

寄件者: Chong Hermose [REDACTED]
寄件日期: 2026年07月22日星期三 18:15
收件者: tpbpd/PLAND

主旨: s16 Application No. A/YL-KTN/1264 : 補充文件
附件: A_YL-KTN_1264_Approved Drainage Proposal..pdf; A_YL-KTN_1264_Approved FS_Plan.pdf

城規會/規劃處：

大家好。

有關規劃許可：**A/YL-KTN/1264** 的申請，申請人現附上補充文件，請查收。

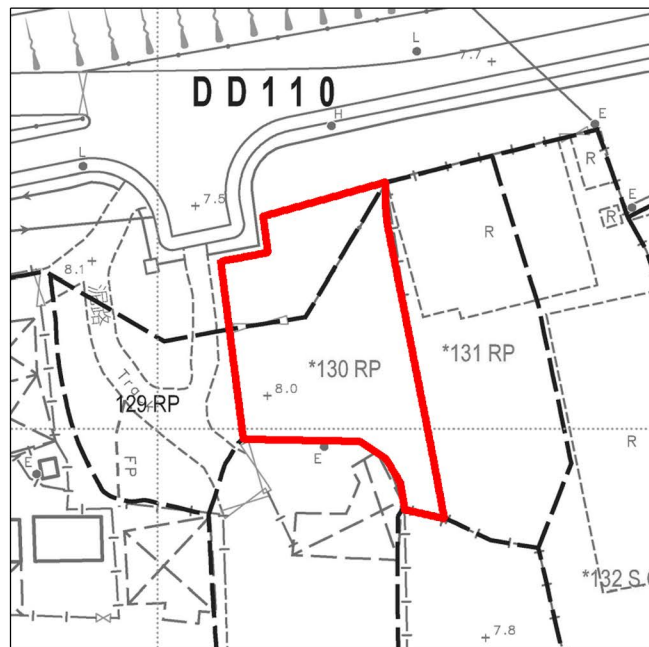
如有什麼問題，請隨時聯絡我，謝謝。

Ms Chong
([REDACTED])

F.S. NOTES :

Proposed Fire Services Installation

1. Sufficient emergency lighting shall be provided throughout the entire building in accordance with BS 5266-1:2016, BS EN 1838:2013 and the FSD Circular Letter No.4/2021.
2. Sufficient directional and exit sign shall be provided throughout the entire building in accordance with BS 5266-1:2016 and the FSD Circular Letter No. 5/2008.
3. Portable fire extinguisher shall be provided for structures in the application site.



DD 110 Lot 130 RP and Adjoining Government Land, Kam Tin, Y.L.

Application Site

Ingress/Egress 4m -

Structure 1 (Metal and Glass)
Main Structure
Multi-function Room and Conference Room
GFA: 190m² (About)
No. of storey: 2
Height: Not exceeding 8m

2 parking spaces of
5m x 2.5m for
private cars

Structure 2 (Metal and Glass)
Office and Storage room
GFA: 40m²(About)
No. of storey: 1
Height: Not exceeding 5m

1st Floor



Emergency Lighting and Portable Fire Extinguisher to be provided at 1/F.

Structure 3
Portable Toilet
GFA: 8m² (About)
No. of storey: 1
Height: Not exceeding 3m



Project 項目名稱:

Proposed Temporary Private Club for a Period of 3 Years at Lot 130 RP in D.D.110 and Adjoining Government Land , Kam Tin, Yuen Long

Drawing Title 圖紙標題:

Proposed FS Plan

Drawing No. 圖號:

20250115

Remarks 備註:



Proposed New Emergency Lighting complete with 2 hours battery backup



Proposed New Exit Sign complete with 2 hours battery backup



Proposed New 5KG CO₂ Fire Extinguisher

1. Comments from DSD

No.	Comments	Response
1	A surface channel at the peripheral of the site should be constructed to intercept all such rainwater falling onto the site.	Noted. Surface channels are proposed on three sides of the site. The remaining side is at the high point of this site and adjacent sites which will not intercept rainfall. Please refer to Appendix D.
2	Section 3: Please clarify why North District Area is adopted.	The rainfall statistics is revised to HKO Headquarters.
3	SDM Corrigendum Nos. 1/2022 and 1/2024 should be considered.	Noted with thanks.
4	The cover and invert levels of the proposed u-channels and catchpits should be shown on the drainage plan.	Noted. Appendix D1 is updated.
5	Please indicate the runoff (the flow direction) of the adjacent areas to show if there are any external catchment areas to be considered.	Noted. Appendix D2 is updated. It is noted that 510m ² of adjacent catchment area may fall on the application site. For conservative approach, a total of 1120 m ² (610 m ² + 510 m ²) area are considered in the design calculation. 300mm surface channels are found adequate to capture the external surface runoff.
6	Please clarify whether any walls or hoarding would be erected along the site boundary. Where walls or hoarding are erected/laid along the site boundary, adequate opening (practically 100mm all along the wall) should be provided to intercept the existing overland flow passing through the site.	Please be clarified that hoarding and walls with adequate opening will be erected along the site boundary. Please refer to Appendix B with updated photos attached.
7	More cross sections in different directions showing the existing and proposed ground levels of the captioned site with respect to the adjacent areas should be given. Adjacent ground levels should also be shown in Section A-A.	Noted. Section B-B, C-C and D-D are added in Appendix D3.

TEMPORARY DRAINAGE PROPOSAL



Application Site of Proposed Temporary Private Club for a
Period of 3 Years in Lot 130 Rp in D.D.110 and Adjoining
Government Land, Kam Tin, Yuen Long, New Territories
Issue 3 (November 2024)

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Appendix A Site Location

Appendix B Layout Plan

Appendix C Location and Photo of the Existing Drainage System

Appendix D1 Proposed Drainage Arrangement

Appendix D2 Runoff Flow Direction of Adjacent Areas

Appendix D3 Cross Section of Site and Adjacent Areas

Appendix E Design Calculation of Proposed Drainage Works

Appendix F Calculation Checking on Existing Public Drainage System

Appendix G Typical designs of the U-channels and Catchpits

1. Introduction

This report presents the temporary drainage proposal for supporting the Proposed Temporary Private Club for a Period of 3 Years in Lot 130 RP in D.D.110 and Adjoining Government Land, Kam Tin, Yuen Long., New Territories. For site location, please refer to **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;
- Section 5 on Construction Stage;
- Section 6 on Conclusion

2. Development Proposal

2.1. Existing Site Conditions

The application site is located in Kam Tin, Yuen Long, New Territories, with a total area of around 610 m^2 . The existing ground level varying between + 7.8 mPD and + 8.4 mPD. The site layout plan is provided in **Appendix B**.

The applied development is "Residential (Group C) 2" zoning, the type of application is the Temporary Use/Development in Rural Areas for a Period of 3 Years. 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. According to the "**Technical Note to Prepare a Drainage Submission**" issued by Drainage Services Department (DSD) in November 2001, it is regarded as simple site.

There is an existing public drainage system in vicinity of the site that can be discharged to without overload the existing drainage system, the location and photos of the existing public drainage system is shown in **Appendix C**.

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. It is recommended to design the system with a return period of 50 years to ensure its adequacy in managing stormwater drainage.

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 Q_p = Peak Runoff, m^3/s

C = Runoff Coefficient

i = Rainfall Intensity, mm/hr

A = Catchment Area, km^2

The runoff coefficient of 1 is assumed.

Based on the storm constants for the 50-year return period recommended in the SDM, the appropriate rainfall intensities (i) are calculated as detailed in **Appendix E**.

3.2. Calculation Methodology for Capacity Checking

Since the catchment areas are less than 1ha, surface U-channels are recommended to be constructed to collect the stormwater runoff within the site. The collected stormwater should finally be diverted to the existing 525mm U channel in vicinity of the site via the proposed U-channel and pipe system.

For the worst-case scenario, bad condition of concrete u channel is assumed for the Manning's roughness coefficient i.e coefficient value is 0.016 for calculating capacities

of concrete U-channel using Manning's Equation. The recommended roughness values k_s for concrete channels with float finish is 3.3 mm under normal condition.

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

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

where V = mean velocity, m/s

S = slope of the total energy line

n = Manning's roughness coefficient

R = hydraulic radius, m

3.3. Summary of Assessment Assumptions

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

- 50 years return period is adopted;
- Runoff coefficient of 1 for the paved area is assumed;
- Storm constants for 50 years return periods of HKO Headquarters
- Manning's roughness coefficient of 0.016 for the proposed concrete U-channels and concrete pipe are adopted.

4. Potential Drainage Impact

4.1. Change in Drainage Characteristics

There is no existing drainage provision inside the current site, the collected stormwater was discharged as surface runoff and infiltration leading to the natural stream or river before the development.

