Appendix VII

Drainage Proposal

PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS, LOTS 2063 AND 2064 IN D.D. 106 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES (FORMER SHEK WU SCHOOL)

Drainage Appraisal

September 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) to use the Former Shek Wu School (Government Land (GL) in D.D. 106, Kam Tin, Yuen Long, New Territories) (the Site) for 'Proposed Temporary Social Welfare Facility with Ancillary Facilities for a Period of 5 Years' (Proposed Development).

1.1.2 This Drainage Proposal is to support the planning application for the proposed use.

1.2 The Site

1.2.1 The Application Site was former Shek Wu School located beside Kam Sheung Road. It has an area of about 1,940 m^2. The site is currently occupied by old school buildings with some greenery. The site location plan is shown in **Figure 1**.

1.2.2 The existing ground level of the site is approx. +12 mPD and it is intended to keep it unchanged. The site and the surrounding area are generally flat.

1.2.3 There is an existing approx. 1.2m width channel beside Kam Sheung Road. Existing Drainage Plan and Site Photo of existing channel 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 1,940 m^2. The indicative development schedule is summarized in **Table 1** below for technical assessment purpose. Catchment Plan is shown in Figure 4.

Proposed Development	
Total Site Area (m^2)	1,940
Paved Area (m^2) Assume all proposed site area as paved area for assessment purpose	1,940

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 village drainage system intended to collect runoff from the internal site and discharge to existing approx. 1m width channel at the south of the site. 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 Headquarters Rainfall Zone. Therefore, for 10 years return period, the following values are adopted.

a	=	485
b	=	3.11
c	=	0.397

(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:

- Paved Area: C = 0.95
- 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

4.1.1 Proposed drainage system are designed for collection of runoff from the application site and to discharge to existing approx. 1.2m width channel beside Kam Sheung Road. The alignment, size and gradient of the proposed drains are shown in **Figure 3**. The catchment plan is shown in **Figure 4**.

4.1.2 The design calculations of proposed drains and checking of existing 1.2m channel are shown in **Appendix A**.

4.1.3 The reference standard drawings of drains are shown in **Appendix C**.

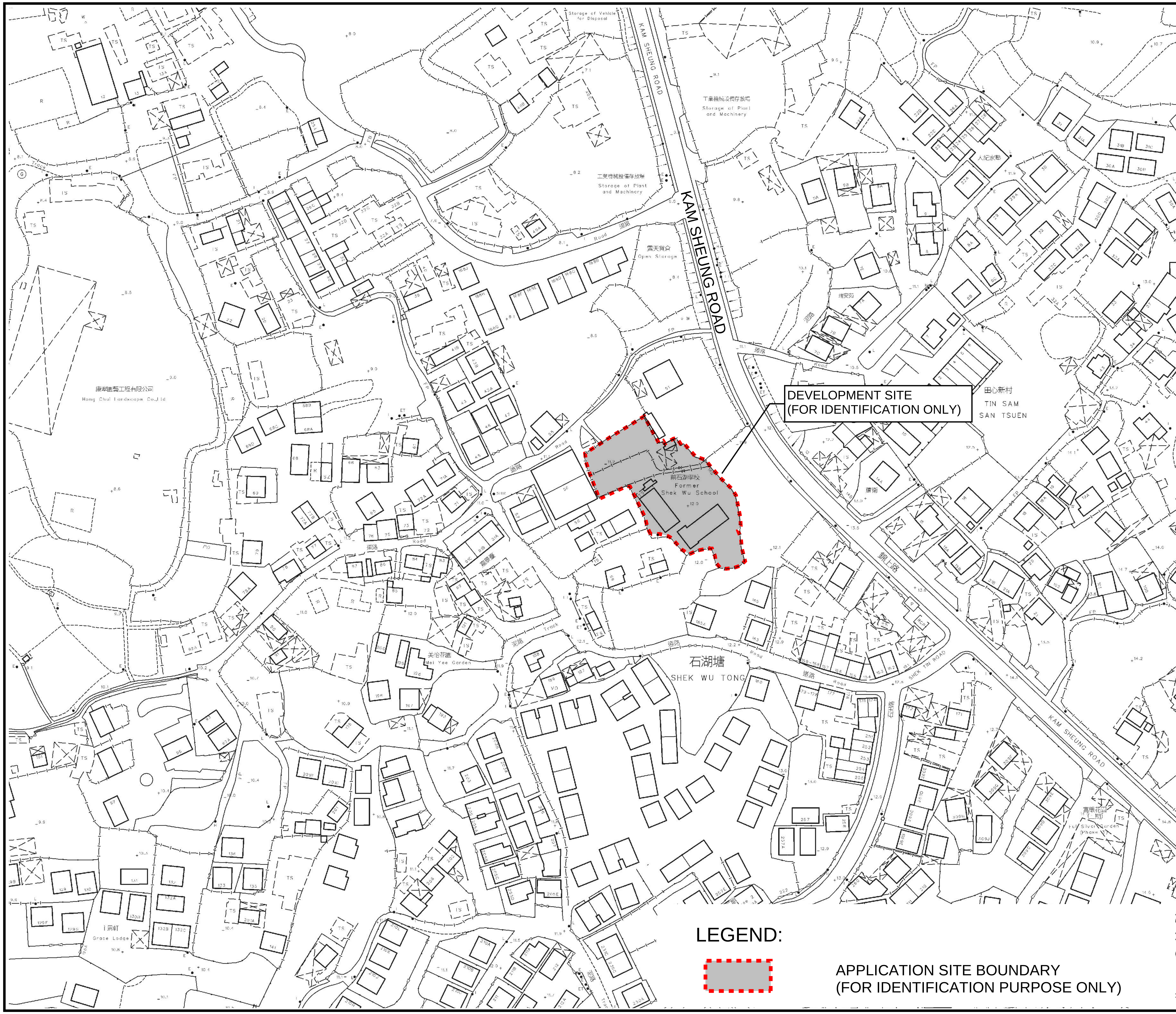
5. Conclusion

5.1.1 A drainage appraisal has been conducted for the Proposed Development. The surface runoff from the Application Site will be collected by the proposed drains and discharged to the existing channel beside Kam Sheung Road.

5.1.2 With the proposed drainage system, it is anticipated that there will be no significant drainage impact to the area after the implementation of the development.

