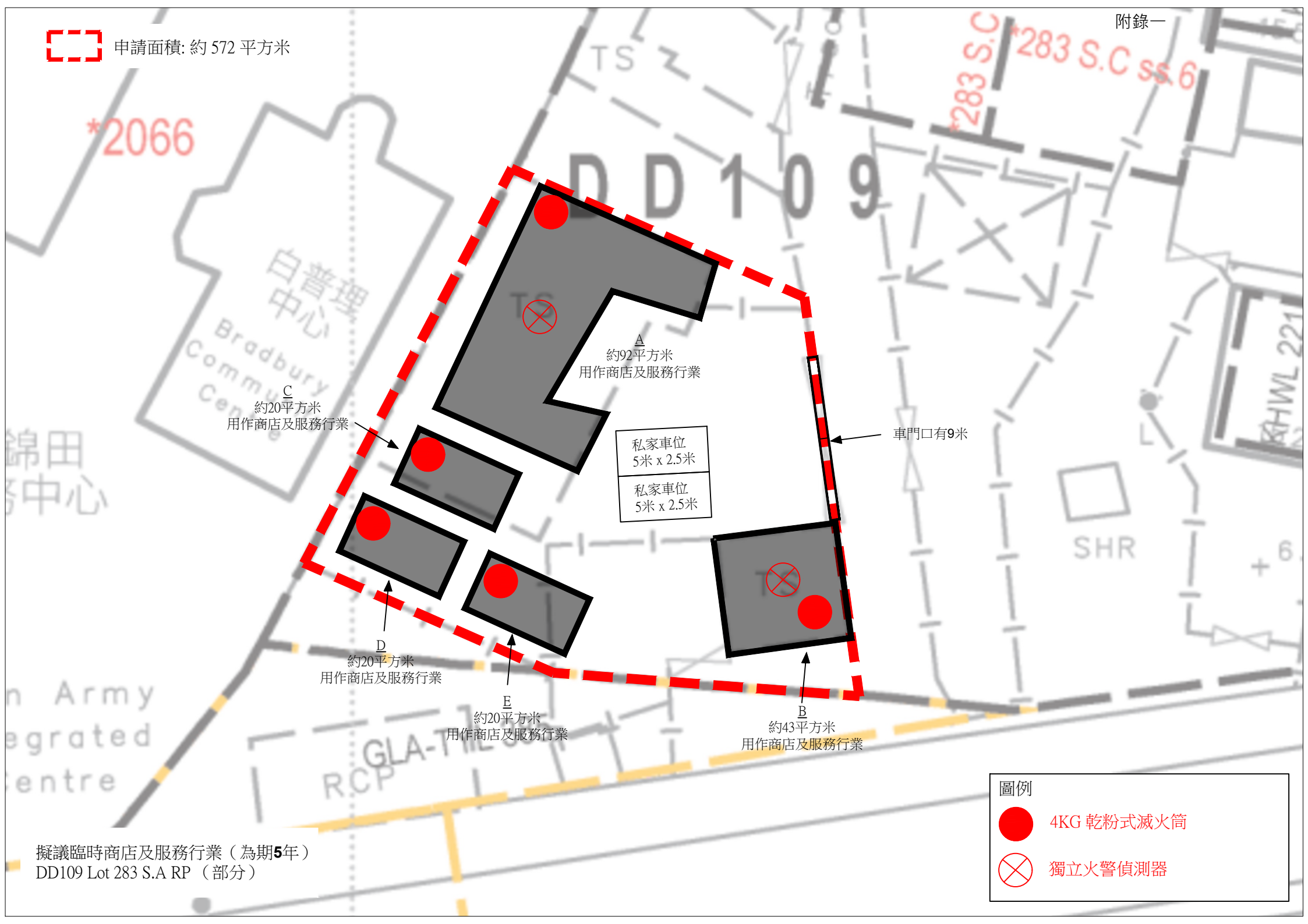

擬議臨時商店及服務行業（為期**5**年）
DD109 Lot 283 S.A RP （部分）

Comments of Chief Engineer/Mainland North, Drainage Services Department

Item	Comments	Responses
A	Specific Comment	
1	Figure 3: The applicant should clarify discrepancies of invert levels of the proposed terminal manhole CP1.03 shown on the submitted drawing.	Noted. Further to the discussion with DSD, the manhole CP1.03 is revised to manhole type F1. The IL is updated in Figure 3.
2	The applicant should review construction details of the proposed terminal manhole CP1.03 since the proposed construction details were not applicable for backdrop manhole. Also, the applicant should review design of the proposed stormwater drainage system in order to minimize the need of adopting backdrop manhole.	Further to the discussion with DSD, sand traps are provided before connection to manhole CP1.03. As the existing manhole (SMH1012050) for connection is 3.6m depth, backdrop manhole is proposed to provide the enough drop in such short distance. The manhole CP1.03 to be maintained by the development. Standard drawings are shown in Appendix D.
3	Sand trap or provision alike should be clearly indicated on the proposed drainage plan and provided before the collected runoff is discharged to the public drainage facilities. A sand trap/desilting type catchpit should be provided prior to connection to the proposed stormwater terminal manhole or to the downstream public stormwater drainage system. The sand trap/desilting type catchpit should be regularly desilted by the applicant to prevent sand, silt, cementitious materials or other objects from being washed down into the public stormwater drainage system.	Further to the discussion with DSD, catchpits with trap are proposed before connection to manhole CP1.03. Figure 3 is updated for your perusal.
B	General Comment	
1	For the construction details of the proposed drainage facilities, reference should be made to current CEDD's standard drawings.	Noted.
2	For any proposed connection to DSD's drainage facilities, the applicant should submit form HBP1 to this Division for application of technical audit. Upon our acceptance of the connection application, the applicant shall carry out the proposed connection works in accordance with DSD's Standard Drawings at the resources of the applicant.	Noted.
3	Connection of the proposed and existing drainage facilities shall be designed and constructed such that there is no water leakage at the proposed connection.	Noted.

4	The proposed development should neither obstruct overland flow nor adversely affect any existing natural streams, village drains, ditches and the adjacent areas, etc.	Noted.
5	Where walls or hoarding are erected are laid along the site boundary, adequate openings should be provided to intercept the existing overland flow passing through the site.	Noted. 100mm opening from ground level along wall/ hoarding or equivalent to be provided where it is erected.
6	The applicant is required to rectify the drainage system if they are found to be inadequate or ineffective during operation. The applicant shall also be liable for and shall indemnify claims and demands arising out of damage or nuisance caused. by a failure of the drainage system.	Noted.
7	The applicant should submit form HBP1 to this Division for application of technical audit for any proposed connection to DSD's drainage facilities.	Noted.
8	Comments from HyD, TD and RMO shall be sought as part of the proposed drainage works would be carried out within highway polygon and on carriageway.	Noted.
9	The applicant should consult DLO/YL and seek consent from the relevant owners for any drainage works to be carried out outside his lot boundary before commencement of the drainage works.	Noted.

Temporary Shop and Services for a Period of 5 Years, Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories

Drainage Proposal

May 2026

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

Table of Contents

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1 Introduction

1.1 Background

1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) for 'Temporary Shop and Services for a Period of 5 Years, Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories

1.1.2 This report aims to support the development in drainage aspect.

1.2 Application Site

1.2.1 The application site is located to near junction of Kam Tin Road and Kam Sheung Road. It has an area of approx. 572 m^2. The site location is shown in **Figure 1**.

1.2.2 The existing site is fully unpaved. Existing levels are approximately +6.15 mPD. No major site formation of the Application Site is anticipated.

1.2.3 There is an existing manhole and 1650mm pipe at Kam Tin Road which eventually discharge to Kam Tin River. **Figure 2** indicates the existing drainage system of the area.

2 Development Proposal

2.1 The Proposed Development

2.1.1 The total site area is approximately 572 m^2. The catchment plan is shown in **Figure 4**.

Proposed Development Area (Approx.)	
Total Site Area (m^2)	572
Paved Area after Development (m^2)	572

Table 1 – Site Development Area

3 Assessment Criteria

3.1.1 The Recommended Design Return Period based on Flood Level from SDM (Table 10) is adopted for this report. The recommendation is summarized in **Table 2** below.

Description	Design Return Periods
Intensively Used Agricultural Land	2 – 5 Years
Village Drainage Including Internal Drainage System under a polder Scheme	10 Years
Main Rural Catchment Drainage Channels	50 Years
Urban Drainage Trunk System	200 Years
Urban Drainage Branch System	50 Years

Table 2– Design Return Periods under SDM

3.1.2 The proposed drainage system intended to collect runoff from internal site and external catchment. 1 in 50 years return period is adopted.

3.1.3 Stormwater drainage design will be carried out in accordance with the criteria set out in the Stormwater Drainage Manual published by DSD. The proposed design criteria to be adopted for design of this stormwater drainage system and factors which have been considered are summarised below.

1. Intensity-Duration-Frequency Relationship – The Recommended Intensity-Duration-Frequency relationship is used to estimate the intensity of rainfall. It can be expressed by the following algebraic equation.

$$i = \frac{a}{(t_d + b)^c}$$

The site is located within the HKO Zone. Therefore, for 50 years return period, the following values are adopted.

a	=	505.5
b	=	3.29
c	=	0.355

(Corrigendum No.1/2024)

The development is proposed for temporary use for a period of 5 years. 11.1% rainfall increase due to climate change is considered.

2. The peak runoff is calculated by the Rational Method
i.e. $Q_p = 0.278CiA$

where	Q_p	=	peak runoff in m^3/s
	C	=	runoff coefficient (dimensionless)
	i	=	rainfall intensity in mm/hr
	A	=	catchment area in km^2

3. The run-off coefficient (C) of surface runoff are taken as follows:

1. Paved Area: C = 0.95
2. Unpaved Area: C = 0.35

4. Manning's Equation is used for calculation of velocity of flow inside the channels:

Manning's Equation: $v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Where,

V = velocity of the pipe flow (m/s)
S_f = hydraulic gradient
n = manning's coefficient
R = hydraulic radius (m)

5. Colebrook-White Equation is used for calculation of velocity of flow inside the pipes:

Colebrook-White Equation: $\underline{v} = -\sqrt{32gRS_f}\ log\ (\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRS_f}})$

where,

V	=	velocity of the pipe flow (m/s)
S_f	=	hydraulic gradient
k_f	=	roughness value (m)
v	=	kinematics viscosity of fluid
D	=	pipe diameter (m)
R	=	hydraulic radius (m)

4 Proposed Drainage System

4.1. Proposed Channels

4.1.1 Proposed channels are designed for collection of runoff for application site. The design calculation of proposed drains are shown in **Appendix A**. The catchment and checking of capacity of existing 1650mm drains downstream of manhole SMH1012050 are also shown in **Appendix A**. According to the checking, existing 1650mm drains has enough capacity and the flow from application site only occupy about 1.0% of its capacity.

4.1.2 The alignment, size, gradient and details of the proposed drains are shown in **Figure 3**. The catchment plan is shown in **Figure 4**.

