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From: Jenny Lau <[REDACTED]>
Sent: 2025-02-05 星期三 12:27:17
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Cc: [REDACTED]
Subject: A/YL-SK/393
Attachment: 2025.1.30 letter to TPB amended with photo.pdf; 申請書 修改.pdf; 佈局圖.pdf; 汽車出入路線圖.pdf; 渠務報告 3.pdf; 意見回應 1.pdf; 意見回應 2-1.pdf

先生/女士

提交進一步資料

Regards,
機滙園藝
劉錦松

致：城市規劃署

有關規劃申請編號：A/YL-SK/393 意見回應。

申請人是從事園藝及花園保養的業務，主要的服務對象是，上門為私人花園、園林提供保養維修服務。需要經營一個苗圃，以儲備花苗及樹苗。

申請填土之苗圃主要是自用，不向公眾提供服務。

預計主要車輛出入時間是早上 10:00 ~ 11:30 平均每日（包括公眾假期及星期六、日）出入車一至兩次。

現在申請填土之地段狀況：有部份已鋪設植草磚約120平方米批發後，將會依申請內容將其規範化；另外，貨櫃下面現有的石屎板塊亦會移除；再者，第460號地段與第459號中間約1米圍牆會拆除。現在於459號地段上設有之木柱屏風，主要是美化作用，及阻擋風沙。

對漁護署意見回應:

申請地段之土地,曾用2米高圍板圍封,鋪設之水泥地面積最大101平方呎,厚0.1米並且已委任合資格顧問公司提供梁務報告,並不會對鄰近地區作出不當應响。

對運輸署意見回應

申請人使用之車輛為輕型貨車,且出入車次每日只有一至兩次,又在早上10:00~11:30時段,對石崗機場路之交通影响極為輕微。

申請地段第460號大門闊為5米,459號大門闊8.8米,輕型貨車可以完全進入上落貨及掉頭,絕不會阻塞石崗機場路之交通。

- 對公眾意見的回應：

申請人在申請地段進行苗圃工作，有需要平整土地以便放置花盆、花架，及陰棚。部份土地需要鋪設水泥地是方便車輛完全進入苗圃上落貨及掉頭，以免阻礙外圍交通通道。

車輛出入次數及車型對石崗機場路影響甚微，更不會使用劉銘上路。不會增加附近交通負擔。

再者，鋪設水泥地之面積最大為101平方米，總共374.8平方米，對附近環境影響極微。

苗圃營運屬農業用途，並無違反土地地帶使用規範。

致：城市規劃署

有關規劃申請編號：A1YL-SK/393意見回應
(續一)

就運輸署意見，再一步回應如下：

1. 申請人了解石崗松場路有7米車長限制，故申請人只會使用不超過5米長的輕型貨車運送貨物、花苗。
2. 申請人所使用之運送路線，都只會使用石崗松場路來回。且每日出入車只有一至兩次，又在非繁忙時段，故對石崗松場路交通之影響極微。
3. 為釋除疑慮，申請人為地段第460號拍攝了九張圖片，展示輕型貨車由

由石崗私場路駛入,第460號地段5米闊的
大門可以(一手遮天)順利暢駛入,絕不會
做成石崗私場路的阻塞。

















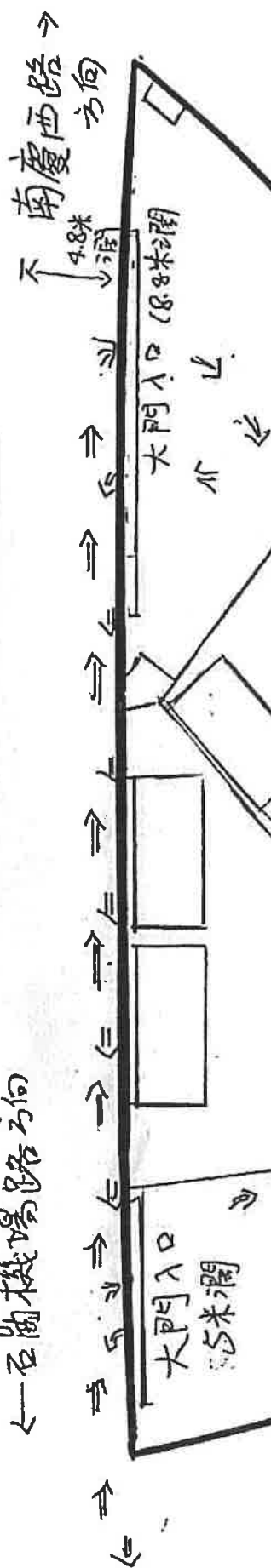
← 回覆





車庫出入路線圖

← 石崗機場路方向



SCALE 1:200 比例尺

(ii) For Type (ii) application 供第(ii)類申請

(a) Operation involved 涉及工程	<input type="checkbox"/> Diversion of stream 河道改道		
	<input type="checkbox"/> Filling of pond 填塘		
	Area of filling 填塘面積	sq.m 平方米	<input type="checkbox"/> About 約
	Depth of filling 填塘深度	m 米	<input type="checkbox"/> About 約
	<input checked="" type="checkbox"/> Filling of land 填土		
	Area of filling 填土面積	690 .. sq.m 平方米	<input checked="" type="checkbox"/> About 約
	Depth of filling 填土厚度	0.1 .. m 米	<input checked="" type="checkbox"/> About 約
	<input type="checkbox"/> Excavation of land 挖土		
	Area of excavation 挖土面積	sq.m 平方米	<input type="checkbox"/> About 約
	Depth of excavation 挖土深度	m 米	<input type="checkbox"/> About 約
(Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用圖則顯示有關土地/池塘界線, 以及河道改道、填塘、填土及/或挖土的細節及/或範圍))			
(b) Intended use/development 有意進行的用途/發展	擬議填土工程, 以作 准許的農業用途		

(iii) For Type (iii) application 供第(iii)類申請

(a) Nature and scale 性質及規模	<input type="checkbox"/> Public utility installation 公用事業設施裝置												
	<input type="checkbox"/> Utility installation for private project 私人發展計劃的公用設施裝置												
	Please specify the type and number of utility to be provided as well as the dimensions of each building/structure, where appropriate 請註明有關裝置的性質及數量, 包括每座建築物/構築物(倘有)的長度、高度和闊度												
	<table border="1"> <thead> <tr> <th>Name/type of installation 裝置名稱/種類</th> <th>Number of provision 數量</th> <th>Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Name/type of installation 裝置名稱/種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)									
	Name/type of installation 裝置名稱/種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)										
(Please illustrate on plan the layout of the installation 請用圖則顯示裝置的布局)													

10. Justifications 理由

The applicant is invited to provide justifications in support of the application. Use separate sheets if necessary.
現請申請人提供申請理由及支持其申請的資料。如有需要，請另頁說明。

