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類別: Internet Email

城規會/規劃處：

大家好。

有關規劃申請編號：A/YL-TT/812，現附上補充說明，請查收。

如有什麼問題，請隨時聯絡我。

謝謝。

Ms Chong
[REDACTED]

規劃申請編號：A/YL-TT/812

補充說明

1. 申請地點內沒有工場活動及露天存放。
2. 申請地點涉及一個先前的規劃申請：A/YL-TT/664，由於之前因為早前申請人未能如期履行規劃許可附帶的規劃條件，在 18 個月後申請就被撤銷。
3. 由於申請人的營運模式有變，由一個大的物流中心分拆為多個小型物流倉，佈局有變（構築物數量增加，但總樓面面積沒有增加），所以這次需重新向城規會入申請。
4. 營運模式更改的主要原因如下：
 - 4.1 業務轉型與精準物流營運需要
 - 適應跨境與本地搬遷物流的「分流與獨立管理」需求：保誠國際貨運的核心業務涉及國際搬遷、高價值家具及敏感物件存放。大倉改為多個獨立細倉，能更有效實施分區管理。不同客戶的物資可獨立儲存，避免交叉污染或混亂，提升保安與隱私級別。
 - 彈性租賃與按需調配：國際貨運受全球經濟及季節性航運影響巨大。多個獨立構築物能讓公司根據市場波動，彈性調節不同細倉的啟用率，比單一大倉更具營運韌性與能源效益。
 - 4.2 回應現代「小批量、高頻次」的物流供應鏈趨勢

配合現代物流業「電商化與精細分揀」發展：現今物流業已由過往的大宗貨物囤積，轉變為小批量、快速流轉的模式。分拆細倉有助於建立多元化的分揀線與專屬包裝區，讓員工在各自獨立的構築物內進行精細包裝，符合政府推動物流業走向高增值、現代化的政策導向。
5. 至於有關之前那三個附帶條件未能履行的原因：
 - * 設置 3 米高的隔音屏障：由於屏障的位置會影響毗鄰土地或物業的景觀，申請人為尊重鄰里關係，之前未能開工。
 - * 排水建議書：申請人早前曾遞交排水建議書，並不獲渠務處接受，而申請人未能在限期更改排水建議書，所以未能履行附帶條件。
 - * 消防裝置建議書：申請人早前曾遞交消防裝置建議書，並不獲消防處接受，而申請人未能在限期更改消防裝置建議書，所以未能履行附帶條件。
6. 基於上述原因，申請人重新提交本申請（A/YL-TT/812）以要求城市規劃委員會批准為期三年的規劃許可，希望貴處能重新考慮，申請人承諾這次會履行所有附帶條件，並遞交排水建議書及消防裝置的建議書。

TEMPORARY DRAINAGE PROPOSAL



PROPOSED TEMPORARY LOGISTICS CENTRE
AND ASSOCIATED FILLING OF LAND FOR A
PERIOD OF 3 YEARS AT LOT 489 RP (PART) IN
D.D. 117, TAI TONG, YUEN LONG, NEW
TERRITORIES

Application No.: A/YL-TT/812

Sep 2026

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2 Introduction

2.1 Background

This report presents the Drainage Proposal for supporting the Proposed Logistics Centre and Associated Filling of Land for a period of 3 years at Lot (Part) in D.D. 117, Tai Po, Yuen Long, New Territories.

2.2 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

2.3 Report Structure

The report contains the following sections:

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

3 Development Proposal

3.1 Location of the Application Site

The application Site is located within the Kam Sheung Road, with an area of around 3880m² and ground level varying between + 12.1mPD and + 11.8mPD. The layout plan is provided in **Appendix B**.

This application site is "Agriculture" zoning, the type of application is the Temporary Use/Development in Rural Areas for a Period of 3 Years.

There is a existing catchpit vicinity of the application site, the location and site photos of the existing catchpit are provided in **Appendix C**.

4 Assessment Criteria

4.1 Design Return Periods

The drainage system in the Application site is to collect surface flows and convey to the existing catchpit and finally convey to downstream village drain. The recommended design return periods based on the

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flood levels for the various drainage systems depend on the drainage system, land use, hazard to public safety and community expectations. The recommended design return period is reproduced in Table 4-1 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 4-1 Recommended Design Return Periods based on Flood Levels

As per Storm Drainage Manuel (SDM) Section 6.6.2 Urban Drainage Branch and Urban Drainage Trunk Systems “An ‘Urban Drainage Branch System’ is defined as a group or network of connecting drains collecting runoff from the urban area and conveying stormwater to a trunk drain, river or sea. For a simple definition, 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.

An ‘Urban Drainage Trunk System’ collects stormwater from branch drains and/or river inlets, and conveys the flow to outfalls in river or sea. Pipes with size or diameter equal to or larger than 1.8m are normally considered as trunk drains.”

As per SDM, since the proposed U-channels are sized smaller than 1.8m, the drainage system would be defined as an urban drainage branch with recommended design return period of 50 years.

The 50 years design return period will be considered to ensure adequacy of the stormwater drainage system.

4.2 Calculation Methodology for Runoff

Peak instantaneous runoff values before and after the development were calculated based on the Rational Method and with recommended physical parameters including runoff coefficient (C) and storm constants for different return periods referred to the SDM, based on the following equation:

$$Q_p = 0.278 C i A$$

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

The paved area of the site will account for 5240m². For conservative, the runoff coefficient of 0.9 is assumed, such that the all the run-off would be collected from the catchment area without any infiltration as the critical scenario.

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

4.3 Calculation Methodology for Pipe Capacity Checking

Due to the catchment areas are less than 1ha, U-channels are recommended to be constructed to collect the stormwater runoff of the open area within the site. For the catchment area within the roofing of the one-story warehouse, stormwater would be collected by the gutter, and then be diverted to U-channel system at ground level via downpipe. The collected stormwater should finally be diverted to the downstream via the proposed U-channel system.

For the worst-case scenario, bad condition of concrete pipe is assumed for the Manning's roughness coefficient (coefficient value is 0.016) for calculating capacities of concrete U-channel using Manning's Equation.

Manning's Equation for calculating the channel and pipe capacities is adopted.

5 Potential Drainage Impact

5.1 Existing Site Condition

The application Site is located within the Tai Tong with an area of around 3880m² and ground level varying between + 12.1mPD and + 11.8mPD.

5.2 Changes in Drainage Characteristics

Since the ground level of application site is generally higher than the adjacent ground surface. No external catchment shall be considered in the calculation.

The characteristics of the sub-catchment areas are altered due to the proposed application, which are changed from unpaved site area to paved area. The change in sub-catchment is summarized in Table 5-1.

	Before	After
Grassland (m ²)	0	0
Paved Area (m ²)	3880	3880
External Catchment Area(m ²)	0	0
Total Catchment Area (m ²)	3880	3880

Table 5-1 Change in sub-catchment within the site

5.3 Potential Drainage Impact

The details of the proposed drainage works are illustrated in **Appendix C**.

To effectively convey stormwater away from the application site and minimize the potential impact to the drainage infrastructure of the village area, drainage works consists of U-channels, are proposed to convey the stormwater runoff to the terminate catchpit with sand trap (TCP).