- End of Text -

FIGURES

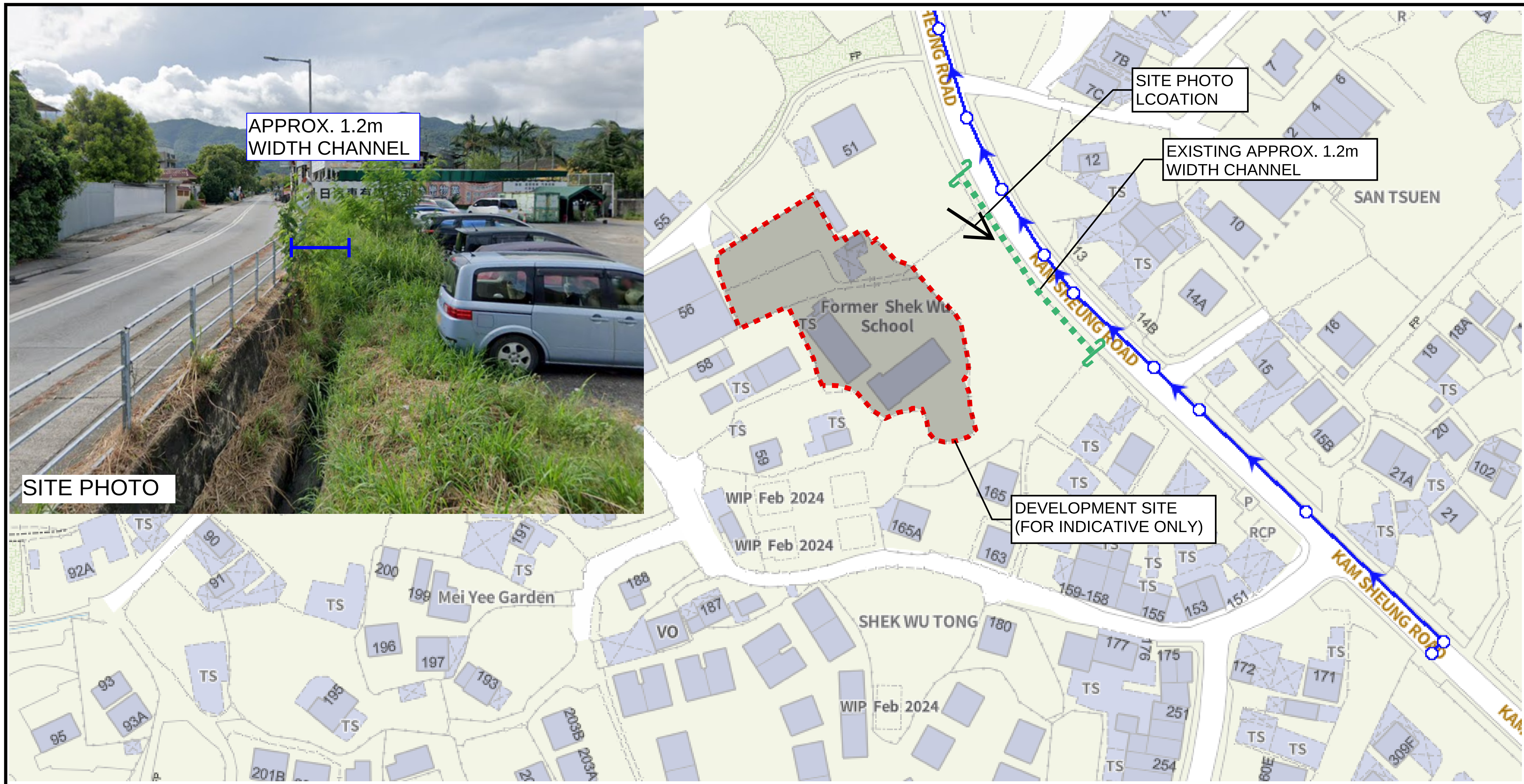


PROJECT:
PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS, LOTS 2063 AND 2064 IN D.D. 106 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES (FORMER SHEK WU SCHOOL)

REV	DESCRIPTION	DATE

DRAWING TITLE
SITE LOCATION PLAN

DRAWING NUMBER
FIGURE 1



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 CHANNEL
Pipe (Sewer)	Sand Trap	

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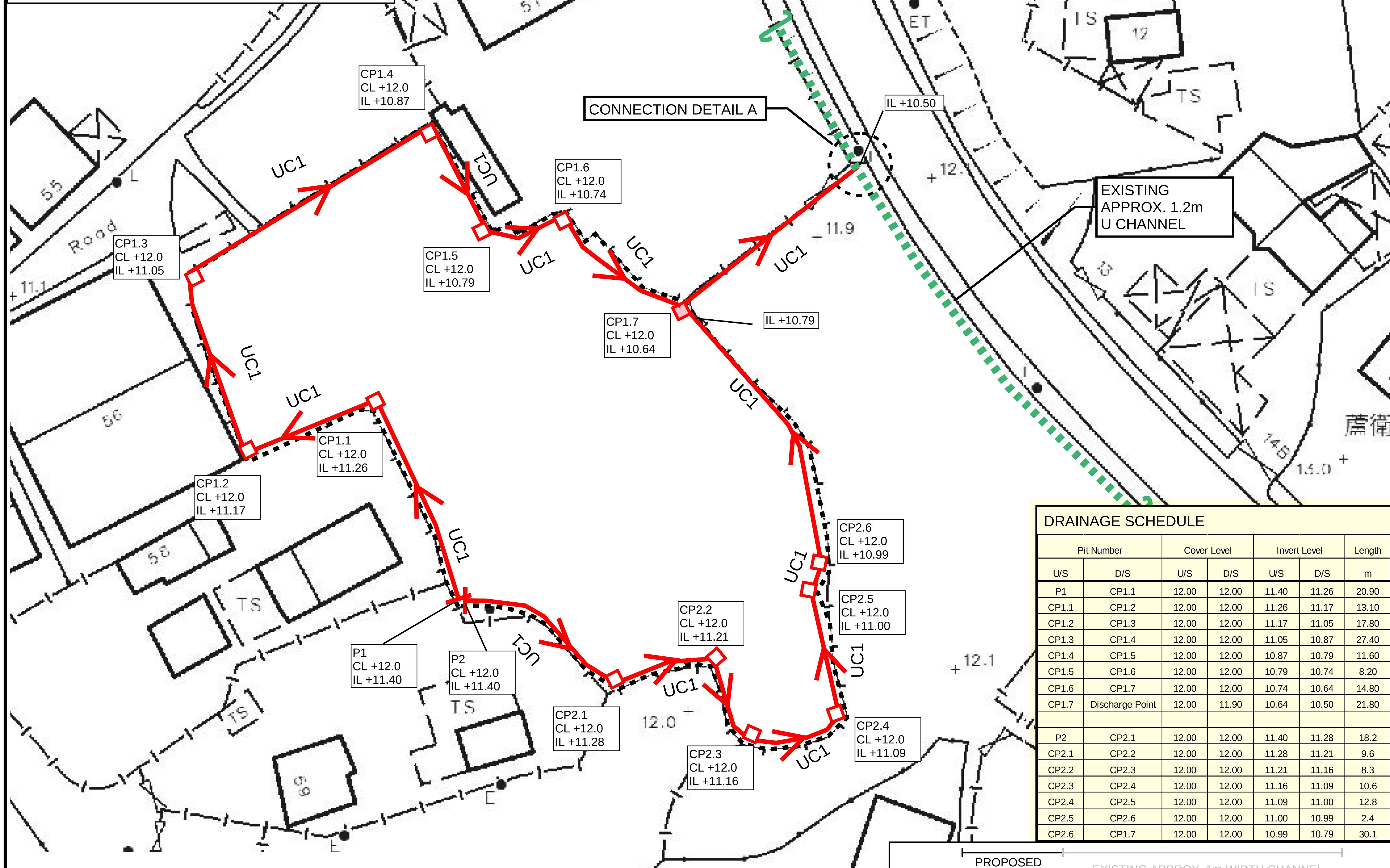
REV	DESCRIPTION	DATE

