TEMPORARY DRAINAGE PROPOSAL

TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION SPORTS OR CULTURE (HOBBY FARM) AND ASSOCIATED LAND FILLING FOR A PERIOD OF 3 YEARS AT LOTS 1430 (PART), 1431 (PART), 1439(PART) AND 1440 (PART) IN D.D.114, SHEK KONG, YUEN LONG

A/YL-SK-439

ISSUE 1 (FEBRUARY 2026)

Content Page

Appendix

1.   Introduction

This report presents the temporary drainage proposal for the proposed temporary place of recreation sports or culture (hobby farm) and associated land filling for a period of 3 years at lots 1430 (part), 1431 (part), 1439(part) and 1440 (part) in D.D.114, Shek Kong, Yuen Long. The site location is shown in **Appendix A**.

1.1.   Objectives of the Report

This report shall be prepared to include the following:
- Identify the potential drainage impact assessment from the proposed Application Site
- Recommend and implement all necessary measures to mitigate adverse drainage impacts arising from the application site

1.2.   Report Structure

The report contains the following sections:
- Section 1 on Introduction;
- Section 2 on Development Proposal;
- Section 3 on Assessment Methodology;
- Section 4 on Potential Drainage Impact; and
- Section 5 on Conclusion

1.3.   References

This report has been prepared with reference to the following documents:

- Stormwater Drainage Manual: Planning, Design and Management (Fifth Edition, January 2018)
- Technical Note No.1 Technical Note to Prepare a Drainage Submission (December 2024)
- Stormwater Drainage Manual – Corrigendum No. 1/2022
- Stormwater Drainage Manual – Corrigendum No. 1/2024

2.   Development Proposal

2.1.   Existing Site Conditions

The application site is located in Shek Kong in Yuen Long, New Territories. The total area of approximately 1500 m^2 and the existing ground level is approximately 44.0 mPD. The site layout plan is provided in **Appendix B**.

The applied development is a temporary place of recreation sports or culture (hobby farm) and associated land filling for 3 years. The zonings are under "Agriculture". The application site is located at lots 1430 (part), 1431 (part), 1439(part) and 1440 (part) in D.D.114, Shek Kong, Yuen Long, New Territories.

The application site is less than 1 ha in size and neither fall within flood prone areas such as lowlying areas and flooding blackspots nor involve pond filling and substantial earth filling, so it is regarded as simple site. There are no existing stormwater drains within the application site. There is an existing 1200 mm village drain in vicinity of the site that proposed be connected to, the location and picture of the existing village surface channel and open channel are shown in **Appendix C**.

3. Assessment Methodology

3.1. Calculation Methodology for Runoff

According to Section 6.6.2 of *the Storm Drainage Manual*, an "Urban Drainage Branch System" refers to a network of interconnected drains that collect rainwater runoff from an urban area and transport it to a trunk drain, river, or sea. In simpler terms, the largest pipe size or the equivalent diameter in case of a box culvert in a branch system will normally be less than 1.8m.

Referring to Stormwater Drainage Manual, since the proposed U-channels have dimensions smaller than 1.8m, the drainage system would be classified as an urban drainage branch. In consideration of the effect of recent climate change in the drainage design, the return period is 50 years with the storm constraints specified in *Stormwater Drainage Manual – Corrigendum No. 1/2024.*

To calculate the peak instantaneous runoff values before and after the development, the Rational Method with recommended physical parameters including runoff coefficient (C) and storm constants for different return periods are adopted referred to the SDM.

The Rational Method is adopted for hydraulic analysis and the peak runoff is calculated based on the following equation:

$$Q_p = 0.278 \, Ci \, A$$

where Qp = Peak Runoff, m^3/s
C = Runoff Coefficient
i = Rainfall Intensity, mm/hr
A = Catchment Area, km^2

The runoff coefficient of 1 is assumed. Based on the storm constants for the 50-year return period recommended in the SDM, the appropriate rainfall intensities (i) are calculated as detailed in **Appendix E**.

3.2. Calculation Methodology for Capacity Checking

Since the catchment areas are less than 1ha, peripheral surface U-channels are recommended to be constructed to collect the stormwater runoff within the site and to intercept the overland flow from the adjacent lands. The surface U-channel are proposed to be 375 mm width. The collected stormwater will be diverted to the existing 1200mm village drain in vicinity of the site.

For the worst-case scenario, bad condition of concrete u channel is assumed for the Manning's roughness coefficient i.e coefficient value is 0.016 for calculating capacities of concrete U-channel using Manning's Equation. The recommended roughness values ks for concrete channels with float finish is 3.3 mm under normal condition.

Manning's Equation for calculating the channel and pipe capacities is adopted for this analysis:

$$V = \frac{R^{2/3}S^{1/2}}{n}$$

where V = mean velocity, m/s
S = slope of the total energy line
n = Manning's roughness coefficient
R = hydraulic radius, m

3.3. Summary of Assessment Assumptions

The assumptions of the Drainage Proposal are summarized below for ease of reference:

- Runoff coefficient of 1 for the paved area is assumed;
- Storm constants for 50 years return periods of HKO Headquarters
- Manning's roughness coefficient of 0.016 for the proposed concrete U-channels and concrete pipe are adopted; and
- Roughness values ks of 3.3 mm for concrete channels with float finish is adopted.

4.   Potential Drainage Impact

4.1.   Change in Drainage Characteristics

There is no existing drainage provision for the current site, the collected stormwater was discharged as surface runoff and infiltration leading to the natural stream or river. For conservative approach, the total area of the site for 1500 m^2 will be accounted for one catchment area.

The adjacent sites have no record of flooding. Peripheral surface channels are proposed to collect the surface runoff accrued on the site and to intercept the overland flow from the adjacent lands. Hoardings are erected with adequate opening to allow existing overland flow passing through the site.

To manage the stormwater flows after developing the site, this drainage proposal detailed the proposed drainage system consisting of a set of U-channels for diverting stormwater flows to avoid causing flooding to the site.

4.2.   Proposed Drainage Works

The runoff from the application site is proposed to be collected by U-channels along the site boundary and discharged to the terminate catchpit with sand trap and eventually lead to the existing village surface channel in vicinity of the site. The details of the proposed drainage works are illustrated in **Appendix D**.

To ensure a conservative approach, the critical scenario has been considered, involving the collection of all flow within the catchment area of 1500 m^2. Surface U-channels with a width of 375mm are proposed for this purpose. Design calculations for the proposed U-channel are presented in **Appendix E1**. A separate design check has been undertaken using an enlarged catchment area of 600 m^2 that includes the overflow from adjacent sites. These calculations are provided in **Appendix E2**.

The hydraulic performance of the existing terminal drainage facilities of 1200 mm open channel is also checked under a separate calculation in **Appendix F**. The concerned development is not adversely existing drainage facilities.

The typical designs for the U-channels and catchpits are provided in **Appendix G** as a reference.

4.3. Design Calculation and Result

The design runoff arising from the proposed application site will be discharged into the proposed 375mm U-channel and then connect with the existing 1200 village drain in adjacent to site. The design calculations for U-channel with the application site and adjacent site areas are summarized in **Table 1,** and appended in **Appendix E1** and **Appendix E2**.

