



Geotechnical Planning Review Report for Installation of Proposed Public Utility Installation and Associated Filling and Excavation of Land (OHL Pole & Stay Erection)

Geotechnical Planning Review | Government Land in D.D. 96, San Tin, Yuen Long

B190011.051.01 | 8 August 2022

BD Ref.: N/A

CLP Power Hong Kong Limited



Executive Summary

This geotechnical planning review report is prepared on behalf of the Applicant, CLP Power Hong Kong Limited, to seek approval from the Town Planning Board under Section 16 of the Town Planning Ordinance for installation of 5 electricity poles with 10 pole stays for low voltage overhead line cable.

The proposed public utilities installation includes erection of 5 electricity poles and 10 pole stays for low voltage overhead line cable. To facilitate the foundation construction for OHL pole and pole stays, pit excavation of 1.8m deep is required.

After completion of the foundation, the OHL poles and pole stay are to be erected, pits will be backfilled and the ground will be reinstated to its original situation.

Based on available geotechnical information, the effect of proposed utility installation works including pit excavation and the erection of OHL poles, that may affect or be affected by natural terrain or man-made slopes, is addressed in this report. In view of failure of the man-made slopes would affect the OHL poles at the slope toe, stability analysis is proposed to be carried out. **The proposed development would not comprise any critical facilities (i.e. facilities under Group 1-3 in Table 2.2 of GEO Report No. 138), hence a Natural Terrain Hazard Study is **not** necessary.**

The geotechnical assessment concludes that the proposed utility installation works including pit excavation and the erection of OHL poles are geotechnically feasible.

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1. Introduction

1.1 Background

Fugro (Hong Kong) Limited was appointed by CLP Power Hong Kong Limited as the Engineering Consultant for the preparation of a Geotechnical Planning Review Report for proposed public utilities installation of 5 electricity poles and 10 pole stays for low voltage overhead line cable as shown in Figure 1 – Site Location Plan and Figure 2 – Site Plan.

The proposed public utilities installation includes erection of 5 electricity poles and 10 pole stays for low voltage overhead line cable. To facilitate the foundation construction for OHL pole and pole stays, pit excavation of 1.8m deep is required.

After completion of the foundation, the OHL poles and pole stays are to be erected, pits will be backfilled and the ground will be reinstated to its original situation.

Based on available geotechnical information, the proposed utility installation works including pit excavation and the erection of OHL poles that may affect or be affected by natural terrain or man-made slopes is addressed in this report and geotechnical feasibility of proposed utility installation works is also recommended.

1.2 Description of the Works

There are 5 groups of pole and pole stay (one group consists of one pole and two pole stay) in the application, which are illustrated on the photo in [Appendix D](#).

The height of the proposed pole and pole stay (including the above ground portion) with illustration on drawings (Drg. No. 01 – A and 01 G A) and photos in.

The proposed works with supporting drawings and photo illustrations (in [Appendix D](#)) as follows:

- According to the applicant, the proposed installation is for providing electricity to support the agricultural use at Lot 1808 in D.D. 96 (Plan A-2). The proposal involves erection of five poles of dimension 2m (L) x 2m (W) x 10m (H) and ten pole stays of dimension 1.5m (L) x 1.5m (W) x 5m (H) for low voltage overhead line (OHL) cable with associated excavation of about 42.5 m² (1.5m to 2m in length and width) and about 1.8m in depth. Each group of the installation set involves one pole stand which will be supported by two pole stays (Drg. No. 01 – A and 01 G A) and photo in [Appendix D](#). Upon erection of the OHL poles and pole stays, the pits will be backfilled and the ground will be reinstated to its original situation. All the pole stay wire are located at the outer side of the road such that no pedestrian or traffic will be obstructed after completion of the installation. The location plan is shown in [Figures 1 and 2](#) and the sections are shown

in [Appendix A](#) and the vehicular access plan is Figures 1 and 2. The installation works will be carried out only from 8 am to 5 pm.

The location and disposition of the Site for erection of the OHL will minimise the filling and excavation of land and slope maintenance required for the proposed works and avoid encroachment onto private land. The proposed works will not cause adverse impacts on geotechnical safety, traffic, landscape, environment, sewerage, drainage and water supply. The applicant shall minimise the disturbance to the nearby vegetation during the land excavation/filling works.

The existing local road will not be obstructed. All vehicles are allowed to use the existing roads during construction period.

1.3 The Report

This Geotechnical Planning Review Report is prepared in support of a Section 16 planning application (Application No. A/YL-ST/618).

1.4 Client

CLP Power Hong Kong Limited

1.5 Geotechnical Engineer

Fugro (Hong Kong) Limited

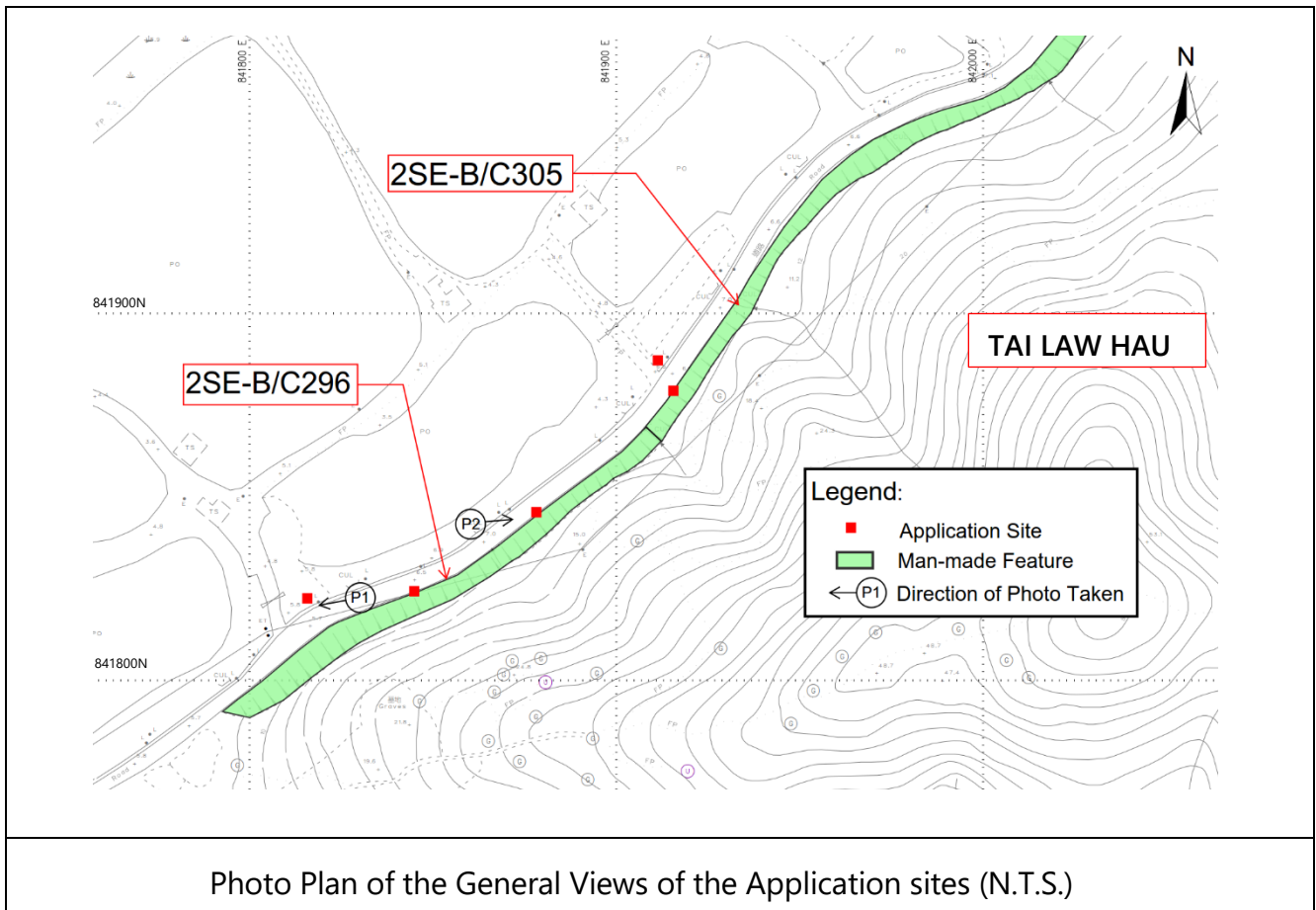
2. Description of Site Conditions

2.1 Site Topography

The site is situated northeast of San Tin in the North West New Territories. The site is along a road with low vehicular traffic density. Beyond the road to the northwest are numerous estuaric ponds and then Shenzhen River.

The natural hillside (see Figure 1) above the proposed site is located at the southeast, which is elevated from the man-made slopes 2SE-B/C296 and 2SE-B/C305 (+11mPD) along the site towards the southeast direction (+49mPD max).

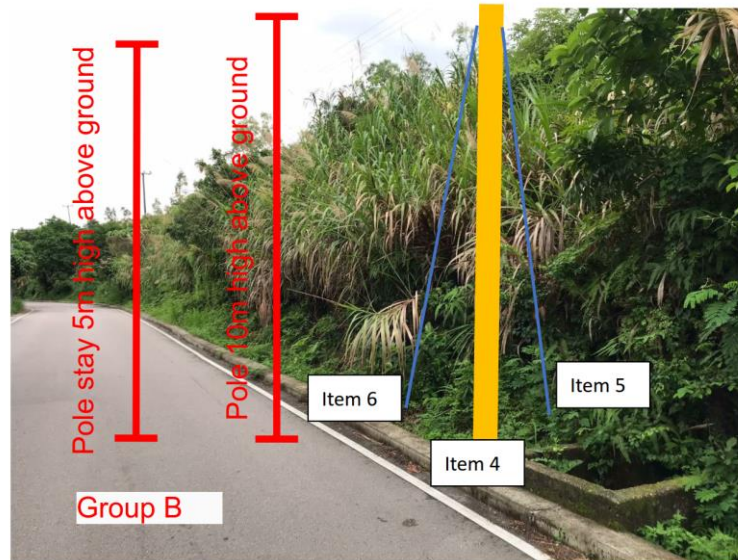
For the proposed public utility installation, 5 OHL poles with approximate height of 10m will be installed in the specified areas along a local road. General views along with the photo plan of the application site are shown in the Plates below. The road gradients is quite gentle and all poles are located at +6.0 mPD to +8.0 mPD approximately.





Location refers to figure 2

P1: General View 1 of the Site with Approximate Location of a Pole & Pole Stays (looking Southwest)



Location refers to figure 2

P2: General View 2 of the Site with Approximate Location of a Pole & Pole Stays (looking Northeast)

2.2 The Proposed Development

The proposed public utilities installation includes erection of 5 electricity poles and 10 pole stays for low voltage overhead line cable. To facilitate the foundation construction for OHL pole and pole stays, pit excavation of 1.8m deep is required.

After completion of the foundation, the OHL poles and pole stay are to be erected, pits will be backfilled and the ground will be reinstated to its original situation.

3. Desk Study

3.1 Topography

The 1:1000 topographical survey maps of the Site and the area of the adjacent natural terrains obtained from the Lands Department are used as the base map for this geotechnical assessment. With reference to the topographical survey maps, sections showing man-made slopes and hillsides of natural terrain are prepared and presented in [Appendix A](#).

3.2 Geology

Sheet 2 of the Hong Kong Geology Survey 1:20,000 scale map series HGM20 (Geological Map is shown in [Figure 3](#)) indicates that the site is underlain by superficial deposit, which is Qd – unsorted sand, gravel, cobbles and boulders; Clay/Silt matrix (Debris Flow Deposits). Underlying the superficial deposits are different compositions of rocks including metasiltstone with metasandstone, granite and quartzite.

3.3 Hydrology

The site is surrounded with ponds, which affect the groundwater levels under the existing flatland.

Based on the available groundwater monitoring records (summarized in [Appendix C](#)), groundwater levels are at 0.25 m to 1.5 m below the existing ground, which match with the water levels of adjacent rivers and ponds.

3.4 Man-made Slopes

There are 2 registered man-made slopes within the site area affecting / being affected by the proposed installation works. Features locations are shown in [Appendix A](#). These slope characteristics are summarised in [Table 1](#) and their locations are indicated on the plan in [Appendix B](#). Details of the man-made slopes downloaded from the Slope Information

System along with SMRIS information are presented in same Appendix. Both man-made slopes are cut slopes with 6m in height at 45° slope angle. Both cut slopes are located at the southwest of the site. The general views of the slopes are also shown in [Appendix B](#).

Table 1_ Summary of Registered Man-made Slopes

Feature No.	Slope height (m)	Slope Angle (degree)	Upgrading works	Site formation works	Drawings / record plans	Related GI borehole	Responsible Party
2SE-B/C296	6	45	-	post-1977	-	NIL	Lands Department
2SE-B/C305	6	45	-	post-1977	-	SBF/DH10	Lands Department

3.5 Available Ground Investigation

Lok Ma Chau area was previously used for fishery activities, with water channels, oyster beds and fish ponds. Based on the available ground investigation information and as summarized in [Table 2](#), the superficial deposits mainly comprise fill (1 to 2m thick), pond deposits / alluvium (1 to 7m thick). The in-situ soil / rock of meta-siltstone / granite/ quartzite is encountered at 1m to 9m below the existing ground level. Geotechnical Sections are shown in [Appendix A](#).

A plan showing the locations of previous ground investigation works carried out in the vicinity of the site area is presented in [Appendix C](#). The relevant GI records are enclosed in same Appendix and summarized in [Table 2](#).

Table 2_Summary of Previous Ground Investigations

Borehole	Ground Level (mPD)	Total Depth (m)	Thickness (m)					H.G.W.L	L.G.W.L	Related Slope/ Section
			Fill	Pond Deposit	Alluvium	Grade V/IV	Grade III or above			
LMCT-BH1	3.95	10	2	1.1	2.5	4.4	-	1.11	1.27	-
LMCT-BH2	3.98	49.05	1.5	2	3.1	28.37	14.08	0.25	0.48	-
SBF/DH10	6.74	3.03	0.8	-	-	-	2.23	-	-	Section 4-4
SBF/DH11	4.86	14.15	2	-	7	5.15	-	-	-	Section 6-6
SBF/TP40	6.44	2	1.65	-	-	0.35	-	-	-	-
BH-5	53.19	45.10	-	-	-	22.40	22.70	-	-	-

4. Geotechnical Assessment

4.1 Man-made Slopes

There are 2 registered man-made slopes in the vicinity affecting / being affected by the proposed utility installation. Features locations are shown in [Appendix A](#). It can be inferred that 2 registered slopes, which maintenance responsible party is Lands Department, are the cut slopes formed during the previous road construction works. Slope information shown in [Appendix B](#) and slope characteristic is summarized in Table 1.

The proposed poles will be installed along the existing road at the toe of the cut slopes by pit excavation method. After pit excavation and installation of poles and pole stays, the excavation will be reinstated to its original situation, Hence, the construction effect of the proposed utility installation on the cut slopes is insignificant.

These 2 registered man-made slopes are cut slopes with 6m in height at 45° slope angle. In view of failure of the man-made slopes would affect the OHL poles at the slope toe, stability analysis is proposed to be carried out.

4.2 Natural Terrain Hazard

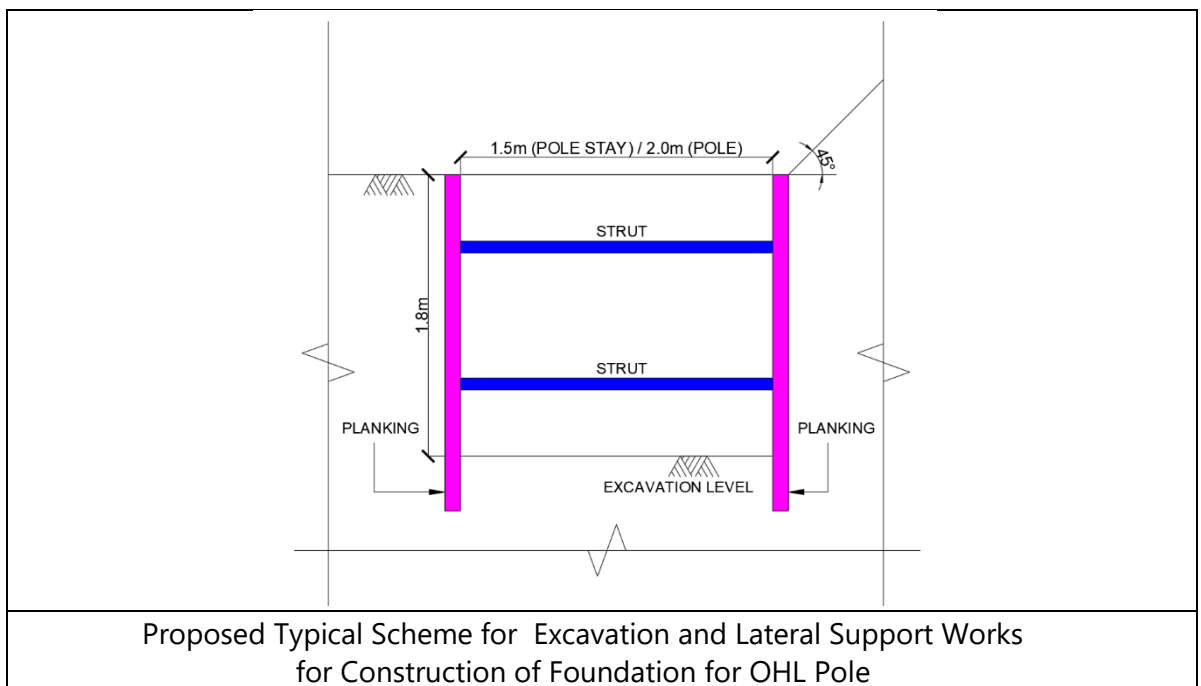
A natural hillside (shown in [Appendix A](#)) near proposed poles location is located to the southeast. The hillside is elevated from the man-made slopes 2SE-B/C296 and 2SE-B/C305 (+11mPD) along the site towards the southeast direction (+49mPD max). Sections 1, 2 & 3 (in the same Appendix) shows that the proposed pole locations are within the angular elevation of 20° and thus the locations of proposed poles likely meet alert criteria of natural terrain hazard. However, the proposed development would not comprise any critical facilities (i.e. facilities under Group 1-3 in Table 2.2 of GEO Report No. 138) (refer to the table below), a Natural Terrain Hazard Study is not necessary. Table 2.2 of GEO Report No. 138 is attached in Appendix A.

Group No.	Table 2.2 GEO Report No. 138	The proposed development	Conclusion
1(a) 2(a)	Buildings	The proposed development comprise the erection of poles	The proposed development does not comprise the critical facilities in Group No. 1(a) and 2(a).
1(b) 2(b) 3	Road with heavy / moderate traffic density	Along the toe of the proposed poles is "road with low traffic density"	The proposed development does not comprise the critical facilities in Group No. 1(b), 2(b) and 3.

Based on the ENTLI Inventory Plan and Boulder Inventory Plan (shown in [Appendix A](#)) extracted from GIU of GEO, there are no records of landslides and boulders within the natural terrain area above the proposed pole locations.

4.3 Excavation Works

The foundation of the proposed OHL poles and pole stays will be constructed by pit excavation method. The pit will be 1.5m to 2m wide and 1.8m deep approximately. It is proposed that the pit will be supported by planking and struts as shown in the figure below.



In the design of excavation and lateral support works, attention should be paid to the excavation and strutting sequence and to the standard workmanship in order to limit loss of ground due to the inward movement of the temporary planking. Earth load, water load and surcharge should be taken into consideration. It was recorded that the water level of the site is approximately 1.2m below the existing ground, sufficient water pumps shall be provided to ensure that the pits are not submerged during the construction of foundation.

Since the pit excavation works involves excavation of depth 1.8m only, excavation effects on the adjacent slopes and change of ground profile should be minimal.

After excavation and installation of poles, the pits will be backfilled and the ground will be reinstated to its original situation. Hence, the construction effect of proposed pit excavation on adjacent ground / slopes is insignificant.

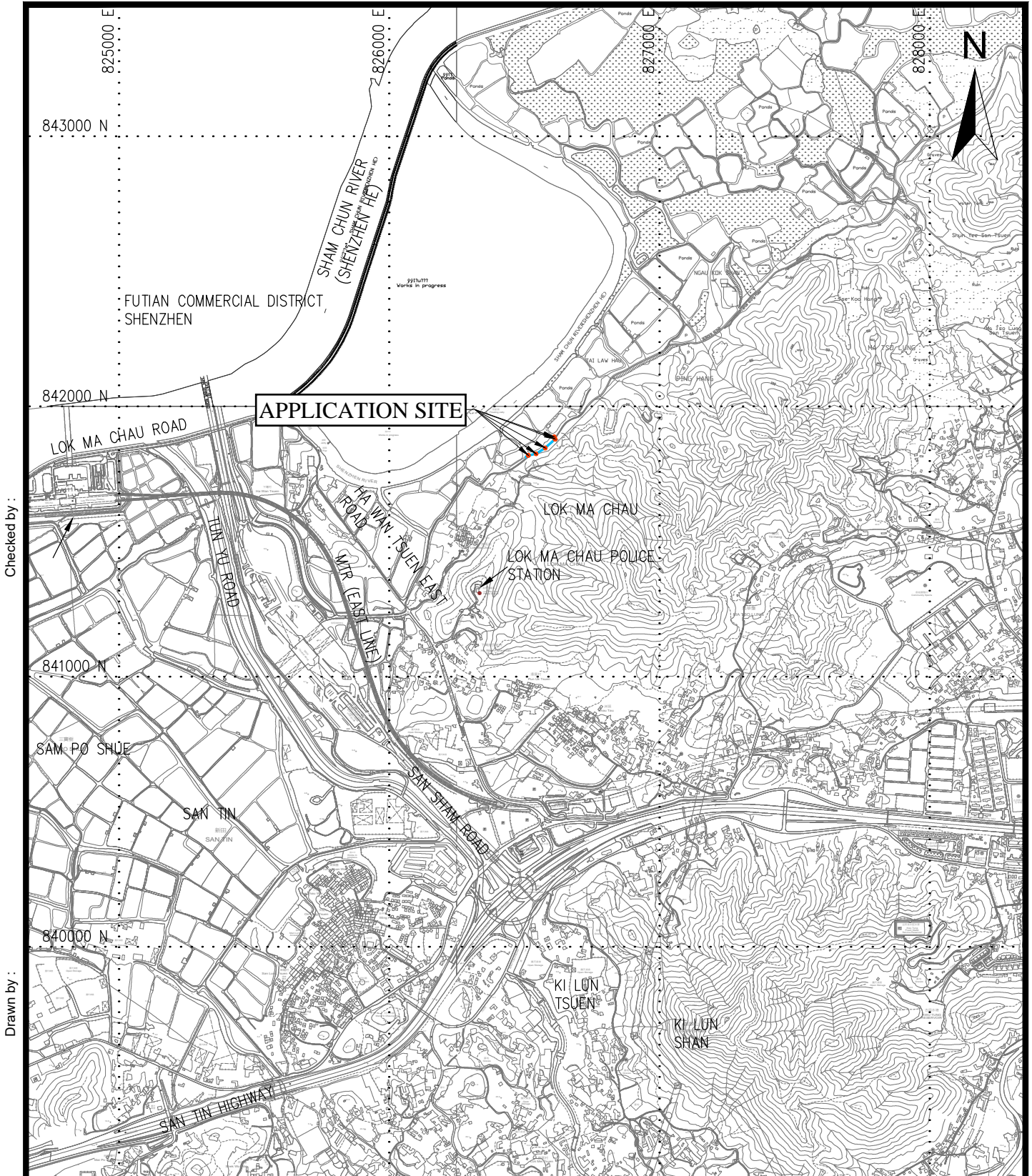
5. Recommendation

1. The proposed utility installation works including pit excavation and the erection of 5 electricity poles and 10 pole stays is geotechnically feasible.
2. In the design of excavation and lateral support works for the pits, attention should be paid to the excavation and strutting sequence and earth load, water load and surcharge should be taken into consideration. During excavation works, sufficient water pump shall be provided to ensure that the pits are not submerged.
3. Proposed pit excavation works for erecting the poles will involve installation of planking with temporary strutting systems during the construction stage. Since the pit excavation works involves excavation of depth 1.8m only, excavation effects on the adjacent ground / slopes and change of ground profile should be minimal.
4. The proposed OHL poles and stay poles will be installed at the toe of the existing slopes. After pit excavation and installation of poles, the pits will be reinstated to its original situation. Hence, the construction effect of proposed utilities installation at the toe of slopes on the adjacent slope is insignificant.
5. Two registered man-made slopes are cut slopes with 6m in height at 45° slope angle. In view of failure of the man-made slopes would affect the OHL poles at the slope toe, stability analysis is proposed to be carried out.
6. There are no records of landslides and boulders within the natural terrain area above the proposed pole locations. The proposed development would not comprise any critical facilities (i.e. facilities under Group 1-3 in Table 2.2 of GEO Report No. 138), a Natural Terrain Hazard Study is **not** necessary.

7. The location and disposition of the Site for erection of the OHL will minimise the filling and excavation of land and slope maintenance required for the proposed works and avoid encroachment onto private land. The proposed works will not cause adverse impacts on geotechnical safety, traffic, landscape, environment, sewerage, drainage and water supply. The applicant shall minimise the disturbance to the nearby vegetation during the land excavation/filling works.
8. The existing local road will not be obstructed. All vehicles are allowed to use the existing roads during construction period.

6. References

1. GEO (2007), GEO Advice Note for Planning Applications under Town Planning Ordinance (Cap.131), Geotechnical Engineering Office, Hong Kong.
2. Geotechnical Control Office (1989). "Solid and Superficial Geology. Hong Kong Geological Survey HGM20, Edition 1, Sheet No. 2, 1:20,000 scale". Government Press, Hong Kong.
3. Manusell Fugro Scott Wilson (2005). "Enhanced Natural Terrain Landslide Inventory". Geotechnical Engineering Office, Hong Kong.
4. Geotechnical Control Office (1988). "GEO Report No. 138 Guidelines for Natural Terrain Hazard Studies". Geotechnical Engineering Office, Hong Kong.
5. The Buildings Department. "Practice Note for Authorized Person and Registered Structural Engineer, PNAP APP 24".



LEGEND:

- CLP LOW VOLTAGE POLES (SUBJECT OF THIS APPLICATION)
- CLP LOW VOLTAGE OVERHEAD LINE CABLE

Compiled by :



Project
GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

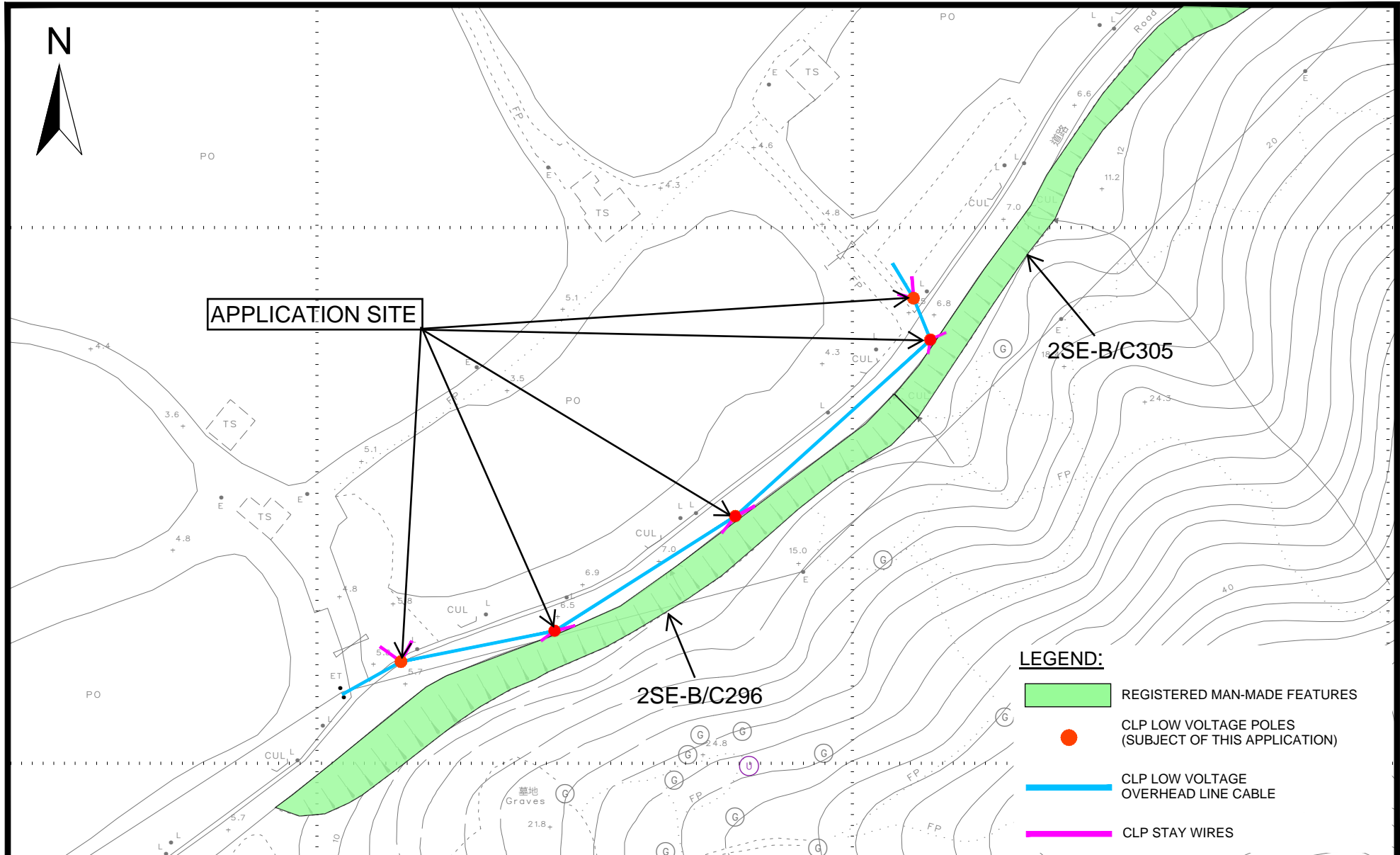
Drawing Title
LOCATION PLAN

Job No.	Figure No.	Scale	Date
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Compiled by :

Drawn by :

Checked by :



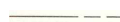



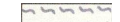









	Project GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG	Drawing Title SITE PLAN	Job No. 190011.051	Figure No. 2
			Scale 1 : 1000	Date JUL-2022

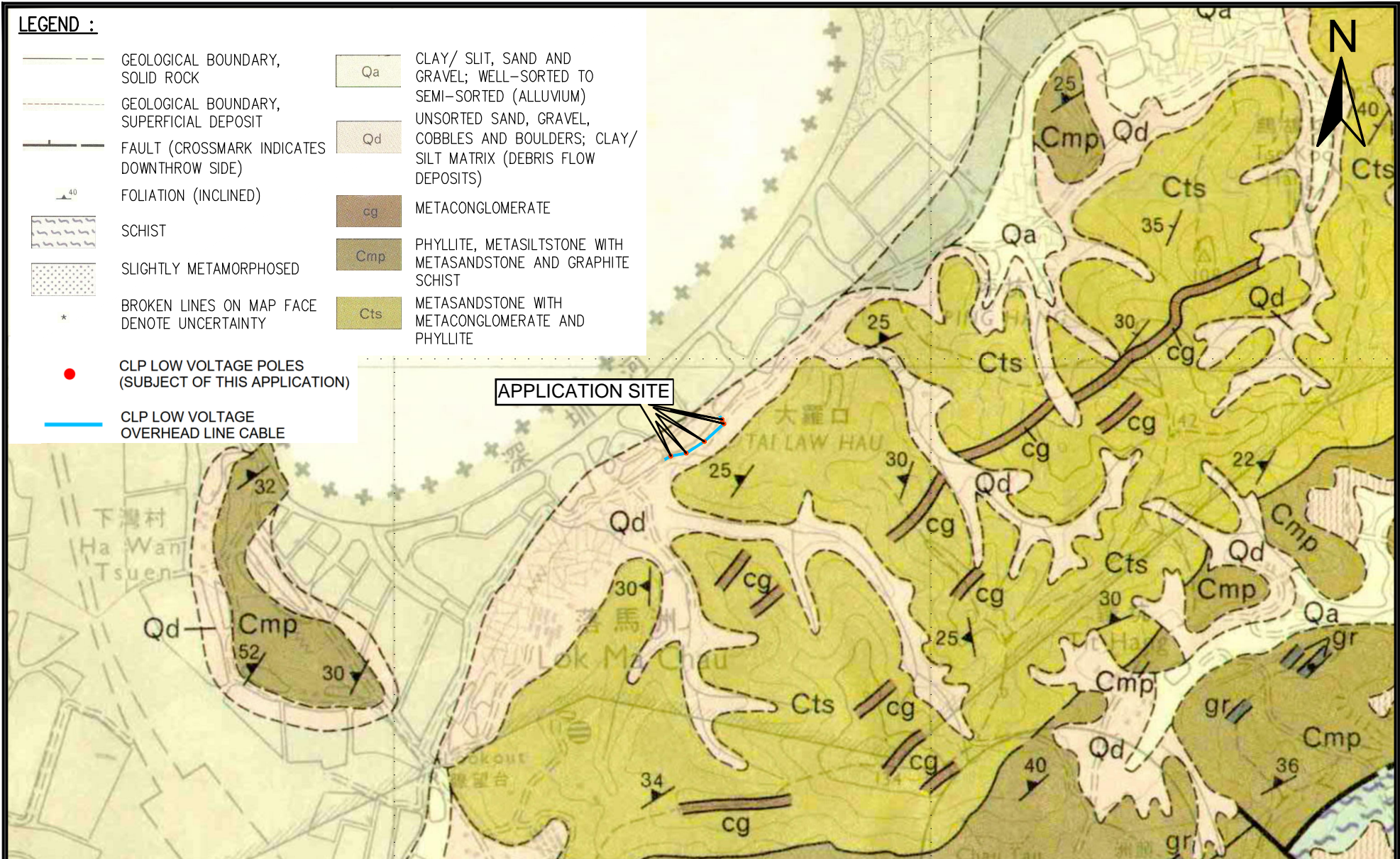
Compiled by :


Drawn by :

Checked by :

LEGEND :