The area of the site will account for 610 m^2 , which is considered as catchment area CA1 in Appendix D2. According to the survey data and observation from site visit, the surface runoff from adjacent site DD110Lot131RP of 510 m^2 may fall on the application site, which is considered as catchment area CA2. Therefore, the total area of 1120 m^2 are considered in the design calculation.

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.

Since there are no changes in drainage characteristics, it is considered that the drainage discharge from the application site will not cause adverse impact to the entire downstream drainage system. For conservative approach, calculation for demonstrating the existing downstream drainage system has adequate spare capacity is attached in **Appendix F**.

4.2. Potential Drainage Impact

The runoff from the application site is proposed to be collected by U-channels along three sides of the site and discharged to the terminate catchpit with sand trap, and eventually lead to the existing urban 525mm U channel in vicinity of the site. The details of the proposed drainage works are illustrated in **Appendix D1**. The surface runoff direction of adjacent areas and section marks are indicated in **Appendix D2**. Four sections of site and adjacent areas are shown in **Appendix D3**.

For conservative approach, the critical scenario is considered for collecting all the flow in the catchment area leading to the 300 mm U-channel. The design calculations of the proposed U- channel are calculated as detailed in **Appendix E**. Typical designs of the U-channels and Catchpits are shown in **Appendix G**.

The design runoff arising from the proposed application site is to be discharged into the proposed 300 mm U-channel and connect with the existing public drainage system with a catchpit with trap in according with **CEDD Standard Drawing C2406/1 and C2406/2A**. The design calculation for U channel is summarized in **Table 1**.

U -channel	Catchment Area¹ (m²)	Proposed U-channel Size (mm)	Estimated Peak Runoff (m³/s)	Capacity (%)
UC1	1120	300	0.08208	74%
UC2	1120	300	0.08201	74%
UC3	1120	300	0.08195	52%
UC4	1120	300	0.08188	52%
UC5	1120	300	0.09027	57%
UC6	1120	300	0.08195	40%

Table 1 Summary of Estimated Runoffs and Proposed U-channel Size

¹Accumulated catchment area of application site and adjacent area

5. Construction Stage

5.1. Temporary Drainage Arrangements

Proper measures shall be taken to maintain the existing drainage characteristics of the catchment areas and to minimize drainage impacts associated with the construction works. The principal drainage impacts which are associated with construction of the works have been identified as follows:

- (a) Erosion of ground materials;
- (b) Sediment transportation to existing downstream drainage system; and
- (c) Obstruction to drainage systems.

Construction of the catchpit connecting with the existing public drainage system shall only be carried out in dry season. Temporary local diversion will be provided during the construction. Regular inspections shall be carried out to ensure integrity of the works. These inspections shall cover works under construction as well as recently completed areas.

To ensure proper operation of the site drainage channels and desilting facilities, inspection of the perimeter drains shall be carried out regularly and the desilting facilities shall be cleaned regularly.

Liaison will be carried out with relevant parties and comments shall be sought from relevant government departments regarding temporary drainage arrangements to ensure that the drainage system is functioning adequately.

6. Conclusion

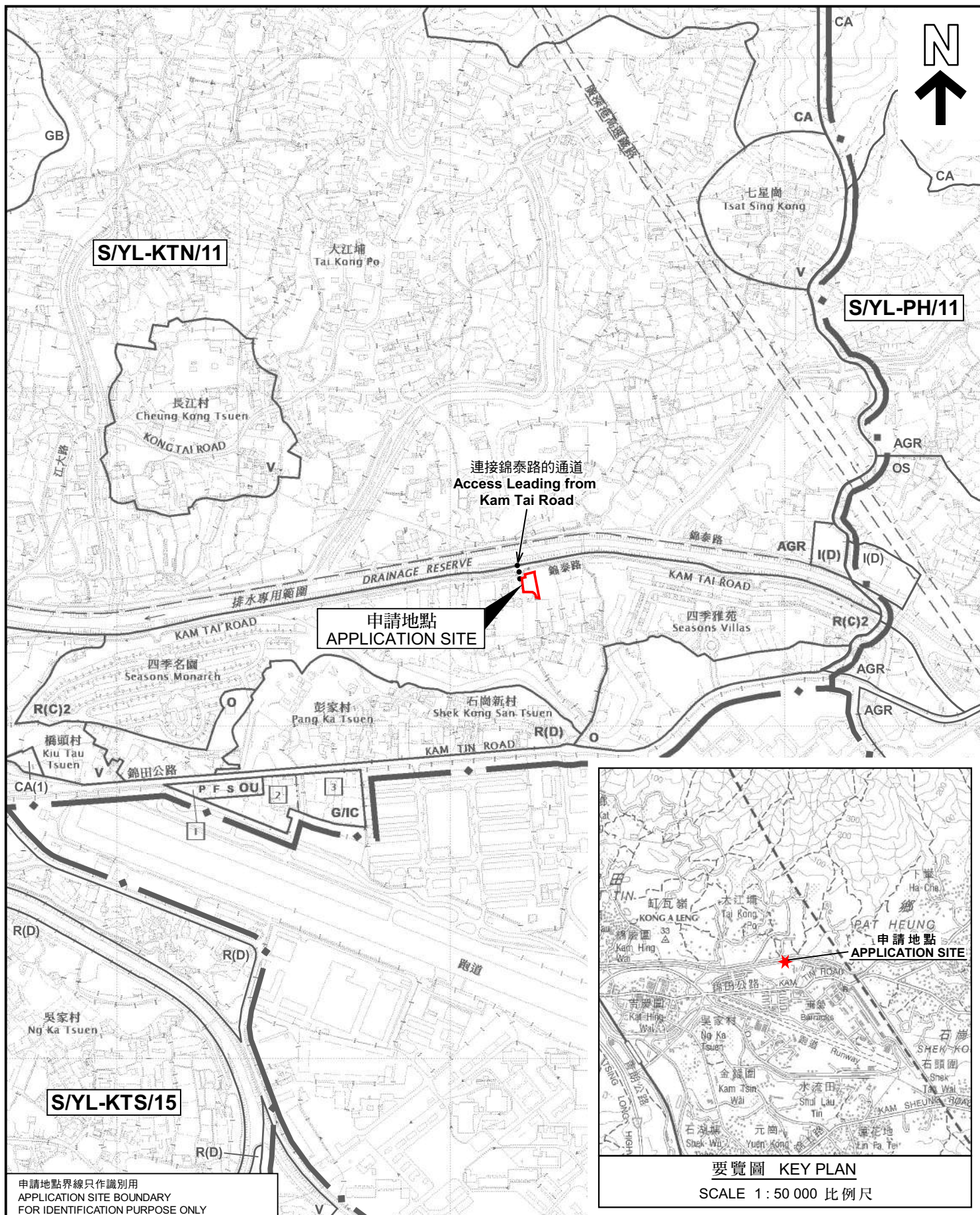
A temporary drainage proposal has been designed for proposed temporary private club for a period of 3 years in lot 130 rp in d.d.110 and adjoining government land, Kam Tin, Yuen Long., New Territories.

In the design calculation, 300 mm U-channel found adequate and proposed to convey at the peak runoff under the 50 years return period from the application site.

The stormwater collected from this application site will be discharged to the existing public drainage system which is a 525mm U channel in vicinity of the site without overloading the existing drainage system.

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

Appendix A



位置圖 LOCATION PLAN

本摘要圖於2024年2月7日擬備，
所根據的資料為於2023年12月5日
核准的分區計劃大綱圖編號 S/YL-KTN/11
EXTRACT PLAN PREPARED ON 7.2.2024
BASED ON OUTLINE ZONING PLAN No.
S/YL-KTN/11 APPROVED ON 5.12.2023

擬議臨時私人會所（為期3年）
PROPOSED TEMPORARY PRIVATE CLUB FOR A PERIOD OF 3 YEARS
LOT 130 RP IN D.D.110 AND ADJOINING GOVERNMENT LAND,
KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE 1: 7 500 比例尺
100 0 100 200 300
METRES METRES

規劃署
PLANNING
DEPARTMENT



參考編號
REFERENCE No.
A/YL-KTN/984

圖 PLAN
A-1

Appendix B



申請地點界線只作識別用 APPLICATION SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

實地照片 SITE PHOTOS

本圖於2024年3月6日擬備，所根據的資料為攝於2024年2月27日及2024年3月4日的實地照片

PLAN PREPARED ON 6.3.2024
BASED ON SITE PHOTOS
TAKEN ON 27.2.2024 & 4.3.2024

擬議臨時私人會所（為期3年）
PROPOSED TEMPORARY PRIVATE CLUB FOR A PERIOD OF 3 YEARS
LOT 130 RP IN D.D.110 AND ADJOINING GOVERNMENT LAND,
KAM TIN, YUEN LONG, NEW TERRITORIES

