

Supplementary Statement

1) Background

- 1.1 The applicant seeks planning permission from the Town Planning Board (the Board) to use *Lots 1222 S.A (Part) and 1224 S.B in D.D. 107, Fung Kat Heung, Kam Tin, Yuen Long, New Territories* (the Site) for '**Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land**' (proposed development) (**Plans 1 to 3**).
- 1.2 In view of the pressing demand for indoor storage space in recent years, the applicant, also the lot owner of the Site, would like to use the Site for the applied use to support the local warehousing and storage industry.

2) Planning Context

- 2.1 The Site falls within an area zoned as "Agriculture" ("AGR") on the Approved Kam Tin North Outline Zoning Plan No.: S/YL-KTN/11 (**Plan 2**). According to the Notes of the OZP, 'warehouse' use is not a column one nor column two use within the "AGR" zone, which requires planning permission from the Board.
- 2.2 Although the Site is zoned as "AGR" zone, there is no active agricultural use within the Site, approval of the planning application on a temporary basis of years would not frustrate the long-term planning intention of the "AGR" zone and would better utilize the previous land resources in the New Territories. The Site is also surrounded by open storage yards, warehouses and other brownfield activities, the proposed development with one low-rise structure for warehouse is considered not incompatible with the surrounding areas.
- 2.3 The application sites of several similar S.16 planning applications (No. A/YL-KTN/920, 937, 993, 996 and 1054) for 'warehouse' use are located in close vicinity of the Site and they were all approved by the Board in 2023 and 2024. As the proposed development is in similar nature, approval of the current application would not set an undesirable precedent within the "AGR" zone and in line with the Board's previous decisions.

2.4 The Site is the subject of one previous application (No. A/YL-KTN/904) for 'warehouse' use that was submitted by the same applicant. The application was approved by the Board on a temporary basis for 3 years on 19/5/2023. When compared with the previous application, all the major parameters, including the site area, GFA, plot ratio, number of structure, building height of the structures, parking and loading/unloading (L/UL) spaces remain unchanged. The applicant has shown effort to comply with approval conditions of the previous application, details are shown as follow at **Table 1** below:

Table 1 – Details of Compliance with Approval Condition of the Previous Application

Approval Conditions of Application No. A/YL-KTN/904		Date of Compliance
(d)	The submission of a drainage proposal	Not complied with
(e)	The implementation of the drainage proposal	Not complied with
(g)	The submission of a fire service installations (FSIs) proposal	22/9/2023
(h)	The implementation of the FSI proposal	Not complied with

2.5 Regarding approval condition (d), the applicant submitted a drainage proposal for compliance with this approval condition on 13/8/2024 and the submission was considered not acceptable by Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD) on 25/9/2024. The applicant later submitted a revised drainage proposal on 8/11/2024, however, there is insufficient time for the CE/MN, DSD to comment on the submission by the designated time period, which led to revocation of the application on 19/11/2024.

2.6 Regarding approval condition (h), the applicant is currently awaiting for the approval of Short Term Waiver (STW) from the Lands Department for erection of the proposed structure at the Site. Since FSIs are proposed at structure, the applicant could not commence the works for the proposed FSIs within the designated time period, which led to revocation of the application on 19/11/2024.

2.7 In support of the current application, the applicant has submitted the accepted FSI proposal of the previous application (No. A/YL-KTN/905) and a revised drainage proposal in order to mitigate any potential nuisance from the proposed development (**Appendices I to II**).

3) Development Proposal

3.1 The Site occupied an area of 516 m² (about) of private land (**Plan 3**). The operation hours are Monday to Saturday from 09:00 to 19:00. No operation on Sunday and public holiday. One single-storey structure is proposed at the Site for warehouse and ancillary office with total GFA of 222 m² (about) (**Plan 4**). The ancillary site office is intended to provide indoor space for administrative staff to support the daily operation of the Site. The Site would be able to accommodate not more than 3 staff. As the Site is proposed for 'warehouse' use, no visitor is anticipated at the Site. Details of development parameters are shown at **Table 2** below:

Table 2 – Major Development Parameters

Application Site Area	516m ² (about)
Covered Area	222m ² (about)
Uncovered Area	294m ² (about)
Plot Ratio	
	0.43 (about)
Site Coverage	
	43% (about)
Number of Structure	
	1
Total GFA	
- Domestic GFA	Not applicable
- Non-Domestic GFA	222 m ² (about)
Building Height	
	8.23m (about)
No. of Storey	
	1

3.2 The proposed warehouse is intended for storage of miscellaneous goods (i.e. packaged food, apparel, footwear, electronic goods, furniture etc.). No dangerous goods and workshop activities will be stored/conducted at the Site at any time during the planning approval period.

3.3 The Site has already been filled wholly with concrete to facilitate a flat surface for site formation of structures (**Plan 5**). As heavy loading of structures and vehicles would compact the existing soiled ground and weaken the ground surface, the associated filling of land area is considered necessary and has been kept to minimal for the operation of the proposed development. The applicant will reinstate the Site to an amenity area after the planning approval period.

- 3.4 The Site is accessible from Fung Kat Heung Road via Mei Fung Road and a local access (**Plan 1**). A total of 2 parking and L/U spaces are provided at the Site, details of spaces are shown at **Table 3** below:

Table 3 – Parking and L/UL Provision

Type of Space	No. of Space
Private Car (PC) Parking Space for Staff - 2.5m (W) x 5m (L)	1
L/UL Space for Light Goods Vehicle (LGV) - 3.5m (W) x 7m (L)	1

- 3.5 5.5 tonnes will be deployed for transportation of goods to and out of the Site, hence, 1 L/UL space for LGV is provided. Sufficient space is provided for vehicle to smoothly manoeuvre within the Site to ensure that no vehicle will turn back onto the local access (**Plan 6**). No medium or heavy goods vehicles exceeding 5.5 tonnes, including container tractors/trailers, as defined in the Road Traffic Ordinance are allowed to be parked/stored on or enter/exit the Site at any time during the planning approval period. As traffic generated and attracted by the proposed development as shown at **Table 3** below is minimal, adverse traffic impact should not be anticipated.

Table 3 - Trip Generation and Attraction of the Proposed Development

Time Period	PC		LGV		2-Way Total
	In	Out	In	Out	
Trips at <u>AM peak</u> per hour (09:00 – 10:00)	1	0	1	0	2
Trips at <u>PM peak</u> per hour (18:00 – 19:00)	0	1	0	1	2
Traffic trip per hour (average, 10:00 – 18:00)	0	0	1	1	2

- 3.6 The applicant will strictly follow the 'Code of Practice on Handling the Environmental Aspects of Temporary Uses and Open Storage Sites' issued by Environmental Protection Department (EPD) to minimise adverse environmental impacts and nuisance to the surrounding area. The applicant will strictly comply with all environmental protection / pollution control ordinances, i.e. Water Pollution Control Ordinance, Air Pollution Control Ordinance, Noise Control Ordinance etc. at all times during the planning approval period. The applicant will follow the

Professional Persons Environmental Consultative Committee Practice Notes for sewage treatment at the Site.

4) Conclusion

- 4.1 The proposed development will not create significant nuisance to the surrounding area. Adequate mitigation measures have been provided by the applicant (i.e. submission of drainage and FSIs proposals) in order to mitigate any adverse impact arising from the applied use (**Appendices I to II**).
- 4.2 In view of the above, the Board is hereby respectfully recommended to approve the subject application for '**Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land**'.

