

Application for Permission under Section 16 of The Town Planning Ordinance (Cap.131)  
Proposed Temporary Place of Recreation, Sports or Culture (Hobby Farm) with Ancillary Facilities for a Period of 3  
Years and Associated Filling of Land at Lots 1275 (Part), 1279 (Part), 1280, 1281 (Part), 1282 and 1284 (Part) in D.D. 96,  
Ma Tso Lung, New Territories

Geotechnical Planning Review Report

**Geotechnical Planning**  
**Review Report for**  
**Application for Permission under Section 16**  
**of The Town Planning Ordinance (Cap.131)**  
**Proposed Temporary Place of Recreation, Sports or**  
**Culture (Hobby Farm) with Ancillary Facilities for a**  
**Period of 3 Years and Associated Filling of Land at**  
**Lots 1275 (Part), 1279 (Part), 1280, 1281 (Part), 1282**  
**and 1284 (Part) in D.D. 96, Ma Tso Lung, New**  
**Territories**

**January 2025**

**W.K.Poon**

## 1. INTRODUCTION

W.K. Poon was appointed to carry out Geotechnical Planning Review Report (GPRR) for the application for permission under Section 16 of the Town Planning Ordinance (Cap.131) for Proposed Temporary Place of Recreation, Sports or Culture (Hobby Farm) with Ancillary Facilities for a Period of 3 Years and Associated Filling of Land at Lots 1275 (Part), 1279 (Part), 1280, 1281 (Part), 1282 and 1284 (Part) in D.D. 96, Ma Tso Lung, New Territories.(hereafter collectively called "the Site")

This GPRR is made based on desk study and review of available documentary information and proposed development plan. The geology and site conditions are described. Potential geotechnical constraints are identified in the assessment.

## 2. THE SITE AND NEARBY MAN-MADE SLOPE FEATURES

The site is a filling land (Approx. 0.2m higher than surrounding ground) at Ma Tso Lung Road, Ma Tso Lung, New Territories. Site photos taken in December 2024 are presented in Appendix A (see Photos A to D). General view and close up view of the Site is shown on Photo A, B, C and D. The location plan and the aerial view of the Site is presented in Figures 1 and 2, respectively.

According to the available SIMAR reports retrieved from Lands Department and SIS records obtained from Geotechnical Engineering Office (GEO), there are 9 nos. of registered geotechnical features lies within or in the vicinity of the site (see Figure 4).

The features and the responsible lot/party are tabulated below:

Feature No.	Sub-division	Owner/Department
2NE-D/C50	-	Lands Department
2NE-D/C51	-	Lands Department
2NE-D/C48	-	Lands Department
2NE-D/C49	-	Lands Department
2NE-D/CR53	-	Lands Department
2NE-D/CR75	-	Lands Department
2NE-D/CR76	-	Lands Department
2NE-D/CR 143	1	DD96 Lot 1275
	2	DD96 Lot 1283
	3	Water Supplies Department
2NE-D/F17	1	DD96 Lot 1275
	2	DD96 LOT1274
	3	Lands Department

A copy of the SIMAR reports and slope records are enclosed in Appendix B and C, respectively. The location of the above captioned features is also presented in Figure 3.

### **3. Desk Study**

Desk study has been carried out to search and review the existing building records, previous ground investigation data and geotechnical study reports kept by the Geotechnical Information Unit (GIU) of Geotechnical Engineering Office (GEO) and the Buildings Department (BD).

#### **3.1 Geotechnical Maps**

The geology of the Site is shown on the Hong Kong Geological Survey (HKGS) Map Geological Map of Hong King (Web-based Edition 2006). The local geology of the Site is presented in Figure 5(Appendix E) and described below.

##### **3.1.1 Solid Geology**

The 1:20,000 scale geological maps indicated that regional area around the Site is underlain by Deep Bay Granite of the Lok Ma Chau Formation in Carboniferous.

##### **3.1.2 Superficial Geology**

No superficial deposits has been recorded within or in the vicinity of Site. But approx. 0.2 m land filling on the site.

##### **3.1.3 Structural Geology**

No fault has been recorded within or in the vicinity of the Site. Several faults have been recorded on geological map to the northwest and northeast of the Site.

#### **3.2 Enhanced Natural Terrain Landslide Inventory**

In 1995, the GEO compiled the Natural Terrain Landslide Inventory (NTLI) from an interpretation of high-altitude (8,000ft and above) aerial photographs dated from 1945 to 1994 (King, 1999). In 2007, the GEO produced an Enhanced Natural Terrain Landslide Inventory (ENTLI) using low-altitude (8,000ft and below) aerial

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photographs to update the NTLI.

In accordance with GEO Report No. 138 (GEO, 2016), landslides are classed as either “Relict” or “Recent” , depending on their appearance in aerial photographs.

“Relict” landslides are defined as those where the main scarp is well-defined but vegetation has re-established on the scar on the earliest set of available aerial photographs. “Recent” landslides are defined as having occurred within the timespan of the aerial photograph coverage. These are typically identified as having a light tone on the aerial photographs and are bare of vegetation.

The ENTLI has no record of any relict landslides.

### 3.3 Relevant Previous Ground Investigation Works

No previous ground investigation has been taken place within the Site. The previous ground investigation reports adjacent to the site have been retrieved and summarized below:

GIU Report No,	GI Station Nos:	Report Title	GI Stations related to Feature No,
51471	CH1,CH2,CH3, CH4,CH5, CH6,SP1	Consultancy for the investigation, Design and Supervision of Slope and Retaining Wall Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long on Lot 1283 in DD96	2NE-D/CR 143

### 3.4 DH Orders

No DH Order relevant to the man-made features has been issued within or in the vicinity of the Site. But DH orders had been issued to 2NE-D/CR 143 (DH Orders No. : DH0073/NT/03/C) in 2003 and the improvement works of the slope has been completed in the same year.

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## **4. Impacts of proposed works on existing slopes/retaining walls & Natural Hillsides**

### 4.1 Feature No. 2NE-D/C50

According to the SIS record, the registered slope is 9m in height and 15m in length with slope gradient ranging at about 35 degree to the horizontal, which is located at north of the site from 100m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

### 4.2 Feature No. 2NE-D/C51

According to the SIS record, the registered slope is 6.5m in height and 36m in length with slope gradient ranging at about 43 degree to the horizontal, which is located at north of the site from 80m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

### 4.3 Feature No. 2NE-D/C53

According to the SIS record, the registered slope is 2m in height and 12m in length with slope gradient ranging at about 45 degree to the horizontal and 4m in height and 8m in length with slope gradient ranging at about 60 degree to the horizontal, which is located at north of the site from 50m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

### 4.4 Feature No. 2NE-D/C49

According to the SIS record, the registered slope is 3.3m in height and 28m in length with slope gradient ranging at about 70 degree to the horizontal, which is located at north of the site from 80m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

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#### 4.5 Feature No. 2NE-D/CR48

According to the SIS record, the registered slope is 1.5m in height and 22m in length with slope gradient ranging at about 45 degree to the horizontal and the registered wall is vertical and 2.5m in height and 31m in length, which is located at north of the site from 50m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

#### 4.6 Feature No. 2NE-D/CR75

According to the SIS record, the registered slope is 3m in height and 29m in length with slope gradient ranging at about 50 degree to the horizontal and the registered wall is vertical and 2.5m in height and 22m in length, which is located at northeast of the site from 100m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

#### 4.7 Feature No. 2NE-D/CR76

According to the SIS record, the registered slope is 3m in height and 6m in length with slope gradient ranging at about 65 degree to the horizontal and the registered wall is vertical and 3.5m in height and 29m in length, which is located at northeast of the site from at least 100m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

#### 4.8 Feature No. 2NE-D/CR143

According to the SIS record, the registered slope is 2.7m in height and 27m in length with slope gradient ranging at about 40 degree to the horizontal and the registered wall (face angle ranging from 40 to 52 degrees) is 2.5m in height and 40m in length, which is located at north of the site from 10m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

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4.9 Feature No. 2NE-D/F 17

According to the SIS record, the registered slope is 4m in height and 38m in length with slope gradient about 50 degree to the horizontal, which is located at north-east of the site from 15m. The proposed development will not affect the geotechnical features. No further detailed of the slope and wall stability assessment shall be carried out (i.e. Geotechnical assessment report).

4.10 Existing features at site

There are no existing structures or features at the proposed site.

## 5. CONCLUSION

Based on the above discussion, it can be concluded that the proposed development is considered to be feasible from geotechnical point of view. The construction is unlikely posting particular problems to the surrounding area under careful planning, proper execution and vigilant supervision.

It is essential to search and review the background information of existing buildings, geotechnical features and underground services within and in the vicinity of the site. Site investigation is proposed to reveal/confirm the subsoils and the ground regime within and in the vicinity of the site as well as to determine the engineering properties of subsoils and rock. The ground investigation field works should be preceded under supervision of suitably qualified engineers and technically competent persons conforming the requirements specified in the “Code of Practice for Site Supervision 2009” published by the BD.

For safety and cost effective, the foundation design and excavation planning as well as the design of geotechnical structure should be based on geological horizons inferred from the ground investigation results, groundwater table interpreted from the piezometer/standpipe monitoring records and geotechnical parameters determined and adopted by field and laboratory testing.

A comprehensive precautionary monitoring program including settlement markers, tiling, vibration check points as well as groundwater observation wells shall be

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implemented to ensure demolition of foundation of existing buildings and substructure construction being carried out safety and soundly.

A natural terrain hazard study will be carried out in the next stage of the project to investigate any potential natural terrain hazard will pose to the proposed development and subsequence mitigation measures to mitigate the hazard if found necessary.



## **FIGURES**



— Site Boundary

Company:



Project:

Lot 27 Part 279  
 Part 202 Part  
 22 and 24 Part in  
 D.D. 96  
 a T o L ng  
 New Territorie

Title:

ite Location Plan

Dwg No:

File:

Fig.

Date:  
 29 Dec 2024

申請地點  
 Application Site

馬草壟  
 MA TSO LUNG

馬草壟  
 Shun Yee San Tsui  
 (Ma Tso Lung)  
 Lutheran New Village

— Site Boundary

Company:



Project:

Lot 27 Part 279  
Part 2 0 2 Part  
2 2 and 2 4 Part in  
D.D. 96  
a T o L ng  
New Territorie

Title:

Aerial P oto

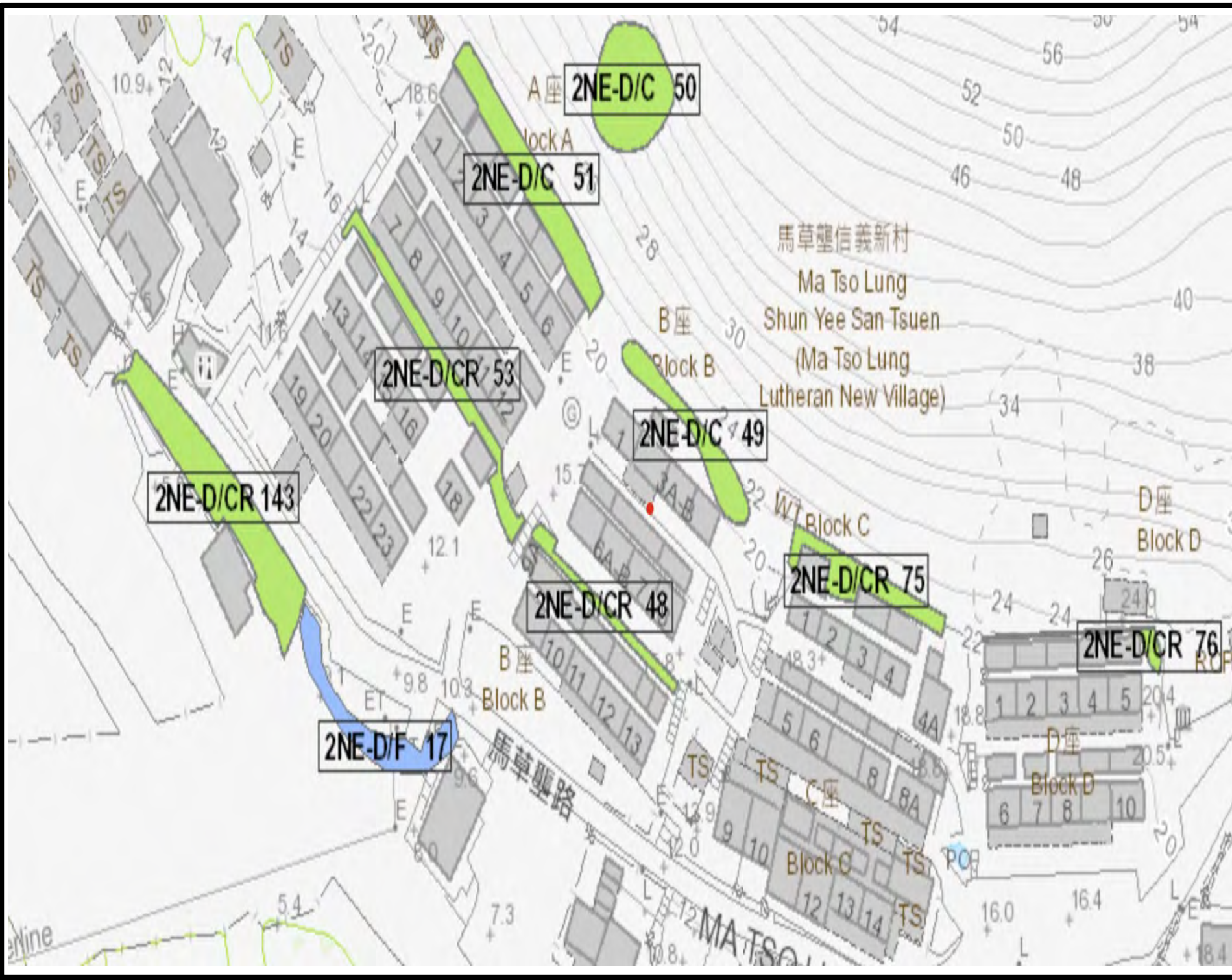
Dwg No:

Fig.2

File:

Date:  
29 Dec 2024





— Site Boundary

Company:



Project:

Lot 27 Part 279  
 Part 202 Part  
 22 and 24 Part in  
 D.D. 96  
 a T o L ng  
 New Territorie

Title:

Registered  
 Geotechnical  
 Feature

Dwg No:

File:

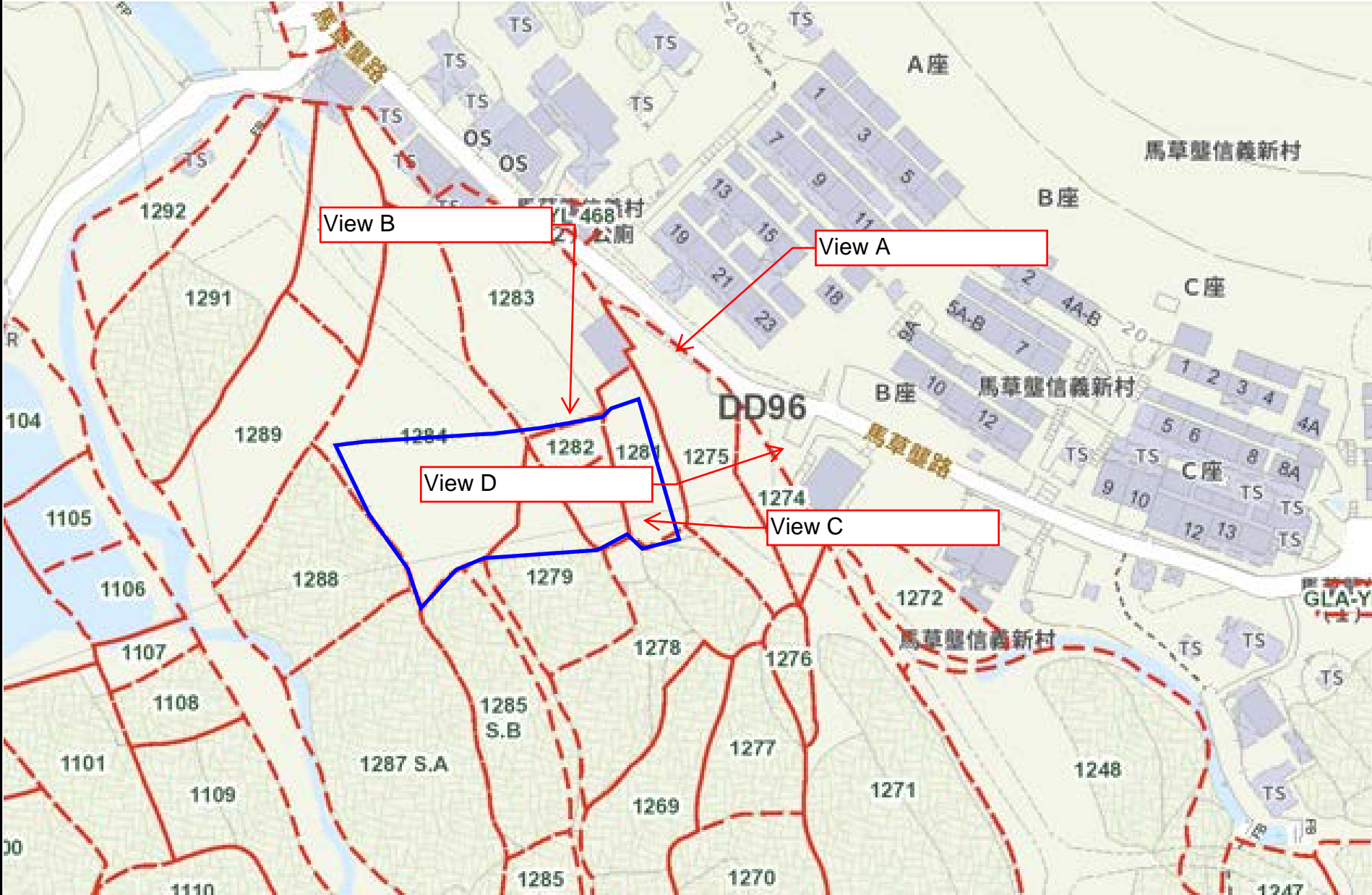
Fig.

