Annex 1

Updated Drainage Impact Assessment

Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in "Agriculture" Zone, Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

Drainage Impact Assessment

Jan 26

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Marvellous Construction & Design Company Limited

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CONSTRUCTION & DESIGN COMPANY LIMITED

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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. 115 and D.D. 116 and Adjoining Government Land (GL), Au Tau, Yuen Long, New Territories (the Site) for 'Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land'.

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

1.2 Application Site

1.2.1 The application site is situated beside Pok Oi Interchange. It has an area of approx. 14,250 m^2. The site location is shown in **Figure 1**.

1.2.2 The existing site is partly hard paved with level various from approx. +3.3mPD to + 5.6mPD. The proposed site is intent to keep unpaved with gravel material after the development.

1.2.3 There is an existing stream at the west of the application site, which would eventually discharge to 2.5m x 2m box culvert. **Figure 2** indicate the existing drainage system of the area.

2 Development Proposal

2.1 The Proposed Development

2.1.1 The total site area is approximately 14,250 m^2. The applicant intended to keep unpaved with gravel material after the development. The catchment plan is shown in **Figure 4-2**.

Proposed Development	
Total Site Area (m^2)	14,250
Unpaved Area after Development (m^2)	14,250

Table 1 – Site Development Area

3 Assessment Criteria

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

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

Table 2– Design Return Periods under SDM

3.1.2 The proposed drainage system intended to collect runoff from internal site and external catchment. 1 in 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 HKO Zone. Therefore, for 10 years return period, the following values are adopted.

a	=	485
b	=	3.11
c	=	0.397

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

4.1. Proposed Channels

4.1.1 Proposed channels are designed for collection of runoff for internal and external catchment. They are proposed to discharge to approx. 10m width existing watercourse at the west.

4.1.2 The design calculations of proposed UChannel are shown in **Appendix A1**. The checking of utilization of existing 10m watercourse is also shown in Appendix A1, it shows the utilization is only 7%. As the development proposed to keep unpaved after development, no additional runoff is generated.

4.1.3 The alignment, size, gradient and details of the proposed drains are shown in **Figure 3**.

4.1.4 The catchment plan is shown in **Figure 4**.

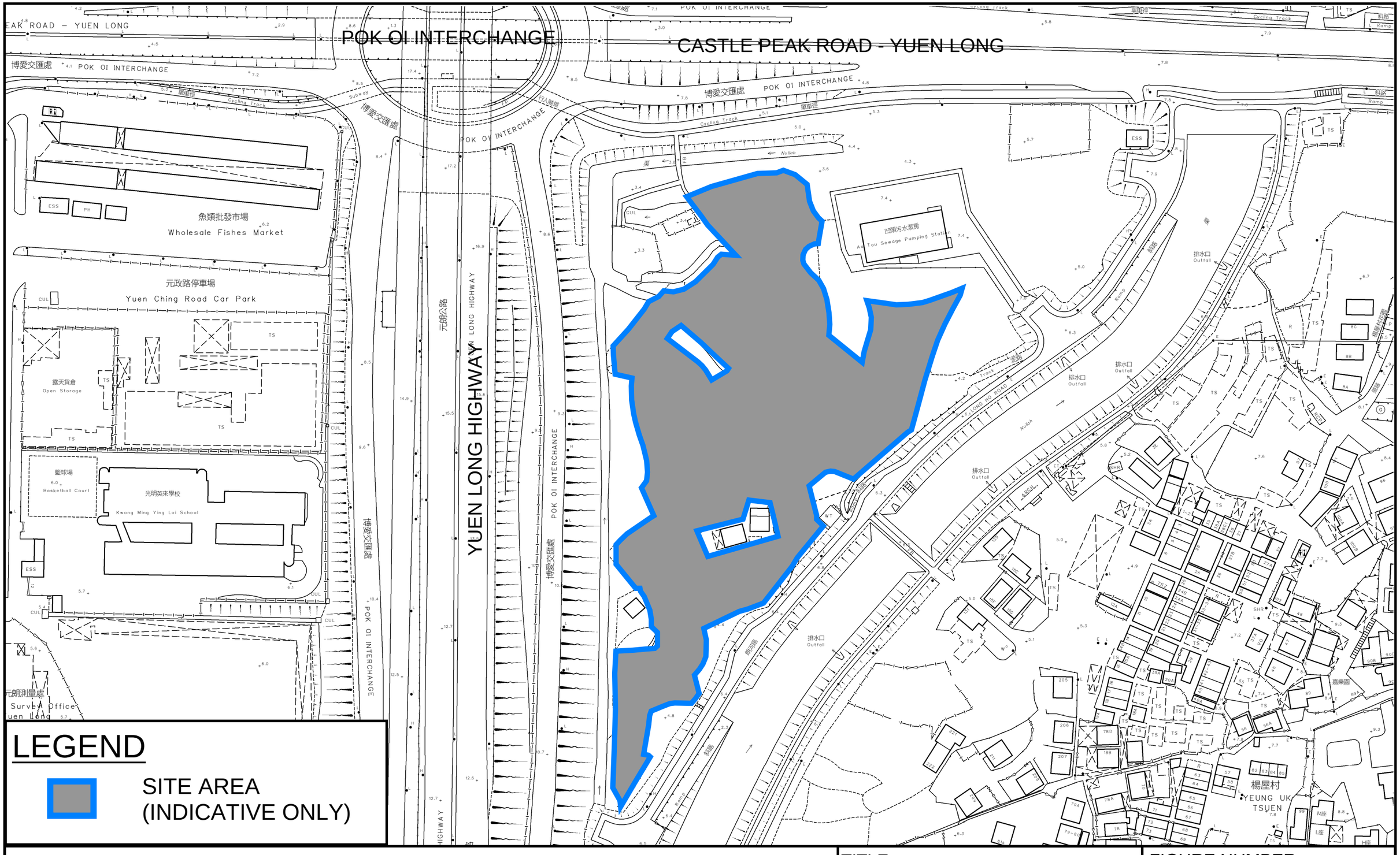
4.1.5 Reference Drawings are shown in **Appendix C** for reference.

5 Conclusion

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

- End of Text -

FIGURES



LEGEND

SITE AREA
(INDICATIVE ONLY)

PROJECT:
Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone

TITLE
SITE LOCATION PLAN

FIGURE NUMBER
FIGURE 1

LOCATION:
Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

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VER	DESCRIPTION	DATE

LEGEND

SITE AREA
(INDICATIVE ONLY)

博愛交匯處

青山公路元朗段

青山公路

M6

魚類批發市場

M7

元欣路停車場

凹頭污水泵房

楊屋村

M8

露天貨倉

光明英來學校

博愛交匯處

元朗公路

博愛交匯處

元朗測量處

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)			
Pipe (Sewer)		Sand Trap			

PROJECT:
Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in "Agriculture" Zone

TITLE
EXISTING DRAINAGE PLAN

FIGURE NUMBER
FIGURE 2

LOCATION:
Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

VER	DESCRIPTION	DATE

NOTES:

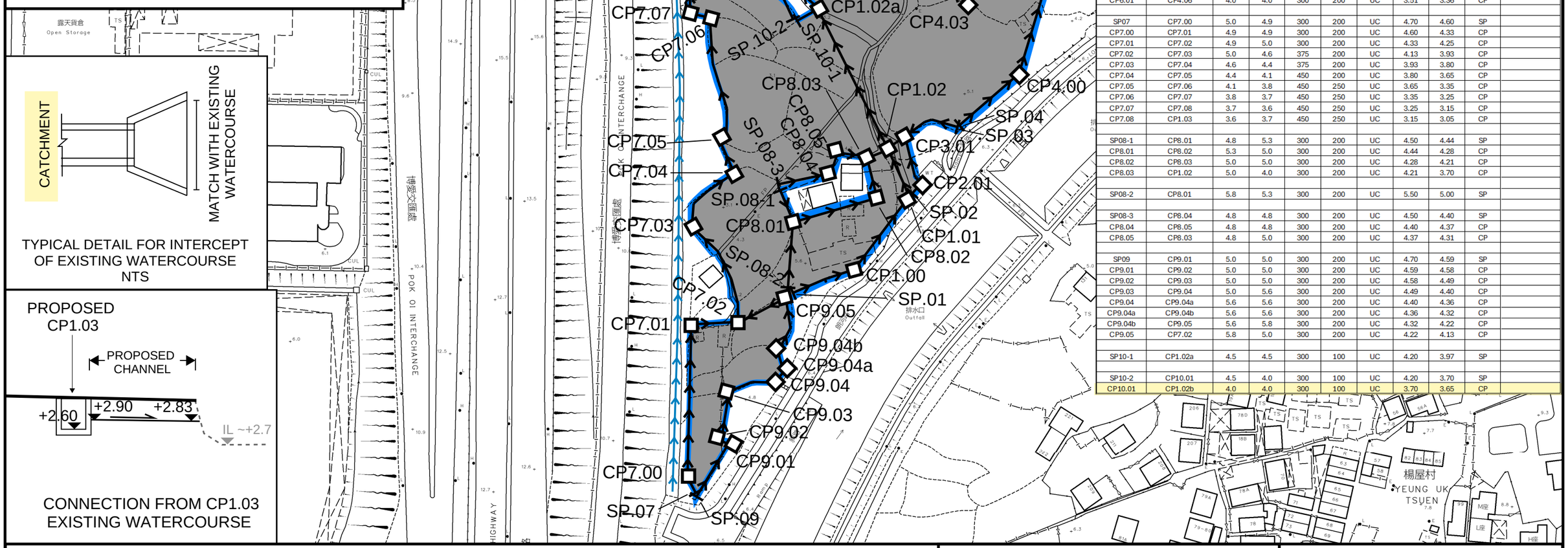
1.ALL LEVELS ARE IN METRES TO HONG KONG PRINCIPAL DATUM (m.P.D.) UNLESS NOTED OTHERWISE.
2.ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
3.LOCATION OF CATCHPITS ARE APPROX. ONLY.
4.CONNECTION LEVELS ARE APPROX. ONLY AND SHALL BE VERFIED ON SITE.
5.CONCRETE/CI GRATING TO BE PROVIDED FOR SURFACE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

