APPENDICES

Appendix I

Details of the Affected Business Premises

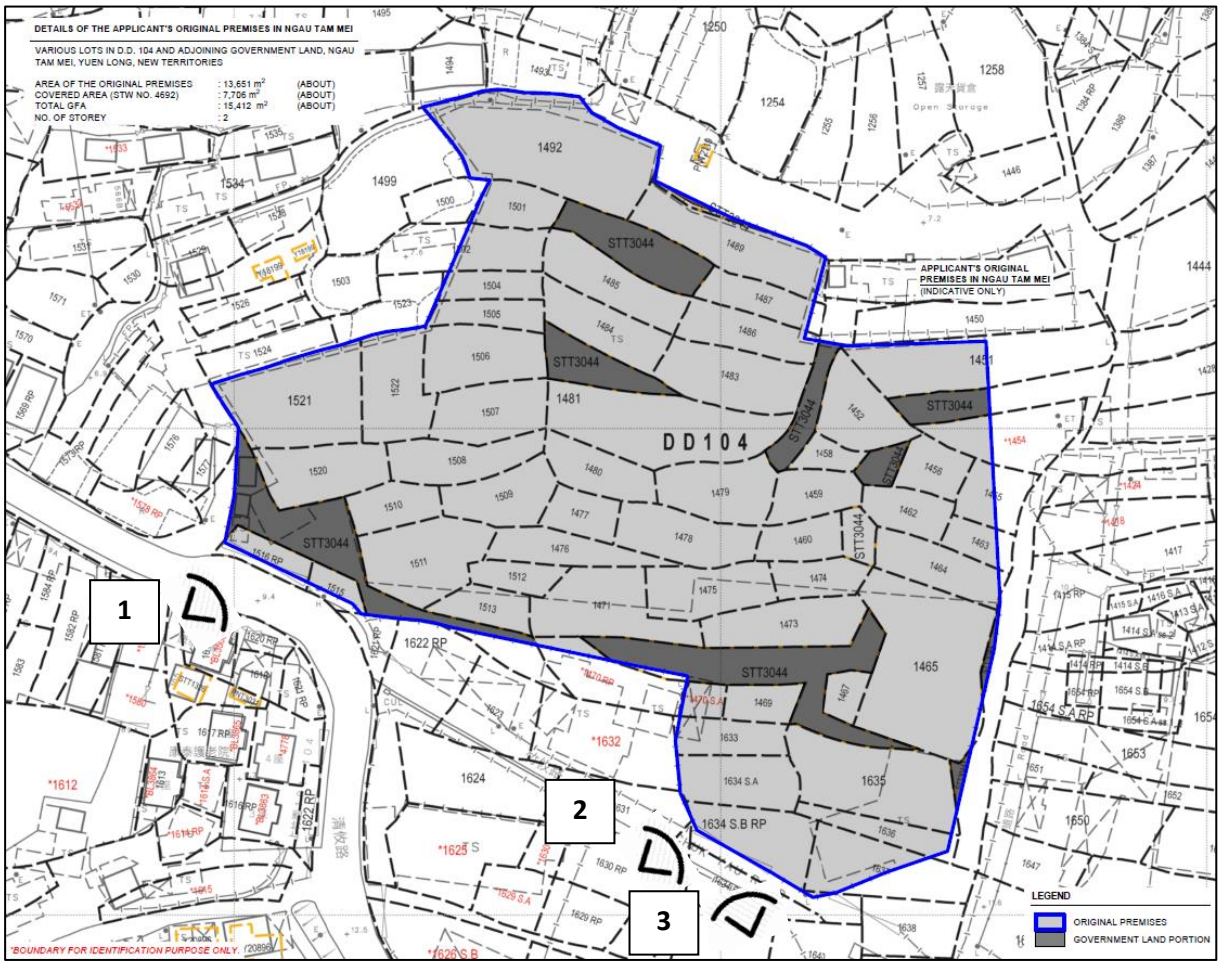
Appendix I – Details of the Affected Business Premises

Company Name: **YTAD Warehousing Logistics Co. Limited**
(*authorised Luck Great Global Engineering Limited as applicant of the current application*)

Details of Business Premises

Location: Various Lots in D.D. 104 and Adjoining Government Land, Ngau Tam Mei, Yuen Long, New Territories

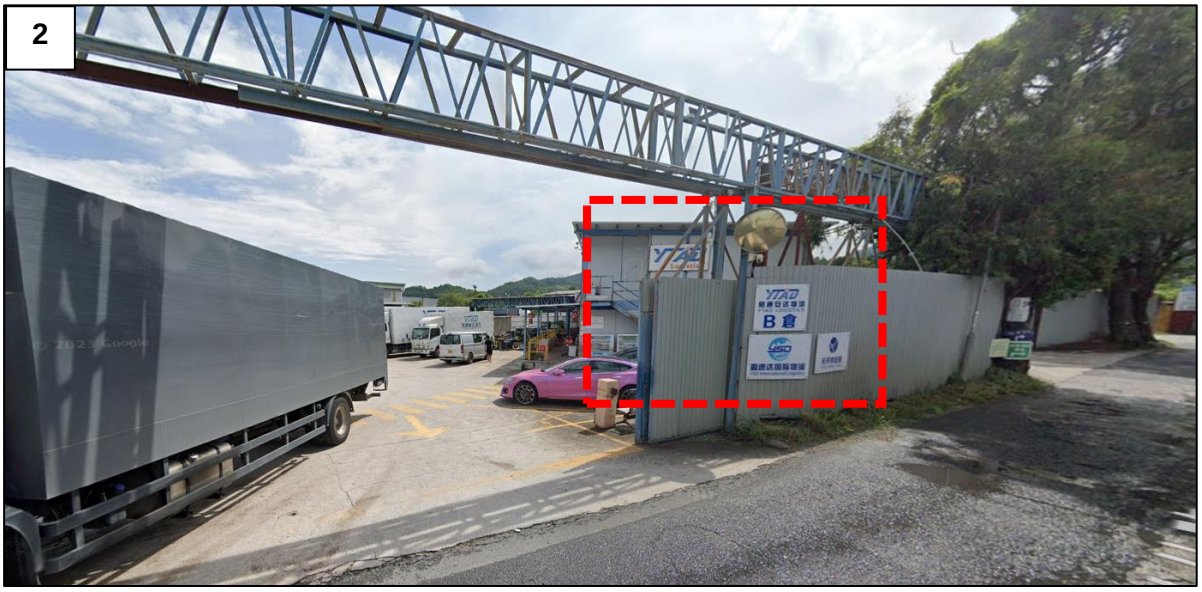
Use of Premises: Warehouse with Ancillary Facilities