申請人從事園藝工作，於申請地點上已獲地政署批准興建兩座培育構築物，及豁免渠務工程及地盤平整。現再向貴署申請下列填土工程。

① 苗圃出入口貨物上落區，申請鋪設水泥地，面積約 101 平方米

理由：花苗及樹苗會用輕型貨車運送，故需要於上落貨區鋪設水泥地，避免雨天車輛打滑及將泥濘帶出公路

② 在兩個培育室的周圍及通道，申請鋪設植草磚，面積約 261 平方米

理由：花苗及樹苗需要經常搬運出入，植草磚方便手推車的搬運。另外，植草磚為空心磚，疏水功能良好，可於其上種植草皮，有助整個花園降溫。

③及④ 為兩個已獲地政署批准的培育構築物（一層），每個長 15 米，闊 6 米，高 4.3 米，總面積 186 平方米

申請於其內鋪設水泥地

理由：培育構築物內，採用花架、花盆培植較貴重的花苗，水泥地有助固定花架設施。

10. Justifications 理由 續

The applicant is invited to provide justifications in support of the application. Use separate sheets if necessary.
現請申請人提供申請理由及支持其申請的資料。如有需要，請另頁說明。

⑤ 電掣房，申請建造一層不高於2.1米、
的建築物，總面積33平方米

理由：保護電纜及相關供電設施

⑥ 水泵房：申請建築一層不高於2.1米，長1米、闊0.5
米的建築物，總面積0.5平方米

理由：保護水泵設施，以作灌溉植物花草

⑦、⑧、⑨ 放置三個改裝貨柜於植草磚上，不
需加墊其他物料，三個總面積54平方米

理由：需要放置肥料、改善土、打草機等
農具，以防受雨水浸壞

⑩ 苗圃出入口貨物上落區，申請鋪設水泥地，
面積90平方米（沒有固定車位）

理由：花苗及樹苗會用輕型貨車運送，故需
要於上落貨區鋪設水泥地，避免雨天
車輛打滑及將泥濘帶出公路

另外陳明，兩個苗圃出入口都可以讓輕型（5噸）
貨車完全進入及在苗圃內掉頭，不會影響
苗圃外面的交通。苗圃的出車時間一般為
早上10時至11時30分，預計平均一日出入車各
一次至兩次（包括星期六日及公眾假期）。

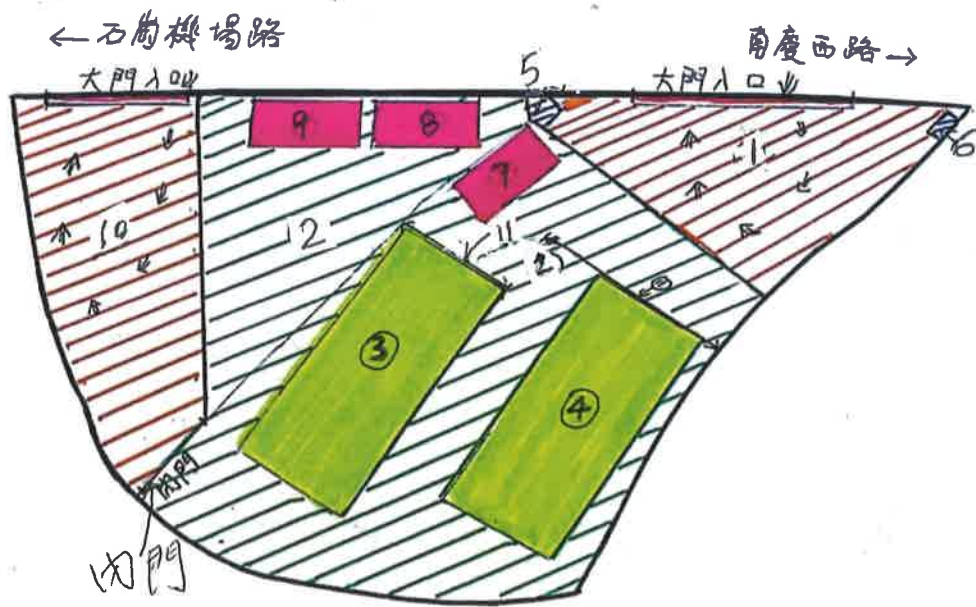
Gist of Application 申請摘要

(Please provide details in both English and Chinese as far as possible. This part will be circulated to relevant consultees, uploaded to the Town Planning Board's Website for browsing and free downloading by the public and available at the Planning Enquiry Counters of the Planning Department for general information.)
(請盡量以英文及中文填寫。此部分將會發送予相關諮詢人士、上載至城市規劃委員會網頁供公眾免費瀏覽及下載及於規劃署規劃資料查詢處供一般參閱。)

Application No. 申請編號	(For Official Use Only) (請勿填寫此欄)		
Location/address 位置/地址	新界八鄉石崗機場路水流田丈量約份 第112約地段, 第460號及第459 S.B. RP 第459 S.B. SS1 號		
Site area 地盤面積	690	sq. m 平方米	<input checked="" type="checkbox"/> About 約
	(includes Government land of 包括政府土地	sq. m 平方米	<input type="checkbox"/> About 約)
Plan 圖則	S1YL-SK19		
Zoning 地帶	農業		
Applied use/ development 申請用途/發展	擬議填土工程, 以作 准許的農業用途		
(i) Gross floor area and/or plot ratio 總樓面面積及/或 地積比率		sq.m 平方米	Plot Ratio 地積比率
	Domestic 住用	<input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	<input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
	Non-domestic 非住用	237.8 <input checked="" type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	<input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
(ii) No. of blocks 幢數	Domestic 住用		
	Non-domestic 非住用	7	
	Composite 綜合用途		



布局設計圖



布局設計圖



- (1) 水泥地上落貨區 101 平方米 (沒有固定車位)
 → 輕型貨車, 可於區內掉頭駛出公路, 大門車積長
 方便輕型貨車完全進入及掉頭



- 2 植草磚約 261 平方米



- 3, 4 水泥地, 每個長 15 米, 闊 6 米, 高 4.3 米, 總面積
 180 米² (地政署批准構築物之地面)



- 5 電掣房長 1.5 米, 闊 2.2 米, 高 2.1 米, 一層, 面積 3.3 米²
 電掣房之下為水泥地



- 6 水泵房長 1 米, 闊 0.5 米, 高 2.1 米, 一層, 面積 0.5 米²
 水泵房之下為水泥地



7. 改裝貨櫃 長 6 米, 闊 3 米, 高 3 米, 一層, 面積 18 米²
 8. 改裝貨櫃 長 6 米, 闊 3 米, 高 3 米, 一層, 面積 18 米²
 9. 改裝貨櫃 長 6 米, 闊 3 米, 高 3 米, 一層, 面積 18 米²
 改裝貨櫃之下為植草磚



- 10 水泥地, 上落貨區 90 米² (沒有固定車位)
 → 輕型貨車可於區內掉頭駛出公路

- 11 木棚, 作美化用 (高 2.5 米, 長 9 米及 7 米)

朗賢顧問公司
Sun Merit Consultants Company

Our Ref: 007/25/HC/hc

Your Ref: A/YL-SK/393

Date: 30 January 2025

Town Planning Board ,
North Point Government Building,
North Point, Hong Kong,

Dear Sir/ Madam,

Filling of Land for Permitted Agricultural Use
at Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112
Shui Lau Tin, Pat Heung, N. T.
Reply to A F & C comments

In reply to the comments from Director of Agricultures, Fisheries and Conservation to our submitted drainage proposal for the proposed Development of Agricultural Temporary Structures. On behalf of the applicant, we submit herewith the Supplementary Report, one set with two copies, for your comment and approval.