LEGEND

- SITE AREA (INDICATIVE ONLY)
- EXISTING STREAM
- PROPOSED CHANNEL
- PROPOSED CATCHPIT
- PROPOSED CATCHPIT w/TRAP

TYPICAL DETAIL FOR INTERCEPT OF EXISTING WATERCOURSE
NTS

CONNECTION FROM CP1.03
EXISTING WATERCOURSE



DRINAGE SCHEDULE

US MH/PIT	DS MH/PIT	US GL	DS GL	Size mm	Gradient 1 in	Type	US IL	DS IL	U/S MH/PIT TYPE #	Remark
SP01	CP1.00	5.8	5.3	300	200	UC	5.50	5.00	SP	#SP: Start Point
CP1.00	CP1.01	5.3	5.3	300	200	UC	5.00	4.84	CP	
CP1.01	CP1.02	5.3	5.0	300	200	UC	4.84	4.70	CP	
CP1.02	CP1.02a	5.0	4.5	525	200	UC	3.70	3.42	CP	
CP1.02a	CP1.02b	4.5	4.0	525	200	UC	3.42	3.30	CP	
CP1.02b	CP1.03	4.0	3.7	525	200	UC	3.30	3.18	CP	
CP1.03	EXISTING WATERCOURSE	3.7	3.7	675	300	UC	2.90	2.83	CP	
SP02	CP2.01	5.3	5.3	300	200	UC	5.00	4.98	SP	
CP2.01	CP3.01	5.3	5.0	300	200	UC	4.98	4.70	CP	
SP03	CP3.01	5.3	5.0	300	200	UC	5.00	4.70	SP	
CP3.01	CP1.02	5.0	5.0	300	200	UC	4.70	4.66	CP	
SP04	CP4.00	5.3	4.5	300	200	UC	5.00	4.20	SP	
CP4.00	CP4.01	4.5	4.1	300	200	UC	4.20	3.80	CP	
CP4.01	CP4.02	4.1	4.1	600	300	UC	3.50	3.38	CP	
CP4.02	CP4.03	4.1	4.1	600	300	UC	3.38	3.29	CP	
CP4.03	CP4.04	4.1	4.0	600	300	UC	3.29	3.23	CP	
CP4.04	CP4.05	4.0	4.0	600	300	UC	3.23	3.11	CP	
CP4.05	CP4.06	4.0	4.0	600	300	UC	3.11	3.03	CP	
CP4.06	CP4.07	4.0	4.0	600	300	UC	3.03	2.91	CP	
CP4.07	CP1.03	4.0	3.7	600	300	UC	2.91	2.90	CP	
SP05	CP5.00	4.0	4.0	300	200	UC	3.70	3.65	SP	
CP5.00	CP5.01	4.0	4.0	300	200	UC	3.65	3.57	CP	
CP5.01	CP5.02	4.0	4.0	300	200	UC	3.57	3.54	CP	
CP5.02	CP4.05	4.0	4.0	300	200	UC	3.54	3.48	CP	
SP06	CP6.01	4.0	4.0	300	200	UC	3.70	3.51	SP	
CP6.01	CP4.06	4.0	4.0	300	200	UC	3.51	3.36	CP	
SP07	CP7.00	5.0	4.9	300	200	UC	4.70	4.60	SP	
CP7.00	CP7.01	4.9	4.9	300	200	UC	4.60	4.33	CP	
CP7.01	CP7.02	4.9	5.0	300	200	UC	4.33	4.25	CP	
CP7.02	CP7.03	5.0	4.6	375	200	UC	4.13	3.93	CP	
CP7.03	CP7.04	4.6	4.4	375	200	UC	3.93	3.80	CP	
CP7.04	CP7.05	4.4	4.1	450	200	UC	3.80	3.65	CP	
CP7.05	CP7.06	4.1	3.8	450	250	UC	3.65	3.35	CP	
CP7.06	CP7.07	3.8	3.7	450	250	UC	3.35	3.25	CP	
CP7.07	CP7.08	3.7	3.6	450	250	UC	3.25	3.15	CP	
CP7.08	CP1.03	3.6	3.7	450	250	UC	3.15	3.05	CP	
SP08-1	CP8.01	4.8	5.3	300	200	UC	4.50	4.44	SP	
CP8.01	CP8.02	5.3	5.0	300	200	UC	4.44	4.28	CP	
CP8.02	CP8.03	5.0	5.0	300	200	UC	4.28	4.21	CP	
CP8.03	CP1.02	5.0	4.0	300	200	UC	4.21	3.70	CP	
SP08-2	CP8.01	5.8	5.3	300	200	UC	5.50	5.00	SP	
SP08-3	CP8.04	4.8	4.8	300	200	UC	4.50	4.40	SP	
CP8.04	CP8.05	4.8	4.8	300	200	UC	4.40	4.37	CP	
CP8.05	CP8.03	4.8	5.0	300	200	UC	4.37	4.31	CP	
SP09	CP9.01	5.0	5.0	300	200	UC	4.70	4.59	SP	
CP9.01	CP9.02	5.0	5.0	300	200	UC	4.59	4.58	CP	
CP9.02	CP9.03	5.0	5.0	300	200	UC	4.58	4.49	CP	
CP9.03	CP9.04	5.0	5.6	300	200	UC	4.49	4.40	CP	
CP9.04	CP9.04a	5.6	5.6	300	200	UC	4.40	4.36	CP	
CP9.04a	CP9.04b	5.6	5.6	300	200	UC	4.36	4.32	CP	
CP9.04b	CP9.05	5.6	5.8	300	200	UC	4.32	4.22	CP	
CP9.05	CP7.02	5.8	5.0	300	200	UC	4.22	4.13	CP	
SP10-1	CP1.02a	4.5	4.5	300	100	UC	4.20	3.97	SP	
SP10-2	CP10.01	4.5	4.0	300	100	UC	4.20	3.70	SP	
CP10.01	CP1.02b	4.0	4.0	300	100	UC	3.70	3.65	CP	

PROJECT:

Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone

TITLE
PROPOSED DRAINAGE SYSTEM

FIGURE NUMBER
FIGURE 3

LOCATION:
Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

VER	DESCRIPTION	DATE

LEGEND:

FALL

+5.0 PROPOSED LEVEL

+4.0
A1c: 1,316 m²
+4.0
B1: 1,443 m²
+3.7
+4.0
+4.1
A1b: 5,799 m²
C1: 179 m²
+3.8
A2: 3,448 m²
+5.3
+5.0
B2a: 1,719 m²
B2b: 359 m²
39m² PAVED
+5.3
C2: 370 m²
A1a: 124 m²
+5.8
A4: 1,033 m²
A3: 2,530 m²
B3: 306 m²
+5.0
B4: 797 m²

N

魚類批發市場
Wholesale Fishes Market
元政路停車場
Yuen Ching Road Car Park
露天貨倉
Open Storage
籃球場
Basketball Court
光明英來學校
Kwong Ming Ying Loi School
元朗測量處
Survey Office
Yuen Long
凹頭污水泵房
Au Tau Sewage Pumping Station
楊屋村
YEUNG UK TSUEN
博愛交匯處
POK OI INTERCHANGE
元朗公路
YUEN LONG HIGHWAY
LONG HO ROAD

PROJECT:

Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone

TITLE
CATCHMENT PLAN

FIGURE NUMBER
FIGURE 4

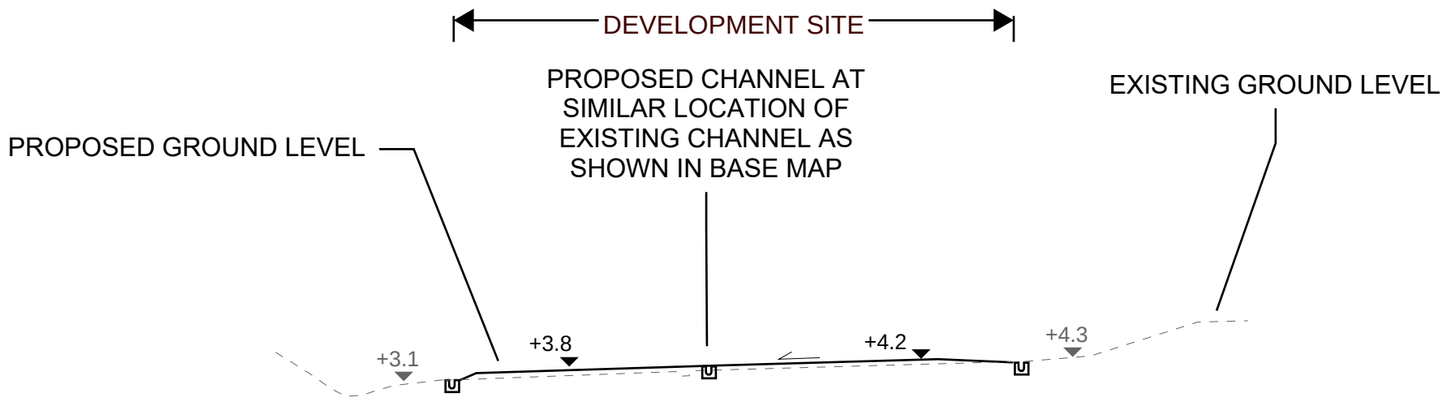
LOCATION:
Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

