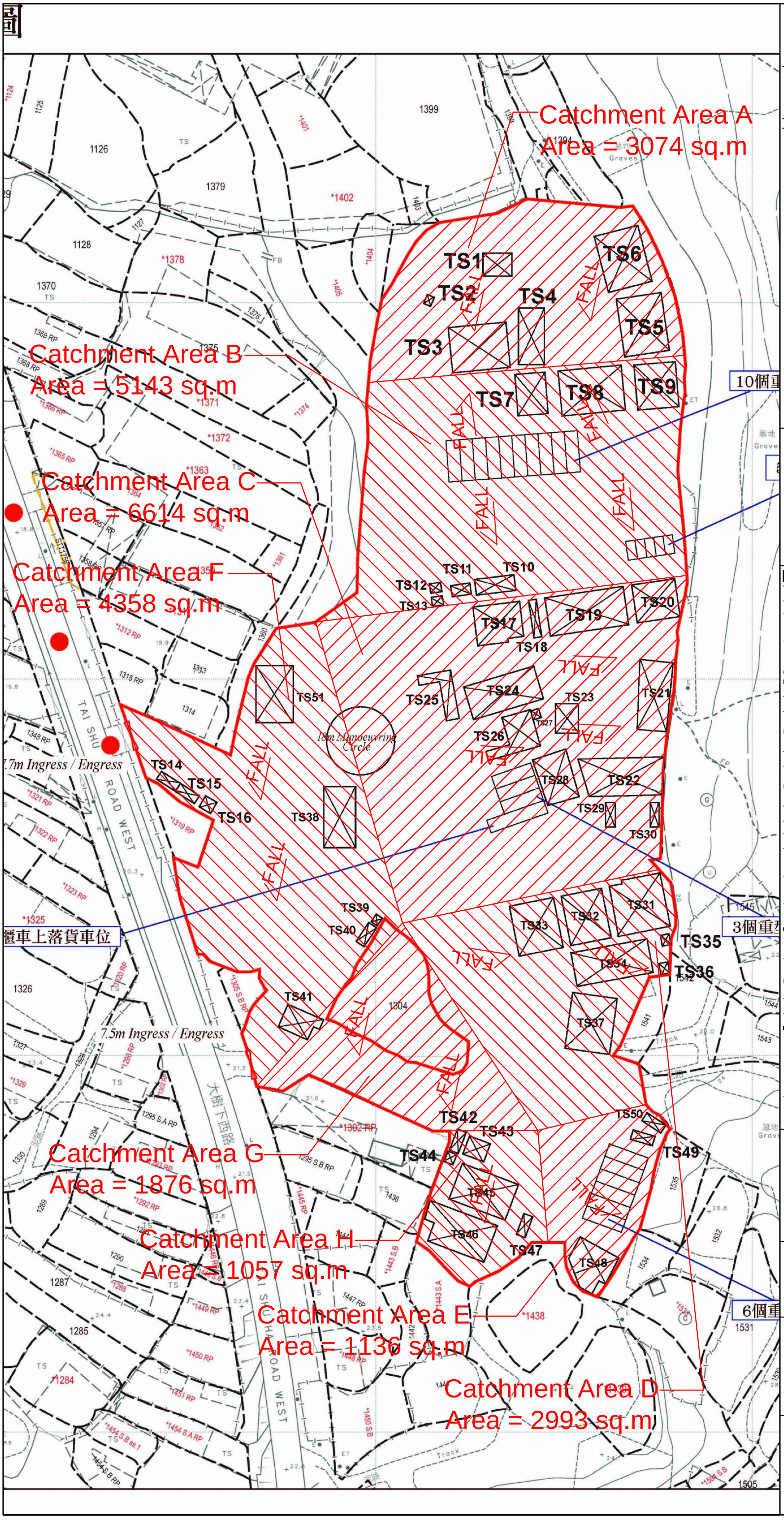
File:

Scale:

Date:
19-12-2024

DWG NO.

D01



LEGEND

- CP — Proposed CatchPit
- Proposed UC with Cast Iron Cover (size as shown)
- Proposed Connection Catchpit to ex. 1000 dia pipe
- Existing 1000 dia pipe /Existing 2m(W)x 1.67m(D) Open Channel
- ① — Photo Viewpot

Company:

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Ching Wan Engineering Consultants Company

PROJECT:

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Application No.:

TITLE:

