

REPORT

Boston Alternative Energy Facility – Environmental Statement

Appendix 11.2 Lincs Laboratory, Ground Investigation
Report for Boston Waste Transfer Station

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**Ground Investigation Report for
Boston Waste Transfer Station,
Slippery Gowt Lane,
Riverside Industrial Estate,
Lincolnshire**

Issued

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Ground Investigation Report for Boston Waste Transfer Station, Slippery Gowt Lane, Riverside Industrial Estate, Lincolnshire

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**GROUND INVESTIGATION REPORT FOR
BOSTON WASTE TRANSFER STATION,
SLIPPERY GOWT LANE,
RIVERSIDE INDUSTRIAL ESTATE,
LINCOLNSHIRE**

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**GROUND INVESTIGATION REPORT FOR
BOSTON WASTE TRANSFER STATION,
RIVERSIDE INDUSTRIAL ESTATE,
LINCOLNSHIRE**

1.0 INTRODUCTION

- 1.1 At the request of Lincolnshire County Council's Environmental Management, Lincs Laboratory has undertaken a ground investigation in accordance with the general principles of BS5930 ⁽¹⁾ and BS EN 1997-2 ⁽²⁾ at a proposed waste transfer station site off Slippery Gowt Lane, Riverside Industrial Estate, Boston, Lincolnshire. The purpose of the investigation was to determine the nature of the underlying soils to enable recommendations to be made to aid the design and construction of the proposed waste transfer station.
- 1.2 The proposed development consists of a large steel framed building, weighbridge and office 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 higher groundwater levels 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.

2.0 SITE DESCRIPTION AND GEOLOGY

- 2.1 The site is situated approximately 2.5km south east of the town of Boston (Drawing Number 1, Appendix (i)). It consists of a rectilinear plot of flat arable land bound by a landfill site to the east, arable land to the north, industrial units to the west and Slippery Gowt Lane to the south. Drains run along the east and west boundaries of the site. The site is accessed off Slippery Gowt Lane.
- 2.2 From the Ordnance Survey maps the site has remained undeveloped throughout the recorded history. What is now the Haven Business Park to the west of the site first appears on the historical maps in the year 2000 with just two small buildings, the 2006 map shows the addition of another larger building and further developments appearing further to the west of these. On the 2011 map the Haven Business Park is much larger with an additional 8 or so buildings of different sizes. The land to the north, south and east seems to have remained undeveloped along with the site itself. A copy of the historical maps is included in Appendix (v).
- 2.3 The British Geological Survey 1:50,000 geological sheet for the Boston area ⁽³⁾ indicates the site to be situated on Quaternary Terrington Beds over the Jurassic Ancholme Group.

3.0 SITE WORK

3.1 Between Tuesday 8th November 2011 and Tuesday 22nd November 2011 six boreholes and seven trial pits were undertaken on the site in positions selected by Lincs Laboratory. The locations of the exploratory holes are shown on Drawing Number 2 in Appendix (i).

3.2 The trial pits (TP1 to 7) were excavated using a mechanical backhoe loader to between 3.0m and 3.2m below ground level (BGL). The trial pits were extended below groundwater levels.

Bulk (B) bag samples were taken from all of the trial pits out of the 0.50m margin below the anticipated sub-grade level. Additional samples were taken from the trial pits for reference purposes and additional testing.

3.3 The boreholes (BH1 to 6) were drilled with a Dando 150 to depths between 13.45m and 18.45m BGL. The boreholes were extended below groundwater level. BH1 was extended to 24.0m using a Beretta T44 truck mounted rotary rig.

Bulk (B) bag, small disturbed (d) and undisturbed (U100) samples were taken in all of the boreholes for testing and reference purposes. Continuous core samples were recovered from BH1 from 18.0 to 24.0m BGL.

3.4 In-situ standard penetration tests (SPT) were undertaken throughout the strata encountered in the borehole. The Standard Penetration Test involves driving a 50mm outside diameter split barrel sampler with a 65kg drop hammer, which falls 760mm. An initial drive of 150mm is carried out to 'seat' the sampler and then the number of blows required to drive the sampler a further 300mm is recorded, this number is called the standard penetration resistance (N). The full test procedure is detailed in BS 1377 : 1990 Part 9⁽⁴⁾. These results are shown on the borehole logs in Appendix (ii) and on the chart in Appendix (iv). The results are used to refine the soil strength descriptions, as well as for the design recommendations.

3.4 Standpipes (50mm diameter slotted pipe) were installed in BH1, 2 and 5 so that groundwater levels could be monitored. The groundwater levels recorded since completion of site work are given below.

Borehole	Depth of Standpipe (m BGL)	Water level 25/11/2011 (m BGL)	Water level 02/12/2011 (m BGL)	Water level 15/12/2011 (m BGL)
BH1	24.00	1.30	1.18	1.10
BH2	18.00	1.04	1.00	0.95
BH5	9.00	1.38	1.37	1.32

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, through external audits that it tests to a high standard.

4.2 The following tests were completed at the laboratory:
Natural Moisture Content
Atterberg Limits
California Bearing Ratio (CBR)

Details of the standards used ⁽⁴⁾ 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.

- 4.3 Selected samples were despatched to another UKAS accredited laboratory for sulphate content and pH value testing. The results are presented in the Laboratory Test Report (Appendix (iii)).