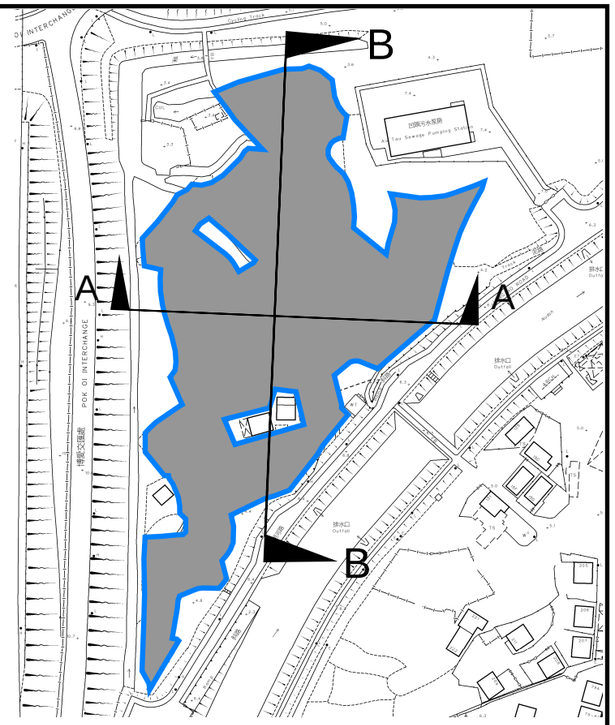
VER	DESCRIPTION	DATE

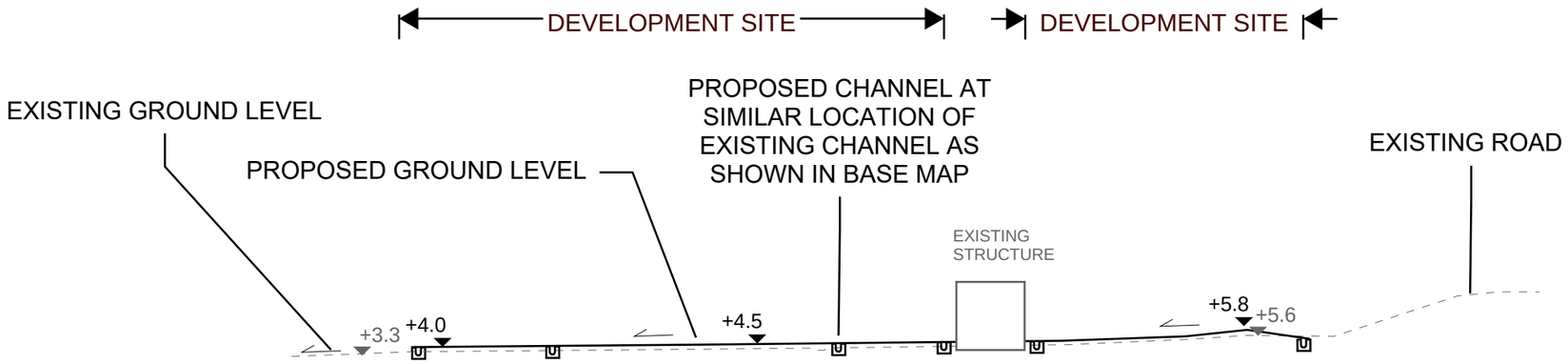
LEGEND

SITE AREA
(INDICATIVE ONLY)



N.T.S.
SECTION A-A





N.T.S.
SECTION B-B

PROJECT:
Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone

TITLE
SECTIONS

FIGURE NUMBER
FIGURE 5

LOCATION:
Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

VER	DESCRIPTION	DATE

APPENDIX

Appendix A1: Design Calculation

Zone

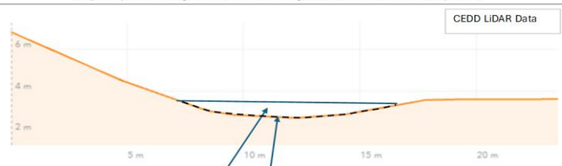
HKO

Return Period	1 in	10	years

n	0.014
Ks	0.15
Viscosity	0.000001

Storm Constant		
	HKO a	485
	HKO b	3.11
	HKO c	0.397

Capacity Checking of Watercourse against Flow from Development



Assumed Water Depth	Base Width	Width of Water Surface	Flow Area	Wetted Perimeter	Hydralic Radius	Manning's Roughness	Gradient	Velocity	Capacity
m	m	m	m2	m	m		1 in	m/s	m3/s
0.90	-	9.50	4.52	9.68	0.47	0.035	200	1.21	5.48

Total Flow from Site = 0.39 m^3/s
Utilization Rate = 7.0%
Total flow from Development Site only occupy 7% of nearby Watercourse.

Catchment Area Table (Area in m^2)

Catchment	A1a	A1b	A1c	A2	A3	A4	B1	B2a	B2b	B3	B4	C1	C2	Total Site Area (After Development)	
Total Area	124	5799	1316	3448	2530	1033	1443	1719	359	306	797	179	370	14250	
Hard Paved Area	0	0	0	0	0	0	0	0	39	0	0	0	370	0	
Unpaved Area	124	5799	1316	3448	2530	1033	1443	1719	320	306	797	179	0	14250	
Equival. Area	43.4	2029.65	460.6	1206.8	885.5	361.55	505.05	601.65	149.05	107.10	278.95	62.65	351.50	4987.50	