The runoff within application site is collected by one 225mm U-channel, 375mm U-channel and one 450mm U-channel along the boundary and convey to the existing terminate catchpit with sand trap (TCP) within the application site, before discharging to the existing catchpit at the South direction of the application site, and eventually discharge to the further downstream village drain.

as indicated in the **Appendix C**.

Section	Drainage System	Estimated Flow (L/min)	Capacity (L/min)	Reserve Capacity
1	225mm u-channel	1837	3500	47%
2	375mm u-channel	9462	17000	44%
3	225mm u-channel	2942	3600	18%
4	450mm u-channel	16065	22000	27%
5	Twin 375mm discharge pipe	25527	31809	20%

Table 4-2 Design calculation of the proposed drainage work

1. Rainfall increase due to climate change at the end of 21st century is considered according to stormwater drainage manual Table 28.

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2. The reserve capacity is calculated by assuming that the U-channel reach its full capacity.

The design runoff arise from the proposed catchment area 1 is to be discharged into the proposed 225mm u-channel within the runoff anticipated to be of 1837L/min, which is within the drainage capacity of the proposed 225mm u-channel of 3500L/min, the reserve capacity is 47%. The design runoff arise from the proposed catchment area 1 and 2 is to be discharged into the proposed section 2, 375 mm u-channel of within the runoff anticipated to be 9462L/min, which is within the drainage capacity of the proposed 375mm u-channel of 17000L/min, the reserve capacity is 44%. The runoff would then be coney to the existing terminal catchpit within the application site, and discharge to downstream village drain by 375mm existing discharge pipe.

The design runoff arise from the proposed catchment area 3 is to be discharged into the proposed 225mm u-channel within the runoff anticipated to be of 2942L/min, which is within the drainage capacity of the proposed 225mm u-channel of 3600L/min, the reserve capacity is 18%. The design runoff arise from the proposed catchment area 3 and 4 is to be discharged into the proposed section 4, 450 mm u-channel of within the runoff anticipated to be 16065L/min, which is within the drainage capacity of the proposed 450mm u-channel of 22000L/min, the reserve capacity is 27%. The runoff would then be coney to the existing terminal catchpit within the application site, and discharge to downstream village drain by 375mm existing discharge pipe.

It is considered that the drainage discharge from the Application Site will not cause adverse impact to the entire downstream drainage system.

All u-channels & catch pits will be constructed according to the CEDD's standard drawings, please refer to the **Appendix E**.

6 Construction Stage

6.1 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:

- (i) Erosion of ground materials;
- (ii) Sediment transportation to existing downstream drainage system; and
- (iii) Obstruction to drainage systems.

Regular inspections shall be carried out to ensure integrity of the works. These inspections shall cover

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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 on a weekly basis and the desilting facilities shall be cleaned on a daily basis.

If excavated materials are not possible to transport away the excavated material within the same day, the material should be covered by tarpaulin/impervious sheets. Stockpiles of construction materials (for examples aggregate, fill materials) of more than 50 m³ in an open area shall also be covered with tarpaulin or similar fabric during rainstorms.

All runoff discharged into the existing drainage system will be settled in a silt trap to ensure no sediment will be discharged into the channel. Silt traps will normally be provided along the site drainage immediately upstream of the proposed discharge point to the existing Site. The silt traps will be inspected daily and immediately after each rainstorm.

Liaison will be carried out with relevant parties regarding temporary drainage arrangements to ensure that the drainage system is functioning adequately.

7 Conclusions

7.1 Conclusions

The analyzed catchment area of 3880m² consists of the site area of the proposed Application Site only and no external catchment area had been identified.

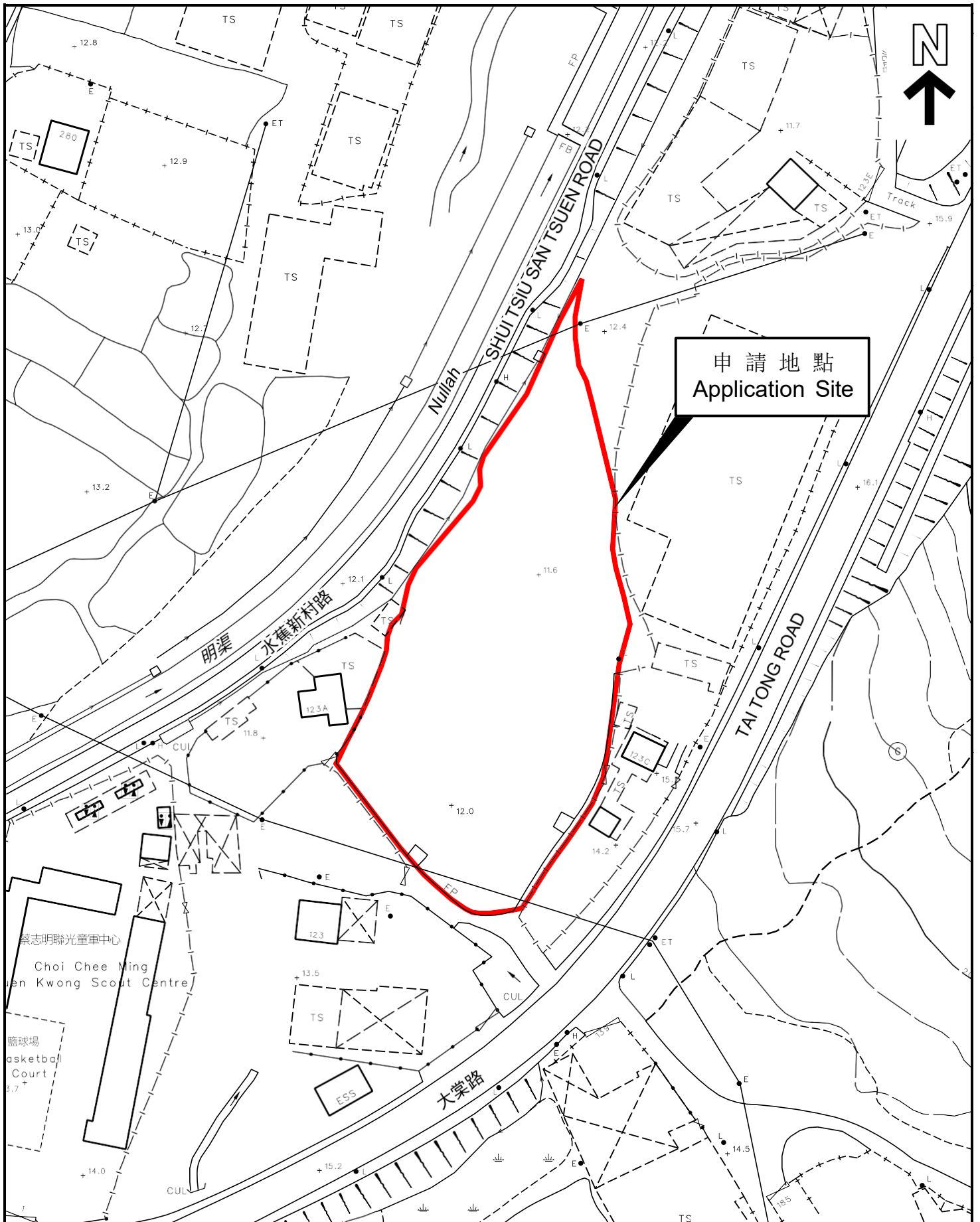
All round U-channels are proposed to convey runoff from the application site for collection. The proposed U-channels are located along the boundary of application site which is subject to change to suit the building layout.

