

Lincs Laboratory
St George's Lane
Riseholme
LINCOLN
LN2 2LQ
Telephone (01522) 530355
Email: Lincslab@lincolnshire.gov.uk

Ground Investigation Report for A Proposed Residential Development Off Lime Walk, Long Sutton

Issued

28 February 2023

G45011/HD/23/EM



www.lincolnshire.gov.uk

Ground Investigation Report for A Proposed Residential Development Off Lime Walk, Long Sutton

Reporter:



Huw Davey
Geotechnical Engineer

Reviewer:



Chris Neal
Principal Engineer

Distribution:

Copy 1 (PDF) – Stinders Homes, Danny Baxendale
Copy (PDF) – File

All technical matters within this report have been undertaken under the guidance of Sam Wells. Any enquiry relating to this report should be addressed to Huw Davey at Lincs Laboratory.

The samples will be stored for one month after publication of the report. Please inform Huw Davey if you wish to have these stored for a longer period.

GROUND INVESTIGATION REPORT FOR A PROPOSED RESIDENTIAL DEVELOPMENT OFF LIME WALK, LONG SUTTON

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GROUND INVESTIGATION REPORT FOR A PROPOSED RESIDENTIAL DEVELOPMENT OFF LIME WALK, LONG SUTTON

1.0 INTRODUCTION

- 1.1 At the request of Stinders Homes, Lincs Laboratory has undertaken a ground investigation in accordance with the general principles of BS5930 ⁽¹⁾ at a residential development site off Lime Walk, Long Sutton, Lincolnshire. The purpose of the investigation was to determine the nature of the underlying soils to enable recommendations to be made for the design and construction of the proposed access road.
- 1.2 The proposed development consists of 61 plots of residential property with associated landscaping, private driveways and access roads.
- 1.3 This report is based on data from test results and site records obtained during the ground investigation. There is the possibility of variations in ground conditions that have not been revealed during the ground investigation. It should also be noted that changes in groundwater levels are likely to occur from season to season and that groundwater may be encountered.

The report is also based on the information given to Lincs Laboratory by the client. Should there be any subsequent alterations to the project's design it will be necessary to check with Lincs Laboratory that the geotechnical assessments and recommendations are still valid.

- 1.4 This report has been prepared for the sole use and reliance of the Client. The report may not be used or relied upon by any unauthorised third party without the written consent of Lincs Laboratory.
- 1.5 This report shall not be reproduced except in full, without the written approval of Lincs Laboratory.

2.0 SITE DESCRIPTION AND GEOLOGY

- 2.1 The site is situated approximately seven kilometres east of Holbeach in the north of the village of Long Sutton, Lincolnshire (Drawing Number 1, Appendix (i)). It consists of a rectangular, flat lying area of farmland adjacent to an existing residential development (Drawing Number 2, Appendix (i)). The site is bound by residential properties to the south, farmland to the north and east and Lime Walk to the west. Access to the site was via the site entrance through the existing residential development off Magpie Close.

There were no open water features on the site at the time of the works.

- 2.2 The British Geological Survey 1:50,000 geological sheet for the "King's Lynn and The Wash with part of 129 area" ⁽²⁾ indicates the site to be situated on superficial deposits of the Terrington Beds overlying solid geology of the Amphill Clay Formation.

3.0 SITE WORK

- 3.1 On Tuesday 24th January 2023, seven trial pits (TPs 1 to 7) were excavated using a mechanical tracked excavator to between 1.10 m and 1.30 m below ground level (BGL) in positions selected by Lincs Laboratory in conjunction with the client's engineer. The trial pits were not extended below groundwater levels.

Bulk (B) bag samples were taken from each trial pit out of the 0.50m margin below the anticipated formation level.

4.0 LABORATORY WORK

- 4.1 Lincs Laboratory is registered with the United Kingdom Accreditation Service, UKAS registration No. 0699. Achieving accreditation means that the testing laboratory has demonstrated that it tests to a high standard, through external audits.
- 4.2 The following tests were completed at the laboratory:
Particle Size Distribution (wet sieve analysis)
California Bearing Ratio (CBR) – Soaked and unsoaked where appropriate

The following tests were subcontracted to another UKAS accredited laboratory:
Water Soluble Sulphate Content
pH value

Details of the standards used ⁽³⁾ and the test results are presented in the Laboratory Test Result Report in Appendix (iii).

Lincs Laboratory is accredited for all of the tests undertaken in-house.

5.0 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

5.1 Ground Conditions

The ground investigation confirmed that the anticipated superficial deposits of the Terrington Beds are present across the site. These were encountered as soft to firm, light brown silty clay and light brown fine grained silty sand. The underlying solid geology of the Amphill Clay Formation was not encountered within any of the trial holes as they were terminated at shallow depth.

Groundwater was not encountered within any of the trial pits. The trial pit logs in Appendix (ii) give the specific details of the encountered soils at each location.

5.2 Sulphate Classification for Concrete

Laboratory water soluble sulphate content testing gave a result of 60 mg/l.

This indicates a Design Sulphate Classification of DS-1 in accordance with BRE Special Digest 1 ⁽⁴⁾. In order to assess an Aggressive Chemical Environment for Concrete (ACEC), the site has been assumed to be natural and the groundwater has been assumed to be mobile in the absence of extensive groundwater monitoring. The corresponding alkaline pH value test result of 8.4, together with the sulphate content values and previous site usage, represents an ACEC classification of AC-1.

