

ASSESSMENT REPORT
FOR
TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR
LAND PARCEL ST28I (MK11-03745L) AT SUNGEI TENGAH ROAD

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1 Introduction

This report covers trial pit works and sub-surface condition assessment of Land Parcel ST28I at Sungei Tengah Road for the purpose of sub-surface soil condition assessment. The manual excavation of trial pit is carried out to assess soil condition and presence of foreign materials, if any. A total of 8 trial pits were excavated within the land parcel and inspected by Professional Engineer (PE) from 31st December 2020 to 9th January 2021. The inspection report, PE's assessment and other details related to the trial pits exercise are included in this report.



Fig 1. Location Plan of ST28I.

2 Scope of Works

2.1 General

The scope of works for trial pits and sub-condition assessment of land parcel ST28I include the following:

- Cable detection of utilities / services by LCDW;
- Selection of trial pits location by PE;
- Setting out and recording of trial pits location by Registered Surveyor;
- Manual excavation of trial pits of 1.5m x 1.5m x 1.5m (depth);
- Visual inspection of trial pits by PE to assess the sub-surface condition and PE's report should include the following:
 - Sub-surface soil strata;
 - Description of excavated soil material
 - Presence of foreign materials, if any;
 - Presence of sub-surface water, if any;
 - Photographs; and
 - Other findings, if any.
- Reinstatement works
- Preparation and submission of assessment report endorsed by PE.

2.2 Methodology

The objective of this project is to conduct visual inspections of sub-surface soil within the excavated trial pits and produce a sub-surface condition report. Preliminary site survey was conducted by the field team and the underground cable detection work was carried out by the Licensed Cable Detection Worker.

The proposed trial pit locations were submitted to and approved by the PE. Notification of Commencement of Earth Work was submitted and approved by the authorities. Safety measures were installed prior to the commencement of excavation works. The trial pits were excavated manually and the locational details were taken by the Registered Surveyor.

The Professional Engineer visually inspected the trial pits from the top to bottom level for differences in color, texture and soil structure according to Identification and Description of Soil (BS 5930, 1999) and Munsell Color Chart. Measurement of soil layer and observations for water table level were conducted. All the findings were recorded and photographs of the trial pits were taken. All trial pits excavated were backfilled and reinstated.

3 Inspection Photographs and Assessment

3.1 Locations of the trial pits for ST28I.

The excavated materials were stockpiled beside the trial pit for inspection and assessment by PE. The trial pit depth was also measured and recorded.

