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Appendix 2

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Stormwater Drainage Proposal

TEMPORARY OPEN STORAGE AND MAINTENANCE  
WORKSHOP FOR FREEZER VEHICLES ON  
LOT 401(PART), 404(PART), 405R.P.(PART), 406R.P.,  
408R.P.(PART), 409 AND 410(PART) IN D.D. 106  
PAT HEUNG, YUEN LONG, N.T.

STORMWATER DRAINAGE PROPOSAL

ISSUE 1

Engineering Consultant

: Heng Fai Consulting Limited



June 2015

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2. SITE DESCRIPTION	1
3. STORMWATER DRAINAGE PROPOSAL	1

## FIGURES

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Figure No. 2	Scale 1:1000 Land Survey Plan from Government Land Survey Office

## APPENDICES

Appendix A	<del>Reference Document</del> <del>Lot Index Plan from District Survey Office/Yuen Long dated 4<sup>th</sup> June 2015</del>
Appendix B	Photographs - A1 (4 June 2015) - General view of the site (looking southwest)
Appendix C	Design Calculation for Surface Channel
Appendix D	Stormwater Drainage Plan

## 1. INTRODUCTION

- 1.1 This report is submitted being application for Town Planning Board's approval on temporary open storage and maintenance workshop for freezer vehicles on Lot 401(Part), 404(Part), 405R.P.(Part), 406R.P., 408R.P.(Part), 409 and 410(Part) in D.D. 106, Pat Heung, Yuen Long, N.T.
- 1.2 This report presents the stormwater drainage proposal for open storage and maintenance workshop. A copy of Lot Index Plan from the District Survey Office/Yuen Long (DSO) is enclosed in Appendix A.

## 2. SITE DESCRIPTION

- 2.1 The site is a piece of level ground with concrete pavement. Temporary structures are found at east, south and west of the site. Entrance gate is located at the north. The area is accessed by Kam Sheung Road of about 80 m at the east. A nullah running from east to northwest is situated along southern and western boundary of the site. Location of the site is shown on Figure Nos. 1 and 2. Photograph showing general view of the area are included in Appendix B.
- 2.2 The site is elevated at about +7.9 mPD.

## 3. STORMWATER DRAINAGE PROPOSAL

- 3.1 Stormwater from temporary open storage and maintenance workshop shall be collected by proposed 300 mm and 350 mm U-channels connecting to the existing culvert at east of the site, discharging surface runoff to the nullah at the south. The whole area shall be concrete paved in order to prevent erosion and provide fall to channel. Catchpit with sand trap will be constructed to de-silt the surface runoff. The entire drainage arrangement is shown on Stormwater Drainage Plan enclosed in Appendix D.
- 3.2 The 350 mm U-channel is designed in accordance with Geotechnical Manual for Slopes (1994). Rational Method is adopted to estimate the quantity of surface runoff based on a storm of two hundred-year return period. Runoff coefficient of 1.0 is used. The runoff is designed to 4 m/s permissible flow velocity and 1 m/s minimum flow velocity for self-cleaning.
- 3.3 Design calculation for channel is presented in Appendix C. Construction details of channel and catchpit are shown on Stormwater Drainage Plan enclosed in Appendix D.
- 3.4 The proposed drainage works, whether within or outside the lot boundary, shall be constructed and maintained by the applicant at his own expense. For works to be undertaken outside the lot boundary, prior consent from the DLO and/or relevant private lot owners shall be sought. It is also the duty of the applicant to protect the site from being eroded and flooded.

