

A Risk Assessment Report on water quality likely to be affected by proposed private garden at Lot No. 429 S. B (Part) in DD244 and adjoining Government land (House No. 450 Ho Chung New Village, Sai Kung, N.T.)

I. Introduction

As the proposed temporary garden falls within Water Gathering Ground (WGG), Mr. Terry LAW of the Construction Division, Water Supplies Department (WSD) commented that:

"There are risks of contamination to the WGG due to the formation, operation and management of the garden".

As such Mr. LAW advised that a Risk Assessment Report is required "to prove and demonstrate to the satisfaction of WSD that there is no material increase in pollution effect resulting from the proposed development".

II. Site visit conducted on 19 July 2024

Site was visited in the afternoon of 19 July 2024. After arriving and dropping off at House No. 450 Ho Chung New Village, I walked towards the stream course in the north and a few photographs were taken. The location plan showing the proposed boundary of the private garden is at Attachment 1, photographs taken of the surrounding at Attachment 2, and plan showing alignment of the U-Channel for rain/storm water outside House No. 450 Ho Chung New Village is at Attachment 3.

III. Revised proposal of a simple private garden

Discussed with Applicant Ms. LAM Yeuk Yin in her house after walking around the area. Ms LAM remarked that in view of departmental comments given particularly by WSD and the District Lands Office/Sai Kung, and the fact that there is no public sewer at the present location and in the vicinity around the area, she now desires a simple lawn inside the proposed private garden. The green house would be taken away, and the growing of vegetables would be stopped. Part of the garden area immediately in front of the house would be paved and the remainder area would be used as lawn which would only involve daily spraying of water. As such, she does not think that there would be any creation of wastewater from the revised proposal that would contaminate the surrounding. The plan showing the revised proposal is at Attachment 4.

IV. History of Lot 2194 & Lot 429 S. B in DD244

The Applicant is the owner of Lots Nos. 2194 and 429 S.B in DD244. Lot 2194 is a 3-storey small house lot (New Grant No. 20956 issued on 28/07/2010), and Lot 429 S. B is an old scheduled Block Government Lease agricultural lot.

The applicant bought the two lots on 16/01/2015 as the small house Lot was completed with Certificate of Compliance duly issued on 02/01/2013 after satisfactory construction of the small house, the septic tank and surface drains in and around Lot 2194 as required by the grant conditions.

I have checked the details of the small house conditions of Lot No. 2194 in DD244 which are common to all small house grants in the New Territories. I am not going to attach the said grant conditions here as it has a total of 22 pages. I shall just mention Special Condition Nos. 17 & 23 at Paragraphs V and VI below.

Nevertheless a copy of the Certificate of Compliance is at Attachment 5 for reference.

V. Storm or rain water from Lot No. 2194

According to Special Condition No. 17 (listed at Page 16 of New Grant No. 20956):

"All storm or rain water from the lot shall be conveyed into the nearest stream course, catchpit, channel or storm - water drain as required and in a manner to be approved by the District Lands Officer"

In other words, the Applicant's current practice in discharging storm or rain water according to the aforesaid grant condition is acceptable to the District Lands Officer.

VI. Drainage of Lot No. 2194

According to Special Condition No. 23 (listed at Page 17 of New Grant No. 20956):

"The drainage of any building erected on the lot shall be effected as may be required by the District Lands Officer, and the Grantee shall make all arrangements at his own expense and to the satisfaction of the District Lands Officer for the treatment and disposal of sewage, sullage and foul, contaminated or waste water by the construction of suitable works either within the lot or on Government land or otherwise and on such terms as the District Lands Officer shall require, and the Grantee shall be solely liable for any damage or nuisance caused thereby."

As a result septic tank was constructed to the satisfaction of the District Lands Officer and Letter of Compliance was issued on 02/01/2013 as at Attachment 5.

VII. My Views of the septic tank, the small house and the proposed private garden

I have no information as to the reasons leading to the small house grant in this area of current Agriculture zoning and WGG in the year 2010.

Moreover, there were other three small house grants, namely Lot 2196, BL 2527 & BL 2478 to the south-west of Lot 2194, and eleven small houses piled up immediately on the right hand side of Lot 2194 across the track. Plan showing the houses is at Attachment 6.

There was no public sewer then in the vicinity to serve the to-be-built small houses. The Departments in considering issuing small house grants at the time must have thought that the septic tanks (be it individual or communal) would not pose any threat to the WGG and the nearby stream course to the north of the small houses.

In my view, the contamination to the WGG and the stream course to the north as a result of the development of a proposed private garden would have far less pollution effect than the wastewater created by inhabitants of the existing small house or actual farming in the area if a septic tank system is built below the proposed private garden.

If septic tank for a small house can prevent contamination of the WGG and the stream course, I am of the view that a septic tank to hold foul water generates from the simple private lawn can prevent contamination to the surrounding and the stream course in the north as well.

VIII. Concerns of WSD

Let me describe below the concerns of WSD and my recommended proposed measures:

- A. No discharge of effluent or foul water into adjoining land, storm water drain, channel, stream or river course is allowed. Such foul water or effluent shall be collected and disposed of outside WGG.

Proposed measures – A septic tank of similar size as to a septic tank required by a small house would be constructed under Lot 429 S. B in D.D.244. As a result, any foul water or effluent generates from the private garden would be collected

into the said septic tank just like those foul water or effluent generates from the small house on Lot 2194. It is my view that the foul water or effluent generates from the private garden would be far less than that from one small house, and the proposed septic tank could solve the issue of possible contamination.