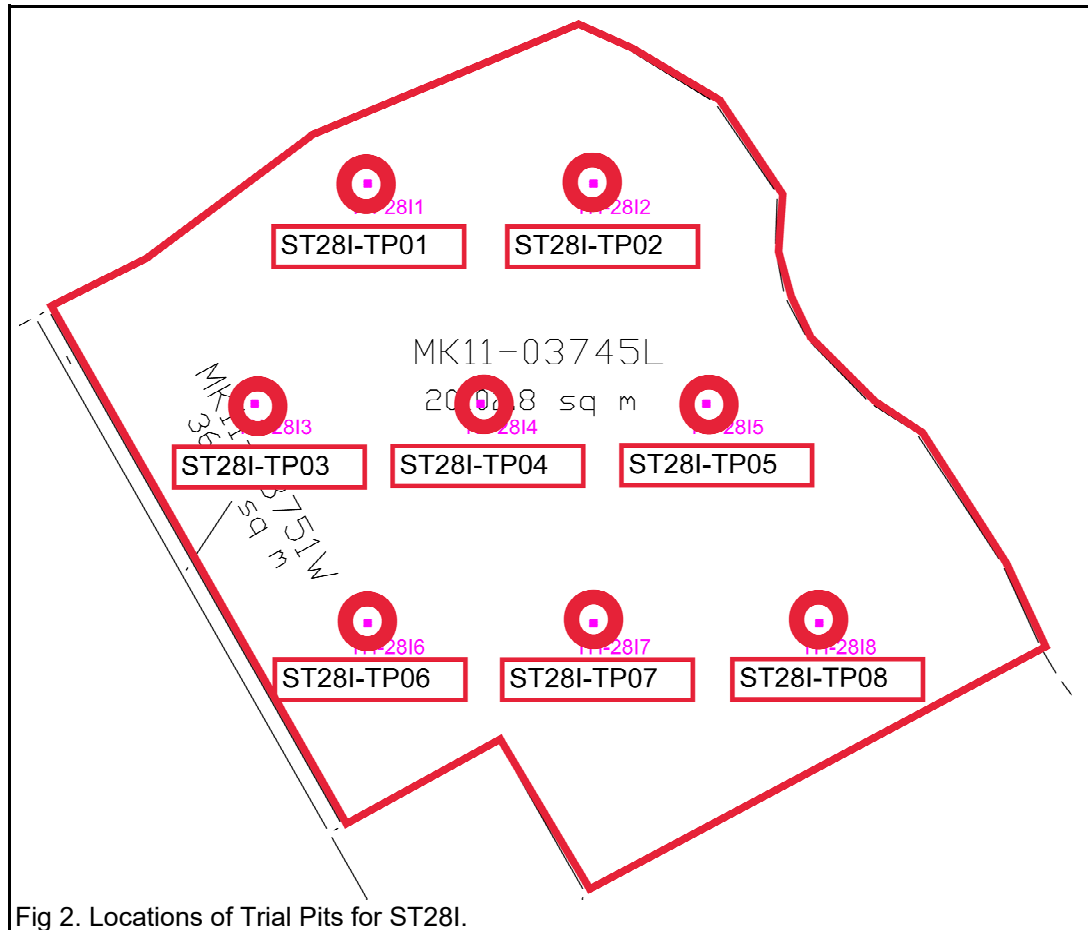


Fig 2. Locations of Trial Pits for ST28I.

3 Inspection Photographs and Assessment

3.1 Locations of the trial pits for ST28I.

Table 1. Locations coordinate for trial pits for ST28I.

Surveyed by Lee Teck Kim, Registered Surveyor No.81.

S/N	Trial Pit Nos.	Coordinate
1	ST28I-TP1	N42787.301, E16338.518
2	ST28I-TP2	N42787.301, E16383.518
3	ST28I-TP3	N42742.301, E16316.018
4	ST28I-TP4	N42742.301, E16361.018
5	ST28I-TP5	N42742.301, E16406.018
6	ST28I-TP6	N42697.301, E16338.518
7	ST28I-TP7	N42697.301, E16383.518
8	ST28I-TP8	N42697.301, E16428.518

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.1 ST28I-TP1 – Photographs



PE's observation for ST28I-TP1:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.2 ST28I-TP1 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP1	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-07
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42787.301	TEST NUMBER:	200973-032
EXCAVATION METHOD:	MANUAL	EASTING:	16338.518	SHEET NO:	1 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 -1.0		Pale yellowish brown Fine to medium sandy SILT with small gravels	MS	
	1.0 1.1 1.2 1.3 1.4 -1.5		Greyish brown Medium to coarse peaty SILT	MPt	
	1.5 1.6 1.7 1.8 1.9 2.0		Termination Depth at 1.5m depth BOTTOM OF TRIAL PIT		

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.3 ST28I-TP2 – Photographs



PE's observation for ST28I-TP2:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.4 ST28I-TP2 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP2	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-06
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42787.301	TEST NUMBER:	200973-033
EXCAVATION METHOD:	MANUAL	EASTING:	16383.518	SHEET NO:	2 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1	· · × × × ×	Reddish brown and yellowish brown Medium to coarse sandy SILT with large gravels	MS	
	0.2	· · × × × ×			
	0.3	· · × × × ×			
	0.4	· · × × × ×			
	0.5	· · × × × ×			
	0.6	· · × × × ×			
	0.7	· · × × × ×			
	0.8	· · × × × ×			
	0.9	· · × × × ×			
	1.0	· · × × × ×			
	1.1	· · × × × ×			
	1.2	· · × × × ×			
	1.3	· · × × × ×			
	1.4	· · × × × ×			
-1.5	1.5	· · × × × ×	Termination Depth at 1.5m depth		
	1.6		BOTTOM OF TRIAL PIT		
	1.7				
	1.8				
	1.9				
	2.0				