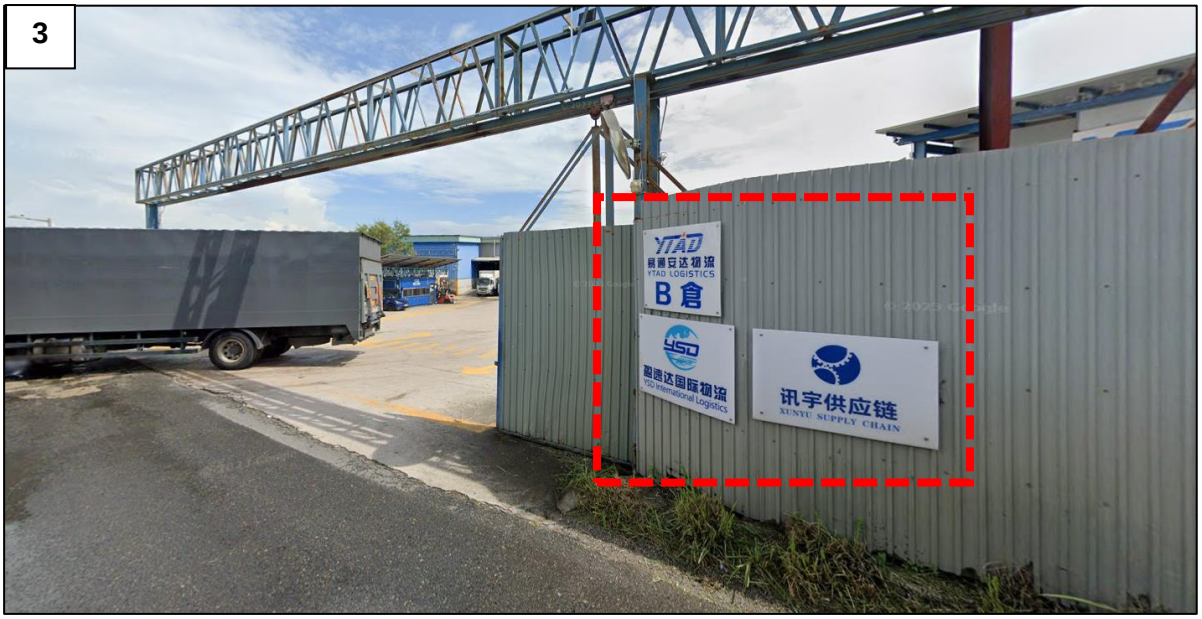
1


YTAD
Logistics
Yau Tam Mei Tsuen

2


YTAD
B 倉

3


YTAD
YTAD LOGISTICS
B 倉
YSD
YSD International Logistics
讯宇供应链
XUNYU SUPPLY CHAIN

Appendix II

Details of Alternative Sites for Relocation

Appendix II – Alternative Sites for the Relocation of the Applicant's Original Premises in Ngau Tam Mei, Yuen Long

Alternative Site / Application Site	Site 1	Site 2	Site 3	Site 4	Site 5	Application Site
Location	Various Lots in D.D. 86, San Uk Ling, Man Kam To, New Territories	Various Lots in D.D. 93, Ma Tso Lung, New Territories	Various Lots in D.D. 122, Long Ping Road, Ping Shan, New Territories	Various Lots in D.D. 129, Lau Fau Shan, Yuen Long, New Territories	Various Lots in D.D. 130, Lam Tei, Tuen Mun, New Territories	Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories,
Site Area	3,678 m^2 (about)	30,190 m^2 (about)	2,815 m^2 (about)	10,740 m^2 (about)	7,130 m^2 (about)	24,446m^2 (about)
Accessibility	Accessible from Lin Ma Hang Road via a local access	Accessible from Ma Tso Lung Road via a local access	Accessible from Long Ping Road via a local access	Accessible from Deep Bay Road via a local access	Accessible from Fuk Hang Tsuen Road via a local access	Accessible from Heung Yuen Wai Highway via Lin Ma Hang Road
Distance from Original Premises	12.8 km (about) from the original premises	8.3 km (about) from the original premises	8.4 km (about) from the original premises	15.6 km (about) from the original premises	11.4 km (about) from the original premises	15.4 km (about) from the original premises
Outline Zoning Plan	Approved Man Kam To OZP No. S/NE-MKT/4	Approved Ma Tso Lung and Hoo Hok Wai OZP No. S/NE-MTL/3	Approved Ping Shan OZP No. S/YL-PS/20	Approved Lau Fau Shan & Tsim Bei Tsui OZP No. S/YL-LFS/11	Approved Lam Tei and Yick Yuen OZP No. S/TM-LTYY/12	Approved Ta Kwu Ling North OZP S/NE-TKLN/2
Zoning	"Green Belt"	"Conservation Area (1)"	"Conservation Area"	"Green Belt"	"Comprehensive Development Area"	"Recreation"
Existing Condition	Covered by tree groups and vegetation	Mostly vacant, covered by vegetation and occupied by fishpond.	Woodland and partly vacant	Covered by vegetation and woodland	Hard paved and occupied by temporary structures	Mostly vacant, partially hard-paved and the remaining area consists of soiled ground
Surrounding Area	Surrounded by residential development and woodland	Surrounded by vegetation, pond, some GIC uses and residential use	Surrounded by woodland and graves	Surrounded by tree groups, temporary structures for open storage and residential use	Surrounded by warehouse, workshop, logistic centre and land covered by residential use	Surrounded by vacant land, woodland, public roads, temporary structures and village houses
Suitability for Relocation	Not suitable for relocation - 73% smaller than the original premises - Tree felling is required - Tenancy for portion of the site is not feasible - Not compatible with the surrounding area	Not suitable for relocation - 55% larger than the original premises - Within the closed area - Falls within the "Conservation Area" zone - Tenancy for portion of the site is not feasible - Not compatible with the surrounding area	Not suitable for relocation - 385% smaller than the original premises - Not compatible with the surrounding area - Within "Conservation Area" Zone - Tenancy for portion of the site is not feasible	Not suitable for relocation - 21% smaller than the original premises - Tree felling is required - Tenancy for portion of the site is not feasible - Not compatible with the surrounding area Tenancy for portion of the site is not feasible	Not suitable for relocation - 48% smaller than the original premises - Not compatible with the surrounding area - Tenancy for portion of the site is not feasible	Comparatively Suitable for relocation: - In close vicinity of Heung Yuen Wai Highway - Relatively flat and mostly vacant - No active agricultural activity

Appendix III

Drainage Impact Assessment

Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

Drainage Impact Assessment Report

June 2024

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1. Introduction

1.1 Background

1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) under Section (S.) 16 of the Town Planning Ordinance (Cap. 131)(the Ordinance) to use Various Lots in D.D. 78 and Adjoining Government Land (GL), Lin Ma Hang, New Territories (the Site) for 'Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years'.

1.1.2 This Drainage Impact Assessment aim to support the development in drainage aspect.

1.2 The Site

1.2.1 The Application Site situate between Lin Ma Hang Road and Shenzhen River. It has an area of about 24,446 m^2. The site is partially hard-paved at the south east corner and the remaining area is covered by vegetation. The site location plan is shown in **Figure 1**.

1.2.2 The existing site ground levels beside Lin Ma Hang Road is about +9.1 mPD. The site generally falling towards Shenzhen river to about +6.6 mPD. There is no major site level changes proposed.

1.2.3 There is an existing 800mm channel to the northeast of the site and beside Lin Ma Hang Road. Shenzhen River is situated at the west side of the site. This existing channel pass through the site and discharge toward Shenzhen River at the west. 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 24,446 m^2. The indicative development schedule is summarized in **Table 1** below for technical assessment purpose. The catchment plan is shown in **Figure 4.1** and **Figure 4.2**.

