Appendix G

Geotechnical Planning Review Report

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" to "Residential (Group C) 1" for Proposed House Development

at

Various Lots in D.D. 244 and Adjoining Government Land, Nam Pin Wai, Sai Kung

Geotechnical Planning Review Report

1st Submission

JMK Consulting Engineers Limited May 2023

Revision 3

Report	technical Planning Review
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Geotechnical Planning Review Report

Revision 3

1. INTRODUCTION

Philip So & Associates Ltd was appointed to carry out Geotechnical Planning Review Report (GPRR) for the proposed residential development at various lots in D.D. 244 at Nam Pin Wai, Sai Kung (the Site).

This GPPR 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 THE FEATURES

The Site is at Nam Pin Wai, Sai Kung. New Hiram's Highway is located at a distance about 25m at east of the Site. Site photos taken in February 2021 are presented in Appendix A (see Photos A of F). According to the available SIS records obtained from Geotechnical Engineering Office (GEO), there is a registered geotechnical feature no. 11NE-B/F186 partly lies within the southwestern of the Site and two registered geotechnical feature nos. 11NE-B/CR 924 and 11NE-B/FR 295 are located immediately outside the east of the Site boundary.

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).

Ground investigation was carried out at Feature No. 11NE-B/CR924 at distance about 6m at the east of the Site under the project, namely "Hiram's Highway Improvement Phase 3 : Improvement between Nam Wai and Ho Chung and Upgrading Local Access Roads", prepared by Gammon Construction Limited in June 1999. The borehole record (Drillhole No. ABH2) indicated that the site comprises colluvium overlying completely / highly decomposed tuff (C/HDT) (see Appendix D).

3.1 Geological Maps

The geology of the Study Area is shown on the Hong Kong Geological Survey (HKGS) Map Sheet 11 (Hong Kong & Kowloon), 1:20,000 - scale HGM20 series. The local geology of the Study Area is presented in Figure 3 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 coarse ash crystal tuff (Krd_cat) of the Mount Davis Formation.

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3.1.2 Superficial Geology

Entire Site are surrounded by alluvium (Qfa).

3.1.3 Structural Geology

No fault or photolineament has been recorded within or in the vicinity 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 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 recorded none relict / recent landslides within and in the vicinity of the Site.

3.3 Historical Landslide Catchment (HLC) Inventory

Historical Landslide Catchments (HLCs) have been defined by GEO based on the results of the ENTLI. According to the inventory, there is no HLC within the Site.

3.4 Large Landslide Study

The Large Landslide database was prepared by Scott Wilson (1999) for the GEO. Interpretation of landslide details with Map Sheet Ref No. 11-NE-A was conducted using the low altitude (3,900 ft.) 1963 aerial photographs to identify features thought to be landslides with source area greater than 20m wide. The database has no record of large landslides within or close to the Site.

3.5 Reported Landslide Incidents

The GEO landslide incidents database has no record of reported landslide incident within or in the vicinity of the Site.

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4. IMPACTS OF PROPOSED WORKS ON EXISTING SLOPES AND RETAINING WALLS

Feature No. 11NE-B/F186 (Photos E and F)

Feature No. NE-B/F186 is located at the southwestern end of Site boundary. Sub-division nos. 1, 2 and 3 of the feature are lies within the Site while the rest are immediately outside the Site. According to the SIS record, the slope portion of the feature has a maximum eight about 8.0m with 110m long measured along its toe, and the average slope gradient is about 40 degrees to the horizontal.

Feature No. 11NE-B/FR295 (Photos G and H)

Feature No. 11NE-B/FR295 is located immediately outside the eastern site boundary and adjacent to the Feature No. 11NE-B/CR924. According to the SIS record, the slope portion of the feature has a maximum height about 8.8m with 85m long measured along its toe, and the average slope gradient is about 30 degrees to the horizontal. The wall portion of the feature has a maximum height about 8.8m with 16.3m long measured along its toe, and the average wall face angle is about 90 degrees to the horizontal. Stability assessment was checked and accepted by GEO in 1998 under the project "Hiram's Highway Improvement Between Nam Wai and Ho Chung".

Feature No. 11NE-B/CR924 (Photos I and J)

Feature No. 11NE-B/CR924 is located immediately outside the northeastern site boundary. According to the SIS record, the slope portion of the feature has a maximum height about 3m with 50m long measured along its toe, and the average slope gradient is about 35 degrees to the horizontal. The wall portion of the feature has a maximum height about 5m with 50m long measured along its toe, and the average wall face angle is about 90 degrees to the horizontal. Stability assessment was checked and accepted by GEO in 1998 under the project "Hiram's Highway Improvement Between Nam Wai and Ho Chung".

