PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS, LOT 138 (PART) IN D.D. 52, FU TEI AU, SHEUNG SHUI, NEW TERRITORIES

Geotechnical Planning Review Report

Jan 2026

MARVELLOUS
CONSTRUCTION & DESIGN COMPANY LIMITED

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1 Introduction

1.1 Background

1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) to use Lot 138 (Part) in D.D. 52, Fu Tei Au, Sheung Shui, New Territories (the Site) for 'Proposed Temporary Warehouse (Excluding Dangerous Goods Godown (D.G.G.)) with Ancillary Facilities for a Period of 5 Years'.

1.1.2 This Geotechnical Planning Review Report is prepared based on desk study and available documentary to support the aforementioned planning application in geotechnical aspect.

1.2 Objectives of this Report

1.2.1 The main objectives of this report are as followings:-

- Describe the geology of the Application Site.
- Indicate the location of existing features within and surrounding the Application Site and the land status.
- Review of how the Proposed Development have effects on the manmade slopes or retaining walls.
- Assess on the geotechnical feasibility of the Proposed Development.

2 Site Description

2.1 Site information and Topography

2.1.1 The development site situates beside Man Kam To Road near Hung Kiu San Tsuen. It has an area of about 2,151m^2. The site location plan and aerial photo view are shown in **Figure 1** and **Figure 2** respectively.

2.1.2 In general, the site is a flat ground with level various from approx. +9.8 mPD to + 11 mPD, gently falling from northwest to southeast.

2.1.3 The application site area is mostly open area comprising paved area or shallow vegetation. According to records in slope information system, there is an existing feature **3NW-C/F 22** at the western boundary

2.1.4 According to the site visit and topographic survey, the existing feature **3NW-C/F 22** within the Application Site is no longer exists and the level difference is retained by a retaining structure under other development at the west side of the site. Brid view photos and topographic survey records are shown in **Appendix F** and **G** respectively. The ground level outside the retaining wall is generally flat.

2.2 Existing Man-made Features

2.2.1 There is 1 registered feature in vicinity of the Application Site. The location of the feature is shown in **Figure 3**. Records of the slopes are retrieved from the SIS System of GEO and SIMAR of Lands Department, they are summarized in **Table 2.1**.

Table 2.1 - Existing Geotechnical Feature adjoining to the Application Site

Feature No.	Location	Max. Height (m)	Length (m)	Angle (°)	Material	Consequence-to-life	Maintenance Parties
Adjoining to the Application Site							
3NW-C/F 22	FU TEI AU, SHEUNG SHUI, NEW TERRITORIES	9	148	30	Vegetated: 95 Other: 5	1	Sub Div. 1: LandsD Sub Div. 2: DD52 LOT137 Sub Div. 3: DD52 LOT138

2.2.2 Sub Div. 3 is located within the Application Site. According to the site visit and topography survey the existing feature **3NW-C/F 22** within the Application Site is no longer exist and the level difference is retained by an existing retaining structure under other development.

2.2.3 A Copy of the SIMAR reports and Slope Information System records are attached in **Appendix A** and **B** respectively.

3 Review of Desk Study Information

3.1 Site Geology

3.1.1 The geology of the Study Area is shown on 1:20000 scale HGM20 Series Solid and Superficial Geology Map Sheet 3, Published by the GEO, HKSAR. The Application Site is generally underlain by debris flow deposits. A part print of geological map is presented in **Figure 4**.

3.2 Schedule Area

3.2.1 The Site is located outside the Schedule Area No. 2 (North-western New Territories) and Schedule Area 3 (The Railway Protection Zone). Plan of the Schedule Areas are enclosed in **Appendix C**.

3.3 Existing Ground Investigation Data

3.3.1 There is no existing ground investigation (GI) information within the site. The nearest identified GI (TP PP2) are located approximately 150 m away to the west of the site which is carried out by Gammon (Hong Kong) Limited in Nov 1985.

3.3.2 The location and information of the borehole is enclosed in **Appendix D**.

Table 3.1 - Summary of GIU Report

GIU Report no.	Title of the Report	Done by	Date
06883	Improvement to Man Kam To Road from Jockey Club Road to Lin Ma Hang Road Site Investigation Report	Gammon (Hong Kong) Limited	1985

3.3.3 The trial pit record indicated it is covered with approx. 0.3m thick layer of FILL and follow by approx. 0.9m thick ALLUVIUM below ground level. Then it is underlain by sandy silt.

3.4 Landslide History

3.4.1 According to the GEO's Enhanced Natural Terrain Landslide Inventory (ENTLI) data, there is neither recent nor relict relevant natural terrain landslide identified for the Application Site.

3.4.2 Other landslides as recorded in ENTLI are indicated in **Figure 5** for reference.

3.5 Historical Landslide Catchment

3.5.1 There is no relevant Historical Landslide Catchments (HLC) (MFJV, 2007), identified adjoining to the Application Site. The HLC of nearby Area are shown in **Figure 7** for reference.

4 Proposed Works

4.1 Site formation works

4.1.1 The site area is 2,151 m^2. The Application Site is proposed to be entirely filled with concrete of not more than 0.2m depth to facilitate a flat surface for maneuvering of vehicle and site formation of structures. No new slopes/ retaining walls is required to support the minor site formation works.

4.2 Temporary Structures

4.2.1 The proposed Application Site is applying for temporary warehouse for a period of 5 years. A 2-storey structure and a 1-storey structure are provided at the Site for warehouse (excluding D.G.G.), site office, washroom etc. The proposed development layout plan is shown in **Appendix E**.

4.2.2 In view of loadings from low-rise temporary structures is comparatively general, no foundation is proposed for the temporary structures. Excavation for drainage, sewerage and utilities works are minimal, no deep Excavation and Lateral Support (ELS) is anticipated.

5 Works effect on Existing Features

5.1.1 According to the topographic survey and site photos, the existing feature **3NW-C/F 22** within the Application Site is no longer exists and the level difference is retained by a retaining structure under other development. The ground level outside the retaining wall is generally flat. No deep excavation and lateral support is anticipated for low-rise temporary structures.

5.1.2 In view of the above minor site formation works and low-rise temporary structures, effect on adjoining existing features is minimal.

5.1.3 Excavation in close proximity of existing retaining wall should be avoided. If excavation is required in close proximity of the existing retaining wall, ELS should be designed and the stability and integrity of the existing retaining wall that shall be assessed in detail under a separate submission. After detail assessment in detail design stage, ELS, monitoring, stabilization works are to be proposed if required.

6 Conclusion

6.1.1 A geotechnical planning review has been conducted for Application Site. The physical conditions as well as the geological conditions of the Application Site have been reviewed and discussed.

6.1.2 Existing feature **3NW-C/F 22** within the Application Site is no longer exists and the level difference is retained by a retaining structure under other development. If excavation is required in close proximity of the existing retaining wall, ELS, monitoring, stabilization works are to be proposed if find necessary after detail assessment in detail design stage.

6.1.3 In conclusion, the proposed development at the Application Site is not anticipated to case adverse geotechnical impact to the nearby area and considered geotechnically feasible.

- End of Text -

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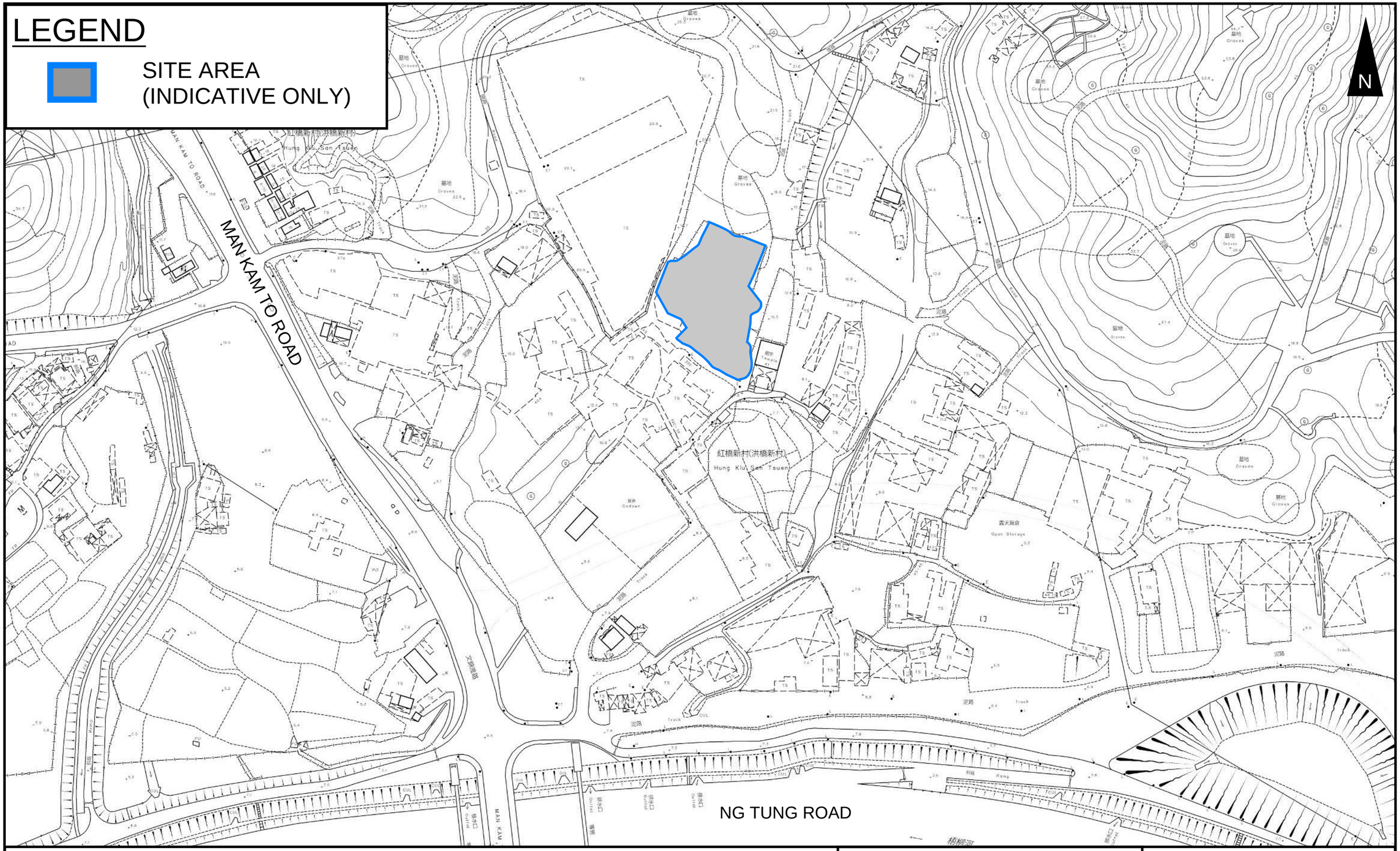
FIGURES

LEGEND

SITE AREA
(INDICATIVE ONLY)



PROJECT:

Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 5 Years in ´Other Specified Uses˝ annotated ´Port Back-up Uses˝ Zone

LOCATION:

