寄件者: Chong Hermose [redacted]
寄件日期: 2026年09月30日星期三 14:36
收件者: tpbpd/PLAND

主旨: A/YL-KTN/1281 - Revised Drainage Proposal
附件: TEMPORARY DRAINAGE PROPOSAL_Sep2026_fullset.pdf

城規會/規劃處：

大家好。

有關規劃許可：A/YL-KTN/1281 的申請，現附上Revised的 Drainage proposal，請查收。
謝謝。

Ms Chong
[redacted]

TEMPORARY DRAINAGE PROPOSAL





TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES

KTN/1281

SEPTEMBER 2026

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1. Introduction

This report presents the temporary drainage proposal for proposed temporary place of recreation, sport or culture (padel tennis) with ancillary eating place and shop and services for a period of 3 years at Lot 1560 (Part) in D.D.107 and adjoining government land, Kam Tin, Yuen Long, New Territories. The site location is shown in **Appendix A**.

1.1. Objectives of the Report

This report shall be prepared to include the following:

- Identify the potential drainage impact assessment from the proposed Application Site
- Recommend and implement all necessary measures to mitigate adverse drainage impacts arising from the application site

1.2. Report Structure

The report contains the following sections:

- Section 1 on Introduction;
- Section 2 on Development Proposal;
- Section 3 on Assessment Methodology;
- Section 4 on Potential Drainage Impact; and /
- Section 5 on Conclusion

1.3. References

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

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

2. Development Proposal

2.1. Existing Site Conditions

The application site is located in Kam Tin in Yuen Long, New Territories. The total area is approximately 8200 m^2. The existing ground level is approximately +4.50 to 5.20 mPD. The site layout plan is provided in **Appendix B**.

The applied development is a temporary place of recreation, sport or culture (padel tennis) with ancillary eating place and shop and services for a period of 3 years. The zonings are under "Comprehensive Development Area (1)" and "Comprehensive Development Area". The application site is Lot 1560 (Part) in D.D.107 and adjoining government land, Kam Tin, Yuen Long, New Territories.

The application site is less than 1 ha in size and neither fall within flood prone areas such as lowlying areas and flooding blackspots nor involve pond filling and substantial earth filling, so it is regarded as simple site.

There is an existing public open channel (SCP1013160) with width of 12m on the north side of the application site and the other existing public open channel (SCP1009605) with width of 6.5m on the south side of the application site that proposed be the ultimate discharge point. There are also existing village surface channels with 750mm width and catchpits in vicinity of the application site. The location and picture of the existing village surface channel and open channel are shown **Figure 1** and appended in **Appendix C**.

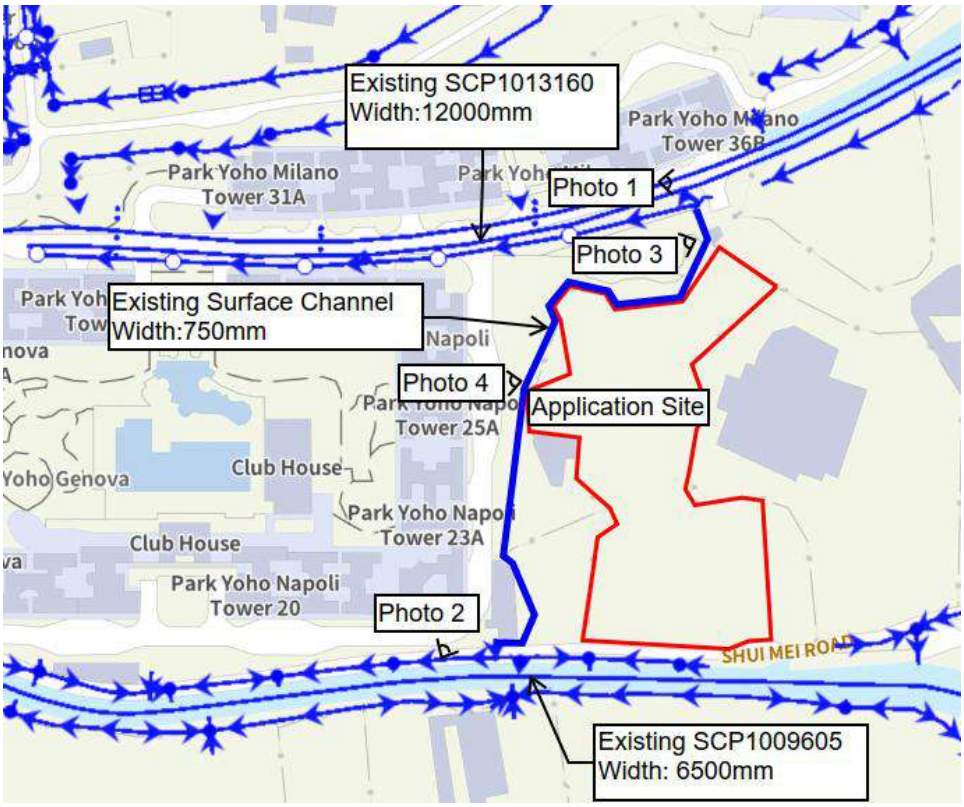


Figure 1. Location Plan of Existing Drainage Facilities

3. Assessment Methodology

3.1. Calculation Methodology for Runoff

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

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

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

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

$$Q_p = 0.278\ Ci\ A$$

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

A runoff coefficient of 0.85 was adopted for paved surfaces with brick paving. In accordance with the *SDM – Corrigendum No. 1/2024,* a 16% increase in rainfall intensity due to projected climate change impacts by the end of the 21st century was incorporated into the analysis. Based on the storm constants recommended in the SDM for the 50-year return period, the corresponding rainfall intensities (i) were calculated as presented in **Appendix E1** and **Appendix E2**.

3.2. Calculation Methodology for Capacity Checking

Based on the runoff results, a drainage layout was developed to intercept and convey stormwater efficiently. Surface U-channels were proposed along the site perimeter and internal flow paths to collect runoff directly from paved and filled areas. These channels guide surface water toward catchpits, which act as collection points and allow debris to settle before water enters underground pipes.

Peripheral surface U-channels are proposed to collect stormwater runoff within the site. Surface U-channels with nominal widths of 450 mm and 525 mm are proposed along the site periphery to convey the collected runoff. The stormwater will be discharged to the 750mm surface U-channel, existing 12 m wide open channel and the existing 6.5 m wide open channel located in the vicinity of the site respectively. Underground drainage pipes were designed to carry collected runoff from the catchpits to a suitable discharge point.

Fair condition of concrete U channel is assumed for the Manning's roughness coefficient i.e coefficient value is 0.015 for calculating capacities of concrete U-channel using Manning's Equation. The recommended roughness values ks for precast concrete is 0.6 mm under poor condition.

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

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

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

Deposition of sediment in stormwater drainage system is considered in the hydraulic calculation as required by the SDM. 10% reduction in flow area is adapted to consider the effects to flow capacity due to materials deposited on the bed.

3.3. Summary of Assessment Assumptions

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

- Runoff coefficient of 0.85 for the paved area is assumed;
- Storm constants for 50 years return periods of HKO Headquarters
- Manning's roughness coefficient of 0.015 for the proposed concrete U-channels and concrete pipe are adopted; and
- Roughness values ks of 0.6 mm for prestressed concrete channels is adopted.

4. Potential Drainage Impact

4.1. Change in Drainage Characteristics

There is no existing drainage provision inside the current site, the stormwater was discharged as surface runoff and infiltration leading to the natural stream or river.
The total application area is approximately 8,200 m^2, they are divided into four catchment areas, namely CA1 (2,300 m²), CA2 (2,700 m²), CA3 (1,200 m²) and CA4 (2,000 m²).

The adjacent sites have no record of flooding. Peripheral surface channels are proposed to collect the surface runoff accrued on the site. For conservative approach, external catchment areas are also considered in the hydraulic calculation, which is shown in **Table 1** and **Appendix E2**. Hoardings are erected with adequate opening to allow existing overland flow passing through the site.

Catchment Area	Application Site (m^2)	Application Site +External Area (m^2)
CA1	2300	2800
CA2	2700	3400
CA3	1200	2900
CA4	2000	2400

Table 1: Catchment Area for Site Only and External Area

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

4.2. Proposed Drainage Works

The runoff from the application site is proposed to be collected by U-channels along the site boundary and discharged to the four terminate catchpits with sand trap and eventually lead to the existing open channels in vicinity of the site. Cover levels and invert levels of both the proposed and existing drainage facilities were shown on the drainage plan. The invert levels of the upstream drainage facilities were higher than those at the downstream to ensure proper flow direction. In addition, the gradients and sizes of the proposed and existing drainage facilities were also indicated on the drainage plan. The detail of the proposed drainage works in drainage plan are illustrated in **Appendix D1**.

Cross sections showing the proposed drainage facilities and the existing and proposed ground levels of the captioned site with respect to the adjacent areas were provided in **Appendix D2.**

Hydraulic calculations were carried out to demonstrate that the proposed drainage facilities were adequate to collect, convey, and discharge the surface runoff generated from the application site. The hydraulic calculations for the proposed U-channel and drainage pipes are presented in **Appendix E1**, the hydraulic calculations with external catchment area are presented in **Appendix E2**.

Moreover, separate hydraulic calculation has been checked for the existing facilities to be discharged to have sufficient capacity to cater for application site, it is appended in **Appendix F**.

The construction details of the proposed drainage facilities and typical details for the U-channels and catchpits in CEDD's standard drawings are provided in **Appendix G** as a reference.

4.3. Design Calculation and Result

Hydraulic calculation demonstrated 450mm width surface U-channels are adequate to collect the surface runoff accrued on CA1 and CA4 while 525mm width are adequate for the surface runoff accrued on CA2 and CA3. The design calculations for U-channel with the application site are summarized in **Table 2,** appended in **Appendix E1** and **Appendix E2.**

Catchment Area (m^2)	Surface Channel	From	To	Cover Level	Inlet Level	Width (mm)	Length (m)	Grad	Vel. Full Bore (m/s)	Runoff / Cap. (Q/Qo) Site Only	Runoff / Cap. (Q/Qo) Site and External Catchment	Check
CA1: Site :2300 m^2 (With External 2800m2)	UC1	CP1	CP2	4.92	4.35	450	12.3	100	1.80	65.1%	79.4%	OK
	UC2	CP2	CP3	4.92	4.13	450	21.6	100	1.80	64.0%	78.1%	OK
	UC3	CP3	CP4	4.91	3.85	450	27.8	100	1.80	62.8%	76.5%	OK
	UC4	CP4	TCP5	4.89	3.66	450	19.2	100	1.80	62.0%	75.5%	OK
	UC5a	CP18	CP8	4.93	3.85	450	38.4	100	1.80	56.7%	69.3%	OK
	UC6	CP8	CP7	4.92	3.68	450	17.4	100	1.80	56.2%	68.7%	OK
	UC7	CP7	CP6	4.90	3.56	450	18.1	150	1.47	68.1%	83.2%	OK
	UC8	CP6	TCP5	4.89	3.46	450	15.1	150	1.47	67.5%	82.4%	OK
CA2: Site 2700 m^2	UC9	CP16	CP17	4.92	4.32	525	11.8	150	1.63	62.3%	78.6%	OK
	UC10	CP17	CP18	4.93	4.24	525	12.1	150	1.63	61.7%	77.8%	OK
	UC11	CP8	CP9	4.91	3.74	525	16.9	150	1.63	60.4%	74.7%	OK
	UC12	CP9	CP10	4.91	3.68	525	8.8	150	1.63	60.0%	74.2%	OK

Catchment Area (m^2)	Surface Channel	From	To	Cover Level	Inlet Level	Width (mm)	Length (m)	Grad	Vel. Full Bore (m/s)	Runoff / Cap. (Q/Qo) Site Only	Runoff / Cap. (Q/Qo) Site and External Catchment	Check
With External 3400 m^2	UC13	CP10	TCP11	4.90	3.44	525	35.4	150	1.63	58.4%	72.3%	OK
	UC14	CP16	CP12	4.92	4.03	525	54.1	150	1.63	51.0%	64.5%	OK
	UC15	CP12	TCP11	4.90	3.70	525	49.7	150	1.63	49.8%	62.9%	OK
CA3: Site 1200 m^2 (With External 2900 m^2)	UC16	CP12	TCP13	4.92	4.26	525	35.4	200	1.41	25.5%	61.6%	OK
	UC17	CP15	CP14	4.92	4.18	525	26.7	200	1.41	29.1%	71.1%	OK
	UC18	CP14	TCP13	4.90	4.01	525	56.2	200	1.41	25.4%	62.5%	OK
CA4: Site 2000 m^2 (With External 2400 m^2)	UC5	CP17	CP18	4.93	4.18	450	8.9	150	1.47	61.1%	73.4%	OK
	UC5B	CP18	CP1	4.92	3.74	450	65.1	150	1.47	66.7%	80.1%	OK
	UC20	CP17	CP19	4.93	4.14	450	9.5	150	1.80	57.6%	69.2%	OK
	UC21	CP19	CP20	4.92	3.88	450	38.9	150	1.47	68.0%	81.7%	OK
	UC22	CP20	CP21	4.92	3.63	450	38.4	150	1.47	65.8%	79.0%	OK
	UC23	CP21	CP22	4.92	3.45	450	26.1	200	1.47	64.5%	77.4%	OK
	UC24	CP22	TCP23	4.92	3.31	450	21.1	200	1.47	63.4%	76.2%	OK
	UC25	CP1	TCP23	4.92	4.33	450	14.3	100	1.80	55.8%	67.1%	OK

Table 2: Drainage Schedule of Proposed U-channel

Drainage pipes are proposed to connect from the terminal catchpits to the existing village surface channel and open channel. The sizes of the drainage pipes are 450mm and 525mm respectively, they are detailed as in **Table 3** and appended in **Appendix E1** and **Appendix E2**.