End of Text

Temporary Open Storage and Maintenance Workshop for Freezer Vehicles on  
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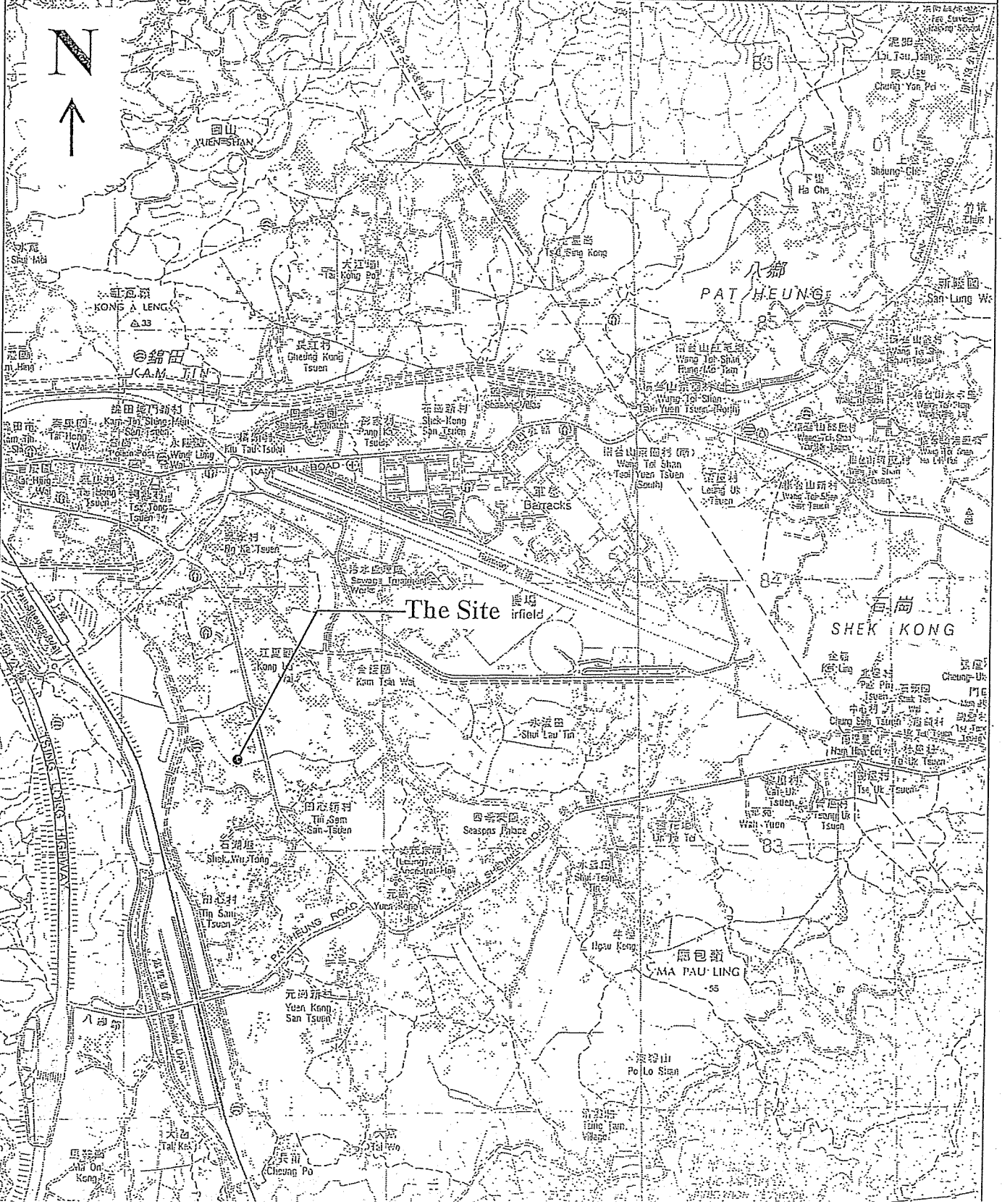
Issue 1