DRAWING TITLE
EXISTING DRAINAGE PLAN

DRAWING NUMBER
FIGURE 2

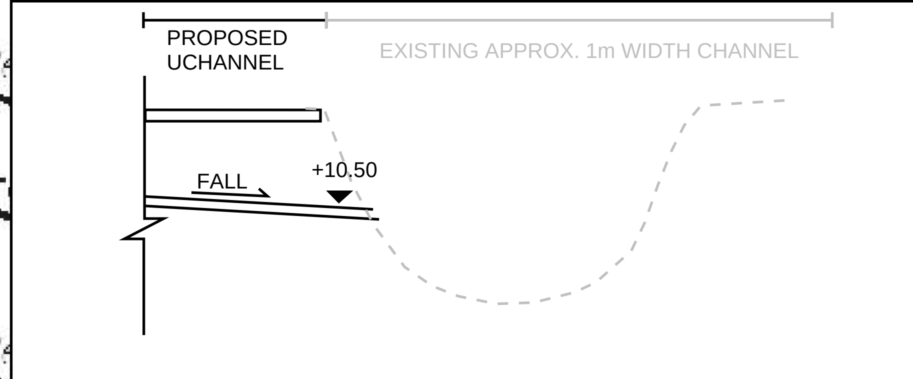
NOTE:
1. CONNECTION LEVEL SHALL BE VERFIED ON SITE BEFORE CONNECTION.
2. GROUND LEVELS ARE APPROX. ONLY.

UCHANNEL TYPE
UCHANNEL 1 (UC1) - 525 mm, MIN. 1 IN 150



DRAINAGE SCHEDULE

Pit Number		Cover Level		Invert Level		Length
U/S	D/S	U/S	D/S	U/S	D/S	m
P1	CP1.1	12.00	12.00	11.40	11.26	20.90
CP1.1	CP1.2	12.00	12.00	11.26	11.17	13.10
CP1.2	CP1.3	12.00	12.00	11.17	11.05	17.80
CP1.3	CP1.4	12.00	12.00	11.05	10.87	27.40
CP1.4	CP1.5	12.00	12.00	10.87	10.79	11.60
CP1.5	CP1.6	12.00	12.00	10.79	10.74	8.20
CP1.6	CP1.7	12.00	12.00	10.74	10.64	14.80
CP1.7	Discharge Point	12.00	11.90	10.64	10.50	21.80
P2	CP2.1	12.00	12.00	11.40	11.28	18.2
CP2.1	CP2.2	12.00	12.00	11.28	11.21	9.6
CP2.2	CP2.3	12.00	12.00	11.21	11.16	8.3
CP2.3	CP2.4	12.00	12.00	11.16	11.09	10.6
CP2.4	CP2.5	12.00	12.00	11.09	11.00	12.8
CP2.5	CP2.6	12.00	12.00	11.00	10.99	2.4
CP2.6	CP1.7	12.00	12.00	10.99	10.79	30.1



CONNECTION DETAIL A

LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

PROPOSED CATCHPIT W/TRAP

PROPOSED CATCHPIT WO/TRAP

PROPOSED UCHANNEL

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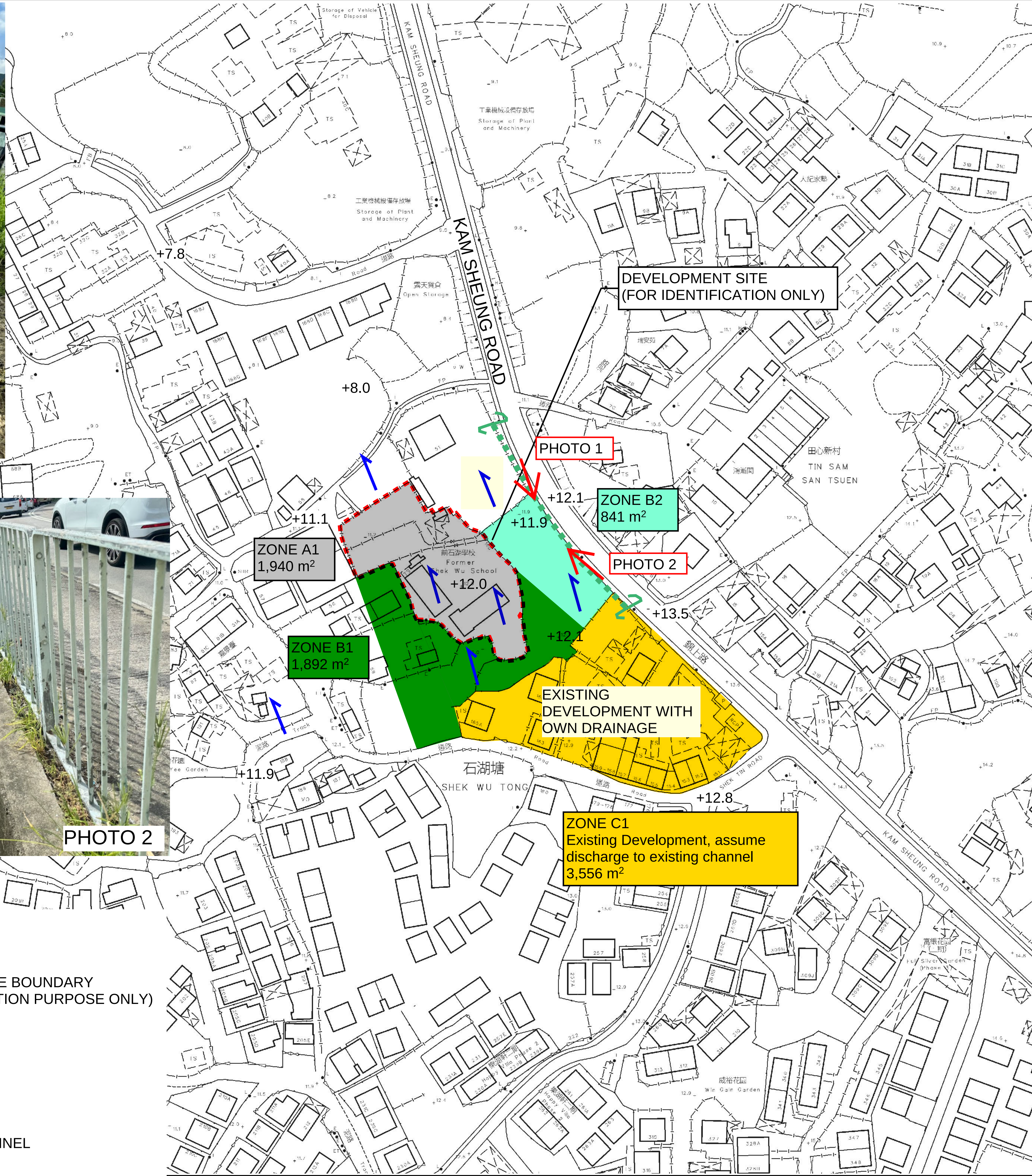
REV	DESCRIPTION	DATE