4.1.3 Reference Drawings are shown in **Appendix C** for reference. Existing site photos are shown in **Appendix D**.

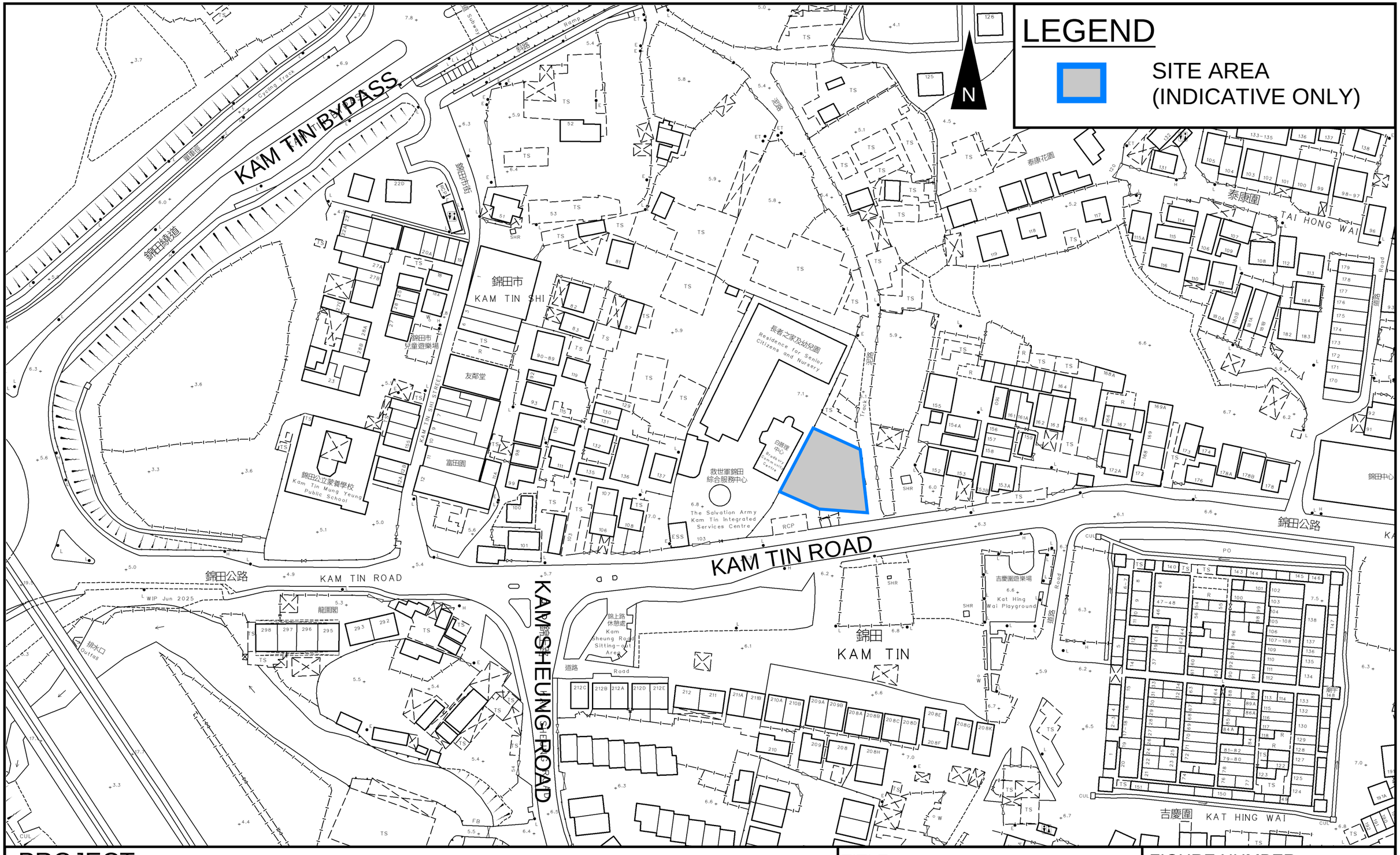
5 Conclusion

5.1.1 Drainage review has been conducted for the Proposed Development. The surface runoff will be collected by the proposed drains discharge to existing 1650mm drains and eventually discharge to Kam Tin River.

5.1.2 With implementation of the above drainage system, no unacceptable drainage impact is anticipated.

- End of Text -

FIGURES



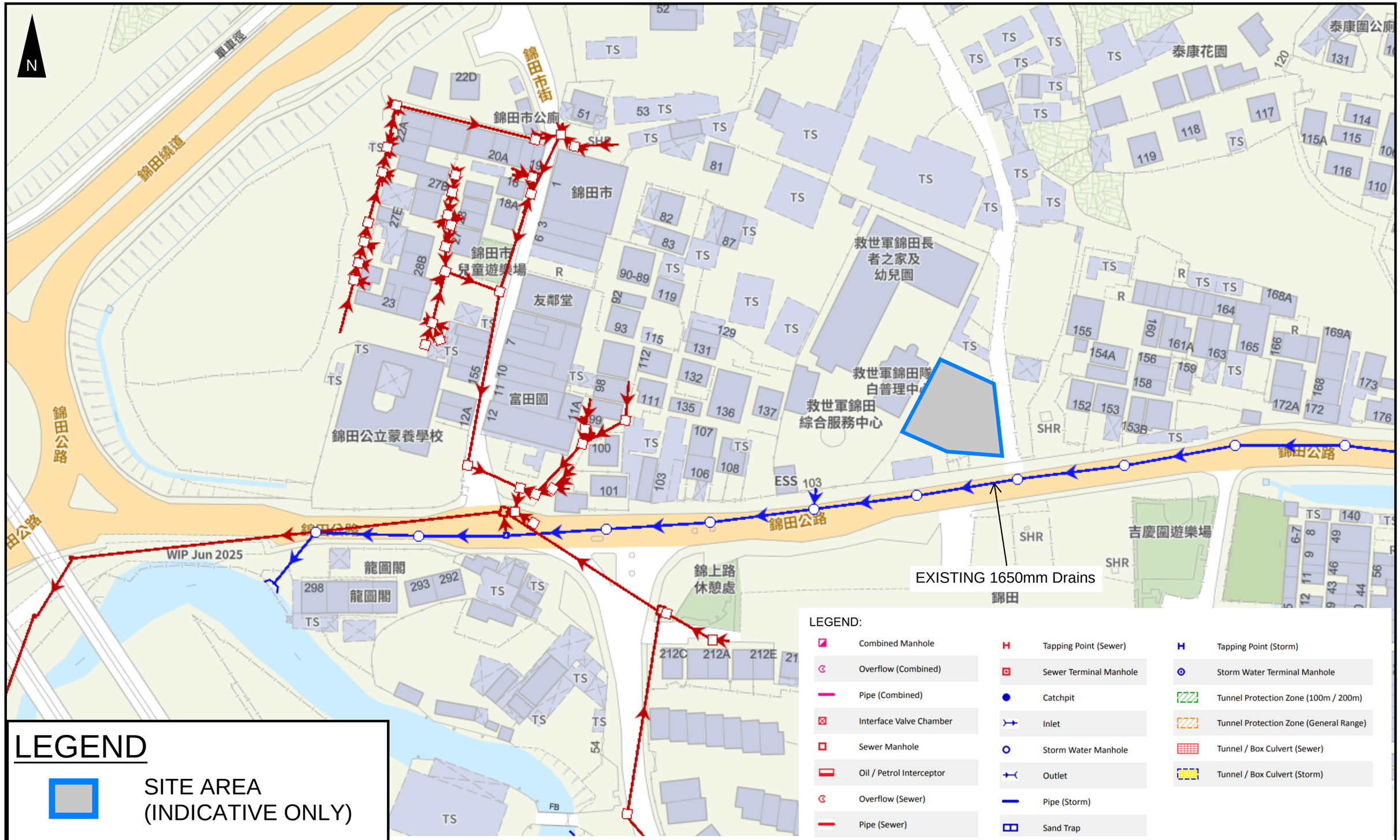
PROJECT:
Temporary Shop and Services for a Period of 5 Years

TITLE
SITE LOCATION PLAN

FIGURE NUMBER
FIGURE 1

LOCATION:
Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories

VER	DESCRIPTION	DATE



PROJECT:
Temporary Shop and Services for a Period of 5 Years

TITLE
EXISTING DRAINAGE PLAN

FIGURE NUMBER
FIGURE 2

LOCATION:
Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories

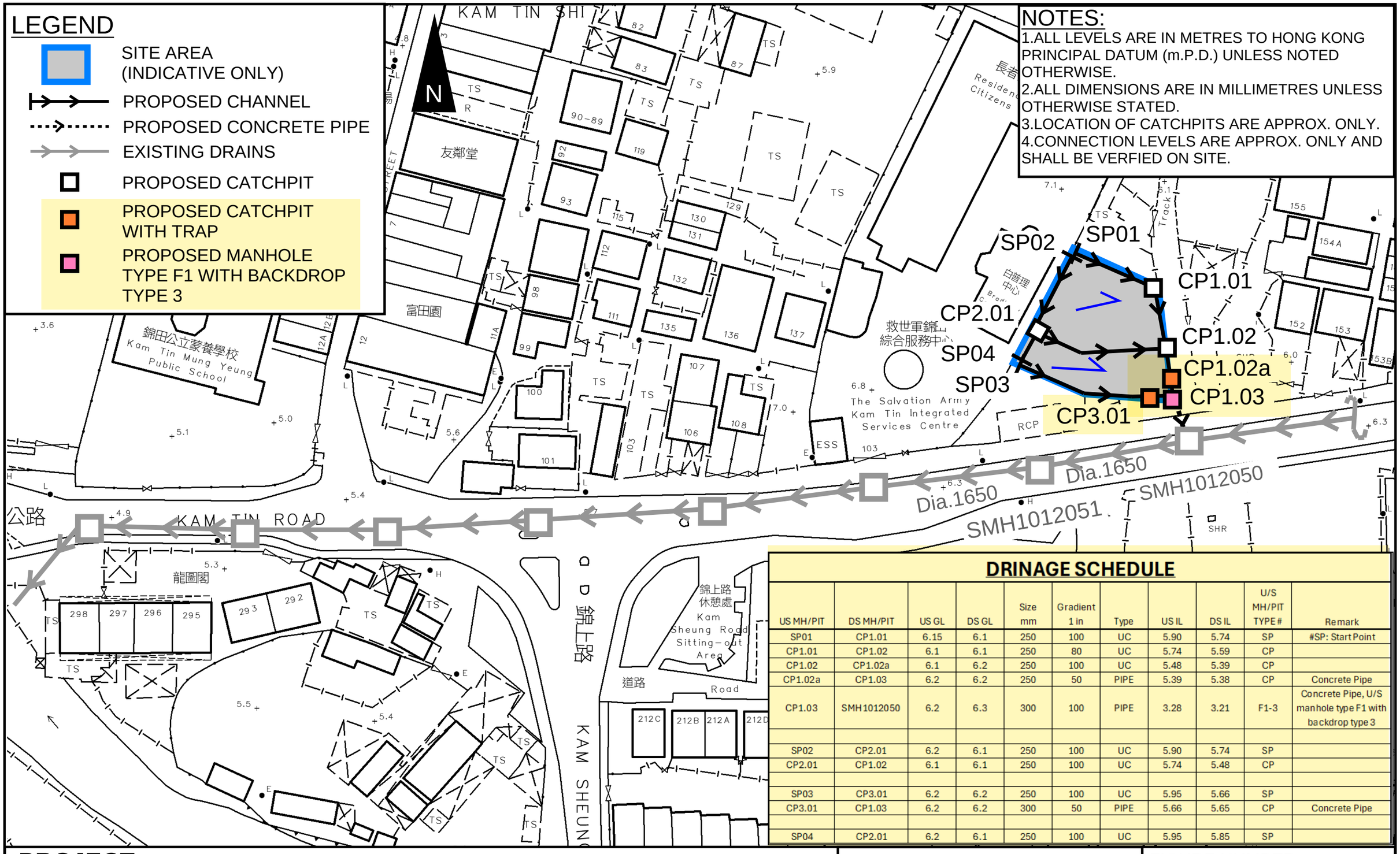
VER	DESCRIPTION	DATE

LEGEND

- SITE AREA (INDICATIVE ONLY)
- PROPOSED CHANNEL
- PROPOSED CONCRETE PIPE
- EXISTING DRAINS
- PROPOSED CATCHPIT
- PROPOSED CATCHPIT WITH TRAP
- PROPOSED MANHOLE TYPE F1 WITH BACKDROP TYPE 3

NOTES:

1.ALL LEVELS ARE IN METRES TO HONG KONG PRINCIPAL DATUM (m.P.D.) UNLESS NOTED OTHERWISE.
2.ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3.LOCATION OF CATCHPITS ARE APPROX. ONLY.
4.CONNECTION LEVELS ARE APPROX. ONLY AND SHALL BE VERFIED ON SITE.