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## FIGURES

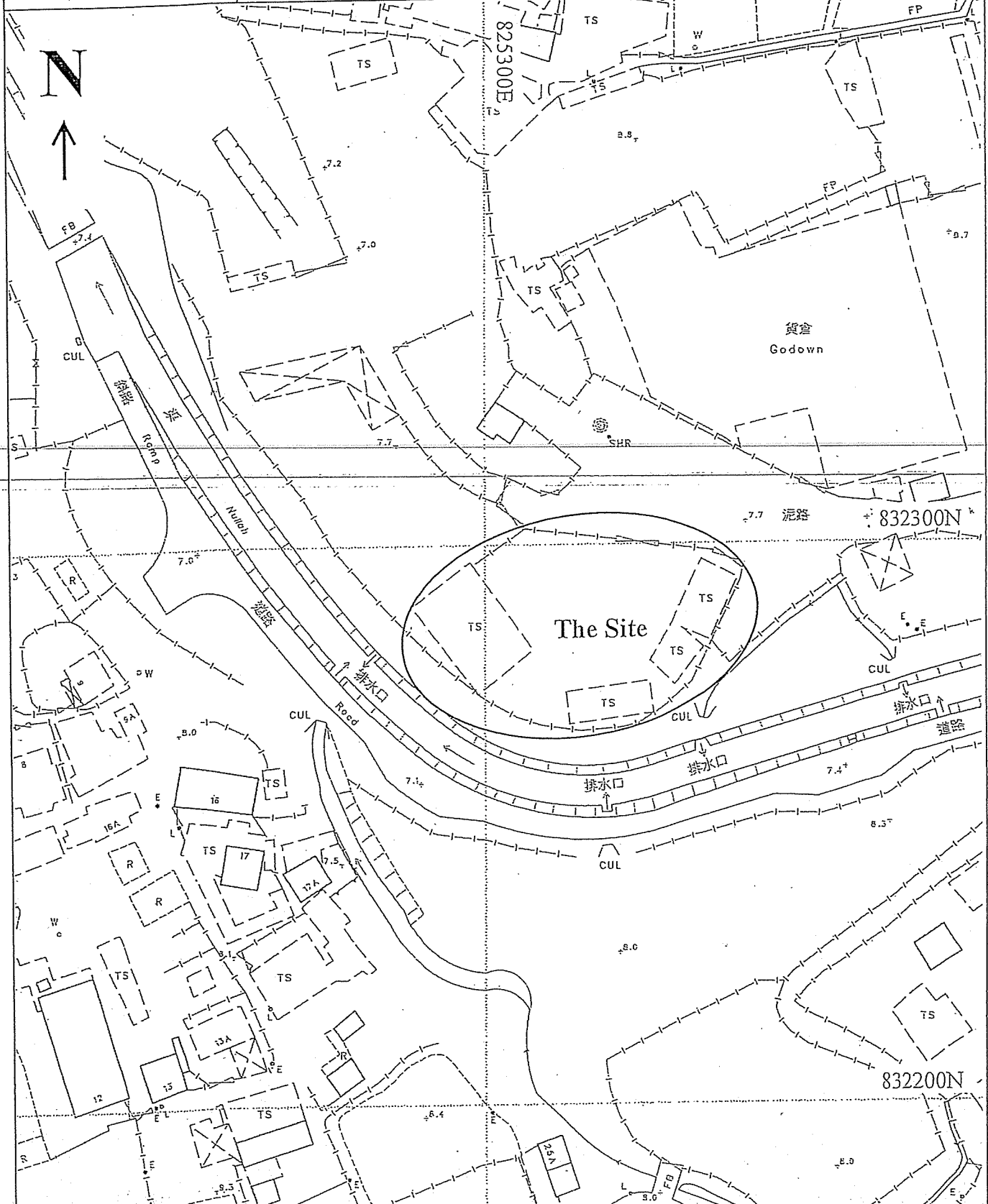
**TEMPORARY OPEN STORAGE AND MAINTENANCE WORKSHOP  
FOR FREEZER VEHICLES ON LOT 401(PART), 404(PART),  
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SITE PLAN		Figure No.	1
Map No.	Sheet 6 (Ed. 16, 2013)	Scale	1:20000



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SITE PLAN	Figure No.	2
Map No.	Sheet 6-NE-17B (Jul 2013)	Scale
		1 : 1000



