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T. L. P. Ground Investigations Ltd.

Site Investigation Report

Site: Phase 2 Residential Development, Seagate Road, Long Sutton, Lincolnshire.

Client: D. Brown (Building Contractors) Ltd.

Date: 02.12.2022.

Brief

A new residential development is underway at a site situated on Seagate Road, Long Sutton, Lincolnshire. In order to establish the ground conditions in areas of the site which had not previously been investigated in detail (i.e. Phase 2 area), TLP Ground Investigations Ltd. were requested to return to the site and undertake additional exploratory boreholes. This involved:-

- The sinking of 22 No. sampling boreholes using dynamic sampling equipment.
- Identification of the prevailing soil and groundwater conditions.
- Examination and soils laboratory testing of selected samples.
- The provision of a brief report with borehole records and laboratory test results.

Site and Geology

The site of the proposed new residential development is located to the east of Seagate Road in the southern outskirts of the village of Long Sutton, Lincolnshire. The next phase of the development site (Phase 2) presently comprises part of the central section of a large arable field, which can currently be accessed directly from Seagate Road. At the time of the investigation, the site had recently been harvested with crop stubble still present on the ground surface.

The field is generally flat. The investigation was undertaken during mid November following a period of wet weather and at this time, the site surface was noted to be damp with no areas of standing water on the site surface. The adjacent site, which is under development and currently trafficked with plant and machinery was observed to have numerous areas of standing surface water particularly in wheel ruts.

Geology

From data obtained during earlier surveys undertaken at the site together with information shown on the British Geological Survey 1: 50 000 Series, the superficial soils overlying the site were anticipated to comprise Tidal Flat Deposits represented by silt and clay. The underlying solid geology is represented by the Ampthill Clay Formation, which is of Oxfordian age (Cretaceous).

Previous investigations undertaken as part of the initial phases of development revealed the presence of silty clay, silt and silty sand to depths of at least 4.00m beneath the surface.

The approximate locations of the additional exploratory boreholes have been indicated on the enclosed Borehole Location Plans and details of the strata encountered have been recorded on the enclosed borehole record sheets.

Ground Conditions

Topsoil

At the surface, each of the borings penetrated deposits of topsoil extending to depths of between 0.25m and 0.41m beneath the surface. This comprised mid brown, silty, slightly clayey soil which occasionally contained fine fragments of brick and other occasional stones.

Disturbed Ground

In three of the borings, deposits of disturbed ground were encountered beneath the topsoil. At the locations of BH20 (Plot 97) and BH36 (Plot 118), these deposits extended to depths of between 0.54m and 0.70m beneath the surface and comprised 'loose', brown and grey, very silty clay / clayey silt containing occasional fine fragments of brick, coal and broken pottery.

At the location of BH25 (Plot 102), a more significant thickness of disturbed ground was encountered extending to a depth of 2.40m beneath the surface. This comprised deposits of 'soft' / 'loose' brown, mottled rust brown and grey very silty clay / clayey silt containing occasional fine fragments of brick and coal.

Natural Stratum

The underlying natural stratum comprised a sequence of Tidal Flat Deposits, represented by silt and clay. In the majority of the borings, this initially comprised a layer of 'loose' to 'medium dense' silt resting on 'firm to stiff' or 'firm', brown, mottled rust brown and grey silty clay. Beneath the deposits of silty clay, the borings penetrated deposits of 'loose' or 'medium dense', brown, mottled rust brown silt or very silty clay / clayey silt. In a small number of the borings, the deposits of silty clay were absent and instead, the deposits of topsoil rested directly on the underlying deposits of silt or very silty clay / clayey silt. At depths of between 0.26m and 1.70m, the majority boreholes penetrated deposits of buff brown, 'loose' to 'medium dense' silt. Once penetrated, these deposits extended to the full depth of borehole penetration, some 3.00m beneath the surface. Very occasionally, pockets of slightly more clayey materials were encountered within the deposits of silt.

Groundwater

Groundwater seepages were encountered in all of the sampling boreholes at depths of between 1.65m and 2.20m beneath the surface. On completion, the side walls of the boreholes became slightly unstable and partially collapsed generally at the level of the standing water level. On completion, groundwater levels in the open boreholes settled out at depths of between 1.65m and 2.20m beneath the surface.

Laboratory and *In Situ* Testing - Geotechnical

Whilst much of the ground encountered at slightly greater depth was predominantly fine granular (i.e. silt and sand)i.e. 'non –plastic', Atterberg Limit tests were performed on representative samples of silty clay obtained from some of the near surface soils and the recorded Plastic Index values (PI's) have been indicated on the enclosed summary laboratory data sheets. Plastic Index (PI's) on the more clayey material ranged between 26.5% and 30.9%, indicating that the material has a maximum of a **'medium' volume change potential'** (NHBC Standards Chapter 4.2 'Building near Trees').

Some of the near surface and much of the slightly deeper stratum was predominantly granular in composition (silt), so Standard Penetration Tests (SPT's) were performed as the borings were advanced in order to establish the relative compactness of the stratum *in situ*. The results of the tests have been interpreted as 'N' values (blows for 300mm penetration) and these are indicated on the enclosed borehole record sheets. In those tests performed within the deposits of silt, SPT 'N' values generally ranged between 4 and 14 (uncorrected for overburden), indicating a 'loose' to 'medium dense' state of compaction. Similar

tests performed within the deposits of very silty clay / clayey silt, recorded 'N' values of between 4 and 12, also indicative of a 'loose' to 'medium dense' state of compaction.

SPT's performed within the deposits of silty clay recorded SPT 'N' values of between 6 and 8, indicating a generally 'firm' consistency for these deposits. Tests performed within the deposits of silty topsoil and disturbed ground, recorded 'N' values more typically between 3 and 9, indicating a generally 'loose' state of compaction.

Hand vane tests were performed on sections of the undisturbed soil cores recovered from the bands of silty clay within the sequence and the results have been recorded on the enclosed borehole record sheets. Hand vane values for the silty clay ranged between 51kN/m^2 and 100kN/m^2, indicating consistencies ranging between 'firm' and 'stiff' for these deposits. Tests performed on samples obtained from the very silty clay / clayey silt layers, shear vane strength values varied between 22kN/m^2 and 77kN/m^2, the lower values being recorded on the more silty (i.e. less cohesive) material.

Shear strength values recorded on samples recovered from the thicker deposits of disturbed ground encountered at the location of BH25 (Plot 102) ranges between 31kN/m^2 and 35kN/m^2, indicating a generally 'soft' consistency for the deposit.