DRAWING TITLE
PROPOSED DRAINAGE SYSTEM

DRAWING NUMBER
FIGURE 3B



LEGEND:

APPLICATION SITE BOUNDARY
(FOR IDENTIFICATION PURPOSE ONLY)

+11.1 EXISTING LEVELS

FALL

EXISTING U CHANNEL

PROJECT:
PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS, LOTS 2063 AND 2064 IN D.D. 106 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES (FORMER SHEK WU SCHOOL)

REV	DESCRIPTION	DATE

DRAWING TITLE
CATCHMENT PLAN

DRAWING NUMBER
FIGURE 4B

Appendix

Appendix A - Design Calculation

U Channel 1 (ZONE A1 + B1 + B2)

Runoff Estimation

Design Return Period		1 in	10	years
Paved Area	1940 + 1892 + 841=		4673	(m2)
Unpaved Area			0	(m2)
Total Equivalent Area	2898 x 0.95 + 0 x 0.35 =		4439	(m2)
Rainfall Intensity, I *			240	mm/hr
Design Discharge Rate, Q	0.278 x 4439 x 240 / 1000000 =		0.296	m3/s

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

U Channel

Channel Size			525	(mm)
Gradient		1 in	150	
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 $v = \frac{R^{\frac{1}{6}}}{n} R^{\frac{1}{2}} S_f^{\frac{1}{2}}$			1.64	m/s
Capacity			0.404	m3/s

where n = 0.016 (Concrete Channel in Fair Conditions)

Utilitization 0.296 / 0.404 = **73.24** % OK (less than 90%, for 10% siltation allowance)

Checking for Existing 1.2m Channel (Zone [A1 + B1 + B2] + C1)

Runoff Estimation

Design Return Period		1 in	10	years
Paved Area	4673 + 3556 x 1 =		8229	(m2)
Unpaved Area			0	(m2)
Total Equivalent Area	8229 x 0.95 + 0 x 0.35 =		7818	(m2)
Rainfall Intensity, I *			240	mm/hr
Design Discharge Rate, Q	0.278 x 0 x 240 / 1000000 =		0.521	m3/s

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

U Channel

Channel Size			1200	(mm)
Gradient		1 in	200	
Velocity			2.47	m/s
Capacity			3.169	m3/s

Utilization 0.521 / 3.169 = **16.43** % OK (less than 90%, for 10% siltation allowance)

Time of Concentration for Catchement from B1 to the Site

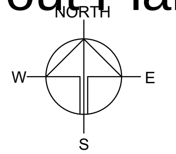
Catchment	Flow Distance	Highest Level	Lowest Level	Gradient (per 100m) = (H1-H2)/L x 100	to (min) = 0.14465L/ ($H^{0.2}A^{0.1}$)	tc = to + tf
A	L			H		
(m2)	(m)	(mPD)	(mPD)		(min)	(min)
1892	32.5	12.1	12	0.308	2.80	2.80

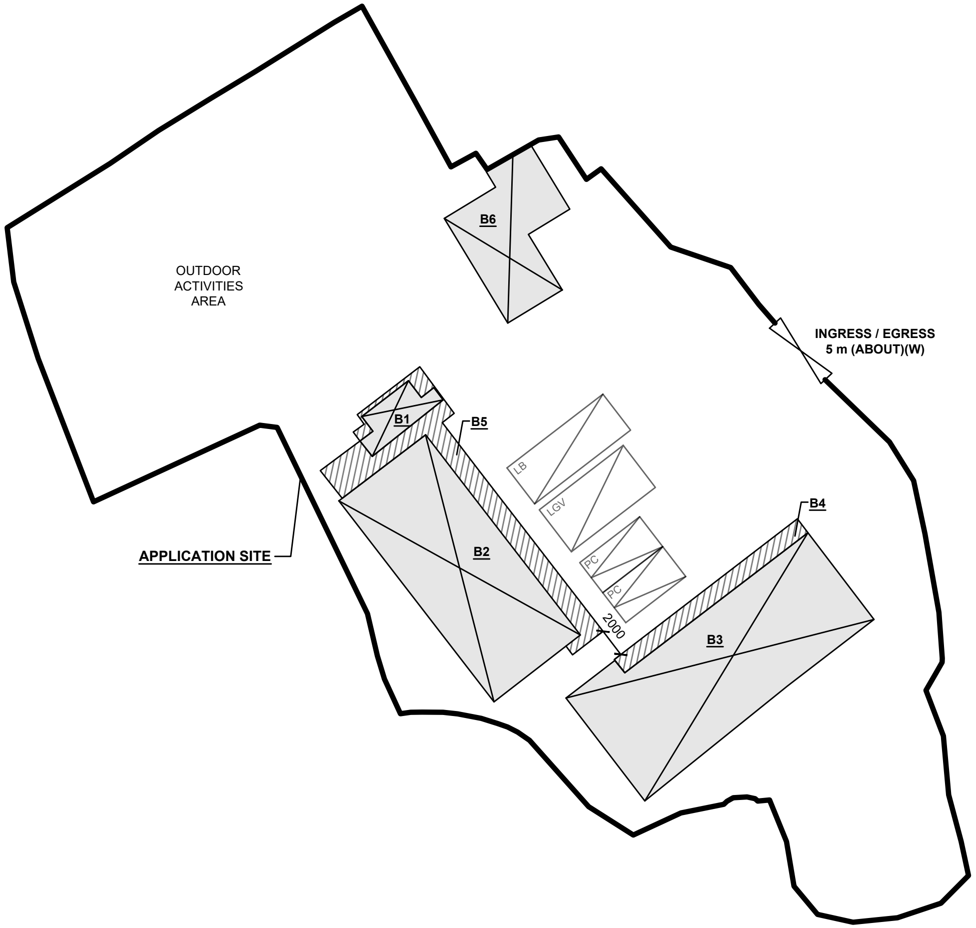
Appendix B - Proposed Development Layout Plan