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.5 ST28I-TP3 – Photographs



PE's observation for ST28I-TP3:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.6 ST28I-TP3 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP3	SURFACE ELEVATION:	N/A	TEST DATE:	2020-12-31
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42742.301	TEST NUMBER:	200973-34
EXCAVATION METHOD:	MANUAL	EASTING:	16316.018	SHEET NO:	3 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1 0.2 0.3 0.4 -0.5		Reddish brown and dark reddish brown Medium to coarse sandy SILT with small gravels	MS	
	0.5 0.6 0.7 -0.8		Very dark grey Medium to coarse peaty SILT	MPt	
	0.8 0.9 1.0 1.1 1.2 1.3 1.4 -1.5		Reddish brown and yellowish brown Fine to coarse sandy SILT with small gravels	MS	
	1.5 1.6 1.7 1.8 1.9 2.0		Termination Depth at 1.5m depth BOTTOM OF TRIAL PIT		

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.7 ST28I-TP4 – Photographs



PE's observation for ST28I-TP4:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.8 ST28I-TP4 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP4	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-06
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42742.301	TEST NUMBER:	200973-35
EXCAVATION METHOD:	MANUAL	EASTING:	16361.018	SHEET NO:	4 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1	· · × × × ×	Reddish brown and yellowish brown Medium to coarse sandy SILT with small gravels	MS	
	0.2	· · × × × ×			
	0.3	· · × × × ×			
	0.4	· · × × × ×			
	0.5	· · × × × ×			
	0.6	· · × × × ×			
	0.7	· · × × × ×			
	0.8	· · × × × ×			
	0.9	· · × × × ×			
-1.0	1.0	· · × × × ×			
	1.1	· · × × × ×	Dark reddish brown Medium to coarse sandy SILT with small gravels	MS	
	1.2	· · × × × ×			
	1.3	· · × × × ×			
	1.4	· · × × × ×			
-1.5	1.5	· · × × × ×			
	1.6		Termination Depth at 1.5m depth BOTTOM OF TRIAL PIT		
	1.7				
	1.8				
	1.9				
	2.0				

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.9 ST28I-TP5 – Photographs



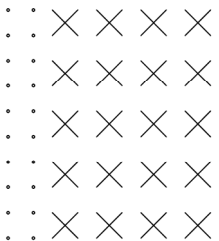
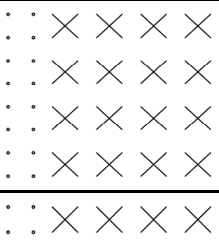
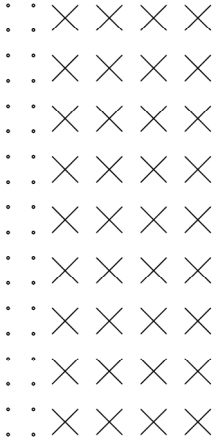
PE's observation for ST28I-TP5:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.10 ST28I-TP5 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP5	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-07
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42742.301	TEST NUMBER:	200973-36
EXCAVATION METHOD:	MANUAL	EASTING:	16406.018	SHEET NO:	5 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1 0.2 0.3 -0.4		Brownish yellow Fine to coarse sandy SILT with small gravels	MS	
	0.4 0.5 0.6 -0.7		Reddish grey Medium to coarse sandy SILT with small gravels	MS	
	0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 -1.5		Dark reddish brown Medium to coarse sandy SILT with small gravels	MS	
	1.5		Termination Depth at 1.5m depth		
	1.5		BOTTOM OF TRIAL PIT		
	1.6 1.7 1.8 1.9 2.0				