R-riches Property Consultants Limited

December 2024

LIST OF PLANS

Plan 1	Location Plan
Plan 2	Plan Showing the Zoning of the Application Site
Plan 3	Plan Showing the Land Status of the Application Site
Plan 4	Layout Plan
Plan 5	Land Filling Area of the Application Site
Plan 6	Swept Path Analysis

APPENDICES

Appendix I	The Accepted Fire Service Installations Proposal of A/YL-KTN/904
Appendix II	Drainage Proposal

規 劃 署

粉嶺、上水及元朗東規劃處
新界荃灣青山公路 388 號
中染大廈 22 樓 2202 室



Planning Department

Fanling, Sheung Shui & Yuen Long East
District Planning Office
Unit 2202, 22/F, CDW Building,
388 Castle Peak Road, Tsuen Wan, N.T.

Appendix I

來函檔號 Your Reference : DD107 Lot 1222 S.A & 1224 S.B
本署檔號 Our Reference : TPB/A/YL-KTN/904
電話號碼 Tel. No. : 3168 4072
傳真機號碼 Fax No. : 3168 4074 / 3168 4075

By Post and Fax (2323 3662)

R-riches Property Consultants Limited

(Attn: Mr. Orpheus LEE / Ms. Grace WONG)

22 September 2023

Dear Sir/Madam,

**Submission for Compliance with Approval Condition (g)
– the Submission of Fire Service Installations Proposal**

**Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with
Ancillary Facilities for a Period of 3 Years and Filling of Land
in “Agriculture” Zone, Lots 1222 S.A (Part) and 1224 S.B in D.D. 107,
Fung Kat Heung, Kam Tin, Yuen Long, New Territories
(Application No. A/YL-KTN/904)**

I refer to your submission dated 8.8.2023 for compliance with the captioned approval condition. Relevant department has been consulted on your submission. Your submission is considered:

- Acceptable. The captioned condition **has been complied with**. Please find detailed departmental comments in Appendix.
- Acceptable. Since the captioned condition requires both the submission and implementation of the proposal, it **has not been fully complied with**. Please proceed to implement the accepted proposal for full compliance with the approval condition.
- Not acceptable. The captioned condition **has not been complied with**.

Should you have any queries, please contact Mr. CHEUNG Wing-hei (Tel: 2733 7737) or Mr. CHAU Nai-yin (Tel: 2733 7781) of the Fire Services Department directly.

Yours faithfully,

(Anthony LUK)

District Planning Officer/
Fanling, Sheung Shui & Yuen Long East
Planning Department

c.c.
D of FS

(Attn.: Mr. CHEUNG Wing-hei)

(Fax: 2739 8775)

Internal
CTP/TPB

AL/LD/jt

Appendix

Comments from the Director of Fire Services:

Please be advised that the installation/maintenance/modification/repair work of FSIs shall be undertaken by a Registered Fire Service Installation Contractor (RFSIC). The RFSIC shall after completion of the installation/maintenance/modification/repair work issue to the person on whose instruction the work was undertaken a certificate (F.S. 251) and forward a copy of the certificate to the Director of Fire Services.

Our Ref.: DD107 Lot 1222 S.A & 1224 S.B
Your ref.: TPB/A/YL-KTN/904

The Secretary
Town Planning Board
15/F, North Point Government office
333 Java Road
North Point, Hong Kong

By Email

8 August 2023

Dear Sir,

Compliance with Approval Condition (g)

**Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities
for a Period of 3 Years and Filling of Land in "Agriculture" Zone, Lots 1222 S.A (Part) and
1224 S.B in D.D. 107, Fung Kat Heung, Kam Tin, Yuen Long, New Territories**

(S.16 Planning Application No. A/YL-KTN/904)

We are writing to submit a FSIs proposal (**Appendix I**) for compliance with approval condition (g) of the subject application, i.e. the submission of fire services installations proposal. Your kind attention to the matter is much appreciated.

Should you require more information regarding the application, please contact our Ms. Grace WONG at [REDACTED] or the undersigned at your convenience.

Yours faithfully,

For and on behalf of
R-riches Property Consultants Limited




Orpheus LEE
Planning and Development Consultant

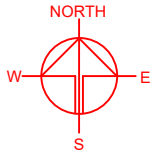
DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 516 m ²	(ABOUT)
COVERED AREA	: 222 m ²	(ABOUT)
UNCOVERED AREA	: 294 m ²	(ABOUT)
PLOT RATIO	: 0.43	(ABOUT)
SITE COVERAGE	: 43 %	(ABOUT)
NO. OF STRUCTURE	: 1	
DOMESTIC GFA	: NOT APPLICABLE	
NON-DOMESTIC GFA	: 222 m ²	(ABOUT)
TOTAL GFA	: 222 m ²	(ABOUT)
BUILDING HEIGHT	: 8.23 m	(ABOUT)
NO. OF STOREY	: 1	