Lot 138 (Part) in D.D. 52, Fu Tei Au, Sheung Shui, New Territories

VER	DESCRIPTION	DATE

LEGEND

SITE AREA
(INDICATIVE ONLY)

PROJECT:

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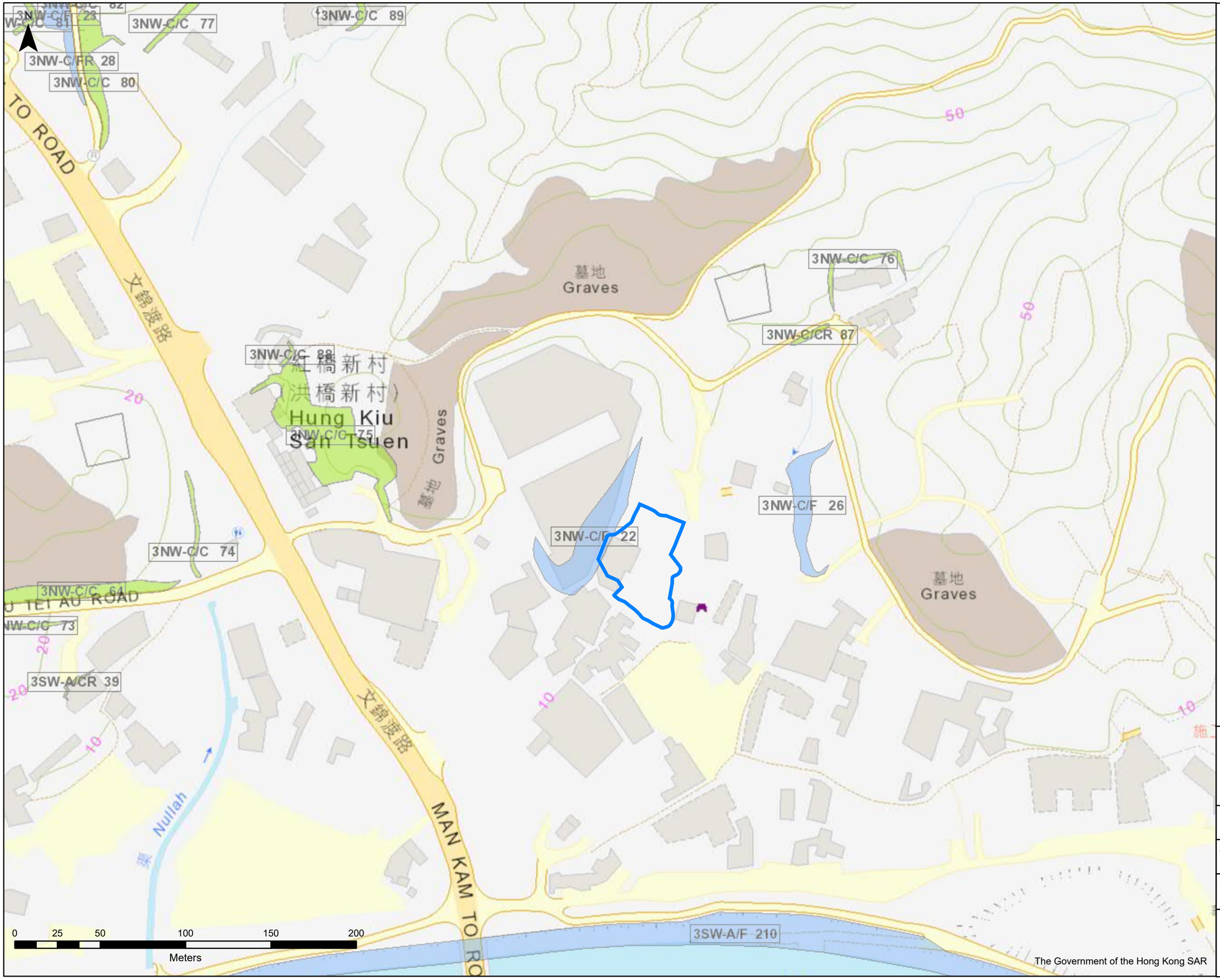


Man-made Features

- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls

Slope Features

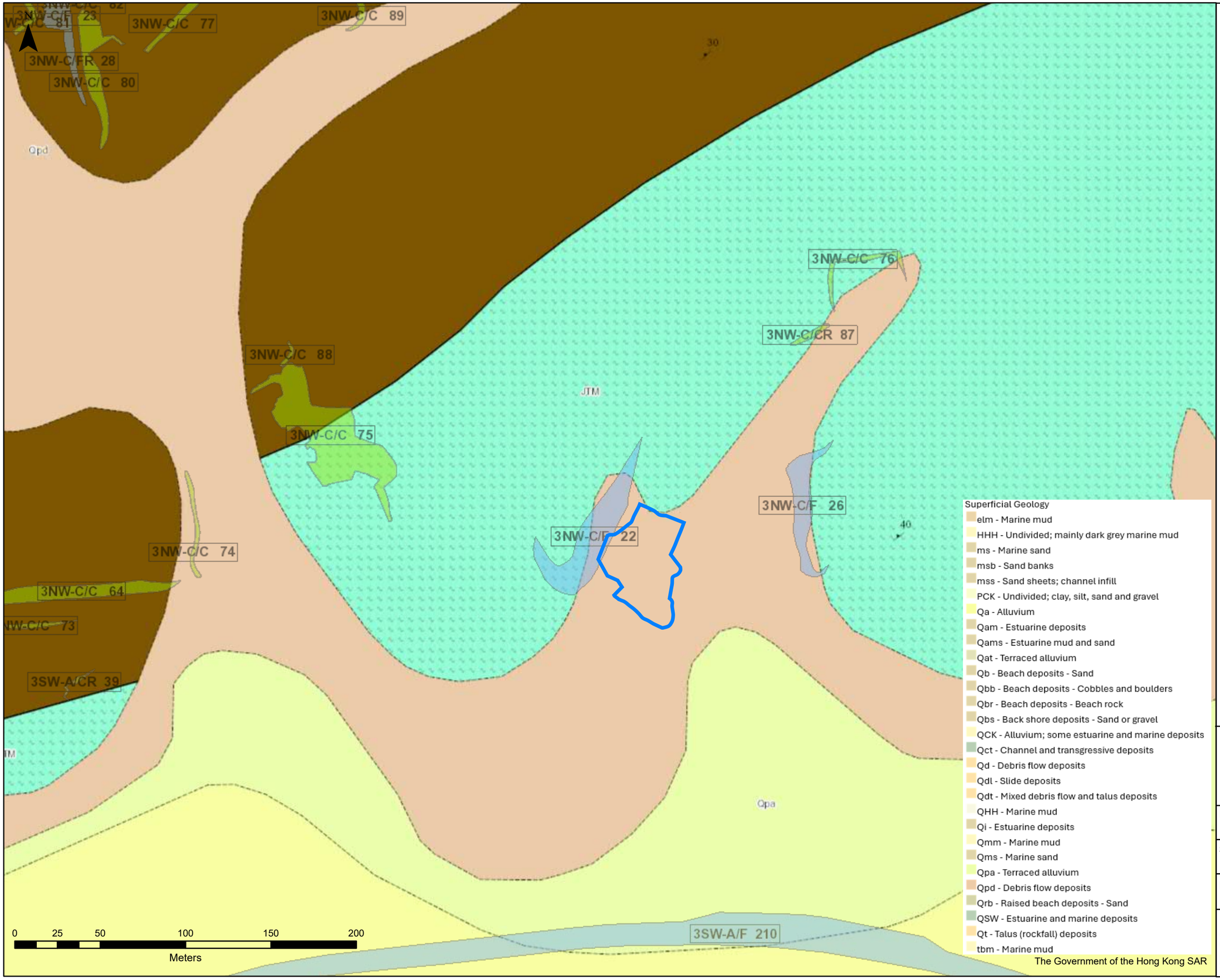
قوخ خ چ چخ خ
ژرږ د ډ څ ډ ډ ژ ډ ډ ډ څ خ
ز ڤ ڇ ژ ږ ږ ژ د ڇ

Division

Scale 1:2000

Date 06/12/2025

GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



Man-made Features

- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls

Slope Features

قوخ څچ چ څچ څ
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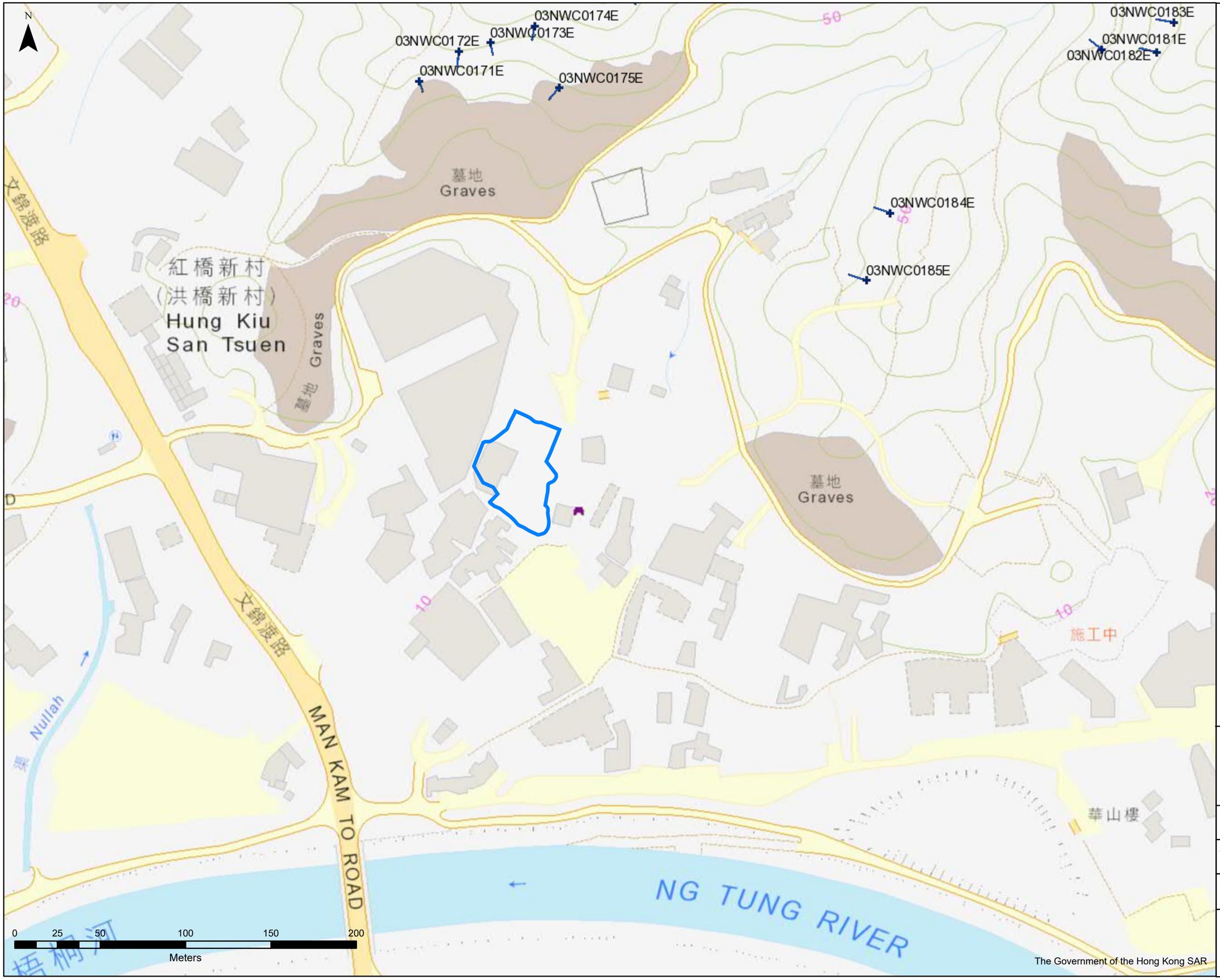
Division

