

Annex 1

Geotechnical Assessment Report

Sunny Mega Holdings Limited

**Planning Application No. A/NE-FTA/280 –
Proposed Temporary Warehouse (Excluding Dangerous Goods Godown)
with Ancillary Facilities and Associated Filling of Land for a period of 3 years
in “Agriculture” Zone, Various Lots in D.D. 89 and adjoining Government Land,
Man Kam To, New Territories**

Preliminary Geotechnical Assessment Report

Document No. Y1066/GAR/001

Issue 1

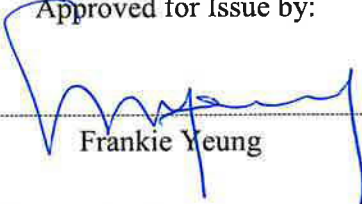
September 2026



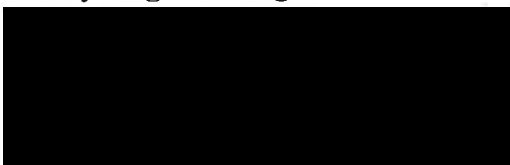
Y1066/GAR/001
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Man Kam To, New Territories**

Preliminary Geotechnical Assessment Report

Approved for Issue by:	
	
Position:	<u>Project Manager</u>
Date:	<u>2 September 2026</u>

Sunny Mega Holdings Limited



Mannings (Asia) Consultants Ltd



Y1066/GAR/001

Issue 1

September 2026

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Issue	Prepared by	Reviewed by	Date
1	JW	FY	September 2026

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1.0 Introduction

1.1 General

1.1.1 Planning Statement for Planning Application No. A/NE-FTA/280 – *Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a period of 3 years in “Agriculture” Zone, Various Lots in D.D. 89 and adjoining Government Land, Man Kam To, New Territories* was submitted to Planning Department by Standard Billion Limited in 2026.

1.1.2 Comments from Geotechnical Engineering Office (GEO), Civil Engineering and Department (CEDD) were received (see **Appendix A**). According to GEO’s comments, there are suspected unauthorized geotechnical works in the vicinity of the captioned Site, which unauthorized slopes had been formed without any design approval. These unauthorized slopes may affect or be affected by the proposed development of the subject application. The applicant is requested to carry out topographic survey for area within 20m away from the boundary of the captioned Site. Subsequently, based on the results of the topographic survey, a preliminary geotechnical assessment is required for any identified geotechnical features, which might affect or be affected by the proposed development.

1.2 Objectives of the Report

- (a) To identify any existing registered / un-registered / non-registered man-made slopes and retaining wall within the site boundary, and within 20m beyond the site boundary;
- (b) To review the results of the topographic surveys to verify the results of the desktop study;
- (c) To carry out preliminary geotechnical assessment; and
- (d) To recommend any remedial measures to the existing geotechnical condition if there is any potential hazard.

1.3 Structures of the Report

1.3.1 This report contains the following sections in addition to this introduction:

- Section 2: Desk Study Review
- Section 3: Geotechnical Assessment
- Section 4: Conclusion and Recommendation

2.0 Desk Study Review

2.1 Site Description

- 2.1.1 The Site is located to the South of Lo Wui Station Road and to the West of Man Kam To Road in North District, adjacent to Sha Ling Playground. Sha Ling Village is noted to the Northwest of the Site. The location of the Site is shown in **Drawing No. Y1066/GL/001**.
- 2.1.2 The Site is a relatively flat land with two pools noted, surrounded by streams and pools. Non-registered slopes are noted around the pools within the Site. The elevation is approximately from +5mPD at the Northwestern portion of the Site to about 7.5mPD at the middle of the Site and to about +5mPD at the Southeastern portion of the Site. And from about +7mPD at the Northeastern portion of the Site to +7.5mPD at the middle of the Site and to +4mPD to the Southwestern portion of the Site. Local lowest and highest spot with an elevation of +3.08mPD and +7.98mPD is noted at the Northwestern boundary of the Site and at the crest of and non-registered slope to the East of a pool respectively. Cross sections of the Site are shown in **Drawing Nos. Y1066/GS/001 and Y1066/GS/002**.
- 2.1.3 Topography survey was conducted and the findings are shown in **Drawing No. Y1066/GL/001**.

2.2 Site Geology

- 2.2.1 The Site is covered by the 1:20,000 scale Hong Kong Geological Survey – Solid and Superficial Geology Sheet 3 “Sheung Shui” (Edition I) series HGM20 published by Geotechnical Engineering Office in 1991. According to the geological map (**Figure 1**), the Site is generally underlain by well-sorted to semi-sorted alluvium of clay to gravel (Qa) and well-sorted to semi-sorted terraced alluvium of gravelly sandy clay/silt (Qpa) of Quaternary, locally unsorted debris flow deposits of gravelly clayey silt/sand with cobbles and boulders (Qpd) of Quaternary at the southeastern portion. No adverse geological features are identified in the vicinity of the Site.
- 2.2.2 No previous records of ground investigation (GI) within the Site / within 20m beyond the site boundary is available. Limited records of GI are noted along Lo Wu Road and Man Kam To Road and summarized in **Appendix C**. The location of GI stations is shown in **Figure 2**.

2.3 Existing Geotechnical Features

- 2.3.1 According to Slope Information System (SIS) of Geotechnical Engineering Office (GEO), of Civil Engineering and Development Department, no registered man-made geotechnical feature is located within the site boundary and within 20m beyond the site boundary (**Figure 2**).
- 2.3.2 A total number of 3 man-made slopes are identified within the site boundary and within 20m beyond the site boundary, which are shown in **Drawing No. Y1066/GL/001** and summarized in table below:-

Table 2.2 Summary of Existing Slopes

Feature No.	Location	Max. Height (m)	Max. Length (m)	Average Slope Angle (°)	Slope meeting registration criteria?
NR-A	Within 20m beyond the site boundary	~2.64 (From ~+7.46mPD to +~4.82mPD)	~53	~20	No
NR-B	Within site boundary	~2.22 (From ~+7.10mPD to +~4.88mPD)	~118	~60	No
NR-C	Within site boundary	~2.61 (From ~+7.98mPD to +~5.37mPD)	~94	~60	No

2.3.3 According to Appendix A of Development Bureau Technical Circular (Works) No. 2/2018 (DEVB TC(W) No. 2/2018) Registration and Updating of the Catalogue of Slopes, the registration height for cut slope / fill slope / retaining wall shall be 3m or greater. The relevant information is extracted and enclosed in **Appendix D**.

2.3.4 The abovementioned slopes, with dimensions as listed in Table 2.2, are identified with a height of less than 3m and hence do not meet the registration criteria as set in DEVB TC(W) No. 2/2018.

3.0 Geotechnical Assessment

3.1 Preliminary Geotechnical Assessment

3.1.1 According to the findings in Section 2, no registered / registrable geotechnical features are identified within the site boundary and within 20m beyond the site boundary. No further geotechnical assessment on non-registered slopes is required.

4.0 Conclusion

4.1.1 3 nos. of man-made slopes are identified within the site boundary and within 20m beyond the site boundary. As described in Section 3, the identified slopes do not meet the registration criteria as set in Development Bureau Technical Circular (Works) No. 2/2018 (DEVB TC(W) No. 2/2018) Registration and Updating of the Catalogue of Slopes.

4.1.2 No further geotechnical assessment on non-registered slopes is required.

5.0 References

Development Bureau (DEVB) (2018). Registration and Updating of the Catalogue of Slopes (Development Bureau Technical Circular No. 2/2018).

Ground Investigation Records

Gammon (Hong Kong) Limited (1986). Site Investigation Report. Job No. 133. EDD Contract No. GC/85/08 W.O. Q7/2/15.4. Improvement to Man Kam To Road from Jockey Club Road to Lin Ma Hang Road. (GIU Ref. No. 06883)

Enpack (Hong Kong) Limited (1991). Final Report (Volume 2 of 2). CESD Contract No. GC/89/06. Site Investigation New Territories East (Term Contract). Works Order No. PW7/2/28.83. Ground Investigation Muk Wu 'C' Pumping Station Au Tau 'B' Pumping Station and Improvement to the Muk Wu / Au Tau Aqueduct and Muk Wu / Tai Po Tau Aqueduct. (GIU Ref. No. 14383)

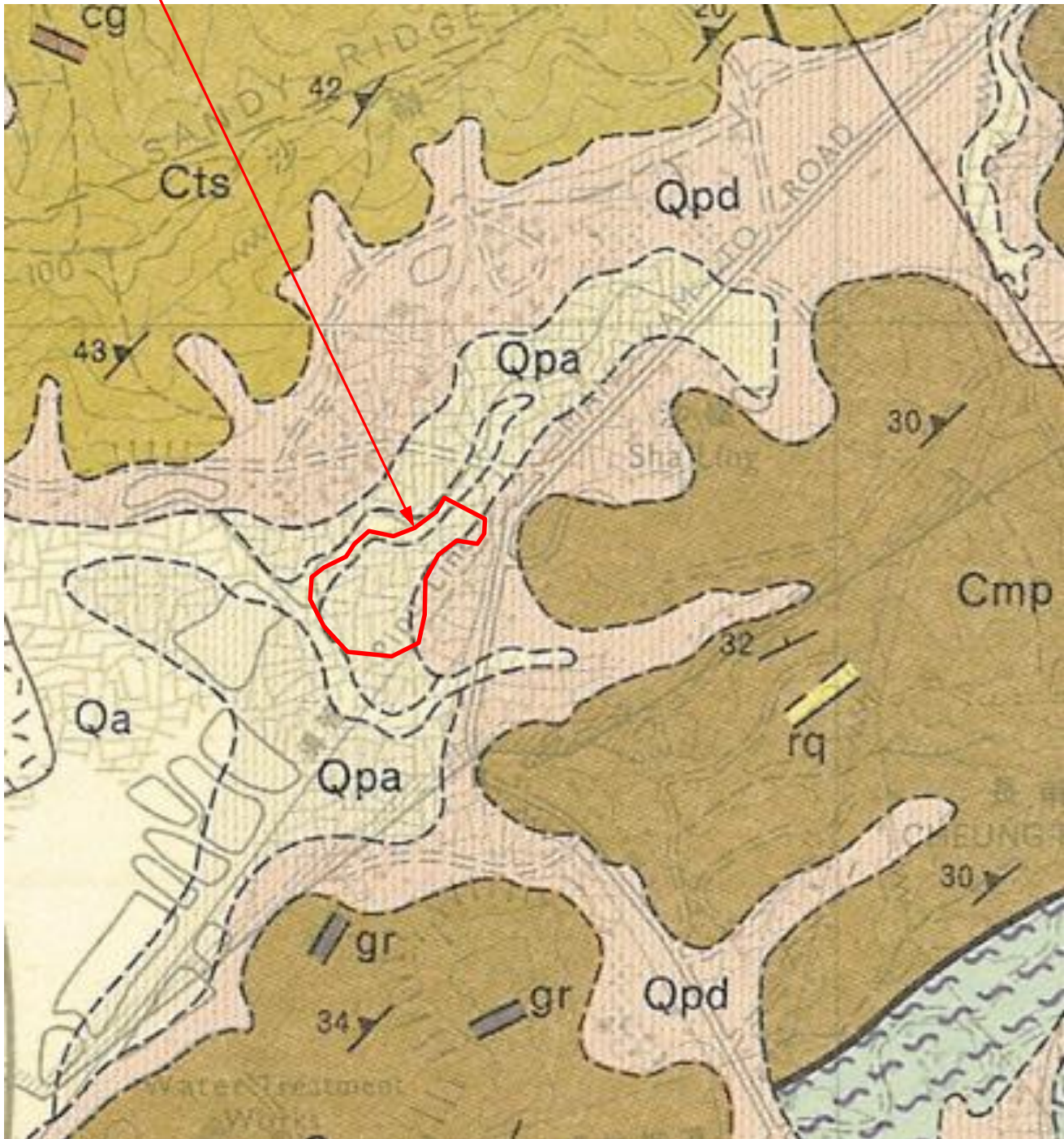
Geotechnics & Concrete Engineering (Hong Kong) Limited (2003). Final Field Work Report. Contract No. GE/2001/13. Work Order No. GE/2001/13.37A. Agreement No. CE 68/2002(HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation. (GIU Ref. No. 38987)

Driltech Ground Engineering Limited (2004). Final Field Work Report. Contract No. GE/2003/19. Ground Investigation – New Territories East (Term Contract). Works Order No. GE/2003/19.3A. Agreement No. CE5/2002(DS) Drainage Improvement in the Northern New Territories - Package B (Man Kam To Road). (GIU Report No. 40637)

Hanki Contractors (HK) & Associates Ltd. (20022). Ground Investigation Field Work Report. Work Order No. 00722/KM/H. Proposed Temporary Storage & Distribution of Chilled Poultry/Meat in D.D. 89, Man Kam To Road, Sandy Ridge, NT. (GIU Report No. 70197)

FIGURES

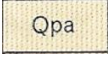
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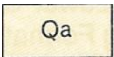
Legend:



Debris Flow Deposit



Terraced Alluvium



Alluvium

PLOT DRW: \$PLTDRVL\$
MODELNAME: \$MODEL\$
FILENAME: \$FILE\$

PRINTED BY: \$USER\$
\$DATE\$
\$TIME\$

DESIGNED : FY	CHECKED : FY	DRAWN : KAM
APPROVED : FY	DATE : SEP 26	SCALE : NTS

PLAN DERIVED FROM :