Date:  
 29 Dec 2024

# **Appendix A**

Photographs

— Site Boundary



Company:



Project:

Lot 27 Part 279  
Part 2 0 2 Part  
2 2 and 2 4 Part in  
D.D. 96  
a T o L ng  
New Territorie

Title:

Eye Location Plan  
and Lot index  
Plan

Dwg No:

File:

Fig.4

Date:  
29 Dec 2024



VIEW A SITE VIEW



VIEW B SITE VIEW



VIEW C SITE VIEW



VIEW D Entrance of Site



# **Appendix B**

SIMAR Record

# Slope Maintenance Responsibility Report

(2NE-D/C50)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

<b>1</b>	<b>2NE-D/C50</b>	<b>Sub-Division</b>		Not Applicable
	<b>Location</b>	TO THE E OF T14521		
	<b>Responsible Lot/Party</b>	Lands Department	<b>Maintenance Agent</b>	Lands Department
	<b>Remarks</b>	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- 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.

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Search Criteria: 2NE-D/C50

## 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



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## Slope Maintenance Responsibility Report

(2NE-D/C51)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

### List of Slope Maintenance Responsibility Area(s)

1	2NE-D/C51	Sub-Division	Not Applicable
	Location	Wholly within unallocated Government land adjoining CLP T14520, CLP T14521, CLP T14526, CLP T14979, GLL T17648 and GLL T17671, Shun Yee San Tsuen, Ma Tso Lung	
	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.	

- End of Report -

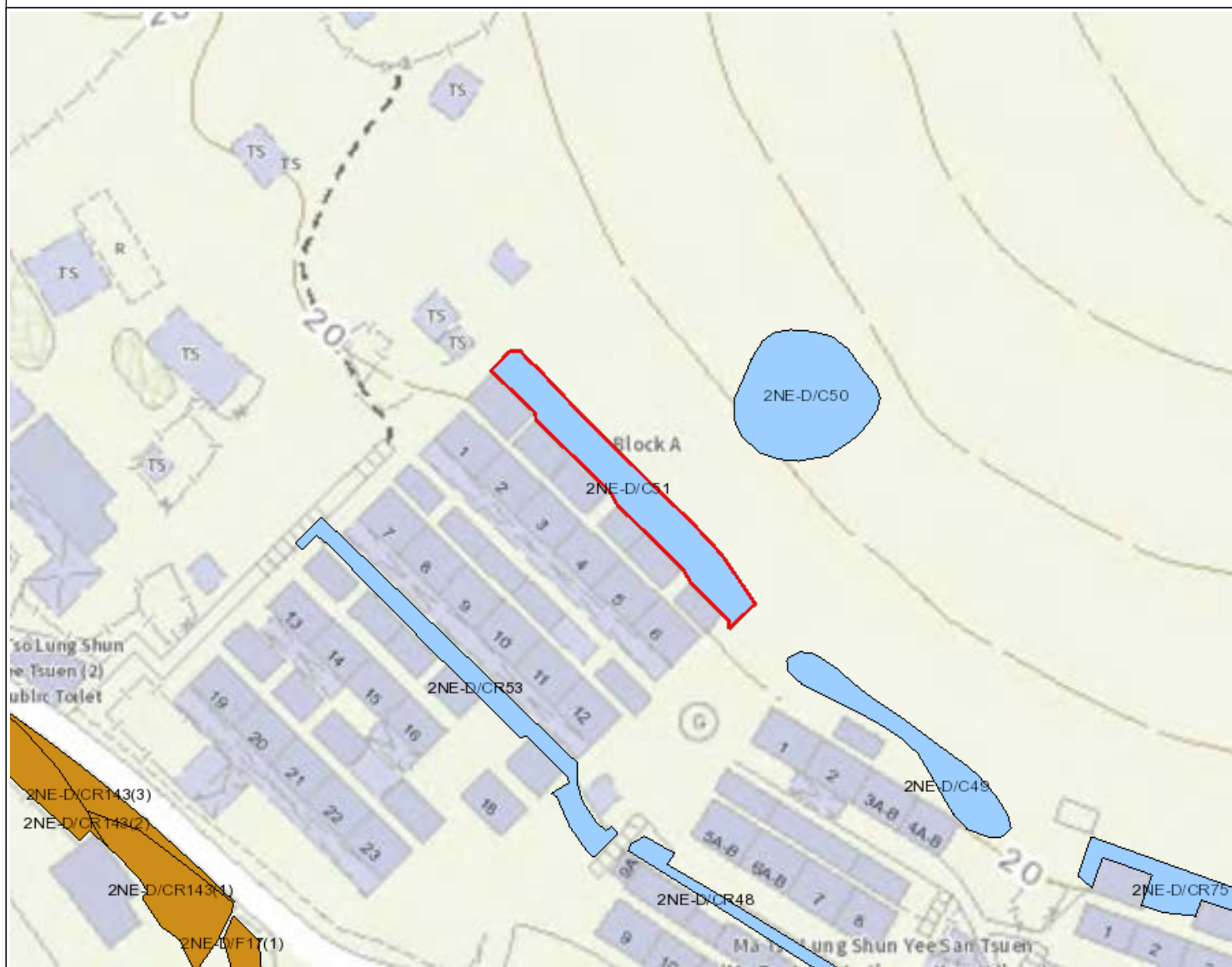
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Search Criteria: 2NE-D/C51

## Location Plan



## Legend

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



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# Slope Maintenance Responsibility Report

(2NE-D/C49)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/C49	Sub-Division	Not Applicable
	Location	PARTLY IN GL, ADJOINING N8760 NEAR SPOT LEVEL 16.1	
	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.	

- End of Report -

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## 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



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# Slope Maintenance Responsibility Report

(2NE-D/CR48)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	<b>2NE-D/CR48</b>	<b>Sub-Division</b>	Not Applicable
	<b>Location</b>	ON GOVERNMENT LAND ADJOINING T11030, T6339, T9575 AND LICENCE 837	
	<b>Responsible Lot/Party</b>	Lands Department	<b>Maintenance Agent</b> Lands Department
	<b>Remarks</b>	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.	

- End of Report -

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Search Criteria: 2NE-D/CR48



## Location Plan



## Legend

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



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# Slope Maintenance Responsibility Report

(2NE-D/C49)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/C49	Sub-Division	Not Applicable
	Location	PARTLY IN GL, ADJOINING N8760 NEAR SPOT LEVEL 16.1	
	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.	

- End of Report -

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# Slope Maintenance Responsibility Report

(2NE-D/CR53)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

<b>1</b>	<b>2NE-D/CR53</b>	<b>Sub-Division</b>	Not Applicable
	<b>Location</b>	GOVERNMENT LAND ADJOINING GLL T14525, GLL T18859 , GLL T18943 AND GLL T6331, MA TSO LUNG ROAD	
	<b>Responsible Lot/Party</b>	Lands Department	<b>Maintenance Agent</b> Lands Department
	<b>Remarks</b>	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.	

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Search Criteria: 2NE-D/CR53

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## Legend

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# Slope Maintenance Responsibility Report

(2NE-D/CR75)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	<b>2NE-D/CR75</b>	<b>Sub-Division</b>	Not Applicable
	<b>Location</b>	Partly within GLL T19523 and partly on Government land	
	<b>Responsible Lot/Party</b>	Lands Department	<b>Maintenance Agent</b> Lands Department
	<b>Remarks</b>	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.	

- End of Report -

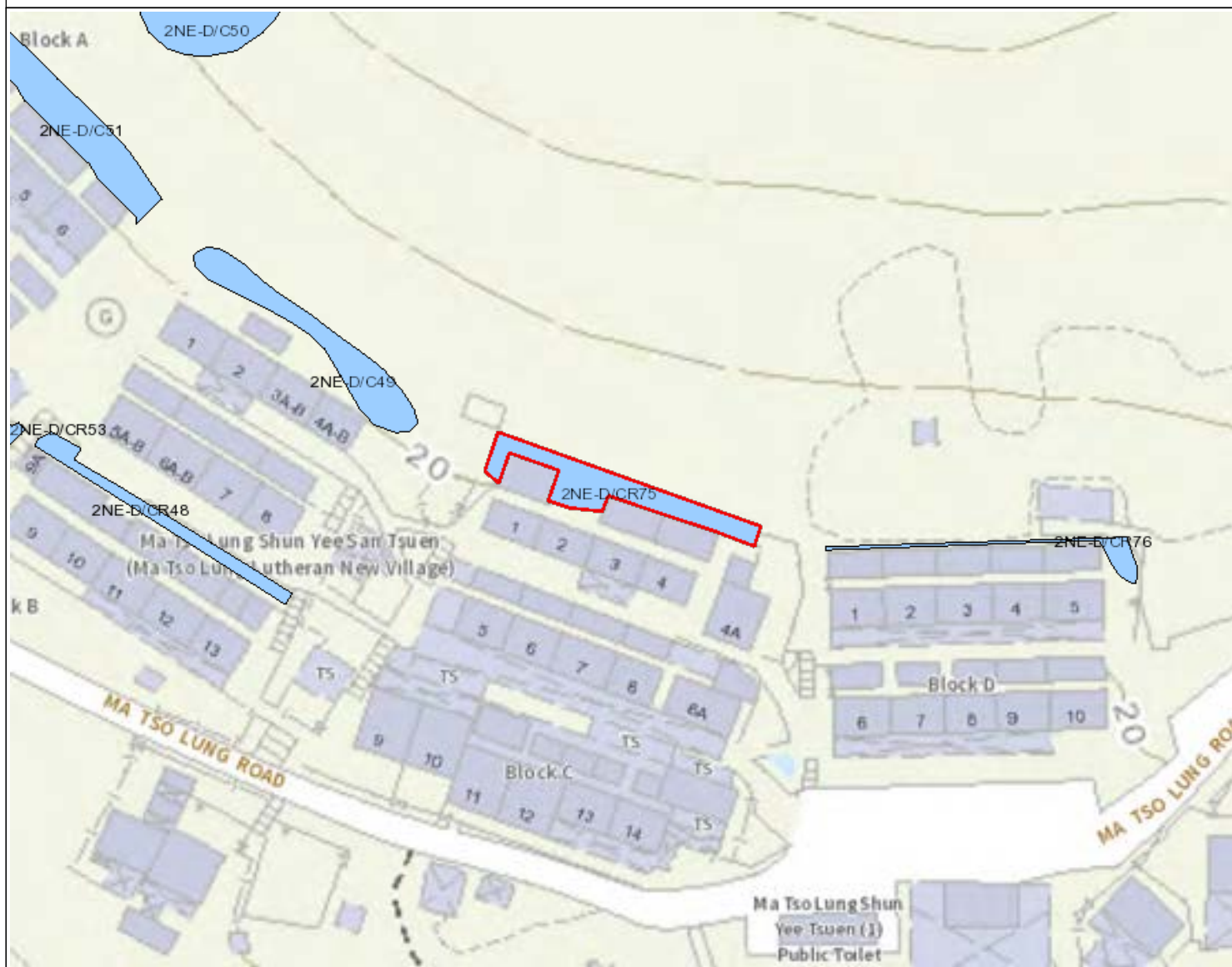
### Notes:

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Search Criteria: 2NE-D/CR75

## 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**

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# Slope Maintenance Responsibility Report

(2NE-D/CR76)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/CR76	Sub-Division		Not Applicable
	Location	WITHIN GLL T19210 AND ADJOINING GLL N030821, GLL T15357, GLL T17642 AND GLL T17649 IN DD96, MA TSO LUNG SHUN YEE SAN TSUEN, YUEN LONG		
	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.		

- End of Report -

### Notes:

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Search Criteria: 2NE-D/CR76



## 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  
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# Slope Maintenance Responsibility Report

(2NE-D/CR143)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/CR143	Sub-Division		1
	Location	Partly within DD96 LOTS 1275 and 1283, and partly on unallocated Government land adjoining GLA-TYL 2181		
	Responsible Lot/Party	DD96 LOT1275	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

### Notes:

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## 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

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# Slope Maintenance Responsibility Report

(2NE-D/CR143)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/CR143	Sub-Division	2	
	Location	Partly within DD96 LOTS 1275 and 1283, and partly on unallocated Government land adjoining GLA-TYL 2181		
	Responsible Lot/Party	DD96 LOT1283	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

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## Location Plan



## Legend

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



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# Slope Maintenance Responsibility Report

(2NE-D/CR143)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

1	2NE-D/CR143	Sub-Division		3
	Location	Partly within DD96 LOTS 1275 and 1283, and partly on unallocated Government land adjoining GLA-TYL 2181		
	Responsible Lot/Party	Water Supplies Department	Maintenance Agent	Water Supplies Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- End of Report -

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## Location Plan



## Legend

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- Search Location
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# Slope Maintenance Responsibility Report

(2NE-D/F17)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

## List of Slope Maintenance Responsibility Area(s)

<b>1</b>	<b>2NE-D/F17</b>	<b>Sub-Division</b>	1
	<b>Location</b>	Partly within GLL Y9944, DD96 LOT 1274 and 1275, and partly on Government land	
	<b>Responsible Lot/Party</b>	DD96 LOT1275	<b>Maintenance Agent</b> Not Applicable
	<b>Remarks</b>	Not Applicable	

- End of Report -

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## Location Plan



## Legend

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- Search Location
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# Slope Maintenance Responsibility Report

(2NE-D/F17)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

## List of Slope Maintenance Responsibility Area(s)

<b>1</b>	<b>2NE-D/F17</b>	<b>Sub-Division</b>	2	
	<b>Location</b>	Partly within GLL Y9944, DD96 LOT 1274 and 1275, and partly on Government land		
	<b>Responsible Lot/Party</b>	DD96 LOT1274	<b>Maintenance Agent</b>	Not Applicable
	<b>Remarks</b>	Not Applicable		

- End of Report -

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## Location Plan



## Legend

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- Search Location
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# Slope Maintenance Responsibility Report

(2NE-D/F17)



ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT

## List of Slope Maintenance Responsibility Area(s)

<b>1</b>	<b>2NE-D/F17</b>	<b>Sub-Division</b>		3
	<b>Location</b>	Partly within GLL Y9944, DD96 LOT 1274 and 1275, and partly on Government land		
	<b>Responsible Lot/Party</b>	Lands Department	<b>Maintenance Agent</b>	Lands Department
	<b>Remarks</b>	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- End of Report -

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## Location Plan



## Legend

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- Search Location
- Slope(s) Maintained by Government
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## **Appendix C**

Slope Records Retrieved from CEDD

## BASIC INFORMATION

Location: North of Ma Tso Lung, Shun Yee San Tsuen  
Date of Formation: pre-1977  
Date of Construction/ Modification: N/A  
Approximate Coordinates: Easting : 828114 Northing : 842655

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt  
Distance of Facility from Crest (m): 0  
Facility at Toe: Undeveloped green belt  
Distance of Facility from Toe (m): 0  
Consequence-to-life Category: 3  
Remarks: N/A

## SLOPE PART

(1) Max. Height (m): 9 Length (m): 15 Average Angle (deg): 35

## WALL PART

N/A

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-08-2001  
Data Source: EI(Lands D)  
Slope Part Drainage: N/A  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0  
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