Our site works have considered the followings:-

1. As shown in the attached record photos, all around the proposed site is fenced up with metal fencing, which the bottom is all sealed up with concrete as to migrate any leakage to the area outside the site area. Also, there are two desilting catchpits already installed at locations for all the discharges before flowing to outside the site area into the public drains/ watercourses.
2. We also confirm that the filling works is only placing 100 mm thick concrete slabs for car parking and spaced floor tiles as indicated in the attached layout plan. Also the concrete placing /filling and spaced floor tile works will not carried out in rain days.

Hence, we ensure that our proposal works will not cause any condemnation to the near-by water course at north side of the site.

Thank you for your attention.

Yours faithfully,

Cho Hin Cheung

.....
H C Cho (RPE cvL)

Encl.



The proposed site

Photo no.1 Overall view of the present proposed development site. Presently the area is a flat grassy land. Ground level is around +20.8 mPD to +21.60 mPD.



Photo no. 2 Along the lots boundary consisted with metal fence wall, which sealed up at the bottom.



Photo no. 3 As indicated in the drainage layout plan there will be a proposed 225mm U-channel and two desilting pits to collect the stormwater that induced in the lots.



Photo no.4 As shown, the existing ground level of the proposed site is slightly higher than the outside village road.



Existing 500 mm ditch

Photo no.5 At the south side outside the lot boundary is a village road, further beyond is an existing 500mm ditch covered with grass.



Photo No. 6 At north, in front of the proposed development site is a village driveway, further is an existing nullah (7.0 meters in width) flowing east to west.

朗賢顧問公司
Sun Merit Consultants Company

Our Ref: 006/25/HC/hc
Your Ref: A/YL-SK/393

Date: 30 January 2025

Town Planning Board,
North Point Government Building,
North Point, Hong Kong,

Dear Sir/ Madam,

Filling of Land for Permitted Agricultural Use
at Lots 459 S.B ss.1, 459S.S.B RP & 460 both in D.D. 112
Shui Lau Tin, Pat Heung, N. T.
Reply to DSD's comments

In reply to the comments from DSD regarding our submitted drainage proposal for the proposed Filling of land for permitted agricultural use. On behalf of the applicant, we re-submit herewith the drainage assessment report, one set with two copies, for your comment and approval.

For the comments of DSD, we reply in the same itemization as follows: -

- a) Noted. The Storm Constants for Different Return Periods of North District Area (a, b, c) are taken as recommended by The Stormwater Drainage Manual Corrigendum No. 1/2024 for the design calculations.
- b) As recommended by Stormwater Drainage Manual Corrigendum No. 1/2022, the rainfall increase due to climate change is taken as 11.1%, for the design calculations.
- c) 300 mm peripheral surface channels are provided for the proposed site. As calculated, the capacity is 900 % more than required.
- d) Noted. We will provide adequate opening to the fence wall for intercepting of the overland flow passing through the site.
- e) We confirm that the total catchment area of the two drainage system is 540 m³, sum of 270 m³ and 270 m³.
- f) Noted. We will resolve any conflict/disagreement with relevant lot owners and seek LandsD's permission for laying new drains/channels and /or modifying/upgrading existing ones in other private lots or on Government land outside the application site.
- g) Noted, We will.
- h) Noted. We will.

Thank you for your attention.

Encl.

Yours faithfully,


H C Cho (RPE cvl)

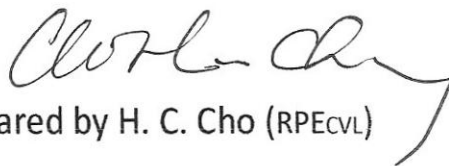
Drainage Proposal Submission

For

Filling of Land for Permitted Agricultural Use

at Lots Nos. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112

Shui Lau Tin, Pat Heung, N. T.

A handwritten signature in black ink, appearing to read 'H. C. Cho', with a long horizontal stroke extending to the right.

Prepared by H. C. Cho (RPECVL)

30 January 2025

**Filling of Land for Permitted Agricultural Use
at Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112
Shui Lau Tin, Pat Heung, N. T.**

Site Stormwater Drainage Assessment Report for the proposed Site,

1.0 Introduction

It is proposed by the applicant Millions Chances Gardening to fill the land and install floor tiles for permitted agricultural use at Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112, Shui Lau Tin, Pat Heung, N. T. I have inspected the site and have taken the consideration of drainage and environmental aspects for the proposed works.

2.0 Basis of Assessment

To assess the technical acceptability of the proposed site, which is located, as indicated in the proposed stormwater drainage plan attached in appendix IV, several analyses have been considered, and they are presented below.

3.0 The Site

The site presently is a vacuum grassy area with spaced floor ties. The total catchment area of the whole development site is approximately $40 \times 27 / 2 = 540 \text{ m}^2$. Appendix I refers. The site is a general flat area.

4.0 Observation

Presently, the proposed development lots are fenced out with metal fence wall cast into the ground. The adjacent ground level is slightly lower than the proposed site level. All the induced stormwater in the site will gradually fall into the proposed 300 mm U-channel along the perimeter inside the lot fence wall.

DSD's flooding Black spots Location Map is checked. This area is not on the list.