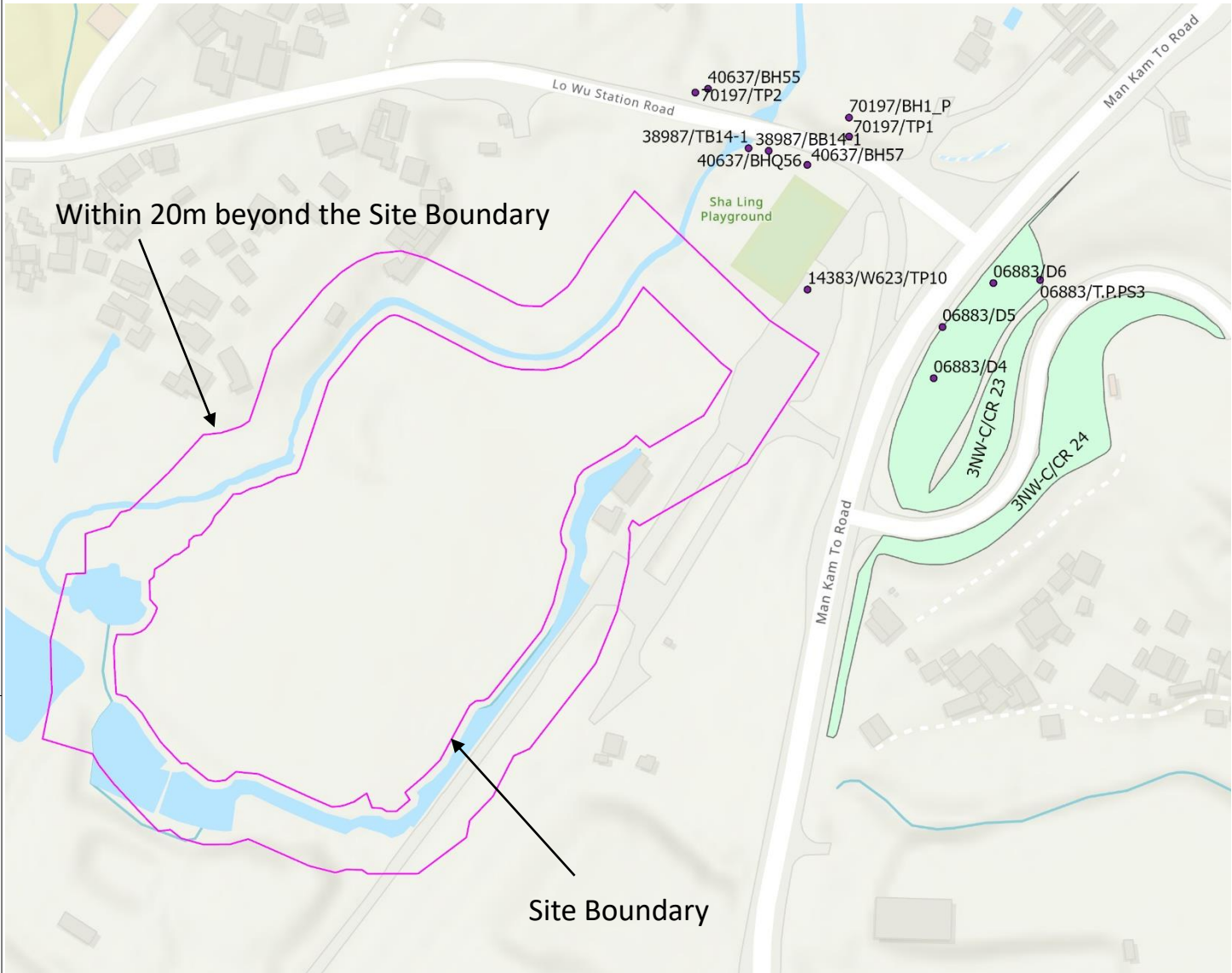
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Land, Man Kam To, New Territories

LOCATION Near Lo Wu, New Territories	
FIGURE TITLE : GEOLOGICAL MAP	
FIGURE NO. : 1	REV. -



Legend:

- Existing Ground Investigation Station
- Registered Man-made Features

DESIGNED : FY	CHECKED : FY	DRAWN : KAM
APPROVED : FY	DATE : SEP 26	SCALE : NTS

PLAN DERIVED FROM :
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Land, Man Kam To, New Territories

LOCATION	
Sha Ling, New Territories	
FIGURE TITLE :	
LOCATION OF EXISTING REGISTERED MAN-MADE FEATURES AND GROUND INVESTIGATION STATION	
FIGURE NO. :	REV.
2	-



APPENDIX A

Comments from Geotechnical Engineering Office (GEO), Civil
Engineering and Department (CEDD)

Planning Application No. A/NE-FTA/280- Proposed Temporary Warehouse (Excluding Dangerous Goods Godown) with Ancillary Facilities and Associated Filling of Land for a Period of 3 Years, Man Kam To

Please find the following departmental comments for your further action.

Head of the Geotechnical Engineering Office, Civil Engineering and Department (H(GEO), CEDD) (Contact Person: Mr Kevin SO, Tel: 2762 5371 or Mr Alex LEE, Tel: 2760 5793)

1. According to our record, suspected unauthorised works were formed within and/or in the vicinity of the application site (the Site). The works comprised formation of unauthorised slopes (i.e. associated geotechnical-related works) that may affect or be affected by the proposed development of the captioned application.
2. As the subject planning application would affect or be affected by the above-mentioned unauthorised works, the applicant shall submit a detailed topographic survey including plans and at least four cross sections (covering at least 20m extending away from the Site boundary with particular emphasis on showing the interface with Sha Ling Village to the northwest of the Site). Existing unregistered and registered man-made geotechnical features (i.e. slopes/retaining walls) should be identified according to the survey results. If the geotechnical features are present, the applicant should further incorporate a preliminary geotechnical assessment of these identified geotechnical features, which might affect or be affected by the proposed development.

Regards,
Esther Li

TPG/N2

Sha Tin, Tai Po & North District Planning Office

Planning Department

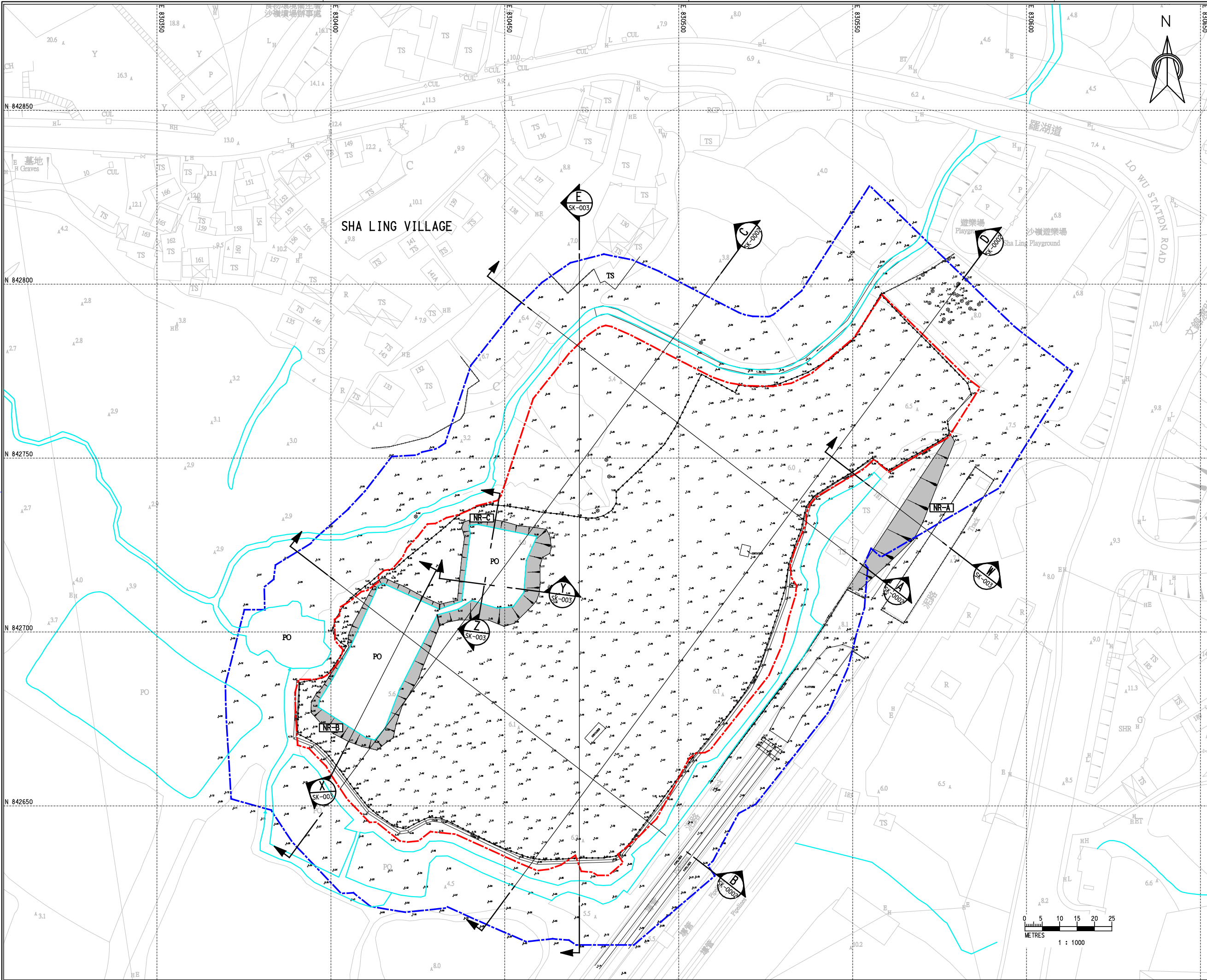
T 2158 6239

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APPENDIX B

Drawings



- NOTES :**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 2. ALL LEVEL ARE IN mPD METRE ABOVE HONG KONG PRINCIPAL DATUM.

LEGEND

- SITE BOUNDARY
- 20M OFFSET FROM SITE BOUNDARY
- NON-REGISTERED SLOPE

SECTION

Rev.	Description of Revision	Date	Ckd.
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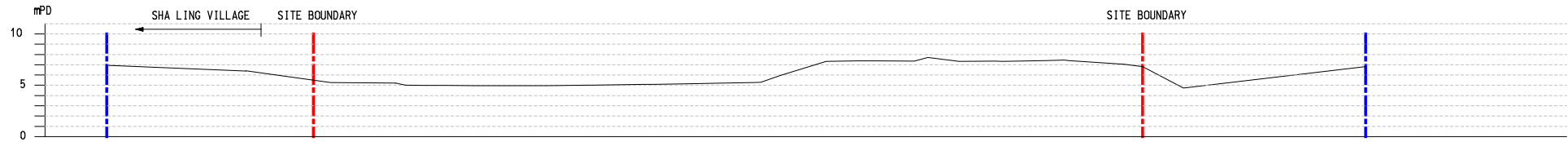
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Designed YKW	Drawn KAM
Design Team Leader FY	Date SEP 2026
Approved FY	Date SEP 2026

Project
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ASSOCIATED FILLING OF LAND FOR A PERIOD OF 3
YEARS IN "AGRICULTURE" ZONE, VARIOUS LOTS IN D.D.
89 AND ADJOINING GOVERNMENT LAND, MAN KAM TO,
NEW TERRITORIES

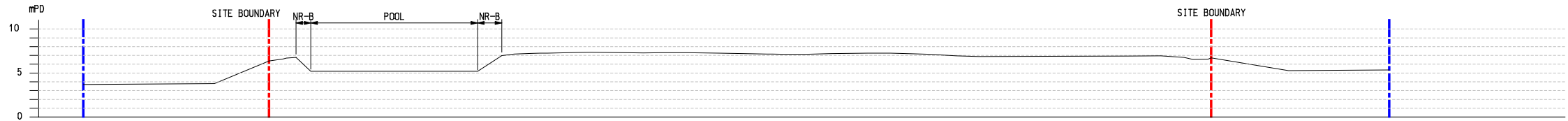
Title

GENERAL LAYOUT PLAN

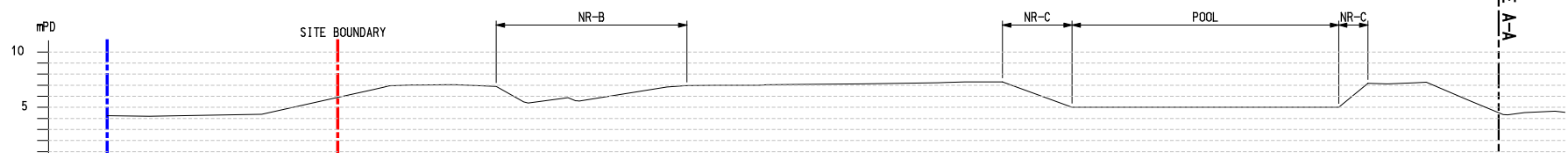
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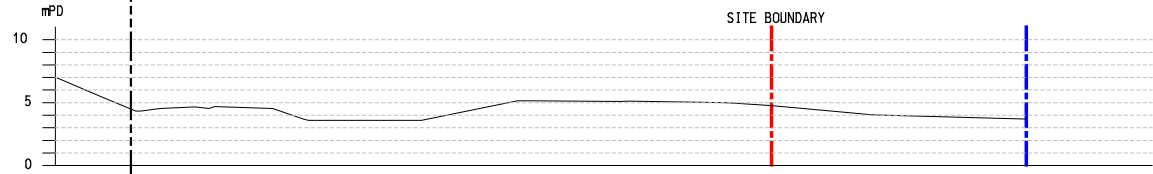
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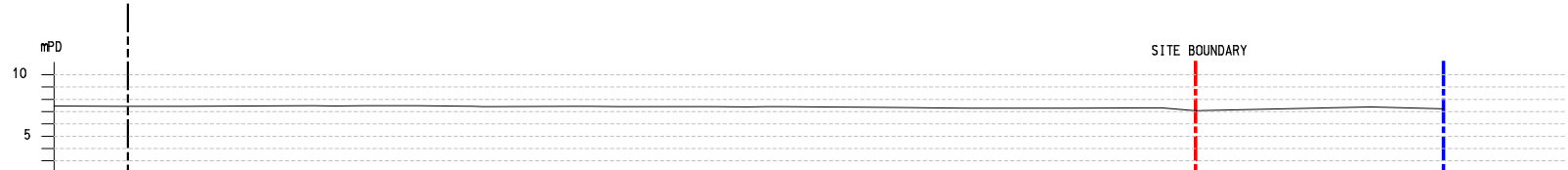
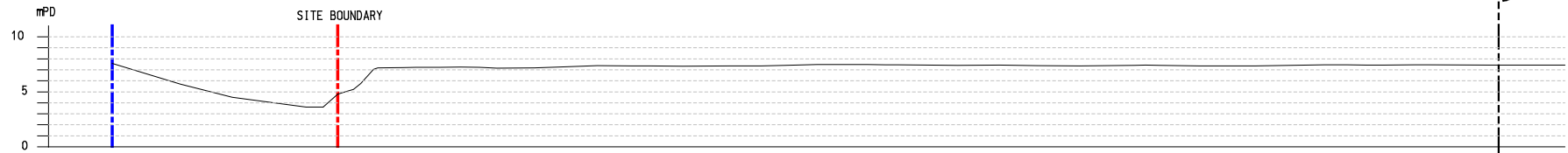
SECTION B
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SECTION C
SCALE 1:600 Y1066/GL/001