Pavement Type	Hard Paved	Unpaved
Runoff Coefficient	0.95	0.35

Calculation Table of Drainage System

US MH/PIT	DS MH/PIT	US GL	DS GL	Size mm	Gradient 1 in	Type	US IL	DS IL	U/S MH/PIT TYPE#	Length m	V m/s	Capacity m^3/s	Catchment ID1	Catchment ID2	Catchment ID3	Catchment ID4	Catchment ID5	Catchment ID6	Catchment ID7	Catchment ID8	Total Equivalent Area m^2	ToC min	Intensity mm/hr	Total Discharge m^3/s	Utilitization	Remark
SP01	CP1.00	5.80	5.30	300	200	UC	5.50	5.00	SP	23.4	1.12	0.09	A4	B3							468.65	2.80	240	0.03	34.7%	
CP1.00	CP1.01	5.30	5.30	300	200	UC	5.00	4.84	CP	31.6	1.12	0.09	A4	B3							468.65	3.15	234	0.03	34.0%	
CP1.01	CP1.02	5.30	5.00	300	200	UC	4.84	4.70	CP	20.1	1.12	0.09	A1a	A4	B3						512.05	3.62	228	0.03	36.1%	
CP1.02	CP1.02a	5.00	4.50	525	200	UC	3.70	3.42	CP	55.7	1.62	0.40	A1a	A1b	A2	A4	B2b	B3	C2		4249.05	3.92	224	0.26	66.1%	
CP1.02a	CP1.02b	4.50	4.00	525	200	UC	3.42	3.30	CP	25.1	1.62	0.40	A1a	A1b	A2	A4	B2b	B3	C1	C2	4311.70	4.50	217	0.26	65.0%	
CP1.02b	CP1.03	4.00	3.70	525	200	UC	3.30	3.18	CP	14.3	1.62	0.40	A1a	A1b	A2	A4	B2b	B3	C1	C2	4311.70	4.75	214	0.26	64.2%	
CP1.03	EXISTING WATERCOURSE	3.70	3.70	675	300	UC	2.90	2.83	CP	19.7	1.57	0.64	Total Site Area (After Development)	B1	B2a	B2b	B3	B4	C1	C2	7043.45	6.61	197	0.39	60.4%	
SP02	CP2.01	5.30	5.30	300	200	UC	5.00	4.98	SP	5.0	1.12	0.09	A1a	B2b							192.45	2.80	240	0.01	14.3%	
CP2.01	CP3.01	5.30	5.00	300	200	UC	4.98	4.70	CP	17.9	1.12	0.09	A1a	B2b							192.45	2.87	238	0.01	14.2%	
SP03	CP3.01	5.30	5.00	300	200	UC	5.00	4.70	SP	21.0	1.12	0.09	B2b								149.05	2.80	240	0.01	11.0%	
CP3.01	CP1.02	5.00	5.00	300	200	UC	4.70	4.66	CP	7.5	1.12	0.09	A1a	B2b							192.45	3.14	234	0.01	14.0%	
SP04	CP4.00	5.30	4.50	300	200	UC	5.00	4.20	SP	27.9	1.12	0.09	B2a								601.65	2.80	240	0.04	44.6%	
CP4.00	CP4.01	4.50	4.10	300	200	UC	4.20	3.80	CP	58.9	1.12	0.09	B2a								601.65	3.22	233	0.04	43.4%	
CP4.01	CP4.02	4.10	4.10	600	300	UC	3.50	3.38	CP	36.3	1.45	0.47	A1b	B1	B2a						3136.35	4.09	221	0.19	41.5%	
CP4.02	CP4.03	4.10	4.10	600	300	UC	3.38	3.29	CP	26.4	1.45	0.47	A1b	B1	B2a						3136.35	4.51	217	0.19	40.5%	
CP4.03	CP4.04	4.10	4.00	600	300	UC	3.29	3.23	CP	19.4	1.45	0.47	A1b	B1	B2a						3136.35	4.82	213	0.19	39.9%	
CP4.04	CP4.05	4.00	4.00	600	300	UC	3.23	3.11	CP	34.0	1.45	0.47	A1b	B1	B2a						3136.35	5.04	211	0.18	39.5%	
CP4.05	CP4.06	4.00	4.00	600	300	UC	3.11	3.03	CP	25.4	1.45	0.47	A1b	A1c	B1	B2a					3596.95	5.43	207	0.21	44.4%	
CP4.06	CP4.07	4.00	4.00	600	300	UC	3.03	2.91	CP	34.3	1.45	0.47	A1b	A1c	B1	B2a					3596.95	5.72	204	0.20	43.8%	
CP4.07	CP1.03	4.00	3.70	600	300	UC	2.91	2.90	CP	5.7	1.45	0.47	A1b	A1c	B1	B2a					3596.95	6.12	201	0.20	43.1%	
SP05	CP5.00	4.00	4.00	300	200	UC	3.70	3.65	SP	10.0	1.12	0.09	B1								505.05	2.80	240	0.03	37.4%	
CP5.00	CP5.01	4.00	4.00	300	200	UC	3.65	3.57	CP	15.6	1.12	0.09	B1								505.05	2.95	237	0.03	37.1%	
CP5.01	CP5.02	4.00	4.00	300	200	UC	3.57	3.54	CP	7.4	1.12	0.09	B1								505.05	3.18	234	0.03	36.5%	
CP5.02	CP4.05	4.00	4.00	300	200	UC	3.54	3.48	CP	10.2	1.12	0.09	B1								505.05	3.29	232	0.03	36.3%	
SP06	CP6.01	4.00	4.00	300	200	UC	3.70	3.51	SP	37.4	1.12	0.09	A1c								460.60	2.80	240	0.03	34.1%	
CP6.01	CP4.06	4.00	4.00	300	200	UC	3.51	3.36	CP	30.0	1.12	0.09	A1c								460.60	3.36	231	0.03	32.9%	
SP07	CP7.00	5.00	4.90	300	200	UC	4.70	4.60	SP	6.3	1.12	0.09	A3								885.50	2.80	240	0.06	65.6%	
CP7.00	CP7.01	4.90	4.90	300	200	UC	4.60	4.33	CP	54.2	1.12	0.09	A3								885.50	2.89	238	0.06	65.2%	
CP7.01	CP7.02	4.90	5.00	300	200	UC	4.33	4.25	CP	16.7	1.12	0.09	A3								885.50	3.70	226	0.06	62.0%	
CP7.02	CP7.03	5.00	4.60	375	200	UC	4.13	3.93	CP	39.4	1.30	0.16	A3	B4							1164.45	4.51	217	0.07	43.0%	
CP7.03	CP7.04	4.60	4.40	375	200	UC	3.93	3.80	CP	26.3	1.30	0.16	A3	B4							1164.45	5.02	211	0.07	42.0%	
CP7.04	CP7.05	4.40	4.10	450	200	UC	3.80	3.65	CP	12.3	1.47	0.26	A2	A3	B4	C1					2433.90	5.35	208	0.14	53.1%	
CP7.05	CP7.06	4.10	3.80	450	250	UC	3.65	3.35	CP	45.4	1.31	0.24	A2	A3	B4	C1	C2				2785.40	5.49	206	0.16	67.5%	
CP7.06	CP7.07	3.80	3.70	450	250	UC	3.35	3.25	CP	6.9	1.31	0.24	A2	A3	B4	C1	C2				2785.40	6.07	201	0.16	65.7%	
CP7.07	CP7.08	3.70	3.60	450	250	UC	3.25	3.15	CP	10.9	1.31	0.24	A2	A3	B4	C1	C2				2785.40	6.16	200	0.16	65.5%	
CP7.08	CP1.03	3.60	3.70	450	250	UC	3.15	3.05	CP	24.6	1.31	0.24	A2	A3	B4	C1	C2				2785.40	6.30	199	0.15	65.1%	
SP08-1	CP8.01	4.80	5.30	300	200	UC	4.50	4.44	SP	12.3	1.12	0.09	C1								62.65	2.80	240	0.00	4.6%	
CP8.01	CP8.02	5.30	5.00	300	200	UC	4.44	4.28	CP	30.9	1.12	0.09	A4	C1							424.20	3.14	234	0.03	30.8%	
CP8.02	CP8.03	5.00	5.00	300	200	UC	4.28	4.21	CP	14.6	1.12	0.09	A4	C1							424.20	3.60	228	0.03	29.9%	
CP8.03	CP1.02	5.00	4.00	300	200	UC	4.21	3.70	CP	7.0	1.12	0.09	A4	C1							424.20	3.82	225	0.03	29.5%	
SP08-2	CP8.01	5.80	5.30	300	200	UC	5.50	5.00	SP	22.9	1.12	0.09	A4								361.55	2.80	240	0.02	26.8%	
SP08-3	CP8.04	4.80	4.80	300	200	UC	4.50	4.40	SP	19.1	1.12	0.09	C1								62.65	2.80	240	0.00	4.6%	
CP8.04	CP8.05	4.80	4.80	300	200	UC	4.40	4.37	CP	7.7	1.12	0.09	C1								62.65	3.08	235	0.00	4.6%	
CP8.05	CP8.03	4.80	5.00	300	200	UC	4.37	4.31	CP	10.5	1.12	0.09	C1								62.65	3.20	233	0.00	4.5%	
SP09	CP9.01	5.00	5.00	300	200	UC	4.70	4.59	SP	21.7	1.12	0.09	B4								278.95	2.80	240	0.02	20.7%	
CP9.01	CP9.02	5.00	5.00	300	200	UC	4.59	4.58	CP	2.8	1.12	0.09	B4								278.95	3.12	235	0.02	20.2%	
CP9.02	CP9.03	5.00	5.00	300	200	UC	4.58	4.49	CP	17.7	1.12	0.09	B4								278.95	3.17	234	0.02	20.2%	
CP9.03	CP9.04	5.00	5.60	300	200	UC	4.49	4.40	CP	16.9	1.12	0.09	B4								278.95	3.43	230	0.02	19.9%	
CP9.04	CP9.04a	5.60	5.60	300	200	UC	4.40	4.36	CP	9.5	1.12	0.09	B4								278.95	3.68	227	0.02	19.6%	
CP9.04a	CP9.04b	5.60	5.60	300	200	UC	4.36	4.32	CP	7.5	1.12	0.09	B4								278.95	3.82	225	0.02	19.4%	
CP9.04b	CP9.05	5.60	5.80	300	200	UC	4.32	4.22	CP	20.3	1.12	0.09	B4								278.95	3.93	223	0.02	19.3%	
CP9.05	CP7.02	5.80	5.00	300	200	UC	4.22	4.13	CP	18.3	1.12	0.09	A3	B4							1164.45	4.24	220	0.07	79.2%	
SP10-1	CP1.02a	4.50	4.50	300	100	UC	4.20	3.97	SP	22.9	1.58	0.13	A2	C1							1269.45	2.80	240	0.08	66.5%	
SP10-2	CP10.01	4.50	4.00	300	100	UC	4.20	3.70	SP	23.9	1.58	0.13	A2	C1							1269.45	2.80	240	0.08	66.5%	
CP10.01	CP1.02b	4.00	4.00	300	100	UC	3.70	3.65	CP	5.1	1.58	0.13	A2	C1							1269.45	3.05	236	0.08	65.4%	