規劃署
PLANNING
DEPARTMENT

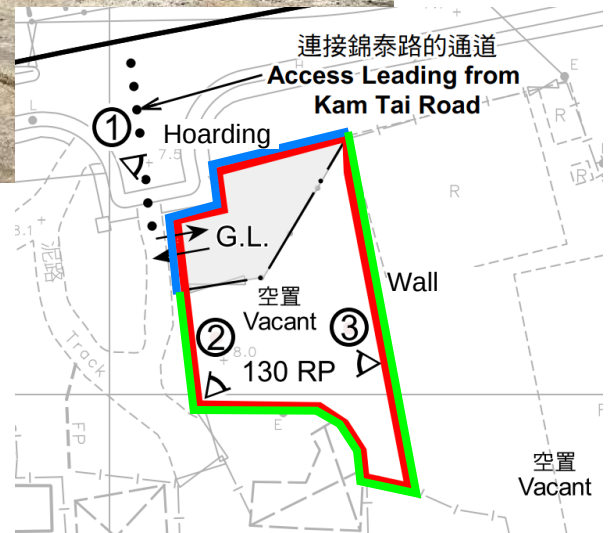


參考編號
REFERENCE No.
A/YL-KTN/984

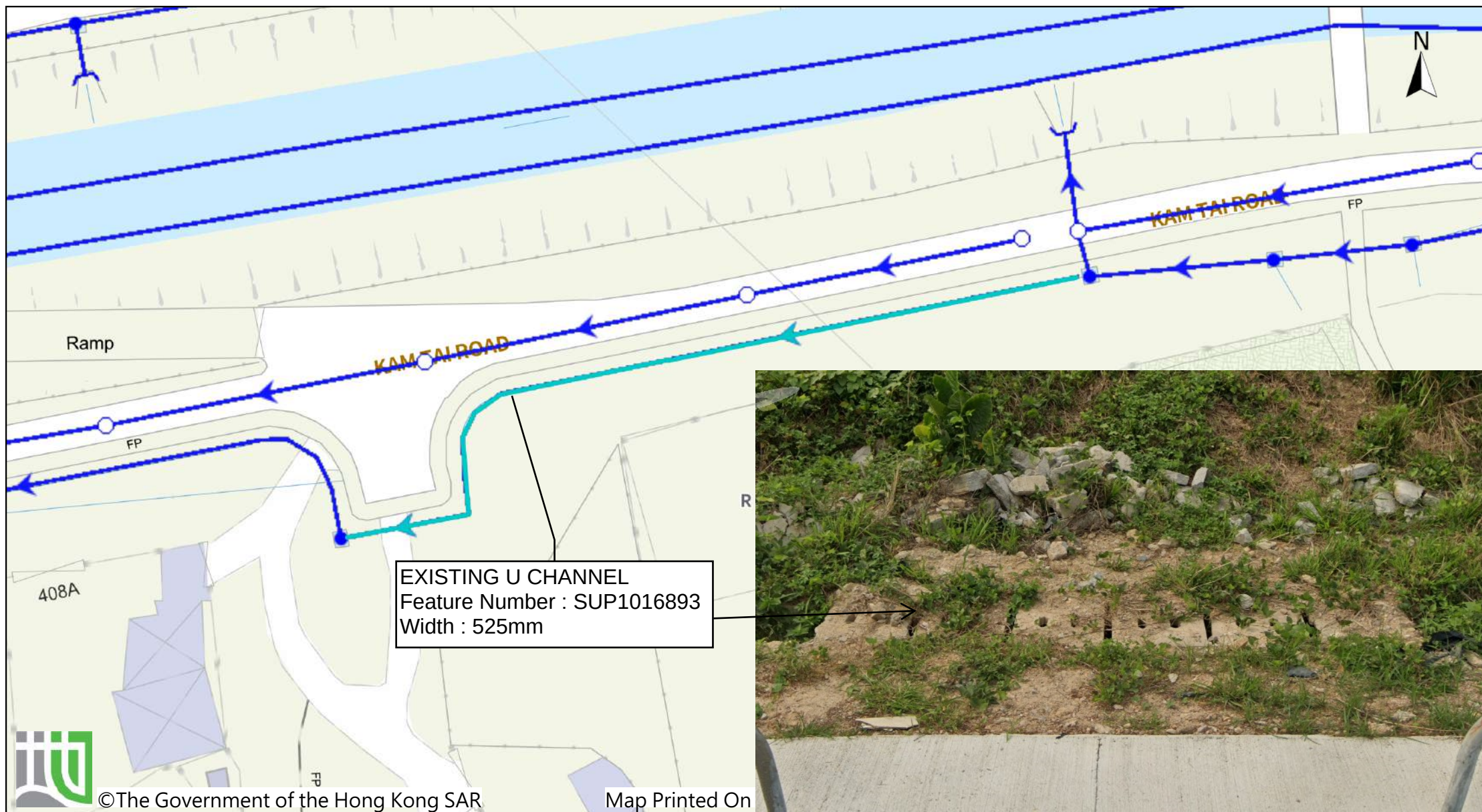
圖 PLAN
A-4



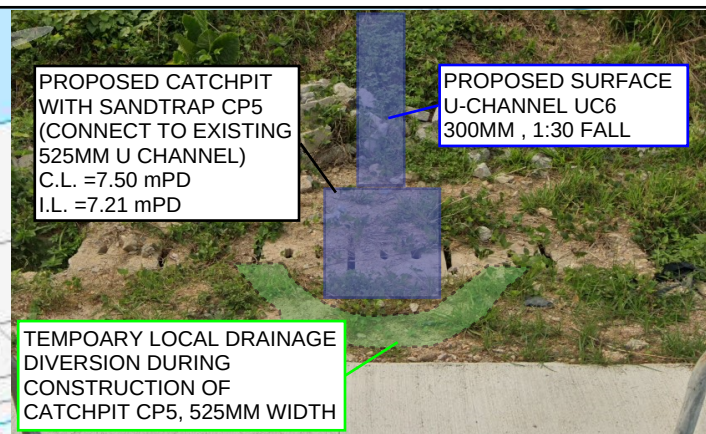
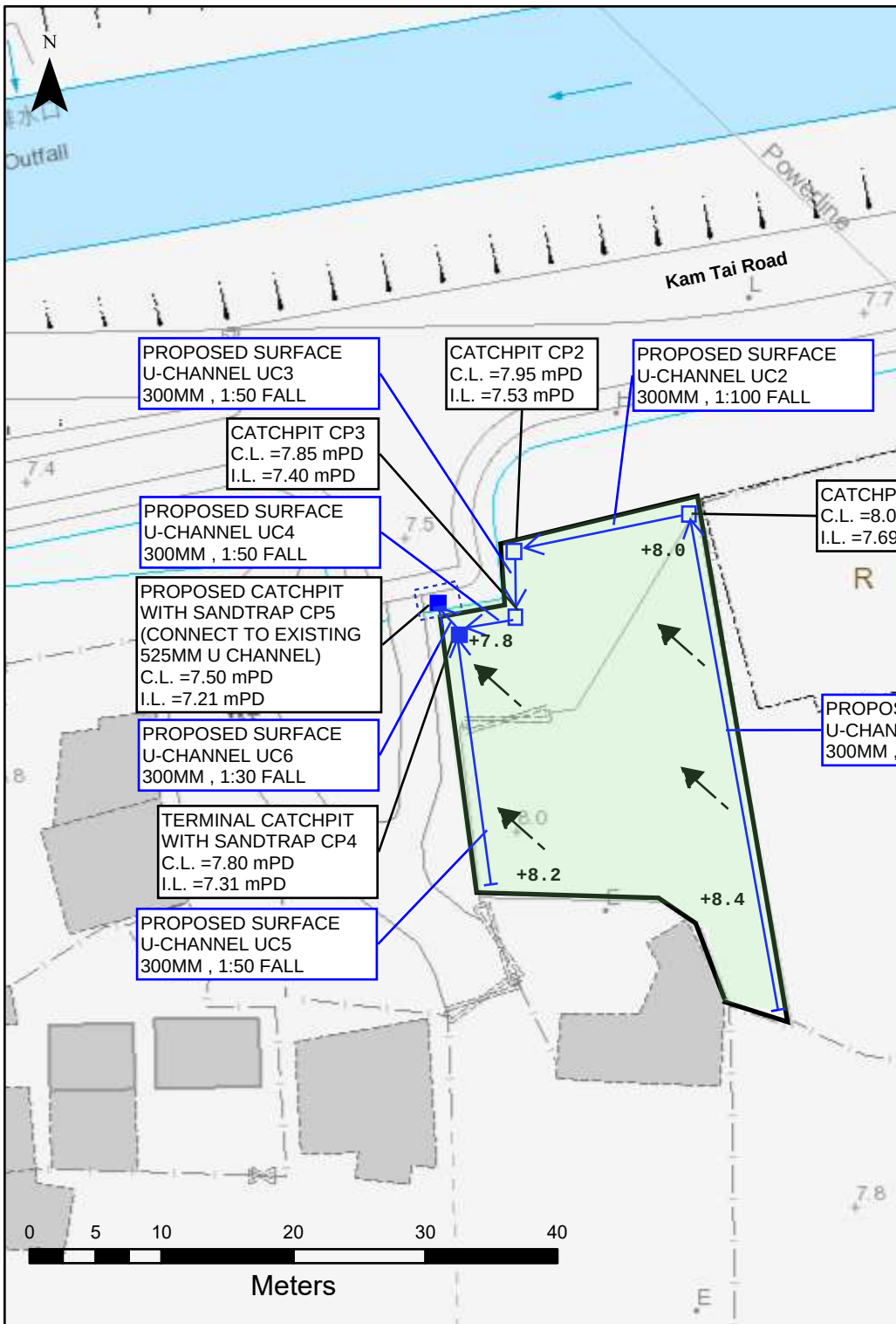
Appendix B: Updated Site Photos (Nov 2024)