SECTION D
SCALE 1:600 Y1066/GL/001



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Approved FY		Date SEP 2026

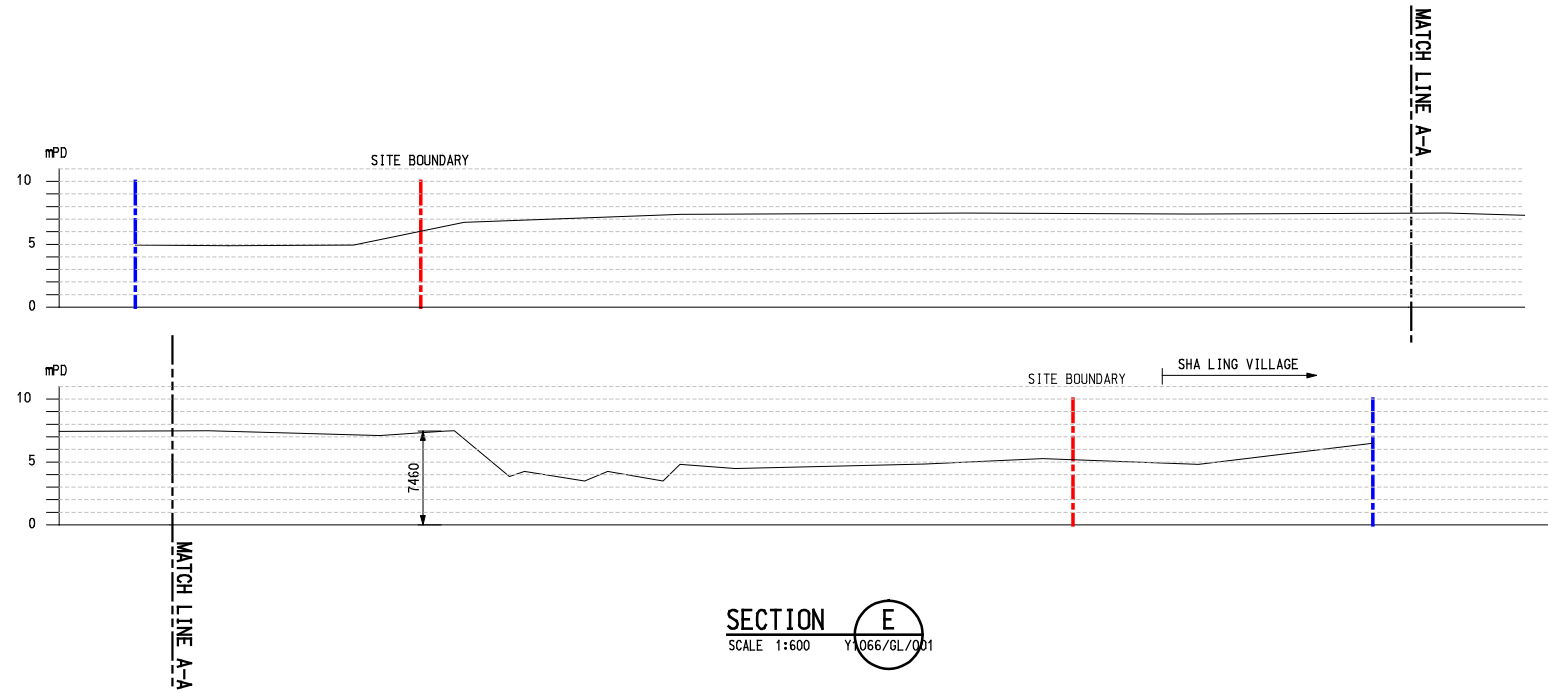
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NEW TERRORIES

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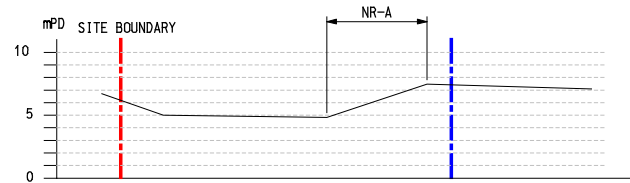
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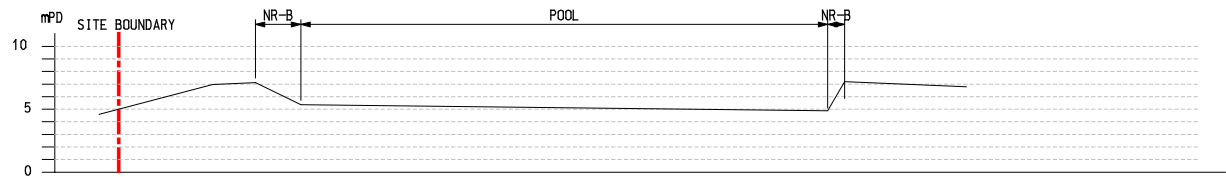




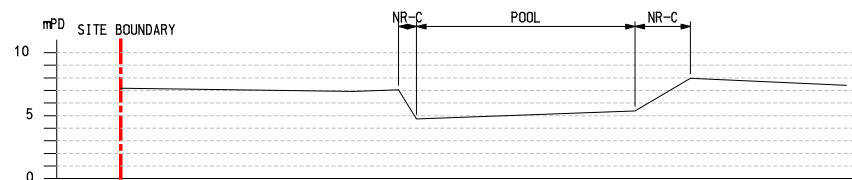
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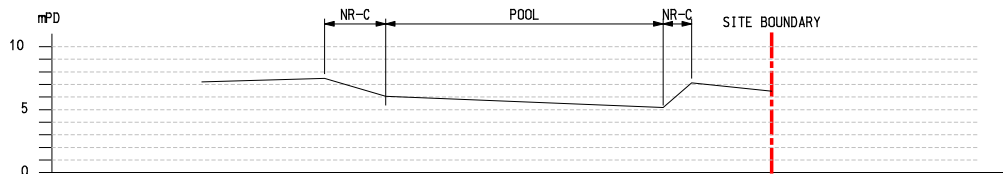
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SECTION X
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SECTION Y
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SECTION Z
SCALE 1:600 Y1066/GL/001



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Title CROSS SECTION			
Drawing No. Y1066/GS/002		Stage I	Rev. -



APPENDIX C

Summary of Ground Investigation Records

Summary of Existing Ground Investigation Records

Drillhole	Easting	Northing	Ground Level (mPD)	Bottom Level (mPD)							End of Hole	Rocktype	Groundwater Monitoing?	Laboratory Test?
				Top Soil / Fill / Concrete	Colluvium	Pond Deposit	Alluvium	C/HD Rock	H/MD Rock	M/SD Rock				
06883_D4	830651.00	842768.00	15.2	-	-	-	-	8.1	-	5.2	5.2	Metamorphic Rock	Yes	No
06883_D5	830653.80	842784.30	13.6	-	-	-	-	6.7	-	-1.4	-1.4	Metamorphic Rock	Yes	No
06883_D6	830670.00	842798.30	15.1	-	-	-	-	8.3	3.1	-	3.1	Metamorphic Rock	Yes	No
06883_TP_PS3	830684.90	842799.30	18.3	18.1	-	-	-	16.05	-	-	16.05	Metamorphic Rock	Yes	No
14383_W623/TP10	830610.77	842796.23	6.56	-	5.46	-	-	-	-	-	5.46	-	No	Y (GIU Ref.15668-9)
38987_BB14-1	830598.40	842840.41	5.64	3.64	-	-	0.34	-13.06	-17.52	-23.16	-23.16	Meta-siltstone / Meta-sandstone	No	Y (GIU Ref.38933,39224)
38987_TB14-1	830591.99	842841.26	5.34	3.94	-	-	3.84	-	-	-	3.84	-	No	Y (GIU Ref.38933,39224)
40637_BH55	830579.04	842860.21	5.52	4.02	-	3.02	-0.48	-23.33	-26.77	-32.34	-32.34	Meta-siltstone / Meta-sandstone	Yes	Y (GIU Ref.40181)
40637_BH56	830610.71	842835.95	6.44	3.94	-	2.44	1.94	-15.46	-15.81	-22.04	-22.04	Meta-siltstone / Meta-sandstone / Phyllite	No	Y (GIU Ref.40181)
40637_BH57	830333.97	842750.07	2.99	-	-	0.99	-1.01	-12.56	-	-	-12.56	Meta-siltstone / Phyllite	Yes	Y (GIU Ref.40181)
70197_BH1/P	830624.80	842851.40	4.89	0.89	-1.32	-	-7.98	-	-14.46	-22.68	-22.68	Meta-siltstone	Yes	Y (GIU Ref.70198)
70197_TP1	830624.30	842845.60	4.596	3.096	-	-	-	-	-	-	3.096	-	No	Y (GIU Ref.70198)
70197_TP2	830575.00	842859.60	5.457	4.057	-	-	-	-	-	-	4.057	-	No	Y (GIU Ref.70198)

C/HD Rock: Completely / Highly Decomposed Rock
H/MD Rock: Highly / Moderately Decomposed Rock
M/SD Rock: Moderately / Slightly Decomposed Rock

Remarks	as instruction given on Work Order
standpipe piezometer was installed at 6.1 m.	



Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 7382R

Contract No: GC/85/08

Client Office: G. C. O.

Borehole/Drillhole No.

D5

Job No & Location: 133 Q7/2/154, IMPROVEMENT TO MAN KAM TO ROAD

Sheet 1 of 2

Method: ROTARY Ground Level: +13.6 m P.D Coords E. 30 653.8

Machine: D 46 Orientation: VERTICAL N. 42784.3

Hole dia.: 0.0m 140mm 6.9m 101mm 15m Date: from 29-11 to 30-11-85

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Depth	Grade
29.11.85 14:00	PX		90						0.0	+13.6				
				85				12.24 25.37 40.48 N=140	1.0		x x x x x x x x x x x x	Yellowish brown and red, sandy SILT < L. D. M. >		V
				95				16.23 25.38 42.53 N=167	2.0 2.5		x x x x x x x x x x x x	Very dense, yellowish brown and violet, sandy SILT		IV
				90				8.6 6.8 11.19 N=45	3.0 4.0 4.5		x x x x x x x x x x x x	< H. D. M. >		
	6.9m								5.0 6.0 6.5		x x x x x x x x x x x x			
				100	0	H.I			6.9	+6.7				
29.11.85 18:00		5.0m 18:00		100	0	H.I			7.6		~ ~ ~ ~	Weak to moderately strong, yellowish brown, gray and white, fine to medium grained, moderately decomposed		III
30.11.85 7:30		NIL 7:30		100	0	H.I			8.6		~ ~ ~ ~	METAMORPHIC ROCK,		
				100	0	H.I			9.5		~ ~ ~ ~	very closely to closely spaced joints.		
									10.3	+3.3				

Legend

Samples:

- Small disturbed
- ◆ Large disturbed
- U40 undisturbed
- U100 undisturbed
- ▨ Mazier
- Liner sample
- ↓ Standard penetration test
- ⬇ Permeability test
- ▲ Water sample
- ≡ Water table

Remarks

standpipe piezometer was installed at 5.9m.

**Gammon (Hong Kong) Limited**

CIVIL ENGINEERS & CONTRACTORS

33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826Contract No: 4C/85/08Client Office: G. C. O.

Borehole/Drillhole No.

D5Job No & Location: 133, Q7/2/15.4, IMPROVEMENT TO MAN KAM TO ROADSheet 2 of 2Method: ROTARY Ground Level: +13.6 m P.D Coords E. _____Machine: D46 Orientation: VERTICAL N. _____Hole dia.: As sheet 1. Date: from 29-11 to 30-11-85

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Depth	Grade
			90	100	0	7			10.3	+3.3				
				85	0	6			10.9			Weak to moderately strong, yellowish brown, grey and white, fine to medium grained, highly to moderately decomposed METAMORPHIC ROCK, closely spaced joints, with quartz gravel and cobble from 13.2 m to 14.3 m.		III
				100	0	9			12.3					III / IV
				50	0	N.I			13.2					III
				100	0	9			14.3			Moderately strong, grey and light grey, fine grained, moderately decomposed METAMORPHIC ROCK, closely spaced joints		III / IV
30.11.85 14:00		8.9m 14:00							15.0	-1.4				III
												Operation stopped at 15m as instruction given on Work Order.		

Legend**Samples:**

- Small disturbed
- ◆ Large disturbed
- U40 undisturbed
- U100 undisturbed
- ▨ Mazier
- Liner sample
- ▼ Standard penetration test
- ⊕ Permeability test
- ▲ Water sample
- ≡ Water table

Remarks



Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-783941 Cables: GAMMONCO Telex: HX 73826

Contract No: GC/85/08

Client Office: GT. C. O.

Borehole/Drillhole No.

D6

Job No & Location: 133 Q7/2/15.4 IMPROVEMENT TO MAN KAM TO ROAD

Sheet 1 of 2

Method: ROTARY Ground Level: +15.1 m P.D Coords E. 30670.0

Machine: D46 Orientation: VERTICAL N. 42798.3

Hole dia.: 0.0 m 140 mm 12 m Date: from 27-11 to 28-11-85

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Depth	Grade
27.11.85 11:00	Px		85						0.0	+15.1				
				95			7.4. 2.2. 4.7 N=15	1	1.0		x x x . x x x x x x x x	Medium dense, yellowish brown, violet and white, sandy SILT << D. M. >		Y
				90			7.8. 8.10. 13.15 N=46	2	2.0		x x x . x x x x x x x x			
				100			13.14. 16.18. 17.23 N=76	3	3.0		x x x . x x x x x x x x	Dense, violet, yellow and brown, sandy SILT << D. M. >		Y
				100			10.12. 16.25. 27.38 N=104	4	4.0		x x x . x x x x x x x x	Weak, yellowish brown, white and violet, fine to medium grained, highly to moderately decomposed METAMORPHIC ROCK, very closely spaced. joint.		II / IV
27.11.85 18:00	5.5m 18:00				0	N.I.		5	5.0	+8.3				
28.11.85	7.0m 7:30							6	6.0	+7.1				
				95				7	7.0		x x x . x x x x x x x x	Very dense, violet and brick red, sandy SILT < H. D. M. >		IV
	10m							8	8.0	+5.1				

Legend

Samples:

- Small disturbed
- ◆ Large disturbed
- U40 undisturbed
- U100 undisturbed
- ▨ Maxier
- Liner sample
- ▼ Standard penetration test
- ⊕ Permeability test
- ▲ Water sample
- ≡ Water table

Remarks

standpipe piezometer was installed at 11.5m.