The client is advised to refer to the BRE Special Digest 1 ⁽⁴⁾ for construction guidelines for in-situ and pre-cast concrete elements of the construction.

5.3 Road Construction

The ground investigation revealed a weak, cohesive and granular sub-grade. Laboratory CBR test results are presented below. Five of these tests were undertaken in a soaked condition.

TP No.	Depth (mBGL)	Moisture Content (%)	Minimum CBR (%)	Soaked or unsoaked?
1	0.50-1.00	24	1.6	Soaked
2	0.50-1.00	22	0.9	Unsoaked
3	0.50-1.00	25	1.3	Soaked
4	0.50-1.00	25	4.7	Soaked
5	0.50-1.00	23	1.2	Soaked
6	0.50-1.00	25	0.6	Soaked
7	0.50-1.00	25	0.8	Unsoaked

For design purposes, it is recommended that a CBR of less than 1.5% is used for the site. A geogrid and geotextile will be required.

The client is advised to refer to the relevant chart in the Lincolnshire County Council Development Road and Sustainable Drainage Specification and Construction ⁽⁵⁾ to determine a total minimum construction thickness and for construction guidelines and requirements.

5.4 Observations for Contamination

Arisings obtained during the excavations were examined for visual and olfactory signs of contamination.

The soils encountered in the trial pits did not show any visual or olfactory signs of contamination. Additionally, the surrounding land shows good healthy grass cover and mature trees. Considering all these factors, along with the rural history of the area and the present surrounding land uses, it is not considered that the site is chemically contaminated. Consequently, the risk of contamination associated with constructing and using the site for its intended use as a residential estate is considered to be low. However, as with all developments, the workforce should wear overalls, gloves and boots to minimise contact with soils and water. For example, the presence of water contaminated with Weil's disease (caused by rats) is a small probability and working on many developments

increases the overall risk of infection to an individual. Care should be taken if any heavily discoloured or pungent smelling materials are encountered as this could indicate that small amounts of chemicals have been discarded. In the unlikely event of encountering suspicious materials, appropriate advice should be sought.