Moreover an additional sand trap will also be constructed as described at Paragraph IX to filter the foul water and any effluent before entering the septic tank. The plan showing the location of the proposed sand trap and the septic tank is at Attachment 7 for reference.

B. All solid waste and sludge arising from the development shall be disposed of properly outside WGG.

Proposed measures – the sand trap and the septic tank system as described under A above should serve the propose of preventing pollution in the area. I am of the view that the revised proposal of a simple garden without a green house and non-growing of vegetables would only generate negligible amount of solid waste and sludge, if not none at all. Such a small amount of solid waste and sludge together with wastewater would be first filtered by the sand trap before going to the septic tank. The used sand would be replaced every 6 months and disposed of properly outside WGG according to the rules imposed by the Environmental Protection Department (EPD) as stipulated by their Water Control Pollution Ordinance. More details of the sand trap and septic tank system are also described at Paragraph IX.

C. The use and storage of pesticide, herbicides, toxicants, chemical solvents, laticidal oil, rodenticide, tar and petroleum oil are strictly prohibited in WGG.

Proposed measures – Applicant promises not to use and the storage of such materials inside the private garden and the small house Lot 2194.

D. No chemicals including fertilizers and detergents shall be used/stored without the prior approval from the Water Authority.

Proposed measures – Applicant promises to abide by D; demolish the green house and stop growing vegetables.

E. Oil leakage and spillage are not allowed within WGG at all time.

Proposed measures – Applicant promises to abide by E.

- F. The garden and its associated horticultural activities shall be located away from any water courses as far as possible. All garden structures shall be water tight and properly maintained. Signage for alerting not to pollute WGG should be displayed.

Proposed measures – Applicant promises to abide by F and put up the signage as described.

- G. During the formation of the garden, no earth and other construction materials which may cause contamination to WGG are allowed to be stockpiled or stored on site. Furthermore, all excavated or filled surfaces shall be protected from erosion and siltation to any water courses shall be prevented within WGG. All construction spoils shall be contained and protected; and effluent containing spoils shall be disposed of after desiltation.

Proposed measures – Applicant promises to adhere to all situations as described at G.

IX. An on-site sewage disposal septic system

In order to tackle the issue of contamination effectively, the Applicant is agreeable to set up an on-site sewage disposal septic system for any wastewater likely to be generated from the private lawn.

The on-site sewage disposal septic system for the private lawn will consist of two parts. The first part is a sand trap and the second part is the septic tank for the settlement and treatment of the wastewater and slurries in the same place just in case any wastewater and slurries, which are very unlikely, are being generated.

The first treatment removes materials that will settle with gravity or float. The method is to sprinkle or trickle the water over the bed of sand. As the water filters downward, it is put into contact with oxygen and microorganisms, which work together to break down the organic matter in the water before the decomposed wastewater goes down to the septic tank built underneath the lawn below Lot 429 S. B in DD244. In practice the bed of sand will be replaced every six months with clean and fresh sand whereas the used ones will be disposed of properly outside WGG according to rules required by the EPD.

A drainage engineer will be asked to design the drainage facilities (the sand trap plus the septic tank and the surface running water channels) surrounding the proposed garden area should this proposal is acceptable to WSD.

X. Conclusion

It is my view that the revised proposal of a simple lawn within the private garden and with the setting up of the sand trap plus the septic tank immediately beneath part of the garden area at Lot 429 S. B in DD244 will not cause any contamination to the WGG, and will not pose any threat to water quality in and around the area.

Basing on the preceding paragraphs, I am confident to say that there would be "no material increase in pollution effect resulting from the proposed development" of a revised simple private garden.



PAU Wah Lung
Registered Architect, Fellow Member of HKIA &
Authorised Person - Architect

Attachments

Attachment 1: Location Plan

Attachment 2: Photographs of House No. 450 and the surrounding (a) to (g)