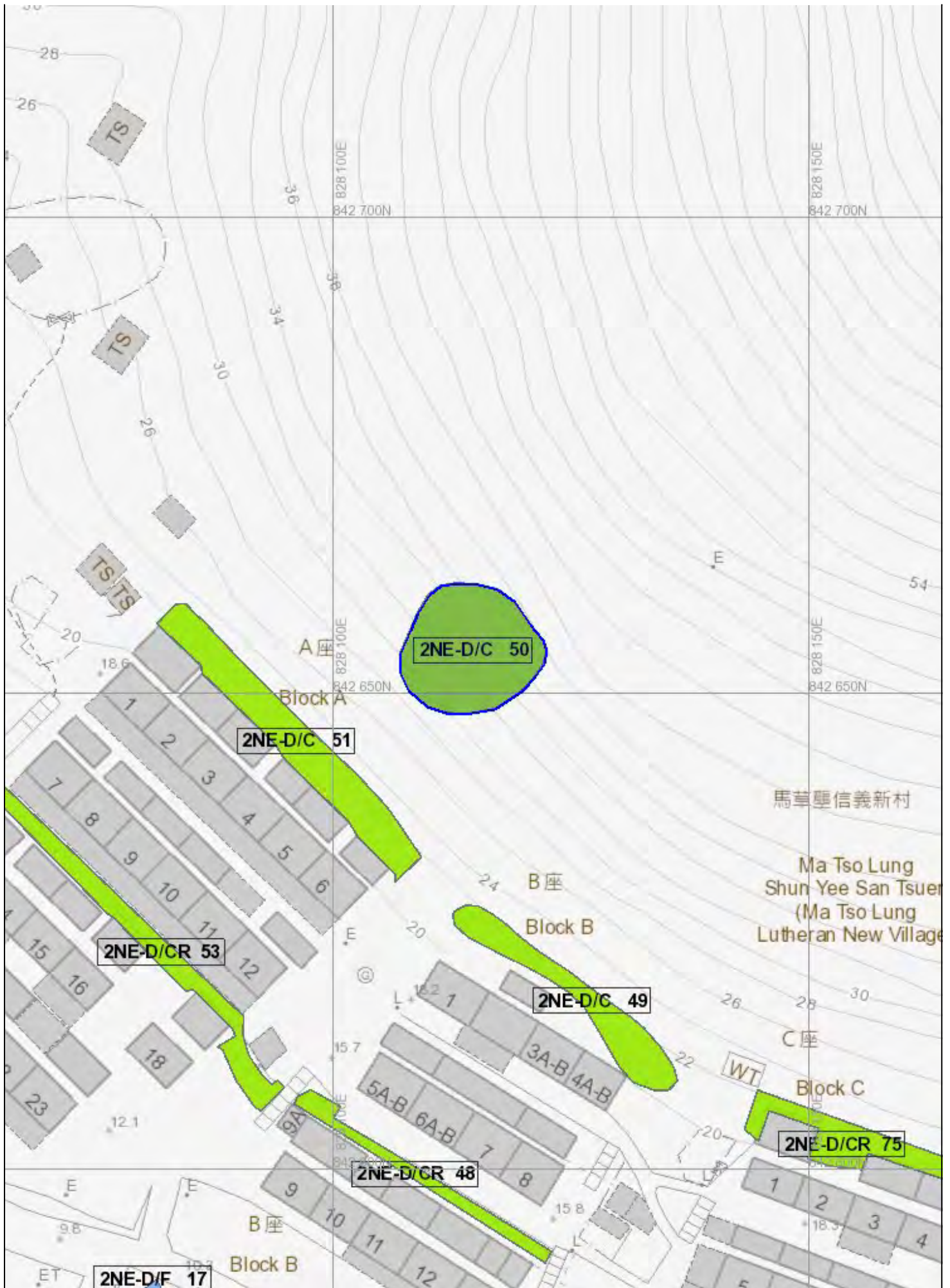
**SERVICES**

N/A



PHOTO





## BASIC INFORMATION

Location: Ma Tso Lung Shum Yee San Tsuen  
Date of Formation: pre-1977  
Date of Construction/ Modification: N/A  
Approximate Coordinates: Easting : 828096 Northing : 842645

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt  
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): 6.5 Length (m): 36 Average Angle (deg): 43

## WALL PART

N/A

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 10-09-2019  
Data Source: EI(Lands D)  
Slope Part Drainage: (1) Position: On slope Size(mm): 300  
(2) Position: Toe Size(mm): 225  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 40 Spacing (m): 1

## WALL PART

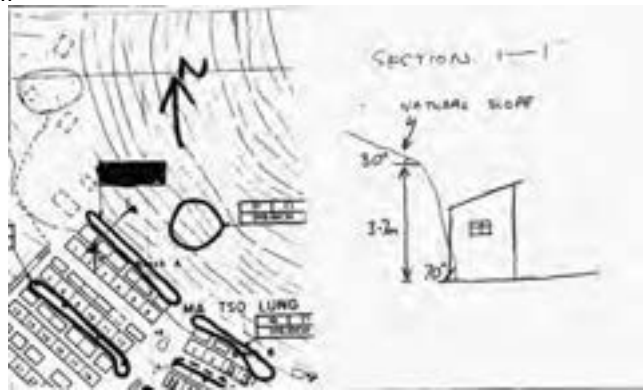
N/A

**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): N/A  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Undeveloped green belt  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P

Section No: 2-2  
 Type of Toe Facility: N/A  
 Distance from Toe (m): 0  
 Type of Crest Facility: N/A  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P

Sign of Seepage: Slope : No signs of seepage  
 Wall : N/A

Criterion A satisfied: N

Sign of Distress: Slope : Minor (mid-portion)  
 Wall : N/A

Criterion D satisfied: N

Non-routine maintenance required: N

Note: N/A



Masonry wall / Masonry facing: N  
Note: N/A  
Consequence category (for critical section): 1  
Observations: N/A  
Emergency Action Required: N  
Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

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

### OTHER EXTERNAL ACTION

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

**PHOTO**





## BASIC INFORMATION

Location: Block B, Ma Tso Lung Shun Yee San Tsuen, Ma Tso Lung  
Date of Formation: pre-1977  
Date of Construction/ Modification: N/A  
Approximate Coordinates: Easting : 828126 Northing : 842619

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt  
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): 3.3 Length (m): 28 Average Angle (deg): 70

## WALL PART

N/A

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-05-2019  
Data Source: Project Office  
Slope Part Drainage: N/A  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 100 Shotcrete: 0 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 40 Spacing (m): 1.5

## WALL PART

N/A

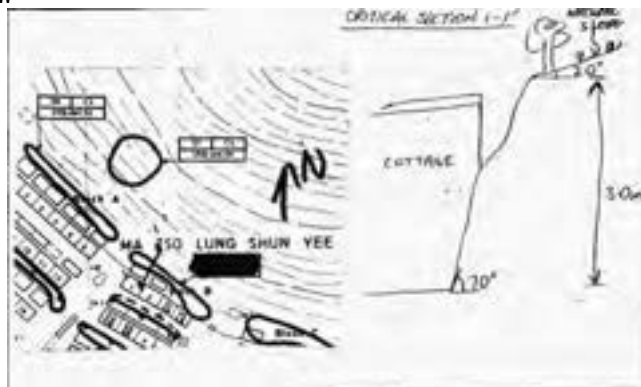


**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): N/A  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Undeveloped green belt  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P  
 Section No: 2-2  
 Type of Toe Facility: N/A  
 Distance from Toe (m): 0  
 Type of Crest Facility: N/A  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P  
 Sign of Seepage: Slope : Signs of seepage  
 Wall : N/A  
 Criterion A satisfied: N  
 Sign of Distress: Slope : Minor (near crest, mid-portion, at toe)  
 Wall : N/A  
 Criterion D satisfied: N  
 Non-routine maintenance required: N  
 Note: N/A  
 Masonry wall / Masonry facing: N



Note: N/A  
Consequence category (for critical section): 1  
Observations: N/A  
Emergency Action Required: N  
Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

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

### OTHER EXTERNAL ACTION

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

**PHOTO**





## BASIC INFORMATION

Location: To the North of House 9-13, Ma Tso Lung Road, Lo Wu  
Date of Formation: pre-1977  
Date of Construction/ Modification: 23-04-2009  
Approximate Coordinates: Easting : 828102 Northing : 842603

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Cottage, licensed and squatter area  
Distance of Facility from Crest (m): 3.5  
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): 1.5 Length (m): 22 Average Angle (deg): 45

## WALL PART

(1) Max. Height (m): 2.5 Length (m): 31 Face Angle (deg): 90

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-04-2009  
Data Source: Project Office  
Slope Part Drainage: N/A  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 75 Spacing (m): 1.5

## WALL PART

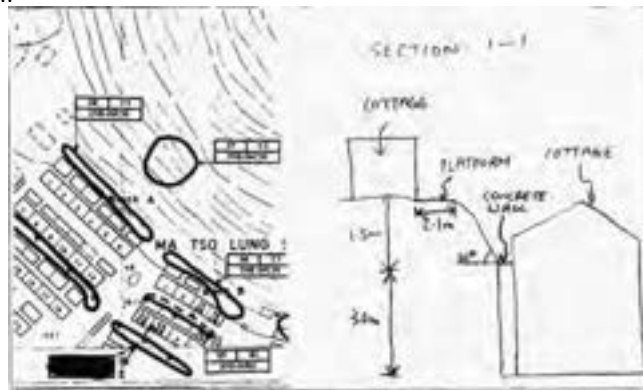
Wall Part (1)  
 Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): N/A Spacing (m): N/A

**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): H1 : 5 , H2 : 3  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Cottage, licensed and squatter area  
 Distance from Crest (m): 3.5  
 Consequence Category: 1  
 Engineering Judgement: P  
 Section No: 2-2  
 Type of Toe Facility: N/A  
 Distance from Toe (m): N/A  
 Type of Crest Facility: N/A  
 Distance from Crest (m): N/A  
 Consequence Category: 1  
 Engineering Judgement: P  
 Sign of Seepage: Slope : No signs of seepage  
 Wall : Signs of seepage  
 Criterion A satisfied: N  
 Sign of Distress: Slope : N/A  
 Wall : N/A  
 Criterion D satisfied: N



Non-routine maintenance required: N  
Note: N/A  
Masonry wall / Masonry facing: N  
Note: N/A  
Consequence category (for critical section): 1  
Observations: N/A  
Emergency Action Required: N  
Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

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

### OTHER EXTERNAL ACTION

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

**PHOTO**







## BASIC INFORMATION

Location: Block B, Ma Tso Lung Shun Yee San Tsuen, Ma Tso Lung  
Date of Formation: pre-1977  
Date of Construction/ Modification: N/A  
Approximate Coordinates: Easting : 828126 Northing : 842619

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt  
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): 3.3 Length (m): 28 Average Angle (deg): 70

## WALL PART

N/A

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-05-2019  
Data Source: Project Office  
Slope Part Drainage: N/A  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 100 Shotcrete: 0 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 40 Spacing (m): 1.5

## WALL PART

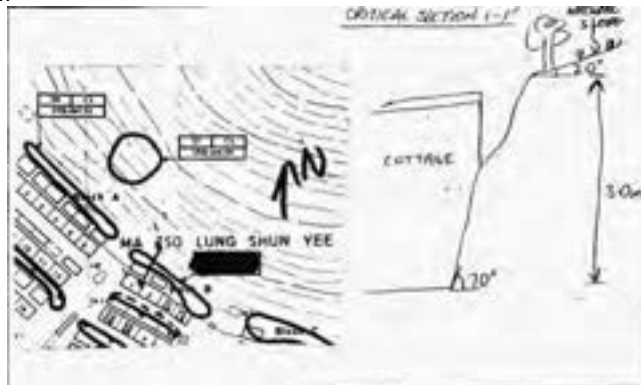
N/A

**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): N/A  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Undeveloped green belt  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P  
 Section No: 2-2  
 Type of Toe Facility: N/A  
 Distance from Toe (m): 0  
 Type of Crest Facility: N/A  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P  
 Sign of Seepage: Slope : Signs of seepage  
 Wall : N/A  
 Criterion A satisfied: N  
 Sign of Distress: Slope : Minor (near crest, mid-portion, at toe)  
 Wall : N/A  
 Criterion D satisfied: N  
 Non-routine maintenance required: N  
 Note: N/A  
 Masonry wall / Masonry facing: N



Note: N/A  
Consequence category (for critical section): 1  
Observations: N/A  
Emergency Action Required: N  
Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

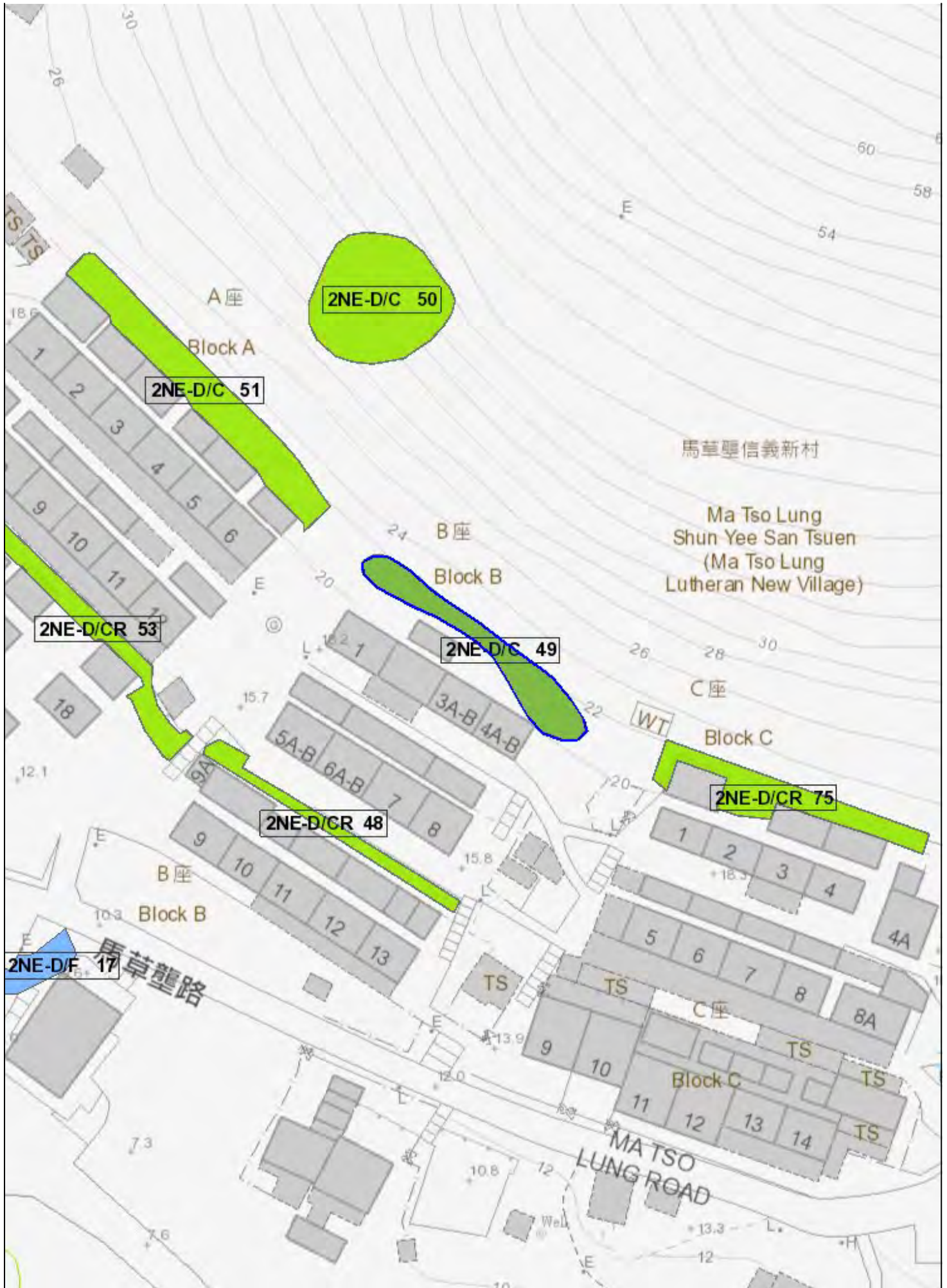
Criterion A / Criterion D: N/A  
Action By: N/A  
Further Study: Y  
Action By: Mixed

### OTHER EXTERNAL ACTION

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

**PHOTO**





## BASIC INFORMATION

Location: Slope falls in GL, T14525, T18859 & T18943 near spot level 12.1, Ma Tso Lung Shung Yee San Tsuen, Ma Tso Lung  
Date of Formation: pre-1977  
Date of Construction/ Modification: 12-02-2009  
Approximate Coordinates: Easting : 828077 Northing : 842628

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Cottage, licensed and squatter area  
Distance of Facility from Crest (m): 2  
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): 2	Length (m): 12	Average Angle (deg): 45
(2)	Max. Height (m): 4	Length (m): 8	Average Angle (deg): 60

## WALL PART

(1)	Max. Height (m): 4	Length (m): 36	Face Angle (deg): 90
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## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-04-2009  
Data Source: Project Office  
Slope Part Drainage: (1) Position: Crest Size(mm): 250  
Wall Part Drainage: N/A

## SLOPE PART

**Slope Part (1)**

Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
 Material Description: Material type: Soil Geology: N/A  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): 75 Spacing (m): 1.5

**Slope Part (2)**

Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
 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**

**Wall Part (1)**

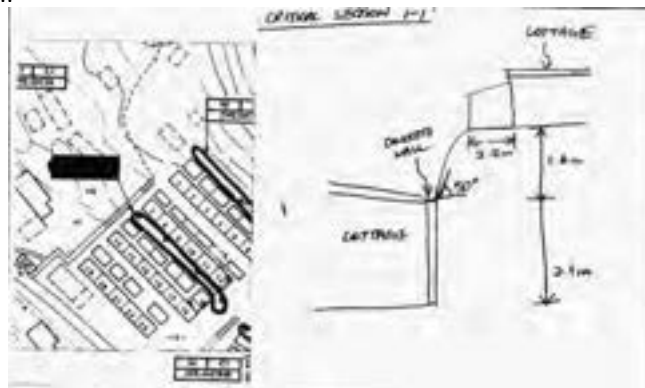
Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): 75 Spacing (m): 1.5

**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): H1 : 2 , H2 : 2  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Cottage, licensed and squatter area  
 Distance from Crest (m): 2  
 Consequence Category: 1  
 Engineering Judgement: P  
 Section No: 2-2  
 Type of Toe Facility: N/A