5.0 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

5.1 Ground Conditions

The ground investigation confirmed that the anticipated Terrington Beds and Ancholme Clay Group are present on the site. These were found beneath between 0.3 and 0.5m of silty sandy clayey occasionally gravelly topsoil. The Terrington Beds were encountered as very soft to stiff silty clays, clays and silts with organic matter and occasional bands of silty fine sand to a maximum depth of 9.45m BGL in BH6, although more generally 6.5m BGL. These were underlain by Glacial Till and granular Glacial Deposits to a maximum depth of 23.4m BGL. The Glacial Till generally comprised a firm to very stiff silty clay with angular to sub-rounded chalk gravel and medium dense silty sand. The Ancholme Group Clay, comprising a weak mudstone with rare shells, was found in BH1 from 23.4m BGL.

Groundwater was encountered in some of the exploratory holes during excavation at a maximum level of 2.0m BGL as a seepage and at 6.2m BGL during drilling. Ground water levels recorded following the site work indicated a maximum level of 0.95m BGL.

The exploratory hole logs, in Appendix (ii), give the details of the encountered soils at each location.

5.2 Foundation Design

The ground conditions above 6.5m BGL generally comprise soft and very soft clays and are unlikely to provide sufficient bearing capacity for the anticipated loads. It is likely that the loadings from the main structure will need to be carried by piled foundations taken into the underlying Glacial Till.

Advice should be sought from a specialist piling subcontractor with regard to the suitability of the various techniques, especially with regard to groundwater.

Based on a 600mm and 750mm diameter continuous flight auger (CFA) pile toeing into the Glacial Till formation (at a depth of 6.5m BGL). The following are likely capacities for an individual pile.

Pile Diameter (mm)	Penetration into Glacial Till (m)	Pile Capacity (kN) FoS = 2.5
600	3.0	250
600	6.0	510
750	3.0	360
750	6.0	710

The foundation assessment is based upon the ground conditions and engineering properties of the soils encountered during this investigation.

5.3 Road Construction

Laboratory CBR test results obtained the following results:

TP No.	Depth (mBGL)	Moisture Content (%)	CBR (%)
1	0.60-0.80	23	13
2	0.60-0.80	20	7.3
3	0.60-0.80	20	7.2
4	0.60-0.80	24	11
5	0.60-0.80	24	11
6	0.60-0.80	19	14
7	0.60-0.80	19	13

For design purposes, it is recommended that a CBR of 3% is used as the sub-grade is considered to be moisture susceptible.

5.4 Radon Assessment

According to information given by the Building Research Establishment (BRE) about Radon ⁽⁴⁾, and taking into account the nature of the site geology, it is considered that radon protection measures **will not be** required.

5.5 Sulphate Classification for Concrete

The laboratory sulphate content test results are as follows:

Exploratory Hole Ref.	Depth (mBGL)	Sulphate Content (g/l)	pH Value
TP1	0.60-0.80	<0.1	8.1
TP3	0.60-0.80	0.5	7.8
TP6	0.60-0.80	0.4	8.0
TP7	0.60-0.80	<0.1	8.1
BH1	6.70-7.00	<0.1	9.0
BH1	7.50 (Water)	<0.1	7.7
BH1	13.50-13.95	0.5	8.0
BH1	19.50-19.95	0.2	7.9
BH1	23.50-24.00	<0.1	8.0
BH3	0.60-1.00	0.2	7.9
BH4	1.20-1.65	0.6	8.0
BH4	7.50-7.95	0.6	9.2
BH4	7.90 (Water)	0.7	7.3
BH5	4.20-4.65	0.4	6.5
BH6	10.00 (Water)	1.3	7.3

These indicate a Design Sulphate Classification of DS-2 in accordance with BRE Special Digest 1⁽⁶⁾. In order to assess an Aggressive Chemical Environment for Concrete (ACEC), the site has been assumed to be greenfield and the groundwater has been assumed to be mobile in the absence of extensive groundwater monitoring. The corresponding pH value test results together with the sulphate content values and previous site usage, represents an ACEC classification of AC-2.

The client is advised to refer to the BRE Special Digest 1⁽⁶⁾ for guidelines for in-situ and pre-cast concrete elements of the construction.

5.6 Contamination

The soils encountered in the exploratory holes did not show any visual or odorous signs of contamination. Additionally, the surrounding land shows good healthy vegetation cover. Considering all these factors, along with the history of the site and the present surrounding land uses, it is not considered that the site is chemically contaminated. 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 projects 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