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 1,940 m^2	(ABOUT)
COVERED AREA	: 389 m^2	(ABOUT)
UNCOVERED AREA	: 1,551 m^2	(ABOUT)
PLOT RATIO	: 0.2	(ABOUT)
SITE COVERAGE	: 20 %	(ABOUT)
NO. OF STRUCTURE	: 6	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 389 m^2	(ABOUT)
TOTAL GFA	: 389 m^2	(ABOUT)
BUILDING HEIGHT	: 3 m - 6 m	(ABOUT)
NO. OF STOREY	: 1	

STRUCTURE	USE STRUCTURE	COVERED AREA	GROSS FLOOR AREA	BUILDING HEIGHT
B1	WASHROOM AND STORE ROOM	12m^2 (ABOUT)	12 m^2 (ABOUT)	3 m (ABOUT)(1-STOREY)
B2	YOUTH ACTIVITY CENTRE	121 m^2 (ABOUT)	121 m^2 (ABOUT)	6 m (ABOUT)(1-STOREY)
B3	ELDERLY ACTIVITY CENTRE, OFFICE	146 m^2 (ABOUT)	146 m^2 (ABOUT)	6 m (ABOUT)(1-STOREY)
B4	COVERED CORRIDOR	17 m^2 (ABOUT)	17 m^2 (ABOUT)	3 m (ABOUT)(1-STOREY)
B5	COVERED CORRIDOR	43 m^2 (ABOUT)	43 m^2 (ABOUT)	3 m (ABOUT)(1-STOREY)
B6	WASHROOM AND REFRESHMENT KIOSK	50 m^2 (ABOUT)	50 m^2 (ABOUT)	3 m (ABOUT)(1-STOREY)
	TOTAL	**389 m^2 (ABOUT)**	**389 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 LIGHT GOODS VEHICLE	: 1
DIMENSION OF L/UL SPACE	: 7 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR LIGHT BUS	: 1
DIMENSION OF L/UL SPACE	: 8 m (L) x 3 m (W)

LEGEND

- APPLICATION SITE
- STRUCTURE (ENCLOSED)
- STRUCTURE (NOT ENCLOSED)
- PARKING SPACE (PC)
- LOADING / UNLOADING SPACE (LGV)
- LOADING / UNLOADING SPACE (LB)
- INGRESS / EGRESS

PLANNING CONSULTANT

R-Riches Property Consultants Ltd.

PROJECT

PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS

SITE LOCATION

LOTS 2063 AND 2064 IN D.D. 106 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES

(FORMER SHEK WU SCHOOL)