Catchment Area Plan

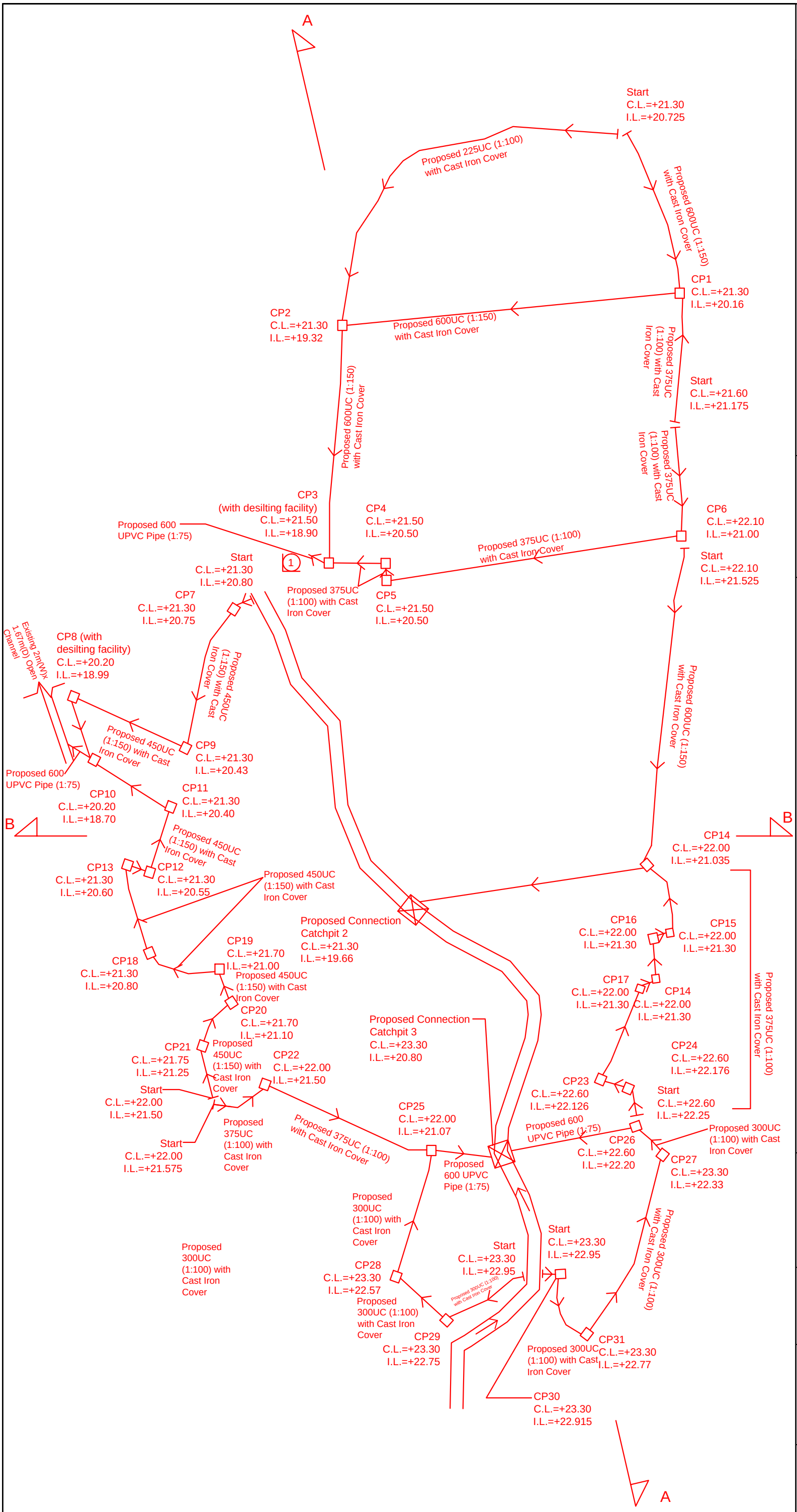
File:

Scale:

Date:
19-12-2024

DWG NO.

D02



LEGEND

- CP — Proposed CatchPit
- Proposed UC with Cast Iron Cover (size as shown)
- Proposed Connection Catchpit to ex. 1000 dia pipe
- Existing 1000 dia pipe /Existing 2m(W)x 1.67m(D) Open Channel
- ① Photo Viewpot

Company:

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Ching Wan Engineering Consultants Company

PROJECT:

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Application No.:

TITLE:

Drainage Layout Plan (without base map)

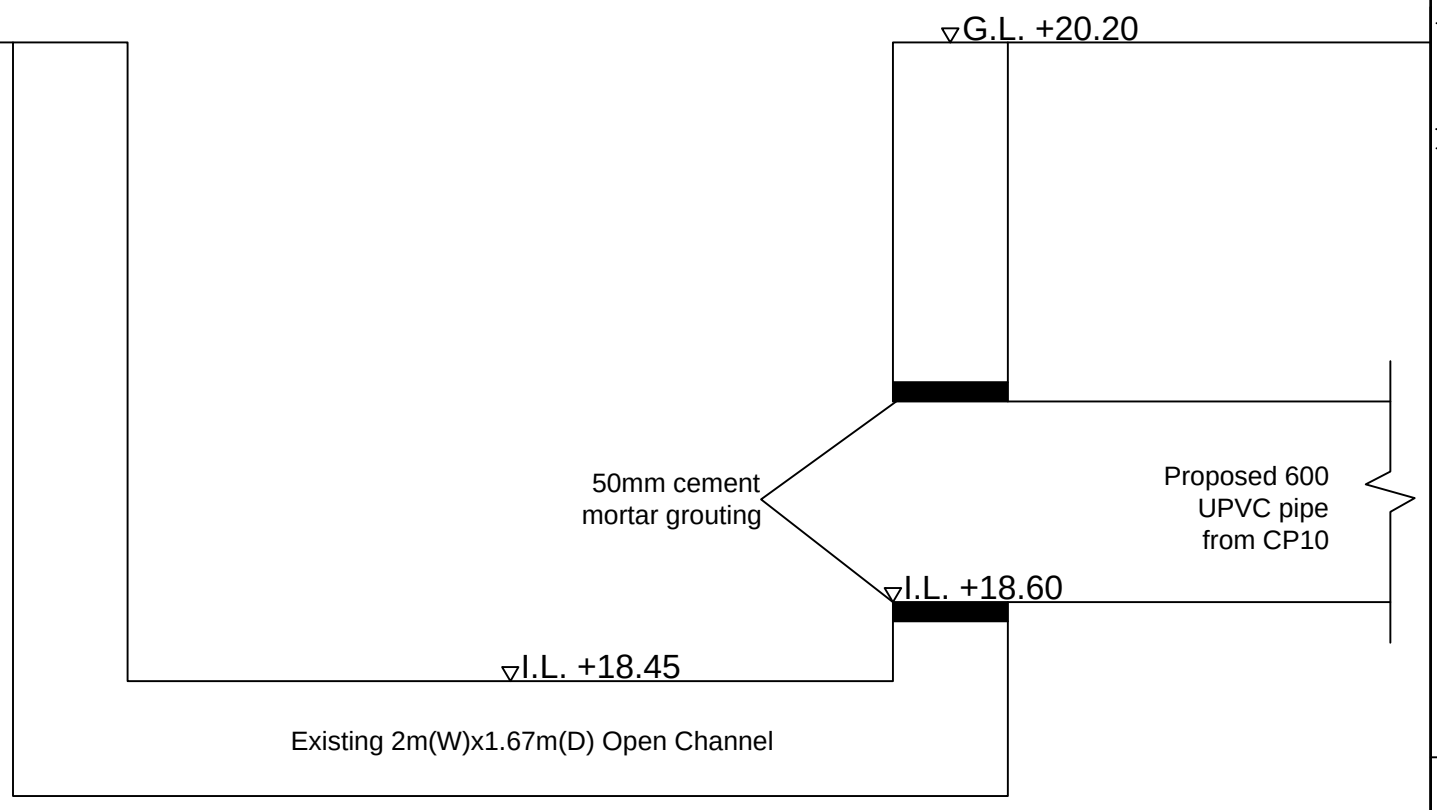
File:

Scale:

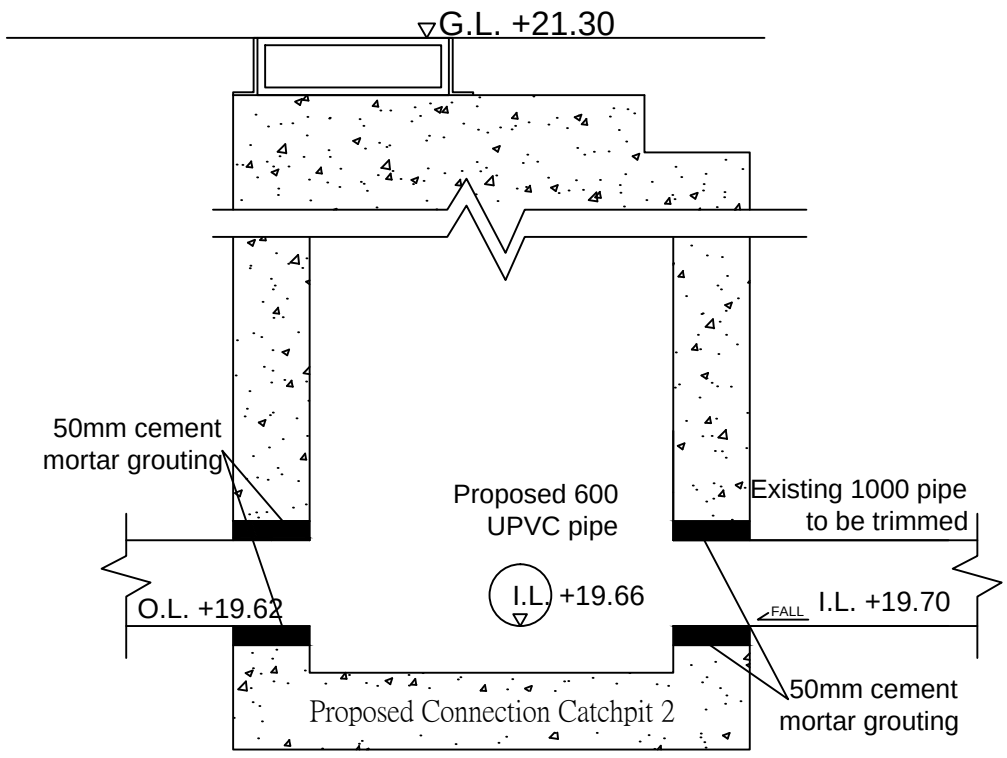
Date:
19-12-2024

DWG NO.