From	To	U.S I.L	D.S I.L	Width (mm)	Length (m)	Grad.	Vel. Full Bore (m/s)	Capacity (Application Site)	Capacity (Application Site and Adjacent Site)	Check
CP1	CP2	42.14	41.84	375	29.6	100	1.61	57.7%	81.1%	OK
CP2	CP3	41.84	41.59	375	24.6	100	1.61	57.6%	81.0%	OK
CP3	TCP8	41.78	41.52	375	12.6	50	2.27	40.7%	57.2%	OK
CP1	CP4	42.14	41.91	375	22.2	100	1.61	57.5%	80.8%	OK
CP4	CP5	41.91	41.61	375	30.6	100	1.61	57.4%	80.7%	OK
CP5	CP6	41.61	41.32	375	28.8	100	1.61	57.3%	80.6%	OK
CP6	CP7	41.59	41.44	375	7.5	50	2.27	40.5%	57.0%	OK
CP7	TCP8	41.42	41.12	375	29.1	100	1.61	57.2%	80.4%	OK

Table 1: Drainage Schedule of Proposed U-channel Size

The hydraulic performance of the existing terminal drainage facilities of 1200 mm open channel is also checked. The concerned development only occupies 4.3% of the capacity of the existing 1200 mm village drain. The design checking is appended in **Appendix F**.

5. Conclusion

A temporary drainage proposal has been designed for temporary place of recreation sports or culture (hobby farm) and associated land filling for a period of 3 years. The zonings are under "Village type Development". The application site is located at lots 1430 (part), 1431 (part), 1439(part) and 1440 (part) in D.D.114, Shek Kong, Yuen Long, New Territories.

Based on the design calculations, a set U-channel with width of 375mm has been deemed sufficient to convey peak runoff under a 50-year return period from the application site. The stormwater collected from the site will be discharged into the nearby existing 1200mm village drain.

Coordination will be undertaken with relevant stakeholders, and feedback will be sought from appropriate government departments regarding temporary drainage arrangements to ensure the system operates effectively.

Appendix A
Location Plan of Application Site

N

石崗
SHEK KONG

北邊村
Pak Pin Tsuen

石頭圍
Shek Tau Wai

中心村
Chung Sum Tsuen

上村
Sheung Tsuen

上村新村
Sheung Tsuen San Tsuen

黃竹園
Wong Chuk Yuen

屋頭村
Uk Tau Tsuen

南慶里
Nam Hing Lei

杜屋村
To Uk Tsuen

錦上路
KAM SHEUNG ROAD

錦田公路
KAM TIN ROAD

林錦公路

I(D)

O

I(D)

謝屋村
Tse Uk Tsuen

曾屋村
ng Uk Tsuen

V

申請地點
Application Site

V

大嶺
TAI LING

石崗村
Shek Kong Village

AGR

CA

雷公田
Lui Kung Tin

R(D)

麻包嶺
PAU LING

AGR

CA

CA

V

CA
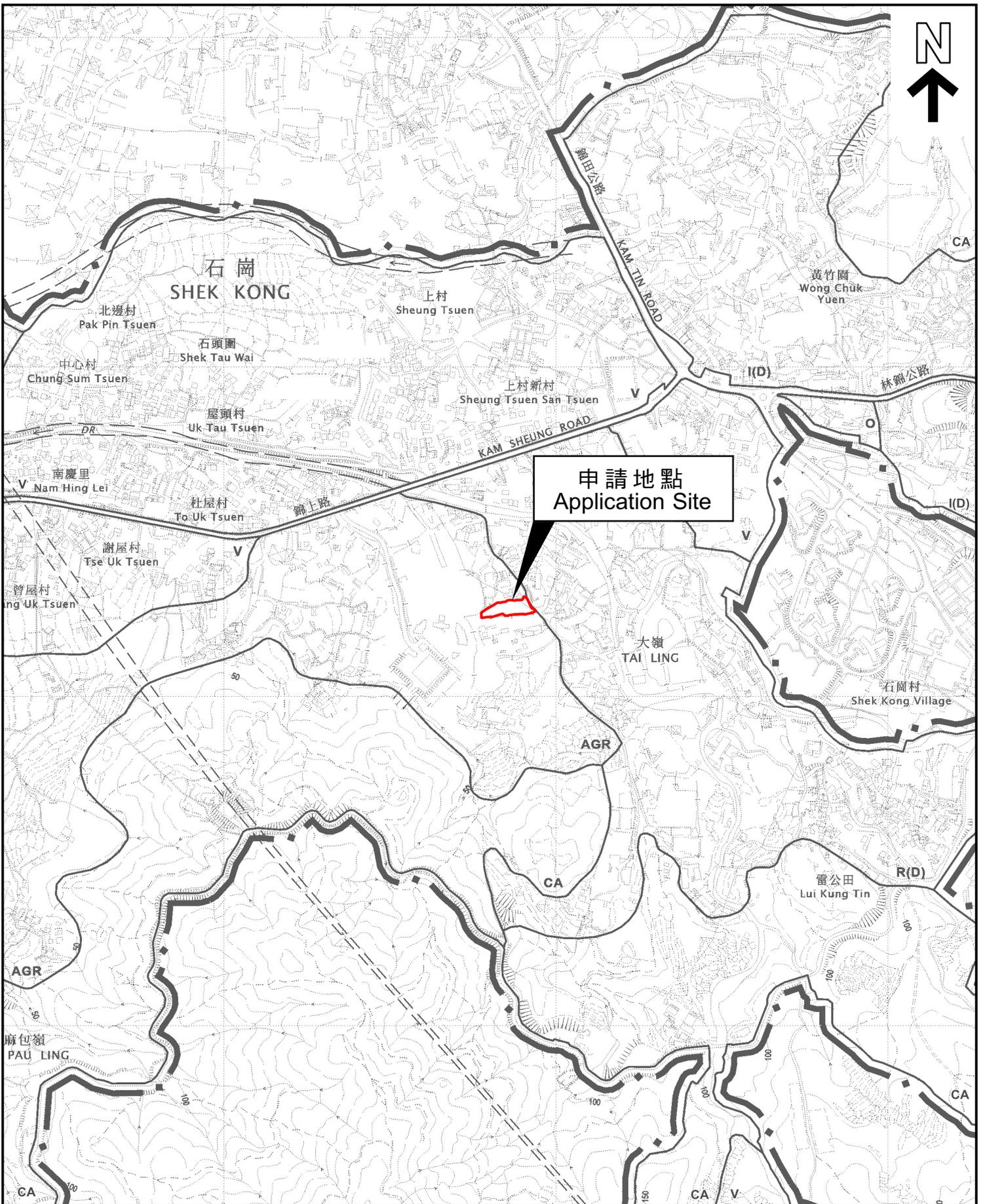
本摘要圖於2025年11月28日擬備，
所根據的資料為於2025年10月17日
展示的分區計劃大綱圖編號S/YL-SK/10
EXTRACT PLAN PREPARED ON
28.11.2025 BASED ON OUTLINE ZONING
PLAN No. S/YL-SK/10 EXHIBITED ON
17.10.2025
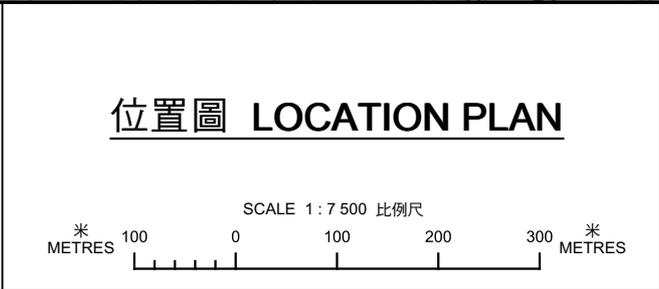
位置圖　LOCATION PLAN

SCALE 1 : 7 500 比例尺

米
METRES 100   0   100   200   300 米
METRES

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

參考編號
REFERENCE No.