Chemical tests performed on a representative samples of the near surface soils recorded a water-soluble sulphate concentrations of between 0.01g/l – 0.02g/l (2:1water / soil extract) with pH varying between 7.3 and 7.5.

Engineering Comments - Geotechnical

- The recent borings have revealed that beneath a covering of topsoil, the majority of the site is initially underlain by Tidal Flat Deposits comprising 'stiff' becoming 'firm' silty clay and 'loose' to 'medium dense' silt and very silty sand / sandy silt. In places the more granular horizons are interrupted by bands of 'firm to stiff' becoming 'soft', silty clay.

- Over the majority of the site, the Tidal Flat Deposits will provide a satisfactory bearing stratum for shallow spread foundations provided the magnitude of loading is limited so as not to overstress the 'looser'/ 'softer' zones present within the sequence. Indeed shallow spread foundations are being employed for the dwellings on the adjacent first phase of the development where similar ground conditions are present. As a preliminary guide to design and using conservative SPT values (corrected for the effects of overburden pressure) and shear strength data recorded in the recent borings, it has been estimated that for strip foundations, say 600mm to 800mm wide, resting on natural deposits of silt / clayey silt / silty clay at around 0.80m depth, the safe foundation bearing pressure would be of the order 75kN/m^2 (i.e. the same as that adopted for the first phases of the development). At this loading, long term settlement should be limited to 25mm.

- **At the location of BH25 (Plot 102), a more significant thickness of disturbed ground was encountered extending to a depth of 2.40m beneath the surface.** This comprised 'soft' and 'loose' deposits of mixed, brown and grey very silty clay / clayey silt containing inclusions of coal and brick. It is unclear why a greater thickness of disturbed ground is present within this location. **Whatever their origin, these soils will not provide a satisfactory bearing stratum for conventional shallow spread foundations for the dwelling on Plot 102**. Owing to the lateral and vertical extent of this made ground feature being undefined to any great degree, care should be taken in the excavation of foundations for the adjacent properties to ensure any trench foundations are bearing on natural Tidal Flat deposits and not made ground. As a foundation solution to plot 102, consideration should be given to supporting this unit using a system of pile foundations with the piles penetrating the deposits of disturbed ground and generating their carrying capacity from adequate penetration into the underlying more competent Tidal Flat deposits or deeper Ampthill Clay formation.

  Using deep borehole information obtained from the initial Site Investigation Report for the site prepared by Humberside Materials Laboratory REF 1197/5350/P/P2 dated November 2021, it appears that deposits of 'medium dense' sand extend from around 10.00m to between 15m to 16.8m beneath the surface, where they overlay the deposits of 'firm' becoming 'stiff', greenish grey, mottled grey, silty, slightly sandy clay containing occasional fine, medium and coarse fragments of chalk and flint

gravel. This being the case, pile lengths of the order of 12m to 20m can be anticipated for budgeting purposes.

- The carrying capacity of piles (plot 102) is fundamentally related to their method of installation therefore advice should be sought from experienced piling contractors in order to establish the most appropriate type and length of pile to adopt given the prevailing ground conditions. As a preliminary guide for design, a 200mm to 220mm diameter, driven and cast in situ, steel cased pile, terminated within deposits of 'medium dense to dense' silty sand and / or stiff silty Ampthill clay, pile loadings of 150kN to 200kN could be anticipated.

- The results of Atterberg limit tests performed on representative samples obtained from the near surface deposits of silty **clay**, indicate that it is a material of 'medium volume change potential' and as such, could experience volume changes associated with seasonal fluctuations in soil moisture content, **which could be exacerbated by tree root action**. In this instance the NHBC Standard Chapter 4.2 'Building near Trees' provides useful guidance on building near trees particularly within clayey soils. However, no significant existing trees or vegetation were identified within influencing distance of the proposed properties in this second phase of the development, however, care should be exercised with any proposed new plantings.

- Over the majority of the site, the covering of silty and clayey topsoil extended to depths of between 0.25m and 0.41m beneath the surface. Provided any topsoil is first removed and replaced with compacted stone of suitable grading, ground bearing floor slabs could be considered for the majority of the dwellings. At the location of BH25 (Plot 102), where pile foundations are to be installed, a fully suspended ground floor construction will be required. Indeed, a fully suspended ground floor slab construction could be adopted for all of the proposed dwellings if this is the preferred option.

- Initial groundwater seepages were encountered at depths of between 1.65m and 2.20m beneath the surface. It is therefore considered unlikely that any significant groundwater seepages will be encountered in excavations for shallow foundations. However, the near surface soils are occasionally granular in composition and therefore may be only temporarily self supporting in open excavations. Deeper excavations may require the provision of trench supports and dewatering facilities to ensure that construction can proceed under optimum conditions.

- Chemical tests performed on a representative samples of the near surface soils recorded a water-soluble sulphate concentrations of between 0.01g/l – 0.02g/l (2:1water / soil extract) with pH varying between 7.3 and 7.5. These values fall within design sulphate class DS-1 of the BRE Digest Special Digest 1 classification 'Concrete in Aggressive Ground'. In accordance with the guidelines contained in Part 1 of the Digest and taking into account the geology and specific soil and groundwater conditions, the site can be assigned an ACEC (Aggressive Chemical Environment for Concrete) Class AC-1.

The opinions expressed in this report assume that the ground conditions do not vary beyond the range revealed by the scope of the investigation. There may, however, be conditions at the site, which have not been identified by the investigation and therefore will not have been considered in this report. Accordingly a careful watch should be maintained during any future ground works and this report and its conclusions reviewed and /or modified accordingly.