5.0 Consideration and Recommendation

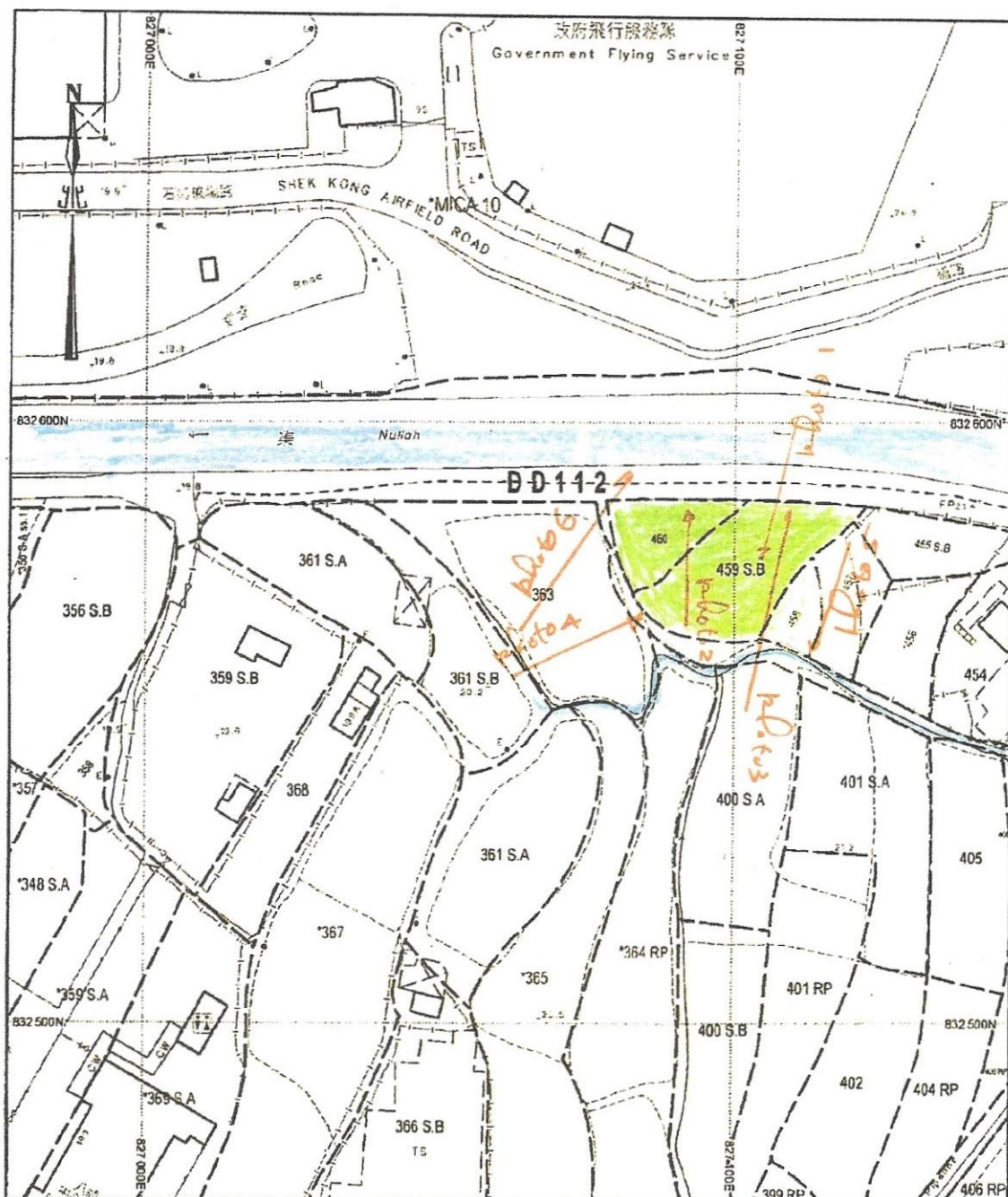
As indicated in the drainage layout plan in appendix IV, all the surface water induced in the site area and adjacent areas are discharged into the proposed 300mm U-channel along the perimeter inside the lot fence wall, then is discharged through the proposed 300mm diameter uPVC drainpipe, then further discharged to further downstream, the 7.0 meters nullah.

Adequate opening, 75mm diameter @1.0 meter C/C at the fence wall will be formed for intercepting of the overland flow passing through the site.

APPENDIX

- I Lot Indication Plan
- II Record Photos No.1 to no. 6
- III Topographic Survey Record Plan
- IV Proposed Drainage Layout Plan
- V Proposed Lots Section Plan
- VI Proposed Stormwater Drainage Detailed Plan
- VII General Notes
- VIII Hydraulic Calculation Sheets
- IX Proposed Drainage Section Detailed Plan

地段索引圖 LOT INDEX PLAN



地政總署測繪處 Survey and Mapping Office, Lands Department

比例尺 SCALE 1:1000

米 metres 10 0 10 20 30 40 50 metres



Locality : YUEN LONG

Lot Index Plan No. : YL0566052015

District Survey Office : Yuen Long

Date : 13-May-2015

Reference No. : S-NE-13D,S-NE-14C

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SMO-P01

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免責聲明

本圖則乃地段索引圖的複本，顯示地段界線的大概位置，包括根據政府撥地、臨時政府撥地、短期租約及政府土地租用牌照而臨時佔用土地的位置。臨時佔用土地的情況可隨時短期通知出現或終止，因此應向有關的分區地政專員核對。本圖則所示的資料必須透過實地測量予以核實，當有更佳或新的地界證據時，地段索引圖可能會被修訂而無須事先通知。

Disclaimer

This plan is a copy of the lot index plan showing the approximate location of lot boundaries, including the temporary occupation of land under Government Land Allocations, Temporary Government Land Allocations, Short Term Tenancies and Government Land Licences. The temporary occupation of land may be created or terminated at short notice and should be confirmed with the District Lands Officer. The information shown on this plan MUST be verified by field survey. The lot index plan may be revised without prior notification as better or new boundary evidence becomes available.

Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung	Scale: As Shown	Date: 28-01-2025
Lot Indication and Photo Indication Plan	Drawn by: Cho	Drawing No. SWD-01

Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung, N. T.

Site Record Photos

30-10-2024



Photo no.1 Overall view of the present proposed development site. Presently the area is a flat grassy land. Ground level is around +20.8 mPD to +21.60 mPD.



Photo no. 2 Along the lots boundary consisted with metal fence wall, which sealed up at the bottom.



Photo no. 3 As indicated in the drainage layout plan there will be a proposed 225mm U-channel and two desilting pits to collect the stormwater that induced in the lots.

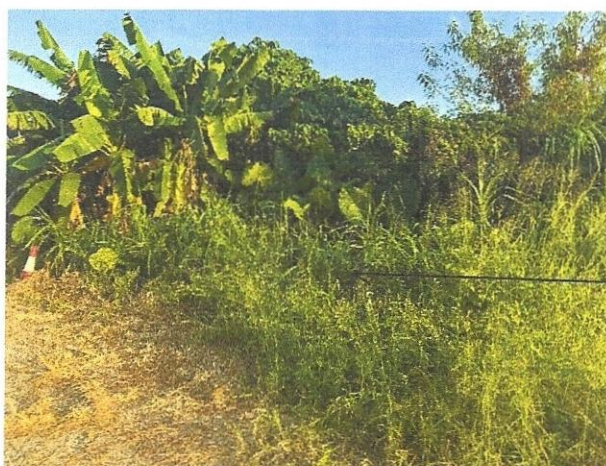
Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung, N. T.

Site Record Photos

30-10-2024



Photo no.4 As shown, the existing ground level of the proposed site is slightly higher than the outside village road.



Existing 500 mm ditch

Photo no.5 At the south side outside the lot boundary is a village road, further beyond is an existing 500mm ditch covered with grass.