DRINAGE SCHEDULE

US MH/PIT	DS MH/PIT	US GL	DS GL	Size mm	Gradient 1 in	Type	US IL	DS IL	U/S MH/PIT TYPE#	Remark
SP01	CP1.01	6.15	6.1	250	100	UC	5.90	5.74	SP	#SP: Start Point
CP1.01	CP1.02	6.1	6.1	250	80	UC	5.74	5.59	CP	
CP1.02	CP1.02a	6.1	6.2	250	100	UC	5.48	5.39	CP	
CP1.02a	CP1.03	6.2	6.2	250	50	PIPE	5.39	5.38	CP	Concrete Pipe
CP1.03	SMH1012050	6.2	6.3	300	100	PIPE	3.28	3.21	F1-3	Concrete Pipe, U/S manhole type F1 with backdrop type 3
SP02	CP2.01	6.2	6.1	250	100	UC	5.90	5.74	SP	
CP2.01	CP1.02	6.1	6.1	250	100	UC	5.74	5.48	CP	
SP03	CP3.01	6.2	6.2	250	100	UC	5.95	5.66	SP	
CP3.01	CP1.03	6.2	6.2	300	50	PIPE	5.66	5.65	CP	Concrete Pipe
SP04	CP2.01	6.2	6.1	250	100	UC	5.95	5.85	SP	

PROJECT:
Temporary Shop and Services for a Period of 5 Years

TITLE
PROPOSED DRAINAGE SYSTEM

FIGURE NUMBER
FIGURE 3

LOCATION:
Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories

VER	DESCRIPTION	DATE

LEGEND:

FALL

EXISTING SOLID FENCE WALL

EXISTING DEVELOPMENT WITH OWN DRAINAGE SYSTEM

B1: Paved
89 m²

A1: Paved
572 m²

+6.15

+5.8

+5.3

+5.9

+6.1

+6.3

KAM TIN SHI

KAM TIN STREET

KAM TIN ROAD

KAM SHEUNG ROAD

KAM TIN

錦田公路

錦田市街

錦上路

道路

Road

錦田市
KAM TIN SHI

錦田市
兒童遊樂場

友鄰堂

富田園

錦田公立蒙養學校
Kam Tin Mung Yeung
Public School

龍圖閣

錦上路
休憩處
Kam
Sheung Road
Sitting-out
Area

吉慶圍遊樂場
Kat Hing
Wai Playground

錦田
KAM TIN

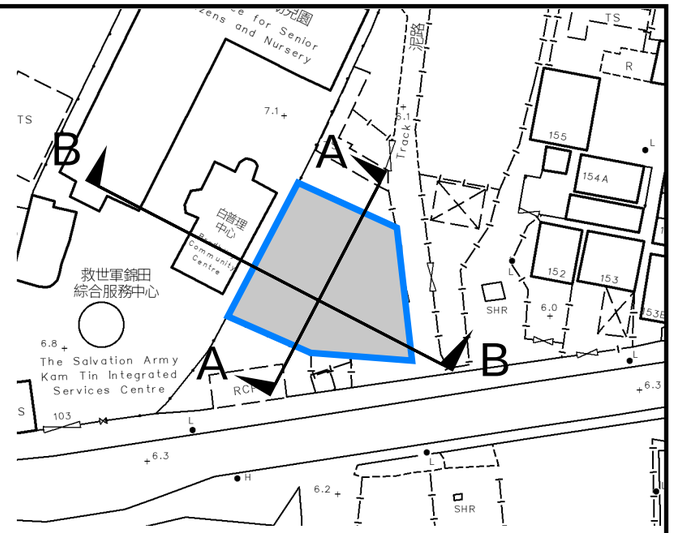
N

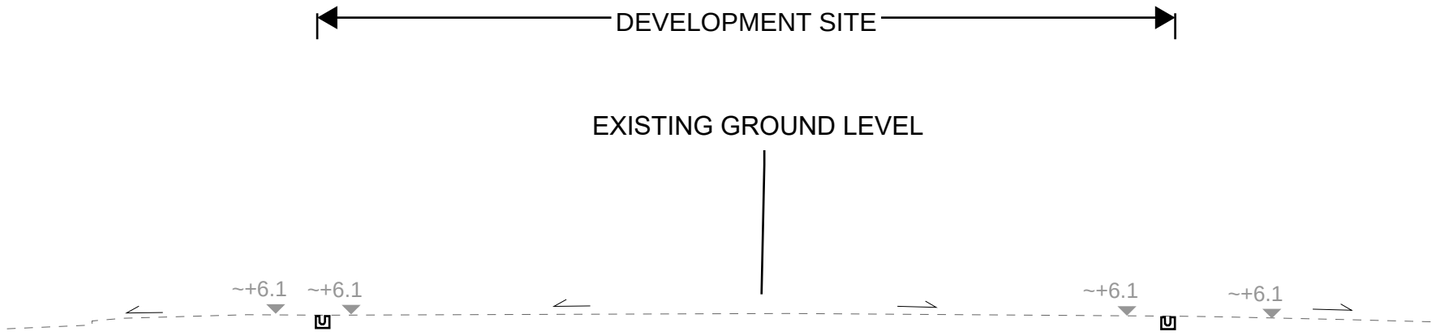
PROJECT: Temporary Shop and Services for a Period of 5 Years	TITLE CATCHMENT PLAN	FIGURE NUMBER FIGURE 4
LOCATION: Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories		

VER	DESCRIPTION	DATE

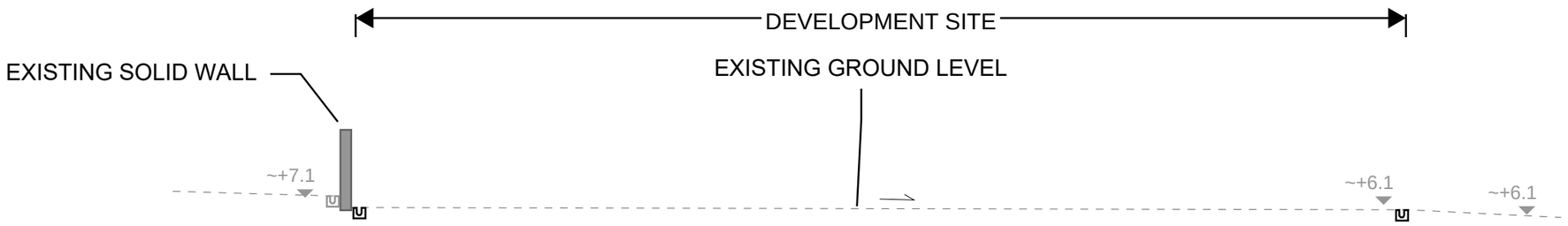
LEGEND

SITE AREA
(INDICATIVE ONLY)





N.T.S.
SECTION A-A



N.T.S.
SECTION B-B

PROJECT: Temporary Shop and Services for a Period of 5 Years	TITLE SECTIONS	FIGURE NUMBER FIGURE 5
LOCATION: Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories		

VER	DESCRIPTION	DATE

APPENDIX

Appendix A: Design Calculation

Zone

HKO

Return Period	1 in	50	years

n	0.014
Ks	0.6
Viscosity	0.000001

Storm Constant	HKO a	505.5
	HKO b	3.29
	HKO c	0.355

Catchment Area Table (Area in m^2)

Catchment	A1	B1	Catchment of SMH1012050																
Total Area	572	89	59915																
Hard Paved Area	572	89	59915																
Unpaved Area	0	0	0																
Equival. Area	543.4	84.55	56919.25																

Pavement Type	Hard Paved	Unpaved
Runoff Coefficient	0.95	0.35

Calculation Table of Drainage System

US MH/PIT	DS MH/PIT	US GL	DS GL	Size mm	Gradient 1 in	Type	US IL	DS IL	U/S MH/PIT TYPE #	Length m	V m/s###	Capacity m^3/s	Catchments	Total Equivalent Area m^2	ToC min	Intensity mm/hr ##	Total Discharge m^3/s	Utilization	Remark
SP01	CP1.01	6.15	6.10	250	100	UC	5.90	5.74	SP	16.3	1.31	0.07	A1	543.40	1.10	332	0.05	76.6%	
CP1.01	CP1.02	6.10	6.10	250	80	UC	5.74	5.59	CP	12.1	1.46	0.07	A1,B1	627.95	1.31	327	0.06	77.8%	
CP1.02	CP1.02a	6.10	6.20	250	100	UC	5.48	5.39	CP	8.9	1.31	0.07	A1,B1	627.95	1.63	319	0.06	84.9%	
CP1.02a	CP1.03	6.20	6.20	250	50	PIPE	5.39	5.38	CP	0.5	1.85	0.08	A1,B1	627.95	1.75	316	0.06	67.4%	
CP1.03	SMH1012050	6.20	6.30	300	100	PIPE	3.28	3.21	F1-3	7.6	1.47	0.09	A1,B1	627.95	1.75	316	0.06	59.0%	U/S Manhole with backdrop type 3
SP02	CP2.01	6.15	6.10	250	100	UC	5.90	5.74	SP	15.8	1.31	0.07	A1	543.40	1.10	332	0.05	76.6%	
CP2.01	CP1.02	6.10	6.10	250	100	UC	5.74	5.48	CP	26	1.31	0.07	A1	543.40	1.30	327	0.05	75.3%	
SP03	CP3.01	6.20	6.20	250	100	UC	5.95	5.66	SP	29.5	1.31	0.07	A1	543.40	1.10	332	0.05	76.6%	
CP3.01	CP1.03	6.20	6.20	300	50	PIPE	5.66	5.65	CP	0.5	2.08	0.13	A1	543.40	1.48	323	0.05	36.8%	
SP04	CP2.01	6.20	6.10	250	100	UC	5.95	5.85	SP	6.3	1.31	0.07	A1	543.40	1.10	332	0.05	76.6%	
SMH1012050	SMH1012051	6.30	6.30	1650	250	PIPE	2.65	2.54	Existing	29	2.69	5.18	A1,B1,Catchment of SMH1012050	57547.20	5.00	265	4.24	81.9%	Catchment of SMH1012050 see Figure 6
Checking of Existing 1650 Pipe Against flow from Application Site																			
SMH1012050	SMH1012051	6.30	6.30	1650	250	PIPE	2.65	2.54	Existing	29	2.69	5.18	A1,B1	627.95	1.84	314	0.05	1.1%	