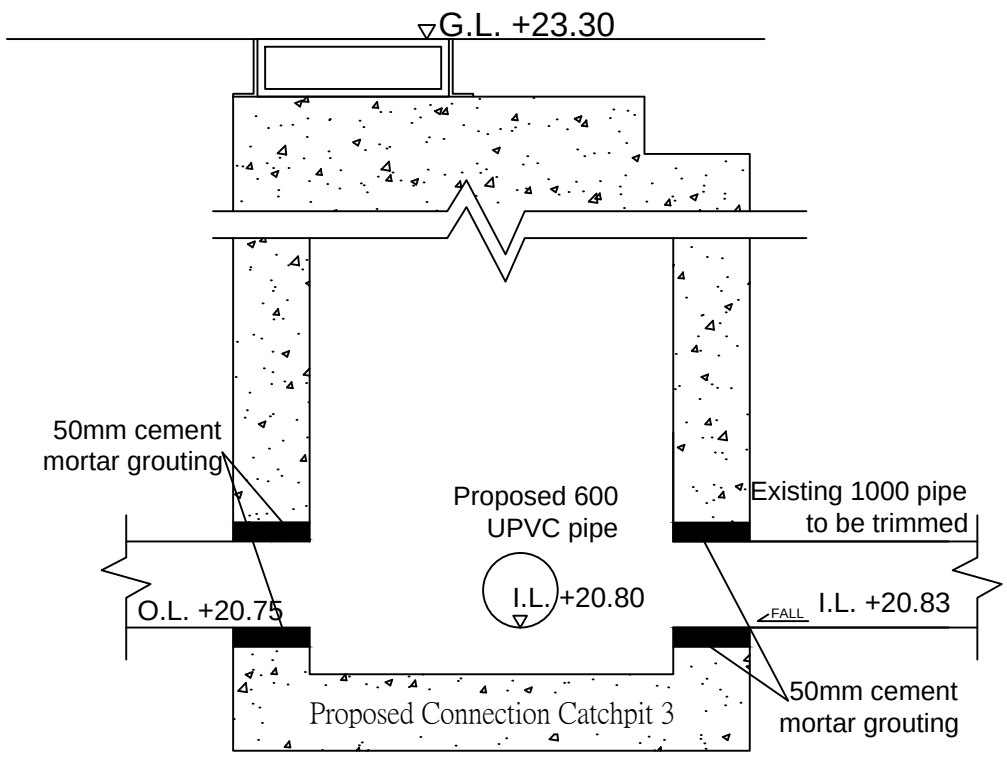
D03



CONNECTION DETAILS



CONNECTION DETAILS
(Proposed Connection Catchpit 2)



CONNECTION DETAILS
(Proposed Connection Catchpit 3)

LEGEND

- CP — Proposed CatchPit
- Proposed UC with Cast Iron Cover (size as shown)
- Proposed Connection Catchpit to ex. 1000 dia pipe
- Existing 1000 dia pipe /Existing 2m(W)x 1.67m(D) Open Channel
- ① — Photo Viewpot

Company:

正宏工程顧問公司
Ching Wan Engineering Consultants Company

PROJECT:

Proposed Temporary Vehicle Repair Workshop and Open Storage of Building Materials/Prefabricated Components, Recycling Materials, Construction Machinery and Used Electrical/Electronic Appliances with Ancillary Workshop and Packaging Activities for a Period of 3 Years at Various Lots in D.D. 118, Tai Tong, Yuen Long,

Application No.:

TITLE:

Connection Details

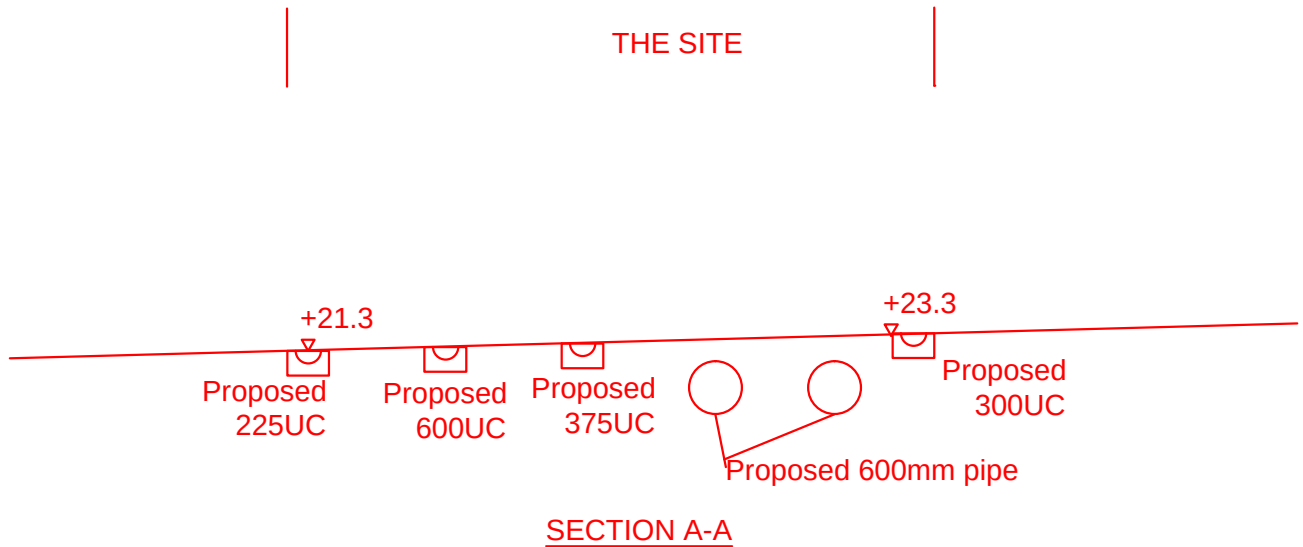
File:

Scale:

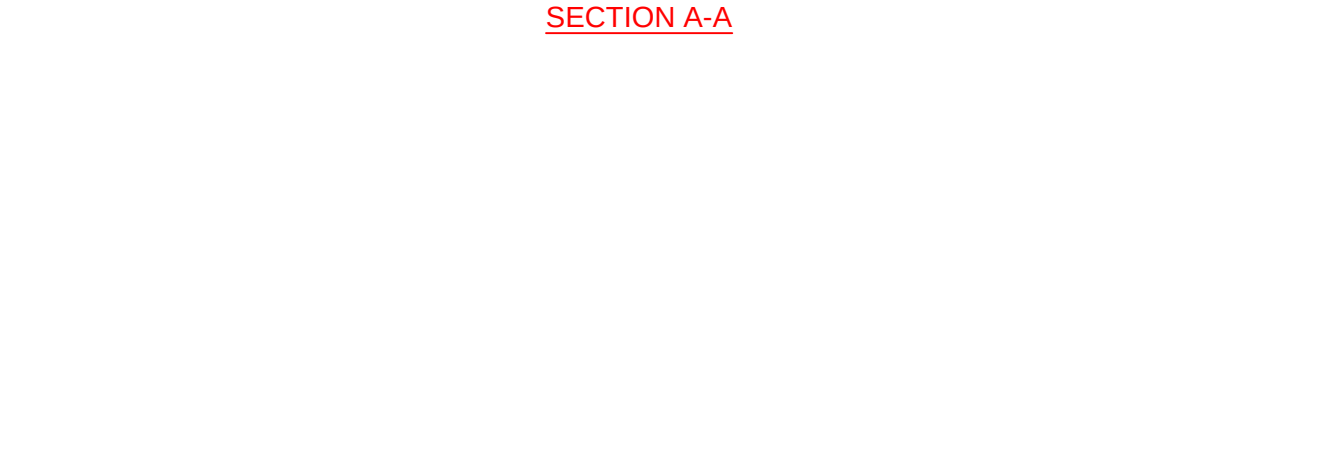
Date:
19-12-2024

DWG NO.

D04



SECTION A-A



SECTION B-B

LEGEND

- CP — Proposed CatchPit
- Proposed UC with Cast Iron Cover (size as shown)
- Proposed Connection Catchpit to ex. 1000 dia pipe
- Existing 1000 dia pipe /Existing 2m(W)x 1.67m(D) Open Channel
- ① — Photo Viewpot

Company:

正宏工程顧問公司
Ching Wan Engineering Consultants Company

PROJECT:

Proposed Temporary Vehicle Repair Workshop and Open Storage of Building Materials/Prefabricated Components, Recycling Materials, Construction Machinery and Used Electrical/Electronic Appliances with Ancillary Workshop and Packaging Activities for a Period of 3 Years at Various Lots in D.D. 118, Tai Tong, Yuen Long,

Application No.:

TITLE:

SECTIONS

File:

Scale:

Date:
19-12-2024

DWG NO.

D05

PHOTO 1

CATCHMENT A

Catchment Area = 3074 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 3074 m^2

= 0.003074 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.003074/0.9 (0.9 factor according to Section 9.3 of SDM)

= 0.226 m^3/sec

= 13531 lit/min

CATCHMENT B

Catchment Area = 5143 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 5143 m^2

= 0.005143 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.005143/0.9 (0.9 factor according to Section 9.3 of SDM)

= 0.377 m^3/sec

= 22638 lit/min

CATCHMENT C

Catchment Area = 6614 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 6614 m^2

= 0.006614 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.006614/0.9 (0.9 factor according to Section 9.3 of SDM)

= 0.485 m^3/sec

= 29113 lit/min

CATCHMENT D

Catchment Area = 2993 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 2993 m^2
= 0.002993 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.002993/0.9 (0.9 factor according to Section 9.3 of SDM)
= 0.220 m^3/sec
= 13174 lit/min

CATCHMENT E

Catchment Area = 1136 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 1136 m^2
= 0.001136 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.001136/0.9 (0.9 factor according to Section 9.3 of SDM)
= 0.083 m^3/sec
= 5000 lit/min

CATCHMENT F

Catchment Area = 4358 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 4358 m^2
= 0.004358 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.004358/0.9 (0.9 factor according to Section 9.3 of SDM)
= 0.320 m^3/sec
= 19182 lit/min

CATCHMENT G

Catchment Area = 1876 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 1876 m^2
= 0.001876 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.001876/0.9 (0.9 factor according to Section 9.3 of SDM)
= 0.138 m^3/sec
= 8258 lit/min

CATCHMENT H

Catchment Area = 1057 m2

Calculation of Runoff from the Proposed Development,

Q = 0.278 C i A

C = 0.95 (P.42 of Stormwater Drainage Manual)

A = 1057 m^2
= 0.001057 km^2

take i = 250 mm/hr

Therefore, Q = 0.278*0.95*250*0.001057/0.9 (0.9 factor according to Section 9.3 of SDM)
= 0.078 m^3/sec
= 4653 lit/min

Design Drain in Catchment Area A

Design Q = Area A + 0.5 Area B
= 13531 + 11318.89
= 24850 lit/min

Provide 600UC (1:150) is OK

Design Drain in Catchment Area B

Design Q = 0.5 Area B
= 11319 lit/min

Provide 375UC (1:100) is OK

Design Drain in Catchment Area C

Design Q = 29113 lit/min

Provide 600UC (1:150) is OK

Design Drain in Catchment Area D

Design Q = 13174 lit/min

Provide 375UC (1:100) is OK

Design Drain in Catchment Area E

Design Q = 5000 lit/min

Provide 375UC (1:100) is OK

Design Drain in Catchment Area F

Design Q = 19182 lit/min

Provide 450UC (1:150) is OK

Design Drain in Catchment Area G

Design Q = 8258 lit/min

Provide 375UC (1:100) is OK

Design Drain in Catchment Area H

Design Q = 4653 lit/min

Provide 300UC (1:100) is OK

Calculation Maximum Capacity of Proposed 1000mm dia. Underground pipe.