Proposed Development	
Total Site Area (m^2)	24,446
Paved Area (m^2) Assume all proposed site area as paved area for assessment purpose	24,446

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 50 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 50 years return period, the following values are adopted.

a	=	474.6
b	=	2.9
c	=	0.371

(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:

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

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 and Mitigation Measure

4.1. Proposed UChannel

4.1.1 The existing U-channel is proposed to be diverted starting at the northeast of the application site and connect to proposed U-channel UC1. It would discharge to the original discharge point and eventually fall to Shenzhen River.

4.1.2 Proposed U-channels are designed for collection of runoff within and near the Development Site. Please refer to the **Figure 4.2** for proposed catchment plan. The U-channels are proposed to be connect to original existing channel to the southwest of the site and eventually discharge to Shenzhen River. The design calculations of proposed UChannel are shown in **Appendix A**.

4.2. Upgrade of Existing Downstream UChannel

4.1.3 The increase in runoff due to the change of application site's pavement ratio is calculated in **Appendix A**. Please refer to existing catchment plan **Figure 4.1**. The existing channel downstream is proposed to be upgraded such that the increase in capacity is not less than the increase in runoff.

4.1.4 The alignment, size, gradient and details of the proposed drains 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 impact assessment has been conducted for the Proposed Development. With implementation of proposed drainage system and upgrade of existing downstream U-channels, no adverse drainage impact is anticipated.

- End of Text -

FIGURES

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

TO HEUNG YUEN WAI
BORDER CONTROL POINT

DEVELOPMENT SITE
(FOR IDENTIFICATION ONLY)

SHENZHEN RIVER

LIN MA HANG ROAD

HEUNG YUEN WAI HIGHWAY

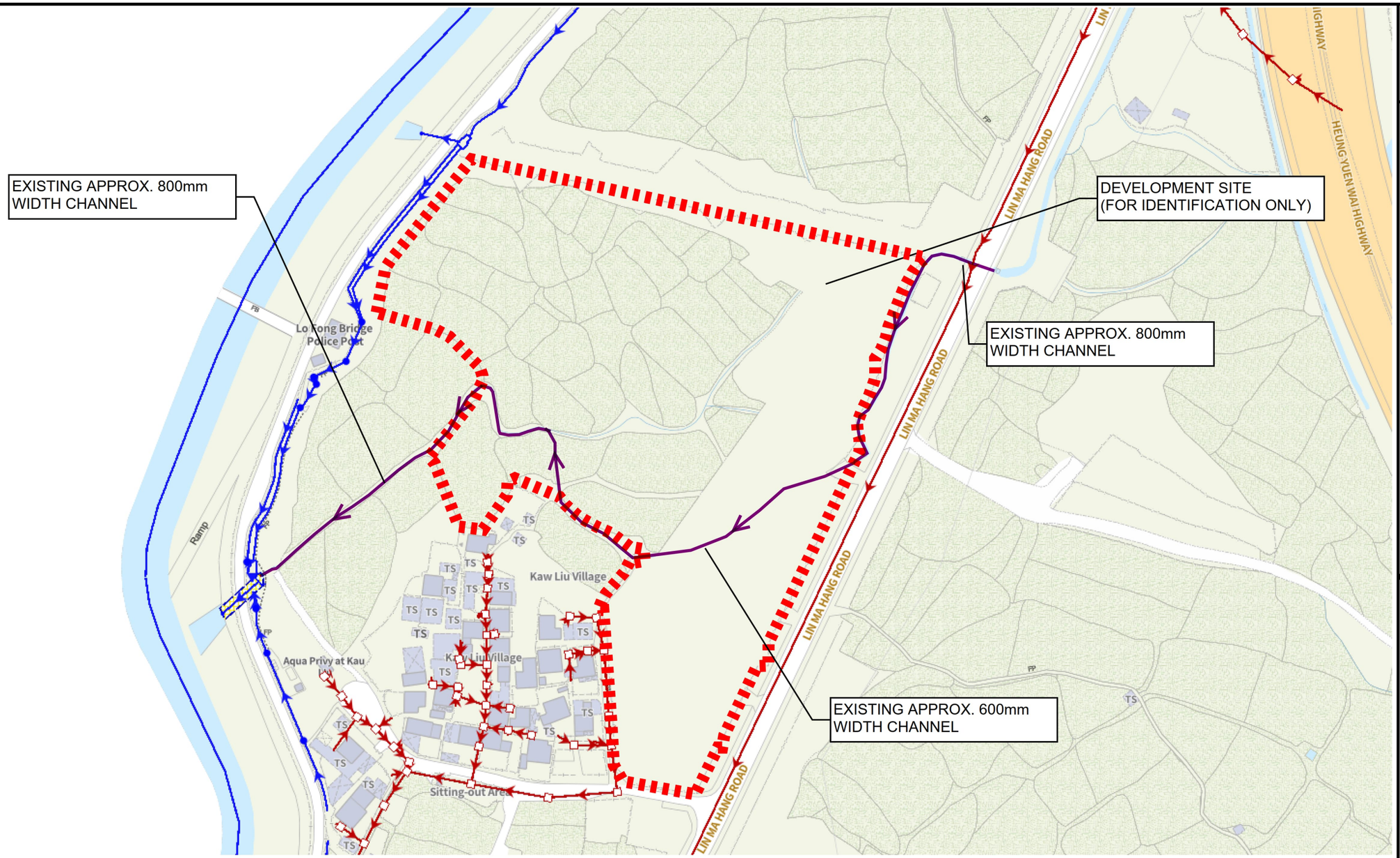
Kaw Liù Village

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
SITE LOCATION PLAN

DRAWING NUMBER
FIGURE 1



LEGEND:

Combined Manhole	Tapping Point (Sewer)	Tapping Point (Storm)	APPLICATION SITE BOUNDARY (FOR IDENTIFICATION PURPOSE ONLY)
Overflow (Combined)	Sewer Terminal Manhole	Storm Water Terminal Manhole	EXISTING CHANNELS TOWARDS SHENZHEN RIVER
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)		
Pipe (Sewer)	Sand Trap		