TLP Ground Investigations Ltd

Site Location Plan

Phase 2 Residential Development, Seagate Road, Long Sutton, Lincolnshire

Site Location Plan

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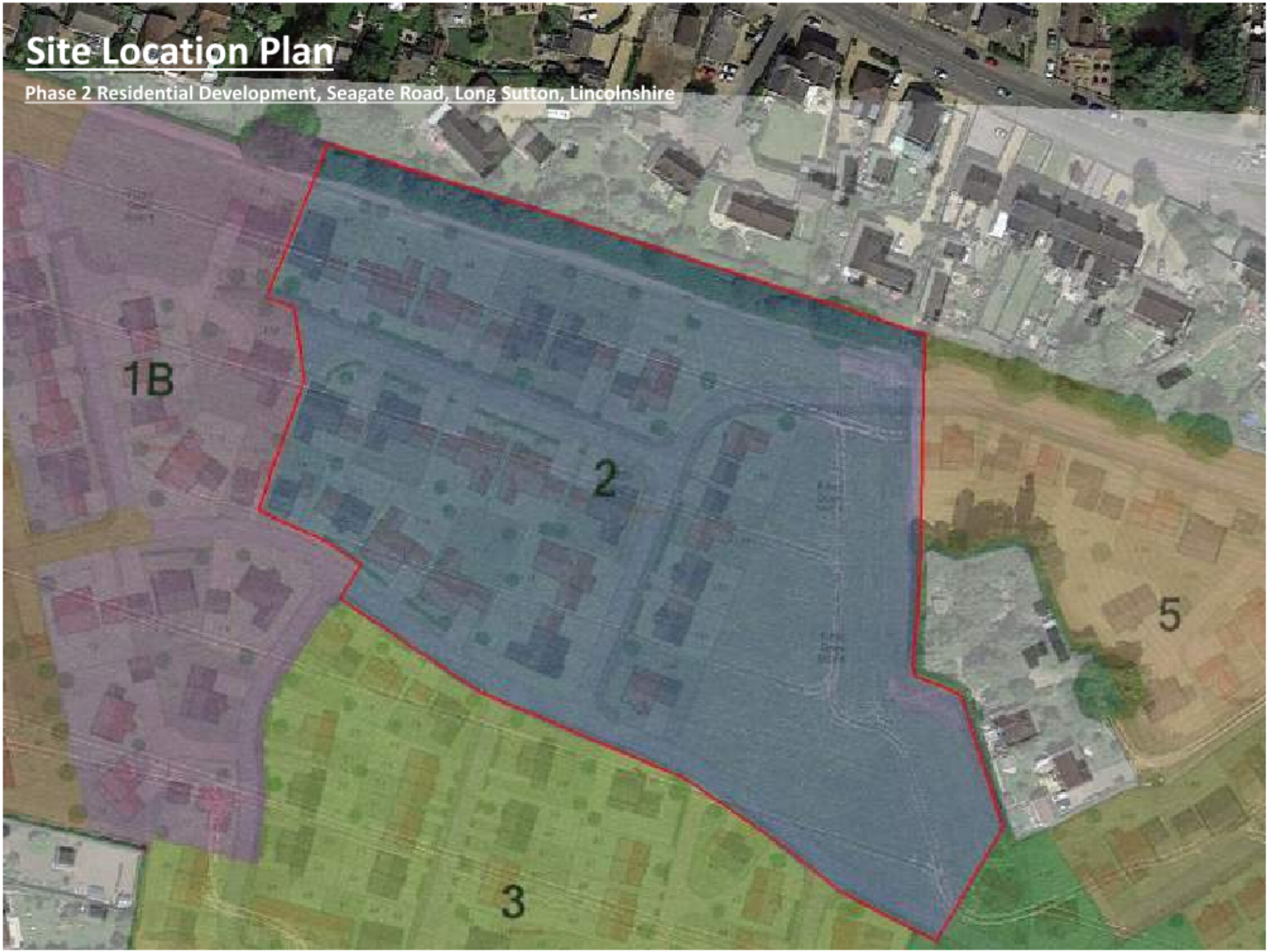
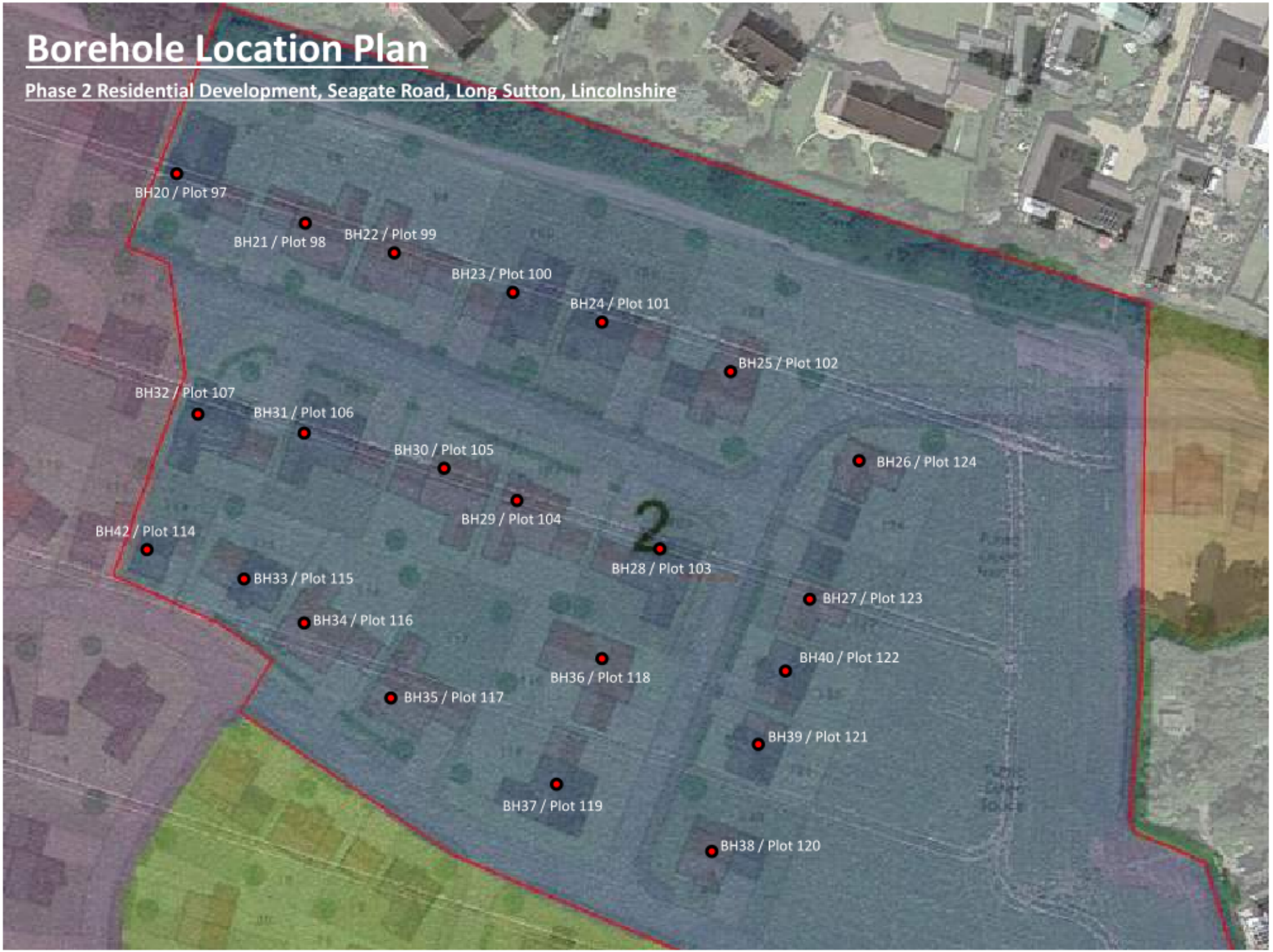