-  GEOLOGICAL BOUNDARY, SOLID ROCK
 -  GEOLOGICAL BOUNDARY, SUPERFICIAL DEPOSIT
 -  FAULT (CROSSMARK INDICATES DOWNTHROW SIDE)
 -  FOLIATION (INCLINED)
 -  SCHIST
 -  SLIGHTLY METAMORPHOSED
 -  BROKEN LINES ON MAP FACE DENOTE UNCERTAINTY
 -  CLP LOW VOLTAGE POLES (SUBJECT OF THIS APPLICATION)
 -  CLP LOW VOLTAGE OVERHEAD LINE CABLE
-  Qa CLAY/ SILT, SAND AND GRAVEL; WELL-SORTED TO SEMI-SORTED (ALLUVIUM)
 -  Qd UNSORTED SAND, GRAVEL, COBBLES AND BOULDERS; CLAY/ SILT MATRIX (DEBRIS FLOW DEPOSITS)
 -  cg METACONGLOMERATE
 -  Cmp PHYLLITE, METASILTSTONE WITH METASANDSTONE AND GRAPHITE SCHIST
 -  Cts METASANDSTONE WITH METACONGLOMERATE AND PHYLLITE



	Project	Drawing Title	Job No.	Figure No.
	GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG	REGIONAL GEOLOGICAL MAP H.K. Geological Survey, Series HGM20, Sheet 02, 1988 Edition	190011.051	3
			Scale	Date
			1 : 10000	JUL-2022

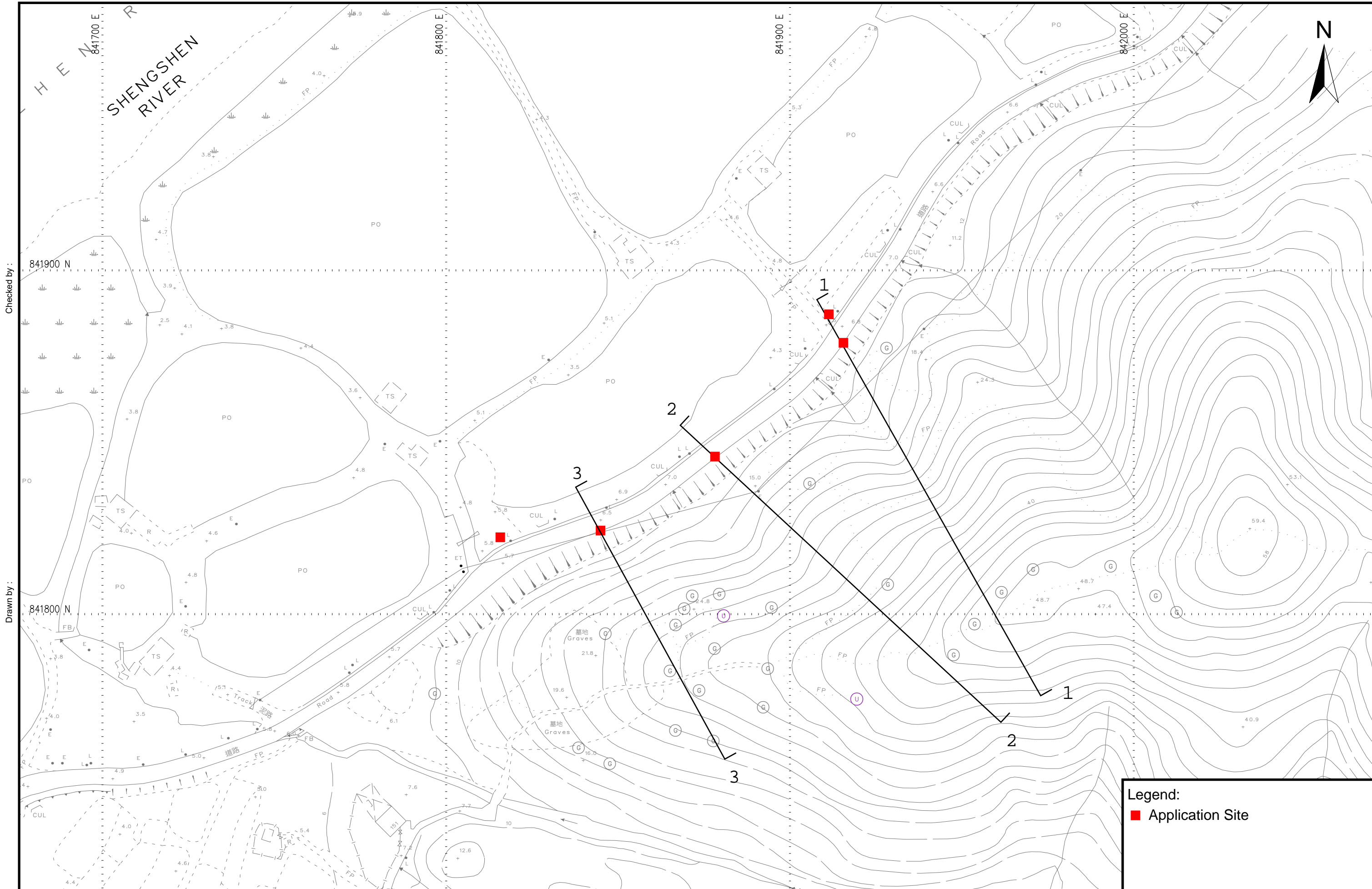
Appendix A

Assessment of Natural Terrain Hazard

GEO Report No. 138

Table 2.2 Grouping of Facilities (adapted from Wong, 1998)

Group No.	Facilities
1	(a) Buildings - any residential building, commercial office, store and shop, hotel, factory, school, power station, ambulance depot, market, hospital/polyclinic/ clinic, welfare centre
	(b) Others - bus shelter, railway platform and other sheltered public waiting area - cottage, licensed and squatter area - dangerous goods storage site (e.g. petrol station) - road with very heavy vehicular or pedestrian traffic density
2	(a) Buildings - built-up area (e.g. indoor car park, building within barracks, abattoir, incinerator, indoor games' sport hall, sewage treatment plant, refuse transfer station, church, temple, monastery, civic centre, manned substation)
	(b) Others - road with heavy vehicular or pedestrian traffic density - major infrastructure facility (e.g. railway, tramway, flyover, subway, tunnel portal, service reservoir)
3	- densely-used open space and public waiting area (e.g. densely-used playground, open car park, densely-used sitting out area, horticultural garden) - quarry - road with moderate vehicular or pedestrian traffic density



Checked by :

Drawn by :

Compiled by :

Legend:
■ Application Site

FUGRO FUGRO (HONG KONG) LIMITED
 10/F, Fugro House - KCC2,
 1 Kwai On Road, Kwai Chung,
 New Territories, Hong Kong. Tel : 2577 9023

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 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG**

Drawing Title
Natural Terrain Plan

Job No.	Figure
B190011.051	-/-
Scale	Date
1:1000	JUL-2022

Comparing Figure 2.5 and Section 1, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

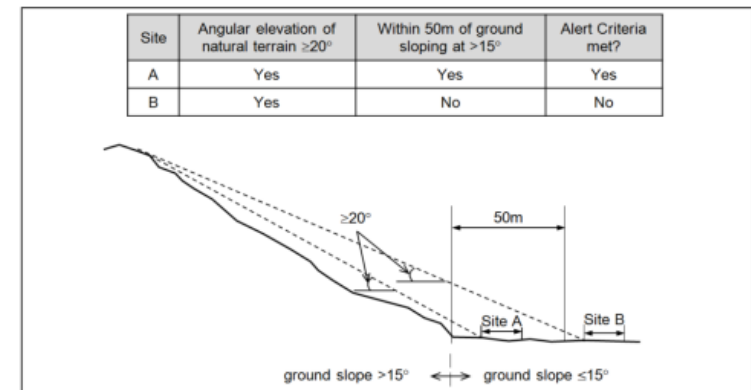
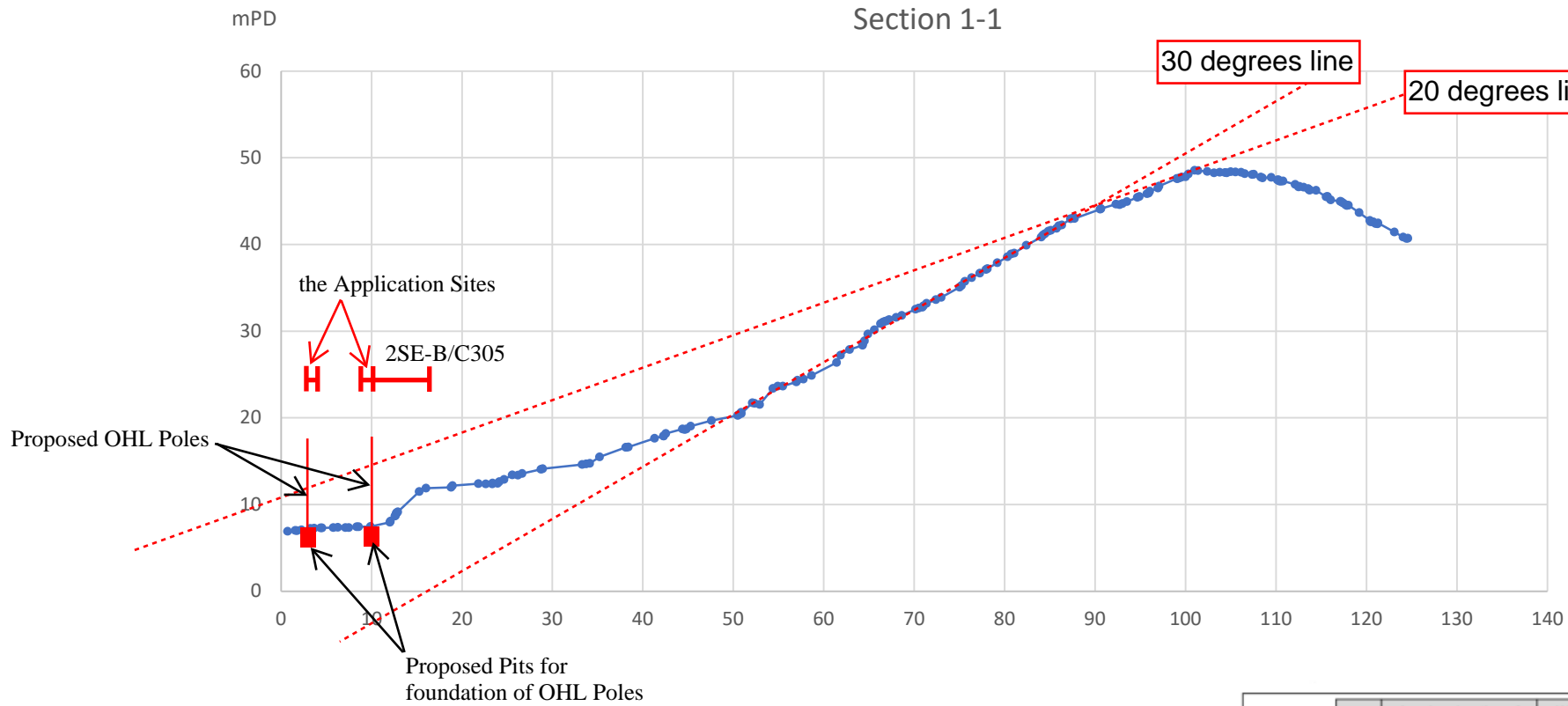


Figure 2.5 Application of Alert Criteria

Comparing Figure 2.5 and Section 2, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

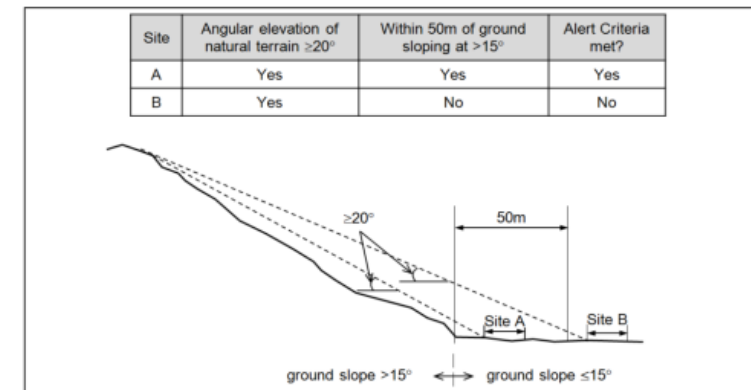
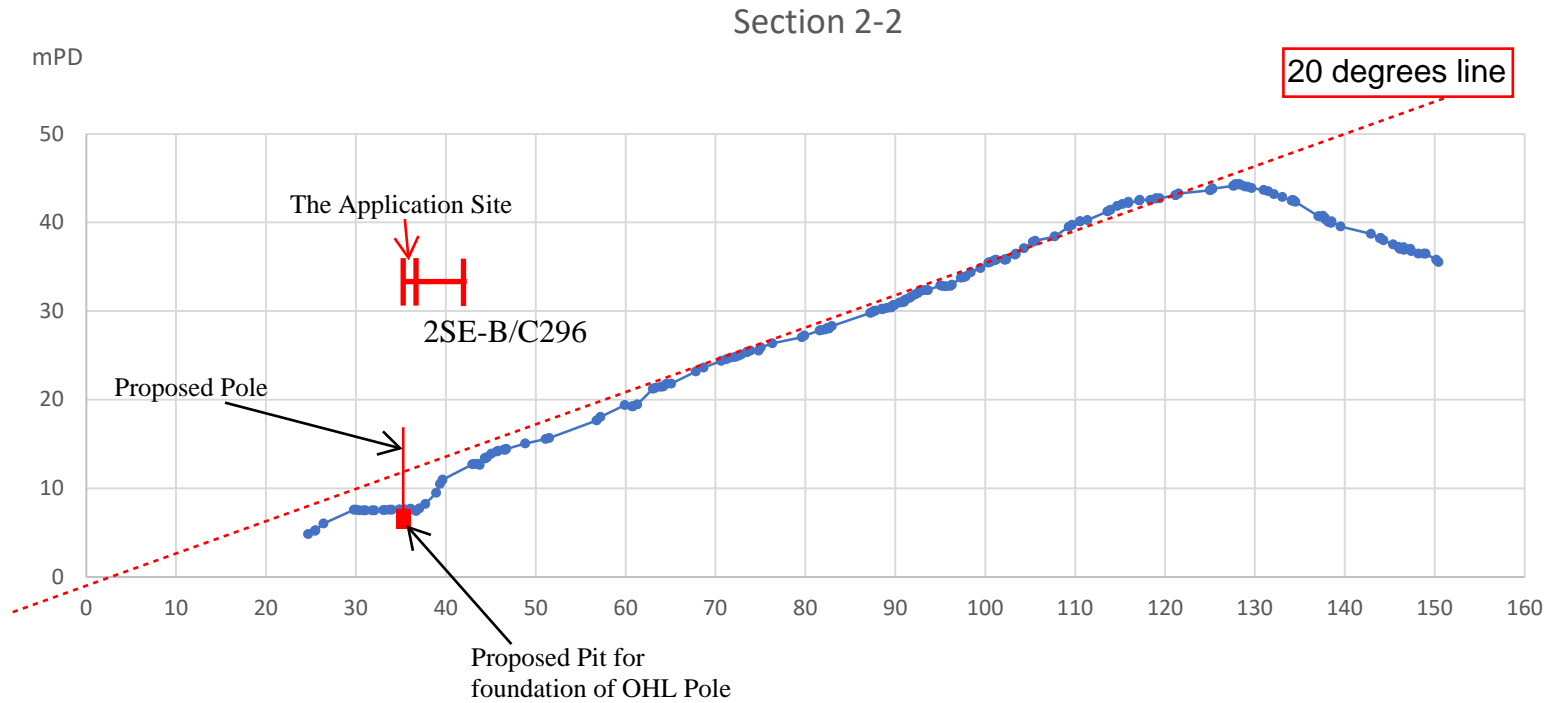


Figure 2.5 Application of Alert Criteria

Comparing Figure 2.5 and Section 3, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

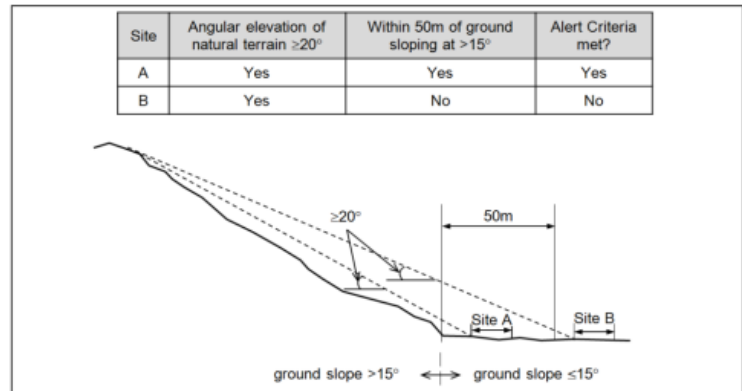
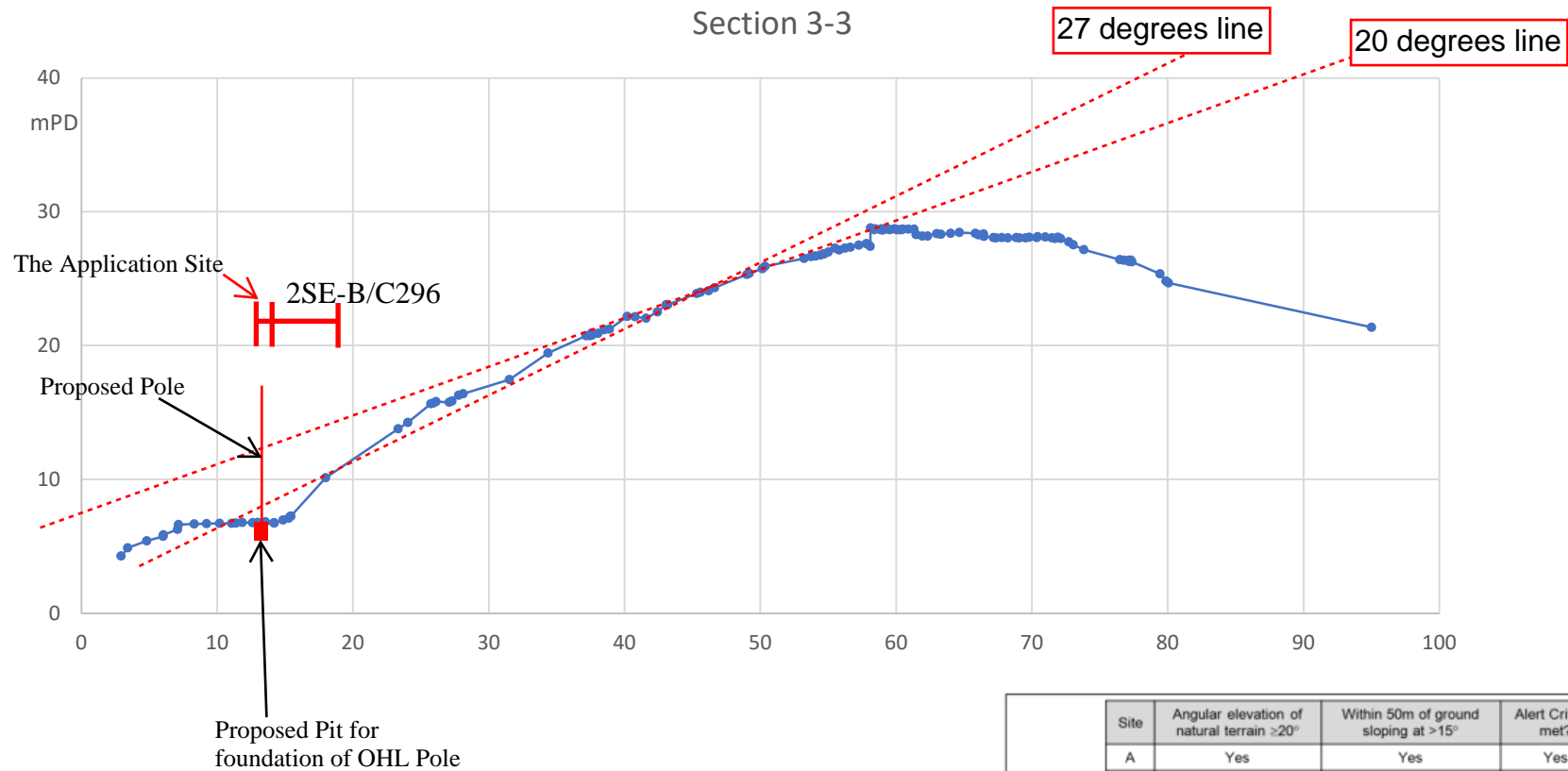
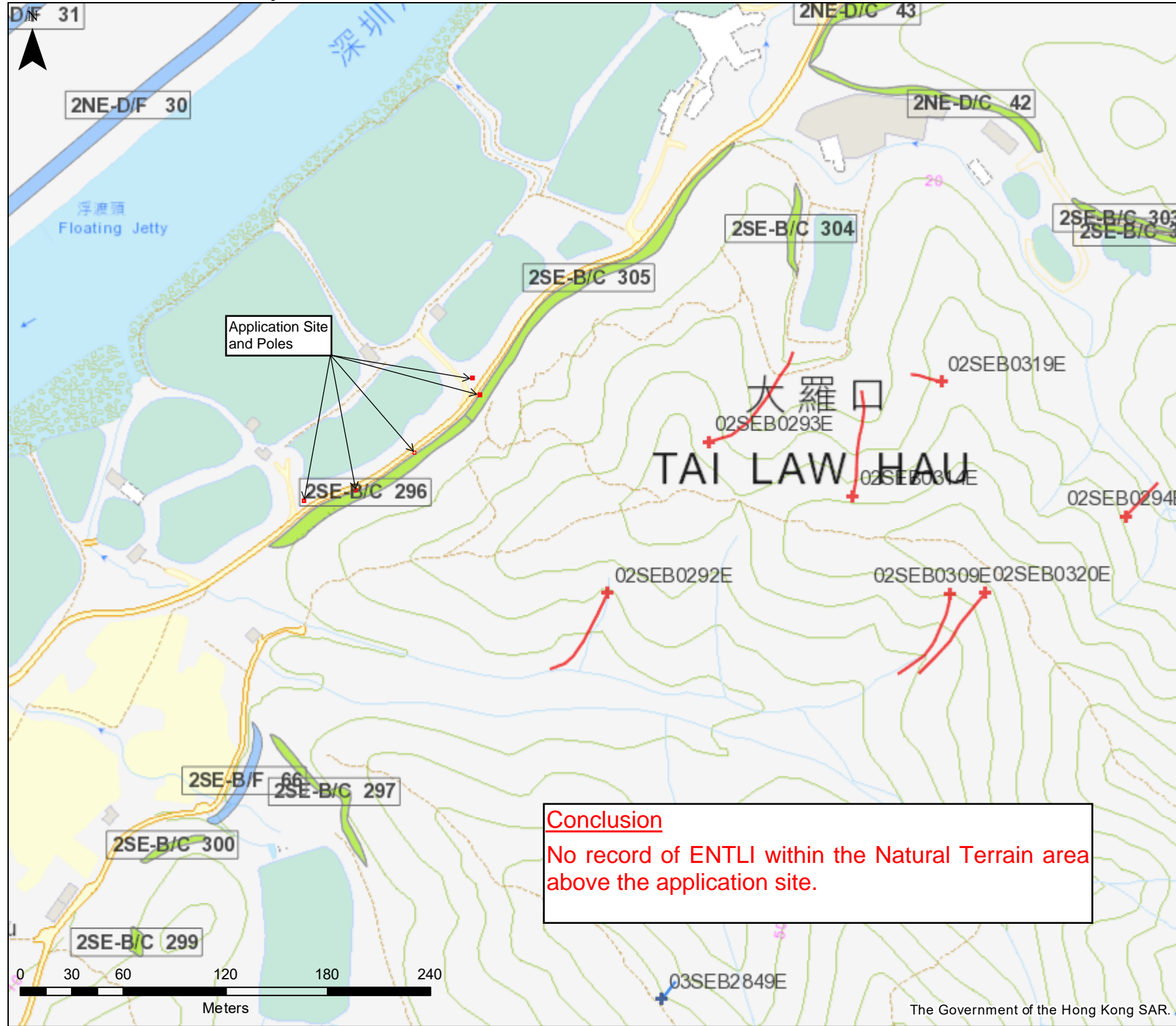


Figure 2.5 Application of Alert Criteria

Appendix A(Cont'd)

Inventory Plan



Application Site and Poles

2SE-B/C 296

2SE-B/F 66
2SE-B/C 297

2SE-B/C 300

2SE-B/C 299

2NE-D/C 43

2NE-D/C 42

2SE-B/C 304

2SE-B/C 303
2SE-B/C 302

2SE-B/C 305

大羅口
TAI LAW HAU

02SEB0293E

02SEB0304E

02SEB0294E

02SEB0292E

02SEB0309E

02SEB0320E

03SEB2849E

Conclusion
No record of ENTLI within the Natural Terrain area above the application site.

ENTLI Crown (2019)

- Recent
- Relict

ENTLI Trail (2019)

- Recent
- Relict

Man-made Features

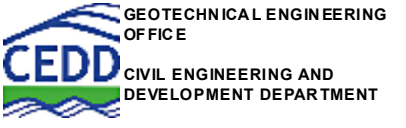
- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls

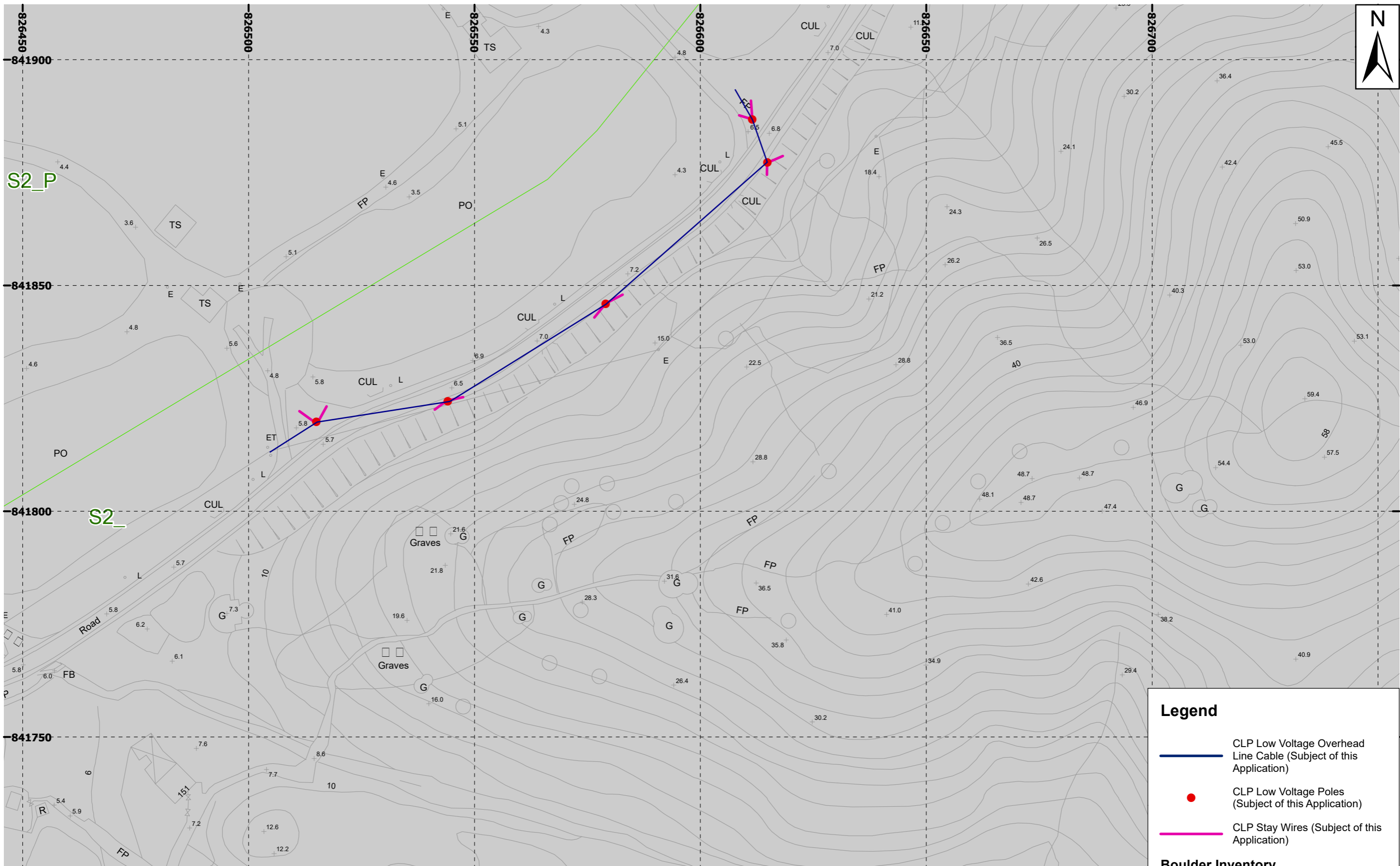
Slope Features

Legend:

- Application Site

Division	
Scale	1:3,000
Date	22/07/2022



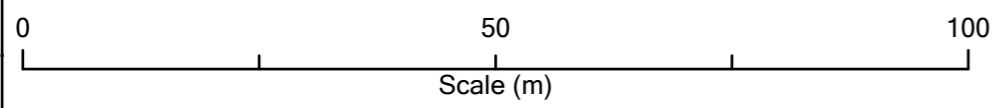


Legend

- CLP Low Voltage Overhead Line Cable (Subject of this Application)
- CLP Low Voltage Poles (Subject of this Application)
- CLP Stay Wires (Subject of this Application)

Boulder Inventory

- No data



Conclusion
 No record of boulder within the natural terrain area about the application site.

FUGRO (HONG KONG) LTD
 10/F, Fugro House - KCC2,
 1 Kwai On Road, Kwai Chung,
 New Territories, Hong Kong.