Appendix C



Appendix D1, 2 and 3



SITE PLAN

PROJECT :

APPLICATION FOR PROPOSED TEMPORARY PRIVATE CLUB FOR A PERIOD OF 3 YEARS LOT 130 RP IN D.D.110 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES

DRAWING TITLE:

PROPOSED DRAINAGE WORKS

ISSUE 3

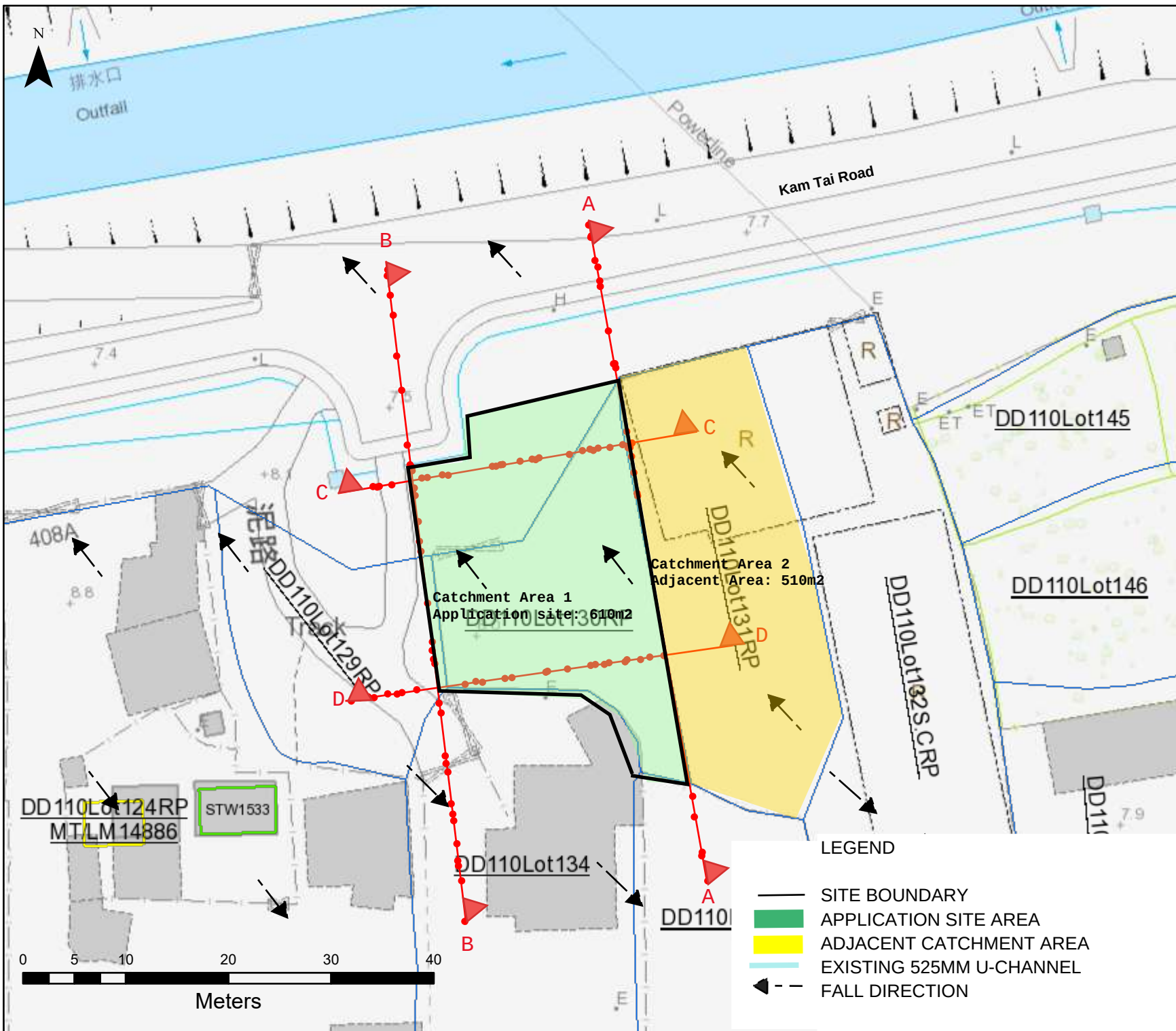
LEGEND

- SITE BOUNDARY
- SITE AREA
- ← PROPOSED U- CHANNEL
- PROPOSED CATCHPIT
- PROPOSED CATCHPIT WITH SANDTRAP
- EXISTING 525MM U-CHANNEL
- ◀ -- FALL DIRECTION

Scale 1:500

Date 24/11/2024

APPENDIX D1



SITE PLAN

PROJECT :

APPLICATION FOR
PROPOSED
TEMPORARY PRIVATE
CLUB FOR A PERIOD OF
3 YEARS LOT 130 RP IN
D.D.110 AND ADJOINING
GOVERNMENT
LAND,KAM TIN, YUEN
LONG, NEW
TERRITORIESN

DRAWING TITLE:

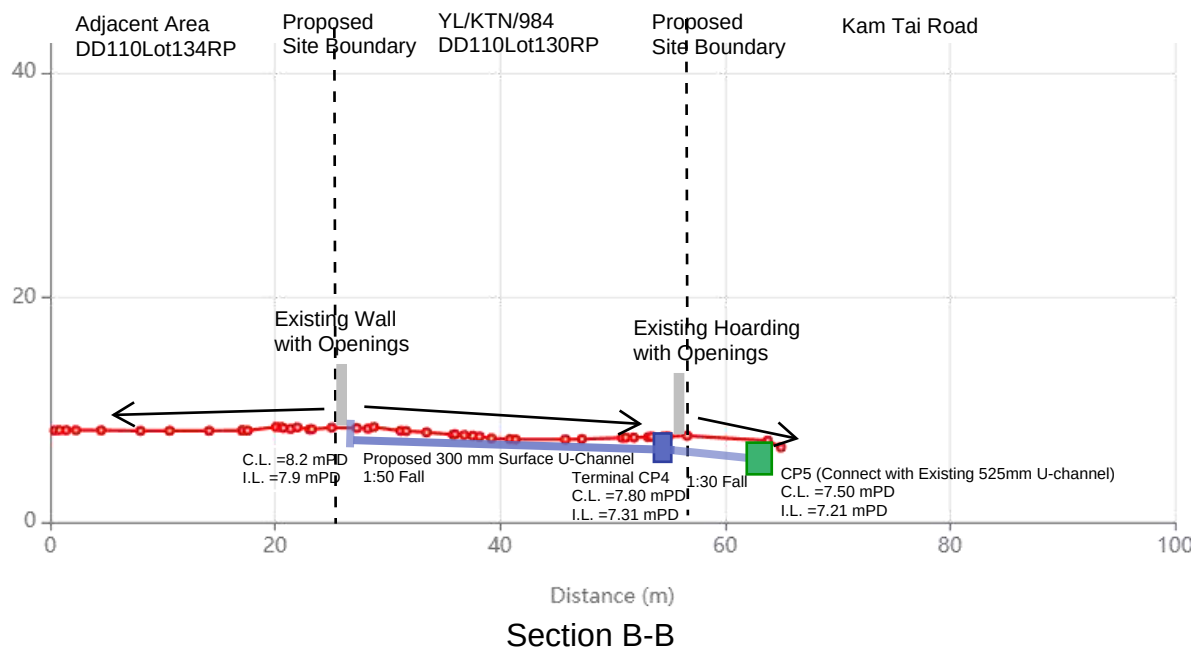
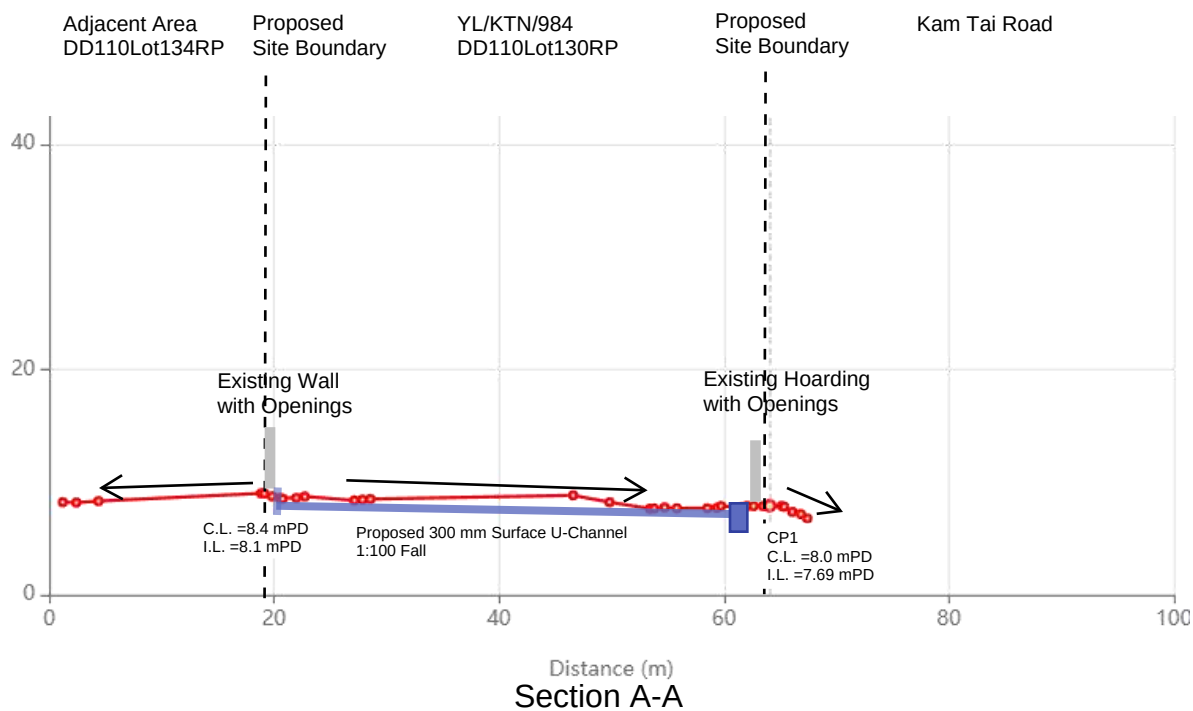
RUNOFF FLOW
DIRECTION OF
ADJACENT AREAS WITH
SECTION MARKS