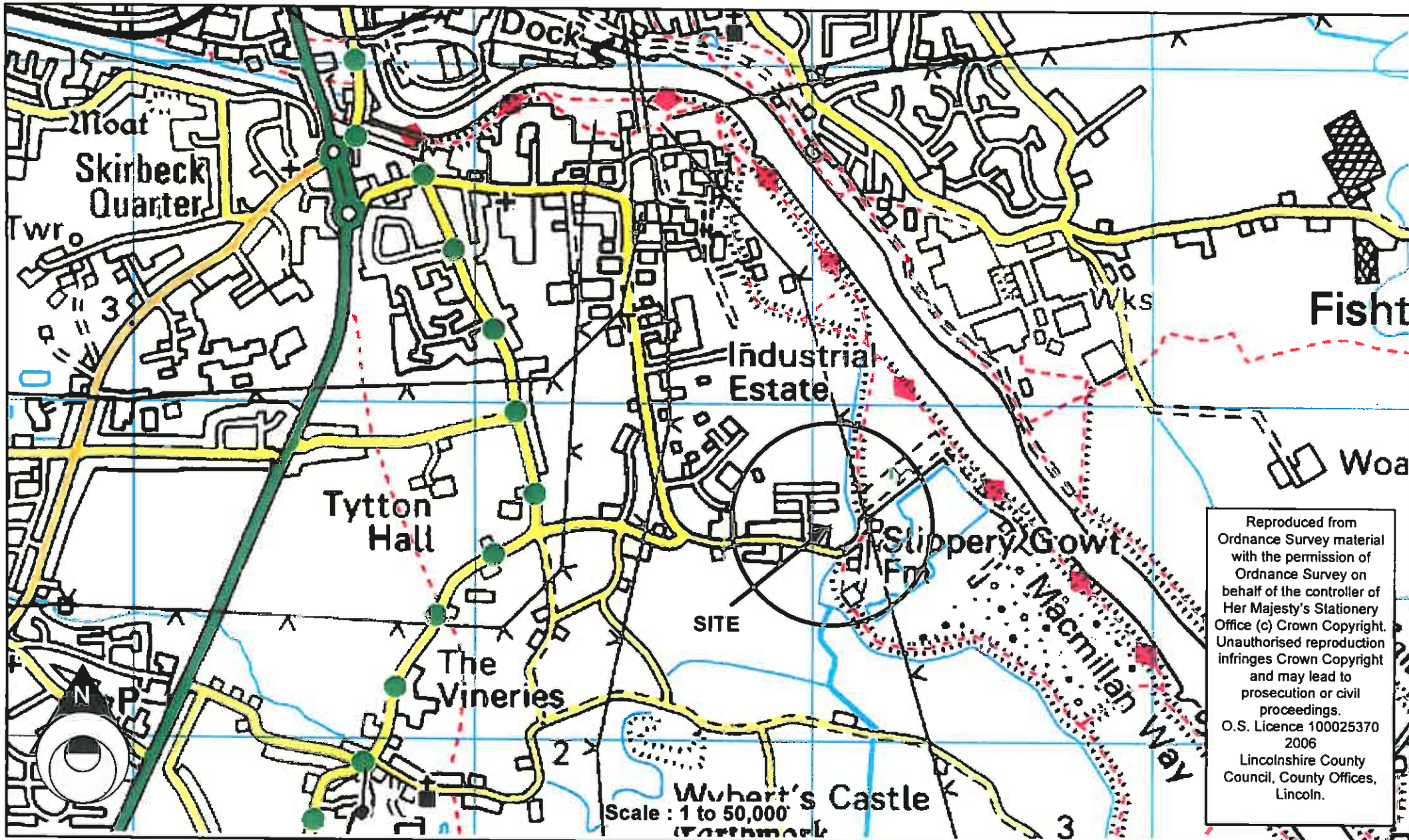
1. BS 5930 : 1999. "Code of Practice for Site Investigation". British Standards Institution.
2. BS EN 1997-2 : 2007. "Eurocode 7 – Geotechnical design – Part 2 – Ground Investigation and testing". British Standards Institution.
3. BGS 1:50,000 Geological Solid and Drift map for the Boston Area. Sheet 128. Published 1995.
4. BS 1377 : 1990. "Methods of Test for Soils for Civil Engineering Purposes". British Standards Institution.
5. BR 211 "Radon : Guidance on Protective Measures for New Dwellings". Building Research Establishment (BRE). Published 2007.
6. BRE Special Digest 1: "Concrete in Aggressive Ground". Third Edition. Published 2005. BRE Construction Division.

7.0 APPENDICES



APPENDIX (i)