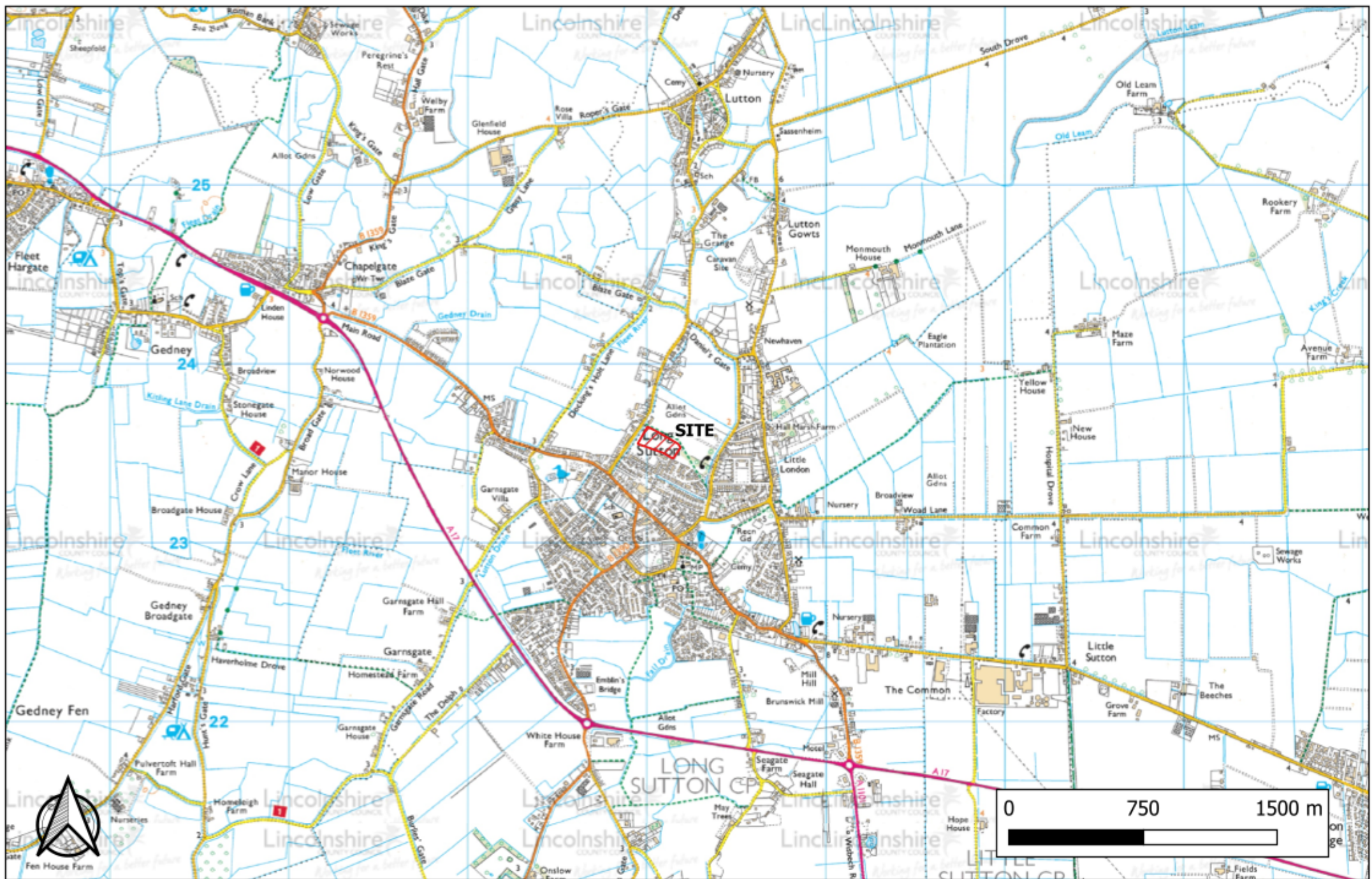
6.0 REFERENCES

- (1) BS 5930: 2015 (+A1:2020). "Code of Practice for Site Investigation". British Standards Institution.
- (2) BGS 1:50,000 Geological Solid and Drift map for the King's Lynn and The Wash with part of 129 area. Sheet 145 and part of 129. Published 1978.
- (3) BS 1377: 1990. "Methods of Test for Soils for Civil Engineering Purposes". British Standards Institution.
- (4) BRE Special Digest 1: "Concrete in Aggressive Ground". Third Edition. Published 2005. BRE Construction Division.
- (5) "Development Road and Sustainable Drainage Specification and Construction ". Lincolnshire County Council. March 2021. (Version 4.3)

7.0 APPENDICES

APPENDIX (i)

DRAWINGS

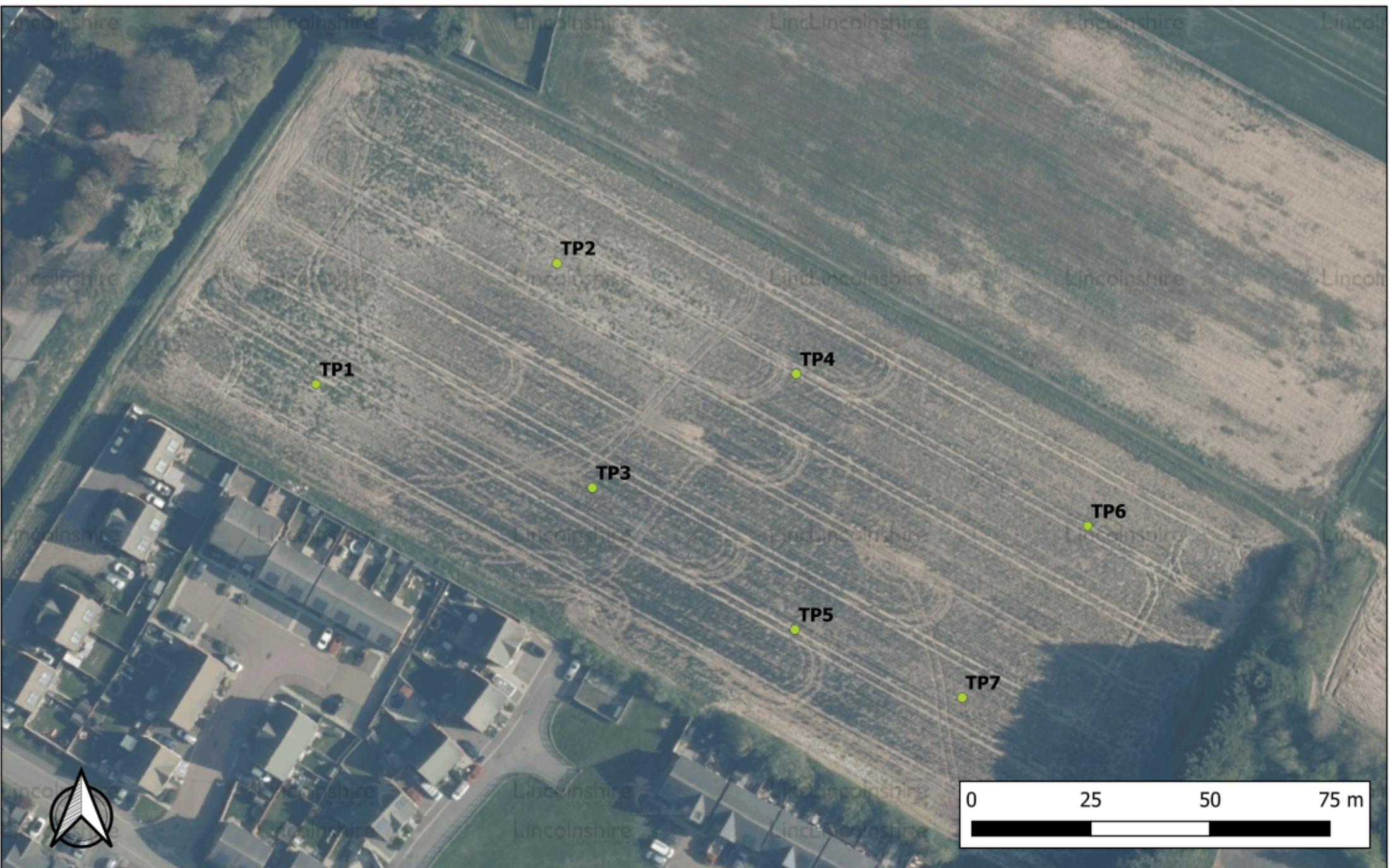


Produced by HD (Lincs Lab) Feb 2023

Site off Lime Walk, Long Sutton Site Location Plan

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**Site off Lime Walk, Long Sutton
Trial Pit Location Plan**