From	To	U/S I.L. (mPD)	D/S I.L. (mPD)	Width (mm)	Length (m)	Grad.	Vel. V (m/s)	Runoff Q (m3/s)	Runoff / Cap. (Q/Qo) Site Only	Runoff / Cap. (Q/Qo) Site and External Catchment	Check
TCP5	DP1	3.46	3.30	450	7.9	49	2.211	0.274	64%	78%	OK
TCP11	DP2	3.44	2.98	525	31.9	69	2.068	0.325	58%	73%	OK
TCP13	DP3	3.86	3.61	525	18.1	72	2.024	0.274	26%	63%	OK
TCP23	DP4	3.31	3.10	450	9.8	47	2.274	0.226	52%	62%	OK

Table 3: Drainage Schedule of Proposed Drainage Pipe

To confirm that the receiving drainage facilities have sufficient capacity to accommodate the discharge from the application site, additional hydraulic calculations were carried out on existing 750 mm U-channel and 6500mm open channel in the vicinity of the application site. The results are summarized in **Table 3** and appended in **Appendix F**. This demonstrates that the proposed development will not adversely affect the existing drainage system.

Existing Drainage Facility	Catchment Area m^2 (Original)	Catchment Area m^2 (Application Site)	Total Catchment Area m^2	Nominal Width (mm)	Length (m)	Vel. Full Bore (m/s)	Original Capacity	With Application Site capacity	Check
Existing UC	2800	4300	7100	750	110	1.82	20.9%	53.0%	OK
Existing UC	3000	2700	5700	750	50	1.64	29.1%	55.2%	OK
Existing UC	2800	4300	7100	900	90	2.05	13.5%	34.3%	OK
SCP1009605	57000	9000	66000	6500	600	2.76	2.5%	2.9%	OK
SCP1013160	52000	9000	61000	12000	400	2.90	0.7%	0.8%	OK

Table 4: Design Checking for Existing Drainage Facilities

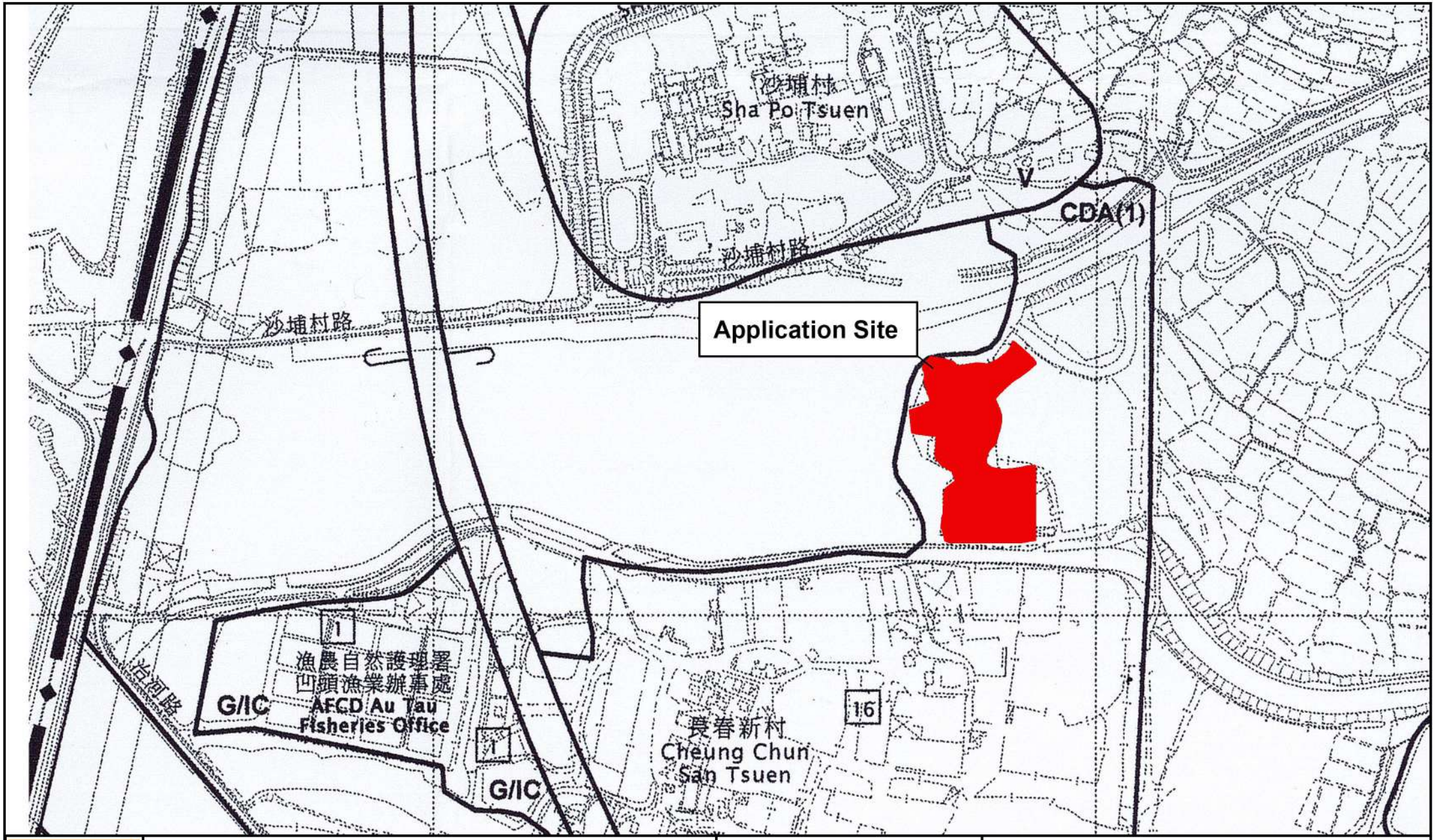
5. Conclusion

A temporary drainage proposal has been designed for proposed temporary place of recreation, sport or culture (padel tennis) with ancillary eating place and shop and services for a period of 3 years at Lot 1560 (Part) in D.D.107 and adjoining government land, Kam Tin, Yuen Long, New Territories.

Based on the hydraulic calculations, a set od peripheral U-channel with width of 450mm and 525mm have been deemed sufficient to convey peak runoff under a 50-year return period from the application site. The stormwater collected from the site will be discharged into the village surface channels with 750mm width and catchpits in vicinity of the application site. The ultimate discharge points will be existing public open channel (SCP1013160) with width of 12m on the north side of the application site and the other existing public open channel (SCP1009605) with width of 6.5m on the south side of the application site.

Coordination will be undertaken with relevant stakeholders, agreement will be sought from the owner prior to commencement of the proposed work, and feedback will be sought from appropriate government departments regarding temporary drainage arrangements to ensure the system operates effectively.

Appendix A
Location Plan of Application Site



Project 項目名稱:

Proposed Temporary Place of Recreation, Sports or Culture (Padel Tennis) with Ancillary Eating Place and Shop and Services for a Period of 3 Years at Lot 1560 (Part) in D.D. 107 and Adjoining Government Land , Kam Tin, Yuen Long, New Territories

Drawing Title 圖紙標題:

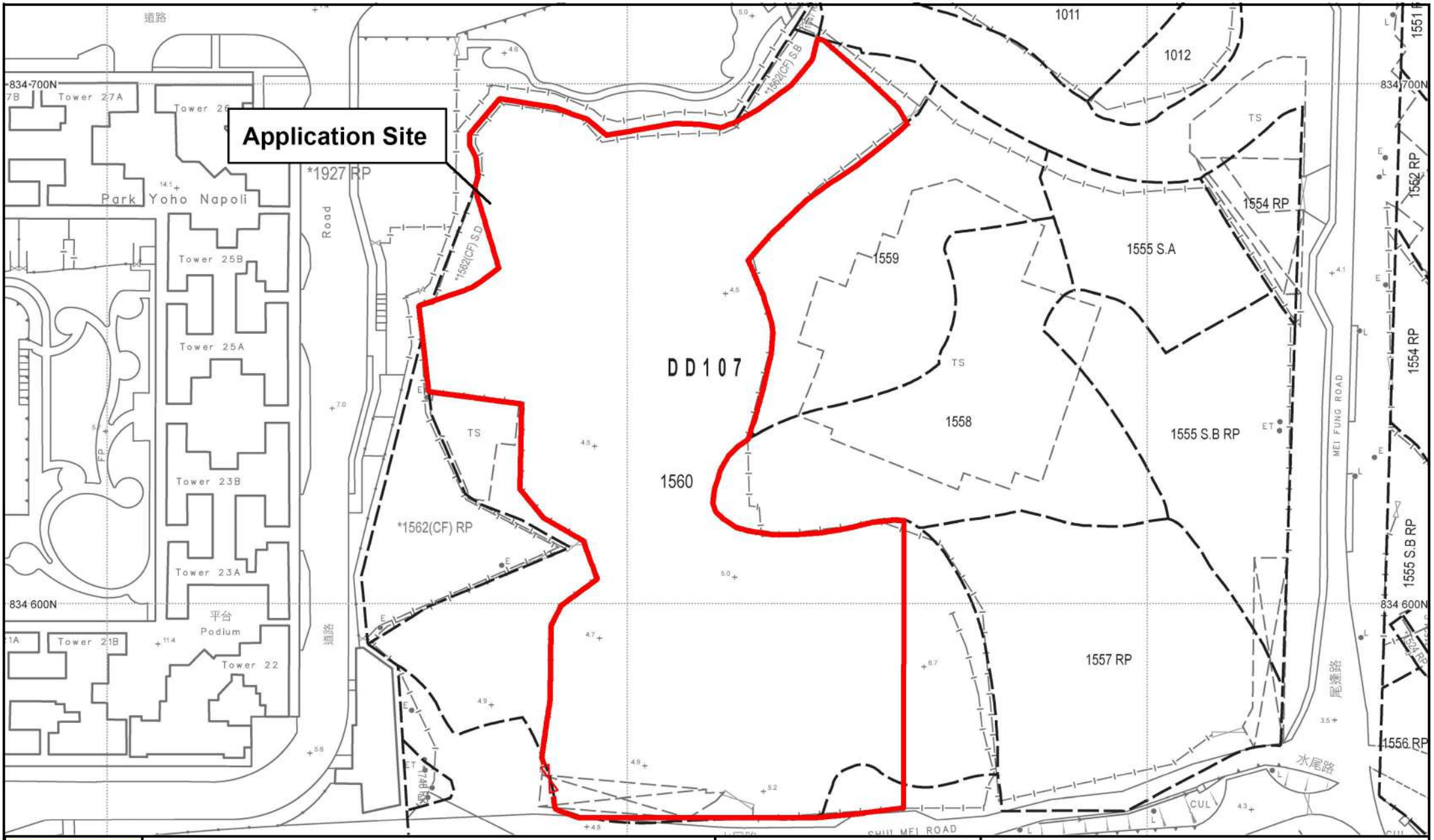
Location Plan

Drawing No. 圖號:

20260821

Remarks 備註:

Allgain Land Planning 全堅土地規劃



Project 項目名稱:

Proposed Temporary Place of Recreation, Sports or Culture (Padel Tennis) with Ancillary Eating Place and Shop and Services for a Period of 3 Years at Lot 1560 (Part) in D.D. 107 and Adjoining Government Land , Kam Tin, Yuen Long, New Territories