The assessment reviews the drainage pipe have the sufficient capacity to cater for the drainage flow from the Application Site.

Mitigation measures are proposed during the construction period and to ensure that the existing drainage system within the site will not be affected during the construction stage.

APPENDIX A

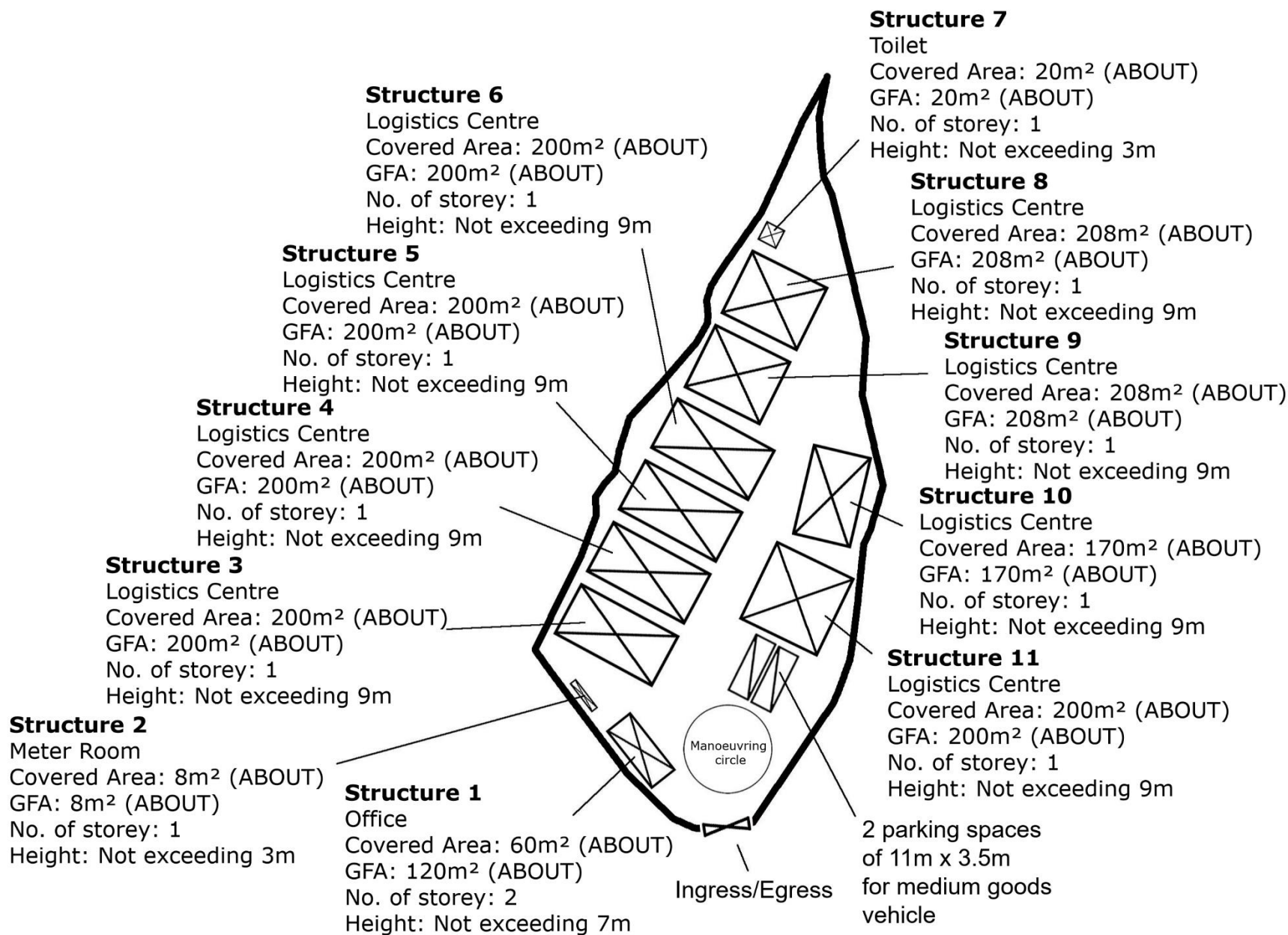
SITE LAYOUT PLAN



平面圖 **SITE PLAN**

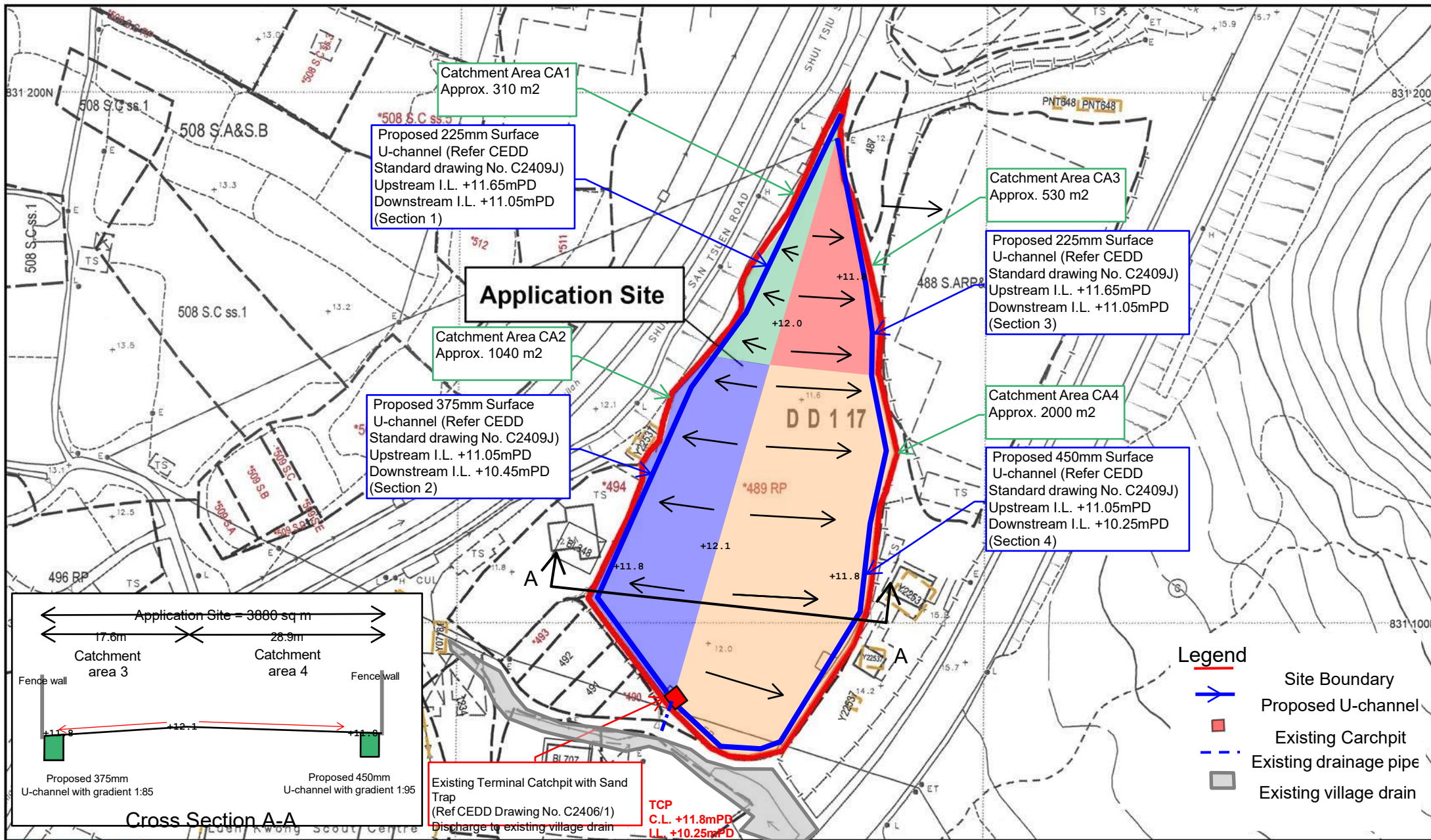
APPENDIX B

LAYOUT PLAN



APPENDIX C

PROPOSED DRAINAGE PLAN



APPENDIX D

DESIGN CALCULATION OF THE PROPOSED DRAINAGE SYSTEM

PROJECT: APPLICATION SITE OF PROPOSED TEMPORARY LOGISTICS CENTRE FOR A PERIOD OF 3 YEARS **Revision :** 0
AT AND FILLING OF LAND AT LOT 489RP (PART) IN D.D. 117, TAI TONG, YUEN LONG, NEW TERRITORIES **Date :** 28-May-25
JOB NO : ALPL/TDM/015

TITLE : Temporary Drainage Design Calculation

Prepare By: JW

DETERMINE THE CATCHMENT OF AREA

CA1	=	310	(m ²)
CA2	=	1040	(m ²)
CA3	=	530	(m ²)
CA4	=	2000	(m ²)

DETERMINE THE INLET TIME

Section	A = Catchment of Area (m ²)		Level of remote point (mPD)	Level of inlet point (mPD)	L (m)	H (m/100m)	t _e = Time of Natural flow (min)
1	CA1	310	12	11.8	7.8	2.56	0.53
2	CA1+CA2	1350	12.1	11.8	17.6	1.70	1.11
3	CA3	530	12	11.8	17.5	1.14	1.32
4	CA3+CA4	2530	12.1	11.8	28.9	1.04	1.90

Ref.: Brandsby Williams Equation

Note: $t_e = \frac{0.14465L}{H^{0.78}A^{0.1}}$

H = average slope (m per 100m), measured along the line of natural flow, from the summit of the catchment to the point under consideration
L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m).

DETERMINE THE SIZE OF STEPPED / U-CHANNEL

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Section No.	Ldr (m)	Lh (m)	L (m)	Gradient (1 in)	Site area (m ²)	others area (m ²)	Total area (m ²)	A (m ²)	channel size	Capacity (l/min)	Assumed Flow	t _r (min)	t _c (min)	t _t (min)	I (mm/hr)	Runoff (l/min)	Remark