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APPENDIX (ii)

TRIAL PIT LOGS

TPs 1 to 7



Trial Pit Log

Lincoln Laboratory
St Georges Lane
Riseholme
LN2 2LQ

TP Number
TP01

Project Name: Limewalk, Long Sutton			Client: Stinders Homes			Date: 24/01/2023					
Location: Off Limewalk											
Project No. : 45011			JCB Contractor: Client			Equipment: Mini Excavator					
Location Number TP01		Location Type TP		Level		Logged By HD		Scale 1:16		Page Number Sheet 1 of 1	
Water Strikes	Sample and In Situ/Lab Testing							Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Atterberg Limits			CBR %	Shear Strength				
PL %			LL %	PI %							
	0.50 - 1.00	B				(Top) 1.6 (Base) 2.3		0.30		Firm, dark brown silty TOPSOIL	1
					0.90				Soft to firm, light brown silty CLAY (TFD)		
					1.10				Light brown, fine grained silty SAND (TFD)	2	
									End of Trial Pit at 1.100m		
Dimensions			Trench Support and Comment					Pumping Data			
Pit Length	Pit Width		Pit Stability	Shoring Used	Remarks			Date	Rate	Remarks	
Remarks											



Trial Pit Log

Lincoln Laboratory
St Georges Lane
Riseholme
LN2 2LQ

TP Number
TP02

Project Name: Limewalk, Long Sutton			Client: Stinders Homes			Date: 24/01/2023					
Location: Off Limewalk											
Project No. : 45011			JCB Contractor: Client			Equipment: Mini Excavator					
Location Number TP02		Location Type TP		Level		Logged By HD		Scale 1:16		Page Number Sheet 1 of 1	
Water Strikes	Sample and In Situ/Lab Testing							Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Atterberg Limits			CBR %	Shear Strength				
PL %			LL %	PI %							
	0.50 - 1.00	B				(Top) 0.9 (Base) 1.1		0.30		Firm, dark brown silty TOPSOIL	1
					0.90				Soft to firm, light brown silty CLAY (TFD)		
					1.10				Light brown, fine grained silty SAND (TFD)	2	
									End of Trial Pit at 1.100m		
Dimensions			Trench Support and Comment					Pumping Data			
Pit Length	Pit Width		Pit Stability	Shoring Used	Remarks			Date	Rate	Remarks	
Remarks											

Project Name: Limewalk, Long Sutton

Client: Stinders Homes

Date: 24/01/2023

Location: Off Limewalk

Project No. : 45011

JCB Contractor: Client

Equipment: Mini Excavator

Location Number
TP03

Location Type
TP

Level

Logged By
HD

Scale
1:16

Page Number
Sheet 1 of 1[illegible]

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks



Trial Pit Log

Lincoln Laboratory
St Georges Lane
Riseholme
LN2 2LQ

TP Number
TP04

Project Name: Limewalk, Long Sutton				Client: Stinders Homes				Date: 24/01/2023				
Location: Off Limewalk												
Project No. : 45011				JCB Contractor: Client				Equipment: Mini Excavator				
Location Number TP04		Location Type TP		Level		Logged By HD		Scale 1:16		Page Number Sheet 1 of 1		
Water Strikes	Sample and In Situ/Lab Testing							Depth (m)	Legend	Stratum Description		
	Depth (m)	Type	Atterberg Limits			CBR %	Shear Strength					
PL %			LL %	PI %								
	0.50 - 1.00	B				(Top) 4.7 (Base) 5.6		0.30		Firm, dark brown silty TOPSOIL		1
					0.60				Soft to firm, brown silty CLAY (TFD)			
									1.20		Light brown, fine grained silty SAND (TFD)	
										End of Trial Pit at 1.200m		2
												3
Dimensions			Trench Support and Comment						Pumping Data			
Pit Length	Pit Width		Pit Stability	Shoring Used	Remarks				Date	Rate	Remarks	

Remarks

Project Name: Limewalk, Long Sutton

Client: Stinders Homes

Date: 24/01/2023

Location: Off Limewalk

Project No. : 45011

JCB Contractor: Client

Equipment: Mini Excavator

Location Number
TP06

Location Type
TP

Level

Logged By
HD

Scale
1:16

Page Number
Sheet 1 of 1[illegible]

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks



Trial Pit Log

Lincoln Laboratory
St Georges Lane
Riseholme
LN2 2LQ

TP Number
TP07

Project Name: Limewalk, Long Sutton				Client: Stinders Homes				Date: 24/01/2023						
Location: Off Limewalk														
Project No. : 45011				JCB Contractor: Client				Equipment: Mini Excavator						
Location Number TP07		Location Type TP		Level		Logged By HD		Scale 1:16		Page Number Sheet 1 of 1				
Water Strikes	Sample and In Situ/Lab Testing							Depth (m)	Legend	Stratum Description				
	Depth (m)	Type	Atterberg Limits			CBR %	Shear Strength							
PL %			LL %	PI %										
	0.50 - 1.00	B				(Top) 0.8 (Base) 1.2		0.30		Firm, dark brown silty TOPSOIL		1		
													Firm, brown silty CLAY (TFD)	
											1.20			End of Trial Pit at 1.200m
												2		
												3		
Dimensions			Trench Support and Comment					Pumping Data						
Pit Length	Pit Width		Pit Stability	Shoring Used	Remarks			Date	Rate	Remarks				