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.11 ST28I-TP6 – Photographs



PE's observation for ST28I-TP6:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.12 ST28I-TP6 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP6	SURFACE ELEVATION:	N/A	TEST DATE:	2020-12-31
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42697.301	TEST NUMBER:	200973-37
EXCAVATION METHOD:	MANUAL	EASTING:	16338.518	SHEET NO:	6 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1	· · × × × ×	Reddish brown Medium to coarse sandy SILT with large gravels	MS	
	0.2	· · × × × ×			
	0.3	· · × × × ×			
	0.4	· · × × × ×			
	0.5	· · × × × ×			
	0.6	· · × × × ×			
	0.7	· · × × × ×			
	0.8	· · × × × ×			
	0.9	· · × × × ×			
	1.0	· · × × × ×			
	1.1	· · × × × ×			
	1.2	· · × × × ×			
	1.3	· · × × × ×			
	1.4	· · × × × ×			
-1.5	1.5	· · × × × ×	Termination Depth at 1.5m depth		
	1.6		BOTTOM OF TRIAL PIT		
	1.7				
	1.8				
	1.9				
	2.0				

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.13 ST28I-TP7 – Photographs



PE's observation for ST28I-TP7:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.14 ST28I-TP7 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP7	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-09
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42697.301	TEST NUMBER:	200973-38
EXCAVATION METHOD:	MANUAL	EASTING:	16383.518	SHEET NO:	7 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1	· · × × × ×	Pale reddish brown and yellowish brown Fine to coarse sandy SILT with small gravels	MS	
	0.2	· · × × × ×			
	0.3	· · × × × ×			
	0.4	· · × × × ×			
	0.5	· · × × × ×	Reddish brown and yellowish brown Fine to coarse sandy SILT with small gravels	MS	
	0.6	· · × × × ×			
	0.7	· · × × × ×			
	0.8	· · × × × ×			
	0.9	· · × × × ×			
	1.0	· · × × × ×			
	1.1	· · × × × ×			
	1.2	· · × × × ×			
	1.3	· · × × × ×	Dark reddish brown Medium to coarse sandy SILT with small gravels	MS	
	1.4	· · × × × ×			
	1.5	· · × × × ×			
	1.6				
	1.7		Termination Depth at 1.5m depth BOTTOM OF TRIAL PIT		
	1.8				
	1.9				
	2.0				

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.15 ST28I-TP8 – Photographs



PE's observation for ST28I-TP8:

No anomaly found within the excavated soil and trial pit, no presence of sub-surface water.

3.2 Photographs and Soil Profile Log of Trial Pits

3.2.16 ST28I-TP8 – Soil Profile Log

PB&M PTE LTD		PROVISION OF TRIAL PITS AND SUB-SURFACE CONDITION ASSESSMENT FOR LAND PARCEL NO. ST28I AT SUNGEI TENGAH ROAD			
		CLIENT: SINGAPORE FOOD AGENCY			
TRIAL PIT NO:	ST28I-TP8	SURFACE ELEVATION:	N/A	TEST DATE:	2021-01-09
TRIAL PIT DIMENSION:	1.5m (L) x 1.5m (W)	NORTHING:	42697.301	TEST NUMBER:	200973-39
EXCAVATION METHOD:	MANUAL	EASTING:	16428.518	SHEET NO:	8 OF 8

Reduce Level	Depth (m)	Graphic Log	Material Description	BS Soil Classification	Additional Remarks
	0.1	· · × × × ×	Reddish brown and yellowish brown Fine to coarse sandy SILT with small gravels	MS	
	0.2	· · × × × ×			
	0.3	· · × × × ×			
	0.4	· · × × × ×			
-0.5	0.5	· · × × × ×			
	0.6	· · × × × ×	Dark reddish brown Fine to coarse SANDY SILT with small cobbles	MS	
	0.7	· · × × × ×			
	0.8	· · × × × ×			
	0.9	· · × × × ×			
	1.0	· · × × × ×			
	1.1	· · × × × ×			
	1.2	· · × × × ×			
	1.3	· · × × × ×			
	1.4	· · × × × ×			
-1.5	1.5	· · × × × ×			
	1.6		Termination Depth at 1.5m depth BOTTOM OF TRIAL PIT		
	1.7				
	1.8				
	1.9				
	2.0				