A/YL-SK/439

N

道路 Road

道路 Road

Track

TS
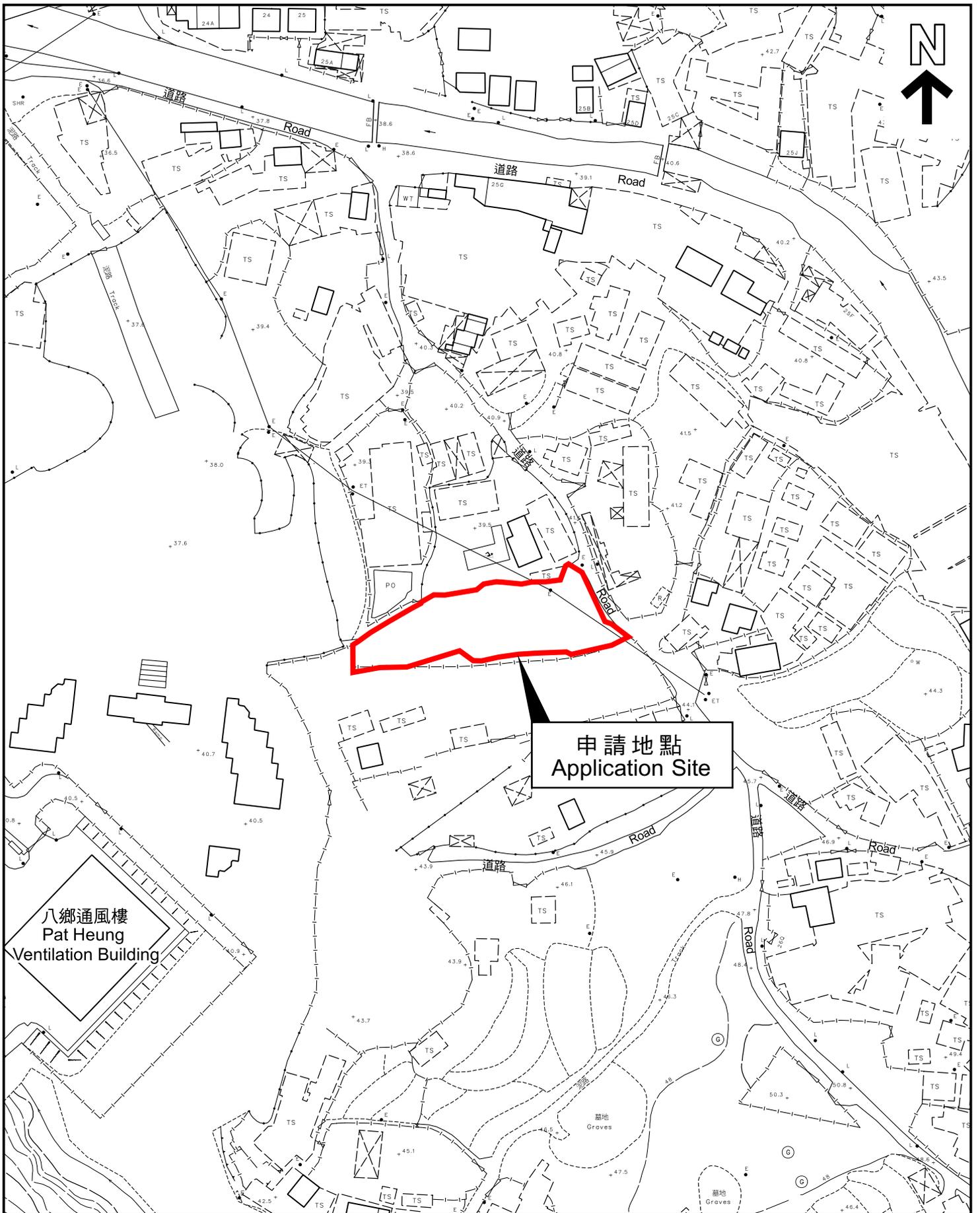
Pat Heung Ventilation Building
八鄉通風樓

申請地點
Application Site

道路 Road

道路 Road

Track

墓地 Graves

墓地 Graves

平面圖 SITE PLAN

本摘要圖於2025年11月28日擬備，
所根據的資料為測量圖編號6-NE-19B及20A

EXTRACT PLAN PREPARED ON
28.11.2025 BASED ON SURVEY SHEETS
No. 6-NE-19B & 20A

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

參考編號
REFERENCE No.

A/YL-SK/439

Appendix B
Layout Plan of Application Site

N

Structure 3
Meter Room
Not exceeding 8㎡ (ABOUT)
No. of storey: 1
Height: Not exceeding 3m

Ingress/Egress

1 parking space of
5m x 2.5m for
private cars

Structure 1
Office, Reception,
Changing Room & Storage
Covered Area: 56㎡ (ABOUT)
GFA: Not exceeding 112㎡ (ABOUT)
No. of storey: 2
Height: Not exceeding 7m
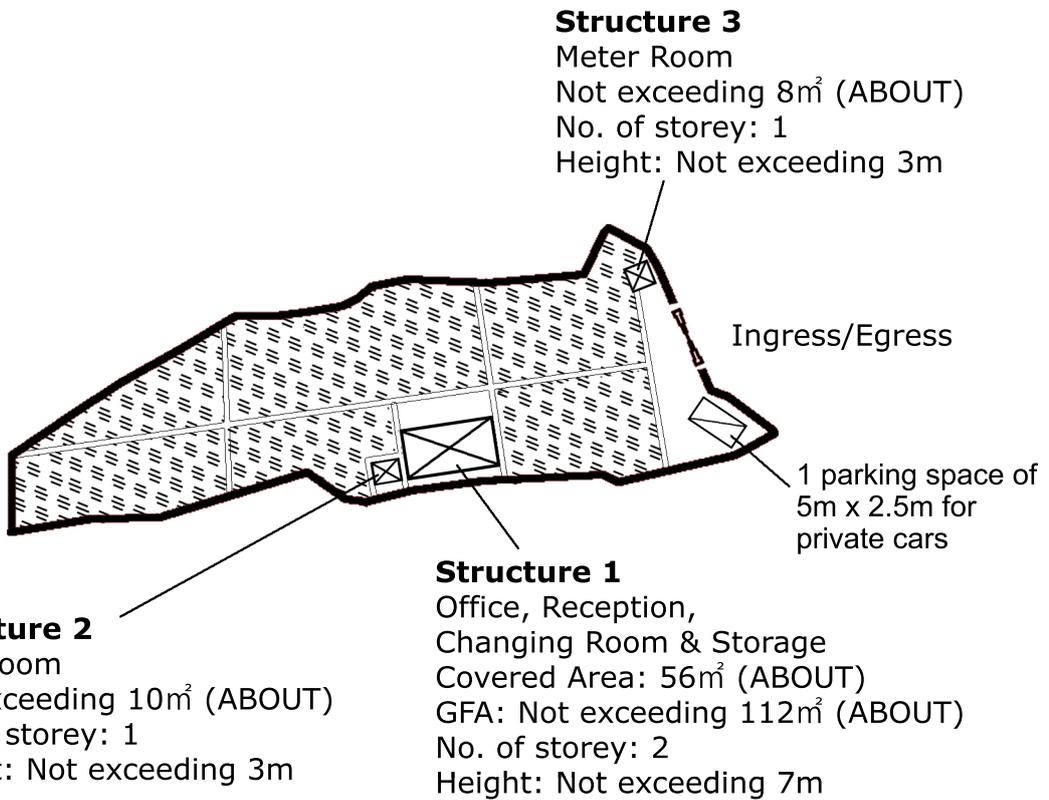
Structure 2
Washroom
Not exceeding 10㎡ (ABOUT)
No. of storey: 1
Height: Not exceeding 3m