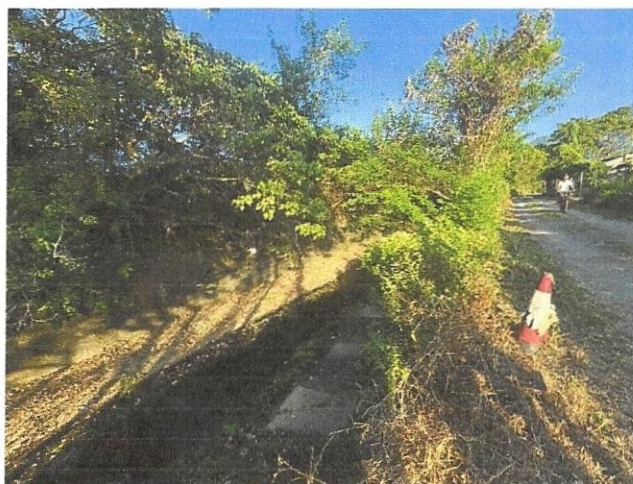
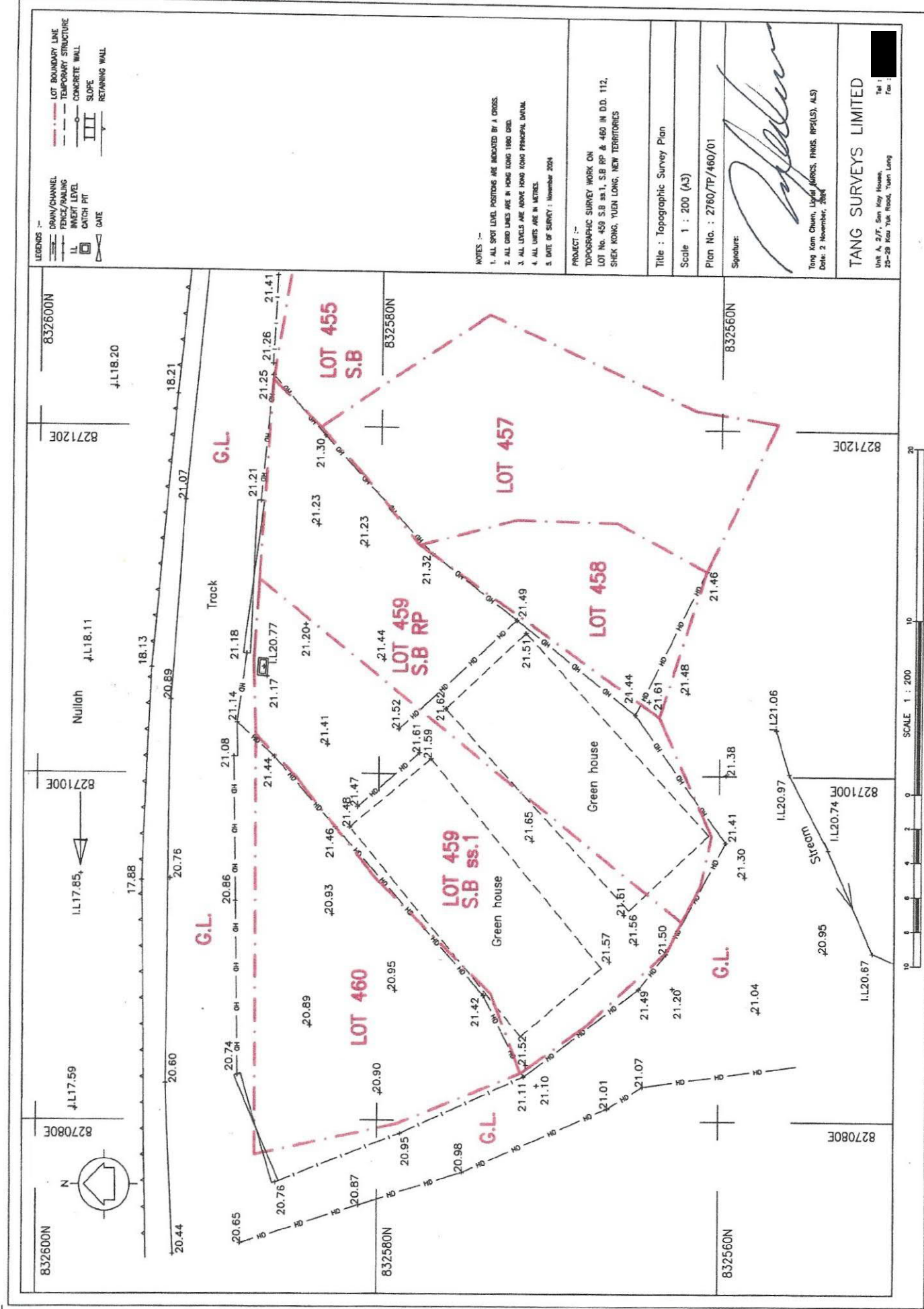
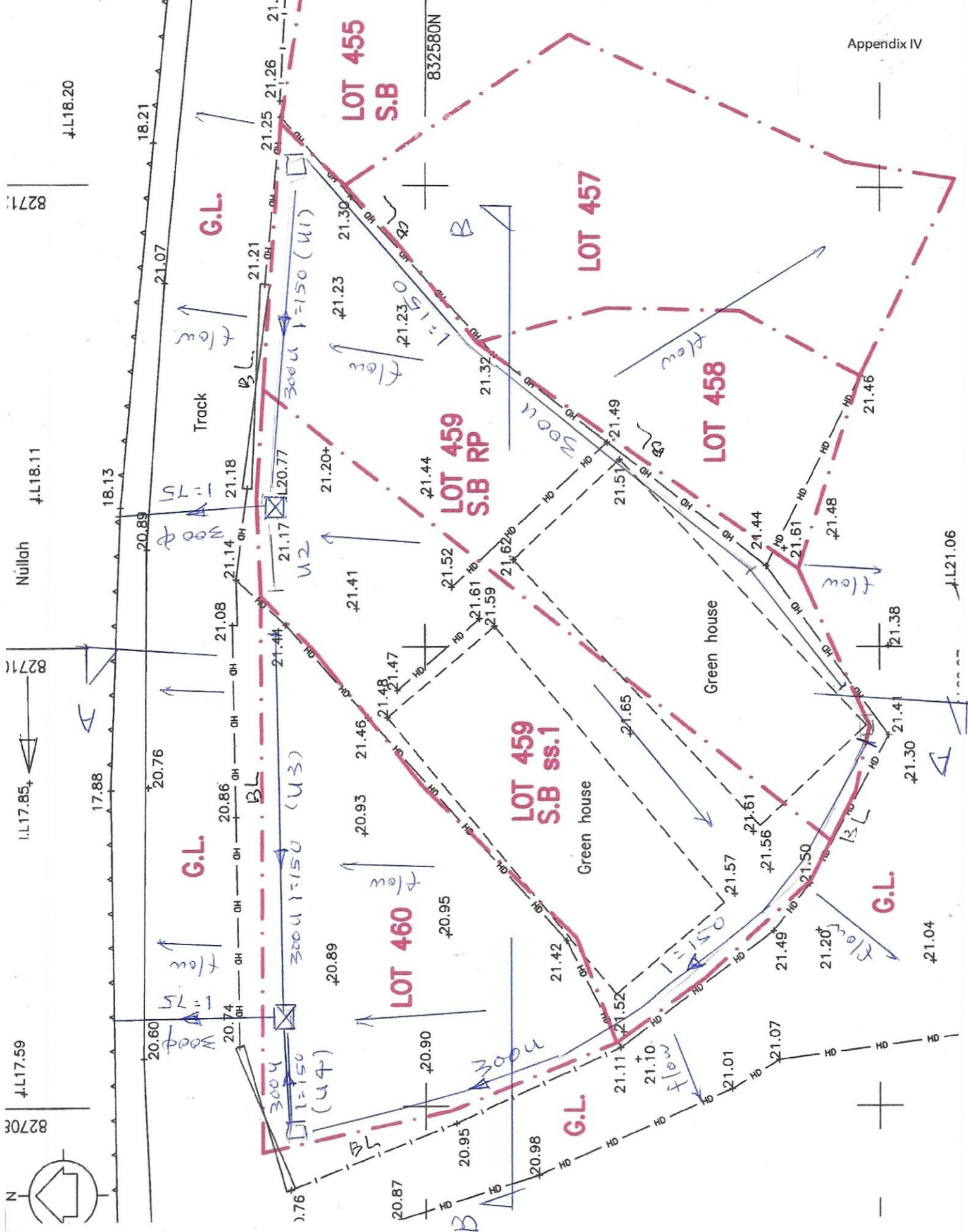