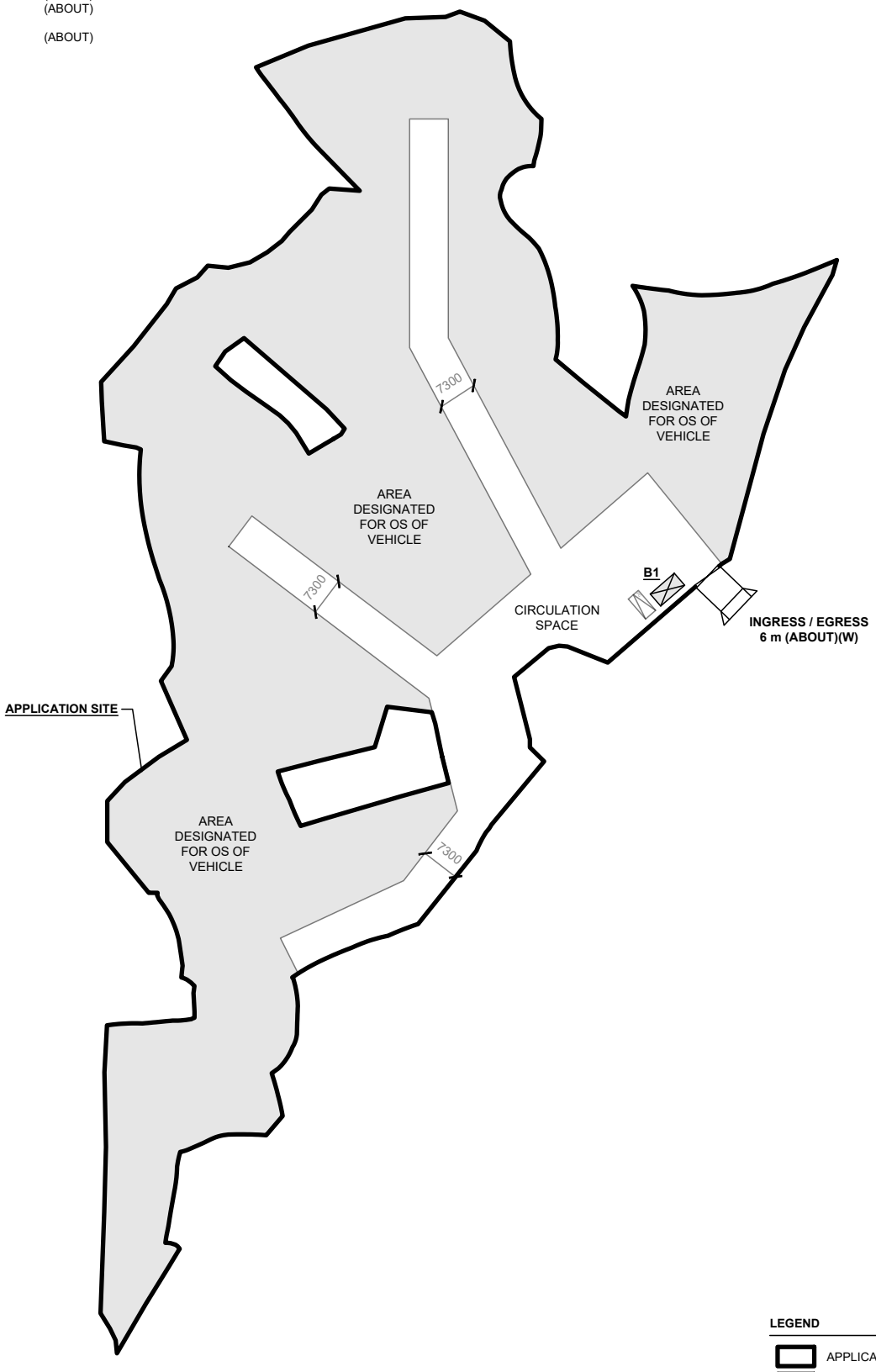
#SP: Start Point

APPENDIX B - PROPOSED SITE LAYOUT PLAN

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 14,250 m^2	(ABOUT)
COVERED AREA	: 18 m^2	(ABOUT)
UNCOVERED AREA	: 14,232 m^2	(ABOUT)
PLOT RATIO	: 0.001	(ABOUT)
SITE COVERAGE	: 0.1 %	(ABOUT)
NO. OF STRUCTURE	: 1	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 18 m^2	(ABOUT)
TOTAL GFA	: 18 m^2	(ABOUT)
BUILDING HEIGHT	: 3 m	(ABOUT)
NO. OF STOREY	: 1	

STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	GUARDROOM	18 m^2 (ABOUT)	18 m^2 (ABOUT)	3 m (ABOUT)(1-STOREY)
	TOTAL	**18 m^2 (ABOUT)**	**18 m^2 (ABOUT)**	



LEGEND

- APPLICATION SITE
- STRUCTURE
- OPEN STORAGE AREA
- PARKING SPACE (PC)
- INGRESS / EGRESS

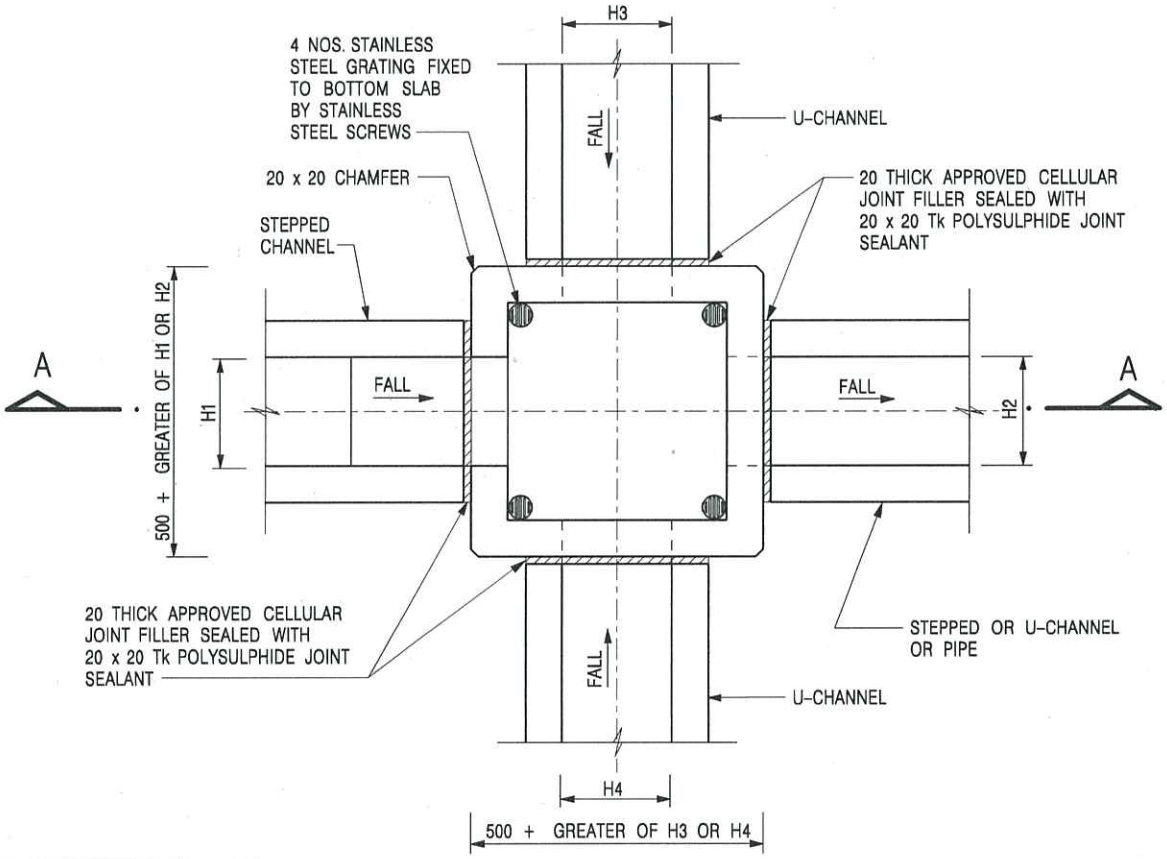
PARKING PROVISIONS

NO. OF PRIVATE CAR PARKING SPACE	: 1
DIMENSION OF PARKING SPACE	: 5 m (L) x 2.5 m (W)

PLANNING CONSULTANT: R-Riches Property Consultants Ltd.	PROJECT: PROPOSED TEMPORARY OPEN STORAGE OF VEHICLE WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS AND ASSOCIATED FILLING OF LAND	ADDRESS: VARIOUS LOTS IN D.D. 115 AND 116 AND ADJOINING GOVERNMENT LAND, AU TAU, YUEN LONG, NEW TERRITORIES	SCALE: 1 : 1500 @ A4 DRAWN BY: MN DATE: 7.6.2024 REVISED BY: DATE:	TITLE: LAYOUT PLAN DWG NO.: PLAN 10 VER.: 001

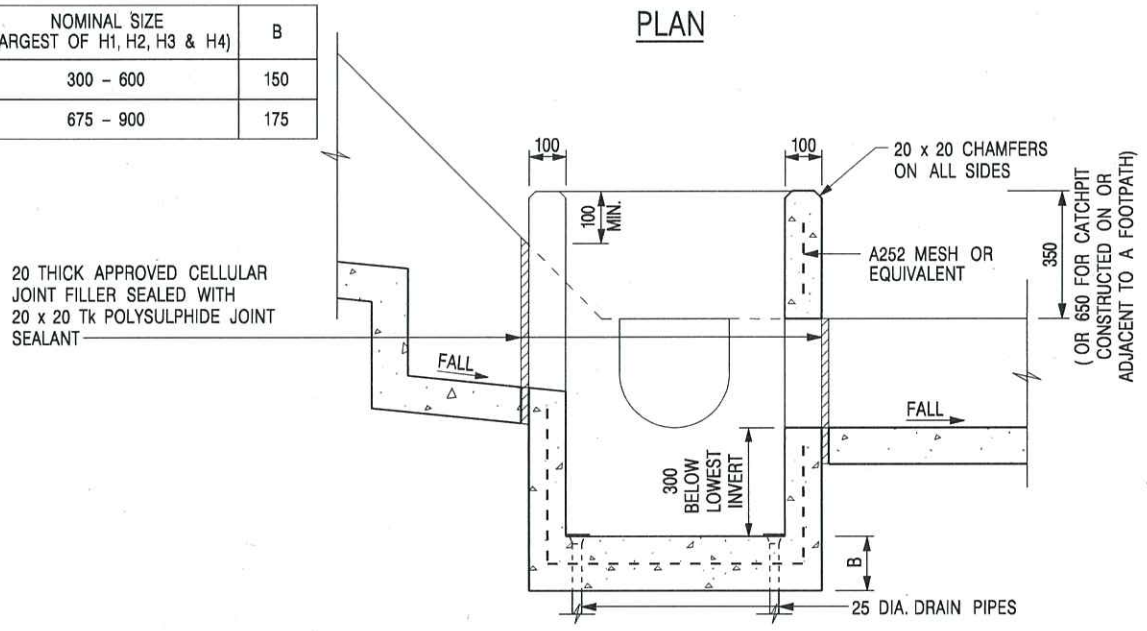
NORTH
W E
S

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)