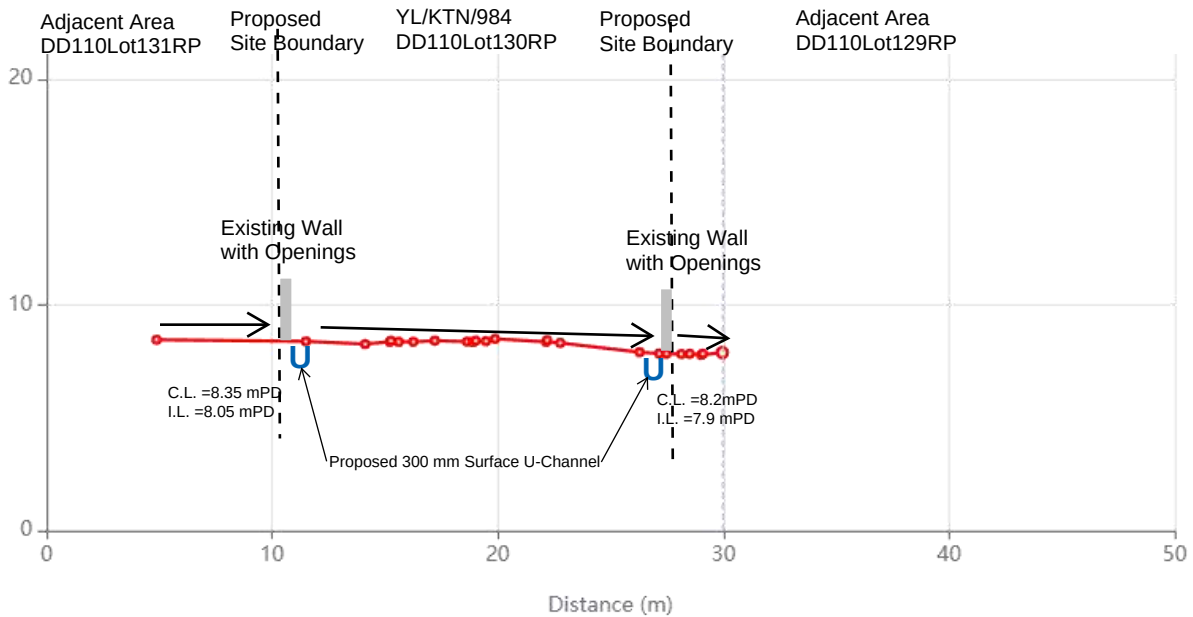
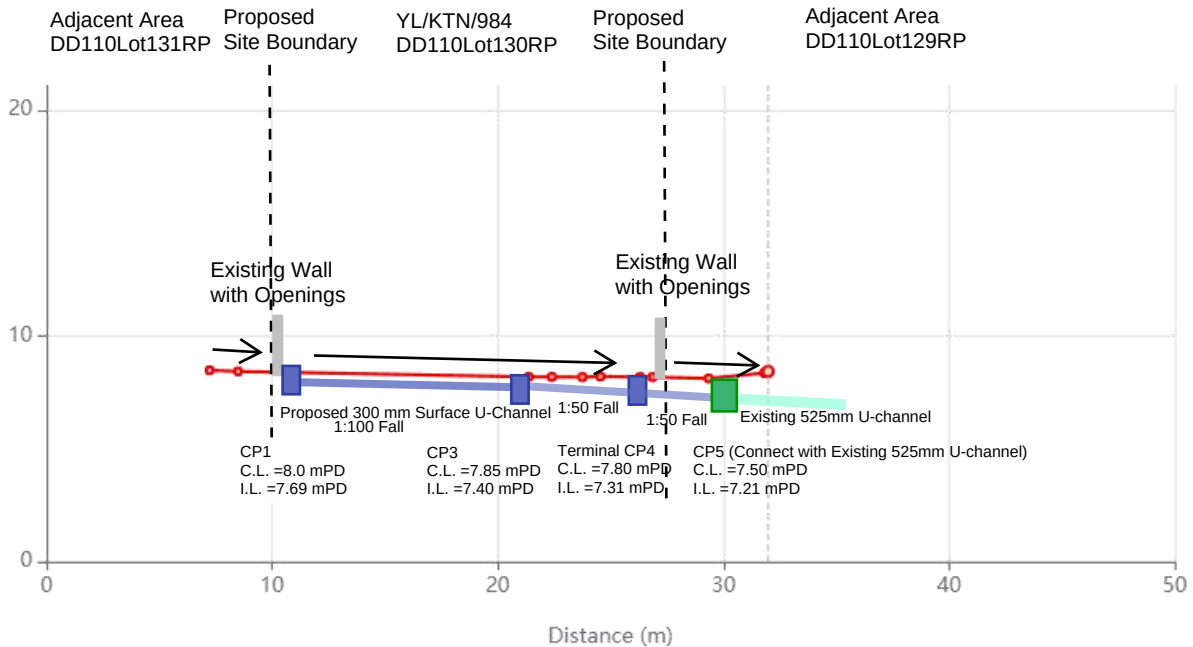
ISSUE 3

Scale 1:500

Date 24/11/2024

APPENDIX D2





Appendix E

Calculation Sheet																	Date:	2024-11-24				
Project Title: APPLICATION SITE OF PROPOSED TEMPORARY PRIVATE CLUB FOR A PERIOD OF 3 YEARS IN LOT 130 RP IN D.D.110 AND ADJOINING GOVERNMENT LAND, KAM TIN, YUEN LONG, NEW TERRITORIES																	Project No.:		YL-KTN-984			
																	Designed by:		RF			
																	Appendix :		E			
																	Sheet No.:		1			