Borehole Location Plan

Phase 2 Residential Development, Seagate Road, Long Sutton, Lincolnshire



Borehole Location Plan

Phase 2 Residential Development, Seagate Road, Long Sutton, Lincolnshire

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH20 Plot 97.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.				0.00 - 1.10	U	1		
			(0.38)					
Topsoil				0.25			S N9	
Mixed brown and occasionally grey, silty clay / clayey silt containing occasional fine to medium fragments of brick and broken pottery.			0.38					
			(0.32)					
			0.70					
Loose, buff brown, slightly clayey **Silt.**				0.80			Vane	45kN/m²
			(0.55)					
				1.10 - 2.10	U	2	S N7	52kN/m²
Tidal Flat Deposits			1.25					
Medium dense, buff brown **Silt.**				2.10	D	1	S N13	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.80m b.g.l. On completion the side walls of the borehole collapsed to 1.90m and water rose to within 1.80m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH21 Plot 98.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil** containing occasional fine stones.			(0.33)	0.00 - 1.10	U	1	S N9	
Topsoil			0.33	0.25				
Loose, buff brown, slightly clayey **Silt.**			(0.97)					
Tidal Flat Deposits				1.10 - 2.10	U	2	S N7	
			1.30					
Medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N13	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.73m b.g.l. On completion the side walls of the borehole collapsed to 1.80m and water rose to within 1.73m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH22 Plot 99.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil** containing occasiona fine stones.				0.00 - 1.10	U	1	S	
Topsoil			(0.32)	0.15			N8	
Loose, buff brown, mottled rust brown **Silt.**			0.32					
Loose, buff brown, mottled light grey, silty **Clay.**			0.42	(0.10)				
			0.60	(0.18)				
Firm to stiff / loose, buff brown, mottled light grey, slightly clayey **Silt.**				1.70			Vane	86kN/m²
Tidal Flat Deposits			(1.00)	1.10 - 2.10	U	2	S N8	
			1.60					
Medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N14	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.85m b.g.l. On completion the side walls of the borehole collapsed to 1.95m and water rose to within 1.85m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH23 Plot 100.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | **Date :** 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.25)	0.00 - 1.10	U	1		
Topsoil			0.25	0.25			S N8	
Loose, buff brown, mottled rust brown **Silt.**			(1.35)					
Tidal Flat Deposits				1.10 - 2.10	U	2	S N9	
			1.60					
Soft / medium dense, buff brown, mottled rust brown and grey very silty **Clay.**				1.70			Vane	29kN/m²
				2.00			Vane	30kN/m²
				2.10	D	1	S N12	
			2.55					
End of Borehole								

Observations

Perched water seepages were encountered at a depth of 2.15m b.g.l. On completion the side walls of the borehole collapsed to 2.15m and water rose to within 2.10m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH24 Plot 101.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil** containing occasional fine stones.			(0.27)	0.00 - 1.10	U	1		
Topsoil			0.27	0.30			S N5	
Loose, mid brown, slightly clayey **Silt.**			(0.28)					
			0.55	0.60			Vane	35kN/m²
Soft becoming firm to stiff, brown and occasionally light grey, very silty **Clay.**			(0.80)	0.90			Vane	75kN/m²
				1.10 - 2.10	U	2	S N7	
Tidal Flat Deposits			1.35	1.20			Vane	77kN/m²
Medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N14	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.95m b.g.l. On completion the side walls of the borehole collapsed to 2.00m and water rose to within 1.95m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH25 Plot 102.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil** containing occasiona fine stones.			(0.33)	0.00 - 1.10	U	1		
Made / disturbed Ground			0.33	0.30			S N7	
Loose, mid brown, slightly clayey silt containing occasional fine fragments of coal and brick.			(1.07)					
				1.10 - 2.10	U	2	S N6	
Soft, mixed brown and rust brown, silty clay / clayey silt.			1.40 (0.15) 1.55	1.50			Vane	35kN/m²
				1.80			Vane	31kN/m²
Loose, mixed brown and grey stained silty clay containing occasional fine fragments of brick and coal.			(0.85)	2.10	D	1	S N3	
Medium dense, buff brown, mottled rust brown **Silt.**			2.40	2.55	D	2	S N13	
Tidal Flat Deposits			3.00 **End of Borehole**					

Observations

Perched water seepages were encountered at a depth of 1.95m b.g.l. On completion the side walls of the borehole collapsed to 1.95m and water rose to within 1.95m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH26 Plot 124.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil.**			(0.33)	0.00 - 1.10	U	1		
Topsoil			0.33	0.30			S N8	
Loose, buff brown **Silt.**			(0.39)					
Tidal Flat Deposits			0.72	0.80			Vane	100kN/m²
Stiff becoming firm brown, mottled light grey, silty **Clay.**			(0.68)	1.10 - 2.10	U	2	S N6	96kN/m²
			1.40	1.40			Vane	58kN/m²
				1.70			Vane	22kN/m²
Medium dense, buff brown, very silty **Clay / clayey Silt.**				2.10	D	1	S N14	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.95m b.g.l. On completion the side walls of the borehole collapsed to a depth of 1.95m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH27 Plot 123.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil.**			(0.35)	0.00 - 1.10	U	1		
Topsoil			0.35	0.30			S N8	
Loose, buff brown, mottled rust brown **Silt.**			(0.20)					
Mid brown, mottled rust brown and light grey, silty **Clay.**			0.55 (0.25) 0.80					
				1.10 - 2.10	U	2	S N5	
Tidal Flat Deposits								
Medium dense, buff brown, mottled grey **Silt.**				2.10	D	1	S N11	
			2.55	**End of Borehole**				