Distance from Toe (m):	N/A
Type of Crest Facility:	N/A
Distance from Crest (m):	N/A
Consequence Category:	1
Engineering Judgement:	P
Sign of Seepage:	Slope : No signs of seepage Wall : No sign of seepage
Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall / Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

### ACTION TO INITIATE PREVENTIVE WORKS

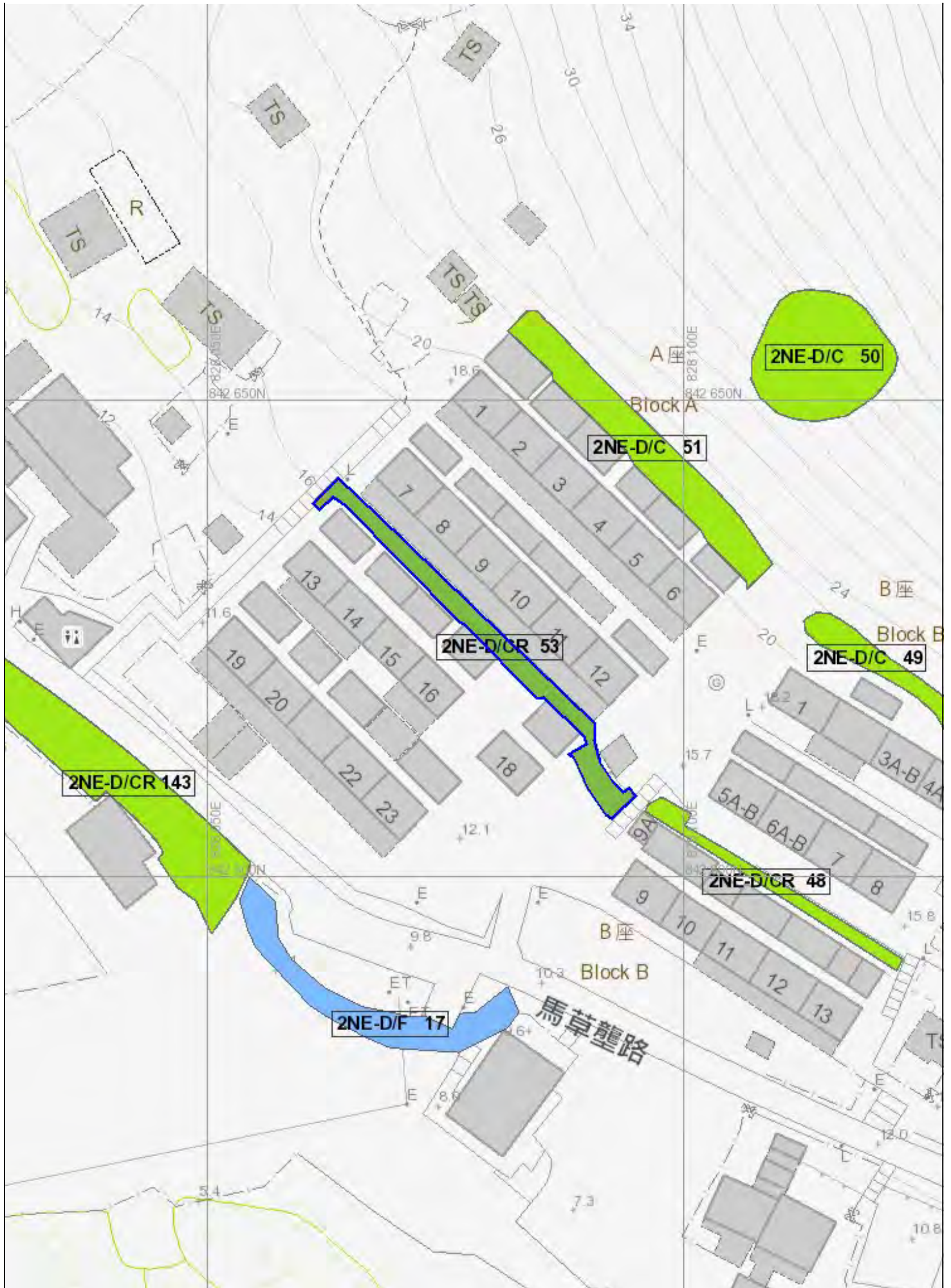
Criterion A / Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

### OTHER EXTERNAL ACTION

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

**PHOTO**





## BASIC INFORMATION

Location: House No. 1-4, Block C, Shun Yee San Tsuen, Yuen Long  
Date of Formation: pre-1977  
Date of Construction/ Modification: 07-11-2012  
Approximate Coordinates: Easting : 828155 Northing : 842603

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt  
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): 3 Length (m): 29 Average Angle (deg): 50

## WALL PART

(1) Max. Height (m): 2.5 Length (m): 16 Face Angle (deg): 90  
(2) Max. Height (m): 2.5 Length (m): 5.5 Face Angle (deg): 90

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 11-06-2013  
Data Source: Project Office  
Slope Part Drainage: (1) Position: Crest Size(mm): 300  
(2) Position: On slope Size(mm): 300  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 50 Spacing (m): 1.5

## WALL PART

Wall Part (1)  
 Type of Wall: Wall Material: Concrete Wall Location: Wall at toe  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): N/A Spacing (m): N/A

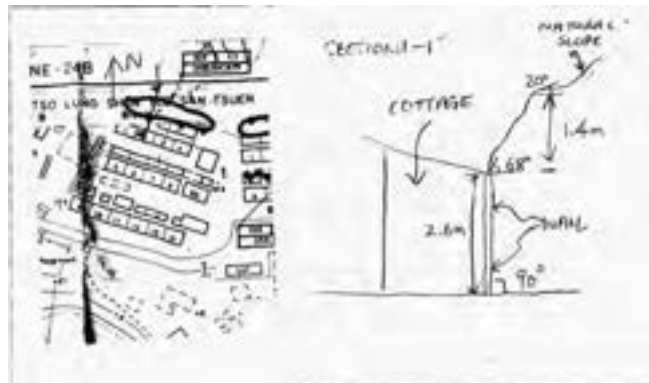
Wall Part (2)  
 Type of Wall: Wall Material: Concrete Wall Location: Wall at toe  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): N/A Spacing (m): N/A

## SERVICES

(1) Utilities Type: Water Main Size (mm): 25 Location: On crest Remark: N/A

## STAGE 1 STUDY REPORT

Inspected On: 06-11-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): N/A  
 Type of Toe Facility: Cottage, licensed and squatter area  
 Distance from Toe (m): 0  
 Type of Crest Facility: Undeveloped green belt  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: HP

Section No: 2-2  
 Type of Toe Facility: Cottage  
 Distance from Toe (m): 0  
 Type of Crest Facility: Undeveloped green belt  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: HP

Sign of Seepage:	Slope : No signs of seepage Wall : No sign of seepage
Criterion A satisfied:	N
Sign of Distress:	Slope : Severe (near crest) Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	Y
Note:	N/A
Masonry wall / Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

### ACTION TO INITIATE PREVENTIVE WORKS

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

### OTHER EXTERNAL ACTION

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

**PHOTO**







## BASIC INFORMATION

Location: Ma Tso Lung, Shun Yee San Tsuen, Lo Wu  
Date of Formation: pre-1977  
Date of Construction/ Modification: 23-04-2009  
Approximate Coordinates: Easting : 828194 Northing : 842597

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Non-dangerous goods storage site  
Distance of Facility from Crest (m): 1  
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): 3 Length (m): 6 Average Angle (deg): 65

## WALL PART

(1) Max. Height (m): 3.5 Length (m): 29 Face Angle (deg): 90

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 20-04-2009  
Data Source: Project Office  
Slope Part Drainage: (1) Position: Crest Size(mm): 300  
Wall Part Drainage: (1) Position: Crest Size(mm): 300

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0  
Material Description: Material type: Soil Geology: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 75 Spacing (m): 1.5

## WALL PART

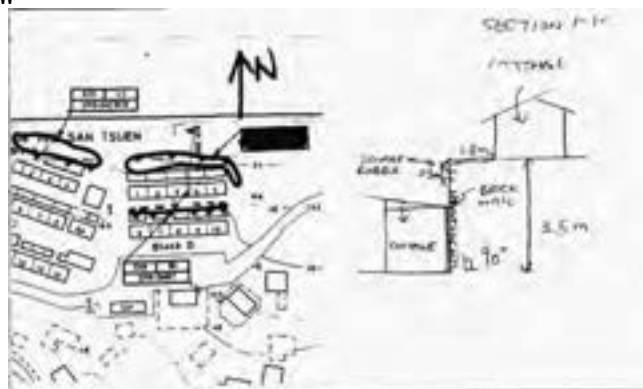
Wall Part (1)  
 Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform  
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
 Weepholes: Size (mm): N/A Spacing (m): N/A

**SERVICES**

N/A

**STAGE 1 STUDY REPORT**

Inspected On: 27-10-1997  
 Weather: Mainly Fine  
 District: MW



Section No: 1-1  
 Height (m): N/A  
 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): 1  
 Consequence Category: 1  
 Engineering Judgement: P  
 Section No: 2-2  
 Type of Toe Facility: Cottage  
 Distance from Toe (m): 0  
 Type of Crest Facility: Other lightly-used open space  
 Distance from Crest (m): 0  
 Consequence Category: 1  
 Engineering Judgement: P  
 Sign of Seepage: Slope : No signs of seepage  
 Wall : No sign of seepage  
 Criterion A satisfied: N  
 Sign of Distress: Slope : N/A  
 Wall : N/A  
 Criterion D satisfied: N



Non-routine maintenance required: N  
Note: N/A  
Masonry wall / Masonry facing: N  
Note: N/A  
Consequence category (for critical section): 1  
Observations: N/A  
Emergency Action Required: N  
Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

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

### OTHER EXTERNAL ACTION

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

**PHOTO**





## BASIC INFORMATION

Location: Near Nos. 19-23, Ma Tso Lung Shun Yee San Tsuen, Ma Tso Lung  
Date of Formation: post-1977  
Date of Construction/ Modification: 30-01-2014  
Approximate Coordinates: Easting : 828039 Northing : 842611

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with low traffic density  
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): 2.7 Length (m): 27 Average Angle (deg): 40

## WALL PART

(1) Max. Height (m): 1.9 Length (m): 17 Face Angle (deg): 40  
(2) Max. Height (m): 2.5 Length (m): 24 Face Angle (deg): 52

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Mixed Party: DD96 LOT1275 Agent: N/A  
Maintenance Type: Mixed Party: DD96 LOT1283 Agent: N/A  
Maintenance Type: Mixed Party: WSD Agent: WSD

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 24-11-2016  
Data Source: EI(WSD)  
Slope Part Drainage: (1) Position: On slope Size(mm): 300  
(2) Position: Toe Size(mm): 400  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0  
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

### Wall Part (1)

Type of Wall: Wall Material: Concrete Wall Location: Wall at crest  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 75 Spacing (m): 1.5

### Wall Part (2)

Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 75 Spacing (m): 1.5

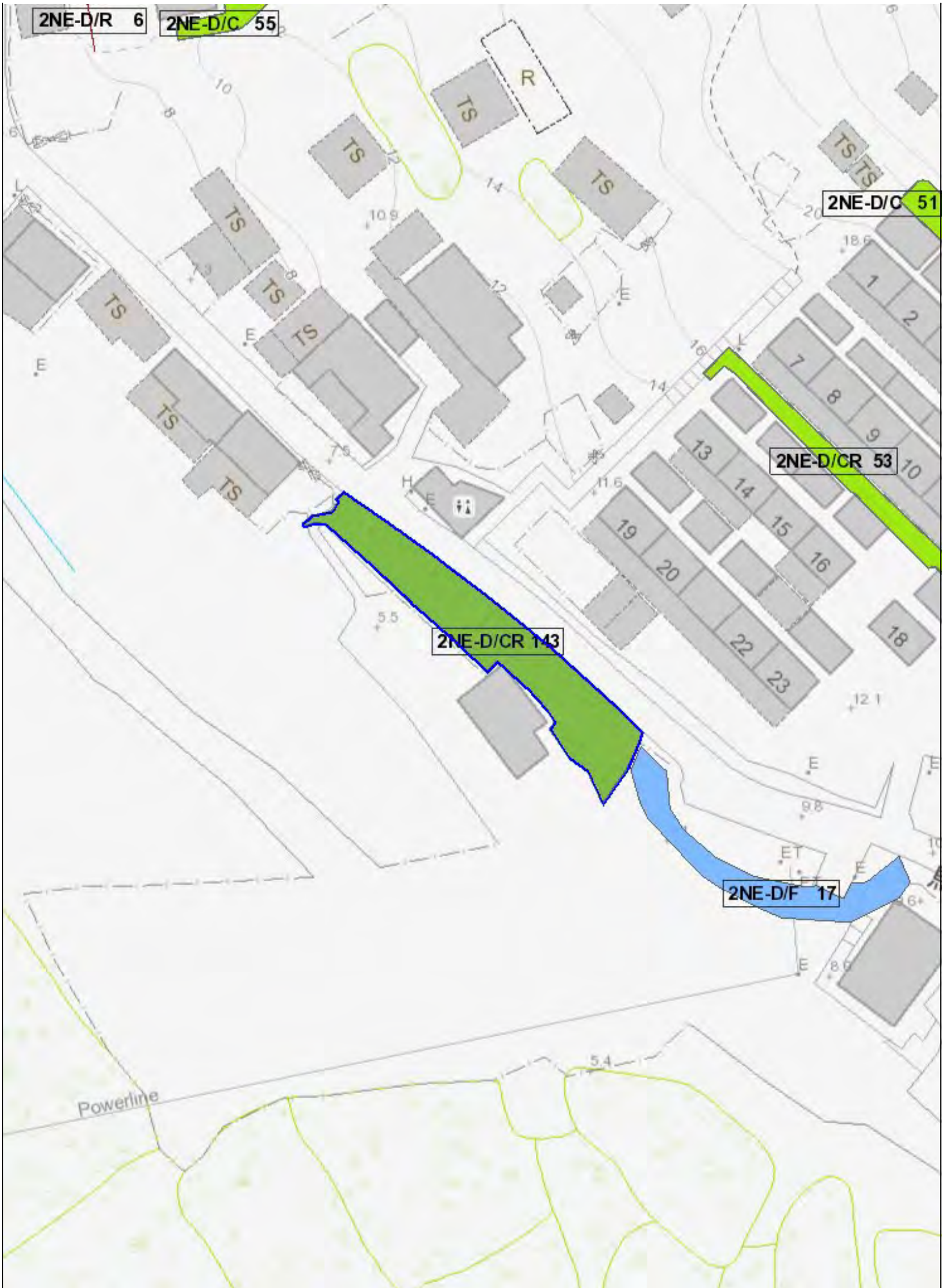
## SERVICES

- (1) Utilities Type: Cable Size (mm): 0 Location: On crest Remark: Size cannot be determined
- (2) Utilities Type: Water Main Size (mm): 80 Location: On crest Remark: N/A

**PHOTO**







## BASIC INFORMATION

Location: Near House 23, Ma Tso Lung Shun Yee Tsuen, Ma Tso Lung, Yeun Long.  
Date of Formation: pre-1977  
Date of Construction/ Modification: N/A  
Approximate Coordinates: Easting : 828068 Northing : 842584

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Open car park  
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: SIFT class changed from post 78 to pre 78 by MW Div. on Apr 06 - SCRR 42150~42400

## SLOPE PART

(1) Max. Height (m): 4 Length (m): 38 Average Angle (deg): 50

## WALL PART

N/A

## MAINTENANCE RESPONSIBILITY

Maintenance Type: Mixed Party: DD96 LOT1275 Agent: N/A  
Maintenance Type: Mixed Party: DD96 LOT1274 Agent: N/A  
Maintenance Type: Mixed Party: Lands D Agent: Lands D

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 17-07-2014  
Data Source: EI(Lands D)  
Slope Part Drainage: N/A  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0  
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**