SCALE

1 : 500 @ A4

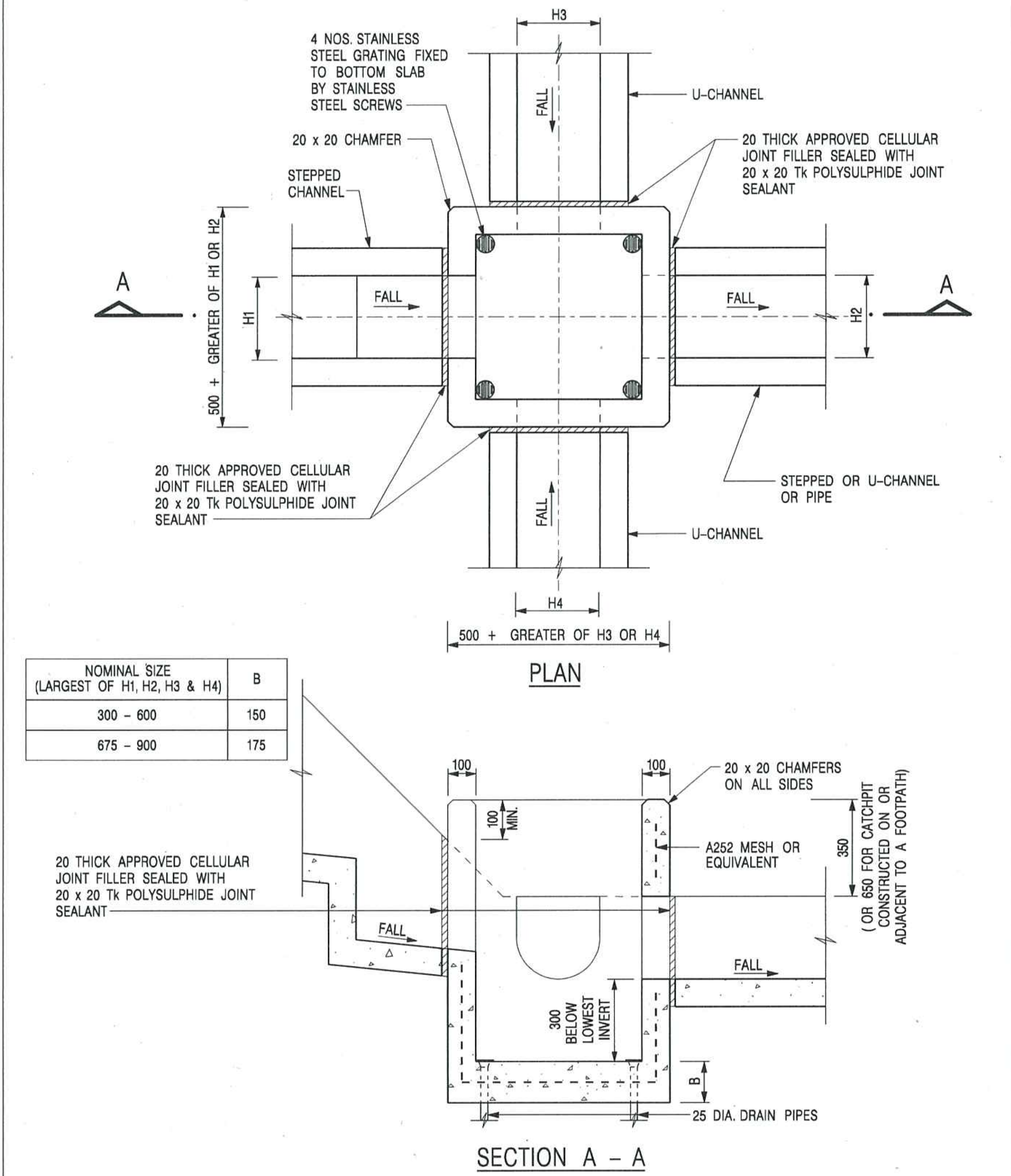
DRAWN BY	DATE
MN	7.10.2024
REVISED BY	DATE
APPROVED BY	DATE

DWG. TITLE

LAYOUT PLAN

DWG NO.	VER.
PLAN 4	002

Appendix C - Reference Drawings



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.

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

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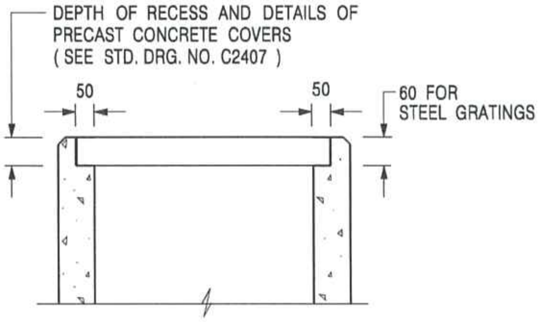

ALTERNATIVE TOP SECTION
FOR PRECAST CONCRETE COVERS / GRATINGS

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)

CEDD

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20	**DRAWING NO.**
DATE JAN 1991	C2406 /2A

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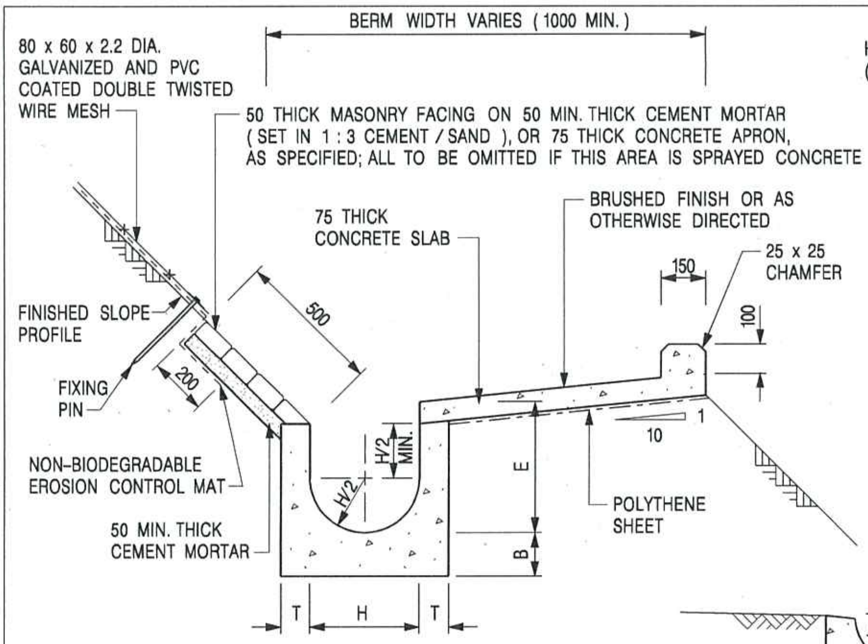
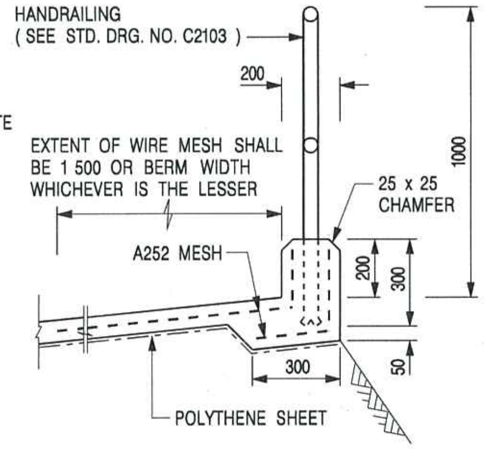
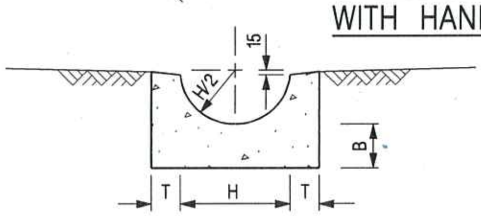