**Gammon (Hong Kong) Limited****CIVIL ENGINEERS & CONTRACTORS**33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 8-283941 Cables: GAMMONCO Telex: MX 73829Contract No: GC/85/08Client Office: G. C. O.

Borehole/Drillhole No.

D 6Job No & Location: 133, Q7/2/15.4, IMPROVEMENT TO MAN KAM TO ROADSheet 2 of 2Method: ROTARY Ground Level: +15.1 m P.D Coords E. 30670.0Machine: D46 Orientation: VERTICAL N. 42798.3Hole dia.: As sheet 1. Date: from 27-11 to 28-11-85

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Depth	Grade
	Px								10.0	+5.1				
							10.15, 30.41, 52.55 H=178	□ 9.	10.5		x x x x x x x x x x x x	Very dense, violet, yellow, brick red and black, sandy SILT <H. D. M.>		
28.11.85 12:00	12 m	6.6m 12:00		95				② 10	12.0	+3.1				
												Operation stopped at 12m as instruction given on Work Order.		

Legend**Samples:**

- Small disturbed
- ⬆ Large disturbed
- U40 undisturbed
- U100 undisturbed
- ▨ Mazier
- Liner sample
- ⬇ Standard penetration test
- ⬇ Permeability test
- ▲ Water sample
- ≡ Water table

Remarks



Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
23rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-203941 Cable: GAMMONCO Telex: HX73828

CONTRACTOR: WORKS ORDER NO: Q 7/2/15.4		SHORING: LOGGED BY: W. K. LUI DATE: 22-11-85		CO-ORDINATES: E 36 68 4.9 N 42799.3 EXCAVATION DATES: 21-11-85		SLOPE REF. NO: LOCATION: Man Kam To Road.			
SAMPLES & TESTS	(E) DEPTH	DATUM = +18.3 mPD				LEGEND	DESCRIPTION	GR.	
		0	0.2	0.5	1.0				
☒ 1	0	X	X	X	X	X	① Dark brown, sandy SILT with grass < TOP SOIL > ② Yellowish brown, violet sandy SILT < COMPLETELY DECOMPOSED > METAMORPHIC ROCK ③ Yellowish brown, violet, sandy SILT with rock fragment < COMPLETELY TO HIGHLY DECOMPOSED > METAMORPHIC ROCK		
	0.2	X	X	X	X	X			
	0.5	X	X	X	X	X			
	1.0	X	X	X	X	X			
	1.5	X	X	X	X	X			
	2.0	X	X	X	X	X			
	2.5	X	X	X	X	X			
	3.0	X	X	X	X	X			
	3.5	X	X	X	X	X			
	4.0	X	X	X	X	X			
Remarks Sidewalls pumping water others		Operation stopped at 2.5m as given by Work Order.							
FACE A:	FACE B:	FACE C:	FACE D:	SYMBOL ◆ I □ U m ↗		SAMPLES/TESTS/WATER Small dist. sample Large dist. sample Undist. sample, horl. () Undist. sample, vert. () Block sample Plate bearing test In situ density test Moisture content test Water sample Seepage	PLAN (not to scale) Man Kam To Road		

T. P. P 53

SHEET / OF /

TRIAL PIT RECORD

3 NW 21 A

CONTRACTOR : ENPACK (HK) LTD. WORKS ORDER NO. : PW 7/2/28.83 SAMPLES & TESTS :		SHORING : LOGGED BY : F.S.MOO DATE : 8/5		CO-ORDINATES : E 830610.77 N 842796.23 EXCAVATION DATES : 7/5/91		PIT NO. : W623/TP10 LOCATION : MAN KAM ROAD		T.P. 10 SHEET 1 OF 1	
DATUM = 6.56 m.P.C.		LEGEND		DESCRIPTION		SYMBOL SAMPLES/TESTS/WATER		PLAN (not to scale)	
				Medium dense, yellowish brown silty gravelly SAND with large boulder. (COLLUVIUM)		Small dist. sample Large dist. sample Undist. sample hori. Undist. sample vert. Block sample Plate bearing test In situ density test Moisture content test Water sample Seepage			



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO
BB14-1

SHEET **1** OF **4**

DRILLHOLE RECORD

CONTRACT NO. GE/2001/13

PROJECT Agreement No. CE 68/2002 (HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation

METHOD Rotary Cored

CO-ORDINATES

WORKS ORDER NO. GE/2001/13.37A

MACHINE & NO DR131

E 830598.40

DATE FROM 11/08/2003 TO 14/08/2003

N 842840.41

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL 5.64 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
11/08/2003	PX								5.61	0.00			Firm, brown (7.5YR 5/4), clayey sandy SILT with occasional angular fine to coarse gravel sized moderately weak meta-siltstone fragments. (FILL)
1									4.64	1.00			Firm, light green (GLE1 7/2), clayey sandy SILT with occasional subangular fine to medium gravel sized weak meta-siltstone fragments. (FILL)
2			80						4.14	1.50			Firm, yellowish brown (10YR 5/8), clayey sandy SILT with some angular to subangular fine to coarse gravel sized quartz fragments. (FILL)
3							1,3 3,3,4,4 N=14		3.64	2.00			Firm, dark gray (7.5YR 4/1), sandy clayey SILT with some angular to subangular fine to coarse gravel sized quartz fragments. (ALLUVIUM)
4									2.54	3.10			Medium dense, light gray (7.5YR 7/1), fine to coarse SAND with much angular to subangular fine to medium gravel sized quartz fragments. (ALLUVIUM)
5			0						1.64	4.00			Light gray (7.5YR 7/1), slightly sandy angular to subangular fine to coarse GRAVEL with occasional cobble sized quartz fragments. (ALLUVIUM)
6	PX 5.36 HX		80	45	0	>20	9,15 21,31,48/50cm (100bls/200cm)	T2101	0.34	5.10		IV	Moderately strong, light brownish grey, moderately decomposed, META-SILTSTONE. From 5.30m to 5.36m: Weak, yellowish brown, highly decomposed and fractured.
7								T2101	-0.02	5.66		V	No core recovered, assumed to be completely decomposed META-SILTSTONE
8			70	34	0	NI		T2101	-0.16	5.80		V	Extremely weak, yellowish brown (10YR 5/8), completely decomposed, META-SILTSTONE
9			5	24	0	NI		T2101	-1.10	6.74		IV	(Very stiff, sandy SILT with occasional angular fine to medium gravel sized weak rock fragments)
10		0.53m at 18:00 0.78m at 08:00	100			NI	3,3 7,10,12,13 N=42	T2101	-1.31	6.85		V/V	Weak, yellowish brown dappled light brownish grey, highly decomposed and fractured, META-SILTSTONE.
								T2101	-1.81	7.55		IV	From 6.36m to 6.80m: Moderately strong and moderately decomposed.
								T2101	-2.36	8.00		V	From 6.74m to 6.95m: No core recovered, assumed to be completely to highly decomposed meta-siltstone.
								T2101	-2.86	8.45		V/V	From 7.15m to 7.40m: Moderately strong and moderately decomposed.
								T2101	-3.41	9.00			No core recovered, assumed to be completely decomposed META-SILTSTONE
								T2101	-4.31	9.95			Extremely weak, yellowish brown (10YR 5/8), completely decomposed, META-SILTSTONE (Very stiff, sandy SILT)
								T2101					Extremely weak to very weak, yellowish brown

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- OPTIMIZER SAMPLE
- U70 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- NAZIER SAMPLE
- RSCON SAMPLE
- △ WATER SAMPLE
- ▲ PNEUMATIC TIP
- STANDPIPE
- STANDARD PENETRATION TEST
- PENETRAMETER TEST
- IMPRESSION PACTER TEST
- IN-SITU VANE SHEAR TEST
- PACTER TEST

LOGGED K.M. To
DATE 15/08/2003
CHECKED Tom Lo
DATE 16/08/2003

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BB14-1**

SHEET **2** OF **4**

DRILLHOLE RECORD

CONTRACT NO. GE/2001/13

PROJECT Agreement No. CE 68/2002 (HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation

METHOD **Rotary Cored**

CO-ORDINATES

WORKS ORDER NO. **GE/2001/13.37A**

MACHINE & NO. **DR131**

E 830598.40

DATE FROM **11/08/2003** TO **14/08/2003**

N 842840.41

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **5.64 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
15	HX		69	18	0	NI		T2101	-4.69	10.33	• • • •	III/IV	(10YR 5/8), completely to highly decomposed, META-SILTSTONE. (Very stiff, sandy SILT with much angular fine to coarse gravel sized weak rock fragments)
17			7	0	0	NI	7.43/35mm 100/40mm (100b/s/40mm)	T2101	-5.88	10.51	• • • •	V	Moderately weak to moderately strong, light brownish grey, moderately to highly decomposed and fractured, META-SANDSTONE
18						NR		T2101	-6.01	11.05	• • • •	V	No core recovered, assumed to be completely decomposed META-SILTSTONE
19						NR	3,3 8,10,15 19 N=62	T2101	-6.38	12.10	• • • •	V	Extremely weak, brown (7.5YR 5/4), completely decomposed, META-SILTSTONE. (Very stiff, sandy SILT)
20			90					T2101	-7.46	13.10	• • • •	IV	Weak, brown (7.5YR 5/4), highly decomposed and highly fractured, META-SILTSTONE
21			83	38	13	NI		T2101	-7.98	13.51	• • • •	IV	No core recovered, assumed to be completely decomposed META-SILTSTONE
22			92	13	0	>20		T2101	-8.26	13.79	• • • •	V/IV	Extremely weak, brown (7.5YR 5/4), completely decomposed, META-SILTSTONE. (Very stiff, sandy SILT with some angular fine to coarse gravel sized weak rock fragments)
23			98	40	0	>20		T2101	-10.23	15.87	• • • •	IV	Weak, brown dappled greyish brown and light brownish grey, highly decomposed and fractured, META-SILTSTONE
24		0.40m at 18:00	90	0	0	NI		T2101	-11.31	16.95	• • • •	IV	From 13.15m to 13.35m: Moderately strong and moderately decomposed
25		0.82m at 08:00	98	57	17	14.6		T2101	-12.35	17.99	• • • •	III/IV	From 13.60m to 13.90m: No core recovered, assumed to be completely to highly decomposed meta-siltstone.
26			100	83	39	20.0		T2101	-13.08	18.70	• • • •	III	From 13.90m to 14.28m: Moderately weak to moderately strong and moderately to highly decomposed
27			100	36	13	NI		T2101	-13.98	19.70	• • • •	III	From 15.20m to 15.75m: Moderately strong and moderately decomposed with very closely to closely, locally extremely closely spaced joints.
28			100			9.5		T2101	-19.84		• • • •	IV	From 15.75m to 16.00m: Moderately strong and moderately decomposed with very closely to closely, locally extremely closely spaced joints.
29			100			9.5		T2101	-19.84		• • • •	IV	Very weak to weak, greyish brown (2.5Y 5/2), highly to completely decomposed.
30			100			9.5		T2101	-19.84		• • • •	IV	META-SILTSTONE. (Sandy angular fine to coarse GRAVEL with occasional cobble sized weak rock fragments)
31			100			9.5		T2101	-19.84		• • • •	IV	Moderately strong to strong, light brownish grey dappled yellowish brown, moderately to slightly decomposed, META-SILTSTONE
32			100			9.5		T2101	-19.84		• • • •	IV	From 18.95m to 17.24m: Weak, highly decomposed and fractured.
33			100			9.5		T2101	-19.84		• • • •	IV	From 17.72m to 17.99m: Moderately weak, moderately to highly decomposed and fractured.
34			100			9.5		T2101	-19.84		• • • •	IV	No core recovered, assumed to be completely decomposed META-SILTSTONE
35			100			9.5		T2101	-19.84		• • • •	IV	Extremely weak, yellowish brown (10YR 5/8), completely decomposed, META-SILTSTONE. (Very stiff, sandy SILT)
36			100			9.5		T2101	-19.84		• • • •	IV	Moderately weak to moderately strong, yellowish brown dappled light brownish grey and grey, moderately to highly decomposed, META-SANDSTONE with interbedded meta-siltstone.