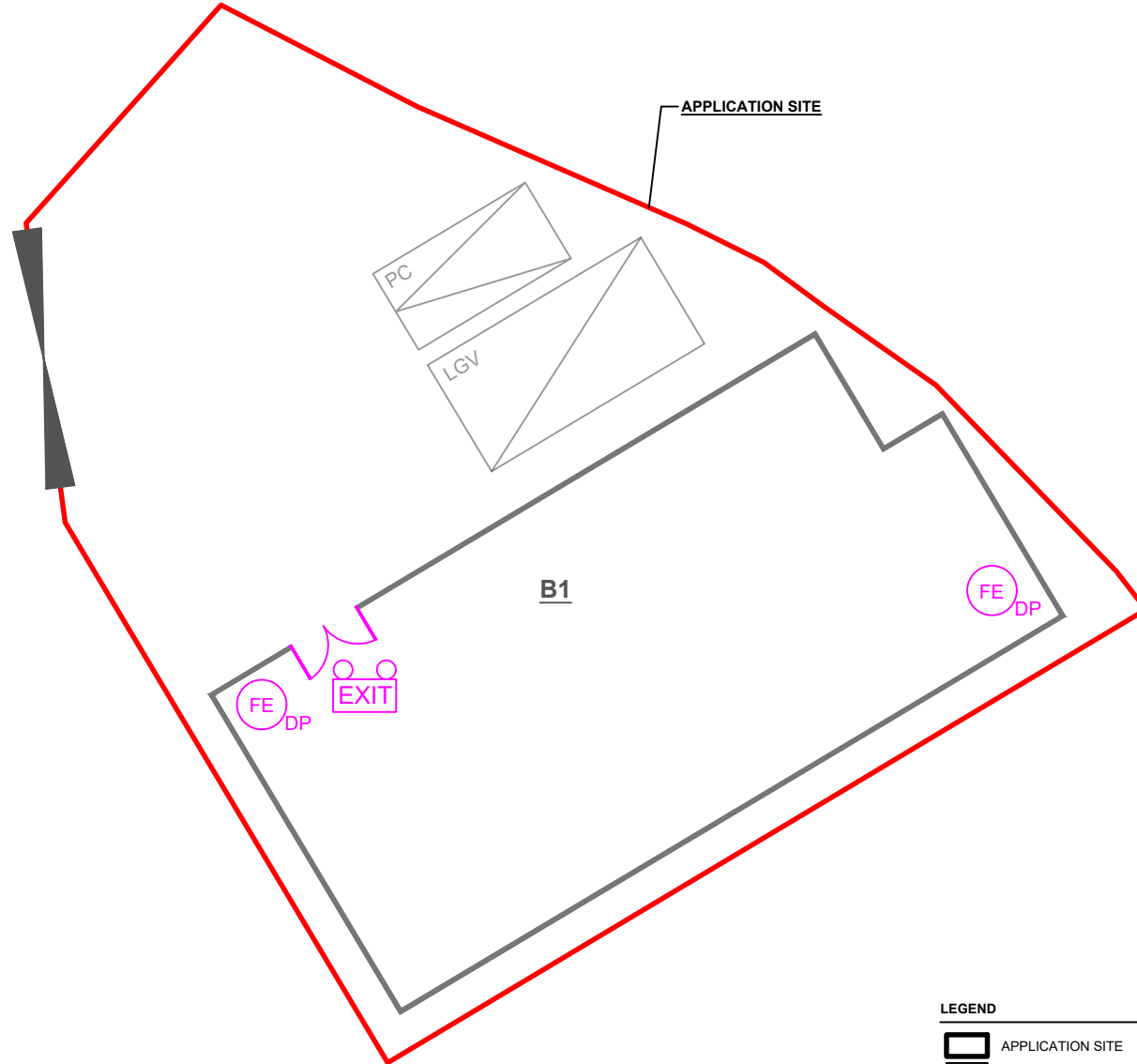
PARKING AND LOADING/UNLOADING PROVISION

NO. OF PRIVATE CAR		
PARKING SPACE	: 1	
DIMENSION OF PARKING SPACE	: 5 m (L) X 2.5 m (W)	
NO. OF LIGHT GOODS		
VEHICLE PARKING SPACE	: 1	
DIMENSION OF LOADING/UNLOADING SPACE	: 7 m (L) X 3.5 m (W)	



STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	WAREHOUSE (EXCLUDING D.G.G.) ANCILLARY OFFICE	222 m ² (ABOUT)	222 m ² (ABOUT)	8.23 m (ABOUT)(1-STOREY)
TOTAL		222 m ² (ABOUT)	222 m ² (ABOUT)	



**INGRESS / EGRESS
7.3m (ABOUT)(W)**








FIRE SERVICE INSTALLATIONS

-  EXIT SIGN AND EMERGENCY LIGHT
-  5 KG DRY POWDER TYPE FIRE EXTINGUISHER

FS NOTES:

- SUFFICIENT EMERGENCY LIGHTING SHALL BE PROVIDED THROUGHOUT THE ENTIRE BUILDING IN ACCORDANCE WITH BS5266-1:2016 AND BS EN1838:2013 AND FSD CIRCULAR LETTER 6/2021
- SUFFICIENT DIRECTIONAL AND EXIT SIGN SHALL BE PROVIDED IN ACCORDANCE WITH BS5266: PART 1 AND FSD CIRCULAR LETTER 5/2008.
- PORTABLE HAND-OPERATED APPROVED APPLIANCE SHALL BE PROVIDED AS REQUIRED BY OCCUPANCY.
- ACCESS IS PROVIDED FOR EMERGENCY VEHICLE TO REACH 30m OF ALL PART OF STRUCTURES.

LEGEND

-  APPLICATION SITE
-  STRUCTURE
-  PARKING SPACE
-  LOADING / UNLOADING SPACE
-  INGRESS / EGRESS

PLANNING CONSULTANT



PROJECT

PROPOSED WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) FOR A PERIOD OF 3 YEARS AND ASSOCIATED FILLING OF LAND

SITE LOCATION

LOTS 1222 S.A (PART) AND 1224 S.B IN D.D. 107, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE

1 : 200 @ A4

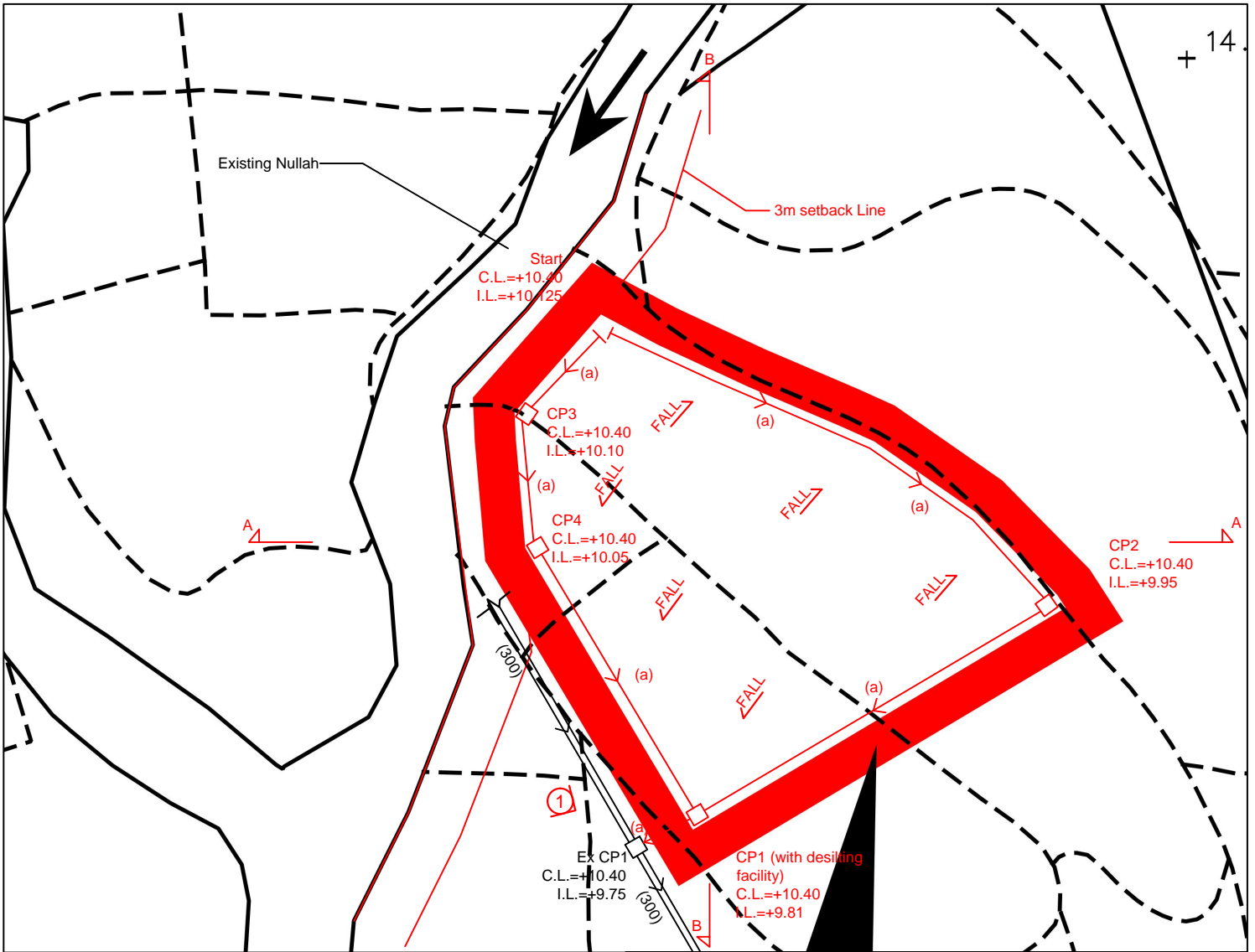
DRAWN BY OL DATE 8.8.2023

CHECKED BY DATE

APPROVED BY DATE

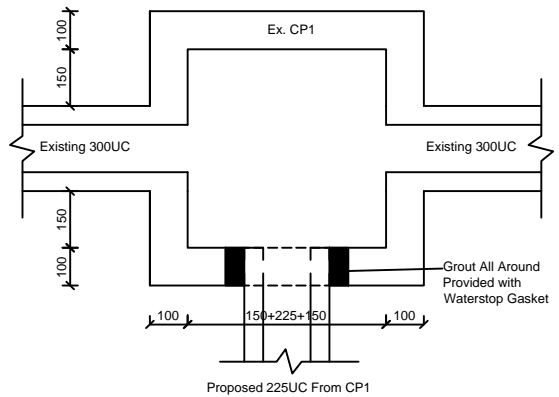
DWG. TITLE
FSIs PROPOSAL

DWG NO. APPENDIX I VER. 001



- Note:**
- Catchpits (CP1) with desilting facility shall follow CEDD standard drawing No. C2406I.
 - Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
 - Adjacent area which is developed or occupied, which has their stormwater collection system.
 - Minor filling works to be carried out. Existing Formation Level is +10.30mPD. Proposed Formation Level is +10.40mPD. The cover level of proposed UC shall be flush with adjoining ground.