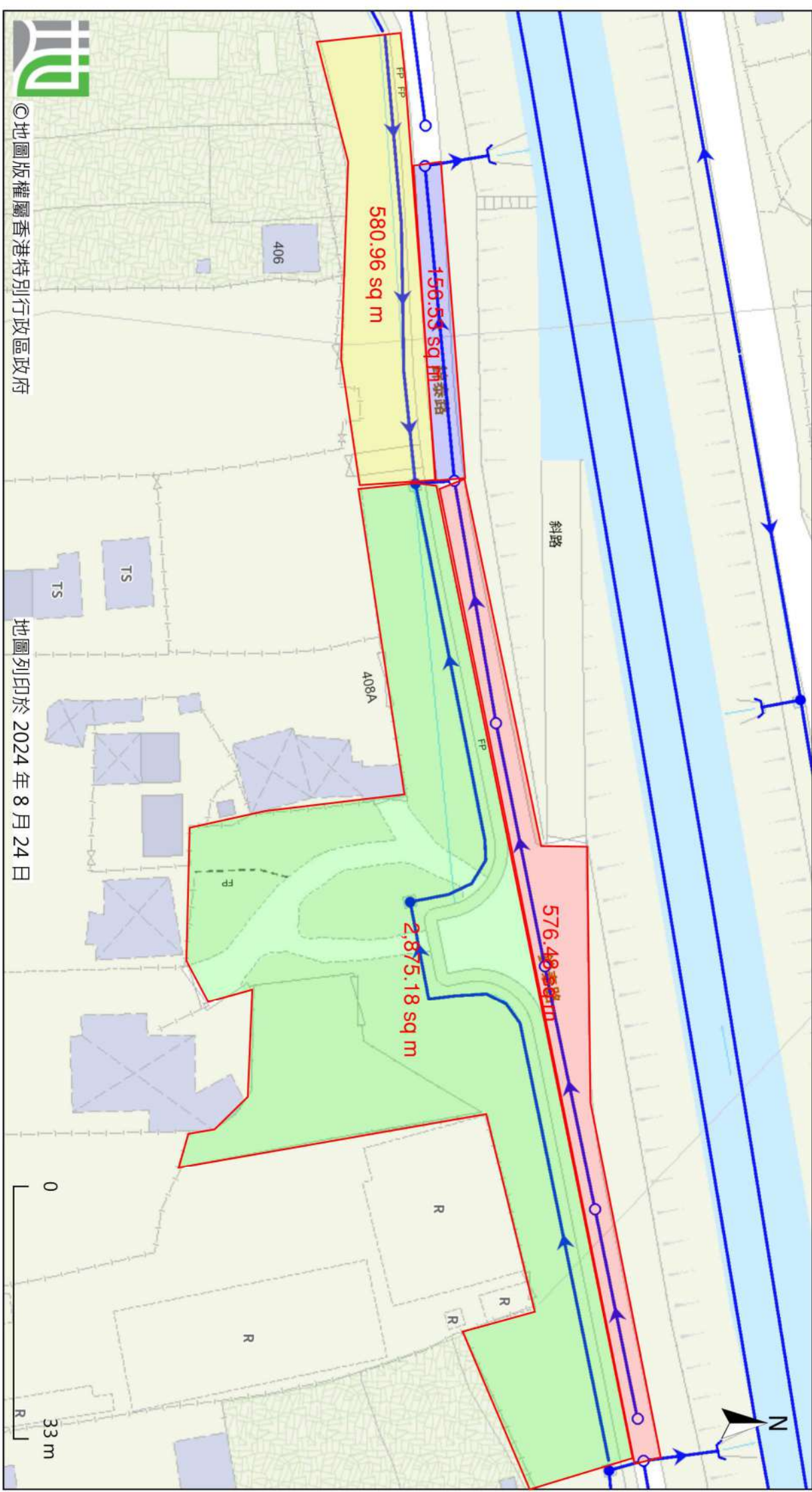
Design for Proposed U Channel for Development Area

UC No.	Catchpit No.		Catchment				Level				U Channel							Manning's Equation									
	From (U/S)	To (D/S)	Site Area (m ²)	Site and Adjacent Area (m ²)	Runoff Coef. C	Ave. Slope / 100m	U/S G.L. (mPD)	D/S G.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Material	Width (mm)	Depth (mm)	Lgth (m)	Grad. (1 in)	U Channel Area A (m ²)	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
1	-	CP1	610	1120	1	1	8.40	8.00	8.10	7.69	CO	300	300	41.4	100	0.08	0.77	0.10	0.016	1.384	0.111	OK	2.968	263.63	0.082	74%	OK
2	CP1	CP2	610	1120	1	1	8.00	7.95	7.69	7.53	CO	300	300	15.6	100	0.08	0.77	0.10	0.016	1.384	0.111	OK	2.984	263.38	0.082	74%	OK
3	CP2	CP3	610	1120	1	1	7.95	7.85	7.53	7.40	CO	300	300	6.5	50	0.08	0.77	0.10	0.016	1.957	0.157	OK	2.996	263.21	0.082	52%	OK
4	CP3	CP4	610	1120	1	1	7.80	7.80	7.40	7.31	CO	300	300	4.5	50	0.08	0.77	0.10	0.016	1.957	0.157	OK	3.013	262.96	0.082	52%	OK
5	-	CP4	610	1120	1	1	8.20	7.80	7.90	7.48	CO	300	300	20.9	50	0.08	0.77	0.10	0.016	1.957	0.157	OK	1.498	289.91	0.090	57%	OK
6	CP4	CP5	610	1120	1	1	7.80	7.50	7.31	7.21	CO	300	300	3	30	0.08	0.77	0.10	0.016	2.526	0.203	OK	2.997	263.19	0.082	40%	OK

Formulae:

t _c	=	Time of Concentration	=	t _o + t _f	
		where	t _o	=	Inlet Time = 2.968 min
			t _f	=	Flow Time = L (Pipe Length / Flow Velocity)
V	=	Pipe Flow Velocity			
	=	(R) ^{2/3} s ^{1/2} / n			for Manning's Equation
		where	g	=	Gravitational Acceleration = 9.81 m/s ²
			R	=	Hydraulic Radius
			s	=	Frictional Slope
			k _s	=	Surface Roughness
				=	3.3 mm for concrete CO
				=	0.06 mm for cast iron CI
				=	0.6 mm for ductile iron DI
			n	=	Kine. Viscosity = 1.141E-06 m ² /s
			n	=	Manning's Coef. = 0.016 for concrete CO
				=	0.015 for cast iron CI
				=	0.015 for ductile iron DI
Q _o	=	Pipe Flow Capacity	=	(pD ² /4)V	
i	=	Rainfall Intensity	at	HKO Headquarters	
	=	a / (t _c + b) ^c	where	a = 505.5 for a return period of 50 years	Ref. DSD SDM Table 3a
				b = 3.29	
				c = 0.355	
Q	=	Runoff	=	0.278 * C * A	
		where	C	=	Runoff Coefficient
			A	=	Catchment Area

Appendix F



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地圖列印於 2024 年 8 月 24 日

由「地理資訊地圖」網站提供: <https://www.map.gov.hk>

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Manning's Eq.

750mm Pipe (The ultimate discharge point)

Diameter	=	750	mm
Cross-sectional area of pipe	=	0.5021	
Gradient	=	0.010	
Restricted flow velocity under sedimentation	=	2.719	m/s
Design Capacity	=	0.038	m ³ /s
		1.3%	

The flow generated from the application site is only 1.3% of the flow capability of the 750mm pipe that connect to the 12000mm open channel.

Calculation demonstrating the existing downstream drainage system:

Catchment	K	Area (A)
Catchment Area 1	1.00	2875.0 m ²

Design flow, Q

$$= 0.278 \sqrt{\Sigma K A}$$
$$= 0.324 \text{ m}^3/\text{s}$$

525mm u-channel capacity by others

Diameter	=	525	mm
Cross-sectional area of UC	=	0.2461	
Gradient	=	0.010	
Restricted flow velocity under sedimentation	=	2.143	m/s
Design Capacity	=	0.527	m ³ /s
Design flow, Q	>	0.324	m ³ /s
Reserve Capacity		39%	

Manning's Eq.

OK



Catchment	K	Area (A)
	1.00	581.0 m ²

Design flow, Q

$$= 0.278 \sqrt{\Sigma K A}$$
$$= 0.065 \text{ m}^3/\text{s}$$

525mm u-channel capacity by others

Diameter	=	525	mm
Cross-sectional area of UC	=	0.2461	
Gradient	=	0.010	
Restricted flow velocity under sedimentation	=	2.143	m/s
Design Capacity	=	0.527	m ³ /s
Design flow, Q	>	0.065	m ³ /s
Reserve Capacity		88%	

Manning's Eq.

OK



Manning's Eq.