Remarks

GROUND INVESTIGATION REPORT FOR A PROPOSED RESIDENTIAL DEVELOPMENT OFF LIME WALK, LONG SUTTON

NOTES ON SAMPLE DESCRIPTIONS AND SYMBOLS

1. Sample Descriptions

Sample descriptions are in accordance with BS 5930: 2015 Code of Practice for Site Investigations ⁽¹⁾ but with the following additional terms also being used.

rare	intermittent appearance less than 2%
occasional	intermittent appearance 2% to 5%
with a trace	less than 10%
with a little or with frequent	10% to 25%
with some or with numerous	25% to 40%
and	about equal

2. Geology

(TFD) Tidal Flat Deposits (Terrington Beds)

APPENDIX (iii)

LABORATORY TEST REPORT



Lincs Laboratory, St Georges Lane,
Riseholme, Lincoln, LN2 2LQ



Tel: (01522) 530355
Email: Lincslab@lincolnshire.gov.uk

TO: Danny Baxendell
Stinders Homes
Unit 3 Birchwood One Business Park
Dewhurst Road
Warrington
WA3 7GB

REPORT NO: 82361
JOB NO: 45011
DATE: 27 February 2023

PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: ANALYSIS OF SOILS

Authorising Signature:

(L Ghaleb; Supervisor - Laboratory Testing)

Notes:

1. This report is factual and only relates to the items tested.
2. Advice on the interpretation of these results is available from Lincs Laboratory Consultancy Staff. Opinions and interpretations are outside the scope of our UKAS/ISO 17025 accreditation.
3. Any samples or their residues will normally be kept for four weeks after the publication of this report.
4. Tests marked 'UKAS accredited' in this report are listed in our UKAS accreditation schedule bearing No.0699.
5. This report shall not be reproduced except in full, without written approval of Lincs Laboratory.

Distribution:

- √1 - Client (Via Huw Davey)
1 - Lab File



0699



Lincs Laboratory St Georges Lane, Riseholme, Lincoln LN2 2LQ

Tel: (01522) 530355

Email: Lincslab@lincolnshire.gov.uk



0699

REPORT: 82361
JOB NO: 45011
DATE: 27 February 2023

PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: CALIFORNIA BEARING RATIO TEST RESULTS

Lab Sample No:	BH/TP (No)	Sample (type)	Depth (m)	Density			Moisture Content		CBR Value			Retained 20mm (%)	Swell (mm)
				Bulk (Mg/m ³)	Soaked (Mg/m ³)	Dry (Mg/m ³)	Top (%)	Base (%)	Top (%)	Base (%)	Mean (%)		
S21-23	TP1	B	0.50 – 1.00	1.99	1.99	1.62	24	23	1.6	2.3	N/A	0.0	0.00
S23-23	TP3	B	0.50 – 1.00	1.96	1.96	1.58	25	24	1.3	1.7	N/A	0.0	0.00
S24-23	TP4	B	0.50 – 1.00	1.87	1.83	1.47	24	25	4.7	5.6	5.2	0.0	0.00
S25-23	TP5	B	0.50 – 1.00	1.92	1.90	1.55	23	23	1.2	1.3	1.3	0.0	0.00
S26-23	TP6	B	0.50 – 1.00	1.93	1.92	1.54	25	24	0.6	0.8	0.7	0.0	0.00

Notes:

- i) Sampler : Lincs Lab
- ii) Sampling Procedure : BS 5930:2015 (Not UKAS Accredited)
- iii) Date Received : 24.01.23
- iv) Date Tested : 02.02.23 – 13.02.23
- v) Test Procedure : BS 1377:Pt 4:1990 CI 7.4, Surcharge Mass: 13kg (UKAS Accredited)
- Method of Compaction : Dynamic (2.5kg rammer) BS1377:Part 4:1990 CL 7.2.4.4 Method 5 (UKAS Accredited)
- Method of Soaking : BS1377:Part 4:1990 CI 7.3 (UKAS Accredited)
- vi) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- vii) U = Undisturbed, d = Disturbed, B = Bulk
- viii) The samples were tested in a soaked condition for 96 hours.
- ix) Water was found on the top of Sample S24-23 after 6 hours and Sample S25-23 after 0.25 hours. Samples S21-23, S23-23 and S26-26 were flooded after 72 hours.
- x) Copies of the force penetration curves are available on request.
- xi) Copies of the swell measurement curves are available on request.
- xii) The test method stated for Moisture Content has been superseded by BS EN ISO 17892-1:2014.