Observations

Perched water seepages were encountered at a depth of 2.00m b.g.l. On completion the side walls of the borehole collapsed to a depth of 2.00m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH28 Plot 103.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil** containing occasiona fine stones.				0.00 - 1.10	U	1		
Topsoil			(0.35)	0.25			S N7	
Loose, buff brown, mottled rust brown **Silt.**			0.35 (0.10) 0.45					
Brown, mottled rust brown and light grey, silty **Clay.**			(0.20) 0.65					
Loose, buff brown, mottled rust brown, slightly clayey **Silt.**			(1.05)	1.10 - 2.10	U	2	S N8	
Tidal Flat Deposits			1.70					
Medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N12	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.00m b.g.l. On completion the side walls of the borehole collapsed to 2.05m and water rose to within 2.00m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH29 Plot 104.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil.**				0.00 - 1.10	U	1		
Topsoil			(0.41)	0.30			S N6	
Loose, buff brown, mottled rust brown **Silt.**			0.41					
Tidal Flat Deposits			(0.79)					
				1.10 - 2.10	U	2	S N5	
Loose, brown, mottled light grey, slightly clayey **Silt.**			1.20					
			(0.40)					
Medium dense, buff brown **Silt.**			1.60					
				2.10	D	1	S N10	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.95m b.g.l. On completion the side walls of the borehole collapsed to 1.95m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH30 Plot 105.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.26)	0.00 - 1.10	U	1	S	
Topsoil / Disturbed Ground			0.26	0.10			N6	
Loose, buff brown, mottled rust brown **Silt.**				1.10 - 2.10	U	2	S	
							N8	
Tidal Flat Deposits				2.10	D	1	S	
							N7	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.10m b.g.l. On completion the side walls of the borehole collapsed to 2.10m and water rose to within 1.97m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH31 Plot 106.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.35)	0.00 - 1.10	U	1	S	
				0.10			N6	
Topsoil / Disturbed Ground			0.35					
Loose, buff brown, mottled rust brown **Silt.**								
				1.10 - 2.10	U	2	S	
							N7	
Tidal Flat Deposits								
				2.10	D	1	S	
							N5	
				2.55	D	2	S	
							N9	
			3.00					
End of Borehole								

Observations

Perched water seepages were encountered at a depth of 2.20m b.g.l. On completion the side walls of the borehole collapsed to 2.20m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record
Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH32 Plot 107.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil.**			(0.30)	0.00 - 1.10	U	1		
Topsoil			0.30	0.30			S N9	
Loose, buff brown, mottled rust brown **Silt.**								
				1.10 - 2.10	U	2	S N9	
Tidal Flat Deposits								
				2.10 - 3.10	U	3	S N5	
				2.55	D	1	S N5	
				3.00	D	2	S N5	
			3.45					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.00m b.g.l. On completion the side walls of the borehole collapsed to a depth of 2.00m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH33 Plot 115.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil.**			(0.32)	0.00 - 1.10	U	1	S	
Topsoil			0.32	0.15			N8	
Loose, buff brown **Silt.**			(0.21)					
			0.53	0.60			Vane	67kN/m²
Firm or firm to stiff, mid brown, mottled light grey, silty **Clay.**			(0.82)	0.90			Vane	77kN/m²
				1.10 - 2.10	U	2		
				1.20			Vane	51kN/m²
Tidal Flat Deposits			1.35					
Loose, buff brown, mottled rust brown **Silt.**				2.10 - 3.10	U	3	S	
							N6	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.05m b.g.l. On completion the side walls of the borehole collapsed to a depth of 2.05m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH34 Plot 116.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.32)	0.00 - 1.10	U	1	S	
Topsoil / Disturbed Ground			0.32	0.10			N6	
Loose, buff brown, mottled rust brown **Silt.**				1.10 - 2.10	U	2	S N6	
Tidal Flat Deposits				2.10	D	1	S N5	
				2.55	D	2	S N5	
			3.00	**End of Borehole**				

Observations

Perched water seepages were encountered at a depth of 2.00m b.g.l. On completion the side walls of the borehole collapsed to 2.00m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH35 Plot 117.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.35)	0.00 - 1.10	U	1		
Topsoil / Disturbed Ground			0.35	0.20			S N6	
Loose, buff brown, mottled rust brown **Silt.**			0.41 (0.06)					
Firm, buff brown, mottled rust brown and light grey silty **Clay.**			(0.13) 0.54	0.50			Vane	61kN/m²
Medium dense becoming loose, buff brown, mottled rust brown **Silt.**				1.10 - 2.10	U	2	S N6	
Tidal Flat Deposits				2.10	D	1	S N5	
				2.55	D	2	S N4	
			3.00					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.95m b.g.l. On completion the side walls of the borehole collapsed to 2.10m and water rose to within 1.95m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH36 Plot 118.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.				0.00 - 1.10	U	1	S	
Topsoil / Disturbed Ground			(0.32)	0.05			N9	
Loose, buff brown silt containing occasional fine fragments of coal.			0.32 (0.22) 0.54					
Loose, buff brown, mottled rust brown and light grey slightly clayey **Silt.**								
Tidal Flat Deposits				1.10 - 2.10	U	2	S N7	
				2.10	D	1	S N4	
				2.55	D	2	S N8	
Observations Perched water seepages were encountered at a depth of 1.90m b.g.l. On completion the side walls of the borehole collapsed to 1.90m and the base of the borehole remained damp.			3.00 **End of Borehole**					

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH37 Plot 119.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.34)	0.00 - 1.10	U	1		
Topsoil / Disturbed Ground				0.20			S N8	
Loose, buff brown, mottled rust brown **Silt.**			0.34 (0.21)					
			0.55					
Firm to stiff, buff brown, mottled rust brown and light grey silty **Clay.**			(0.15) 0.70	0.60			Vane	84kN/m²
Medium dense becoming loose, buff brown, mottled rust brown **Silt.**			(0.65)	1.10 - 2.10	U	2	S N10	
Tidal Flat Deposits			1.35	1.40			Vane	34kN/m²
				1.70			Vane	38kN/m²
Soft / loose, buff brown, mottled rust brown very silty **Clay** / clayey **Silt.**				2.10	D	1	S N4	
				2.55	D	2	S N5	
			3.00					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 1.65m b.g.l. On completion the side walls of the borehole collapsed to 1.65m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH38 Plot 120.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.34)	0.00 - 1.10	U	1		
Topsoil / Disturbed Ground			0.34	0.30			S N8	
Firm to stiff, buff brown, mottled rust brown and light grey silty **Clay.**			(0.66)	0.60			Vane	76kN/m²
Tidal Flat Deposits			1.00	1.10 - 2.10	U	2	S N10	
Medium dense becoming loose, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N8	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.10m b.g.l. On completion the side walls of the borehole collapsed to 2.10m and water rose to within 2.05m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.