Impacts of Proposed Works – Existing Features

The proposed development consists of gardening construction for clubhouse for Site A and 3-storery house for Site B & C.

The schematic geotechnical works for the proposed development – Option 1 are discussed below (Figure 5 & 6):-

Since Feature 11NE-B/CR924 & 11NE-B/FR295 are adjacent to the application site, the stability on the geotechnical feature shall be assessed in detail under a separate submission. Site formation works / slope upgrading works such as installation of soil nails works are proposed in the site formation design / slope upgrading design submission if the stability of such geotechnical features cannot fulfil the current engineering standards. In addition,

Geotechnical Planning Review Report

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retaining walls are proposed to withstand the required platform under a site formation submission to the Buildings Department for approval.

Application Site A, B & C

No existing geotechnical feature is situated within Application Site A, B & C. The schematic geotechnical works for Site A, B & C consist of mainly soil cutting and formation permanent cut slope with 1.1mm high approximately in Site A, construction of retaining wall or mass wall with level platform and 3-srorey houses in both Site B and Site C. According to criteria for Feature Registration in the Appendix B of PNAP ADV-8 issued by Buildings Authorities, cut slopes, including any associated retaining walls and retaining walls greater than 3m high shall be registered as a Feature. As there is retaining wall over 3m high within Site C, it is considered that a geotechnical feature is proposed. Detail site formation proposal shall be submitted to Buildings Department for approval.

The preliminary design for site formation / slope upgrading works is given in Figure 7 to 9.

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5. CONCLUSION

Based on the above discussion, it can be concluded that the proposed residential development is considered to be feasible from geotechnical point of view. The existing feature shall be upgraded to the current engineering standards if the stability of such geotechnical features are found below standards.

It is essential to search and review the background information of existing building, geotechnical feature 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 retaining wall stability assessment 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 implemented to ensure demolition of foundation of existing buildings and substructure construction being carried out safety and soundly.

FIGURES

Site Location Plan



Lot Index Plan and Feature Location



LOT INDEX PLAN AND FEATURE LOCATION

NOTES : -1. ALL LEVELS 2. GRID LINES LEGENDS : AI ----- AI ----- FE

1. ALL LEVELS ARE IN METERS ABOVE P.D.

2. GRID LINES ARE IN H.K. METRIC GRID 1980.

APPLICATION SITE BOUNDARY LINE

LOT BOUNDARY LINE

FEATURE BOUNDARY LINE

	CATIO	N SI	te ff	ROM	"GREEN	BELT"	TO
,	NAM	PIN	WAI,	SAI	KUNG.		

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υ	U	U	

FIGURE	2
	~

А

Geological Map



Site Layout Plan



· · · · · · · · · · · · · · · · · · ·			1	
B(C)4	LEGE	APPLICATION SITE LOT BOUNDARY FEATURE BOUND REMAINING PHAS 11 PROPOSED HOUS 4.3 PROPOSED GROU	E BOUNDARY LINE LINE ARY LINE E SE NO. JND LEVEL (mPD)	
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PROJECT : APPLICATION FOR AMEN 12A OF THE TOWN PLA REZONE THE APPLICATI "RESIDENTIAL (GROUP (DEVELOPMENT AT VARIO ADJOINING GOVERNMEN"	IDMEN NNING ON SI C) 1" DUS L T LAN	IT OF PLAN UND ORDINANCE (CA TE FROM "GREEN FOR PROPOSED OTS IN D.D.244 D, NAM PIN WAI,	ER SECTION AP. 131) TO I BELT" TO HOUSE AND SAI KUNG.	
DRAWING TITLE :				
SITE LAYOUT PLAN				
SCALE : 1 : 600		DRAWN BY :	D.M.	
DATE : 27/07/2023		CHECKED BY :	C.L.	
drawing no. FIGU	JRE	04	^{rev.} E	

Section A - A & B – B



Section C - C & D – D and Details



APPENDIX

Appendix A

Photographs



Photo A General View of the Site, Looking North



Photo B General View of the western portion of the Site, Looking Northeast



Photo C Close View of the Northern End of the Site, Looking West



Photo D Close View of the Southeastern End of the Site, Looking East



Photo E General View of the Northern End of Feature No. 11NE-B/F186, Looking South



Photo F General View of the Mid Portion of Feature No. 11NE-B/F186, Looking Northeast



Photo G General View of the Feature No. 11NE-B/FR 295, Looking North



Photo H General View of the Feature No. 11NE-B/FR 295, Looking Southeast



Photo I General View of the Feature No. 11NE-B/CR924, Looking southwest



Photo J General View of the Feature No. 11NE-B/CR924, Looking Northwest

Appendix B

SIMAR Records

(11NE-B/F186)



List of Slope Maintenance Responsibility Area(s)