Project 項目名稱:	Drawing Title 圖紙標題:		Remarks 備註:
Proposed Temporary Place of Recreation, Sports or Culture (Hobby Farm) and Associated land filling for a Period of 3 Years at Lots 1430(Part), 1431(Part), 1439(Part) and 1440(Part) in D.D. 114, Shek Kong, Yuen Long	Layout Plan	AG Allgain Land Planning	▢ Private car parking Space / ▢ Farmland / ⊠ Structure
	Drawing No. 圖號:		Scale 比例:

Appendix C
Location Plan and Photos of the Existing Drainage

Site Boundary

Application Site

Existing Village drainage (U-channel)

1200mm

Application Site

Site Boundary

Existing Village drainage (U-channel)

1200mm
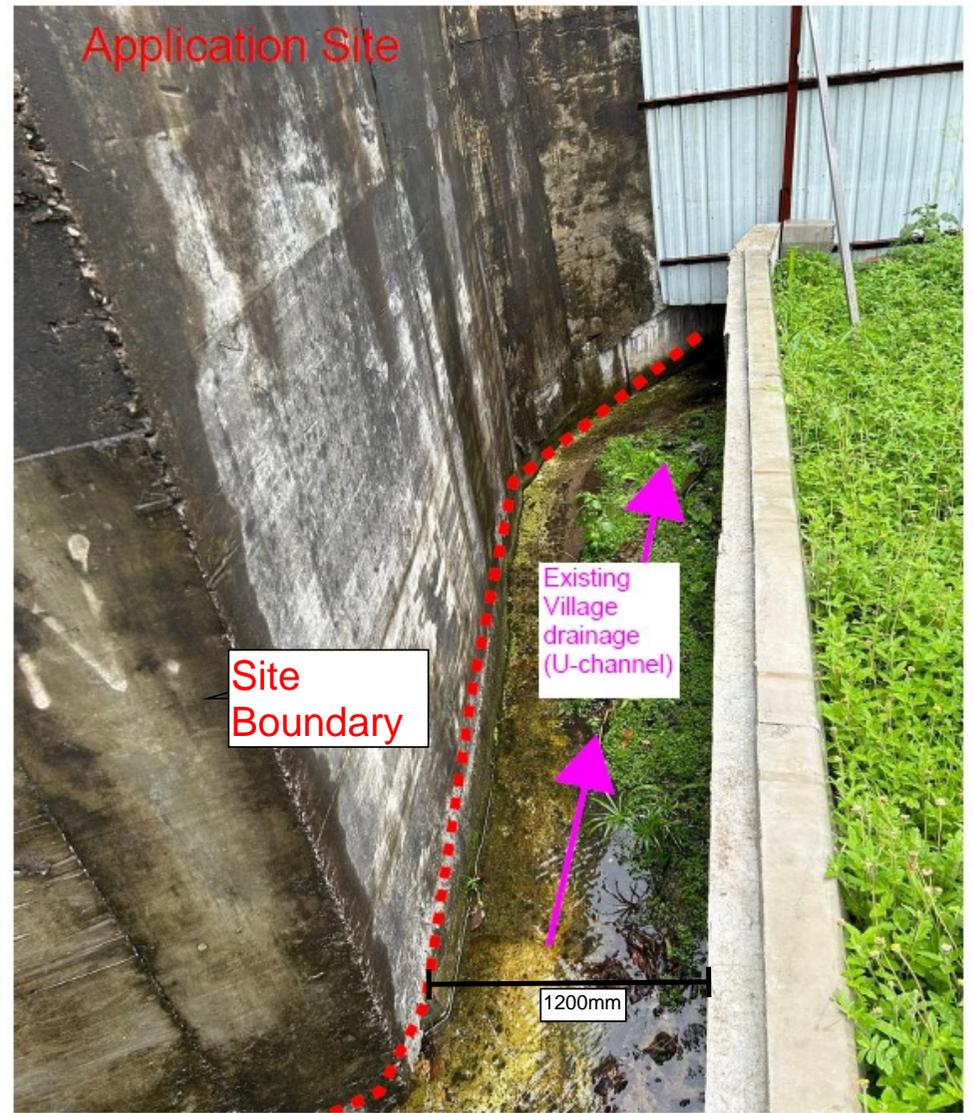
Appendix D
 Proposed Drainage Arrangement

LEGEND
—— SITE BOUNDARY
·<······ FALL DIRECTION
CATCHMENT AREA
EXTERNAL CATCHMENT AREA
← PROPOSED U- CHANNEL
□ PROPOSED CATCHPIT
■ PROPOSED TERMINAL CATCHPIT WITH SANDTRAP
● PROPOSED CONNECTION POINT
━━ EXISTING VILLAGE DRAIN