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
EXISTING DRAINAGE PLAN

DRAWING NUMBER
FIGURE 2

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

EXISTING APPROX. 800mm
WIDTH UCHANNEL

PROPOSED CATCHPIT

PROPOSED UCHANNEL

PROPOSED CATCHPIT W/ TRAP

DP2.1
CL +7.61
IL +7.25

IL +7.53

UC2 600, 1 IN 200

DP1.3
CL +8.2
IL +7.51

EXISTING CHANNEL
TO BE CONNECTED
TO UC1

DP1.2
CL +9.0
IL +7.82

DP1.1
CL +9.0
IL +8.07

UC1 1000, 1 IN 200

UC2 600, 1 IN 200

DP2.2
CL +7.6
IL +6.68

UC1 1000, 1 IN 200

UC2 600, 1 IN 200

DP1.5
CL +7.8
IL +6.15

IL +6.6

UC6 1350, 1 IN 200

IL +7.10

EXISTING CHANNEL
TO BE UPGARDED
TO 1350mm 1 IN 200

IL +6.74

DP1.4
CL +8.2
IL +6.8

UC1 1000, 1 IN 200

IL +8.47

EXISTING CHANNEL
TO BE CONNECTED
TO UC3

DP4.1
CL +8.2
IL +7.55

UC4 800, 1 IN 200

UC5 450,
1 IN 200

DP3.4
CL +8.3
IL +7.10

DP4.4
CL +8.0
IL +6.91

DP3.1
CL +9.46
IL +7.67

DP3.3
CL +8.7
IL +7.29

UC3 800, 1 IN 300

UC3 800, 1 IN 300

DP4.3
CL +8.0
IL +7.05

DP4.2
CL +8.0
IL +7.45

DP3.5
CL +8.2
IL +7.03

Kaw Liu Village

IL +7.68

UC7 525,
1 IN 200

DP7.3
CL +9.0
IL +7.86

DP3.2
CL +9.6
IL +7.47

DP7.2
CL +9.0
IL +7.97

UC7 525, 1 IN 200

UC7 525, 1 IN 200

LIN MA HANG ROAD

UC7 525,
1 IN 200

IL +8.4

IL +8.4

DP7.1
CL +9.0
IL +8.27

羅芳橋警崗
Lo Fong Bridge Police Post

深圳河

Ramp

Track

Road

Sitting-out Area

休憩處

NOTE:
1. CONNECTION LEVELSHOULD BE VERTIFIED ON SITE.

PROJECT:
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REV	DESCRIPTION	DATE

DRAWING TITLE
PROPOSED DRAINAGE SYSTEM

DRAWING NUMBER
FIGURE 3

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

ZONE E2
19,010 m²
(UNPAVED)

ZONE E1
5,436 m²
(PAVED)

較寮村
Kaw Liu Village

羅芳橋警崗
Lo Fong Bridge Police Post

深圳河

LIN MA HANG ROAD

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
EXISTING CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4.1

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

FALL

ZONE B4
4,967 m²
(PAVED)

ZONE B3
2,329 m²
(PAVED)

ZONE B2
2,935 m²
(PAVED)

ZONE B1
3,377 m²
(PAVED)

ZONE A1
1,064 m²
(10%PAVED)

ZONE C4
1,424 m²
(PAVED)

ZONE C3
1,053 m²
(PAVED)

ZONE C2
2,561 m²
(PAVED)

ZONE C1
1,821 m²
(PAVED)

ZONE D2
1,437 m²
(50%PAVED)

ZONE D1
3,930 m²
(PAVED)

ZONE A2
604 m²
(20%PAVED)

Lo Fong Bridge Police Post 羅芳橋警岗

Liu Village 較寮村

LIN MA HANG ROAD 蓮麻坑路

PROJECT:
Proposed Temporary Warehouse (Excluding D.G.G.) with Ancillary Facilities for a Period of 3 Years in "Recreation" Zone, Various Lots in D.D.78 and Adjoining GL, Lin Ma Hang, New Territories

REV	DESCRIPTION	DATE

DRAWING TITLE
PROPOSED CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4.2

Appendix

Appendix A - Design Calculation

Checking of Peak Flow of Existing Channel at Upstream of the Application Site

U Channel Capacity Estimiation				
Channel Size			800	(mm)
Gradient (approx.)		1 in	186	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			2.23	m/s
Capacity			1.275	m3/s

$$v = \frac{1}{n} R^{\frac{1}{6}} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

The estimated capacity of existing channel is 1.275 m3/s
Assume the utilitiation of the existing channel is 80%
The estimated peak flow of existing channel is 1.02 m3/s

Checking of Additional Flow due to the Development

Runoff Estimation (before development)				
Design Return Period		1 in	50	years
Paved Area	5436 =		5436	(m2)
Unpaved Area	19010 =		19010	(m2)
Total Equivalent Area	5436 x 0.95 + 19010 x 0.35 =		11818	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 19010 x 220 / 1000000 =		0.724	m3/s

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

Runoff Estimation (after development)				
Design Return Period		1 in	50	years
Paved Area	24446 =		24446	(m2)
Unpaved Area	0 =		0	(m2)
Total Equivalent Area	24446 x 0.95 + 0 x 0.35 =		23224	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 23224 x 220 / 1000000 =		1.423	m3/s

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

Additional flow due to development 1.423 -0.724 = 0.699 m3/s

Proposed Upgrade of Existing Channel at Downstream of Application Site

	Existing U Channel				**Proposed Updated Channel**			
Channel Size			800	(mm)			1350	(mm)
Gradient		1 in	186			1 in	200	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)	π x 1.35^2 /8 + 1.35 x 1.35/2 =		1.627	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)	π x 1.35 / 2 + 1.35/2 x 2 =		3.471	(m)
R	0.571 / 2.057 =		0.278	(m)	1.627 / 3.471 =		0.469	(m)
Velocity $v = \frac{1}{n} R^{\frac{1}{6}} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$			2.23	m/s			3.05	m/s
Capacity			1.275	m3/s			4.96	m3/s

Capacity of upgraded channel is incareased by 4.959 - 1.275 = 3.684 > 0.699 m3/s
Therefore, it is proposed to upgrade of downstream channel from 800mm, 1 in 186 to 1350mm, 1 in 200

U Channel 1 (Zone B1 + B2 + B3 + Peak Flow from Existing Channel)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	3377 + 2935 + 2329=		8641	(m2)
Unpaved Area	0 =		0	(m2)
Total Equivalent Area	8641 x 0.95 + 0 x 0.35 =		8209	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	0.278 x 8209 x 220 / 1000000 =		0.503	m3/s
Q + Peak Flow from existing channel	0.503 + 1.02		1.523	m3/s

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

U Channel				
Channel Size			1000	(mm)
Gradient		1 in	200	
Area	π x 1^2 /8 + 1 x 1/2 =		0.893	(m2)
Wetted Perimeter	π x 1 / 2 + 1/2 x 2 =		2.571	(m)
R	0.893 / 2.571 =		0.347	(m)
Velocity			2.50	m/s
Capacity			2.228	m3/s

$$v = \frac{1}{n} R^{\frac{1}{6}} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

Utilization 1.523 / 2.228 = **68.37** % OK (less than 90%, for 10% siltation allowance)

U Channel 2 (ZONE B4)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	4967 =		4967	(m2)
Unpaved Area	0 =		0	(m2)
Total Equivalent Area	4967 x 0.95 + 0 x 0.35 =		4719	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 4719 x 220 / 1000000 =		0.289	m3/s

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

U Channel				
Channel Size			600	(mm)
Gradient		1 in	200	
Area	π x 0.6^2 /8 + 0.6 x 0.6/2 =		0.321	(m2)
Wetted Perimeter	π x 0.6 / 2 + 0.6/2 x 2 =		1.542	(m)
R	0.321 / 1.542 =		0.208	(m)
Velocity			1.78	m/s
Capacity			0.570	m3/s

$$v = \frac{1}{n} R^{\frac{1}{6}} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$$

Utilization 0.289 / 0.57 = **50.69** % OK (less than 90%, for 10% siltation allowance)