Drawing Title 圖紙標題:

Site Plan

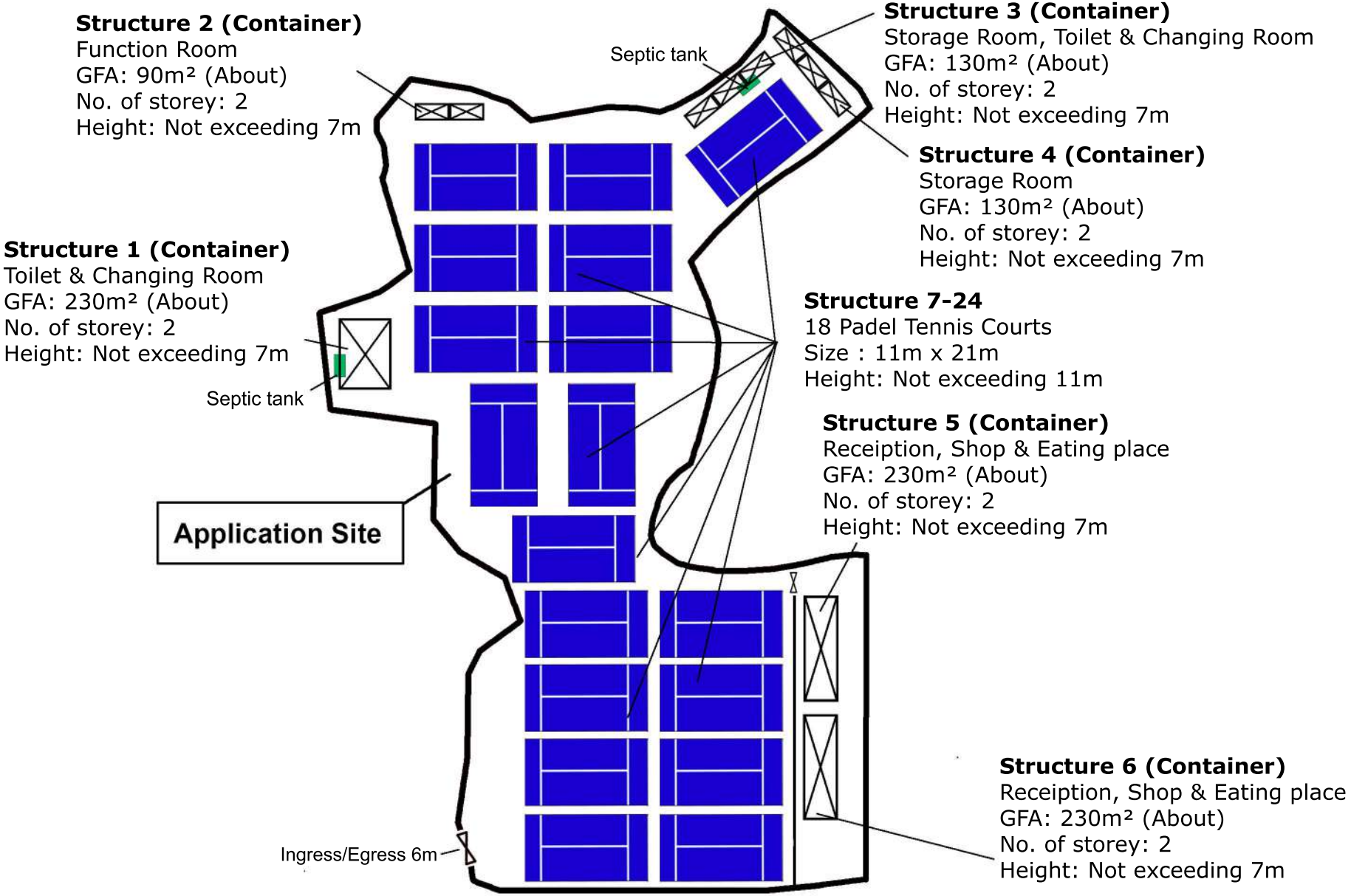
Drawing No. 圖號:

20260811

Remarks 備註:

Application Site

Appendix B
Layout Plan of Application Site



Allgain Land Planning 全堅土地規劃	Project 項目名稱: Proposed Temporary Place of Recreation, Sports or Culture (Padel Tennis) with Ancillary Eating Place and Shop and Services for a Period of 3 Years at Lot 1560 (Part) in D.D. 107 and Adjoining Government Land , Kam Tin, Yuen Long, New Territories	Drawing Title 圖紙標題: Layout Plan Drawing No. 圖號: 20260811	Remarks 備註: Padel tennis court Structure

Appendix C
Location Plan and Photos of the Existing Drainage

Appendix C
Proposed Temporary Place of Recreation, Sport or Culture (Padel Tennis) with Ancillary Eating Place and Shop and Services for a Period of 3 Years at Lot 1560 (Part) in D.D.107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories
A-YL-KTN-1281
Sep 2026

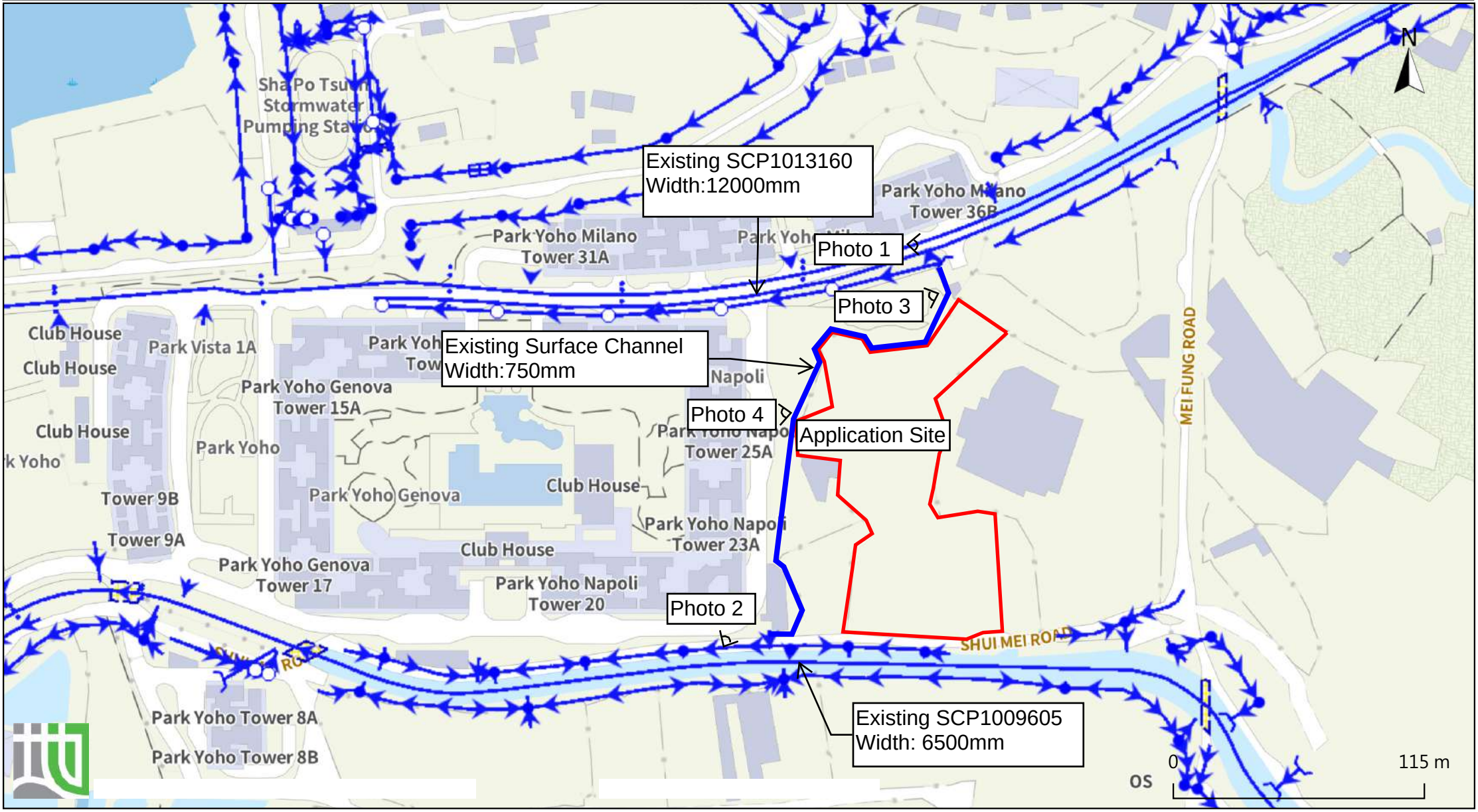



Photo 1:
Existing SCP1013160
Width:12000mm


Photo 2:
Existing SCP1009605
Width: 6500mm



Photo 3 : 750mm Surface Channel



Photo 3 : 750mm Surface Channel



Photo 4 : 750mm Surface Channel



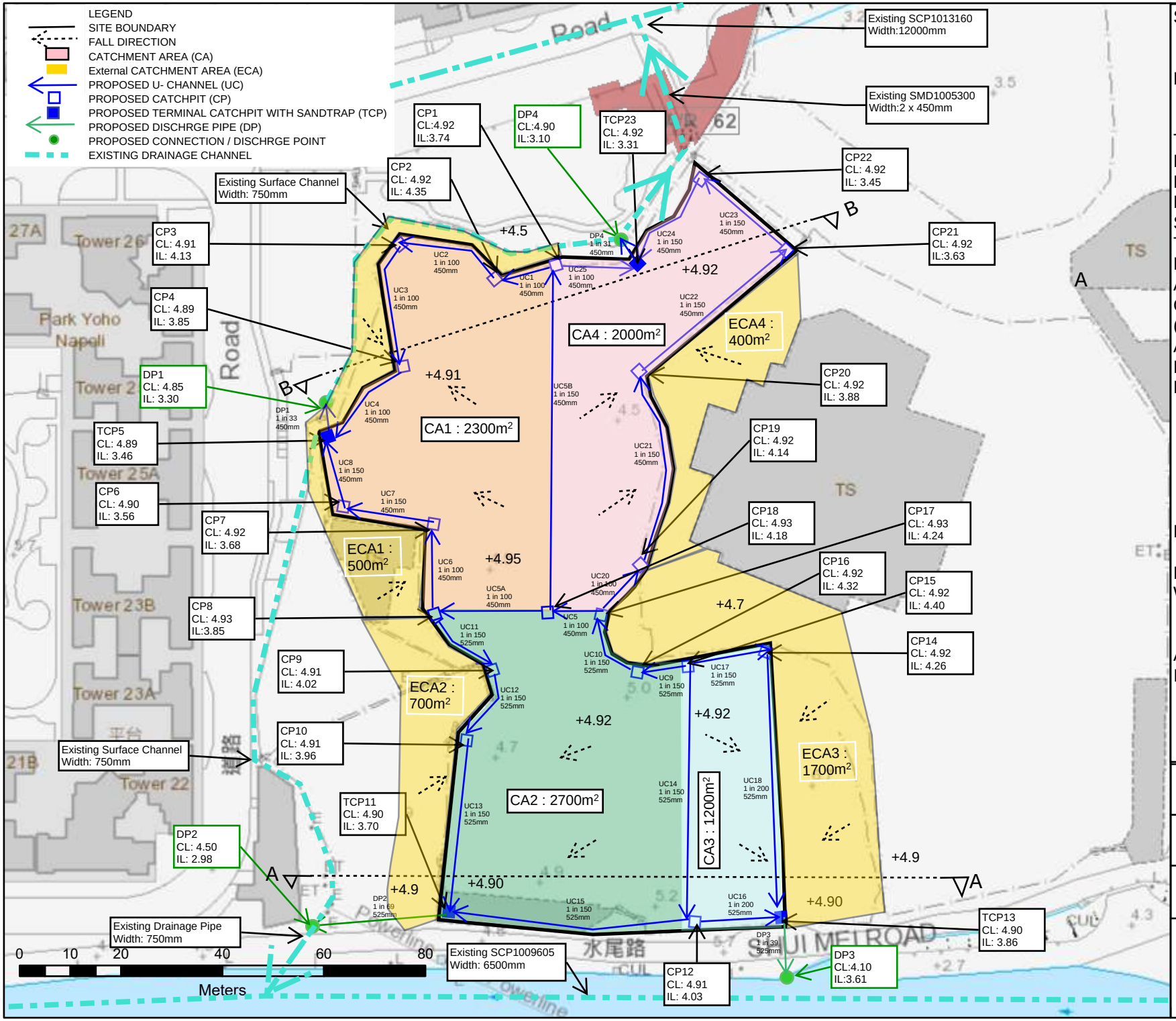
Photo 4 : 750mm Surface Channel



Photo 4 : 750mm Surface Channel
(Internal Condition)