LEGEND	
	Proposed Catch Pit
	Proposed 225UC (1:150) with Cast Iron Cover
	Existing Catch Pit
	Proposed 300UC (1:100) with Cast Iron Cover
	Photo Viewport



CONNECTION DETAILS

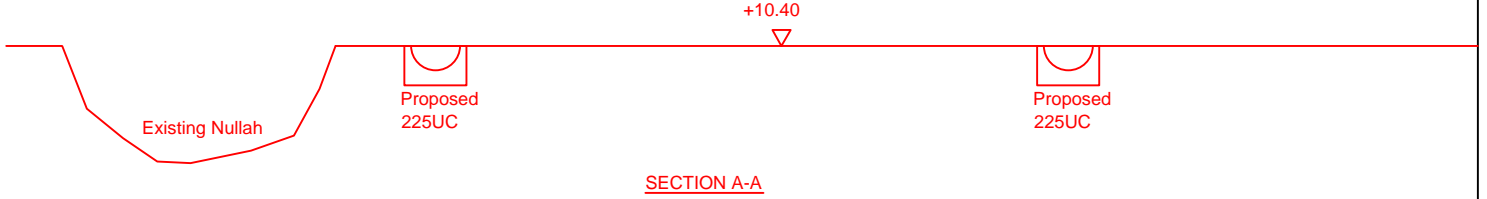
正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANTS CO.

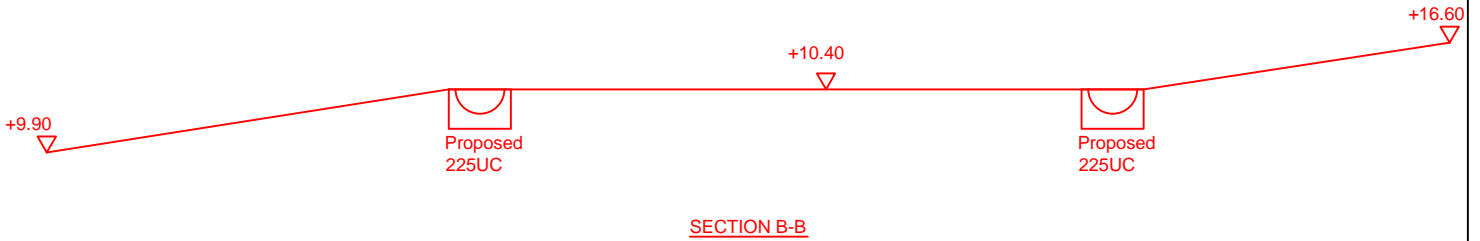
Project:
Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Filling of Land at Lots 1222 S.A (Part) and 1224 S.B in D.D. 107, Fung Kat Heung, Kam Tin, Yuen Long, New Territories

Title: Drainage Proposal - LAYOUT		D01
Drawn by: DM	Date: 7-11-2024	
Check by: DM	Scale: ----	

THE SITE



THE SITE



正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANTS CO.

Project:
Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Filling of Land at Lots 1222 S.A (Part) and 1224 S.B in D.D. 107, Fung Kat Heung, Kam Tin, Yuen Long, New Territories

Title:

SECTIONS

D02

Drawn by:

DM

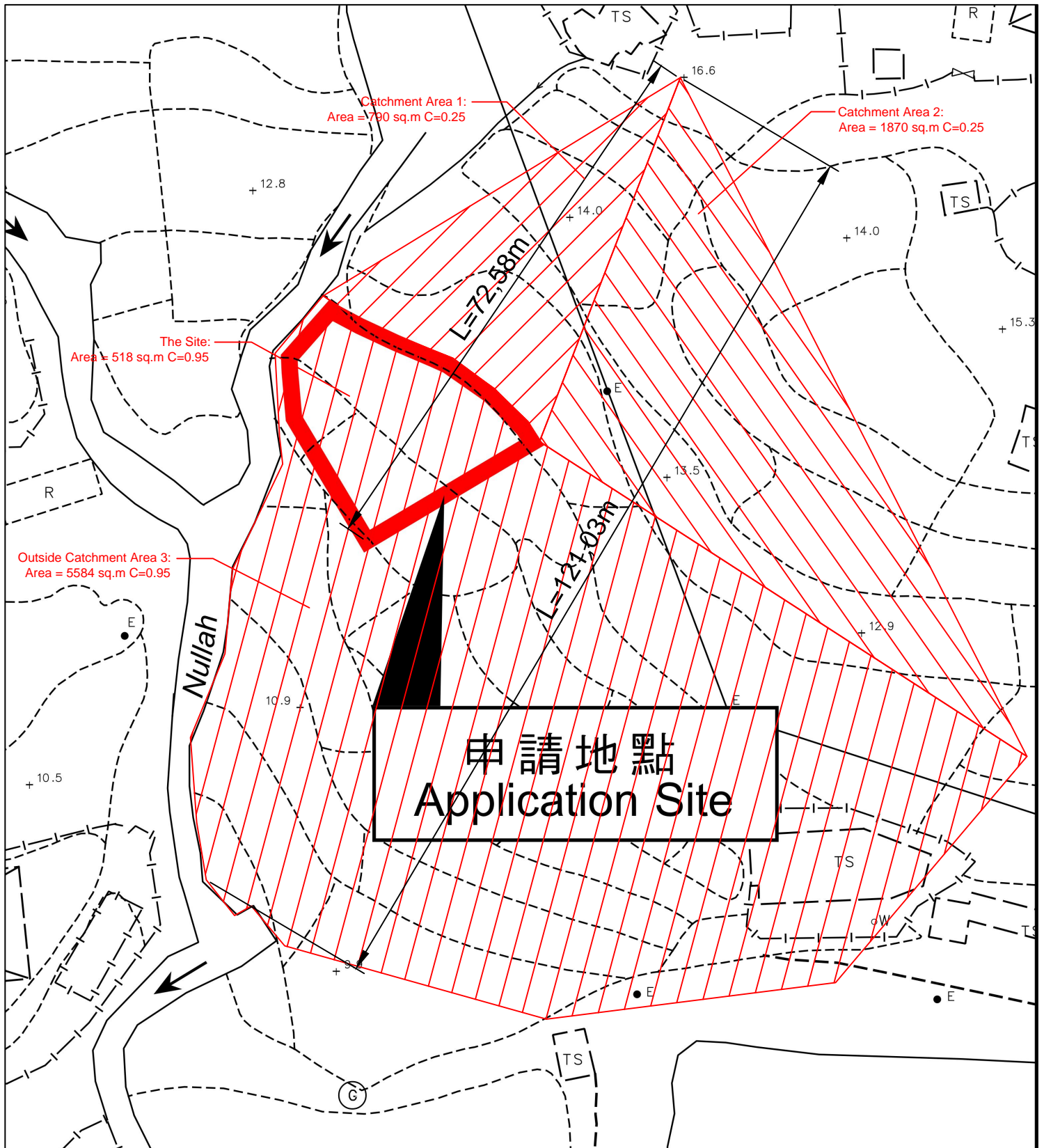
Date:

7-11-2024

Check by:

DM

Scale:



申請地點
Application Site

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANTS CO.