Attachment 3: Plan showing alignment of the U-Channel for rain/storm water

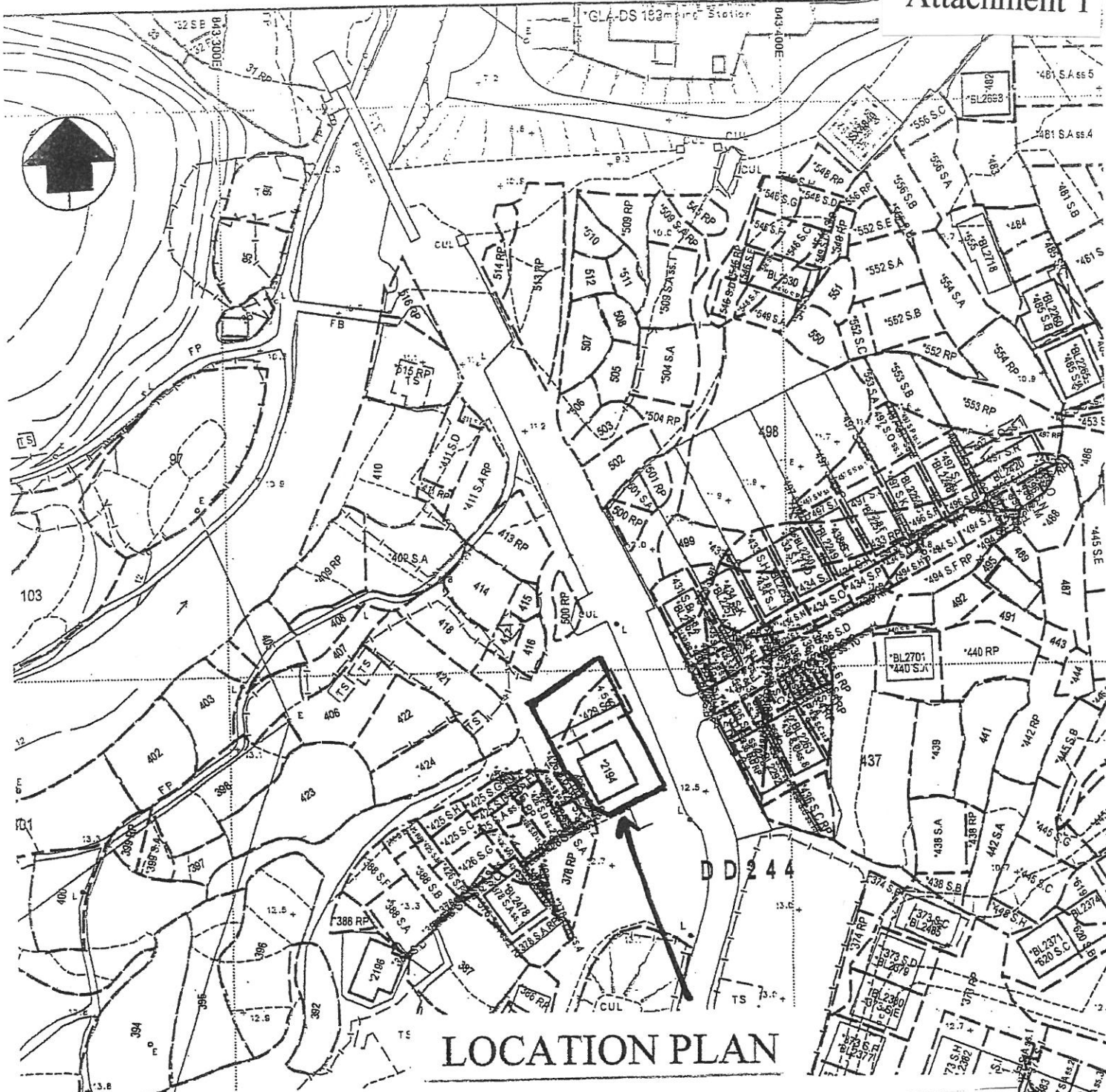
Attachment 4: Revised Plan showing Proposed Private Garden

Attachment 5: Copy of the Certificate of Compliance

Attachment 6: Plan showing the houses in the vicinity

Attachment 7: Plan showing proposed sand trap and the septic tank

Date: 16 August 2024



LOT 429 S. B (PART) IN DD 244 AND THE ADJOINING GOVERNMENT LAND

Scale 1:1000

SURVEY SHEET No. 11-NE-4B, 11-NE-5A

(a)



House No. 450 Ho Chung New Village, Sai Kung, N. T.



Part of the Existing Features inside House No. 450

(c)



Part of the existing drainage for rain/storm water
inside House No. 450

(d)



A nearby culvert

(e)



A U-Channel to the North of House No. 450 Ho Chung New Village (Part 1)

(f)

