☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

Emily Tsz Yan WONG/PLAND

寄件者: tmylwdpo_pd/PLAND
寄件日期: 2026年01月07日星期三 11:27
副本: Emily Tsz Yan WONG/PLAND
主旨: 轉寄: A/YL-TYST/1326補充資料
附件: DD121 LOT551唐人新村 FS Drawing 16092025.pdf; 搬遷戶原址位置.pdf; A-YL-TYST-1326 Drainage Proposal 7-1-2026.pdf

From: tpbpd/PLAND <tpbpd@pland.gov.hk>
Sent: Wednesday, January 7, 2026 11:24 AM
To: tmylwdpo_pd/PLAND <tmylwdpo@pland.gov.hk>
Cc: Kiff Kit Fu YIU/PLAND <kkfyiu@pland.gov.hk>
Subject: Fw: A/YL-TYST/1326補充資料

From: 陳灝然 [redacted]
Sent: Wednesday, January 7, 2026 11:14 AM
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Cc: Edwin Wai Shing YEUNG/PLAND <ewsyeung@pland.gov.hk>
Subject: A/YL-TYST/1326補充資料

敬啟者

此電郵取代今日09:14發出的電郵。

有關上述檔案現提供補充資料。

發展局
搬遷戶原址為：
DD125 LOT 1490RP、1492RP(部份)、1503RP(部份)、1505S.A (部份)、1505RP(部份)、1506 (部份) 、1512、1513 (部份) 、1514 (部份) 、1520 (部份) 、1521 (部份) 、1522。
附件為搬遷戶原址位置圖。

消防署
附件為消防建議。

渠務署
附件為渠務建議。

環保署

第一，場地存放的建築材料包括：磚石、玻璃、水泥等，不會產生塵埃，不會對環境有影響。

第二，場地洗手間是臨時式廁所，會有便槽，便槽底部空間供儲存糞便，儲存容量為600升。作業者會定期聘請專業技術人員進行吸糞工作，所有污水皆獨立儲存在流動洗手間內。

北

搬遷戶原址位置

DD125

DD124

連接線 MATCH LINE 第十張 SHEET 10

第十七張 SHEET 17 連接線 MATCH LINE

第四張 SHEET 4 連接線 MATCH LINE

連接線 MATCH LINE 第十六張 SHEET 16

連接線 MATCH LINE 第十二張 SHEET 12

816800 E

817000 E

817200 E

834200 N

834000 N

833800 N

F.S.NOTES:

1. GENERAL

1.1 FIRE SERVICE INSTALLATIONS SHALL BE PROVIDED IN ACCORDANCE WITH THE CODES OF PRACTICE FOR MINIMUM FIRE SERVICE INSTALLATIONS AND EQUIPMENT AND INSPECTION, TESTING AND MAINTENANCE OF INSTALLATIONS AND EQUIPMENT 2022 (COP 2022), FSD CIRCULAR LETTERS AND THE HONG KONG WATERWORKS STANDARD REQUIREMENTS.

1.2 ALL TUBES AND FITTINGS SHALL BE G.M.S. TO BS1387 MEDIUM GRADE WHERE PIPEWORK UP TO ø150mm.

1.3 ALL TUBES AND FITTINGS SHALL BE DUCTILE IRON TO BS EN545 K12 WHERE PIPEWORK ABOVE ø150mm.

1.4 ALL DRAIN PIPES SHALL BE DISCHARGED TO A CONSPICUOUS POSITION WITHOUT THE POSSIBILITY OF BEING SUBMERGED.

1.5 ALL PUDDLE FLANGES SHALL BE MADE OF DUCTILE IRON

1.6 SMOKE EXTRACTION SYSTEM(S) SHALL NOT BE PROVIDED AS THE AGGREGATE AREA OF OPERABLE WINDOW OF STRUCTURE EXCEEDS 6.25% OF THE FLOOR AREA OF THE COMPARTMENT.

1.7 VENTILATION/AIR CONDITIONING SYSTEM NOT TO BE PROVIDED.

2. HOSE REEL SYSTEM

2.1 NEW FIRE HOSE REEL SHALL BE PROVIDED AS INDICATED ON PLAN TO ENSURE THAT EVERY PART OF THE BUILDING CAN BE REACHED BY A LENGTH OF NOT MORE THAN 30m HOSE REEL TUBING.

2.2 THE WATER SUPPLY FOR HOSE REEL SYSTEM WILL BE FED FROM A NEW $2m^3$ F.S. FIBREGLASS WATER TANK VIA TWO HOSE REEL PUMPS (DUTY/STANDBY) LOCATED INSIDE FS PUMP ROOM AT EXTERNAL AREA.

2.3 HOSE REEL PUMPS SHALL BE STARTED BY ACTUATION OF ANY BREAKGLASS UNIT FITTED ASIDE EACH HOSE REEL SETS

2.4 ALL FIRE HOSE REEL OUTLETS SHOULD BE HOUSED IN GLASS FRONTED CABINET SECURED UNDER LOCK & KEY.

2.5 ALL FIRE HOSE REEL SHOULD BE PROVIDED WITH FSD APPROVED TYPE INSTRUCTION PLATE & WSD WARNING PLATE

2.6 SECONDARY ELECTRICITY SUPPLY DIRECTLY TEE OFF BEFORE CLP'S INCOMING MAIN SWITCH SHALL BE PROVIDED FOR THE FH/HR PUMPS.