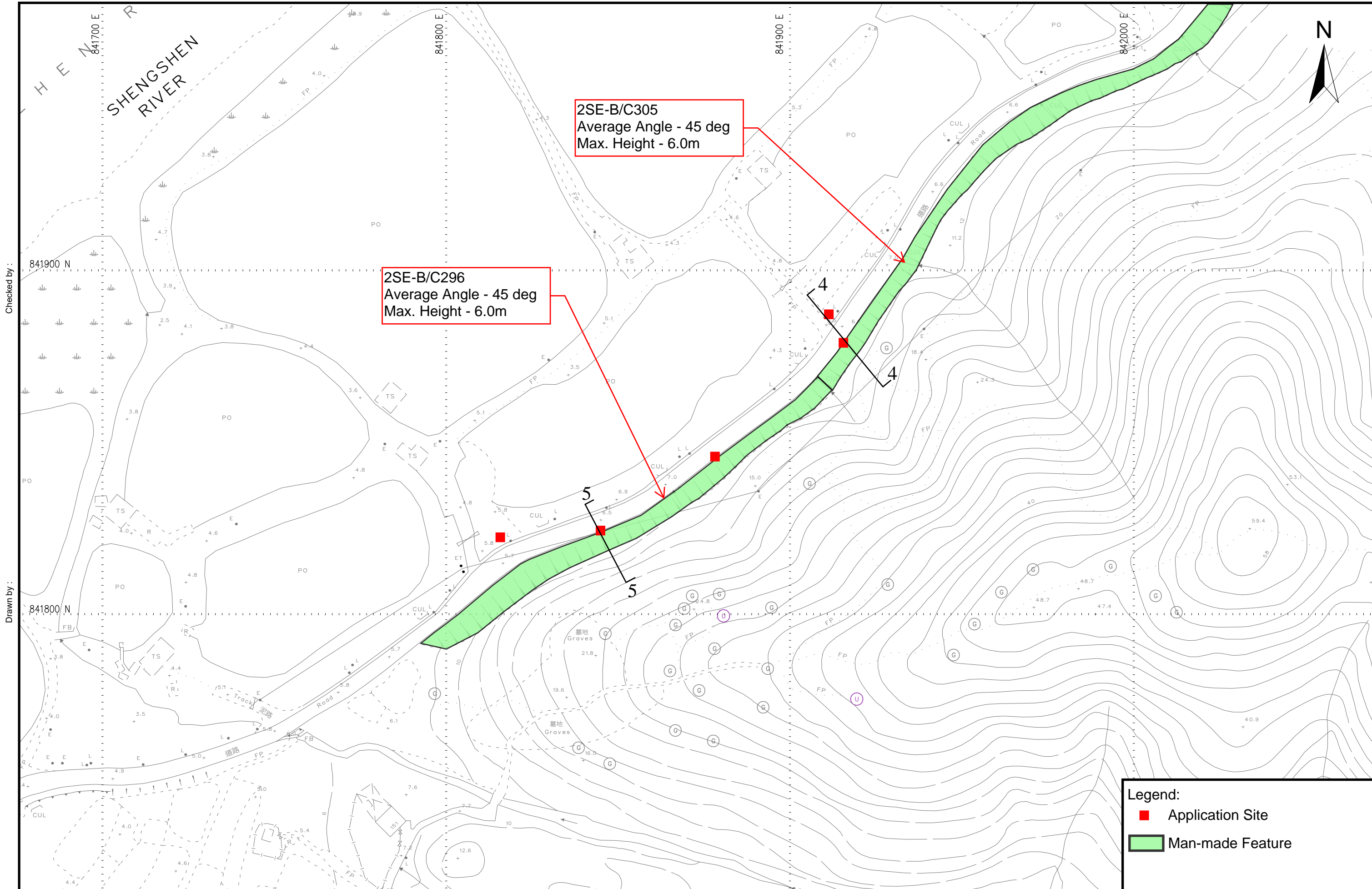
Project
 GEOTECHNICAL PLANNING REVIEW REPORT FOR THE
 PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED
 FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION)
 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

Drawing Title
BOULDER INVENTORY

Job No. 190011.051	Figure
Scale: 1:800	Date: JUL-2022

Appendix A(Cont'd)

Features and Sections



Checked by :

Drawn by :

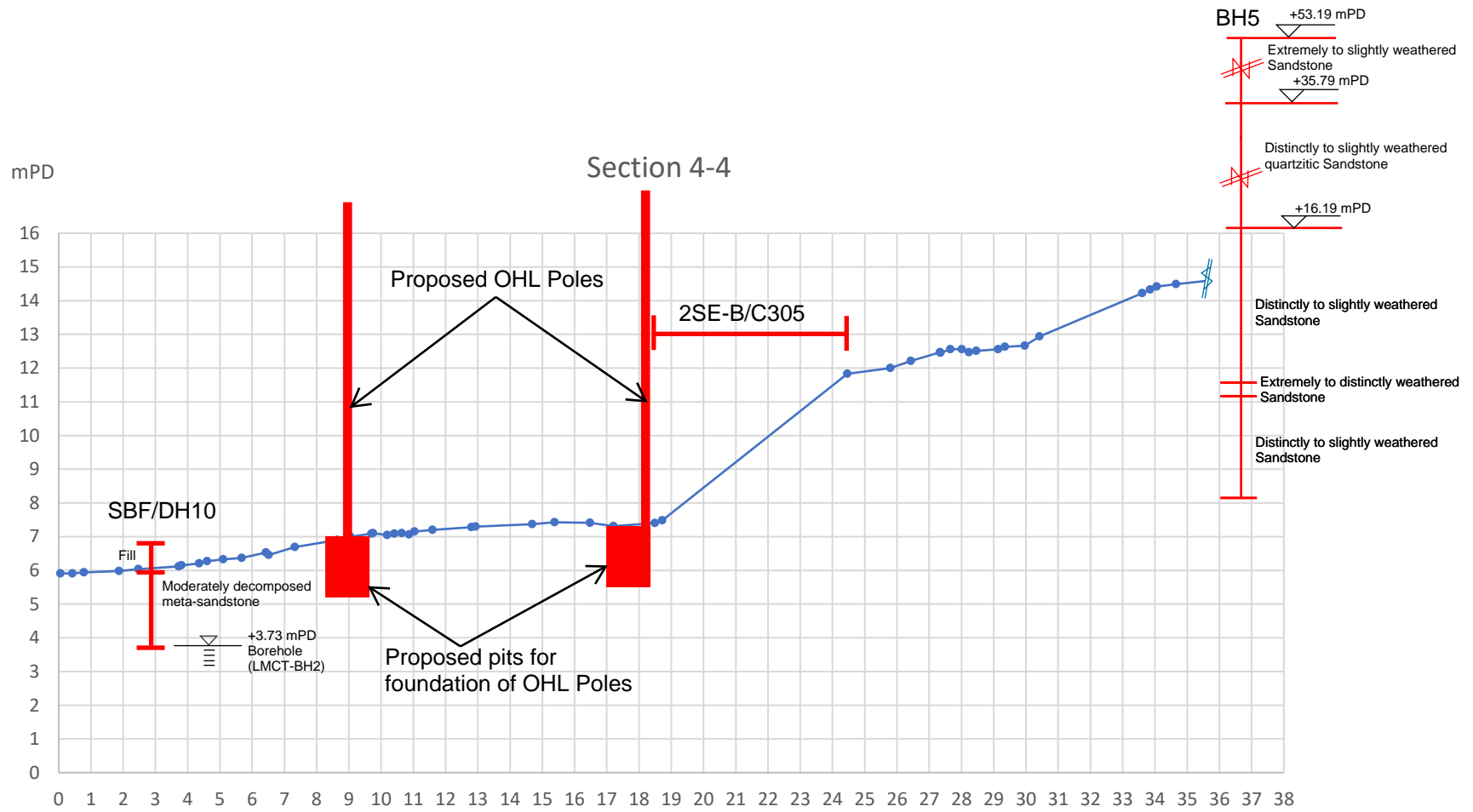
Compiled by :

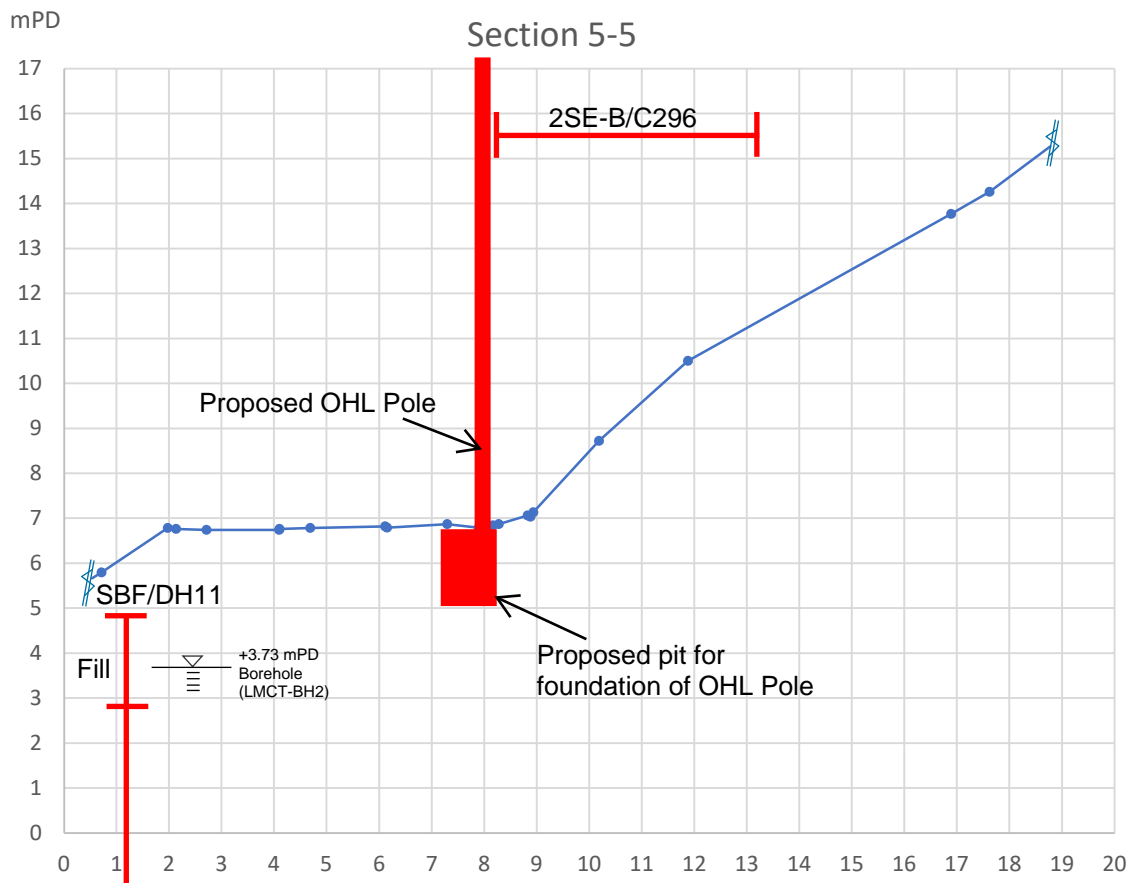
FUGRO FUGRO (HONG KONG) LIMITED
 10/F, Fugro House - KCC2,
 1 Kwai On Road, Kwai Chung,
 New Territories, Hong Kong. Tel : 2577 9023

Project
 GEOTECHNICAL PLANNING REVIEW REPORT FOR THE
 PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED
 FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION)
 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

Drawing Title
 Feature Layout Plan

Legend:	
■	Application Site
	Man-made Feature
Job No.	Figure
B190011.051	-/-
Scale	Date
1:1000	JUL-2022

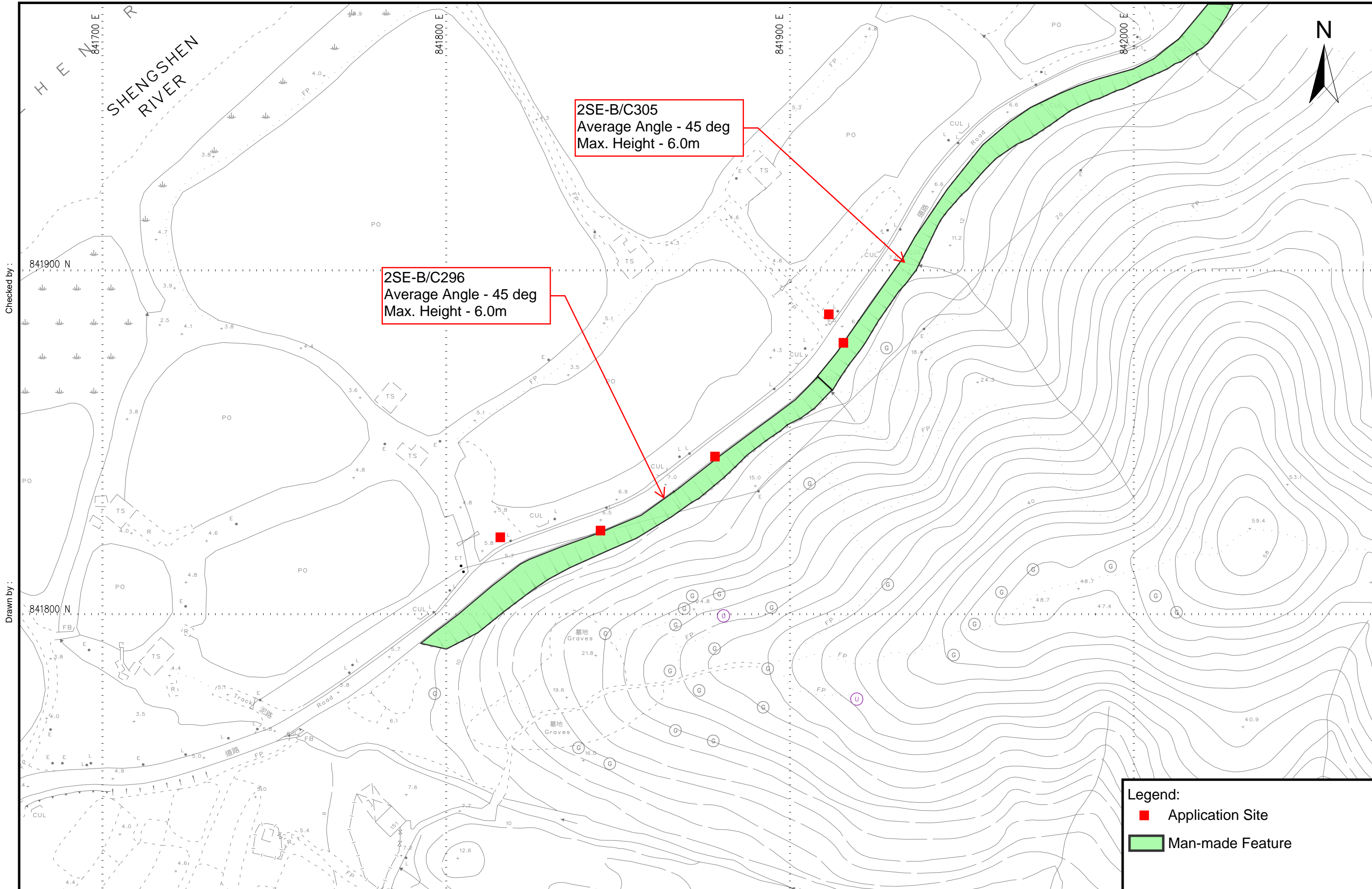




Alluvium
 Very Silty fine sand
 meta-conglomerate/meta-siltstone
 Very Silty fine sand
 Very stiff, sandy silt
 Very Silty fine to medium sand
 Very stiff, sandy silt

Appendix B

Slope Location Plan



Checked by :

Drawn by :

Compiled by :

FUGRO FUGRO (HONG KONG) LIMITED
 10/F, Fugro House - KCC2,
 1 Kwai On Road, Kwai Chung,
 New Territories, Hong Kong. Tel : 2577 9023

Project
 GEOTECHNICAL PLANNING REVIEW REPORT FOR THE
 PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED
 FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION)
 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

Drawing Title
 Slope Location Plan

Legend:	
■	Application Site
	Man-made Feature
Job No.	Figure
B190011.051	-/-
Scale	Date
1:1000	JUL-2022

General Views of Registered Man-made Slopes

2SE-B/C296
Average Angle - 45 deg
Max. Height - 6.0m



Photo 1: General View of 2SE-B/C296

2SE-B/C305
Average Angle - 45 deg
Max. Height - 6.0m



Photo 2: General View of 2SE-B/C305

Appendix B(Cont'd)

Basic Data of Slope Downloaded from SIS



BASIC INFORMATION

Location: BORDER FENCE ROAD Adjoining Border Rd opposite DD96 Lot1811

Registration Date: 12-05-1998

Ranking Score (NPRS): 0 (EI)

Date of Formation: post-1977

Date of Construction/
Modification:

Data Source: EI(HyD)

Approximate Coordinates: Easting : 826564 Northing : 841830

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with very low traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 3

Remarks: N/A

SLOPE PART

(1) Max. Height (m): 6 Length (m): 140 Average Angle (deg): 45

WALL PART

N/A



MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Government Feature Party: Lands D Agent: Lands D Land Cat.: 5b(vi) Reason Code: 62 MR Endorsement Date: 29-11-2013

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 10-06-2014
 Data Source: EI(HyD)
 Slope Part Drainage: (1) Position: On slope Size(mm): 300

Wall Part Drainage: N/A

SLOPE PART

Slope Part (1)
 Surface Protection (%): Bare: 50 Vegetated: 50 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



CHECKING STATUS INFORMATION

Tagmark: 14810_0_5 Part: 0 Checking Status: No checking records Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.: 2SE3B2
Map Sheet Reference (1:1000): 2SE- 3B
Aerial Photos: 51439 (1983), 51440 (1983)

Nearest Rainguage Station (Station Number):
Sheung Shui Water Treatment Plant, Fu Tei Au Road(N34)

Data Collected On: 10-06-2014
Date of Construction, Subsequent Modification and Demolition:
Modification: Constructed Before: 1979 After: 1975
Modification: Modified Before: 1983 After: 1979

Related Reports/Files or Documents:
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III

Remarks: N/A

Follow Up Actions: N/A



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

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

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 26/05/2022)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: MW

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with very low traffic density

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: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

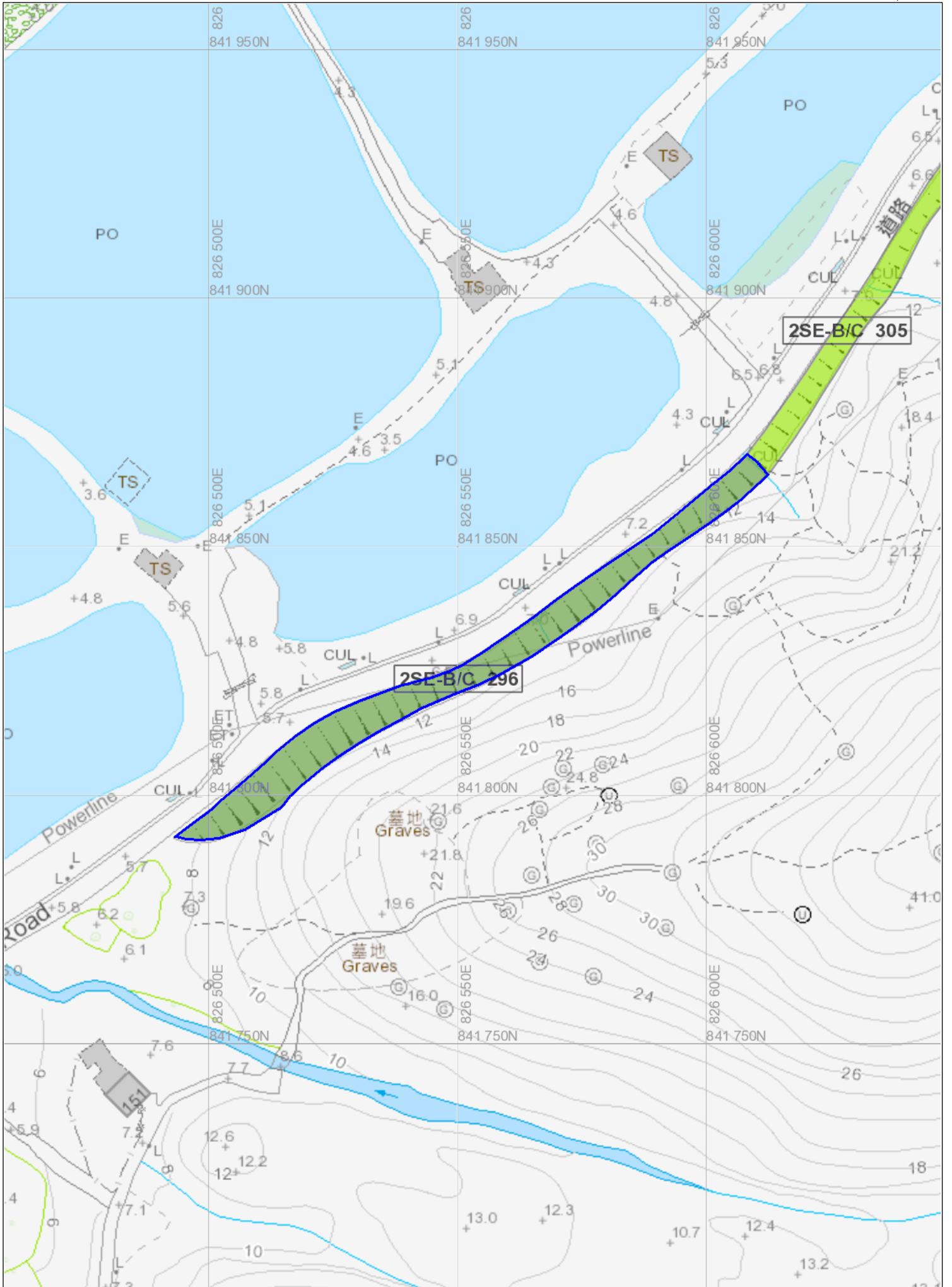
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO





BASIC INFORMATION

Location: Border Fence Road

Registration Date: 12-05-1998

Ranking Score (NPRS): 0 (EI)

Date of Formation: post-1977

Date of Construction/
Modification:

Data Source: EI(Lands D)

Approximate Coordinates: Easting : 826687 Northing : 841952

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with low traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 3

Remarks: N/A

SLOPE PART

(2) Max. Height (m): 6 Length (m): 218 Average Angle (deg): 45

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1 Mixed Feature Party: Lands D Agent: Lands D Land Cat.: 1,5b(vi),7 Reason Code: 62 MR Endorsement Date: 29-11-2013
 (2) Sub Div.: 2 Mixed Feature Party: DD96 LOT 1750RP Agent: N/A Land Cat.: 1,5b(vi),7 Reason Code: 1 MR Endorsement Date: 29-11-2013
 (3) Sub Div.: 3 Mixed Feature Party: DD96 LOT 1746RP Agent: N/A Land Cat.: 1,5b(vi),7 Reason Code: 1 MR Endorsement Date: 29-11-2013
 (4) Sub Div.: 4 Mixed Feature Party: DD96 LOT 1745 Agent: N/A Land Cat.: 1,5b(vi),7 Reason Code: 1 MR Endorsement Date: 29-11-2013

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 05-11-2018
 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

CHECKING STATUS INFORMATION

Tagmark: 14813_1_5 Part: 1 Checking Status: No checking records Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.: 2SE3B2
Map Sheet Reference (1:1000): 2SE- 3B
Aerial Photos: 51439 (1983), 51440 (1983)

Nearest Rainguage Station (Station Number):
Sheung Shui Water Treatment Plant, Fu Tei Au Road(N34)

Data Collected On: 05-11-2018
Date of Construction, Subsequent Modification and Demolition:
Modification: Constructed Before: 1979 After: 1975
Modification: Modified Before: 1983 After: 1979

Related Reports/Files or Documents: File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III

Remarks: N/A

Follow Up Actions: N/A



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

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

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 26/05/2022)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: MW

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with low traffic density

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: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

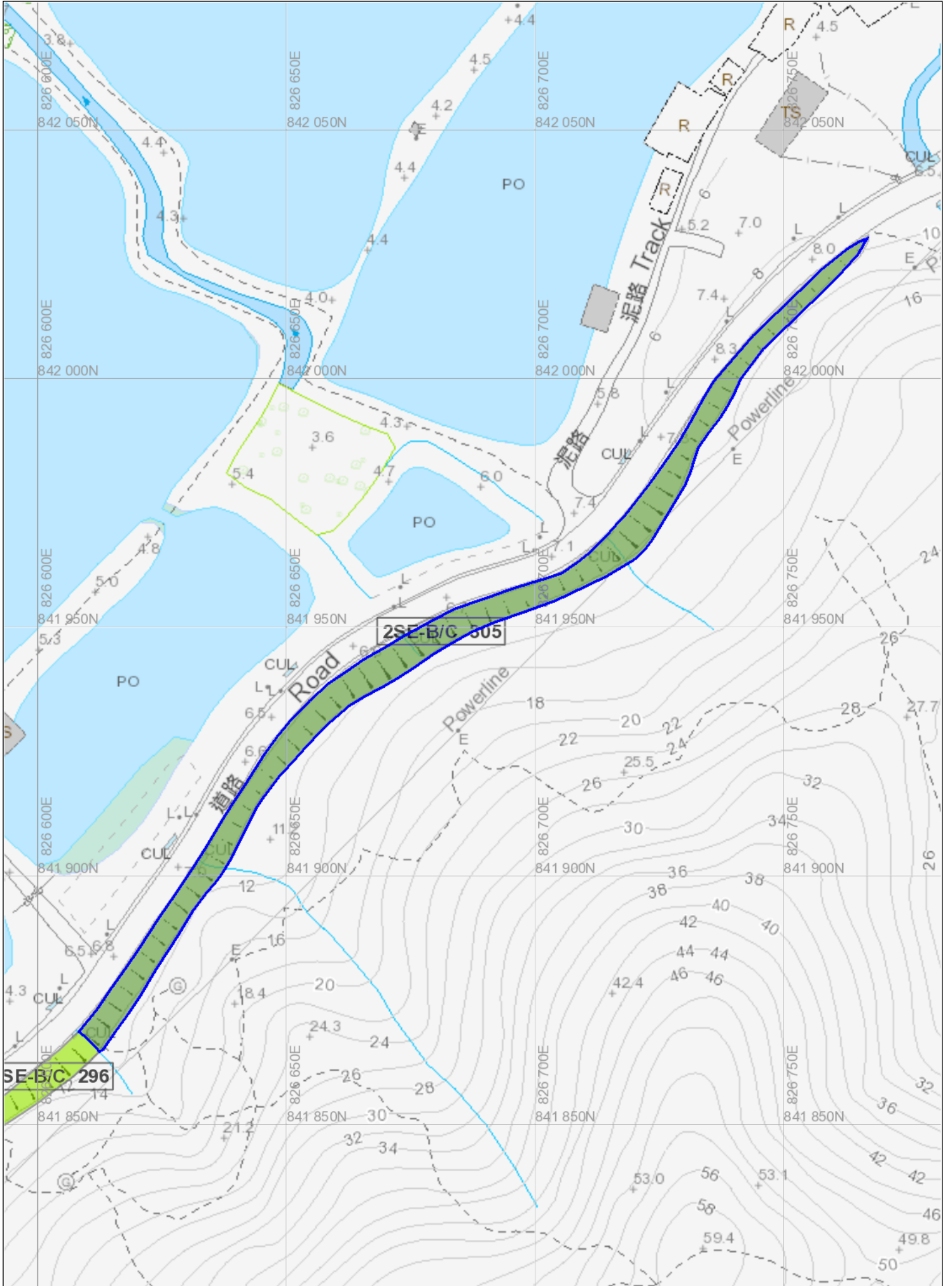
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO





Appendix B(Cont'd)

Slope Maintenance Responsibility Report
Downloaded from SMRIS

Slope Maintenance Responsibility Report

(2SE-B/C296)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	2SE-B/C296	Sub-Division	Not Applicable
	Location	ADJOINING BORDER ROAD OPPOSITE DD96 LOT 1811	
	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.	

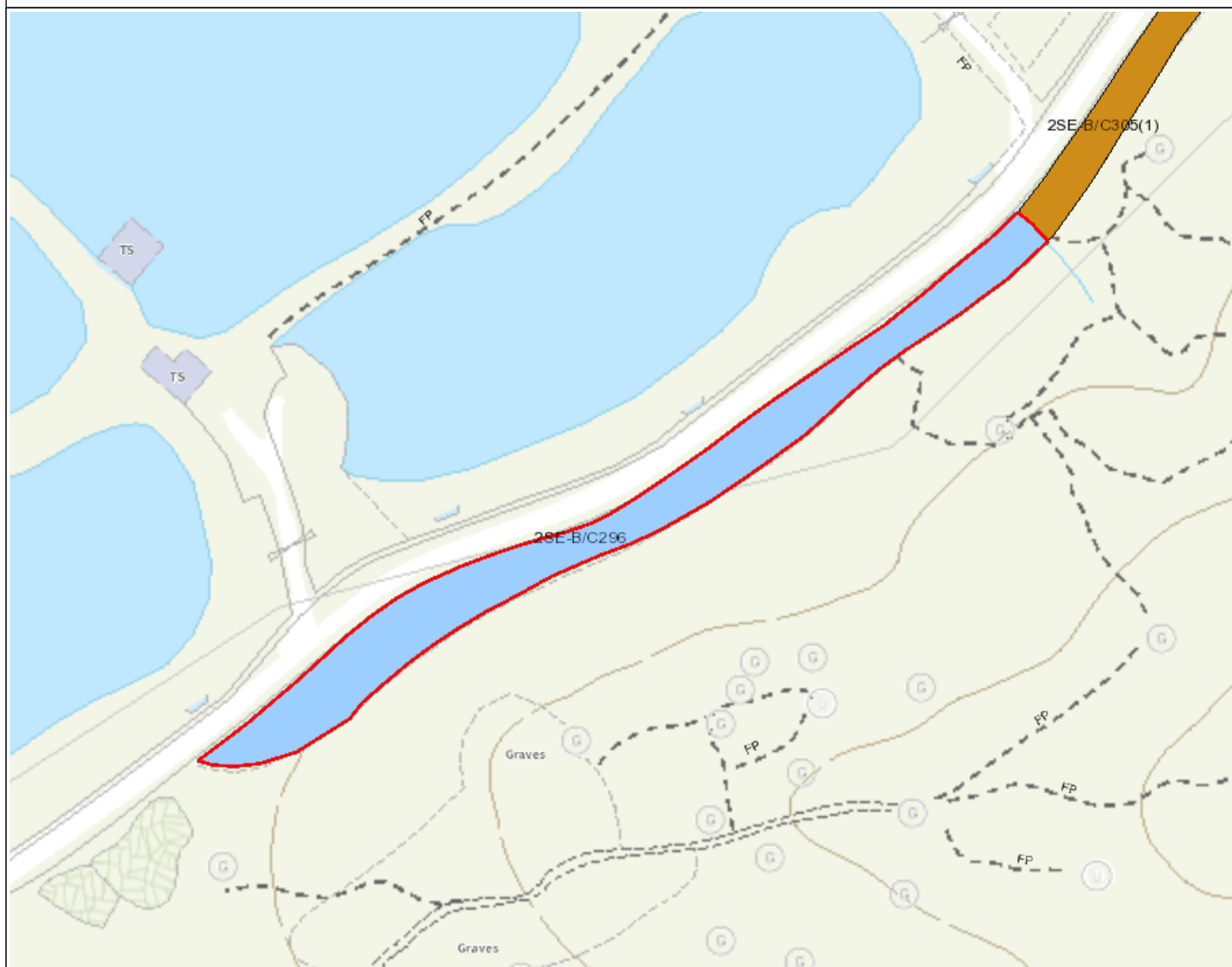
- End of Report -

Notes:

- (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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Location Plan



Legend

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



**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT**

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

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Slope Maintenance Responsibility Report

(2SE-B/C305)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	2SE-B/C305	Sub-Division	1
Location	ADJOINING BORDER ROAD & WITHIN DD96 LOT 1750RP, 1746RP & 1745 NEAR SPOT LEVEL 11.2		
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 -

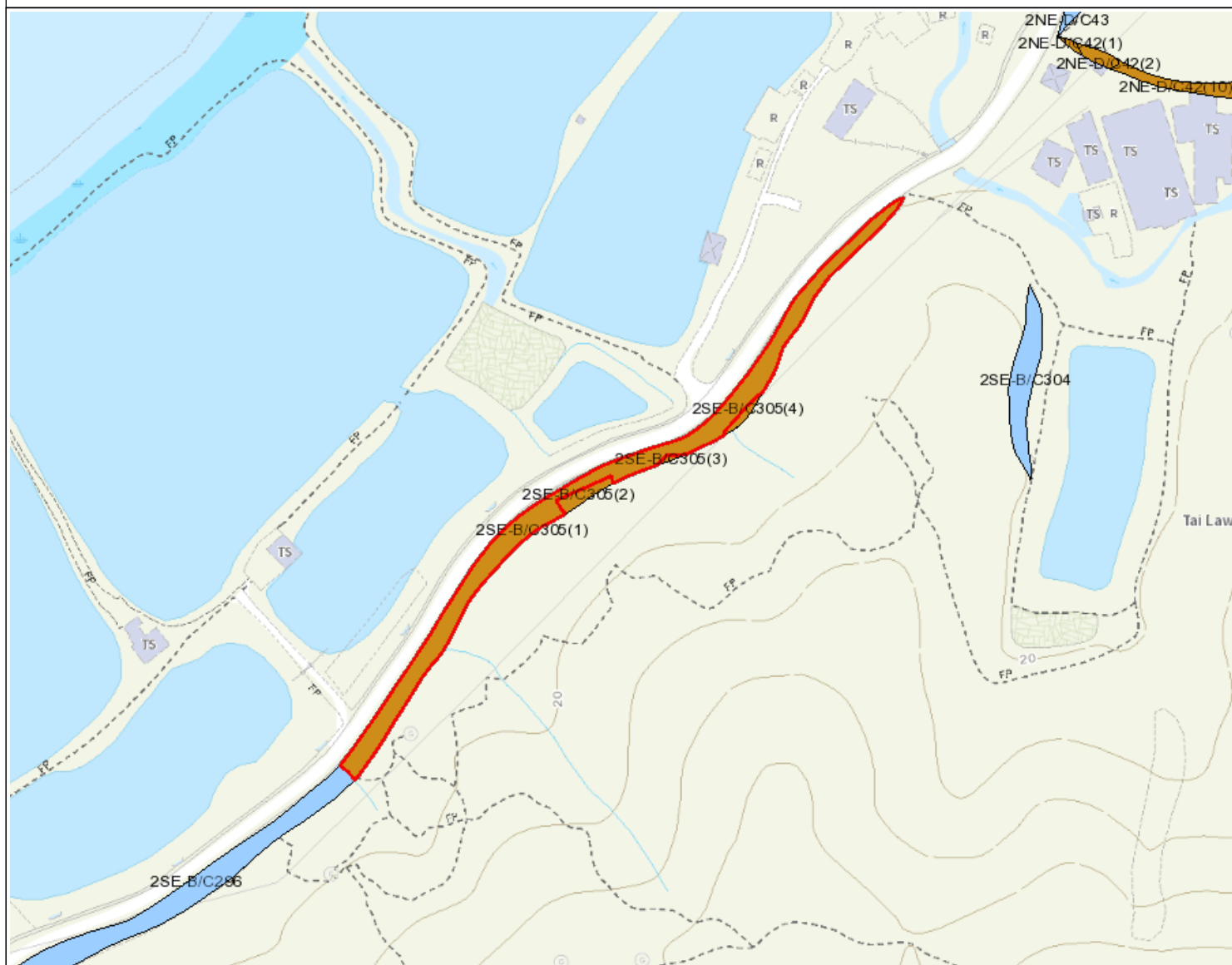
Notes:

- (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: 2SE-B/C305

Location Plan



Legend

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



**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT**

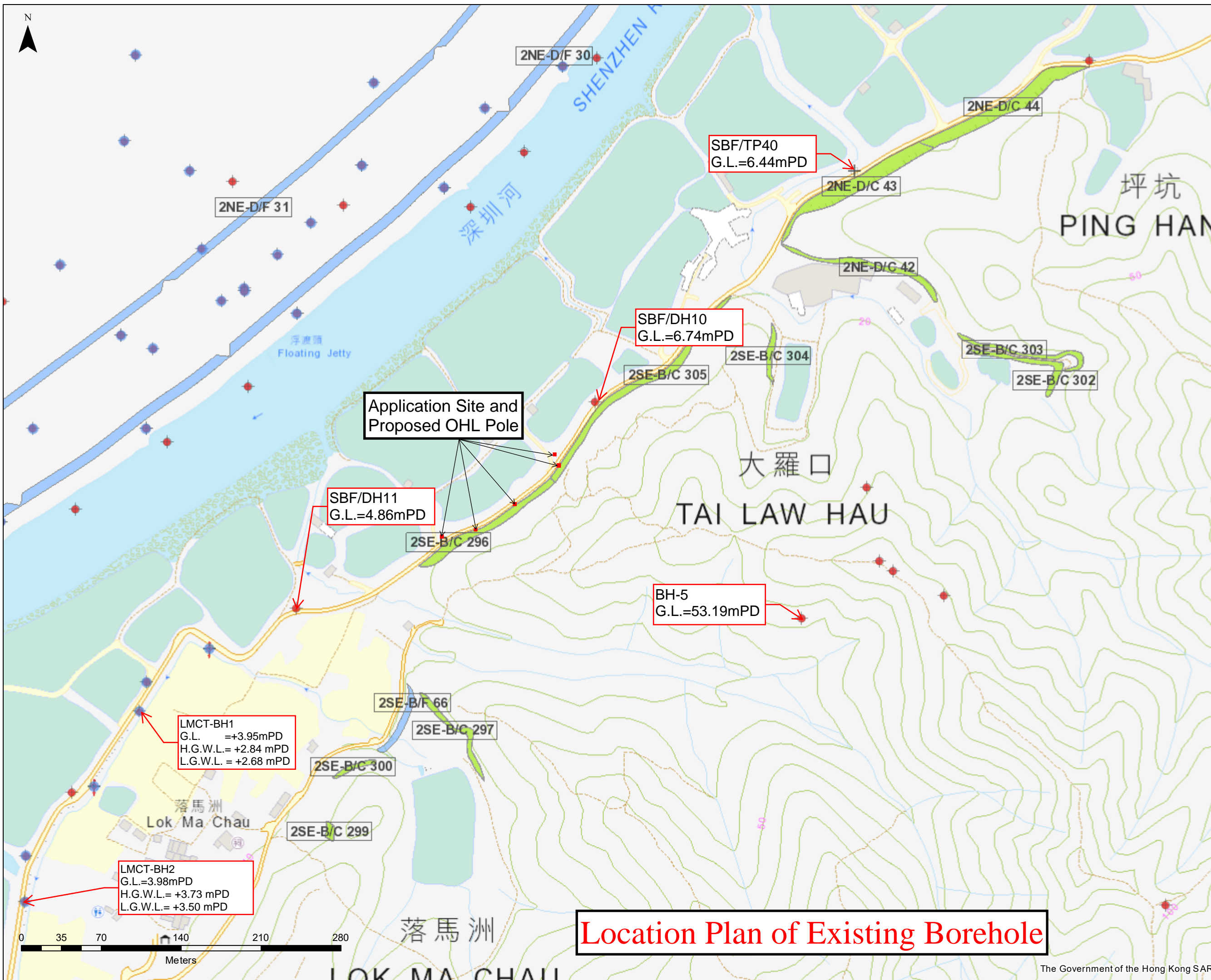
This Plan is **NOT TO SCALE** and intended for **IDENTIFICATION** only. All information shown on this plan **MUST** be verified by field survey.