Project:
Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 3 Years and Filling of Land at Lots 1222 S.A (Part) and 1224 S.B in D.D. 107, Fung Kat Heung, Kam Tin, Yuen Long, New Territories

Title:

Drainage Proposal
(Catchment Area Plan)

D03

Drawn by:

DM

Date:

7-11-2024

Check by:

DM

Scale:

Approved Drainage Proposal for A/YL-KTN/752) showing the full alignment of the discharge path

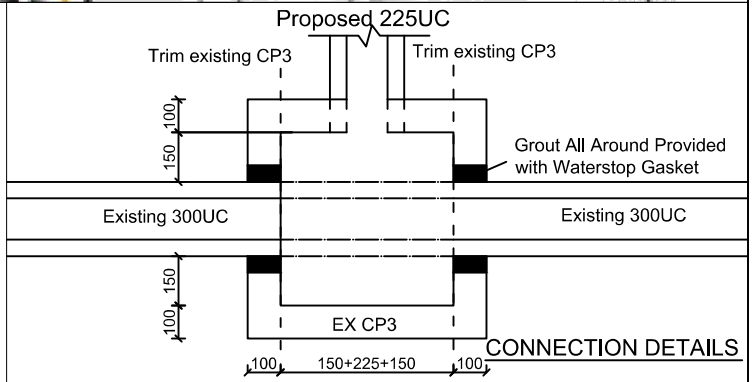


LEGEND

<input type="checkbox"/> CP	Proposed CatchPit
	Proposed UC (1:100) with Cast Iron Cover/underground pipe
<input checked="" type="checkbox"/> CP	Existing CatchPit
	Existing Drain

Note:

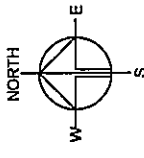
- No solid fence wall to be erected.
- Catchpits (CP3) with desilting facility shall follow CEDD standard drawing No. C24061.
- Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.
- All proposed u-channel is covered by cast iron



正宏工程顧問公司
CHING WAN ENGINEERING CONSULTANT CO.

Project
Proposed Temporary Animal Boarding Establishment for a period of 5 years and Filling of Land at Lots 1222 S.B, 1224 S.C, and 1225 S.A in D.D. 107, Fung Kat Heung, Kam Tin
(Application No.: A/YL-KTN/752)

Title:		D01	
Drawn by:		Date:	
DM		19th Jan 2021	
Check by:		Scale:	
DM		---	



PROJECT
 PROPOSED WAREHOUSE (EXCLUDING DANGEROUS GOODS (GODOWN) FOR A PERIOD OF 3 YEARS AND ASSOCIATED FILLING OF LAND

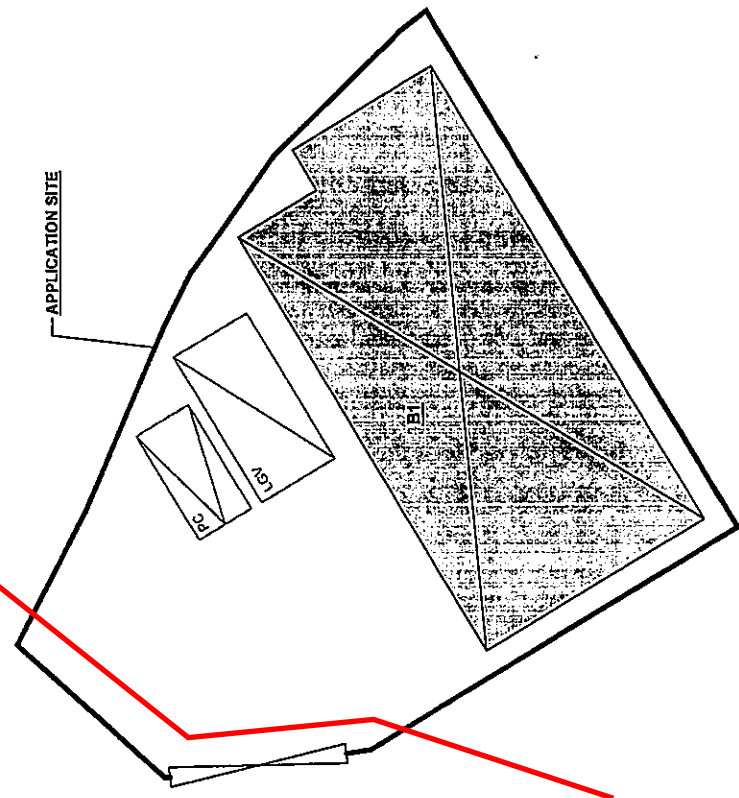
SITE LOCATION
 LOTS 1222 S.A. (PART) AND 1224 S.B. IN D.D. 107, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE	1:300 @ A4
DRAWN BY	MAN
CHECKED BY	
APPROVED BY	
DATE	13.3.2023
DATE	
DATE	
DWG. TITLE	LAYOUT PLAN
PROJECT	PLAN 4
VER.	001

STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	WAREHOUSE (EXCLUDING D.S.G.) ANCILLARY OFFICE	222 m ² (ABOUT)	222 m ² (ABOUT)	8.23 m (ABOUT) (1-STORY)
TOTAL		222 m ² (ABOUT)	222 m ² (ABOUT)	

申請編號 Application No. : A / YL-KTN / 904
 此頁摘自申請人提交的文件。
 This page is extracted from applicant's submitted documents.

3m setback
 line from th bank



INGRESS / EGRESS
 7.3m (ABOUT)(W)

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 518 m ² (ABOUT)
COVERED AREA	: 222 m ² (ABOUT)
UNCOVERED AREA	: 294 m ² (ABOUT)
PLOT RATIO	: 0.43 (ABOUT)
SITE COVERAGE	: 43 % (ABOUT)
NO. OF STRUCTURE	: 1
DOMESTIC GFA	: NOT APPLICABLE (ABOUT)
NON-DOMESTIC GFA	: 222 m ² (ABOUT)
TOTAL GFA	: 222 m ² (ABOUT)
BUILDING HEIGHT	: 8.23 m (ABOUT)
NO. OF STOREY	: 1

LEGEND

[Symbol]	APPLICATION SITE
[Symbol]	STRUCTURE
[Symbol]	PARKING SPACE
[Symbol]	LOADING / UNLOADING SPACE
[Symbol]	INGRESS / EGRESS

PARKING AND LOADING/UNLOADING PROVISION

NO. OF PRIVATE CAR PARKING SPACE	: 1
DIMENSION OF PARKING SPACE	: 5 m (L) X 2.5 m (W)
NO. OF LIGHT GOODS VEHICLE PARKING SPACE	: 1
DIMENSION OF LOADING/UNLOADING SPACE	: 7 m (L) X 3.5 m (W)