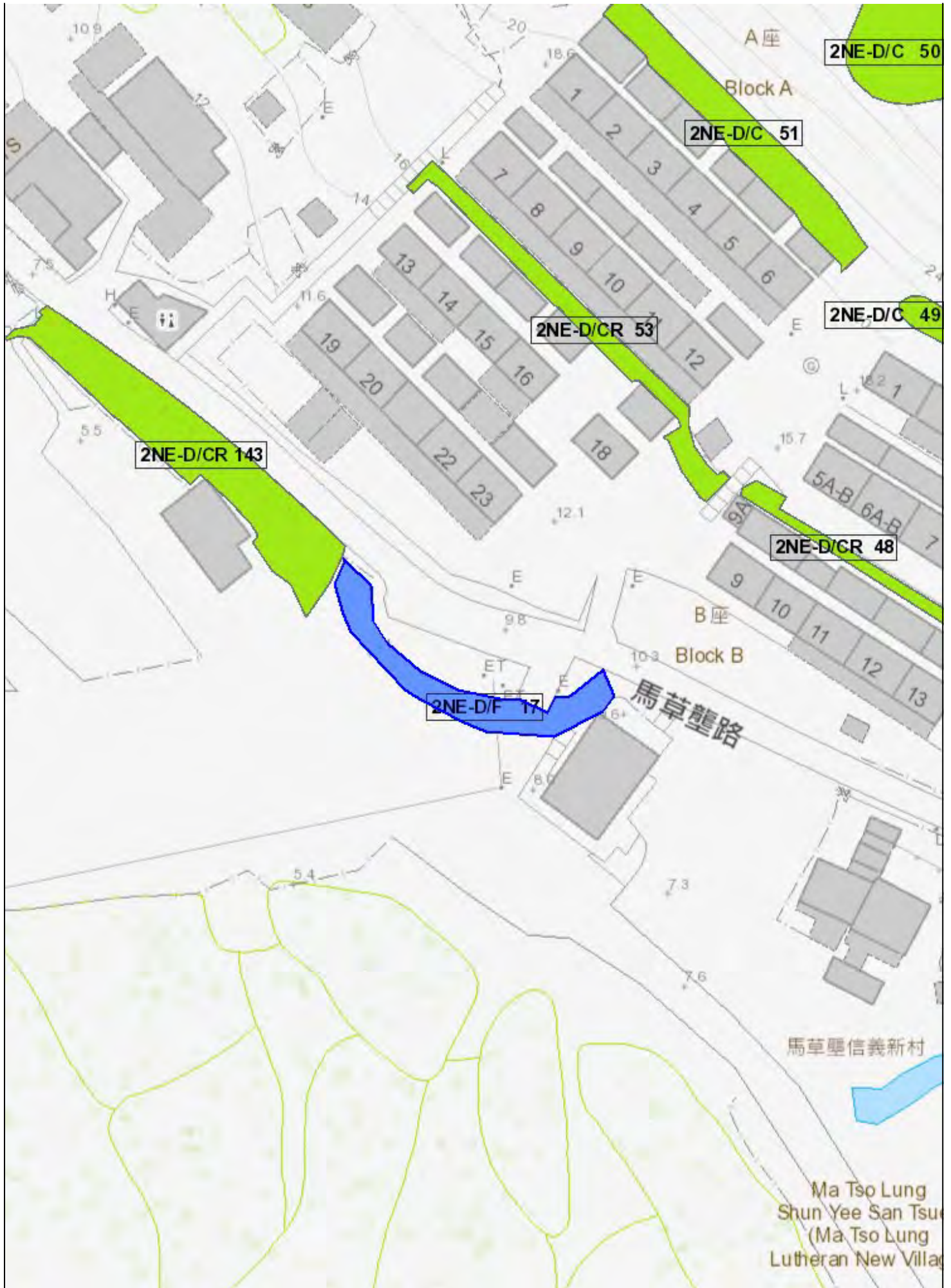
N/A

**SERVICES**

N/A

PHOTO





# **Appendix D**

GI Record



**CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
 GEOTECHNICAL ENGINEERING OFFICE  
 Contract No. GE/2008/04  
 GROUND INVESTIGATION – NEW TERRITORIES WEST  
 (TERM CONTRACT)**

**Works Order No. GE/2008/04.42**

**Agreement No. BA/01/2008,  
 Consultancy for the Investigation, Design and Supervision  
 Of Slope and Retaining Wall Upgrading Works at  
 Ma Tso Lung Sun Tsuen, Yuen Long, New Territories  
 On Lot No. 1283 in D.D.96 for portion of Feature No. 2NE-D/R1**

**Final Factual Fieldwork Report**

Document No : 07-0376-03-42/R001

REVISION STATUS INDEX

0	01 April 2010	Final	BW <i>Jr</i>	AB <i>B</i>	JY <i>dv</i>
<i>Rev</i>	<i>Date</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>

## CONTRACT DATA SUMMARY

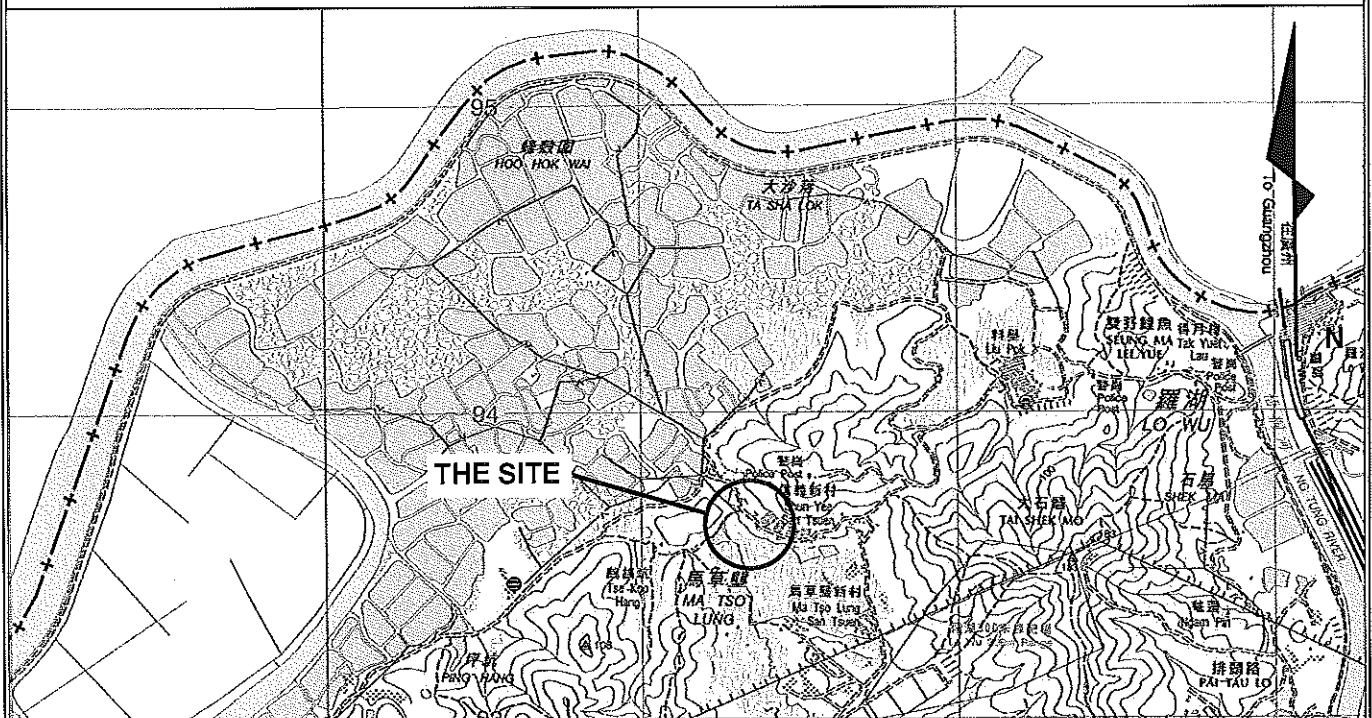
Project Name & No. : Ground Investigation - New Territories West (Term Contract)	Site Name : Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1	Date : 28/01/2010 to 01/04/2010 Official only G.E.O Data Bank No.
G.I. Contractor : Fugro Geotechnical Services Ltd.	Client: CEDD - GEO	
Contract No. : GE/2008/04	W.O. No. GE/2008/04.42	File Ref.


## FIELD WORK SUMMARY

Drillhole Nos. : NIL	Method : Rotary	Date : 01/03/2010 to 02/03/2010
Corehole Nos. : 6	Trial Pit Nos. : NIL	Slope Stripping Nos. : NIL
Probe Nos. : NIL	Trial Trenches Nos. : NIL	Strip Windows Nos. : NIL
Piezometer/Standpipe Nos. : - / 1	Inspection Pit Nos. : 1	Halcrow Bucket Nos. : NIL
Insitu Test Nos. : NIL	Types : NIL	
Geophysics : NIL	Type : NIL	

## LABORATORY TESTING SUMMARY

Total No. of Tests :		Date : _____ to _____			
Soil	Physical Properties	LL	PL	PSD	MC
		SG	$\gamma_m/\gamma_d$		
	Strength Tests	CU	CD	UU	Shear Box
	Compaction & CBR Tests	Standard	Modified		CBR
	Oedometer & Perm. Test	Cv	k		
Others					
Rock	$\gamma$	Pt load	UC	Shear Box	US Vel.
Location Plan	Scale 1: 20 000	Derived from:	Sheet 2, Series HM20C, Edition 10, 2007		



	Ground Investigation	Laboratory	GEOTECHNICAL ENGINEERING OFFICE
CONTRACTOR	Fugro Geotechnical Services Ltd.		 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
WORKS ORDER NO.	GE/2008/04.42		





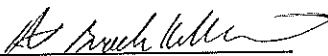
**CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
GEOTECHNICAL ENGINEERING OFFICE  
Contract No. GE/2008/04  
GROUND INVESTIGATION - NEW TERRITORIES WEST  
(TERM CONTRACT)**

**Works Order No. GE/2008/04.42**

**Agreement No. BA/01/2008,  
Consultancy for the Investigation, Design and Supervision  
Of Slope and Retaining Wall Upgrading Works at  
Ma Tso Lung Sun Tsuen, Yuen Long, New Territories  
On Lot No. 1283 in D.D.96 for portion of Feature No. 2NE-D/R1**

**Final Factual Fieldwork Report**

Document No : 07-0376-03-42/R001

Checked By: 

A.F. Brock-Hollinshead  
Geotechnical Engineer

Approved By: 

Jimmy Lam  
Contractor's Representative



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- C. Corehole Records and Photographs
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## 1. INTRODUCTION

In February 2008, Fugro Geotechnical Services Ltd (Fugro) was awarded the New Territories West Term Contract No. GE/2008/04 for ground investigation works by the Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD).

This report presents the results of works order number GE/2008/04.42 which involved a ground investigation on Feature No. 2NE-D/R1 a retaining wall adjacent to Ma Tso Lung Road, located to the north-east of Ma Tso Lung and south-west of Shun Yee San Tsuen, Yuen Long, New Territories. The Works consisted of rotary coring, installation of standpipe, water level monitoring, excavation of an inspection pit, logging and the reinstatement of the exploratory holes. Fieldwork for the investigation was performed between the 1<sup>st</sup> March and the 2<sup>nd</sup> March 2010, under the supervision of Au Posford Consultants Limited (the Engineer).

The factual field data are presented herein.

## 2. SITE DESCRIPTION

The site comprised feature no. 2NE-D/R1, located to the north-east of Ma Tso Lung and the south-west of Shun Yee San Tsuen, Yuen Long, New Territories. Refer to the enclosed Ground Investigation Plan; Figure 1. Feature 2NE-D/R1 is approximately 45m long and 5m wide in plan with a vertical height of some 2m. Ground Investigation locations included in this Works Order were located within an area defined by the following co-ordinates:

	Easting (m)	Northing (m)
1.	828 025	842 615
2.	828 025	842 625
3.	828 030	842 615
4.	828 030	842 625



### 3. FIELDWORK

A programme of subsurface investigation, performed at the site between 1<sup>st</sup> March and 2<sup>nd</sup> March 2010, included the following:

- Exploratory coreholes with:
  - continuous coring in hard strata
  - small disturbed sampling in soils
- Exploratory inspection pit;
- Standpipe installation and groundwater monitoring;
- Surveying of investigation locations.

Fieldworks were performed under the full time supervision of a suitably experienced Fugro Geotechnical Field Technician (GFT).

Investigation locations are indicated in Figure 1 (Ground Investigation Plan) relative to the site layout and existing site features. Field test results and observations are presented in Appendices C to E. The presentation of field results is preceded by a checklist of rock and soil descriptions and summarised explanations of log symbols and classification systems in Appendices A and B respectively.

The soil and rock encountered in drillholes has been described in accordance with Geoguide 3 and the Checklist for Rock and Soil Descriptions presented in Appendix A. Corehole records are presented in the "Coreole Records and Photographs", Appendix C.

A total of six (6) U100 samples and four (4) large disturbed samples were taken of the soil exposed at the surface above and below the retaining wall under investigation. Further details of the samples taken are not included in this reports.

#### 3.1. Exploratory Coreholes

Four (4) horizontal coreholes (CH1, CH3, CH5 and CH6) and two (2) inclined coreholes were cored on site to depths of 3.00m (CH1 to CH3, CH5 and CH6) and 5.00m (CH4). Coring was performed using a portable rotary coring machine with a CAT C-100 core barrel. The coreholes were terminated according to instructions issued by the Engineer.

All samples were retained in purpose built core boxes labelled with contract and drilling details. All samples were logged on site then transported to the contract storage facility at the Works Area and photographed. Photographs are presented with the corehole logs in Appendix C. The photographic board shown in each photograph presents contract and works order details as well as box depths and numbers with reference to a standard Kodak<sup>TM</sup> colour chart and scale.



### 3.2. Groundwater Measurements

One (1) standpipe was installed to a depth of 3.00m below existing ground level at the location of the inspection pit SP1. A response test for the instrument was carried out, after installation, to ensure functionality. Refer to Appendix D "Installation Detail and Response Test Record"

The installation was monitored for a period of seven (7) days after completion of the response tests. The recorded groundwater levels are presented in tabular form in Appendix E, "Record of Water Levels".

### 3.3. Inspection Pit

An inspection pit was manually excavated at a location instructed by the Engineer. The location of the inspection pit is included on the Site Plan presented in Figure 1 and the inspection pit survey data are presented in Table 1. No further records or photographs of the inspection pit are presented in this report.

### 3.4. Surveying Investigation Locations

Investigation locations were set out by survey with adjustments made in agreement with the Engineer to allow for site conditions. Following completion of the fieldwork, levels and co-ordinates for each location were determined with respect to an existing benchmark. Co-ordinates and levels of all test locations are summarised in the Survey Record of Investigation Locations, Table 1, and presented on individual logs. Co-ordinates are relative to Hong Kong Metric Grid (1980) and reduced levels are related to the Hong Kong Principal Datum (PD).

## 4. SUBSURFACE CONDITIONS

According to the geological survey map of San Tin, published by the Geotechnical Control Office entitled "San Tin, Sheet 2, Solid and Superficial Geology, Series HGM20, Scale 1 : 20 000. (Edition 1-1989)", the site is underlain by well-sorted to semi-sorted Alluvium comprising clay/silt, sand and gravel, formed during the Holocene period of the Quaternary era.

## 5. DIGITAL RECORDS

The corehole logs have been produced using gINT, a widely used commercial software package providing ground investigation data in ASCII format. The data format is in accordance with the Association of Geotechnical and Geoenvironmental Specialists (AGS) publication, "Electronic Transfer of Geotechnical and Geoenvironmental Data" (AGS, 1999). The field headings comply with the recommendations of the AGS with local variations as recommended by the GEO.

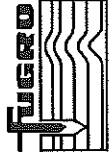
The data is provided on a compact disk with this report and can be found in Appendix F.

**6. REFERENCES**

1. AGS (1999). Electronic Transfer of Geotechnical and Geoenvironmental Data, 3<sup>rd</sup> Edition, Association of Geotechnical and Geoenvironmental Specialists.
2. AGS (2002). AGS Digital Data Format Recommendations for Usage in Hong Kong. AGS Subcommittee of the Association of Geotechnical and Geoenvironmental Specialists (Hong Kong) Ltd.
3. BS 1377: 1990: Methods of Test for Soil for Civil Engineering Purposes, British Standards Institute, UK.
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9. Macbeth (1994), Munsell Soil Colour Charts, 1994 Revised Edition published by Gretag Macbeth.