Photo No. 6 At north, in front of the proposed development site is a village driveway, further is an existing nullah (7.0 meters in width) flowing east to west.





Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung

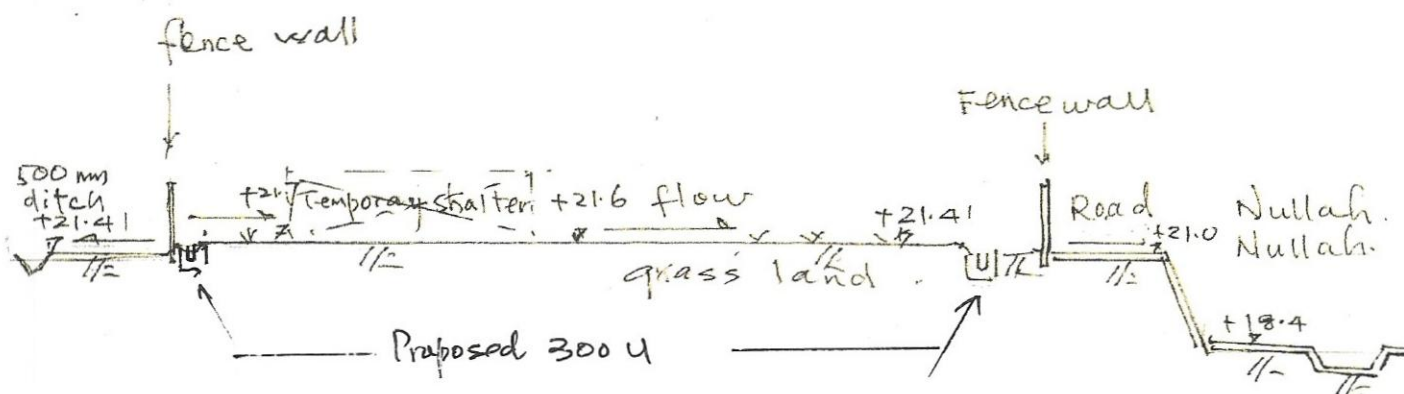
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Date: 28-01-2025

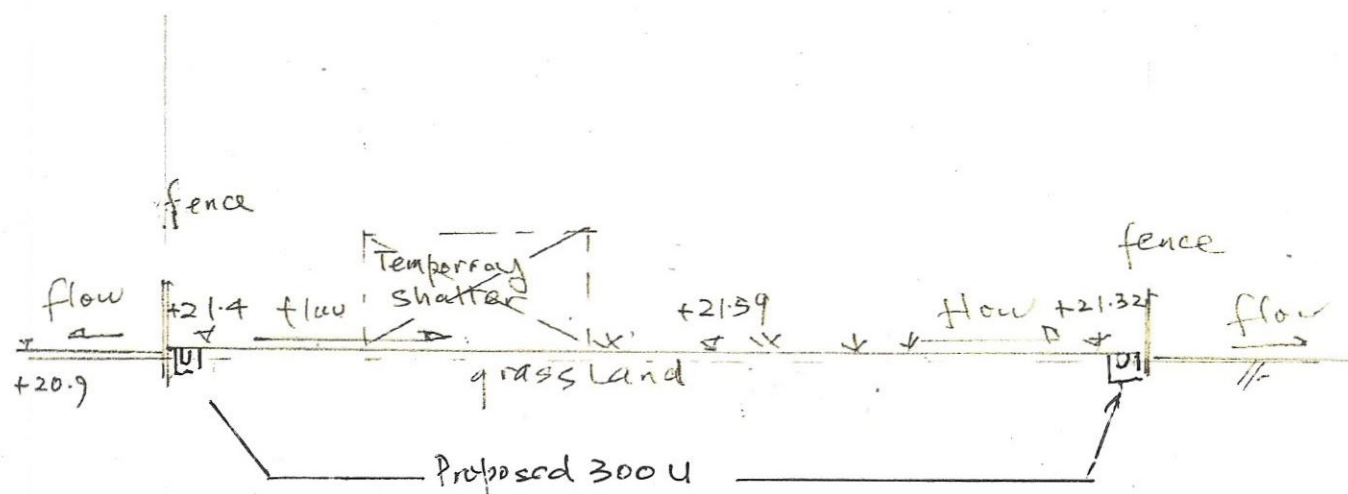
Proposed Drainage Layout Plan

Drawn by: Cho

Drawing No. SWD-02

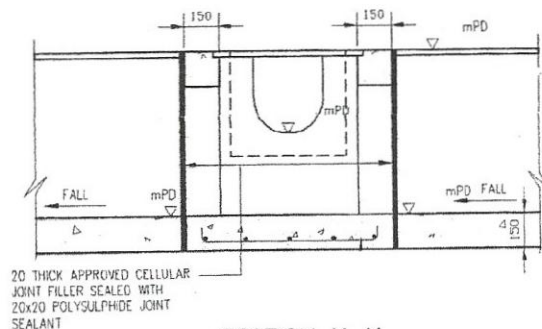
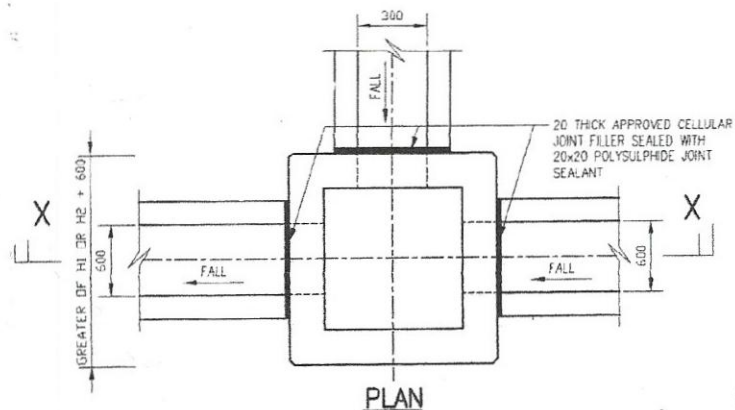