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- RIT LITH SAMPLE
- LITH UNDISTURBED SAMPLE
- ROCK UNDISTURBED SAMPLE
- MAJOR SAMPLE
- PISTON SAMPLE
- △ WATER SAMPLE
- ▲ PIEZOMETER TEST
- STANDARD PENETRATION TEST
- PERMEABILITY TEST
- IMPRESSION PAK TEST
- IN-SITU VANE SHEAR TEST
- RATCH TEST

LOGGED **K.M. To**
DATE **15/08/2003**
CHECKED **Tom Lo**
DATE **16/08/2003**

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO
BB14-1

SHEET **3** OF **4**

DRILLHOLE RECORD

CONTRACT NO GE/2001/13

PROJECT Agreement No. CE 68/2002 (HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation

METHOD Rotary Cored

CO-ORDINATES

WORKS ORDER NO GE/2001/13.37A

MACHINE & NO DR131

E 830598.40

DATE FROM 11/08/2003 TO 14/08/2003

N 842840.41

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL 5.64 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
21			100	68	40	>20		T2101		20.63		II/IV	Joints are very closely to closely spaced, rough stepped and rough undulating, occasionally rough planar, extremely narrow to very narrow, iron and manganese oxide stained, dipping at 10° to 20°, 20° to 30° and 40° to 50°, occasionally 60° to 70°.
			95	14	0	NI		T2101		20.88		II	From 18.70m to 18.80m : Moderately strong and moderately decomposed meta-siltstone.
								T2101				II/IV	From 18.80m to 19.13m : Moderately strong and moderately decomposed meta-siltstone.
22		0.39m at 18.00	98	37	20	20.0		T2101		22.15		III/IV	From 19.13m to 19.77m : Moderately strong to strong and moderately to slightly decomposed meta-siltstone.
		0.85m at 08.00				>20		T2101				III	From 19.77m to 19.85m : Weak, highly decomposed and fractured meta-sandstone.
								T2101				III/IV	From 20.55m to 21.13m : Moderately strong and moderately decomposed meta-sandstone with a quartz vein of 25mm thick at 20.97m.
23			96	55	0	16.0		T2101	-17.52	23.16		III	From 21.66m to 22.15m : Moderately weak, moderately to highly decomposed and fractured meta-siltstone.
								T2101		23.63		III/IV	From 22.15m to 22.65m : Moderately strong and moderately decomposed meta-siltstone.
24			100	68	40	14.3		T2101		24.15		II/IV	From 22.65m to 23.16m : Moderately weak and moderately to highly decomposed meta-siltstone.
								T2101				III	Moderately strong to strong, grey dappled light brownish grey and locally yellowish brown, moderately to slightly decomposed, META-SANDSTONE with interbedded meta-siltstone.
25			98	50	13	>20		T2101		25.55		III/IV	Joints are very closely to closely spaced, locally medium spaced, rough stepped and rough planar, occasionally rough undulating, extremely narrow to very narrow, iron and manganese oxide stained, dipping at 10° to 20°, 30° to 40° and 40° to 50°, occasionally 60° to 70° and 70° to 80°.
26			100	49	26	10.0		T2101		26.53		II	From 23.16m to 23.26m : Moderately strong and moderately decomposed meta-siltstone.
						>20		T2101				II	From 23.26m to 23.75m : Moderately strong and moderately decomposed meta-sandstone.
27			100	100	100	8.3		T2101		27.23		II	From 24.92m to 25.29m : Moderately strong and moderately decomposed meta-sandstone.
								T2101				II	From 25.53m to 26.06m : Moderately strong and moderately decomposed meta-sandstone.
28		0.20m at 18.00	100	77	48	>20		T2101		27.94		III	From 26.06m to 26.40m : Moderately strong to strong and moderately to slightly decomposed meta-siltstone.
						9.8		T2101				II	From 26.40m to 26.80m : Strong and slightly decomposed meta-siltstone.
						>20		T2101	-23.19	28.80			From 26.80m to 27.23m : Moderately strong and moderately decomposed meta-sandstone.
29													From 27.23m to 28.07m : Strong and slightly decomposed meta-sandstone.
													From 28.07m to 28.22m : Moderately strong and moderately decomposed meta-sandstone.
													From 28.22m to 28.80m : Strong and slightly decomposed meta-sandstone.

- SMALL DISTURBED SAMPLE
- ◀ LAME DISTURBED SAMPLE
- SPT LITHO SAMPLE
- ▨ LITHO UNDISTURBED SAMPLE
- ▨ LITHO UNDISTURBED SAMPLE
- ▨ WATER SAMPLE
- ▨ PISTON SAMPLE
- △ WATER SAMPLE
- ▲ PIEZOMETER TIP
- STANDPIPE
- STANDARD PENETRATION TEST
- PERMEABILITY TEST
- IMPRESSION PLAGER TEST
- IN-SITU VANE SHEAR TEST
- PLAGER TEST

LOGGED K.M. To
DATE 15/08/2003
CHECKED Tom Lo
DATE 16/08/2003

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BB14-1**

SHEET **4** OF **4**

DRILLHOLE RECORD

CONTRACT NO. **GE/2001/13**

PROJECT **Agreement No. CE 68/2002 (HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation**

METHOD **Rotary Cored**

CO-ORDINATES

E 830598.40

WORKS ORDER NO. **GE/2001/13.37A**

MACHINE & NO. **DR131**

N 842840.41

DATE FROM **11/08/2003** TO **14/08/2003**

FLUSHING MEDIUM **Water**

ORIENTATION **Vertical**

GROUND LEVEL **5.64** 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
30													Hole completed at 28.80m.
31													
32													
33													
34													
35													
36													
37													
38													
39													
40													

- SMALL DISTURBED SAMPLE
- ▬ LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U75 UNDISTURBED SAMPLE
- ▩ U100 UNDISTURBED SAMPLE
- ▧ MAZIER SAMPLE
- ▦ PISTON SAMPLE
- △ WATER SAMPLE
- ▲ PIEZOMETER TIP
- STANDPIPE
- ⬇ STANDARD PENETRATION TEST
- ⬇ FIRMENABILITY TEST
- ⬇ IMPRESSION PAKER TEST
- ⬇ IN-SITU VANE SHEAR TEST
- ⬇ PAKER TEST

LOGGED **K.M. To**

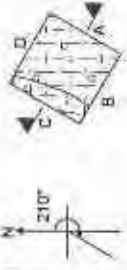
DATE **15/08/2003**

CHECKED **Tom Lo**

DATE **16/08/2003**

REMARKS

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
 1  2  3  4  5  6  7 8	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0	① Boulder of moderately decomposed tuff of maximum size 0.31m x 0.43m. ② Steel pipe of diameter 120mm. ③ Steel pipe of diameter 100mm.	0.5 0.85 1.0 1.30 1.40 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0		Loose, moist, yellowish red (5YR 5/8) dappled brownish grey, clayey silty fine to coarse SAND with much angular to subangular fine to coarse gravel, cobble and some boulder sized moderately decomposed tuff fragments. (FILL) Loose to dense, moist, brown (7.5YR 5/4), clayey silty fine to coarse SAND with much subangular to subrounded fine to coarse gravel and cobble sized moderately decomposed tuff and sandstone fragments (FILL) Stiff, moist, greyish brown (2.5Y 5/2), sandy clayey SILT with some subangular fine to coarse gravel sized moderately decomposed tuff and sandstone fragments. (ALLUVIUM) Trial pit was terminated at an average depth of 1.30m. Notes : 1. Small disturbed samples were taken at the depths of 0.50m and 1.00m. 2. Large disturbed sample was taken at a depth of 0.50m. 3. Block sample was taken at a depth of 1.00m. 4. Undisturbed vertical sample (U76) was taken at a depth of 1.00m. 5. In-situ density test (Sand Replacement Test) was carried out at a depth of 0.50m.	

SYMBOLS  Small Disturbed Sample  Large Disturbed Sample  Undisturbed Vertical Sample  Undisturbed Horizontal Sample  Block Sample  In-situ Density Test  Water Sample Water Seepage		REMARKS Ground Water 0.60m Plant Used Hand dug Shoring Timber Shoring Over Full Height Stability Stable Depth at pit centre 1.30m Others Nil		PLAN (not to scale) 		SECTION 		PROJECT Agreement No. CE 68/2002 (HY), Minor Road Projects in New Territories, Package 2 - Design and Construction, Fanling and Lo Wu Area, Ground Investigation Contract No. : GE/2001/13 Works Order No. : GE/2001/13.37A Co-ordinates : E 830591.99 N 842841.26 Ground Level : 5.34 mPD Logged by : Y.K. Lee Date logged : 28/08/2003 Checked by : Tom Lo Date Checked : 29/08/2003		TRIAL PIT NO. TB14-1 Sheet 1 of 1 Date excavated 27/08/2003 to 27/08/2003 Data Reinstated 05/09/2003 to 05/09/2003 GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	
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DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH55

SHEET

1 of 4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD ROTARY

CO-ORDINATES

WORKS ORDER NO.

GE/2003/19.3A

MACHINE SD22

E 830579.04

N 842860.21

DATE

02.04.2004 to 16.04.2004

FLUSHING MEDIUM WATER

ORIENTATION VERTICAL

GROUND LEVEL

+5.52 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
02.04.2004	SW									+5.52	0.00			Soft, reddish yellow (5YR6/8), occasionally brown and grey, slightly sandy clayey SILT with some subangular to subrounded occasionally angular fine to coarse gravel, occasional cobble of mortar, tuff and asphalt. (FILL)
1									1 0.400					
									2 0.900	+4.52	1.00			Pale brown, a subangular COBBLE of concrete.
									3 1.400	+4.02	1.50			
02.04.2004 03.04.2004		0.85 at 1800						B=43	4 1.900	+3.52	2.00			Soft to very soft, grey (10YR6/1) and yellowish brown (10YR8/6), slightly sandy, slightly silty CLAY with occasional subangular fine to coarse gravel of rock fragments and rootlets. (CONTAMINATED POND DEPOSIT)
		Dry at 0800		60				B=119	5 2.000					Grey (10YR6/1), clayey silty fine SAND with occasional rootlets. (POND DEPOSIT)
				100					6 2.450	+3.02	2.50			Pale brown (10YR6/3), slightly clayey, slightly sandy subangular fine to coarse GRAVEL of quartz and meta-sandstone fragments. (ALLUVIUM)
									7 2.500					Medium dense, light greenish grey (10BG7/1), clayey silty fine SAND. (ALLUVIUM)
								2.2 1,1,6,6 N=14	8 2.950	+2.52	3.00			
									9 3.000					
									10 3.400					
	SW							B=134	11 4.000	+1.52	4.00			Yellowish brown (5YR5/8), slightly clayey, slightly silty, sandy subangular fine to coarse GRAVEL, occasional cobble of quartzite fragments. (ALLUVIUM)
	PW			100				5.6 7,11,20,25 N=63	12 4.450	+1.02	4.50			Very dense, brownish yellow (10YR6/8), slightly clayey silty fine, occasional medium to coarse SAND with occasional subangular fine to coarse gravel of quartz fragments. (ALLUVIUM)
									13 4.500					
									14 4.900					
								B=82	15 6.000	-0.48	6.00		V	Extremely weak, light reddish brown (5YR6/4), completely decomposed META SILTSTONE with iron oxide stained relict joints. (Clayey SILT)
				100				6.18 18,12,11,25 N=66	16 6.450					
									17 6.500					
									18 6.900	-1.38	6.90		IV	Very weak to weak, yellowish brown (10YR8/6), highly decomposed META SILTSTONE (PHYLLITE?) with iron oxide stained relict joints. (Slightly sandy silty, clayey subangular fine to coarse GRAVEL of rock fragments)
									19 8.000					
									20 8.750	-3.33	8.85			
03.04.2004 06.04.2004		0.82 at 1800		20	100			3.5 11,14,36,56 N=117	21 8.850				V-IV	Extremely weak to very weak, yellowish brown (10YR8/6), completely, occasionally highly decomposed META SILTSTONE. (Slightly clayey sandy SILT with some subangular fine to medium gravel of rock fragments)
		0.73 at 0800							22 9.250					
10										-4.48	10.00			

- ↑ SMALL DISTURBED SAMPLE
↓ LARGE DISTURBED SAMPLE
U76 SAMPLE
U100 SAMPLE
PISTON SAMPLE (76mm)
MAZIER / PT SAMPLE
SPT LINER SAMPLE
WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
○ IMPRESSION PACKER TEST
| PERMEABILITY TEST
↓ PRESSUREMETER TEST
▲ PIEZOMETER TIP
□ STANDPIPE TIP

LOGGED

L. Zhang

DATE

20.04.2004

CHECKED

K.S. Luk

DATE

20.04.2004

REMARKS

1. An inspection pit was excavated to 2.00m deep by hand tools.
2. Two piezometers were installed with tips at 6.50m and 37.36m respectively.
3. 4 nos. of Piezometer Buckets were installed at 0.50m intervals from 0.50m to 2.00m in piezometer (Upper).
4. 4 nos. of Piezometer Buckets were installed at 0.50m intervals from 0.50m to 2.00m in piezometer (Lower).
5. A ground water sample was taken at the bottom of hole.

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH55

SHEET

2 of 4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830579.04

N 842860.21

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD22**

DATE

02.04.2004

to

16.04.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+5.52 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11	PW		20	100									IV	Weak to moderately weak, yellowish brown (10YR8/6), highly decomposed slightly metamorphosed FINE SANDSTONE. (Slightly silty sandy subangular fine to coarse GRAVEL of rock fragments)
	HW						NI						III	
			40	46	0	0	NR		T2-101	-4.98	10.50		V	Moderately strong, occasionally moderately weak, pale brown, occasionally pale grey, moderately decomposed partially slightly metamorphosed FINE SANDSTONE interbedded weak to very weak, highly decomposed, occasional extremely weak, completely decomposed horizons.
12			50	100	15	0	NI		T2-101	-11.600	11.39		III	Where intact, joints are very closely to extremely closely spaced, rough planar, iron and manganese oxide stained, dipping at 5°-15°, 25°-35°, subvertically from 11.60m to 12.75m and randomly. (Where non-intact, recovered as angular fine to coarse gravel and occasional cobble sized moderately and highly decomposed fragments)
			50	100	0	0	>20		T2-101	-12.120	12.12		IV	
			50	100	0	0	NI		T2-101	-12.920	12.50		III	
13			50	100	0	0	>20		T2-101	-12.920	12.92		V-IV	
			50	100	0	0	NI		T2-101	-13.750	13.18		III	10.66m to 10.80m: Very weak to weak, olive brown, highly decomposed.
		0.79 at 1800	50	100	0	0	>20		T2-101	-13.750	13.32		II	10.80m to 11.39m: No recovery, assumed to be completely decomposed.
14		0.76 at 0800	50	100	19	0	NI		T2-101	-14.290	14.29		III	11.76m to 12.12m: Moderately weak to weak, highly decomposed.
			50	100	19	0	>20		T2-101	-15.350	14.42		III-II	12.56m to 12.75m: Very weak to weak, highly to completely decomposed. (Slightly silty sandy subangular fine to coarse GRAVEL of rock fragments)
15			30	0	0	0	NR		T2-101	-15.350	15.05		III	Moderately weak to moderately strong, pale brown, occasionally white, moderately decomposed FINE SANDSTONE interbedded strong, slightly decomposed META FINE SANDSTONE.
16		0.79 at 1800							T2-101	-15.890	15.89		V	Where intact, joints are very closely to closely, locally extremely closely spaced, rough planar, iron and manganese oxide stained, dipping at 5°-15°, 25°-35°, 40°-50° and subvertically from 12.75m to 13.35m and 13.85m to 14.05m. (Where non-intact, recovered as angular gravel and cobble sized moderately and slightly decomposed rock fragments)
17		0.70 at 0800	70	0					T2-101	-16.750	16.85		III	13.18m to 13.32m: Strong, slightly decomposed and metamorphosed.
			30	0	0	0	NR		AT3-H	-17.340	17.34		V-IV	13.75m to 13.98m: Strong, slightly decomposed and metamorphosed.
18			30	26	0	0	NR		AT3-H	-18.100	18.48		III	14.55m to 15.05m: Moderately to slightly decomposed.
19		0.65 at 1800	30	0	0	0	NR		AT3-H	-19.060	19.210		III	Extremely weak to very weak, brownish yellow (10YR6/6), completely decomposed slightly metamorphosed SILTSTONE.
		0.70 at 0800	30	100					AT3-H	-19.700	19.80		III	(Slightly sandy clayey SILT with some subangular fine to coarse gravel of rock fragments)
20							NI		AT3-H	-19.800	19.90		III	15.35m to 15.89m: No recovery, assumed to be