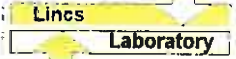
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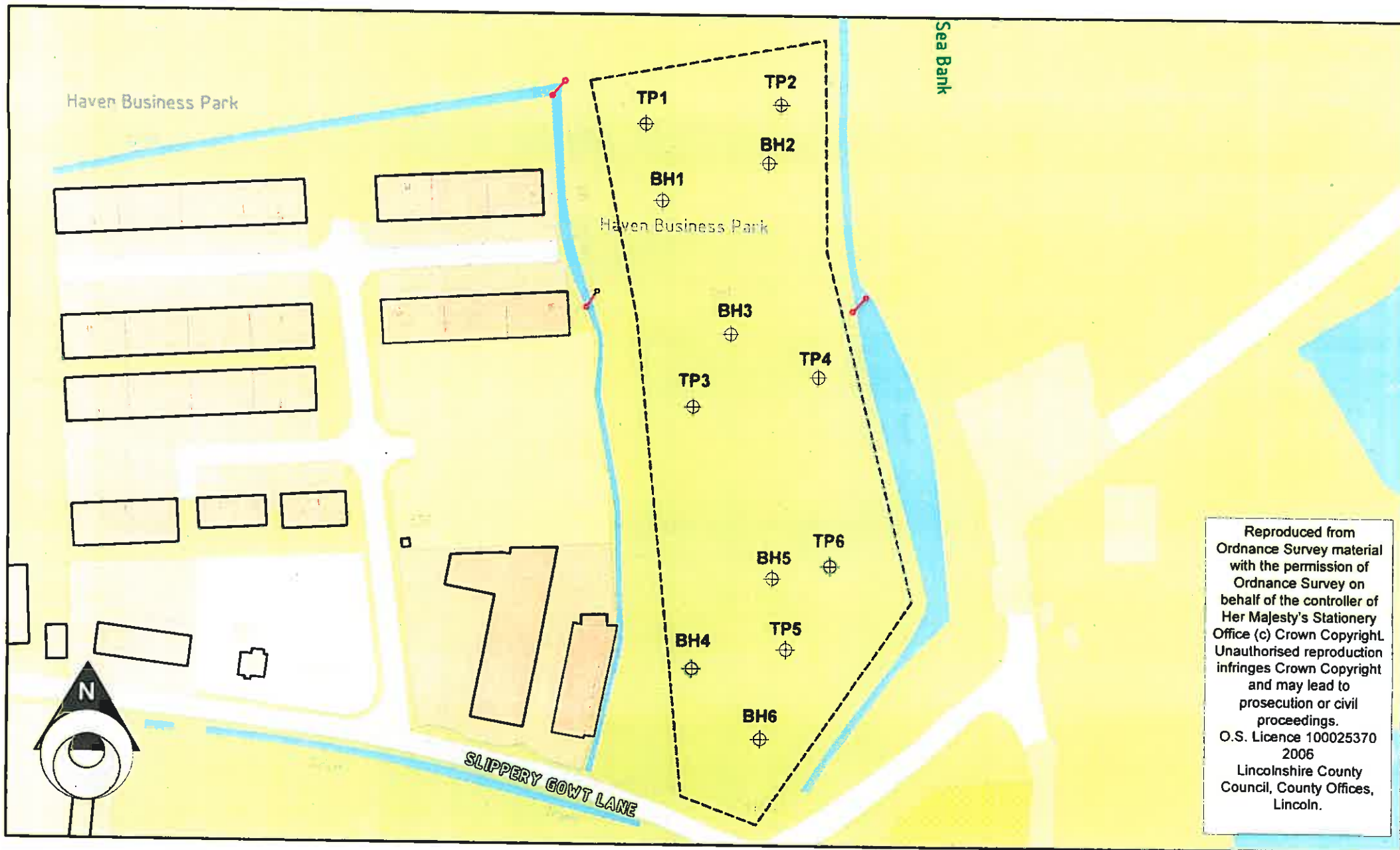
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 Date : 21/12/2011
 Job No. : 35361

Boston Waste Transfer Station

Site Location Plan



01522 530355



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Drawn : CTM
 Date : 21/12/2011
 Job No : 35361

Boston Waste Transfer Station

Exploratory Hole Location Plan

Lines
Laboratory
01522 530355



APPENDIX (ii)
EXPLORATORY HOLE LOGS

BH1 to 6
TP1 to 7

Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH1	Sheet 1 of 3
Remarks : Surface: stubble field. Groundwater was standing in borehole at 3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL).	Location: 534061E - 341755N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits				Density		Shear Strength			Chemical		Other				
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk Mg/m ³	Dry Mg/m ³	Cu kPa	Øu°	Type of Shear Test		SO ⁴ g/l	pH		
11/11	5mm 3.20		001	D	0.00-0.50				0.50	Orange brown silty sandy clayey TOPSOIL.																
			002	D	0.50-1.00				(Firm becoming very soft) orange brown very silty CLAY. (TB)																	
			003	S	1.20-1.85				2.20	N=2																
			004	D																						
			005	S	2.20-2.85				2.70	N=1																
			006	D																						
			007	S	3.20-3.65				1.50	N=0													51	59	28	31
			008	D																						
			009	S	4.20-4.65				1.50	N=0																
			010	D																						
			011	S	5.20-5.65				1.50	N=0																
			012	D																						
			013	D	5.70-6.00				0.70	N=3																
			014	S	6.20-6.65																					
			015	B					6.40	0.30													17	29	13	16
			016	D	6.70-7.00																					
			017	W	7.50				0.80	N=21																
			018	S	7.50-7.95																					
			019	D					0.10	1.40																
			020	S	9.00-9.45				1.40	N=31																
021	D																									
					1.70	Continued next sheet																				

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (28) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINC'S LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH1	Sheet 2 of 3
Remarks : Surface: stubble field. Groundwater was standing in borehole at 3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL).	Location: 534061E - 341755N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits				Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	
			022 023	S D	10.50-10.95		10.70 10.80	0.10	to medium angular and subrounded chalk gravel. (GT)	23/75mm	11	44	18	26							
			024 025	S D	12.00-12.45				Band of hard grey MUDSTONE. (DD)												
			026 027	S D	13.50-13.95			4.20	(Stiff) dark grey silty CLAY with fine to coarse angular and subrounded chalk gravel. (GT)	N=37											
			028 029	S D	15.00-15.45		15.00		(Stiff becoming very stiff) grey silty CLAY with fine to coarse subrounded chalk gravel.	N=42	17	35	16	19							
			030 031	S D	16.50-16.95			2.95		N=44											
			032 033	S D	17.50-17.95		17.95			N=71	19	33	20	13							
									Borehole continued using rotary coring.	36/150mm											
Continued next sheet																					

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINC'S LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH1	Sheet 3 of 3
Remarks : Surface: stubble field. Groundwater was standing in borehole at 3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL).	Location: 534061E - 341755N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits			CBR %	Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %		PI %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu°	Type of Shear Test	
									Borehole continued using rotary coring.													
								6.05														
								24.00	End of Borehole at 24.00 m													