## TABLES

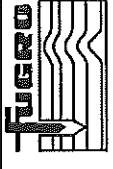


FUGRO GEOTECHNICAL SERVICES LTD

**Table 1**  
**Survey Record of Investigation Locations**

Drillhole / Trial Pit No.	As-Built Co-ordinates		Ground Level (mPD)	Orientation	Remarks
	Easting (m)	Northing (m)			
CH1	828031.52	842618.27	+7.46	050°/0°	Corehole
CH2	828031.02	842617.56	+6.31	050°/45°	Corehole
CH3	828029.43	842620.23	+7.36	050°/0°	Corehole
CH4	828028.75	842619.36	+5.99	050°/45°	Corehole
CH5	828026.44	842622.18	+6.66	050°/0°	Corehole
CH6	828026.08	842621.75	+5.84	050°/0°	Corehole
SP1	828029.01	842621.70	+7.96	--	Inspection Pit

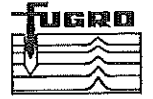




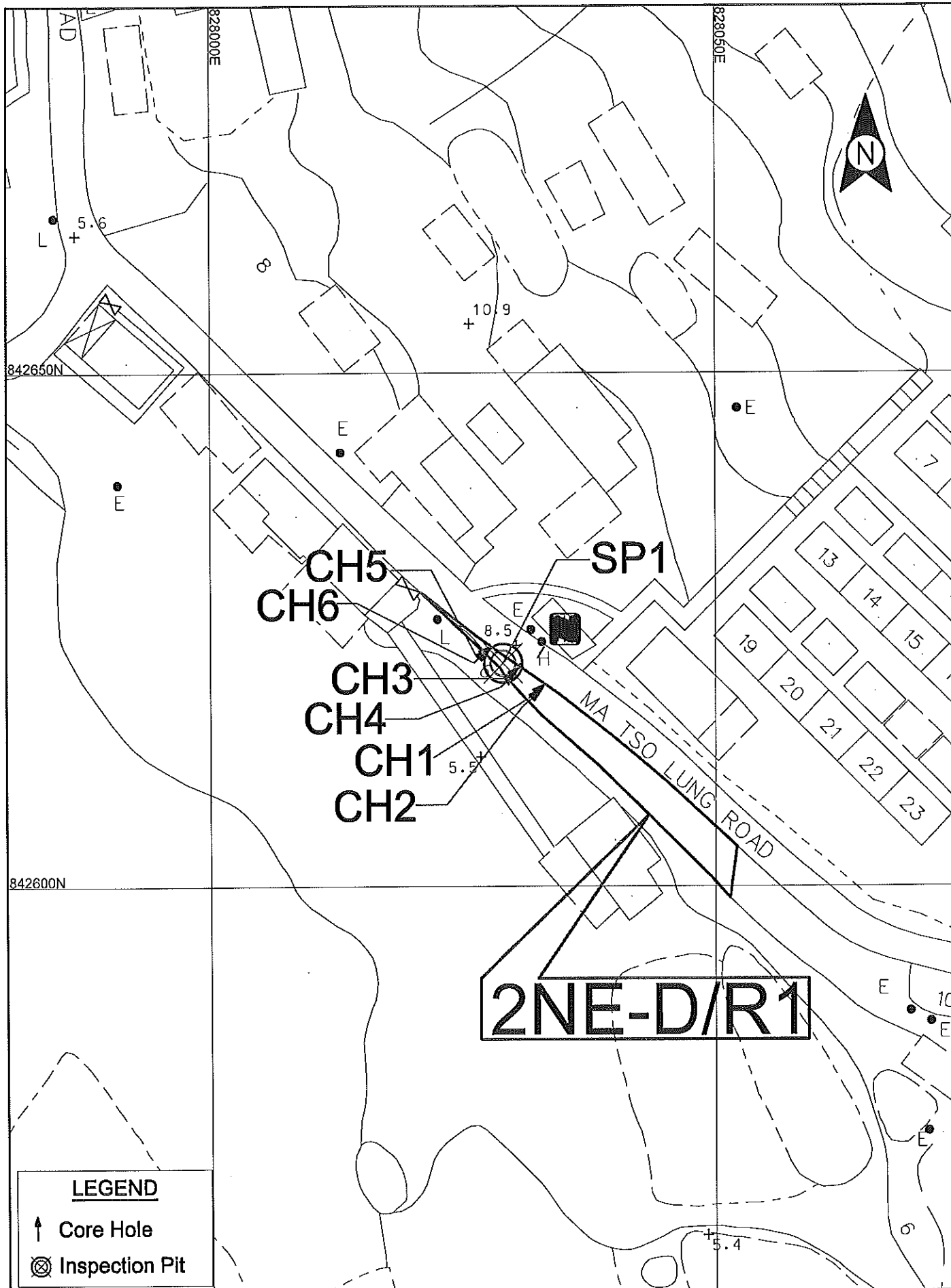
**Table 2**  
**Summary of Field Testing and Field Installations**

Station No.	Type of Test	Test Zone/ Test Depth (m bgl)	Type of Installation	Installation Tip/ End Depth (m bgl)	Response Zone (m bgl)	Install Halcrow Buckets		Remarks
						Depth (m bgl)	Spacing (m)	
SP1	-	-	Standpipe	3.00	0.50 to 3.00	-	-	

Notes:	IP - Impression Packer Survey	Rising - Rising Head Permeability Test	Pressuremeter - Pressuremeter Test
	Vane - Vane Shear Test	Constant - Constant Head Permeability Test	Falling - Falling Head Permeability Test
	Sand - In-Situ Density Test	Packer - Water Absorption Test	GCO - Dynamic Probing Test



**FIGURE**



<b>LEGEND</b>	
↑	Core Hole
⊗	Inspection Pit

**FUGRO**  

**FUGRO GEOTECHNICAL SERVICES LTD**

**PROJECT:**  
 Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1

<b>TITLE:</b>	Ground Investigation Plan
<b>SCALE:</b>	1:500
<b>CLIENT:</b>	CEDD-GEO
<b>FIGURE:</b>	1

**JOB REF:** 07 0376 03  
**DATE:** 24-March-2010

**WORKS ORDER NO:** GE/2008/04.42



**APPENDIX A**  
**Checklist for Rock and Soil Descriptions**

# CHECKLIST FOR ROCK DESCRIPTION

GEOTECHNICAL ENGINEERING OFFICE, HKSAR

## 1. STRENGTH

Term	Identification
Extremely weak	Easily crumbled by hand; indented deeply by thumbnail.
Very weak	Crumbled with difficulty; scratched easily by thumbnail; peeled easily by pocket knife.
Weak	Broken into pieces by hand; scratched by thumbnail; peeled by pocket knife; deep indentations (to 5 mm) by point of geological pick; hand-held specimen easily broken by single light hammer blow.
Moderately weak	Broken with difficulty in two hands; scratched with difficulty by thumbnail; difficult to peel but easily scratched by pocket knife; shallow indentations easily made by point of pick; hand-held specimen usually broken by single light hammer blow.
Moderately strong	Scratched by pocket knife; shallow indentations made by firm blow with point of pick; hand-held specimen usually broken by single firm hammer blow. Point load strength (PLS) 0.5 - 2 MPa.
Strong	Firm blows with point of pick cause only superficial surface damage; hand-held specimen requires more than one firm hammer blow to break. PLS 2 - 4 MPa.
Very strong	Many hammer blows required to break specimen. PLS 4 - 8 MPa.
Extremely strong	Specimen only chipped by hammer blows. PLS > 8 MPa.

## 2. COLOUR

Parameter	Terms
Value	Light, Dark
Chroma	Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish
Hue	Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.

For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light pinkish grey spotted with black).

State whether sample was wet or dry when described.

## 3. TEXTURE/FABRIC

**Texture Terms** (Applicable Mainly to Igneous Rocks)  
 Equigranular, Inequigranular, Megacrystic, Porphyritic, Crystalline, Cryptocrystalline, Aphanitic

**Fabric**  
 Describe preferred orientation of grains/crystals where apparent.

Describe intensity, spacing, continuity and any preferred orientation of microfractures where apparent.

## 4. MATERIAL WEATHERING/ALTERATION

Decomposition Term	Grade Symbol	Typical Characteristics
Residual Soil	VI	Original rock texture completely destroyed; can be crumbled by hand and finger pressure into constituent grains.
Completely Decomposed	V	Original rock texture preserved; can be crumbled by hand and finger pressure into constituent grains; easily indented by point of geological pick; slakes in water; completely discoloured compared with fresh rock.
Highly Decomposed	IV	Can be broken by hand into smaller pieces; makes a dull sound when struck by hammer; not easily indented by point of pick; does not slake in water; completely discoloured compared with fresh rock.
Moderately Decomposed	III	Cannot usually be broken by hand; easily broken by hammer; makes a dull or slight ringing sound when struck by hammer; completely stained throughout.
Slightly Decomposed	II	Not broken easily by hammer; makes a ringing sound when struck by hammer; fresh rock colours generally retained but stained near joint surfaces.
Fresh Rock	I	Not broken easily by hammer; makes a ringing sound when struck by hammer; no visible signs of decomposition (i.e. no discolouration).

This classification is applicable to igneous and volcanic rocks and other rocks of equivalent strength in fresh state.

**Disintegration**  
 Describe small-scale cracking and fracturing caused by mechanical weathering, where apparent.

**Alteration**  
 Describe state of alteration (e.g. mineralised, kaolinised) where apparent.

## 5. ROCK NAME (Including Grain Size)

Igneous	: Coarse- (6-20 mm), Medium- (2-6 mm) & Fine- (0.06-2 mm) grained GRANITE; GRANODIORITE. Very Fine-grained (< 0.06 mm) RHYOLITE; BASALT. (Common types only, see Geoguide 3 for others).
Pyroclastic	: PYROCLASTIC BRECCIA (> 60 mm), Lapilli TUFF (2-60 mm), Coarse ash TUFF (0.06-2 mm), Fine ash TUFF (< 0.06 mm).
Metamorphic	: Foliated - SCHIST (> 0.06 mm), PHYLLITE (< 0.06 mm). Non-foliated - MARBLE, QUARTZITE, FAULT BRECCIA.
Sedimentary	: CONGLOMERATE, BRECCIA (> 2 mm), SANDSTONE (0.06-2 mm), MUDSTONE (< 0.06 mm) = SILTSTONE (0.002-0.06 mm) + CLAYSTONE (< 0.002 mm). (Common types only).

If rock name cannot be identified, describe grain size quantitatively, including textural term where appropriate.

## 6. STRUCTURE

Structural Term	Rock Type
Bedded, Laminated, Massive	Sedimentary
Massive, Flow-banded	Igneous, Pyroclastic
Foliated, Banded, Cleaved	Metamorphic

**Spacing of Planar Structures**  
 Very thick (> 2 m), Thick (0.6-2 m), Medium (200-600 mm), Thin (60-200 mm), Very thin (20-60 mm), Thickly-laminated (Sedimentary) (6-20 mm) or Narrow (Igneous, Metamorphic) (6-20 mm), Thinly-laminated (Sedimentary) (< 6 mm) or Very narrow (Igneous, Metamorphic) (< 6 mm).

Examples: Thickly-bedded SANDSTONE. Narrowly flow-banded RHYOLITE.

## 7. DISCONTINUITIES

Nature (Type of Discontinuity)	Location and Orientation
Fault zone	Cleavage
Fault	Schistosity
Joint	Shaar plane
	Fissure
	Tension crack
	Foliation
	Bedding

Record location as co-ordinates or relative position along datum line, preferably on map or plan.

Record orientation as dip direction/dip in degrees (e.g. 032/55).

Spacing	Description
Extremely widely-spaced (> 6 m)	Very widely-spaced (2-6 m)
Widely-spaced (0.6-2 m)	Medium-spaced (200-600 mm)
Closely-spaced (60-200 mm)	Very closely-spaced (20-60 mm)
Extremely closely-spaced (< 20 mm)	

In exposures, supplement spacing with description of rock block shape where possible. Descriptors: Blocky, Tabular, Columnar, Polyhedral.

**Persistence** (Areal extent or size of a discontinuity within a plane)  
 Measured maximum persistence dimension should be used where possible (e.g. the discontinuity trace length on the surfaces of rock exposures). For general descriptions of different discontinuity sets, relative terms should be used.

Roughness	Waviness (large-scale): Estimate/measure wavelength and amplitude in metres.
Unevenness (small-scale), use one term from the following:	
Rough stepped	Smooth stepped
Rough undulating	Smooth undulating
Rough planar	Smooth planar
	Stickensided stepped
	Stickensided undulating
	Stickensided planar

Aperture Size	Description
Wide (> 200 mm)	Moderately wide (60-200 mm), Moderately narrow (20-60 mm), Narrow (6-20 mm), Very narrow (2-6 mm), Extremely narrow (> 0-2 mm), Tight (zero).

Infilling (Nature)	Description
Clean	Surface staining
Non-cohesive soil	Cohesive soil
Calcite	Manganese
Other (Specify)	
	Decomposed/disintegrated rock
	Quartz
	Kaolin

Give full description of Infill materials/minerals where appropriate.

Seepage	Description
Dry	Damp/wet
	Seepage present (estimate quantity in l/sec or l/min)

**Fracture State**  
 In borehole cores, measure the following: Total Core Recovery (TCR), Solid Core Recovery (SCR), Rock Quality Designation (RQD), Fracture Index (FI). See Geoguide 3 for definitions.

## 8. MASS WEATHERING

Term	Zone Symbol	Typical Characteristics
Residual Soil	RS	Residual soil derived from <i>in situ</i> weathering; mass structure and material texture/fabric completely destroyed; 100% soil
Partially Weathered Rock	PW 0/30	Less than 30% rock Soil retains original mass structure and material texture/fabric (i.e. sepolite)
	PW 30/50	Rock content does not affect shear behaviour of mass, but relict discontinuities in soil may do so. Rock content may be significant for investigation and construction. 30% to 50% rock
	PW 50/90	Both rock content and relict discontinuities may affect shear behaviour of mass. 50% to 90% rock
	PW 90/100	Interlocked structure. Greater than 90% rock
	Unweathered Rock	UW

## 9. ADDITIONAL GEOLOGICAL INFORMATION

Record geological formation name if known. Avoid conjecture. Refer to HKGS maps & memoirs for further information.

### NOTES:

1. Rock material description normally includes: strength, colour, texture/fabric, material weathering/alteration and ROCK NAME.
2. Rock mass description normally includes: strength, colour, structure, mass weathering, ROCK NAME, discontinuities and additional geological information. Can be supplemented with more detailed information on texture/fabric and material weathering/alteration of different materials within the mass where necessary.

1. STRENGTH (Compactness & Consistency)

Soil Type	Term	Identification
Very Coarse (COBBLES & BOULDERS)	Loose	By inspection of voids and particle packing in the field.
	Dense	
	Very loose	SPT 'N' value 0-4.
Coarse (SANDS & GRAVELS)	Loose	SPT 4-10; can be excavated with spade; 50 mm peg easily driven.
	Medium dense	SPT 10-30.
	Dense	SPT 30-50; requires pick for excavation; 50 mm peg hard to drive.
	Very dense	SPT > 50.
Fine (CLAYS & SILTS)	Very soft	Undrained shear strength (USS) < 20 kPa; exudes between fingers when squeezed in hand.
	Soft	USS 20-40 kPa; moulded by light finger pressure.
	Firm	USS 40-75 kPa; can be moulded by strong finger pressure.
	Stiff	USS 75-150 kPa; cannot be moulded by fingers; can be indented by thumb.
	Very stiff or hard	USS > 150 kPa; can be indented by thumbnail.
Organic (ORGANIC CLAYS, SILTS SANDS & PEATS)	Compact	Fibres already compressed together.
	Spongy	Very compressible and open structure.
	Plastic	Can be moulded in hand and smears fingers.

Terms applicable only to transported soils. For soils derived from insitu rock weathering, record actual values of quantitative tests (e.g. SPT 'N' value) as part of the description, where appropriate.

2. COLOUR

Parameter	Terms
Value	Light, Dark
Chroma	Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish
Hue	Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Gray, Black

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.  
 For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light yellowish brown mottled with red).  
 State whether sample was wet or dry when described.

3. PARTICLE SHAPE & COMPOSITION

Characteristic	Terms
Form	Equidimensional, Flat, Elongate, Flat & Elongate
Angularity	Angular, Subangular, Subrounded, Rounded
Surface Texture	Smooth, Rough, Glassy, Honeycombed, Pitted, Striated

Describe composition of coarse particles where appropriate. Gravel and larger particles are usually rock fragments (e.g. granite, tuff); sand particles are usually individual minerals (e.g. quartz, feldspar).

4. STRUCTURE

Soil Type	Term	Identification
Coarse & Fine	Homogenous	Deposit consists essentially of one type.
	Interstriated (Interbedded or Interlaminated)	Alternating layers of varying types or with bands or lenses of other materials.
Coarse	Heterogenous	A mixture of types.
	Fissured	Breaks into polyhedral fragments along fissures.
Fine	Intact	No fissures.
	Fibrous	Plant remains recognizable & retain some strength.
Organic	Amorphous	No recognizable plant remains.

Describe spacing of bedding planes, fissures, shell bands, etc using the spacing terms given in Items 6 & 7 for rock description (see other side).

Above terms applicable only to transported soils. For soils derived from insitu rock weathering, describe relict structures in accordance with item 8 of rock description (see other side).

5. WEATHERING

Soils Derived from Insitu Weathering of Rocks  
 There are two main types: saprolites (rock texture/structure retained) and residual soils (rock texture/structure completely destroyed). Describe state of weathering in accordance with items 4 & 8 for rock description (see other side).

Sedimentary (Transported) Soils  
 Coarse soils: Describe overall discoloration of soil and degree of decomposition of gravel and larger particles (see item 4, other side). Also note any signs of disintegration of large particles where apparent.

Fine Soils: Describe overall discoloration of soil where apparent.

6. SOIL NAME

A. Basic Soil Types			
Soil Type	Particle Sizes (mm)	Identification	
BOULDERS	> 200	Only seen complete in pits or exposures. Often difficult to recover from boreholes.	
COBBLES	60 - 200		
GRAVELS	Coarse 20 - 60	Easily visible to naked eye; particle shape and grading can be described. Well-graded: wide range of grain sizes. Poorly-graded: not well-graded (split further into uniform or gap-graded).	
	Medium 6 - 20		
	Fine 2 - 6		
SANDS	Coarse 0.6 - 2	Visible to naked eye; very little or no cohesion; grading can be described. May be well-graded or poorly-graded (uniform or gap-graded) as for gravel.	
	Medium 0.2 - 0.6		
	Fine 0.06 - 0.2		
SILTS	Coarse 0.02 - 0.06	Only coarse silt barely visible to naked eye; exhibits little plasticity and marked dilatancy; slightly granular or silky to the touch. Disintegrates in water; lumps dry quickly; possesses cohesion but can be powdered easily between fingers. Dry lumps can be broken by hand but not powdered between the fingers. Disintegrates in water more slowly than silt; smooth to the touch; exhibits plasticity but no dilatancy; sticks to the fingers and dries slowly; shrinks appreciably on drying, usually showing cracks. These properties more noticeable with increasing plasticity.	
	Medium 0.006 - 0.02		
	Fine 0.002 - 0.006		
CLAYS	< 0.002		
ORGANIC CLAYS, SILTS OR SANDS	varies	Contains much organic vegetable matter; often has a noticeable smell and changes colour on oxidation.	
PEATS	varies	Predominantly plant remains; usually dark brown or black in colour, often with distinctive smell; low bulk density.	