Lincs Laboratory St Georges Lane, Riseholme, Lincoln LN2 2LQ

Tel: (01522) 530355

Email: Lincslab@lincolnshire.gov.uk



0699

REPORT: 82361
JOB NO: 45011
DATE: 27 February 2023

PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: CALIFORNIA BEARING RATIO TEST RESULTS

Lab Sample No:	Ref (No:)	Sample (type)	Depth (m)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Moisture Content Top (%)	Moisture Content Base (%)	Top (%)	CBR Value Base (%)	Mean (%)	Retained 20 mm (%)
S22-23	TP2	B	0.50 – 1.00	1.98	1.62	22	22	0.9	1.1	1.0	0.0
S27-23	TP7	B	0.50 – 1.00	1.91	1.53	25	24	0.8	1.2	N/A	0.0

Notes:

- i) Sampler : Lincs Lab
- ii) Sampling Procedure : BS 5930:2015 (Not UKAS Accredited)
- iii) Date Received : 24.01.23
- iv) Date Tested : 03.02.23 – 15.02.23
- v) Test Procedure : BS 1377:Pt 4:1990 Cl 7.4, Surcharge Mass: 13 kg (UKAS Accredited)
- vi) Method of Compaction : Dynamic (2.5 kg rammer) BS1377:Part 4:1990 CL 7.2.4.4 Method 5 (UKAS Accredited)
- vii) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- viii) U = Undisturbed, d = Disturbed, B = Bulk
- ix) The samples were tested in an unsoaked condition.
- x) Copies of the force penetration curves are available on request.
- x) The test method stated for Moisture Content has been superseded by BS EN ISO 17892-1:2014.



Lincs Laboratory St Georges Lane, Riseholme, Lincoln LN2 2LQ

Tel: (01522) 530355

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0699

REPORT: 82361
JOB NO: 45011
DATE: 27 February 2023

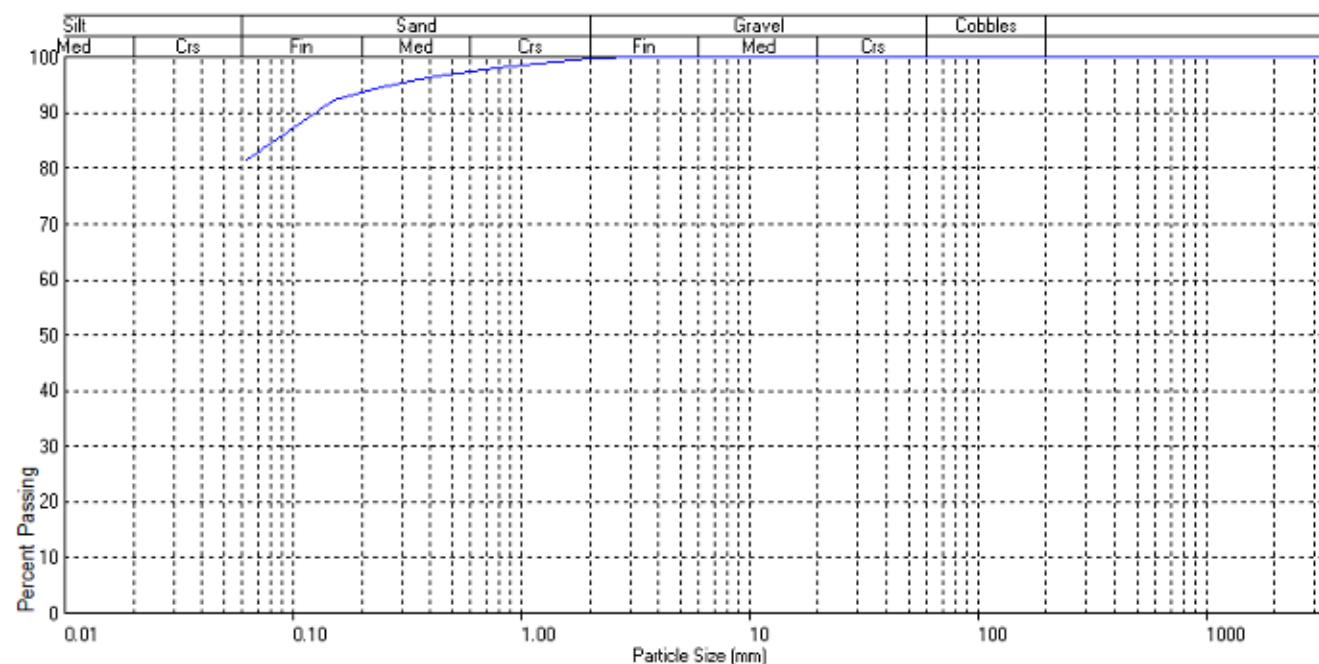
PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: PARTICLE SIZE DISTRIBUTION
(WET GRADING ANALYSIS) TEST RESULTS

Lab Sample No:	BH/TP (No)	Sample (type)	Depth (m)	Sieve Size (mm)	Passing (%)
S23-23	TP3	B	0.50 – 1.0	3.35	100
				2.00	100
				1.18	99
				0.600	98
				0.425	97
				0.300	96
				0.212	94
				0.150	92
				0.063	81.6

Notes:

- i) Sampler : Lincs Laboratory
- ii) Sampling Procedure : BS 5930:2015 (Not UKAS Accredited)
- iii) Date Received : 24.01.23
- iv) Date Tested : 07.02.23
- v) Test Procedure : BS 1377:Part 2:1990 Cl 9.2 (UKAS Accredited)
- vi) The sample was prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- vii) U = Undisturbed, d = Disturbed, B = Bulk