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26° blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH1(R)	Sheet 1 of 3
Remarks : Surface: stubble field. Groundwater was standing in borehole at 3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL). Cored on 412.	Location: 534061E - 341755N	Instrumentation:	
	Client: LCC	Diameter of Hole: 100mm	
	Drilling Method: Beretta T44	Casing Diameter: 150mm	Logged By: SAW
		Log Scale: 10.00 m/page	Ground Level: - m AOD

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Core Details						Change of Strata			Description of Strata	Summary of Laboratory Testing				Installation details	SPT N Value and Other Tests			
			Run No	Run Depth (m)	TCR %	SCR %	RQD %	FI	Legend	Depth below GL (m)	Reduced Level m AOD (m)		Thickness of Stratum (m)	Sample/Test Depth (m) and Type	NMC %	PLI Diam ² MN/m ²			qu MN/m ²	PLI Axial MN/m ²	
													Borehole undertaken using Light Cable Percussion								N=2
																					N=1
																					N=0
																					N=0
																					N=0
																					N=3
																					N=21
																					N=31
												Continued next sheet									

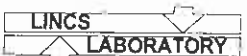
Scale	Samples/Tests D Small Bag B Large Bag N SPT 'N' Value C85 Rock Core Sample (85mm diameter)	Symbols TCR Total Core Recovery % SCR Solid Core Recovery % RQD Rock Quality Designation % FI Fracture Index	T Top of Sample PLI Point Load Index I Approx. uniaxial compressive strength A Axial Point Load Test Result D Diametral Point Load Test Result	Notes : Geology : Refer to appendix at end of logs. Soil strengths in (brackets) are assessed visually	Groundwater: <input checked="" type="checkbox"/> Struck <input type="checkbox"/> Rose to
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH1(R)	Sheet 3 of 3
Remarks : Surface: stubble field. Groundwater was standing in borehole at 3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL). Cored on 412.	Location: 534061E - 341755N	Diameter of Hole: 100mm	Instrumentation:
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Beretta T44	Logged By: SAW	Log Scale: 10.00 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Core Details						Change of Strata			Description of Strata	Summary of Laboratory Testing				Installation details	SPT N Value and Other Tests	
			Run No	Run Depth (m)	TCR %	SCR %	RQD %	FI	Legend	Depth below GL (m)	Reduced Level m AOD (m)		Thickness of Stratum (m)	Sample/Test Depth (m) and Type	NMC %	PLI Diam MN/m ²			qu MN/m ²
								[Pattern]				18.00m - 19.95m : Remaining Detail : 19.40m - 19.50m : coarse subrounded chalk gravel.	19.50-19.80 D						
								[Pattern]			3.45	19.95m - 23.40m : (Very stiff) dark grey very silty CLAY with fine to coarse subrounded chalk gravel and occasional small chalk cobbles. (GT) Detail 21.75m - 21.95m : 21.75-21.95 No recovery, possible band of sand. 21.75-21.95 No recovery, possible band of sand.	21.00-22.50 C						
								[Pattern]				(Weak) dark grey MUDSTONE with irregular laminations and rare shells. (AmG)	22.50-24.00 C						
								[Pattern]		23.40	0.80	End of Borehole at 24.00 m							
								[Pattern]		24.00									

Scale as Shown	Samples/Tests D Small Bag B Large Bag N SPT 'N' Value CB5 Rock Core Sample (85mm diameter)	Symbols TCR Total Core Recovery % SCR Solid Core Recovery % RQD Rock Quality Designation % FI Fracture Index	T Top of Sample PLI Point Load Index I Approx. uniaxial compressive strength A Axial Point Load Test Result D Diametral Point Load Test Result Groundwater: <input checked="" type="checkbox"/> Struck <input type="checkbox"/> Rose to
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Notes : **Geology :** Refer to appendix at end of logs.
Soil strengths in (brackets) are assessed visually



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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH2	Sheet 1 of 2
Remarks : Surface: stubble field. Groundwater was encountered at 6.2m BGL. A 50mm standpipe was installed to 18m (slotted between 18m and 9m BGL).	Location: 534096E - 341776N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

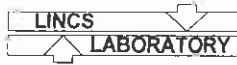
Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits				Density		Shear Strength		Chemical		Other																
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk Mg/m ³	Dry Mg/m ³	Cu kPa	Øu°		Type of Shear Test	SO ₄ g/l	pH													
17/11	6.20		001	D	0.00-0.50		0.50	0.50	Grey brown sandy silty clayey TOPSOIL.																												
			002	D	0.50-1.00				(Firm becoming soft) orange brown sandy silty CLAY. (TB)																												
			003 004	SPT D	1.20-1.65				2.00													N=1	28	37	20	17											
			005 006	SPT D	2.20-2.65				2.50													N=1															
			007 008	SPT D	3.20-3.65				2.00													N=0															
			009 010	SPT D	4.20-4.65				4.50													N=2															
			011 012	SPT D	5.20-5.65				1.40													N=3															
			013	D	5.90-6.10				0.30													N=4															
			014 015	SPT D	6.20-6.65																		(Firm) black pseudo fibrous organic SILT. (TB)														
			016 017	SPT D	7.50-7.95				7.50 7.70													0.20	N=19	(Very soft) grey green silty CLAY with fine to coarse angular and subrounded chalk and flint gravel. (GT)													
																								(Firm) grey brown very sandy CLAY with occasional fine to coarse angular and subrounded chalk and flint gravel. (GT)													
			018 019	SPT D	9.00-9.45																	N=29															