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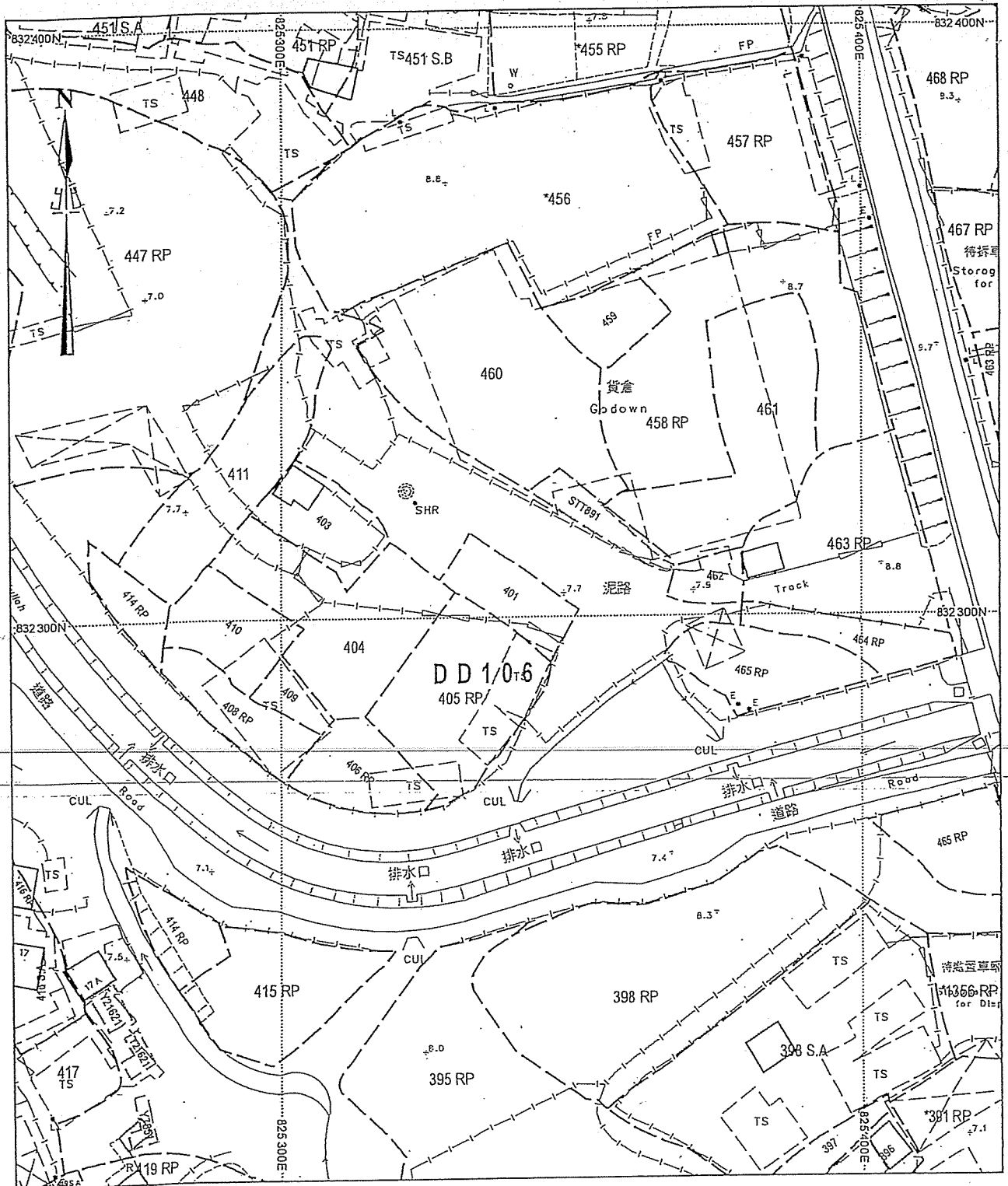
Issue 1

## APPENDIX A

### REFERENCE DOCUMENT

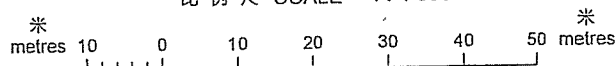


# 地段索引圖 LOT INDEX PLAN



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

比例尺 SCALE 1:1000



Locality : YUEN LONG  
 Lot Index Plan No. : KD0039062015  
 District Survey Office : Kowloon  
 Date : 04-Jun-2015  
 Reference No. : 6-NE-12D,6-NE-17B

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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憑藉短期通知出現或終止，因此應向有關的分區地政專員核證。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.

APPENDIX B  
PHOTOGRAPHS

TEMPORARY OPEN STORAGE AND MAINTENANCE WORKSHOP  
FOR FREEZER VEHICLES ON LOT 401(PART), 404(PART),  
405R.P.(PART), 406R.P., 408R.P.(PART), 409 AND 410(PART) IN D.D. 106  
PAT HEUNG, YUEN LONG, N.T.