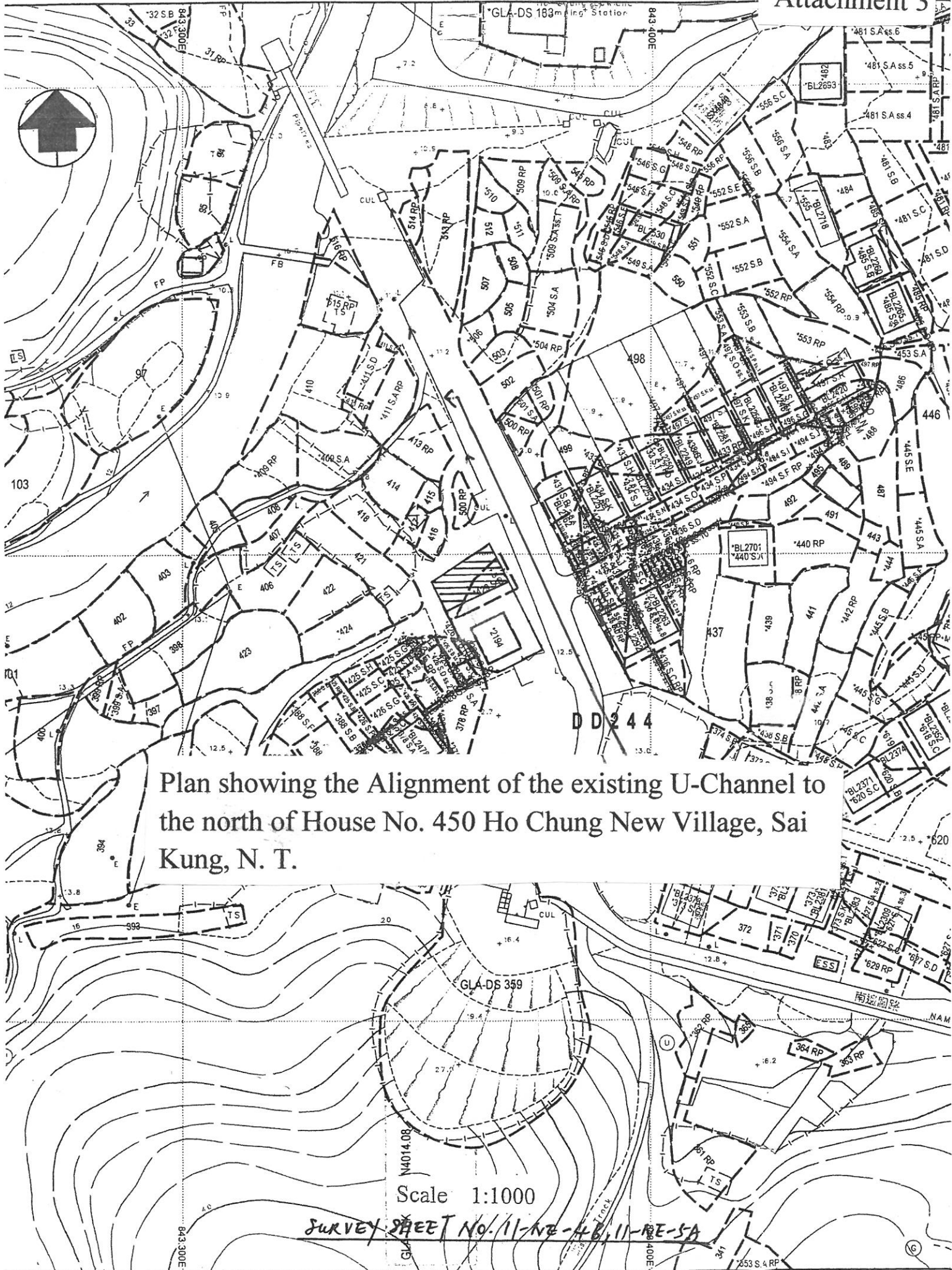


A U-Channel to the North of House No. 450 Ho Chung New Village (Part 2)

(9)



The Stream Course to the North



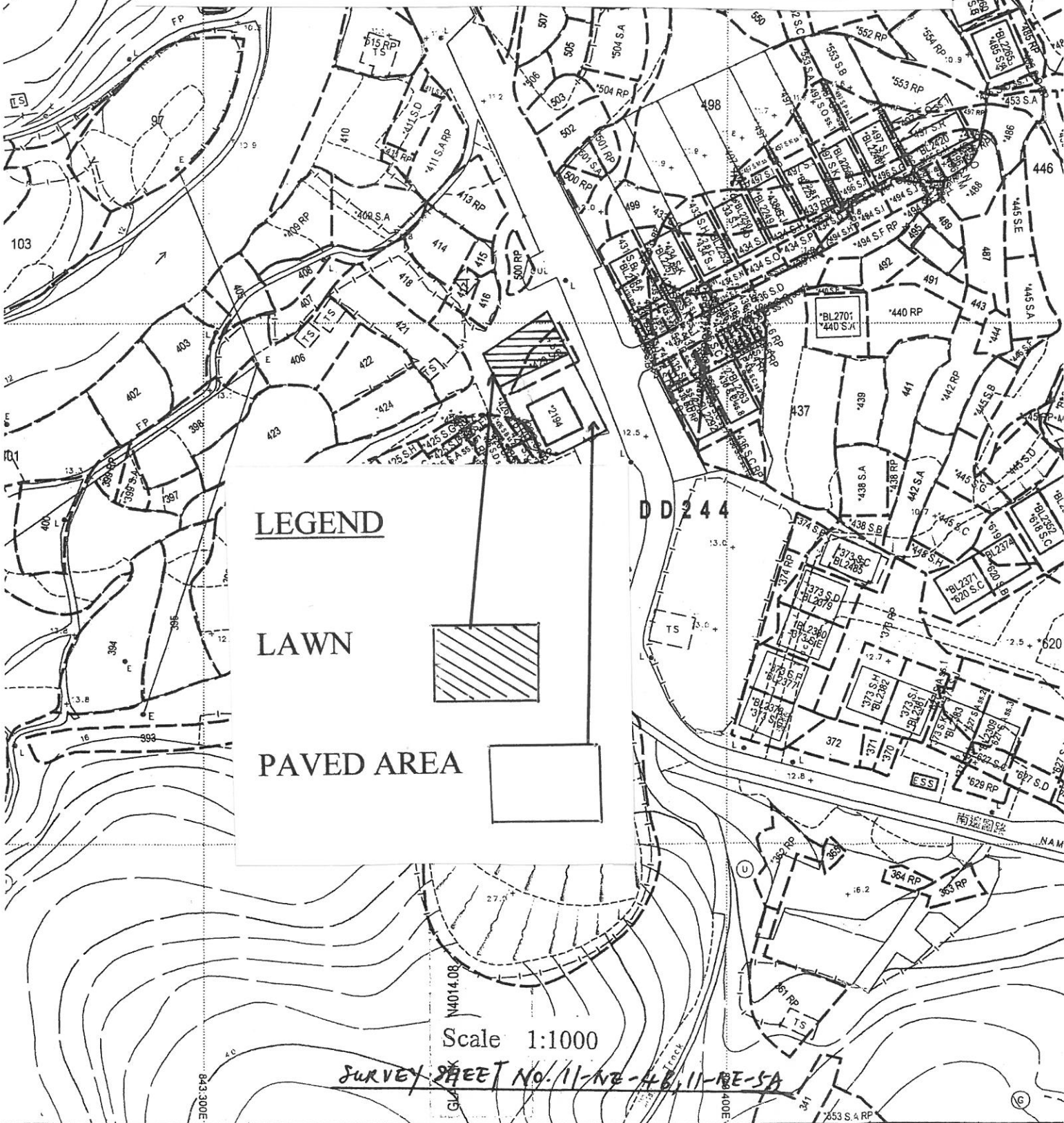
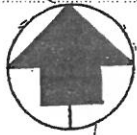
Plan showing the Alignment of the existing U-Channel to the north of House No. 450 Ho Chung New Village, Sai Kung, N. T.