4 Conclusion

From the visual inspection of the excavated trial pits within parcel ST281, the general soil composition of the land parcel up to 1.5m depth consist of sandy silt with varying textures. The surface layer across all trial pits were covered with grass turfing, the subsoil layer consists of partially decayed organic matter followed by uniformed yellowish-brown and reddish-brown lower subsoil layer. None of the trial pits or excavated showed signs of anomaly or foreign object. Conclusively, there was no sub-surface water found within all eight excavated trial pits.

All field inspections had been carried out by the Professional Engineer or under his supervision. The results recorded were verified to the best of his knowledge and presented in this report. All the works conducted were in compliance with all aspects of the Building Control Act and Regulations, relevant Codes of Practice and Standards.



Professional Engineer's Signature and Stamp

19/2/2021

Date

5 Appendices

5.1 Legend

LEGENDS FOR DIFFERENT SOIL AND ROCK TYPES

HATCHING PATTERNS FOR GEOLOGICAL FORMATION CLASSIFICATION



FILL

KALLANG FORMATION



F1 : FLUVIAL SAND



F2 : FLUVIAL CLAY



E : PEAT/ORGANIC CLAY



M : MARINE CLAY



Kr : REEF MEMBER



B : BEACH (LITTORAL)

OLD ALLUVIUM



O(A)



O(D)



O(B)



O(E)



O(C)

JURONG FORMATION



S(I)



S(II)



S(III)



S(IV)



S(V)



S(VI)

BUKIT TIMAH GRANITE



G(I)



G(II)



G(III)



G(IV)



G(V)



G(VI)

FORT CANNING BOULDER BED



FCBB

HATCHING PATTERNS FOR SOIL CLASSIFICATION (BORELOGS)