Photo 4 : 750mm Surface Channel (Depth)



SITE PLAN

PROJECT :

TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES

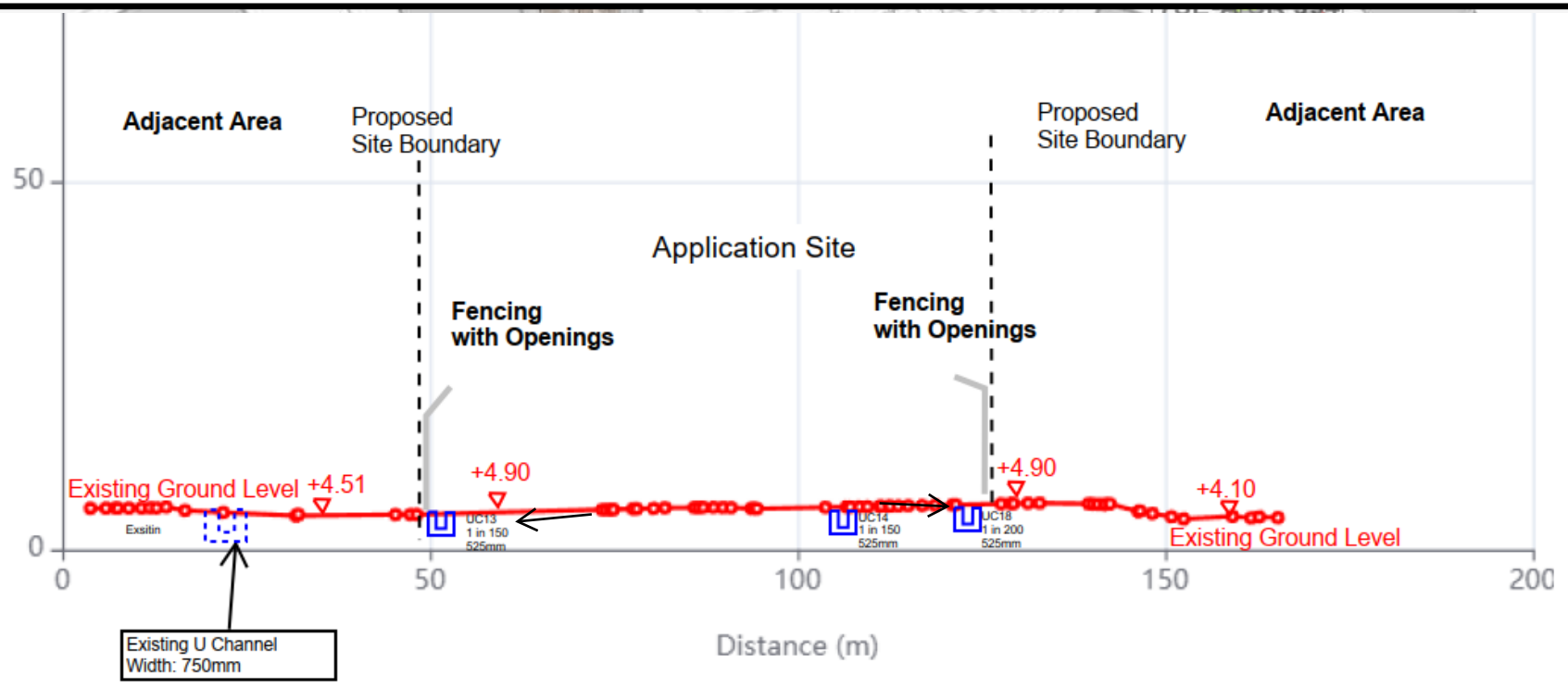
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PROPOSED DRAINAGE WORKS

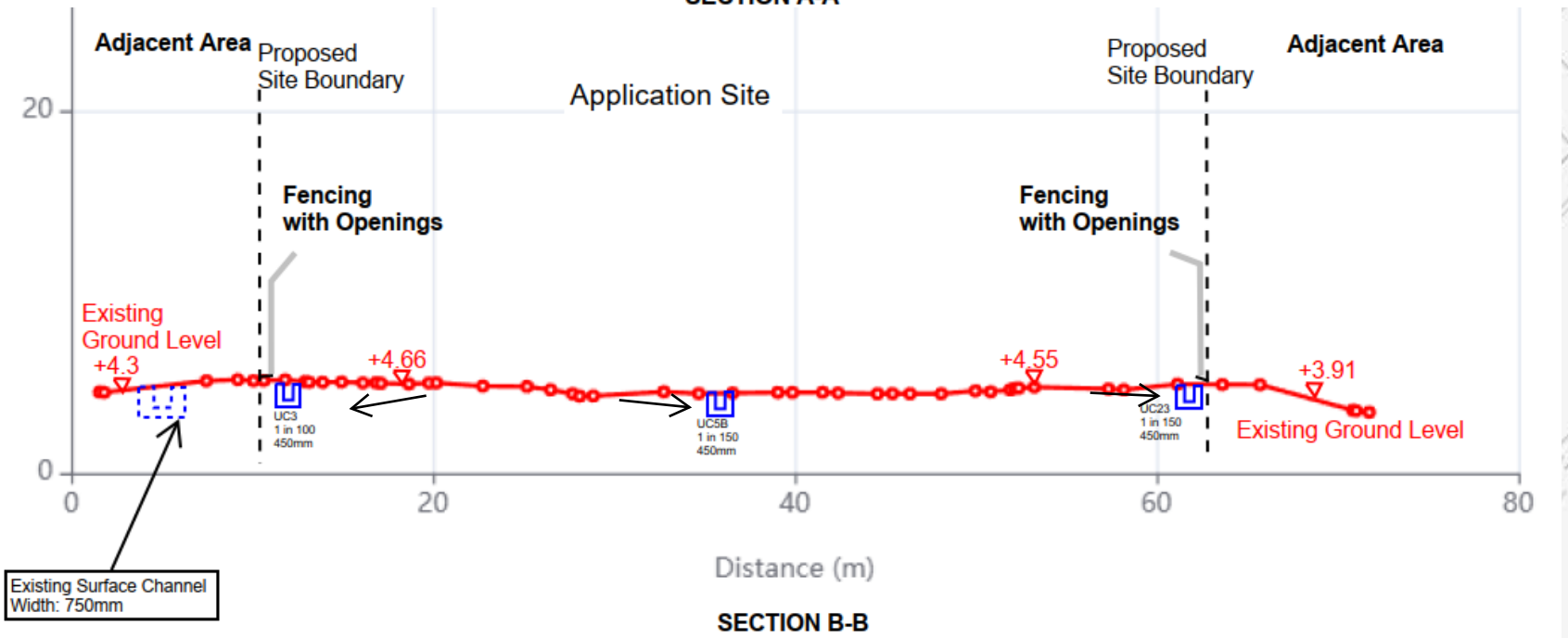
APPENDIX D1
ISSUE 3

Division	
Scale	1:1000
Date	28/08/2026

Appendix D2
Proposed Drainage Arrangement-
Cross Sections



SECTION A-A



SECTION B-B

SITE PLAN

PROJECT :

TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES

DRAWING TITLE:

PROPOSED DRAINAGE WORKS -CROSS SECTION

APPENDIX D2
ISSUE 3

Division	
Scale	
Date	28/08/2026

Appendix E1
Design Checking for Proposed U Channel for Application Site

Calculation Sheet		
Project Title:	**Date:**	2026-08-28
	Project No.:	-
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES	**Designed by:**	RF
	Appendix :	E1
	Sheet No.:	1

Design for Proposed U Channel for Development Area

Catchpit No.		Catchment				Level				U Channel									Manning's Equation								
From (U/S)	To (D/S)	Surface Channel	Catchment Area A1 (m^2)	Runoff Coef. C	Ave. Slope / 100m	U/S C.L. (mPD)	D/S C.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Nominal Width (mm)	Nominal Depth (mm)	Lgth (m)	Grad. (1 in)	U Channel Area a1 (m2)	U Channel Area with Deposition of Sediment Ar (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Q_o (m^3/s)	Velocity Check	Time of Conc. t_c (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m^3/s)	Capacity % (Q/Q_o)	Capacity Check
CP1	CP2	UC1	2300	0.85	0.5	4.92	4.92	4.47	4.35	CO	450	450	12.3	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	0.942	351.35	0.19	65.1%	OK
CP2	CP3	UC2	2300	0.85	0.5	4.92	4.92	4.35	4.13	CO	450	450	21.6	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.142	345.65	0.19	64.0%	OK
CP3	CP4	UC3	2300	0.85	0.5	4.92	4.91	4.13	3.85	CO	450	450	27.8	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.399	338.80	0.18	62.8%	OK
CP4	TCP5	UC4	2300	0.85	0.5	4.91	4.89	3.85	3.66	CO	450	450	19.2	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.577	334.36	0.18	62.0%	OK
CP18	CP8	UC5A	2300	0.85	0.5	4.93	4.93	4.24	3.85	CO	450	450	38.4	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	2.942	306.25	0.17	56.7%	OK
CP8	CP7	UC6	2300	0.85	0.5	4.93	4.92	3.85	3.68	CO	450	450	17.4	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	3.103	303.49	0.16	56.2%	OK
CP7	CP6	UC7	2300	0.85	0.5	4.92	4.90	3.68	3.56	CO	450	450	18.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	3.308	300.11	0.16	68.1%	OK
CP6	TCP5	UC8	2300	0.85	0.5	4.90	4.89	3.56	3.46	CO	450	450	15.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	3.479	297.40	0.16	67.5%	OK
CP15	CP16	UC9	2700	0.85	0.5	4.92	4.92	4.40	4.32	CO	525	525	11.8	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	0.890	352.92	0.23	62.3%	OK
CP16	CP17	UC10	2700	0.85	0.5	4.92	4.93	4.32	4.24	CO	525	525	12.1	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.013	349.28	0.22	61.7%	OK
CP8	CP9	UC11	2700	0.85	0.5	4.91	4.91	4.13	4.02	CO	525	525	16.9	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.280	341.90	0.22	60.4%	OK
CP9	CP10	UC12	2700	0.85	0.5	4.91	4.91	4.02	3.96	CO	525	525	8.8	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.370	339.54	0.22	60.0%	OK
CP10	TCP11	UC13	2700	0.85	0.5	4.91	4.90	3.96	3.73	CO	525	525	35.4	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.732	330.65	0.21	58.4%	OK
CP15	CP12	UC14	2700	0.85	0.5	4.92	4.92	4.40	4.03	CO	525	525	54.1	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	4.079	288.56	0.18	51.0%	OK
CP12	TCP11	UC15	2700	0.85	0.5	4.92	4.10	4.03	3.70	CO	525	525	49.7	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	4.587	281.82	0.18	49.8%	OK
CP12	TCP13	UC16	1200	0.85	0.5	4.92	4.90	4.03	3.86	CO	525	525	35.4	200	0.246	0.221	1.35	0.16	0.015	1.41	0.31	OK	4.621	281.39	0.08	25.5%	OK
CP15	CP14	UC17	1200	0.85	0.5	4.92	4.92	4.40	4.26	CO	525	525	26.7	200	0.246	0.221	1.35	0.16	0.015	1.41	0.31	OK	2.183	320.70	0.09	29.1%	OK
CP14	TCP13	UC18	1200	0.85	0.5	4.92	4.90	4.26	3.98	CO	526	526	56.2	200	0.247	0.222	1.35	0.16	0.015	1.41	0.31	OK	4.596	281.71	0.08	25.4%	OK
CP17	CP18	UC5	2000	0.85	0.5	4.93	4.93	4.24	4.18	CO	450	450	8.9	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	0.692	309.53	0.15	61.1%	OK
CP18	CP1	UC5B	2000	0.85	0.5	4.93	4.92	4.18	3.74	CO	450	450	65.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.429	338.05	0.16	66.7%	OK
CP17	CP19	UC20	2000	0.85	0.5	4.93	4.93	4.24	4.14	CO	450	450	9.5	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	0.738	357.57	0.17	57.6%	OK
CP19	CP20	UC21	2000	0.85	0.5	4.93	4.92	4.14	3.88	CO	450	450	38.9	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.179	344.64	0.16	68.0%	OK
CP20	CP21	UC22	2000	0.85	0.5	4.92	4.92	3.88	3.63	CO	450	450	38.4	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.613	333.47	0.16	65.8%	OK
CP21	CP22	UC23	2000	0.85	0.5	4.92	4.92	3.63	3.45	CO	450	450	26.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.909	326.61	0.15	64.5%	OK
CP22	TCP23	UC24	2000	0.85	0.5	4.92	4.92	3.45	3.31	CO	450	450	21.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	2.148	321.44	0.15	63.4%	OK
CP1	TCP23	UC25	2000	0.85	0.5	4.92	4.92	4.47	4.33	CO	450	450	14.3	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.111	346.51	0.16	55.8%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time