Scale 1:1000

SURVEY SHEET NO. 11-NE-4B, 11-NE-5A

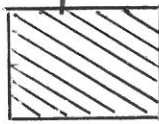
REVISED PLAN SHOWING PROPOSED PRIVATE GARDEN

Lot No.429 S. B (Part) in DD244 & adjoining Government land (House No. 450 Ho Chung New Village, Sai Kung)

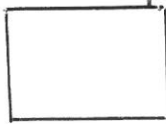


LEGEND

LAWN



PAVED AREA



Scale 1:1000

SURVEY SHEET No. 11-NE-48, 11-NE-5A



地政總署
西貢地政處
DISTRICT LANDS OFFICE, SAI KUNG
LANDS DEPARTMENT

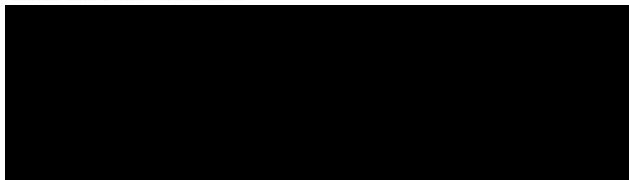
電話 Tel: 2972 5187
圖文傳真 Fax: 2792 0706
電郵地址 Email: gendlosk@landsd.gov.hk
本署檔號 Our Ref.: () in DLO/SK 32/SHL/05
來函檔號 Your Ref.:

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OFFICES, 34 CHAN MAN STREET, SAI KUNG
NEW TERRITORIES

網址 Web Site: www.landsd.gov.hk

Mr. WAN Pak Kan



By Recorded Delivery

- 2 JAN 2013

Dear Sir,

Lot No. 2194 in Demarcation District No. 244

The house erected on the lot pursuant to New Grant No. 20956 under which the above lot has been granted has now been inspected and I hereby certify that all the positive obligations imposed on the Grantee of the above lot under the General and Special Conditions of New Grant No. 20956 have been complied with to my satisfaction.

This certification is given without prejudice to all or any rights of the Government whether under the said Conditions or otherwise in respect of any breach or failure to observe any of the said Conditions which may exist on the date hereof or which may hereafter occur.

As the building erected on the lot is exempted from the provisions of the Buildings Ordinance, Cap. 123 under the Buildings Ordinance (Application to the New Territories) Ordinance, Cap. 121 by virtue of Certificates of Exemption dated 16/11/2010 and 12/04/2012, no site formation, building or other plans have been approved by the Building Authority in respect of the above lot and the building erected thereon. Accordingly this certificate is not to be construed as a representation by Government that the building erected on the above lot or any works in connection therewith are structurally safe and Government expressly excludes any liability arising out of such construction or works.

In your own interest, you are advised to register this certificate in the Land Registry by memorial which shall be verified by the certificate of a solicitor in accordance with Regulation 7 of the Land Registration Regulations.