Scale 1:2000

Date 06/12/2025

GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



ENTLI Crown

- Recent
- Relict

ENTLI Trail

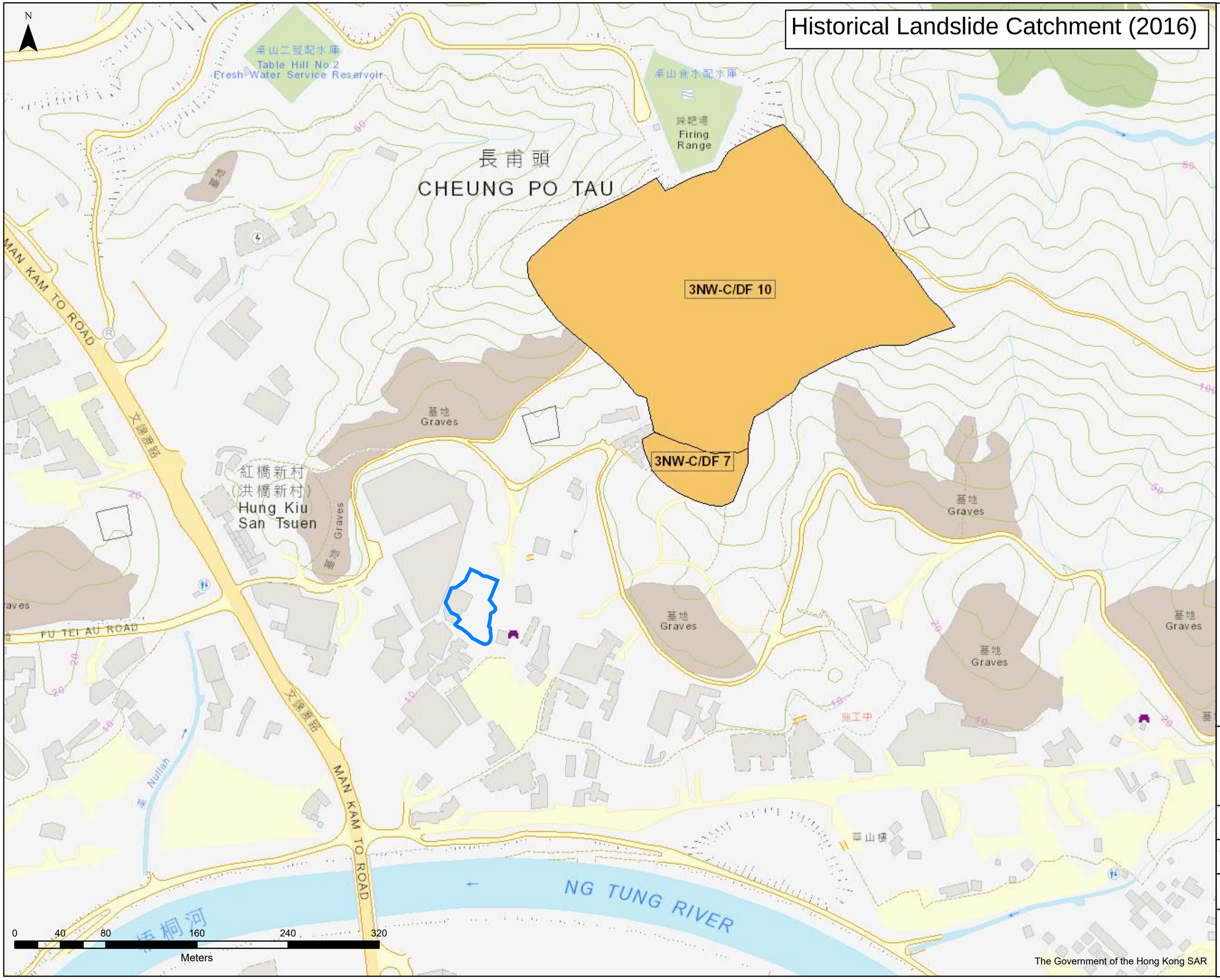
- Recent
- Relict

تۇخ ثچ خخ
جچثچخ

Division	
Scale	1:2000
Date	06/12/2025

GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Historical Landslide Catchment (2016)



Historical Landslide Catchment

The Government of the Hong Kong SAR

تۈخ خ چ خچخ ڈيڤۈر يرّ تجڤڑ ڈيڤۈرررڑڈ خ رّ ڈ رّ ڈ ڤ ڈ ځ	
Division	
Scale	1:3000
Date	06/12/2025

GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Appendix A – SIMAR Report

Slope Maintenance Responsibility Report (3NW-C/F22)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**3NW-C/F22**		**Sub-Division**	1
	Location	Within DD52 LOT137 and LOT138 and adjoining Government land, off Man Kam To Road, Hung Kiu San Tsuen, Sheung Shui		
	Responsible Lot/Party	Lands Department	**Maintenance Agent**	Lands Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		
2	**3NW-C/F22**		**Sub-Division**	2
	Location	Within DD52 LOT137 and LOT138 and adjoining Government land, off Man Kam To Road, Hung Kiu San Tsuen, Sheung Shui		
	Responsible Lot/Party	DD52 LOT137	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		
3	**3NW-C/F22**		**Sub-Division**	3
	Location	Within DD52 LOT137 and LOT138 and adjoining Government land, off Man Kam To Road, Hung Kiu San Tsuen, Sheung Shui		
	Responsible Lot/Party	DD52 LOT138	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		

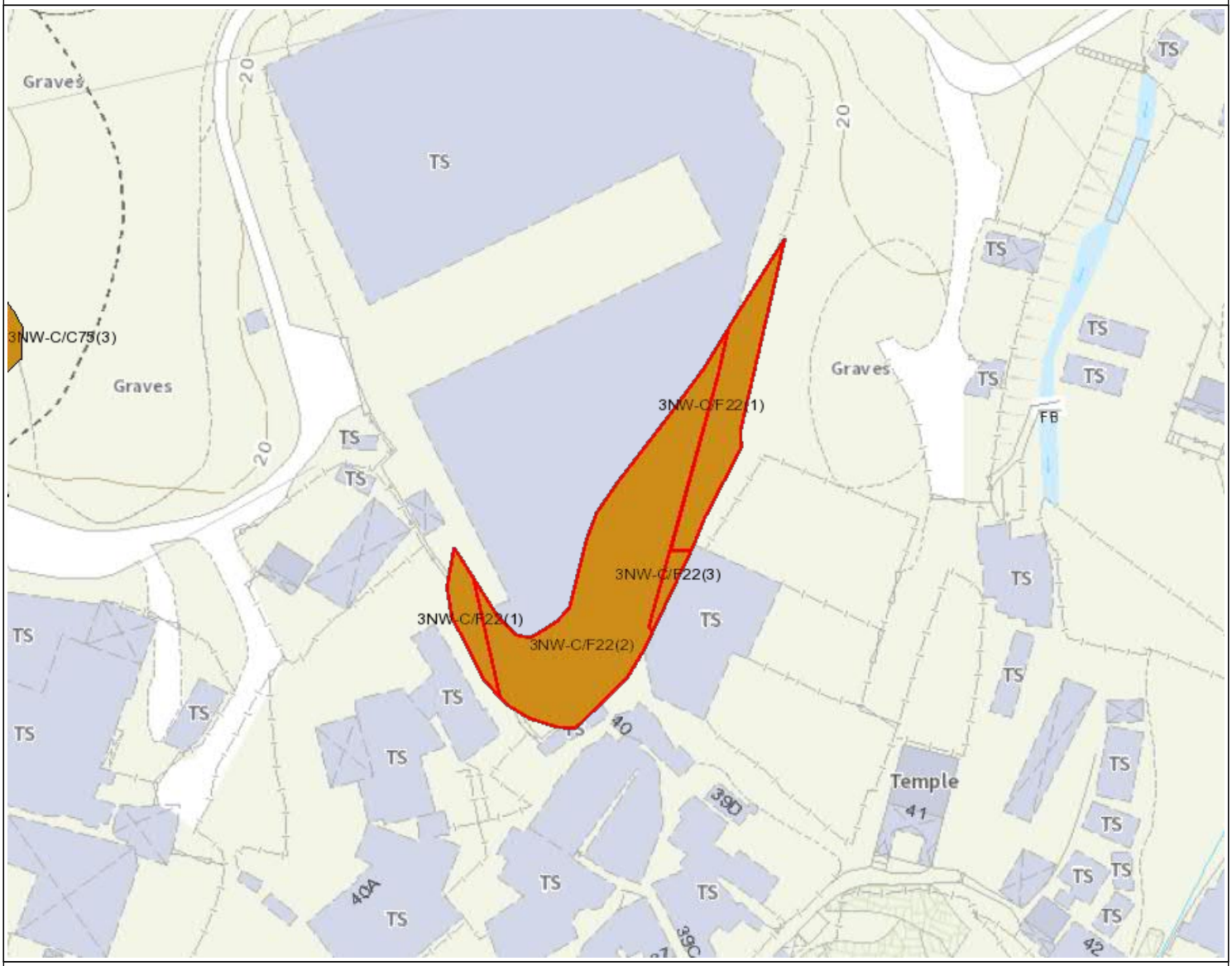
- End of Report -

Notes:

(i) The location plan in Annex is for identification purposes of slope(s) only.

(ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

Location Plan



Legend

- Slope Area(s)
- Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties

ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

This Plan is **NOT TO SCALE** and intended for **IDENTIFICATION** only. All information shown on this plan **MUST** be verified by field survey.