N

PROPOSED SURFACE
U-CHANNEL UC3
375MM , 1:50 FALL

PROPOSED SURFACE
U-CHANNEL UC2
375MM , 1:100 FALL

CATCHPIT CP2
C.L.: 42.22 mPD
I.L. :41.84 mPD

CATCHPIT TCP8
C.L.:41.86 mPD
I.L. :41.12 mPD

CATCHPIT CP3
C.L.:42.15 mPD
I.L. :41.59 mPD

DRAINAGE PIPE DP1
375MM , 1:10 FALL

PROPOSED SURFACE
U-CHANNEL UC1
375MM , 1:100 FALL

CONNECTION POINT
C.L.:41.42 mPD
I.L. :40.50 mPD

CATCHPIT CP1
C.L.: 42.51 mPD
I.L. :42.14 mPD

PROPOSED SURFACE
U-CHANNEL UC8
375MM , 1:100 FALL

APPLICATION AREA 1500m²

CATCHPIT CP7
C.L.:41.79 mPD
I.L. :41.44 mPD

A

PROPOSED SURFACE
U-CHANNEL UC7
375MM , 1:100 FALL

EXTERNAL CATCHMENT
AREA 600m²

PROPOSED SURFACE
U-CHANNEL UC6
375MM , 1:100 FALL

PROPOSED SURFACE
U-CHANNEL UC4
375MM , 1:100 FALL

CATCHPIT CP6
C.L.:41.96 mPD
I.L. : 41.32 mPD

CATCHPIT CP5
C.L.: 42.27mPD
I.L. :41.61 mPD

PROPOSED SURFACE
U-CHANNEL UC5
375MM , 1:100 FALL

CATCHPIT CP4
C.L.:42.32mPD
I.L. :41.91 mPD

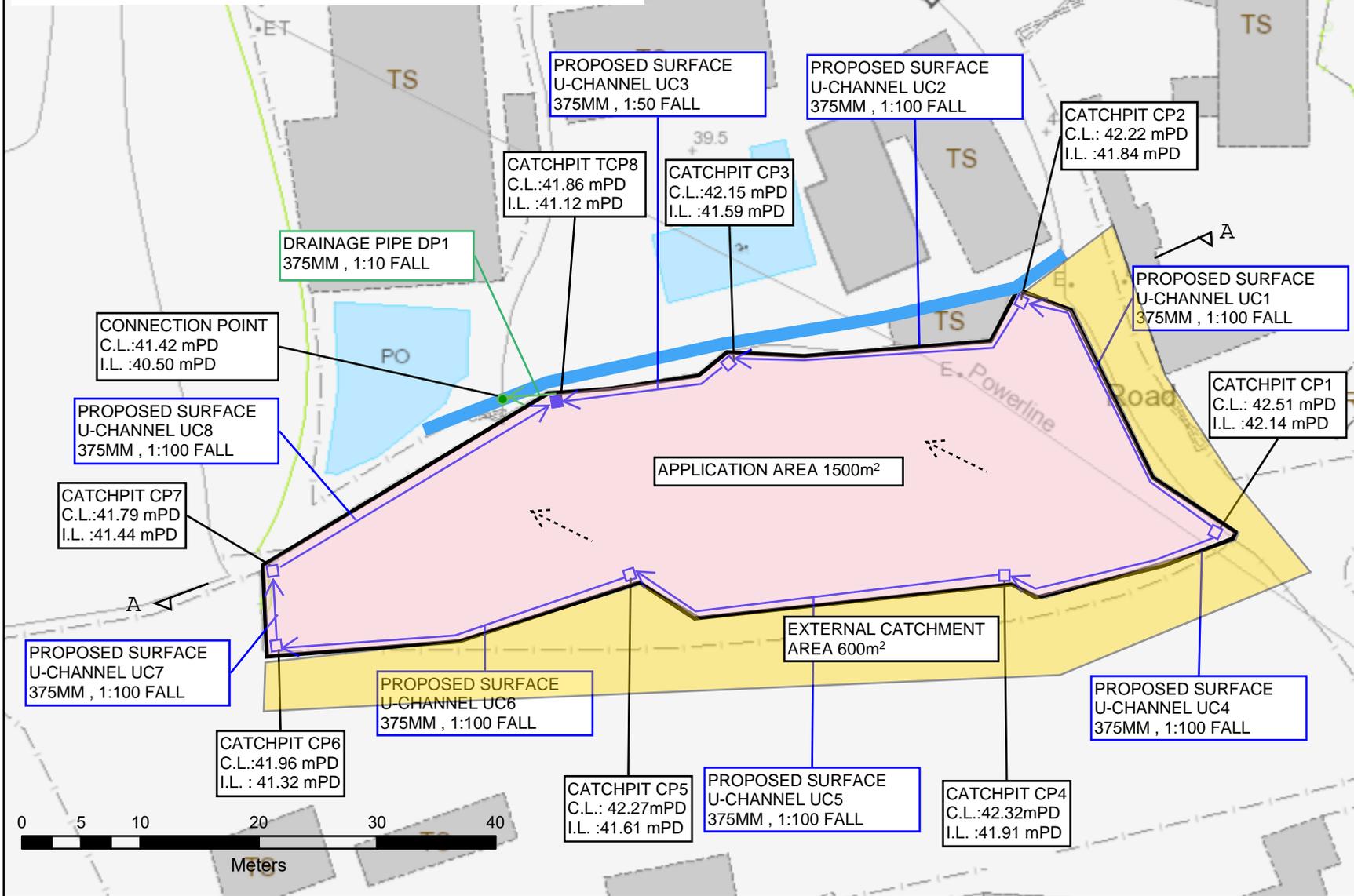0 5 10   20   30   40
Meters

道路

SITE PLAN

PROJECT :

TEMPORARY DRAINAGE
PROPOSAL FOR THE
PROPOSED TEMPORARY
PLACE OF RECREATION,
SPORTS OR CULTURE (HOBBY
FARM) AND ASSOCIATED
FILLING OF LAND FOR A
PERIOD OF 3 YEARS

DRAWING TITLE:

PROPOSED DRAINAGE
WORKS

APPENDIX D
ISSUE 1

Division

Scale   1:500

Date   06/02/2026

SECTION A

Proposed
Site Boundary

APLLICATION SITE
YL-SK-439

Proposed
Site Boundary

Adjacent Area

Adjacent Area

CONNECT TO
DRAINAGE PIPE DP1
375MM , 1:10 FALL

PROPOSED SURFACE
U-CHANNEL UC8
375MM , 1:100 FALL

PROPOSED SURFACE
U-CHANNEL UC3
375MM , 1:50 FALL

PROPOSED SURFACE
U-CHANNEL UC2
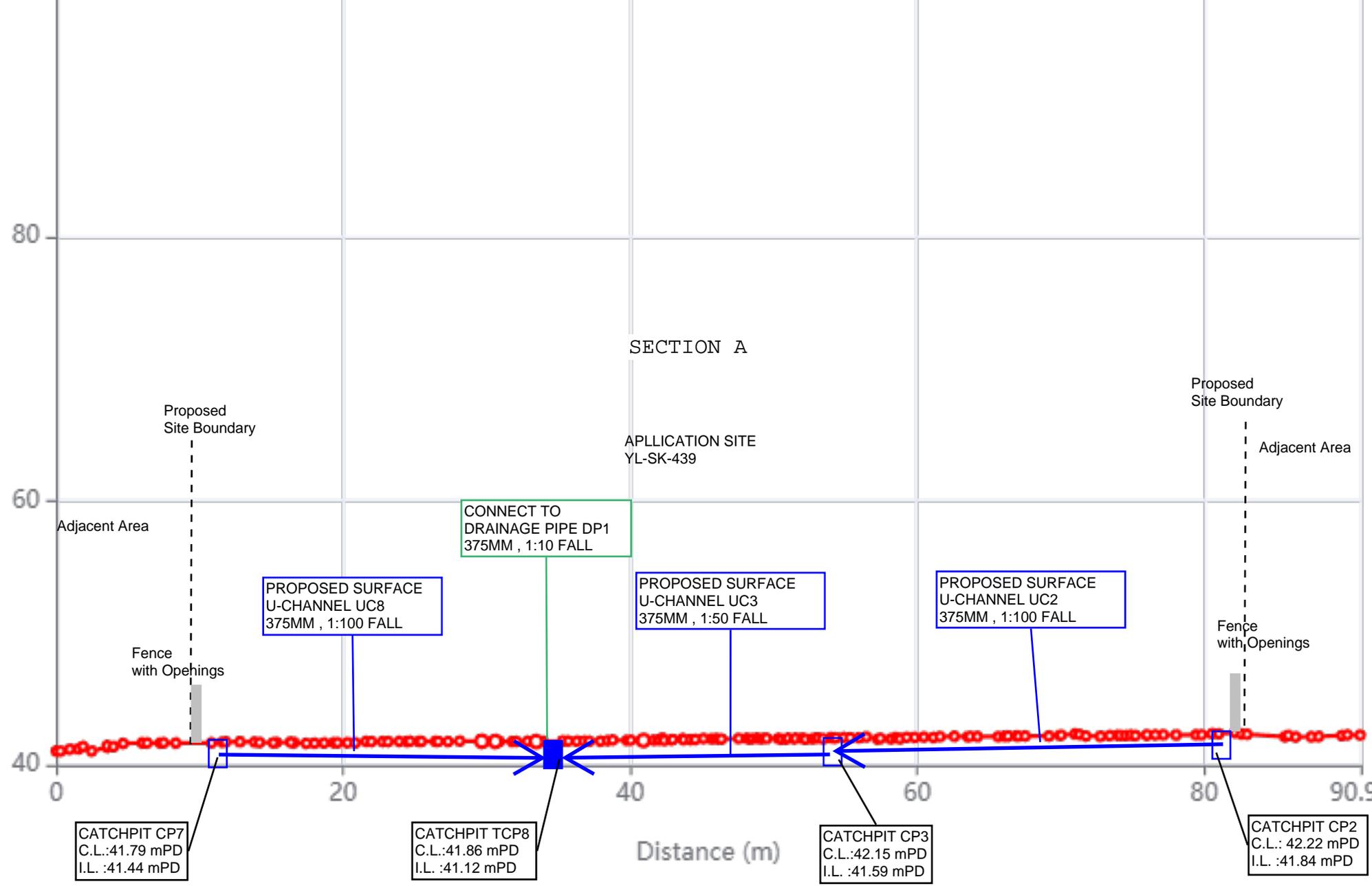375MM , 1:100 FALL

Fence
with Openings

Fence
with Opehings

CATCHPIT CP7
C.L.:41.79 mPD
I.L. :41.44 mPD

CATCHPIT TCP8
C.L.:41.86 mPD
I.L. :41.12 mPD

CATCHPIT CP3
C.L.:42.15 mPD
I.L. :41.59 mPD

CATCHPIT CP2
C.L.: 42.22 mPD
I.L. :41.84 mPD

Elevation (mPD)