Section A-A

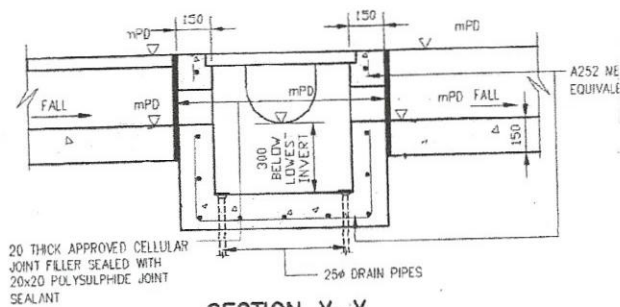
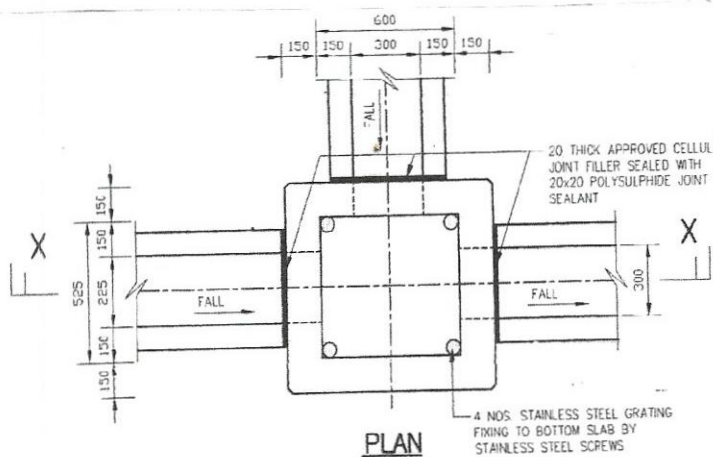


Section B-B

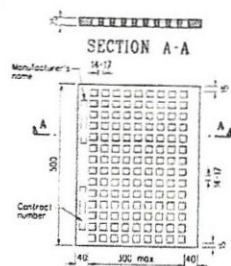
Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung	Scale: 1:200	Date: 30-10-2024
Proposed Site Section Plan	Drawn by: Cho	Drawing No. SWD-3



STANDARD DETAIL OF CATCHPIT

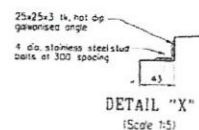
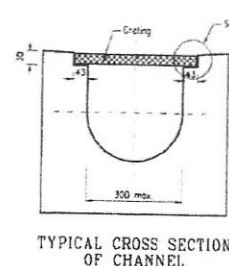


CATCHPIT WITH TRAP DETAILS



GRATING - SQUARE HOLES PATTERN

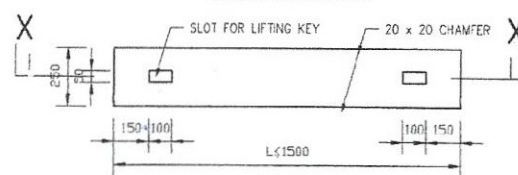
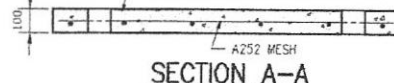
(All holes are 20x20 in size and all ribs are of equal width. Exact no. of holes and ribs to be adjusted to suit channel width)



U-CHANNEL WITH CAST IRON GRATING

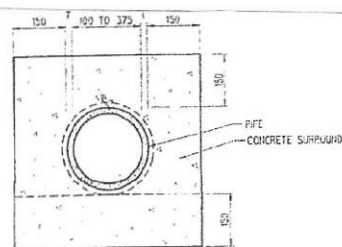
(300 mm x 40 mm)

GRADE 20 / 20 CONCRETE WITH ONE LAYER OF A252 MESH REINFORCEMENT PLACED CENTRALLY F2 AND U2 FINISH



PRECAST CONCRETE COVER FOR CATCHPIT AND SAND TRAP

N.T.S.








BEDDING AND SURROUNDS

Notes:

1. All level shown in meter and refer to the principal Datum
2. The exact location of Catch Pits should be agreed with the Engineer (RPE) on site
3. All concrete used should be D30/20
4. U-channel details should refer to CEDD Drawing No.C2409I
5. U-channel cover should refer to HyD Standard Drawing H 3156A
6. CP details should refer to CEDD Drawing No.2405/1
7. DCP details should refer to CEDD Drawing No.2406/1
8. Catch pit concrete cover should refer to CEDD Drawing no.C2407B
9. All Proposed U-channel and Catch pit constructed in Govt. Land should gain consent from DLO.

Drainage System						
Catch pit No	C.L.+ mPD	I.L. +mPD	From	Length U	Size U	Fall
CP2	21.30	20.80	300U (U1)	36.0 m	300 mm	1:150
DCP2	21.17	20.70	CP2	14.0 m	300 mm	1:150
DCP2	21.17	20.70	300U (U2)	3.0 m	300 mm	1:150
Nullah	20.89	19.99	DCP2	5.0 m	300 mm Φ	1:75
CP1	20.90	20.45	300U (U3)	32.0 m	300 mm	1:150
DCP1	20.85	20.28	CP1	17.0m	300 mm	1:150
DCP1	20.85	20.28	300U (U4)	4.0m	300 mm	1:150
Nullah	20.60	19.70	DCP1	5.0 m	300 mm Φ	1:75

Legend:-

-  Proposed Standard Catch Pit
 Proposed Desilting Catch Pit
 Existing 7.0-meter box-culvert
 Proposed 300 mm U-channel
 Cross Fall

Notes:

1. All level shown in meter and refer to the principal Datum.
2. The exact location of Catch Pits should be agreed with the Engineer (RPE) on site.
3. All concrete used should be D30/20
4. U-channel details should refer to CEDD Drawing No.C2409H
5. CP details should refer to CEDD Drawing No.2405/1
6. DCP details should refer to CEDD Drawing No.2406/1
7. U-channel cover should refer to HyD Standard Drawing H 3156A.
8. Catch pit concrete cover should refer to CEDD Drawing no.C2407B
9. All Proposed U-channel and Catch pit constructed in Gov. L. should gain consent from DLOYL

Lots. 459S.B RP, 459 S.B ss.1 & 460 both in D.D. 112 Shui Lau Tin, Pat Heung	Scale: N T S	Date: 28-01-2025
General Notes	Drawn by: Cho	Drawing No. SWD05

Analysis of the Surface Drainage Channels

- (1) Proposed Surface Channel (U1) for 300 U-channel
 (2) Proposed Surface Channel (U2) for 300 U-channel