- ↑ SMALL DISTURBED SAMPLE
↓ LARGE DISTURBED SAMPLE
U76 SAMPLE
U100 SAMPLE
PISTON SAMPLE (76mm)
MAZIER / PT SAMPLE
SPT LINER SAMPLE
WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
↓ IMPRESSION PACKER TEST
↓ PERMEABILITY TEST
↓ PRESSUREMETER TEST
↓ PIEZOMETER TIP
□ STANDPIPE TIP

LOGGED

L. Zhang

DATE

20.04.2004

CHECKED

K.S. Luk

DATE

20.04.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH55

SHEET

3

of

4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830579.04

N 842860.21

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD22**

DATE

02.04.2004

to

16.04.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+5.52 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
21			50	100	28	0	>20		AT3-H	20.40	20.40		III	completely decomposed.
							NI			20.65	20.65		IV	16.40m to 16.85m: A subangular COBBLE of moderately strong, light grey, moderately decomposed META FINE SANDSTONE.
							>20		AT3-H	20.97	20.97		III	
							NR			21.16	21.16		IV	16.85m to 17.25m: No recovery, assumed to be completely decomposed.
22			50	57	5	0				21.45	21.45		V	Moderately strong to moderately weak, light grey, occasionally pale brown, moderately decomposed FINE SANDSTONE.
										22.05	22.05		V	(Recovered as non-intact, angular and subangular medium to coarse GRAVEL with occasional cobble of highly and moderately decomposed rock fragments)
23			30	100						22.500	22.500		V	Very weak to weak, occasionally extremely weak, light olive brown (2.5Y5/4), completely to highly, occasionally completely decomposed slightly metamorphosed SILTSTONE.
										23.500	23.500		V	(Slightly sandy, slightly clayey silty subangular coarse, occasional medium to fine GRAVEL of rock fragments)
24		0.55 at 1800								23.730	23.730		IV-V	17.54m to 18.10m: No recovery, assumed to be completely to highly decomposed.
13.04.2004										24.500	24.500		V	18.48m to 19.06m: No recovery, assumed to be completely to highly decomposed.
14.04.2004		0.67 at 0800	40	89						25.300	25.300		V	Moderately strong to locally moderately weak, pale brown to yellowish brown, moderately decomposed FINE SANDSTONE / META SANDSTONE
25										25.645	25.645		IV-V	interbedded weak to very weak, highly decomposed zones.
26										26.500	26.500		IV	Where intact, joints are very closely, occasionally closely spaced, smooth and rough planar, iron and manganese oxide stained, dipping at 5°-15°, 35°-45° and 65°-75°.
27			40	46						27.500	27.500		IV	20.40m to 20.65m: Weak to very weak, highly decomposed.
										27.600	27.600		IV	20.97m to 21.45m: Very weak to weak, highly decomposed. (Recovered as slightly silty sandy angular fine to coarse GRAVEL of highly decomposed fragments)
28			40	44						28.400	28.400		V-IV	Extremely weak, light yellowish brown (10YR6/4), completely decomposed slightly metamorphosed FINE SANDSTONE? with occasional SILTSTONE? (Clayey SILT interbedded clayey sandy SILT with some subangular fine to coarse gravel of rock fragments)
										28.598	28.598		V-IV	21.45m to 22.05m: No recovery, assumed to be completely decomposed.
29	HW		60	100	0	0	NI		AT3-H	28.85	28.85		III	Weak, occasionally very weak, light greenish grey (10BG7/1), occasionally light yellowish brown (10YR6/4), completely to highly FINE SANDSTONE, locally metamorphosed.
		0.92 at 1800	60	100	17	0	>20		AT3-H	29.15	29.15		III	(Slightly clayey, silty sandy subangular fine to
44.04.2004									AT3-H	29.750	29.750		III	
45.04.2004		0.66							AT3-H	30.00	30.00		III	

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- U76 SAMPLE
- U100 SAMPLE
- PISTON SAMPLE (76mm)
- MAZIER / PT SAMPLE
- SPT LINER SAMPLE
- WATER SAMPLE

- STANDARD PENETRATION TEST
- IN-SITU VANE SHEAR TEST
- IMPRESSION PACKER TEST
- PERMEABILITY TEST
- PRESSUREMETER TEST
- PIEZOMETER TIP
- STANDPIPE TIP

LOGGED

L. Zhang

DATE

20.04.2004

CHECKED

K.S. Luk

DATE

20.04.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH55

SHEET

4

of

4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830579.04

N 842860.21

WORKS ORDER NO.

GE/2003/19.3AMACHINE **SD22**

DATE

02.04.2004 to 16.04.2004FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+5.52 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
		at 0800	50	100	10	0			AT3-H	30.240	30.11		III	coarse GRAVEL of rock fragments)
							NI				30.60			25.15m to 25.65m: Extremely weak, completely decomposed. (Slightly sandy clayey SILT)
31			50	93	24	13	>20 6.3		AT3-H	31.250	30.78			27.60m to 28.50m: Weak to moderately weak, highly decomposed. (Recovered as angular fine to coarse gravel sized highly to moderately decomposed rock fragments)
									AT3-H	31.730	31.73		IV	Moderately strong to locally moderately weak, light brown, occasionally greenish grey or yellowish brown, moderately decomposed META FINE SANDSTONE, highly fractured.
32			60	100	12	0	>20		AT3-H	31.930	32.29			Where intact, joints are very closely, occasionally closely spaced, rough planar, iron, occasionally manganese oxide stained, dipping at 5°-15°, 35°-45°, 55°-65°, and randomly, occasionally subvertically from 29.15m to 29.86m.
			60	100	18	0			AT3-H	32.550	32.55		III	
33			60	100	96	96	3.4		AT3-H	33.950	32.03		II	29.80m to 30.95m: Moderately weak, FAULT BRECCIA (?)
34		1.46 at 1800	80	89	89	74			T2-101	34.410	34.33			31.73m to 32.29m: Weak, dark brown, highly decomposed, FAULT BRECCIA (?). (Sandy subangular fine to medium GRAVEL of rock fragments)
15.04.2004 16.04.2004		0.67 at 0800	80	100	94	56	10.0		T2-101	35.850	35.73			Strong to very strong, light greenish grey, occasionally dark grey and mottled brown, white, occasionally yellowish green, slightly decomposed META (silicified and chlorite infilled) FINE SANDSTONE.
35											37.00			Joints are medium to closely spaced, rough and smooth planar and undulated, chlorite coated, occasionally iron oxide stained or silty fine sand coated, dipping at 15°-25°, 45°-55° and 55°-65°.
36			80	100	100	100	1.6		T2-101	37.300	37.00			35.20m to 35.26m: Highly fractured.
37			80	100	100	86	7.0		T2-101	37.86	37.86			
16.04.2004											32.34			
38														End of hole at 37.86 m.
39														
40														

↑ SMALL DISTURBED SAMPLE
↓ LARGE DISTURBED SAMPLE
U76 SAMPLE
U100 SAMPLE
PISTON SAMPLE (76mm)
MAZIER / PT SAMPLE
SPT LINER SAMPLE
WATER SAMPLE

↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
↓ IMPRESSION PACKER TEST
↓ PERMEABILITY TEST
↓ PRESSUREMETER TEST
↓ PIEZOMETER TIP
△ STANDPIPE TIP

LOGGED

L. Zhang

DATE

20.04.2004

CHECKED

K.S. Luk

DATE

20.04.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH56

SHEET

1

of

4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830610.71

N 842835.95

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD-16**

DATE

27.05.2004

to

02.06.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+6.44 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return %	TCR %	SCR %	RQD %	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
27.05.2004	SW								1	0.000	+6.44	0.00		Soft, brown (10YR4/3), sandy clayey SILT with some angular to subangular fine to coarse gravel of highly to moderately decomposed meta-siltstone / sandstone, occasional glass and asphalt fragments and rootlets. (FILL)
1									2	0.950	+5.44	1.00		Light brownish grey (10YR7/1) and pale brown (10YR6/3), angular and subangular fine to coarse GRAVEL, with occasional cobble of cement grout and moderately to slightly decomposed rock fragments in matrix of clayey silty fine to coarse sand. (FILL)
27.05.2004									3	1.450				
28.05.2004									4	1.950	+4.44	2.00		Soft, greyish brown (10YR5/2), sandy silty CLAY with some angular to subangular fine to coarse gravel of moderately and slightly decomposed slightly meta-siltstone fragments. (FILL)
				100					5	2.000				
									6	2.450	+3.94	2.50		Soft, dark grey (N4/), slightly sandy, slightly silty CLAY, with occasionally decayed plant and rootlets. (POND DEPOSIT)
									7	2.500				
3									8	2.900				
									9	4.000	+2.44	4.00		Very soft, dark grey (10YR4/1) and brownish yellow (10YR6/8), occasional white (10YR8/1), sandy silty CLAY with much subangular, occasional angular fine to coarse gravel of quartz fragments. (ALLUVIUM)
				89					10	4.450	+1.94	4.50	V	Extremely weak, light grey (N7/) mottled yellow (2.5Y7/6), completely decomposed META SILTSTONE? (Fine sandy clayey SILT with occasional subangular fine to coarse gravel of highly decomposed meta fine sandstone fragments)
									11	4.500				
									12	4.900				
6	SW	0.75 at 1800	80	100					13	6.000	+0.44	6.00		Moderately weak to moderately strong, occasionally weak, light greenish brown and strong brown, moderately decomposed META FINE SANDSTONE. Highly fractured. (Recovered as slightly silty / sandy angular medium to coarse gravel sized moderately decomposed rock fragments)
28.05.2004	PW	1.13 at 0800	70	80	10	0	>20		14	6.200	+0.14	6.30	III	Moderately strong, occasionally moderately weak, light grey, locally yellow, moderately decomposed META FINE SANDSTONE. Joints are very closely, occasionally closely spaced, smooth and rough planar, also stepped, iron and manganese oxide stained, dipping at 5°-15°, 40°-50°, 65°-75° and subvertically.
29.05.2004							>20		15	7.300	-0.92	7.36	V	6.47m to 6.57m: Extremely weak to weak, completely to highly decomposed META SILTSTONE. (Fine sandy clayey SILT with some angular to subangular fine to coarse gravel sized rock fragments)
							NR		16	7.700			V-IV	7.02m to 7.10m: Partially extremely weak, yellow, completely decomposed META SILTSTONE.
									17	7.800				
									18	8.800				
									19	8.900				
									20	9.300				
									21	9.800				
10														

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- U76 SAMPLE
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- PISTON SAMPLE (76mm)
- MAZIER / PT SAMPLE
- SPT LINER SAMPLE
- WATER SAMPLE

- STANDARD PENETRATION TEST
- IN-SITU VANE SHEAR TEST
- IMPRESSION PACKER TEST
- PERMEABILITY TEST
- PRESSUREMETER TEST
- PIEZOMETER TIP
- STANDPIPE TIP

LOGGED

L. Zhang

DATE

05.06.2004

CHECKED

K.S. Luk

DATE

08.06.2004

REMARKS

1. An inspection pit was excavated to 2.00m deep by hand tools.

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH56

SHEET

2

of

4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830610.71

N 842835.95

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD-16**

DATE

27.05.2004

to

02.06.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+6.44 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return %	TCR %	SCR %	RQD %	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11			70	100				5,14 35,30,30,32 N=127	22 23 24	-4.13 -4.47	-10.57 -10.91		V IV-III V	(Sandy clayey SILT with occasional subangular fine to coarse gravel sized rock fragments) No core recovered, assumed to be completely decomposed. Extremely weak, locally very weak, yellow (2.5Y7/6), streaked black, completely decomposed META SILTSTONE (PHYLLITE) with very closely to closely spaced, manganese oxide stained, kaolin coated relict joints. (Soft, slightly sandy clayey SILT, with occasional angular to subangular gravel of highly decomposed rock fragments. Between 7.80m and 8.90m: with some medium to coarse gravel of completely to highly decomposed META SILTSTONE.
12			70	100					25	-5.36	-11.80		V-IV	Moderately weak to weak, dark yellow brown, moderately to highly decomposed and highly fractured META SILTSTONE (PHYLLITE) (Angular to subangular fine to coarse GRAVEL of highly to moderately decomposed rock fragments)
13								11,30 50,100/75mm 150bbs/150mm	26 27 28	-6.46	-12.90		V	Extremely weak, brownish yellow (10YR6/6), completely decomposed META FINE SANDSTONE. (Slightly silty fine SAND with occasional subangular fine to medium gravel of rock fragments)
14			70	95					29		-13.800			Extremely weak, locally very weak to weak, brownish yellow (10YR6/6) streaked black, completely, locally completely to highly decomposed META SILTSTONE (PHYLLITE) with manganese oxide stained relict joints. (Slightly sandy clayey SILT with angular and some subangular fine to coarse gravel of highly decomposed rock fragments)
15								14,35 25,16,16,15 N=72	30 31 32		-14.800 -14.900 -15.300			Extremely weak, olive yellow (5Y6/6 - 2.5Y6/8), completely decomposed META SILTSTONE (PHYLLITE) with manganese oxide stained relict joints. (Slightly sandy clayey SILT with occasional subangular fine to coarse gravel of rock fragments)
16	PW	1.25 at 1800	70	100					33 34	-9.36	-15.80		II	12.90m to 13.20m: completely decomposed META FINE SANDSTONE. (Clayey silty fine SAND)
17	HW	0.49 at 0800	60	100	7	0	NI	20,30/35mm 100/50mm 100bbs/50mm	35 36 37	-9.96	-16.40 -16.60 -16.76		IV-III V-IV	Moderately strong to strong, light grey, slightly decomposed and fractured META FINE SANDSTONE. (Recovered as subangular COBBLES and much coarse gravel of slightly decomposed rock fragments)
18			60	100					38 39	-10.78 -11.06	-17.10 -17.20 -17.50		III II	Very weak to weak, brownish yellow (10YR6/6) and light grey (N7/), completely to highly decomposed META FINE SANDSTONE. (Sandy silty clayey with some angular to subangular fine to coarse GRAVEL, occasional cobbles of rock fragments). 16.60m to 16.76m and 17.10m to 17.20m: Moderately strong, moderately decomposed and highly fractured zones.
19			60	56	0	0	NI	25,25/45mm 60,100/65mm 160bbs/140mm	40 41	-11.26	-17.70 -18.00 -18.13		V V-IV V-IV	Strong, light grey, slightly decomposed META FINE SANDSTONE, highly fractured. (Recovered as angular and subangular coarse GRAVEL, with occasional cobbles of slightly decomposed rock fragments)
20			60	65	50	25	>20 12.5 NR	15,23 22,24,32,44 N=122	42 43 44 45	-12.08 -12.46	-18.50 -18.76 -18.90 -19.300 -19.400		II V V	No core recovered, assumed to be completely decomposed.