Manning Equation		V	=	$R^{2/3}*S_f^{0.5}/n$		
					dia	1000 mm
	where	R	=	$\pi r^2/2\pi r$	r=	0.5 m
			=	r/2		
			=	0.25	m	
		n	=	0.012	$s/m^{1/3}$	(Talbe 13 of Stormwater Drainage Manual)
1/	100	S_f	=	0.01		
	Therefore,	V	=	$0.25^{2/3}*0.01^{0.5}/0.012$		
			=	3.31	m/sec	
	Maximum Capacity (Q_{max})		=	0.8*V*A		(0.8 factor for sedimentation)
			=	$0.8*3.31*\pi r^2$		
			=	2.08	m^3/sec	
			=	124674	lit/min	
			>	60197	lit/min	(Area C+D+E+G+H)

Existing 1000 dia. pipe is OK

Calculation Maximum Capacity of Proposed 600dia(CP3 outfall)

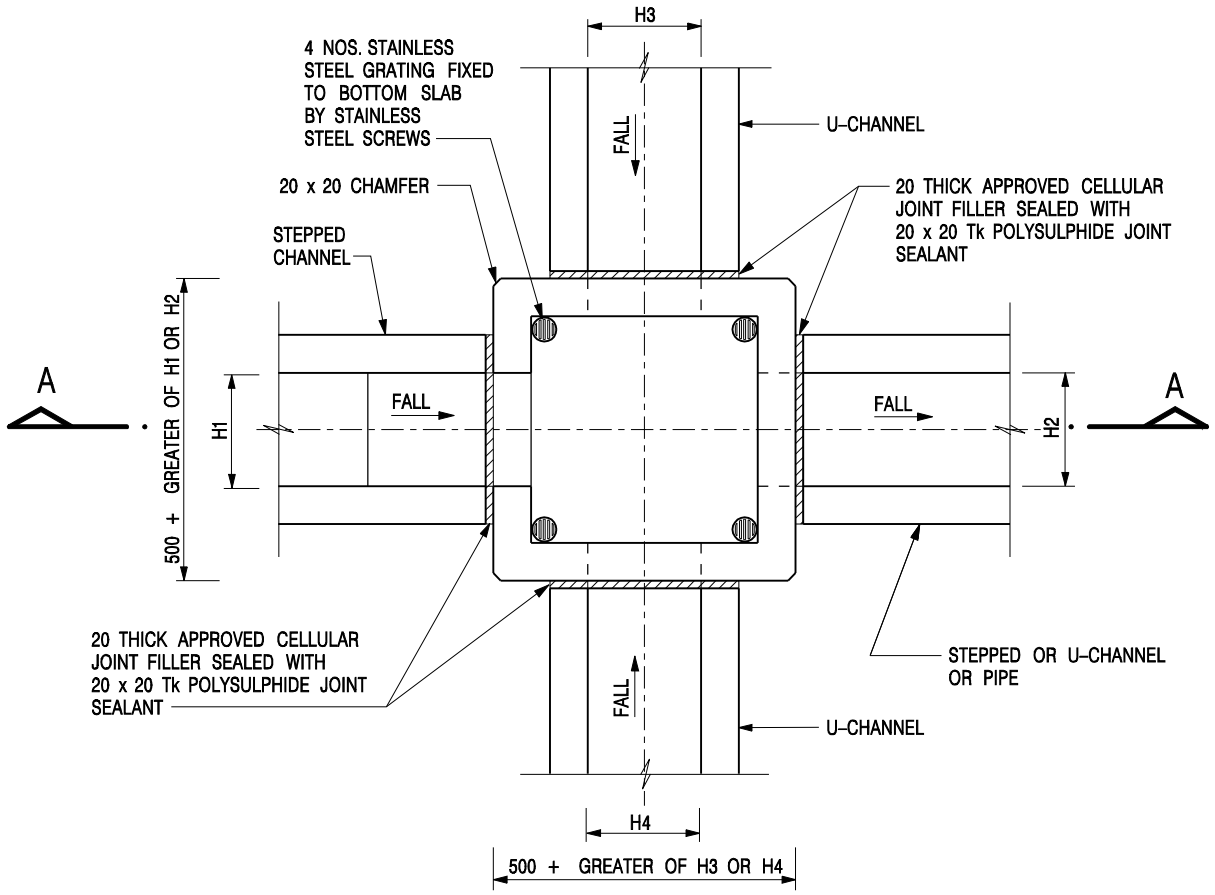
Manning Equation		V	=	$R^{2/3}*S_f^{0.5}/n$		
					dia	600 mm
	where	R	=	$\pi r^2/2\pi r$	r=	0.3 m
			=	r/2		
			=	0.15	m	
		n	=	0.012	$s/m^{1/3}$	(Talbe 13 of Stormwater Drainage Manual)
1/	75	S_f	=	0.0133333		
	Therefore,	V	=	$0.13125^{2/3}*0.01^{0.5}/0.012$		
			=	2.72	m/sec	
	Maximum Capacity (Q_{max})		=	0.8*V*A		(0.8 factor for sedimentation)
			=	$0.8*2.72\pi r^2$		
			=	0.61	m^3/sec	
	1 nos of pipe		=	0.61	m^3/sec	
			=	36868	lit/min	
			>	36168	lit/min	