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

V = Pipe Flow Velocity

= $-\sqrt{(8gDs)}\log[(k_s/(3.7D)+2.51v/D\sqrt{(2gDs)})]$ for Colebrook-White Equation

where g = Gravitational Accelearation = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness = 0.6 mm for concrete CO — Ref. DSD SDM Table 14

= 0.06 mm for cast iron CI

= 0.6 mm for ductile iro DI

n = Kine. Viscosity = 1.14 E-06 m^2/s

n = Manning's Coef. = 0.015 for concrete CO — Ref. DSD SDM Table 13

0.015 for cast iron CI

0.015 for ductile iron DI

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

i = Rainfall Intensity — HKO Headquarters

= 1.16 x a / $(t_c + b)^c$ where a = 505.5 for a return period of 50 years — Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase due to Climate Change = 16 % — Ref. DSD Corrigendum No. 1/2022 SDM Table 28

Q = Runoff = 0.278*CiA

Calculation Sheet	Date:	2026-08-28
Project Title:	Project No.:	-
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES	Designed by:	RF
	Appendix :	E1
	Sheet No.:	2

Design for Proposed Drainage Pipe for Development Area

		Catchment					Pipe				Colebrook-White Equation								Manning's Equation							
From (U/S)	To (D/S)	Incre. Area (m^2)	Accum. Area (m^2)	Runoff Coef. C	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Dia. (mm)	Lgth (m)	Grad. (1 in)	Rough-ness k_s (mm)	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Q_o (m^3/s)	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Velocity Check	Mng's Coef. n	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Q_o (m^3/s)	Capacity Check	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Runoff / Cap. (Q/Q_o)	Capacity Check
TCP5	DP1	2300	2300	1	3.46	3.30	CO	450	7.9	49	0.60	2.897	0.461	0.988	367	302	0.193	OK	0.015	2.211	0.352	OK	0.942	351	0.224	64%	OK
TCP11	DP2	2700	2700	1	3.44	2.98	CO	525	31.9	69	0.60	2.691	0.582	1.185	363	297	0.223	OK	0.015	2.068	0.448	OK	1.200	344	0.258	58%	OK
TCP13	DP3	1200	1200	1	3.86	3.61	CO	525	18.1	72	0.60	2.633	0.570	1.300	363	294	0.098	OK	0.015	2.024	0.438	OK	1.349	340	0.113	26%	OK
TCP23	DP4	2000	2000	1	3.31	3.10	CO	450	9.8	47	0.60	2.980	0.474	1.355	366	293	0.163	OK	0.015	2.274	0.362	OK	1.420	338	0.188	52%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time

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

V = Pipe Flow Velocity

= -O(8gDs) log[(k_s/(3.7D)+2.51v / DÖ(2gDs)] for Colebrook-White Equation

where g = Gravitational Acceleartion = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness

=	0.6	mm for	concrete CO
=	0.06	mm for	cast iron CI
=	0.6	mm for	ductile iro DI

Ref. DSD SDM Table 14

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef.

=	0.015	for	concrete CO
=	0.015	for	cast iron CI
=	0.015	for	ductile iron DI

Ref. DSD SDM Table 13

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

i = Rainfall Intensity HKO Headquarters

= 1.16 x a / $(t_c + b)^c$ where a = 505.5 for a return period of 50 years

Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase due to Climate Change = 16 %

Ref. DSD Corrigendum No. 1/2022 SDM Table 28

Q = Runoff = 0.278*CiA

Appendix E2
Design Checking for Proposed U Channel for Application Site and External Catchment Area

Calculation Sheet		
Project Title:	**Date:**	2026-08-28
	Project No.:	-
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES	**Designed by:**	RF
	Appendix :	E2
	Sheet No.:	1

Design for Proposed U Channel for Development Area and Adjacent Area

Catchpit No.		Catchment				Level				U Channel									Manning's Equation								
From (U/S)	To (D/S)	Surface Channel	Catchment Area A1+ External Catchment Area A2 (m^2)	Runoff Coef. C	Ave. Slope / 100m	U/S C.L. (mPD)	D/S C.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Nominal Width (mm)	Nominal Depth (mm)	Lgth (m)	Grad. (1 in)	U Channel Area a1 (m2)	U Channel Area with Deposition of Sediment Ar (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Q_o (m^3/s)	Velocity Check	Time of Conc. t_c (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m^3/s)	Capacity % (Q/Q_o)	Capacity Check
CP1	CP2	UC1	2800	0.85	0.5	4.92	4.92	4.47	4.35	CO	450	450	12.3	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	0.924	351.89	0.23	79.4%	OK
CP2	CP3	UC2	2800	0.85	0.5	4.92	4.92	4.35	4.13	CO	450	450	21.6	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.124	346.16	0.23	78.1%	OK
CP3	CP4	UC3	2800	0.85	0.5	4.92	4.91	4.13	3.85	CO	450	450	27.8	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.381	339.27	0.22	76.5%	OK
CP4	TCP5	UC4	2800	0.85	0.5	4.91	4.89	3.85	3.66	CO	450	450	19.2	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.558	334.81	0.22	75.5%	OK
CP18	CP8	UC5A	2800	0.85	0.5	4.93	4.93	4.24	3.85	CO	450	450	38.4	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	2.885	307.26	0.20	69.3%	OK
CP8	CP7	UC6	2800	0.85	0.5	4.93	4.92	3.85	3.68	CO	450	450	17.4	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	3.046	304.47	0.20	68.7%	OK
CP7	CP6	UC7	2800	0.85	0.5	4.92	4.90	3.68	3.56	CO	450	450	18.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	3.251	301.05	0.20	83.2%	OK
CP6	TCP5	UC8	2800	0.85	0.5	4.90	4.89	3.56	3.46	CO	450	450	15.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	3.422	298.30	0.20	82.4%	OK
CP15	CP16	UC9	3400	0.85	0.5	4.92	4.92	4.40	4.32	CO	525	525	11.8	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	0.869	353.53	0.28	78.6%	OK
CP16	CP17	UC10	3400	0.85	0.5	4.92	4.93	4.32	4.24	CO	525	525	12.1	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	0.993	349.87	0.28	77.8%	OK
CP8	CP9	UC11	3400	0.85	0.5	4.91	4.91	4.13	4.02	CO	525	525	16.9	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.260	342.44	0.28	76.2%	OK
CP9	CP10	UC12	3400	0.85	0.5	4.91	4.91	4.02	3.96	CO	525	525	8.8	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.350	340.07	0.27	75.6%	OK
CP10	TCP11	UC13	3400	0.85	0.5	4.91	4.90	3.96	3.73	CO	525	525	35.4	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	1.712	331.13	0.27	73.6%	OK
CP15	CP12	UC14	3400	0.85	0.5	4.92	4.92	4.40	4.03	CO	525	525	54.1	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	3.986	289.87	0.23	64.5%	OK
CP12	TCP11	UC15	3400	0.85	0.5	4.92	4.10	4.03	3.70	CO	525	525	49.7	150	0.246	0.221	1.35	0.16	0.015	1.63	0.36	OK	4.494	283.01	0.23	62.9%	OK
CP12	TCP13	UC16	2900	0.85	0.5	4.92	4.90	4.03	3.86	CO	525	525	35.4	200	0.246	0.221	1.35	0.16	0.015	1.41	0.31	OK	4.621	281.39	0.19	61.6%	OK
CP15	CP14	UC17	2900	0.85	0.5	4.92	4.92	4.40	4.26	CO	525	525	26.7	200	0.246	0.221	1.35	0.16	0.015	1.41	0.31	OK	1.999	324.63	0.22	71.1%	OK
CP14	TCP13	UC18	2900	0.85	0.5	4.92	4.90	4.26	3.98	CO	526	526	56.2	200	0.247	0.222	1.35	0.16	0.015	1.41	0.31	OK	4.207	286.80	0.20	62.5%	OK
CP17	CP18	UC5	2400	0.85	0.5	4.93	4.93	4.24	4.18	CO	450	450	8.9	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	0.679	309.88	0.18	73.4%	OK
CP18	CP1	UC5B	2400	0.85	0.5	4.93	4.92	4.18	3.74	CO	450	450	65.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.416	338.36	0.19	80.1%	OK
CP17	CP19	UC20	2400	0.85	0.5	4.93	4.93	4.24	4.14	CO	450	450	9.5	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	0.725	358.00	0.20	69.2%	OK
CP19	CP20	UC21	2400	0.85	0.5	4.93	4.92	4.14	3.88	CO	450	450	38.9	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.165	345.01	0.20	81.7%	OK
CP20	CP21	UC22	2400	0.85	0.5	4.92	4.92	3.88	3.63	CO	450	450	38.4	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.600	333.79	0.19	79.0%	OK
CP21	CP22	UC23	2400	0.85	0.5	4.92	4.92	3.63	3.45	CO	450	450	26.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	1.896	326.91	0.19	77.4%	OK
CP22	TCP23	UC24	2400	0.85	0.5	4.92	4.92	3.45	3.31	CO	450	450	21.1	150	0.181	0.163	1.16	0.14	0.015	1.47	0.24	OK	2.134	321.72	0.18	76.2%	OK
CP1	TCP23	UC25	2400	0.85	0.5	4.92	4.92	4.47	4.33	CO	450	450	14.3	100	0.181	0.163	1.16	0.14	0.015	1.80	0.29	OK	1.091	347.07	0.20	67.1%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time

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

V = Pipe Flow Velocity

= $-\sqrt{(8gDs)}\log[(k_s/(3.7D)+2.51v/D\sqrt{(2gDs)}]$ for Colebrook-White Equation

where g = Gravitational Accelearation = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness = 0.6 mm for concrete CO — Ref. DSD SDM Table 14

= 0.06 mm for cast iron CI

= 0.6 mm for ductile iro DI

n = Kine. Viscosity = 1.14 E-06 m^2/s

n = Manning's Coef. = 0.015 for concrete CO — Ref. DSD SDM Table 13

0.015 for cast iron CI

0.015 for ductile iron DI

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

i = Rainfall Intensity — HKO Headquarters

= $1.16 \times a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years — Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase due to Climate Change = 16 % — Ref. DSD Corrigendum No. 1/2022 SDM Table 28

Q = Runoff = 0.278*CiA

Calculation Sheet	Date:	2026-08-28
Project Title:	Project No.:	-
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES	Designed by:	RF
	Appendix :	E2
	Sheet No.:	2

Design for Proposed Drainage Pipe for Development Area and Adjacent Area

		Catchment					Pipe				Colebrook-White Equation								Manning's Equation								
From (U/S)	To (D/S)	Incre. Area (m^2)	Accum. Area (m^2)	Runoff Coef. C	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Dia. (mm)	Lgth (m)	Grad. (1 in)	Rough-ness k_s (mm)	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Q_o (m^3/s)	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Velocity Check	Mng's Coef. n	Pipe Flow Vel. V (m/s)	Pipe Flow Cap. Q_o (m^3/s)	Capacity Check	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Runoff / Cap. (Q/Q_o)	Capacity Check
TCP5	DP1	2800	2800	1	3.46	3.30	CO	450	7.9	49	0.60	2.897	0.461	0.970	367	302	0.235	OK	0.015	2.211	0.352	OK	0.924	352	0.274	78%	OK
TCP11	DP2	3400	3400	1	3.44	2.98	CO	525	31.9	69	0.60	2.691	0.582	1.167	363	297	0.281	OK	0.015	2.068	0.448	OK	1.181	345	0.325	73%	OK
TCP13	DP3	2900	2900	1	3.86	3.61	CO	525	18.1	72	0.60	2.633	0.570	1.282	363	295	0.237	OK	0.015	2.024	0.438	OK	1.330	341	0.274	63%	OK
TCP23	DP4	2400	2400	1	3.31	3.10	CO	450	9.8	47	0.60	2.980	0.474	1.337	366	293	0.196	OK	0.015	2.274	0.362	OK	1.402	339	0.226	62%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time

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

V = Pipe Flow Velocity

= $-\sqrt{(8gDs)}\log[(k_s/(3.7D)+2.51v / D\sqrt{(2gDs)}]$ for Colebrook-White Equation

where g = Gravitational Acceleartion = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness

=	0.6	mm for	concrete	CO
=	0.06	mm for	cast iron	CI
=	0.6	mm for	ductile iron	DI

Ref. DSD SDM Table 14

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef.