1	0.60	54.30	54.30	85.50	310.00	0.00	310.00	310.00	225	3600	1.60	0.57	0.53	1.09	395.00	1636.6	O.K. CAPACITY > RUNOFF
2	0.60	51.30	51.30	85.50	1350.00	310.00	1660.00	1660.00	375	17000	2.35	0.36	1.11	1.48	380.00	9462.0	O.K. CAPACITY > RUNOFF
3	0.60	51.00	51.00	85.00	530.00	0.00	530.00	530.00	225	3600	1.65	0.52	1.32	1.83	370.00	2941.5	O.K. CAPACITY > RUNOFF
4	0.80	75.40	75.40	94.25	2530.00	530.00	3060.00	3060.00	450	22000	2.40	0.52	1.90	2.42	350.00	16065.0	O.K. CAPACITY > RUNOFF

Note: Ldr = Different level between U-channel section
Gradient = 1 in (Lh/Ldr)
Total area = Site area + others area
A=Cumulative area = Total area + others section area
Capacity = Refer to the extracted Figure 8.7 - Chart for the Rapid Design of Channels (Geotechnical Manual for Slopes P.253)
Assumed flow velocity = Assumed velocity of runoff
Actual Flow velocity = Refer to the extracted Figure 8.7 - Chart for the Rapid Design of Channels (Geotechnical Manual for Slopes P.253)
t_r = Flow time = L / assumed flow velocity
t_c = inlet time (time taken for flow from the remotest point to reach the most upstream point of the urban drainage system)
t_t = Time of concentration = t_r + t_c (Min. t_c = 1 min. for conservative design)
I = Intensity Refer to the extracted Figure 8.2 - Curves Showing Duration and Intensity of Rainfall in H.K. for Various Return Periods (Geotechnical Manual for Slopes P.248)
K = Runoff coefficient = 0.9 refer to Character of Surface (refer DSD(2013))
Design Return Period = 50 years
Runoff = K.I.A./3600 (l/s) = K.I.A./60 (l/min)
UC U-channel
SC Stepped channel

14240.3

For section no.	1.00	, Actual Flow Velocity =	1.60	m/s	<4m/s, O.K.
For section no.	2.00	, Actual Flow Velocity =	2.35	m/s	<4m/s, O.K.
For section no.	3.00	, Actual Flow Velocity =	1.65	m/s	<4m/s, O.K.
For section no.	4.00	, Actual Flow Velocity =	2.40	m/s	<4m/s, O.K.