Printed on: 12/01/2026

Appendix B – SIS Records

BASIC INFORMATION

Location:	FU TEI AU, SHEUNG SHUI, NEW TERRITORIES
Registration Date:	24-10-1997
Ranking Score (NPRS):	13 (LPMit)
Date of Formation:	post-1977
Date of Construction/ Modification:	
Data Source:	LPM
Approximate Coordinates:	Easting : 831124 Northing : 842087

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Non-dangerous goods storage site
Distance of Facility from Crest (m):	0
Facility at Toe:	Cottage, licensed and squatter area
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 9 Length (m): 148 Average Angle (deg): 30

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1 Mixed Feature Party: Lands D Agent: Lands D Land Cat.: 5b(vi) Reason Code: 62 MR Endorsement Date: 05-03-2015
(2) Sub Div.: 2 Mixed Feature Party: DD52 LOT137 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 05-03-2015
(3) Sub Div.: 3 Mixed Feature Party: DD52 LOT138 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 05-03-2015

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	06-11-2014
Data Source:	LPM
Slope Part Drainage:	N/A
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 95 Chunam: 0 Shotcrete: 0 Other Cover: 5
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

N/A

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: 15215_1_5 Part: 1 Checking Status: No checking records Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	3NW21D8
Map Sheet Reference (1:1000):	3NW-21B
Aerial Photos:	A05553-4 (1986),
Nearest Rainguage Station (Station Number):	Sheung Shui Water Treatment Plant, Fu Tei Au Road(N34)
Data Collected On:	06-11-2014
Date of Construction, Subsequent Modification and Demolition:	Modification: Constructed Before: 1986 After: 1982
Related Reports/Files or Documents:	File/Report: LWC Ref. No.: GC4/1/2-5(6)f(3A)&GC4/1/2-3f(9) pt.VI File/Report: LWC Ref. No.: GC4/1/2-5(6)f(3A)&GC4/1/2-3f(9) pt.VI File/Report: Other Ref. No.: SIRST Field Sheet File/Report: Other Ref. No.: SIRST Field Sheet
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	Agreement No.: CE30/2011 Report No.: S2R 59/2014

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 21/11/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	MW
Section No:	1-1
Height(m):	
Type of Toe Facility:	Cottage, licensed and squatter area
Distance from Toe(m):	0
Type of Crest Facility:	Non-dangerous goods storage site
Distance from Crest(m):	0
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:
Action By: N/A
Non-routine Maintenance:
Action By: N/A

eLPMIS

LPM/LPMit Details Report

LPM Study Feature No.:	3NW-C/F 22
Location:	Hung Kiu Sun Tsuen, Fu Tei Au
District Council:	North
Maintenance Responsibility (At the Time of Selection):	Mixed
Responsible Party for Maintenance of Government Portion:	Lands D
Private Lot No.:	DD52 LOT137,DD52 LOT138

LPM/LPMit Study

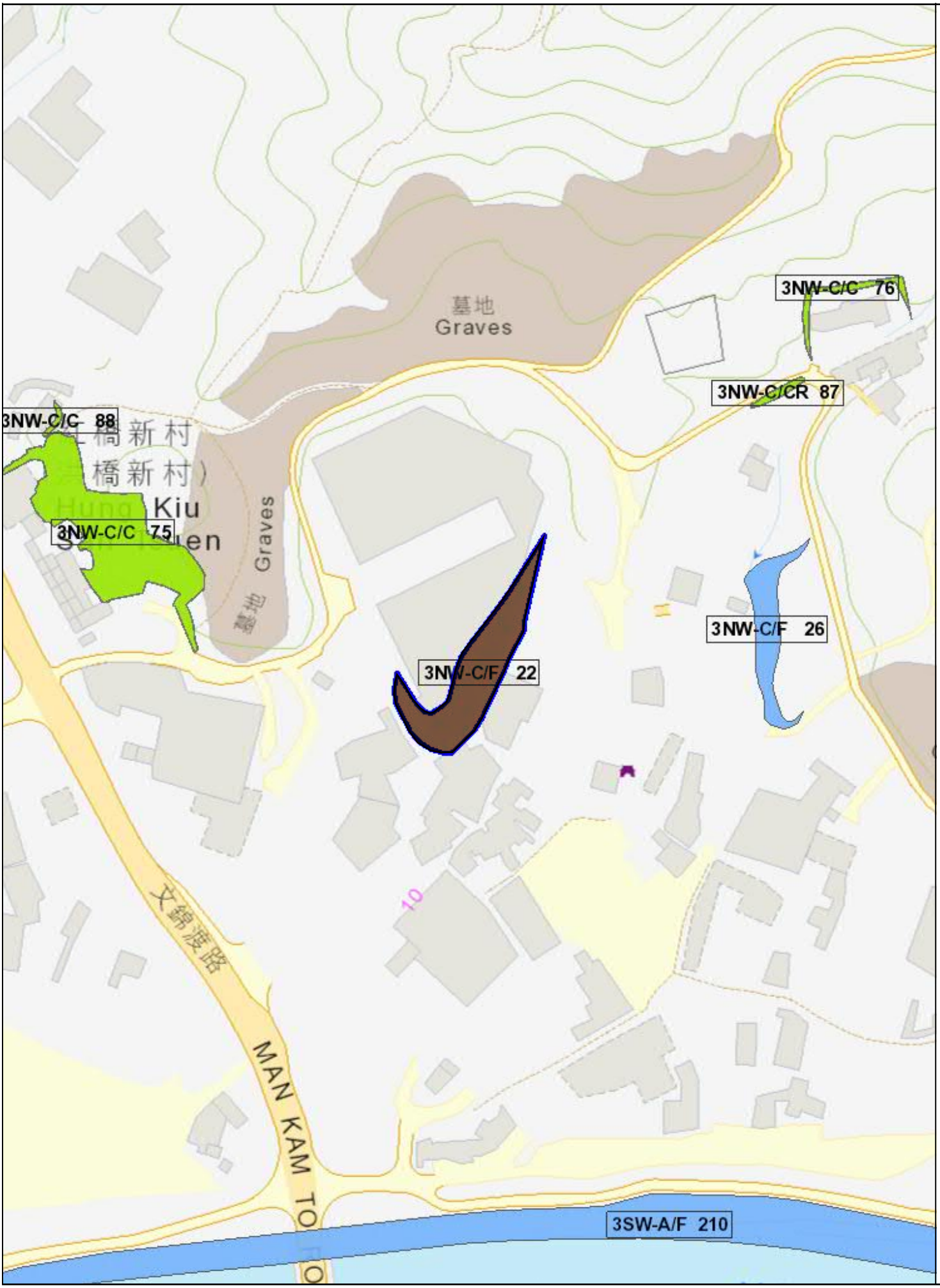
Agreement No.:	CE30/2011
Study Type:	Stage 2 Study
Consultant:	Halcrow China Ltd.
GEO Managing Section / Engineer:	SS / SS2
Study Status:	Study completed
Design Approach:	N/A
Option Assessment Accepted:	N/A
Study Report No.:	S2R 59/2014
Programme / Actual Commencement:	05-07-2013
Programme / Actual Completion:	08-09-2014
Report Recommendation (For Stage 2 Study):	No action required
District Check Status:	N/A
Checking Certificate No.:	N/A
GEO Engineer's Remarks:	N/A

LPM/LPMit Works

Works Contract No.:	N/A
GEO Managing Section / Engineer:	N/A / N/A
Contractor:	N/A
Progress Status:	N/A
Reason of Study Termination / Works Deletion (If Necessary):	N/A

Forecast Commencement Date:	N/A
Forecast Completion Date:	N/A
Completion Cert. Issued:	N/A
Site Handed Over to Maintenance Department on:	N/A
Estimated Cost for Upgrading (HK$M):	N/A
Maintenance Manual No.:	N/A
Actual Works:	N/A
No. of Tree Felled:	N/A
No. of Tree Planted (Incl. Transplant):	N/A
% Bare of Slope Surfacing:	N/A
% Vegetated of Slope Surfacing:	N/A
% Shotcrete of Slope Surfacing:	N/A
Other Hard Surface of Slope Surfacing:	N/A

PHOTO


墓地
Graves
3NW-C/C 76
3NW-C/CR 87
3NW-C/C 88
3NW-C/C 75
3NW-C/F 26
3NW-C/F 22
3SW-A/F 210
MAN KAM TO

Appendix C – Schedule Area Plan

HONG KONG 1:20 000

香港 1:20 000

后 海 灣
HAU HOI WAN
(DEEP BAY)

TSWTL 28

BOUNDARY OF AREA NUMBER 2 OF THE SCHEDULED AREAS

BOUNDARY OF AREA NUMBER 2 OF THE SCHEDULED AREAS

Signed: _____
(G. Barnes)
Secretary for Planning, Environment and Lands

Dated: 8th of June 1990

	initial	name	date
drawn		C. C. MAK	30-10-1989
checked		P. J. STRANGE	30-10-1989

drawing title

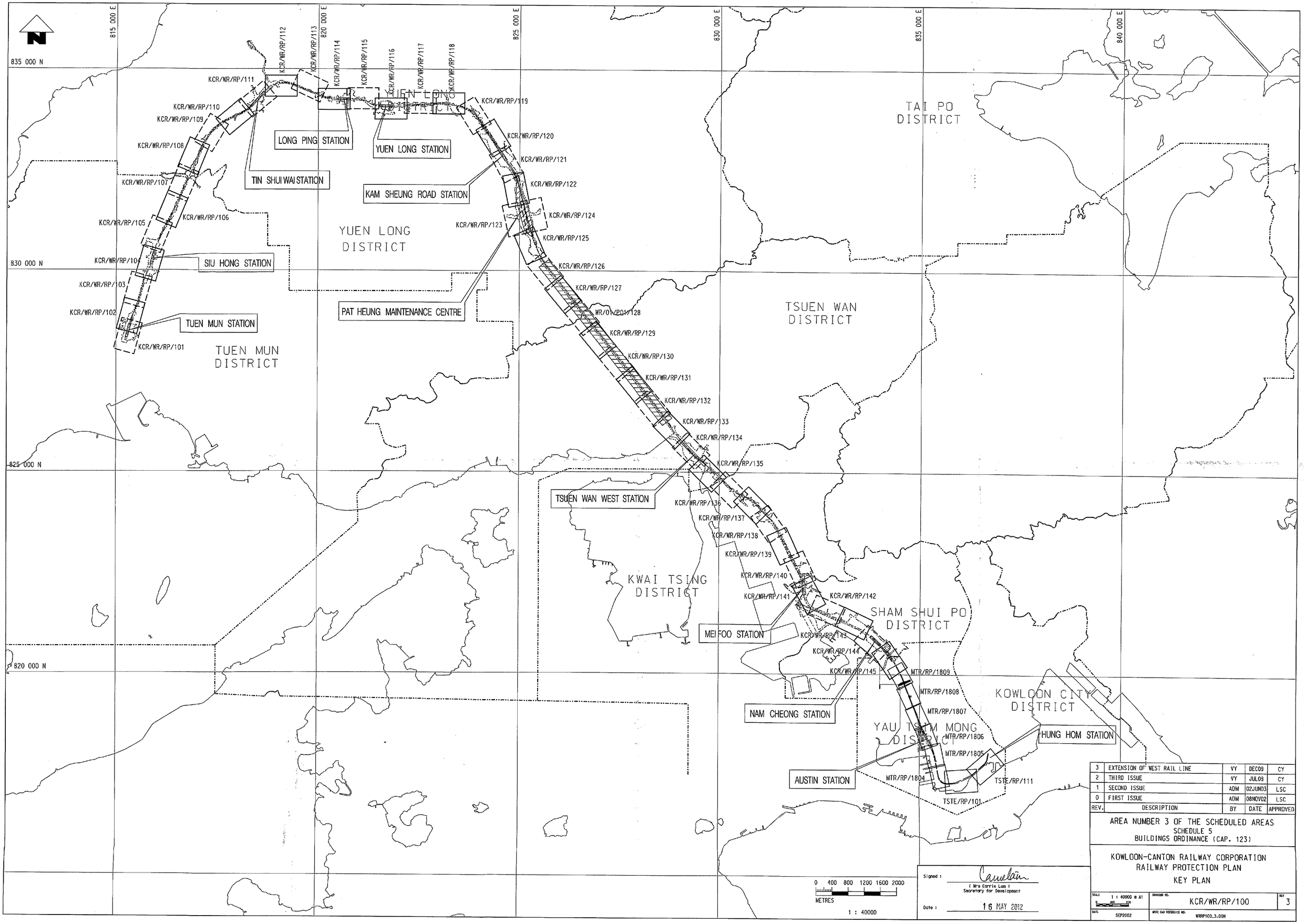
AREA NUMBER 2 OF THE SCHEDULED AREAS

drawing no.
GS-SP/714-1

scale
1:20 000

office
PLANNING DIVISION
GEOTECHNICAL CONTROL OFFICE

CIVIL ENGINEERING SERVICES DEPARTMENT
HONG KONG



REV.	DESCRIPTION	BY	DATE	APPROVED
3	EXTENSION OF WEST RAIL LINE	VY	DEC09	CY
2	THIRD ISSUE	VY	JUL09	CY
1	SECOND ISSUE	ADM	02JUN03	LSC
0	FIRST ISSUE	ADM	08NOV02	LSC