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Appendix C

Location Plan of Existing Borehole



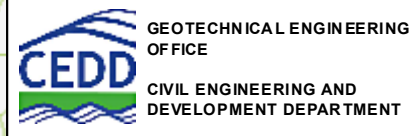
- R** GIU Report
- GI with AGS
- GI Location**
- ⊙ <all other values>
- ▭ Slope striping
- ⊕ Cone Penetration Test
- ⊕ GCO Probe
- ⊕ Grab Samples
- ⊕ Impression Packer Test
- ⊕ Trial pt
- ⊕ PR
- ▭ Rock joint survey
- ▭ Trial trench
- Man-made Features**
- ▭ Cut slopes
- ▭ Disturbed terrain
- ▭ Fill slopes
- ▭ NT defence measures
- ▭ NT stabilisation measures
- ▭ Retaining walls

Legend:
■ Application Site

Division

Scale 1:3,000

Date 25/07/2022



Location Plan of Existing Borehole

Appendix C(Cont'd)

Measured Groundwater Record

Appendix C(Cont'd)

Existing Ground Investigation Records



DRILLHOLE RECORD

HOLE NO. LMCT-BH 1

CONTRACT NO. : GE/2015/29

SHEET 1 OF 1

PROJECT
Ground Investigation - New Territories West
Agreement No. CE 78/2014 (DS)
Drainage Improvement Works at North District - Package B - Investigation
Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826249.35	N 841664.70	DATE :	15/09/2017 to 18/09/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.95 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level +3.95	Depth (m) 0.00	Legend	Grade	Description
	SW														Brown (7.5YR 5/4), mottled reddish brown, spotted white, slightly clayey silty fine to coarse SAND with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
	SW 2.00 PW		80	46						A INSPECTION PIT 0.50 B 1.00 C 1.35	+2.60	1.35			Reddish brown (2.5YR 5/4), locally light brownish grey, angular COBBLE sized moderately decomposed Metasandstone with some angular medium to coarse gravel sized rock fragments. (FILL)
			80	90						1 SW 2.00	+1.95	2.00			Firm, dark grey (N 4), mottled black, clayey slightly sandy SILT with occasional decayed wood pieces. (POND DEPOSIT)
								3.10 1,1,1,1,1 N=4		2 3.00 3.10 3 3.20 4 3.50 3.55	+0.85	3.10			Soft, brown, slightly clayey sandy SILT with occasional subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
			80	0				5.65 x 10 ⁻⁶ m/sec		5 4.00 5.00 5.10	-0.05	4.00			Reddish brown (2.5YR 5/4), mottled light yellowish brown, spotted white, sandy subangular to subrounded fine to coarse GRAVEL sized quartz and rock fragments. (ALLUVIUM)
		0.50m at 18:00		0				25 bls		6 5.50 5.60 7 5.70	-1.65	5.60		V	Extremely weak, light grey (N 7), streaked reddish brown and light brown, completely decomposed METASILTSTONE. (Slightly sandy SILT)
		1.20m at 08:00						3.1, 1.2, 3, 3 N=9		8 6.00 6.05					
		1.21m at 18:00						6.05		9 7.10	-3.15	7.10		V	Extremely weak to very weak, reddish brown (2.5YR 5/4), dappled yellow and red, occasional mottled light grey, completely decomposed METASILTSTONE. (Slightly sandy SILT with some subangular fine to coarse gravel)
		1.13m at 08:00	80	40						10 8.10 11 8.20					
			80	95						12 9.20 9.30 13 9.40 14 9.70 9.75					
	PW	0.58m at 18:00						9.30 2.5, 5.9, 17.22 N=53							
10	18/09/2017	10.00						9.75			-6.05	10.00			End of Investigation Hole at 10.00m.

<ul style="list-style-type: none"> ● Disturbed sample ▣ Piston sample ▨ Split spoon sample ▩ U76 undisturbed sample ▩ U100 undisturbed sample ▨ Mazier sample ▩ SPT liner sample ▲ Water sample En Environmental Sample 	<ul style="list-style-type: none"> ▼ Standard penetration test ▽ In-situ vane shear test ⊥ Permeability test ⊥ Pressuremeter test ⊥ Packer Test ⊥ Acoustic or optical televiwer survey ⊥ Piezometer tip ⊥ Standpipe ⊥ Groundwater Sampling Well ⊥ Vibrating wire piezometer ⊥ Impression packer test 	LOGGED S. C. Law DATE 19/09/2017 CHECKED Y. M. Leung DATE 21/09/2017	REMARKS 1. An inspection pit was excavated to 1.35m. 2. A constant head permeability test was carried out from 4.10m to 5.60m. 3. A standpipe was installed at 5.50m. 4. A piezometer was installed at 8.50m. 5. Piezometer buckets were installed in standpipe and piezometer from 0.05m to 2.55m depth at 0.50m intervals below ground level.
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GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

**Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH1

Hole No.:

1

of

1

Box No.:

0.00

m

to

10.00

m

Depth :

Date of Photograph : 31-10-2017



0.00m

1.00m





DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 1 OF 5

PROJECT
 Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	T C R %	S C R %	R Q D %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
21/09/2017	SW										+3.98	0.00			Brown (7.5YR 5/4), mottled reddish brown, silty sandy subangular fine to coarse GRAVEL sized rock fragments. (FILL)
				80	36					INSPECTION PIT A ● 0.50 B ● 1.00	+2.98	1.00			Light grey (N 7), locally light brown, slightly silty angular medium to coarse GRAVEL sized rock fragments. (FILL)
				80	90					1 1.50	+2.48	1.50			Firm to stiff, dark greyish brown (10YR 4/2), spotted dark grey, clayey slightly sandy SILT with occasional subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
										2 2.50 3 2.60	+1.38	2.60			Soft, dark grey (N 4), spotted dark brown, clayey slightly sandy SILT. (POND DEPOSIT)
21/09/2017 22/09/2017		0.10m at 18:00 0.40m at 08:00							1,1,1,1,1,1 N=4 23.24 kN/m ²	4 3.00 5 3.05					From 3.60m to 4.60m : No recovery.
					0					6 3.55 7 3.60					
22/09/2017 23/09/2017		0.25m at 18:00 1.03m at 08:00							28 bls	8 4.55 9 4.60	-0.62	4.60			Stiff, yellowish brown (10YR 5/4), mottled reddish brown, occasional mottled white, clayey slightly sandy SILT with occasional subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
									2,3,3,3,5,8 N=19 1.30 x 10 ⁻⁷ m/sec	10 5.05 11 5.10 12 5.20 13 5.50 14 5.55					
				80	98					15 6.10					
23/09/2017 25/09/2017	SW 8.15 PW	0.22m at 18:00 0.53m at 08:00							5,7,6,10,20,16 N=52 9.17 x 10 ⁻⁷ m/sec	16 6.60	-2.62	6.60		V	Extremely weak, brown (7.5YR 5/4), streaked reddish brown, completely decomposed METASILTSTONE. (Sandy SILT with some subangular fine to medium gravel)
										17 7.60 18 7.70	-3.72	7.70		V	Extremely weak to very weak, light reddish brown (2.5YR 7/3), spotted and mottled reddish brown, completely decomposed METASILTSTONE. (Sandy SILT with much subangular fine to medium gravel)
25/09/2017 26/09/2017		0.27m at 18:00 0.80m at							4,4,7,7,8,9	19 8.10 20 8.15					
				60	95					21 8.60					
										22 9.60 23 9.70					
										24 9.80					

<ul style="list-style-type: none"> ● Disturbed sample ▣ Piston sample ▤ Split spoon sample ▥ U76 undisturbed sample ▧ U100 undisturbed sample ▨ Mazier sample ▩ SPT liner sample ▲ Water sample En Environmental Sample 	<ul style="list-style-type: none"> ↓ Standard penetration test ↕ In-situ vane shear test ⊥ Permeability test ⊥ Pressuremeter test ⊥ Packer Test ⊥ Acoustic or optical televiwer survey ⊥ Piezometer tip ⊥ Standpipe ⊥ Groundwater Sampling Well ⊥ Vibrating wire piezometer ⊥ Impression packer test 	<p>LOGGED S. C. Law</p> <p>DATE 11/10/2017</p> <p>CHECKED Y. M. Leung</p> <p>DATE 20/10/2017</p>	<p>REMARKS</p> <ol style="list-style-type: none"> An inspection pit was excavated to 1.00m. An in-situ vane shear test was carried out at 3.55m. Constant head permeability tests were carried out from 5.10m to 6.60m and 8.70m to 10.20m. Piezometers were installed at 24.40m and 38.00m. Piezometer buckets were installed in piezometers from 0.08m to 2.58m depth at 0.50m intervals below ground level.
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DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 2 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD Rotary	CO-ORDINATES	TASK ORDER NO. GE/2015/29.2
MACHINE & NO. VBM52	E 826149.30 N 841498.38	DATE : 21/09/2017 to 10/10/2017
FLUSHING MEDIUM Water	ORIENTATION Vertical	GROUND LEVEL + 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
26/09/2017 27/09/2017	PW	08:00 0.28m at 18:00 0.81m at 08:00						10.15	N=31	19 10.10 10.15	-6.02	10.00		V	See sheet 1 of 5
11			60	88						20 10.60	-6.62	10.60		V	Extremely weak, brown (7.5YR 5/4), occasional spotted white, completely decomposed METASILTSTONE. (Slightly sandy SILT)
12								11.70	3,3,5,6,7,9 N=27	21 11.60 22 11.80 23 12.10 12.15					
13			60	95						24 12.60	-8.62	12.60		V	Extremely weak, reddish brown (2.5YR 5/4), streaked light grey, completely decomposed METASILTSTONE. (Slightly sandy SILT with occasional subangular fine to medium gravel)
14		0.25m at 18:00 0.95m at 08:00						13.70	6,8,12,17,25,30 N=84	25 13.60 26 13.80 27 14.10 14.15					
15			60	95						28 14.60					
16								15.70	3,8,12,19,22,33 N=86	29 15.60 30 15.80 31 16.10 16.15					
17			60	95						32 16.60	-12.62	16.60		IV	Very weak, reddish brown (2.5YR 5/4), streaked and mottled light grey, highly decomposed METASANDSTONE. (Silty sandy subangular fine to medium GRAVEL)
18								17.70	10,12,14,28,32,24 N=98	33 17.60 34 17.80 35 18.10 18.15				IV	Very weak, brown (7.5YR 5/4), spotted white, highly decomposed METASANDSTONE. (Subangular fine to medium GRAVEL)
19		0.55m at 18:00 1.12m at 08:00								36 18.60	-14.62	18.60		IV	Very weak, reddish brown (2.5YR 5/4), streaked and mottled brown, highly decomposed METASANDSTONE. (Silty sandy subangular fine to medium GRAVEL)
20								19.70	16,13,13,16,30,36	37 19.60 38 19.70 19.80					

- Disturbed sample
- ▣ Piston sample
- ▨ Split spoon sample
- ▨ U76 undisturbed sample
- ▨ U100 undisturbed sample
- ▨ Mazier sample
- ▨ SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ↓ Standard penetration test
- ↓ In-situ vane shear test
- ↓ Permeability test
- ↓ Pressuremeter test
- ↓ Packer Test
- ↓ Acoustic or optical televiewer survey
- ↓ Piezometer tip
- ↓ Standpipe
- ↓ Groundwater Sampling Well
- ↓ Vibrating wire piezometer
- ↓ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 3 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
21	HW							20.15	N=95	39 20.10 20.15	-16.02	20.00		IV	See sheet 2 of 5
22			60	95				21.70	8, 12, 14, 18, 30, 32 N=94	40 20.60 41 21.60 42 21.80 43 22.10 22.15					
23			60	95				23.70	50/70mm 100/60mm (100/60mm)	44 22.60 45 23.60 46 23.70 47 23.78 23.83	-18.62	22.60		IV	Very weak to weak, light grey (N 7), streaked brown, highly decomposed METASILTSTONE. (Slightly silty subangular fine to coarse GRAVEL)
24		0.42m at 18:00						24.40							
25	29/09/2017 30/09/2017	0.92m at 08:00	60	100				24.96		48 24.60 49 24.86 24.96	-20.98	24.96		III	Moderately strong, greyish brown, dappled brown, moderately decomposed METASILTSTONE. Joints are very closely to closely spaced, locally medium spaced, occasional slickensided planar, extremely narrow to very narrow, iron and manganese oxide stained, dipping 10° to 20°, 20° to 30°, 40° to 50°, 60° to 70° and 70° to 80°.
26			60	100	82	33	9.4	25.49	>20	T2 O I					
27			60	100	49	0	12.5	26.07	>20	T2 O I					At 26.97m : Fractured, quartz vein up to 40mm thick, dipping 20° to 30°.
28	30/09/2017 03/10/2017	0.31m at 18:00 1.00m at 08:00	85	63	47	15	10.9	26.75		T2 O I					
29								28.50		T2 O I	-24.52	28.50		V	From 28.50m to 29.05m : No recovery, inferred to be completely decomposed METASILTSTONE.
30			85	100	96	24	NR	29.05		T2 O I	-25.07	29.05		III	
								13.4							

- Disturbed sample
- ▣ Piston sample
- ▤ Split spoon sample
- ▥ U76 undisturbed sample
- ▧ U100 undisturbed sample
- ▨ Mazier sample
- ▩ SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ▼ Standard penetration test
- ▽ In-situ vane shear test
- ⊥ Permeability test
- ⊕ Pressuremeter test
- ⊙ Packer Test
- ⊙ Acoustic or optical televiewer survey
- ⊙ Piezometer tip
- ⊙ Standpipe
- ⊙ Groundwater Sampling Well
- ⊙ Vibrating wire piezometer
- ⊙ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 4 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD Rotary	CO-ORDINATES	TASK ORDER NO. GE/2015/29.2
MACHINE & NO. VBM52	E 826149.30 N 841498.38	DATE : 21/09/2017 to 10/10/2017
FLUSHING MEDIUM Water	ORIENTATION Vertical	GROUND LEVEL + 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level -26.02 30.00	Depth (m)	Legend	Grade	Description
31			85	100	89	43		30.69		T210I 30.22				III	See sheet 3 of 5
32			85	52	5	0		31.13		T210I 31.63					
		0.90m at 18:00						31.63		T210I 32.13	-28.15	32.13		V	From 32.13m to 32.59m : No recovery, inferred to be completely decomposed METASILTSTONE.
		1.10m at 08:00						32.59		T210I 32.59	-28.61	32.59		IV	Moderately weak to moderately strong, reddish brown, spotted white, moderately decomposed METASANDSTONE.
			85	90	31	16		32.79		T210I 33.00	-28.80	32.78		III	Joints are very closely to closely spaced, locally extremely closely spaced, rough planar and rough stepped, extremely narrow to very narrow, iron and manganese oxide stained, dipping 20° to 30°, 40° to 50° and 50° to 60°.
								33.00		T210I 33.20	-29.22	33.20		IV	From 32.59m to 32.78m : Moderately weak, reddish brown (2.5YR 5/4), spotted white, highly decomposed METASANDSTONE. (Sandy subangular fine to coarse GRAVEL)
			65	0				33.20		50 34.00		34.10		IV	Very weak to weak, reddish brown (2.5YR 5/4), streaked dark greyish brown, highly decomposed METASANDSTONE. (Silty sandy subangular fine to coarse GRAVEL)
		0.90m at 18:00						34.10		T210I 35.10	-30.12	34.10		IV	Moderately weak, brown (7.5YR 5/4), dappled brown, highly decomposed METASANDSTONE. (Slightly silty sandy subangular fine to coarse GRAVEL with some subangular cobbles)
		1.05m at 08:00						34.10		51 35.10		35.10		V	Extremely weak to very weak, brown, streaked black, completely decomposed METASANDSTONE. (Silty fine to medium SAND with much subangular fine to medium gravel)
			85	91	0	0	NA	35.10		52 36.10		36.20			
								36.20		53 36.30		36.30			
								36.35		54 36.60		36.65			
								36.41		55 37.10		37.10			
			80	95				37.10		56 38.10		38.20			
								38.00		57 38.36		38.41			
								38.20		58 38.41		38.41			
								38.41							
		0.65m at 18:00						38.90							
		0.90m at 08:00						38.90		T210I 39.90	-34.92	38.90		IV	Moderately weak to moderately strong, brown, streaked black, moderately decomposed METASILTSTONE.
			80	98	21	15		39.13		T210I 39.36	-35.15	39.13		III	Joints are very closely to closely spaced, locally extremely closely spaced, occasional slickensided planar, extremely narrow to very narrow, iron and manganese oxide stained, dipping 0° to 10°, 20° to 30°, 40° to 50°, 50° to 60° and 60° to 70°.
								39.36			-35.38	39.36		IV	
								39.99		T210I 39.90	-36.01	39.99			

- Disturbed sample
- ▣ Piston sample
- ▤ Split spoon sample
- ▥ U76 undisturbed sample
- ▧ U100 undisturbed sample
- ▨ Mazier sample
- ▩ SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ▼ Standard penetration test
- ▽ In-situ vane shear test
- ⊥ Permeability test
- ⊕ Pressuremeter test
- ⊗ Packer Test
- ⊘ Acoustic or optical televiwer survey
- ⊙ Piezometer tip
- ⊚ Standpipe
- ⊛ Groundwater Sampling Well
- ⊜ Vibrating wire piezometer
- ⊝ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 5 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description																																							
41	HW		80	69	40	32	NR	17.6		T2101	-36.02	40.00		III	From 38.90m to 39.13m : Moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASANDSTONE. (Slightly silty sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)																																							
								40.16			-36.18	40.16		V																																								
								40.65			-36.67	40.65		III																																								
								41.08			-37.10	41.08		IV																																								
								41.57			-37.59	41.57		III																																								
								42			HW			80		99	46	30	NA	9.0	T2101	-38.26	42.24		IV	From 39.36m to 39.99m : Weak to moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASILTSTONE. (Silty slightly sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)																												
								42.24												-37.59		41.57	III																															
								42.77												-38.26		42.24	IV																															
								43												HW			80		78		15	0	NA	17.1	T2101	-38.79	42.77		III	From 40.16m to 40.65m : No recovery, inferred to be completely decomposed METASILTSTONE.																		
								43.18																						-39.20		43.18	IV																					
43.58	-39.60	43.58	V																																																			
44	HW	07/10/2017 18:00 09/10/2017 08:00	60	0	0	0	NR	43.86	T2101	-39.88			43.86																	IV		From 41.08m to 41.57m : Weak to moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASILTSTONE. (Silty slightly sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)																						
43.86								-39.93		43.91			II																																									
45								HW					60																	100			100		94		NA	3.1	T2101	-42.39	46.37		III	From 43.58m to 43.86m : No recovery, inferred to be completely decomposed METASILTSTONE.										
45.34																																						-42.39		46.37	III													
46											HW			60		100	98	89	NA		9.4			T2101		-46.83												46.83			III		Weak to moderately weak, greyish brown (2.5Y 5/2), streaked brown (7.5YR 5/4), highly decomposed METASILTSTONE. (Slightly sandy angular to subangular fine to coarse GRAVEL)											
46.51																					-46.83					46.83												III																
47																					HW																	60			100				16	0	>20	18.2	T2101	-47.50	47.50		III	Strong, grey, occasional streaked dark brown, slightly decomposed METASILTSTONE.
47.17																				-47.50		47.50	III																															
48																				HW		09/10/2017 18:00 10/10/2017 08:00	60		100		89	66	NA		9.8			T2101		-48.42												48.42			III		Joints are medium spaced, locally closely spaced, occasional rough stepped, extremely narrow, iron and manganese oxide stained, dipping 10° to 20°, 40° to 50°, 50° to 60° and 60° to 70°.	
48.42																															-48.42					48.42												III						
49	HW		60	100	70	43	NA		4.0						T2101																-49.05	49.05																III			From 43.86m to 43.91m : No recovery, inferred to be completely decomposed METASILTSTONE.			
48.81									-49.05																						49.05	III																						
50								HW	10/10/2017 18:00	60			100																	70	43	NA	12.5		T2101		-49.05		49.05					III				From 45.34m to 46.37m : Moderately strong, brown, streaked white and dark brown, moderately decomposed METASANDSTONE.						
49.05																																	-49.05				49.05		III															
50											HW			60		100	70	43	NA					4.0									T2101				-49.05		49.05				III	Joints are closely to medium spaced, locally very closely spaced, rough planar and rough stepped, occasional slickensided planar, extremely narrow, iron and manganese oxide stained, dipping 20° to 30°, 30° to 40°, 40° to 50°, 50° to 60° and 60° to 70°.										
49.05																								-49.05													49.05		III															
50																					HW					60											100	70	43		NA		12.5		T2101	-49.05	49.05					III		From 47.54m to 48.29m : With some quartz veins up to 10mm thick, dipping 30° to 40°.
49.05																																											-49.05			49.05	III							
50																				HW			60		100		70	43	NA					12.5									T2101			-49.05	49.05					III	End of Investigation Hole at 49.05m.	
49.05																																		-49.05												49.05	III							

<ul style="list-style-type: none"> ● Disturbed sample ▣ Piston sample ▤ Split spoon sample ▥ U76 undisturbed sample ▧ U100 undisturbed sample ▨ Mazier sample ▩ SPT liner sample ▲ Water sample En Environmental Sample 	<ul style="list-style-type: none"> ↓ Standard penetration test ↕ In-situ vane shear test ⊥ Permeability test ⊞ Pressuremeter test ⊠ Packer Test ⊡ Acoustic or optical televiwer survey ⊣ Piezometer tip ⊤ Standpipe ⊥ Groundwater Sampling Well ⊦ Vibrating wire piezometer ⊧ Impression packer test 	<p>LOGGED S. C. Law</p> <p>DATE 11/10/2017</p> <p>CHECKED Y. M. Leung</p> <p>DATE 20/10/2017</p>	<p>REMARKS</p>
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GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: LMCT-BH2

Box No.: 1 of 10

Depth : 0.00 m to 11.70 m

Date of Photograph : 31-10-2017



0.00m

1.00m





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



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Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH2

Hole No.:

2

of

10

Box No.:

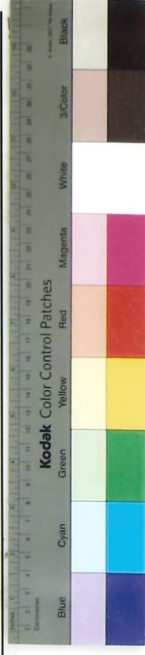
11.70

m to

24.96

m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

(23)

11.70

(49)

24.96

CONT'D





**GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**



**惠保(香港)有限公司
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Contract No.: GE/2015/29

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**Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH2

Hole No.:

3

Box No.:

10

of

24.96

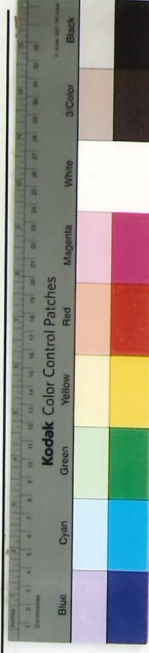
m to

27.55

m

Depth :

Date of Photograph : **31-10-2017**



0.00m

1.00m

CONT'D

24.96

26.28

27.55

CONT'D



**GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**



**惠保(香港)有限公司
VIBRO (H.K.) LIMITED**
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

**Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH2

Hole No.: _____ of _____

Box No.: **4** of **10**

Depth : **27.55** m to **30.22** m

Date of Photograph : **31-10-2017**



0.00m

1.00m

CONT'D

27.55

NR
28.50-29.05

29.05

30.22

CONT'D





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

LMCT-BH2

Hole No.: _____ of _____
Box No.: 5 of 10
Depth: 30.22 m to (32.99) m
Date of Photograph: 31-10-2017



CONT'D

30.22

31.63

32.59

NR
32.13-32.59

(32.99)

CONT'D



GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: LMCT-BH2

Box No.: 6 of 10

Depth: (32.99) m to 39.90 m

Date of Photograph : 31-10-2017



0.00m

1.00m





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: **LMCT-BH2**

Hole No.:

Box No.: **7** of **10**

Box No.:

Depth: **39.90** m to **42.58** m

Depth:

Date of Photograph : **31-10-2017**

Date of Photograph :



0.00m

1.00m

CONT'D

39.90

NR
40.16-40.65

41.19

42.58

CONT'D



GEOTECHNICAL ENGINEERING OFFICE
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惠保(香港)有限公司
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Contract No.: GE/2015/29

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Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: LMCT-BH2

Box No.: 8 of 10

Depth : 42.58 m to 45.34 m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

42.58

(59)

43.86

43.91

NR
43.58-43.86

43.91

45.34

CONT'D





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
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Contract No.: GE/2015/29

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Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

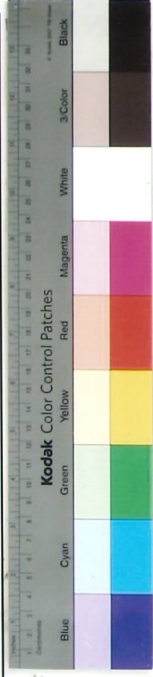
LMCT-BH2

Hole No.: _____ of _____

Box No.: 9 of 10

Depth: 45.34 m to (48.12) m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

45.34



CONT'D



GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

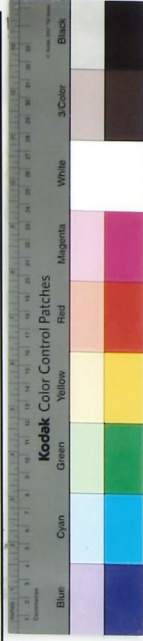
Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: **LMCT-BH2**

Box No.: **10** of **10**

Depth : **(48.12)** m to **49.05** m

Date of Photograph : **31-10-2017**



0.00m

1.00m





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH10**

SHEET **1** OF **1**

DRILLHOLE RECORD

CONTRACT NO. **TC N307**

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826647.23
N 841934.82

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR113**

DATE FROM **20/04/2005** TO **20/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **6.74** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
0 20/04/2005	HX							INSPECTION PIT	6.74	0.00			Yellowish red (5YR 5/8), silty fine to medium SAND with some angular to subangular fine to coarse gravel sized moderately strong rock fragments. (FILL)
1	HX 1.26		99	99	91	8.7		A	5.94	0.80			
			100	98	0	14.9		T2101		1.26		III	Moderately strong, reddish brown, moderately decomposed meta-SANDSTONE. Joints are closely spaced, occasional very closely and medium spaced, rough and smooth planar, rough undulating, extremely narrow to occasional very narrow, limonite, iron and manganese oxide stained, dipping at 0° to 10°, 20° to 30° and 30° to 40°
2			100	92	56			T2101		1.60			From 1.71m to 1.98m : Subvertical joint.
3		1.23m at 18:00				20 12.1		T2101		3.03			Hole completed at 3.03m.
4													
5													
6													
7													
8													
9													
10													

- SMALL DISTURBED SAMPLE
- ⬆ LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- ▩ MAZIER SAMPLE
- ▨ PISTON SAMPLE
- ▲ WATER SAMPLE
- PIEZOMETER TIP
- STANDPIPE
- ⬇ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∨ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED Y.K. Lee

DATE 21/04/2005

CHECKED Tom Lo

DATE 22/04/2005

REMARKS



GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT
TERM CONTRACT FOR GROUND INVESTIGATION

SITE: CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH10

DEPTH: 0.00 M TO 3.03 M

DATE: 24-5-2005

BOX 1 OF 1

0.0m

0.5m



1.0m

0.00



0.80



1.26



1.60



3.03
END





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH11**

SHEET **1** OF **2**

DRILLHOLE RECORD

CONTRACT NO. **TC N307**

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826386.01
N 841754.65

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR129**

DATE FROM **24/04/2005** TO **26/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **4.86** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
0									4.86	0.00			
24/04/2005	PX							A		0.50			Firm, yellowish brown (10YR 5/8), dappled grey, sandy clayey SILT with some angular to subangular fine to coarse gravel sized moderately weak to moderately strong rock fragments. (FILL)
1								B		1.00			
2								C		3.36	1.50		
24/04/2005		Dry at 18:00											
25/04/2005		Dry at 08:00	80					D		2.86	2.00		Yellowish brown (10YR 5/8), clayey silty fine to coarse SAND with much angular fine to medium gravel sized rock fragments. (FILL)
3								1					Greyish brown (2.5Y 5/2), clayey silty fine to coarse SAND with much angular to subangular fine to coarse gravel sized moderately strong and strong rock and quartz fragments. (ALLUVIUM)
4	PX 4.00 HX						1.1, 1.1, 1.2 N=5	2		1.76	3.10		Loose, dark grey (7.5YR 4/1), clayey silty fine to coarse SAND. (ALLUVIUM)
5		0.60m at 18:00	85					3					
25/04/2005		1.50m at 08:00	0					4		0.86	4.00		Brownish yellow (10YR 6/8), slightly clayey silty fine to coarse SAND with some subangular fine to medium gravel sized moderately strong rock fragments. (ALLUVIUM)
26/04/2005								5					
6								6		-0.24	5.10		Dark yellowish brown (10YR 3/6), silty fine to medium SAND with much subangular fine to coarse gravel sized moderately strong and strong rock and quartz fragments. (ALLUVIUM)
7							3.2, 2.2, 3.3 N=10	7		-1.34	6.20		Loose to medium dense, yellowish brown (10YR 5/8), sandy subangular fine to medium GRAVEL sized moderately strong rock and quartz fragments. (ALLUVIUM)
8			80					8		-2.24	7.10		Yellowish brown (10YR 5/8), slightly sandy subangular medium to coarse GRAVEL with some cobble sized, moderately decomposed, meta-sandstone and occasional quartz fragments. (ALLUVIUM)
9			75					T2101			7.60		
10			62					T2101			8.40		
11								T2101			9.00		
9							3.9, 1.1, 1.1, 1.4, 1.8 N=54	9		-4.14	9.00	V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SANDSTONE. (Very silty fine SAND)
10			30					10		-4.64	9.50	V	Extremely weak, dark yellowish brown, dappled grey (10YR 3/6), completely decomposed, meta-CONGLOMERATE / meta-SILTSTONE.
11								11					

- SMALL DISTURBED SAMPLE
- ◄ LARGE DISTURBED SAMPLE
- ▨ SPT LINER SAMPLE
- ▩ U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- ▨ MAZIER SAMPLE
- ▩ PISTON SAMPLE
- ▲ WATER SAMPLE
- ▣ PIEZOMETER TIP
- STANDPIPE
- ⊥ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∇ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **Y.K. Lee**

DATE **27/04/2005**

CHECKED **Tom Lo**

DATE **28/04/2005**

REMARKS
1. Water sample was taken at a depth of 14.15m.



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH11**

SHEET **2** OF **2**

DRILLHOLE RECORD

CONTRACT NO. TC N307

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826386.01
N 841754.65

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR129**

DATE FROM **24/04/2005** TO **26/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **4.86** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10	HX									10.00		V	(Silty fine SAND with much subangular fine to medium coarse gravel sized moderately strong rock and qartz fragments)
11			90					12 13	-5.74	10.60		V	Extremely weak, yellowish red (5YR 5/8), completely decomposed, meta-SILTSTONE. (Very stiff, sandy SILT)
12							14.7 9,18,26,40 N#3	14 15 16	-6.84	11.70		V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SANDSTONE. (Very silty fine SAND)
13	HX 12.60		90					17	-7.74	12.60		V	Extremely weak, yellowish brown (10YR 5/8), dappled grey, completely decomposed, meta-CONGLOMERATE / meta-SILTSTONE. (Clayey silty fine to medium SAND with much subangular fine to medium gravel sized moderately strong rock and qartz fragments)
14		0.80m at 18:00					5,8 11,19,29,43 N#02	18 19	-8.84	13.70		V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SILTSTONE. (Very stiff, sandy SILT)
20								20 21	-9.29	14.15			Hole completed at 14.15m.