Design Drain inside the site

$$Q = 0.278 C i A$$

The Site + Catchment Area 1

$$\begin{aligned} \text{The Site Area} &= 518 \text{ m}^2 \\ C &= 0.95 \end{aligned}$$

$$\begin{aligned} \text{Catchment Area 1 Area} &= 790 \text{ m}^2 \\ C &= 0.25 \end{aligned}$$

$$\begin{aligned} \text{Total A} &= 518+790 \text{ m}^2 \\ &= 0.001308 \text{ km}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L/ H^{0.2} A^{0.1} \\ &= 0.14465*72.58/1^{0.2}*(518+790)^{0.1} \\ &= 5.122 \text{ min} \end{aligned}$$

$$\begin{aligned} i &= 1.111*a/(t+b)^c && \text{(10 yrs return period, Table 3d, Corrigendum 2024, SDM) and (11.1\% increase due to climate change)} \\ &= 1.111*454.9/(5.122+3.44)^{0.412} \\ &= 208.6 \text{ mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q &= 0.278*0.95*208.6*0.000518+0.278*0.25*208.6*0.00079 \\ &= 0.04000 \text{ m}^3/\text{sec} \\ &= 2400 \text{ lit/min} \end{aligned}$$

Provide 225UC (1:150) is OK

Calculation Maximum Capacity of Existing 500mm dia. underground pipe

The Site + Catchment Area 1+ Catchment Area 2+Catchment Area 3

$$\begin{aligned} \text{The Site Area} &= 518 \text{ m}^2 \\ C &= 0.95 \end{aligned}$$

$$\begin{aligned} \text{Catchment Area 1 Area} &= 790 \text{ m}^2 \\ C &= 0.25 \end{aligned}$$

$$\begin{aligned} \text{Catchment Area 2 Area} &= 1870 \text{ m}^2 \\ C &= 0.25 \end{aligned}$$

$$\begin{aligned} \text{Catchment Area 3 Area} &= 5584 \text{ m}^2 \\ C &= 0.95 \end{aligned}$$

$$\begin{aligned} \text{Total A} &= 518+790+1870+5584 \text{ m}^2 \\ &= 0.008762 \text{ km}^2 \end{aligned}$$

$$\begin{aligned} t &= 0.14465 L/ H^{0.2} A^{0.1} \\ &= 0.14465*121.03/1^{0.2}*8762^{0.1} \\ &= 7.062 \text{ min} \end{aligned}$$

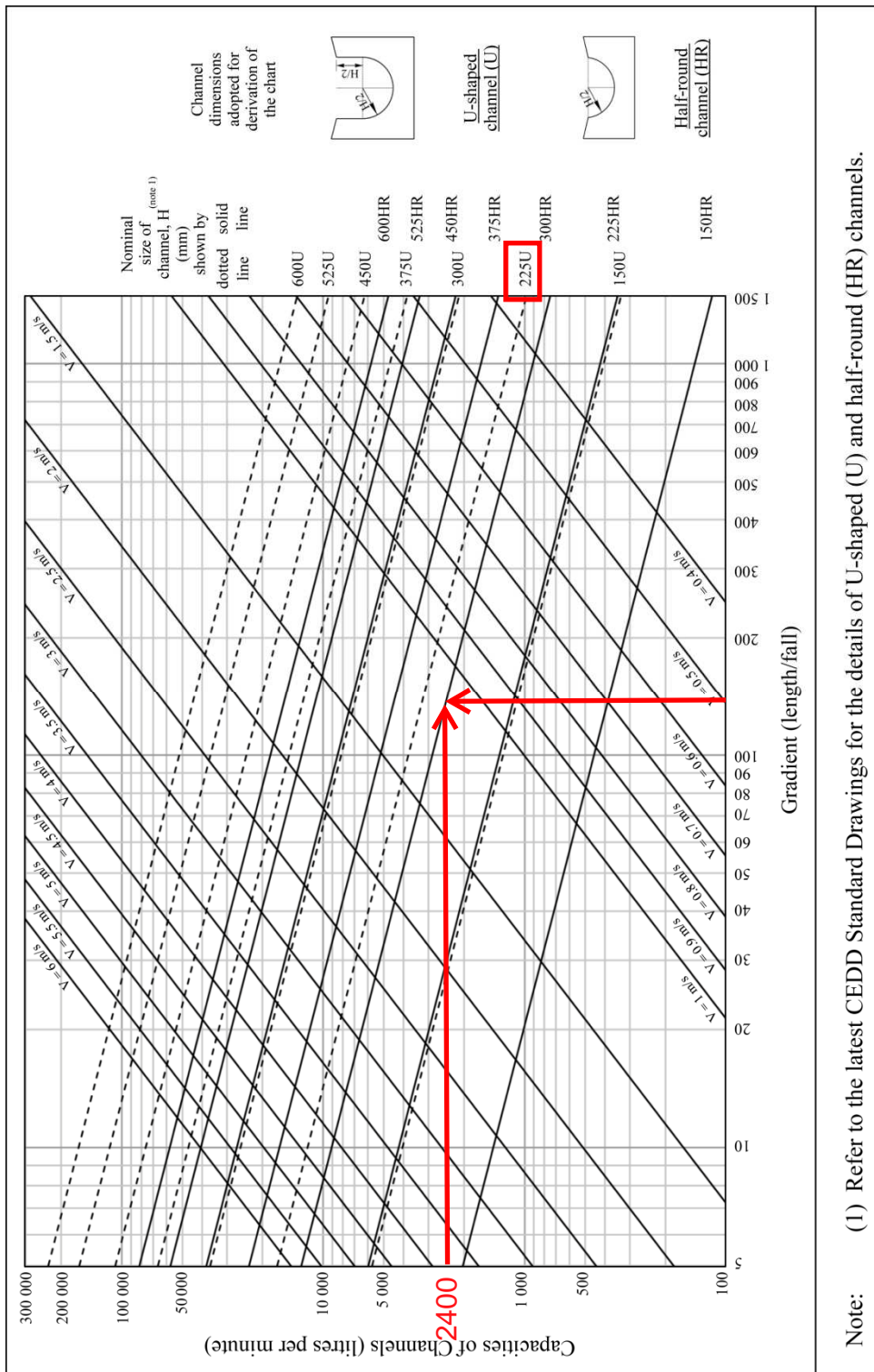
$$\begin{aligned} i &= 1.111*a/(t+b)^c && \text{(10 yrs return period, Table 3d, Corrigendum 2024, SDM) and (11.1\% increase due to climate change)} \\ &= 1.111*454.9/(7.062+3.44)^{0.412} \\ &= 191.8 \text{ mm/hr} \end{aligned}$$

$$\begin{aligned} \text{Therefore, } Q &= 0.278*0.95*191.8*(0.000518+0.005584)+0.278*0.25*191.8*(0.00079+0.00187) \\ &= 0.34456 \text{ m}^3/\text{sec} \\ &= 20674 \text{ lit/min} \end{aligned}$$

GEO Technical Guidance Note No. 43 (TGN 43)
Guidelines on Hydraulic Design of U-shaped and Half-round Channels on Slopes

Issue No.: 1 Revision: - Date: 05.06.2014 Page: 3 of 3

Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm



Total Peak runoff in m³/s of the whole site = 20674 liter/min

Check 500mm dia. Pipes by Colebrook-White Equation

$$V = -\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where :

V	=		mean velocity (m/s)
g	=	9.81 m/s ²	gravitational acceleration (m/s ²)
D	=	0.5 m	internal pipe diameter (m)
ks	=	0.00015 m	hydraulic pipeline roughness (m)
v	=	1.14E-06 m ² /s	kinematic viscosity of fluid (m ² /s)
s	=	0.01	hydraulic gradient