3. AUTOMATIC SPRINKLER SYSTEM

3.1 NEW AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS INCORPORATING BS EN 12845: 2015 (INCLUDING TECHNICAL BULLETINS, NOTES, COMMENTAR AND RECOMMENDATIONS) AND FSD CIRCULAR LETTER NO. 5/2020. THE CLASSIFICATION OF THE OCCUPANCIES WILL BE ORDINARY HAZARD GROUP III.

3.2 ONE NEW $135m^3$ SPRINKLER WATER TANK WILL BE PROVIDED AS INDICATED ON PLAN. THE TOWN MAIN WATER SUPPLY WILL BE FED FROM SINGLE END.

3.3 TWO NEW SPRINKLER PUMPS (DUTY/STANDBY) AND ONE JOCKEY PUMP SHALL BE PROVIDED IN FS PUMP ROOM LOCATED AT EXTERNAL AREA.

3.4 NEW SPRINKLER CONTROL VALVE SET AND SPRINKLER INLET SHALL BE PROVIDED AS INDICATED ON PLAN.

3.5 A TEST VALVE SHALL BE PROVIDED FOR EACH ZONE OF SPRINKLER PIPE. THIS VALVE SHALL BE AT A CONSPICUOUS POSITION THAT WATER CAN BE DRAINED AWAY EASILY.

3.6 ALL SUBSIDIARY STOP VALVES TO BE ELECTRIC MONITORING TYPE.

3.7 ALL ELECTRIC TYPE VALVES SHOULD GIVE VISUAL SIGNALS TO FIRE SERVICE MAIN SUPERVISORY CONTROL PANEL TO INDICATE THE STATUS (OPEN/CLOSE) OF THE VALVES.

3.8 SECONDARY ELECTRICITY SUPPLY DIRECTLY TEE OFF BEFORE CLP'S INCOMING MAIN SWITCH SHALL BE PROVIDED FOR THE SPRINKLER PUMPS.

3.9 THE SPRINKLER SYSTEM DESIGN IS BASED ON THE FOLLOWINGS:
HAZARD CLASS : ORDINARY HAZARD GROUP III
TYPE OF STORAGE : POST-PALLET (ST2)
STORAGE CATEGORY : CATEGORY I
MAXIMUM STORAGE HIEGHT : 3.5m
SPRINKLER PROTECTION : CEILING PROTECTION ONLY
THE MAXIMUM STORAGE AREAS SHALL BE $50m^2$ FOR SINGLE BLOCK
THE MINIMUM CLEARANCE AROUND EACH SINGLE STORAGE CLOCK : 2.4m

4. FIRE ALARM SYSTEM

4.1 NEW FIRE ALARM SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH BS 5839-1:2017 AND FSD CIRCULAR LETTERS NO. 6/2021.

4.2 NEW BREAKGLASS UNITS AND FIRE ALARM BELLS SHALL BE PROVIDED AT ALL NEW FIRE HOSE REEL POINTS. THE FIRE ALARM INTALLATION WILL BE INTEGRATED WITH THE HOSE REEL SYSTEM.

5. EMERGENCY LIGHTING

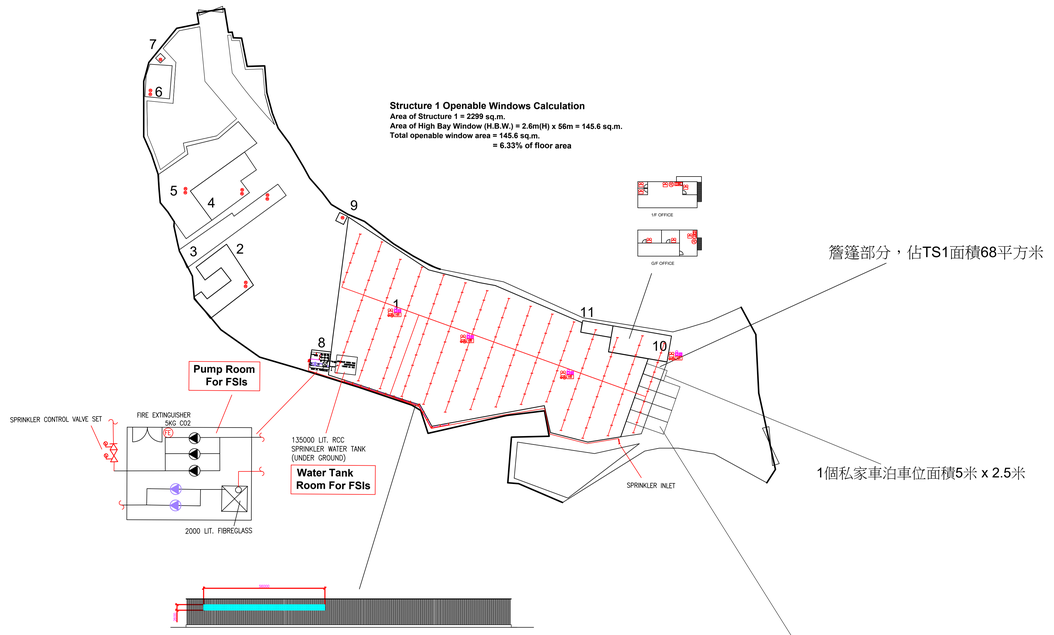
5.1 EMERGENCY LIGHTING SHALL BE PROVIDED IN ACCORDANCE WITH 'BS 5266-1 :2016 AND BS EN 1838 :2013", AND THE FSD CIRCULAR LETTER NO. 4/2021, COVERING ALL AREA. EMERGENCY LIGHTINGS SHALL BE BACKED UP BY BUILT-IN BATTERY AND CAPABLE OF MAINTAINING FUNCTION OF NOT LESS THAN 2 HOURS IN CASE OF POWER FAILURE