AS : ASPHALT, TAR



BF : BACKFILL



BE : BEDROCK



BR : BRICK



BO : BOULDER



C : CLAY / MARINE CLAY



CO : ORGANIC CLAY



CS : SANDY CLAY



CG : GRAVELY CLAY



Cpt : PEATY CLAY



CNG : CONGLOMERATE



CON : CONCRETE



GM : SILTY GRAVEL



G : GRAVEL



GS : SANDY GRAVEL



Gpt : PEATY GRAVEL



GC : CLAYEY GRAVEL



GR : GRANITE



GO : ORGANIC GRAVEL



LI : LIMESTONE



M : SILT



MPt : PEATY SILT



MG : GRAVELLY SILT



MU : MUDSTONE



MS : SANDY SILT



MO : ORGANIC SILT



Pt : PEAT



PtS : SANDY PEAT



PtG : GRAVELLY PEAT



PtM : SILTY PEAT



PtC : CLAYEY PEAT



S : SAND



SG : GRAVELLY SAND



SO : ORGANIC SAND



SM : SILTY SAND



SC : CLAYEY SAND



SPt : PEATY SAND



SA : SANDSTONE



SI : SILTSTONE



SH : SHALE



SCH : SCHIST



TB : TIMBER



Rf : REEF

5 Appendices

5.2 Classification / Symbol of Soil and Rock Type

Table 1.1 Classification/Symbol of Soil and Rock Type

REFERENCE	SOIL & ROCK TYPE	GENERAL DESCRIPTION	GEOLOGICAL FORMATION (PWD, 1976)
B	BEACH (Littoral)	Sandy, sometimes silty, with gravels, coral and shells	KALLANG Littoral, possibly also part of all other members & TEKONG
E	ESTUARINE (Transitional)	Peats, peaty and organic clays, organic sands	KALLANG Transitional, possibly part of Alluvial and Marine.
F	FLUVIAL (Alluvial)	Sands, silty sands, silts and clays	KALLANG Alluvial, possibly part of all other members and TEKONG.
F1		Predominantly granular soils including silty sands, clayey sands and sandy silts	Bed of Alluvial Member of KALLANG
F2		Cohesive soils including silty clays, sandy clays and clayey silts	Bed of Alluvial Member of KALLANG
M	MARINE	Very soft to soft blue or grey clay	KALLANG Marine Member
O	OLD ALLUVIUM	Very weak to weak beds of sandstone and mudstone. See C-5 for weathering classification	OLD ALLUVIUM
FC	FORT CANNING BOULDER BED (also known as S3, Bouldery Clay or Boulder Bed)	A colluvial deposit of boulders in a soil matrix. The matrix is typically a hard silty clay, but can be granular. The material is largely derived from the rocks and weathered rocks of the Jurong Formation	Not shown in PWD (1976)
S	SEDIMENTARIE S (Rocks & associated soils)	Sandstones, siltstones mudstones, conglomerate and limestone. The rock has been subjected to a varying degree of metamorphism.	JURONG Tengah, Rimau, Ayer Chawan and Queenstown Facies (plus the Pandan Limestone, which was not identified in PWD (1976)
G	GRANITE (Rock and associated Residual soils)	Granitic rocks, including granodiorite, adamellite and granite.	BUKIT TIMAH GRANITE

5.3 Identification of Description of Soil

Table 2.1 Identification and description of soils (BS 5930, 1999)

Soil group	Density/compactness/strength		Discontinuities	Bedding	Colour	Composite Soil types (mixtures of basic soil types)	Principle Shape	Particle size	PRINCIPAL SOIL TYPE			
	Term	Field test										
Very coarse soils	Loose	By inspection of voids and particle packing	Scale of spacing of discontinuities		Scale of bedding thickness		Red Orange Yellow Brown Green	For mixtures involving very coarse soil, see 41.4.4.3		200	BOULDER	
	Dense		Term	Mean Spacing mm	Term	Mean thickness mm		Term	Approx. % ^{c)} Secondary		Angular Sub angular	COBBLES
Coarse soils (over about 65% sand and gravel sizes)	Borehole with SPT N-value		Very widely	Over 2000	Very Thickly Bedded	Over 2000	Blue White Cream Gray Black etc.	Slightly (sandy ^{a)})	<5	Sub rounded	Coarse 20 Medium	GRAVEL
	Very loose 0-4		Widely	2000 to 600	Thickly Bedded	2000 to 600						
	Loose 4-10		Medium	600 to 200	Medium Bedded	600 to 200		(sandy ^{a)})	5 to 20 ^{b)}	Rounded Flat Tabular Elongated	6 Fine	
	Medium dense 10-30		Closely	200 to 60	Thinly Bedded	200 to 60						
	Dense 30-50		Very Closely	60 to 20	Very thinly Bedded	60 to 20		Very ^{a)} (sandy ^{a)})	>20 ^{b)}	Minor Constituent type	2 Coarse 0.6 Medium	
	Very dense >50		Extremely Closely	Under 20	Thickly Laminated	20 to 6						
	Slightly cemented	Visual examination: pick removes soil in lumps which can be abraded	Fissured	Break into blocks along unpolished discontinuities	Thinly laminated	Under 6		SAND AND GRAVEL	about 50 ^{b)}	Calcareous shelly, glauconitic, micaceous etc. using terms such as	0.2 Fine	
	Uncompact	Easily moulded or crushed in the fingers		Sheared	Breaks into blocks along polished discontinuities	Inter-bedded						Alternating layers of different types Prequalified by thickness term if in equal proportions. Otherwise thickness of and spacing between subordinate layers defined
Fine Soils (over about 35 % silt and clay sizes)	Compact	Can be moduled or crushed by strong pressure in the fingers	Spacing terms also used for distant between partings, isolated beds or laminac, dessication cracks, rootlets etc.	Inter-Laminated		Light Dark Mottled	Slightly (sandy ^{e)})	<35	Slightly calcareous,	0.02 Medium	CLAY/ SILT	
	Very soft 0-20	Finger easily pushed in up to 25mm										
	Soft 20-40	Finger pushed in up to 10mm										
	Firm 40-75	Thumb makes impression easily										
	Stiff 75-150	Can be indented slightly by thumb									CLAY	
	Very stiff 150-300	Can be indented by thumb nail										
	Hard (or very weak mudstone) Cu>300kPa	Can be scratched by thumbnail see 41.2.2										