Continued next sheet

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH2	Sheet 2 of 2
Remarks : Surface: stubble field. Groundwater was encountered at 6.2m BGL. A 50mm standpipe was installed to 18m (slotted between 18m and 9m BGL).	Location: 534096E - 341776N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits				Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	
			032	W	10.00				(Stiff) grey very silty CLAY with fine to medium subrounded chalk gravel and rare coarse angular flint gravel. (GT)												
			020 021	SPT D	10.50-10.95					N=43											
			022 023	SPT D	12.00-12.45					N=49	15	38	19	19							
			024 025	SPT D	13.50-13.95			10.75		N=55											
			026 027	SPT D	15.00-15.45					N=57											
			028 029	SPT D	16.50-16.95					N=62	14	38	23	15							
			030 031	SPT D	18.00-18.45			18.45		25/75mm											
End of Borehole at 18.45 m																					

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☑ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26° blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane		Borehole.: BH3	Sheet 1 of 2
Remarks : Surface: stubble field. Groundwater was not encountered.	Location: 534088E - 341708N (See plan)	Diameter of Hole: 150mm		
	Client: LCC	Casing Diameter: 150mm		
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page	Ground Level: - m AOI

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits				Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu ^o	Type of Shear Test	
10/11			001	D	0.00-0.80			0.30	Orange brown silty clayey TOPSOIL.													
			002	D	0.60-1.00			0.70	(Firm) orange brown very silty CLAY. (TB)													
			003 004	S D	1.20-1.65			1.00	(Soft to firm) orange brown silty CLAY with pockets of orange silt. (TB)	N=4												
			005 006	S D	2.20-2.65			2.00	(Very soft to soft) orange grey brown silty CLAY. (TB)	N=1												
			007 008	S D	3.20-3.65			2.70	(Very soft) grey brown silty CLAY. (TB)													
			009 010	S D	4.20-4.65			4.20	(Very soft) grey brown silty CLAY with rare pockets of black organic clay. (TB)	N=0												
			011 012	S D	5.20-5.65			2.00		N=0												
			013	D	5.70-6.00																	
			014 015	S D	6.20-6.65			6.20	(Very soft) dark grey brown very sandy CLAY with pockets of black organic clay and rare fine flint gravel. (TB?)	N=8												
			016 017	S D	7.50-7.95			6.50	(Medium dense) grey silty SAND and GRAVEL. (DD)	N=24												
			018 019	S D	9.00-9.45			7.50	(Firm) grey green brown slightly sandy silty CLAY with fine to medium subrounded chalk gravel. (GT)													
								9.00	(Stiff) dark grey silty CLAY with fine to medium (occasionally coarse)	N=24												
Continued next sheet																						

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☑ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu ^o Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINC'S LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane		Borehole.: BH3	Sheet 2 of 2
Remarks : Surface: stubble field. Groundwater was not encountered.	Location: 534088E - 341708N (See plan)	Diameter of Hole: 150mm		
	Client: LCC	Casing Diameter: 150mm		
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page	Ground Level: - m AOD

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits			Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu°	
			020 021	S D	10.50-10.95	[Pattern]			subrounded chalk and flint gravel. (GT)	N=44											
			022 023	S D	12.00-12.45	[Pattern]		6.00		N=35											
			024 025	S D	13.50-13.95	[Pattern]				N=48											
			026 027	S D	15.00-15.45	[Pattern]		15.00	End of Borehole at 15.45 m	N=55											

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH4	Sheet 2 of 2
Remarks : Surface: bare ground. Ground water was encountered at 7.9m rising to 2.8m BGL in 20 mins.	Location: 534065E - 341617N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits			CBR %	Density		Shear Strength			Chemical		Other Test
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %		PI %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test	SO ₄ g/l	
			022 023	S D	10.50-10.95		10.00 10.50 10.80	0.50 0.30	(Loose) grey brown fine slightly silty SAND. (GT)	N=51													
			024 025	S D	12.00-12.45				(Loose) grey brown fine slightly silty SAND with fine to coarse subrounded chalk gravel. (GT)														
			026 027	S D	13.50-13.95				(Very dense) grey brown fine to coarse SAND and fine to coarse subrounded chalk and flint GRAVEL. (GT)	N=30													
			028 029	S D	15.00-15.45		15.00	4.20	(Firm to stiff) grey slightly silty slightly sandy CLAY with fine to medium subrounded chalk gravel. (GT)	N=43	19	33	17	16									
									End of Borehole at 15.45 m	N=56													

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ☒ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINC'S LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361

Site: Boston WTS, Slippery Gowt Lane

Borehole.: BH5

Sheet 1 of 2

Remarks :

Surface: stubble field. Groundwater was encountered as a slight seepage at 6.2m and was at 4.5m after borehole left overnight. A 50mm standpipe was installed to 9.0m (slotted between 9.0 and 3.0m BGL)

Location: 534108E - 341641N (See plan)