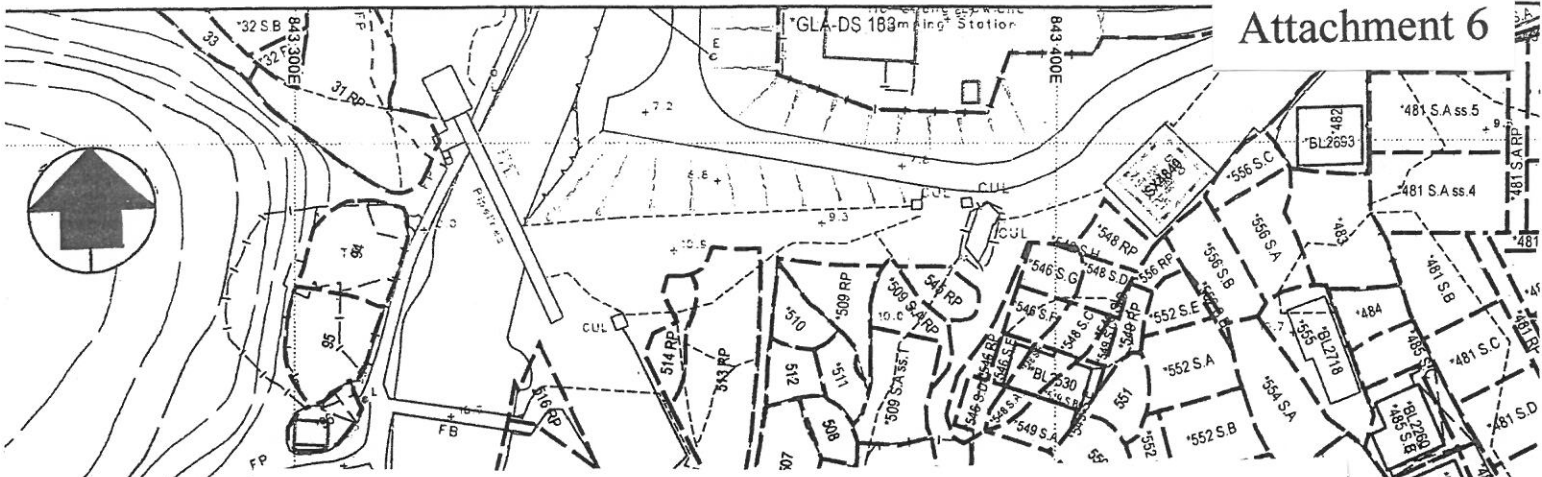
Yours faithfully,

(Ken CHEUNG)