Distance (m)

Appendix E1
Design Checking for Proposed U Channel for Application Site

Design for Proposed U Channel for Development Area

Catchpit No.		Catchment				Level				U Channel								Manning's Equation							
From (U/S)	To (D/S)	Surface Channel	Catchment Area (m²)	Runoff Coef. C	Ave. Slope / 100m	U/S G.L. (mPD)	D/S G.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Width (mm)	Depth (mm)	Lgth (m)	Grad. (1 in)	U Channel Area A (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Qo (m³/s)	Velocity Check	Time of Conc. tc (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m³/s)	Capacity % (Q/Qo)	Capacity Check
CP1	CP2	UC1	1500	1	1	42.51	42.22	42.14	41.84	CO	375	375	29.6	100	0.13	0.96	0.13	0.016	1.61	0.20	OK	2.061	278.70	0.12	57.7%	OK
CP2	CP3	UC2	1500	1	1	42.22	42.15	41.84	41.59	CO	375	375	24.6	100	0.13	0.96	0.13	0.016	1.61	0.20	OK	2.077	278.39	0.12	57.6%	OK
CP3	TCP8	UC3	1500	1	1	42.15	41.86	41.78	41.52	CO	375	375	12.6	50	0.13	0.96	0.13	0.016	2.27	0.29	OK	2.089	278.18	0.12	40.7%	OK
CP1	CP4	UC4	1500	1	1	42.51	42.32	42.14	41.91	CO	375	375	22.2	100	0.13	0.96	0.13	0.016	1.61	0.20	OK	2.113	277.74	0.12	57.5%	OK
CP4	CP5	UC5	1500	1	1	42.32	42.27	41.91	41.61	CO	375	375	30.6	100	0.13	0.96	0.13	0.016	1.61	0.20	OK	2.129	277.44	0.12	57.4%	OK
CP5	CP6	UC6	1500	1	1	42.27	41.96	41.61	41.32	CO	375	375	28.8	100	0.13	0.96	0.13	0.016	1.61	0.20	OK	2.146	277.14	0.12	57.3%	OK
CP6	CP7	UC7	1500	1	1	41.96	41.79	41.59	41.44	CO	375	375	7.5	50	0.13	0.96	0.13	0.016	2.27	0.29	OK	2.158	276.93	0.12	40.5%	OK
CP7	TCP8	UC8	1500	1	1	41.79	41.86	41.42	41.22	CO	375	375	29.1	150	0.13	0.96	0.13	0.016	1.31	0.16	OK	2.187	276.41	0.12	70.0%	OK

Design for Proposed Drainage Pipe for Development Area

Manhole		Catchment					Pipe				Colebrook-White Equation							Manning's Equation							
From (U/S)	To (D/S)	Incre. Area (m²)	Accum. Area (m²)	Runoff Coef. C	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Dia. (mm)	Lgth (m)	Grad. (1 in)	Rough-ness ks (mm)	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Qo (m³/s)	Time of Conc. tc (min)	Rainfall Inten-sity i	Runoff Q (m³/s)		Mng's Coef. n	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Qo (m³/s)		Time of Conc. tc (min)	Rainfall Inten-sity i	Runoff Q (m³/s)	Runoff / Cap. (Q/Qo)	Capacity Check
TCP8	DP1	1500	1500	1	41.220	40.500	CO	375	4	20	3.30	3.180	0.351	2.082	278	0.116		0.016	2.884	0.319		5.023	238	0.099	31%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time = 2.061 min

t_f = Flow Time = à (Pipe Length / Flow Velocity)

V = Pipe Flow Velocity

= $(R)^{2/3}s^{1/2}/n$ for Manning's Equation

where g = Gravitational Acceleartion = 9.81 m/s²

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness = 3.3 mm for concrete CO   Ref. DSD SDM Table 14

= 0.06 mm for cast iron CI

= 0.6 mm for ductile iron DI

n = Kine. Viscosity = 1.141E-06 m²/s

n = Manning's Coef. = 0.016 for concrete CO   Ref. DSD SDM Table 13

0.015 for cast iron CI

0.015 for ductile iron DI

Q_o = Pipe Flow Capacity = $(\pi D^2/4)V$

i = Rainfall Intensity   HKO Headquarters

= $a / (t_c +b)^c$ where a = 505.5 for a return period of 50 years   Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Q = Runoff = 0.278*CiA

where C = Runoff Coefficient

A = Catchment Area

Appendix E2
Design Checking for Proposed U Channel for Application Site with Adjacent Area

Appendix F
Design Checking for Existing Drainage System

Calculation Sheet		
Date:		2026-02-17
Project Title:	**Project No.:**	YL-SK-439
	Designed by:	RF
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE (HOBBY FARM) AND ASSOCIATED FILLING OF LAND FOR A PERIOD OF 3 YEARS	**Appendix :**	E
	Sheet No.:	1

Design Checking for Existing Village Drain

Catchpit No.		Catchment			Level				U Channel							Manning's Equation							
From (U/S)	To (D/S)	Channel	Catchment Area (m²)	Runoff Coef. C	Ave. Slope / 100m	U/S G.L. (mPD)	D/S G.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Width (mm)	Lgth (m)	Grad. (1 in)	U Channel Area A (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Qo (m³/s)	Velocity Check	Time of Conc. tc (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m³/s)	Capacity % (Q/Qo)	Capacity Check
TCP8	EXISTING	DP1	1500	1	1	42.22	41.42	41.02	41.02	CO	1200	1	200	1.29	3.08	0.42	0.016	2.47	3.17	OK	0.070	328.77	0.14	4.3%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$
    where t_o = Inlet Time = 0.070 min
          t_f = Flow Time = $\sum$ (Pipe Length / Flow Velocity)

V = Pipe Flow Velocity
  = $(R)^{2/3} s^{1/2}/n$ for Manning's Equation
    where g = Gravitational Acceleartion = 9.81 m/s²
          R = Hydraulic Radius
          s = Frictional Slope
          k_s = Surface Roughness = 3.3 mm for concrete CO   Ref. DSD SDM Table 14
                                    = 0.06 mm for cast iron CI
                                    = 0.6 mm for ductile iron DI
          n = Kine. Viscosity = 1.141E-06 m²/s
          n = Manning's Coef. = 0.016 for concrete CO   Ref. DSD SDM Table 13
                                   0.015 for cast iron CI
                                   0.015 for ductile iron DI

Q_o = Pipe Flow Capacity = $(\pi D^2/4)V$

i = Rainfall Intensity   HKO Headquarters
  = $a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years   Ref. DSD Corrigendum No. 1/2024 SDM Table 3a
                               b = 3.29
                               c = 0.355
Q = Runoff = 0.278*CiA
    where C = Runoff Coefficient
          A = Catchment Area

Appendix G
 Typical designs of the U-channels and Catchpits

4 NOS. STAINLESS STEEL GRATING FIXED TO BOTTOM SLAB BY STAINLESS STEEL SCREWS

20 x 20 CHAMFER

STEPPED CHANNEL

H3

FALL

U-CHANNEL

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT

500 + GREATER OF H1 OR H2

H1

FALL

FALL

H2

A — A

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT

STEPPED OR U-CHANNEL OR PIPE

FALL

U-CHANNEL

H4

500 + GREATER OF H3 OR H4

PLAN

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

100

100

100 MIN.

20 x 20 CHAMFERS ON ALL SIDES

350 (OR 650 FOR CATCHPIT CONSTRUCTED ON OR ADJACENT TO A FOOTPATH)