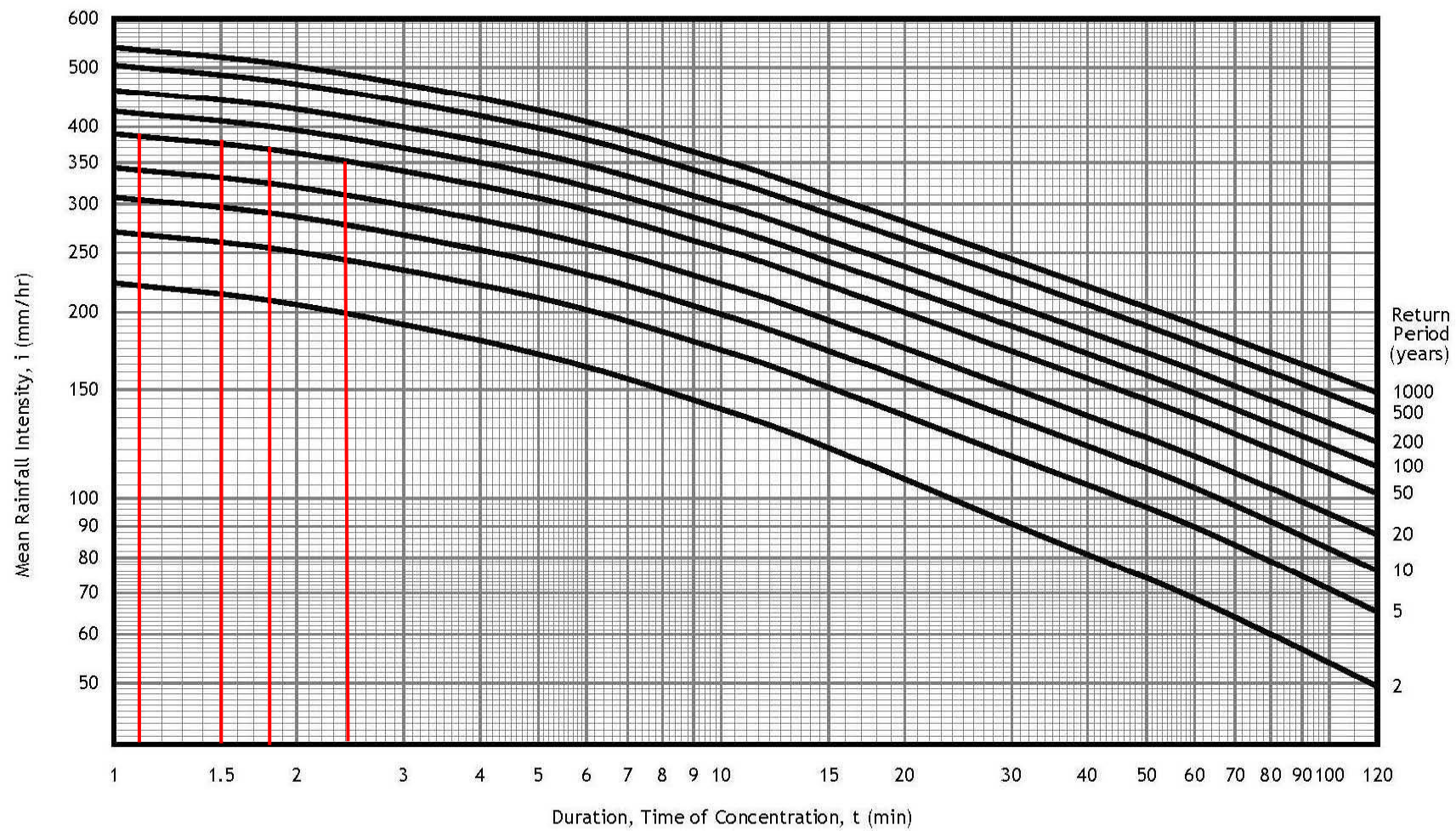
[Use new 225 U, so it is O.K.]
[Use new 375 U, so it is O.K.]
[Use new 225 U, so it is O.K.]
[Use new 450 U, so it is O.K.]

DETERMINE THE SIZE OF DISCHARGE PIPE

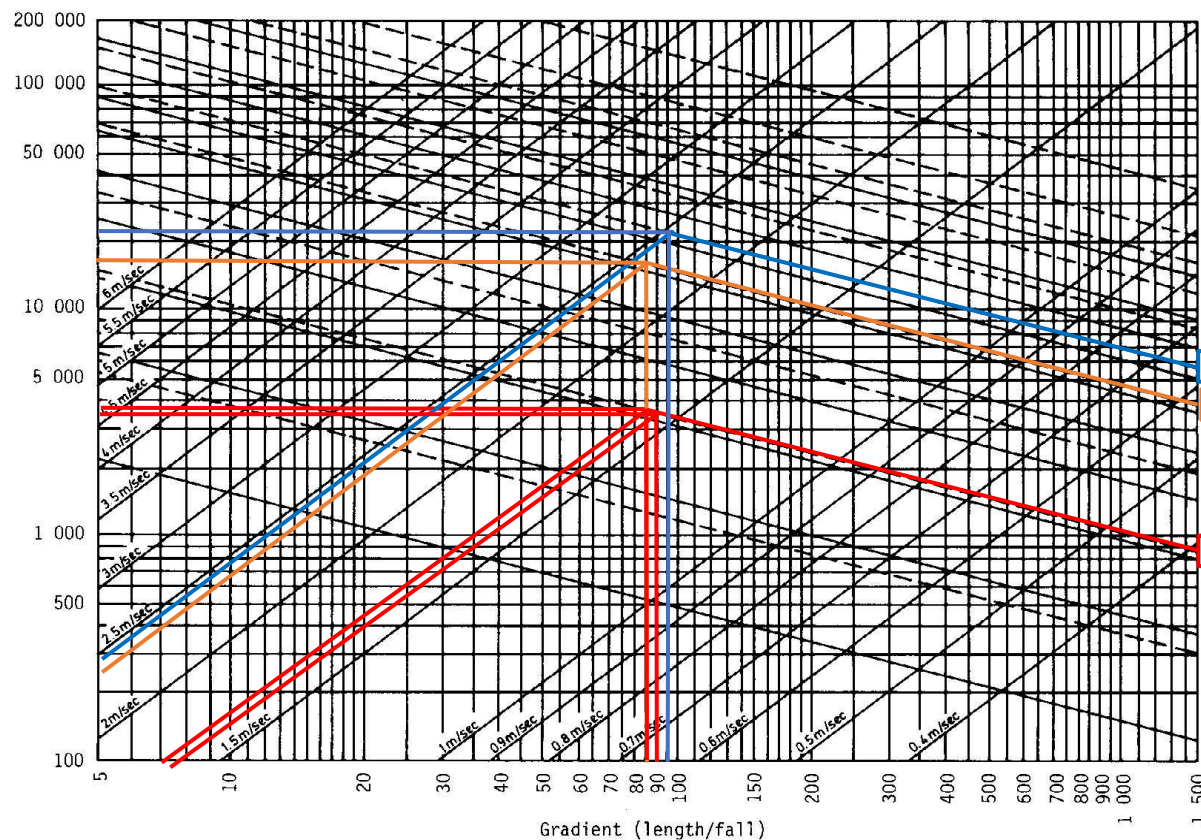
1	2	3	4	5	6	7	8
Section No.	Dia. of Discharge Pipe (mm)	Sectional Area of Discharge Pipe (m ²)	v (m/s)	No. of Discharge Pipe Provided	Capacity (l/min)	Runoff (l/min)	Remark
Existing Drainage pipe	375.00	0.11	2.40	2	31809	25527	O.K.

CAPACITY > RUNOFF [Use new 375, so it is O.K.]

Note: v = Velocity of flow in downpipe
A = Catchment Area
K = Runoff coefficient = 0.9 refer to Character of Surface (refer DSD(2013))

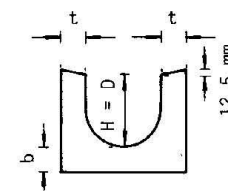


Capacities of Channels (litres per minute)

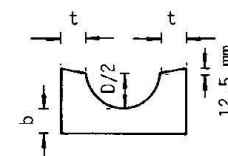


Size of channel (mm) shown by dotted solid line line

Channel dimensions



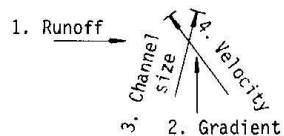
U-shaped channel (U)



Half-round channel (HR)

DESIGN METHOD USING CHART

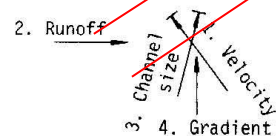
(a) Normal channel Solution



Example :

1. Enter Runoff = 4 000 litre/min.
2. Enter Gradient = 1 in 40
3. Read channel required = 225 U or 300HR
4. Read velocity = 2.2 m/sec. (<4 m/sec. ∴OK)