Organic Soil	Firm	Fibres already compressed together	Fibrous	Plant remains recognizable and retains some strength	Transported mixtures Slightly organic clay or silt Slightly organic sand	Colour Grey as mineral	Contains finely divided or discrete particles of organic matter, often with distinctive smell, may oxidize rapidly. Describe as for inorganic soils using terminology above.
	Spongy	Very compressible and open structure	Pseudo-Fibrous	Plant remains recognizable, Strength lost	Organic clay or silt Organic sand	Dark gray Dark gray	
					Very organic clay or silt Very organic sand	Black Black	
	Plastic	Can be moulded in hand and smears fingers	Amorphous	Recognizable plant remains absent	Peat		

5 Appendices

5.3 Identification of Description of Soil (continued)

Table 2.1 Identification and description of soils (continued)

PRINCIPAL SOIL TYPE	Visual identification	Minor constituents	Stratum name	Example descriptions
BOULDERS	Only seen complete in pits or exposures	Shell fragments, pockets of peal, gypsum crystals, flint gravel, fragments of brick, rootlets, plastic bags etc using terms such as; with rare with occasional with abundant/frequent/ numerous	RECENT DEPOSITS, ALLUVIUM, WEATHERED BRACKLESHAM CLAY, LIAS CLAY, EMBANKMENT FILL, TOPSOIL, MADE GROUND OR GLACIAL DEPOSITS? etc.	Loose brown very sandy sub-angular fine to coarse flint GRAVEL with small pockets(up to 30mm)of clay. (TERRACE GRAVELS) Medium dense light brown gravelly clayey fine SAND, Gravel is fine (GLACIAL DEPOSITS) Stiff very closely sheared orange mottled brown slightly gravelly CLAY. Gravel is fine and medium of rounded quartzite. (REWORKED WEATHERED LONDON CLAY) Firm thinly laminated grey CLAY with closely spaced thick laminae of sand (ALLUVIUM) Plastic brown clayey amorphous PEAT (RECENT DEPOSITS)
COBBLES	Often difficult to recover whole from boreholes			
GRAVEL	Easily visible to naked eye: particle shape can be described: grading can be described.			
SAND	Visible to naked eye: no cohesion when dry: grading can be described.			
SILT	Only coarse silt visible with hand lens; exhibits little plasticity and marked dilatancy: slightly granular or silky to the touch; disintegrates in water; lumps dry quickly; possesses cohesion but can be powdered easily between fingers			
CLAY/SILT	Intermediate in behaviour between clay and silt. Slightly dilatant	%defined on a site or material specific basis or subjective		
CLAY	Dry lumps can be broken but not powdered between the fingers; they also disintegrate under water but more slowly than silt; smooth to the touch; exhibits plasticity but no dilatancy; sticks to the fingers and dries slowly; shrinks appreciably on drying usually showing cracks.			

Notes

a) Or described as coarse soil depending on mass behaviour

d) Gravelly sandy and/or silty or clayey

b) Or described as fine soil depending on mass behaviour

e) Gravelly and/ or sandy

c) %coarse or fine soil type assessed excluding cobbles and boulders

f) Gravelly of sandy

5 Appendices

5.4 Cable Detection Report