Borehole Record

Dynamic Probe / Sampler.

Location : Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.

Borehole No. BH39 Plot 121.

Carried out For D. Brown Builders Ltd.

Ground Level | Co-ordinates | Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.32)	0.00 - 1.10	U	1		
Topsoil / Disturbed Ground			0.32	0.30			S N8	
Loose, buff brown, mottled rust brown **Silt.**			(0.23)					
Firm to stiff, buff brown, mottled rust brown and light grey silty **Clay.**			0.55 (0.15)	0.60			Vane	94kN/m²
			0.70					
Tidal Flat Deposits				1.10 - 2.10	U	2	S N5	
Loose becoming medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N11	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.10m b.g.l. On completion the side walls of the borehole collapsed to 2.10m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH40 Plot 122.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples Type	samples No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.			(0.30)	0.00 - 1.10	U	1	S	
Topsoil / Disturbed Ground			0.30	0.05			N9	
Loose, buff brown, mottled rust brown **Silt.**			(0.90)					
Tidal Flat Deposits				1.10 - 2.10	U	2	S N4	
			1.20					
Loose / soft, buff brown, mottled rust brown and light grey very silty **Clay /** slightly clayey **Silt.**			(0.40)	1.30			Vane	42kN/m²
			1.60	1.60			Vane	35kN/m²
Medium dense, buff brown, mottled rust brown **Silt.**				2.10	D	1	S N12	
			2.55					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.05m b.g.l. On completion the side walls of the borehole collapsed to 2.05m and the base of the borehole remained damp.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

T.L.P. Ground Investigations Ltd.	**Borehole Record** Dynamic Probe / Sampler.	**Location :** Proposed Residential Development, Seagate Road, Long Sutton Lincolnshire.	**Borehole No.** BH41 Plot 114.
Carried out For D. Brown Builders Ltd.		Ground Level	Co-ordinates	Date : 16.11.22.

Description	Reduced Level	Legend	Depth & Thickness	Samples/Tests: Depth	samples: Type	samples: No.	Test	Field Records
Mid brown, silty, slightly clayey **Topsoil**.				0.00 - 1.10	U	1	S	
Topsoil			(0.38)	0.05			N9	
			0.38	0.40			Vane	45kN/m²
Soft to firm becoming firm to stiff, brown, mottled rust brown, very silty **Clay.**			(0.27)	0.60			Vane	92kN/m²
			0.65					
Tidal Flat Deposits				1.10 - 2.10	U	2	S	
							N7	
Loose, buff brown, mottled rust brown **Silt.**				2.10	D	1	S	
							N4	
				2.55	D	2	S	
							N8	
			3.00					
			End of Borehole					

Observations

Perched water seepages were encountered at a depth of 2.10m b.g.l. On completion the side walls of the borehole collapsed to 2.15m and water rose to within 2.10m of the surface.

S.P.T. : Where full penetration has not been achieved the number of blows for the quoted penetration is given (Not 'N' value)

Depths: All depths and reduce levels in metres. Thickness given in brackets in depth column.

Samples/Test Key.

D Disturbed Sample
B Bulk Sample
W Water Sample
U Undisturbed Core sample
S Standard Penetration Test
V Vane Test

Remarks

Logged by S. P. T. / J. T.

Scale 1 : 25

Fig.

Summary of Lab Test Data

Moisture Content and Plasticity

Client	D Brown Building Contractors Ltd.
Location	Seagate Road, Long Sutton (Phase 2)
Job No.	Your Ref. - above
Date	16/11/2022

Sample Details			Classification						
No. Type	Depth (m)	Description	w%	%<425µ	Wa%	LL%	PL%	PI%	I'p%
BH20	0.80	Tidal Flat Deposits (CI)	24.5	100	24.5	44.3	13.4	30.9	30.9
BH26	1.10	Tidal Flat Deposits (CI)	25.9	100	25.9	42.1	13.7	28.4	28.4
BH38	0.60	Tidal Flat Deposits (CI)	24.9	100	24.9	39.6	13.1	26.5	26.5
BH42	0.80	Tidal Flat Deposits (CI)	21.0	100	21.0	NP	NP	NP	NP

Key

BS1377	%<425µ	Percent Passing 425 Micron Sieve
BS1377	w%	Natural Moisture Content
BS1377	Wa%	Corrected w% for <425 Micron
BS1377	LL%	Liquid Limit of Sample >425 Micron removed
BS1377	PL%	Plastic Limit of Sample >425 Micron removed
BS1377	PI%	Plastic Index LL% - PL%
NHBC 4.2	I'p%	Modified Plasticity Index for <425 micron - NHBC 4.2

Liquid limit determinations performed on soil samples in natural state <425 micron particle size, using one point method in accordance with BS 1377 Part 2

Plastic limit determinations performed on soil samples in natural state <425 micron particle size in accordance with BS 1377 Part 2

Notes - Classification

NP	Non Plastic
CL	Clay of Low Plasticity
CI	Clay of Intermediate Plasticity
CH	Clay of High Plasticity
CV	Clay of Very High Plasticity
CE	Clay of Extremely High Plasticity
ML	Silt of Low Plasticity
MI	Silt of Intermediate Plasticity
MH	Silt of High Plasticity
MV	Silt of Very High Plasticity
ME	Silt of Extremely High Plasticity

Based on Plasticity Chart Fig 31. (B.S. 5930 - 1981)