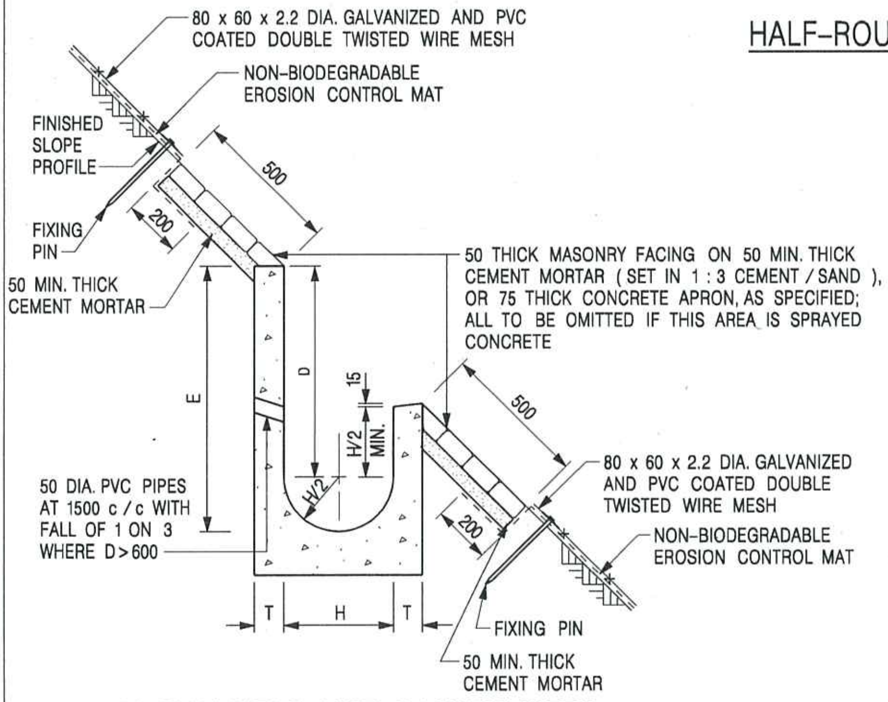
U-CHANNELS CONSTRUCTED ON BERM



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

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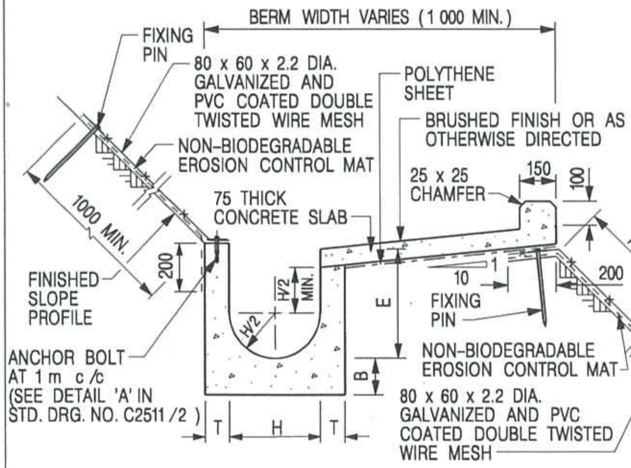
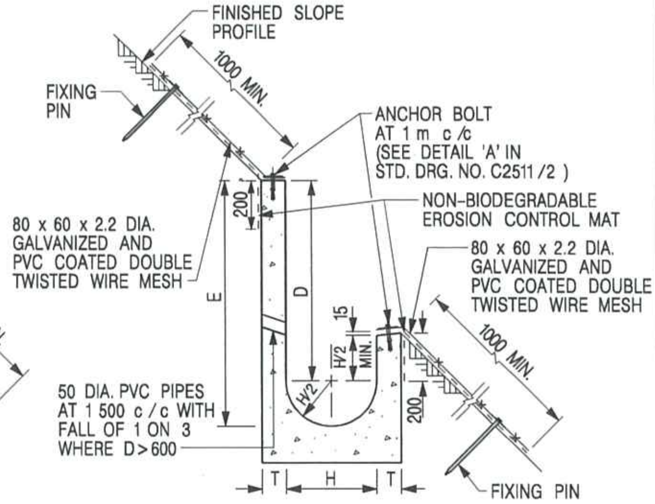
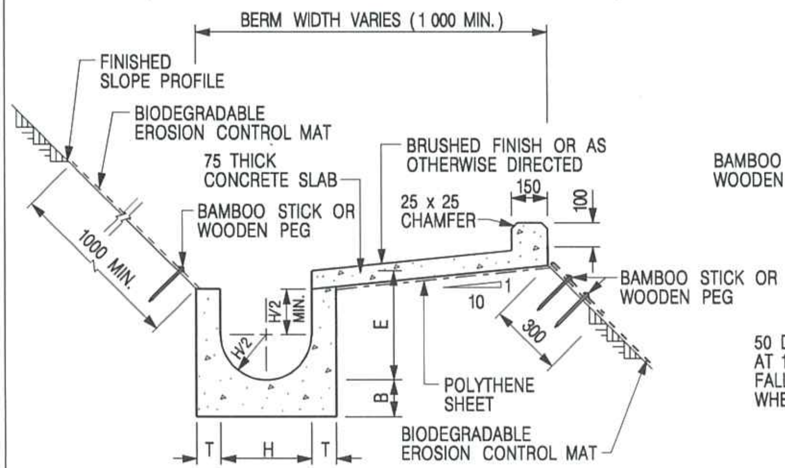