U Channel 3 (Zone A1 + A2 + C1 + D1)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	1821 + 1064 x 0.1 + 604 x 0.2 + 3930=		5978	(m2)
Unpaved Area	0 + 1064 x 0.9 + 604 x 0.8 =		1441	(m2)
Total Equivalent Area	5978 x 0.95 + 1441 x 0.35 =		6184	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 6184 x 220 / 1000000 =		0.379	m3/s

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

U Channel				
Channel Size			800	(mm)
Gradient		1 in	300	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			1.76	m/s
Capacity			1.003	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	0.379 / 1.003	=	**37.78**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 4 (Zone [A1 + A2 + C1 + D1] + C2 + C3 + D2)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	5978 + 2561 + 1053 + 1437 x 0.5 =		10311	(m2)
Unpaved Area	1441 + 1053 + 1437 x 0.5 =		2159	(m2)
Total Equivalent Area	10311 x 0.95 + 2159 x 0.35 =		10551	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 10551 x 220 / 1000000 =		0.647	m3/s

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

U Channel				
Channel Size			800	(mm)
Gradient		1 in	200	
Area	π x 0.8^2 /8 + 0.8 x 0.8/2 =		0.571	(m2)
Wetted Perimeter	π x 0.8 / 2 + 0.8/2 x 2 =		2.057	(m)
R	0.571 / 2.057 =		0.278	(m)
Velocity			2.15	m/s
Capacity			1.229	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	0.647 / 1.229	=	**52.63**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 5 (Zone C4 + D2)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	1424 + 1437 x 0.5 =		2143	(m2)
Unpaved Area	0 + 1437 x 0.5 =		719	(m2)
Total Equivalent Area	2143 x 0.95 + 719 x 0.35 =		2287	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 2287 x 220 / 1000000 =		0.140	m3/s

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

U Channel				
Channel Size			450	(mm)
Gradient		1 in	200	
Area	π x 0.45^2 /8 + 0.45 x 0.45/2 =		0.181	(m2)
Wetted Perimeter	π x 0.45 / 2 + 0.45/2 x 2 =		1.157	(m)
R	0.181 / 1.157 =		0.156	(m)
Velocity			1.47	m/s
Capacity			0.265	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	0.14 / 0.265	=	**52.91**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 6 (Whole Site (paved) + A1 + A2 + D2 + Peak Flow from Existing Channel)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	24446 + 1064 x 0.1 + 604 x 0.2+ 1437 x 0.5=		25392	(m2)
Unpaved Area	0 + 1064 x 0.9 + 604 x 0.8+ 1437 x 0.5=		2159	(m2)
Total Equivalent Area	25392 x 0.95 + 2159 x 0.35 =		24878	(m2)
Rainfall Intensity, I *			220	mm/hr
Q	0.278 x 24878 x 220 / 1000000 =		1.525	m3/s
Q + Peak Flow from existing channel	1.525 + 1.02		2.544	m3/s

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

U Channel				
Channel Size			1350	(mm)
Gradient		1 in	200	
Area	π x 1.35^2 /8 + 1.35 x 1.35/2 =		1.627	(m2)
Wetted Perimeter	π x 1.35 / 2 + 1.35/2 x 2 =		3.471	(m)
R	1.627 / 3.471 =		0.469	(m)
Velocity			3.05	m/s
Capacity			4.959	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

Utilization	1.525 / 4.959	=	**51.31**	%	OK	(less than 90%, for 10% siltation allowance)

U Channel 7 (Zone A2, D1)

Runoff Estimation				
Design Return Period		1 in	50	years
Paved Area	3930 + 604 x 0.2=		4051	(m2)
Unpaved Area	0 + 604 x 0.8 =		483	(m2)
Total Equivalent Area	4051 x 0.95 + 483 x 0.35 =		4017	(m2)
Rainfall Intensity, I *			220	mm/hr
Design Discharge Rate, Q	0.278 x 4017 x 220 / 1000000 =		0.246	m3/s

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

U Channel				
Channel Size			525	(mm)
Gradient		1 in	200	
Area	π x 0.53^2 /8 + 0.53 x 0.53/2 =		0.246	(m2)
Wetted Perimeter	π x 0.53 / 2 + 0.53/2 x 2 =		1.350	(m)
R	0.246 / 1.35 =		0.182	(m)
Velocity			1.62	m/s
Capacity			0.400	m3/s

$v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$

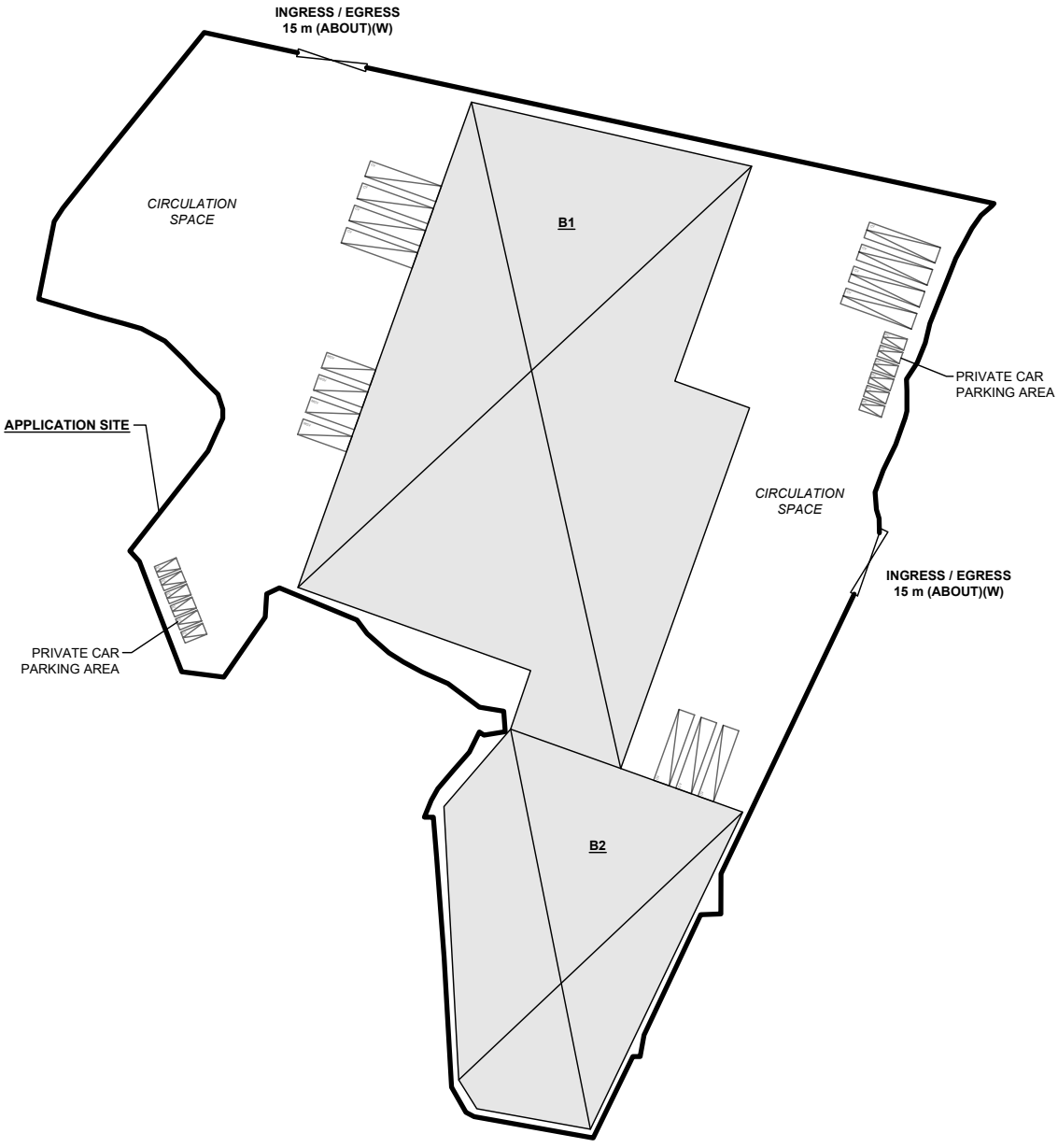
Utilization	0.246 / 0.4	=	**61.62**	%	OK	(less than 90%, for 10% siltation allowance)