●	SMALL DISTURBED SAMPLE	▲	WATER SAMPLE
⬆	LARGE DISTURBED SAMPLE	■	PIEZOMETER TIP
□	SPT LINER SAMPLE	⬆	STANDPIPE
▨	U76 UNDISTURBED SAMPLE	⬆	STANDARD PENETRATION TEST
■	U100 UNDISTURBED SAMPLE	⬆	PERMEABILITY TEST
▨	MAZIER SAMPLE	⬆	IMPRESSION PACKER TEST
▨	PISTON SAMPLE	∇	IN-SITU VANE SHEAR TEST
		⬆	PACKER TEST

LOGGED Y.K. Lee

DATE 27/04/2005

CHECKED Tom Lo

DATE 28/04/2005

REMARKS



GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT

TERM CONTRACT FOR GROUND INVESTIGATION

SITE: CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH 11

DEPTH: 0.00 M TO 9.50 M

DATE: 24-5-2005

BOX 1 OF 2



0.0m

0.5m

1.0m

0.00



7.10

7.10m



7.60

8.40



9.00



9.50





GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT
TERM CONTRACT FOR GROUND INVESTIGATION

SITE: CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH 11

DEPTH: 9.50 M TO 14.15 M

DATE: 24-5-2005

BOX 2 OF 2



0.0m









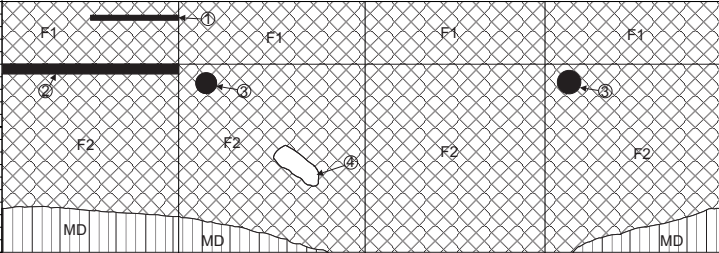

0.5m




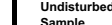
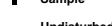



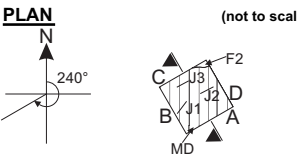

1.0m


9.50



14.15
END


Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
 3  2  4  5  6  7  8  9	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0	 <p>① Steel pipe of diameter 40mm. ② P.V.C pipe of diameter 80mm. ③ P.V.C pipe of diameter 120mm. ④ Boulder of moderately decomposed meta-siltstone 0.15m x 0.24m in size. J1 : 304°/32°. J2 : 341°/21°. J3 : 332°/74°.</p>	0.5 1.0 1.5 1.65 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0		<p>Stiff, dry, yellowish brown (10YR 5/8), dappled grey and light yellow, sandy clayey SILT with some angular to subangular fine to coarse gravel and occasional cobble sized moderately decomposed and moderately decomposed siltstone fragments. Some rootlets. (FILL)</p> <p>Stiff, moist, reddish brown (5YR 5/4), dappled dark purplish red and yellow, sandy clayey SILT with much angular to subangular fine to coarse gravel, some cobble and occasional boulder sized moderately decomposed siltstone fragments occasional rootlets. (FILL)</p> <p>Moderately strong, brownish to greenish grey moderately decomposed METASILTSTONE. Joints are closely spaced, rough and smooth planar, extremely narrow, iron and manganese oxide stained. Silt infilled (<1 mm thick), dipping at 20° to 30, 30° to 40° and 70° to 80°. Trial pit was terminated at a depth of 2.00m.</p> <p>Notes :</p> <ol style="list-style-type: none"> Small disturbed samples were taken at the depths of 0.50m, 1.00m, 1.50m and 2.00m. Large disturbed sample was taken at a depth of 0.50m. Undisturbed horizontal samples (U100) were taken at the depths of 0.50m, 1.00m, 1.50m and 2.00m. Insitu density tests were carried out at the depths of 0.50m, 1.00m, 1.50m and 2.00m. 	III
		FACE A: 1.40 m FACE B: 1.40 m FACE C: 1.40 m FACE D: 1.40 m				


SYMBOLS	REMARKS	PLAN (not to scale)	Contract No. :	PROJECT	
			 Small Disturbed Sample  Large Disturbed Sample  Undisturbed Vertical Sample  Undisturbed Horizontal Sample  Block Sample  Insitu Density Test  Water Sample  Water Seepage	Ground Water Nil Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 2.00m Others Nil	
			Works Order No. : ASD 010414	Sheet 1 of 1 TRIAL PIT NO. SBF/TP40	
			Co-ordinates : E 826873.76 N 842137.33		
			Ground Level : 6.44 mPD	Date excavated 12/04/2005 to 12/04/2005	
			Logged by : Y.K. Lee	Date Reinstated 16/04/2005 to 16/04/2005	
			Date logged : 13/04/2005	 GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	
			Checked by : Tom Lo		
			Date Checked : 14/04/2005		

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD 010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: A (UPPER)





 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: A (LOWER)






GEOTECHNICS & CONCRETE ENGG (HK) LTD
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION


CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: B (UPPER)




20
E
=19
E
=18
E
=17
E
=16
E
=15
E
=14
E
=13
E
=12
E
=11
E
=10
E
=09
E
=08

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION

CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: B (LOWER)



E
=13
E
12=
E
=11
E
=10
E
=09
E
08=
E
=07
E
06=
E
=05
E
04=
E
=03
E
02=
E
=01

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE : BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 **DATE: 13-4-2005**
T.P. NO: TP40
FACE: C (UPPER)




 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION


CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: C (LOWER)





15
E
14
E
13
E
12
E
11
E
10
E
09
E
08
E
07
E
06
E
05
E
04
E
03
E
02
E
01

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: D (LOWER)




21
20
19
18
17
16
15
14
13
12
11
10
09
08



GEOTECHNICS & CONCRETE ENGG (HK) LTD
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION

CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: D (UPPER)



 GEOTECHNICS & CONCRETE ENGG (HK) LTD
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
SITE: CONSTRUCTION OF A SECONDARY
WO NO: BOUNDARY FENCE - PHASE I
T.P. NO: ASD 010414
FACE: TP40 DATE: 13-4-2005



CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 1 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year D-49

E 826828
N 841746

33

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.O.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
5/11	P		60								0.00	x x x x			Medium dense, yellowish brown and brown, slightly silty fine SAND, relic texture (Extremely weathered SANDSTONE)
				75						51.19	2.00	x x x x	XW		
											3.00	x x x x			Very dense to weak, brown and reddish brown, silty fine SAND (Extremely to distinctly weathered SANDSTONE)
				100						48.66	4.53	x x x x	XW to DW		
	4.53 P H										5.00	x x x x			Moderately weak to moderately strong, light grey and reddish brown, distinctly weathered SANDSTONE with layers of extremely to distinctly weathered SANDSTONE
				70	0	0	*			47.29	5.90	x x x x	DW minor XW to DW		
											6.45	x x x x			Moderately strong, reddish brown and white, distinctly weathered SANDSTONE, joints are irregular, mainly closely spaced, dip sub-horizontally
				100	28	11	6			45.74	7.45	x x x x	DW		
											8.00	x x x x			Moderately strong to strong, light grey and white, distinctly to slightly weathered fine SANDSTONE, joints are closely spaced, planner with limonite staining
				98	54	33	4			43.99	9.00	x x x x	DW to SW		
											8.45	x x x x			See sheet 2 of 5
				94	82	42	5			9.20	9.45	x x x x	DW		
5/11	H		40	65	0	0	*				10.00	x x x x			

- Small disturbed sample
- ▲ Water sample
- ◆ Large disturbed sample
- ▼ Water Level
- SPT liner sample
- ⬇ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ▲ Piezometer tip
- Mazzer sample
- ✓ In situ vane shear test
- PS Piston sample

LOGGED K.Y.Kwok
DATE 12.11.86
CHECKED [Signature]
DATE 18.11.86

REMARKS
1. * : Cannot be determined
2. NR : No Recovery

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 2 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link -
Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year
D-49

E 826828
N 841746

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
5/11	H		40								10.00 10.35				Moderately strong, pale brown and brownish grey, fine to medium grained, distinctly weathered quartzitic SANDSTONE, a layer of fine sandy silt at 10.35m to 10.65m, minor schistosity at 10.65m to 12.80m, joints are very closely spaced to shattered, rock with abundant incipient joints
				40	12	0	*				11.00 11.35				
				19	0	0	*		T2		12.00		DW		
				NR						40.34	12.85	x x	XW		
				NR						39.99	13.00 13.20	x x	DW		Layer of brown, silty SAND (Extremely to distinctly weathered SANDSTONE)
				40	9	0	*				14.00				Strong to very strong, light grey fine grained, distinctly to slightly weathered SANDSTONE, thin layers of soil at 15.00m to 15.45m and 16.00m to 16.22m, rocks are under minor metamorphism
				NR							14.70				
				NR							15.00 15.15				
				62	9	0	*		T2		16.00		DW to SW		
				NR							16.22				Strong, light grey and white, medium grained, distinctly to slightly weathered quartzitic SANDSTONE, joints are planner and closely spaced some recrystallized quartz crystal
5/11	H	16.72 at 19:00		70	0	0	*				16.72				
6/11	N	13.25m at 7:00		90	82	11	*			35.79	17.00 17.40				
				100	53	0	*		T2		17.72 18.00 18.20		DW to SW		
6/11		10.80m at 19:00								34.99	18.20	x x	XW		Layer of red, reddish brown, silty fine SAND (Extremely weathered fine SANDSTONE)
7/11		16.20m at 7:00		90	53	0	*			34.57	18.62	x x	XW		
											19.00		DW to SW		
7/11	N		40								19.72 20.00				See sheet 3 of 5

- Small disturbed sample
- ▲ Water sample
- ⬇ Large disturbed sample
- ▼ Water Level
- ⊠ SPT liner sample
- ⬇ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ▲ Piezometer tip
- ⊠ Mazier sample
- ✓ In situ vane shear test
- P-S Piston sample

LOGGED K.Y.Kwok
DATE 12.11.86
CHECKED [Signature]
DATE 18.11.86

REMARKS

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 3 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD <u>Rotary</u>	CO-ORDINATES	ROCK COREBIT <u>T2. TNW</u>
MACHINE & NO. <u>Long Year D-49</u>	<u>E 826828</u> <u>N 841746</u>	HOLE DIA. <u>140mm to 114mm to 89mm</u> <u>P to H to N</u>
FLUSHING MEDIUM <u>Water</u>	ORIENTATION	GROUND LEVEL <u>53.19 mPD</u>

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
7/11	N		40	100	92	0	*		T2		20.00	DW to SW		Moderately strong to strong, white and light grey, fine to medium grained, distinctly to slightly weathered quartzitic SANDSTONE, joints are closely spaced, minor limonite, rocks are rich in incipient joints, sheared joints at 19.45m to 19.50m	
				94	55	21	*				20.70				
											21.00				
											31.54				
				100	95	44	*				21.65				
											22.00				
											22.65				
				100	100	27	*				23.00				
7/11		12.30m at 19:00									23.32				
8/11		21.65m at 7:00		65	0	0	*				23.80				
				42	10	0	*				24.00				
	24.50 N										24.50				
				59	25	0	*			25.00					
				100	45	0	*			25.32					
				98	58	28	*			25.65					
				100	85	0	*			26.00					
				57	63	0	*			26.32					
										26.85					
										27.00					
										27.45					
										28.00					
				55	0	0	*			28.95					
8/11		18.10m at 19:00									28.95			Strong, light grey and white, fine to medium grained, slightly weathered quartzitic SANDSTONE, joints are closely to moderately spaced from 21.70m to 23.20m, closely spaced from 23.20m to 37.00m, joints are irregular, rough with iron staining, dip mainly 25°, 65° and sub-vertically, minor joint fault zone at 28.50m to 28.90m some recrystallized quartz crystal	
10/11		26.30m at 7:00		92	0	0	*				27.00				
10/11			40								30.00				

<ul style="list-style-type: none"> ● Small disturbed sample ⬇ Large disturbed sample ⊠ SPT liner sample ■ U76 undisturbed sample ■ U100 undisturbed sample ⊠ Mazier sample ⊠ P S Piston sample 	<ul style="list-style-type: none"> ▲ Water sample ▼ Water Level ⬇ Standard penetration test ⬇ Permeability test ⬇ Piezometer tip ✓ In situ vane shear test 	LOGGED <u>K.Y.Kwok</u> DATE <u>12.11.86</u> CHECKED <u>[Signature]</u> DATE <u>18.11.86</u>	REMARKS
---	--	--	---------

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 4 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link -
Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year
D-49

E 826828
N 841746

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
10/11			40								30.00				Strong, light grey and white, fine to medium grained, slightly weathered quartzitic SANDSTONE, joints are closely to moderately spaced from 21.70m to 23.20m, closely spaced from 23.20m to 37.00m, joints are irregular, rough with iron staining, dip mainly 25°, 65° and sub-vertically, minor joint fault zone at 28.50m to 28.90m some recrystallized quartz crystal
				73	77	55	*				30.45				
											31.05				
				93	79	10	*				32.00				
											32.25				
				98	45	0	*				33.00				
											33.50		SW		
				91	86	0	*				34.00				
											34.60				
				80	79	0	*				35.00				
											35.80				
				100	100	40	5				36.00				
10/11		18.20m at 19:00									36.85				Moderately strong, yellowish brown, fine to medium grained, distinctly weathered and distinctly to slightly weathered SANDSTONE some thin layers of weathered soil minor schistosity rocks are under low-graded metamorphism
11/11		26.25m at 7:00		82	69	0	*				37.00				
				68	36	0	*				37.53		DW & DW to SW		
				52	0	0	*				38.00				
											38.23				
				100	40	18	*				39.00				See sheet 5 of 5
											39.70		SW		
11/11			40								40.00				

- Small disturbed sample
- ▲ Water sample
- ◆ Large disturbed sample
- ▼ Water Level
- ⊗ SPT liner sample
- ⬇ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ⬇ Piezometer tip
- ⊗ Mazier sample
- ▼ In situ vane shear test
- P-S Piston sample

LOGGED K.Y.Kwok
 DATE 12.11.86
 CHECKED [Signature]
 DATE 18.11.86

REMARKS

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 5 of 5

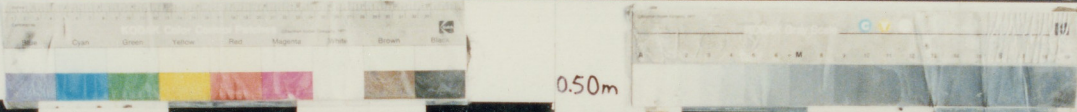
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PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD <u>Rotary</u>	CO-ORDINATES E 826828 N 841746	ROCK COREBIT <u>T2. TNW</u>
MACHINE & NO. <u>Long Year D-49</u>		HOLE DIA. <u>140mm to 114mm to 89mm P to H to N</u>
FLUSHING MEDIUM <u>Water</u>	ORIENTATION	GROUND LEVEL <u>53.19 mPD</u>

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.O.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
11/11			40	100	73	14	*				40.00		SW		Strong, light grey, fine to medium grained, slightly weathered SANDSTONE, joints are mainly planner, closely spaced, dip at 15°-25°, rocks with minor limonite staining, and abundant incipient joints
				76	68	0	*			11.69	41.50				
				90	85	0	*			11.19	42.00	x x x x	KW/DW		Very dense to very weak, brown and greyish brown, silty fine SAND (Extremely to distinctly weathered SANDSTONE)
				100	82	31	*				42.20				
				93	79	21	*				43.00				Moderately strong to strong, light grey and brownish grey, distinctly to slightly weathered SANDSTONE, joints are closely to moderately spaced, mainly planner, dip sub-vertically, joint planner with limonite staining
											43.30				
											44.00				
											44.30				
11/11		18.90m at 19:00	40							8.09	45.10				End of investigation hole at 45.10m
											46.00				
											47.00				
											48.00				
											49.00				
											50.00				

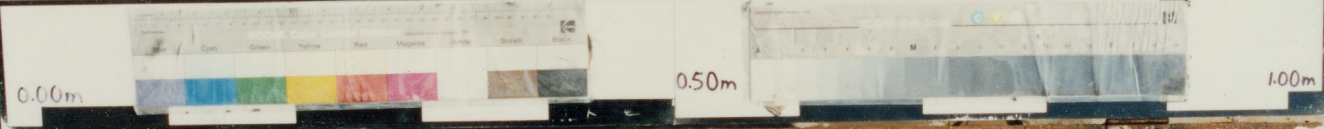
<ul style="list-style-type: none"> ● Small disturbed sample ◆ Large disturbed sample ▨ SPT liner sample ■ U76 undisturbed sample ■ U100 undisturbed sample ▨ Mezzor sample P-S Piston sample 	<ul style="list-style-type: none"> ▲ Water sample ▼ Water Level ↓ Standard penetration test ↓ Permeability test ▲ Piezometer tip ∨ In situ vane shear test 	LOGGED <u>K.Y.Kwok</u> DATE <u>12.11.86</u> CHECKED <u>[Signature]</u> DATE <u>18.11.86</u>	REMARKS
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CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	1 OF 7
DEPTH	METRE FROM 0.00m TO 8.45m		
			

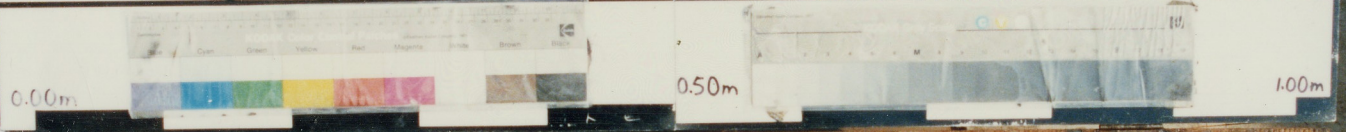


26/1675

CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	2 OF 7
DEPTH	METRE FROM 8.45m TO 16.72m		



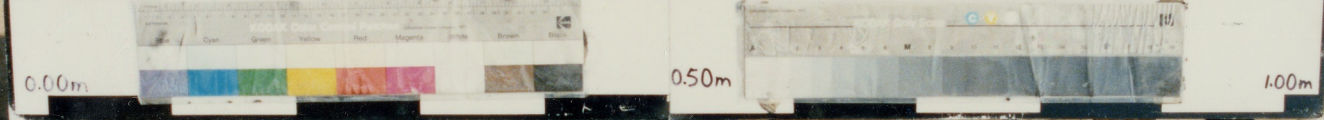
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CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	3 OF 7
DEPTH	METRE FROM 16.72m TO 20.70m		



CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	4 OF 7
DEPTH	METRE FROM 20.70m TO 26.32m		

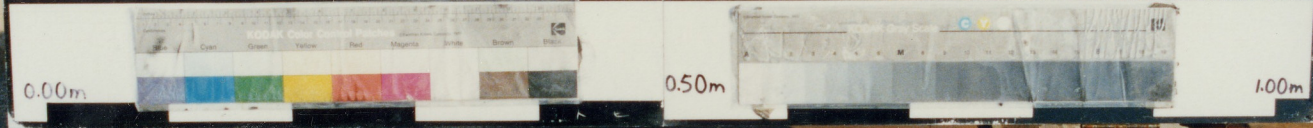


CLIENT	GEOTECHNICAL CONTROL OFFICE	
CONTRACT NO.	GC/85/09	
CONTRACTOR	LAM GEOTECHNICS LTD	
JOB NAME	LOK MA CHAU	W.O.NO. PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO. 5 OF 7
DEPTH	METRE FROM 26.32m TO 34.60m.	

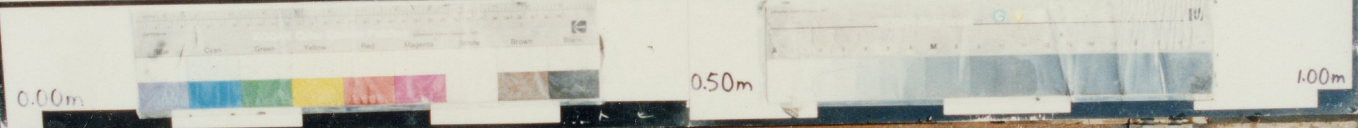


34.60m to 40.95m

CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	6 OF 7
DEPTH	METRE FROM 34.60m TO 40.95m		



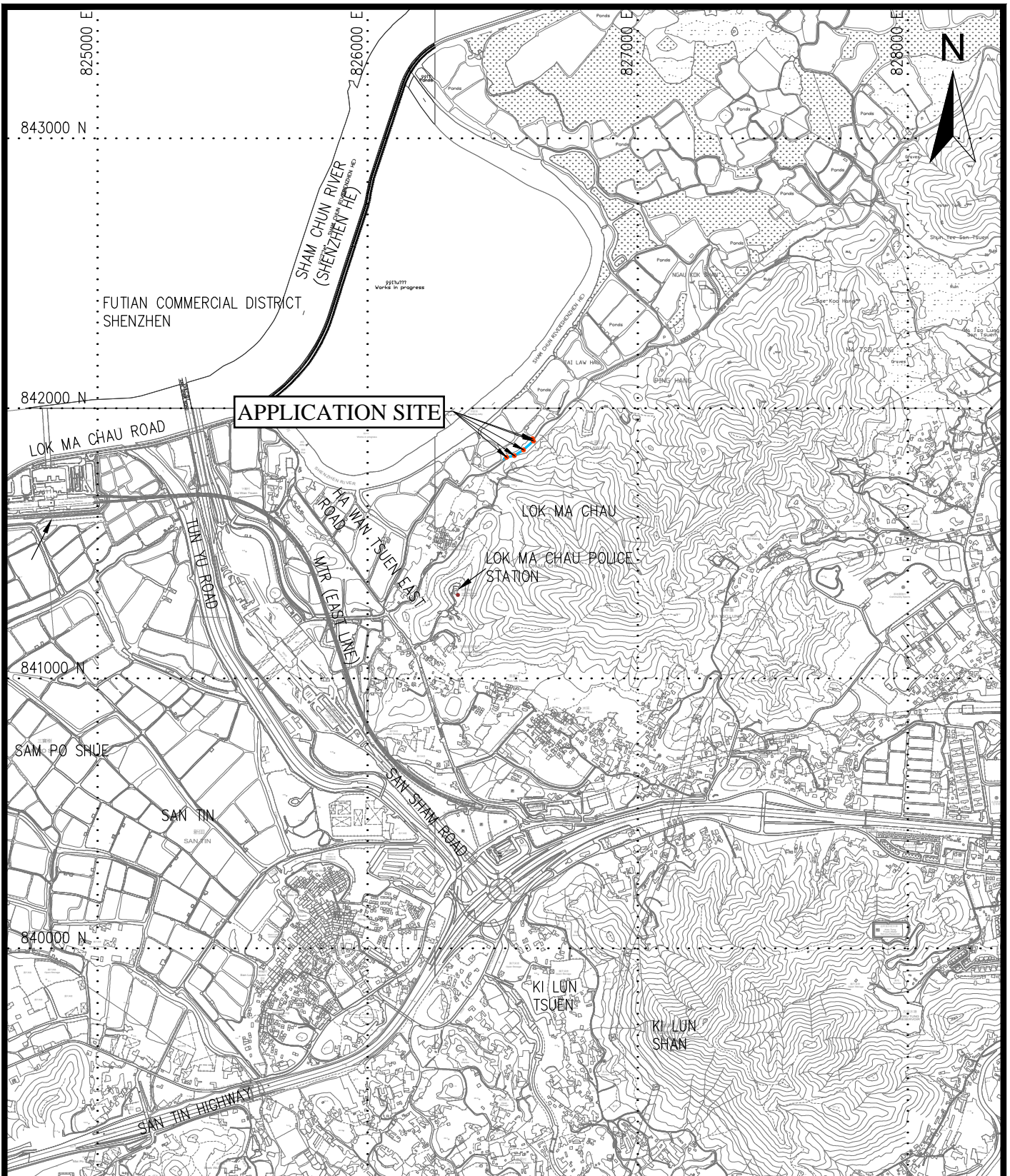
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CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	7 OF 7
DEPTH	METRE FROM 40.95m TO 45.10m		



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Drawn by :

Compiled by :



LEGEND:

- CLP LOW VOLTAGE POLES (SUBJECT OF THIS APPLICATION)
- CLP LOW VOLTAGE OVERHEAD LINE CABLE



Project
GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

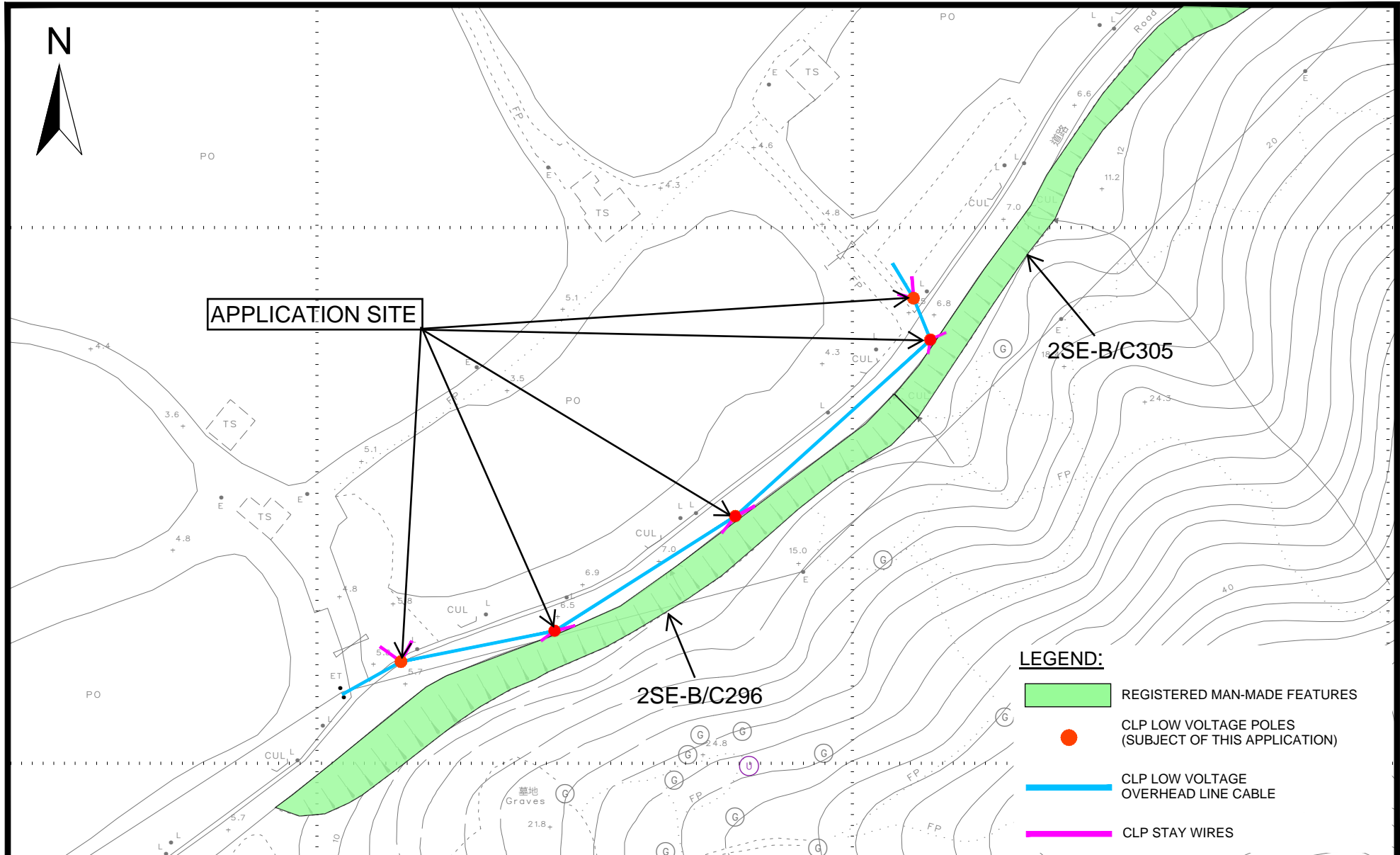
Drawing Title
LOCATION PLAN

Job No.	Figure No.	Scale	Date
190011.051	1	1:20000	JUL-2022

Compiled by :

Drawn by :

Checked by :



LEGEND:

- REGISTERED MAN-MADE FEATURES
- CLP LOW VOLTAGE POLES (SUBJECT OF THIS APPLICATION)
- CLP LOW VOLTAGE OVERHEAD LINE CABLE
- CLP STAY WIRES

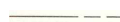



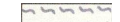









	Project GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG	Drawing Title SITE PLAN	Job No. 190011.051	Figure No. 2
			Scale 1 : 1000	Date JUL-2022

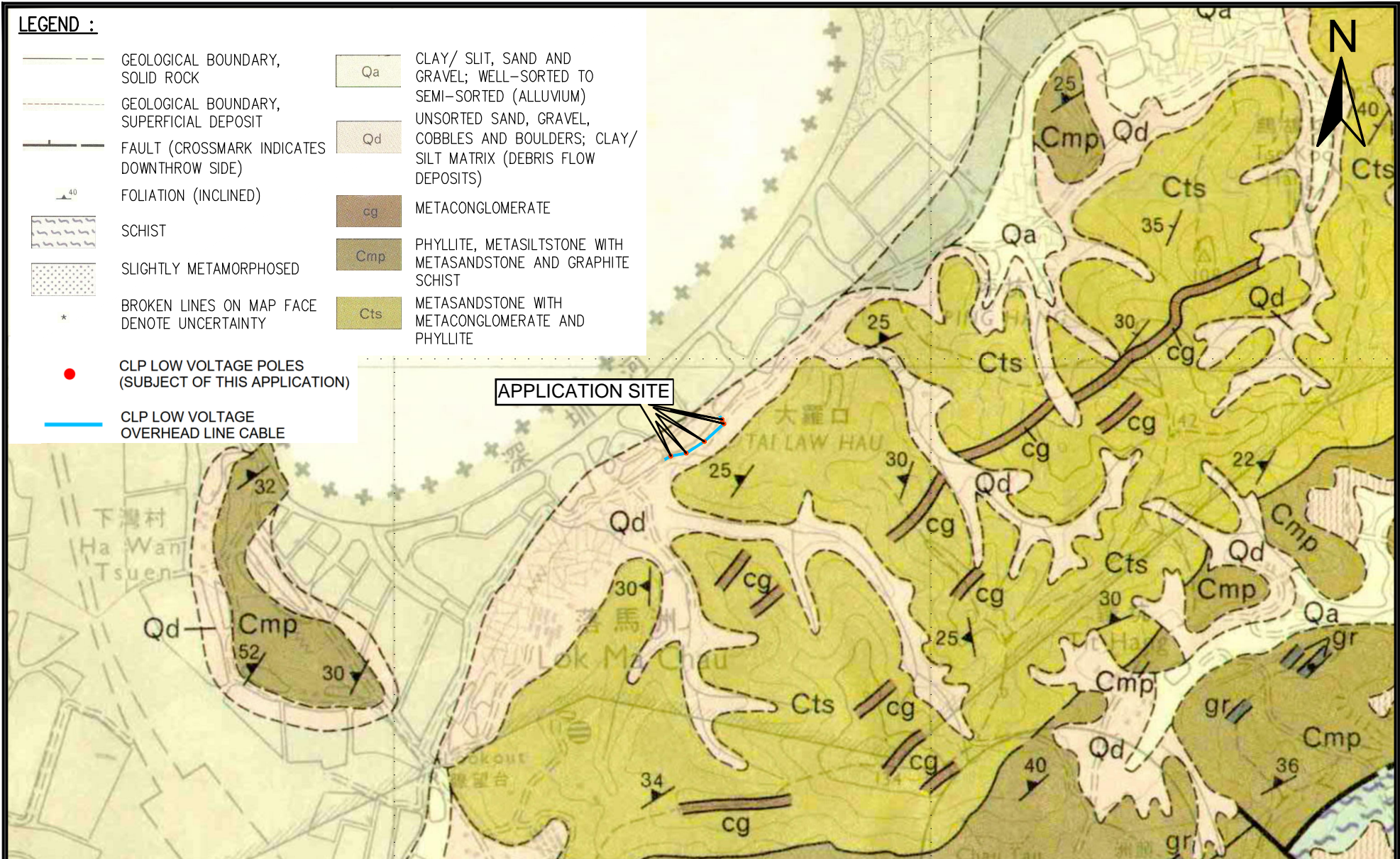
Compiled by :


Drawn by :

Checked by :

LEGEND :

-  GEOLOGICAL BOUNDARY, SOLID ROCK
 -  GEOLOGICAL BOUNDARY, SUPERFICIAL DEPOSIT
 -  FAULT (CROSSMARK INDICATES DOWNTHROW SIDE)
 -  FOLIATION (INCLINED)
 -  SCHIST
 -  SLIGHTLY METAMORPHOSED
 -  BROKEN LINES ON MAP FACE DENOTE UNCERTAINTY
 -  CLP LOW VOLTAGE POLES (SUBJECT OF THIS APPLICATION)
 -  CLP LOW VOLTAGE OVERHEAD LINE CABLE
-  Qa CLAY/ SILT, SAND AND GRAVEL; WELL-SORTED TO SEMI-SORTED (ALLUVIUM)
 -  Qd UNSORTED SAND, GRAVEL, COBBLES AND BOULDERS; CLAY/ SILT MATRIX (DEBRIS FLOW DEPOSITS)
 -  cg METACONGLOMERATE
 -  Cmp PHYLLITE, METASILTSTONE WITH METASANDSTONE AND GRAPHITE SCHIST
 -  Cts METASANDSTONE WITH METACONGLOMERATE AND PHYLLITE



	Project	Drawing Title	Job No.	Figure No.
	GEOTECHNICAL PLANNING REVIEW REPORT FOR THE PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION) AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG	REGIONAL GEOLOGICAL MAP H.K. Geological Survey, Series HGM20, Sheet 02, 1988 Edition	190011.051	3
			Scale	Date
			1 : 10000	JUL-2022

Appendix A

Assessment of Natural Terrain Hazard

Comparing Figure 2.5 and Section 1, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

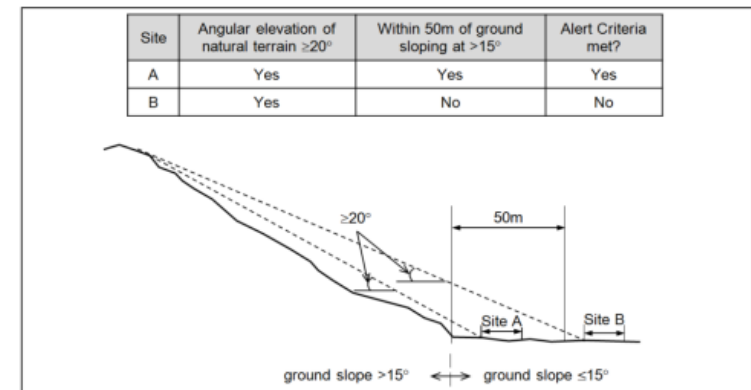
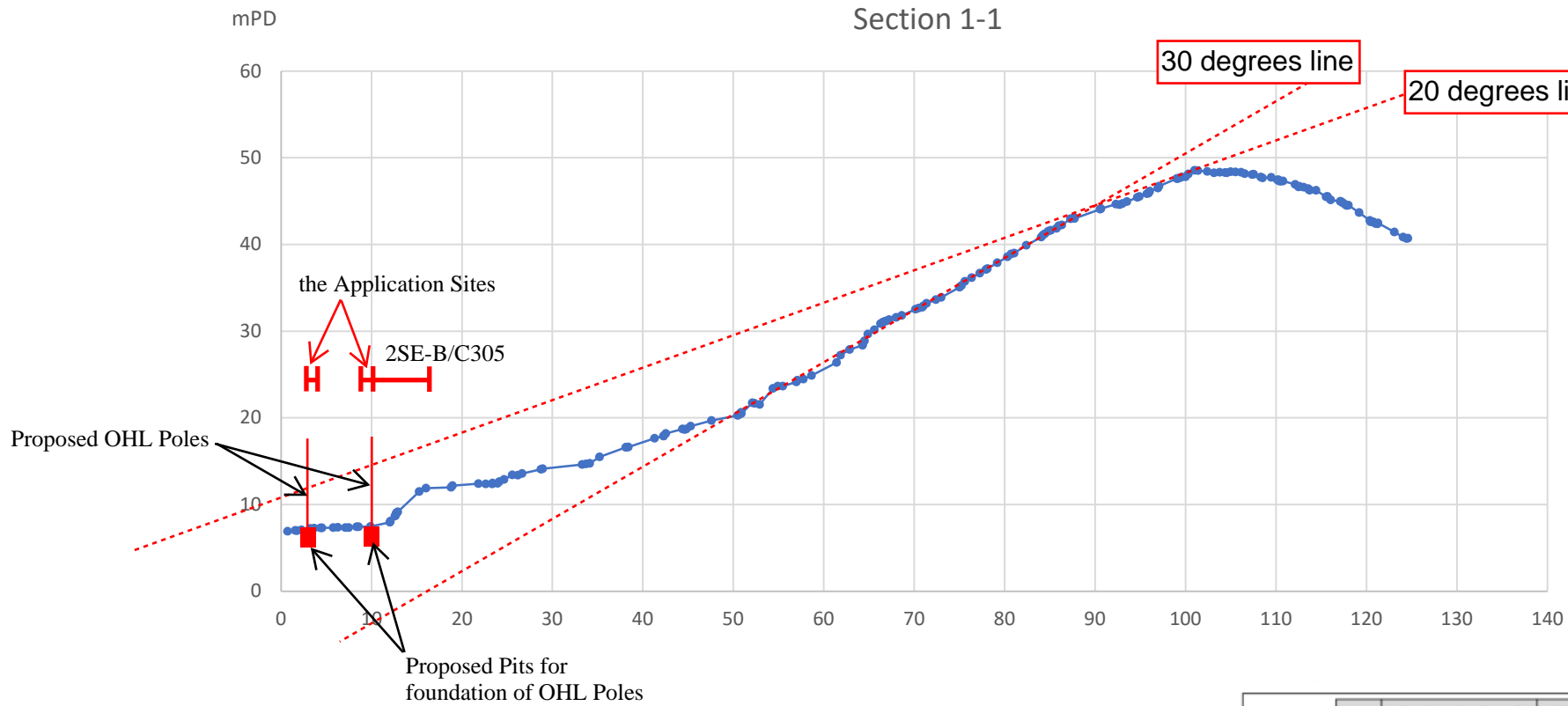