#SP: Start Point

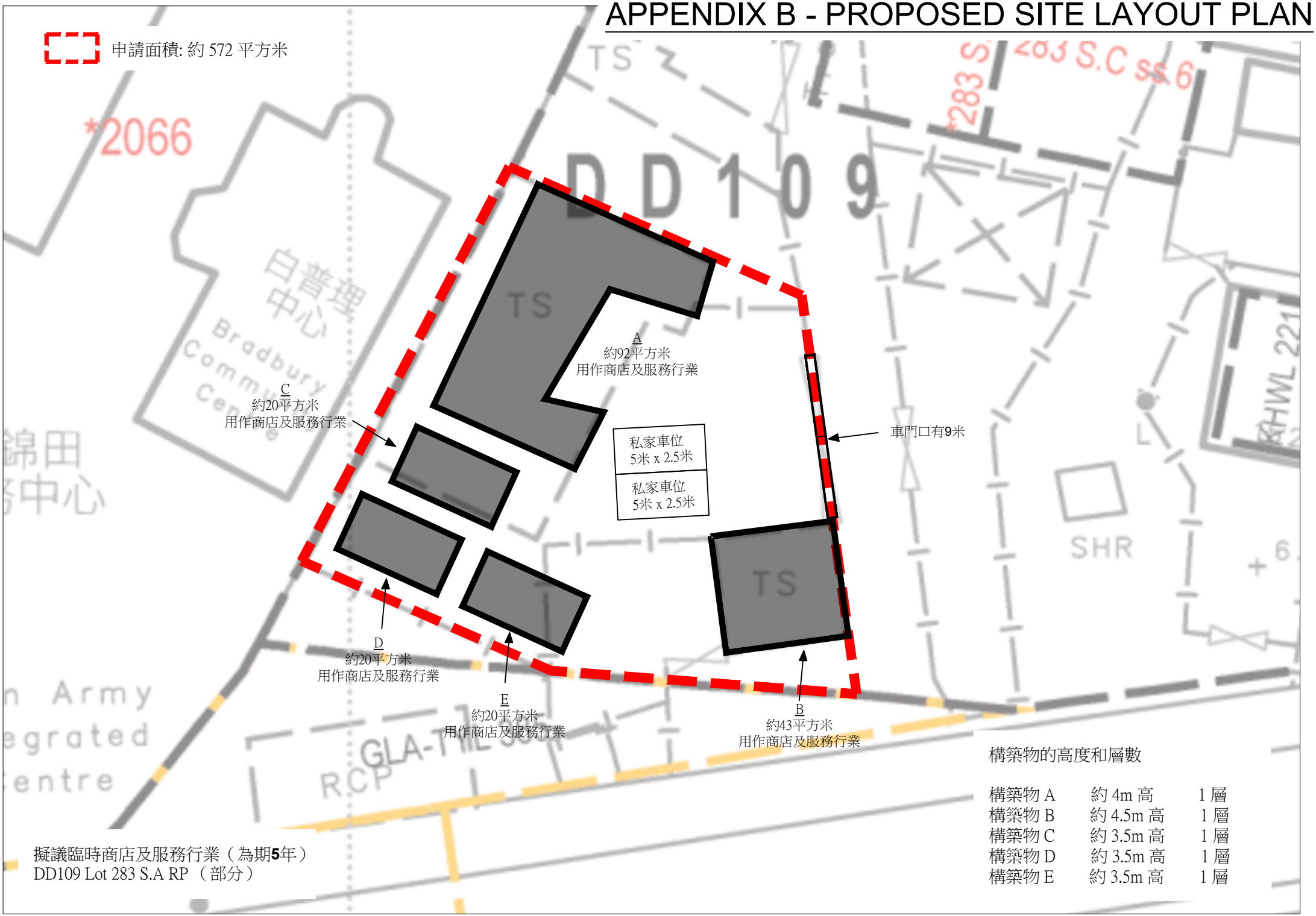
: With 11.1% rainfall increase as per Table 28 of SDM Corrigendum No. 1/2022.

###: 10% reduction in flow area is considered in the capacity review (SDM section 9.3)

Time of Concentration Checking

Catchment	Flow Distance	Highest Level	Lowest Level	Gradient (per 100m) = (H1-H2)/L x 100	to (min) = 0.14465L/ ($H^{0.2}A^{0.1}$)	tc = to + tf
A	L	H1	H2			
(m2)	(m)	(mPD)	(mPD)		(min)	(min)
572	10.5	6.17	6.15	0.190	1.1	1.1

APPENDIX B - PROPOSED SITE LAYOUT PLAN

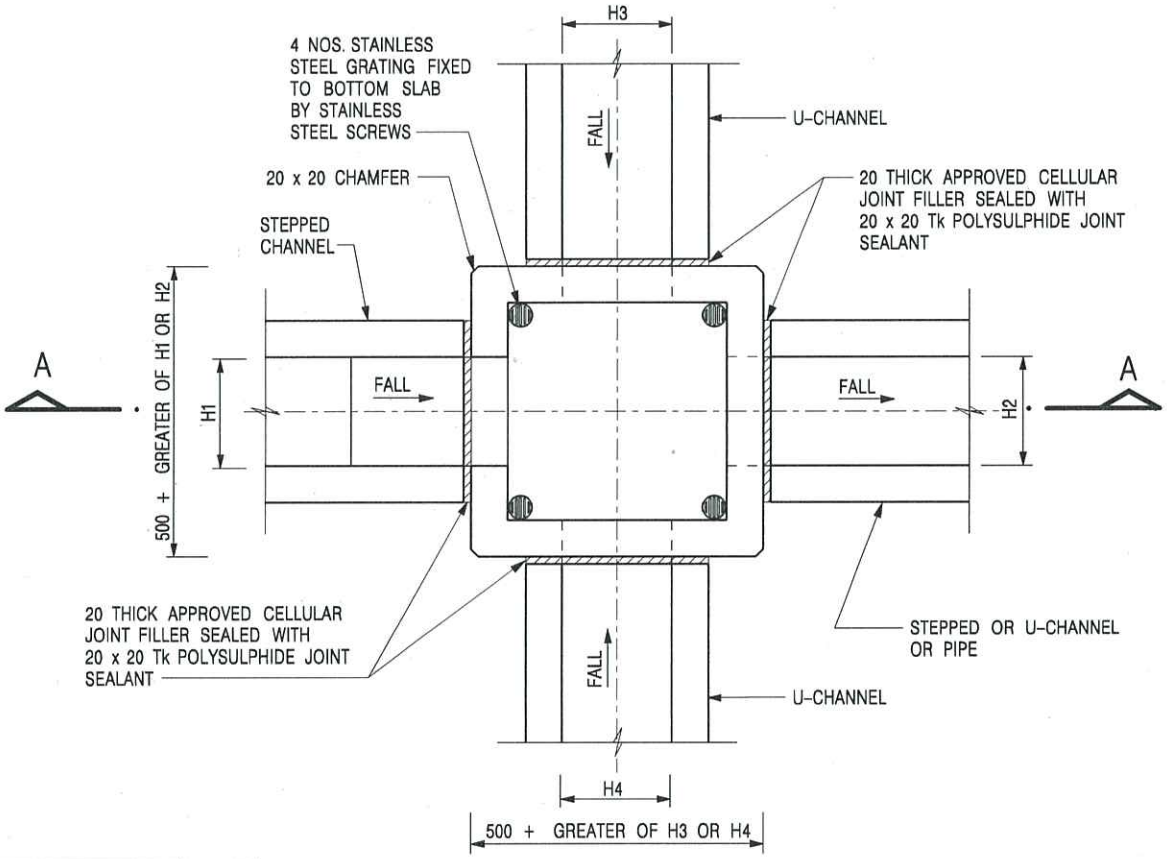


擬議臨時商店及服務行業（為期**5**年）
DD109 Lot 283 S.A RP （部分）

構築物的高度和層數

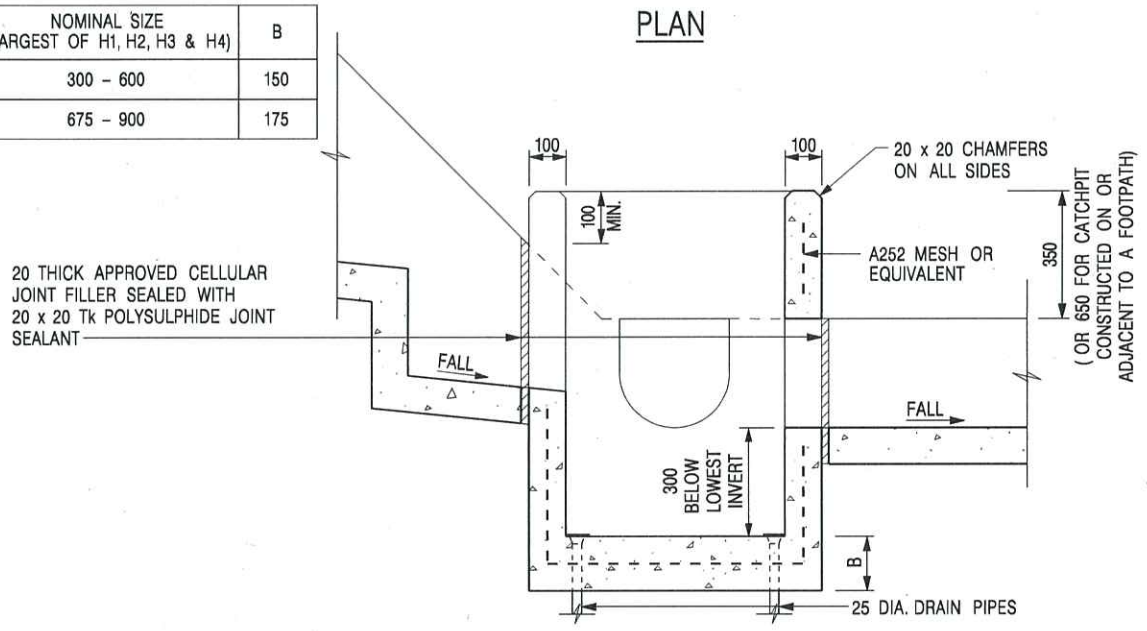
構築物 A	約 4m 高	1 層
構築物 B	約 4.5m 高	1 層
構築物 C	約 3.5m 高	1 層
構築物 D	約 3.5m 高	1 層
構築物 E	約 3.5m 高	1 層

Appendix C - Reference Drawings



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)

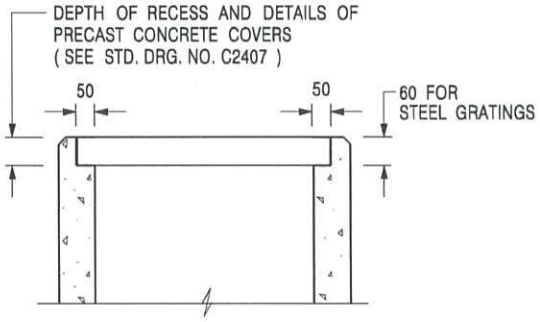
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1

卓越工程 建設香港 We Engineer Hong Kong's Development



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.