Appendix B - Proposed Development Layout Plan

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 24,446 m^2	(ABOUT)
COVERED AREA	: 11,879 m^2	(ABOUT)
UNCOVERED AREA	: 12,567 m^2	(ABOUT)
PLOT RATIO	: 0.97	(ABOUT)
SITE COVERAGE	: 49 %	(ABOUT)
NO. OF STRUCTURE	: 2	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 23,758 m^2	(ABOUT)
TOTAL GFA	: 23,758 m^2	(ABOUT)
BUILDING HEIGHT	: 15 m	(ABOUT)
NO. OF STOREY	: 2	

STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	WAREHOUSE (EXCL. D.G.G.) SITE OFFICE AND WASHROOM	8,332 m^2 (ABOUT)	16,664 m^2 (ABOUT)	15 m (ABOUT)(2-STOREY)
B2	WAREHOUSE (EXCL. D.G.G.) SITE OFFICE AND WASHROOM	3,547 m^2 (ABOUT)	7,094 m^2 (ABOUT)	15 m (ABOUT)(2-STOREY)
	TOTAL	**11,879 m^2 (ABOUT)**	**23,758 m^2 (ABOUT)**	



PARKING AND LOADING / UNLOADING (L/UL) PROVISIONS

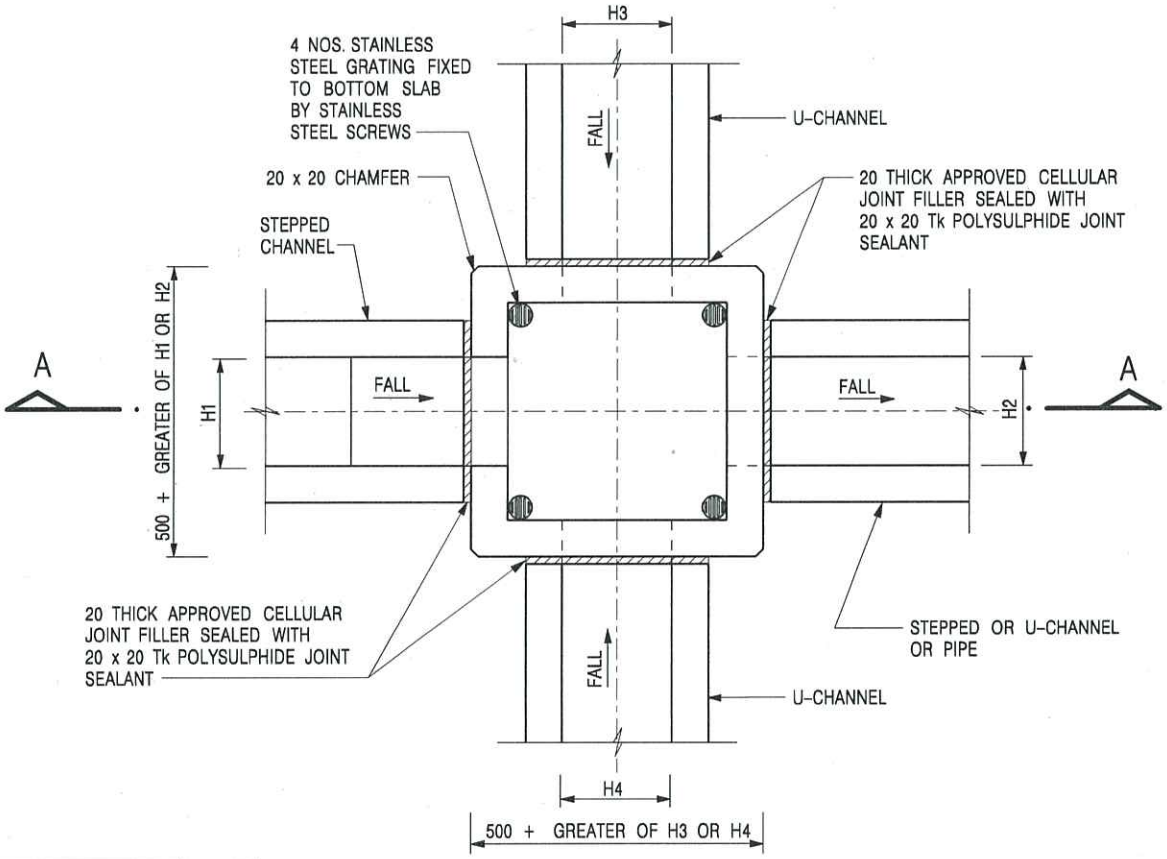
NO. OF PRIVATE CAR PARKING SPACE	: 10
DIMENSION OF PARKING SPACE	: 5 m (L) x 2.5 m (W)
NO. OF CONTAINER VEHICLE PARKING SPACE	: 4
DIMENSION OF LOADING/UNLOADING SPACE	: 16 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR MEDIUM GOODS VEHICLE (MGV)	: 4
DIMENSION OF LOADING/UNLOADING SPACE	: 11 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR CONTAINER VEHICLE	: 7
DIMENSION OF LOADING/UNLOADING SPACE	: 16 m (L) x 3.5 m (W)

LEGEND

- APPLICATION SITE
- STRUCTURE
- PARKING SPACE (PC)
- PARKING SPACE (CV)
- LOADING / UNLOADING SPACE (MGV)
- LOADING / UNLOADING SPACE (CV)
- INGRESS / EGRESS