AREA NUMBER 3 OF THE SCHEDULED AREAS
SCHEDULE 5
BUILDINGS ORDINANCE (CAP. 123)

KOWLOON-CANTON RAILWAY CORPORATION
RAILWAY PROTECTION PLAN
KEY PLAN

Signed : Carrie Lam
(Mrs Carrie Lam)
Secretary for Development

Date : 16 MAY 2012

SCALE 1 : 40000 @ A1
DRAWING NO. KCR/WR/RP/100
REV 3
DATE SEP2002
MTRC CAD REFERENCE NO. WRRP1CO_3.DGN

APPENDIX D - Existing Trial Pit TP-PP1 (about 150m west of site)

006883

金門(香港)有限公司
Gammon (Hong Kong) Limited
怡和

Gammon
(Hong Kong) Limited

怡和

SITE INVESTIGATION REPORT
JOB NO. 133

EDD CONTRACT NO.GC/85/08
W.O. Q7/2/15.4

IMPROVEMENT TO MAN KAM TO ROAD FROM
JOCKEY CLUB ROAD TO LIN MA HANG ROAD

DATA BANK

Boreholes plotted by
Geological Survey

M/F No. 7237, 7238

GEOTECHNICAL
INFORMATION UNIT

Report No. 6883

AREA Ref.	
	3NW 16D
	3NW 21B, D
	3SW 1B

E 6 FEB 1986

CLIENT

GEOTECHNICAL CONTROL OFFICE
6/F., EMPIRE CENTRE
KOLWOON

CONTRACTOR

GAMMON (HONG KONG) LIMITED
33/F., HOPEWELL CENTRE
183 QUEEN'S ROAD EAST
HONG KONG

Boreholes plotted by
Geological Survey

ITE INVESTIGATION REPORT
JOB NO. 133

EDD CONTRACT NO. GC/85/08
W.O. Q7/2/15.4
IMPROVEMENT TO MAN KAM TO ROAD FROM
JOCKEY CLUB ROAD TO LIN MA HANG ROAD

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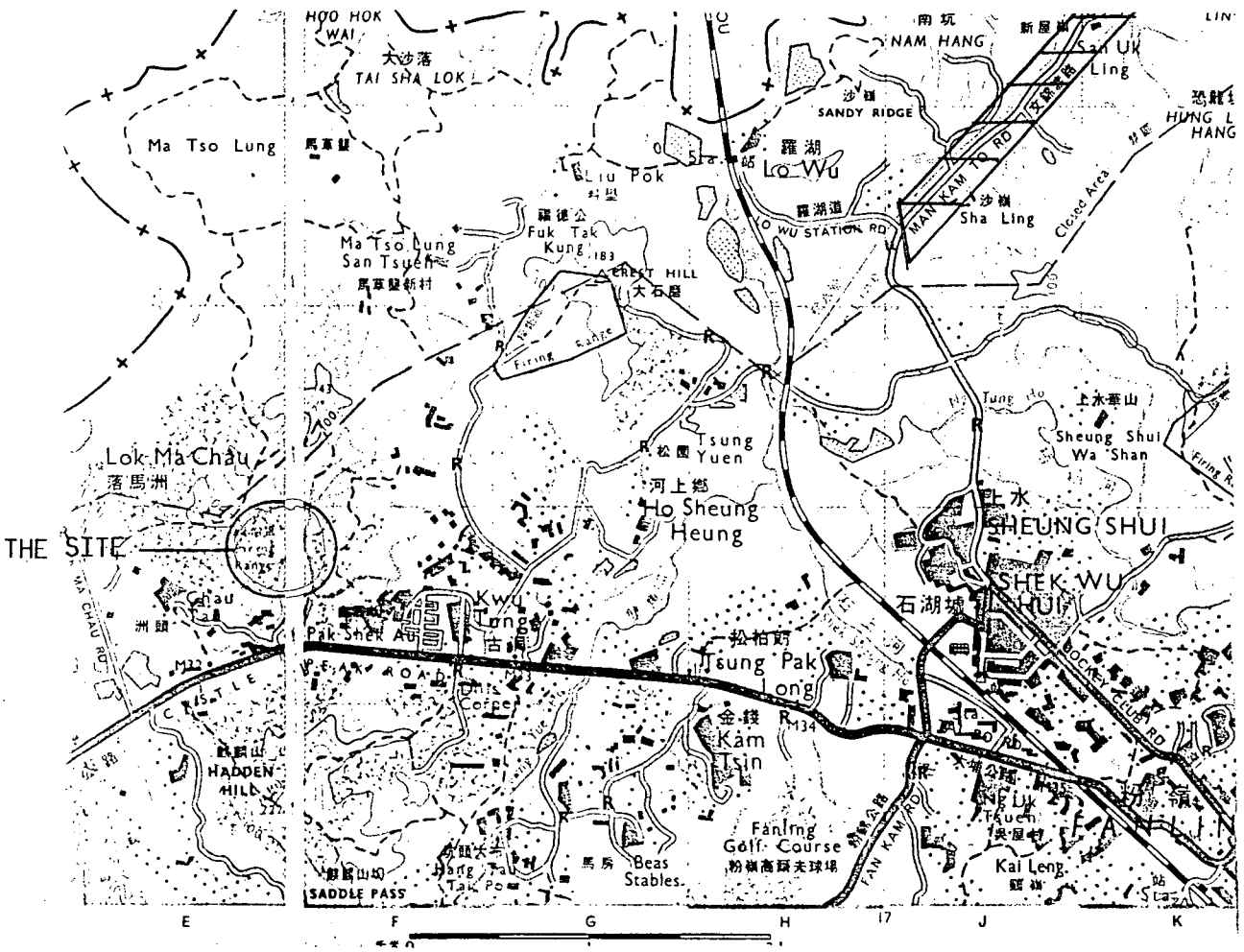

KEY PLAN

Job No: 133

EDD CONTRACT NO. GC/85/08
W.O. Q7/2/15.4

Location: IMPROVEMENT TO MAN KAM TO ROAD FROM JOCKEY CLUB ROAD TO LIN MA HANG ROAD

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
GPO Box 9711 Hong Kong

Gammon (Hong Kong) Limited
A Subsidiary of Jardine, Matheson & Co., Ltd.
Civil Engineers & Contractors
33rd Floor, Hopewell Centre
183 Queen's Road East
Tel: 5-283941
Telex. HX 73826

CONTRACT DATA SUMMARY

Project Name EDD Contract GC/85/08 SITE INVESTIGATION N.T. - EAST	Site Name IMPROVEMENT TO MAN KAM TO ROAD FROM JOCKEY CLUB ROAD TO LIN MA HANG ROAD	Date : to Official only
S.I. Contractor : Gammon (H.K.) Ltd	Client : GCO	G.C.O. Data Bank No. :
Contractor Job No. : 133	Job Ref. No. Q7/2/15. 4	File Ref. :

FIELDWORK SUMMARY

Boreholes Total No. : 21	Method : Rotary	Date : 6/11/85 to 6/12/85
Pits/Trenches/Caissons : No. 9		
Probes : No. -		
Piezometers : No. 12		
Insitu Tests : No. -	Types -	
Geophysics : Traverses -	Type -	

LABORATORY TESTING SUMMARY

Total No. of Tests : Date to

Soil	Physical Properties	LL	PL	Grading	M/C
		SG	Ym/Yd		
	Strength Tests	$\overline{CU}$	CD	UU	Shear Box CD
	Compaction & CBR Tests	Standard	Modified		CBR
	Oedometer & Perm. Tests	Cv	K —		
	Others				

Rock	Y	Pt load	UC	Shear Box	US Vel.	

Location Plan

SCALE 1 : 20 000 / 5 000 Derived from : 20 000 Sheet _____ / 5 000 Sheet _____

Attach 1 : 5 000 or 1 : 20 000 plan in this space

	S 1	Laboratory	GEOTECHNICAL CONTROL OFFICE
Contractor	Gammon (HK) Limited		ENGINEERING DEVELOPMENT DEPARTMENT
Work Order No.	Q7/2/15.4		

Gammon
(Hong Kong) Limited

怡和

SITE INVESTIGATION REPORT
JOB NO 133

EDD CONTRACT NO. GC/85/08
W.O. Q7/2/15.4
IMPROVEMENT TO MAN KAM TO ROAD FROM JOCKEY CLUB ROAD TO LIN MA HANG ROAD

1. Introduction

In October 1985, Gammon (Hong Kong) Limited was awarded a two year term contract to carry out site investigation and associated geotechnical works in the Eastern New Territories for the Geotechnical Control Office of the Engineering Development Department.

This particular report presents the results of a land site investigation for the Improvement to Man Kam To Road, New Territories (see Key Plan). The site work was carrried out during the period from 6-11-85 to 6-12-85.

2. The Site

The site is located approximately between 31048E, 31363E to 41509N, 43521N near Sheung Shui.

3. Geology

According to the 1 : 50 000 scale geological map of Hong Kong (1972), the site is underlain by Metamorphosed sedimentary and Volcanic rock of Lok Ma Chau Formation.

It should be noted that decomposition of the bedrock is common in Hong Kong and at this completely to highly decomposed VOLCANIC was encountered to between 0.0m and 10.0m. In addition a layer of Alluvium/Fill which varied between 6.3m and 4.0m in thickness was encountered overlying the decomposed VOLCANIC.

3 SW 1B
3 NW 21B, D
3 NW 16D.

4. Fieldwork

4.1 Drillholes

21 drillholes (B1-B8, D2-D9, S1-S5) were sunk at the positions given on the Drillhole Location Plan, using water flush rotary drilling techniques employed 106(120mm) casings. Standard penetration tests with Liner samples and Mazier samples were taken in the superficial deposits and completely decomposed material as specified and the information is reported at the relevant depth as specified and the information is reported at the relevant depth on the drillhole log. the sample depth given refers to the base of the sample.