Diameter of Hole: 150mm

Client: LCC

Casing Diameter: 150mm

Drilling Method: Dando 150

Logged By: SAW

Log Scale: 10 m/page

Ground Level: - m AOI

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits					Density		Shear Strength			Chemical		Other Tests					
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test	SO ₄ g/l		pH				
21/11			001	D	0.00-0.50			0.50	Orange brown very silty clayey TOPSOIL.																			
			002	D	0.50-1.00		0.50		(Firm) orange slightly sandy silty CLAY. (TB)																			
			003 004	SPT D	1.20-1.65		1.20				N=6																	
			005 006	SPT D	2.20-2.65		1.70			(Soft) orange brown very silty CLAY. (TB)		N=1																
			007 008	SPT D	3.20-3.65		2.70			(Very soft) grey brown very silty CLAY. (TB)		N=0																
			009 010	SPT D	4.20-4.65		4.20			(Soft) dark grey silty peaty CLAY with pockets of black peat. (TB)		N=4	84	68	39	27												
			011 012	SPT D	5.20-5.65		1.70					N=4																
			013 014 015	D SPT D	5.90-6.20 8.20-6.65		5.90 8.30			(Soft) dark brown pseudo fibrous slightly sandy peaty SILT/CLAY. (TB)		N=13																
			016 017	SPT D	7.50-7.95		7.50			(Medium dense) dark brown coarse SAND and coarse angular and subrounded chalk and flint GRAVEL. (GD)		N=23																
			018 019	SPT D	9.00-9.45		1.95 9.45			(Medium dense) orange brown coarse SAND and fine to coarse subrounded and subangular GRAVEL. (GD)																		
											(Stiff becoming very stiff) dark grey		25/75mm															
											Continued next sheet																	

Scale
as Shown

Disturbed Samples
W Water Sample
D Small Bag
B Large Bag
T Tub
J Jar
RW River/Drain Water

Undisturbed Samples
U100 105mm Dia Core
U38 U100
C75 75mm Dia Core
Groundwater:
∇ Struck ∑ Rose to

Penetration Test
S Standard Penetration Test
CP Cone Penetration Test
Blows N = N Value
26/150 blows for 150mm after seating
26* blows for part or whole of seating drive only
26 (26) Undisturbed Sample Blows


Type of Shear Test
V Shear Vane
SB Shear Box
TX Triaxial (Undrained)
Cu Undrained Cohesive Strength
Øu° Internal Friction Angle

Notes
Geology : Refer to appendix at end of logs.
U100F = Failed U100 sample
(Bracketed) soil strengths are visually assessed

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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH5	Sheet 2 of 2
Remarks : Surface: stubble field. Groundwater was encountered as a slight seepage at 6.2m and was at 4.5m after borehole left overnight. A 50mm standpipe was installed to 9.0m (slotted between 9.0 and 3.0m BGL)	Location: 534108E - 341641N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: SAW	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits			CBR %	Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %		PI %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test	
			020 021	SPT D	10.50-10.95				silty CLAY with fine to coarse chalk gravel. (GT)	N=31	18	34	16	18								
			022 023	SPT D	12.00-12.45					N=37												
			024 025	SPT D	13.50-13.95			7.50		N=44												
			026 027	SPT D	15.00-15.45					N=55												
			028 029	SPT D	16.50-16.95			16.95		41/150mm												
									End of Borehole at 16.95 m													

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ▼ Struck ☒ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 28* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH6	Sheet 1 of 2
Remarks : Surface: stubble field. Groundwater was encountered at 10.1m BGL rising to 3.10m BGL in 20 minutes.	Location: 534090E - 341588N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: CK	Log Scale: 10 m/page

Date (2011)	Depth of Casing (m)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	Atterberg Limits					Density		Shear Strength		Chemical		Other Tests		
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test		SO ⁴ g/l	pH
09/11			1	D	0.00-0.50			0.50	Firm brown slightly silty clayey TOPSOIL with frequent roots.															
			2	D	0.50-1.00			0.50	Firm brown silty CLAY with occasional small roots. (TB)															
			3	SPT	1.20-1.65			1.00	Firm brown slightly silty CLAY. (TB)	N=3														
			4	D																				
			5	SPT	2.20-2.65			1.65	Soft grey brown CLAY. (TB)	N=0														
			6	D																				
			7	SPT	3.20-3.65			2.65	Soft wet brown grey silty CLAY. (TB)	N=0														
			8	D																				
			10	D	4.20-4.65			4.00	Very soft wet grey brown silty CLAY. (TB)	N=0														
			9	SPT																				
			11	SPT	5.20-5.65			6.65	Very soft wet grey brown silty CLAY. (TB)	N=0														
			12	D																				
			13	SPT	6.20-6.65			6.65	Very soft wet grey brown silty CLAY. (TB)	N=0														
			14	D																				
			15	SPT	7.50-7.95			2.80	Very soft wet grey brown silty CLAY. (TB)	N=3														
			16	D																				
			17	SPT	9.00-9.45			9.45	Fine to coarse, subangular to rounded	N=23	32	33	28	5										
			18	D																				
							1.05	Continued next sheet																

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U36 U100 C75 75mm Dia Core Groundwater: ▼ Struck ∇ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after sealing 26* blows for part or whole of sealing drive only 26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Borehole.: BH6	Sheet 2 of 2
Remarks : Surface: stubble field. Groundwater was encountered at 10.1m BGL rising to 3.10m BGL in 20 minutes.	Location: 534090E - 341588N (See plan)	Diameter of Hole: 150mm	
	Client: LCC	Casing Diameter: 150mm	
	Drilling Method: Dando 150	Logged By: CK	Log Scale: 10 m/page

