

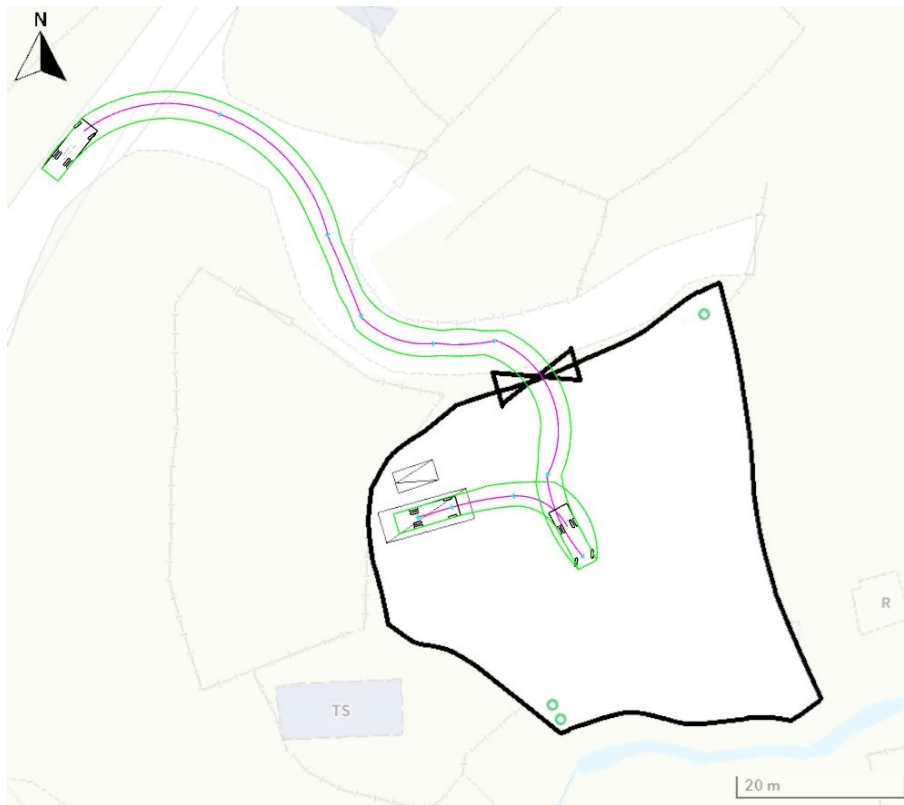
List of Appendices

Appendix 1	Swept Path Analysis
Appendix 2	Implemented Traffic Measures on Site
Appendix 3	Accepted Drainage Proposal
Appendix 4	Condition Record of the Implemented Drainage Facilities

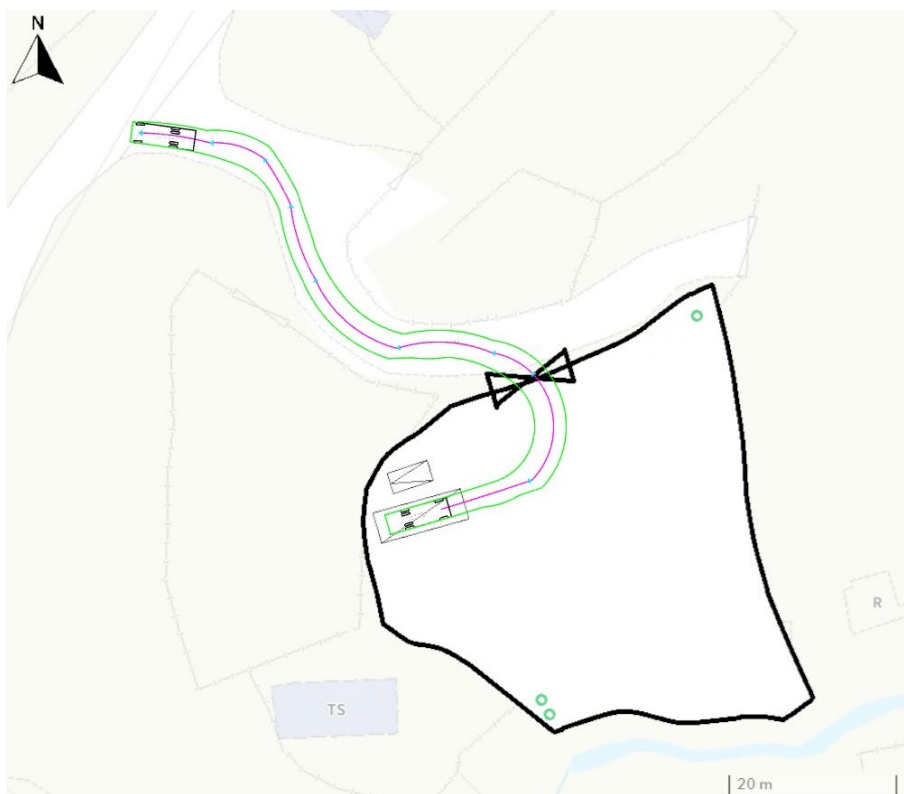
Appendix 1

Swept Path Analysis

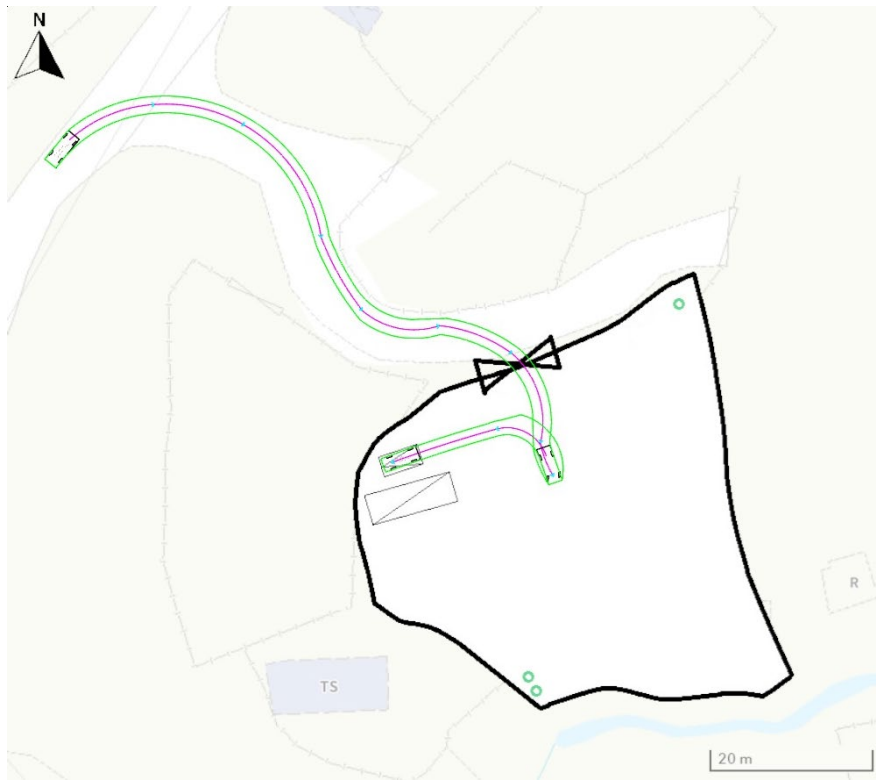
Swept Path Analysis: MGV Entering the Application Site



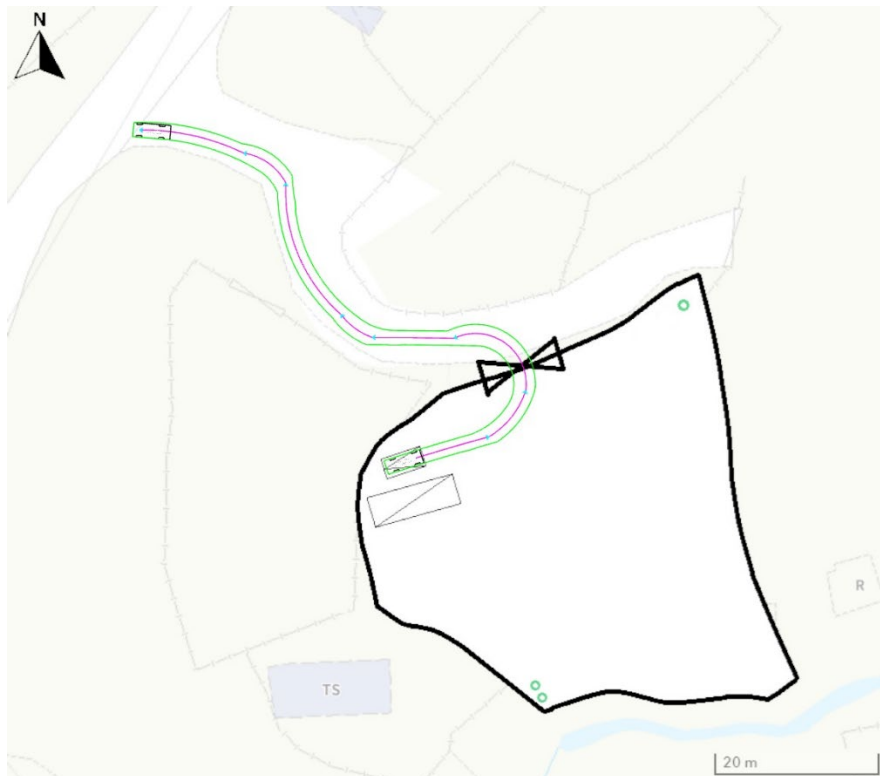
Swept Path Analysis: MGV Exiting from the Application Site



Swept Path Analysis: Private Car Entering the Application Site



Swept Path Analysis: Private Car Exiting from the Application Site



Appendix 2

Implemented Traffic Measures on Site



"5KM/H" signs erected on both sides of the site access.



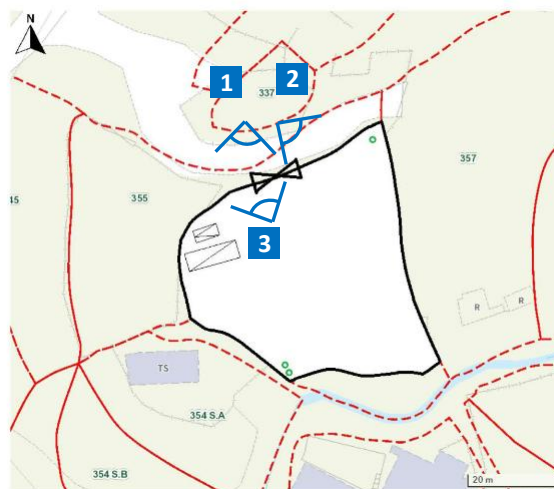
"5KM/H" signs erected on both sides of the site access.



"TS460" sign is erected within the application site near the site access to remind the drivers.



View Plan



Appendix 3

Accepted Drainage Proposal

規 劃 署

沙田、大埔及北區規劃處
香港新界沙田上禾輦路一號
沙田政府合署
十三樓 1301-1314 室



Planning Department

Sha Tin, Tai Po & North
District Planning Office
Rooms 1301-1314, 13/F,
Shatin Government Offices,
1 Sheung Wo Che Road, Sha Tin,
N.T., Hong Kong

來函檔號 Your Reference [REDACTED]
本署檔號 Our Reference () in TPB/A/NE-FTA/251
電話號碼 Tel. No. : 2158 6220
傳真機號碼 Fax No. : 2691 2806

By Email

[REDACTED]

Aikon Development Consultancy Limited

10 March 2026

[REDACTED]

Dear Sir/Madam,

**Proposed Temporary Open Storage of Construction Materials
and Machineries for a Period of 3 Years and Associated Filling of Land
in “Agriculture” Zone, Lot 356 (Part) in D.D. 87, Kong Nga Po, Sheung Shui
(Compliance with Approval Condition (a) for Planning Application No. A/NE-FTA/251)**

I refer to your submission dated 6.2.2026 for compliance with approval condition (a) in relation to the submission of a drainage proposal to the satisfaction of the Director of Drainage Services (D of DS) or of the Town Planning Board under the captioned planning application.