- ↑ SMALL DISTURBED SAMPLE
↑ LARGE DISTURBED SAMPLE
U76 SAMPLE
U100 SAMPLE
PISTON SAMPLE (76mm)
MAZIER / PT SAMPLE
SPT LINER SAMPLE
WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
IMPRESSON PACKER TEST
PERMEABILITY TEST
PRESSUREMETER TEST
PIEZOMETER TIP
STANDPIPE TIP

LOGGED

L. Zhang

DATE

05.06.2004

CHECKED

K.S. Luk

DATE

08.06.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH56

SHEET

3 of 4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

WORKS ORDER NO.

GE/2003/19.3AMACHINE **SD-16****E 830610.71****N 842835.95**

DATE

27.05.2004 to 02.06.2004FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+6.44 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description					
21 31.05.2004 01.06.2004	HW	1.70 at 1800 Dry at 0800 1.40 at 1800	60	69	9	0	NI >20 NA NR	22.28 16,100/75mm 116bls/150mm	46	20.100 20.200	13.64 20.28 20.33		II-III	Very weak to locally weak, brownish yellow (10YR6/8), locally grey (10YR6/1), completely to highly decomposed META FINE SANDSTONE with moderately weak, highly decomposed and highly fractured zone at 18.00m to 18.13m. (Slightly clayey silty fine SAND with some (above 17.90m) subangular to angular fine to coarse gravel of rock fragments)					
HMLC									14.15	20.59 20.74		V							
47									21.000	14.56	21.00		V						
48									21.250										
49			21.300						21.30		IV								
50			22.000 22.100	15.46	21.90		V												
HMLC			22.25	15.81	22.25		III												
22 01.06.2004 02.06.2004			HW	1.58 at 0800	80	77	37		0	NR >20	50	22.000 22.100	15.81	22.25		V	Strong, light grey, slightly decomposed META FINE SANDSTONE. Joints are very closely to closely spaced, smooth and rough planar, iron oxide stained, dipping at 5°-15°.		
HMLC											22.750					22.92 23.08			II
HMLC											23.250					23.30			III
HMLC	24.250												24.03 24.13		II				
23	HW	1.58 at 0800			80	100	56	30	6.7 >20	50	22.000 22.100	15.81	22.25		V	Extremely weak to very weak, yellowish brown (10YR6/8), completely decomposed META FINE SANDSTONE with manganese oxide stained relict joints. (Silty fine SAND with occasional subangular fine gravel of rock fragments)			
HMLC										22.750					23.30			III	
HMLC										23.250					24.03 24.13			II	
HMLC										24.250					24.64 24.74			II	
24					HW	1.58 at 0800	80	100	62	27	13.2 >20 3.9 >20 9.1	50	22.000 22.100	15.81	22.25		V	Strong to moderately strong, light grey, slightly to moderately decomposed (60mm) META FINE SANDSTONE. Where intact joints are extremely closely to very closely spaced, rough planar, iron oxide stained, dipping at 5°-15°, locally moderately decomposed META SILTSTONE / PHYLLITE at 20.13m to 20.33m, 20.44m to 20.46m and 20.57m to 20.60m.	
HMLC												22.750					24.03 24.13		
HMLC			23.250												24.64 24.74		II		
HMLC			24.250												24.96		II		
25			HW	1.58 at 0800			80	100	78	40	>20	50	22.000 22.100	15.81	22.25		V	Extremely weak, olive yellow (2.5Y6/6), completely decomposed META SILTSTONE / PHYLLITE. (Clayey SILT)	
HMLC												22.750					24.03 24.13		
HMLC	23.250														24.64 24.74		II		
HMLC	24.250														24.96		II		
26	HW	1.58 at 0800					80	100	76	18	>20	50	22.000 22.100	15.81	22.25		V	20.74m to 21.00m: No core recovered, assumed to be completely decomposed.	
HMLC												22.750					24.03 24.13		
HMLC					23.250										24.64 24.74		II		
HMLC					24.250										24.96		II		
27					HW	1.58 at 0800	80	100	60	0	15.4	50	22.000 22.100	15.81	22.25		V	Very weak, olive grey (5Y5/2) and olive yellow (2.5Y6/6), completely, locally highly decomposed META SILTSTONE / PHYLLITE. (Slightly sandy clayey SILT, locally with subangular fine to coarse gravel of rock fragments)	
HMLC												22.750					24.03 24.13		
HMLC			23.250												24.64 24.74		II		
HMLC			24.250												24.96		II		
28			HW	1.87 at 1800			80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	Moderately weak to moderately strong, dark greenish grey, moderately decomposed META SILTSTONE / PHYLLITE. (Recovered as subangular coarse GRAVEL and some cobbles of rock fragments)	
HMLC												22.750					24.03 24.13		
HMLC	23.250														24.64 24.74		II		
HMLC	24.250														24.96		II		
29	HW	1.87 at 1800					80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	22.10m to 22.25m: No core recovered, assumed to be highly decomposed.	
HMLC												22.750					24.03 24.13		
HMLC					23.250										24.64 24.74		II		
HMLC					24.250										24.96		II		
30					HW	1.87 at 1800	80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	Strong, light grey, slightly decomposed META FINE SANDSTONE.	
HMLC												22.750					24.03 24.13		
HMLC			23.250												24.64 24.74		II		
HMLC			24.250												24.96		II		
31			HW	1.87 at 1800			80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	Joints are closely to very closely, occasionally medium and extremely closely spaced, smooth and rough planar, iron oxide stained, occasionally chlorite, calcite? and kaolin coated, dipping at 5°-15°, 20°-30°, 35°-45°, 65°-75°, subvertically from 25.00m to 26.35m.	
HMLC												22.750					24.03 24.13		
HMLC	23.250														24.64 24.74		II		
HMLC	24.250														24.96		II		
32	HW	1.87 at 1800					80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	23.08m to 23.25m: Moderately strong, moderately decomposed.	
HMLC												22.750					24.03 24.13		
HMLC					23.250										24.64 24.74		II		
HMLC					24.250										24.96		II		
33					HW	1.87 at 1800	80	100	97	97	2.6	50	22.000 22.100	15.81	22.25		V	23.25m to 23.30m: No core recovered, assumed to be completely decomposed.	
HMLC												22.750					24.03 24.13		
HMLC			23.250												24.64 24.74		II		
HMLC			24.250												24.96		II		

- ↑ SMALL DISTURBED SAMPLE
↑ LARGE DISTURBED SAMPLE
▨ U76 SAMPLE
■ U100 SAMPLE
▨ PISTON SAMPLE (76mm)
▨ MAZIER / PT SAMPLE
□ SPT LINER SAMPLE
▲ WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
| IMPRESSION PACKER TEST
| PERMEABILITY TEST
| PRESSUREMETER TEST
■ PIEZOMETER TIP
□ STANDPIPE TIP

LOGGED

L. Zhang

DATE

05.06.2004

CHECKED

K.S. Luk

DATE

08.06.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH56

SHEET

4

of

4

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830610.71

N 842835.95

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD-16**

DATE

27.05.2004

to

02.06.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+6.44 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/ End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
31														26.01m to 26.35m: Moderately strong, brownish grey, moderately decomposed.
32														26.62m to 26.88m: Moderately strong, moderately decomposed.
33														27.00m to 27.40m: Moderately strong, moderately decomposed.
34														End of hole at 28.48 m.
35														
36														
37														
38														
39														
40														

- ↓ SMALL DISTURBED SAMPLE
↑ LARGE DISTURBED SAMPLE
▣ U76 SAMPLE
▣ U100 SAMPLE
▣ PISTON SAMPLE (76mm)
▣ MAZIER / PT SAMPLE
▣ SPT LINER SAMPLE
▣ WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
✓ IN-SITU VANE SHEAR TEST
↓ IMPRESSION PACKER TEST
↓ PERMEABILITY TEST
↓ PRESSUREMETER TEST
▣ PIEZOMETER TIP
▣ STANDPIPE TIP

LOGGED

L. Zhang

DATE

05.06.2004

CHECKED

K.S. Luk

DATE

08.06.2004

REMARKS

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH57

SHEET

1 of 2

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830333.97

N 842750.07

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD4**

DATE

29.03.2004 to 30.03.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+2.99 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return%	TCR%	SCR%	RQD%	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
29.03.2004	SW								1 0.400	+2.99	0.00			Soft, brownish and yellowish grey (10YR6/2) mottled red, silty CLAY with occasional rootlets. (POND DEPOSIT?)
1									2 0.900					
									3 1.400					
2									4 1.900	+0.99	2.00			Loose, very pale brown to light grey (10YR7/3 - 10YR7/1) spotted white, slightly silty fine to medium, occasional coarse SAND with occasional subangular fine gravel of quartz. (ALLUVIUM)
				100					5 2.000					
									6 2.500					
3									7 2.600					
									8 3.000					
	SW													
4	PW								9 4.000	-1.01	4.00		IV	Extremely weak, occasionally very weak to weak, brownish yellow (10YR6/6) and reddish brown (5YR5/4), completely, occasionally highly decomposed slightly metamorphosed SILTSTONE (PHYLLITE?) with manganese oxide stained relict joints. (Clayey SILT)
				70	100				10 5.000		4.20		V	4.00m to 4.20m: Weak, highly decomposed. (Angular to subangular medium to coarse, occasional fine GRAVEL of rock fragments)
5									11 5.100					
									12 5.500					
6									13 6.000		6.23		V-IV	6.23m to 7.10m: Very weak, completely and highly decomposed. (Clayey SILT with some subangular fine to medium gravel of rock fragments)
				70	100				14 7.000		7.10		V	
7									15 7.100					
									16 7.500					
		0.50 at 1800							17 8.000		8.28		IV	8.28m to 8.68m: Very weak and highly decomposed.
29.03.2004		0.20 at 0800							18 9.000		8.68		V	
30.03.2004				70	100				19 9.100		9.10		IV	Extremely weak to very weak, brownish yellow (10YR6/8), completely decomposed slightly metamorphosed SILTSTONE (PHYLLITE?) / META FINE SANDSTONE interbedded very weak and highly decomposed zones.
									20 9.500	-6.01	9.00		V	
10											10.00			

↑ SMALL DISTURBED SAMPLE

↓ LARGE DISTURBED SAMPLE

U76 SAMPLE

U100 SAMPLE

PISTON SAMPLE (76mm)

MAZIER / PT SAMPLE

SPT LINER SAMPLE

WATER SAMPLE

↓ STANDARD PENETRATION TEST

IN-SITU VANE SHEAR TEST

IMPRESSION PACKER TEST

PERMEABILITY TEST

PRESSUREMETER TEST

PIEZOMETER TIP

STANDPIPE TIP

LOGGED L. Zhang

DATE 01.04.2004

CHECKED K.S. Luk

DATE 02.04.2004

REMARKS

1. An inspection pit was excavated to 2.00m deep by hand tools.

2. One piezometer was installed with tip at 15.05m depth.

3. One water sample was taken at the bottom of hole.

DRILTECH**DRILLHOLE RECORD**

CONTRACT NO. GE/2003/19

HOLE NO.

BH57

SHEET

2 of 2

PROJECT Agreement No. CE 5/2002 (DS), Drainage Improvement in the Northern New Territories - Package B, Man Kam To Road

METHOD **ROTARY**

CO-ORDINATES

E 830333.97

N 842750.07

WORKS ORDER NO.