Particle Size Distribution



Job Name: 45011

Job Location: Limewalk, Long Sutton

Sample Ref: S23-23

Sample Location: TP3 0.5m-1.0m

Date Tested: 08/02/2023



Lincs Laboratory St Georges Lane, Riseholme, Lincoln LN2 2LQ

Tel: (01522) 530355

Email: Lincslab@lincolnshire.gov.uk



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REPORT: 82361
JOB NO: 45011
DATE: 27 February 2023

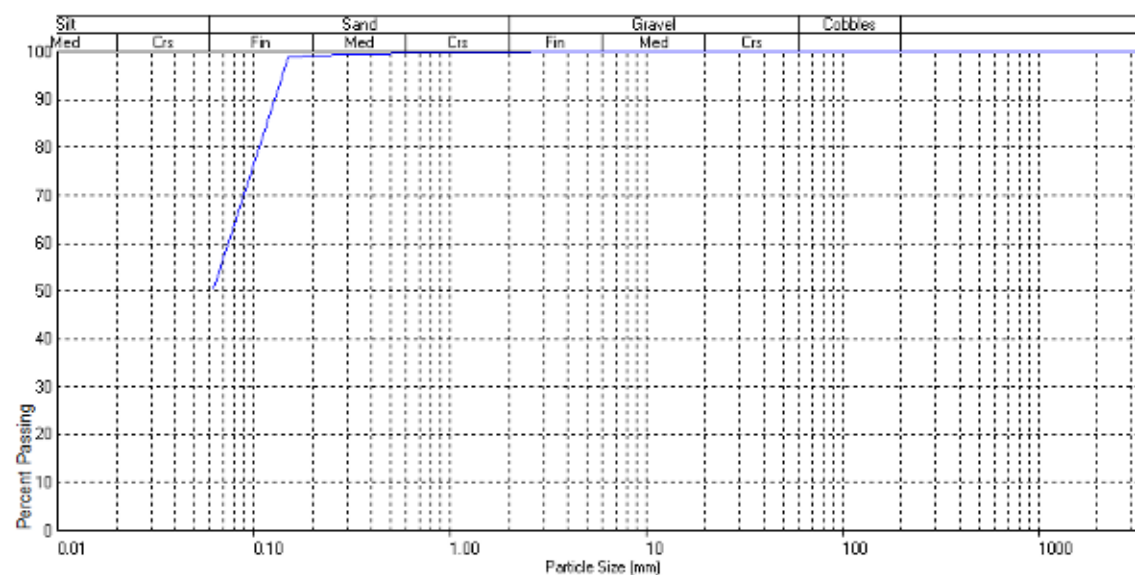
PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: PARTICLE SIZE DISTRIBUTION
(WET GRADING ANALYSIS) TEST RESULTS

Lab Sample No:	BH/TP (No)	Sample (type)	Depth (m)	Sieve Size (mm)	Passing (%)
S27-23	TP7	B	0.50 – 1.0	3.35	100
				2.00	100
				1.18	100
				0.600	100
				0.425	100
				0.300	100
				0.212	99
				0.150	99
				0.063	50.7

Notes:

- i) Sampler : Lincs Laboratory
- ii) Sampling Procedure : BS 5930:2015 (Not UKAS Accredited)
- iii) Date Received : 24.01.23
- iv) Date Tested : 07.02.23
- v) Test Procedure : BS 1377:Part 2:1990 Cl 9.2 (UKAS Accredited)
- vi) The sample was prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- vii) U = Undisturbed, d = Disturbed, B = Bulk

Particle Size Distribution



Job Name: 45011

Job Location: Limewalk, Long Sutton

Sample Ref: S27-23

Sample Location: TP7 0.5m-1.0m

Date Tested: 08/02/2023



Tel: (01522) 530355
Email: Lincslab@lincolnshire.gov.uk

St Georges Lane
Riseholme
Lincoln
LN2 2LQ

REPORT: 82361
JOB NO: 45011
DATE: 27 February 2023

PROJECT TITLE: LIMEWALK, LONG SUTTON
WORK UNDERTAKEN: ANALYSIS OF GROUND INVESTIGATION SAMPLES

Lab Sample No:	BH/TP No:	Sample Type	Depth (m)
S21-23	TP1	B	0.50 – 1.00
S27-23	TP7	B	0.50 – 1.00

SAMPLE DETAILS:

Sample Type:	U = Undisturbed, d = Disturbed, B = Bulk	Date Received:	24.01.23
Sampler:	Lincs Laboratory	Date Tested:	31.01.23 Onwards
Sampling Procedure:	BS 5930:2015 (Not UKAS Accredited)		

REMARKS:

The above samples were sub-contracted to a UKAS accredited laboratory which is accredited for the tests as detailed in their report. A copy of their report can be found on pages 9 to 12 of this report.

**LABORATORY TEST CERTIFICATE**

Certificate No : 23/134 - 01-16
To : Robyn Broughton
Client : Lincolnshire County Council
Lincs Laboratory
Riseholme, off St George's Lane
Lincoln, Lincolnshire
LN2 2LQ

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

2:1 WATER SOLUBLE SULPHATE
BS 1377 : PART 3 : 2018 + A1 2021 : CLAUSE 7.6

Introduction

We refer to a sample taken from Limewalk, Long Sutton and delivered to our laboratory on 31st January 2023.