6. EXIT SIGN

6.1 ALL EXIT SIGNS/DIRECTIONAL EXIT SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH BS 5266-1 :2016 AND FSD CIRCULAR LETTER NO. 5/2008, FOR THE BUILDING. EXIT SIGNS/DIRECTIONAL EXIT SIGNS SHALL BE BACKED UP BY BUILT-IN BATTERY AND CAPABLE OF MAINTAINING FUNCTION OF NOT LESS THAN 2 HOURS IN CASE OF POWER FAILURE.

7. PORTABLE APPLIANCES

7.1 PORTABLE HAND OPERATED APPLIANCES SHALL BE PROVIDED AS INDICATED ON PLAN.



場地設計圖

構築物(1)
用途：貨倉
建築物料：以金屬搭建
高度：約9米
層數：1層
面積：約2299平方米
總樓面面積：約2299平方米

構築物(2)
用途：貨倉及辦公室
建築物料：以金屬搭建
高度：約5米
層數：1層
面積：約186平方米
總樓面面積：約186平方米

構築物(3)
用途：貨倉
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約110平方米
總樓面面積：約110平方米

構築物(4)
用途：貨倉及辦公室
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約110平方米
總樓面面積：約110平方米

構築物(5)
用途：貨倉及辦公室
建築物料：以金屬搭建
高度：約6米
層數：2層
面積：約240平方米
總樓面面積：約300平方米

構築物(6)
用途：過貨涼棚及及洗手間
建築物料：以金屬搭建
高度：約5米
層數：1層
面積：約45平方米
總樓面面積：約45平方米

構築物(7)
用途：電錶房
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約4平方米
總樓面面積：約4平方米

構築物(8)
用途：消防泵房
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約16平方米
總樓面面積：約16平方米

構築物(9)
用途：電錶房
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約4平方米
總樓面面積：約4平方米

構築物(10)
用途：辦公室
建築物料：以金屬搭建
高度：約6米
層數：2層
面積：約105平方米
總樓面面積：約210平方米

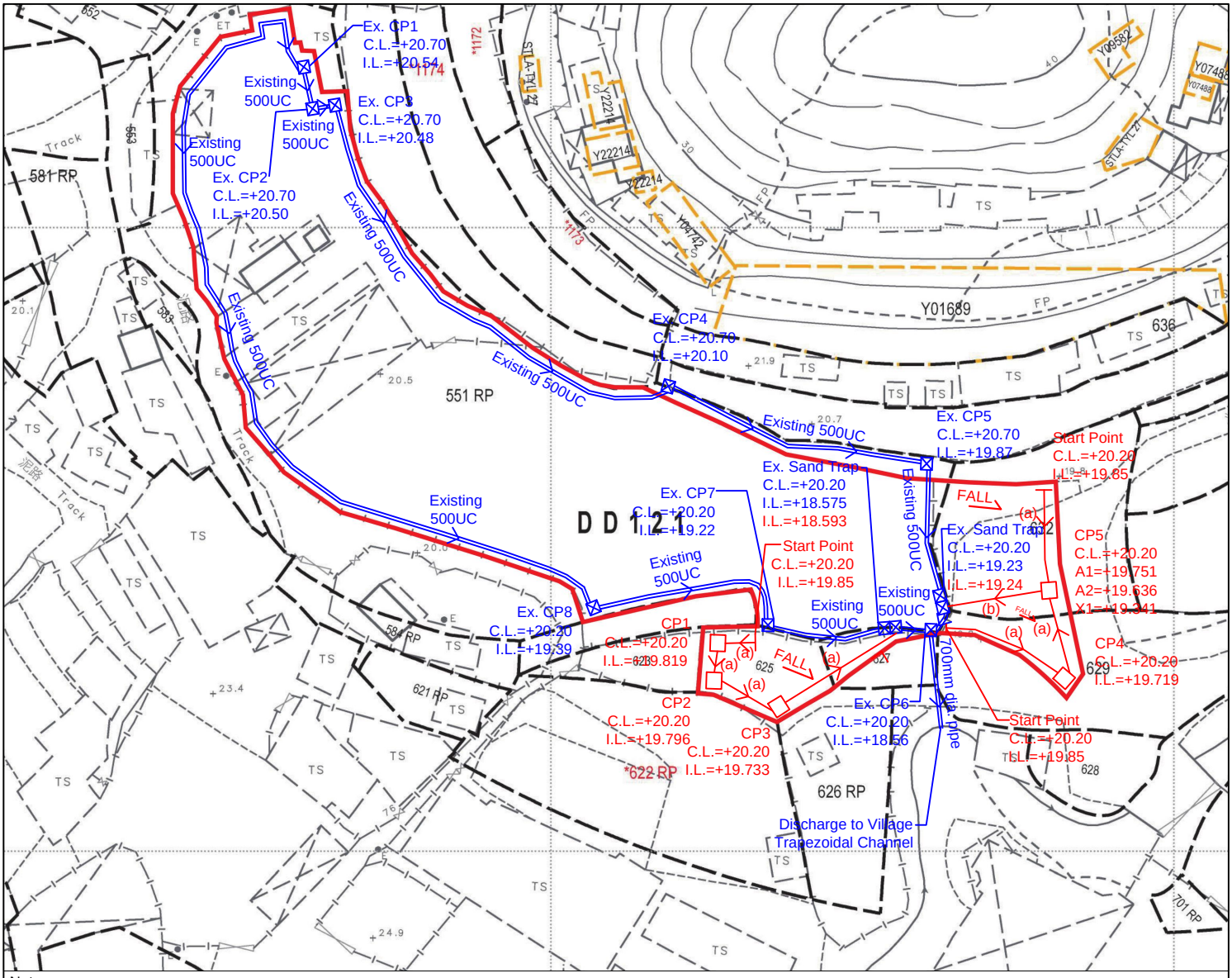
構築物(11)
用途：洗手間
建築物料：以金屬搭建
高度：約3米
層數：1層
面積：約15平方米
總樓面面積：約15平方米