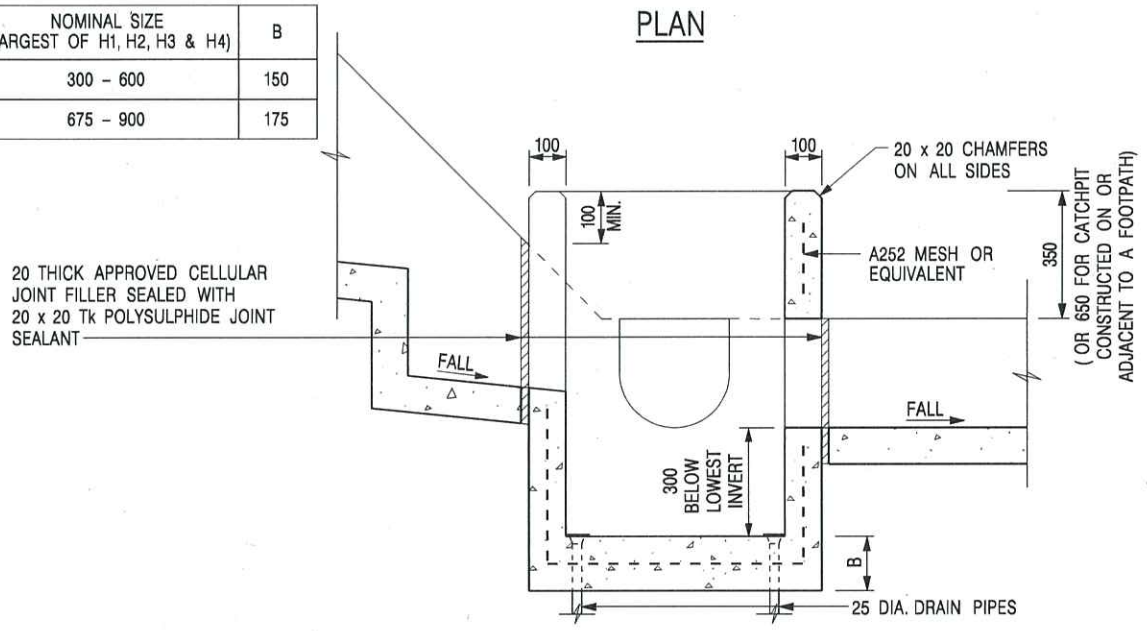
PLANNING CONSULTANT: R-Riches Property Consultants Ltd.	PROJECT: PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS	ADDRESS: VARIOUS LOTS IN D.D. 78 AND ADJOINING GOVERNMENT LAND, LIN MA HANG, NEW TERRITORIES	SCALE: 1 : 1500 @ A4	TITLE: LAYOUT PLAN	NORTH
			DRAWN BY: MN / DATE: 14.5.2024		
			REVISED BY / DATE	DWG NO.: PLAN 9 / VER.: 001	

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)

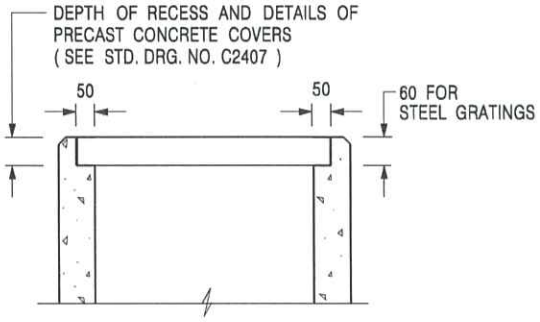
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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

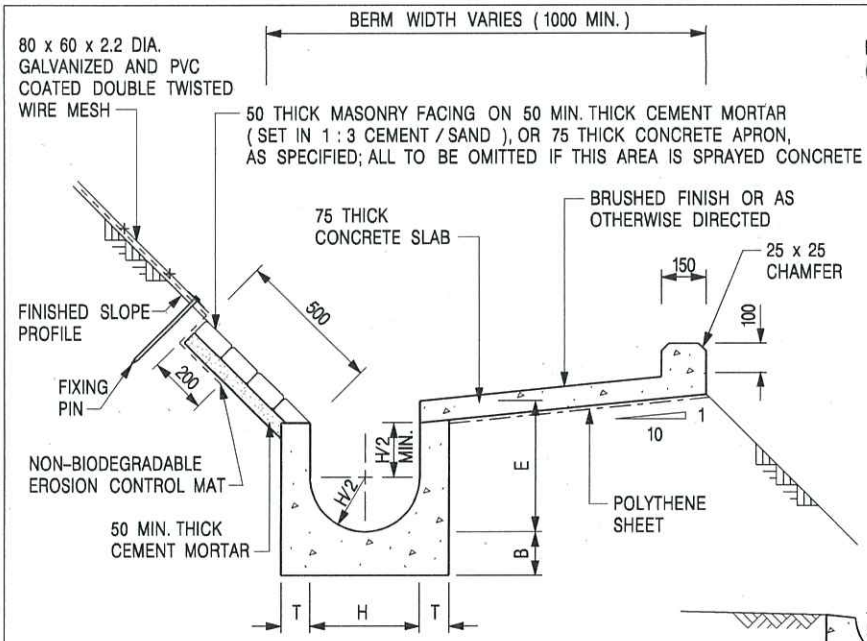
CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