The Chief Engineer/Mainland North, Drainage Services Department (Contact person: Mr. WANG Xing, Samuel; Tel. No.: 3965 8925) has been consulted and considered that approval condition (a) has been complied with. Her advisory comments are attached at **Appendix I**. Please proceed to implement the drainage proposal for compliance with approval condition (b).

Should you have any queries related to planning matters, please contact Ms. Shirley CHAN of this Office at 2158 6241.

Yours faithfully,

(Rico TSANG)

for Director of Planning

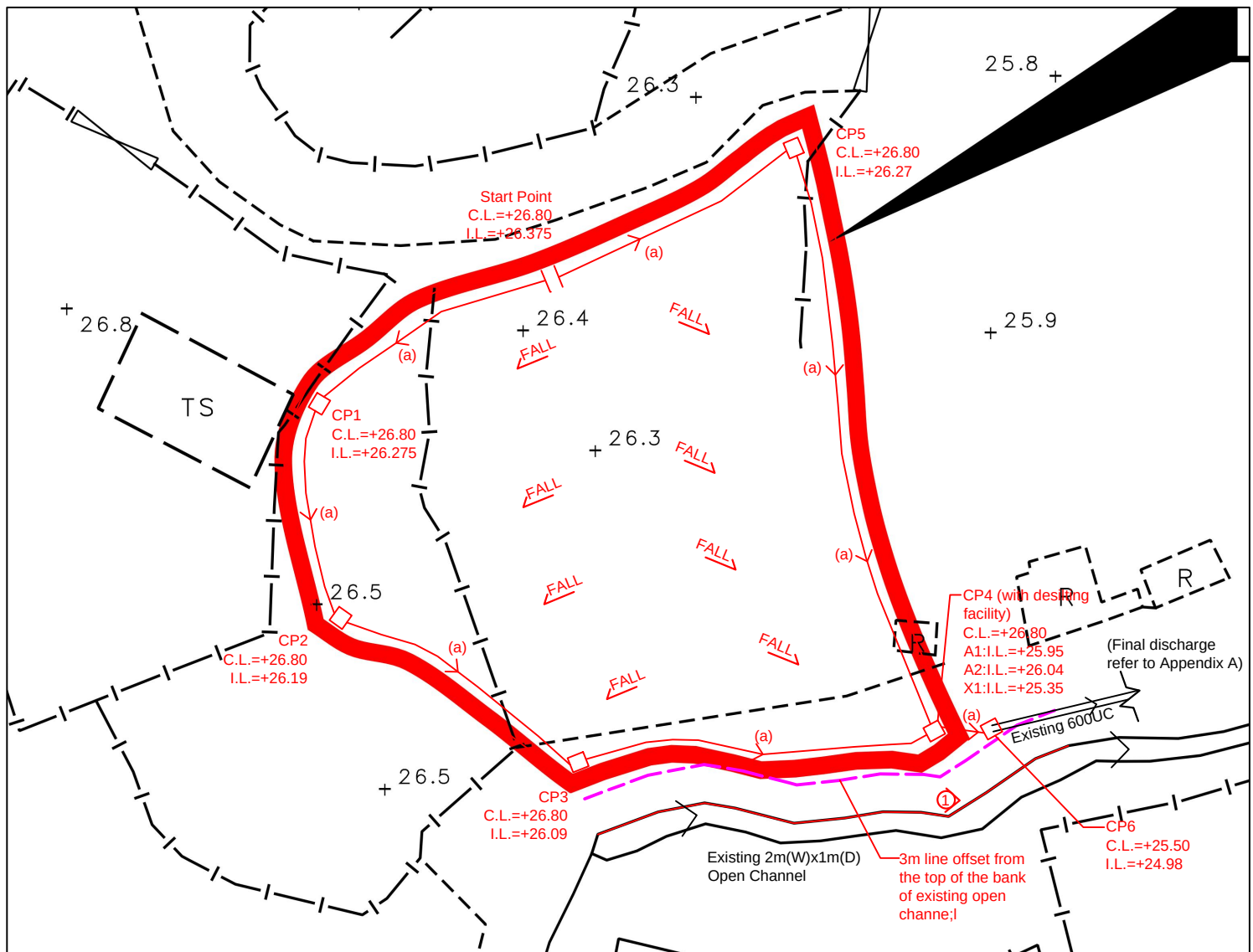
Appendix I

Comments of the Chief Engineer/Mainland North, Drainage Services Department (Contact person: Mr. WANG Xing, Samuel; Tel. No.: 3965 8925):

1. The “existing 600mm U-channel” to which the applicant proposed to discharge the storm water from the application site (the Site) is **not** maintained by her office. Consent from the owner/maintenance party, current users and the District Lands Officer/North, Lands Department (DLO/N, LandsD) should be sought for the proposed drainage connection. Moreover, regular maintenance should be carried out by the applicant to avoid blockage of drain.
2. No works including landfilling and hard paving works which may induce adverse drainage impact should be carried out until completion of the proposed drainage facilities.
3. The applicant shall take all precautionary measures to prevent any disturbance, damage and pollution from the proposed use to any parts of the existing drainage features, especially the existing watercourse to the south in the vicinity of the Site. In the event of any damage to the existing drainage features, the applicant shall be held responsible for the cost of all necessary repair works, compensation and any other consequences arising there from. The applicant shall place all the proposed works at least 3m away from the top of the bank of existing watercourse to the south at all the time.
4. The applicant is required to construct and maintain the proposed drainage works properly and rectify the drainage systems 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 systems. For works undertaken outside the lot boundary, prior consent and agreement from DLO/N, LandsD and/or relevant private lot owners should be sought.
5. The applicant is reminded that all existing flow paths as well as the run-off falling onto and passing through the Site should be intercepted and disposed of via proper discharge points. The applicant shall also ensure that no works, including any site formation works, shall be carried out as may adversely interfere with the free flow condition of the existing drain, channels and watercourses on or in the vicinity of the Site at any time during or after the works.
6. The applicant shall allow all time free access for the Government and its agent to conduct site inspection on his/her completed drainage works, if necessary.
7. The applicant should also be advised that the limited desk-top checking by the Government on the drainage proposal covers only the fundamental aspects of the drainage design which will by no means relieve his/her obligations to ensure that:
 - (i) the proposed drainage works will not cause any adverse drainage or environmental impacts in the vicinity; and
 - (ii) the proposed drainage works and the downstream drainage systems have the adequate capacity and are in good conditions to receive the flows collected from his/her lot and all upstream catchments.

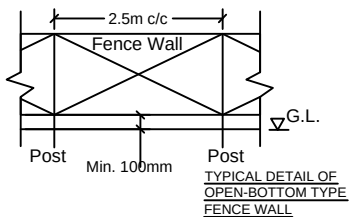
Response to Comment Table

Comments from DSD	Response
The discharge path from CP4 directly to the existing streamcourse to the south is still indicated in the drainage plan, please review and clarify whether all surface runoff shall be discharged to the existing 600UC to the east.	The discharge path is revised, it should be discharged to the existing 600UC to the east



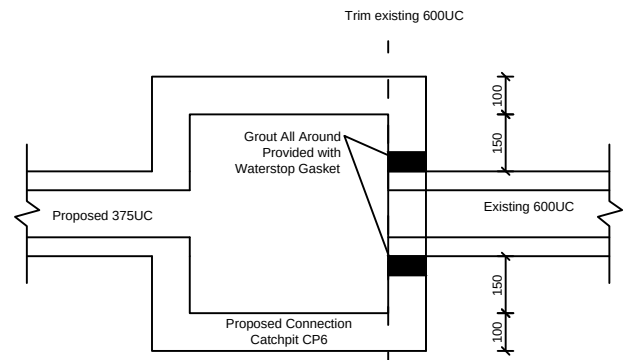
Note:

1. Catchpits (CP4) with desilting facility shall follow CEDD standard drawing No. C2406I.
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.



LEGEND

- CP Proposed CatchPit
- (a) Proposed 375UC (1:200) with Cast Iron Cover
- Existing 2m(W)x1m(D) Open Channel / Existing 600UC
- ① Photo Viewspot



CONNECTION DETAILS

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Project:

Proposed Temporary Open Storage of Construction Materials and Machineries for a Period of 3 Years and Associated Filling of Land at Lot 356 (Part) in D.D. 87, Kong Nga Po, Sheung Shui, New Territories

(Application No.: A/NE-FTA/251)

Title:

Drainage Proposal - LAYOUT

D01

Drawn by:

DM

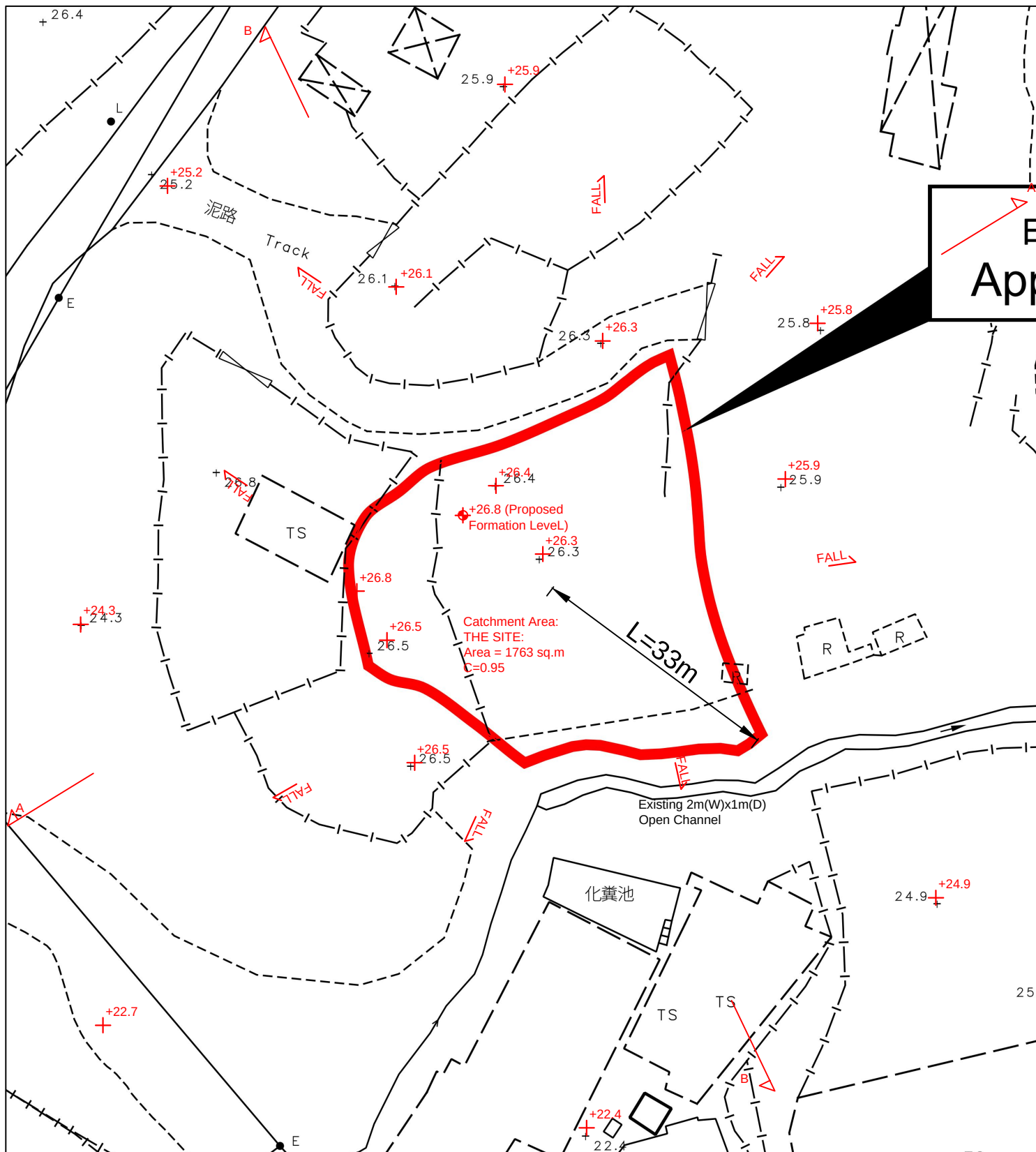
Date:

6-1-2026

Check by:

DM

Scale:



正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Project:

Proposed Temporary Open Storage of Construction Materials and Machineries for a Period of 3 Years and Associated Filling of Land at Lot 356 (Part) in D.D. 87, Kong Nga Po, Sheung Shui, New Territories

(Application No.: A/NE-FTA/251)

Title:

Drainage Proposal -
CATCHMENT AREA PLAN

D02

Drawn by:

DM

Date:

31-7-2025

Check by:

DM

Scale:



正宏工程顧問公司 CHING WAN ENGINEERING CONSULTANT COMPANY	Title: Drainage Proposal - SECTIONS		D03
	Drawn by: DM	Date: 31-7-2025	
Project: Proposed Temporary Open Storage of Construction Materials and Machineries for a Period of 3 Years and Associated Filling of Land at Lot 356 (Part) in D.D. 87, Kong Nga Po, Sheung Shui, New Territories (Application No.: A/NE-FTA/251)	Check by: DM	Scale: ----	

Photo 1



THE SITE, Area	=	1763	m ²	(C= 0.95)
Catchment Area A1, Area	=	1700	m ²	(C= 0.95) (Refer to Appendix A)
Catchment Area A2, Area	=	1410	m ²	(C= 0.95) (Refer to Appendix A)
Catchment Area B2, Area	=	176	m ²	(C= 0.95) (Refer to Appendix A)

Calculation of Design Runoff of the Proposed Development,

For the design of drains inside the site,

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

$$\begin{aligned} A &= 1763 \text{ m}^2 \\ &= 1763 \\ &= 0.001763 \text{ km}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L / H^{0.2} A^{0.1} \\ &= 0.14465 * 33 / 1^{0.2} * 1763^{0.1} \\ &= 2.261 \text{ min} \end{aligned}$$

$$\begin{aligned} i &= 1.111 * a / (t + b)^c && (50 \text{ yrs return period, Table 3d, Corrigendum 2024,} \\ &= 1.111 * 474.6 / (2.261 + 2.90)^{0.371} && \text{SDM) and (11.1\% increase due to climate change)} \\ &= 285.0 \text{ mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q1 &= 0.278 * 0.95 * 285.0 * 0.001763 \\ &= 0.1327 \text{ m}^3/\text{sec} \\ &= \underline{7962} \text{ lit/min} \end{aligned}$$

Provide 375UC (1:200) is OK

For checking Existing 600UC,

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

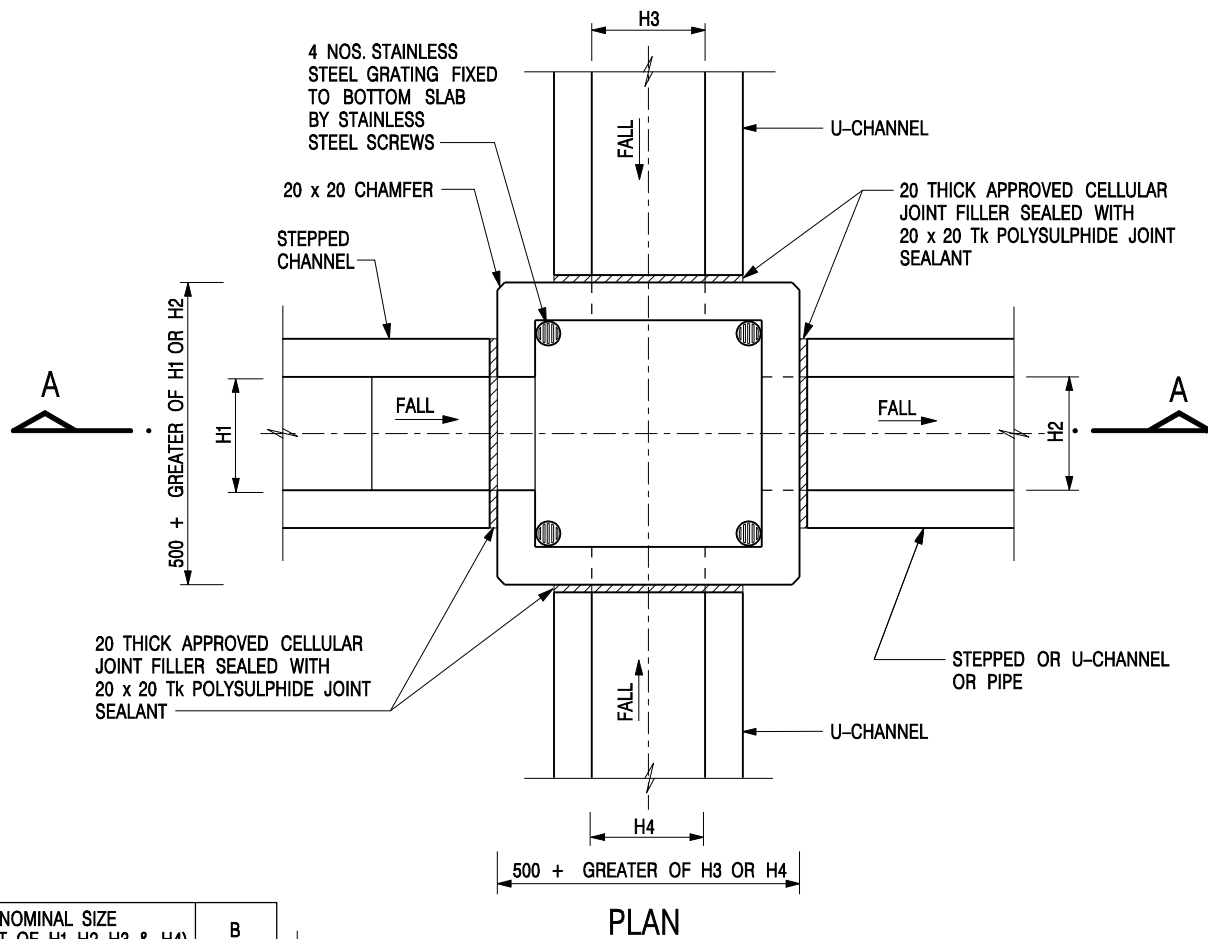
$$\begin{aligned} A &= 1700 + 1410 + 176 \text{ m}^2 \\ &= 1700 + 1410 + 176 \\ &= 3286 \text{ m}^2 \\ &= 0.003286 \text{ km}^2 \end{aligned}$$

$$t = 5.00 \text{ min}$$

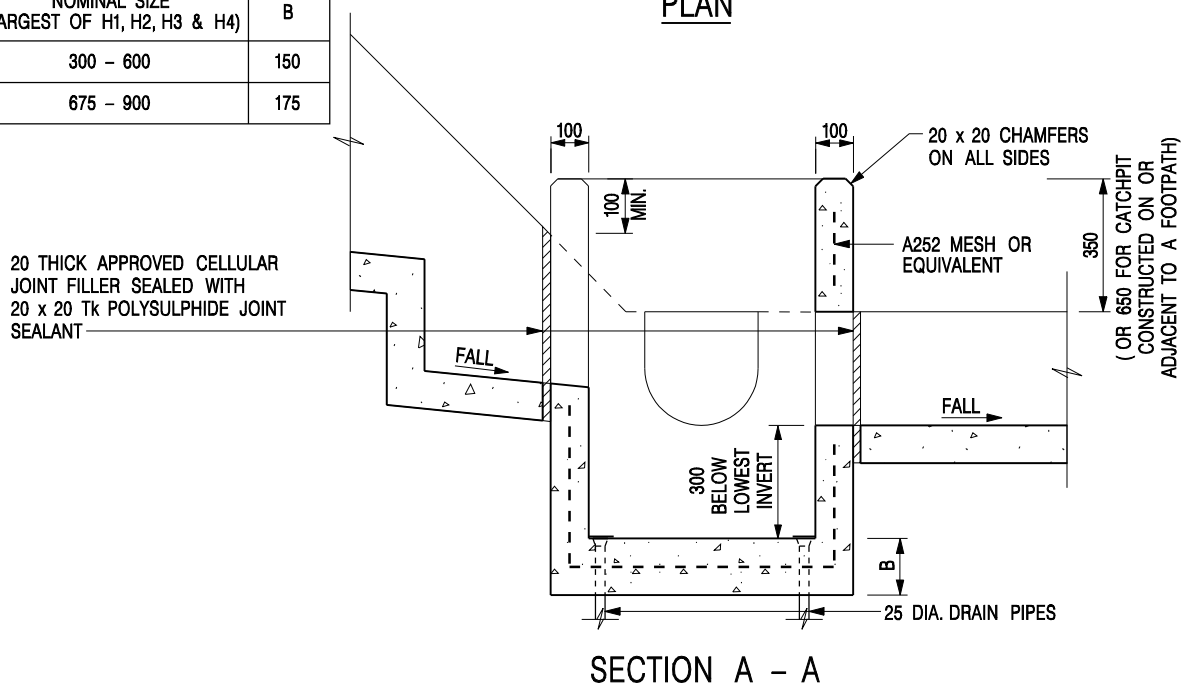
$$\begin{aligned} i &= 1.111 * a / (t + b)^c && (50 \text{ yrs return period, Table 3d, Corrigendum 2024,} \\ &= 1.111 * 474.6 / (5.00 + 2.90)^{0.371} && \text{SDM) and (11.1\% increase due to climate change)} \\ &= 243.9 \text{ mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q2 &= 0.278 * 0.95 * 243.9 * 0.003286 + Q1 \\ &= 0.3444 \text{ m}^3/\text{sec} \\ &= \underline{20661} \text{ lit/min} \end{aligned}$$

Existing 600UC (1:250) is OK



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



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



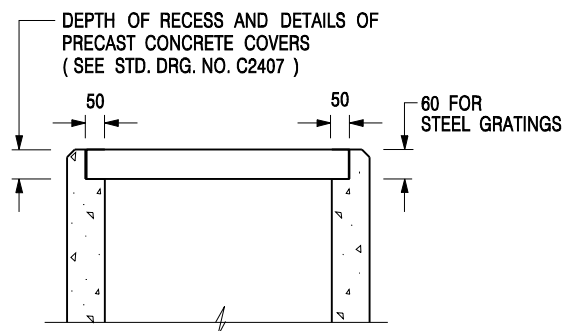
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

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 /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

DATE JAN 1991

DRAWING NO.