RECORD PHOTOGRAPHS

Date Taken :

4 June 2015

Photo Ref. :

As-Shown

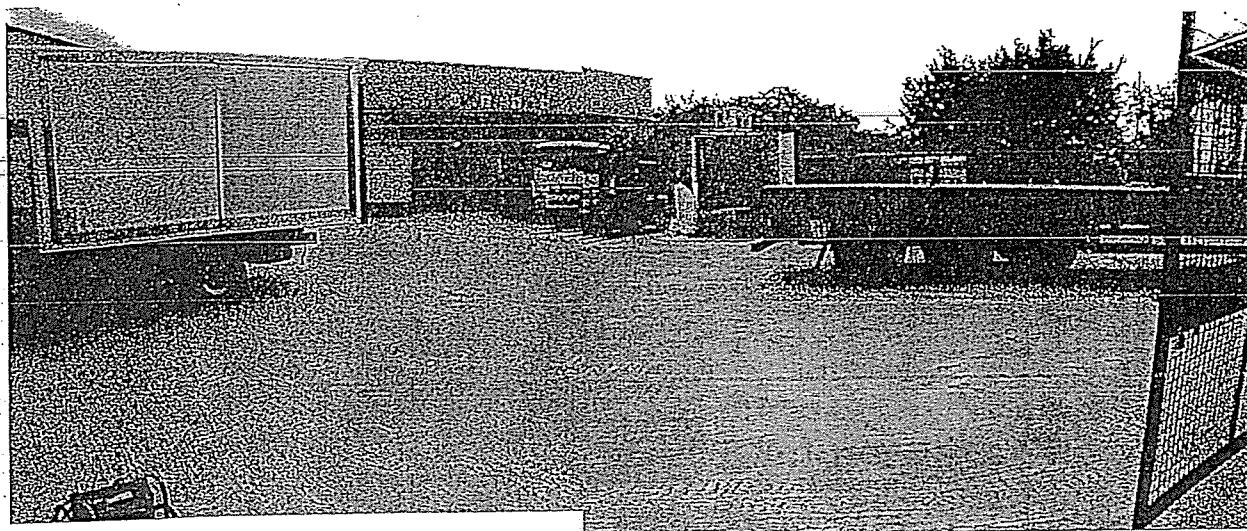


Photo No. A1

General view of the site (looking southwest)