Summary of Laboratory Test Data

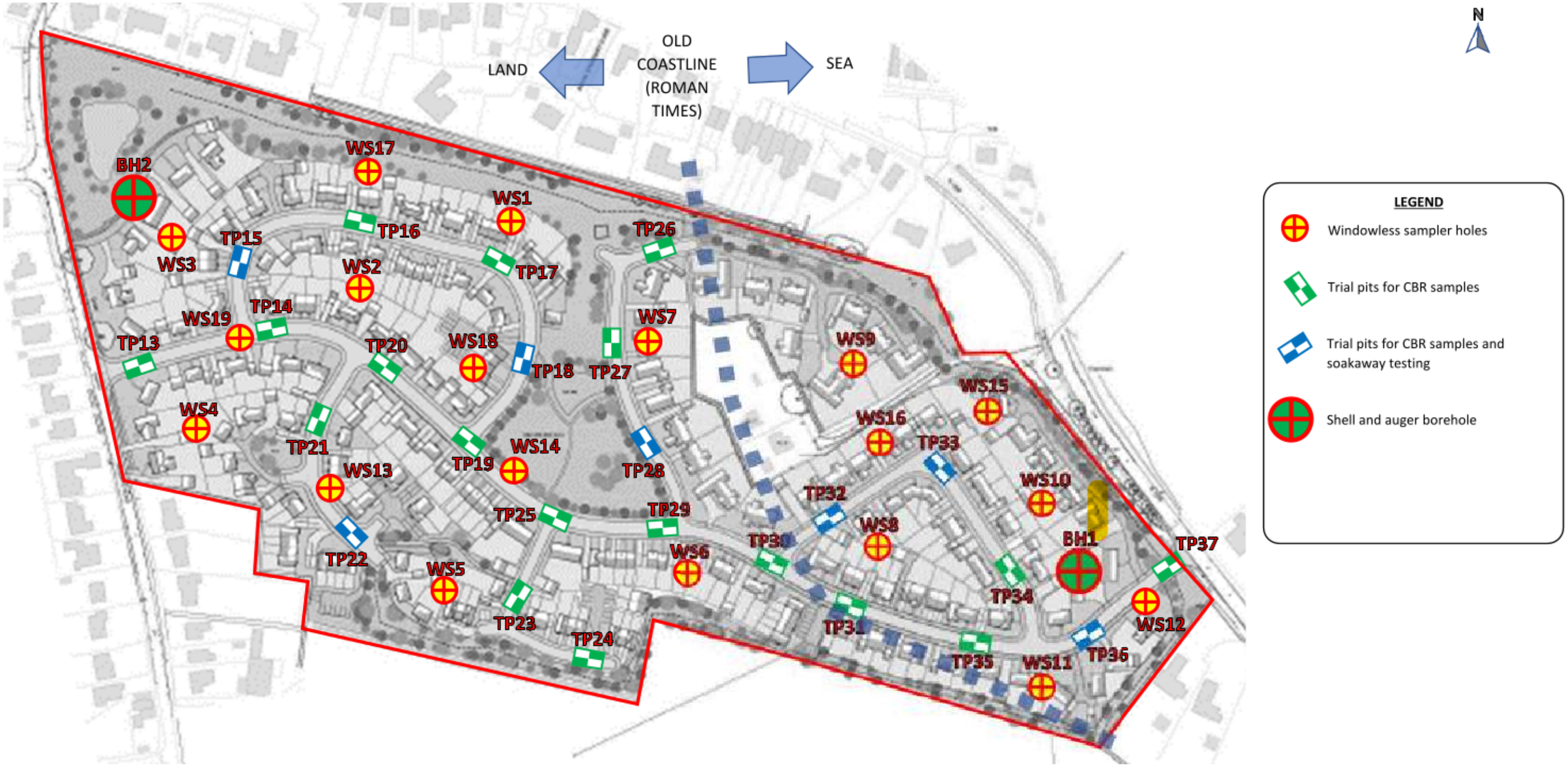
Client : D Brown Building Contractors
Location : Seagate Road, Long Sutton

Sample Details			Classification				Chemical		Density		Strength		
No. Type	Depth m.	Description	w %	LL %	PL %	PI %	SO_4 g/l	pH	Bulk Density Mg/m^3	Dry Density Mg/m^3	Type	c kN/m^2	o Deg.
BH20	0.80	Tidal Flat					0.01 (2:1)	7.5					
BH38	0.60	Tidal Flat					0.02 (2:1)	7.3					

Notes U Undisturbed
B Bulk
D Disturbed
NP Non Plastic

Extracts from Humberside Materials Laboratory Report

November 2021



Notes:

1. Do not scale
2. Locations of all features are approximate only
3. Background image taken from Templeman Design drawing number 3359-TD-XX-DRG-AR-0002-PO, dated November 2017

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Drawing Title: **Exploratory hole location plan**
Drawing No.: 1197-5350-SI-01 *Revision:* 0
Site: Land off Seagate Rd, Long Sutton
Client: D Brown Building Contractors Ltd
Project No.: 1197/5350/P
Date: 18/02/2020

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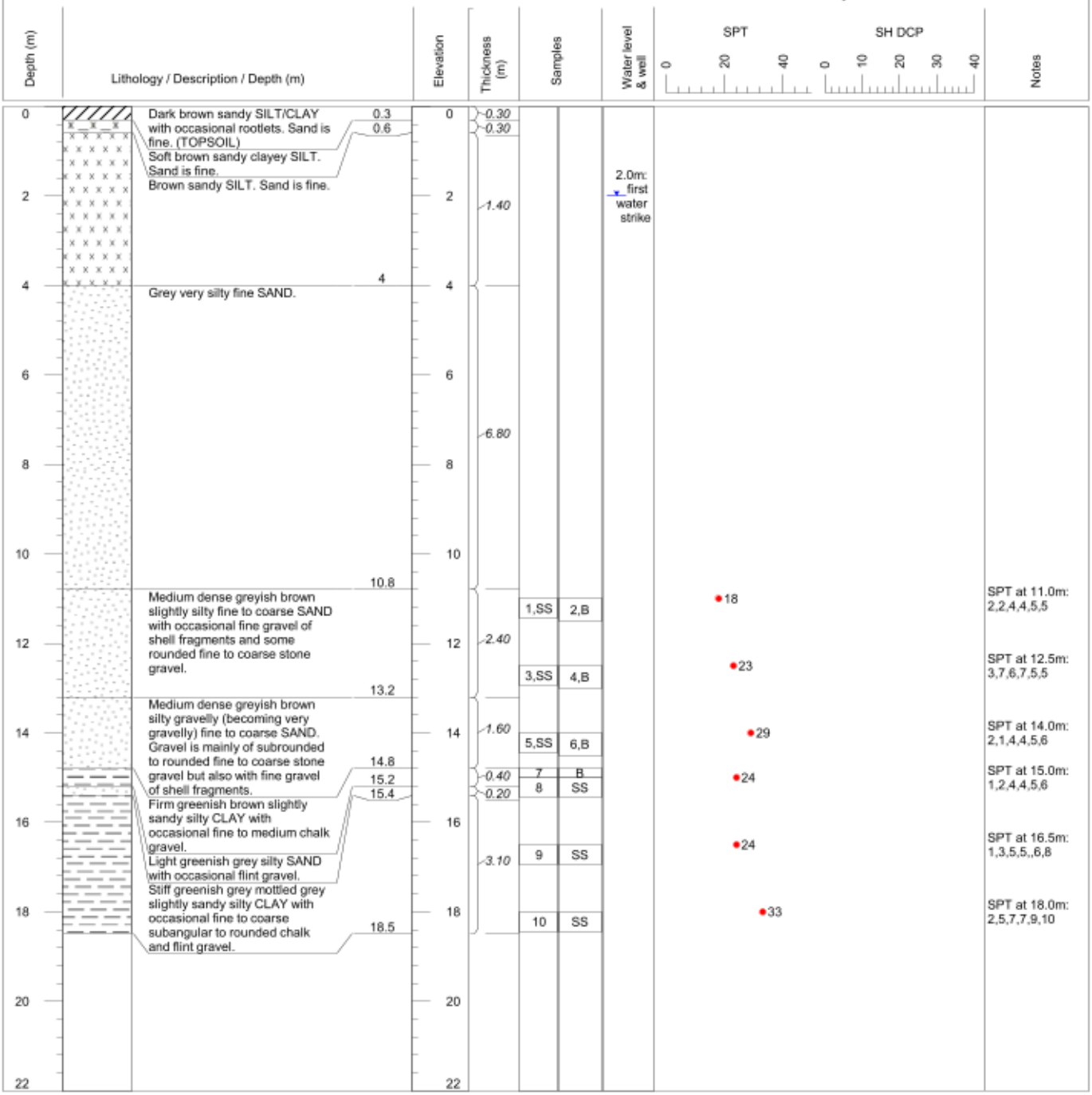
BOREHOLE LOG