Drillholes were extended to the depth specified in the works order or as directed on site. In rock or boulders, TNW or T2101 water flush double tube swivel core drilling was employed to produce rock cores. The cores were photographed and have been presented with the relevant drillhole log.

During drilling regular water level readings were taken before and after overnight rest periods and these readings are reported in the drillhole logs.

The soils encountered in the drillholes have been described generally in accordance with BS5930, the Code of Practice for Site Investigations. the classification of the descriptions used is presented in Appendix A.

The ground levels at the drillholes were taken by Gammon (Hong Kong) Limited and drillholes were sunk at positions specified by the Geotechnical Control Office.

4.2 Trial Pits

9 trial pits (PP1, PP2, PP4, PP5, PS1-PS5) were excavated to 2.5m to inspect the ground conditions. One block sample was taken 1.5m depth in each trial pit for testing.

4.3 Field Installations

Piezometers were installed in D2-D9, S1-S3 to the depths instructed by the Engineer on site. The piezometer were of the Casagrande type with porous tips connected to 19mm internal diameter P.V.C. riser pipes. The installation details have been presented in the section of Piezometer Details. Groundwater level readings taken in the piezometer are given in the section of Piezometer Readings.

APPENDIX A - SOIL AND ROCK DESCRIPTIONS

SOIL DESCRIPTION

COHESIVE SOILS For the preparation of borehole logs the soil description may report the following information as appropriate :

Soil strength (consistency)
Bedding (if present)
Colour
Silt,sand or gravel content
Soil name (in Capitals)
Other qualifying remarks

A. SOIL STRENGTH (CONSISTENCY)

Designation	Undrained Shear Strength kN/m^2	Field Test
Very soft	0 to 20	Very easily squeezed through fingers.
Soft	20 to 40	Easily penetrated by thumb. Easily moulded with fingers.
Firm	40 to 75	Difficult to penetrate by thumb. Moulded only by heavy pressure.
Stiff	75 to 150	Marked only by thumb. Cannot be moulded.
Very Stiff or Hard	$>$ 150	Marked only by thumb or knife.

In cases of difficulty in assessing soil strength any two of the above terms can be used as follows, soft to firm, firm to stiff, etc.

B. BEDDING (IF PRESENT)

Bedding	Spacing
Very thickly bedded	$>$ 2 m
Thickly bedded	600 mm - 2 m
Medium bedded	200 mm - 600 mm
Thinly bedded	60 mm - 200 mm
Very thinly bedded	20 mm - 60 mm
Extremely thinly bedded	6 mm - 20 mm
Intensely bedded	$<$ 6 mm

Terms such as fissured or dessicated may be more appropriate than the terms presented above.

C. COLOUR

1.	2.	3.
Light	Pinkish	Pink
Dark	Reddish	Red
Mottled	Yellowish	Yellow
	Brownish	Brown
	Olive	Olive
	Greenish	Green
	Bluish	
		White
	Greyish	Grey
		Black

D. SECONDARY CONSTITUENTS

Should other constituents be in the samples the soil name should be qualified to give an indication of the proportions of the other constituents.

% of sand, silt or gravel	Term	Soil Name
Less than 5	-	CLAY/SILT
5 - 15	slightly (sandy	
	(gravelly	CLAY/SILT
15 - 35	(sandy	
	(gravelly	CLAY/SILT
35 - 65	very (sandy	
	(gravelly	CLAY/SILT
Greater than 65	Sample to be described as non-cohesive	

E. SOIL NAME

Must be presented in CAPITAL letters.

F. OTHER QUALIFYING REMARKS

Here any additional relevant information may be added e.g. CLAY with occasional cobbles, CLAY with slight organic odour, CLAY with traces of decomposed vegetation.

Examples

i) Firm closely fissured yellowish brown very sandy CLAY
ii) Stiff very thinly bedded grey silty CLAY with occasional shell fragments

SOIL DESCRIPTION

NON-COHESIVE SOILS

Relative density
Colour
Secondary constituents
Grain size
Soil name (in capitals)
Other qualifying remarks

A. RELATIVE DENSITY

Terms	'N' Value (for superficial soils)*	'N' Value (for residual soils)**
Very loose	0 - 4	0 - 3
Loose	4 - 10	3 - 6
Medium dense	10 - 30	7 - 50
Dense	30 - 50	51 - 250
Very dense	Over 50	Over 250

B. COLOUR

1.	2.	3.
Light	Pinkish	Pink
Dark	Reddish	Red
Mottled	Yellowish	Yellow
	Brownish	Brown
	Olive	Olive
	Greenish	Green
	Bluish	
		White
	Greyish	Grey
		Black

C. SECONDARY CONSTITUENTS

For SANDS and/or GRAVELS with the presence of clay or silt the following is adopted :

% of clay or silt	Term	Soil Name
Under 5	slightly clayey slightly silty	SAND or GRAVEL
5 to 15	clayey silty	SAND or GRAVEL
15 to 35	very clayey very silty	SAND or GRAVEL

Greater than 35% clay or silt sample to be described as cohesive.

For SAND and GRAVEL mixtures the following is adopted :

Term	Composition
Slightly sandy GRAVEL	up to 5% sand
Sandy GRAVEL	5% to 20% sand
Very sandy GRAVEL	over 20% sand
GRAVEL/SAND	about equal proportions of gravel and sand
Very gravelly SAND	over 20% gravel
Gravelly SAND	20 to 5% gravel
Slightly gravelly SAND	up to 5% gravel

D. GRAIN SIZE

Soil Grade	Particle Size	Field Identification
Clay	< 2 μm	Not visible with X 10 hand lens. Does not dilate on shaking. Adheres to the fingers when dry.
Silt	2 μm to 60 μm	Particles > 10 μm visible with a X10 hand lens. Dilates on shaking. Does not adhere when dry. Feels gritty on smooth surfaces.
Sand fine	60 μm to 200 μm	Particles > 60 μm visible to the naked eye. Fine sand feels gritty to the fingers.
medium	200 μm to 600 μm	
coarse	600 μm to 2 mm	
Gravel fine	2 to 6 mm	Visual identification
medium	6 to 20 mm	
coarse	20 to 60 mm	
Cobbles	60 to 200 mm	Visual identification
Boulders	> 200 mm	

E. SOIL NAME

Must be presented in CAPITAL letters.

F. OTHER QUALIFYING REMARKS

As for cohesive deposits additional significant information such as the presence of cobbles and boulders, organic matter or made ground material may be added.

Examples

a) Loose brown silty slightly gravelly fine and medium SAND with a little fine gravel.

b) Very dense red-brown sandy fine to coarse GRAVEL with occasional cobbles and boulders.

Ref. A. : Relative Density : * After Terzaghi & Peck. ** After Geotechnical Manual for Slopes, G.C.O., H.K. Govt.

ROCK DESCRIPTION

For the preparation of borehole logs the rock description may report the following information as appropriate in the order indicated :

Strength
Colour
Grain Size
State of decomposition (weathering)
Rock name
Discontinuities
Other qualifying remarks

A. STRENGTH

Term	Compressive Strength (MN/m^2)	Field Test
Very weak	< 1.25	Easily broken by hand
Weak	1.25 - 5	Broken by heavy hand pressure
Moderately weak	5 - 12.5	Broken by light tap with hammer
Moderately strong	12.5 - 50	Reasonable blow required to break
Strong	50 - 100	Broken only by heavy blows
Very strong	100 - 200	Chips/fragments when hit
Extremely strong	> 200	'Rings' when hit with hammer

B. COLOUR

1.	2.	3.
Light	Pinkish	Pink
Dark	Reddish	Red
Mottled	Yellowish	Yellow
	Brownish	Brown
	Olive	Olive
	Greenish	Green
	Bluish	
		White
	Greyish	Grey
		Black

C. GRAIN SIZE

Term	Size of Component particles	Equivalent soil grade
Very Fine grained	2 microns (not visible with X10 hand lens)	Clay
Fine grained	2 microns to 60 microns (grains larger than 10 microns visible using X10 hand lens)	Silt
Medium grained	60 microns to 2 mm (just visible to naked eyes)	Sand size
Coarse grained	2 mm - 60 mm	Gravel size
Very coarse grained	> 60 mm	Boulders & cobbles

D. STATE OF DECOMPOSITION (WEATHERING)

Grade	Degree of Decomposition	Diagnostic features in samples and cores
VI	Residual Soil	Rock is completely changed to a soil in which the original rock fabric is totally destroyed. The soil is normally bright red or yellow, less than 2 metres thick, can be excavated by hand and is susceptible to surface erosion.
V	Completely decomposed/ weathered	Rock is completely decomposed by weathering in situ but the rock texture is still recognisable. The rock in this state will disintegrate into gravel, sand, silt/clay particles with hand pressure or with the addition of water. Usually requires sophisticated coring techniques to effect recovery.
IV	Highly decomposed/ weathered	Rock is discoloured, discontinuities may be open and have discoloured surfaces, discontinuities may be altered. NX size cores can be broken by hand. Core recovered by very careful drilling but is often lost.
III	Moderately decomposed/ weathered	Rock considerably weathered throughout but possessing strength such that NX cores cannot be broken by hand.
II	Slightly decomposed/weathered	Rock slightly discoloured particularly adjacent to discontinuities.
I	Fresh rock	No discernable weathering/decomposition.

(Note that Grades IV to VI are usually described in accordance with the appropriate soils description)

E. ROCK NAME

APPENDIX A

ROCK DESCRIPTION

F. DISCONTINUITIES

Term	Spacing
Very widely spaced	> 2 m
Widely spaced	2 m to 600 mm
Medium/moderately spaced	600 mm to 200 mm
Closely spaced	200 mm to 60 mm
Very closely spaced	60 mm to 20 mm
Extremely closely spaced	< 20 mm

G. OTHER QUALIFYING REMARKS

At the end of the description comments can be made on the nature of joints and discontinuities, mineralisation and other factors that may be of engineering or descriptive importance.

Examples i) Strong dark grey medium grained slightly decomposed GNEISS. Widely spaced iron stained discontinuities.

ii) Moderately weak yellowish brown coarse grained micaceous SANDSTONE.

iii) Extremely strong dark greyish green medium grained fresh DOLERITE. Medium spaced open discontinuities.

H. TOTAL CORE RECOVERY, SOLID CORE RECOVERY, ROCK QUALITY DESIGNATION AND FRACTURE INDEX

TOTAL CORE RECOVERY (T.C.R.) - Defined as summed Length of all pieces of recovered core expressed as a percentage of Length drilled. When the core is highly fragmented the Length of such core is estimated by assembling the fragments and estimating the Length of core that the fragments appear to represent.

SOLID CORE RECOVERY (S.C.R.) - Defined as the Length of material which is recovered as solid core pieces at full diameter expressed as a percentage of the Length of core run.

ROCK QUALITY DESIGNATION (R.Q.D.) - Defined as the Length of solid core recovered in Lengths greater than 100 mm expressed as a percentage of the length of core run. Measurements are made along the core axis and core pieces must possess a full diameter to be included in the R.Q.D. value.