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

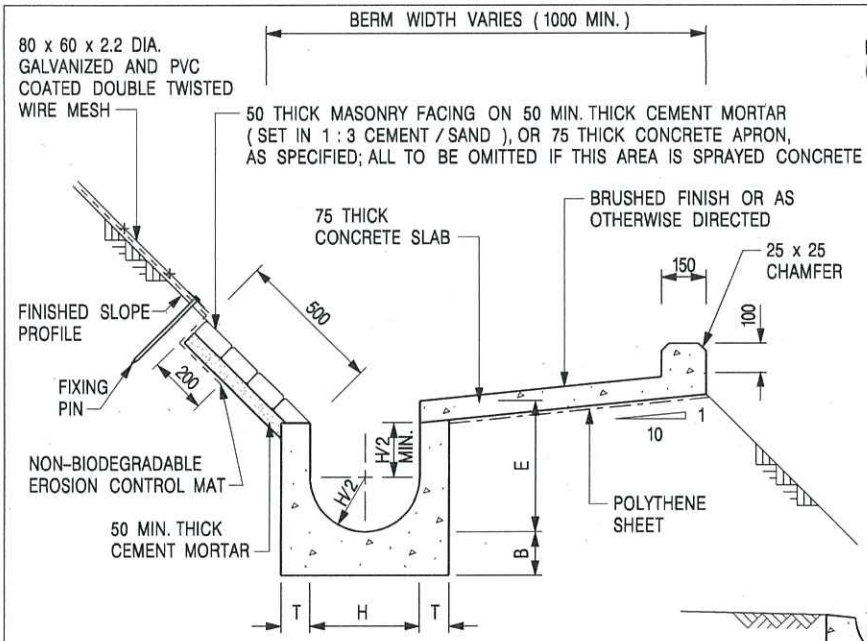
CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

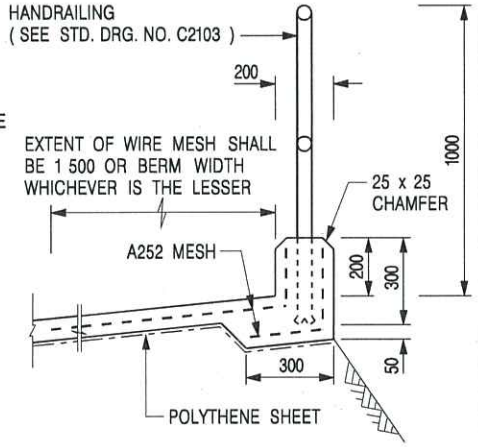
SCALE 1 : 20

DATE JAN 1991

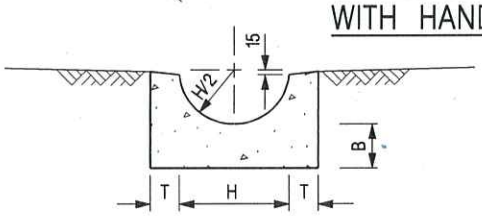
DRAWING NO. C2406 /2A



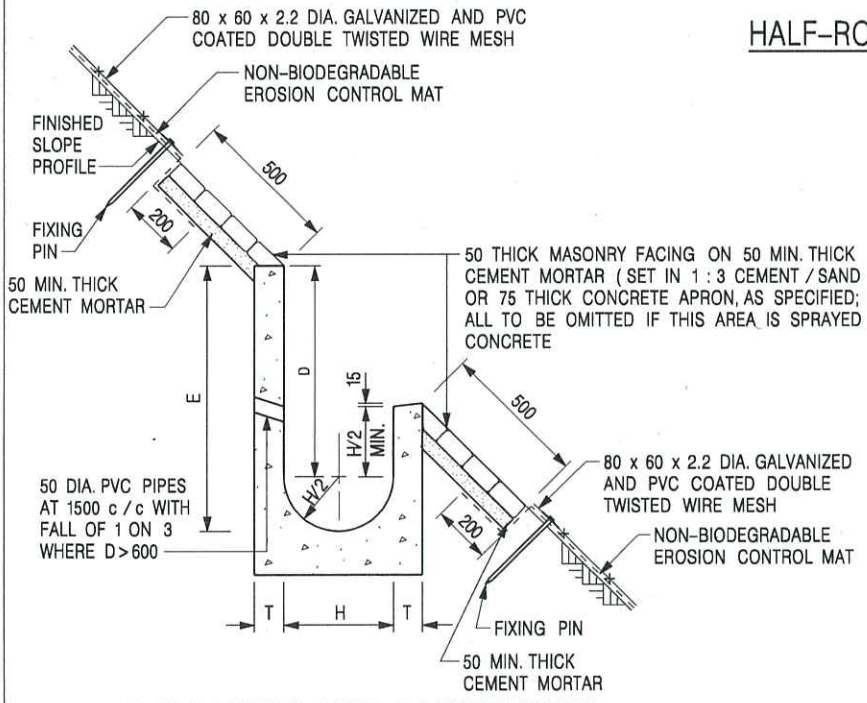
U-CHANNELS CONSTRUCTED ON BERM



DETAILS OF BERM WITH HANDRAILING



HALF-ROUND CHANNEL



U-CHANNELS NOT CONSTRUCTED ON BERM

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. BIODEGRADABLE EROSION CONTROL MAT IF REQUIRED, SEE STD. DRG. NO. C2511/1E.
8. CONCRETE TO BE COLOURED AS SPECIFIED.
9. CONCRETE U-CHANNEL CAN BE CAST IN-SITU OR PRECAST CONCRETE SUBJECT TO THE ENGINEER'S AGREEMENT ON THE DETAILS.
10. DETAILS OF EROSION CONTROL MAT AND WESH MESH ON BERM. (SEE STD DRG. NO. C2511/1E)

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

REF.	REVISION	SIGNATURE	DATE
I	MINOR AMENDMENT.	Original Signed	07.2018
H	THICKNESS OF MASONRY FACING AMENDED.	Original Signed	01.2005
G	MINOR AMENDMENT.	Original Signed	01.2004
F	GENERAL REVISION.	Original Signed	12.2002
E	DRAWING TITLE AMENDED.	Original Signed	11.2001
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENTS.	Original Signed	3.94

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A - WITH MASONRY APRON)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

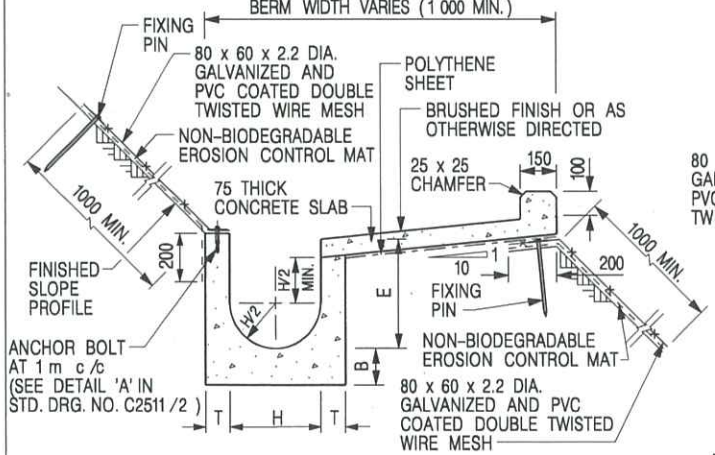
SCALE 1 : 25

DATE JAN 1991

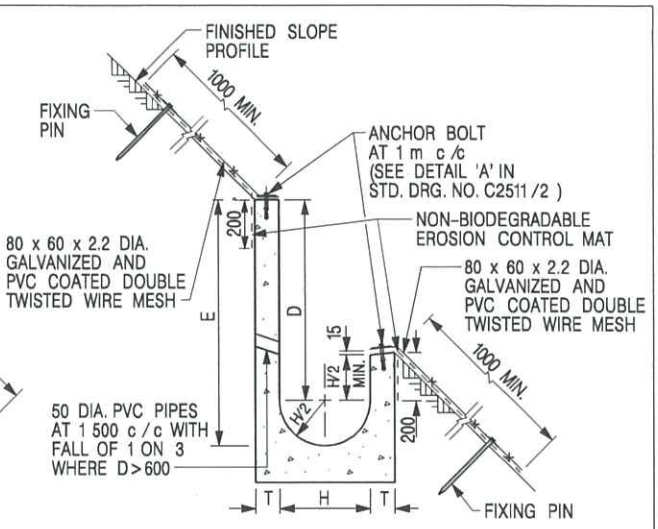
DRAWING NO. C2409I

卓越工程 建設香港

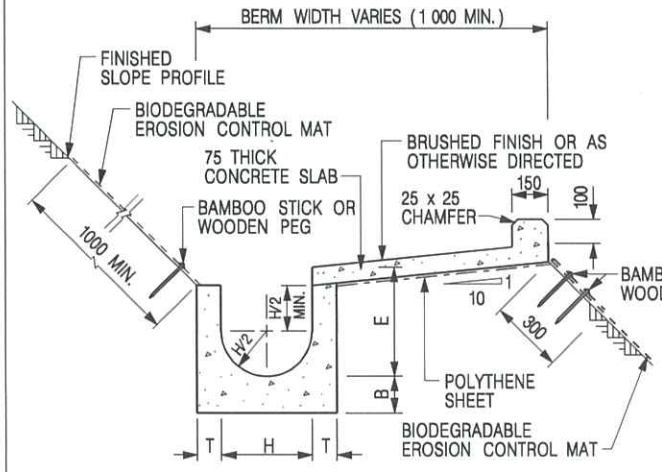
We Engineer Hong Kong's Development



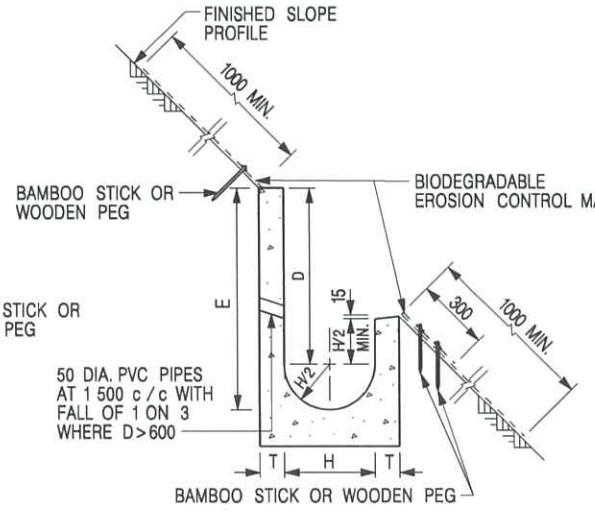
U-CHANNELS CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS NOT CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS CONSTRUCTED ON BERM WITH BIODEGRADABLE EROSION CONTROL MAT



U-CHANNELS NOT CONSTRUCTED ON BERM WITH BIODEGRADABLE EROSION CONTROL MAT

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. FOR TYPICAL FIXING PIN DETAILS, SEE STD. DRG. NO. C2511/2.
8. MINIMUM SIZE OF 25 x 50 x 300mm SHALL BE PROVIDED FOR WOODEN PEG.
9. MINIMUM SIZE OF 10mm DIAMETER WITH 200mm LONG SHALL BE PROVIDED FOR BAMBOO STICK.
10. THE FIXING DETAILS OF NON-BIODEGRADABLE AND BIODEGRADABLE EROSION CONTROL MATS ON EXISTING BERM SHALL REFER TO STD. DRG. NO. C2511/1.