Catchment	K	Area (A)
Catchment Area 1	1.00	2875.0 m ²
Catchment Area 2	1.00	581.0 m ²
Total	1.00	3456.0 m ²

Design flow, Q

750mm u-channel capacity by others

Diameter

Cross-sectional area of pipe

Gradient

Restricted flow velocity under sedimentation

Design Capacity

Design flow, Q

Reserve Capacity



$$\begin{aligned} &= 0.278 \text{ i } \Sigma K A \\ &= 0.389 \text{ m}^3/\text{s} \\ &= 750 \text{ mm} \\ &= 0.5021 \\ &= 0.010 \\ &= 2.719 \text{ m/s} \\ &= 1.365 \text{ m}^3/\text{s} \\ &> 0.389 \text{ m}^3/\text{s} \quad \text{OK} \\ &\quad \underline{71\%} \end{aligned}$$



Catchment	K	Area (A)
Catchment Area 1	1.00	2875.0 m ²
Catchment Area 2	1.00	581.0 m ²
Catchment Area 3	1.00	577.0 m ²
Catchment Area 4	1.00	151.0 m ²
Total	1.00	4184.0 m ²

Design flow, Q

750mm u-channel capacity by others

Diameter

Cross-sectional area of pipe

Gradient

Restricted flow velocity under sedimentation

Design Capacity

Design flow, Q

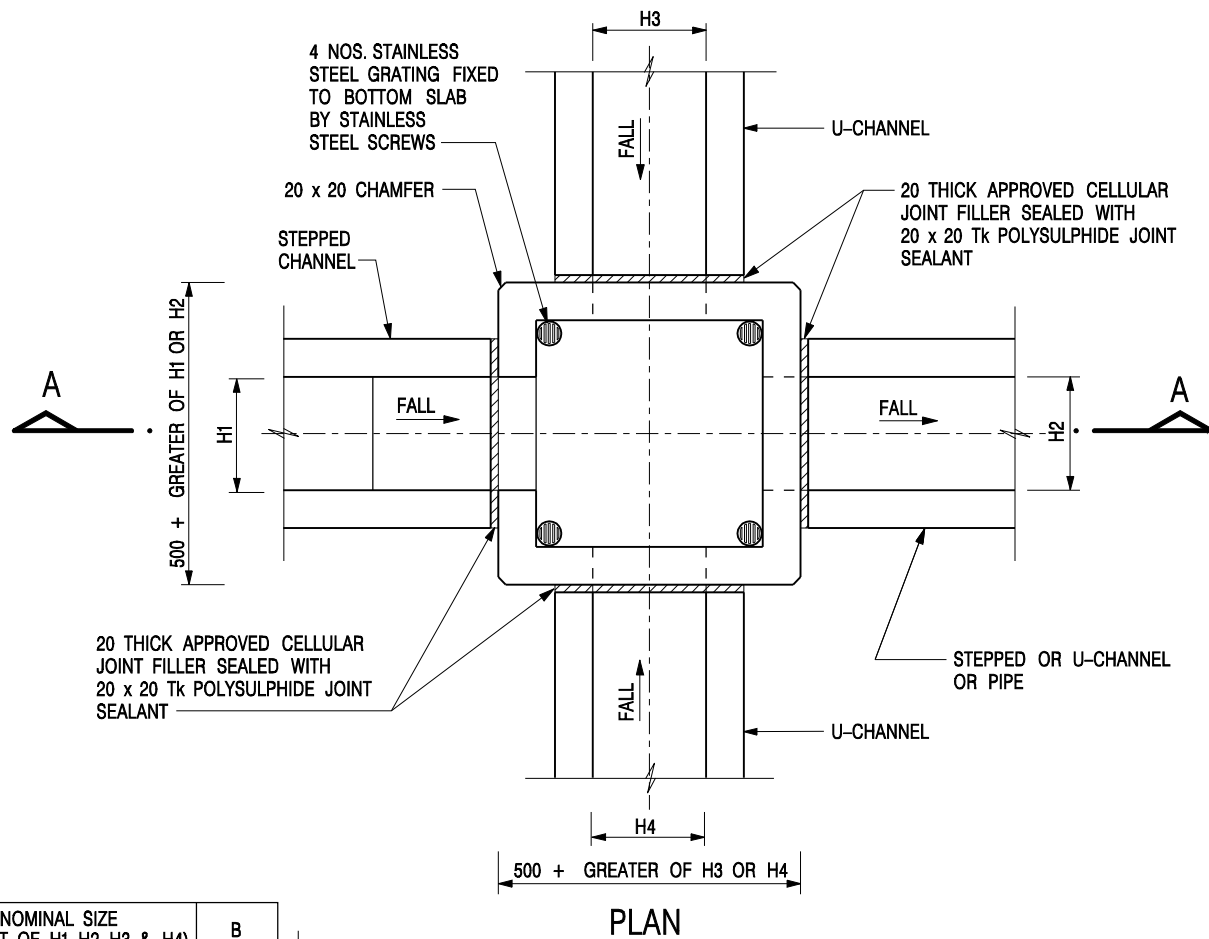
Reserve Capacity

$$\begin{aligned} &= 0.278 \text{ i } \Sigma K A \\ &= 0.471 \text{ m}^3/\text{s} \\ &= 750 \text{ mm} \\ &= 0.5021 \\ &= 0.010 \\ &= 2.719 \text{ m/s} \\ &= 1.365 \text{ m}^3/\text{s} \\ &> 0.471 \text{ m}^3/\text{s} \quad \text{OK} \\ &\quad \underline{65\%} \end{aligned}$$

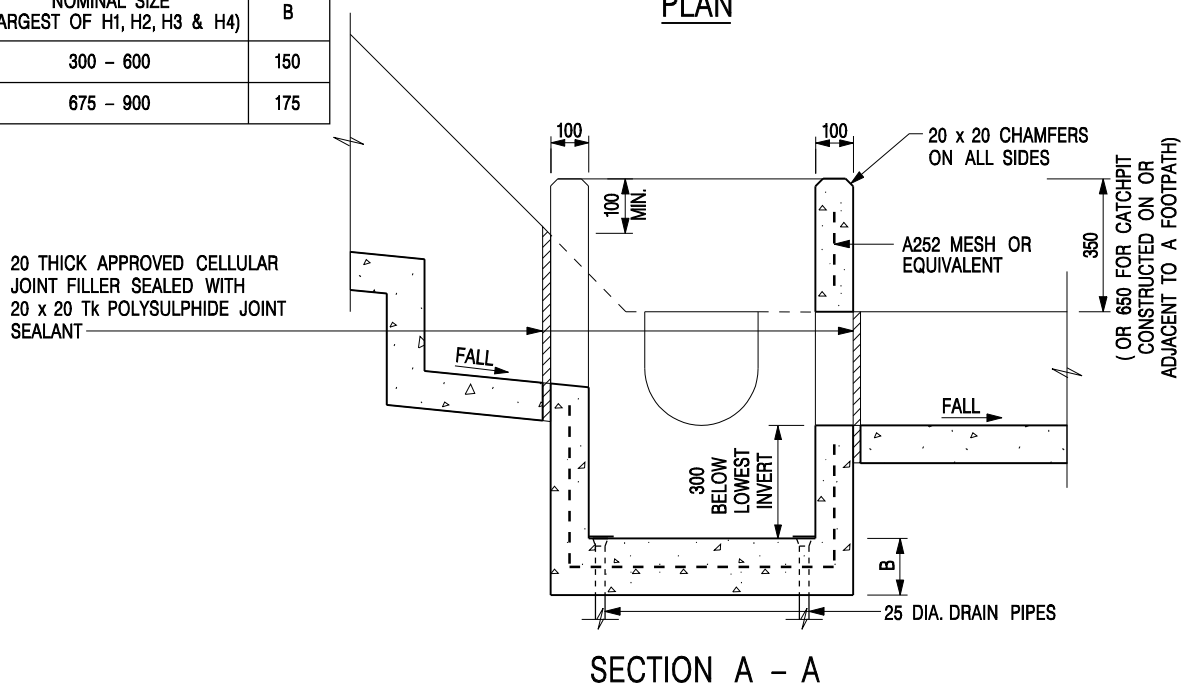
Manning's Eq.

The existing downstream drainage system have sufficient capacity capacity to cater for the drainage flow from the Application Site.

Appendix G



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



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

CATCHPIT WITH TRAP
(SHEET 1 OF 2)

-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE



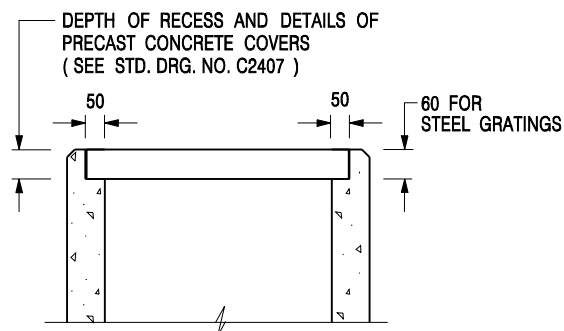
**CIVIL ENGINEERING AND
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SCALE 1 : 20

DATE JAN 1991

DRAWING NO.