Figure 2.5 Application of Alert Criteria

Comparing Figure 2.5 and Section 2, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

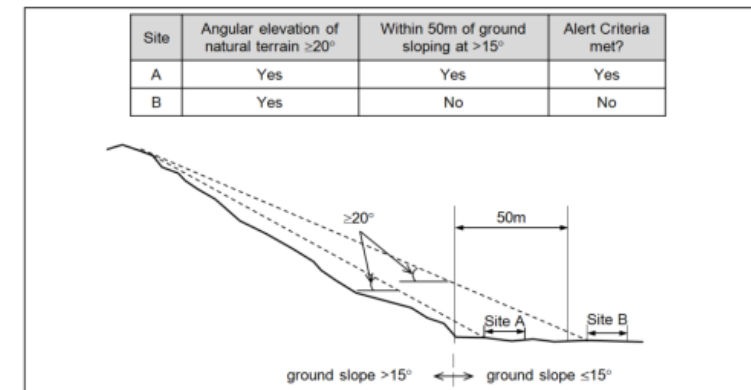
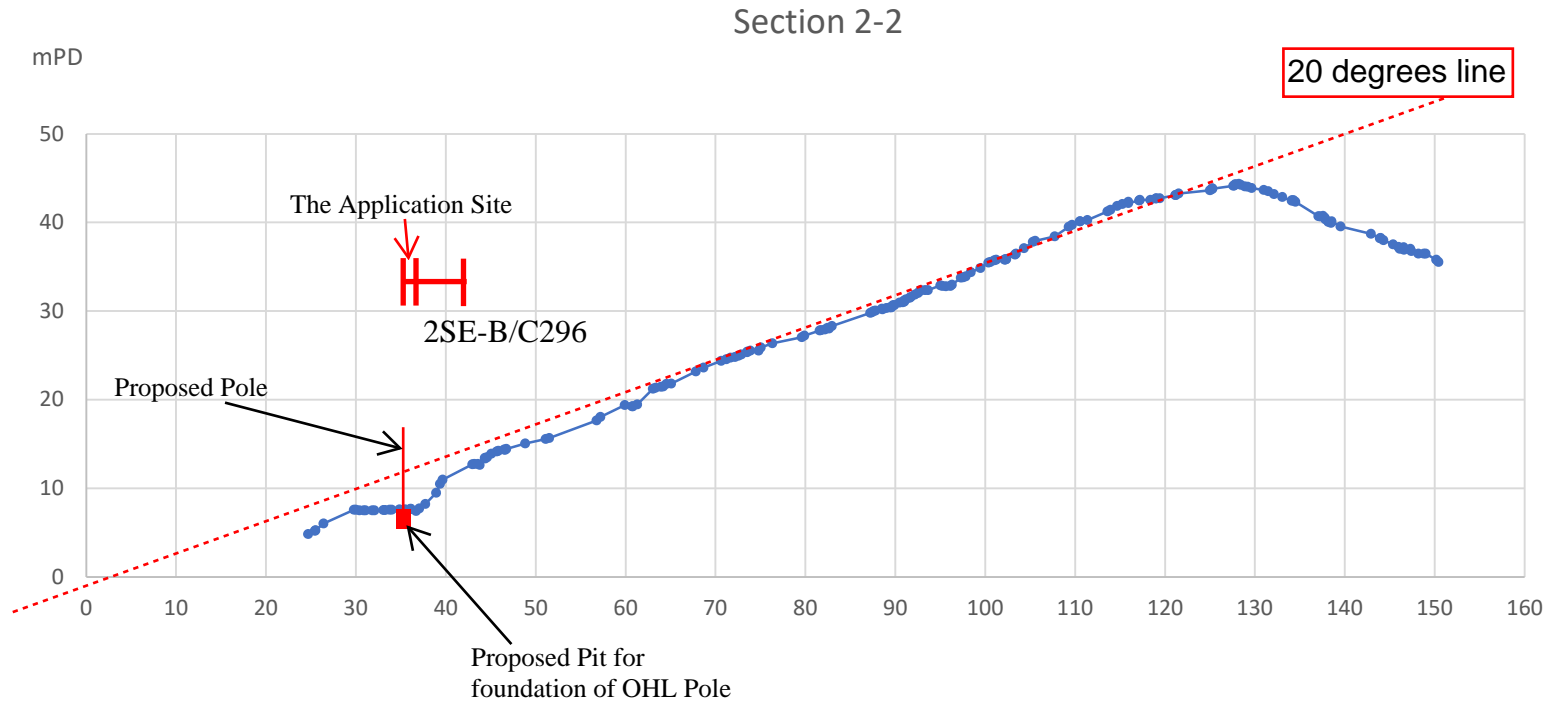


Figure 2.5 Application of Alert Criteria

Comparing Figure 2.5 and Section 3, the site for proposed OHL Pole meets alert criteria of natural terrain hazard.

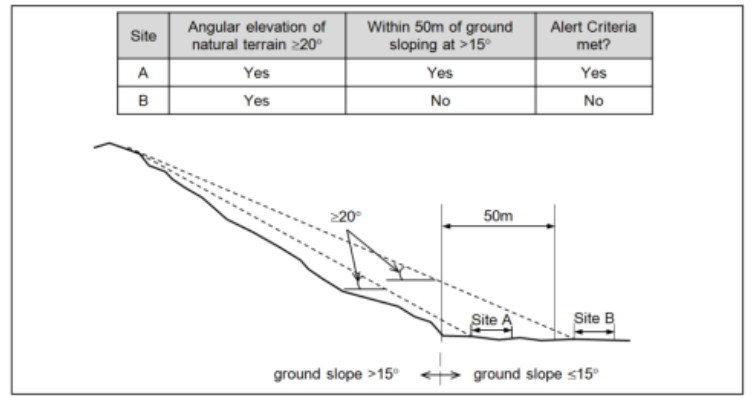
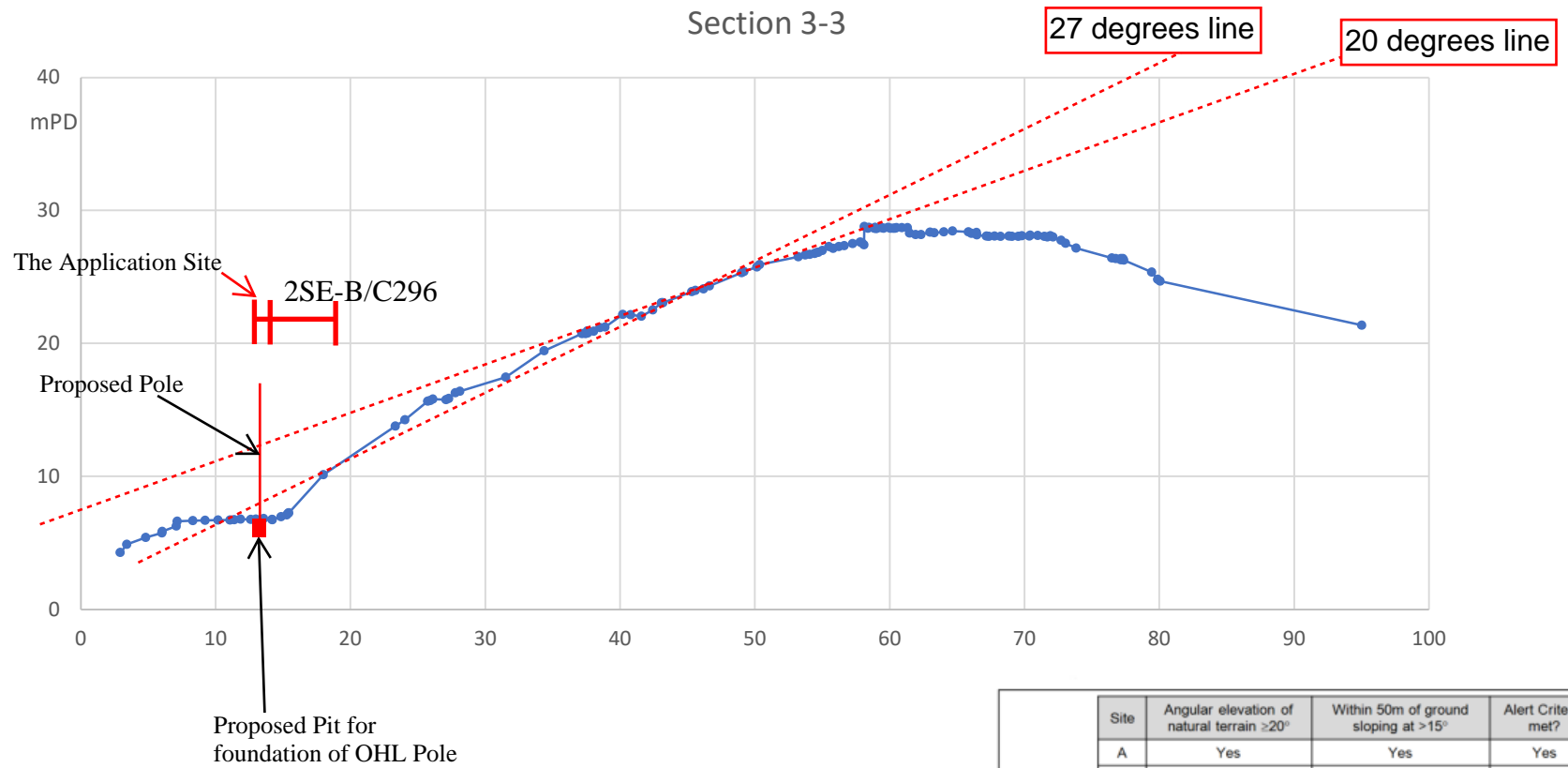
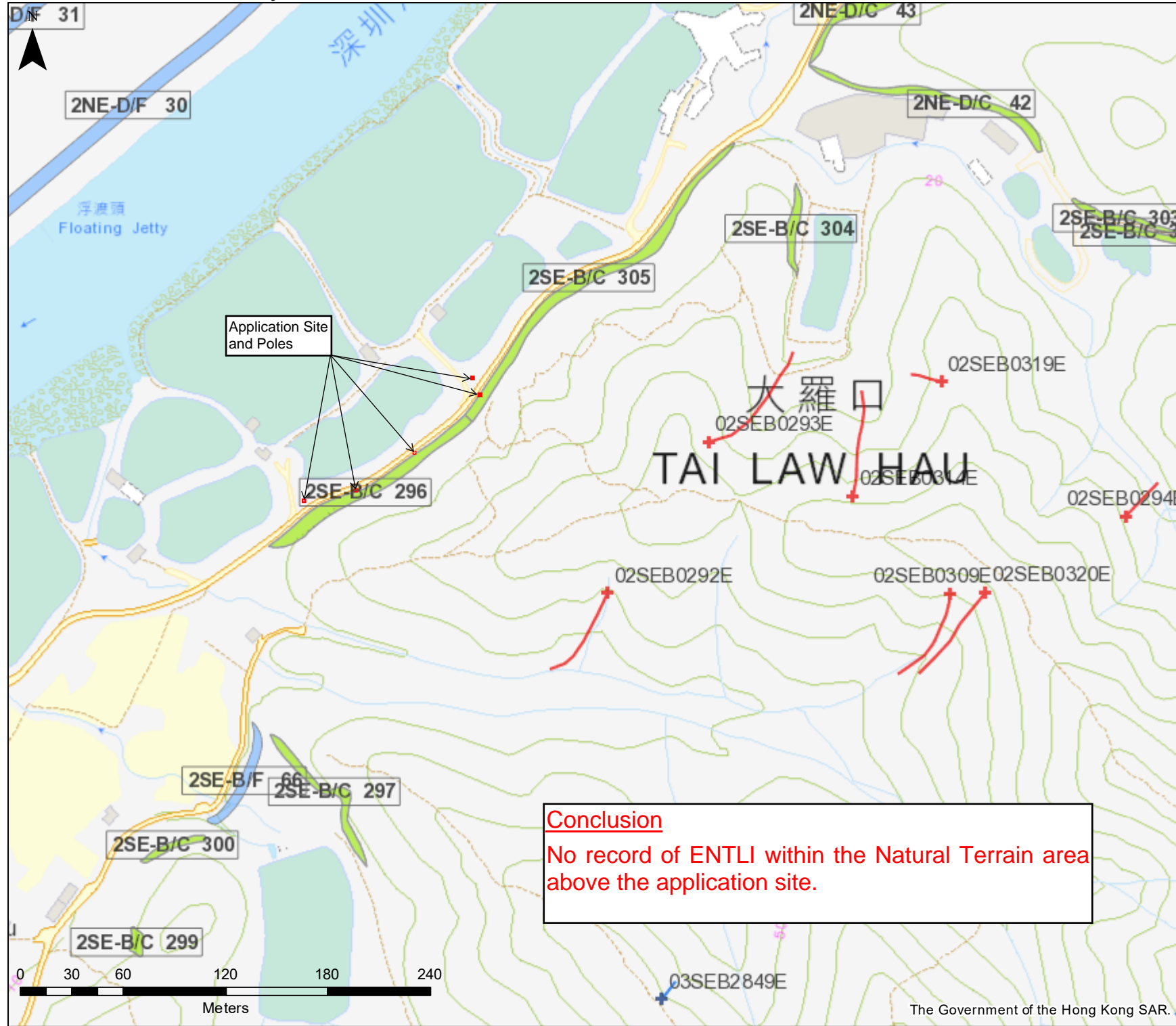


Figure 2.5 Application of Alert Criteria

Appendix A(Cont'd)

Inventory Plan



Application Site and Poles

Conclusion
 No record of ENTLI within the Natural Terrain area above the application site.

ENTLI Crown (2019)

- Recent
- Relict

ENTLI Trail (2019)

- Recent
- Relict

Man-made Features

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

Slope Features

Legend:

- Application Site

Division

Scale 1:3,000

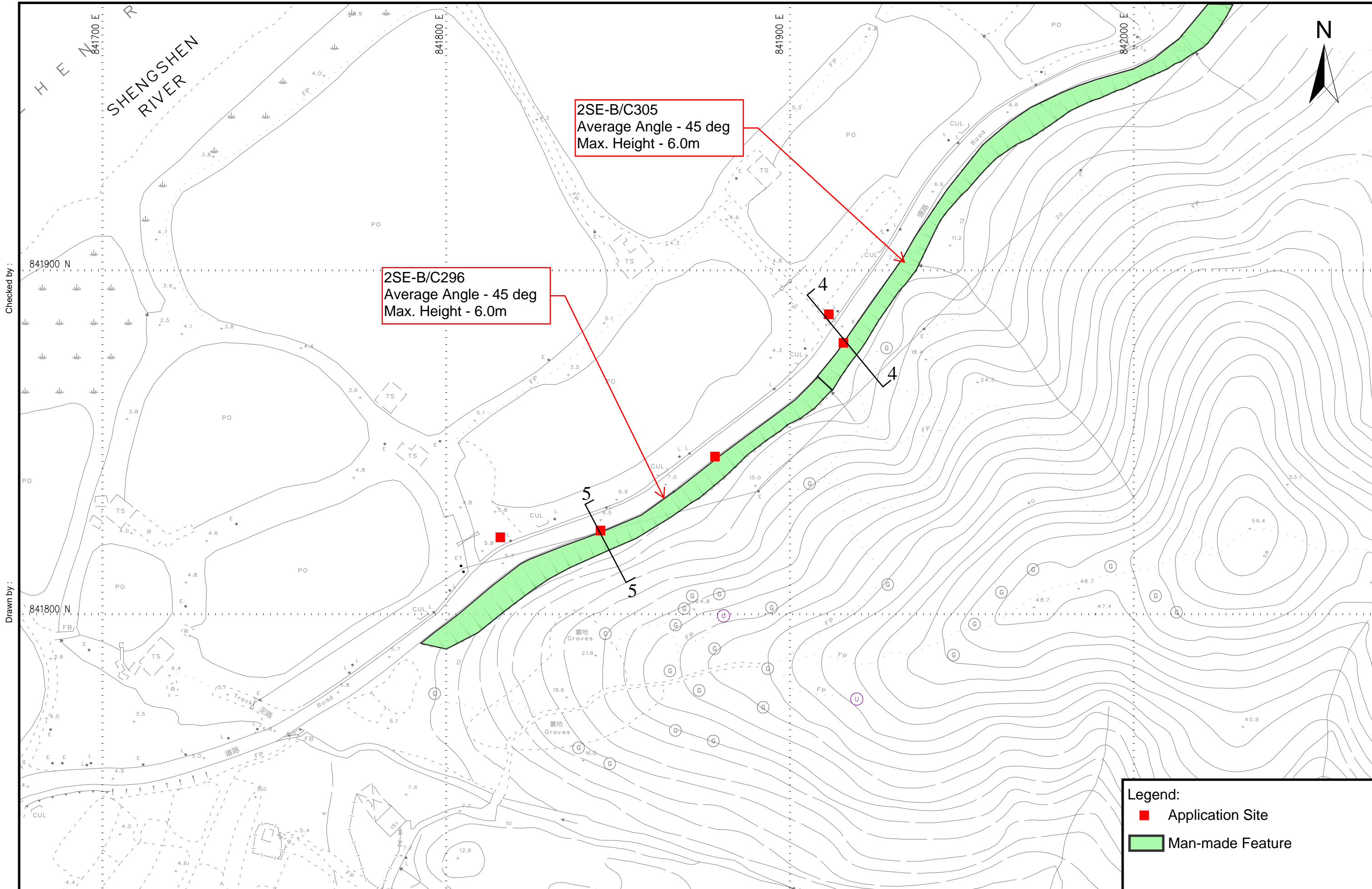
Date 22/07/2022

CEDD GEOTECHNICAL ENGINEERING OFFICE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

The Government of the Hong Kong SAR.

Appendix A(Cont'd)

Features and Sections



Checked by :

Drawn by :

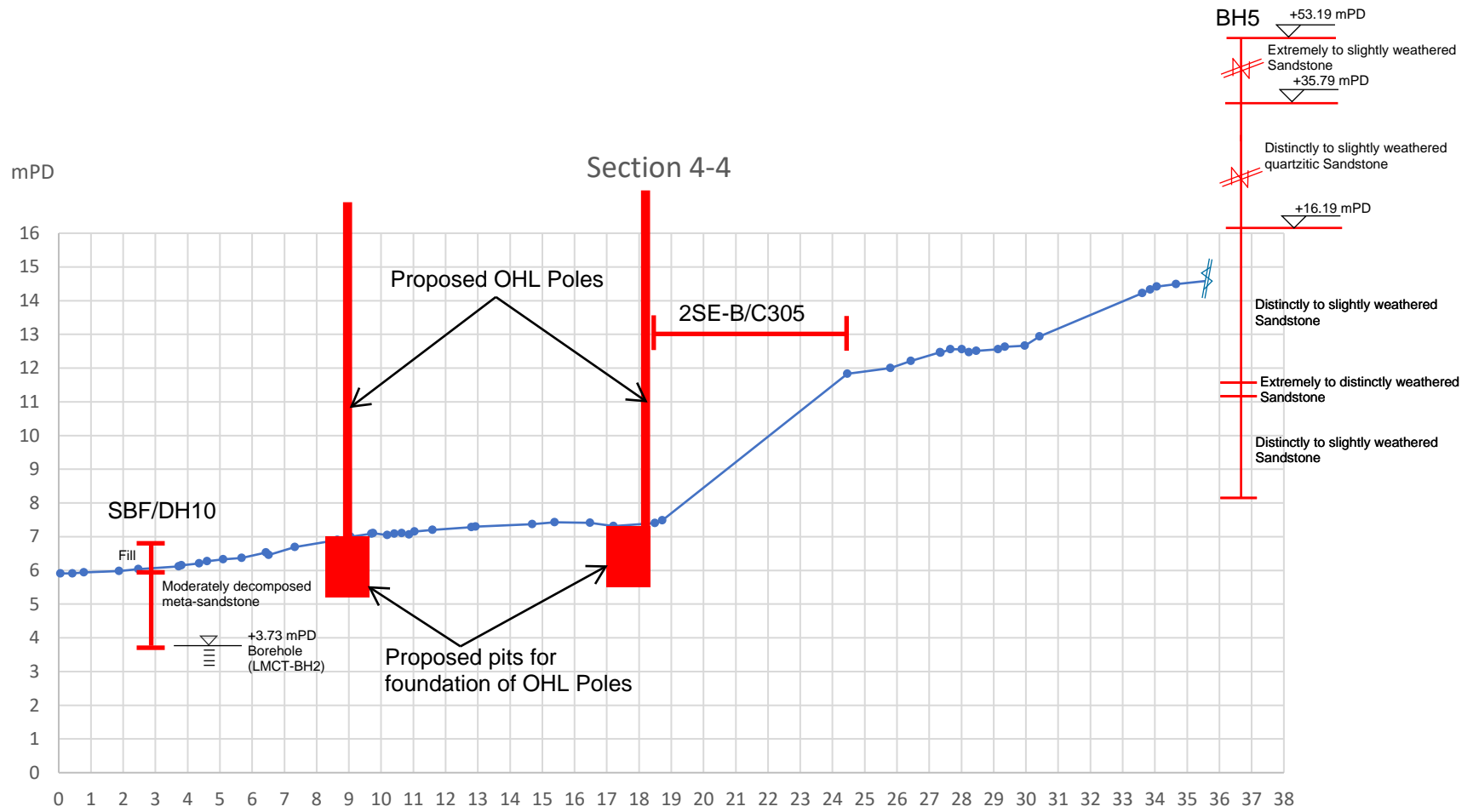
Compiled by :

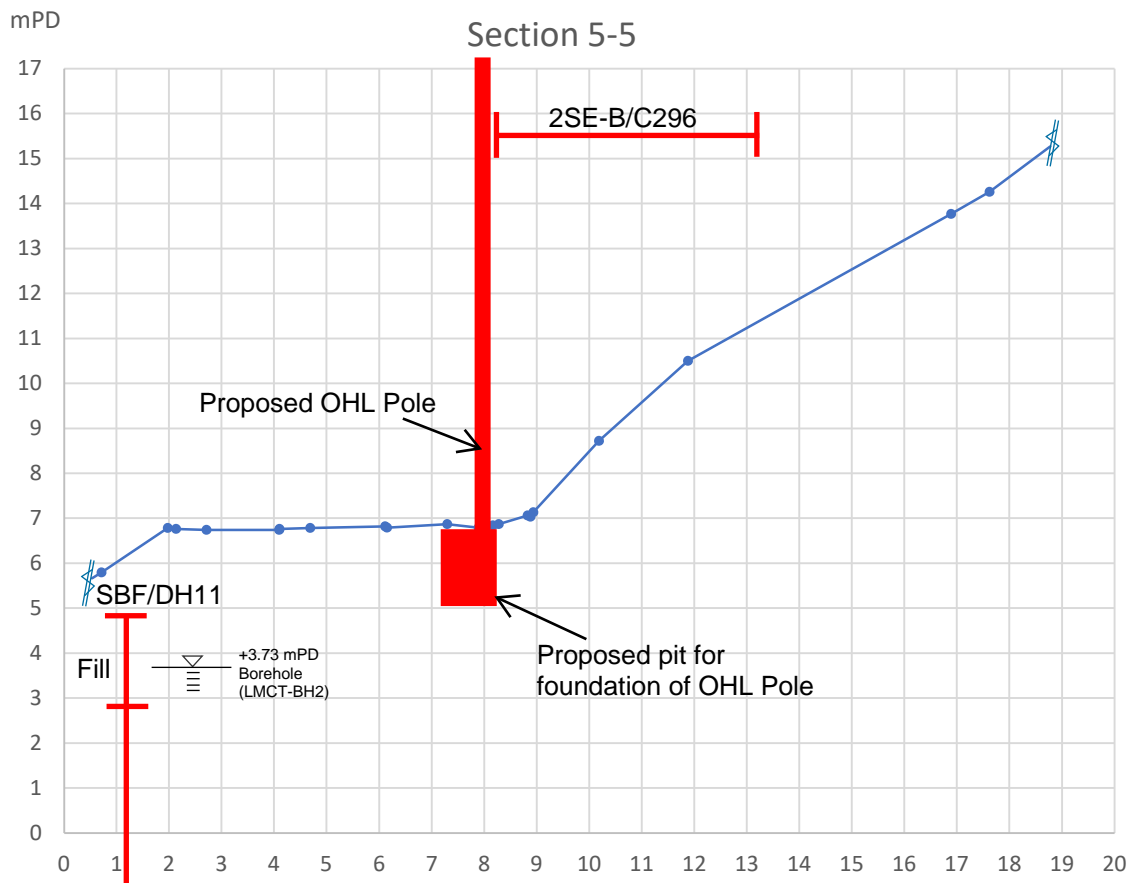
FUGRO FUGRO (HONG KONG) LIMITED
 10/F, Fugro House - KCC2,
 1 Kwai On Road, Kwai Chung,
 New Territories, Hong Kong. Tel : 2577 9023

Project
 GEOTECHNICAL PLANNING REVIEW REPORT FOR THE
 PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED
 FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION)
 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

Drawing Title
 Feature Layout Plan

Legend:	
■	Application Site
	Man-made Feature
Job No.	Figure
B190011.051	-/-
Scale	Date
1:1000	JUL-2022





Alluvium

Very Silty fine sand

meta-conglomerate/meta-siltstone

Very Silty fine sand

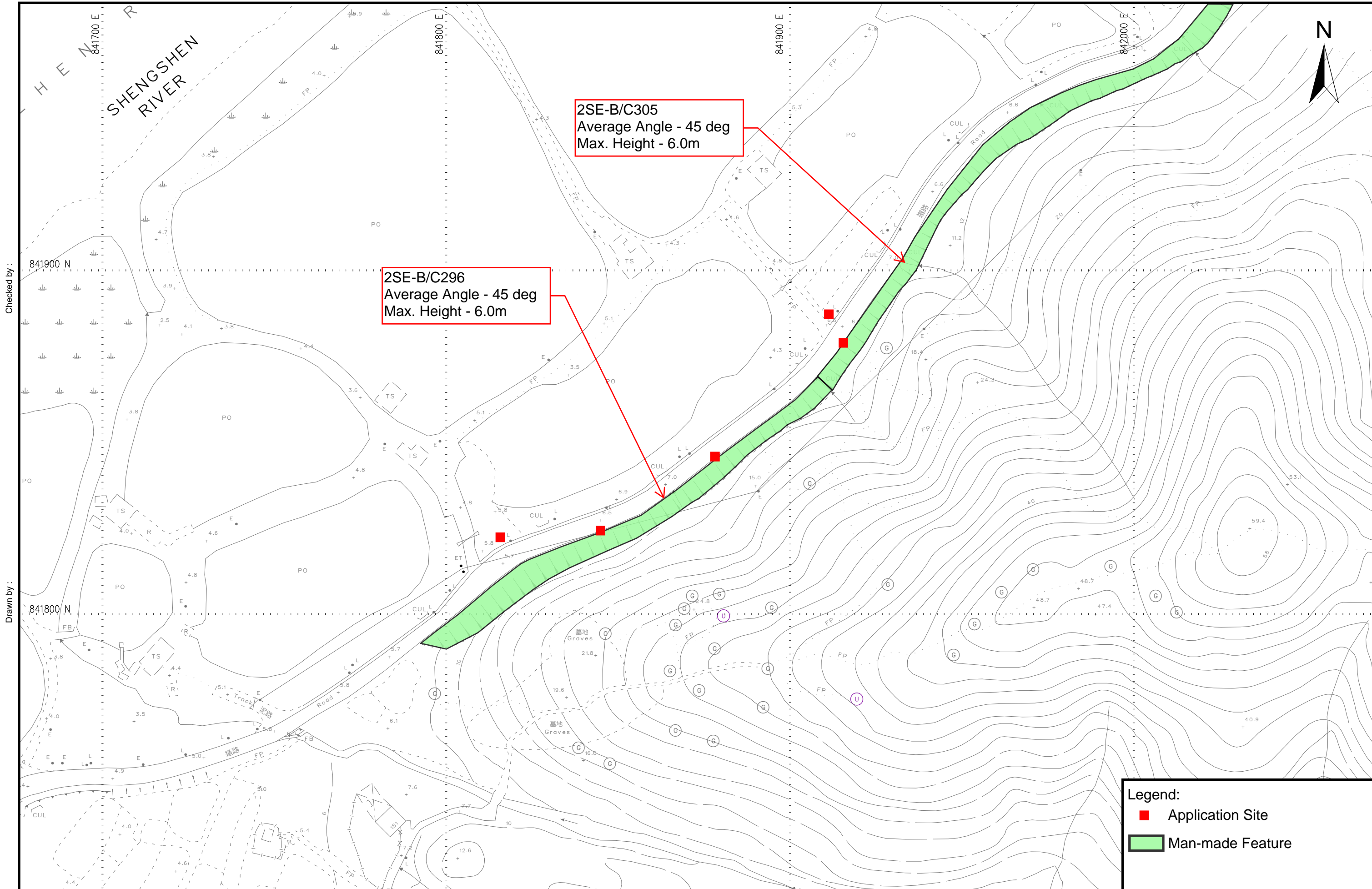
Very stiff, sandy silt

Very Silty fine to medium sand

Very stiff, sandy silt

Appendix B

Slope Location Plan



Checked by :

Drawn by :

Compiled by :

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 10/F, Fugro House - KCC2,
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 New Territories, Hong Kong. Tel : 2577 9023

Project
 GEOTECHNICAL PLANNING REVIEW REPORT FOR THE
 PROPOSED PUBLIC UTILITY INSTALLATION AND ASSOCIATED
 FILLING AND EXCAVATION OF LAND (OHL POLE & STAY ERECTION)
 AT GOVERNMENT LAND IN D.D. 96, SAN TIN, YUEN LONG

Drawing Title
 Slope Location Plan

Legend:	
■	Application Site
■	Man-made Feature
Job No.	Figure
B190011.051	-/-
Scale	Date
1:1000	JUL-2022

General Views of Registered Man-made Slopes

2SE-B/C296
Average Angle - 45 deg
Max. Height - 6.0m



Photo 1: General View of 2SE-B/C296

2SE-B/C305
Average Angle - 45 deg
Max. Height - 6.0m



Photo 2: General View of 2SE-B/C305

Appendix B(Cont'd)

Basic Data of Slope Downloaded from SIS



BASIC INFORMATION

Location: BORDER FENCE ROAD Adjoining Border Rd opposite DD96 Lot1811

Registration Date: 12-05-1998

Ranking Score (NPRS): 0 (EI)

Date of Formation: post-1977

Date of Construction/
Modification:

Data Source: EI(HyD)

Approximate Coordinates: Easting : 826564 Northing : 841830

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with very low traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 3

Remarks: N/A

SLOPE PART

(1) Max. Height (m): 6 Length (m): 140 Average Angle (deg): 45

WALL PART

N/A



MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Government Feature Party: Lands D Agent: Lands D Land Cat.: 5b(vi) Reason Code: 62 MR Endorsement Date: 29-11-2013

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 10-06-2014
 Data Source: EI(HyD)
 Slope Part Drainage: (1) Position: On slope Size(mm): 300

Wall Part Drainage: N/A

SLOPE PART

Slope Part (1)
 Surface Protection (%): Bare: 50 Vegetated: 50 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



CHECKING STATUS INFORMATION

Tagmark: 14810_0_5 Part: 0 Checking Status: No checking records Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.: 2SE3B2
Map Sheet Reference (1:1000): 2SE- 3B
Aerial Photos: 51439 (1983), 51440 (1983)

Nearest Rainguage Station (Station Number):
Sheung Shui Water Treatment Plant, Fu Tei Au Road(N34)

Data Collected On: 10-06-2014
Date of Construction, Subsequent Modification and Demolition:
Modification: Constructed Before: 1979 After: 1975
Modification: Modified Before: 1983 After: 1979

Related Reports/Files or Documents:
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III

Remarks: N/A

Follow Up Actions: N/A



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

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

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 26/05/2022)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: MW

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with very low traffic density

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: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