A252 MESH OR EQUIVALENT

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT

FALL

FALL

300 BELOW LOWEST INVERT

B

25 DIA. DRAIN PIPES

SECTION A – A
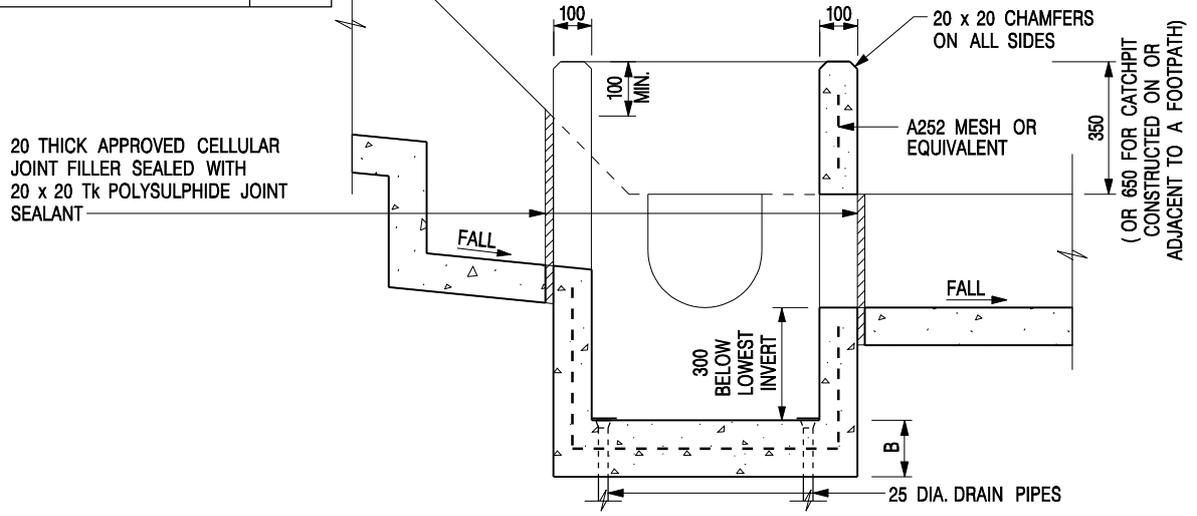
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.

2. REFER TO SHEET 2 FOR OTHER NOTES.

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

CATCHPIT WITH TRAP

(SHEET 1 OF 2)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

CEDD

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

DEPTH OF RECESS AND DETAILS OF
PRECAST CONCRETE COVERS
(SEE STD. DRG. NO. C2407)

50   50 60 FOR
          STEEL GRATINGS
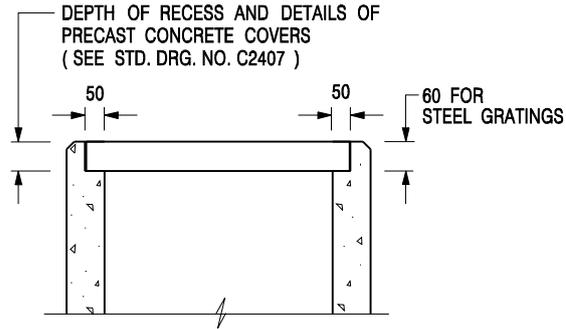
ALTERNATIVE TOP SECTION
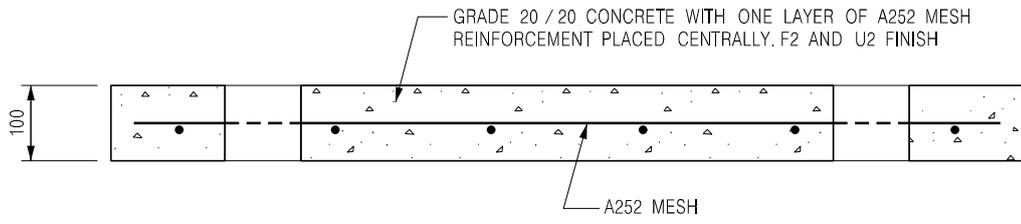## FOR PRECAST CONCRETE COVERS / GRATINGS

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
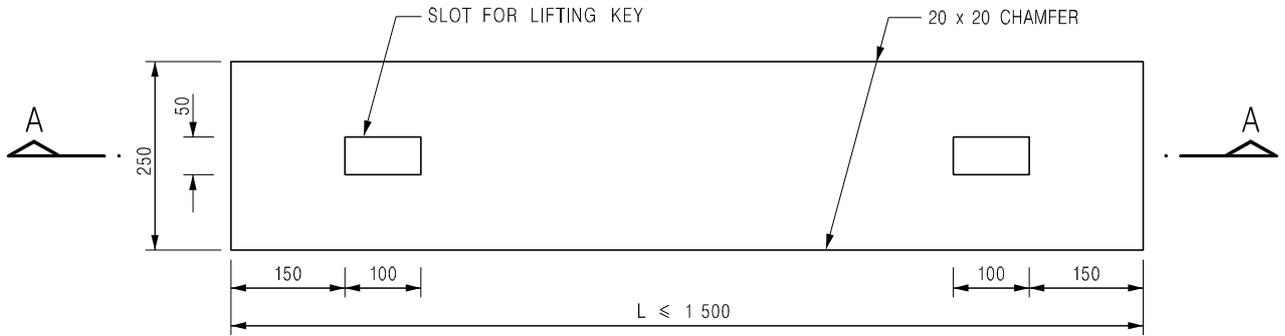   CAN ALSO BE USED AS COVERS / GRATINGS.

CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CEDD — **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

SCALE 1 : 20 DRAWING NO.

DATE JAN 1991 C2406 /2A

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

GRADE 20 / 20 CONCRETE WITH ONE LAYER OF A252 MESH
REINFORCEMENT PLACED CENTRALLY. F2 AND U2 FINISH

100

A252 MESH

SECTION   A – A

SLOT FOR LIFTING KEY

20 x 20 CHAMFER

A

A

50

250

150   100

100   150

L ≤ 1 500

PLAN
TYPE 1 – FOR SPAN UP TO 1.5 m

A393 MESH

GRADE 20 / 20 CONCRETE WITH TWO LAYERS OF
A393 MESH REINFORCEMENT EACH WITH
40 CONCRETE COVER. F2 AND U2 FINISH

130

SECTION B – B

SLOT FOR LIFTING KEY

20 x 20 CHAMFER

B

B

50

250

150   100

100   150

1 500 < L ≤ 2 500
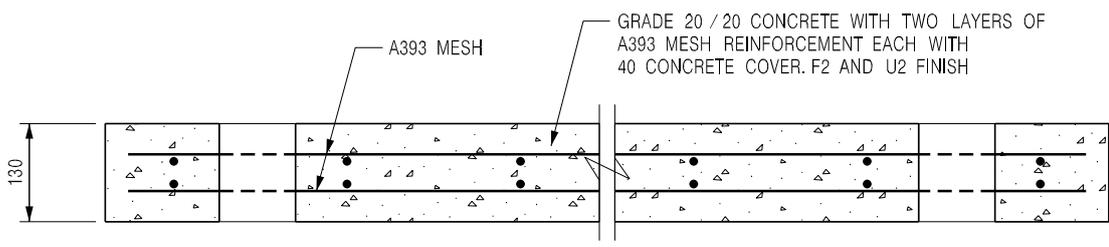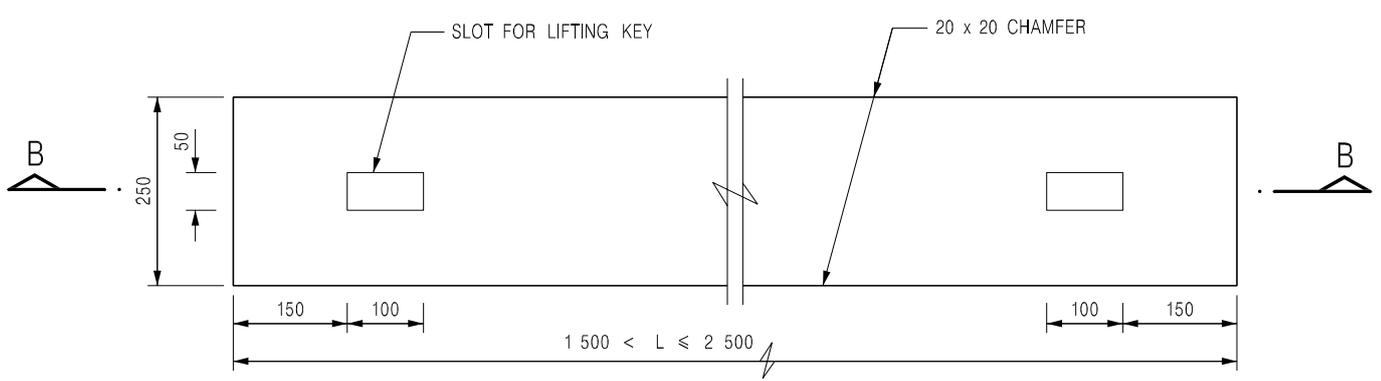
PLAN
TYPE 2 – FOR SPANS 1.5 m TO 2.5 m