## APPENDIX C

### DESIGN CALCULATION FOR SURFACE CHANNEL

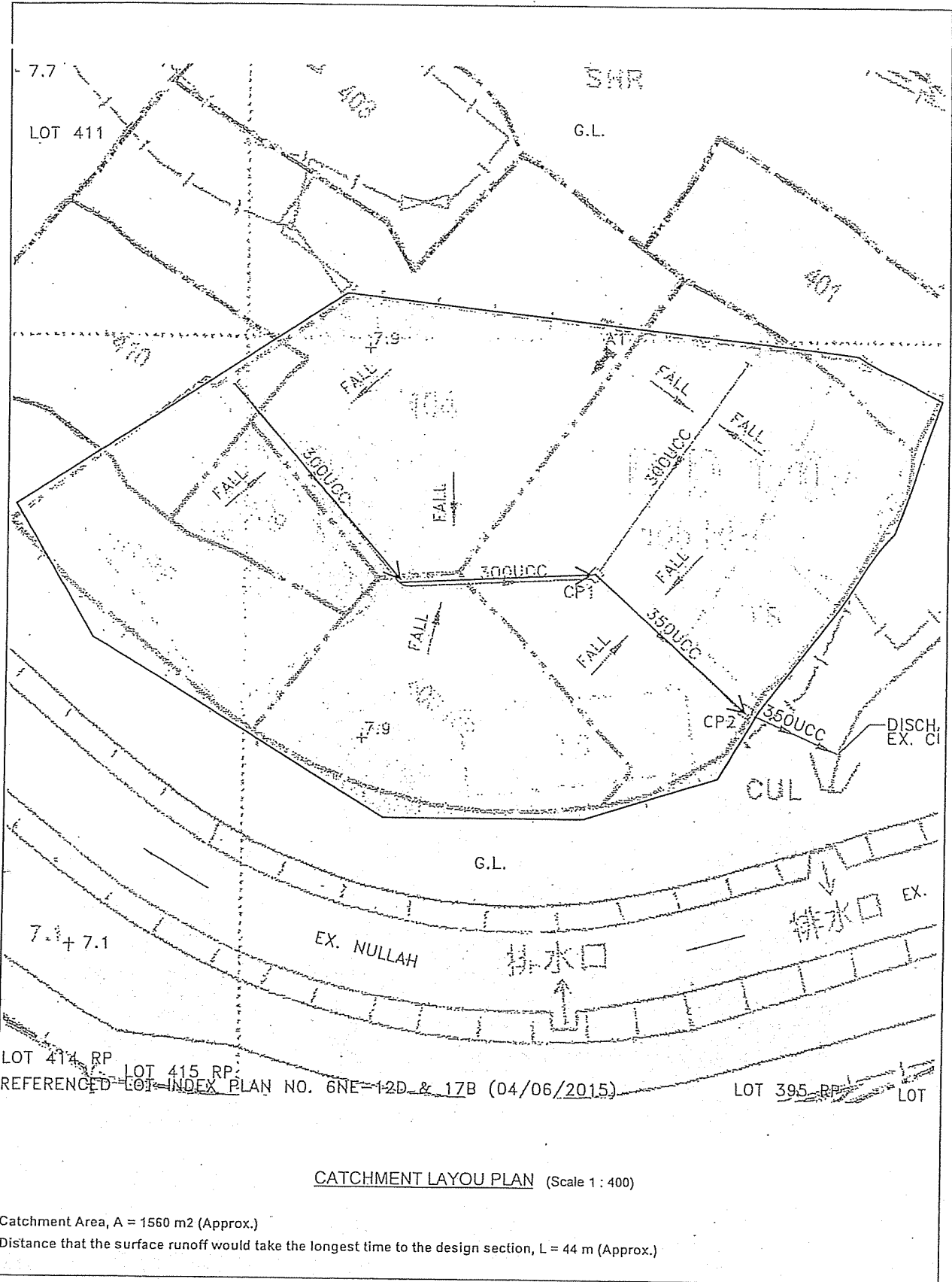
Project Temporary Open Storage & Maintenance Workshop for Freezer Vehicles on Lot 401(Part), 404(Part),  
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Subject Design Calculation for Surface Channel Job number 14/52 Page 1 of 4

DESIGN PARAMETERS / FORMULAS	RESULTS	REMARKS
<u>DESIGN PARAMETERS</u>		
Total plan area of the Site (Catchment Area), A =	1560 m <sup>2</sup>	Approx. (see next page for reference.)
Distance that the surface runoff would take the longest time to the design section (the final discharge point), L =	44 m	Approx.
Gradient of the U-channel for the Site = i.e. Average fall, H, of the U-channel =	1 in 100 1 m per 100 m	
Runoff Coeff., K =	1	Assumed. Section 8.2.1, P. 96, Geotechnical Manual for Slopes
<u>DESIGN CALCULATIONS</u>		
Time of Concentration, $T = 0.14465 \times L / (H^{0.2} \times A^{0.1}) =$	3.051 min	Eq. 8.2, P. 96, Geotechnical Manual for Slopes
Based on the time of concentration, Intensity, i (1 in 200 yrs) =	340 mm/hr	Figure 8.2, Geotechnical Manual for Slopes (Conservatively adopt 1 in 200 yrs for design of peripheral surface-channels)
Estimated Runoff, $Q = K i A / 3600 =$	147.333 Lit/s <del>8839.98 Lit/min</del>	
Based on the estimate runoff, Q and the gradient of U-channel, the required size of U-channel =	350 UC	Figure 8.7, Geotechnical Manual for Slopes
The flow velocity of the U-channel =	1.9 m/s < 4 m/s > 1 m/s	OK Section 8.3.4, P. 99, Geotechnical Manual for Slopes OK