LEGEND

HR HOSE REEL
BREAK GLASS UNIT
FIRE ALARM BELL
EMERGENCY LIGHT
EXIT EXIT SIGN
NON-RETURN VALVE
FE 5KG CO2 FIRE EXTINGUISHER
V VISUAL FIRE ALARM
SUBSIDIARY VALVE / FLOW SWITCH
SPRINKLER CONTROL VALVE SET
GATE VALVE
GATE TYPE (With MONITORING)
PUMP SET
Y-TYPE STRAINER
SPRINKLER INLET
PRESSURE GAUGE
SPRINKLER HEAD (ON PLAN)
5KG DRY POWDER FIRE EXTINGUISHER

PROJECT : LOT 551 (PART) IN D.D. 121, TONG TAN SAN TSUEN, YUEN LONG, NEW TERRITORIES	DRAWING TITLE : **F.S. Notes, Legend, Fire Service Installation Layout Plan**	REV	DESCRIPTION	DATE	ARCHITECT :	CONSULTANT :	FIRE SERVICE CONTRACTOR : **Century Fire Service Engineering Co., Ltd.**		NAME	DATE
								DRAWN BY	C.K.NG	16 Sep 2025
								CHECKED BY		
								APPROVED BY		

DRAWING NO : **FS-01** REV. **0**
SCALE : 1 : 1000 (A0)
SOURCE : B.O.O. Ref. BD
F.S.D. Ref. FP

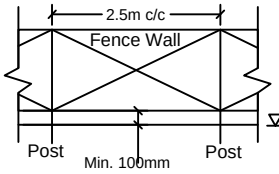


Note:

1. This Drainage Proposal is designed based on the Drainage Proposal for Planning Application A/YL-TYST/1234 (as attached in Appendix A).

2. Catchpit and UC follows Typical Details of Geotechnical Manual for Slope Fig.8.10 and Fig.8.11 respectively.

3. Fence wall, if any, shall be of open-bottom type to avoid blocking of overland flow.



TYPICAL DETAIL OF OPEN-BOTTOM TYPE FENCE WALL

LEGEND

Ex.CP

Existing CatchPit

Existing 500UC /700mm dia. pipe

Under Planning Application A/YL-TYST/1234

CP Proposed CatchPit

(a) Proposed 300UC (1:150) with Cast Iron Cover

(b) Proposed 300mm dia. concrete pipe (1:150)