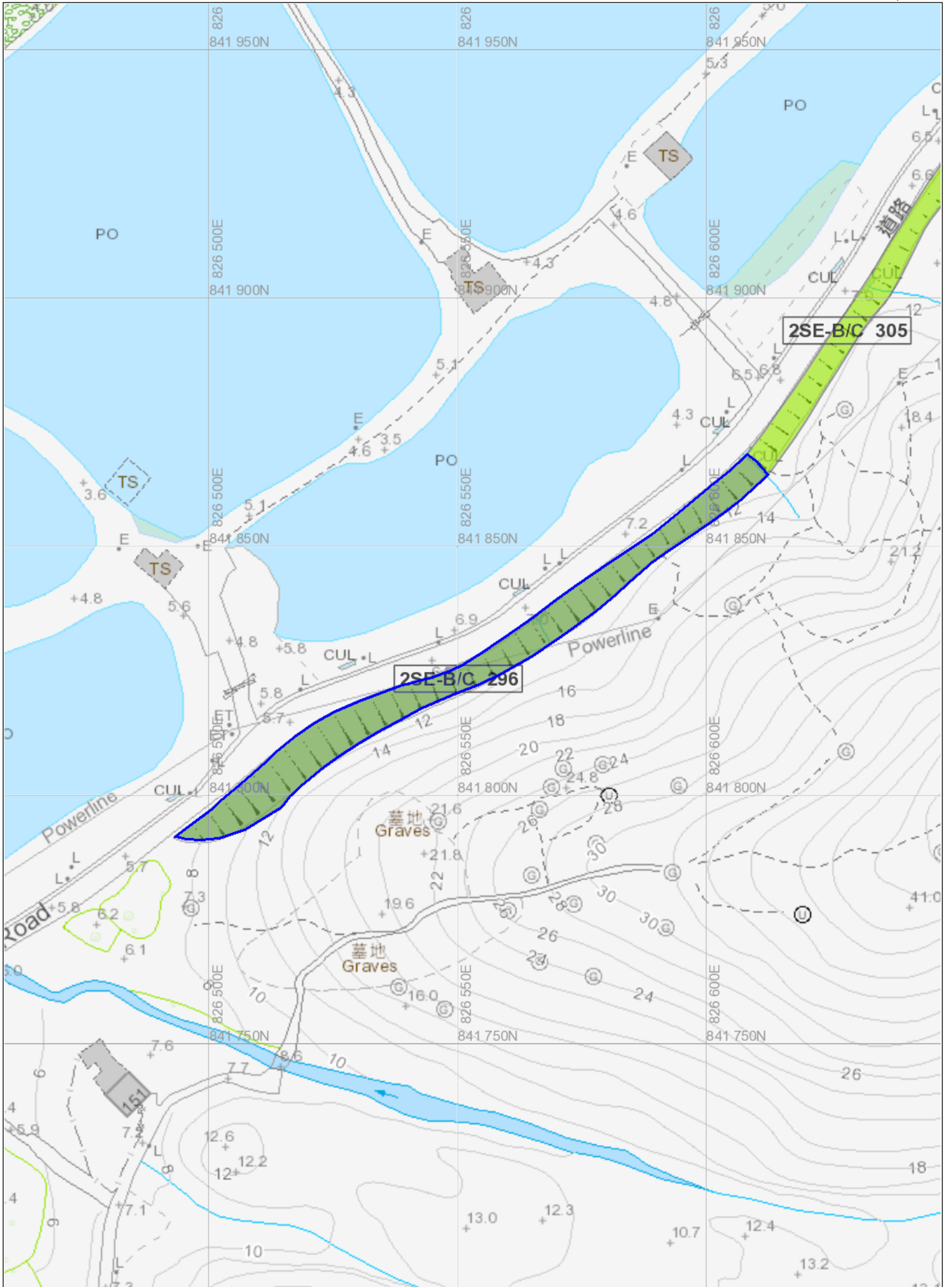
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO





BASIC INFORMATION

Location: Border Fence Road

Registration Date: 12-05-1998

Ranking Score (NPRS): 0 (EI)

Date of Formation: post-1977

Date of Construction/
Modification:

Data Source: EI(Lands D)

Approximate Coordinates: Easting : 826687 Northing : 841952

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with low traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 3

Remarks: N/A

SLOPE PART

(2) Max. Height (m): 6 Length (m): 218 Average Angle (deg): 45

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1	Mixed Feature	Party: Lands D	Agent: Lands D	Land Cat.: 1,5b(vi),7	Reason Code: 62	MR Endorsement Date: 29-11-2013
(2) Sub Div.: 2	Mixed Feature	Party: DD96 LOT 1750RP	Agent: N/A	Land Cat.: 1,5b(vi),7	Reason Code: 1	MR Endorsement Date: 29-11-2013
(3) Sub Div.: 3	Mixed Feature	Party: DD96 LOT 1746RP	Agent: N/A	Land Cat.: 1,5b(vi),7	Reason Code: 1	MR Endorsement Date: 29-11-2013
(4) Sub Div.: 4	Mixed Feature	Party: DD96 LOT 1745	Agent: N/A	Land Cat.: 1,5b(vi),7	Reason Code: 1	MR Endorsement Date: 29-11-2013

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 05-11-2018
 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

CHECKING STATUS INFORMATION

Tagmark: 14813_1_5 Part: 1 Checking Status: No checking records Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.: 2SE3B2
Map Sheet Reference (1:1000): 2SE- 3B
Aerial Photos: 51439 (1983), 51440 (1983)

Nearest Rainguage Station (Station Number):
Sheung Shui Water Treatment Plant, Fu Tei Au Road(N34)

Data Collected On: 05-11-2018
Date of Construction, Subsequent Modification and Demolition:
Modification: Constructed Before: 1979 After: 1975
Modification: Modified Before: 1983 After: 1979

Related Reports/Files or Documents: File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III
File/Report: PWDC Ref. No.: GC 4/1/2-3 f(34) pt III

Remarks: N/A

Follow Up Actions: N/A



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

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

LPMIS: None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 26/05/2022)



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: MW

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with low traffic density

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: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO



Appendix B(Cont'd)

Slope Maintenance Responsibility Report

Downloaded from SMRIS

Slope Maintenance Responsibility Report

(2SE-B/C296)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	2SE-B/C296	Sub-Division	Not Applicable
	Location	ADJOINING BORDER ROAD OPPOSITE DD96 LOT 1811	
	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 -

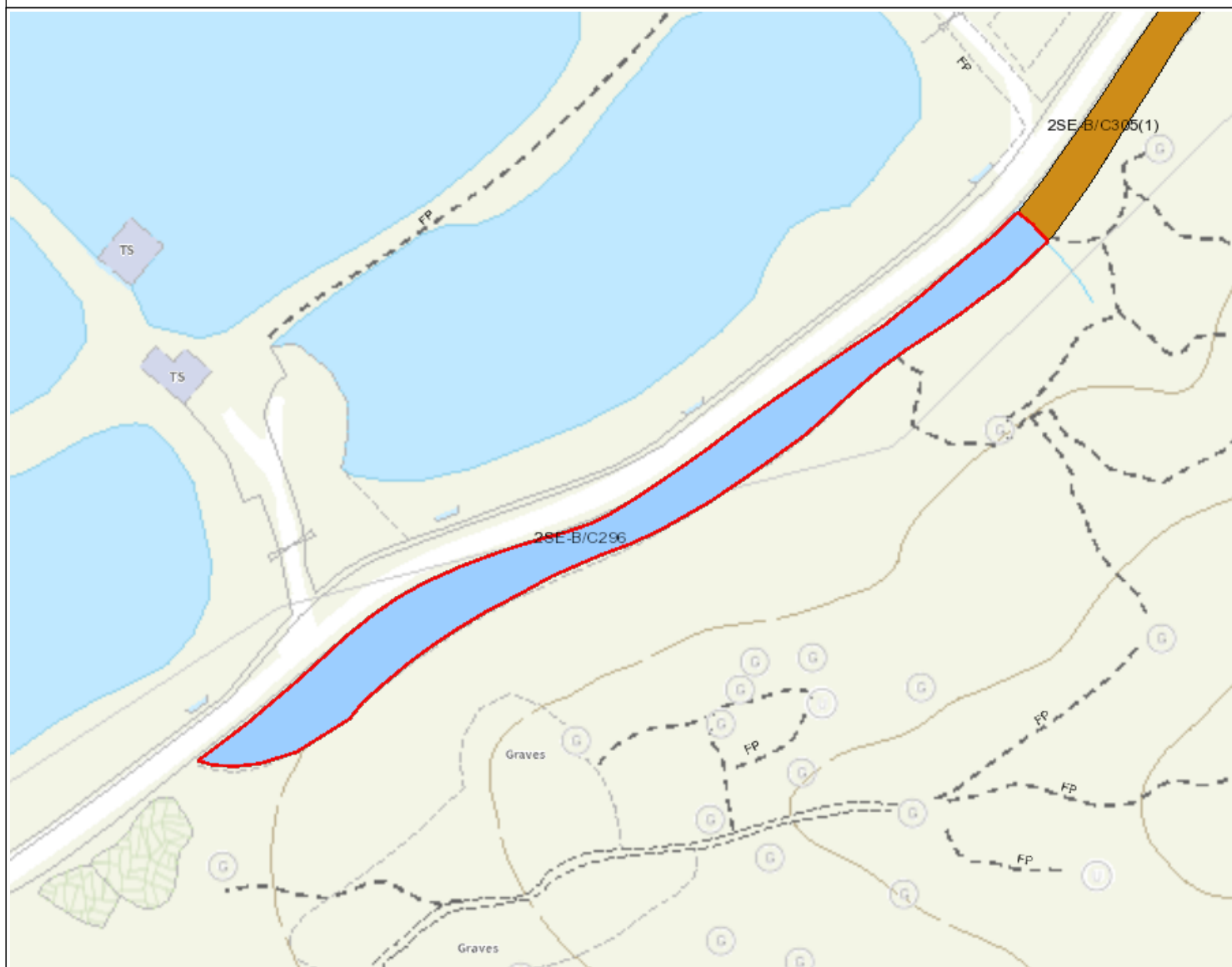
Notes:

- (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: 2SE-B/C296

Location Plan



Legend

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



**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT**

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

Printed on: 01/08/2022

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Slope Maintenance Responsibility Report

(2SE-B/C305)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	2SE-B/C305	Sub-Division	1
Location	ADJOINING BORDER ROAD & WITHIN DD96 LOT 1750RP, 1746RP & 1745 NEAR SPOT LEVEL 11.2		
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 -

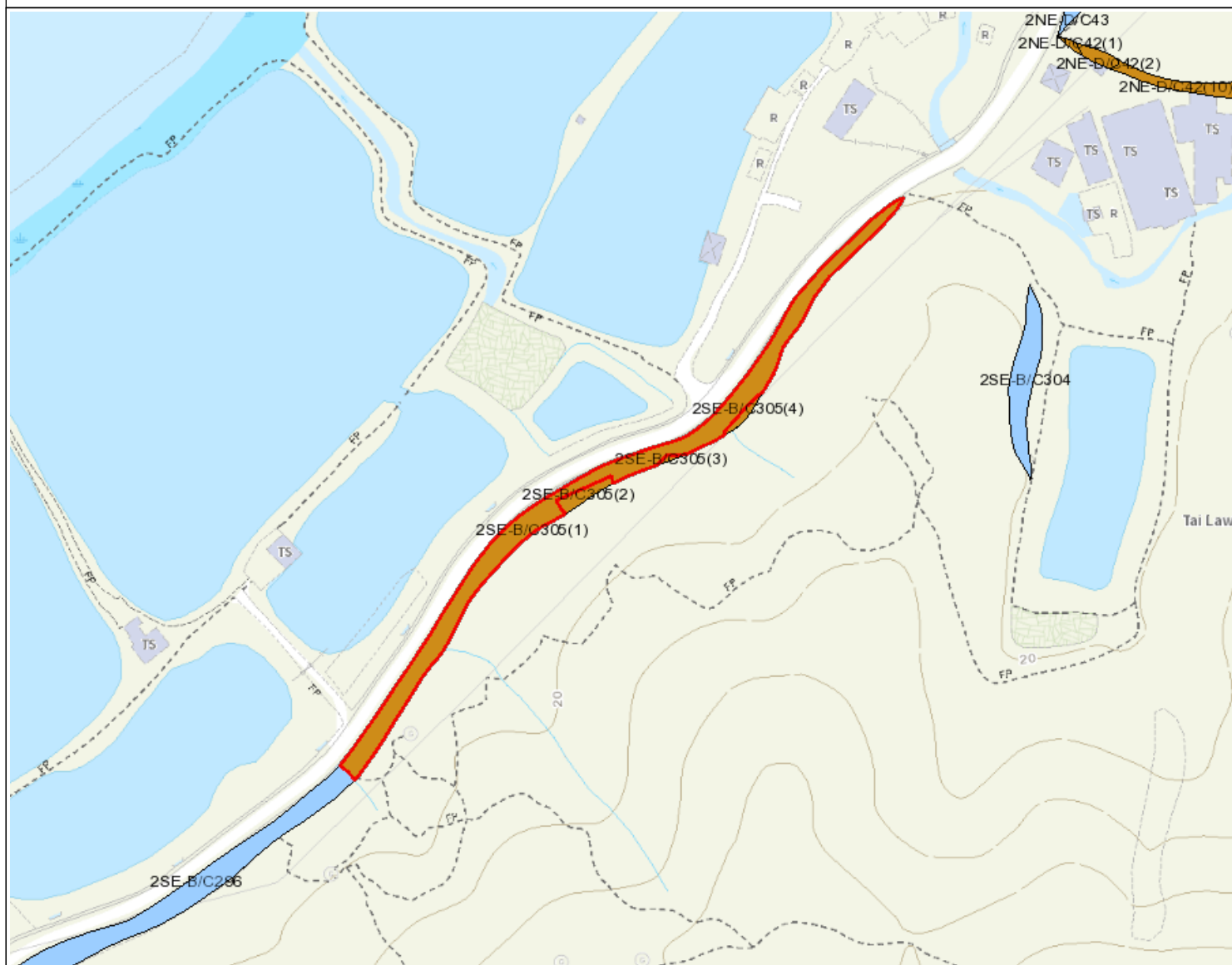
Notes:

- (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: 2SE-B/C305

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**

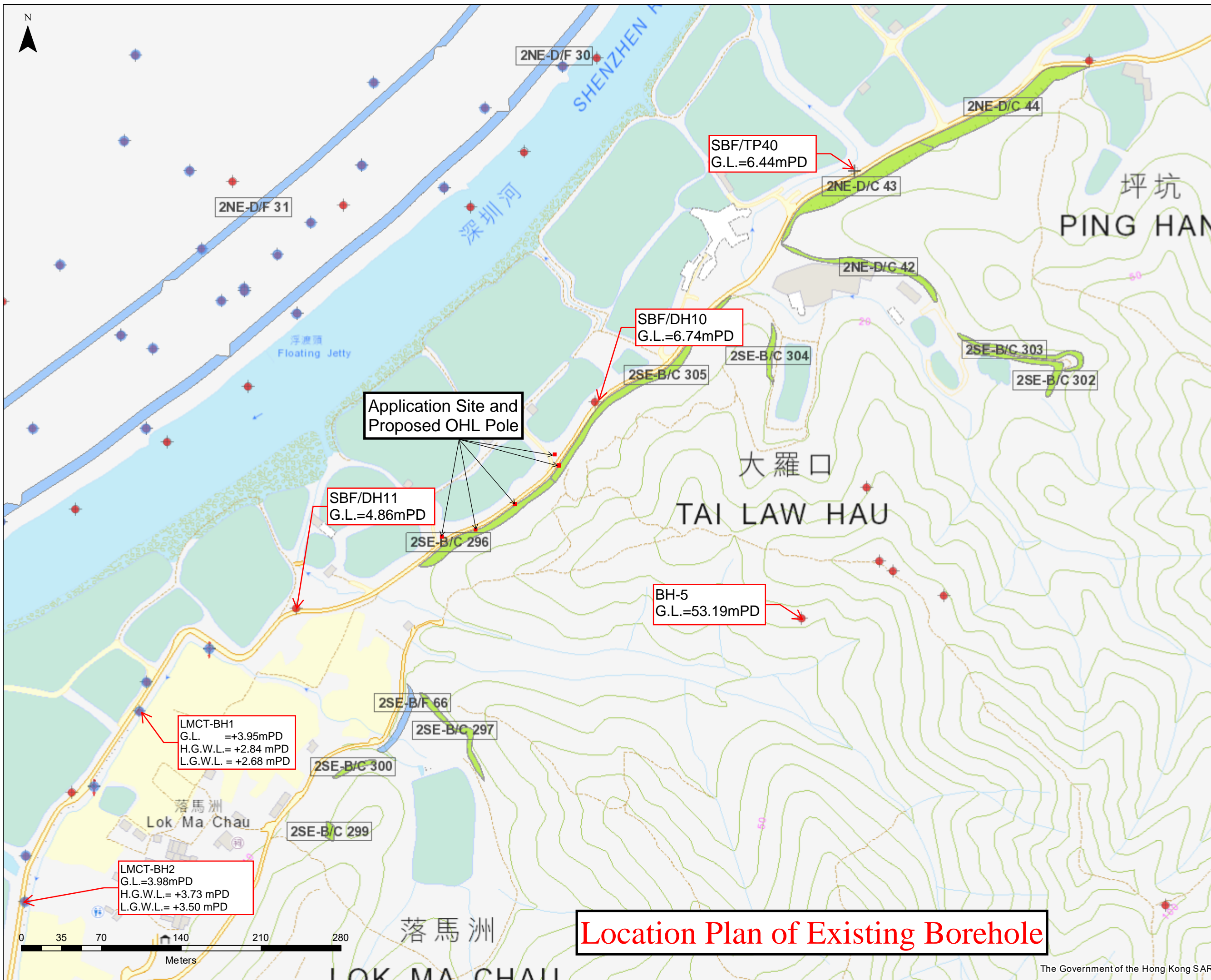
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Appendix C

Location Plan of Existing Borehole



R GIU Report

● GI with AGS

GI Location

- ⊙ <all other values>
- ⤵ Slope striping
- ⚙ Cone Penetration Test
- 📍 GCO Probe
- ⊕ Grab Samples
- Impression Packer Test
- ⊕ Trial pt
- ⊕ PR
- Ⓜ Rock joint survey
- ▬ Trial trench

Man-made Features

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

Legend:

■ Application Site

Legend:	
■	Application Site
Division	
Scale	1:3,000
Date	25/07/2022
 GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	

Location Plan of Existing Borehole

Appendix C(Cont'd)

Measured Groundwater Record

Appendix C(Cont'd)

Existing Ground Investigation Records



GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

**Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH1

Hole No.:

1

of

1

Box No.:

0.00

m

to

10.00

m

Depth :

Date of Photograph : 31-10-2017



0.00m

1.00m





DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 2 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD Rotary	CO-ORDINATES	TASK ORDER NO. GE/2015/29.2
MACHINE & NO. VBM52	E 826149.30 N 841498.38	DATE : 21/09/2017 to 10/10/2017
FLUSHING MEDIUM Water	ORIENTATION Vertical	GROUND LEVEL + 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
26/09/2017 27/09/2017	PW	08:00 0.28m at 18:00 0.81m at 08:00						10.15	N=31	19	10.10 10.15			V	See sheet 1 of 5
11			60	88						20	10.60	-6.62	10.60	V	Extremely weak, brown (7.5YR 5/4), occasional spotted white, completely decomposed METASILTSTONE. (Slightly sandy SILT)
12								11.70	3,3,5,6,7,9 N=27	21	11.60 11.70				
								12.15		22	11.80				
										23	12.10 12.15				
13			60	95						24	12.60	-8.62	12.60	V	Extremely weak, reddish brown (2.5YR 5/4), streaked light grey, completely decomposed METASILTSTONE. (Slightly sandy SILT with occasional subangular fine to medium gravel)
14		0.25m at 18:00						13.70	6,8,12,17,25,30 N=84	25	13.60 13.70				
27/09/2017 28/09/2017		0.95m at 08:00						14.15		26	13.80				
										27	14.10 14.15				
15			60	95						28	14.60				
16								15.70	3,8,12,19,22,33 N=86	29	15.60 15.70				
								16.15		30	15.80				
										31	16.10 16.15				
17			60	95						32	16.60	-12.62	16.60	IV	Very weak, reddish brown (2.5YR 5/4), streaked and mottled light grey, highly decomposed METASANDSTONE. (Silty sandy subangular fine to medium GRAVEL)
18								17.70	10,12,14,28,32,24 N=98	33	17.60 17.70	-13.72	17.70	IV	Very weak, brown (7.5YR 5/4), spotted white, highly decomposed METASANDSTONE. (Subangular fine to medium GRAVEL)
								18.15		34	17.80				
										35	18.10 18.15				
28/09/2017 29/09/2017	PW HW	0.55m at 18:00 1.12m at 08:00								36	18.60	-14.62	18.60	IV	Very weak, reddish brown (2.5YR 5/4), streaked and mottled brown, highly decomposed METASANDSTONE. (Silty sandy subangular fine to medium GRAVEL)
19			60	95						37	19.60 19.70				
20								19.70	16,13,13,16,30,36	38	19.80				

- Disturbed sample
- ▣ Piston sample
- ▨ Split spoon sample
- ▩ U76 undisturbed sample
- ▧ U100 undisturbed sample
- ▩ Mazier sample
- SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ↓ Standard penetration test
- ↕ In-situ vane shear test
- ⊥ Permeability test
- ⊥ Pressuremeter test
- ⊥ Packer Test
- ⊥ Acoustic or optical televiewer survey
- ⊥ Piezometer tip
- ⊥ Standpipe
- ⊥ Groundwater Sampling Well
- ⊥ Vibrating wire piezometer
- ⊥ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 3 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
21	HW							20.15	N=95	39 20.10 20.15	-16.02	20.00		IV	See sheet 2 of 5
22			60	95				21.70	8, 12, 14, 18, 30, 32 N=94	40 20.60 41 21.60 42 21.80 43 22.10 22.15					
23			60	95				23.70	50/70mm 100/60mm (100/60mm)	44 22.60 45 23.60 46 23.70 47 23.78 23.83	-18.62	22.60		IV	Very weak to weak, light grey (N 7), streaked brown, highly decomposed METASILTSTONE. (Slightly silty subangular fine to coarse GRAVEL)
24		0.42m at 18:00						24.40							
25	29/09/2017 30/09/2017	0.92m at 08:00	60	100				24.96		48 24.60 49 24.86 24.96	-20.98	24.96		III	Moderately strong, greyish brown, dappled brown, moderately decomposed METASILTSTONE. Joints are very closely to closely spaced, locally medium spaced, occasional slickensided planar, extremely narrow to very narrow, iron and manganese oxide stained, dipping 10° to 20°, 20° to 30°, 40° to 50°, 60° to 70° and 70° to 80°.
26			60	100	82	33	9.4	25.49	>20	T2 O I					
27			60	100	49	0	12.5	25.59	>20	T2 O I					
28	30/09/2017 03/10/2017	0.31m at 18:00 1.00m at 08:00	85	63	47	15	10.9	26.07		T2 O I					
29								26.75		T2 O I					
30			85	100	96	24	NR	26.75		T2 O I					
								28.50			-24.52	28.50		V	From 28.50m to 29.05m : No recovery, inferred to be completely decomposed METASILTSTONE.
								29.05			-25.07	29.05		III	

- Disturbed sample
- ▣ Piston sample
- ▤ Split spoon sample
- ▥ U76 undisturbed sample
- ▧ U100 undisturbed sample
- ▨ Mazier sample
- ▩ SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ▼ Standard penetration test
- ▽ In-situ vane shear test
- ⊥ Permeability test
- ⊕ Pressuremeter test
- ⊙ Packer Test
- ⊙ Acoustic or optical televiewer survey
- ⊙ Piezometer tip
- ⊙ Standpipe
- ⊙ Groundwater Sampling Well
- ⊙ Vibrating wire piezometer
- ⊙ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 4 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level -26.02 30.00	Depth (m)	Legend	Grade	Description
31	HW		85	100	89	43	4.5	30.69		T210I	30.22			III	See sheet 3 of 5
										T210I					
32			85	52	5	0	NR	32.13		T210I	31.63	-28.15	32.13	V	From 32.13m to 32.59m : No recovery, inferred to be completely decomposed METASILTSTONE.
										T210I					
33	0.90m at 18:00 04/10/2017	1.10m at 08:00	85	90	31	16	14.2	32.59		T210I	32.79	-28.61	32.59	IV	Moderately weak to moderately strong, reddish brown, spotted white, moderately decomposed METASANDSTONE.
										T210I					
34			65	0			>20	33.00		T210I	33.20	-29.22	33.20	IV	Joints are very closely to closely spaced, locally extremely closely spaced, rough planar and rough stepped, extremely narrow to very narrow, iron and manganese oxide stained, dipping 20° to 30°, 40° to 50° and 50° to 60°. From 32.59m to 32.78m : Moderately weak, reddish brown (2.5YR 5/4), spotted white, highly decomposed METASANDSTONE. (Sandy subangular fine to coarse GRAVEL)
										T210I					
35	0.90m at 18:00 04/10/2017	1.05m at 08:00	85	91	0	0	NA	34.10		T210I	34.10	-30.12	34.10	IV	Very weak to weak, reddish brown (2.5YR 5/4), streaked dark greyish brown, highly decomposed METASANDSTONE. (Silty sandy subangular fine to coarse GRAVEL)
										T210I					
36	0.90m at 18:00 06/10/2017		80	95			NA	35.10		T210I	35.10	-31.12	35.10	V	Moderately weak, brown (7.5YR 5/4), dappled brown, highly decomposed METASANDSTONE. (Slightly silty sandy subangular fine to coarse GRAVEL with some subangular cobbles)
										T210I					
37								36.20		T210I	36.20				Extremely weak to very weak, brown, streaked black, completely decomposed METASANDSTONE. (Silty fine to medium SAND with much subangular fine to medium gravel)
										T210I					
38								36.35		T210I	36.30				
										T210I					
39	0.65m at 18:00 06/10/2017	0.90m at 08:00	80	98	21	15	13.0	36.60		T210I	36.65				
										T210I					
40								38.20		T210I	38.10	-34.92	38.90	IV	Moderately weak to moderately strong, brown, streaked black, moderately decomposed METASILTSTONE.
										T210I					
								38.41		T210I	38.36	-35.15	39.13	III	Joints are very closely to closely spaced, locally extremely closely spaced, occasional slickensided planar, extremely narrow to very narrow, iron and manganese oxide stained, dipping 0° to 10°, 20° to 30°, 40° to 50°, 50° to 60° and 60° to 70°.
										T210I					
								39.99		T210I	39.90	-35.38	39.36	IV	
										T210I					

- Disturbed sample
- ▣ Piston sample
- ▤ Split spoon sample
- ▥ U76 undisturbed sample
- ▧ U100 undisturbed sample
- ▨ Mazier sample
- ▩ SPT liner sample
- ▲ Water sample
- En Environmental Sample
- ▼ Standard penetration test
- ⊥ In-situ vane shear test
- ⊥ Permeability test
- ⊥ Pressuremeter test
- ⊥ Packer Test
- ⊥ Acoustic or optical televiwer survey
- ⊥ Piezometer tip
- ⊥ Standpipe
- ⊥ Groundwater Sampling Well
- ⊥ Vibrating wire piezometer
- ⊥ Impression packer test

LOGGED	S. C. Law
DATE	11/10/2017
CHECKED	Y. M. Leung
DATE	20/10/2017

REMARKS



DRILLHOLE RECORD

HOLE NO. LMCT-BH 2

CONTRACT NO. : GE/2015/29

SHEET 5 OF 5

PROJECT Ground Investigation - New Territories West
 Agreement No. CE 78/2014 (DS)
 Drainage Improvement Works at North District - Package B - Investigation
 Location : San Tin Eastern Main Channel, Lok Ma Chau Tsuen and Hang Tau

METHOD	Rotary	CO-ORDINATES		TASK ORDER NO.	GE/2015/29.2
MACHINE & NO.	VBM52	E 826149.30	N 841498.38	DATE :	21/09/2017 to 10/10/2017
FLUSHING MEDIUM	Water	ORIENTATION		GROUND LEVEL	+ 3.98 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description															
41	HW		80	69	40	32	NR	17.6		T2101	-36.02	40.00		III	From 38.90m to 39.13m : Moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASANDSTONE. (Slightly silty sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)															
								40.16			-36.18	40.16		V																
								40.65			-36.67	40.65		III																
								41.08			-37.10	41.08		IV																
								41.57			-37.59	41.57		III																
								42			80	99		46		30	NA	9.0	T2101	-38.26	42.24	IV	From 42.24m to 42.77m : Weak to moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASILTSTONE. (Silty slightly sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)							
								42.24										-38.26		42.24	IV									
								42.77										-38.79		42.77	III									
								43										80		78	15	0		NA	17.1	T2101	-39.20	43.18	IV	From 43.18m to 43.58m : Weak to moderately weak, brown (7.5YR 5/4), streaked black, highly decomposed METASILTSTONE. (Silty slightly sandy subangular fine to coarse GRAVEL with occasional subangular cobbles)
								43.18																	-39.20		43.18	IV		
43.58	-39.60	43.58	V																											
44	0.65m at 18:00 0.95m at 08:00	60	0	0	NR	43.86	T2101	-39.88	43.86	IV			From 43.58m to 43.86m : No recovery, inferred to be completely decomposed METASILTSTONE. Weak to moderately weak, greyish brown (2.5Y 5/2), streaked brown (7.5YR 5/4), highly decomposed METASILTSTONE. (Slightly sandy angular to subangular fine to coarse GRAVEL) Strong, grey, occasional streaked dark brown, slightly decomposed METASILTSTONE. Joints are medium spaced, locally closely spaced, occasional rough stepped, extremely narrow, iron and manganese oxide stained, dipping 10° to 20°, 40° to 50°, 50° to 60° and 60° to 70°.																	
43.86						-39.88		43.86	IV																					
43.89						-39.93		43.91	II																					
45						HW 45.34		60	100	100					94										3.1		T2101	-42.39	46.37	
46.51											-42.39	46.37		III																
46.83											-42.39	46.37		III																
47											0.28m at 18:00 1.21m at 08:00	60		100		16	0		>20				T2101		-46.83			46.83	III	
47.17																		-46.83	46.83	III										
47.28																		-46.83	46.83	III										
47.50																		-46.83	46.83	III										
48	0.52m at 18:00	60	100	89	66		9.8						T2101					-48.42	48.42	III										
48.42							-48.42											48.42	III											
48.56							-48.42											48.42	III											
48.81						-48.42	48.42	III																						
49						10/10/2017	60	100	70	43					4.0			T2101	-48.81	48.81	III									
48.81															-48.81				48.81	III										
48.81											-48.81	48.81		III																
49.05											-49.05	49.05		III																
50																										End of Investigation Hole at 49.05m.				