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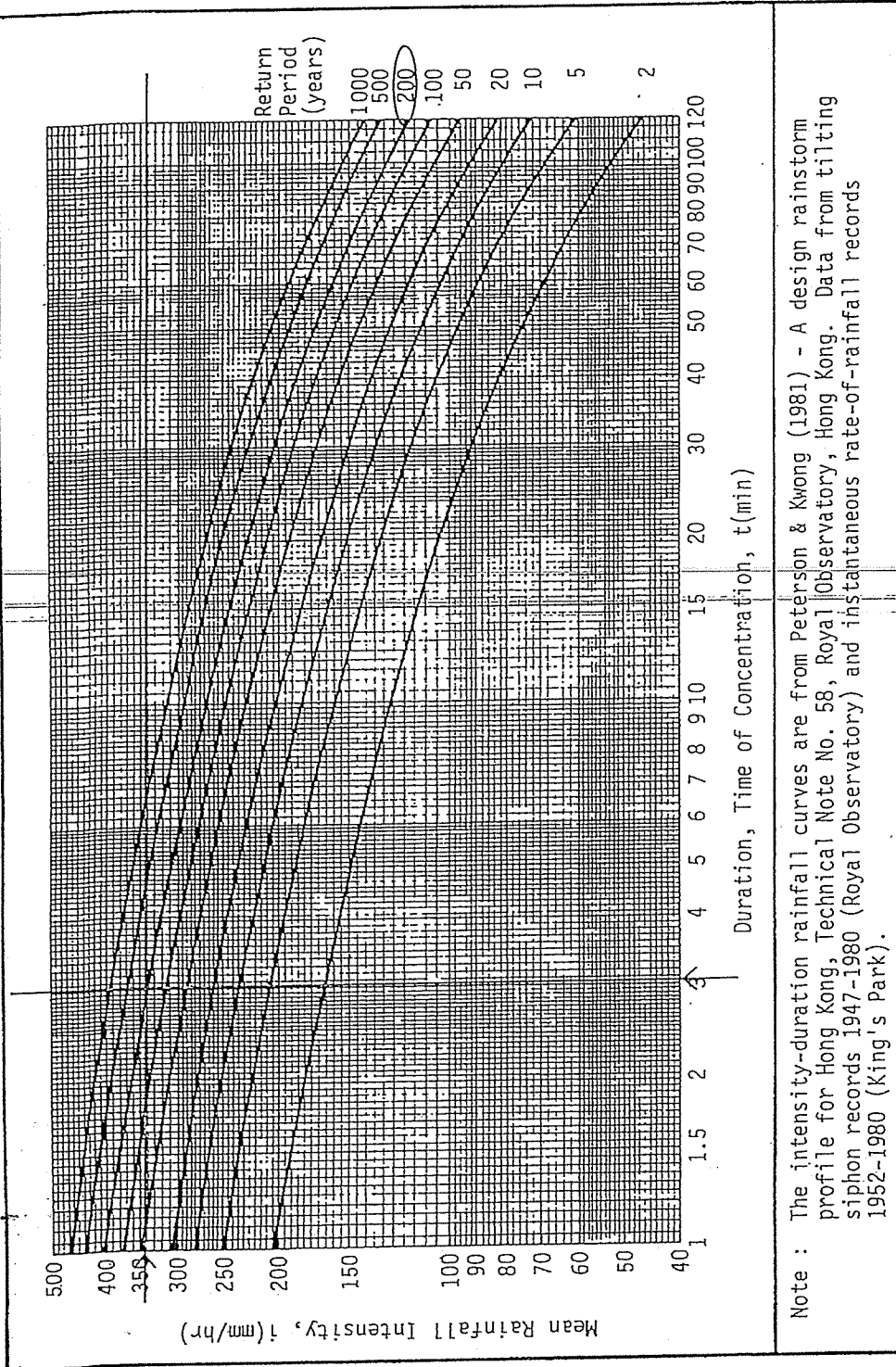


Figure 8.2 - Curves Showing Duration and Intensity of Rainfall in Hong Kong for Various Return Periods

This figure is extracted from Geotechnical Manual for Slopes

## APPENDIX D

### STORMWATER DRAINAGE PLAN

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Subject Design Calculation for Surface Channel Job number 14/52 Page 4 of 4