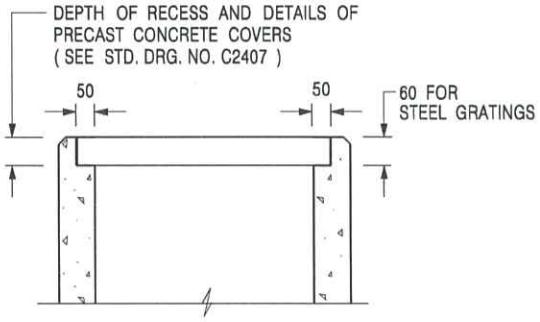
CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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

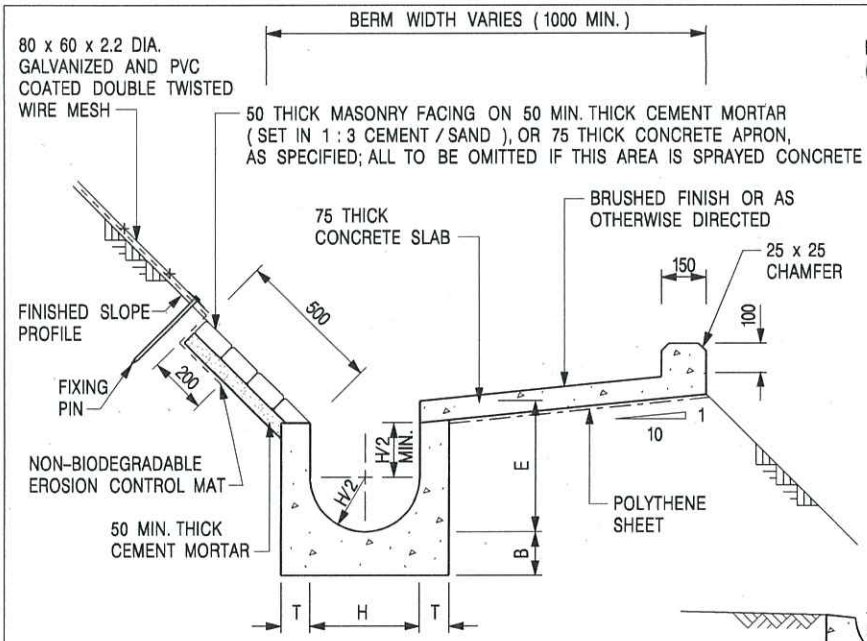
CATCHPIT WITH TRAP (SHEET 2 OF 2)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