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

REF.	REVISION	SIGNATURE	DATE
I	MINOR AMENDMENT.	Original Signed	07.2018
H	FIXING DETAILS OF BIODEGRADABLE EROSION CONTROL MAT ADDED.	Original Signed	12.2017
G	DIMENSION TABLE AMENDED.	Original Signed	01.2005
F	MINOR AMENDMENT.	Original Signed	01.2004
E	GENERAL REVISION.	Original Signed	12.2002
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENT.	Original Signed	3.94
A	MINOR AMENDMENT.	Original Signed	10.92

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE B - WITH EROSION CONTROL MAT APRON)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

SCALE DIAGRAMMATIC

DATE JAN 1991

DRAWING NO. C2410I

卓越工程 建設香港

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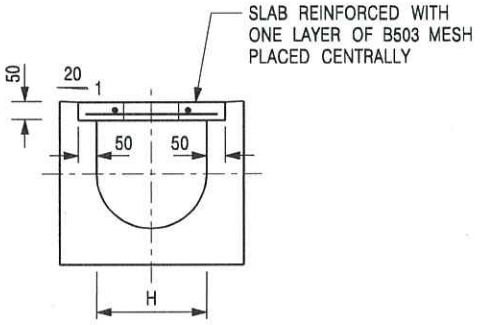
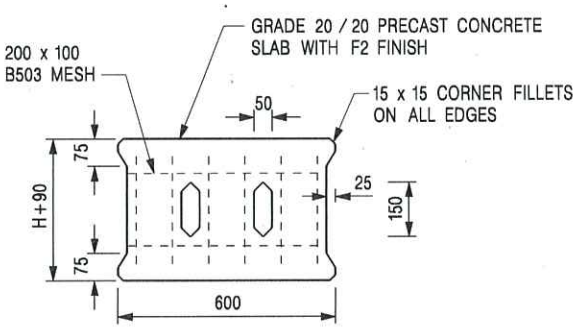


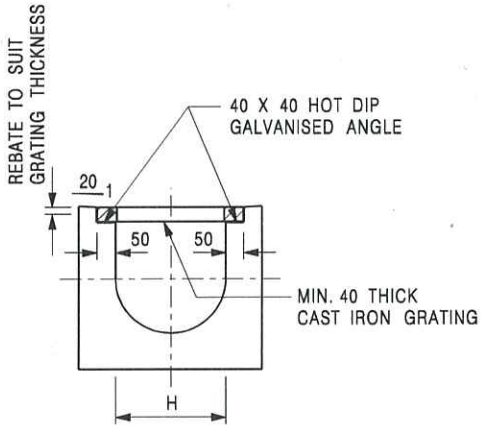
TYPICAL SECTION



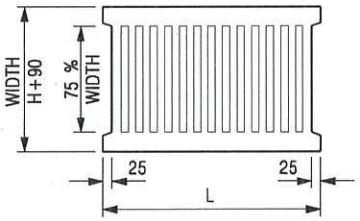
PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



L = 600mm FOR H ≤ 375mm
L = 400mm FOR H > 375mm

CAST IRON GRATING

(DIMENSIONS ARE FOR GUIDANCE ONLY, CONTRACTOR MAY SUBMIT EQUIVALENT TYPE)

U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. H = NOMINAL CHANNEL SIZE.
3. ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
4. FOR COVERED CHANNELS TO BE HANDED OVER TO HIGHWAYS DEPARTMENT FOR MAINTENANCE, THE GRATING DETAILS SHALL FOLLOW THOSE AS SHOWN ON HyD STD. DRG. NO. H3156.

REF.	REVISION	SIGNATURE	DATE
E	NOTES 3 & 4 AMENDED.	Original Signed	12.2014
D	NOTE 4 ADDED.	Original Signed	06.2008
C	MINOR AMENDMENT. NOTE 3 ADDED.	Original Signed	12.2005
B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	CAST IRON GRATING AMENDED.	Original Signed	12.2002

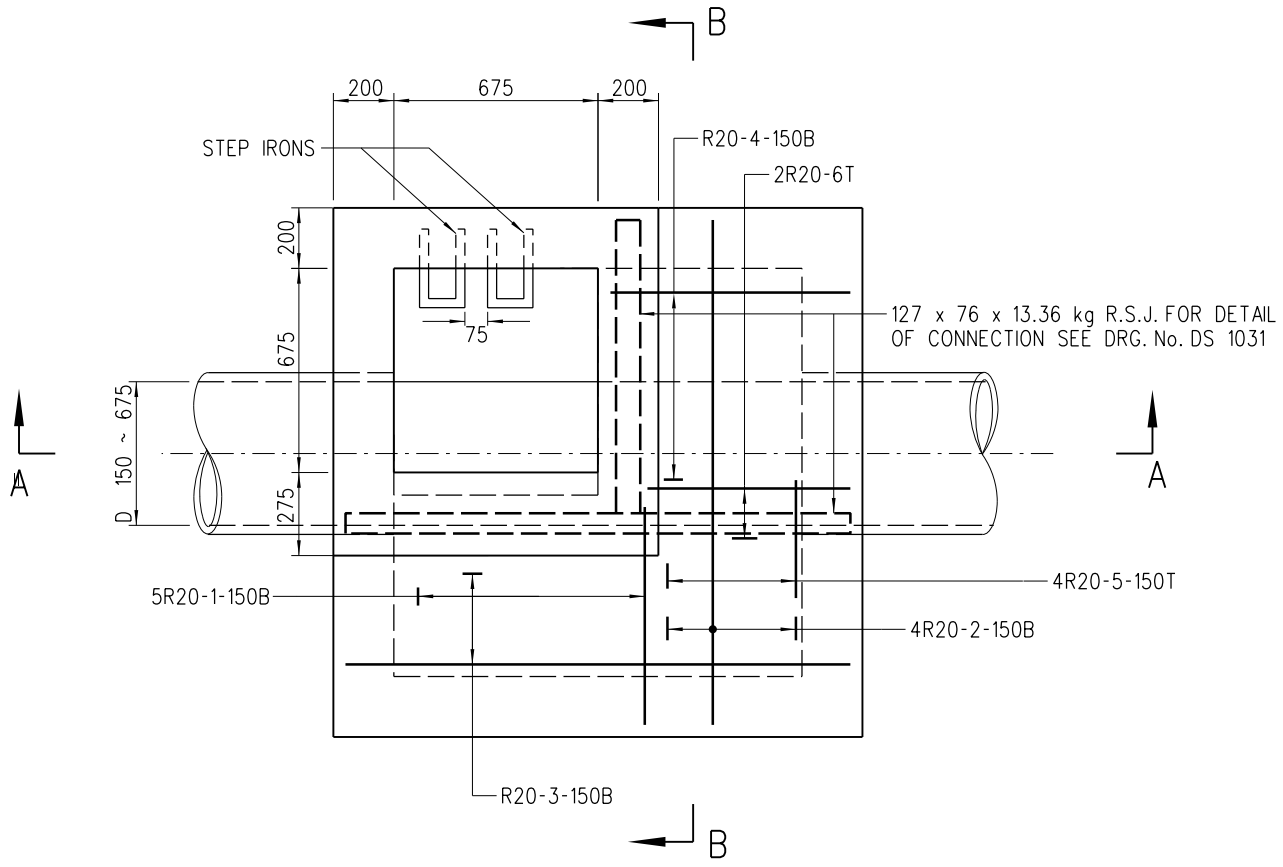
COVER SLAB AND CAST IRON GRATING FOR CHANNELS

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2412E



PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. NOTATION OF REINFORCEMENT : THE SEQUENCE OF DESCRIPTION OF IDENTIFICATION MARKS ON DRAWINGS FOR STEEL REINFORCING BARS FOR CONCRETE WORK IS AS FOLLOWS (NUMBER, TYPE, SIZE, MARK, SPACING, LOCATION OR COMMENT)
3. B DENOTES GRADE 500B RIBBED REINFORCEMENT.
4. R DENOTES GRADE 250 PLAIN REINFORCEMENT.
5. PIPE DIAMETER : 150 TO 675 mm
6. NORMAL RANGE OF DEPTH : 2 500 TO 3700 mm (MEASURED FROM ROAD LEVEL TO LOWEST INVERT)
7. USED IN : STORMWATER DRAIN AND SEWER
8. JUNCTION : POSITION OF JUNCTION TO BE DETERMINED IN EACH INDIVIDUAL CASE. CHANNELS IMMEDIATELY UNDER ACCESS TO MANHOLE SHOULD BE AVOIDED.
9. TOP TREATMENT : SEE DRG. No. DS 1032
10. FOUNDATION : FOUNDATION OF MANHOLE VARIES WITH SITE CONDITION. THEREFORE, IT SHOULD BE DETERMINED ON SITE BY THE ENGINEER.
11. CONCRETE : GRADE 30/20
12. ALL BAR MARKS APPEARED HEREON ARE USED FOR REFERENCE IN THIS DRAWING ONLY.
13. MINIMUM COVER AT END OF BARS 40 mm
14. COVER AND FRAME NOT SHOWN ON PLAN FOR CLARITY.
15. 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
C	NOTE 15 ADDED	ORIGINAL SIGNED	2.8.2022
B	NOTE 11 DELETED NOTES 2, 3 & 4 ADDED	ORIGINAL SIGNED	29.4.2015
A	NOTE 11 REVISED	ORIGINAL SIGNED	24.11.2014
	NEW ISSUE	ORIGINAL SIGNED	15.8.2007

STANDARD MANHOLE TYPE F1

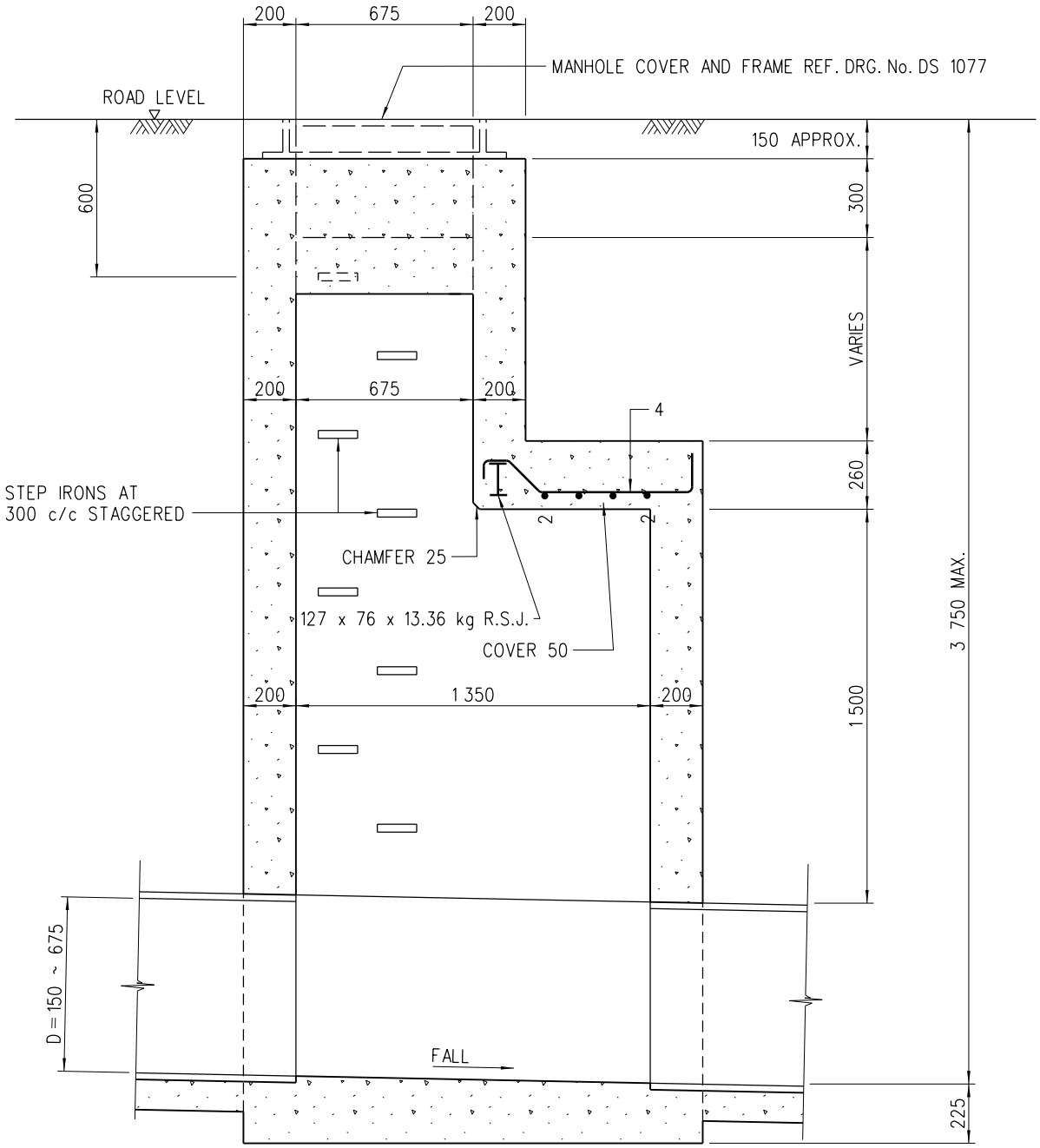
DRAINAGE SERVICES DEPARTMENT

REFERENCE

SCALE 1 : 25

DRAWING No. DS 1081C

(SHEET 1 OF 3)