B. Composite Soil Types (Mixtures of Basic Types)			
Principal Soil Type	Terminology Sequence	Term for Secondary Constituent	% of Secondary Constituent
Very coarse (BOULDERS & COBBLES) (> 50% of soil > 60 mm)	Secondary constituents (finer material) ▲ after principal	With a little	< 5
		With some	5 - 20
		With much	20 - 50
Coarse (GRAVELS & SANDS) (> 65% gravel & sand sizes)	Secondary constituents before principal (excluding cobbles & boulders) +	Slightly (silty, clayey or silty/clayey) *	< 5
		(silty, clayey or silty/clayey) *	5 - 15
		Very (silty, clayey or silty/clayey) *	15 - 35
Fine (SILTS & CLAYS) (> 35% silt & clay sizes)	Secondary constituents before principal (excluding cobbles & boulders) +	Slightly (gravelly or sandy) *	< 5
		(gravelly or sandy) *	5 - 20
		Very (gravelly or sandy) *	20 - 50
		Slightly (gravelly or sandy or both) *	< 35
		(gravelly or sandy) *	35 - 65

- ▲ Full name of finer material should be given (see examples below).
- \* Secondary soil type as appropriate; use 'silty/clayey' when a distinction cannot be made between the two.
- + If cobbles or boulders are also present in a coarse or fine soil, this can be indicated by using one of the following terms relating to the very coarse fraction after the principal: 'with occasional' (< 5), 'with some' (5-20), 'with many' (20-50), where figures in brackets are % very coarse material expressed as a fraction of the whole soil (see examples below).

Examples: Slightly silty/clayey, sandy GRAVEL. Slightly gravelly, sandy SILT. Very gravelly SAND. Sandy GRAVEL with occasional boulders. BOULDERS with much finer material (silty/clayey, very sandy gravel).

For fine soils, plasticity terms should also be described where possible, viz: 'non-plastic' (generally silts), 'intermediate plasticity' (lean clays), 'high plasticity' (fat clays).

7. DISCONTINUITIES

Full description of discontinuities, where necessary, should be made using the methods and terms given in item 7 for rock description (see other side).

8. ADDITIONAL GEOLOGICAL INFORMATION

Record geological name which indicates geological origin or soil type (e.g. Alluvium, Colluvium, Marine sand etc.). Refer to HKGS maps & memoirs for further information.

- NOTES:
- Mass characteristics of soils (i.e. structure, weathering, discontinuities) can only be described satisfactorily in undisturbed field exposures or large undisturbed samples.
  - For full descriptions of soils derived from insitu rock weathering:
    - saprolites - describe as rocks, supplemented by soil strength and soil name terms in brackets,
    - residual soils - describe as soils, supplemented by name of parent rock where apparent from field evidence.



**APPENDIX B**  
**Log Symbols and Classification Systems**

LEGEND SYMBOLS FOR LOGS



AGGLOM	ASPHALT	BASALT	BIOCLAST	BLANK	BLDR	BLDR	BLDRSBL	BLDRSG
BLDRCKT	BLDRCT	BLDRS	BLDRSK	BLDRS	BLDRSG	BLDRSGK	BLDRSK	
BLDRZ	BLDRK	BLDRZSG	BLDRZSGK	BLDRSK	BRECCIA	CBLI	CBLIC	CBLICG
CBLICG	CBLICS	CBLICSG	CBLICSGO	CBLICS	CBLICSG	CBLICZS	CBLIZ	CBLIS
CBLISG	CBLISGO	CBLIZ	CBLIZG	CBLIZS	CBLIZSG	CBLIZSO	CLAY	CLAYB
CLAYG	CLAYGB	CLAYK	CLAYSB	CLAYSO	CLAYGO	CLAYK	CLAYB	CLAYO
CLAYB	CLAYS	CLAYB	CLAYSO	CLAYSB	CLAYSG	CLAYK	CLAYSO	CLAYSTON
CLAYZ	CLAYZ	CLAYSO	CLAYSOB	CLAYSG	CLAYK	CLAYZO	CLAYZS	CLAYZSB
CLAYZSG	CLAYZSB	CLAYZSK	CLAYZK	CLAYZO	CONCRETE	CONGLOM	DOLMITE	FAULT
FILL	FINE	FINES	FINEG	FINEGB	FINEGK	FINEGO	FINEK	FINEKB



LEGEND SYMBOLS FOR LOGS



FINEKO	FINEO	FINES	FINESB	FINESG	FINESGB	FINESGK	FINESGO	FINESK
FINESO	FISSH	GABRO	GNEISS	GRANITE	GRAV	GRAVB	GRAVC	GRAVCS
GRAVCBL	GRAVCK	GRAVCO	GRAVCS	GRAVCSB	GRAVCSK	GRAVCSO	GRAVCSZ	GRAVCSB
GRAVCSK	GRAVCSB	GRAVCSO	GRAVCSZ	GRAVCSB	GRAVCSK	GRAVCSO	GRAVCSZ	GRAVCSB
GRAVZ	GRAVZK	GRAVZO	GRAVZS	GRAVZSB	GRAVZSK	IST	ISTSIT	MARBLE
METACON	METANZ	WOODSTON	ORGANICS	PEGNITE	PHYLLITE	QUARTZIT	RHYOLITE	SAND
SANDB	SANDC	SANDB	SANDC	SANDB	SANDC	SANDB	SANDC	SANDB
SANDCZ	SANDCZB	SANDCZG	SANDCZGB	SANDCZGK	SANDCZK	SANDCZO	SANDG	SANDGB
SANDGK	SANDGG	SANDK	SANDO	SANDSTON	SANDE	SANDEB	SANDG	SANDGB
SANDGK	SANDGO	SANDK	SANDZO	SCHIST	SHALE	SILT	SILTB	SILTC

# LEGEND SYMBOLS FOR LOGS



<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 
<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 
<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 
<b>SILTCK</b> 	<b>SILTCK</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SILTCL</b> 	<b>SYENITE</b> 	<b>TRACHYTE</b> 	<b>TUFF</b> 
<b>TUFFINE</b> 	<b>VEIN</b> 	<b>WASHING</b> 						

LIST OF MATERIAL CODES FOR THE LOG LEGEND



<u>Material Code</u>	<u>Description</u>	
AGGLOM	Agglomerate	
ASPHALT	Asphalt	
BASALT	Basalt	
BIOCLAST	Shells	
BLANK	Material not recovered	
BLDR	Boulders	
BLDRCBBL	Boulders and Cobbles	
BRECCIA	Sedimentary Breccia	
CBBL	Cobbles	
CLAY	Clay	
CLAYSTON	Claystone	
CONCRETE	Concrete	
CONGLOM	Conglomerate	
DOLOMITE	Dolomitic Limestone	
FILL	Artificial Fill	
FISSIN	Fissure Infill	
GABBRO	Gabbro, Lamprophyre	
GNEISS	Gneiss	
GRANITE	Granite	
GRAV	Gravel	
GRAVCBBL	Gravel and Cobbles	
LST	Limestone	
LSTSLT	Interbedded Limestone and Siltstone	
MARBLE	Marble	
METACON	Metamorphic Rock – Contact	
METAREG	Metamorphic Rock – Regional	
MUDSTONE	Mudstone	
ORGANICS	Organic, Peat	
PEGMTITE	Pegmatite	
PHYLLITE	Phyllite, Mylonite	
QUARTZIT	Quartzite	
RHYOLITE	Rhyolites	
SAND	Sand	
SANDSTON	Sandstone	
SCHIST	Schist (Medium – grained Metamorphic Rock)	
SHALE	Shale	
SILT	Silt	
SILTSTON	Siltstone	
SURFACE	Artificial Surfacing – Masonry, Stone/Brick Shotcrete and Chunam surface etc.	Pitching,
SYENITE	Granodiorite, Syenite, Monzonite	
TRACHYTE	Trachyte	
TUFF	Coarse Ash Tuff, Lapilli Tuff	
TUFFINE	Fine Ash Tuff	

Notes:

In common ground the following codes are added to the main description in the order stated below the denote secondary constituents:

(i)	C – Clay	(v)	K – Cobbles
(ii)	Z – Silt	(vi)	O – Organic
(iii)	S – Sand	(vii)	B – Shells
(iv)	G – Gravel		

e.g. A silty CLAY with occasional shell and organic material is coded as CLAYZOB



**APPENDIX C**  
**Corehole Records and Photographs**



**FUGRO  
GEOTECHNICAL  
SERVICES LTD**

**COREHOLE RECORD**

HOLE No. CH1

CONTRACT No.: GE/2008/04

SHEET: 1 of 1

Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1

METHOD: Portable Coring

CO-ORDINATES:

WORKS ORDER No. GE/2008/04.42

MACHINE & No.: R-1

E 828031.52  
N 842618.27

DATE from: 01/03/2010 to 01/03/2010

FLUSHING MEDIUM: Water

ORIENTATION: 050°/0°

GROUND LEVEL + 7.46 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
01/03/2010	HW 0.28			100							0.00	0.00				
1									1	*	0.28	7.46	0.28			Pinkish grey (7.5YR/7/2), angular BOULDERS of moderately strong granite. (MASONRY WALL)
2									2	*	0.55					Yellowish brown (10YR/5/6), angular fine to coarse GRAVEL of weak to moderately strong metasiltstone, metatuff and concrete with some matrix of sandy clayey silt. (FILL)
3									3	*	1.05					
4									4	*	1.55					
5									5	*	2.05	7.46	2.50			
6									6	*	2.55	7.46	3.00			Soft, reddish yellow (5YR/6/6), sandy, very clayey SILT. (ALLUVIUM)
7																End of investigation hole at 3.00m.
8																
9																
10																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



**CEDD Contract No.:** GE/2008/04  
**Ground Investigation - New Territories West (Term Contract)**

**From Fugro Geotechnical Services Ltd.**

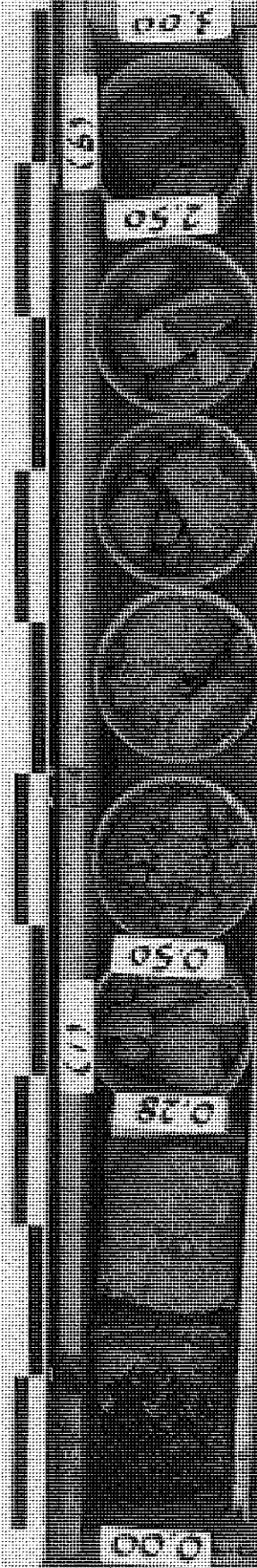
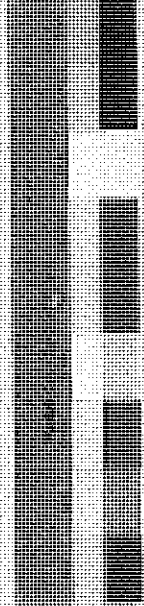
**Works Order No.:** GE/2008/04.42

**Hole No.:** CH1 **Box No.:** 1 of 1

**Depth:** 0.00 m. to 3.00 m.

**Date of Photograph:** 5/3/2010

**Job Title:** Agreement No. BA012005  
 Consultancy for the Investigation, Design & Supervision of Slope & Retaining Wall Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, N.T. on Lot No. 1263 in D.D.96 for Portion of Feature No. 2NE-D/R1



0.00

0.50

1.00

1.50

2.00

2.50

3.00

(5)

(5)



**FUGRO**  
**GEOTECHNICAL**  
**SERVICES LTD**

**COREHOLE RECORD**

HOLE No. **CH2**

CONTRACT No.: **GE/2008/04**

SHEET: **1** of **1**

Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: **Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1**

METHOD: **Portable Coring**

CO-ORDINATES:

WORKS ORDER No. **GE/2008/04.42**

MACHINE & No.: **R-2**

E **828031.02**

DATE from: **01/03/2010** to **01/03/2010**

N **842617.56**

FLUSHING MEDIUM: **Water**

ORIENTATION: **050°/45°**

GROUND LEVEL **+ 6.31** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Depth (m)	Legend	Grade	Description
									No.	Type	Depth				
01/03/2010	HW 0.40			90							6.31	0.00			
1									1	*	0.40	6.03	0.40		Grey (7.5YR/6/1), angular coarse GRAVEL and COBBLES of strong granite and concrete. (MASONRY WALL)
2									2	*	0.55				Soft, red (10R/5/8), sandy clayey SILT with occasional angular coarse gravel of weak to moderately strong metasilstone. (FILL)
3									3	*	1.55	5.25	1.50		Soft, light yellowish brown (2.5Y/6/4), mottled black, sandy, very clayey SILT. (FILL)
4									4	*	1.55	4.90	2.00		Soft, greyish brown (10YR/5/2), sandy clayey SILT with occasional subangular coarse gravel of strong granite. (FILL)
5									5	*	2.55				Soft, light yellowish brown (2.5Y/6/4), sandy silty CLAY with occasional angular coarse gravel of strong granite. (FILL)
01/03/2010									6	*	2.55	4.19	3.00		End of investigation hole at 3.00m.
4															
5															
6															
7															
8															
9															
10															

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



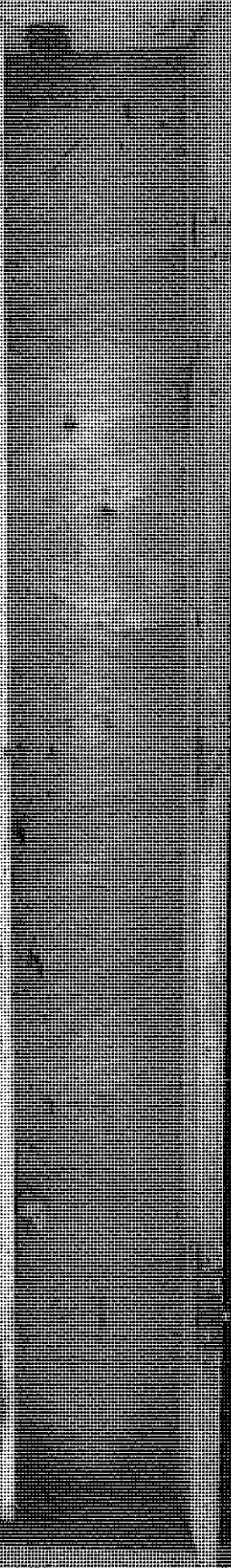
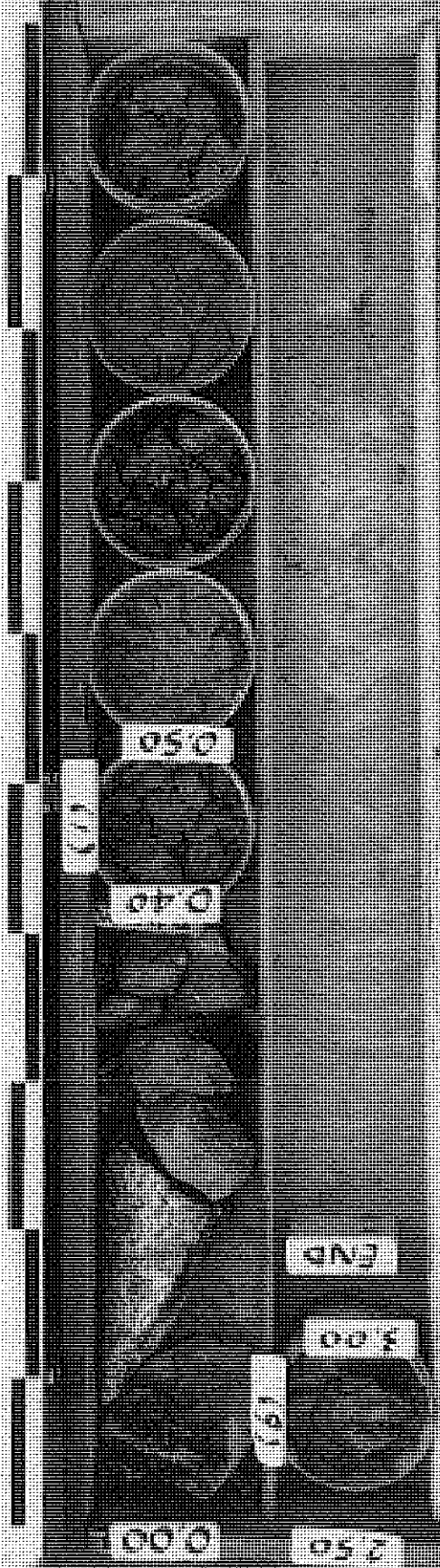
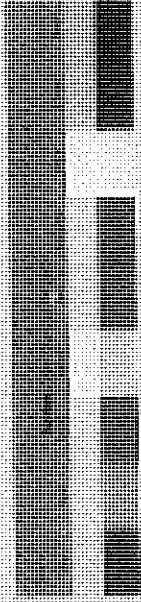
CEDD Contract No.: GE/2008/04  
 Ground Investigation - New  
 Territories West (Term Contract)

Fugro Geotechnical Services Ltd.