1	11NE-B/F186		Sub-Division	1
	Location	SLOPE FALLS IN DD244 LOT1939A,1939B,1942,756,755,758,760,759,761,769&767 NEAR SPOT LEVEL 10.2		
	Responsible Lot/Party	DD244 Lot1939A	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	zed.	
2	11NE-B/F186		Sub-Division	2
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot1939B	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
3	11NE-B/F186		Sub-Division	3
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot1942	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
4	11NE-B/F186		Sub-Division	4
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot755	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
5	11NE-B/F186		Sub-Division	5
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot756	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
6	11NE-B/F186		Sub-Division	6
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot758	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
7	11NE-B/F186		Sub-Division	7
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	Г1939А,1939В,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot760	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	

8	11NE-B/F186		Sub-Division	8
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot759	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
9	11NE-B/F186		Sub-Division	9
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot761	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
10	11NE-B/F186		Sub-Division	10
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot769	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	
11	11NE-B/F186		Sub-Division	11
	Location	SLOPE FALLS IN DD244 LO SPOT LEVEL 10.2	T1939A,1939B,1942,756,755,75	8,760,759,761,769&767 NEAR
	Responsible Lot/Party	DD244 Lot767	Maintenance Agent	Not Applicable
	Remarks	Slope information being review	ved.	

- 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.



(11NE-B/CR924)



List of Slope Maintenance Responsibility Area(s)

1	11NE-B/CR924		Sub-Division	Not Applicable
	Location ADJOINING NEW HIRM'S HI		HIGHWAY, OPPOSITE HEUNG CHUNG ROAD	
	Responsible Lot/Party Highways Department		Maintenance Agent	Highways Department
	Domonka	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the		
	Kellial KS	Maintenance Agent direct.		

- 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.



(11NE-B/CR924)



List of Slope Maintenance Responsibility Area(s)

1	11NE-B/CR924		Sub-Division	Not Applicable
	Location ADJOINING NEW HIRM'S HI		HIGHWAY, OPPOSITE HEUNG CHUNG ROAD	
	Responsible Lot/Party Highways Department		Maintenance Agent	Highways Department
	Domonka	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the		
	Kellial KS	Maintenance Agent direct.		

- 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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Appendix C

Slope Records Retrieved from CEDD



BASIC INFORMATION

Location: 80M SE OF INTERSECTION OF NAM PIN WA ROAD AND MOK TSE CHE NEW VILLAGE ROAD, SAI KUNG

Registration Date :	19-11-1997	
Ranking Score (NPRS):	0 (Notional)	
Date of Construction/ Modification:	Pre-1977	
Data Source:	SIRST	
Approximate Coordinates:	Easting : 843686	Northing : 823610

CONSEQUENCE-TO-LIFE CATEGORY

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

SLOPE PART

(1) Max. Height (m): 8 Length (m): 110 Average Angle (deg): 40

WALL PART

N/A



MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1	Private Feature	Party: DD244 Lot1939A	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(2) Sub Div.: 2	Private Feature	Party: DD244 Lot1939B	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(3) Sub Div.: 3	Private Feature	Party: DD244 Lot1942	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(4) Sub Div.: 4	Private Feature	Party: DD244 Lot755	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(5) Sub Div.: 5	Private Feature	Party: DD244 Lot756	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(6) Sub Div.: 6	Private Feature	Party: DD244 Lot758	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(7) Sub Div.: 7	Private Feature	Party: DD244 Lot760	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(8) Sub Div.: 8	Private Feature	Party: DD244 Lot759	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(9) Sub Div.: 9	Private Feature	Party: DD244 Lot761	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(10) Sub Div.: 10	Private Feature	Party: DD244 Lot769	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998
(11) Sub Div.: 11	Private Feature	Party: DD244 Lot767	Agent: N/A	Land Cat.: 1	Reason Code: 1	MR Endorsement Date: 05-01-1998

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	03-03-1997
Data Source:	SIRST
Slope Part Drainage:	N/A

Wall Part Drainage: N/A

SLOPE PART

Slope Part (1)					
Surface Protection (%):	Bare: 1 Vege	tated: 99	Chunam: O	Shotcrete: O	Other Cover: O
Material Description:	Material type: So	il Geolo	ogy: N/A		
Berm:	No. of Berms: N/A	Min. B	erm Width (m):	N/A	
Weepholes:	Size (mm): N/A	Spacing (m): N/A		