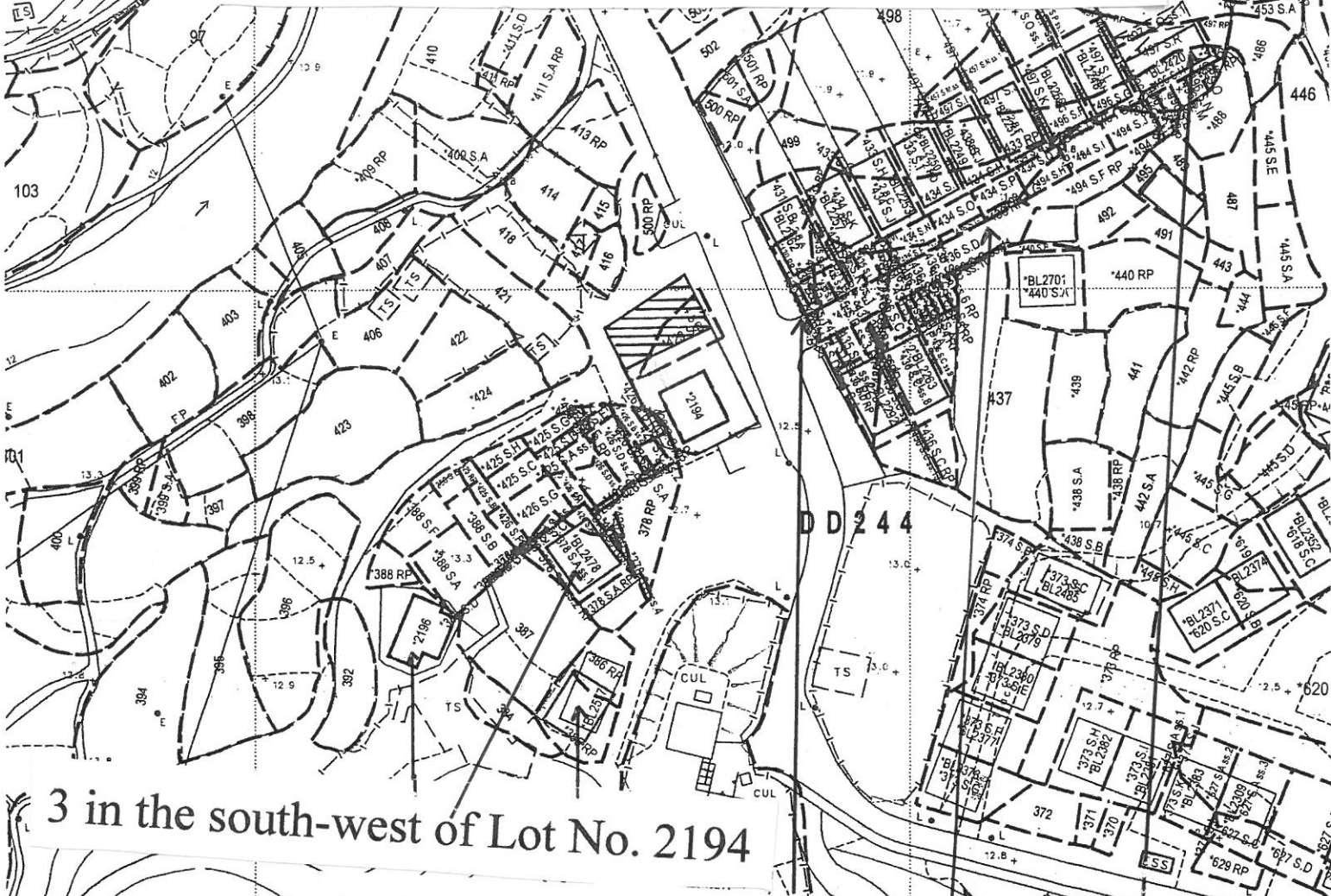
for District Lands Officer/Sai Kung

c.c. CR & V (Attn. Tech. Secy. (Information)) – with plan
DSO/SK – with plan



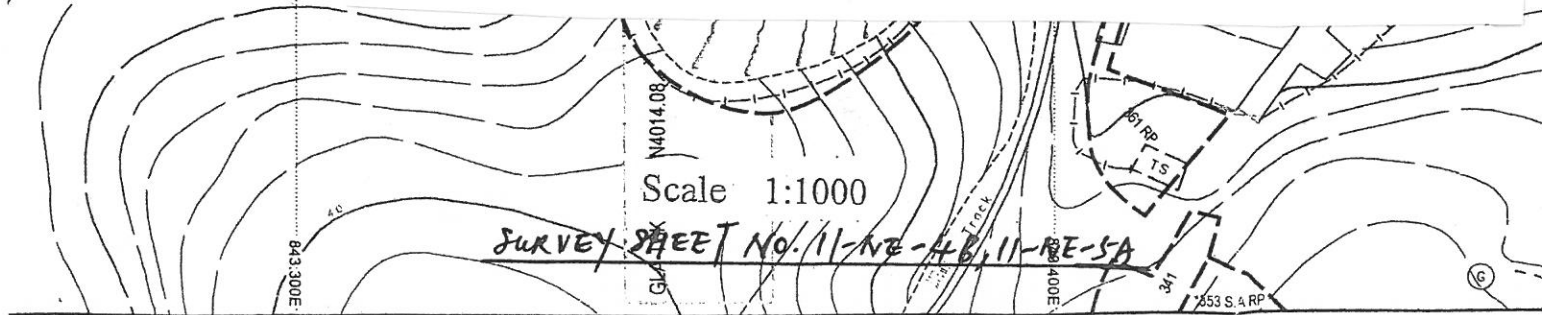


Plan showing the houses in the vicinity



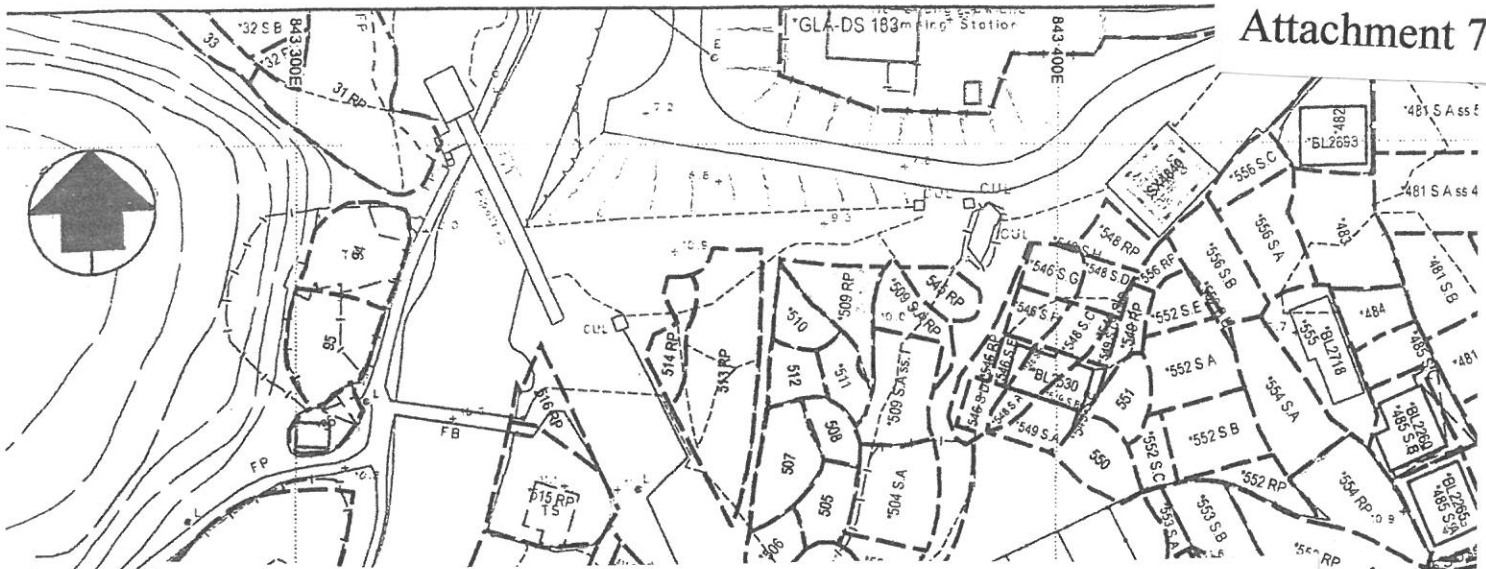
3 in the south-west of Lot No. 2194

And 11 to the right hand side of Lot 2194 across the track