FLU- Formation Level (Upstream) FLD- Formation Level (Downstream)
 USIL- Upstream Invert Level DSIL- Downstream Invert Level
 Lu- Channel Length S- Channel Gradient

Type	From	To	FLU	USIL	FLD	DSIL	Lu(m)	S	n
U(U1)	CP2	DCP2	21.300	20.800	21.170	20.700	14.00	0.0067	0.014
U(U2)	CP1	DCP1	20.900	20.450	20.850	20.280	17.00	0.0067	0.014

Manning Equation

$$Q = Af * (V = (R^{0.667}) * (s^{0.5}) / n)$$

Channel	Width(mm)	A1(m ²)	A2(m ²)	Af	Pw	R	S	Q	V
U(U1)	300	0.0353	0.0885	0.1238	1.0612	0.1167	0.0067	0.1717	1.39
U(U2)	300	0.0353	0.1185	0.1538	1.2612	0.1220	0.0067	0.2197	1.43

A1= Area of the circular section (m²)

A2= Area of the rectangular section (m²)

Af= (A1+A2) area of Channel (m²)

Pw= Perimeter of wetted Area (m²)

R= Hydraulic Radius (m)

S= Gradien of Channel

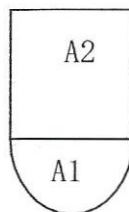
n= Nanning coefficient of Roughness

Q= Flow Capacity of the Channel (m³/s)

V= Cross-sectional Average Velocity (m/s)

d1 (mm) 300

d2 (mm) 300

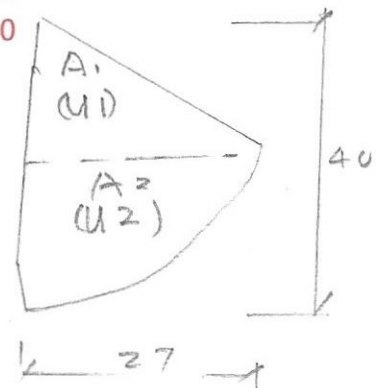


U1(mm) 295.00 (minus 25mm)

U2(mm) 395.00 (minus 25mm)

U1(mm) 150.00

U2(mm) 150.00



(3) Runoff Estimation

- (i) Time of Concentration

$T_c = t_o + t_f$

Inlet time

Brandsby William's Equation

$$t_o = 0.14465 * L * (H^{-0.2}) * (A^{-0.1})$$

where t_o = inlet time(min)

A= Catchment Area (m²)

H= Average slope (m/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)

Consider Average Gradient (m) per 100 meters

H11=mPD	21.410	H12=mPD	21.300
H21=mPD	21.410	H22=mPD	20.900

Platform	L(m)	H(m)	A(m ²)	to	Lu	V	Q
P(U1)	36.00	0.31	270.0	3.7711	14.00	1.39	0.1717
P(U2)	32.00	1.59	270.0	2.4091	17.00	1.43	0.2197

Channel Traveling Time

$$t_f = L_u / 60 * V$$

where L_u = Length of Channel Traveled

V = Cross-section average velocity (m/s)

t_f = Flow time (minutes)

Extreme Mean Rainfall Intensity

$$i = a / (t_d + b)^c * 1.111$$

1 in t years

t	a	b	c
50	474.6	2.9	0.371

i = extreme man intensity in mm/hr.

t_d = duration in minutes ($t_d < 59.1$), and

a, b, c = storm constants given in Table 3 of SWM.

Type	From	To	Lu	V	t_f	t_o	$T_c = t_d$	i (mm/hr)
U(U1)	CP2	DCP2	60.00	1.39	0.3235	3.7711	4.0945	256.23
U(U2)	CP1	DCP1	80.00	1.43	0.4046	2.4091	2.8137	276.20

(4) Rational Method

$$Q_p = 0.278 * C * i * A$$

where Q_p = Peak runoff in m³/s

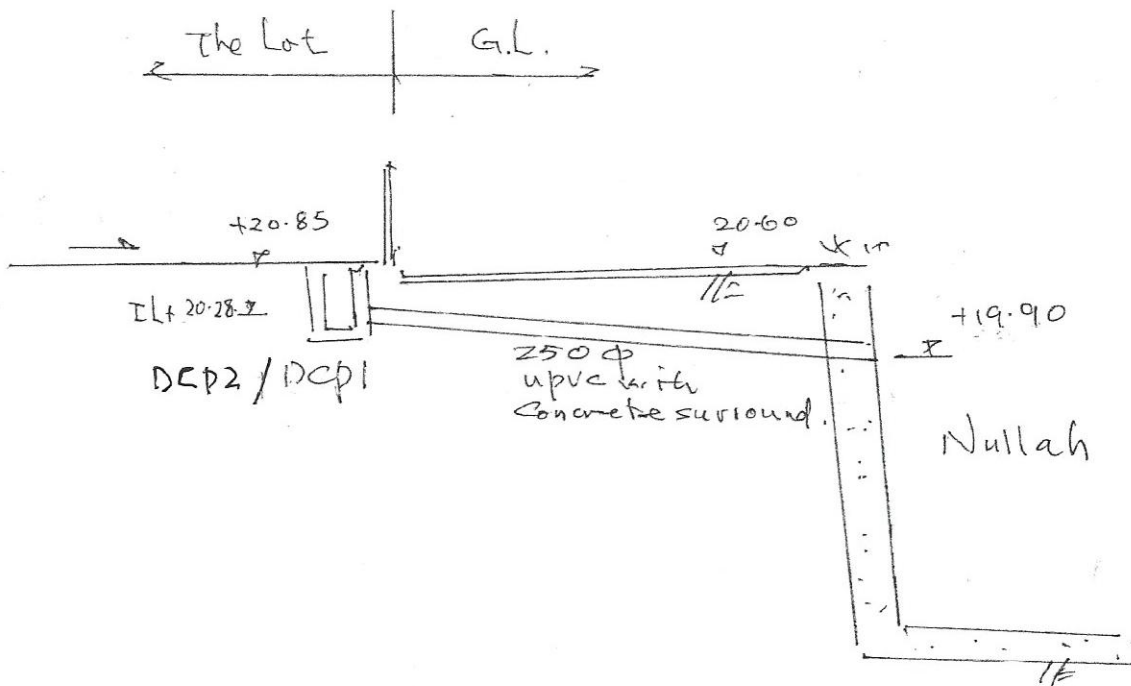
C = runoff coefficient (dimensionless)

i = rainfall intensity in mm/hr.

A = catchment area in km²

Value of Runoff Coefficient C for use in the Rational Method : 0.9

Type	i (mm/hr)		C	A(m ²)	Q_p (m ³)	Q (m ³)	Spare %	
U(U1)	256.23	0.278	0.9	270.0	0.0173	0.1717	891.7962	$Q_p < Q$, OK
U(U2)	276.20	0.278	0.9	270.0	0.0187	0.2197	1077.3805	$Q_p < Q$, OK



Section Detail.