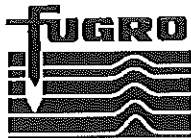
Hole No.: CH2 Box No.: 1 of 1  
 Depth: 0.00 m. to 3.00 m.  
 Works Order No.: GE/2008/04.42

Job Title: Agreement No. BA/01/2006  
 Consultancy for the Investigation, Design  
 & Supervision of Slope & Retaining Wall  
 Upgrading Works at Ma Tso Lung Sun  
 Tsuen, Yuen Long, N.T. on Lot No. 1283 in  
 D.D.96 for Portion of Feature No. 2NE-D/R1

Date of Photograph: 5/3/2010







**FUGRO  
GEOTECHNICAL  
SERVICES LTD**

**COREHOLE RECORD**

HOLE No. **CH3**

CONTRACT No.: **GE/2008/04**

SHEET: **1** of **1**

Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: **Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1**

METHOD: **Portable Coring**

CO-ORDINATES:

WORKS ORDER No. **GE/2008/04.42**

MACHINE & No.: **R-1**

E **828029.43**

DATE from: **01/03/2010** to **01/03/2010**

N **842620.23**

FLUSHING MEDIUM: **Water**

ORIENTATION: **050°/0°**

GROUND LEVEL **+ 7.36** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
01/03/2010	HW 0.20			100							7.36	0.00			
									1	+	8.65				Pinkish grey (7.5YR/7/2), angular BOULDERS of strong granite. (MASONRY WALL)
1									2	+	9.65				Soft to firm, weak, red (10R/5/8), sandy clayey SILT with some angular fine to coarse gravel of weak to moderately strong metatuff, quartz and concrete. (FILL)
									3	+	1.65				
2									4	+	1.65				
									5	+	2.65	7.36	2.50		Light yellowish brown (2.5Y/6/4), angular coarse GRAVEL of moderately strong metatuff. (FILL)
01/03/2010									6	+	3.65	7.36	3.00		End of investigation hole at 3.00m.
3															
4															
5															
6															
7															
8															
9															
10															

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



CEDD Contract No.: GE/2008/04  
 Ground Investigation - New  
 Territories West (Term Contract)

Fugro Geotechnical Services Ltd.

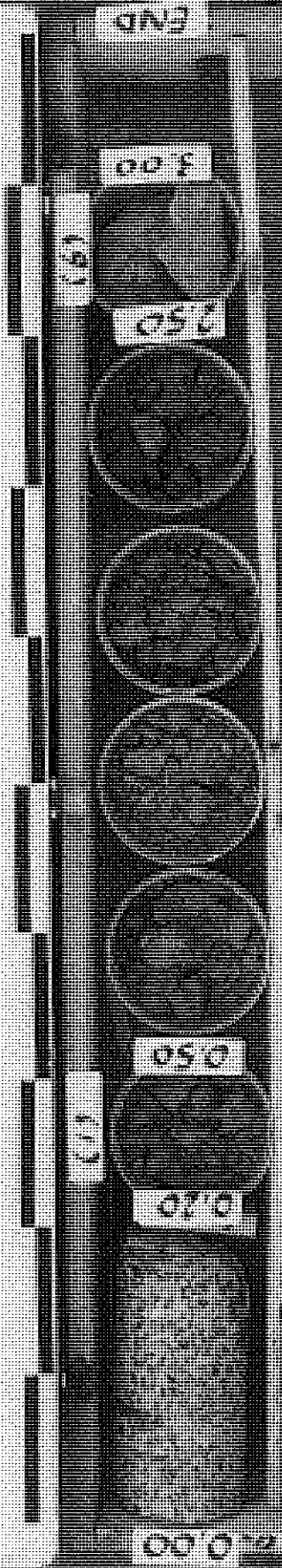
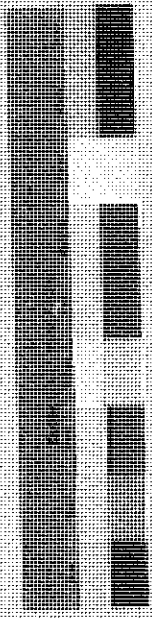
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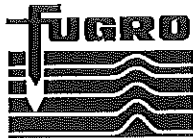
Works Order No.: GE/2008/04.42

Depth: 0.00 m. to 3.00 m.

Date of Photograph: 5/3/2010

Job Title: Agreement No. BA/01/2008  
 Consultancy for the Investigation, Design  
 & Supervision of Slope & Retaining Wall  
 Upgrading Works at Ma Tso Lung Sun  
 Tsuen, Yuen Long, N.T. on Lot No. 1283 in  
 D.D.96 for Portion of Feature No. 2NE-D/R1





**FUGRO  
GEOTECHNICAL  
SERVICES LTD**

**COREHOLE RECORD**

HOLE No. **CH4**

CONTRACT No.: **GE/2008/04**

SHEET: **1** of **1**

Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: **Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NF-D/R1**

METHOD: **Portable Coring**

CO-ORDINATES:

WORKS ORDER No. **GE/2008/04.42**

MACHINE & No.: **R-2**

E **828028.75**

DATE from: **02/03/2010** to **02/03/2010**

N **842619.36**

FLUSHING MEDIUM: **Water**

ORIENTATION: **050°/45°**

GROUND LEVEL **+ 5.99** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
02/03/2010	HW 0.20			100							5.99	0.00			
											5.85	0.20			Pinkish grey (7.5YR/7/2), angular BOULDERS of strong granite. (FILL)
1									1	+	0.55				Soft, yellowish brown (10YR/5/6), sandy clayey SILT. (FILL)
									2	+	0.85				
2									3	+	1.55	4.93	1.50		Soft, light yellowish brown (2.5Y/6/4), sandy silty CLAY with occasional angular coarse gravel of moderately strong quartz. (FILL)
									4	+	1.65	4.58	2.00		
3									5	+	2.55				Soft to firm, light yellowish brown (2.5Y/6/4), mottled red, sandy silty CLAY. (ALLUVIUM)
									6	+	2.65				
4									7	+	3.55				
									8	+	3.65	3.16	4.00		Red (10R/5/8), fine to medium SAND. (ALLUVIUM)
									9	+	4.55				
02/03/2010									10	+	4.65	2.45	5.00		End of investigation hole at 5.00m.

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



CEDD Contract No.: GE/2008/04  
 Ground Investigation - New  
 Territories West (Term Contract)

Fugro Geotechnical Services Ltd.

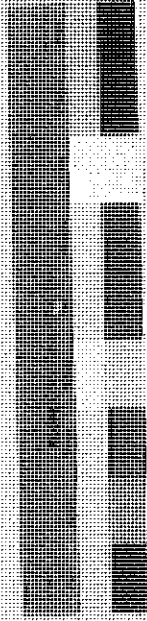
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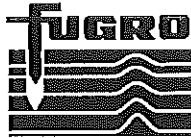
Hole No.: CH4 Box No.: 1 of 1

Depth: 0.00 m. to 5.00 m.

Date of Photograph: 5/3/2010

Job Title: Agreement No. BA/01/2006  
 Consultancy for the Investigation, Design  
 & Supervision of Slope & Retaining Wall  
 Upgrading Works at Ma Tso Lung Sun  
 Tsuen, Yuen Long, N.T. on Lot No. 1283 in  
 D.D.96 for Portion of Feature No. 2NE-D/R1





**FUGRO**  
**GEOTECHNICAL**  
**SERVICES LTD**

**COREHOLE RECORD**

HOLE No. CH5

CONTRACT No.: GE/2008/04

SHEET: 1 of 1

Agreement No. BA/017/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1

METHOD: Portable Coring

CO-ORDINATES:

WORKS ORDER No. GE/2008/04.42

MACHINE & No.: R-2

E 828026.44  
 N 842622.18

DATE from: 01/03/2010 to 01/03/2010

FLUSHING MEDIUM: Water

ORIENTATION: 050°/0°

GROUND LEVEL + 6.66 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
01/03/2010	HW 0.40			98							6.66	0.00			
1									1	±	0.40	0.40			Pinkish brown (7.5YR/7/2), angular BOULDERS of moderately strong tuff. (MASONRY WALL)
									2	±	0.85	0.85			Light yellowish brown (2.5Y/6/4), angular coarse GRAVEL of moderately strong metatuff. (FILL)
									3	±	1.55	1.55			Soft, yellowish brown (10YR/5/6), sandy SILT with much angular fine to coarse gravel of weak to moderately strong metatuff and metasiltstone. (FILL)
2				100					4	±	1.70	1.70			Grey (7.5YR/6/1), angular BOULDERS of strong tuff. (FILL)
									5	±	2.00	2.00			Soft, dark grey (5YR/4/1) to black (5R/2.5/1), sandy clayey SILT with occasional medium gravel of glass. (FILL/TOPSOIL)
3									6	±	2.55	2.55			Soft to firm, reddish yellow (5YR/6/6), sandy, very clayey SILT. (ALLUVIUM)
01/03/2010											6.66	3.00			End of investigation hole at 3.00m.
4															
5															
6															
7															
8															
9															
10												10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



CEDD Contract No.: GE/2008/04  
 Ground Investigation - New  
 Territories West (Term Contract)

Fugro Geotechnical Services Ltd.

Hole No.: CH5 Box No.: 1 of 1

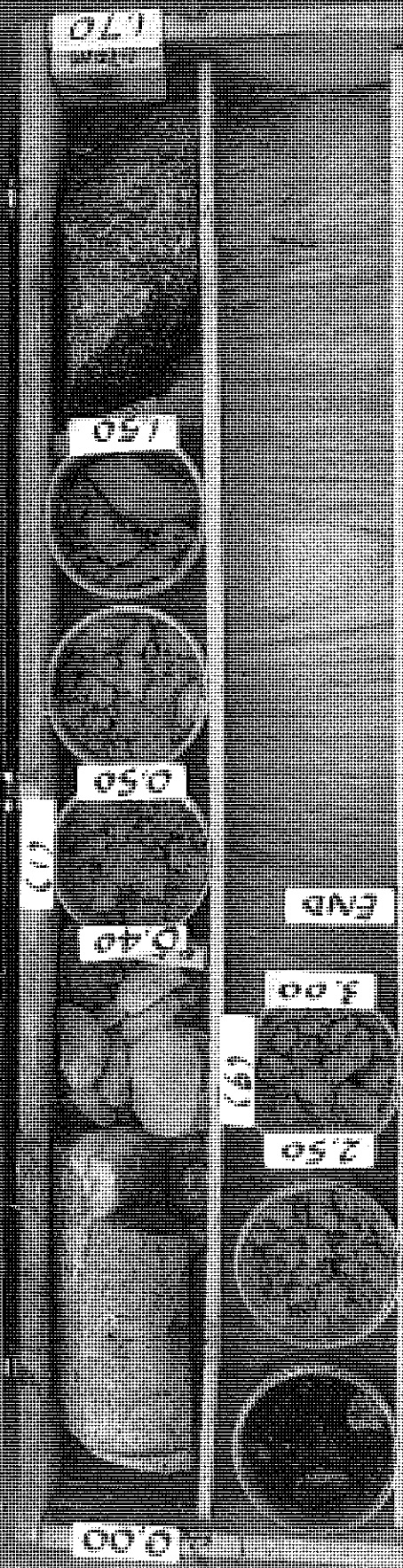
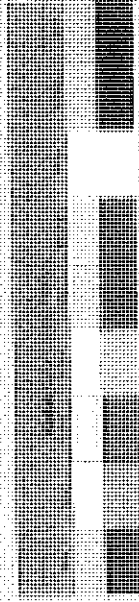
Works Order No.: GE/2008/04.42

Depth: 0.00 m. to 3.00 m.

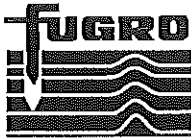
Job Title: Agreement No. BA/01/2008

Date of Photograph: 5/3/2010

Consultancy for the Investigation, Design  
 & Supervision of Slope & Retaining Wall  
 Upgrading Works at Ma Tso Lung Sun  
 Tsuen, Yuen Long, N.T. on Lot No. 1283 in  
 D.D.96 for Portion of Feature No. 2NE-D/R1



END



**FUGRO  
GEOTECHNICAL  
SERVICES LTD**

**COREHOLE RECORD**

HOLE No. **CH6**

CONTRACT No.: **GE/2008/04**

SHEET: **1** of **1**

Agreement No. BA/01/2008, Consultancy for the Investigation, Design and Supervision of Slope and Retaining Wall  
 PROJECT: Upgrading Works at Ma Tso Lung Sun Tsuen, Yuen Long, New Territories on Lot No. 1283 in D.D. 96 for portion of Feature No. 2NE-D/R1

METHOD: **Portable Coring**

CO-ORDINATES:

WORKS ORDER No. **GE/2008/04.42**

MACHINE & No.: **R-1**

E **828026.08**  
N **842621.75**

DATE from: **01/03/2010** to **01/03/2010**

FLUSHING MEDIUM: **Water**

ORIENTATION: **050°/0°**

GROUND LEVEL **+ 5.84** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
01/03/2010	HW 0.20			100							0.00	0.00				
											5.84	0.20				Pinkish grey (7.5YR7/2), angular BOULDERS of strong granite. (MASONRY WALL)
1																Soft, yellowish brown (10YR/5/6), sandy, very clayey SILT. (FILL)
2											5.84	1.50				1.50 - 2.00m : With piece of plastic fragment. (FILL)
											5.84	2.00				Soft, reddish yellow (5YR/6/6), sandy, very clayey SILT. (ALLUVIUM)
01/03/2010											5.84	3.00				End of Investigation hole at 3.00m.
4																
5																
6																
7																
8																
9																
10																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- 76mm Vibrocore Sample
- 100mm Vibrocore Sample
- Vibrocore Sub-sample
- SPT Liner Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Pressuremeter Test
- Televiwer Survey
- Packer Test
- Impression Packer Test
- Water Sample
- Standpipe
- Piezometer Tip

LOGGED W.P. Yiu  
 DATE 04/03/2010  
 CHECKED A.B. Hollinshead  
 DATE 10/03/2010

REMARKS



CEDD Contract No.: GE/2008/04  
 Ground Investigation - New

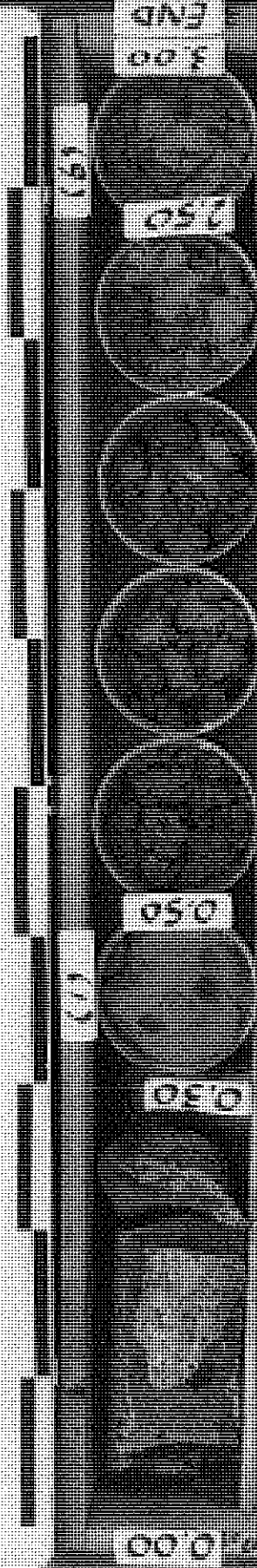
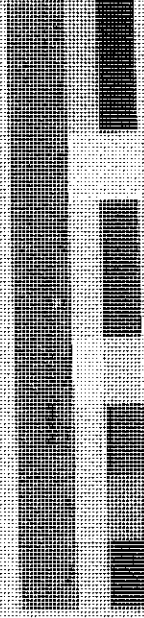
Fugro Geotechnical Services Ltd.

Territories West (Term Contract)  
 Works Order No.: GE/2008/04.42

Hole No.: CH6 Box No.: 1 of 1  
 Depth: 0.00 m. to 3.00 m.

Job Title: Agreement No. BA/012008  
 Consultancy for the Investigation, Design  
 & Supervision of Slope & Retaining Wall  
 Upgrading Works at Ma Tso Lung Sun  
 Tsuen, Yuen Long, N.T. on Lot No. 1283 in  
 D.D. 96 for Portion of Feature No. 2NE-D/R1

Date of Photograph: 5/3/2010



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3000 END





**APPENDIX D**  
**Installation Detail and Response Test Record**





**APPENDIX E**  
**Record of Water Levels**





**APPENDIX F**  
**Digital Records**



**APPENDIX G**  
**Photograph Negatives**  
**(Master Copy Only)**

# **Appendix E**

Geotechnical Map

Proposed Site Location



Company:

Project:

Lot 27 Part 279  
Part 2 0 2 Part  
2 2 and 2 4 Part in  
D.D. 96  
a T o L ng  
New Territorie

Title:

eotec nical ap

Dwg No:

File:

Fig.

Date:  
29 Dec 2024