正宏工程顧問公司

CHING WAN ENGINEERING CONSULTANT COMPANY

Title: Drainage Proposal - LAYOUT

D01

Drawn by: DM

Date: 7-1-2026

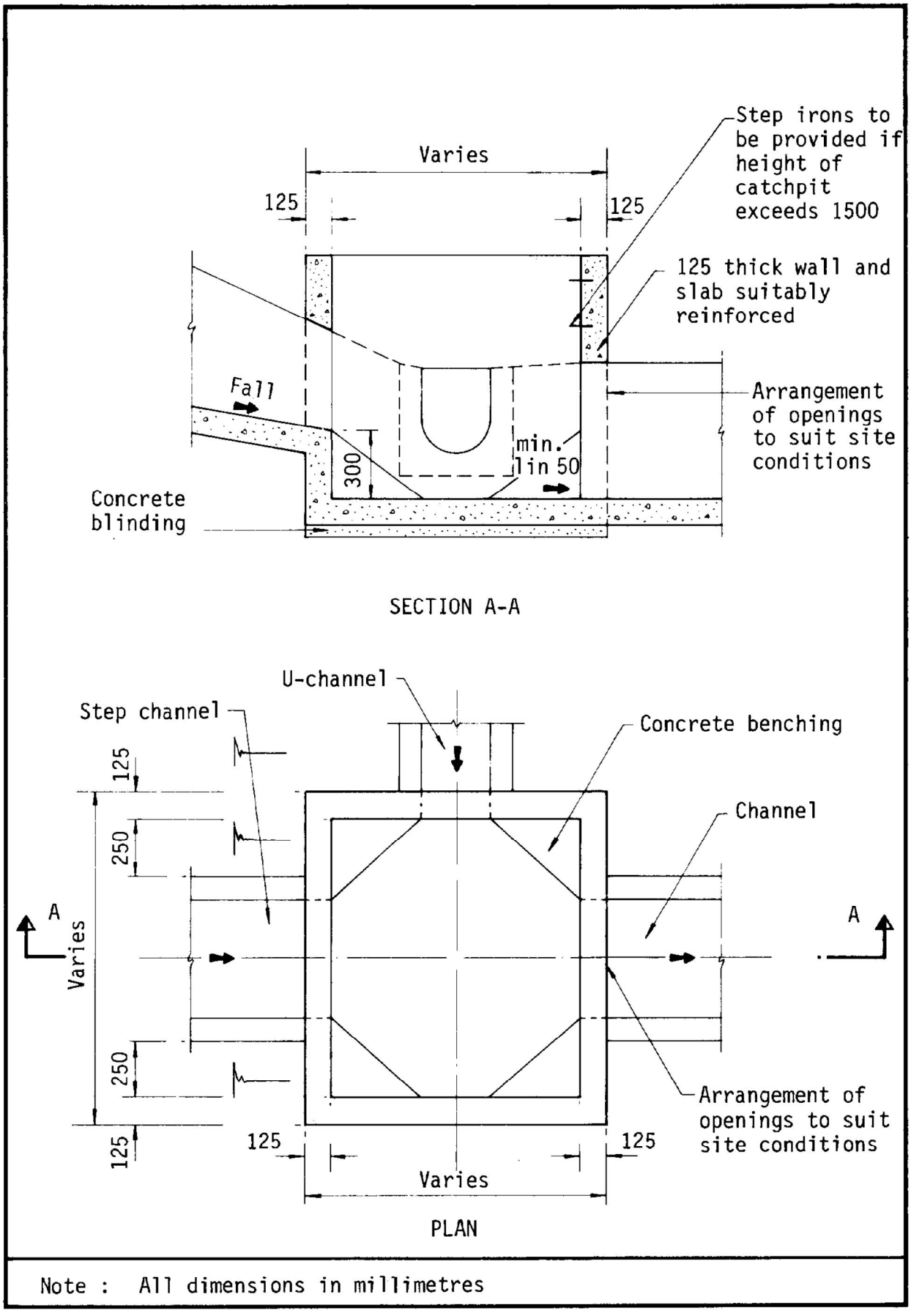
Check by: DM

Scale: ----

Project:

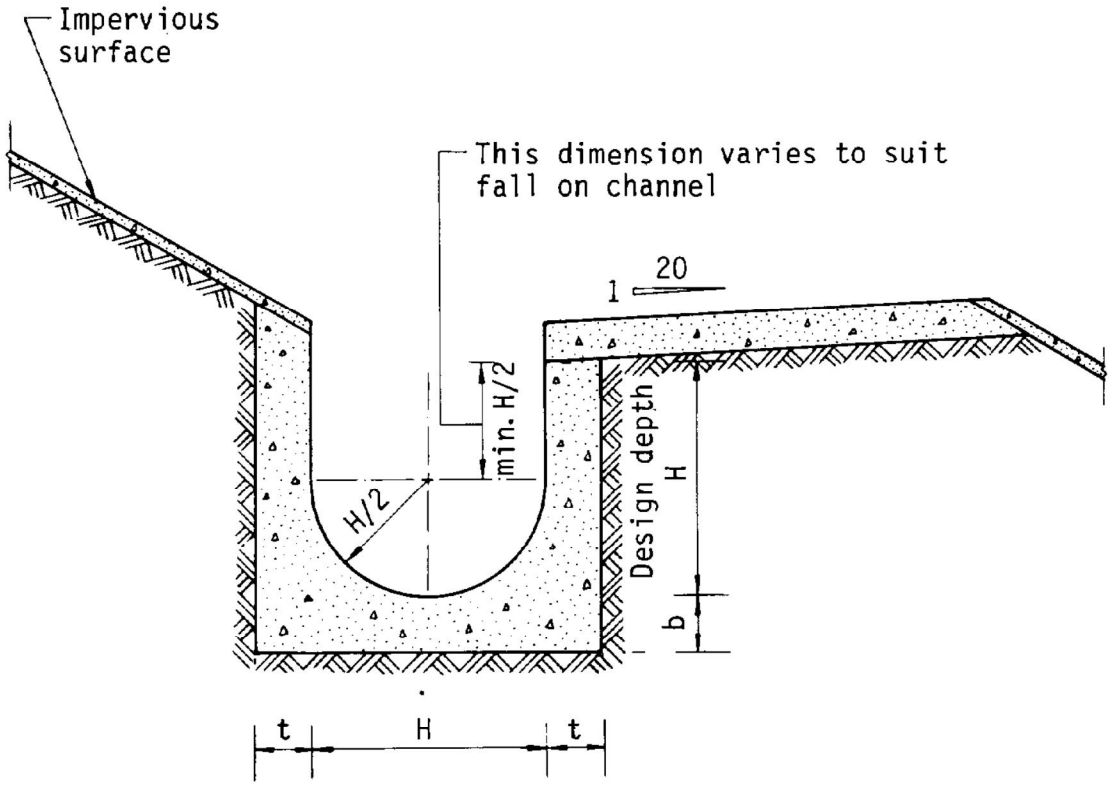
Proposed Temporary Warehouse and Open Storage of Construction Materials for a Period of 3 Years at Lots 551 RP (Part), 625, 626 RP, 627, 629 (Part), 632 (Part) and 635 (Part) in D.D.121 and adjoining Government Land, Tong Yan San Tsuen, Yuen Long, New Territories