WALL PART

N/A

<u>SERVICES</u>

N/A



CHECKING STATUS INFORMATION

N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	11NE5A4
Map Sheet Reference (1:1000):	11NE- 5A
Aerial Photos:	23146-7 (1978),
Nearest Rainguage Station (Station Number):	Staff Quarter (Block C), Pik Uk Prison, Clearwater Bay(N08)
Data Collected On: Date of Construction, Subsequent Modification and Demolition:	03-03-1997 Modification: Constructed Before: 1978 After: 1977
Related Reports/Files or Documents:	File/Report: Development Ref. No.: GCMd 3/5/9301/89, 3/7/3 pt 2 f41-2,44-6,53,59,79 File/Report: Development Ref. No.: GCMd 3/5/9301/89, 3/7/3 pt 2 f41-2,44-6,53,59,79 File/Report: LA Ref. No.: GCMd 5/3/8 pt V f14,16,18,28 File/Report: LA Ref. No.: GCMd 5/3/8 pt V f14,16,18,28 File/Report: LA Ref. No.: GCMd 5/3/8 pt 19 f62,75,88,128 pt 36 f78,79 File/Report: LA Ref. No.: GCMd 5/3/8 pt 19 f62,75,88,128 pt 36 f78,79 File/Report: LA Ref. No.: GCMd 5/3/8 pt 19 f62,75,88,128 pt 36 f78,79 File/Report: LA Ref. No.: GCMd 5/3/8 pt 19 f62,75,88,128 pt 36 f78,79 File/Report: Previous Instability Ref. No.: GCMd 5/3/8 pt 19 f62,75,88,128 pt 36 f78,79 File/Report: Previous Instability Ref. No.: GCMd 5/3/8 pt V f34,36,48, pt 30 f5,8 File/Report: Previous Instability Ref. No.: GCMd 5/3/8 pt V f34,36,48, pt 30 f5,8 File/Report: Previous Instability Ref. No.: GCMd 5/3/8 pt V f34,36,48, pt 30 f5,8 File/Report: Previous Instability Ref. No.: GCMd 5/3/8 pt V f34,36,48, pt 30 f5,8

Remarks: Public/Private Dep - GCMd 2/E1/11NE-B pt 2 case 26,27,29, pt 3 case 1

Follow Up Actions: N/A



DH-Order (To Be Confirmed None with Buildings Department):

Advisory Letter (To Be Confirmed None with Buildings Department):

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 17/12/2020)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: ME

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



Sign of Seepage:

Criterion A satisfied: Sign of Distress:
Criterion D satisfied: Non-routine maintenance required: Note:
Masonry wall/Masonry facing: Note:
Consequence category (for critical section): Observations: Emergency Action Required: Action By:
ACTION TO INITIATE PREVENTIVE WORKS

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

N/A

N/A

OTHER EXTERNAL ACTION

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



<u>PHOTO</u>







BASIC INFORMATION

Location: 70m north of No. 130,Wo Mei, SK

Registration Date:	18-07-2002	
Ranking Score (NPRS):	2 (EI)	
Date of Construction/	Post-1977	
Modification:		
Data Source:	EI(HyD)	
Approximate Coordinates:	Easting : 843901	Northing : 823645

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Road/footpath with heavy traffic density
Distance of Facility from Crest (m): Facility at Toe:	0 Road/footpath with moderate traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	2
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 8.8 Length (m): 85 Average Angle (deg): 30

WALL PART

(1) Max. Height (m): 8.8 Length (m): 16.3 Fa

Face Angle (deg): 90



MAINTENANCE RESPONSIBILITY

(1) Sub Div.: O	Government Feature	Party: HyD	Agent: HyD	Land Cat.: 5b(iii)	Reason Code: 56	MR Endorsement Date: 23-01-2003
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DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	07-1	1-2012	
Data Source:	EI(H ₎	/D)	
Slope Part Drainage:	(1) (2)	Position: Crest Position: Toe	Size(mm): 300 Size(mm): 450

Wall Part Drainage: (1) Position: Crest Size(mm): 300

SLOPE PART

Slope Part (1) Surface Protection (%): Vegetated: 100 Shotcrete: O Other Cover: 0 Bare: O Chunam: O 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: Rand	om rubble	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	I/A

SERVICES

- Utilities Type: Cable (1) Size(mm): 0 Location: Crest **Remark: Size cannot be determined Utilities Type: Cable** (2) Size(mm): 0 Location: Toe **Remark: Size cannot be determined Utilities Type: Electricity** Size(mm): 0 Location: Crest Remark: Size cannot be determined (3) (4) **Utilities Type: Electricity** Size(mm): 0 Location: Toe Remark: Size cannot be determined Utilities Type: Gas Size(mm): 0 Location: Toe Remark: Size cannot be determined (5) Utilities Type: Sewer/Drain (6) Size(mm): 600 Location: Crest Remark: N/A (7) Utilities Type: Water Main Size(mm): 80 Location: Toe Remark: N/A Utilities Type: Water Main (8) Location: Toe
- (8) Utilities Type: Water Main Size(mm): 150 Location: Toe Remark: N/A
 (9) Utilities Type: Water Main Size(mm): 250 Location: Crest Remark: N/A
- (7) oninios type. Water main Size(inin). 250 Eocarion. cress Remark