Proposed 600 dia pipe (1:75) is OK

Calculation Maximum Capacity of Existing 2000dia 1670(D) Open Channel

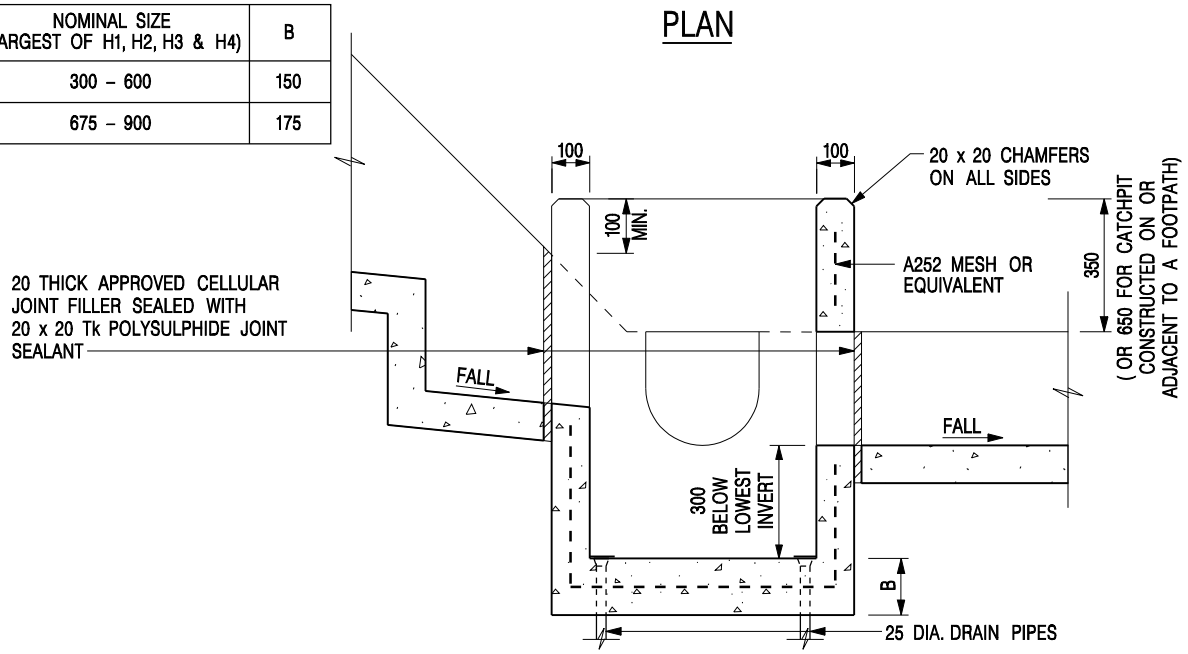
Manning Equation		V	=	$R^{2/3}*S_f^{0.5}/n$		
					W=	2000 mm
	where	R	=	(2*1.67)/(2+2*1.67)	D=	1670 mm
			=	0.625	m	
		n	=	0.018	$s/m^{1/3}$	(Talbe 13 of Stormwater Drainage Manual)
1/	50	S_f	=	0.02		
	Therefore,	V	=	$0.0625^{2/3}*0.02^{0.5}/0.018$		
			=	5.75	m/sec	
	Maximum Capacity (Q_{max})		=	0.8*V*A		(0.8 factor for sedimentation)
			=	0.8*5.75*W*D		
			=	15.35	m^3/sec	
			=	921228	lit/min	
			>	19182	lit/min	

Existing 2000dia 1670(D) Open Channel is 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

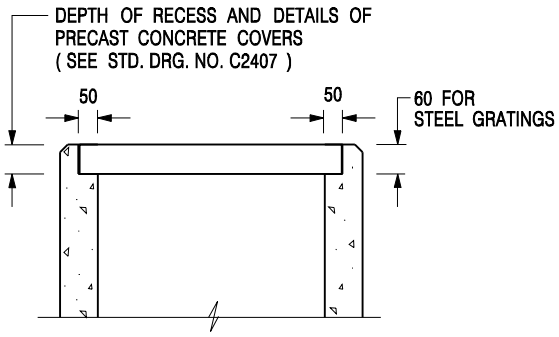
(SHEET 1 OF 2)

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:

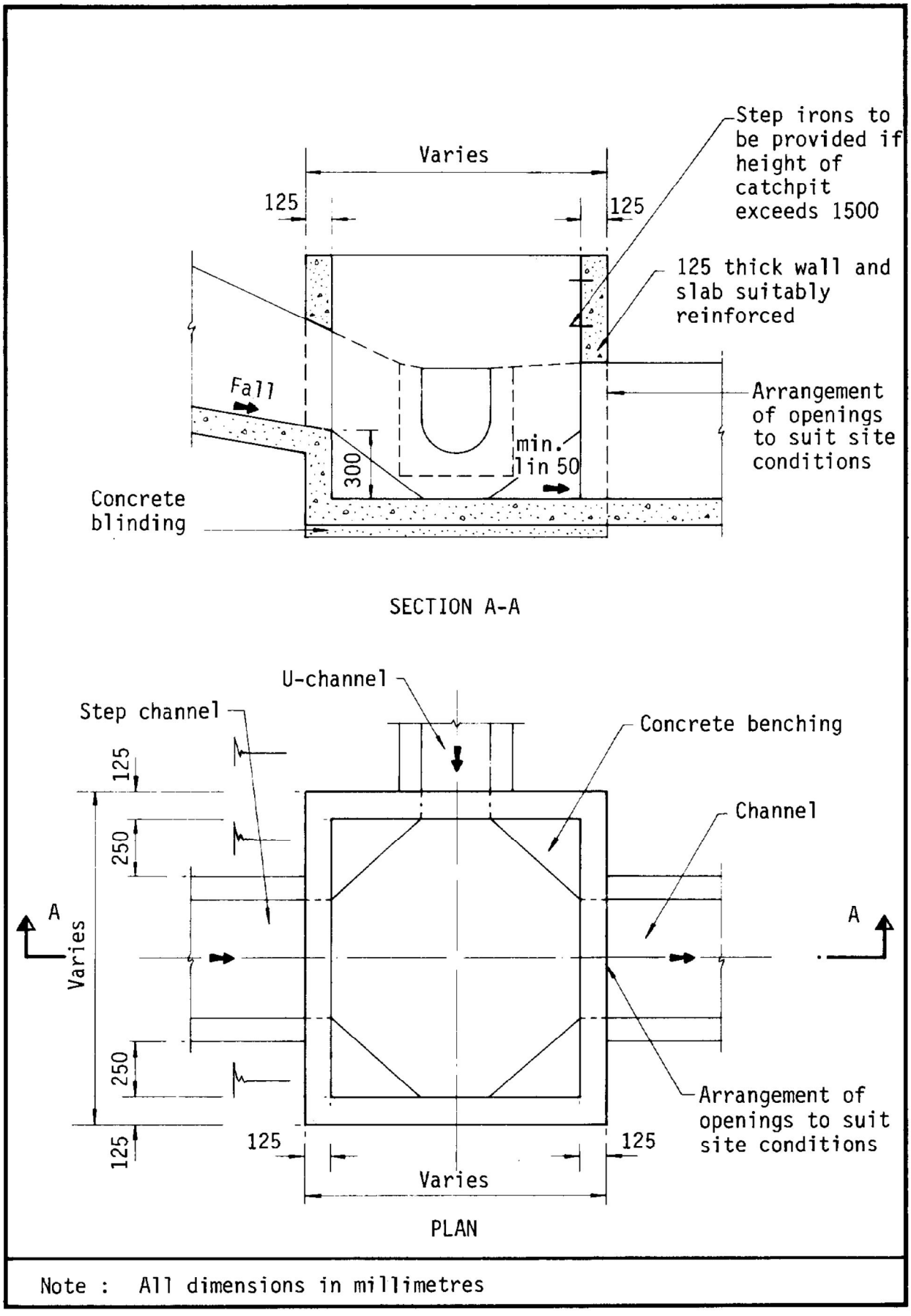
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED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

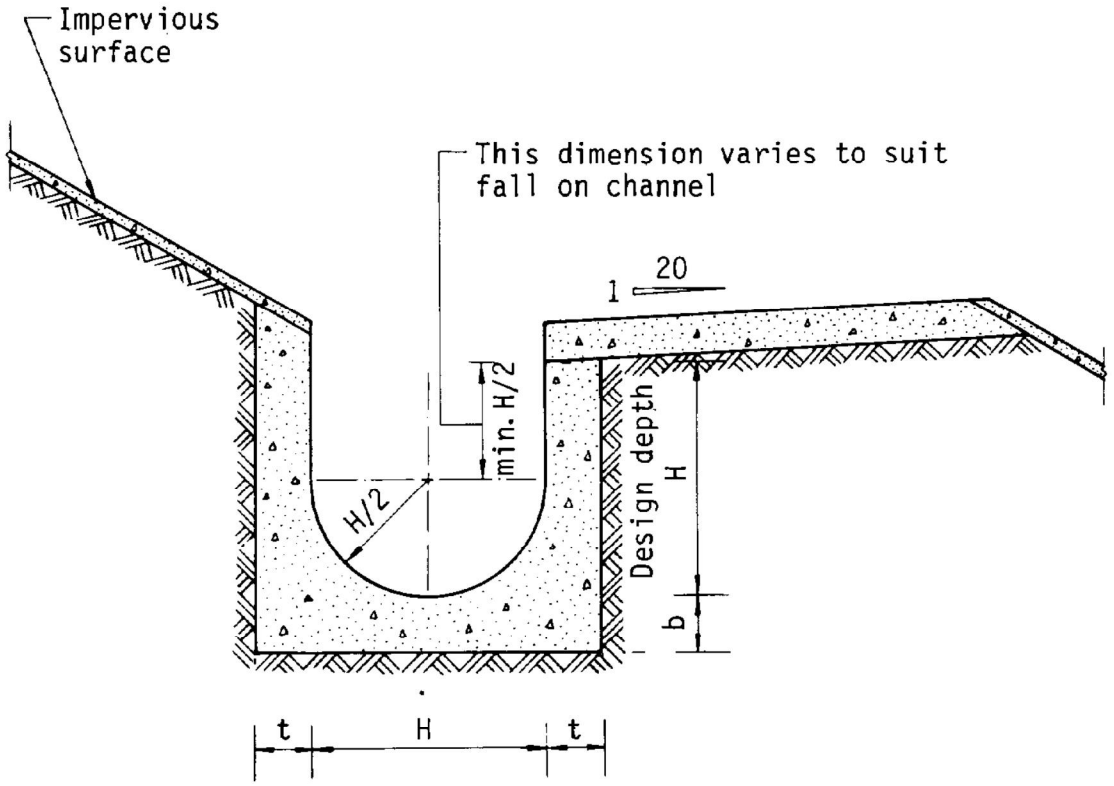
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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