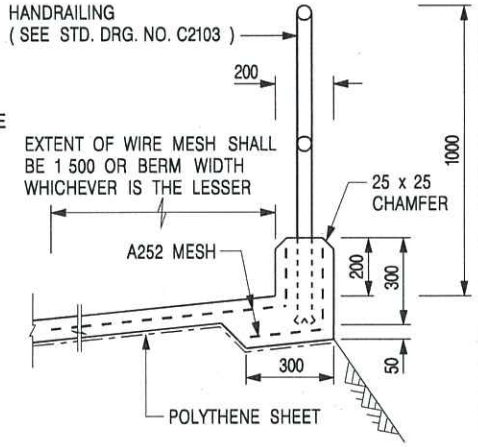
SCALE 1 : 20

DATE JAN 1991

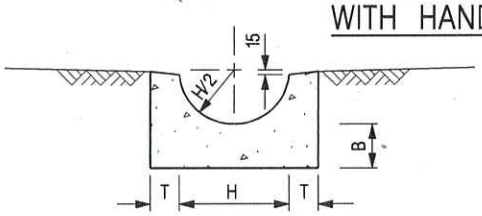
DRAWING NO. C2406 /2A



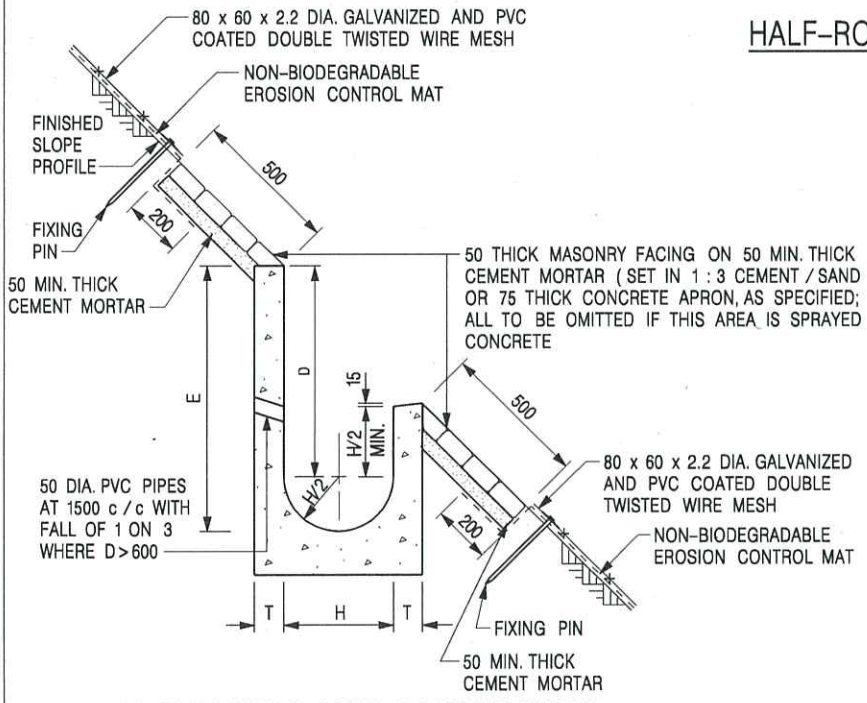
U-CHANNELS CONSTRUCTED ON BERM



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**

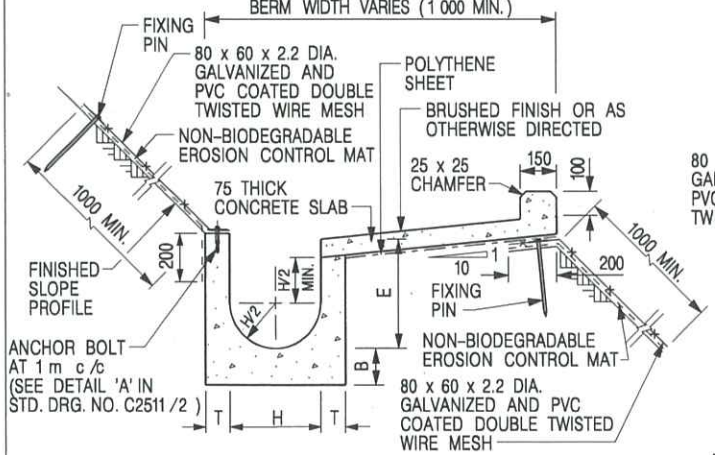
SCALE 1 : 25

DATE JAN 1991

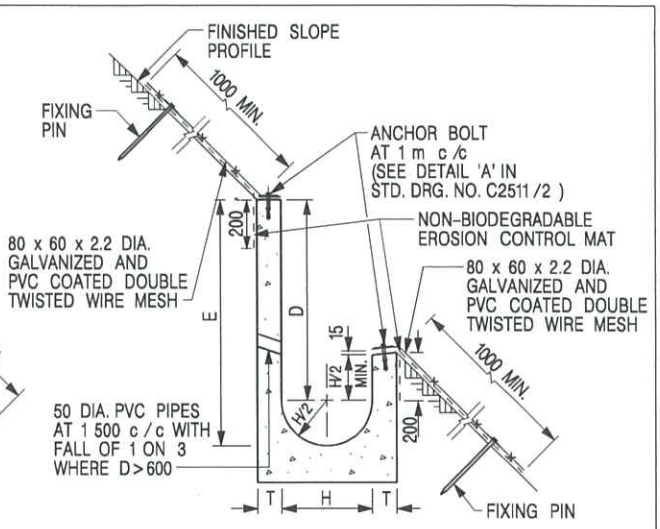
DRAWING NO. C2409I

卓越工程 建設香港

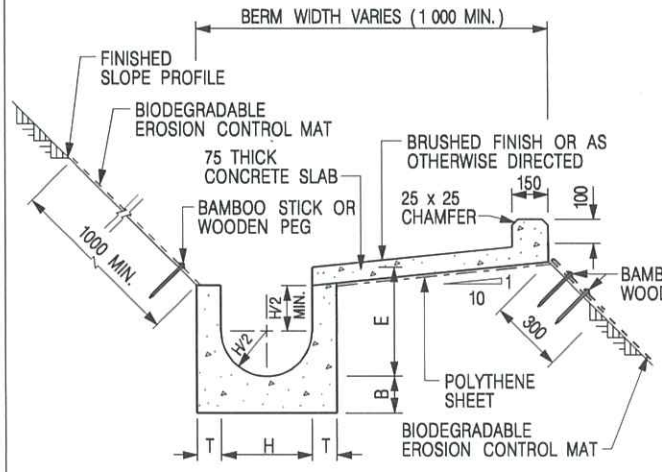
We Engineer Hong Kong's Development



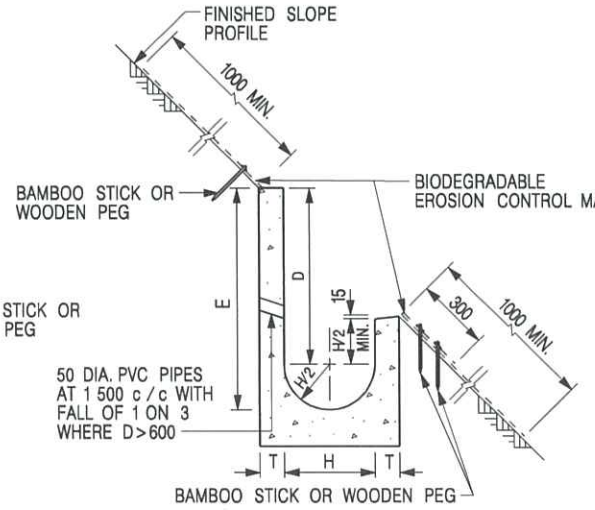
U-CHANNELS CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



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

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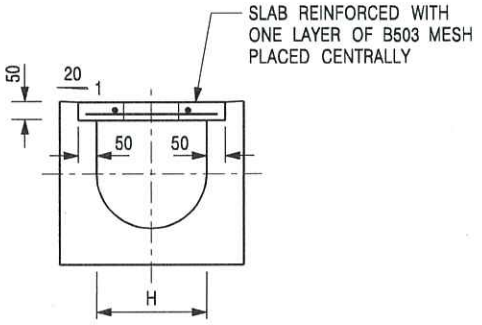
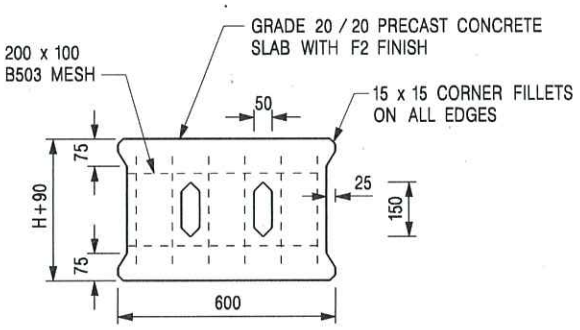


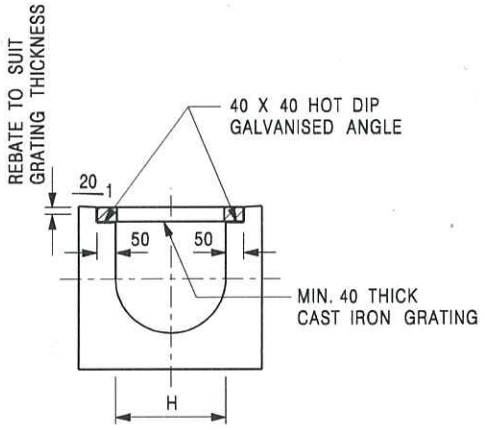
TYPICAL SECTION



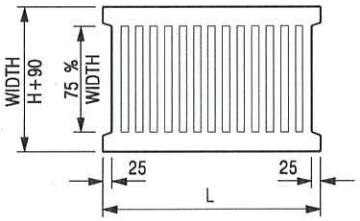
PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



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

CAST IRON GRATING

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

U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

NOTES:

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

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

COVER SLAB AND CAST IRON GRATING FOR CHANNELS

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2412E


PHOTO 1


PHOTO 4

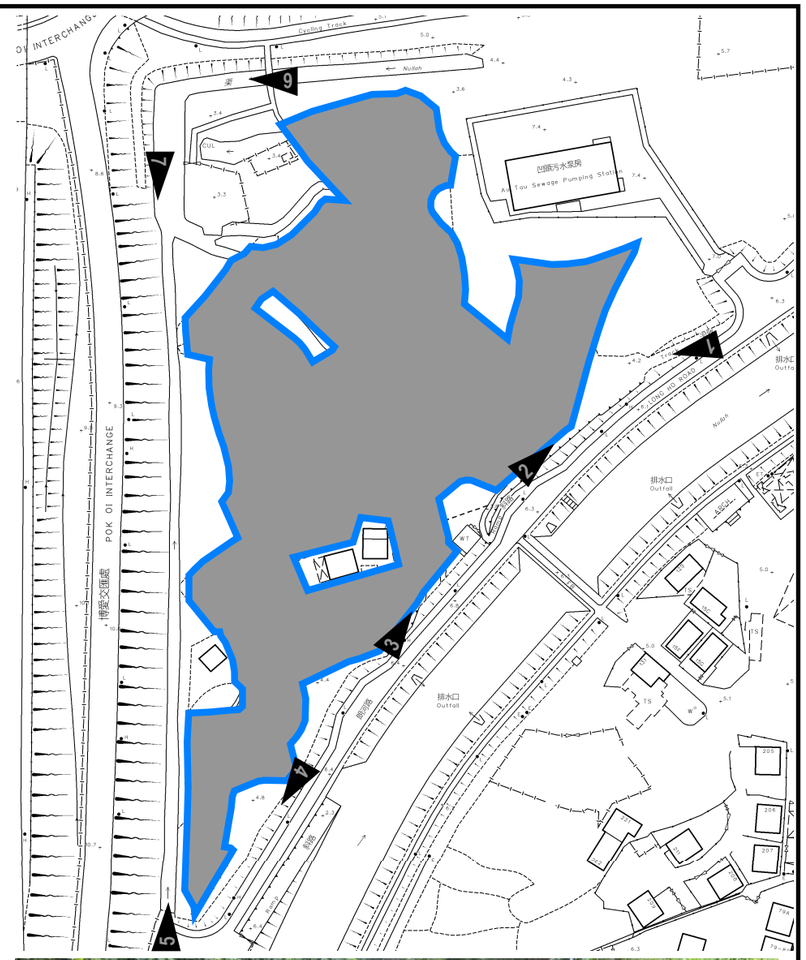



PHOTO 2


PHOTO 5


PHOTO 3


PHOTO 6


PHOTO 7

PROJECT: Proposed Temporary Open Storage of Vehicle with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land in “Agriculture” Zone	SITE PHOTOS	APPENDIX D
LOCATION: Various Lots in D.D. 115 and 116 and Adjoining Government Land, Au Tau, Yuen Long, New Territories	MARVELLOUS CONSTRUCTION & DESIGN COMPANY LIMITED	VER / DESCRIPTION / DATE