FRACTURE INDEX (F.I.) - Defined as the number of fractures per metre run, measured over any arbitrary length which is generally taken as the core run. However, if there is a marked change in fracture frequency during a run the fracture index should be calculated for each part of the run separately.

Where core is too highly fractured for fractureindex to be measured the term N.I. meaning NOT INTACT is inserted.

NOTE : Artificial fractures caused by core handling or by the drilling process are ignored when measuring the above values.

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CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826

CONTRACTOR:
WORKS ORDER NO: Q 7/2/15.4

SHORING:
LOGGED BY: W.K.Lui DATE: 12-11-85

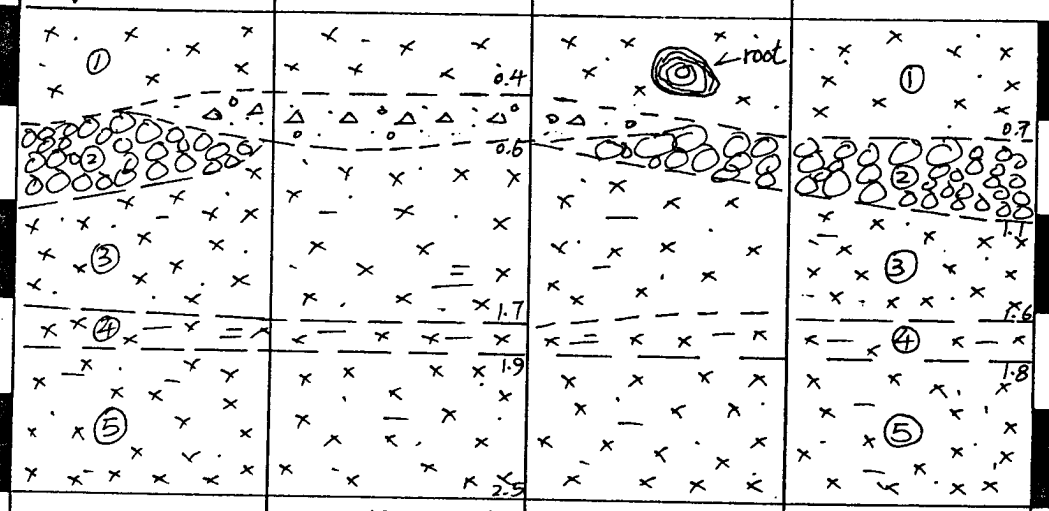
CO-ORDINATES: E 31017.7 N 41957.0
EXCAVATION DATES: 9-11-85

SLOPE REF. NO:
LOCATION: Man Kam To Road.

SAMPLES & TESTS

DEPTH (m)

DATUM = +8.2 mPD



Operation stopped at 2.5 m as given by Work Order.

Water table = 1.9 m b.g.l.

Remarks
Sidewalls
pumping
water
others

FACE A: FACE B: FACE C: FACE D:

LEGEND

DESCRIPTION

GR.

① Dark brown, sandy SILT with rubbish <FILL>

② Grey, fine to coarse gravel <FILL>

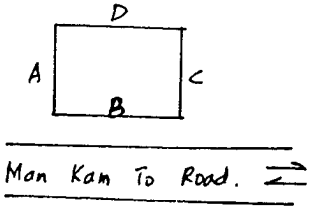
③ Yellowish grey and brown, clayey sandy SILT <ALLUVIUM>

④ Greyish white and grey, clayey SILT <ALLUVIUM>

⑤ Yellowish grey, clayey sandy SILT <COMPLETELY DECOMPOSED METAMORPHIC ROCK>

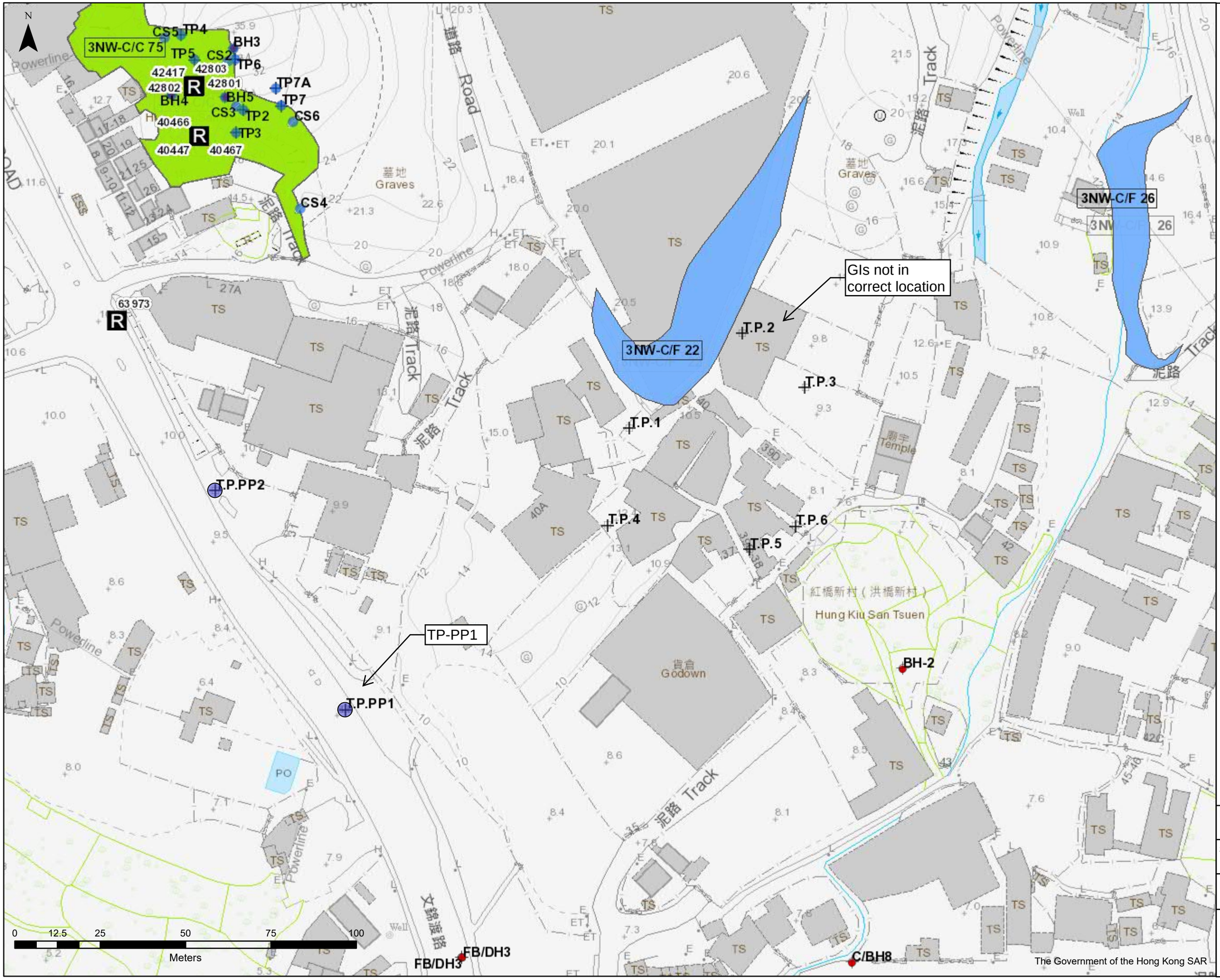
SYMBOL	SAMPLES/TESTS/WATER
●	Small dist. sample
◆	Large dist. sample
▬	Undist. sample, hori. ( )
▮	Undist. sample, vert. ( )
⊠	Block sample
⊥	Plate bearing test
U	Insitu density test
m	Moisture content test
▲	Water sample
↕	Seepage

PLAN (not to scale)



SHEET 1 OF 1

T.P.PPI



Man-made Features

- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls
- Slope Features
- R GIU Report
- GI with AGS

GI Location

- <all other values>
- Slope striping
- Cone Penetration Test
- GCO Probe
- Grab Samples
- Impression Packer Test
- Trial pit
- PR
- Rock joint survey
- Trial trench

Man-made Features

- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls
- GI
- Slope Features

Division	
Scale	1:1000
Date	13/01/2026

GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

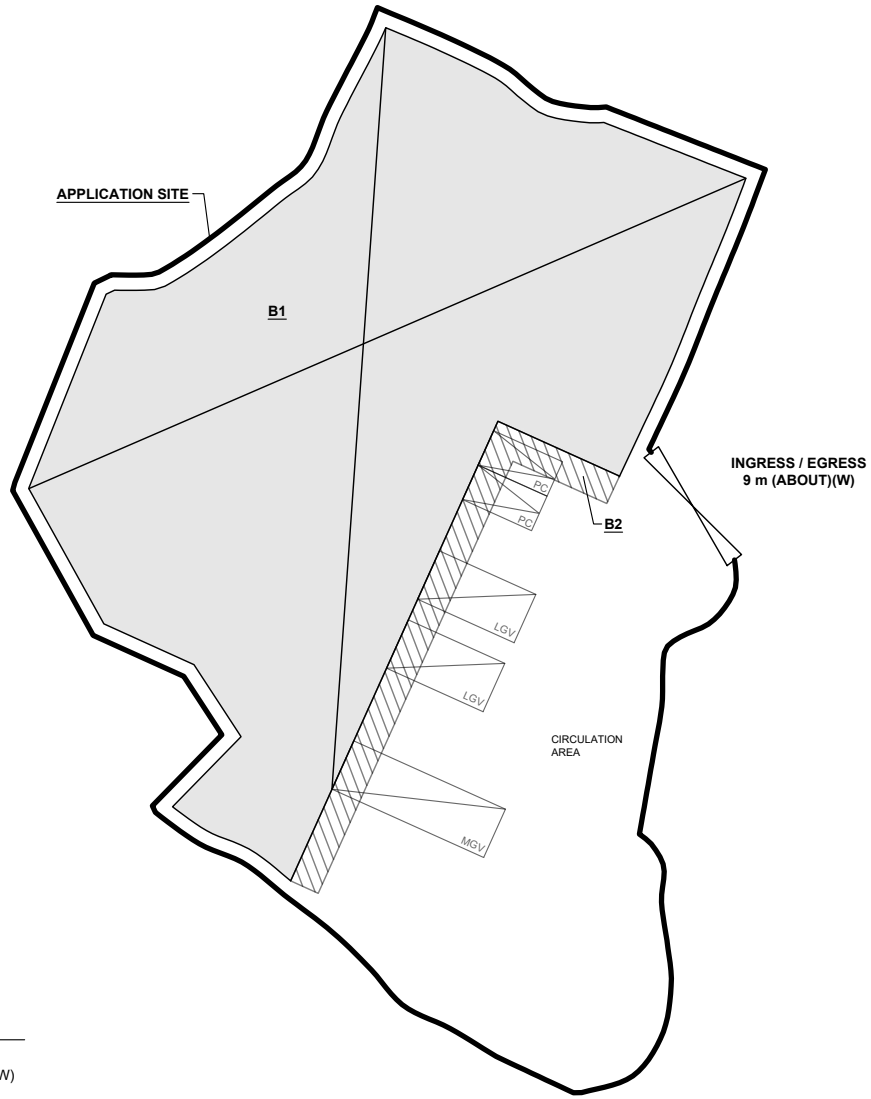
APPENDIX E - DEVELOPMENT LAYOUT PLAN

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA	: 2,151 m^2	(ABOUT)
COVERED AREA	: 1,316 m^2	(ABOUT)
UNCOVERED AREA	: 835 m^2	(ABOUT)
PLOT RATIO	: 1.2	(ABOUT)
SITE COVERAGE	: 61 %	(ABOUT)
NO. OF STRUCTURE	: 2	
DOMESTIC GFA	: N/A	
NON-DOMESTIC GFA	: 2,552 m^2	(ABOUT)
BUILDING HEIGHT	: 7 m - 15 m	(ABOUT)
NO. OF STOREY	: 1 - 2	