SECTION A-A

BAR MARKS	SHAPE CODE ○
5 & 6	20
2 & 3	35
1 & 4	99

REV.	DESCRIPTION	SIGNATURE	DATE
C	NOTE 15 ADDED	ORIGINAL SIGNED	2.8.2022
B	NOTE 11 DELETED NOTES 2, 3 & 4 ADDED	ORIGINAL SIGNED	29.4.2015
A	NOTE 11 REVISED	ORIGINAL SIGNED	24.11.2014
	NEW ISSUE	ORIGINAL SIGNED	15.8.2007

STANDARD MANHOLE
TYPE F1

DRAINAGE SERVICES DEPARTMENT

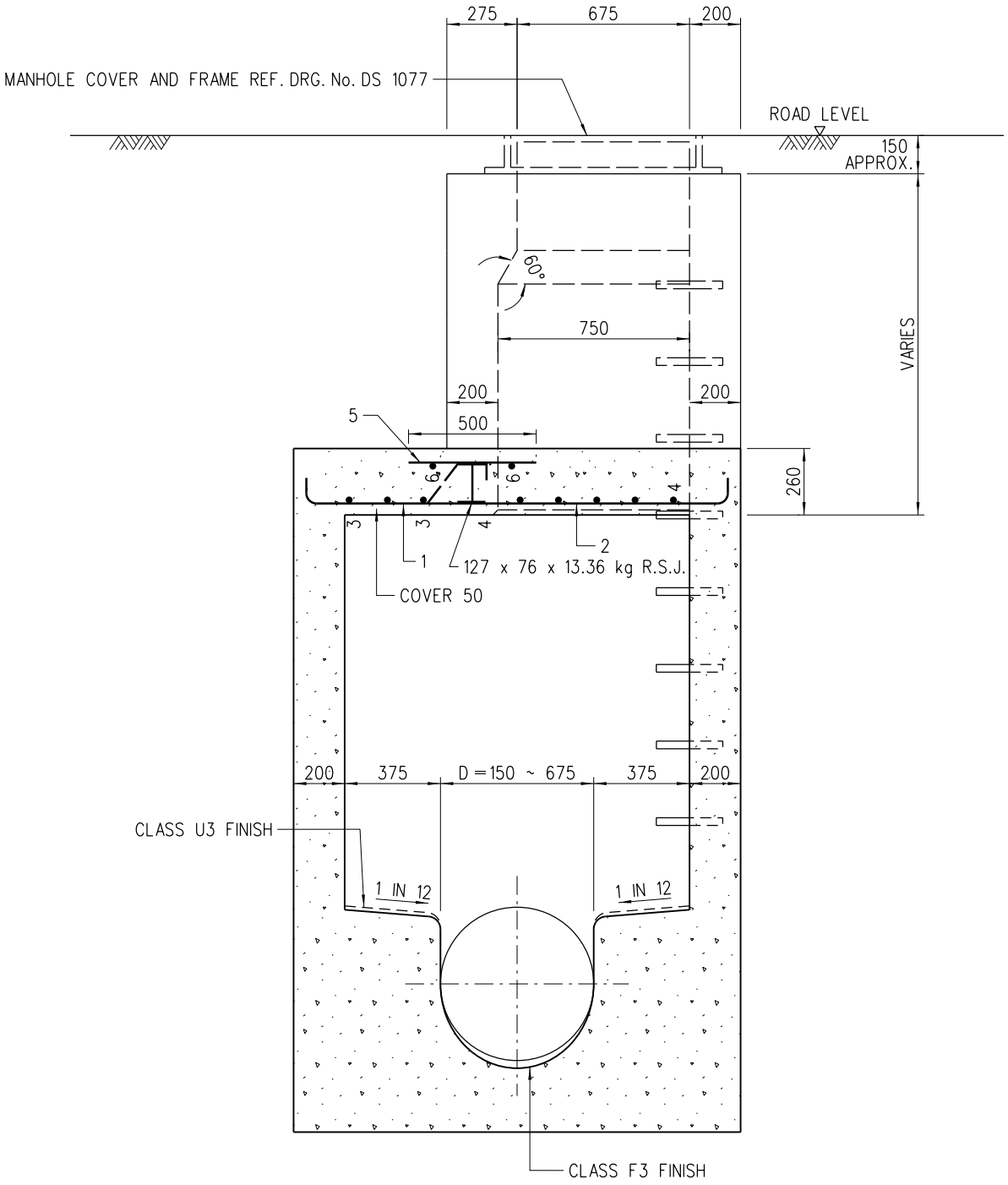
REFERENCE

SCALE 1 : 25

DRAWING No.

DS 1081C

(SHEET 2 OF 3)



SECTION B-B

REV.	DESCRIPTION	SIGNATURE	DATE
C	NOTE 15 ADDED	ORIGINAL SIGNED	2.8.2022
B	NOTE 11 DELETED NOTES 2, 3 & 4 ADDED	ORIGINAL SIGNED	29.4.2015
A	NOTE 11 REVISED	ORIGINAL SIGNED	24.11.2014
	NEW ISSUE	ORIGINAL SIGNED	15.8.2007

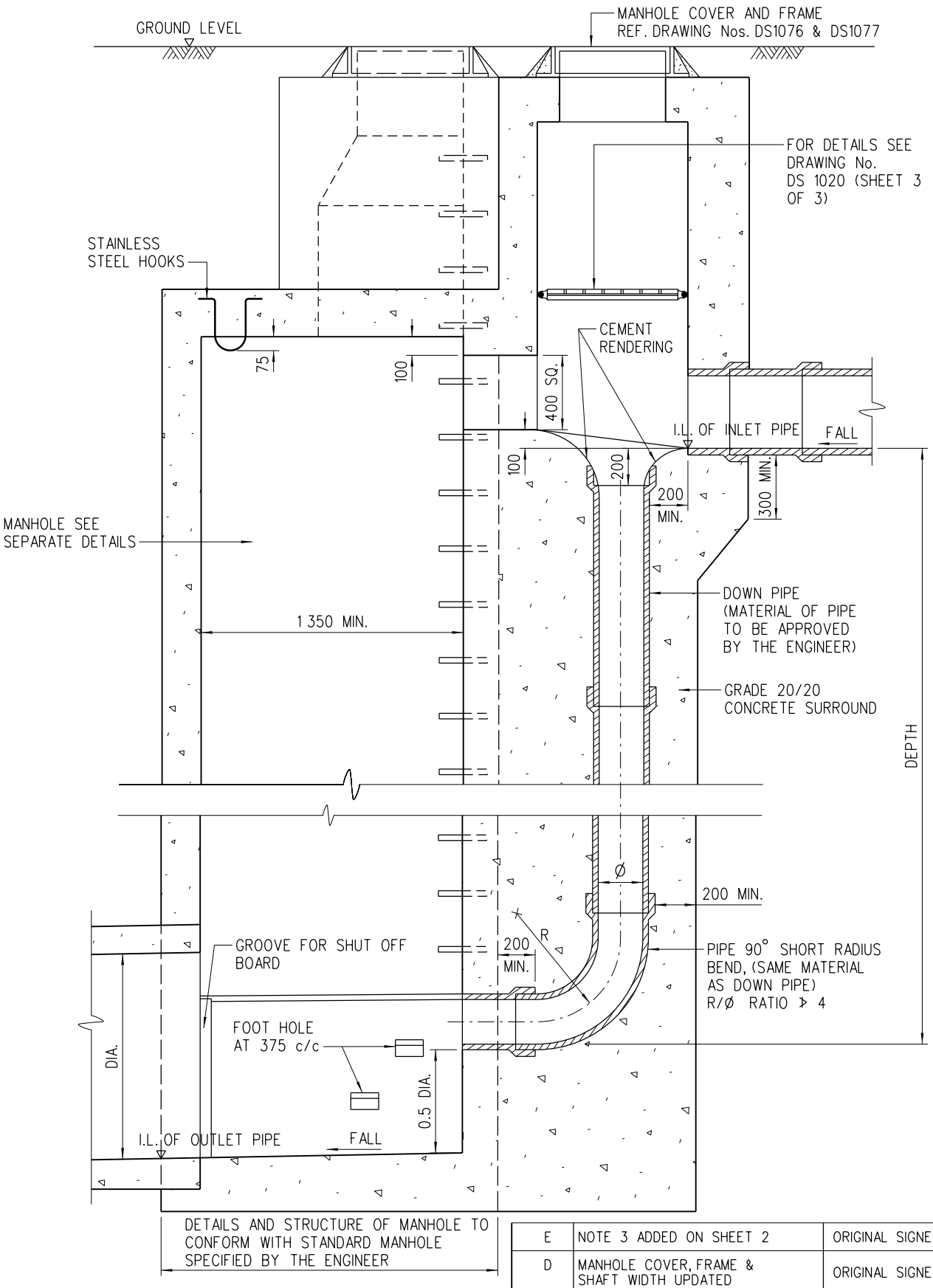
STANDARD MANHOLE
TYPE F1

DRAINAGE SERVICES DEPARTMENT

REFERENCE

SCALE 1 : 25

DRAWING No.
DS 1081C
(SHEET 3 OF 3)