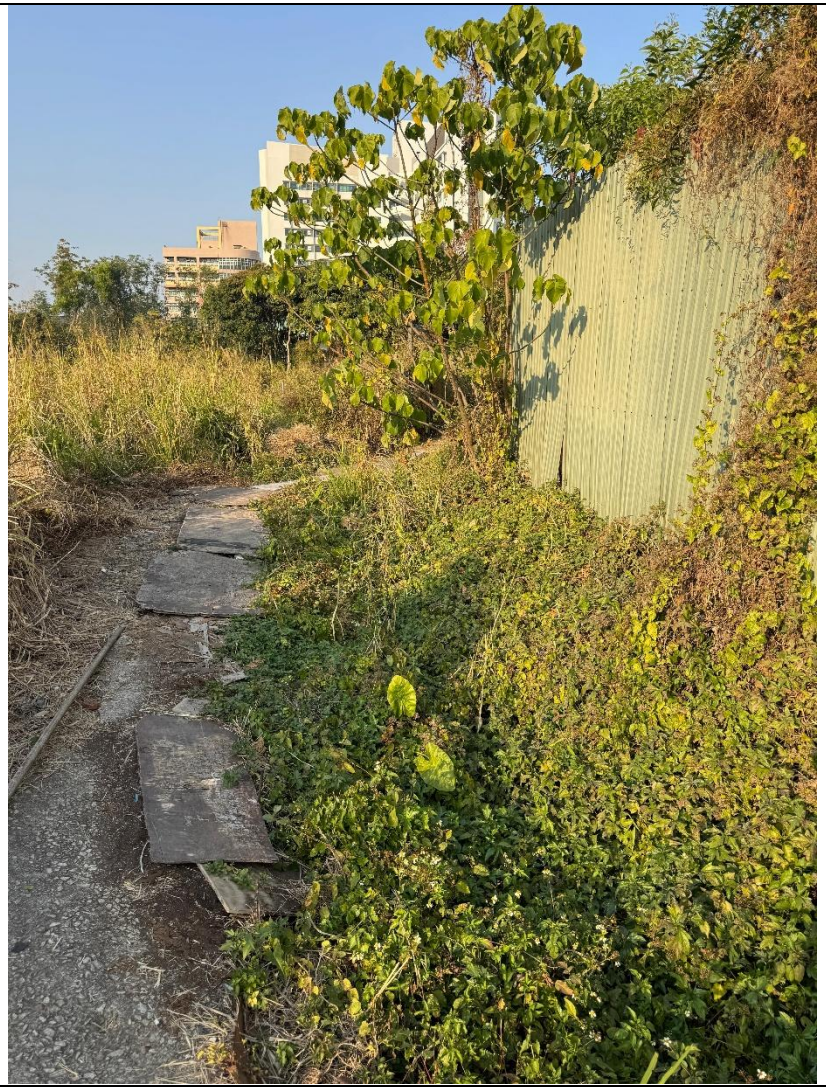
Annex 2

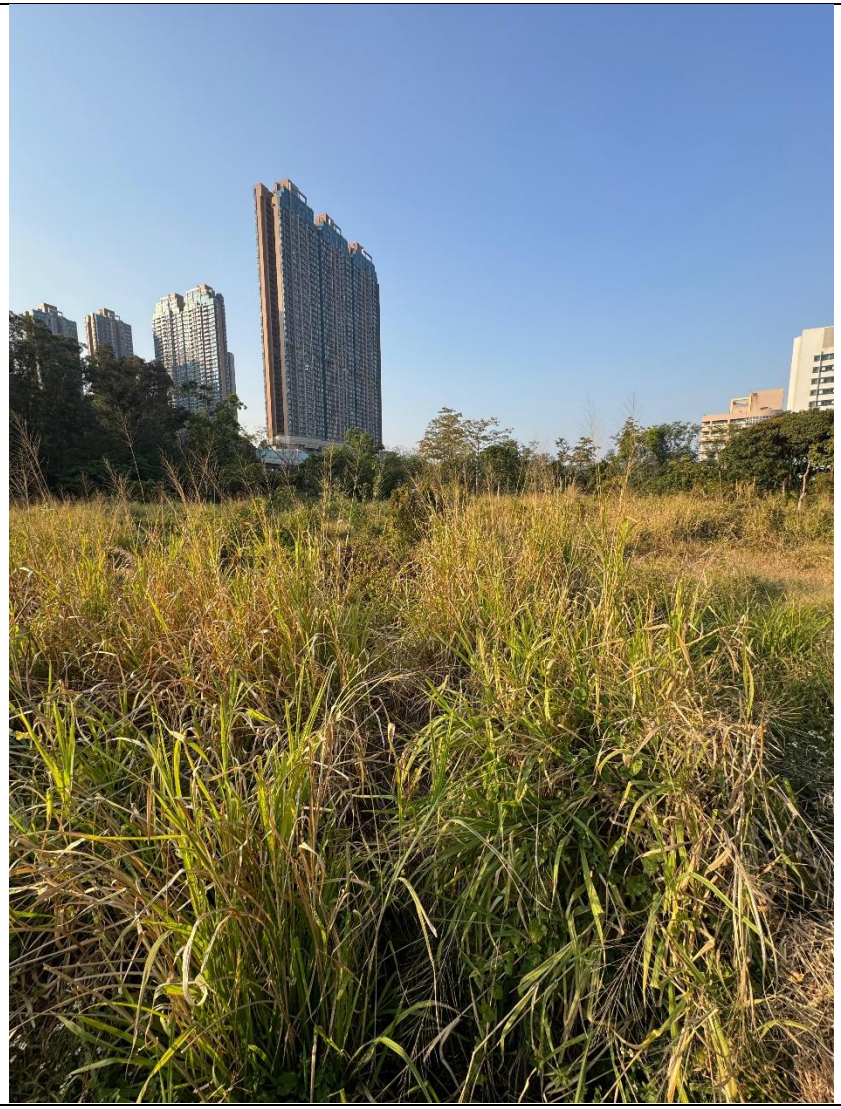
Aerial photos and site photos taken on 19.01.2026

Annex 2 – Site Photos and Aerial Photo

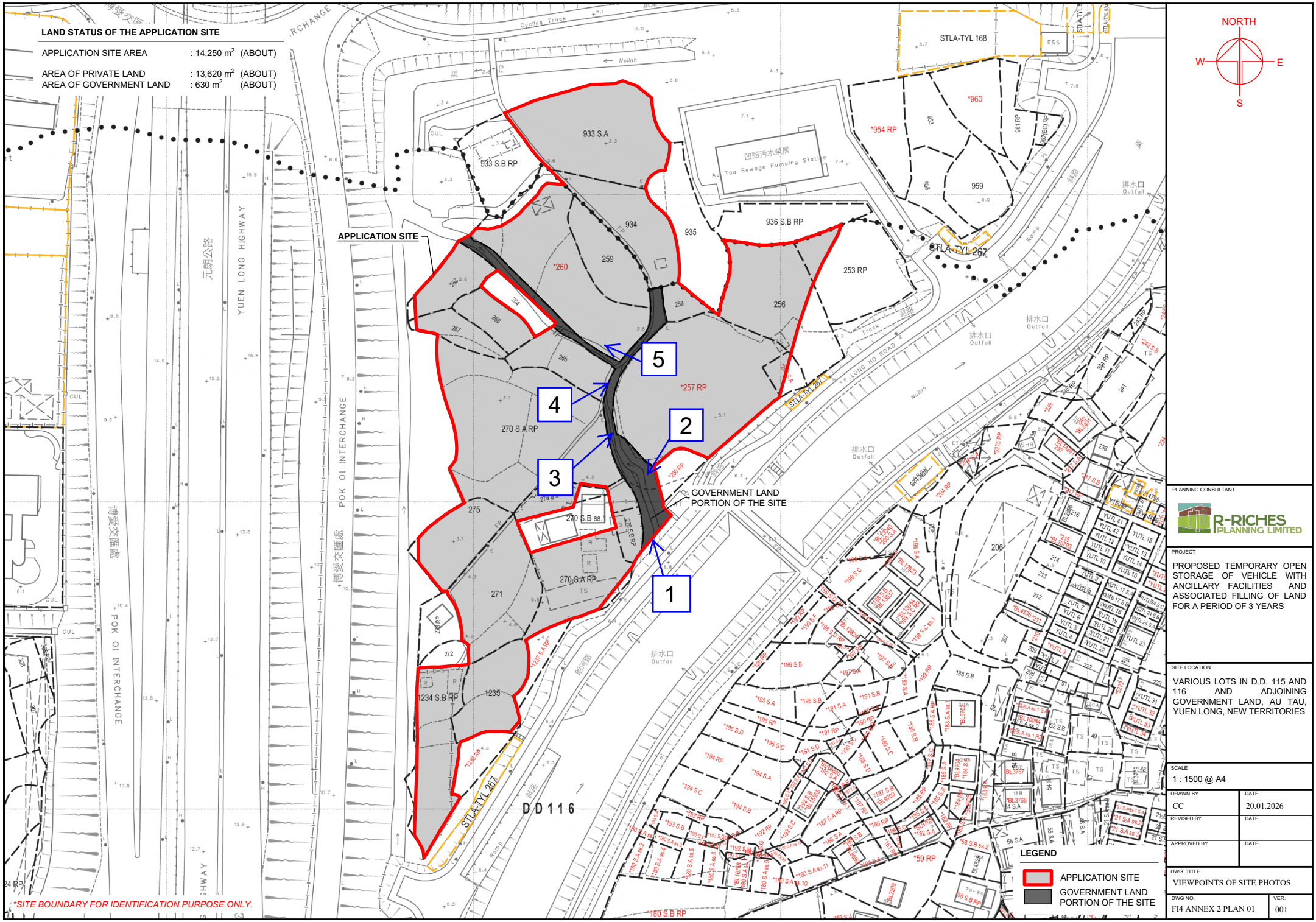
Aerial Photo

	
Viewpoint 1	**Viewpoint 2**

	
Viewpoint 3	**Viewpoint 4**



Viewpoint 5


LAND STATUS OF THE APPLICATION SITE
APPLICATION SITE AREA : 14,250 m² (ABOUT)
AREA OF PRIVATE LAND : 13,620 m² (ABOUT)
AREA OF GOVERNMENT LAND : 630 m² (ABOUT)
APPLICATION SITE
GOVERNMENT LAND PORTION OF THE SITE
YUEN LONG HIGHWAY
POK OI INTERCHANGE
STLA-TYL 267
STLA-TYL 168
933 S.A
933 S.B RP
934
935
936 S.B RP
*960
*954 RP
959
*260
259
253 RP
256
*257 RP
270 S.A RP
270 S.B ss.
270 S.B RP
271
275
272
1234 S.B RP
1235
DD 116
1
2
3
4
5
NORTH
W
E
S
PLANNING CONSULTANT
R-RICHES PLANNING LIMITED
PROJECT
PROPOSED TEMPORARY OPEN STORAGE OF VEHICLE WITH ANCILLARY FACILITIES AND ASSOCIATED FILLING OF LAND FOR A PERIOD OF 3 YEARS
SITE LOCATION
VARIOUS LOTS IN D.D. 115 AND 116 AND ADJOINING GOVERNMENT LAND, AU TAU, YUEN LONG, NEW TERRITORIES
SCALE
1 : 1500 @ A4
DRAWN BY
CC
DATE
20.01.2026
REVISED BY
DATE
APPROVED BY
DATE
DWG. TITLE
VIEWPOINTS OF SITE PHOTOS
DWG NO.
FI4 ANNEX 2 PLAN 01
VER.
001
LEGEND
APPLICATION SITE
GOVERNMENT LAND PORTION OF THE SITE
*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.