C2406 /2A

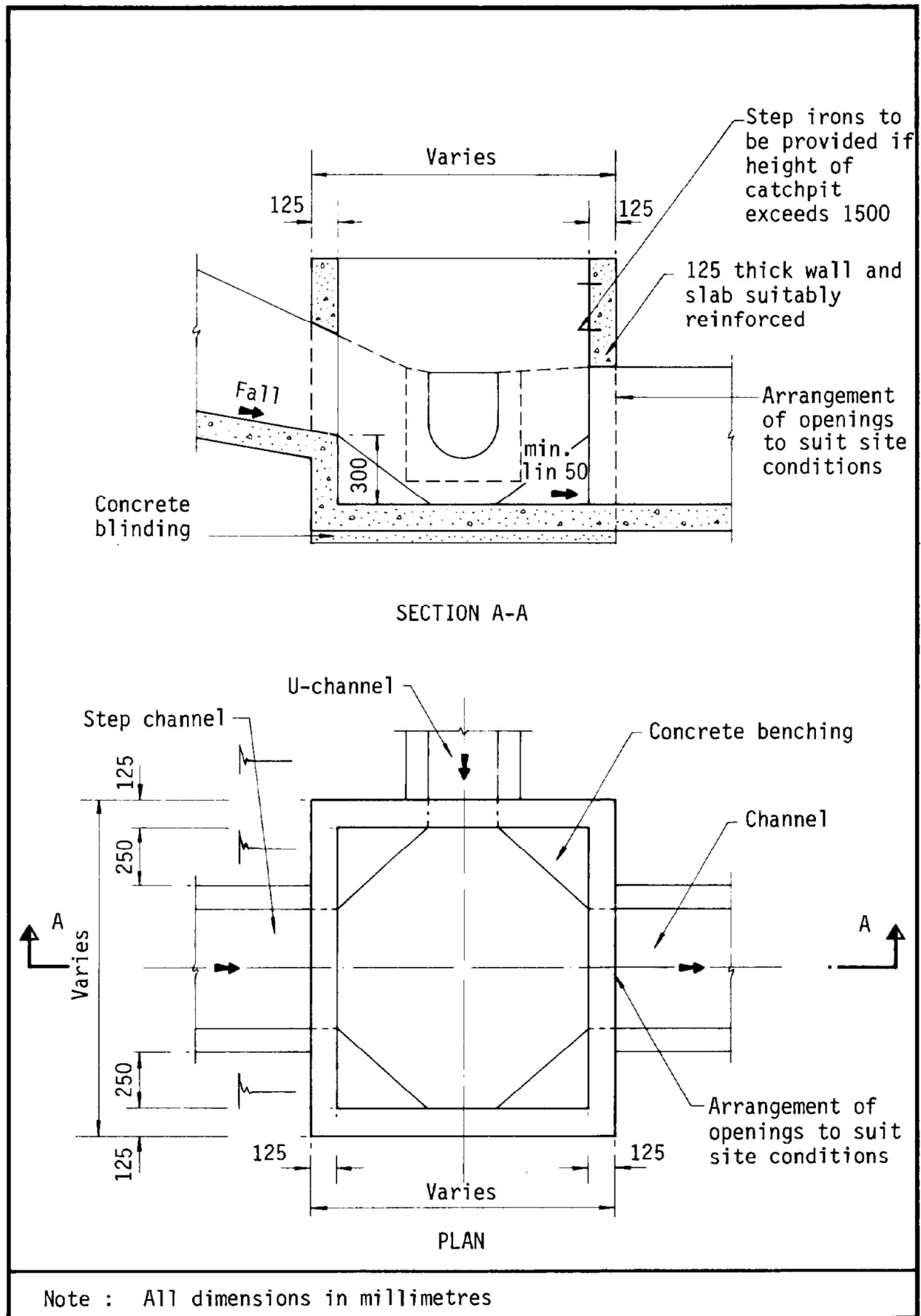
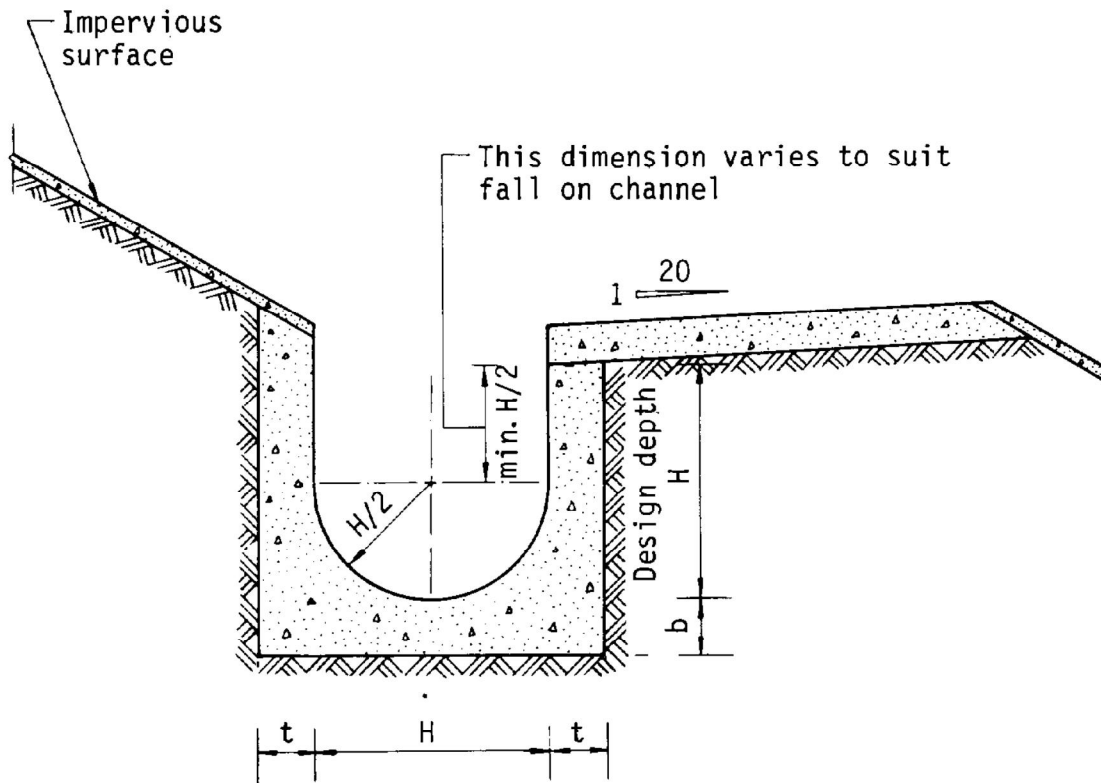


Figure 8.10 - Typical Details of Catchpits



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

Appendix A

Drainage Proposal for the Existing 600UC to be Connected

Proposed Temporary Open Storage of Construction Material and Machinery with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone, Lots 357 (Part) and 359 (Part) in D.D.87, Hung Lung Hang, N.T.

Drainage Proposal

August 24

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Figure 2 - Existing Drainage Plan
Figure 3 – Proposed Drainage System
Figure 4 – Catchment Plan

List of Appendix

Appendix A – Channel Design Calculations
Appendix B - Development Layout Plan
Appendix C – Reference Drawings

1. Introduction

1.1 Background

- 1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) to use Lots 357 (Part) and 359 (Part) in D.D. 87, Hung Lung Hang, New Territories (the Site) for 'Proposed Temporary Open Storage of Construction Material and Machinery with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land'
- 1.1.2 This Drainage Proposal aim to support the development in drainage aspect.

1.2 The Site

- 1.2.1 The Site has a total area of about 3,110 m². The site is partially cover by vegetation and partially paved. The site location plan is shown in **Figure 1**.
- 1.2.2 The existing site ground level is around +25.5 to +25.9 mPD. The site is proposed to all paved with not more than 200mm hard pavement from +25.7 to +26.1 mPD.
- 1.2.3 An existing channel is running from southwest to northeast by the side of the site. Existing Drainage Plan are shown in **Figure 2** for reference.
- 1.2.4 Proposed Development Layout plan is shown in **Appendix B** for reference.

2. Development Proposal

2.1 The Proposed Development

- 2.1.1 The total site area is approximately 3,110 m². The indicative development schedule is summarized in **Table 1** below for technical assessment purpose. The catchment plan is shown in **Figure 4**.

Proposed Development	
Total Site Area (m ²)	3,110
Paved Area (m ²)	3,110
Assume all proposed site area as paved area for assessment purpose	

Table 1 - Key Development Parameters

3. Assessment Criteria

- 3.1.1 The Recommended Design Return Period based on Flood Level from SDM (Table 10) is adopted for this DIA. 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 10 years return period is adopted for the drainage design.

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 North District Zone. Therefore, for 10 years return period, the following values are adopted.

a	=	454.9
b	=	3.44
c	=	0.412

(Corrigendum_No.1_2024)

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:

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

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:

$$\text{Colebrook-White Equation: } \frac{1}{\sqrt{f}} = -\sqrt{32gRS} \log \log \left(\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRS}} \right)$$

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 UChannel

- 4.1.1 Proposed U-channels are designed for collection of runoff within and near the Development Site. Please refer to the **Figure 4** for proposed catchment plan. The U-channels are proposed to be connected to existing stream at the east. The design calculations of proposed UChannels are shown in **Appendix A**.
- 4.1.2 The alignment, size, gradient and details of the proposed drains are shown in **Figure 3**.
- 4.1.3 Further to the discussion with DSD, the following improvement works are proposed.
 - i. additional 2m width channel at critical section of the existing channel.
 - ii. additional 600mm width channel along the site boundary at south (connection to 2m channel at item i)..
 - iii. additional 600mm width channel along the site boundary at the east (connection to 2m channel at item i).
- 4.1.4 The increase in capacity due to the proposed 2m width and 600mm channel are shown in **Appendix A**. The proposed channels alignment are shown in **Figure 3**.
- 4.1.5 The reference standard drawings of drains are shown in **Appendix C**.

5. Conclusion

- 5.1.1 Drainage study has been conducted for the Proposed Development. With implementation of proposed drainage system, no significant drainage impact is anticipated.