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.

2. ALL EXTERNAL EDGES OF THE COVERS
   SHALL BE 20mm CHAMFERED.

B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	GENERAL REVISION	Original Signed	12.2002
REF.	REVISION	SIGNATURE	DATE

PRECAST CONCRETE COVERS

FOR CATCHPIT AND SAND TRAP

CEDD

CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT

SCALE 1 : 10

DATE   JAN 1991

DRAWING NO.

C2407B

興土木 利民生 齊拓展 創明天

We bring the best engineering to life

U-CHANNELS CONSTRUCTED ON BERM

BERM WIDTH VARIES (1000 MIN.)

80 x 60 x 2.2 DIA. GALVANIZED AND PVC COATED DOUBLE TWISTED WIRE MESH

50 THICK MASONRY FACING ON 50 MIN. THICK CEMENT MORTAR (SET IN 1 : 3 CEMENT / SAND), OR 75 THICK CONCRETE APRON, AS SPECIFIED; ALL TO BE OMITTED IF THIS AREA IS SPRAYED CONCRETE

75 THICK CONCRETE SLAB

BRUSHED FINISH OR AS OTHERWISE DIRECTED

25 x 25 CHAMFER

150

100

10   1

FINISHED SLOPE PROFILE

FIXING PIN

NON-BIODEGRADABLE EROSION CONTROL MAT

50 MIN. THICK CEMENT MORTAR

500

200

H/2 MIN.

H/2

E

B

POLYTHENE SHEET

T   H   T

DETAILS OF BERM WITH HANDRAILING

HANDRAILING (SEE STD. DRG. NO. C2103)

200

1000

EXTENT OF WIRE MESH SHALL BE 1 500 OR BERM WIDTH WHICHEVER IS THE LESSER

A252 MESH

25 x 25 CHAMFER

200

300

300

50

POLYTHENE SHEET

HALF-ROUND CHANNEL

15

H/2

B

T   H   T

U-CHANNELS NOT CONSTRUCTED ON BERM

80 x 60 x 2.2 DIA. GALVANIZED AND PVC COATED DOUBLE TWISTED WIRE MESH

NON-BIODEGRADABLE EROSION CONTROL MAT

FINISHED SLOPE PROFILE

FIXING PIN

50 MIN. THICK CEMENT MORTAR

500

200

50 DIA. PVC PIPES AT 1500 c / c WITH FALL OF 1 ON 3 WHERE D > 600

E

D

15

H/2 MIN.

H/2

50 THICK MASONRY FACING ON 50 MIN. THICK CEMENT MORTAR (SET IN 1 : 3 CEMENT / SAND), OR 75 THICK CONCRETE APRON, AS SPECIFIED; ALL TO BE OMITTED IF THIS AREA IS SPRAYED CONCRETE

500

80 x 60 x 2.2 DIA. GALVANIZED AND PVC COATED DOUBLE TWISTED WIRE MESH

200

NON-BIODEGRADABLE EROSION CONTROL MAT

FIXING PIN

50 MIN. THICK CEMENT MORTAR

T   H   T

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

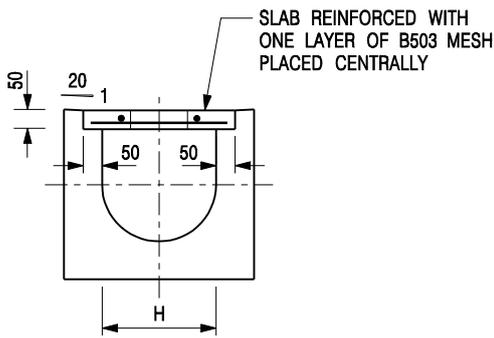# DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A – WITH MASONRY APRON)
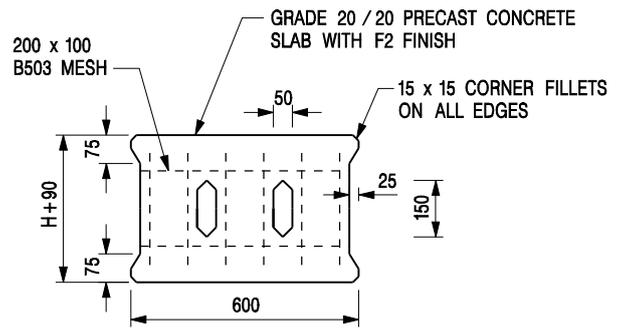
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

CEDD

SCALE 1 : 25

DATE   JAN 1991

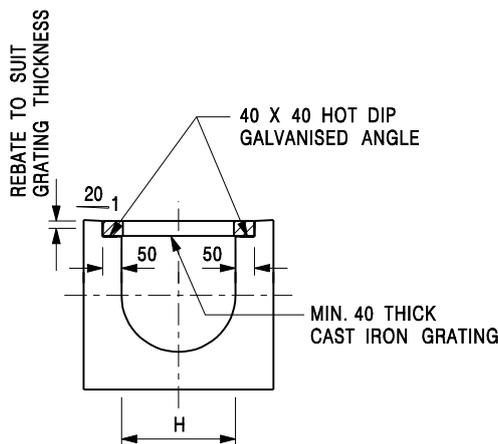DRAWING NO. C2409I

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

TYPICAL SECTION

SLAB REINFORCED WITH
ONE LAYER OF B503 MESH
PLACED CENTRALLY

50
20
1
50 50
H

PLAN OF SLAB

GRADE 20 / 20 PRECAST CONCRETE
SLAB WITH F2 FINISH

200 x 100
B503 MESH

15 x 15 CORNER FILLETS
ON ALL EDGES

50
75
H+90
75
25
150
600

U−CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)

TYPICAL SECTION

REBATE TO SUIT
GRATING THICKNESS

40 X 40 HOT DIP
GALVANISED ANGLE

20
1
50 50

MIN. 40 THICK
CAST IRON GRATING

H

CAST IRON GRATING

WIDTH
H+90
75 %
WIDTH
25
25
L
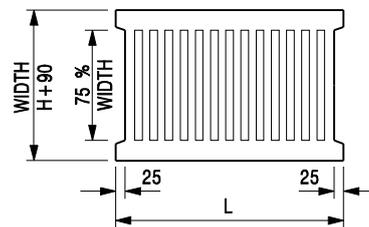
L = 600mm FOR H ≤ 375mm
L = 400mm FOR H > 375mm

(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

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