CHECKING STATUS INFORMATION

Tagmark: 23117_0_4 Part: 0 Checking Status: No outstanding comments Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	11NE5A-5
Map Sheet Reference (1:1000):	11NE- 5A
Aerial Photos:	ACW38788 (2002), CW38789 (2002)

Nearest Rainguage Station (Station Number): Staff Quarter (Block C), Pik Uk Prison, Clearwater Bay(N08)

Data Collected On:	07-11-2012		
Date of Construction, Subsequent	Modification: Constructed	Before: 2001	After: 2000
Modification and Demolition:			

Related Reports/Files or Documents: N/A

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed None with Buildings Department):

Advisory Letter (To Be Confirmed None with Buildings Department):

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 17/12/2020)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: ME

Section No: Height(m):	1-1
Type of Toe Facility:	Road/footpath with moderate traffic density
Distance from Toe(m):	0
Type of Crest Facility:	Road/footpath with heavy traffic density
Distance from Crest(m): Consequence Category: Engineering Judgement:	0
Section No: Type of Toe Facility:	2-2
Distance from Toe(m): Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	



Sign	of Seepage:	

Criterion A satisfied:
Sign of Distress:
Criterion D satisfied:
Non-routine maintenance required:
Note:
Masonry wall/Masonry facing: Note:
Consequence category (for critical section):
Observations:
Action By:
ACTION TO INITIATE PREVENTIVE WORKS

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

N/A

N/A

OTHER EXTERNAL ACTION

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



<u>PHOTO</u>







BASIC INFORMATION

Location: HIRAM'S HIGHWAY, SK

Registration Date:	28-05-2003	
Ranking Score (NPRS):	1 (LPMit)	
Date of Construction/ Modification:	Post-1977	
Data Source:	EI(HyD)	
Approximate Coordinates:	Easting : 843838	Northing : 823685

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Undeveloped green belt
Distance of Facility from Crest (m): Facility at Toe:	0 Subway
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	2
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 3 Length (m): 50 Average Angle (deg): 35

WALL PART

(1)	Max. Height (m): 5	Length (m): 50	Face Angle (deg): 90
(1)	Max. Height (m): 5	Length (m): 50	Face Angle (deg): 90



MAINTENANCE RESPONSIBILITY

(1) Sub Div.: O	Government Feature	Party: HyD	Agent: HyD	Land Cat.: 5b(iii)	Reason Code: 56	MR Endorsement Date: 10-10-2003
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DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	07-0	1-2015	
Data Source:	EI(H ₎	/D)	
Slope Part Drainage:	(1) (2)	Position: Crest Position: Toe	Size(mm): 300 Size(mm): 300

Wall Part Drainage: (1) Position: Crest Size(mm): 300

SLOPE PART

Slope Part (1) Surface Protection (%): Vegetated: 100 Shotcrete: O Other Cover: 0 Bare: O Chunam: O 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: Concre	ete Wall Location: 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 (2)		
Type of Wall:	Wall Material: Others	s Wall Location: N/A
Berm:	No. of Berms: N/A	Min. Berm Width (m): N/A
Weepholes:	Size (mm): N/A	Spacing (m): N/A

N/A



CHECKING STATUS INFORMATION

Tagmark: 23092_0_4 Part: 0 Checking Status: No outstanding comments Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	11NE5A-5
Map Sheet Reference (1:1000):	11NE- 5A
Aerial Photos:	CW38788 (2002), CW38789 (2002)

Nearest Rainguage Station (Station Number): Staff Quarter (Block C), Pik Uk Prison, Clearwater Bay(N08)

Data Collected On:	07-01-2015		
Date of Construction, Subsequent	Modification: Constructed	Before: 2002	After: 2001
Modification and Demolition:			

Related Reports/Files or Documents: N/A

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed None with Buildings Department):

Advisory Letter (To Be Confirmed None with Buildings Department):

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 17/12/2020)



STAGE 1 STUDY REPORT

Inspected On:	20-01-2003
Weather:	Mainly Fine
District:	ME

Section No:	1-1
Height(m):	H1 : 5 , H2 : 5
Type of Toe Facility:	Subway
Distance from Toe(m):	0
Type of Crest Facility:	Undeveloped green
Distance from Crest(m):	0
Consequence Category:	2
Engineering Judgement:	Р
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:	2
Engineering Judgement:	Р

belt



Sign of Seepage:	Slope : No sign of seepage Wall : No sign of seepage
Criterion A satisfied:	Ν
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	Ν
Non-routine maintenance required:	Ν
Note:	N/A
Masonry wall/Masonry facing:	Y
Note:	Sqaure rubble facing
Consequence category (for critical section):	2
Observations:	N/A
Emergency Action Required:	Ν
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