- End of Text -

FIGURES

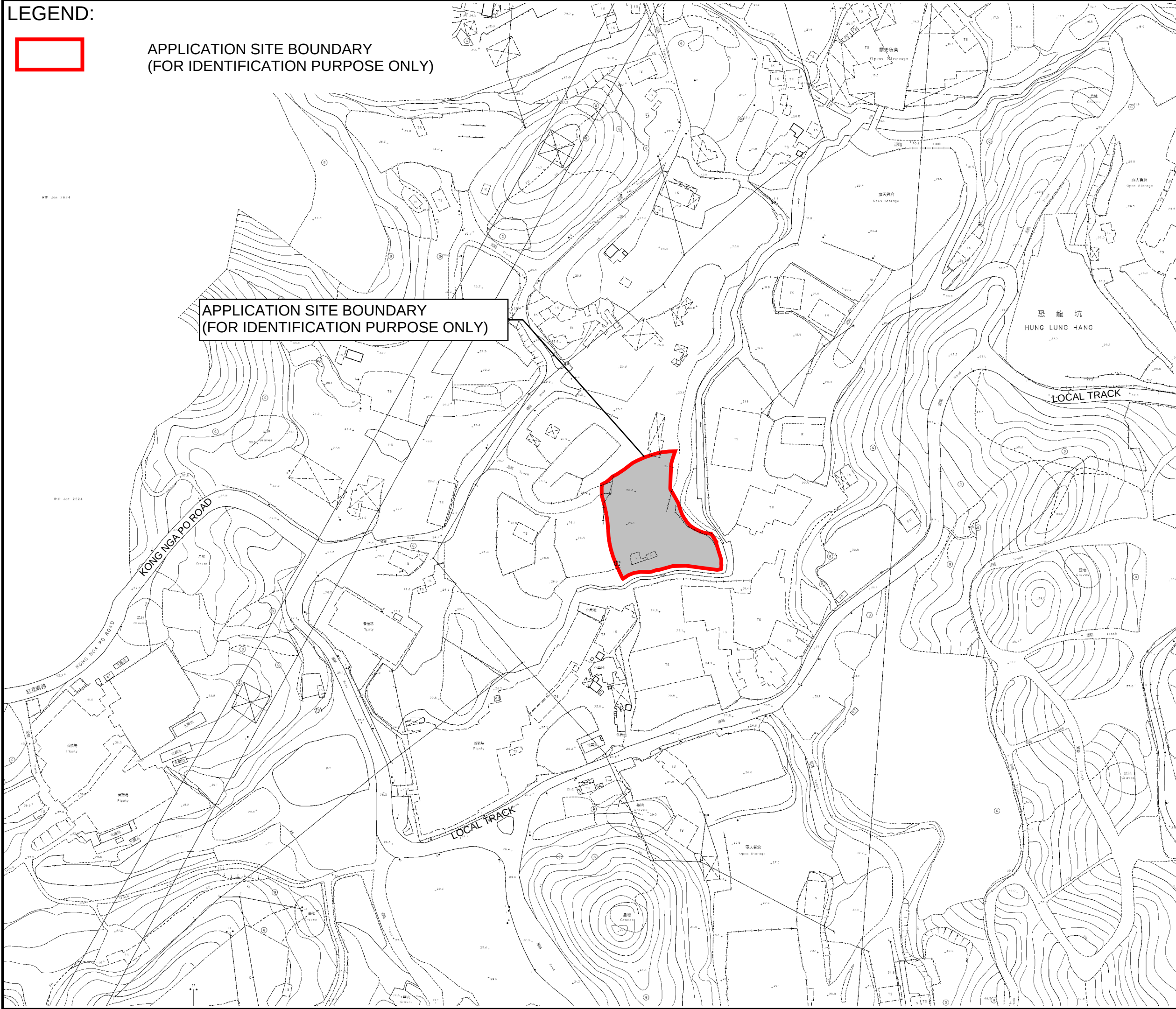
LEGEND:



APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

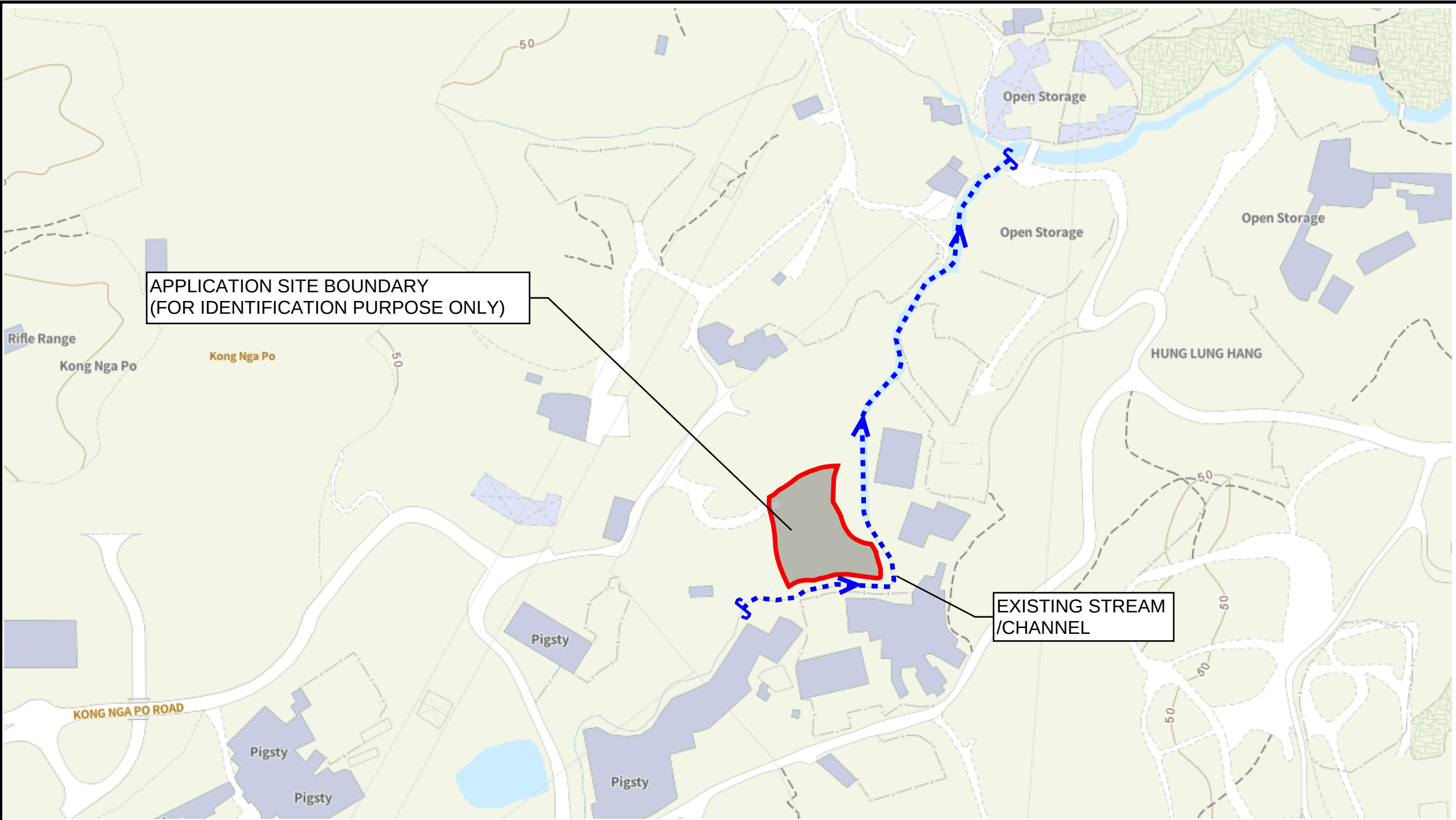
PROJECT:
Proposed Temporary Open
Storage of Construction Material
and Machinery with Ancillary
Facilities for a Period of 3 Years
and Associated Filling of Land in
“Agriculture” Zone, Lots 357 (Part)
and 359 (Part) in D.D.87,
Hung Lung Hang, N.T.



REV	DESCRIPTION	DATE
-----	-------------	------

DRAWING TITLE
SITE LOCATION PLAN

DRAWING NUMBER
FIGURE 1



PROJECT:
Proposed Temporary Open Storage of Construction Material and Machinery with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone, Lots 357 (Part) and 359 (Part) in D.D.87, Hung Lung Hang, N.T.

LEGEND:

	Combined Manhole		Tapping Point (Sewer)		Tapping Point (Storm)
	Overflow (Combined)		Sewer Terminal Manhole		Storm Water Terminal Manhole
	Pipe (Combined)		Catchpit		Tunnel Protection Zone (100m / 200m)
	Interface Valve Chamber		Inlet		Tunnel Protection Zone (General Range)
	Sewer Manhole		Storm Water Manhole		Tunnel / Box Culvert (Sewer)
	Oil / Petrol Interceptor		Outlet		Tunnel / Box Culvert (Storm)
	Overflow (Sewer)		Pipe (Storm)		EXISTING STREAM/CHANNEL
	Pipe (Sewer)		Sand Trap		

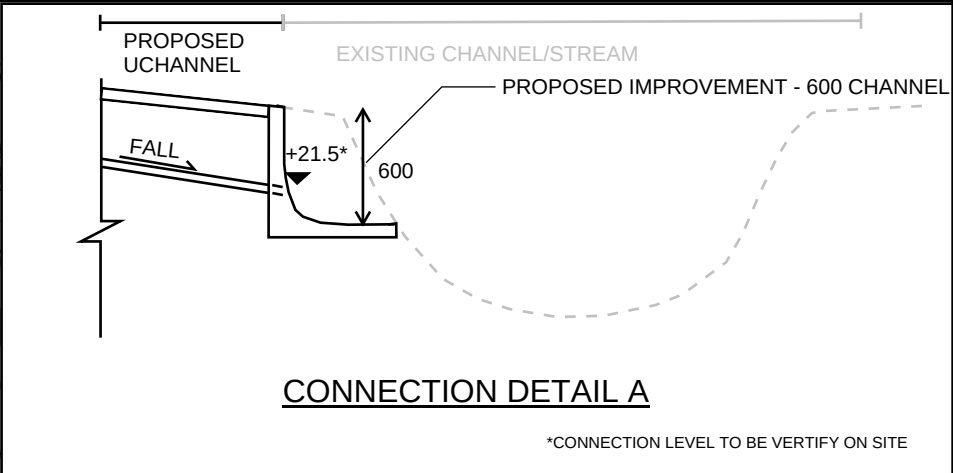
REV	DESCRIPTION	DATE
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DRAWING TITLE
EXISTING DRAINAGE PLAN

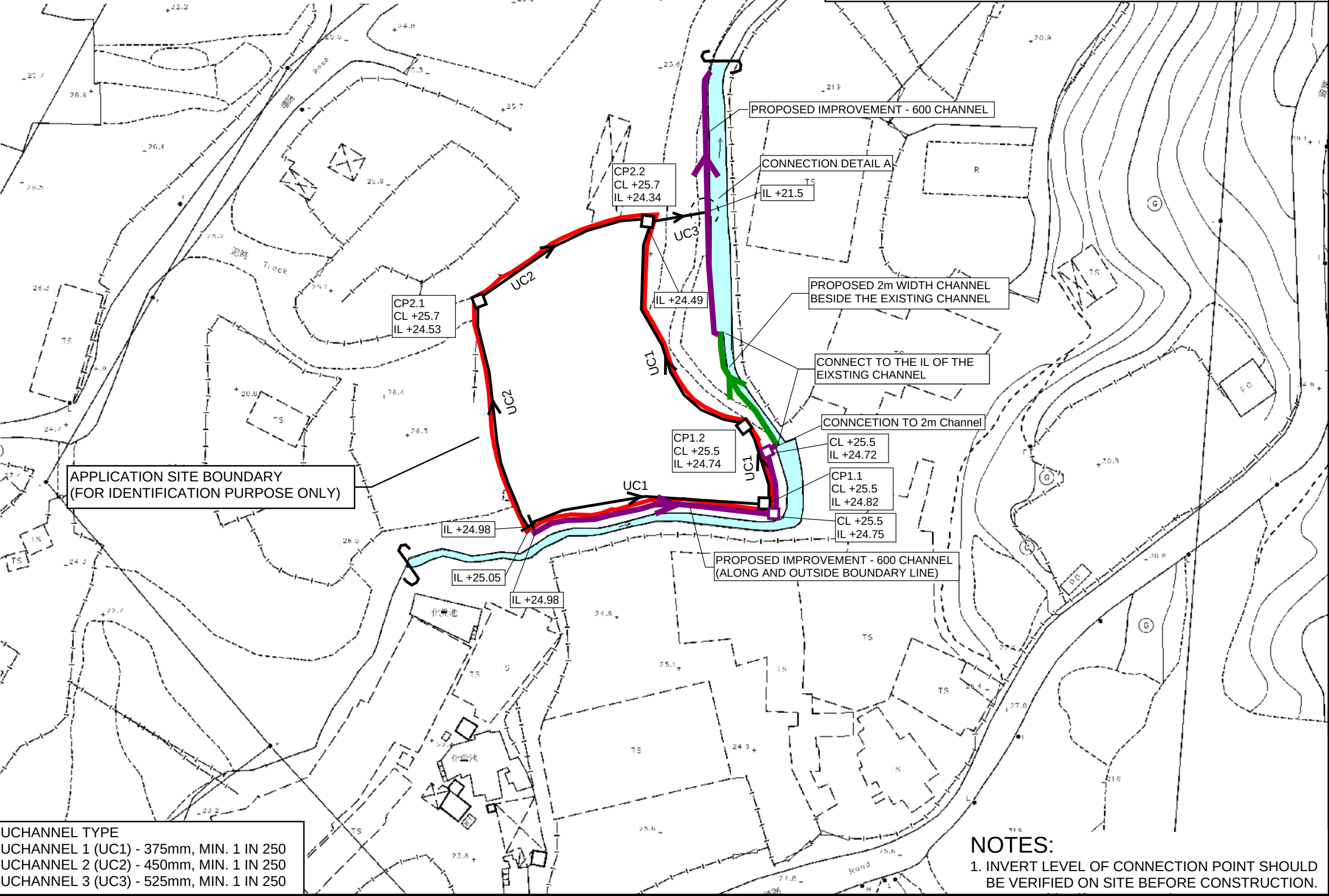
DRAWING NUMBER
FIGURE 2

LEGEND:

- APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)
- PROPOSED CATCHPIT
- PROPOSED UCHANNEL
- PROPOSED UCHANNEL 2m FOR
IMPROVEMENT WORKS
- PROPOSED UCHANNEL 600mm FOR
IMPROVEMENT WORKS



PROJECT:
Proposed Temporary Open
Storage of Construction Material
and Machinery with Ancillary
Facilities for a Period of 3 Years
and Associated Filling of Land in
“Agriculture” Zone, Lots 357 (Part)
and 359 (Part) in D.D.87,
Hung Lung Hang, N.T.