<ul style="list-style-type: none"> ● Disturbed sample ▣ Piston sample ▤ Split spoon sample ▥ U76 undisturbed sample ▧ U100 undisturbed sample ▨ Mazier sample ▩ SPT liner sample ▲ Water sample En Environmental Sample 	<ul style="list-style-type: none"> ↓ Standard penetration test ↕ In-situ vane shear test ⊥ Permeability test ⊞ Pressuremeter test ⊠ Packer Test ⊡ Acoustic or optical televiwer survey ⊣ Piezometer tip ⊤ Standpipe ⊥ Groundwater Sampling Well ⊦ Vibrating wire piezometer ⊧ Impression packer test 	<p>LOGGED S. C. Law</p> <p>DATE 11/10/2017</p> <p>CHECKED Y. M. Leung</p> <p>DATE 20/10/2017</p>	<p>REMARKS</p>
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GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
VIBRO (H.K.) LIMITED
新創建集團成員 Member of NWS Holdings

Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: **LMCT-BH2**

Box No.: **1** of **10**

Depth : **0.00** m to **11.70** m

Date of Photograph : **31-10-2017**



0.00m

1.00m





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- Investigation**

LMCT-BH2

Hole No.: _____

Box No.: 2 of 10

Depth : 11.70 m to 24.96 m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

(23)

11.70

(49)

24.96

CONT'D





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Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH2

Hole No.:

3

Box No.:

10

of

24.96

m

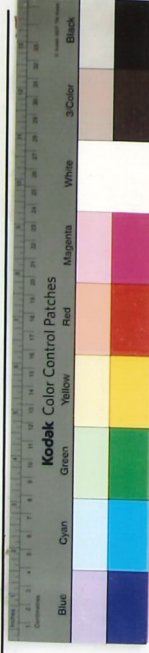
to

27.55

m

Depth :

Date of Photograph : **31-10-2017**



0.00m

1.00m

CONT'D

24.96

26.28

27.55

CONT'D



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Task Order No.: GE/2015/29.2

**Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation**

LMCT-BH2

Hole No.: _____ of _____

Box No.: **4** of **10**

Depth : **27.55** m to **30.22** m

Date of Photograph : **31-10-2017**



0.00m

1.00m

CONT'D

27.55

NR
28.50-29.05

29.05

30.22

CONT'D





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Contract Title: Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

LMCT-BH2

Hole No.: _____ of _____
Box No.: 5 of 10
Depth: 30.22 m to (32.99) m
Date of Photograph: 31-10-2017





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
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Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: LMCT-BH2

Box No.: 6 of 10

Depth: (32.99) m to 39.90 m

Date of Photograph : 31-10-2017



0.00m

1.00m





GEOTECHNICAL ENGINEERING OFFICE
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



惠保(香港)有限公司
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Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: **LMCT-BH2**

Box No.: **7** of **10**

Depth: **39.90** m to **42.58** m

Date of Photograph: **31-10-2017**



0.00m

1.00m

CONT'D

39.90

NR
40.16-40.65

41.19

42.58

CONT'D



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Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: LMCT-BH2

Box No.: 8 of 10

Depth : 42.58 m to 45.34 m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

42.58

(59)

43.86

43.91

NR
43.58-43.86

43.91

45.34

CONT'D





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Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

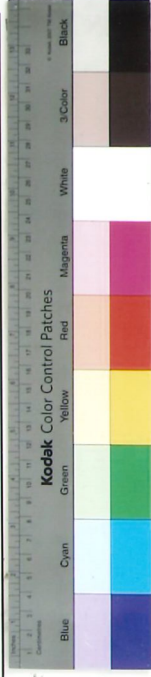
LMCT-BH2

Hole No.: _____ of _____

Box No.: 9 of 10

Depth: 45.34 m to (48.12) m

Date of Photograph : 31-10-2017



0.00m

1.00m

CONT'D

45.34



CONT'D



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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



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VIBRO (H.K.) LIMITED
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Contract No.: GE/2015/29

Contract Title : Ground Investigation - New Territories West

Task Order No.: GE/2015/29.2

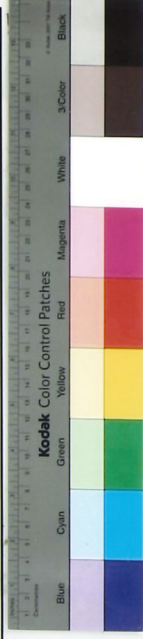
Agreement No. CE78/2014(DS)
Drainage Improvement Works
at North District - Package B
- Investigation

Hole No.: **LMCT-BH2**

Box No.: **10** of **10**

Depth : **(48.12)** m to **49.05** m

Date of Photograph : **31-10-2017**



0.00m

1.00m





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH10**

SHEET **1** OF **1**

DRILLHOLE RECORD

CONTRACT NO. **TC N307**

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826647.23
N 841934.82

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR113**

DATE FROM **20/04/2005** TO **20/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **6.74** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
0 20/04/2005	HX							INSPECTION PIT	6.74	0.00			Yellowish red (5YR 5/8), silty fine to medium SAND with some angular to subangular fine to coarse gravel sized moderately strong rock fragments. (FILL)
1	HX 1.26		99	99	91	8.7		A	5.94	0.80			
			100	98	0	14.9		T2101		1.26		III	Moderately strong, reddish brown, moderately decomposed meta-SANDSTONE. Joints are closely spaced, occasional very closely and medium spaced, rough and smooth planar, rough undulating, extremely narrow to occasional very narrow, limonite, iron and manganese oxide stained, dipping at 0° to 10°, 20° to 30° and 30° to 40°
2			100	92	56			T2101		1.60			From 1.71m to 1.98m : Subvertical joint.
3		1.23m at 18:00				20 12.1		T2101		3.03			Hole completed at 3.03m.
4													
5													
6													
7													
8													
9													
10													

●	SMALL DISTURBED SAMPLE	▲	WATER SAMPLE
⬆	LARGE DISTURBED SAMPLE	■	PIEZOMETER TIP
□	SPT LINER SAMPLE	△	STANDPIPE
▨	U76 UNDISTURBED SAMPLE	⊥	STANDARD PENETRATION TEST
■	U100 UNDISTURBED SAMPLE	⊥	PERMEABILITY TEST
▨	MAZIER SAMPLE	⊥	IMPRESSION PACKER TEST
▨	PISTON SAMPLE	∇	IN-SITU VANE SHEAR TEST
		⊥	PACKER TEST

LOGGED Y.K. Lee

DATE 21/04/2005

CHECKED Tom Lo

DATE 22/04/2005

REMARKS



GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT
TERM CONTRACT FOR GROUND INVESTIGATION

SITE : CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH 10

DEPTH: 0.00 M TO 3.03 M

DATE: 24-5-2005

BOX 1 OF 1

0.0m

0.5m



1.0m

0.00



0.80



1.26



1.60



3.03
END





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH11**

SHEET **1** OF **2**

DRILLHOLE RECORD

CONTRACT NO. **TC N307**

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826386.01
N 841754.65

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR129**

DATE FROM **24/04/2005** TO **26/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **4.86** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
24/04/2005	PX							A	4.86	0.00			Firm, yellowish brown (10YR 5/8), dappled grey, sandy clayey SILT with some angular to subangular fine to coarse gravel sized moderately weak to moderately strong rock fragments. (FILL)
1								B		1.00			
2								C	3.36	1.50			
24/04/2005 25/04/2005		Dry at 18:00	80					D	2.86	2.00			Yellowish brown (10YR 5/8), clayey silty fine to coarse SAND with much angular fine to medium gravel sized rock fragments. (FILL)
3		Dry at 08:00						1					Greyish brown (2.5Y 5/2), clayey silty fine to coarse SAND with much angular to subangular fine to coarse gravel sized moderately strong and strong rock and quartz fragments. (ALLUVIUM)
4	PX 4.00 HX						1.1 1.1,1.2 N=5	2	1.76	3.10			Loose, dark grey (7.5YR 4/1), clayey silty fine to coarse SAND. (ALLUVIUM)
5		0.60m at 18:00	85					3		3.55			
25/04/2005 26/04/2005		1.50m at 08:00	0					4	0.86	4.00			Brownish yellow (10YR 6/8), slightly clayey silty fine to coarse SAND with some subangular fine to medium gravel sized moderately strong rock fragments. (ALLUVIUM)
6								5					
7							3.2 2.2,3.3 N=10	6	-0.24	5.10			Dark yellowish brown (10YR 3/6), silty fine to medium SAND with much subangular fine to coarse gravel sized moderately strong and strong rock and quartz fragments. (ALLUVIUM)
8			80					7	-1.34	6.20			Loose to medium dense, yellowish brown (10YR 5/8), sandy subangular fine to medium GRAVEL sized moderately strong rock and quartz fragments. (ALLUVIUM)
9			75					8	-2.24	7.10			Yellowish brown (10YR 5/8), slightly sandy subangular medium to coarse GRAVEL with some cobble sized, moderately decomposed, meta-sandstone and occasional quartz fragments. (ALLUVIUM)
10			62					T2101		7.60			
11			30				3.9 11,11,14,18 N=54	T2101		8.40			
12								T2101		9.00		V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SANDSTONE. (Very silty fine SAND)
13									-4.14	9.00			
14									-4.64	9.50		V	Extremely weak, dark yellowish brown, dappled grey (10YR 3/6), completely decomposed, meta-CONGLOMERATE / meta-SILTSTONE.

- SMALL DISTURBED SAMPLE
- ◄ LARGE DISTURBED SAMPLE
- ▨ SPT LINER SAMPLE
- ▩ U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- ▨ MAZIER SAMPLE
- ▩ PISTON SAMPLE
- ▲ WATER SAMPLE
- ▣ PIEZOMETER TIP
- STANDPIPE
- ⊥ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∇ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **Y.K. Lee**

DATE **27/04/2005**

CHECKED **Tom Lo**

DATE **28/04/2005**

REMARKS
1. Water sample was taken at a depth of 14.15m.



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.

GROUND INVESTIGATION DEPARTMENT

HOLE NO. **SBF/DH11**

SHEET **2 OF 2**

DRILLHOLE RECORD

CONTRACT NO. TC N307

PROJECT **Construction of A Secondary Boundary Fence - Stage 1**

METHOD **Rotary Cored**

CO-ORDINATES
E 826386.01
N 841754.65

WORKS ORDER NO. **ASD 010414**

MACHINE & NO. **DR129**

DATE FROM **24/04/2005** TO **26/04/2005**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **4.86** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10	HX									10.00		V	(Silty fine SAND with much subangular fine to medium coarse gravel sized moderately strong rock and qartz fragments)
11			90					12 13	-5.74	10.60		V	Extremely weak, yellowish red (5YR 5/8), completely decomposed, meta-SILTSTONE. (Very stiff, sandy SILT)
12							14.7 9,18,26,40 N#3	14 15 16	-6.84	11.70		V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SANDSTONE. (Very silty fine SAND)
13	HX 12.60		90					17	-7.74	12.60		V	Extremely weak, yellowish brown (10YR 5/8), dappled grey, completely decomposed, meta-CONGLOMERATE / meta-SILTSTONE. (Clayey silty fine to medium SAND with much subangular fine to medium gravel sized moderately strong rock and qartz fragments)
14		0.80m at 18:00					5,8 11,19,29,43 N#02	18 19	-8.84	13.70		V	Extremely weak, brownish yellow (10YR 6/8), completely decomposed, meta-SILTSTONE. (Very stiff, sandy SILT)
20								20 21	-9.29	14.15			Hole completed at 14.15m.

- SMALL DISTURBED SAMPLE
- ▲ WATER SAMPLE
- ⬆️ LARGE DISTURBED SAMPLE
- PIEZOMETER TIP
- SPT LINER SAMPLE
- △ STANDPIPE
- ▨ U76 UNDISTURBED SAMPLE
- ▩ STANDARD PENETRATION TEST
- U100 UNDISTURBED SAMPLE
- ⊥ PERMEABILITY TEST
- ▨ MAZIER SAMPLE
- ▨ IMPRESSION PACKER TEST
- ▨ PISTON SAMPLE
- ∇ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED Y.K. Lee

DATE 27/04/2005

CHECKED Tom Lo

DATE 28/04/2005

REMARKS



GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT

TERM CONTRACT FOR GROUND INVESTIGATION

SITE: CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH 11

DEPTH: 0.00 M TO 9.50 M

DATE: 24-5-2005

BOX 1 OF 2



0.0m

0.5m

1.0m

0.00



7.10

7.10m



7.60

8.40



9.00



9.50





GEOTECHNICS & CONCRETE ENGG (HK) LTD

CONTRACT NO. TC N307

ARCHITECTURAL SERVICES DEPARTMENT
TERM CONTRACT FOR GROUND INVESTIGATION

SITE: CONSTRUCTION OF A SECONDARY BOUNDARY FENCE - STAGE 1

W.O. NO.: ASD 010414

HOLE NO.: DH 11

DEPTH: 9.50 M TO 14.15 M

DATE: 24-5-2005

BOX 2 OF 2



0.0m

0.5m

1.0m


9.50



14.15
END


Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	0.5		0.5	F1	Stiff, dry, yellowish brown (10YR 5/8), dappled grey and light yellow, sandy clayey SILT with some angular to subangular fine to coarse gravel and occasional cobble sized moderately decomposed and moderately decomposed siltstone fragments. Some rootlets. (FILL)	III
	1.0		F2	Stiff, moist, reddish brown (5YR 5/4), dappled dark purplish red and yellow, sandy clayey SILT with much angular to subangular fine to coarse gravel, some cobble and occasional boulder sized moderately decomposed siltstone fragments occasional rootlets. (FILL)		
	1.65		MD	Moderately strong, brownish to greenish grey moderately decomposed METASILTSTONE. Joints are closely spaced, rough and smooth planar, extremely narrow, iron and manganese oxide stained. Silt infilled (<1 mm thick), dipping at 20° to 30, 30° to 40° and 70° to 80°. Trial pit was terminated at a depth of 2.00m.		
	2.0		MD			
	2.5	<p>① Steel pipe of diameter 40mm. ② P.V.C pipe of diameter 80mm. ③ P.V.C pipe of diameter 120mm. ④ Boulder of moderately decomposed meta-siltstone 0.15m x 0.24m in size. J1 : 304°/32°. J2 : 341°/21°. J3 : 332°/74°.</p>	2.5		Notes : 1. Small disturbed samples were taken at the depths of 0.50m, 1.00m, 1.50m and 2.00m. 2. Large disturbed sample was taken at a depth of 0.50m. 3. Undisturbed horizontal samples (U100) were taken at the depths of 0.50m, 1.00m, 1.50m and 2.00m. 4. Insitu density tests were carried out at the depths of 0.50m, 1.00m, 1.50m and 2.00m.	
	3.0		3.0			
	3.5		3.5			
	4.0		4.0			
	4.5		4.5			
	5.0		5.0			
	5.5		5.5			
	6.0		6.0			
		FACE A: 1.40 m	FACE B: 1.40 m	FACE C: 1.40 m	FACE D: 1.40 m	


SYMBOLS	REMARKS	PLAN (not to scale)	Contract No. :	PROJECT		
			<p>↑ Small Disturbed Sample</p> <p>↕ Large Disturbed Sample</p> <p>↓ Undisturbed Vertical Sample</p> <p>▬ Undisturbed Horizontal Sample</p> <p>■ Block Sample</p> <p>U Insitu Density Test</p> <p>▲ Water Sample</p> <p>↓ Water Seepage</p>	<p>Ground Water Nil</p> <p>Plant Used Hand dug</p> <p>Shoring Timber shoring over full height</p> <p>Stability Stable</p> <p>Depth at pit centre 2.00m</p> <p>Others Nil</p>		TC N307
			Works Order No. : ASD 010414	Sheet 1 of 1		
			Co-ordinates : E 826873.76 N 842137.33			TRIAL PIT NO. SBF/TP40
			Ground Level : 6.44 mPD	Date excavated 12/04/2005 to 12/04/2005		
			Logged by : Y.K. Lee	Date Reinstated 16/04/2005 to 16/04/2005		
			SECTION	Date logged : 13/04/2005	GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	
			FACE A	Checked by : Tom Lo		
			FACE C	Date Checked : 14/04/2005		

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD 010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: A (UPPER)





 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: A (LOWER)





GEOTECHNICS & CONCRETE ENGG (HK) LTD
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION

CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: B (UPPER)




20
E
=19
E
=18
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=17
E
=16
E
=15
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=14
E
=13
E
=12
E
=11
E
=10
E
=09
E
=08

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION

CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: B (LOWER)



E
=13
E
12=
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=11
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02=
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=01


 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: C (UPPER)




 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: C (LOWER)





15
E
14
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08
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 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: D (LOWER)




21
20
19
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17
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08

 **GEOTECHNICS & CONCRETE ENGG (HK) LTD**
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
CONSTRUCTION OF A SECONDARY
SITE: BOUNDARY FENCE - PHASE 1
WO NO: ASD010414 DATE: 13-4-2005
T.P. NO: TP40
FACE: D (UPPER)

 Kodak



 GEOTECHNICS & CONCRETE ENGG (HK) LTD
ASD CONTRACT NO TCN307
TERM CONTRACT
FOR
GROUND INVESTIGATION
SITE: CONSTRUCTION OF A SECONDARY
WO NO: BOUNDARY FENCE - PHASE I
T.P. NO: ASD 010414
FACE: TP40 DATE: 13-4-2005



CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 1 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year D-49

E 826828
N 841746

33

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.O.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
5/11	P		60								0.00	x x x x			Medium dense, yellowish brown and brown, slightly silty fine SAND, relic texture (Extremely weathered SANDSTONE)
				75						51.19	2.00	x x x x	XW		
											3.00	x x x x	XW to DW		Very dense to weak, brown and reddish brown, silty fine SAND (Extremely to distinctly weathered SANDSTONE)
				100						48.66	4.53	x x x x			
	4.53 P H										5.00	x x x x	DW		Moderately weak to moderately strong, light grey and reddish brown, distinctly weathered SANDSTONE with layers of extremely to distinctly weathered SANDSTONE
				70	0	0	*			47.29	5.90	x x x x	minor XW to DW		
											6.45	x x x x	DW		Moderately strong, reddish brown and white, distinctly weathered SANDSTONE, joints are irregular, mainly closely spaced, dip sub-horizontally
				100	28	11	6			45.74	7.45	x x x x			
				98	54	33	4				8.00	x x x x	DW to SW		Moderately strong to strong, light grey and white, distinctly to slightly weathered fine SANDSTONE, joints are closely spaced, planner with limonite staining
										43.99	9.00	x x x x			
											8.45	x x x x			See sheet 2 of 5
				94	82	42	5				9.20	x x x x			
											9.45	x x x x			
5/11	H		40	65	0	0	*				10.00	x x x x	DW		

- Small disturbed sample
- ▲ Water sample
- ◆ Large disturbed sample
- ▼ Water Level
- SPT liner sample
- Standard penetration test
- U76 undisturbed sample
- Permeability test
- U100 undisturbed sample
- Piezometer tip
- Mazzer sample
- In situ vane shear test
- PS Piston sample

LOGGED K.Y.Kwok
DATE 12.11.86
CHECKED [Signature]
DATE 18.11.86

REMARKS
1. * : Cannot be determined
2. NR : No Recovery

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 2 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link -
Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year
D-49

E 826828
N 841746

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
5/11	H		40								10.00 10.35				Moderately strong, pale brown and brownish grey, fine to medium grained, distinctly weathered quartzitic SANDSTONE, a layer of fine sandy silt at 10.35m to 10.65m, minor schistosity at 10.65m to 12.80m, joints are very closely spaced to shattered, rock with abundant incipient joints
				40	12	0	*				11.00 11.35				
				19	0	0	*		T2		12.00				
				NR						40.34	12.85	x x	XW		
				NR						39.99	13.00 13.20	x x	DW		Layer of brown, silty SAND (Extremely to distinctly weathered SANDSTONE)
				40	9	0	*				14.00				Strong to very strong, light grey fine grained, distinctly to slightly weathered SANDSTONE, thin layers of soil at 15.00m to 15.45m and 16.00m to 16.22m, rocks are under minor metamorphism
				NR							14.70				
				NR							15.00 15.15				
				62	9	0	*		T2		16.00			DW to SW	
				NR							16.22				Strong, light grey and white, medium grained, distinctly to slightly weathered quartzitic SANDSTONE, joints are planner and closely spaced some recrystallized quartz crystal
5/11	H	16.72 at 19:00		70	0	0	*				16.72				
6/11	N	13.25m at 7:00		90	82	11	*			35.79	17.00 17.40				
				100	53	0	*		T2		17.72 18.00 18.20			DW to SW	
6/11		10.80m at 19:00								34.99	18.20	x x	XW		Layer of red, reddish brown, silty fine SAND (Extremely weathered fine SANDSTONE)
7/11		16.20m at 7:00		90	53	0	*			34.57	18.62				
											19.00			DW to SW	
7/11	N		40								19.72 20.00				See sheet 3 of 5

- Small disturbed sample
- ▲ Water sample
- ⬇ Large disturbed sample
- ▼ Water Level
- ⊠ SPT liner sample
- ⬇ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ▲ Piezometer tip
- ⊠ Mazier sample
- ✓ In situ vane shear test
- P-S Piston sample

LOGGED K.Y.Kwok
 DATE 12.11.86
 CHECKED [Signature]
 DATE 18.11.86

REMARKS

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 3 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD <u>Rotary</u>	CO-ORDINATES	ROCK COREBIT <u>T2. TNW</u>
MACHINE & NO. <u>Long Year D-49</u>	<u>E 826828</u> <u>N 841746</u>	HOLE DIA. <u>140mm to 114mm to 89mm</u> <u>P to H to N</u>
FLUSHING MEDIUM <u>Water</u>	ORIENTATION	GROUND LEVEL <u>53.19 mPD</u>

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
7/11	N		40	100	92	0	*		T2		20.00	DW to SW			Moderately strong to strong, white and light grey, fine to medium grained, distinctly to slightly weathered quartzitic SANDSTONE, joints are closely spaced, minor limonite, rocks are rich in incipient joints, sheared joints at 19.45m to 19.50m
				94	55	21	*				20.70				
											21.00				
											31.54				
											21.65				
											22.00				
											22.65				
											23.00				
											23.32				
											23.80				
7/11 8/11		12.30m at 19:00 21.65m at 7:00		65	0	0	*		TNW		24.00	SW		Strong, light grey and white, fine to medium grained, slightly weathered quartzitic SANDSTONE, joints are closely to moderately spaced from 21.70m to 23.20m, closely spaced from 23.20m to 37.00m, joints are irregular, rough with iron staining, dip mainly 25°, 65° and sub-vertically, minor joint fault zone at 28.50m to 28.90m some recrystallized quartz crystal	
				42	10	0	*				24.50				
											25.00				
											25.32				
											25.65				
											26.00				
											26.32				
											26.85				
											27.00				
											27.45				
										28.00					
										28.95					
8/11 10/11		18.10m at 19:00 26.30m at 7:00		55	0	0	*				30.00				
10/11			40	92	0	0	*								

- Small disturbed sample
- ⬇ Large disturbed sample
- ⊠ SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- ⊠ Mazier sample
- ⊠ P S Piston sample
- ▲ Water sample
- ▼ Water Level
- ⬇ Standard penetration test
- ⬇ Permeability test
- ⬇ Piezometer tip
- ✓ In situ vane shear test

LOGGED K.Y.Kwok
 DATE 12.11.86
 CHECKED [Signature]
 DATE 18.11.86

REMARKS

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 4 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link -
Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year
D-49

E 826828
N 841746

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description
10/11			40								30.00				Strong, light grey and white, fine to medium grained, slightly weathered quartzitic SANDSTONE, joints are closely to moderately spaced from 21.70m to 23.20m, closely spaced from 23.20m to 37.00m, joints are irregular, rough with iron staining, dip mainly 25°, 65° and sub-vertically, minor joint fault zone at 28.50m to 28.90m some recrystallized quartz crystal
				73	77	55	*				30.45				
											31.05				
				93	79	10	*				32.00				
											32.25				
				98	45	0	*				33.00				
											33.50		SW		
				91	86	0	*				34.00				
											34.60				
				80	79	0	*				35.00				
											35.80				
				100	100	40	5				36.00				
10/11		18.20m at 19:00									36.85				Moderately strong, yellowish brown, fine to medium grained, distinctly weathered and distinctly to slightly weathered SANDSTONE some thin layers of weathered soil minor schistosity rocks are under low-graded metamorphism
11/11		26.25m at 7:00		82	69	0	*				37.00				
				68	36	0	*				37.53		DW & DW to SW		
				52	0	0	*				38.00				
											38.23				
				100	40	18	*				39.00				See sheet 5 of 5
											39.70		SW		
11/11			40								40.00				

- Small disturbed sample
- ▲ Water sample
- ◆ Large disturbed sample
- ▼ Water Level
- ⊗ SPT liner sample
- ↓ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ⬇ Piezometer tip
- ⊗ Mazier sample
- ▼ In situ vane shear test
- P-S Piston sample

LOGGED K.Y.Kwok
 DATE 12.11.86
 CHECKED [Signature]
 DATE 18.11.86

REMARKS

CONTRACT NO. GC/85/09

W.O. NO. PW7/2/16.75

DRILLHOLE RECORD

HOLE NO. BH5

Lam Geotechnics Limited

SHEET 5 of 5

DATE from 5.11.86 to 11.11.86

PROJECT Site Investigation - Vehicular Border Link - Borrow Area at Mt. Luard

METHOD Rotary

CO-ORDINATES

ROCK COREBIT T2. TNW

MACHINE & NO. Long Year D-49

E 826828
N 841746

HOLE DIA. 140mm to 114mm to 89mm
P to H to N

FLUSHING MEDIUM Water

ORIENTATION

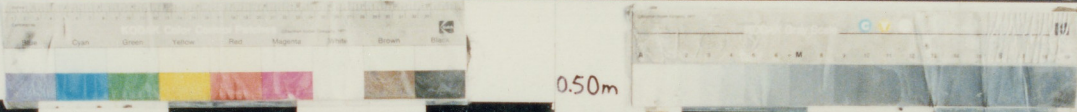
GROUND LEVEL 53.19 mPD

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.O.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m.)	Legend	Grade	Zone	Description	
11/11			40	100	73	14	*				40.00		SW		Strong, light grey, fine to medium grained, slightly weathered SANDSTONE, joints are mainly planner, closely spaced, dip at 15°-25°, rocks with minor limonite staining, and abundant incipient joints	
											40.95					
				76	68	0	*			11.69	41.50		XW/DW		Very dense to very weak, brown and greyish brown, silty fine SAND (Extremely to distinctly weathered SANDSTONE)	
										11.19	42.00					
									TNW		42.20				Moderately strong to strong, light grey and brownish grey, distinctly to slightly weathered SANDSTONE, joints are closely to moderately spaced, mainly planner, dip sub-vertically, joint planner with limonite staining	
				90	85	0	*					43.00				
												43.30				
				100	82	31	*					44.00		DW to SW		
												44.30				
		18.90m at 19:00	40	93	79	21	*				45.10				End of investigation hole at 45.10m	
11/11										8.09	45.10					
											46.00					
											47.00					
											48.00					
											49.00					
											50.00					

- Small disturbed sample
- ▲ Water sample
- ◆ Large disturbed sample
- ▼ Water Level
- ⊞ SPT liner sample
- ↓ Standard penetration test
- U76 undisturbed sample
- ⬇ Permeability test
- U100 undisturbed sample
- ▲ Piezometer tip
- ⊞ Mezzor sample
- ∨ In situ vane shear test
- P-S Piston sample

LOGGED K.Y.Kwok
DATE 12.11.86
CHECKED [Signature]
DATE 18.11.86

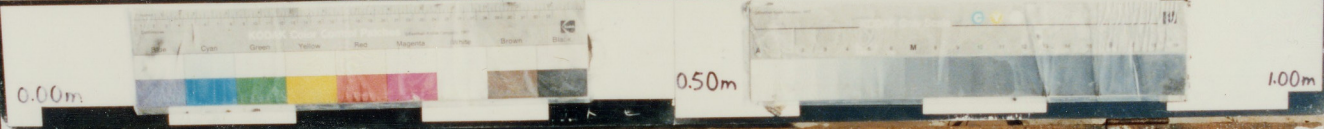
REMARKS

CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	1 OF 7
DEPTH	METRE FROM 0.00m TO 8.45m		
			

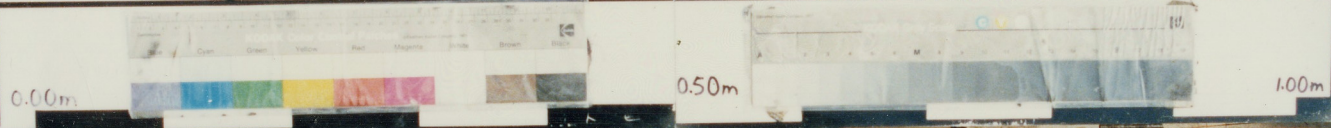


26/1675

CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	2 OF 7
DEPTH	METRE FROM 8.45m TO 16.72m		



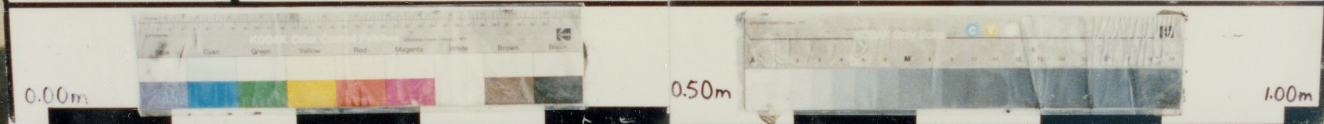
CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	3 OF 7
DEPTH	METRE FROM 16.72m TO 20.70m		



CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	4 OF 7
DEPTH	METRE FROM 20.70m TO 26.32m		
			

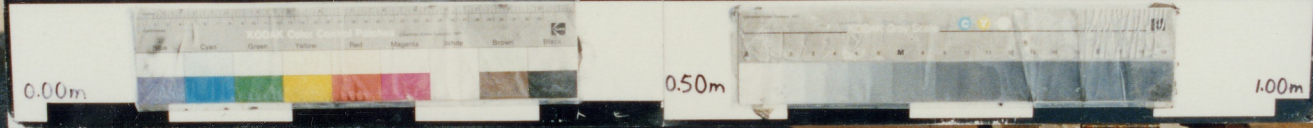


CLIENT	GEOTECHNICAL CONTROL OFFICE	
CONTRACT NO.	GC/85/09	
CONTRACTOR	LAM GEOTECHNICS LTD	
JOB NAME	LOK MA CHAU	W.O.NO. PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO. 5 OF 7
DEPTH	METRE FROM 26.32m TO 34.60m.	



34.60m to 40.95m

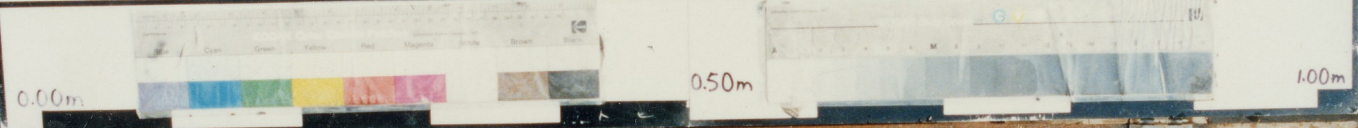
CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	6 OF 7
DEPTH	METRE FROM 34.60m TO 40.95m		



34.60m
35.80m
36.85m
40.00m

37.53m
37.00m
39.70m
40.95m

CLIENT	GEOTECHNICAL CONTROL OFFICE		
CONTRACT NO.	GC/85/09		
CONTRACTOR	LAM GEOTECHNICS LTD		
JOB NAME	LOK MA CHAU	W.O.NO.	PW7/2/16.75
HOLE NO.	BH-5	BOX'S NO.	7 OF 7
DEPTH	METRE FROM 40.95m TO 45.10m		



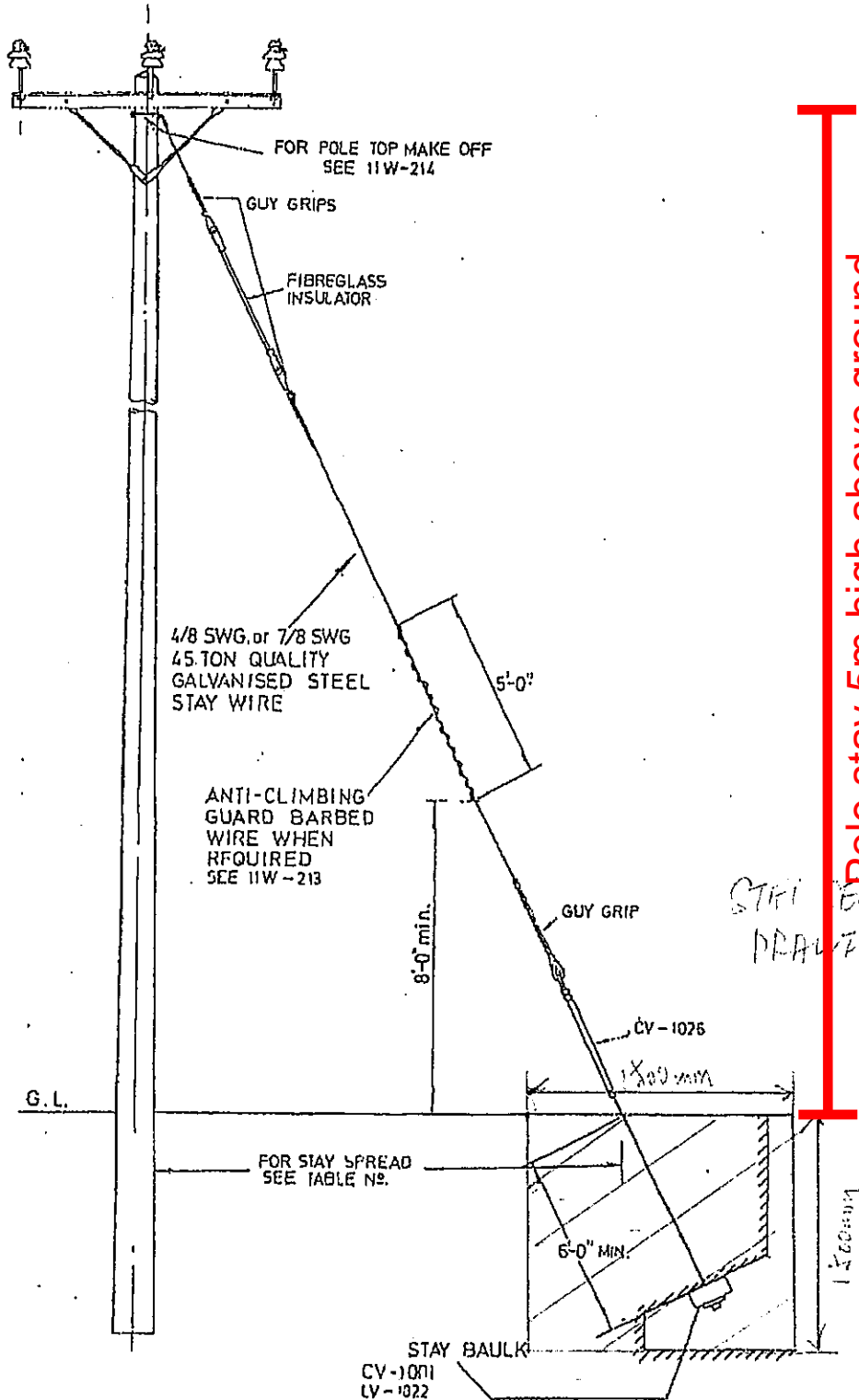
Appendix D
has been
added

Appendix D

Drg No. 01-A and 01 G A Detail of
Pole Stay Photo Illustration for the
Pole and Pole Stay

Pole 10m high above ground

Pole stay 5m high above ground



STAY BULK DRAWING

THIS DWG. SUPERSEDES THE DWG. NO. 11W-201 SHEET 1



REVS.	A	B	C	D	E	F	G	H	J	K	L
INITIAL											

TITLE : 11kV OHL WOOD POLE SPECIFICATION
GENERAL ARRANGEMENT OF STAYS
(SHEET 1)

DRAWN: T.W.L.	DATE: 6-2-03
CHECKED: W.M.CHANG	APPROVED: W.M.CHANG
SCALE: N.T.S.	SHEET(S) IN SET: 1

PROJECT NO. CONTRACT NO.

ASSET MANAGEMENT	DRG. NO. T GEN 51220 DE 33 0138 01	A
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INFORMATION CLASS: PROPRIETARY

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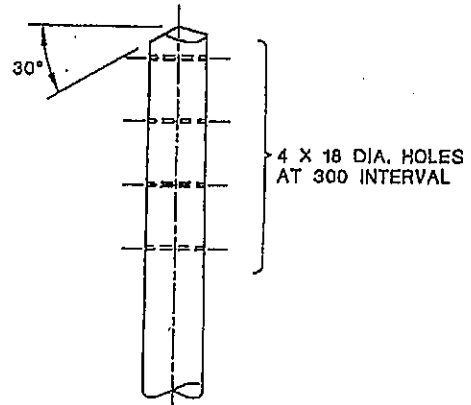
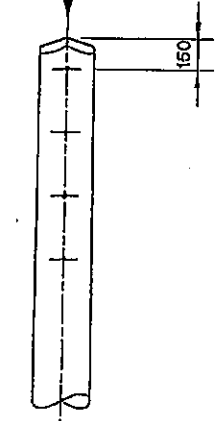
CLP STOCK NO.: 334-500

NOMINAL POLE LENGTH
9m



VIEW A'

Pole 10m high above ground



GOUGE MARK

GROUND LEV.

200(H) WOOD BAULK

15

3000

WIDTH

200mm

GROUND LEV.

210

210

450

760

22' DIA. HOLES

1800

Depth

Pole Section DRAWING

NOTE:
ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

THIS DWG. SUPERSEDES DWG NO. E8C/G/96-69

G	GOUGE MARK UPDATED TO 3m	F	ADDITIONAL BAULK, GOUGE MARK MEASUREMENT INCREASED
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REVS.	28.10.02	28.1.03	8.10.04	30.09.15	05.08.16	13.03.17	01.06.17					
INITIAL	HCHOW	HCHOW	F.O.	S.K.LAU	KL.CHAN	KL.CHAN	KL.CHAN					

TITLE :

LV OHL WOOD POLE

DRAWN: S.C.T.	DATE: 17-3-88
CHECKED: Y.N.S	APPROVED:
SCALE: N.T.S.	SHEET(S) IN SET: 1

PROJECT NO.	CONTRACT NO.
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ASSET MANAGEMENT	DRG. NO. T GEN 5 1 2 2 0 D E 3 3 0 0 2 4 0 1 G A
------------------	--

INFORMATION CLASS: PROPRIETARY

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Drp No. 01 G A

Location Plan of the Pole and Pole Stay