= 0.015	for	concrete	CO
0.015	for	cast iron	CI
0.015	for	ductile iron	DI

Ref. DSD SDM Table 13

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

i = Rainfall Intensity — HKO Headquarters

= $1.16 \times a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years

b = 3.29

c = 0.355

Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

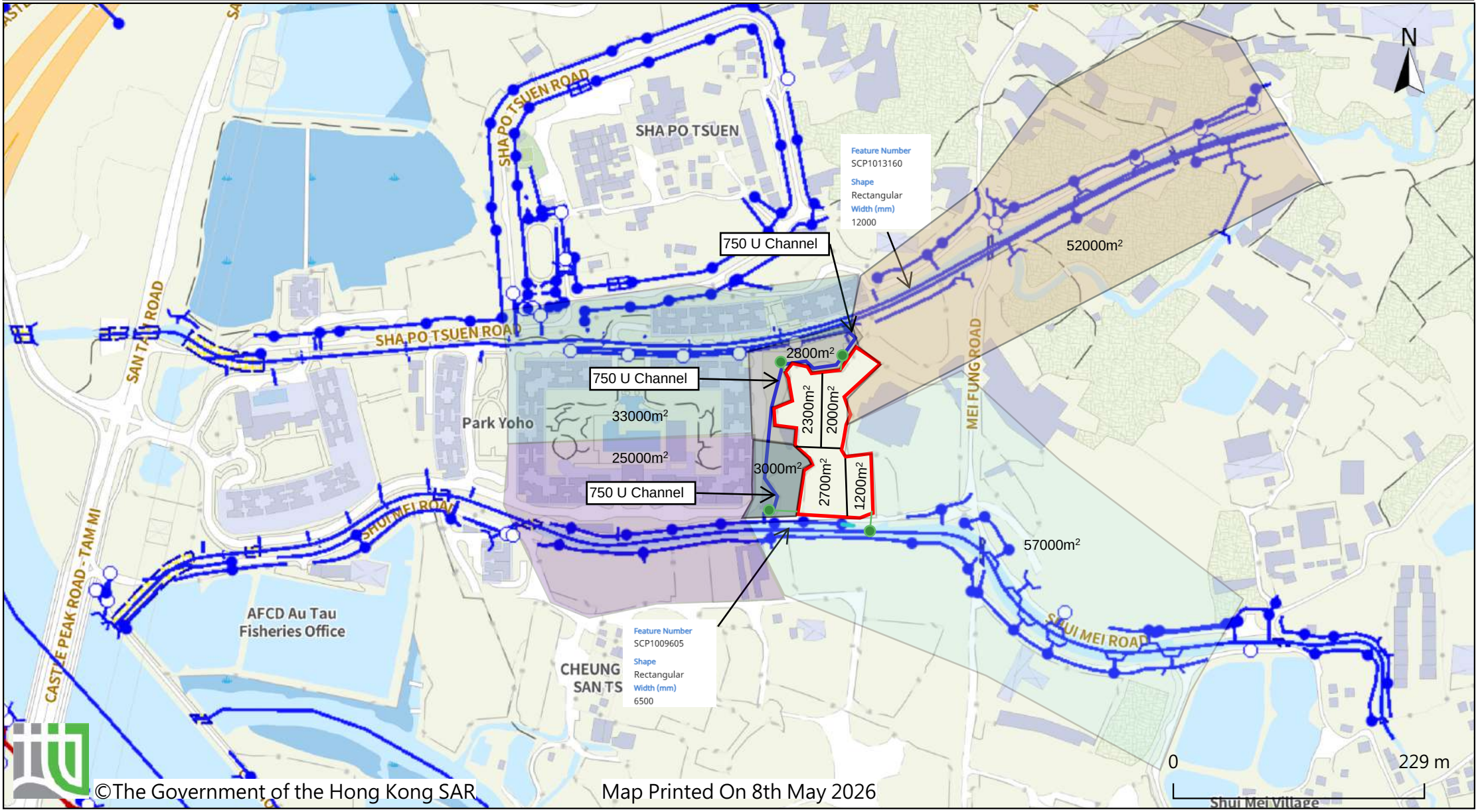
Rainfall Increase due to Climate Change = 16 %

Ref. DSD Corrigendum No. 1/2022 SDM Table 28

Q = Runoff = 0.278*CiA

Appendix F
Design Checking for Existing Drainage System

Appendix F
Proposed Temporary Place of Recreation, Sport or Culture (Padel Tennis) with Ancillary Eating Place and Shop and Services for a Period of 3 Years at Lot 1560 (Part) in D.D.107 and Adjoining Government Land, Kam Tin, Yuen Long, New Territories
A-YL-KTN-1281 SEP 2026



Calculation Sheet	Date:	2026-08-31
Project Title:	Project No.:	-
TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES	Designed by:	RF
	Appendix :	F
	Sheet No.:	1

Design for Proposed U Channel for Development Area

Catchpit No.		Catchment				Level				U Channel								Manning's Equation								
Channel	Catchment Area (Original) A	Catchment Area (Application site) A1	Total Catchment Area (m^2)	Runoff Coef. C	Ave. Slope / 100m	Upper I.L. (mPD)	Lower I.L. (mPD)	Mat-erial	Nominal Width (mm)	Nominal Depth (mm)	Lgth (m)	U Channel Area a1 (m2)	U Channel Area with Deposition of Sediment a2 (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Q_o (m^3/s)	Velocity Check	Time of Conc. t_c (min)	Rainfall Intensity i (mm/hr)	Original Runoff Q (m^3/s)	Original Capacity % (Q/Q_o)	New Runoff Q (m^3/s)	New Capacity % (Q/Q_o)	Capacity Check
Existing UC	2800	4300	7100	0.85	1	3.46	2.89	CO	750	750	110	0.502	0.452	1.93	0.23	0.015	1.82	0.82	OK	6.555	260.37	0.17	20.9%	0.44	53.0%	OK
Existing UC	3000	2700	5700	0.85	1	3.31	3.10	CO	750	750	50	0.502	0.452	1.93	0.23	0.015	1.64	0.74	OK	3.046	304.47	0.22	29.1%	0.41	55.2%	OK
Existing UC	2800	4300	7100	0.85	1	3.44	2.98	CO	900	900	90	0.723	0.651	2.31	0.28	0.015	2.05	1.33	OK	5.363	272.57	0.18	13.5%	0.46	34.3%	OK
SCP1009605	57000	8200	65200	0.85	1	4.01	3.61	CO	6500	6500	600	37.717	33.945	16.71	2.03	0.015	2.76	93.72	OK	28.645	171.46	2.31	2.5%	2.64	2.8%	OK
SCP1013160	52000	8200	60200	0.85	1	4.06	3.93	CO	12000	12000	400	128.549	115.694	30.85	3.75	0.015	2.90	335.64	OK	19.249	194.04	2.38	0.7%	2.76	0.8%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time

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

V = Pipe Flow Velocity

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

where g = Gravitational Acceleartion = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness

=	0.6	mm for	concrete	CO
=	0.06	mm for	cast iron	CI
=	0.6	mm for	ductile iro	DI

Ref. DSD SDM Table 14

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef.

=	0.015	for	concrete CO
	0.015	for	cast iron CI
	0.015	for	ductile iro DI

Ref. DSD SDM Table 13

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

i = Rainfall Intensity — HKO Headquarters

= 1.16 x a / $(t_c + b)^c$ where a = 505.5 for a return period of 50 years — Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase = 16 % — Ref. DSD Corrigendum No. 1/2022 SDM Table 28

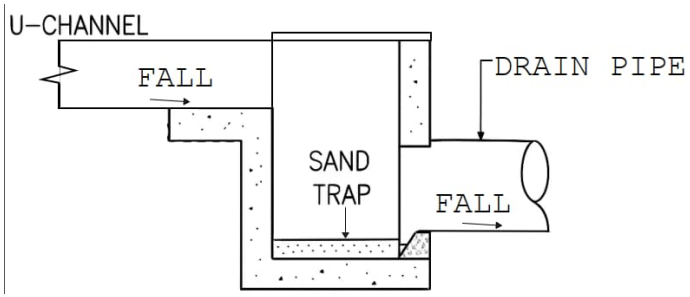
Q = Runoff = 0.278*CiA

where C = Runoff Coefficient

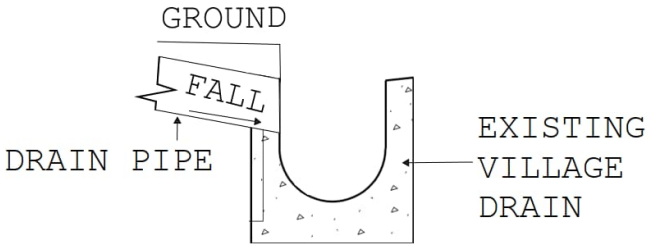
A = Catchment Area

Ar = 0.9 Flow Area (10% reduction for Sedimentation) — Ref. DSD SDM Section 9.3

Appendix G
Construction Details and
Typical designs of the U-channels and Catchpits



CONNECTION TO PROPOSED CATCHPIT
WITH SAND TRAP TO STORMWATER PIPE
(FOR INDICATIVE ONLY)



CONNECTION TO STORMWATER PIPE TO
EXISTING VILLAGE DRAIN
(FOR INDICATIVE ONLY)

SITE PLAN

PROJECT :

TEMPORARY DRAINAGE PROPOSAL FOR THE PROPOSED TEMPORARY PLACE OF RECREATION, SPORT OR CULTURE (PADEL TENNIS) WITH ANCILLARY EATING PLACE AND SHOP AND SERVICES FOR A PERIOD OF 3 YEARS AT LOT 1560 (PART) IN D.D.107 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES
A-YL-KTN-1198

DRAWING TITLE:

CONSTRUCTION DETAILS OF PROPOSED DRAINAGE WORKS

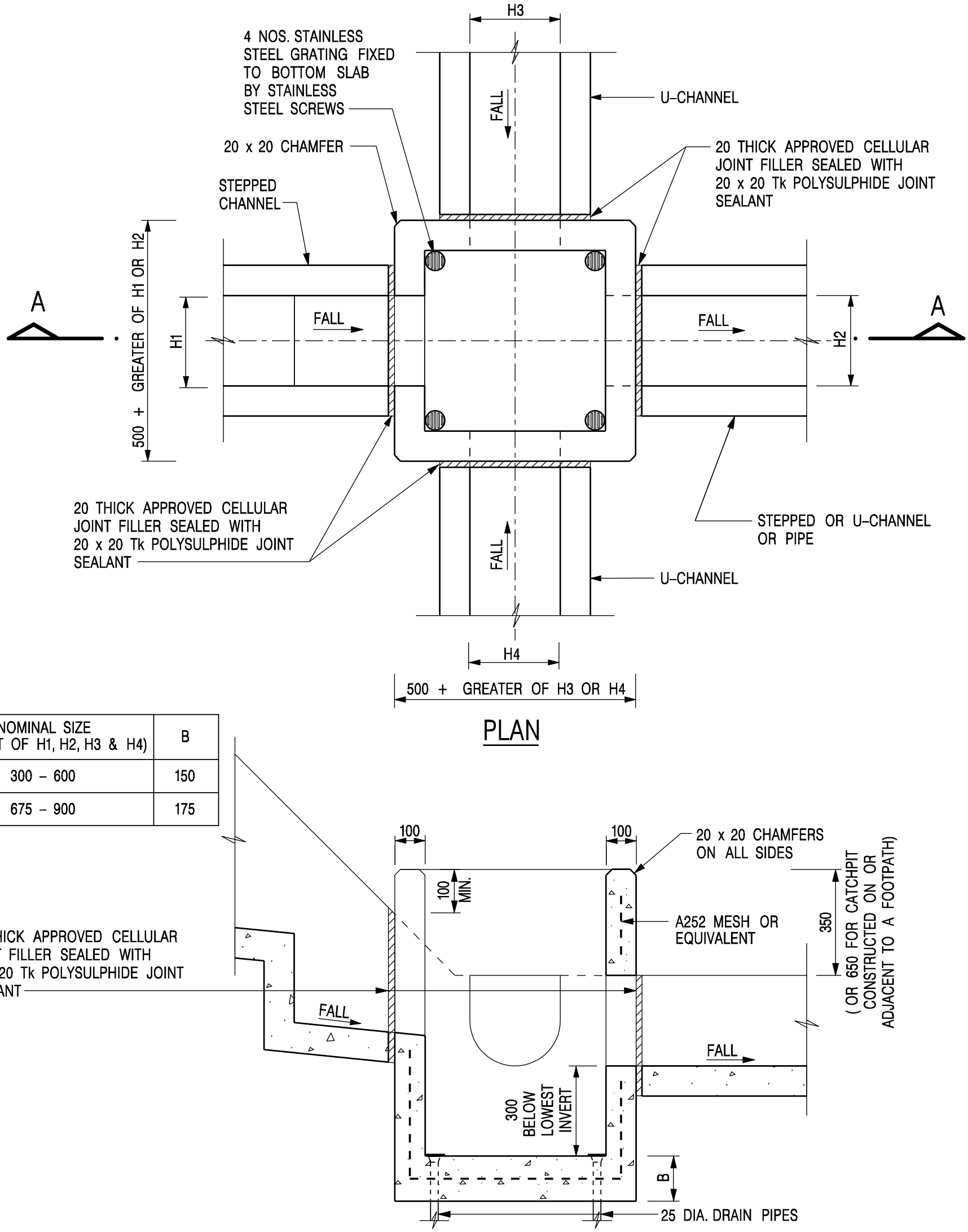
APPENDIX G
ISSUE 2

Division

Scale NOT TO SCALE

Date 01/05/2026

APPENDIX G



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

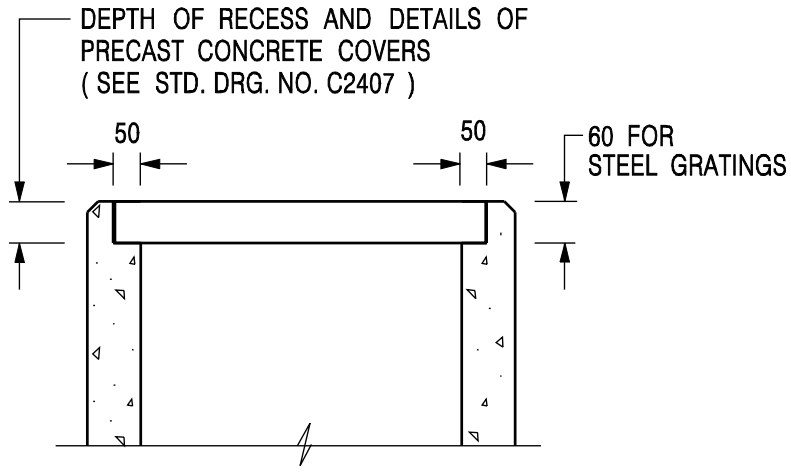
(SHEET 1 OF 2)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1



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

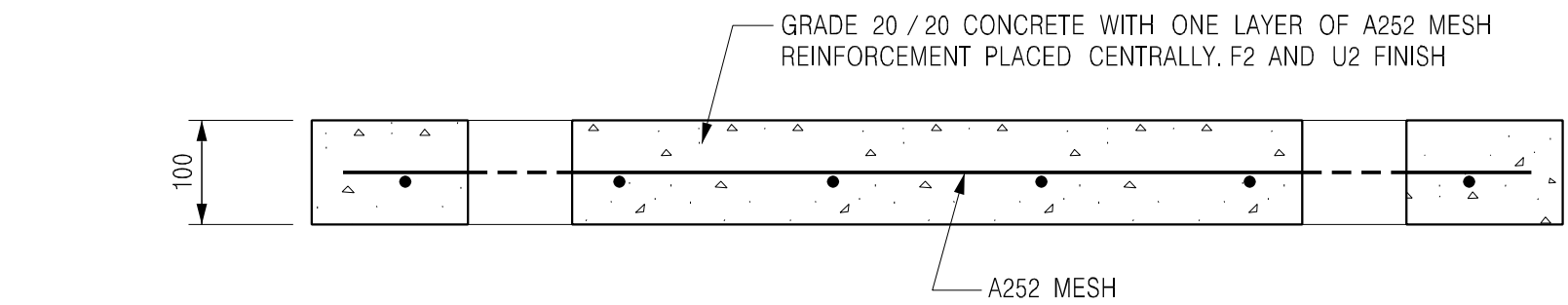
CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

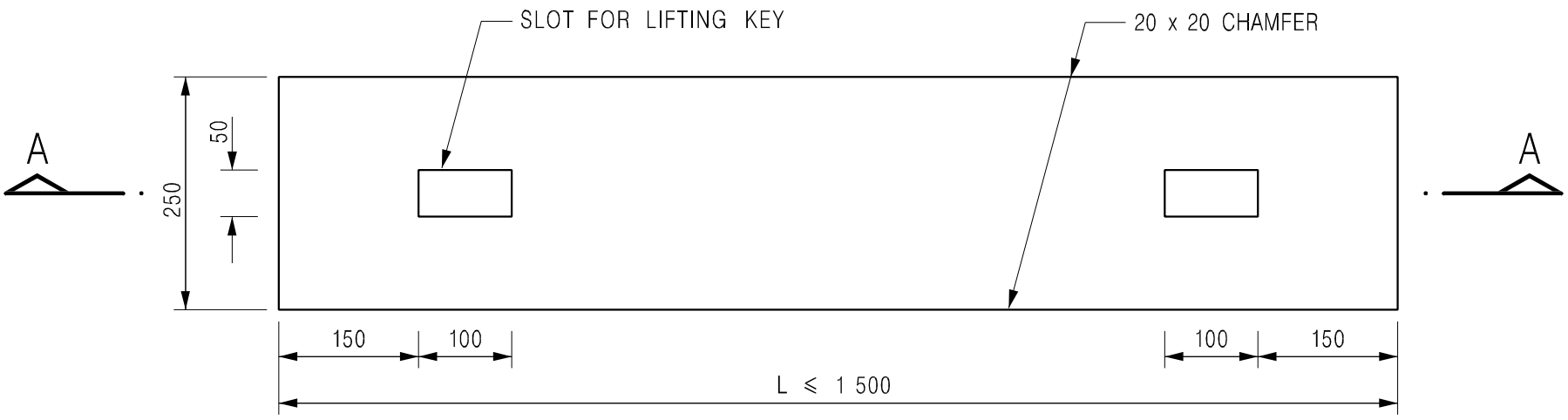
SCALE 1 : 20

DATE JAN 1991

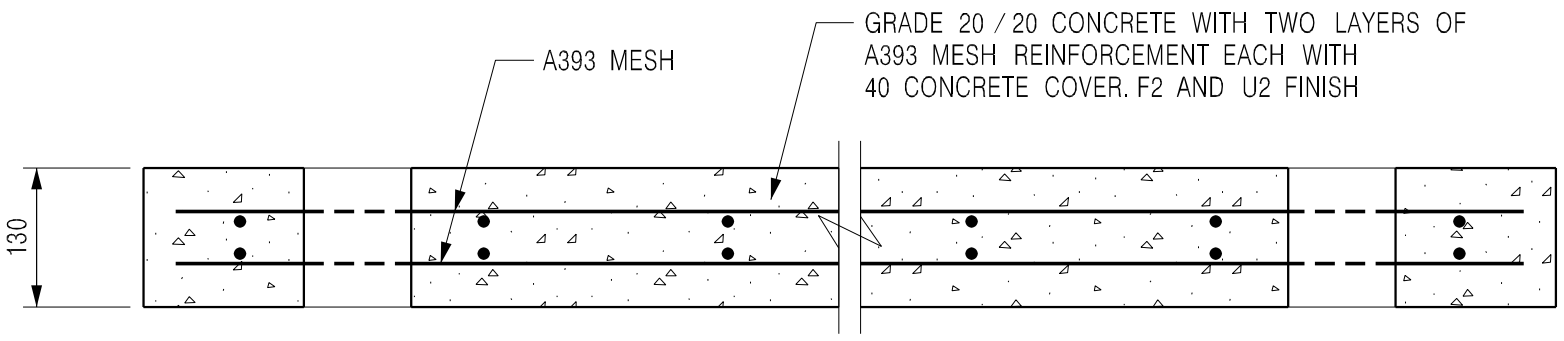
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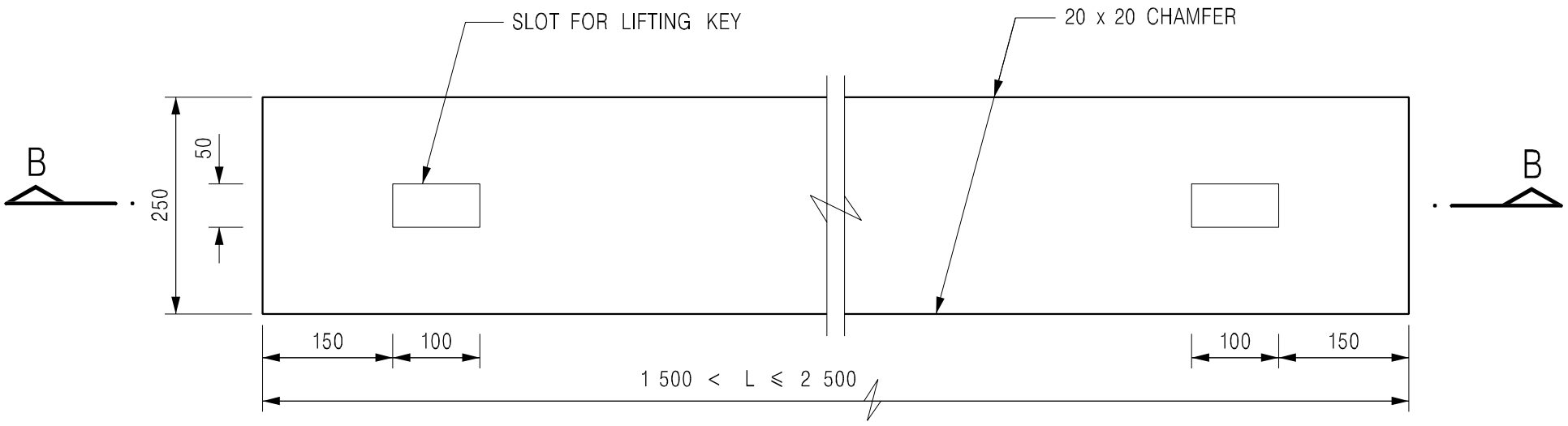
SECTION A – A



PLAN
TYPE 1 – FOR SPAN UP TO 1.5 m



SECTION B – B



PLAN
TYPE 2 – FOR SPANS 1.5 m TO 2.5 m

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL EXTERNAL EDGES OF THE COVERS SHALL BE 20mm CHAMFERED.