Material & Source

Sample Reference : TP1, S21-23, 0.50-1.00m
Sampled By : Client
Sampling Certificate : Not Supplied
Location : TP1, S21-23, 0.50-1.00m
Designation (d/D) : Not Supplied
Description : Brown very sandy CLAY.
Date Sampled : Not Supplied
Date Tested : 31st January 2023 Onwards
Source : 45011 - Limewalk, Long Sutton
% Passing 2mm : 100
Monosulfide Minerals : N/A
Preparation Method : BS 1377 : Part 3 : 2018 + A1 2021 : Clause 7.3

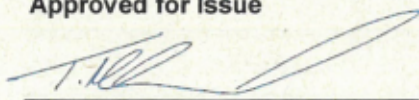
Test Results

2:1 WATER SOLUBLE SULPHATE 50 mg/l SO₄

Comments

The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This test certificate should not be reproduced without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks**Approved for Issue**


T McLelland (Director)

Date 27/02/2023





LABORATORY TEST CERTIFICATE

Certificate No : 23/134 - 01-8
To : Robyn Broughton
Client : Lincolnshire County Council
 Lincs Laboratory
 Riseholme, off St George's Lane
 Lincoln, Lincolnshire
 LN2 2LQ

10 Queenslie Point
 Queenslie Industrial Estate
 120 Stepps Road
 Glasgow
 G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
 Website: www.mattest.org

pH VALUE
BS 1377 : PART 3 : 2018 + A1 2021 : CLAUSE 12.5

Introduction

We refer to a sample taken from Limewalk, Long Sutton and delivered to our laboratory on 31st January 2023.

Material & Source

Sample Reference :	TP1, S21-23, 0.50-1.00m
Sampled By :	Client
Sampling Certificate :	Not Supplied
Location :	TP1, S21-23, 0.50-1.00m
Designation (d/D) :	Not Supplied
Description :	Brown very sandy CLAY.
Date Sampled :	Not Supplied
Date Tested :	31st January 2023 Onwards
Source :	45011 - Limewalk, Long Sutton
% Passing 2mm :	100
Monosulfide Minerals :	N/A
Preparation Method :	BS 1377 : Part 3 : 2018 + A1 2021 : Clause 12.4

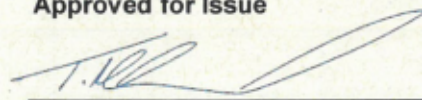
Test Results

pH VALUE **8.4**

Comments

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Remarks**Approved for Issue**


 T McLelland (Director)

Date 27/02/2023





LABORATORY TEST CERTIFICATE

Certificate No : 23/134 - 01-17
 To : Robyn Broughton
 Client : Lincolnshire County Council
 Lincs Laboratory
 Riseholme, off St George's Lane
 Lincoln, Lincolnshire
 LN2 2LQ

10 Queenslie Point
 Queenslie Industrial Estate
 120 Stepps Road
 Glasgow
 G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
 Website: www.mattest.org

2:1 WATER SOLUBLE SULPHATE
BS 1377 : PART 3 : 2018 + A1 2021 : CLAUSE 7.6

Introduction

We refer to a sample taken from Limewalk, Long Sutton and delivered to our laboratory on 31st January 2023.

Material & Source

Sample Reference : TP7, S27-23, 0.50-1.00m
 Sampled By : Client
 Sampling Certificate : Not Supplied
 Location : TP7, S27-23, 0.50-1.00m
 Designation (d/D) : Not Supplied
 Description : Brown very sandy CLAY.
 Date Sampled : Not Supplied
 Date Tested : 31st January 2023 Onwards
 Source : 45011 - Limewalk, Long Sutton
 % Passing 2mm : 100
 Monosulfide Minerals : N/A
 Preparation Method : BS 1377 : Part 3 : 2018 + A1 2021 : Clause 7.3

Test Results

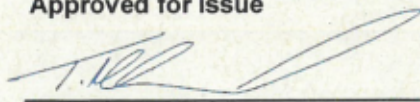
2:1 WATER SOLUBLE SULPHATE **60** **mg/l SO4**

Comments

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Remarks

Approved for Issue


 T McLelland (Director)

Date 27/02/2023



**LABORATORY TEST CERTIFICATE**

Certificate No : 23/134 - 01-9
To : Robyn Broughton
Client : Lincolnshire County Council
Lincs Laboratory
Riseholme, off St George's Lane
Lincoln, Lincolnshire
LN2 2LQ

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

pH VALUE
BS 1377 : PART 3 : 2018 + A1 2021 : CLAUSE 12.5

Introduction

We refer to a sample taken from Limewalk, Long Sutton and delivered to our laboratory on 31st January 2023.

Material & Source

Sample Reference : TP7, S27-23, 0.50-1.00m
Sampled By : Client
Sampling Certificate : Not Supplied
Location : TP7, S27-23, 0.50-1.00m
Designation (d/D) : Not Supplied
Description : Brown very sandy CLAY.
Date Sampled : Not Supplied
Date Tested : 31st January 2023 Onwards
Source : 45011 - Limewalk, Long Sutton
% Passing 2mm : 100
Monosulfide Minerals : N/A
Preparation Method : BS 1377 : Part 3 : 2018 + A1 2021 : Clause 12.4

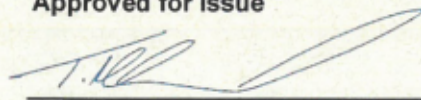
Test Results

pH VALUE **8.5**

Comments

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Remarks**Approved for Issue**


T McLelland (Director)

Date 27/02/2023