Borehole No
BH2

Client :- D Brown Builders Ltd
Site :- Seagate Road, Long Sutton
Project No :- 5350

Location :- see site plan
Date :- 01-Feb-21

Coordinates E: N:
Elevation :-
Excavated by :- Shell & Auger
Drilled by :- SIS



Sample Key
B Bulk
D Disturbed
W Water
SS Split spoon
U undisturbed
DCP SHDCP
HV Hand Vane

Notes :-

Depth drilled :-18.5
Casing depth :- 16

File Ref :- 1197/ 5350
Logged by :- R Lester

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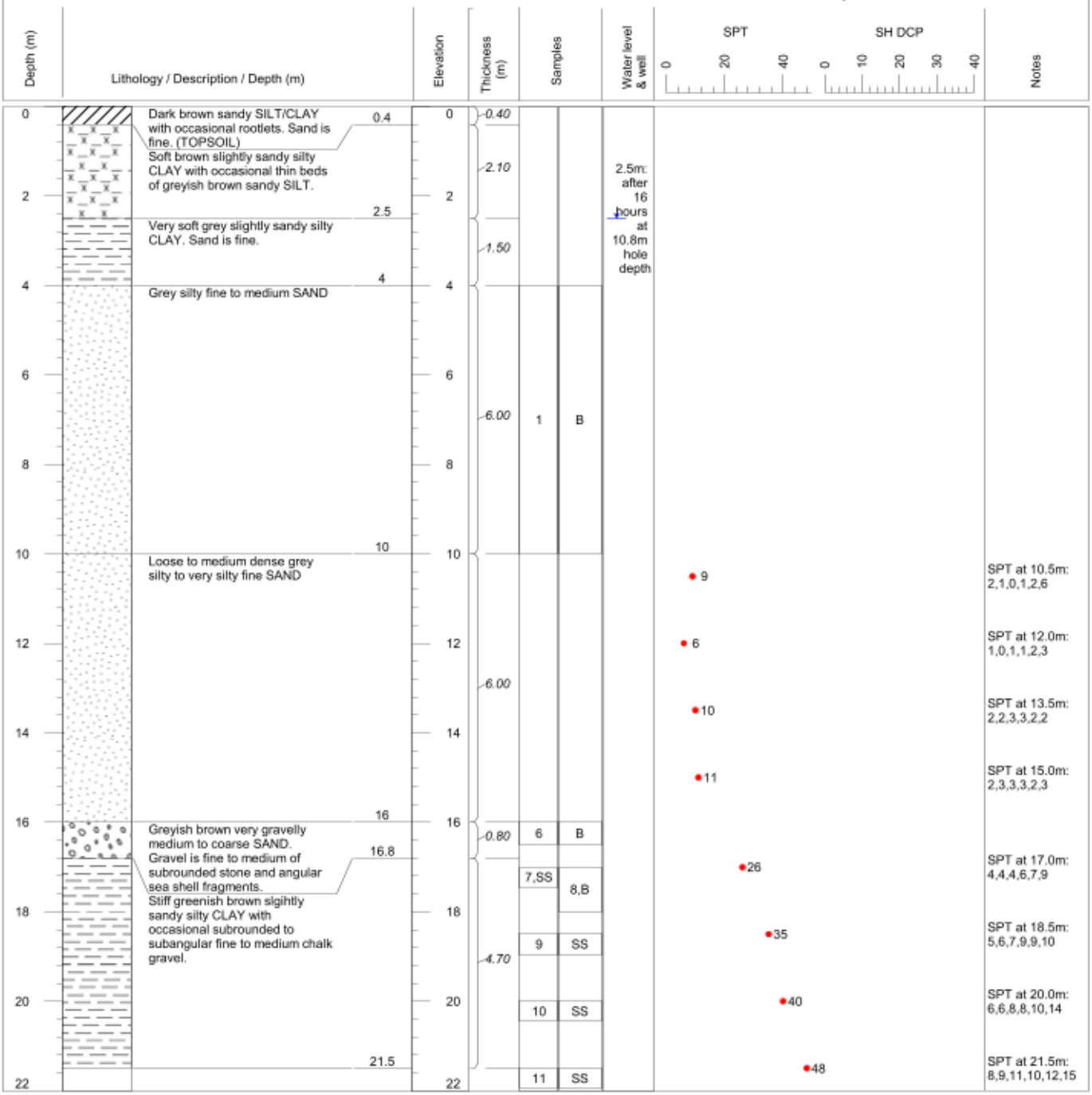
BOREHOLE LOG

Borehole No
BH1

Client :- D Brown Builders Ltd
Site :- Seagate Road, Long Sutton
Project No :- 5350

Location :- see site plan
Date :- 27-Jan-21

Coordinates E: N:
Elevation :-
Excavated by :- Shell & Auger
Drilled by :- SIS



Sample Key
B Bulk
D Disturbed
W Water
SS Split spoon
U undisturbed
DCP SHDCP
HV Hand Vane

Notes :-

Depth drilled :-21.5
Casing depth :- 18

File Ref :- 1197/ 5350
Logged by :- R Lester