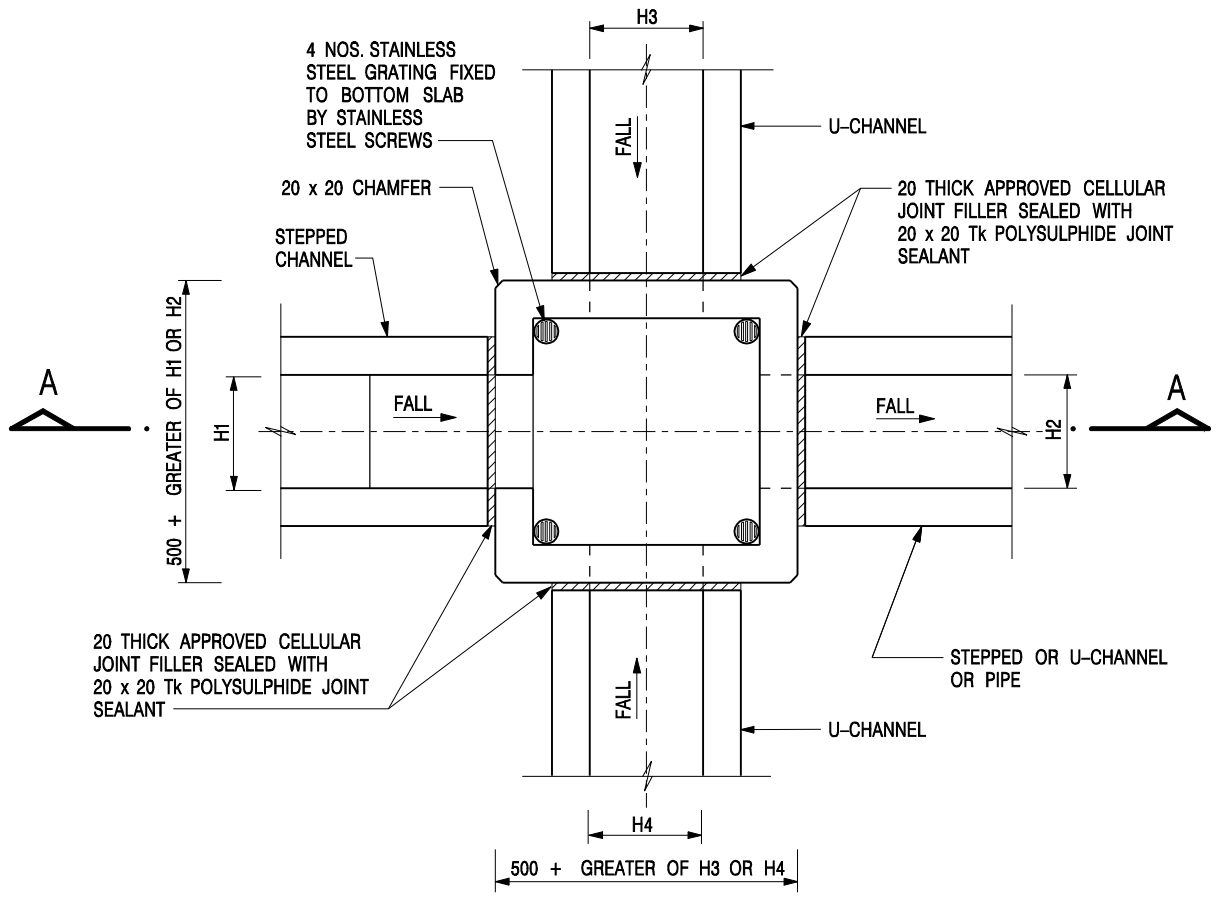
(Table 5, from DSD Sewerage Manual, concrete pipe)

Therefore, design V of pipe capacity	=	2.51 m/s	
Q	=	0.8VA	
	=	0.8*0.25*0.25*π*2.51	
	=	0.393868 lit/min	
	=	23632.07 m ³ /s	
	>	20674 m ³ /s	OK

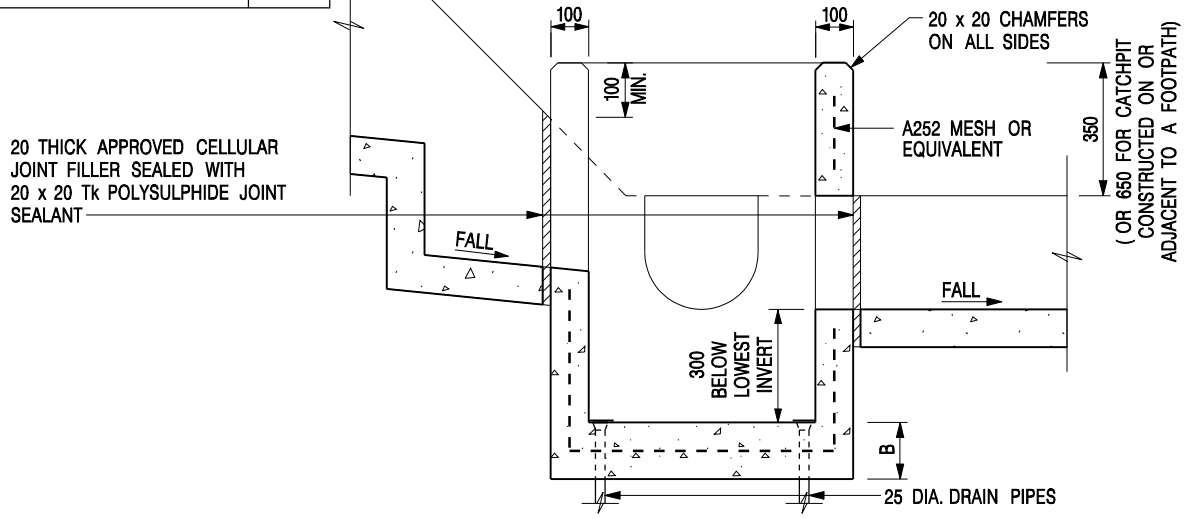
Existing 500mm dia underground pipe is OK

PHOTO 1





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



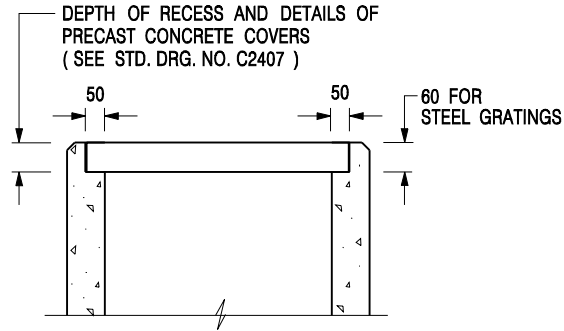
- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. REFER TO SHEET 2 FOR OTHER NOTES.