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

OTHER EXTERNAL ACTION

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



<u>PHOTO</u>





Appendix D

Extraction of Previous GI Records Prepared by Gammon Construction Limited in June 1999

						Ga	m	mon	Co	ons	tru	ctic	on]	Lim	nite	ed		HOLE No ABH2
			L			Ge	ote	chnic	al (Con	trac	ting	De	part	me	ent	SHEET	l of 3
			<u> </u>				Link		D	RI	LL	HO	LE	mart	RE			
PROJ	IECT	LOCA	TIO	N	and	Ho	Chun	ig and U	pgrad	ing L	ocal A	CCess	Road	s s	DetW	een wam wai		
METH	HOD	Rot	ary						CO-	ORD		ES			со	NTRACT No.	HY/98/13	
мас	HINE	& No	. 20	-087	,				E N	; 	8438: 8236	39.04 33.01			DA	TE from 01/0	6/1999 to	05/06/1999
FLUSHING MEDIUM Water							ORI	ENT	ATION	ı v	ertical		GR	OUND LEVEL	15.68	mPD		
	Ð	Water	%	e , %	e / %					Same		p						
lling ogress	sing pth/siz	Depth	ater covery	tal cor covery	lid con covery	D.D.	acture lex	Tests		Samp	nes	Reduce	Depth (m)	gend	ade		Description	
5 E 1/06/99	del G	(m)	Rea	To	Res	R.0	Fra		No	. Туре	Depth	15.68	0.00		Ğ	Firm, brownish	red, slightly fir	ne to medium
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				4-1					2	<i>r</i> ₹7	1.00		-					
				/100/					3									
								1,2	4 5	Ĩ	2.10							
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1/06/00		3.20						,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Ŧ	4.00							
2/06/99		Dry		/100/					11		5.00		-		-			
				<u> </u>				1,1	12		6.10	9.68	6.00		1	Firm, red mottle	ed yellow, sligh	tly fine to
								N=B	14	*	6.55					meaium sandy	SILT. (COLLU)	
				/100/	1				15	771	7.00		E		-			
											a 00							
								2,3 4,4,5,6 N=19	17	Í	8.00							
								T	18	*	8.55							
-				100					19		9.00							
	PX 9.75								20	Ø		5.93	9.75					
	нх			/80/	0	0	NI	1			9.75	5.73	- 9.95		U BKS	Extremely weal	k, light grey m	ottled yellowish
∎ Sn La	nall dist rge dist	turbed sa turbed sa	ample ample		▲ V	Vater s iezome	ample eter / s	tandpipe tip		LOGG		c	_	Piezon	neter	installed at 15.1	7m depth.	
SF	PT liner 76 undi	sample sturbed	sampl	e	↓ S I P	tandar ressuri	d pene emeter	Test		DATE	09	/06/199	9					
	100 und azier sa	disturbed mole	d sam	ple	I "	ermeal npress	bility t ion pa	est cker test		CHEC	KED LF	C						
Pis	ston sa	mple			V li	n-situ v	ane sl	near test		DATE	10	0/06/199	9					