(Application No.:A/YL-TYST/1326)



Note : All dimensions in millimetres

Figure 8.10 - Typical Details of Catchpits



Dimensions of U - channel		
Nominal size of channel H (mm)	Thickness t (mm)	Thickness b (mm)
225 to 600	150	150
675 to 1200	175	225

Figure 8.11 - Typical U-channel Details

Appendix A

Drainage Proposal for Planning Application A/YL-TYST/1234

CI GRATING AT MAIN ENTRANCE ONLY

CP1
CL=20.7
IL=20.54
WITH 0.35 m(H) KERB

CP2
CL=20.7
IL=20.50
WITH 0.35 m(H) KERB

CP3
CL=20.7
IL=20.48
WITH 0.35 m(H) KERB

CP4
CL=20.7
IL=20.10
WITH 0.35 m(H) KERB

CP5
CL=20.7
IL=19.87
WITH 0.35 m(H) KERB

CP6
CL=20.2
IL=18.56
WITH 0.35 m(H) KERB

CP7
CL=20.2
IL=19.22
WITH 0.35 m(H) KERB

CP8
CL=20.2
IL=19.39
WITH 0.35 m(H) KERB

SAND TRAP
CL=20.2
IL=19.23

SAND TRAP
CL=20.2
IL=18.575

IL=19.08

IL=19.21

500mm (W) UC

500mm(W) OPEN CHANNEL F1:200

ø700 RAINWATER DRAIN PIPE AT UNDERGROUND F1:250
PLEASE REFER TO THE DETAIL DRAWING NO. DR-02

ø700 RAINWATER DRAIN PIPE DISCHARGE TO EXISTING VILLAGE CHANNEL

VILLAGE TRAPEZOIDAL CHANNEL

ADJACENT SITE LOT BOUNDARY

SUBJECT SITE BOUNDARY
AREA A
6082 SQM

SUBJECT SITE BOUNDARY
AREA B
4970 SQM

Tarblock

LEGEND:

- WATER FALL IN U-CHANNEL
- NEW 500mm (WIDTH) CHANNEL WITH GRATING COVER
- CATCHPIT
- SAND TRAP
- SUBJECT SITE BOUNDARY
- ADJACENT LOT BOUNDARY

ABBREVIATION :

CL	COVER LEVEL
CP	CATCH PIT
IL	INVERT LEVEL
RWP	RAINWATER PIPE
PVC	POLYVINYL CHLORIDE

B.D. REF.

F.S.D. REF.

REV.	DATE	DESCRIPTION
-	04/24	1ST SUBMISSION

MAIN CONTRACTOR

ROOM 603, FORTUNE COMMERCIAL BUILDING, 362 SHA TSUI ROAD, TSUEN WAN, N.T.
TEL : 2185 7388 FAX : 3740 0255

PROJECT
PROPOSED TEMPORARY LOGISTICS CENTRE FOR A PERIOD OF 3 YEARS

LOT 551 (PART) IN D.D. 121, TONG YAN SAN TSUEN, YUEN LONG, NEW TERRITORIES

DRAWING TITLE
DRAINAGE LAYOUT PLAN OF G/F

DRAWN BY	CHECKED BY	JOB NO.
FAY	CCH	TYST_1234

SCALE	DATE
1 : 500 @A3	APR 2024

DRAWING NO.	REV.
DR-01	-

Project: **Proposed Temporary Logistics Centre for a Period of 3 Years**
LOT 551 (PART) IN D.D. 121, TONG YAN SAN TSUEN,
YUEN LONG, NEW TERRITORIES

Calculation of Stormwater Water Pipe Sizing

(According to Cap.123I the number and size of water pipes shall be calculated at the rate of 700 mm^2 of pipe to every 10 m^2 of horizontal roofed-over surface.)