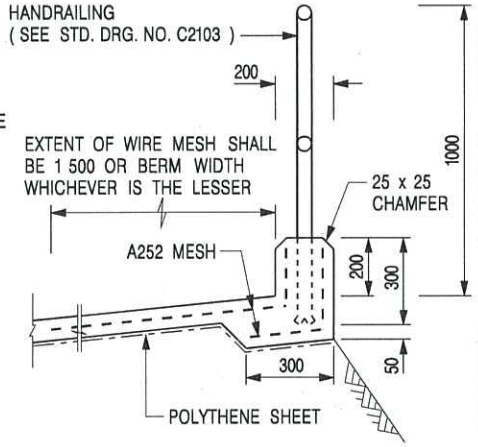
SCALE 1 : 20

DATE JAN 1991

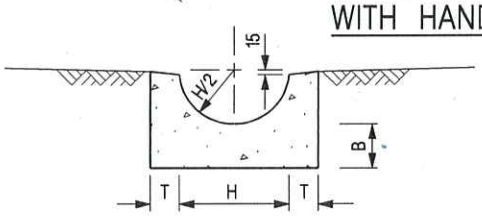
DRAWING NO. C2406 /2A



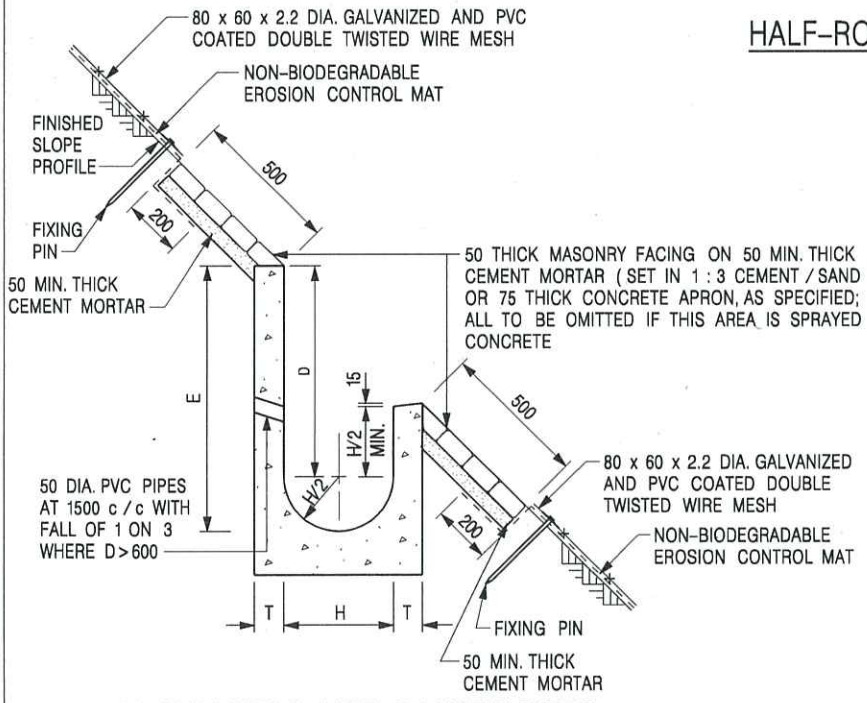
U-CHANNELS CONSTRUCTED ON BERM



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**

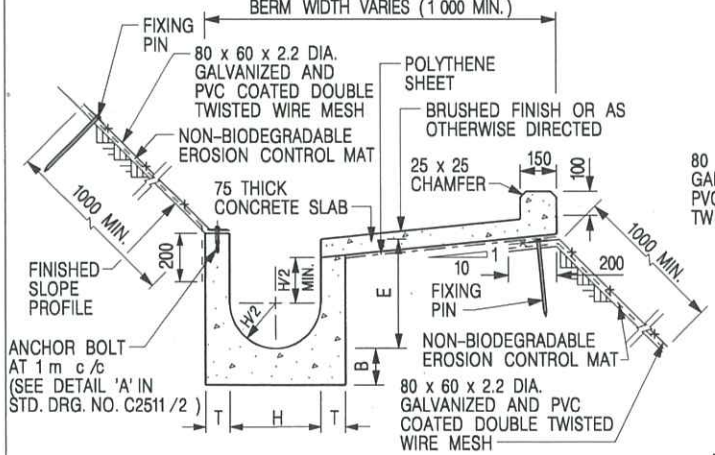
SCALE 1 : 25

DATE JAN 1991

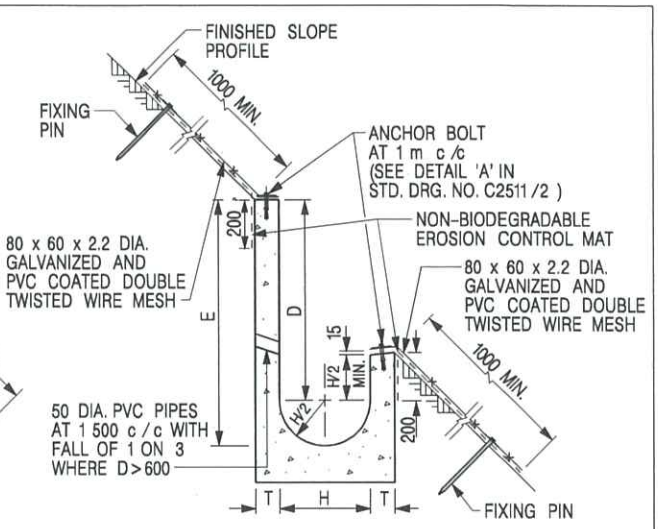
DRAWING NO. C2409I

卓越工程 建設香港

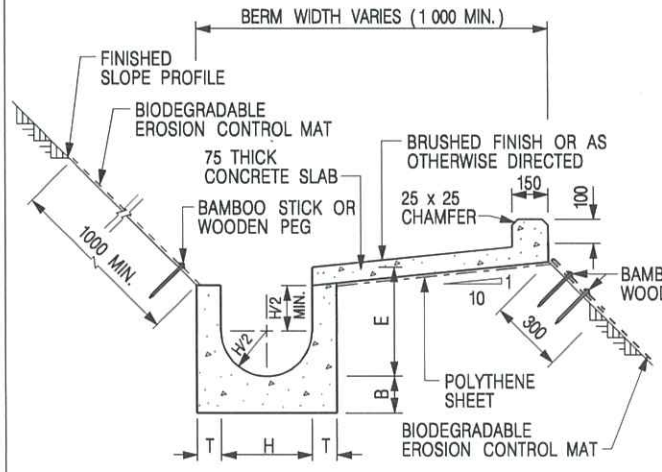
We Engineer Hong Kong's Development



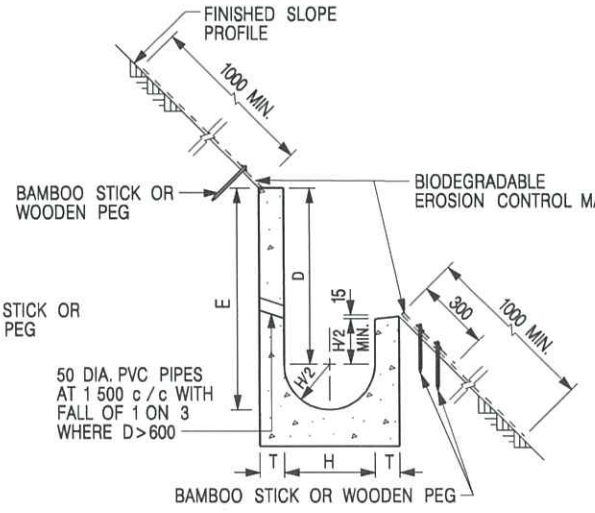
U-CHANNELS CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



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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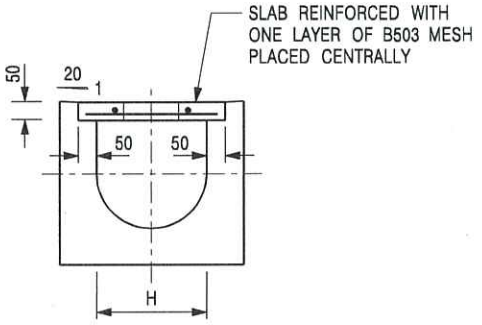
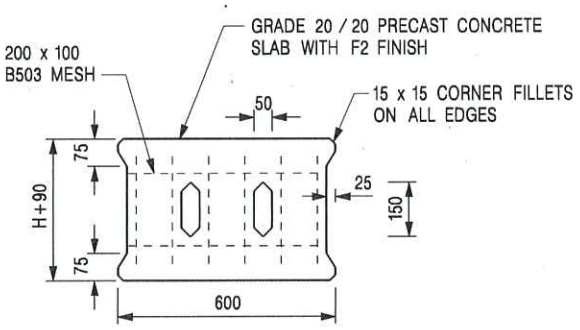


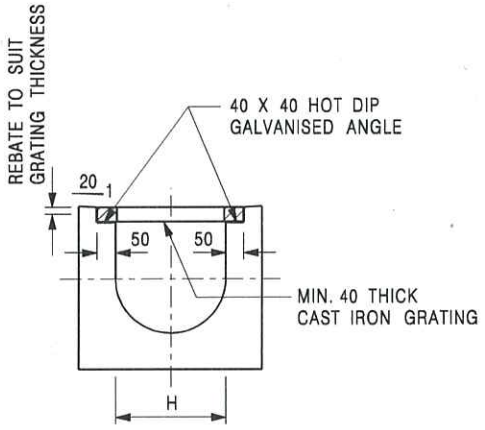
TYPICAL SECTION



PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



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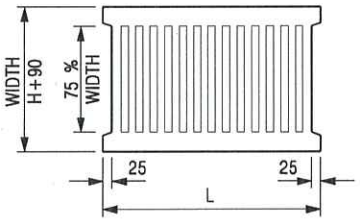

L = 600mm FOR H ≤ 375mm
L = 400mm FOR H > 375mm

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