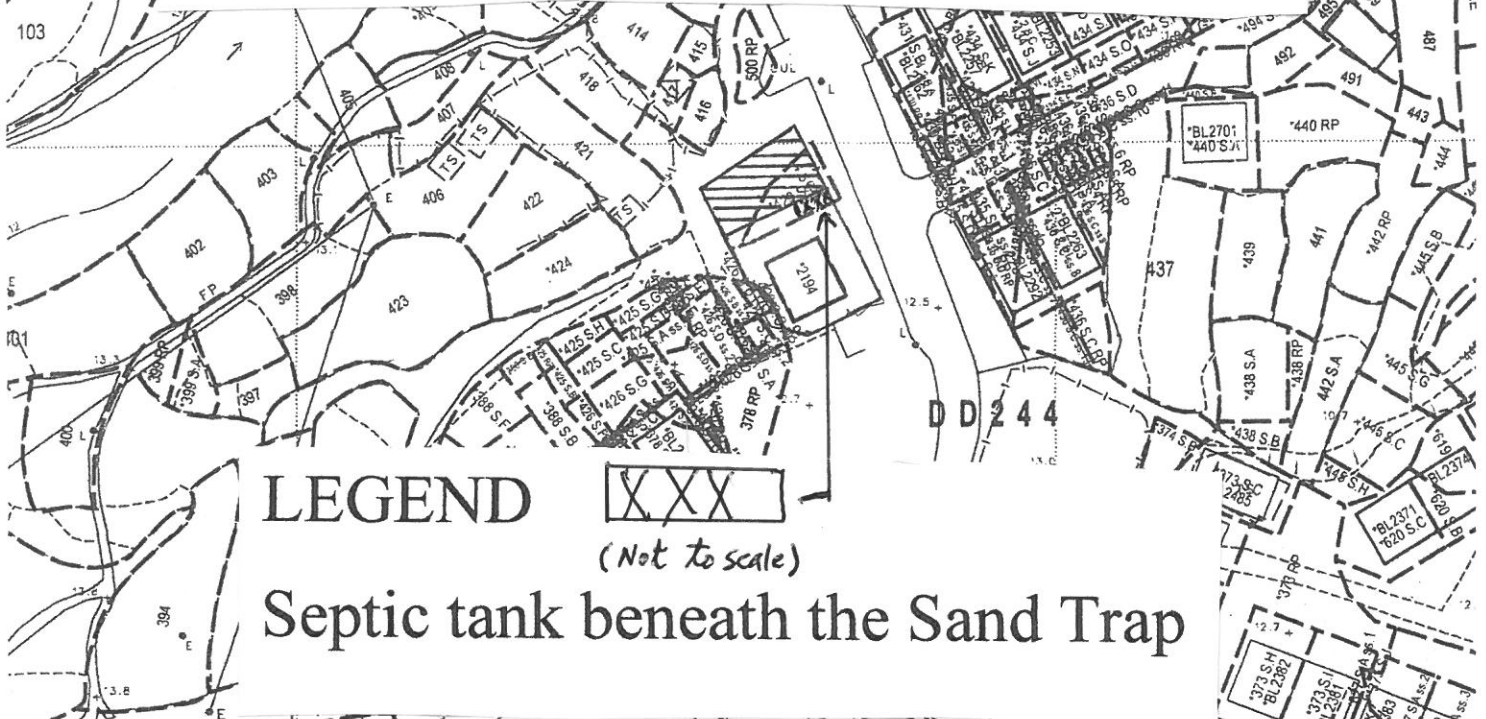


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SURVEY SHEET NO. 11-NE-HB, 11-RE-SA



Plan showing proposed sand trap and the septic tank

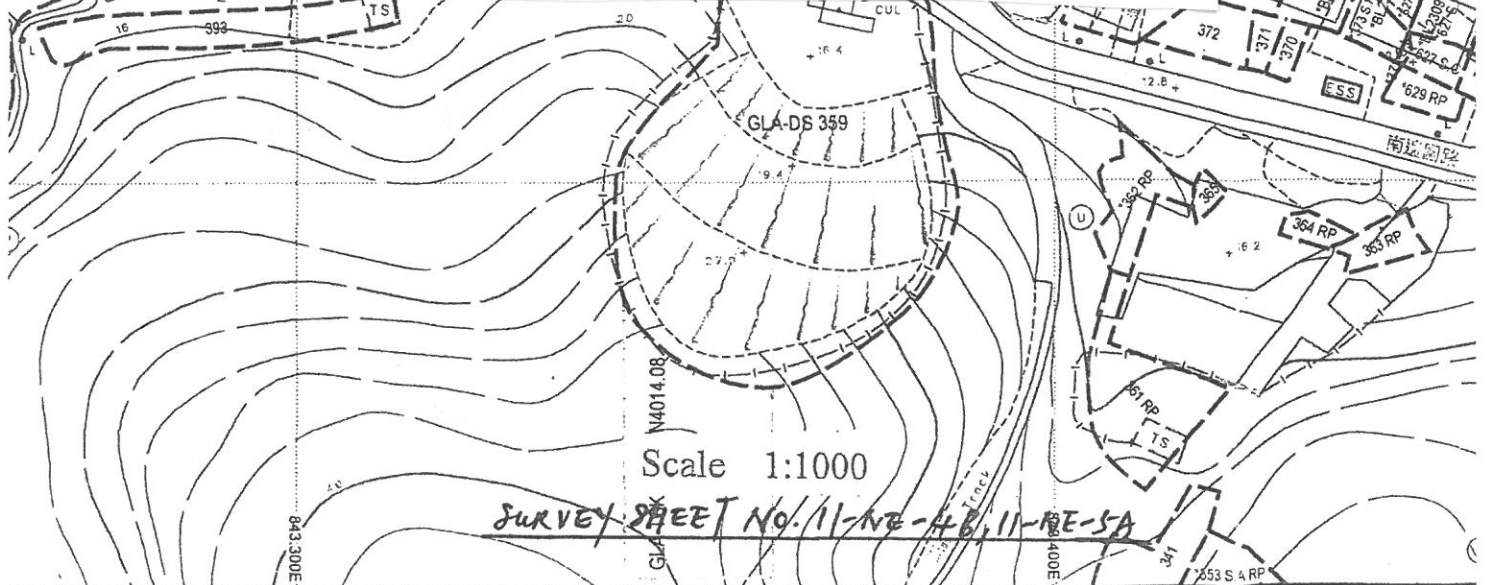


LEGEND



(Not to scale)

Septic tank beneath the Sand Trap



Scale 1:1000

SURVEY SHEET NO. 11-NB-4B, 11-BE-5A