- UCHANNEL TYPE
- UCHANNEL 1 (UC1) - 375mm, MIN. 1 IN 250
- UCHANNEL 2 (UC2) - 450mm, MIN. 1 IN 250
- UCHANNEL 3 (UC3) - 525mm, MIN. 1 IN 250

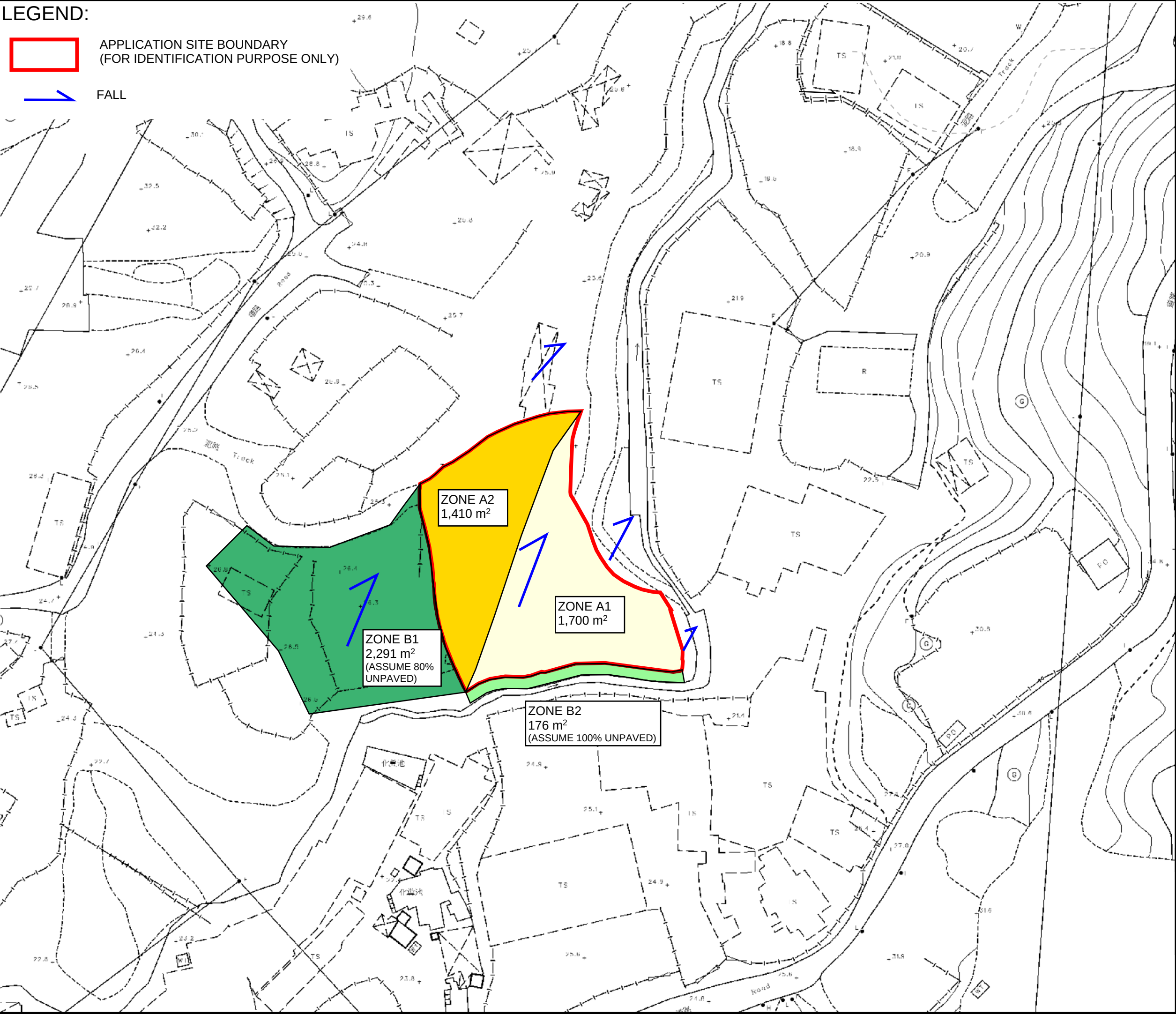
NOTES:

1. INVERT LEVEL OF CONNECTION POINT SHOULD
BE VERIFIED ON SITE BEFORE CONSTRUCTION.

REV	DESCRIPTION	DATE
DRAWING TITLE PROPOSED DRAINAGE SYSTEM		
DRAWING NUMBER FIGURE 3		

LEGEND:

- APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)
- FALL



PROJECT:
Proposed Temporary Open
Storage of Construction Material
and Machinery with Ancillary
Facilities for a Period of 3 Years
and Associated Filling of Land in
“Agriculture” Zone, Lots 357 (Part)
and 359 (Part) in D.D.87,
Hung Lung Hang, N.T.

REV	DESCRIPTION	DATE
-----	-------------	------

DRAWING TITLE
CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4

Appendix

Appendix A - Channel Design Calculation

(n = 0.016)

U Channel 1 (Zone A1 + B2)

Runoff Estimation

Design Return Period		1 in	10	years
Paved Area	1700 + 176 x 0		1700	(m2)
Unpaved Area	176 x 1 =		176	(m2)
Total Equivalent Area	1700 x 0.95 + 176 x 0.35 =		1677	(m2)
Time of Concentration			5	min
Rainfall Intensity, I *			189	mm/hr
Design Discharge Rate, Q	0.278 x 1677 x 189 / 1000000 =		0.088	m3/s

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

U Channel

Channel Size		1 in	375	(mm)
Gradient			250	
Area	$\pi \times 0.38^2 / 8 + 0.38 \times 0.38 / 2 =$		0.126	(m2)
Wetted Perimeter	$\pi \times 0.38 / 2 + 0.38 / 2 \times 2 =$		0.964	(m)
R	$0.126 / 0.964 =$		0.208	(m)
Velocity	$v = \frac{R^{2/3}}{n} S_f^{1/2}$		1.02	m/s
Capacity			0.127	m3/s

Utilization 0.088 / 0.127 = **69.07** % OK (less than 90%, for 10% siltation allowance)

U Channel 2 (Zone A2 + B1)

Runoff Estimation

Design Return Period		1 in	10	years
Paved Area	1410 + 2291 x 0.2 =		1868	(m2)
Unpaved Area	176 + 2291 x 0.8 =		2009	(m2)
Total Equivalent Area	1868 x 0.95 + 2009 x 0.35 =		2478	(m2)
Time of Concentration			5	min
Rainfall Intensity, I *			189	mm/hr
Design Discharge Rate, Q	0.278 x 2009 x 189 / 1000000 =		0.130	m3/s

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

U Channel

Channel Size		1 in	450	(mm)
Gradient			250	
Area	$\pi \times 0.45^2 / 8 + 0.45 \times 0.45 / 2 =$		0.181	(m2)
Wetted Perimeter	$\pi \times 0.45 / 2 + 0.45 / 2 \times 2 =$		1.157	(m)
R	$0.181 / 1.157 =$		0.156	(m)
Velocity	$v = \frac{R^{2/3}}{n} S_f^{1/2}$		1.15	m/s
Capacity			0.207	m3/s

Utilization 0.13 / 0.207 = **62.77** % OK (less than 90%, for 10% siltation allowance)

U Channel 3 (Zone [A1 + B2] + [A2 + B1])

Runoff Estimation

Design Return Period		1 in	10	years
Paved Area	1700 + 1868 =		3568	(m2)
Unpaved Area	176 + 2009 =		2185	(m2)
Total Equivalent Area	3568 x 0.95 + 2185 x 0.35 =		4154	(m2)
Time of Concentration			5	min
Rainfall Intensity, I *			189	mm/hr
Design Discharge Rate, Q	0.278 x 4154 x 189 / 1000000 =		0.218	m3/s

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

U Channel

Channel Size		1 in	525	(mm)
Gradient			250	
Area	$\pi \times 0.53^2 / 8 + 0.53 \times 0.53 / 2 =$		0.246	(m2)
Wetted Perimeter	$\pi \times 0.53 / 2 + 0.53 / 2 \times 2 =$		1.350	(m)
R	$0.246 / 1.35 =$		0.182	(m)
Velocity	$v = \frac{R^{2/3}}{n} S_f^{1/2}$		1.27	m/s
Capacity			0.313	m3/s

Utilization 0.218 / 0.313 = **69.77** % OK (less than 90%, for 10% siltation allowance)

2m Channel (Checking Capacity for Additional 2m width Channel at critical section of Existing Channel)

U Channel

Channel Size		1 in	2000	(mm)
Gradient			250	
Area	$\pi \times 2^2 / 8 + 2 \times 2 / 2 =$		3.571	(m2)
Wetted Perimeter	$\pi \times 2 / 2 + 2 / 2 \times 2 =$		5.142	(m)
R	$3.571 / 5.142 =$		0.694	(m)
Velocity			3.10	m/s
Capacity			11.069	m3/s

>> flow from site (0.218 m3/s)

600mm Channel at Connection Point along Existing Channel/Stream

U Channel

Channel Size		1 in	600	(mm)
Gradient			250	
Area	$\pi \times 0.6^2 / 8 + 0.6 \times 0.6 / 2 =$		0.321	(m2)
Wetted Perimeter	$\pi \times 0.6 / 2 + 0.6 / 2 \times 2 =$		1.542	(m)
R	$0.321 / 1.542 =$		0.208	(m)
Velocity			1.39	m/s
Capacity			0.446	m3/s