GE/2003/19.3A

MACHINE **SD4**

DATE

29.03.2004 to 30.03.2004

FLUSHING MEDIUM **WATER**ORIENTATION **VERTICAL**

GROUND LEVEL

+2.99 mPD

Drilling Progress	Casing Size	Water Level (m) Shift Start/End	Water Return %	TCR %	SCR %	RQD %	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11			70	100				15.25 26.35, 45.53 N=159	21 10.000 22 11.000 23 11.100 24 11.500	-8.11	10.91 11.10		V IV V	(Disturbed sample recovered as angular fine to coarse GRAVEL of rock fragments, occasionally with reddish brown, slightly silty sandy matrix. 9.00m to 9.10m, 9.50m to 9.55m, 10.00m to 10.08m, 10.91m to 11.10m: Weak to very weak, highly decomposed. 10.22m to 10.48m: Locally very weak and highly decomposed. Extremely weak, brownish yellow (10YR6/8) and olive (5Y5/3), completely decomposed slightly metamorphosed SILTSTONE (PHYLLITE?) with manganese oxide stained relict joints. (Very stiff, clayey SILT with occasional subangular fine to coarse gravel of quartz fragments at 15.00m to 15.10m)
12			70	85				5.8 13.13, 18.23 N=67	25 12.000 26 13.000 27 13.100 28 13.500					
13									29 14.000 30 15.000 31 15.100 32 15.500					
14			70	100				3.4 8.11, 14.21 N=54		-12.56	15.55			
15	PW	0.00 at 1800												End of hole at 15.55 m.
16														
17														
18														
19														
20														

- ↑ SMALL DISTURBED SAMPLE
- ↑ LARGE DISTURBED SAMPLE
- ▨ U76 SAMPLE
- U100 SAMPLE
- ▨ PISTON SAMPLE (76mm)
- ▨ MAZIER / PT SAMPLE
- SPT LINER SAMPLE
- ▲ WATER SAMPLE

- ↓ STANDARD PENETRATION TEST
- ✓ IN-SITU VANE SHEAR TEST
- IMPRESSION PACKER TEST
- PERMEABILITY TEST
- PRESSUREMETER TEST
- ▲ PIEZOMETER TIP
- STANDPIPE TIP

LOGGED

L. Zhang

DATE

01.04.2004

CHECKED

K.S. Luk

DATE

02.04.2004

REMARKS

HANKI CONTRACTORS (HK) & ASSOCIATES LIMITED										DRILLHOLE RECORD					HOLE NO. BH1/P	
CONTRACT NO.										SHEET 1 of 3						
PROJECT Proposed Temporary Storage and Distribution of Chilled Poultry/Meat in D.D. 89, Man Kam To Road, Sandy Ridge, N.T.																
METHOD RC										CO-ORDINATES E 830,624.80 N 842,851.40					W.O.:	
MACHINE & No. XY-2B										DATE: 03/03/2022 to 07/03/2022						
FLUSHING MEDIUM WATER										ORIENTATION VERTICAL					GROUND LEVEL +4.89 mPD	
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description			
3.3.22	PX	1.20m at 08:00						A 0.40 0.50					Soft to firm, grey, sandy SILT with many angular fine to medium gravel sized rock fragments. (FILL)			
1								B 0.90 1.00								
2							2.3 5.4, 6.7 N=22	C 1.40 1.50								
3								D 1.90 2.00								
4								1 2.10								
5								2 2.40 2.45								
6	PX 6.00 HX		0										Light brownish grey, angular coarse GRAVEL and COBBLE sized rock fragments. (COLLUVIUM)			
7			0				3.3 4.5, 6.7 N=22	3 4.00	+0.89	4.00						
8								4 5.10								
9								5 6.20 6.30	-1.32	6.20			Stiff, light yellowish brown, sandy SILT with occasional fine gravel sized rock fragments. (ALLUVIUM)			
10							3.4 6.7, 7.8 N=28	6 6.60 6.65								
								7 7.10								
								8 8.10 8.20								
								9 8.60 8.65								
								10 9.10								

Small Disturbed Sample
 Piston Sample
 U76 Undisturbed Sample
 U100 Undisturbed Sample
 Mazur Sample
 SPT Liner Sample
 Water Sample

Standard Penetration Test
 In-situ Vane Shear Test
 Permeability Test
 Televue Test
 Packer Test
 Piezometer Tip
 Standpipe Tip

LOGGED H.S.TSANG
DATE 16/03/2022
CHECKED P.NG
DATE 17/03/2022

REMARKS
 1. One piezometer was installed at 6.00m.

HANKI CONTRACTORS (HK) & ASSOCIATES LIMITED										DRILLHOLE RECORD					HOLE NO. BH1/P	
CONTRACT NO.										SHEET 2 of 3						
PROJECT Proposed Temporary Storage and Distribution of Chilled Poultry/Meat in D.D. 89, Man Kam To Road, Sandy Ridge, N.T.																
METHOD RC										CO-ORDINATES E 830,624.80 N 842,851.40					W.O.:	
MACHINE & No. XY-2B										DATE: 03/03/2022 to 07/03/2022						
FLUSHING MEDIUM WATER										ORIENTATION VERTICAL					GROUND LEVEL +4.89 mPD	
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R. (%)	S.C.R. (%)	R.Q.D. (%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description			
11	HX 12.86	1.12m at 18:00 2.52m at 08:00	94				4 4 7 7, 9, 9 N = 32 4 5 6 8, 9, 10 N = 33	12 10.10 13 10.30 14 10.60 15 11.10 16 12.10 17 12.30 18 12.60 12.86					As sheet 1 of 3.			
12																
13			100	45	0			T2-101	13.74			III	Moderately strong, light grey and light brownish white, moderately weathered thinly laminated meta-SILTSTONE. Joints are very closely spaced, rough planar, iron oxide and manganese oxide stained, dipping at 0-10° and 55-65°.			
14			98	24	21	18.6		T2-101	14.80	-9.92	14.80	III/IV	Moderately strong to moderately weak, light brownish grey, moderately to highly weathered, thinly laminated meta-SILTSTONE. Joints are very closely to closely spaced, rough planar and rough undulating, iron oxide stained, dipping at 0-10°, 40-50° and 70-80°.			
15			100	13	0	>20		T2-101	15.34							
16			95	9	0			T2-101	16.08							
17			87	15	0			T2-101	16.73							
18			100	25	0			T2-101	17.52							
19			100	63	31	15.3		T2-101	18.27							
20			100	35	17			T2-101	19.34	-14.46	19.34	III	Moderately strong, light grey and light brown, moderately weathered, thinly laminated meta-SILTSTONE. Joints are very closely spaced, rough planar, iron oxide stained,			
20			100	18	0	>20	T2-101									

● Small Disturbed Sample
 □ Piston Sample
 ▨ U76 Undisturbed Sample
 ■ U100 Undisturbed Sample
 ▨ Mazzer Sample
 □ SPT Liner Sample
 □ Water Sample

↓ Standard Penetration Test
 V In-situ Vane Shear Test
 □ Permeability Test
 □ Televiwer Test
 □ Packer Test
 □ Piezometer Tip
 □ Standpipe Tip

LOGGED H.S.TSANG
DATE 16/03/2022
CHECKED P.NG
DATE 17/03/2022

REMARKS

HANKI CONTRACTORS (HK) & ASSOCIATES LIMITED		DRILLHOLE RECORD				HOLE NO. BH1/P								
		CONTRACT NO.				SHEET 3 of 3								
PROJECT Proposed Temporary Storage and Distribution of Chilled Poultry/Meat in D.D. 89, Man Kam To Road, Sandy Ridge, N.T.														
METHOD RC				CO-ORDINATES E 830,624.80 N 842,851.40		W.O.:								
MACHINE & No. XY-2B						DATE: 03/03/2022 to 07/03/2022								
FLUSHING MEDIUM WATER				ORIENTATION VERTICAL		GROUND LEVEL +4.89 mPD								
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description	
20			100	18	0	>20		T2-101	20.34	-15.46	20.34	III	dipping at 0-10°, 30-40° and 55-65°.	
21			100	41	35			T2-101				III	As sheet 2 of 3. Moderately strong, light grey to dark grey and light greyish white, moderately weathered, thinly laminated meta-SILTSTONE. Joints are closely spaced, rough planar and smooth planar, iron oxide stained, dipping at 0-10°, 25-35° and 55-65°.	
22		1.23m at 18:00 2.48m at 08:00	100	84	75			T2-101	21.79					
23			100	51	30			T2-101	22.59					
24		1.19m at 18:00 2.54m at 08:00	100	68	60	8.6		T2-101	23.33					
25			100	87	71			T2-101	24.50					
26			100	65	49			T2-101	25.40					
27		1.19m at 18:00	100	90	73			T2-101	26.32					
28								T2-101	27.56	-22.68	27.56			End of Investigation Hole at 27.56m.
29														
30														
● Small Disturbed Sample ▣ Piston Sample ▨ U76 Undisturbed Sample ▩ U100 Undisturbed Sample ▧ Mazier Sample ▭ SPT Liner Sample ◻ Water Sample ↓ Standard Penetration Test ∇ In-situ Vane Shear Test — Permeability Test — Televiwer Test — Packer Test — Piezometer Tip □ Standpipe Tip								LOGGED <u>H.S.TSANG</u> DATE <u>16/03/2022</u> CHECKED <u>P.NG</u> DATE <u>17/03/2022</u>		REMARKS				

TRIAL PIT RECORD

TRIAL PIT NO
TP1

HANKI CONTRACTORS (HK) & ASSOCIATES LIMITED		PROJECT : Proposed Cold Storage and Distribution Centre of Poultry / Meat at Man Kam To Road, Sha Ling, N.T.				LOGGED BY : H.S.TSANG DATE : 22/3/2022		CO-ORDINATES : E 830624.30 N 842645.60		GROUND LEVEL : 4.596 m.P.D. EXCAVATION DATE : 21/3/2022 BACKFILL DATE : 30/3/2022		TRIAL PIT NO : TP1	
CONTRACT NO. :		WORKS ORDER NO. :		Sketch Face A : 1.5 m Face B : 1.5 m Face C : 1.5 m Face D : 1.5 m		Depth (m) 0 1 2 3 4 5		Legend		Weathering Grade		Description Stiff, moist, light brownish grey, sandy SILT with many angular fine to coarse gravel sized rock and many grass fragments. (FILL)	
Samples & Tests Datum 4.596m P.D.													
Remarks: (a) - Concrete (b) - Boulder (c) - Concrete slab (thickness of 140mm)													
PLAN													
SECTION (NOT TO SCALE)													
SYMBOL													

TRIAL PIT NO

TP2

TRIAL PIT RECORD										TRIAL PIT NO TP2	
PROJECT : Proposed Cold Storage and Distribution Centre of Poultry / Meat at Man Kam To Road, Sha Ling, N.T.				LOGGED BY : H.S.TSANG DATE : 22/3/2022		CO-ORDINATES : E 830575.00 N 842859.60		GROUND LEVEL : 5.457 m.P.D. EXCAVATION DATE : 21/3/2022 BACKFILL DATE : 24/3/2022		TRIAL PIT NO : TP2	
CONTRACT NO. :				WORKS ORDER NO. :		Weathering Grade		Legend		Depth (m)	
Samples & Tests		Depth (m)		Sketch		Face A : 1.5 m		Face B : 1.5 m		Face C : 1.5 m	
Datum 5.457 m.P.D.		0		Face A : 1.5 m		Face B : 1.5 m		Face C : 1.5 m		Face D : 1.5 m	
0.40		0.85		1.00		1.40		1.40		1.40	
1		2		3		4		5		6	
7		8		9		10		11		12	
13		14		15		16		17		18	
19		20		21		22		23		24	
25		26		27		28		29		30	
31		32		33		34		35		36	
37		38		39		40		41		42	
43		44		45		46		47		48	
49		50		51		52		53		54	
55		56		57		58		59		60	
61		62		63		64		65		66	
67		68		69		70		71		72	
73		74		75		76		77		78	
79		80		81		82		83		84	
85		86		87		88		89		90	
91		92		93		94		95		96	
97		98		99		100		101		102	
103		104		105		106		107		108	
109		110		111		112		113		114	
115		116		117		118		119		120	
121		122		123		124		125		126	
127		128		129		130		131		132	
133		134		135		136		137		138	
139		140		141		142		143		144	
145		146		147		148		149		150	
151		152		153		154		155		156	
157		158		159		160		161		162	
163		164		165		166		167		168	
169		170		171		172		173		174	
175		176		177		178		179		180	
181		182		183		184		185		186	
187		188		189		190		191		192	
193		194		195		196		197		198	
199		200		201		202		203		204	
205		206		207		208		209		210	
211		212		213		214		215		216	
217		218		219		220		221		222	
223		224		225		226		227		228	
229		230		231		232		233		234	
235		236		237		238		239		240	
241		242		243		244		245		246	
247		248		249		250		251		252	
253		254		255		256		257		258	
259		260		261		262		263		264	
265		266		267		268		269		270	
271		272		273		274		275		276	
277		278		279		280		281		282	
283		284		285		286		287		288	
289		290		291		292		293		294	
295		296		297		298		299		300	
301		302		303		304		305		306	
307		308		309		310		311		312	
313		314</									



APPENDIX D

Extract of DEVB TC(W) No. 2/2018

Definitions of Registrable Features

Man-made Features

- C - Cut slope ≥ 3 m high with a surface sloping at $\geq 15^\circ$.
- F - Fill slope ≥ 5 m high, or posing a direct risk to life (i.e. Consequence-to-life Category 1 or 2) and ≥ 3 m high, with a surface sloping at $\geq 15^\circ$ and a minimum fill thickness of 1 m.
- R - Retaining wall ≥ 3 m high.
- CR - Cut slope with a surface sloping at $\geq 15^\circ$ together with associated retaining wall(s) at crest, middle or toe of the slope, and that the total height is ≥ 3 m.
- FR - Fill slope with a surface sloping at $\geq 15^\circ$ and a minimum fill thickness of 1m, together with associated retaining wall(s) at crest, middle or toe of the slope, and that the total height is ≥ 5 m, or the feature is posing a direct risk to life (i.e. Consequence-to-life Category 1 or 2) and its total height is ≥ 3 m.

Note:

- Where a series of retaining walls of less than the registrable height are on an overall slope angle $\geq 45^\circ$, their heights should be combined to judge if they are registrable.

Natural Terrain Hazard Mitigation Measures

- ND - Defence measures that resists and/or contain landslide debris and/or boulders from natural hillsides from reaching buildings and facilities, e.g. check-dams (rigid barriers), flexible barriers, earth bunds and boulder fences.
- NS - Slope stabilisation measures constructed on natural hillsides to prevent failure which require regular maintenance, e.g. designed raking drains and surface drainage, concrete buttresses ≥ 3 m high that are constructed to support large boulders affecting and in close proximity to Consequence-to-life Category 1 facilities.

Notes:

- Although natural hillsides do not require maintenance, natural terrain hazard mitigation measures requiring regular maintenance to ensure their proper functioning should be registered.
- When the geometry of a natural hillside is substantially modified by earthworks, such as regrading, the hillside should be registered as man-made feature(s) as appropriate.
- Soil nails, rock dowels/bolts and concrete buttresses less than 3m high constructed on natural hillsides under the Landslip Prevention and Mitigation Programme and public works projects require little maintenance and therefore are normally not registered unless otherwise specified by the Designer. However, project departments are required to provide information of such works in a similar way as that for feature registration to GEO for record and management purposes.

Marking of Feature Boundary
C, F, R, CR, FR - plan boundary of the feature ND, NS - boundary of the mitigation measures that require regular maintenance Note: - Feature boundaries are generally marked on 1:1000 scale survey sheets to indicate the approximate extents of the features in the SIS. Land survey is normally not carried out for the purpose of marking the feature boundaries. However, if land survey of the feature boundaries has been carried out (e.g. new works projects and slope boundary updating), the survey data should be submitted to GEO.

- Feature boundaries are generally marked on 1:1000 scale survey sheets to indicate the approximate extents of the features in the SIS. Land survey is normally not carried out for the purpose of marking the feature boundaries. However, if land survey of the feature boundaries has been carried out (e.g. new works projects and slope boundary updating), the survey data should be submitted to GEO.