STRUCTURE	USE	COVERED AREA	GFA	BUILDING HEIGHT
B1	WAREHOUSE (EXCL. D.G.G.) SITE OFFICE, WASHROOM, FS WATER TANK AND PUMP ROOM	1,236 m^2 (ABOUT)	2,472 m^2 (ABOUT)	15 m (ABOUT)(2-STOREY)
B2	RAIN SHELTER FOR L/UL ACTIVITIES	80 m^2 (ABOUT)	80 m^2 (ABOUT)	7 m (ABOUT)(1-STOREY)
	TOTAL	**1,316 m^2 (ABOUT)**	**2,552 m^2 (ABOUT)**	

* *D.G.G.* - *DANGEROUS GOODS GODOWN*
L/UL - *LOADING / UNLOADING*



PARKING AND LOADING / UNLOADING PROVISIONS

NO. OF PRIVATE CAR PARKING SPACE	: 2
DIMENSION OF PARKING SPACE	: 5 m (L) x 2.5 m (W)
NO. OF L/UL SPACE FOR LIGHT GOODS VEHICLE	: 2
DIMENSION OF PARKING SPACE	: 7 m (L) x 3.5 m (W)
NO. OF L/UL SPACE FOR MEDIUM GOODS VEHICLE	: 1
DIMENSION OF L/UL SPACE	: 11 m (L) x 3.5 m (W)

SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

LEGEND

- APPLICATION SITE
- STRUCTURE
- PARKING SPACE (PC)
- LOADING/UNLOADING SPACE (LGV)
- LOADING/UNLOADING SPACE (MGV)
- INGRESS / EGRESS

NORTH
W E
S

PLANNING CONSULTANT
R-RICHES PLANNING LIMITED

PROJECT
PROPOSED TEMPORARY WAREHOUSE (EXCLUDING DANGEROUS GOODS GODOWN) WITH ANCILLARY FACILITIES FOR A PERIOD OF 5 YEARS

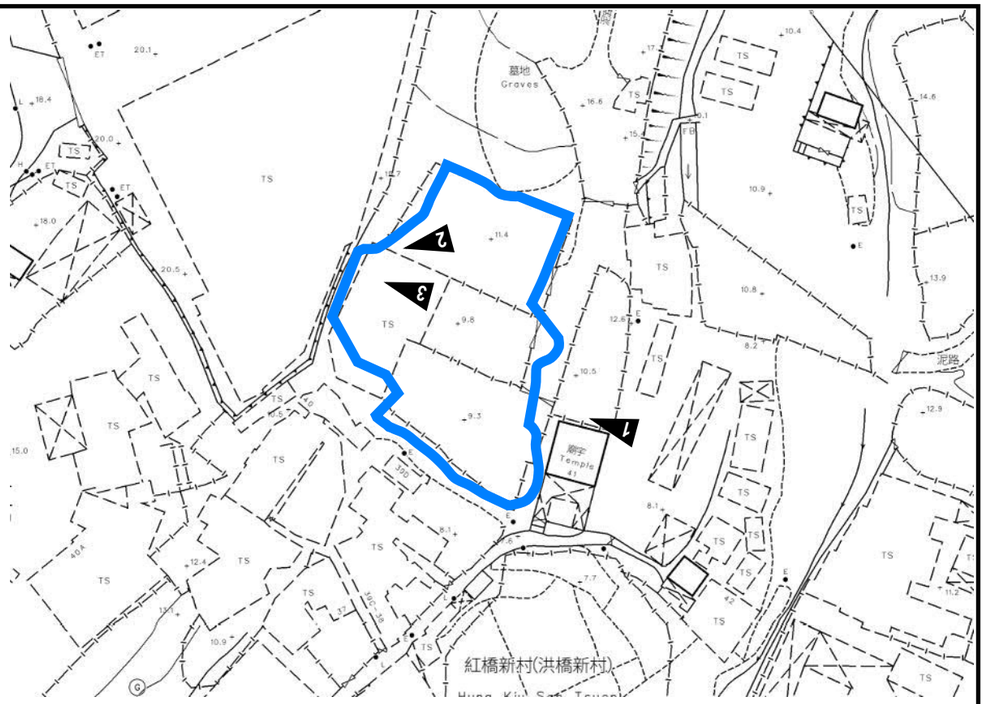
SITE LOCATION
LOT 138 (PART) IN D.D. 52, FU TEI AU, SHEUNG SHUI, NEW TERRITORIES

SCALE
1 : 500 @ A4

DRAWN BY	DATE
MN	2.6.2025
REVISED BY	DATE
APPROVED BY	DATE

DWG. TITLE
LAYOUT PLAN

DWG NO.	VER.
PLAN 4	001



PROJECT:

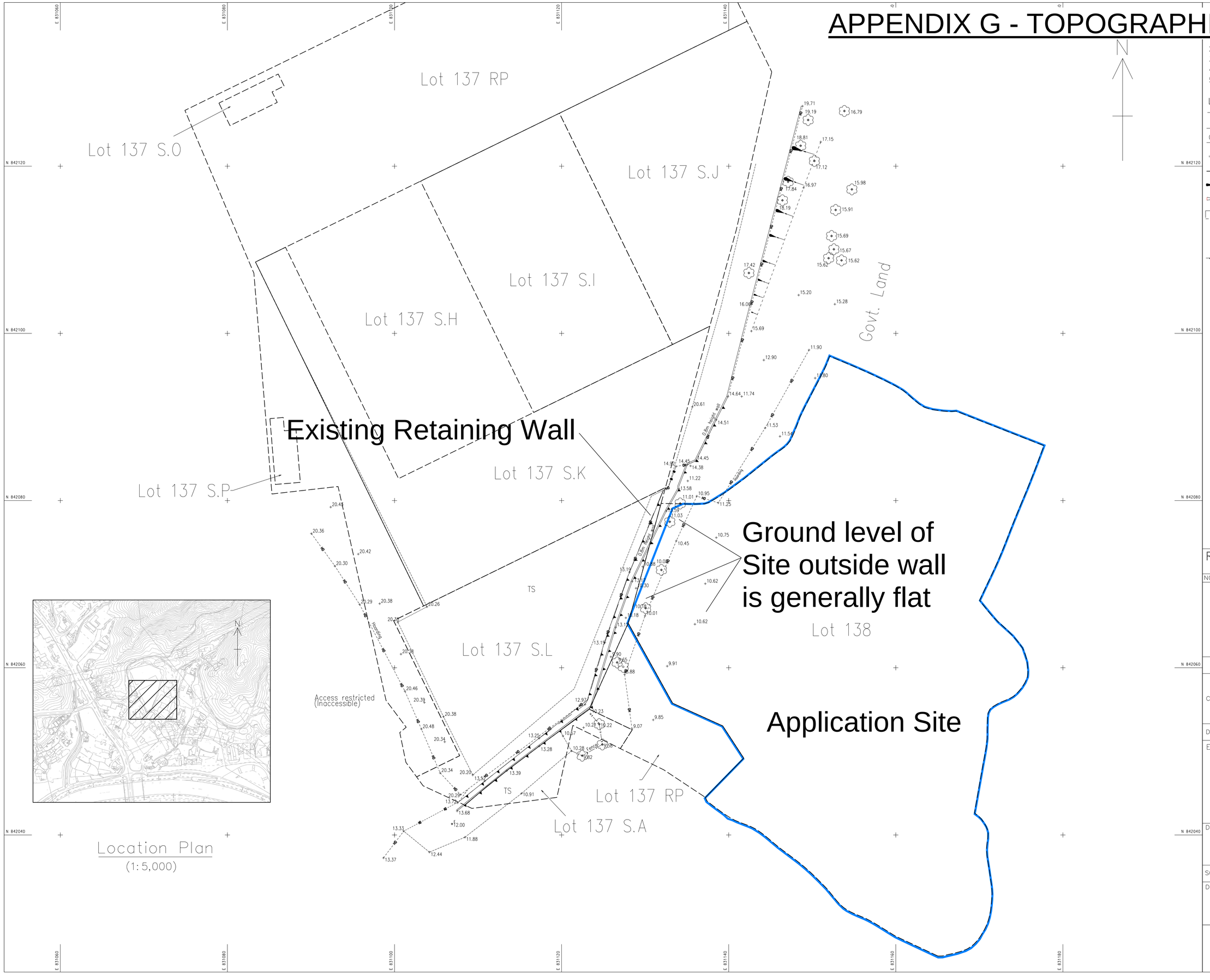
Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities for a Period of 5 Years in ´Other Specified Uses˝ annotated ´Port Back-up Uses˝ Zone

LOCATION:

Lot 138 (Part) in D.D. 52, Fu Tei Au, Sheung Shui, New Territories

VER	DESCRIPTION	DATE

APPENDIX G - TOPOGRAPHIC SURVEY



Location Plan
(1:5,000)

1. ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM.
2. CO-ORDINATES ARE OF HONG KONG 1980 GRID SYSTEM.
3. ALL LEVELS ALONG KERB ARE KERB BOTTOM LEVEL.
4. DATE OF SURVEY : 17 November 2025.
5. LOT BOUNDARIES AS SHOWN ON PLAN FOR IDENTIFICATION ONLY.

LEGEND:

- Road/Pavement
- HD — Hoarding
- CC/UC — Cover Channel/U-Channel
- Fence/Railing
- Lot Boundary
- Slope Symbol
- Gate
- TS — Temporary Structure
- Tree
- E — Electricity Pole
- Retaining Wall
- 5.12 — Spot Level

REVISIONS

NO	DESCRIPTION AND DATE	DWN	CKD	AUTH

INITIAL AND DESIGNATION

	NAME AND DESIGNATION	INITIAL	DATE
CHECKED	CHEUNG HIU YEUNG		NOV 2025
DRAWN	SIU HO MING		NOV 2025

Endorsed By:

LAM Tsun Cheuk Felix
Registered Professional Surveyor (LS)
Registration No: 3408

DRAWING TITLE
TOPOGRAPHIC SURVEY PLAN at Feature No. 3NW-C/F22 for Application No. A/NE-FTA/262

SCALE 1:200 (A1)

DRAWING NO.
2025/TOPO/004/01

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地理訊息產業(香港)有限公司 註冊專業測量師
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