Catchment Area of site boundary: Area B =	4970	m²	(approx.)
Catchment Area of adjacent area: Area A =	6082	m²	(approx.)
Total Catchment area : Effectiive Area A+B=	7762.5	m²	(approx.)
The Effective unpaved area Area A	0.5		
The Effective paved area : Area B	0.95		

B) Collected Run-off

Eff. Catchment area,	CA =	7762.5	m²	(approx.)
Rainfal intensity,	I =	218	mm/hr	
Rainfal increase		11.1%		
Increase Rainfall intensity	I =	242	mm/hr	

(Refence from DSD Stormwater Manual Table 2: 50 years return period & 5 mins duration)
(Refence from Stormwater Drainage Manual. CORRIGENDUM No. 1/2022. Table 28,
Mid 21st Century, rainfall increase is 11.1%)

Table 28 – Rainfall Increase due to Climate Change

	Rainfall Increase
Mid 21st Century	11.1%
End of 21st Century	16.0%

Maximum run-off, $Qrf = I \times C_A$ (m^3/hr)

Qrf =	0.24	m/hr	x	7762.5	m^2
Qrf =	1880.06	m^3/hr			
Qrf =	522.24	L/s			

Maximum stormwater Run-off discharge = 522.24 L/s

Project: **Proposed Temporary Logistics Centre for a Period of 3 Years**
LOT 551 (PART) IN D.D. 121, TONG YAN SAN TSUEN,
YUEN LONG, NEW TERRITORIES

Capacity of Stormwater Drain Pipe Calculation

Manning Formula:

$$V = \frac{HMD^{2/3} s^{1/2}}{n}$$

Type of Pipe	n
New smooth drain	0.011
Cast iron pipe	0.011
Old sewer	0.012
Concrete pipe	0.013

V = Velocity (m/s)
HMD = Hydraulic Mean Depth (m)
A_f = Area of Flow (m^2)
R_f = Rain Fall in Litre per second
Q = Volume of Flow (L/s)
D = 0.700 = Pipe Diameter in metre (m)
s = 1 : 250 = Gradient (slope)
n = 0.013 = Manning Friction Coefficient (Refer DSD Sewer Manual Part 1)

$$HMD = \frac{Af}{\text{Wetted perimeter}}$$

Hydraulic Mean Depth (HMD):			
1/3 bore:	$\frac{Af}{1.231 * D}$	=	0.1304
1/2 bore:	$\frac{Af}{1.571 * D}$	=	0.1750
2/3 bore:	$\frac{Af}{1.911 * D}$	=	0.2037
3/4 bore:	$\frac{Af}{2.094 * D}$	=	0.2114
4/5 bore:	$\frac{Af}{2.214 * D}$	=	0.2128
Full bore:	$\frac{Af}{\pi * D}$	=	0.1750

Area of Flow (A_f):				
1/3 bore:	0.292 * A	=	0.11237	m^2
1/2 bore:	0.500 * A	=	0.19242	m^2
2/3 bore:	0.708 * A	=	0.27247	m^2
3/4 bore:	0.805 * A	=	0.30980	m^2
4/5 bore:	0.857 * A	=	0.32981	m^2
Full bore:	1.000 * A	=	0.38485	m^2

Apply HMD to Manning Formula,

Velocity (V):				
1/3 bore:	V	=	1.251	m/s
1/2 bore:	V	=	1.522	m/s
2/3 bore:	V	=	1.684	m/s
3/4 bore:	V	=	1.726	m/s
4/5 bore:	V	=	1.734	m/s
Full bore:	V	=	1.522	m/s

Q (m^3/s) = V x A (by Continuing Equation)
Q (L/s) = V x A x 1000

Volume of Flow (Q):

1/3 bore:	Q	=	140.59	L/s
1/2 bore:	Q	=	292.86	L/s
2/3 bore:	Q	=	458.89	L/s
3/4 bore:	Q	=	534.78	L/s
4/5 bore:	Q	=	571.94	L/s
Full bore:	Q	=	585.78	L/s

The Area A+B total discharge is **522.24** L/s, therefore the sewage pipe is running in between 2/3 bore and 3/4 bore at a velocity around 1.705m/s.

Proposed 500mm(W) x 1000mm(D) Channel (CP1 - CP6) discharge capacity Calculation: (For Adjacent area A= 6082 sqm)

Size of the channel = 500 (W)mm x 1000 (D)mm

Proposed maximum water level for channel = 600 (D)mm

Based on Manning's formula,

$V = 1/n \times md^{2/3} \times i^{1/2}$

V = velocity in m/s
md = hydraulic mean depth in metres
i = inclination (proposed fall) 1/200
n = factor in surface condition 0.015

U-Channel sectional area A = (0.5 x 0.35) + 0.0982
= 0.2732 m^2

U-Channel Wetted perimeter P = 0.7 + 0.785
= 1.4854 m

md = A / P = 0.2732 / 1.4854 = 0.18 m

V = 1 / n x $0.18^{2/3}$ x $1/200^{1/2}$
= **1.5245 m/s**

Flowrate = V x A
= 1.5245 x 0.2732 x 1000
= **416.45 L/s**

Refer to the channel discharge capacity, the maximum catchment area shall be estimated as below:

Site area = 0.5 x 6082 m^2 = 3041 m^2 (effective area)

Rf = Rain Fall in Litre per second(L/s)
ESA = The Effective Surface Area
SA = 6082.0 = Total Surface Area in squared metre (m^2)
rf = 242.2 = Rainfall in millimetre per hour(mm/hr)
EP = 50% = The Effective unpaved area

The effective surface area is calculated below:

$Rf = \frac{3041.0\ m^2 \times 242.198\ mm/hr \times 1000}{3600 \times 1000}$

= 204.59 L/s < 416.45 L/s .....OK

Therefore, the new proposed 500mm(W) x 1000mm(D) channel (CP1-CP6) is considered capable for site area (Adjacent area A) rainfall discharge 6082 sqm rainfall discharge at 50 year turnover period which is the time of concentration at 5 minutes.

Proposed 500mm(W) x 1000mm(D) Channel (CP8 - CP6)
discharge capacity Calculation: (For Subject Site area B - 4970 sq.m)

Size of the channel = 500 (W)mm x 1000 (D)mm

Proposed maximum water level for channel = 600 (D)mm

Based on Manning's formula,

$V = 1/n \times md^{2/3} \times i^{1/2}$

V = velocity in m/s
md = hydraulic mean depth in metres
i = inclination (proposed fall) 1/200
n = factor in surface condition 0.015

U-Channel sectional area A = (0.5 x 0.35) + 0.0982
= 0.2732 m^2

U-Channel Wetted perimeter P = 0.7 + 0.785
= 1.4854 m

md = A / P = 0.2732 / 1.4854 = 0.18 m

V = 1 / n x $0.18^{2/3}$ x $1/200^{1/2}$
= **1.5245 m/s**

Flowrate = V x A
= 1.5245 x 0.2732 x 1000
= **416.45 L/s**

Refer to the channel discharge capacity, the maximum catchment area shall be estimated as below:

Site area = 0.95 x 4970 m^2 = 4721.5 m^2 (effective area)

Rf = Rain Fall in Litre per second(L/s)
ESA = The Effective Surface Area
SA = 4970.0 = Total Surface Area in squared metre (m^2)
rf = 242.2 = Rainfall in millimetre per hour(mm/hr)
EP = 95.0% = The Effective paved area

The effective surface area is calculated below:

$$Rf = \frac{4721.5\ m^2 \times 242.198\ mm/hr / 1000 \times 1000}{3600}$$

= 317.65 L/s < 416.45 L/s .....OK

Therefore, the new proposed 500mm(W) x 1000mm(D) channel (CP8-CP6) is considered capable for subject site 4970 sqm rainfall discharge at 50 year turnover period which is the time of concentration at 5 minutes.

Estimation of Existing River Discharge Capacity Calculation:

Size of the channel = 2500 (W)mm x 1700 (D)mm

Proposed maximum water level for channel = 1400 (D)mm

Based on Manning's formula,

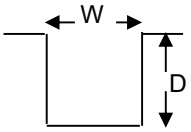
$V = 1/n \times md^{2/3} \times i^{1/2}$

V = velocity in m/s

md = hydraulic mean depth in metres

I = inclination (proposed fall) 1/200

n = factor in surface condition 0.06 (for natural channels, very poor condition)



Channel sectional area A	=	2.5	x	1.4			
	=	3.5000	m^2.				
Wetted perimeter P	=	2.50	+	2.8			
	=	5.3000	m				
md = A / P =	3.5000	/	5.3000	=	0.660	m	
V = 1 / n	x	0.660 $^{2/3}$	x	1/200 $^{1/2}$			
=	**0.8937**	**m/s**					
Flowrate =	V x A						
=	0.8937	x	3.5000	x	1000		
=	**3127.97**	**L/s**	or	3.13	m^3/s		

Refer to the channel discharge capacity, the maximum catchment area shall be estimated as below:

Max. area = 0.5 x 92000.0 m^2 = 46000 m^2 (effective area)

Rf = Rain Fall in Litre per second(L/s)

ESA = The Effective Surface Area

SA = 92000.0 = Maximum catchment Area in squared metre (m^2)

rf = 242.2 = Rainfall in millimetre per hour(mm/hr)

EP = 50% = The Effective unpaved area

The effective surface area is calculated below:

Rf = $\frac{46000.0\ m^2 \times 242.198\ mm/hr / 1000 \times 1000}{3600}$

= 3094.75 L/s < 3127.97 L/s ..... OK

Total Effective Catchment area A&B = 7762.5 m² (approx.)

Total rainfall discharge from A&B = 522.24 L/s

Total rainfall discharge from A&B are only occupy of existing river handling capacity **16.70 %**

Therefore, the existing 2500mm(W) x 1200mm(D) existing river is considered have large spare capacity for subject site area rainfall discharge at 50 year turnover period which is the time of concentration at 5 minutes.