SECTIONAL ELEVATION A-A

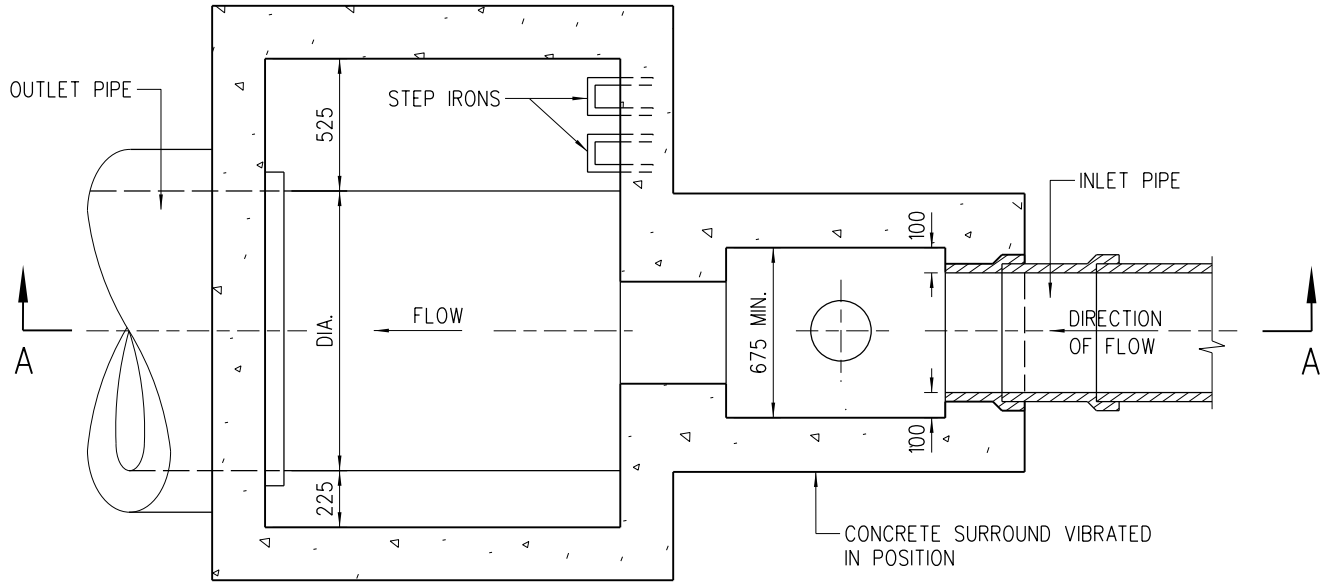
REV.	DESCRIPTION	SIGNATURE	DATE
E	NOTE 3 ADDED ON SHEET 2	ORIGINAL SIGNED	2.8.2022
D	MANHOLE COVER, FRAME & SHAFT WIDTH UPDATED	ORIGINAL SIGNED	10.5.2010
C	REDRAWN BY CAD	ORIGINAL SIGNED	8.8.2001
B	GENERAL REVIEW	ORIGINAL SIGNED	2.2.2001
A	GENERAL REVISION	ORIGINAL SIGNED	22.7.1994

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

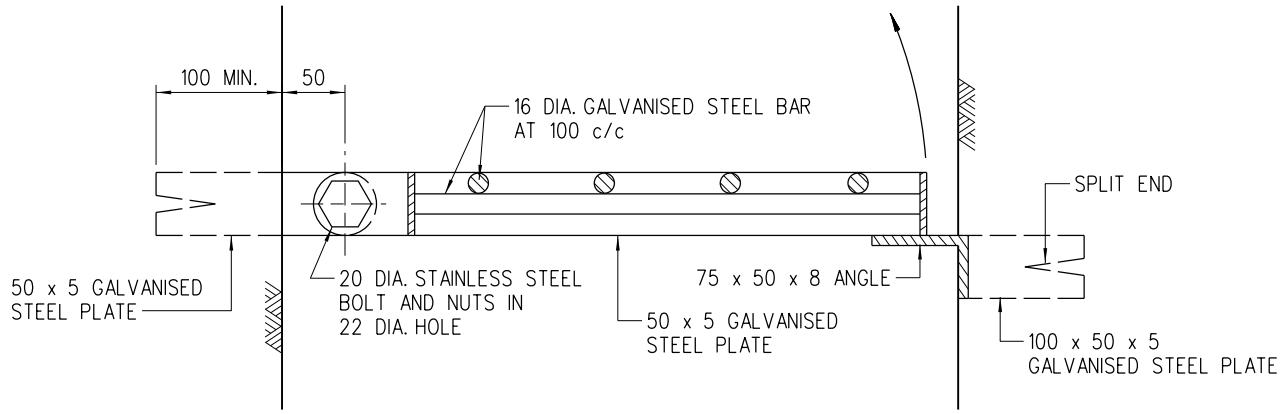
REFERENCE

SCALE 1 : 30

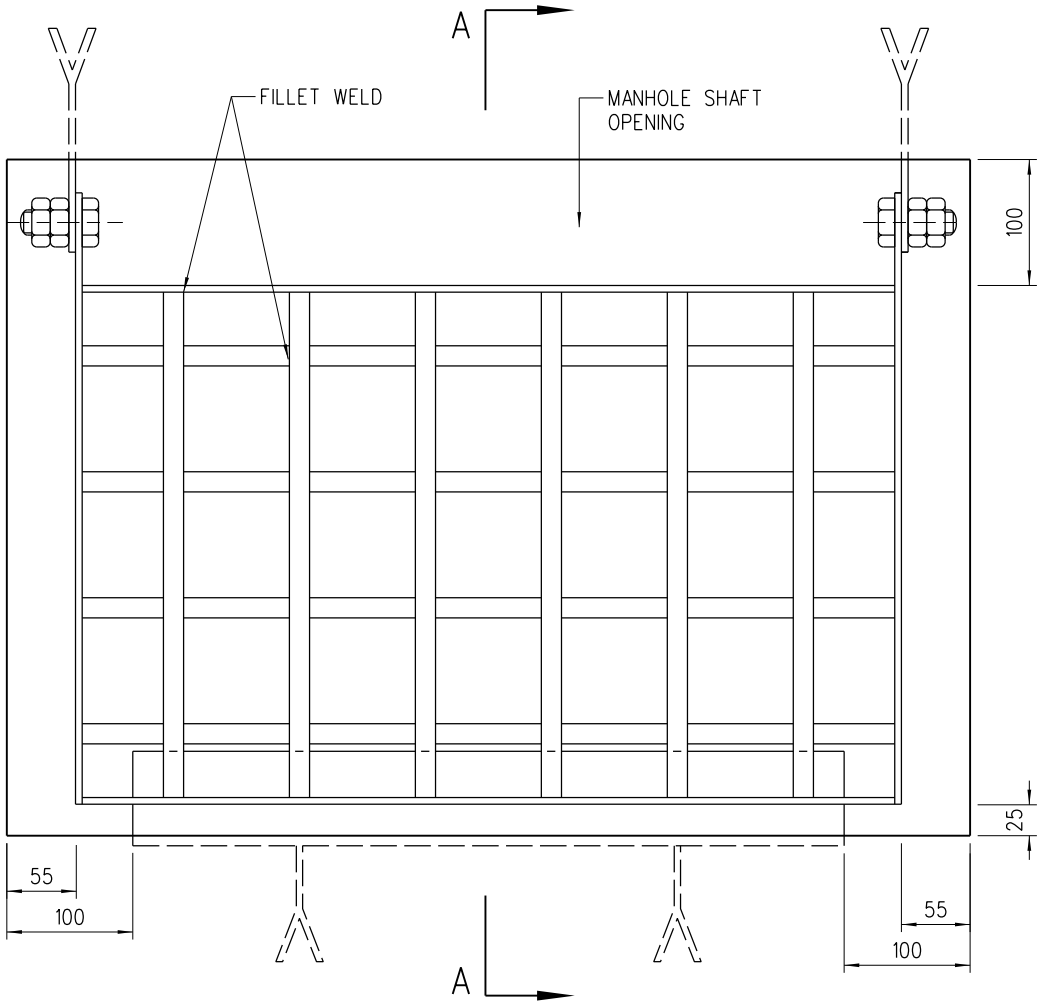
DRAWING No.

DS 1020E

(SHEET 2 OF 3)



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.

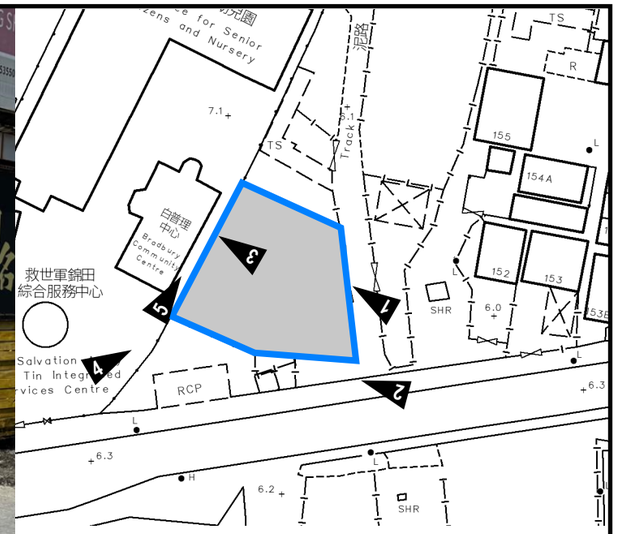
DS 1020E

(SHEET 3 OF 3)

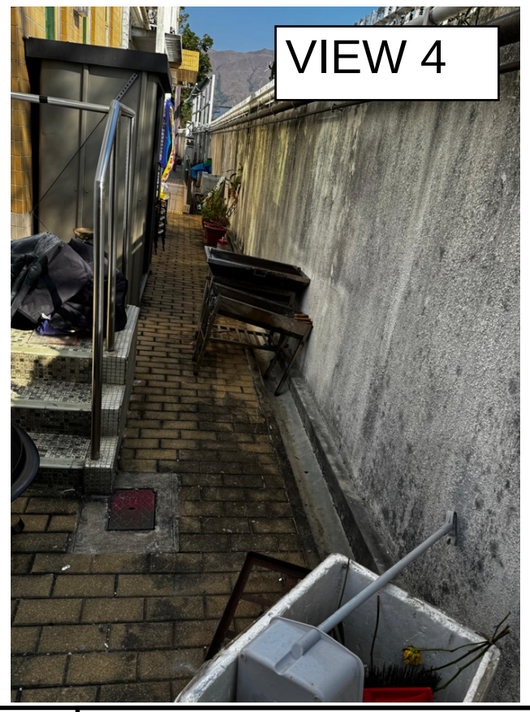
SCALE 1 : 6

VIEW 1

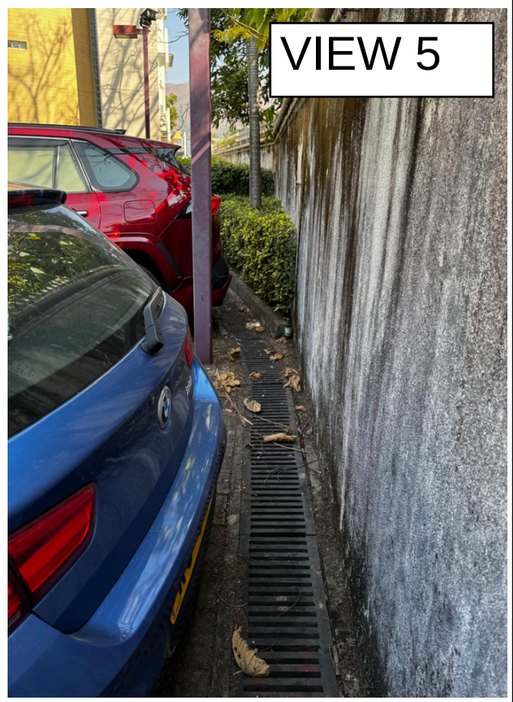
VIEW 2



VIEW 3



VIEW 4



VIEW 5

PROJECT: Temporary Shop and Services for a Period of 5 Years	SITE PHOTOS	APPENDIX D
LOCATION: Lot 283 S.A RP (Part) in D.D. 109, Kam Tin, Yuen Long, New Territories		

VER	DESCRIPTION	DATE