(b) Stepped channel Solution



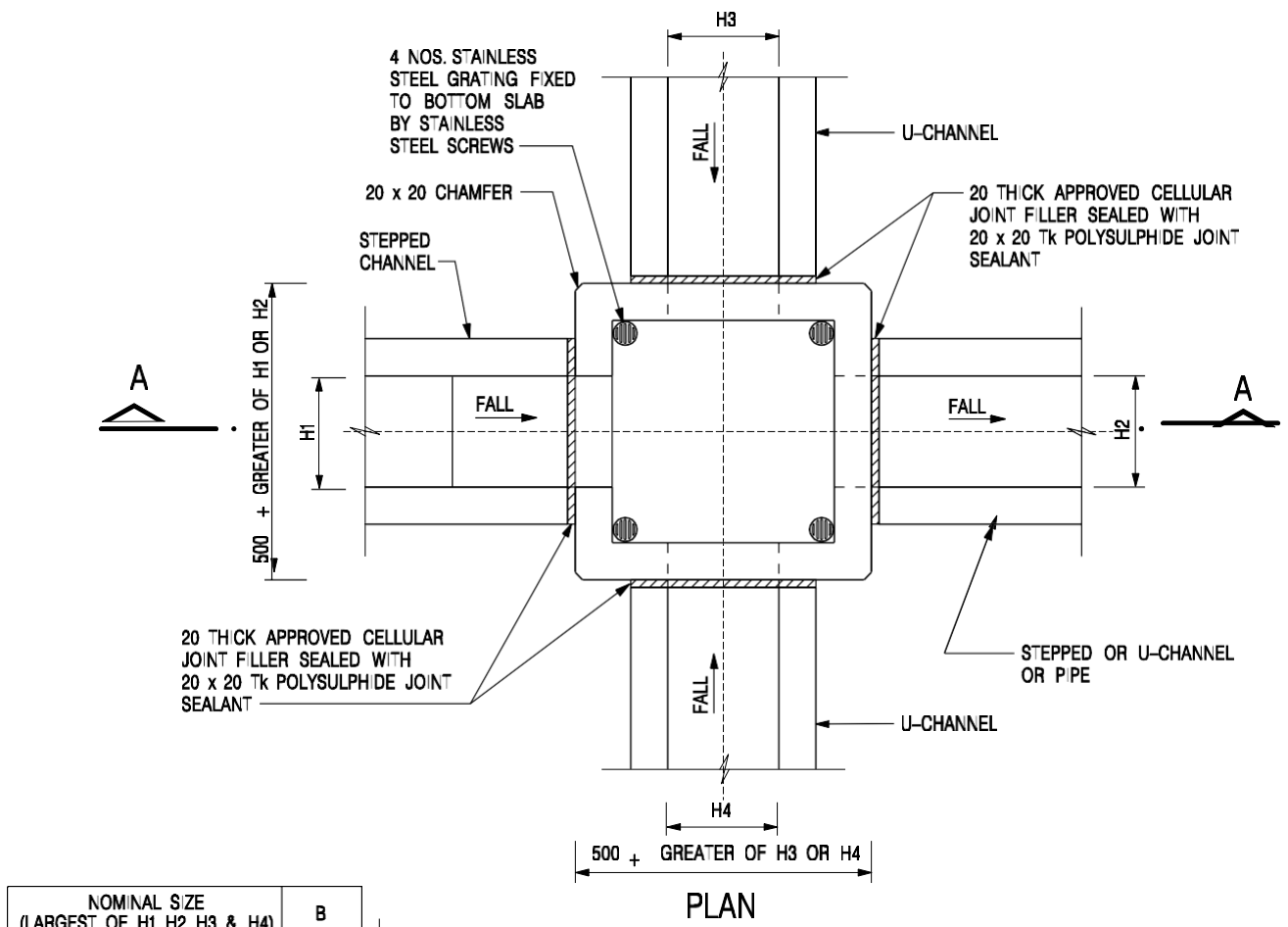
Example :

1. Enter Velocity = 5 m/sec.
2. Enter Runoff = 20 000 litre/min.
3. Read required channel size = 300U
4. Read required gradient = 1 in 14

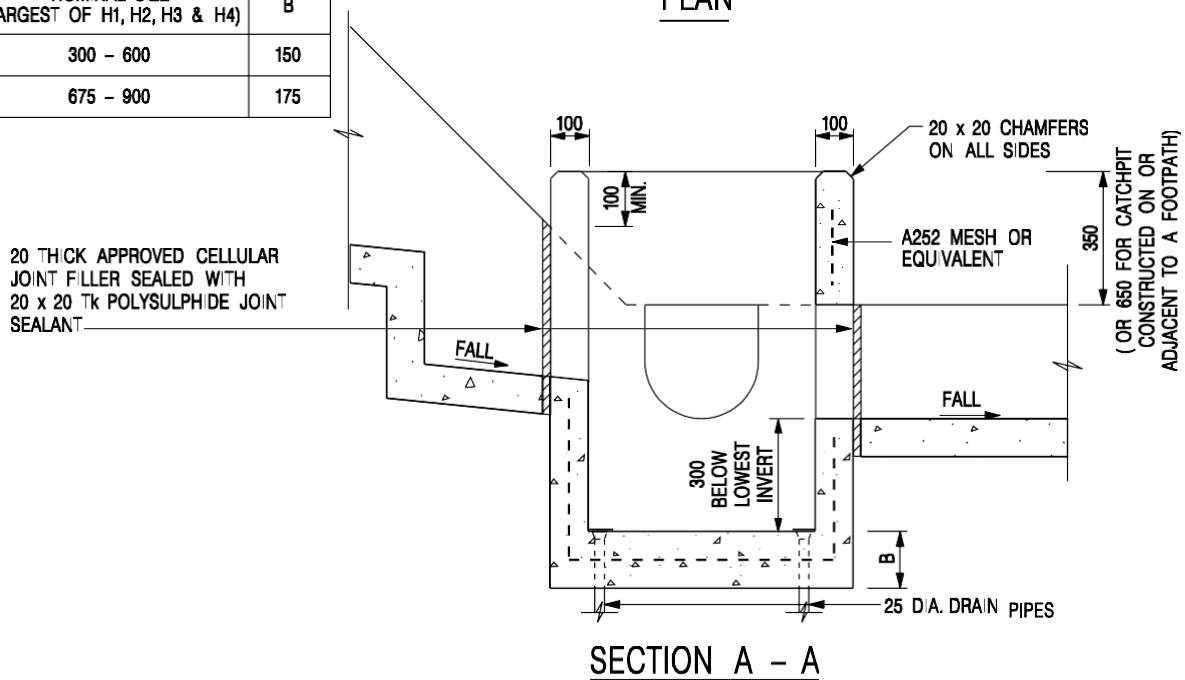
APPENDIX E

TYPICAL STANDARD DRAWINGS OF U-CHANNEL AND CATCHPIT

(EXTRACTED FROM CEDD, FOR REFERENCE ONLY)



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



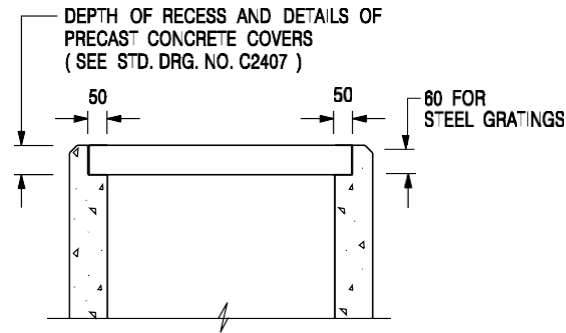
NOTES:

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 DEVELOPMENT DEPARTMENT		DRAWING NO. C2406 /1	
SCALE	1 : 20		
DATE	JAN 1991		



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 ϕ 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)

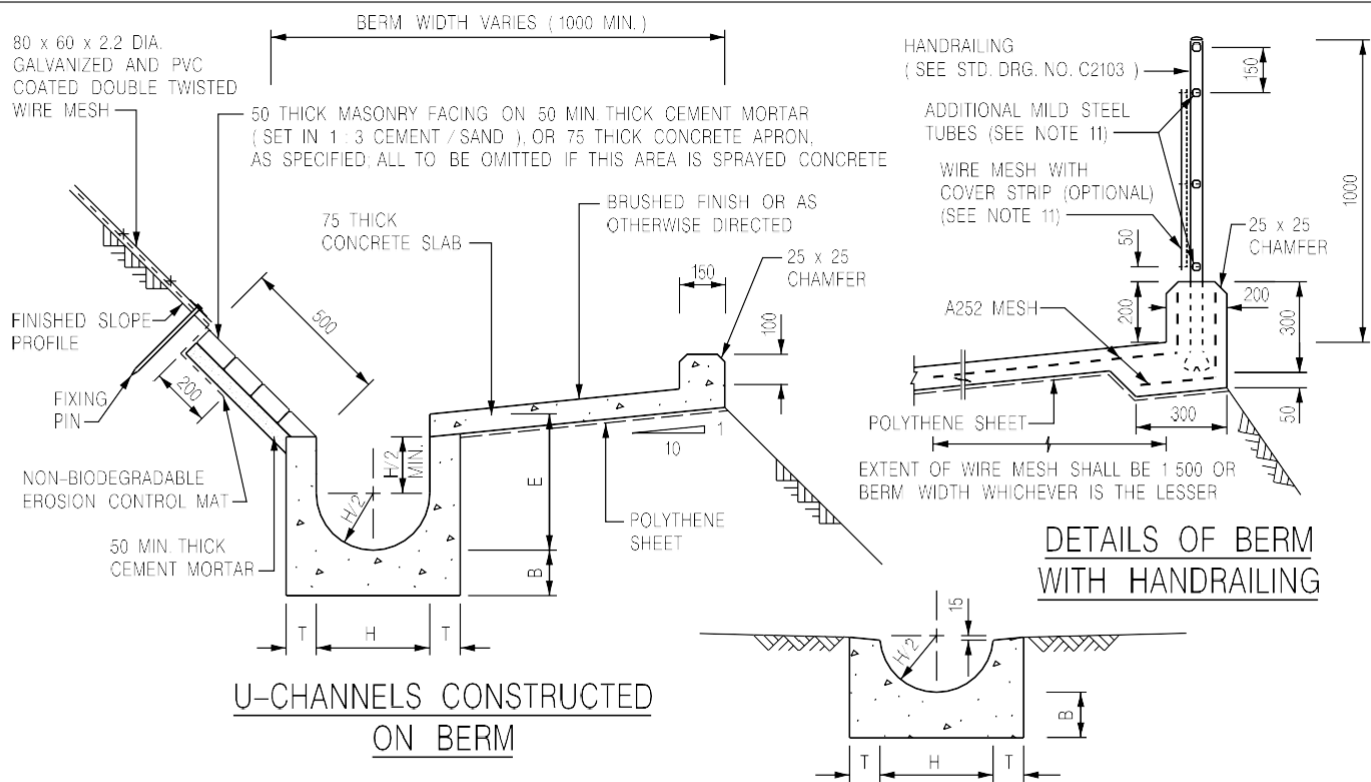


**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

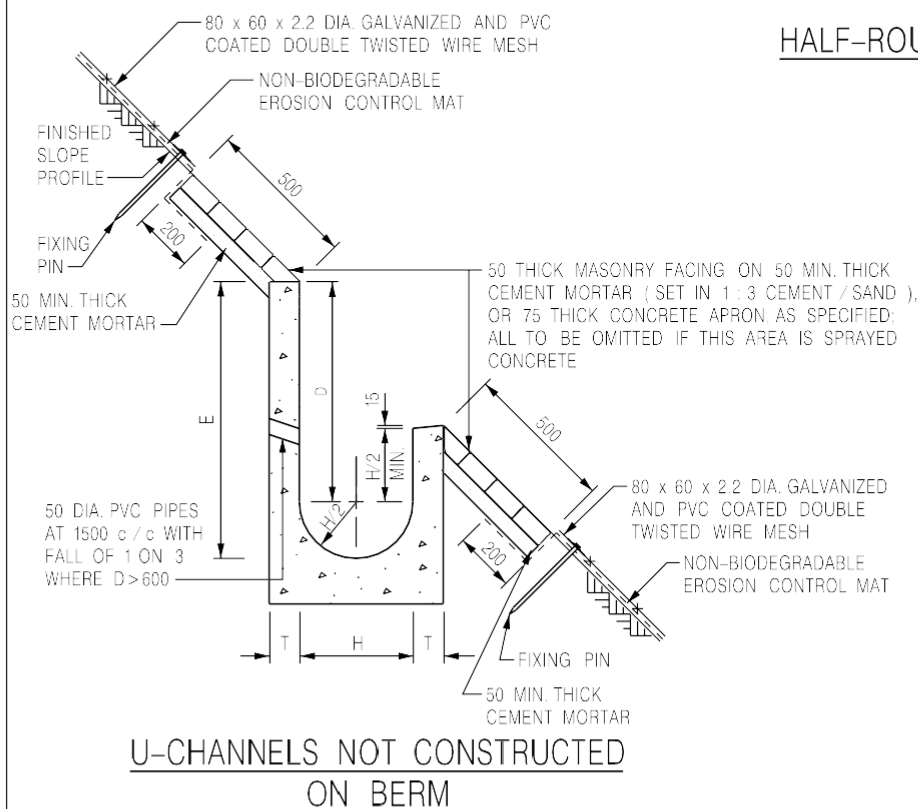
DRAWING NO.
C2406 /2A



HALF-ROUND CHANNEL

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).
11. THE WIRE MESH ON HANDRAILING IS OPTIONAL THE COVER STRIP AND ADDITIONAL MILD STEEL TUBES ARE NEEDED ONLY IF WIRE MESH IS PROVIDED. (SEE STD. DRG. NO. C2103).