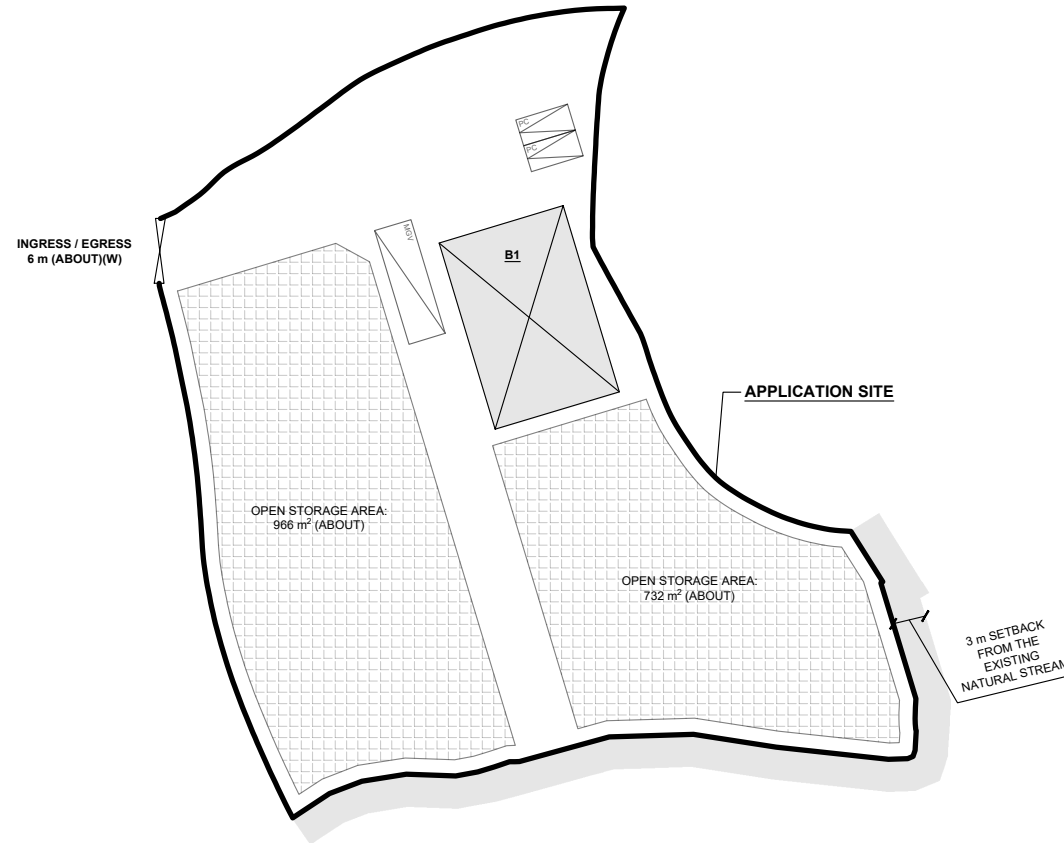
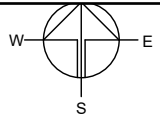
>> flow from site (0.218 m3/s)

Appendix B - Proposed Development Layout Plan

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 3,110 m ²	(ABOUT)
COVERED AREA	: 216 m ²	(ABOUT)
UNCOVERED AREA	: 2,894 m ²	(ABOUT)
PLOT RATIO	: 0.07	(ABOUT)
SITE COVERAGE	: 7 %	(ABOUT)
NO. OF STRUCTURE	: 1	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 216 m ²	(ABOUT)
TOTAL GFA	: 216 m ²	(ABOUT)
BUILDING HEIGHT	: 5 m	(ABOUT)
NO. OF STOREY	: 1	

	AREA	HEIGHT
B1	STORAGE OF CONSTRUCTION MATERIAL AND MACHINERY, SITE OFFICE AND WASHROOM	216 m ² (ABOUT) 216 m ² (ABOUT) 5 m (ABOUT)(1-STOREY)
TOTAL		216 m ² (ABOUT) 216 m ² (ABOUT)



PARKING AND LOADING/UNLOADING PROVISIONS

NO. OF PRIVATE CAR PARKING SPACE	: 2
DIMENSION OF PARKING SPACE	: 5 m (L) X 2.5 m (W)
NO. OF L/UL SPACE FOR MEDIUM GOODS VEHICLE	: 1
DIMENSION OF L/UL SPACE	: 11 m (L) X 3.5 m (W)

LEGEND

	APPLICATION SITE
	STRUCTURE
	OPEN STORAGE AREA
	PARKING SPACE (PRIVATE CAR)
	L/UL SPACE (MEDIUM GOODS VEHICLE)
	INGRESS / EGRESS

PLANNING CONSULTANT



PROJECT

PROPOSED TEMPORARY OPEN STORAGE OF CONSTRUCTION MATERIAL AND MACHINERY WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS AND ASSOCIATED FILLING OF LAND

SITE LOCATION

LOTS 357 (PART) AND 359 (PART) IN D.D. 87, HUNG LUNG HANG, NEW TERRITORIES

SCALE

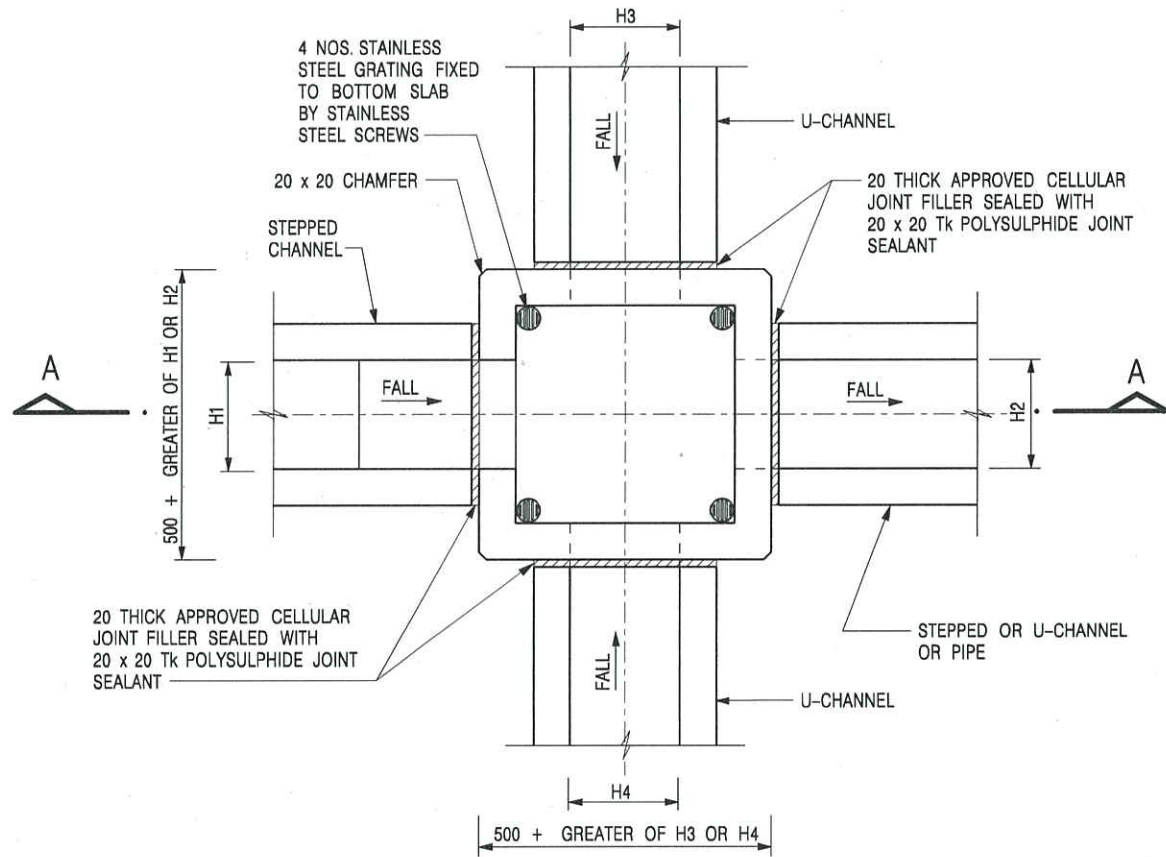
1 : 700 @ A4

DRAWN BY	DATE
MN	16.5.2024
CHECKED BY	DATE
APPROVED BY	DATE

DWG. TITLE
LAYOUT PLAN

DWG NO.	VER.
PLAN 5	001

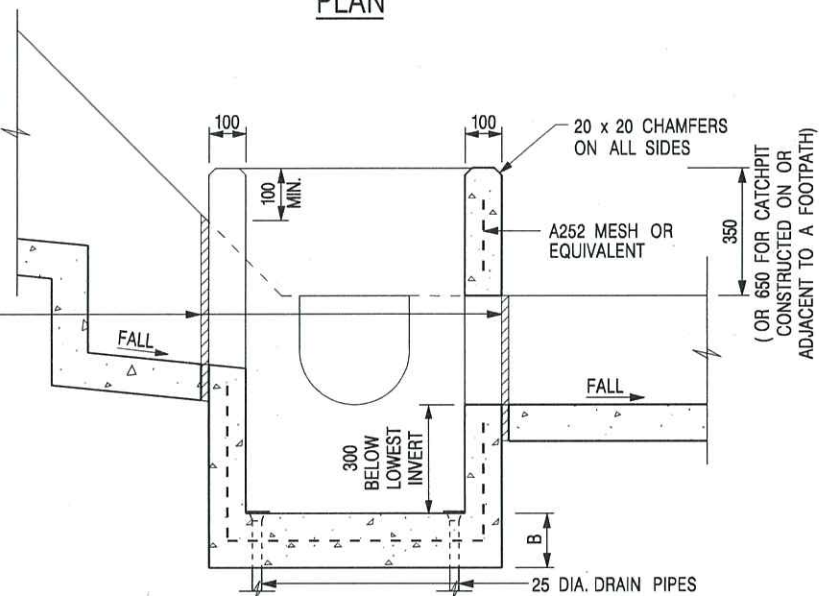
Appendix C - Reference Drawings



PLAN

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

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



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



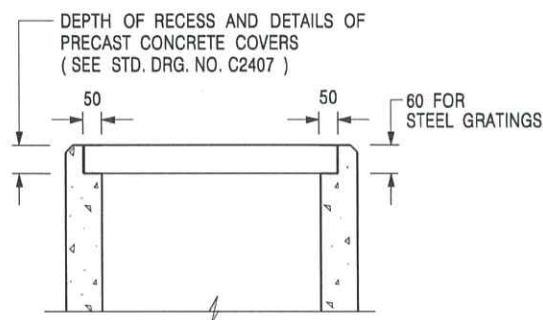
CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT

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 / 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)**