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

CATCHPIT WITH TRAP
(SHEET 1 OF 2)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

SCALE 1 : 20 **DRAWING NO.**
DATE JAN 1991 **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) 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 'G' ON STD. DRG. NO. C2405; 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 'F' ON STD. DRG. NO. C2405.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

-	FORMER DRG. NO. C2406J.	Original Signed	03.2015
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**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**

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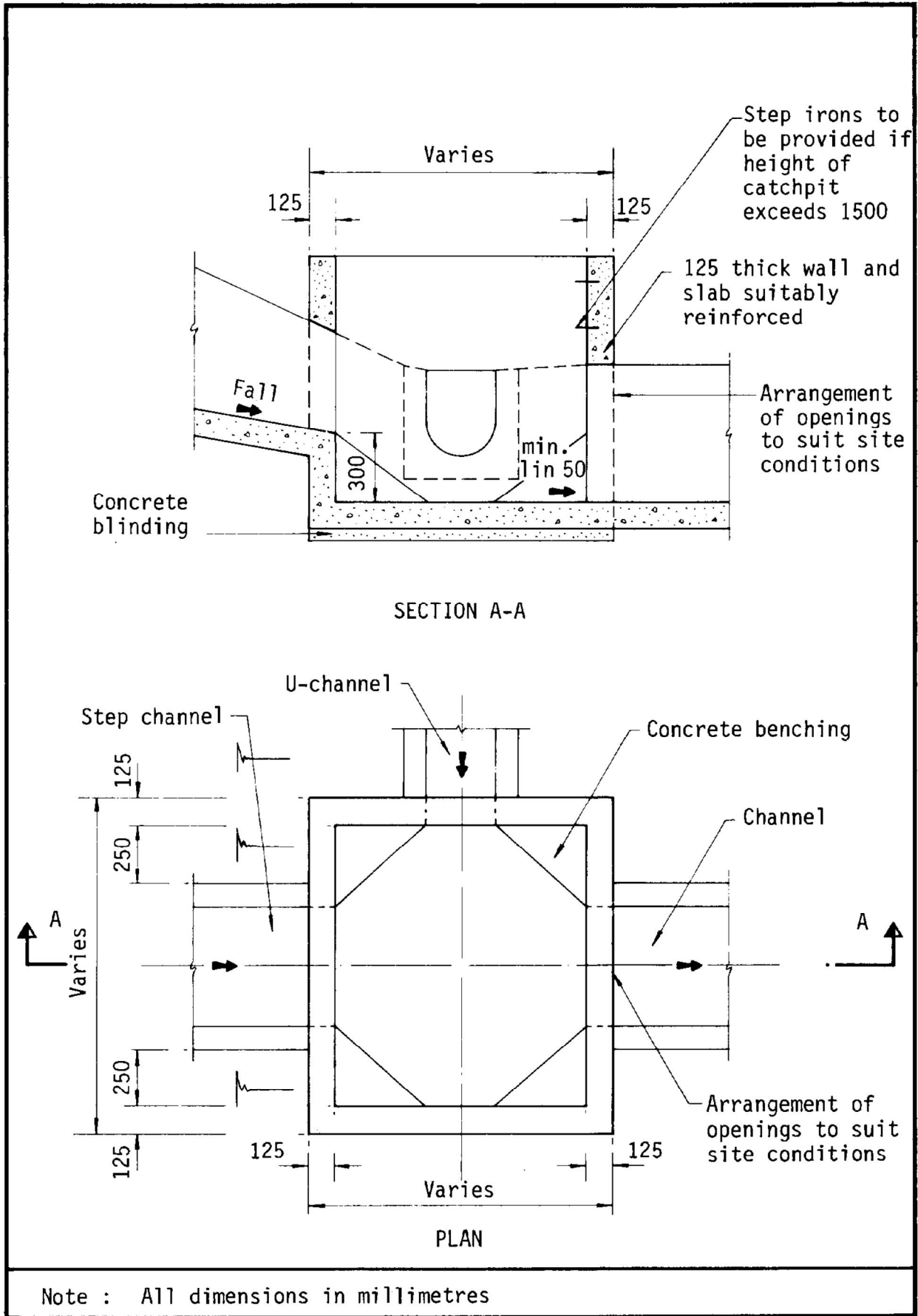


Figure 8.10 - Typical Details of Catchpits

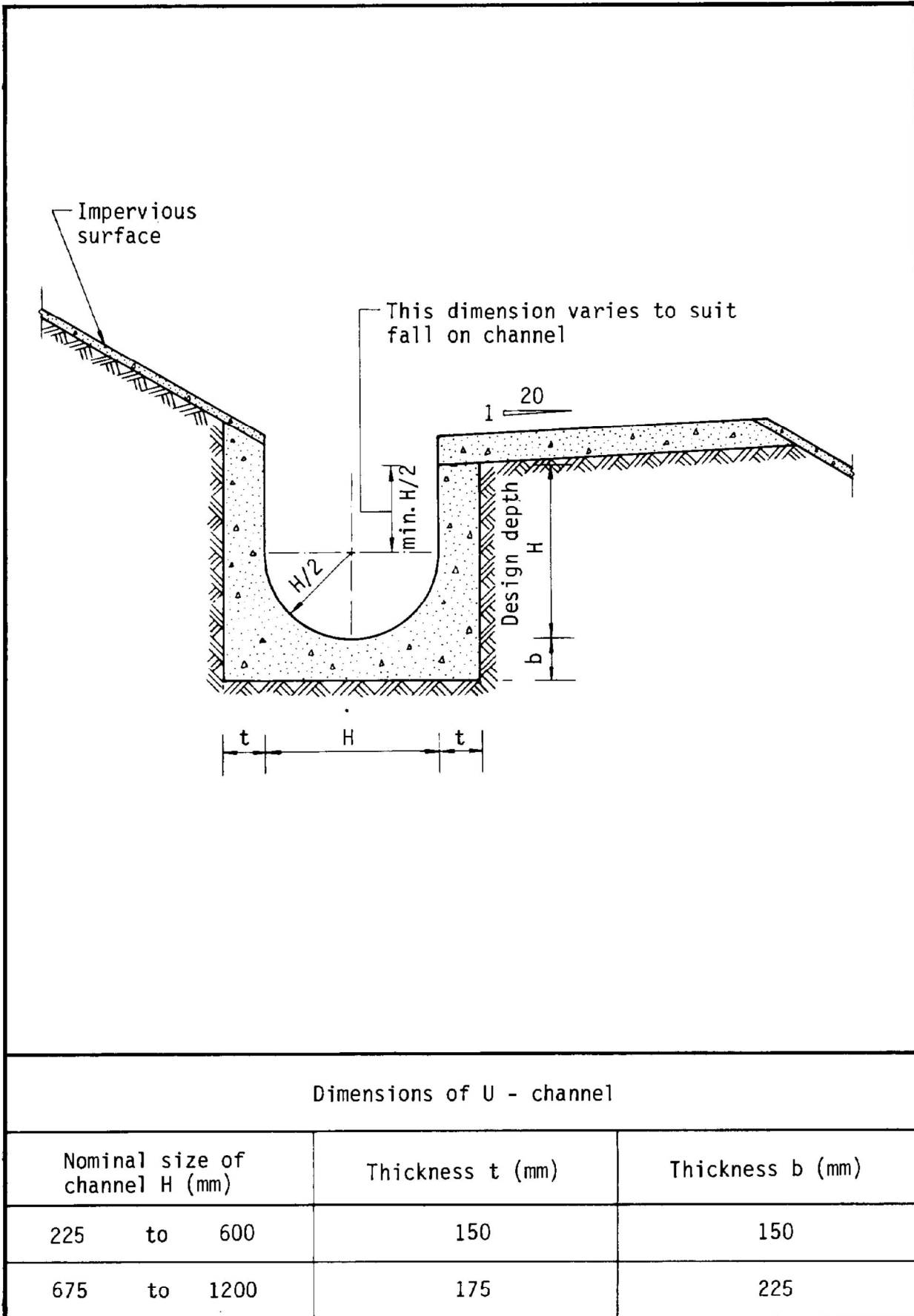


Figure 8.11 - Typical U-channel Details