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

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

J	DETAILS OF HANDRAILING AMENDED.	Original Signed	08.2024
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
REF.	REVISION	SIGNATURE	DATE



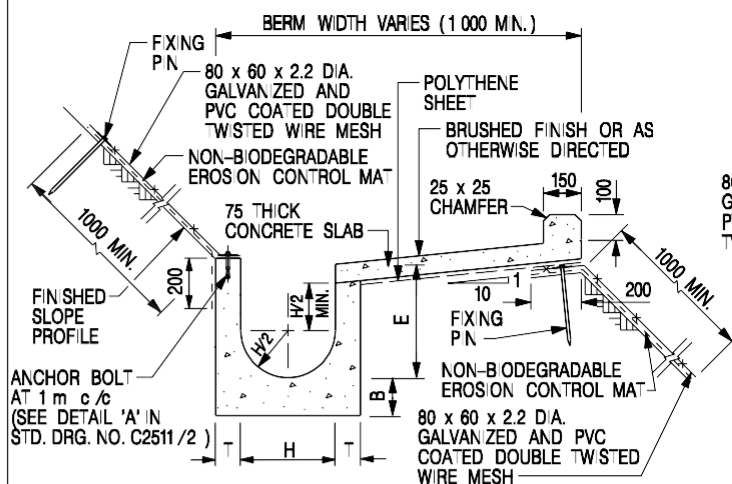
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

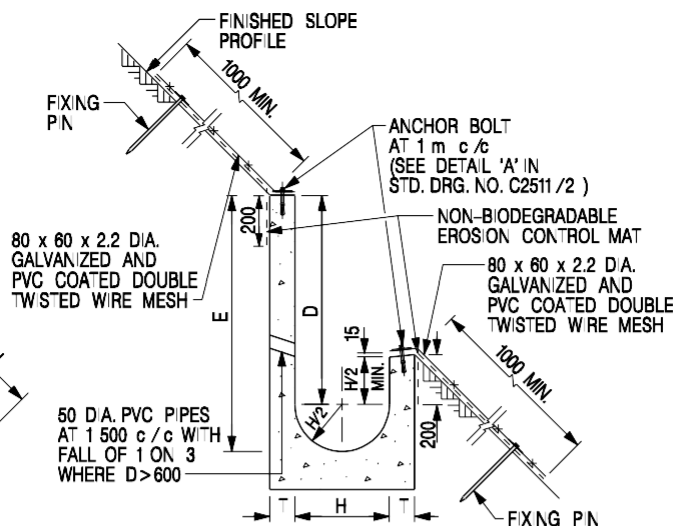
DATE JAN 1991

DRAWING NO.

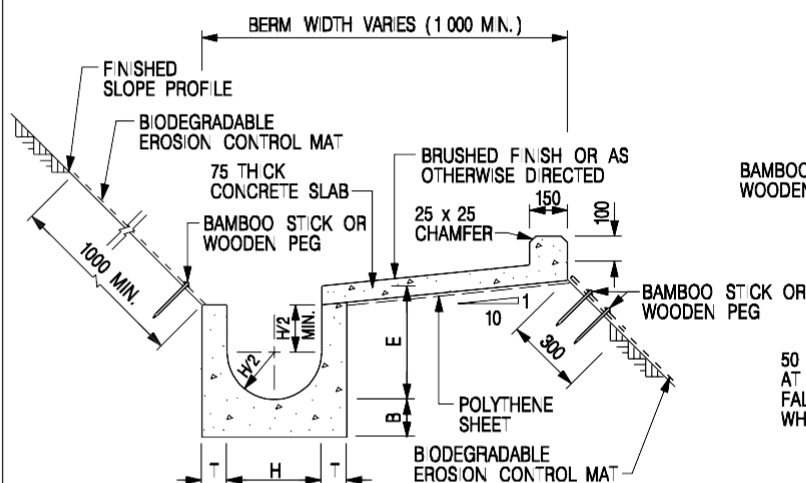
C2409J



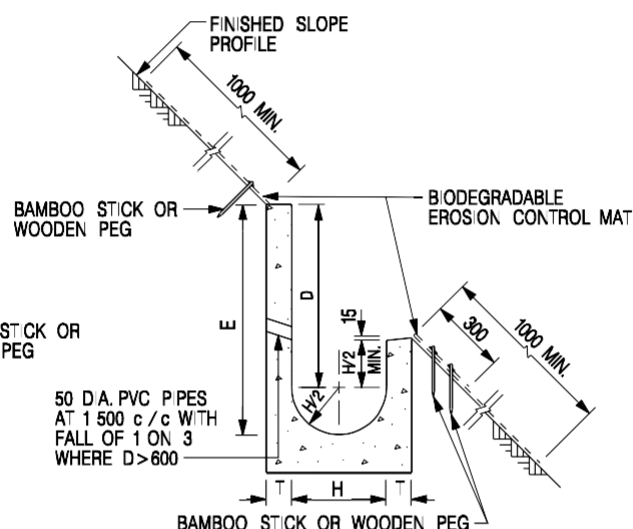
**U-CHANNELS CONSTRUCTED ON BERM
WITH NON-BIODEGRADABLE
EROSION CONTROL MAT**



**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:

- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL CONCRETE TO BE GRADE 20/20.
- CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
- SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
- JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
- FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
- FOR TYPICAL FIXING PIN DETAILS, SEE STD. DRG. NO. C2511/2.
- MINIMUM SIZE OF 25 x 50 x 300mm SHALL BE PROVIDED FOR WOODEN PEG.
- MINIMUM SIZE OF 10mm DIAMETER WITH 200mm LONG SHALL BE PROVIDED FOR BAMBOO STICK.
- 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)**



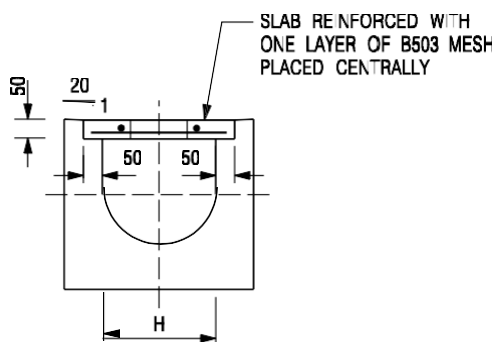
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE DIAGRAMMATIC

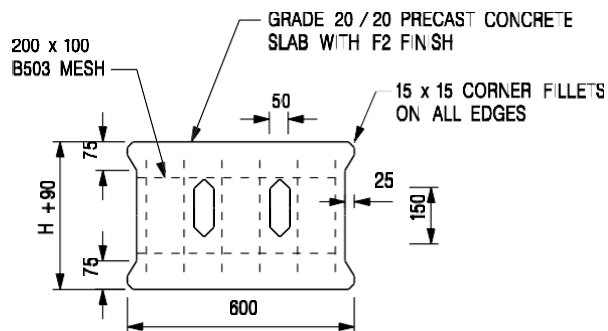
DRAWING NO.

DATE JAN 1991

C24101



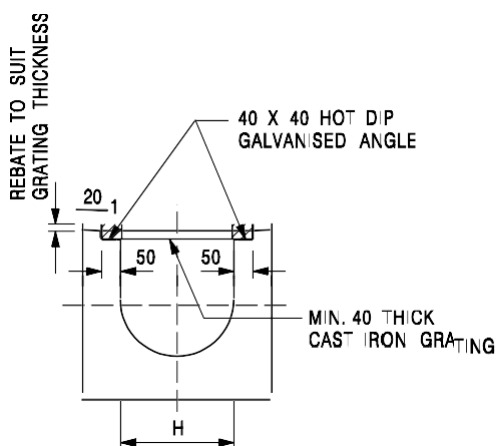
TYPICAL SECTION



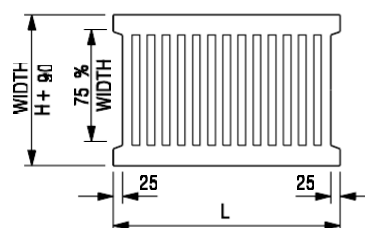
PLAN OF SLAB

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.

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