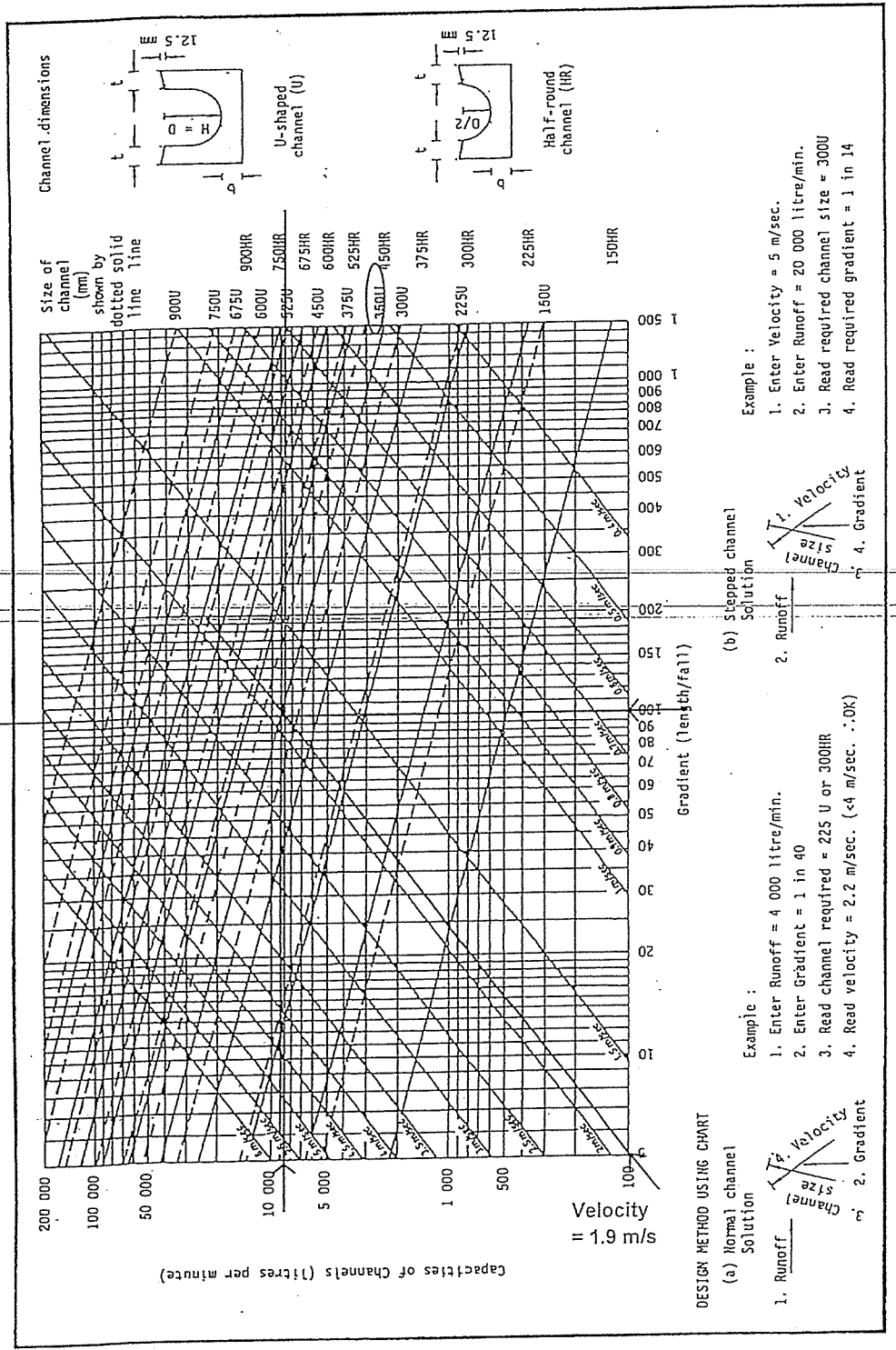


Figure 8.7 - Chart for the Rapid Design of Channels

This figure is extracted from Geotechnical Manual for Slopes