Sector Geotechnical Contracting Department SHEET 2 of 3 DRILLHOLE RECORD PROJECT LOCATION Hiran's Highway Ingrovement Phase 31. and Ho Chung and Upgrading Local Access Reads CONTRACT No. HY/98/13 MACHINE & No. 20-087 E E4383.0.4 N CONTRACT No. HY/98/13 FLUSHING MEDIUM Water ORIENTATION Vertical GROUND LEVEL 15.68 mPD Provide Status Samples Samples <th></th> <th></th> <th></th> <th></th> <th></th> <th>(</th> <th>Ga</th> <th>m</th> <th>mon</th> <th colspan="6">Construction Limi</th> <th>nite</th> <th>ed</th> <th>DRILL</th> <th colspan="3">RILLHOLE No. ABH2</th>						(Ga	m	mon	Construction Limi						nite	ed	DRILL	RILLHOLE No. ABH2		
PROJECT LOCATION Hiram's Highway Improvement Phase 3: Improvement between Nam Wal and Ho Chung and Upprefing Loca Access Reads METHOD Retary CO-ORDINATES CO-ORDINATES CONTRACT No. HY/98/13 MACHINE & No. 20-087 N 82389.04 N 823863.01 DATE from 01/06/1999 to 05/06/199 05/06/199 FLUSHING MEDIUM Water ORIENTATION Vertical GROUND LEVEL 15.68 mpp gage and gage	Geotechnic									al (Con	trac	ting	De	par	tme	nt	SHEET	2 of	3	
PROJECT LOCATION Itram's Highway Improvement Phase 3: Improvement butween Nam Wai and 60 Chung and Upgrading Local Access Reads CONTRACT No. HY/98/13 METHOD Rotary COORDINATES CONTRACT No. HY/98/13 MACHINE & No. 20-087 DATE from 01/06/1999 to 05/06/199 FLUSHING MEDIUM Water ORIENTATION Vertical GROUND LEVEL 15.88 mPD graded and graded and graded and graded and graded access reads Water / 10/06/1999 to 05/06/199 05/06/199 0 05/06/199 graded access reads Machine / 10/06/1999 to 05/06/199 0										D	R I	L L	ΗO	LE	r	R E	CORD				
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MACHINE & No. 20-087 N 823883.01 DATE from 01/06/1999 to 05/06/199 FLUSHING MEDIUM Water ORIENTATION Vertical GROUND LEVEL 15.68 mPD gr g	METH	HOD	Rot	ary						CO-	-ORDI	NATE	S 19.04			CO	NTRACT No.	HY/98/13			
FLUSHING MEDIUM Water ORIENTATION Vertical GROUND LEVEL 15.68 mPD grad grad back grad back </td <td>MACI</td> <td>HINE</td> <td>& No.</td> <td>20</td> <td>-087</td> <td></td> <td></td> <td></td> <td></td> <td colspan="6">E 843839.04 N 823683.01</td> <td>DA</td> <td>TE from 01/06</td> <td>6/1999 to</td> <td>05/06/</td> <td>1999</td>	MACI	HINE	& No.	20	-087					E 843839.04 N 823683.01						DA	TE from 01/06	6/ 1999 to	05/06/	1999	
Biggind Biggind	FLUS	HING	MED	IUM	W	ater				OR	IENTA	TION		ertical		GRO	OUND LEVEL	15.68	mPD	·	
1 0 0 24 0 0 24 24 0 36 10.0 1 0 and streaked black, completely decomposed interms and maganeses 20 10.00 0	rogress	asing epth/size	Water Depth (m)	/ater ecovery %	otal core ecovery %	lid core covery %	a.b.	acture Jex	Tests	Samı		les	Reduced Level Depth (m)		egend	irade	e Description				
Boolese B -40 Constrained Constaned Constaned <thconstane< td=""><td><u>5</u> <u></u></td><td rowspan="2">C</td><td></td><td><u>Së</u></td><td rowspan="3">2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</td><td><u>0</u></td><td>0</td><td></td><td>3.4 7.10,10,11 N= 38 3.5 7.9,13,14 N= 43</td><td>No 21 22 23 24 25</td><td>No. Type 21 22 23 24 T2101 25 1 25</td><td> Depth 10.10 10.55 11.00 11.55 12.05 12.10 </td><td>5.68 4.13 3.98</td><td>10.00</td><td></td><td></td><td>and streaked bla fine ash TUFF w stained relict join SILT) 9.75 - 9.95m : 1 moderately deco (Corestones) 11.55-11.70m: grey stained ora highly decompo (Corestones)</td><td colspan="3">ack, completely decomposed, vith iron and manganese ints. (Firm, fine sandy clayey Moderately strong, omposed zone. Fractured. : Moderately weak to weak, angish brown, moderately to osed zones. Fractured.</td></thconstane<>	<u>5</u> <u></u>	C		<u>Së</u>	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<u>0</u>	0		3.4 7.10,10,11 N= 38 3.5 7.9,13,14 N= 43	No 21 22 23 24 25	No. Type 21 22 23 24 T2101 25 1 25	 Depth 10.10 10.55 11.00 11.55 12.05 12.10 	5.68 4.13 3.98	10.00			and streaked bla fine ash TUFF w stained relict join SILT) 9.75 - 9.95m : 1 moderately deco (Corestones) 11.55-11.70m: grey stained ora highly decompo (Corestones)	ack, completely decomposed, vith iron and manganese ints. (Firm, fine sandy clayey Moderately strong, omposed zone. Fractured. : Moderately weak to weak, angish brown, moderately to osed zones. Fractured.			
0.000 0.000 0.000 10.000 47 0 17.9 10.000 10.000 47 0 17.9 14.85 0.000 16.95 10.000 10.000 47 0 17.9 10.000 10.000 47 0 17.9 15.15 0.015 15.25 10 10.000 <td><u>/06/99</u> I/06/99</td> <td>8.40</td> <td></td> <td>0</td> <td>0 NI NR</td> <td>7,9 16,22,31,33 N= 102</td> <td>26 27 28 29 30</td> <td></td> <td>12.55 13.00 13.55 14.92 14.10 14.55</td> <td>2.13</td> <td></td> <td></td> <td></td> <td colspan="4">13.55-13.73m: Moderately weak to weak grey stained orangish brown, moderately highly decomposed zones. Fractured. (Corestones)</td>	<u>/06/99</u> I/06/99		8.40			0	0 NI NR	7,9 16,22,31,33 N= 102	26 27 28 29 30		12.55 13.00 13.55 14.92 14.10 14.55	2.13				13.55-13.73m: Moderately weak to weak grey stained orangish brown, moderately highly decomposed zones. Fractured. (Corestones)					
 Small disturbed sample Small disturbed sample Large disturbed sample U75 undisturbed s	1/06/99 1/06/99	HX 16.35	10.85			47 25 54 91	0 0 35 52	0 17.9 0 NR 35 > 20 10.0 > 20 52 12.9	Ċ	-	T2101 T2101	14.85 15.15 15.67 16.35	0.16 -0.07 -0.67	14.85 15.52 15.75 16.35			III Moderately strong, grey stain brown, moderately decompos TUFF with very closely spaced rough planar, iron and mangar joints, dipping 0°-10°, 30°-4 III 50°-60°. Highly decomposed around joint margins. 15.52-15.75m: No recovery. III		ned orangis sed, fine a d, narrow, inese stain 40° and d (3-4mm) Inferred h	sh sh ied ighly	
Small disturbed sample Large disturbed sample U76 undisturbed sample U76 undisturbed sample T Pressuremeter Test DATE 09/06/1999					100	70 70 95 26 88 49			T2101 T201 T201 T2101 T2101	16.93 17.26 17.64				アーアーアーアーアーアー	Noderately stro brown, moderat TUFF with very locally medium narrow, rough p stained and loca dipping 10°-20	erately decomposed, fine ash very closely to closely spaced, um spaced, extremely to very gh planar, iron and manganese locally kaolin coated joints, -20°, 30°-40° and 50°-60°.					
* Small disturbed sample Mater sample Large disturbed sample Piezometer / standpipe tip SPT liner sample Standard penetration test U76 undisturbed sample Pressuremeter Test					100	72	52				T2101	18.32 18.57 19.64				*****					
★ Small disturbed sample ▲ Water sample REMARKS Large disturbed sample □ Piezometer / standpipe tip LOGGED LRC SPT liner sample ↓ Standard penetration test DATE 09/06/1999 U76 undisturbed sample ↓ Pressuremeter Test DATE 09/06/1999					/ 96/	83	0	-			T2101	19.88		[$[\vee]$	4					
U76 undisturbed sample	∎ Sn La	nall dist irge dist PT liner	urbed sa urbed sa sample	ample ample		▲ W Å Pi ↓ S	/ater sa iezome tandaro	ample iter / s d pene	tandpipe tip stration test	LOGGED LRC						RKS					
Bermanhility test		76 undi	sturbed	sampl	e		ressure	meter	Test												
U100 undisturbed sample rerrneability test CHECKED LRC	U100 undisturbed sample							est cker test	CHECKED LRC												