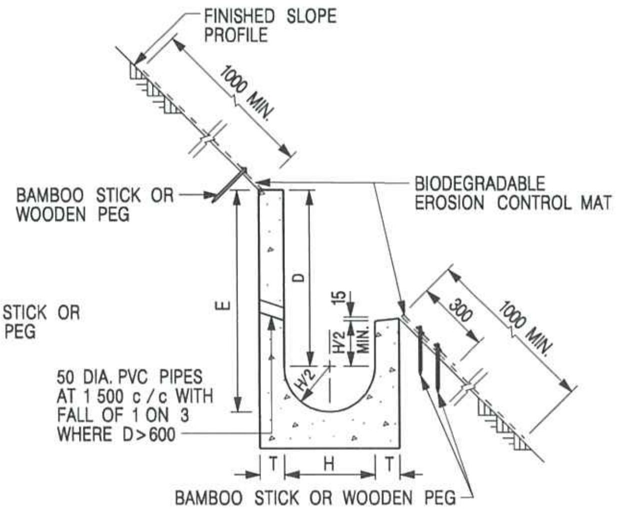
U-CHANNELS CONSTRUCTED ON BERM WITH NON-BIODEGRADABLE EROSION CONTROL MAT



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

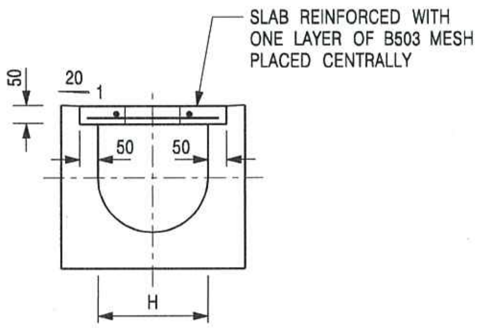
SCALE DIAGRAMMATIC

DATE JAN 1991

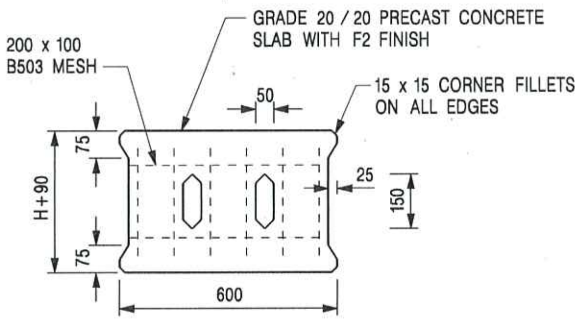
DRAWING NO. C2410I

卓越工程 建設香港

We Engineer Hong Kong's Development



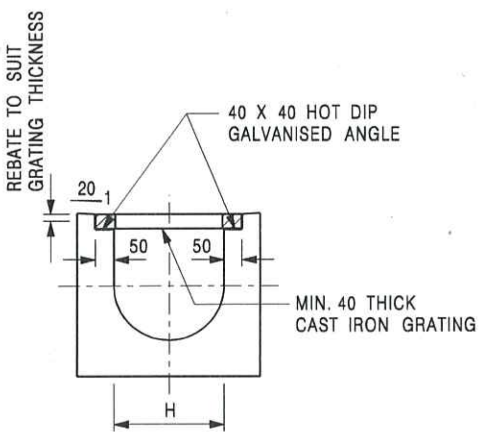
TYPICAL SECTION



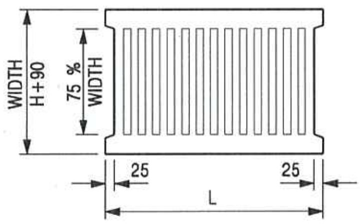
PLAN OF SLAB

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

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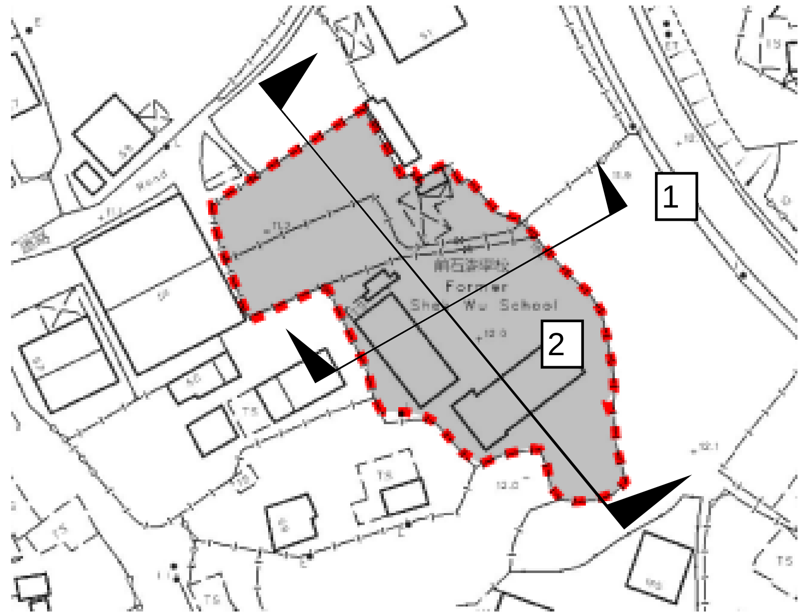
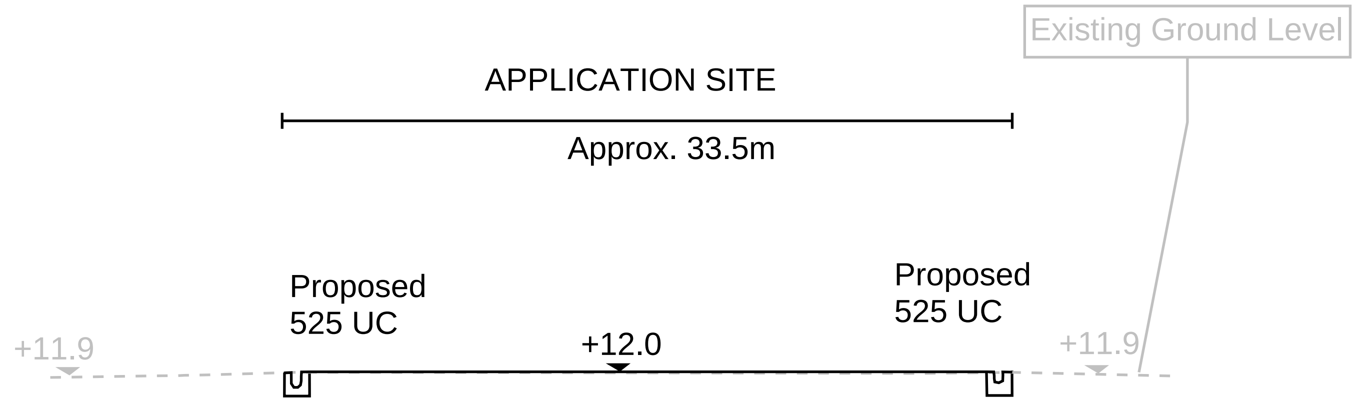
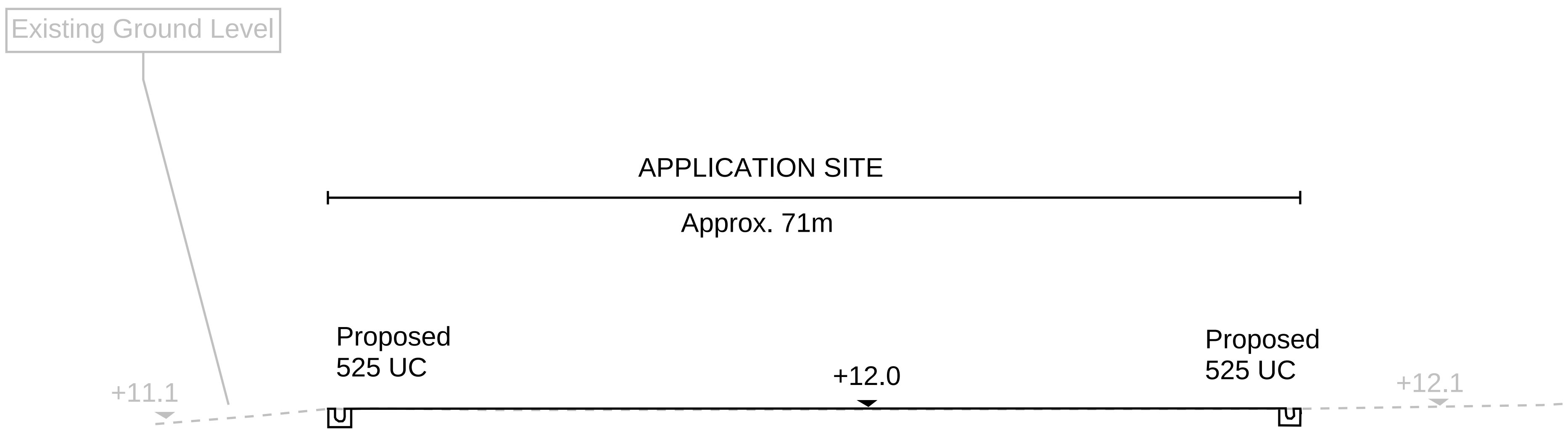


PLAN

PROJECT:
PROPOSED TEMPORARY PLACE OF RECREATION, SPORTS OR CULTURE WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS, LOTS 2063 AND 2064 IN D.D. 106 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES (FORMER SHEK WU SCHOOL)



SECTION 1
NTS



SECTION 2
NTS

SECTIONS

Appendix D