C2406 /1



ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.
7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.
8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 /2) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 /5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 /4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

A	MINOR AMENDMENT.	Original Signed	04.2016
-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE

CATCHPIT WITH TRAP
(SHEET 2 OF 2)



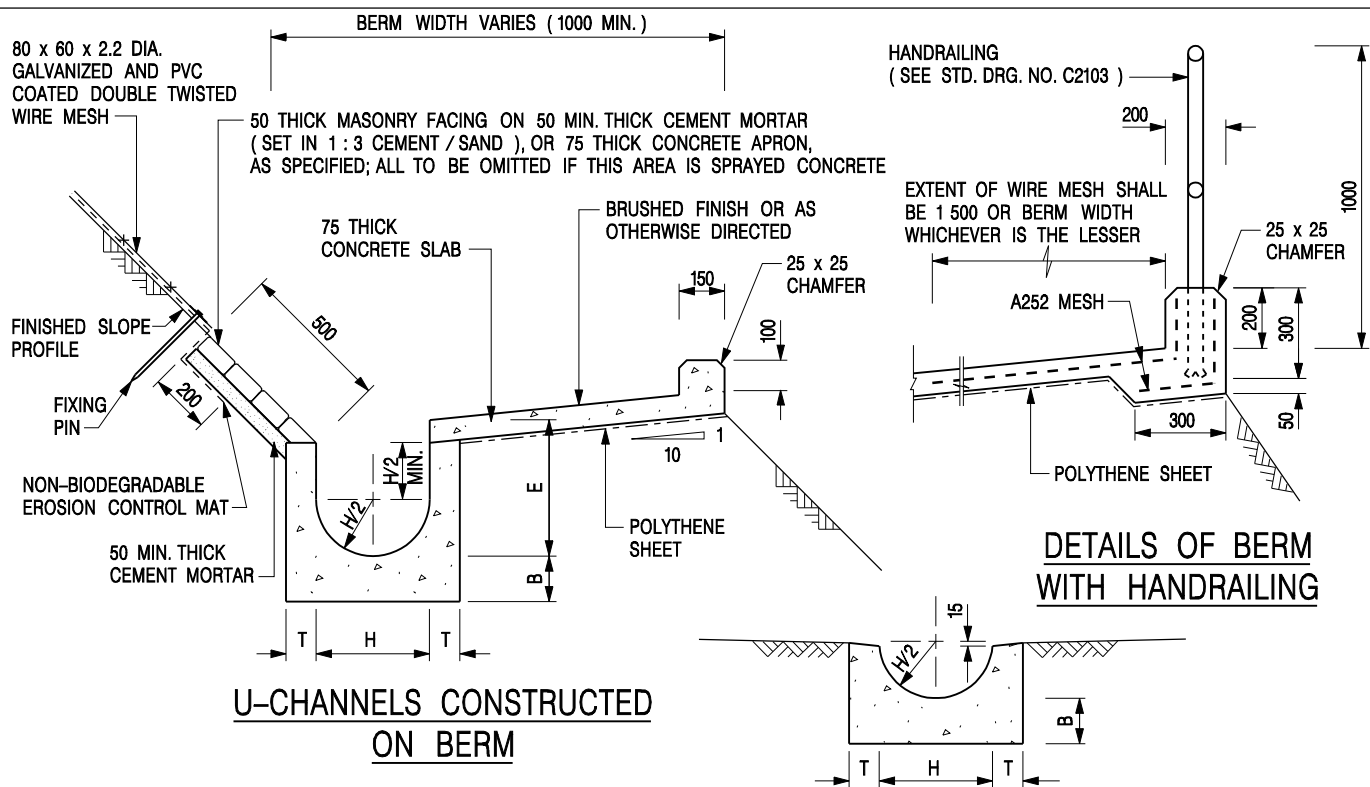
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SCALE 1 : 20

DATE JAN 1991

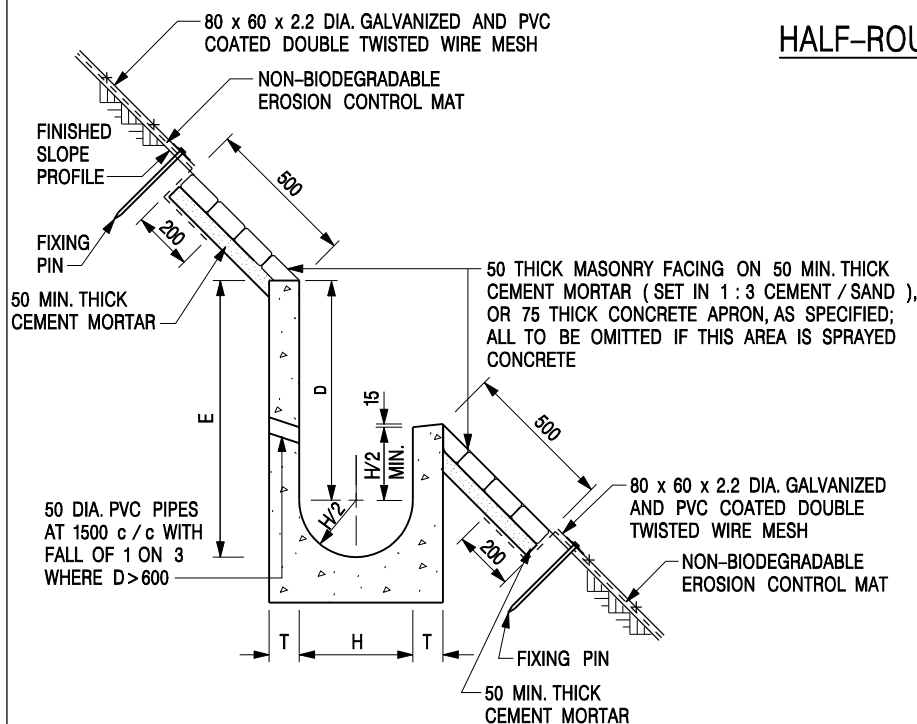
DRAWING NO.

C2406 /2A



U-CHANNELS CONSTRUCTED ON BERM

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/E.
8. CONCRETE TO BE COLOURED AS SPECIFIED.
9. CONCRETE U-CHANNEL CAN BE CAST IN-SITU OR PRECAST CONCRETE SUBJECT TO THE ENGINEER'S AGREEMENT ON THE DETAILS.
10. DETAILS OF EROSION CONTROL MAT AND WESH MESH ON BERM. (SEE STD DRG. NO. C2511/E)

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

I	MINOR AMENDMENT.	Original Signed	07.2018
H	THICKNESS OF MASONRY FACING AMENDED.	Original Signed	01.2005
G	MINOR AMENDMENT.	Original Signed	01.2004
F	GENERAL REVISION.	Original Signed	12.2002
E	DRAWING TITLE AMENDED.	Original Signed	11.2001
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENTS.	Original Signed	3.94
REF.	REVISION	SIGNATURE	DATE

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



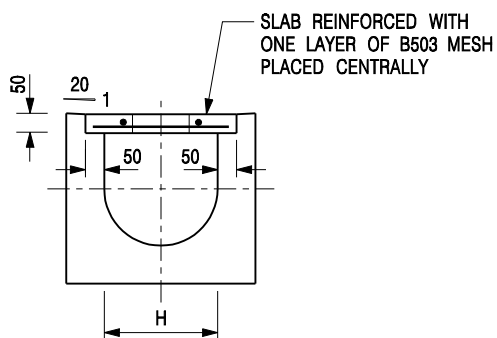
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

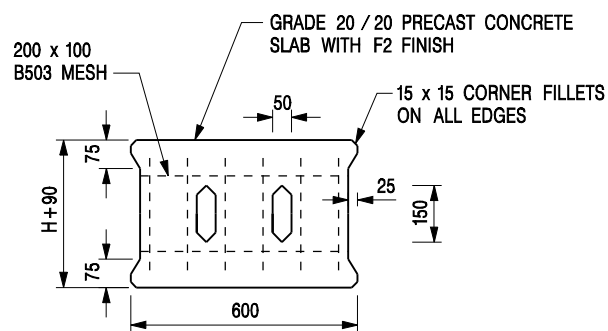
DATE JAN 1991

DRAWING NO.

C2409I



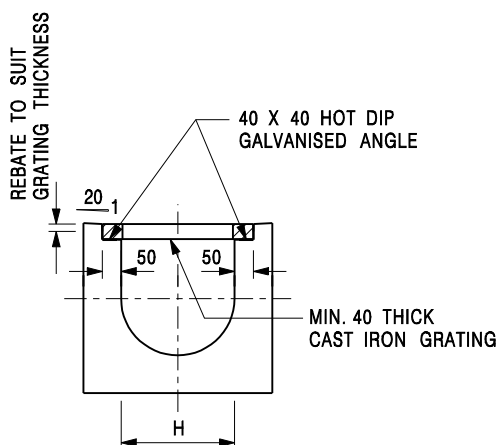
TYPICAL SECTION



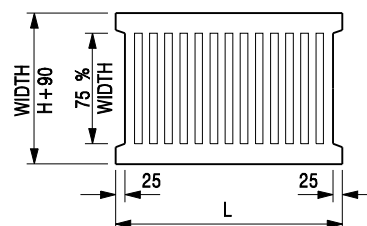
PLAN OF SLAB

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:

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

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

**COVER SLAB AND CAST IRON
GRATING FOR CHANNELS**



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.
C2412E