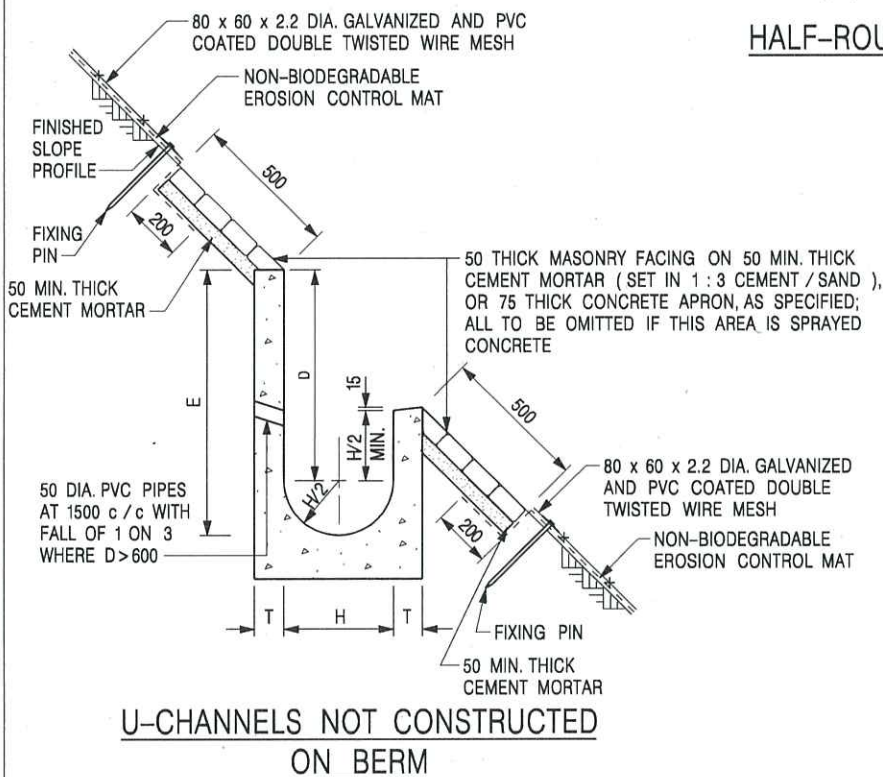
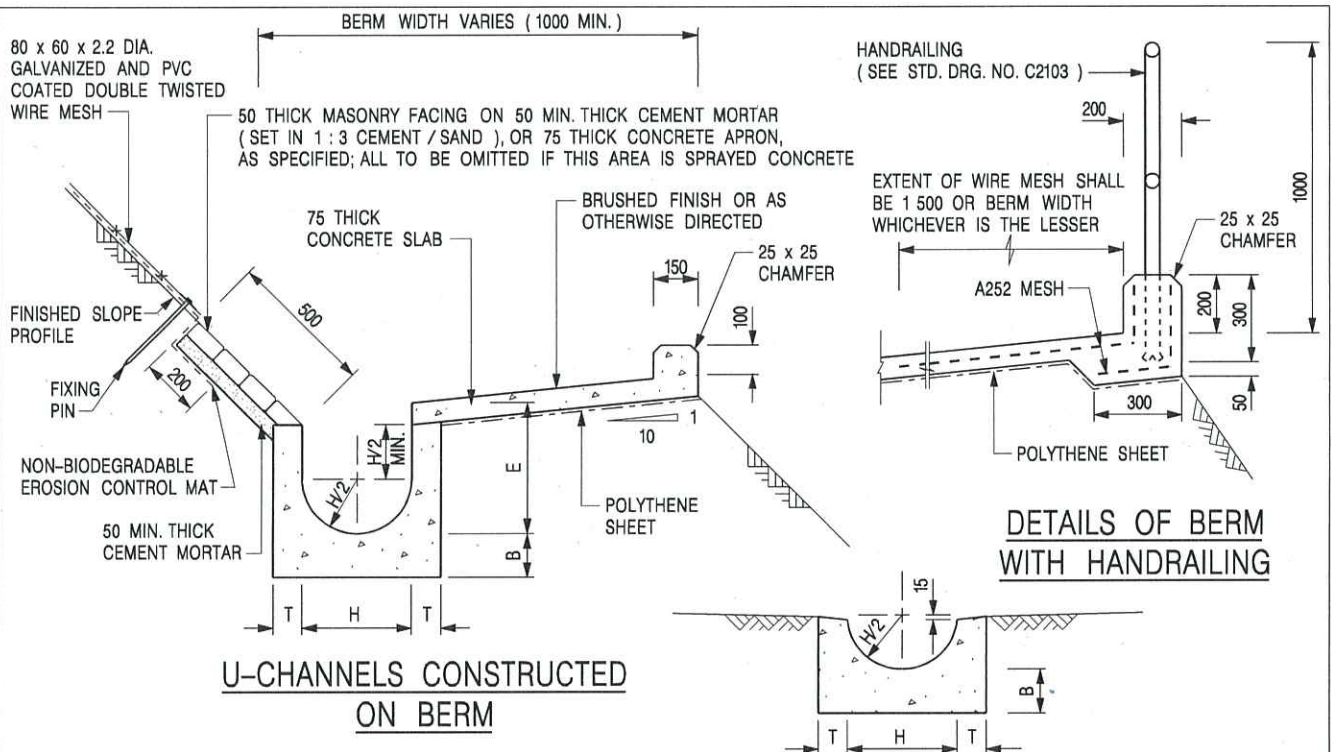
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2406 / 2A



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/E.
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/E)

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

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
REF.	REVISION	SIGNATURE	DATE

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



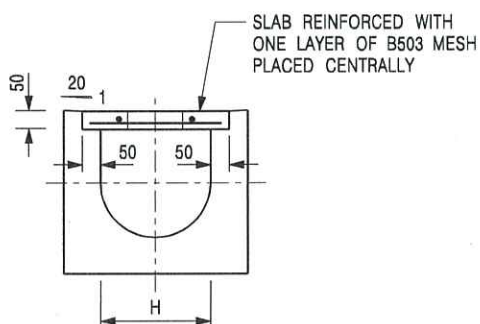
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

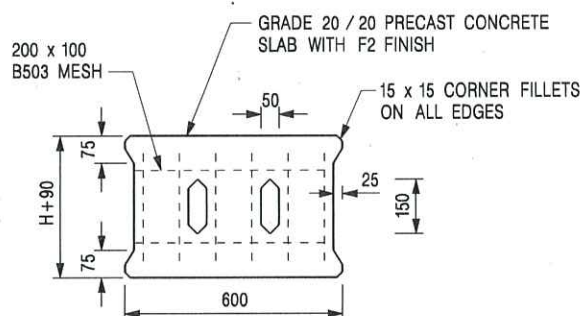
DRAWING NO.

DATE JAN 1991

C2409I



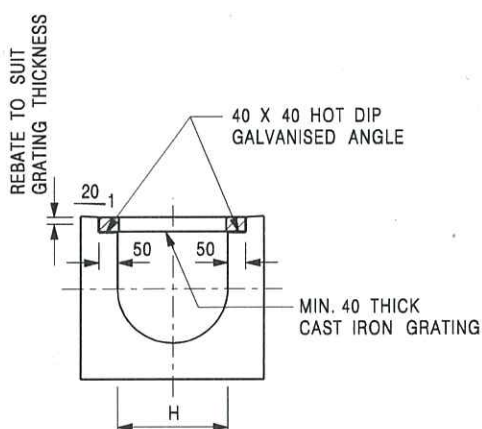
TYPICAL SECTION



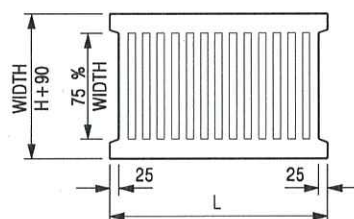
PLAN OF SLAB

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.

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
REF.	REVISION	SIGNATURE	DATE

COVER SLAB AND CAST IRON
GRATING FOR CHANNELS



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

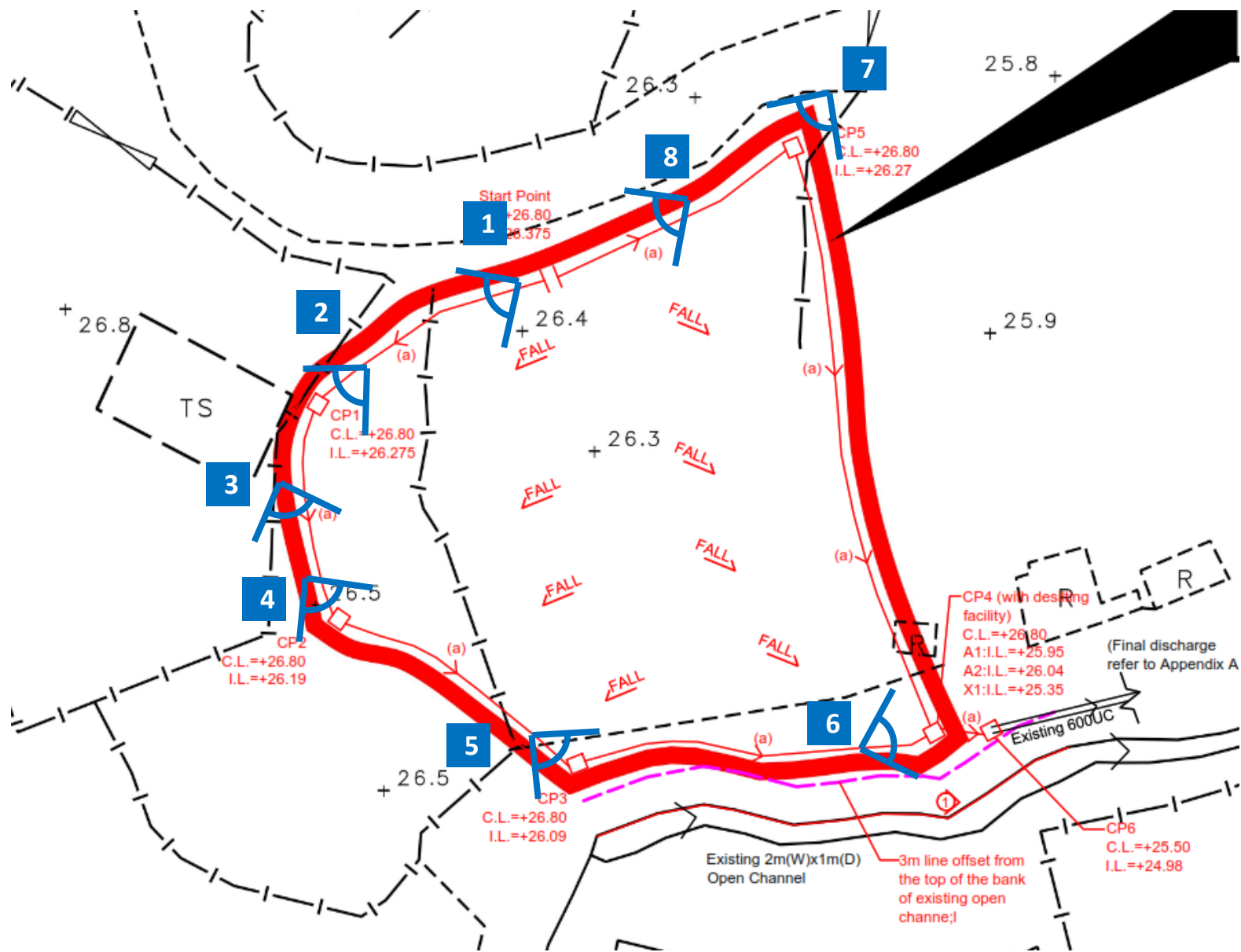
DATE JAN 1991

DRAWING NO.

C2412E

Appendix 4

Condition Record of the Implemented Drainage Facilities

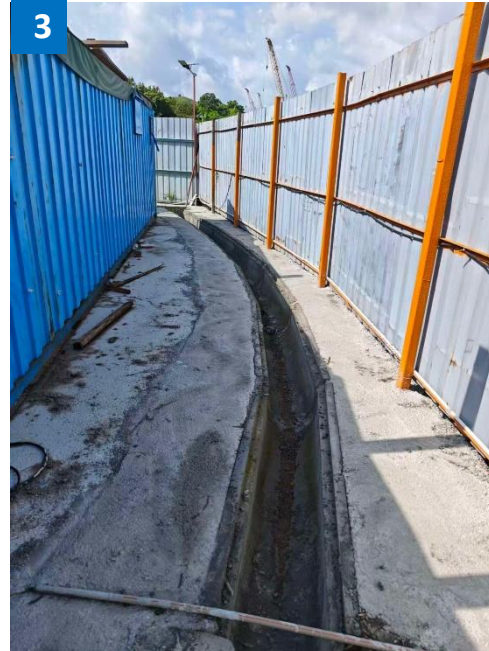


Compliance of Approval Condition (b) of Approved Planning Application No. A/NE-FTA/251

Photographic Records For Implementation of the Drainage Proposal (dated 21.6.2026)

Date:

Jun 2026



Compliance of Approval Condition (b) of Approved Planning Application No. A/NE-FTA/251
Photographic Records For Implementation of the Drainage Proposal (dated 21.6.2026)

Date:
Jun 2026