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

PRECAST CONCRETE COVERS FOR CATCHPIT AND SAND TRAP

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

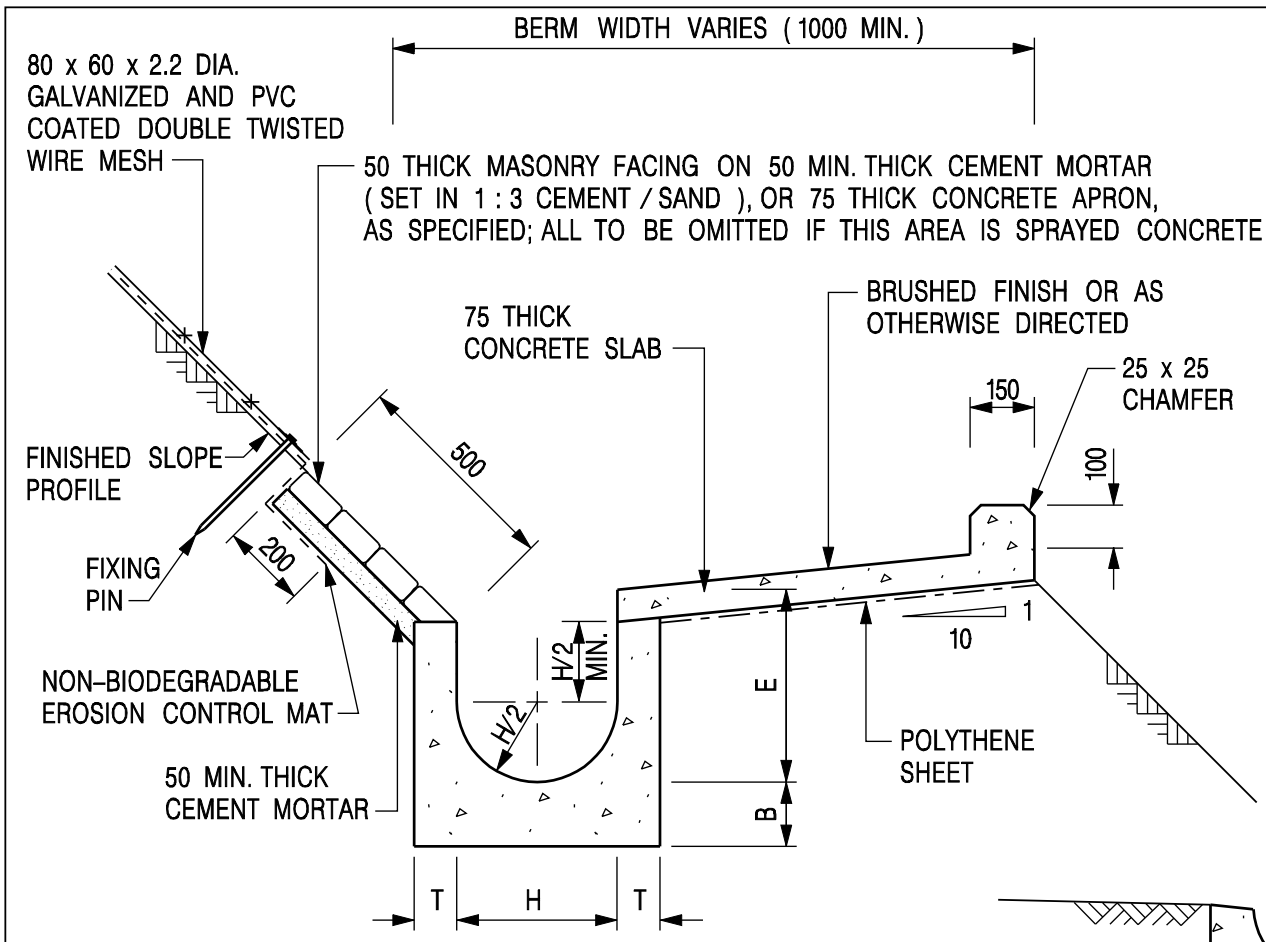
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DATE JAN 1991

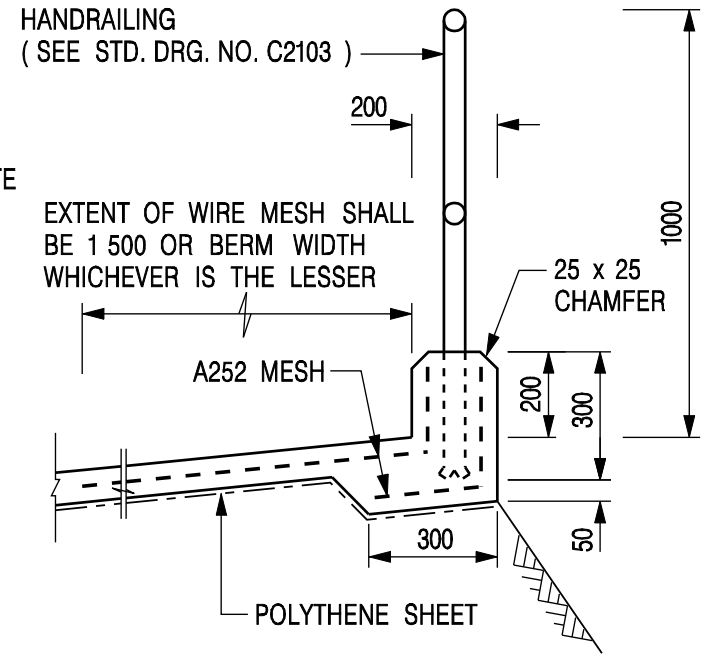
DRAWING NO. C2407B

興土木 利民生 齊拓展 創明天

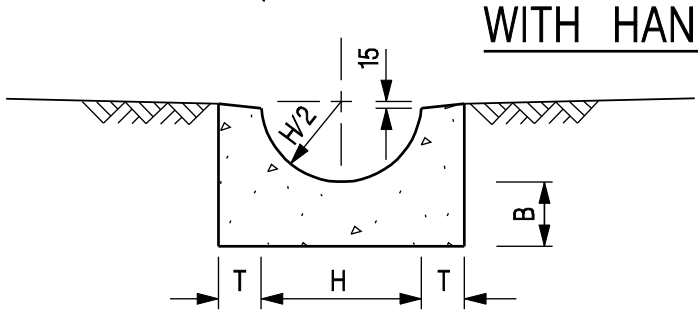
We bring the best engineering to life



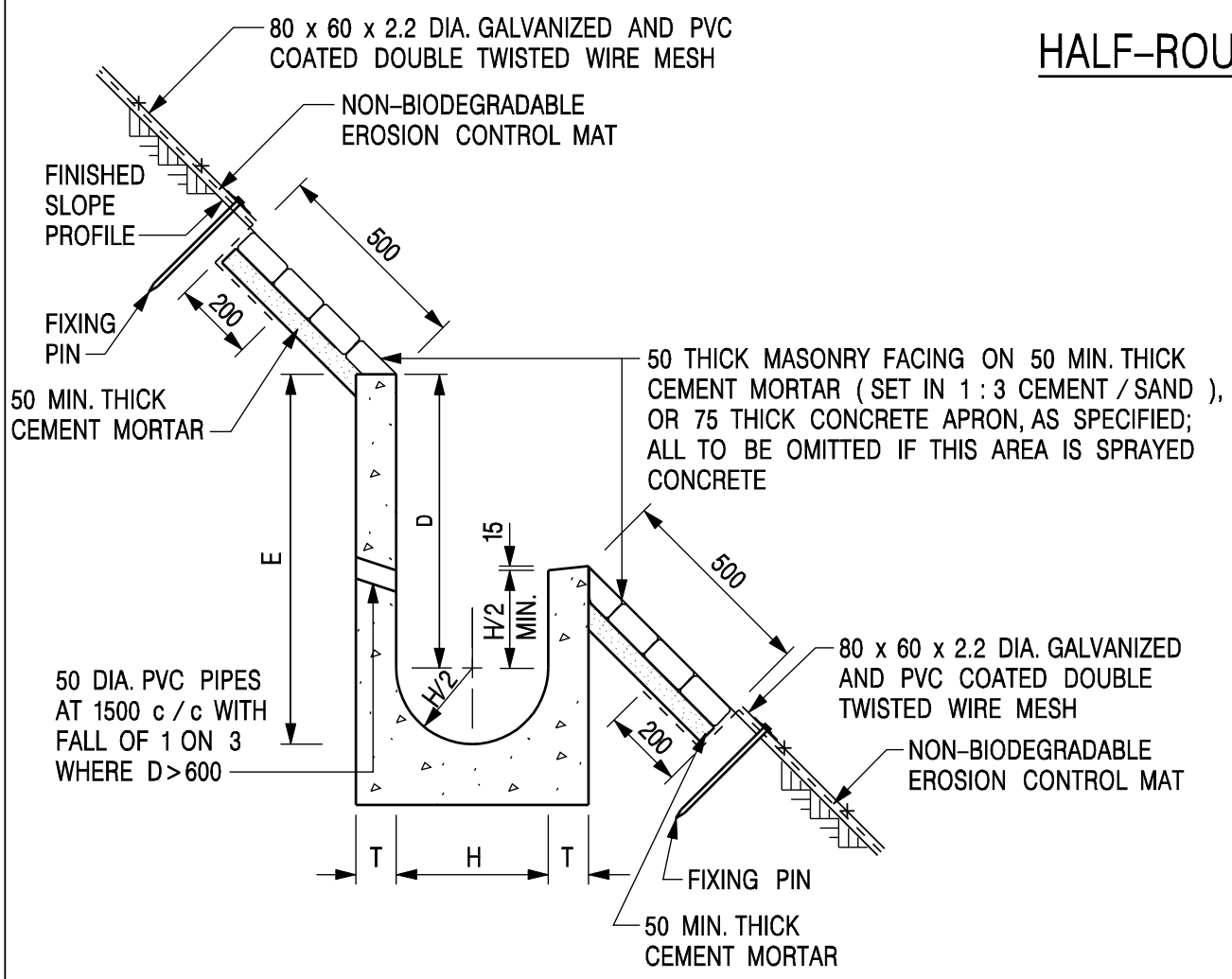
U-CHANNELS CONSTRUCTED ON BERM



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

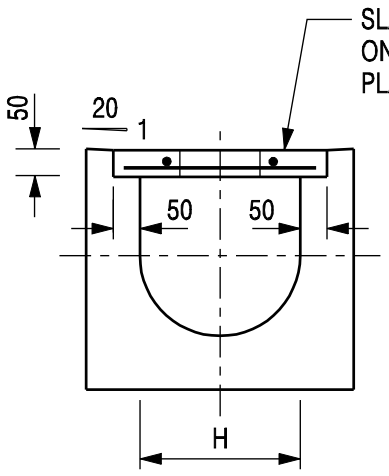
DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A - WITH MASONRY APRON)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

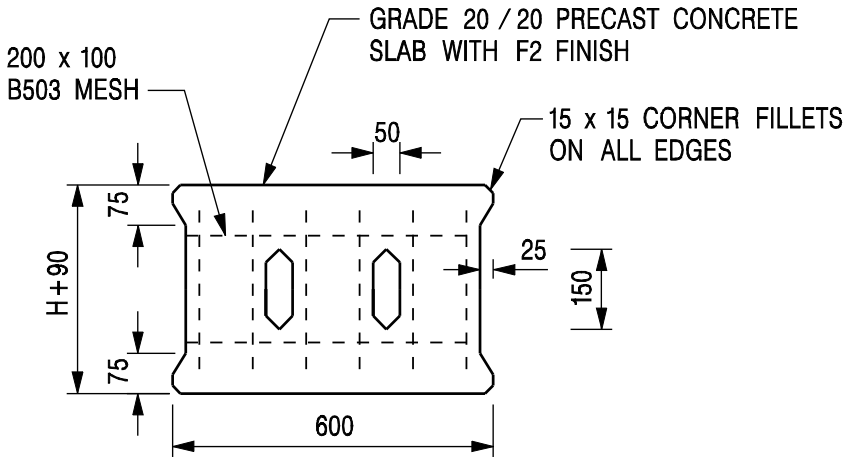
SCALE 1 : 25

DATE JAN 1991

DRAWING NO. C2409I



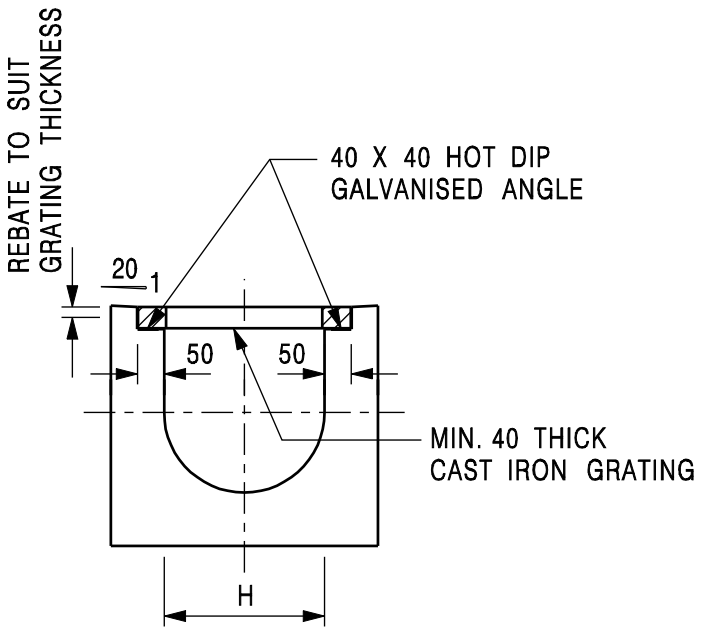
TYPICAL SECTION



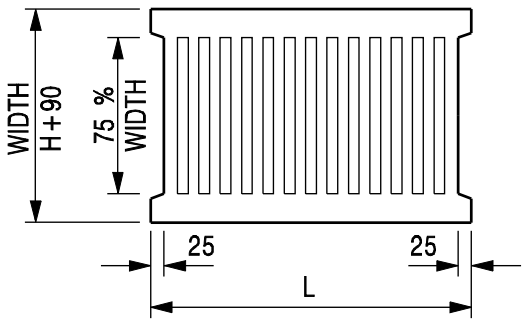
PLAN OF SLAB

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

卓越工程 建設香港

We Engineer Hong Kong's Development