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Gammon									Construction Limit						ited DRILLHOLE N			E No		
Geotechnic								chnic	cal Contracting Depart						ent	SHEET 3 of 3				
-									DRI		HO	LE		R E						
PRO	JECT	LOCA	TIO	N	and	Ho (Chung	g and Up	rovement ograding L	Phase .ocal A	3: Im	prove Road	ment s	betw	veen Nam Wai					
MET	HOD	Rot	ary						CO-ORDINATES						NTRACT No.	HY/98/13	}			
MAC	HINE	& No.	. 20	0-087	,				E 843839.04 N 823683.01						DATE from 01/06/1999 to 05/06/1999					
FLUS	SHING	MED	IUN	ı w	ater				ORIENTATION Vertical						GROUND LEVEL 15.68 mPD					
	ze	Water	% %	re v %	v %				Samı	oles	ed									
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				100	69	45	18.9		T2 01	20.28		-			20.15-20.28m: moderately deco	Moderately omposed zoi	weak, ne.			
				100	85	26			-	20.86		- -								
4/06/99 5/06/99		8.50 10.88		96	31	0				21.40		-								
				100	100	30	9.4		T2101	21.92										
5100100		7 50			100	55			T2IO1		6 9 9			1						
3/06/99		7.50		<u> </u>					*		-0.88	- 22.56	. V)		End of Investiga	ation hole at	22.56m.			
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SPT liner sample U76 undisturbed sample Standard penetration test Pressuremeter Test						ration test Test	DATE	/06/199	9											
U100 undisturbed sample						st ker test	CHEC	c												

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