Date	Depth of Casing (m)	Depth of Water (rf)	Sample/Test			Change of Strata			Description of Strata	Penetration Test Results	NMC %	Atterberg Limits				Density		Shear Strength		Chemical		Other Tests
			No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu°	Type of Shear Test	
09/11 10/11	10.00	10.00	19	B	10.00-10.50				very wet grey brown clayey SAND and GRAVEL with frequent shells and limestone. (GD)	N=46												
			20	W	10.00																	
			21	SPT	10.50-10.95																	
10/11			22	D				0.30														
			23	W	11.00				1.65													
10/11			24	SPT	12.00-12.45				Firm grey slightly gravelly CLAY with fine to medium subrounded to angular gravel and shell fragments. (GT)	N=56	18	35	18	17								
			25	D				12.45														
			26	SPT	13.00-13.45				1.00													
			27	D				Stiff grey slightly gravelly CLAY with fine to medium subrounded to rounded calc gravel. (GT)	25/75mm													
								End of Borehole at 13.45 m														

Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar RW River/Drain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ▼ Struck ⚡ Rose to	Penetration Test S Standard Penetration Test CP Cone Penetration Test Blows N = N Value 26/150 blows for 150mm after seating 26* blows for part or whole of seating drive only (26) Undisturbed Sample Blows	Type of Shear Test V Shear Vane SB Shear Box TX Triaxial (Undrained) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	 LINC'S LABORATORY Telephone (01522) 530355 Fax (01522) 510573
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Job Number: 35361		Site: Boston WTS, Slippery Gowt Lane		Trial Pit.: TP1		Sheet 1 of 1	
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater was not encountered.		Location: 534061E - 341755N		Orientation: E - W		Dimensions: Length : 2.00m Width : 0.70m Depth : 3.20 m	
		Client: LCC		Face Logged : N			
		Excavation Method: Backhoe Excavator		Logged By: CK		Log Scale: 3.50 m/page	

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	NMC %	Atterberg Limits				Density		Shear Strength			Chemical		Oth Tes
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test	SO ₄ g/l	
08/11		1	B	0.60-0.80		0.30		0.30	Firm, brown silty clayey TOPSOIL with occasional small roots.													
						0.30		0.30	Stiff orange brown silty CLAY with occasional roots. (TB)													
						0.60		0.60	(Stiff) grey brown and orange brown silty CLAY with occasional roots. (TB)	23.0				(F)13.00 (B)15.00	1.520							
						0.90		0.90	(Stiff) orange grey brown slightly silty CLAY with occasional orange brown silty laminations and occasional small roots. (TB)													
		2	B	1.80-2.00		1.50		1.50	(Stiff) orange grey brown slightly silty CLAY with occasional orange brown silty laminations and occasional small roots. (TB)													
						2.00		2.00	(Firm) orange brown and grey brown slightly silty CLAY with orange brown silty laminations. (TB)													
						2.60		2.60	(Soft) grey brown, orange brown and dark grey CLAY with frequent black roots and organic matter. (TB)													
		3	B	3.00-3.20		2.60		2.60	(Soft) grey brown, orange brown and dark grey CLAY with frequent black roots and organic matter. (TB)													
08/11						3.20		3.20	End of Trial Pit at 3.20 m													

Scale W Water Sample D Small Bag B Large Bag T Tin J Jar	Disturbed Samples U100 105mm Diameter U38 U100	Undisturbed Samples U100 105mm Diameter U38 U100	Symbols PT Penetration Tests P Probe CBR (!) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (In brackets) are assessed from on-site observations	 Telephone (01522) 530355
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Job Number: 35361		Site: Boston WTS, Slippery Gowt Lane		Trial Pit.: TP2		Sheet 1 of 1	
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater seepages encountered at 2.0m.		Location: 534096E - 341776N		Orientation: E - W		Dimensions: Length : 2.00m Width : 0.70m Depth : 3.00 m	
		Client: LCC		Face Logged : N			
		Excavation Method: Backhoe Excavator		Logged By: CK		Log Scale: 3.50 m/page	

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	Atterberg Limits				Density		Shear Strength		Chemical		Oth Tes
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu°	
08/11		1	B	0.60-0.80		0.30		(Soft) brown and grey brown slightly silty clayey TOPSOIL with occasional small roots.												
						0.70		(Stiff) orange brown silty CLAY and orange brown silt with occasional small roots. (TB)		20.0				(T)7.30 (Ø)15.00	1.670					
		2	B	1.80-2.00		1.00		(Stiff) grey brown and orange brown silty CLAY with occasional grey silty laminations. (TB)								87		v		
	▼ 2.00					2.00		(Soft) orange brown and grey brown silty CLAY. (TB)												
						2.30		(Soft) dark grey and orange brown CLAY with frequent black roots and organic matter. (TB)									38		v	
		3	B	2.80-3.00		0.70														
08/11						3.00		End of Trial Pit at 3.00 m									31		v	

Scale W Water Sample D Small Bag B Large Bag T Tln J Jar	Disturbed Samples U100 105mm Diameter U38 U100	Undisturbed Samples U100 105mm Diameter U38 U100	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	 Telephone (01522) 530355
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Trial Pit.: TP3	Sheet 1 of 1
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater was not encountered.	Location: 534069E - 341693N	Orientation: N - S	Dimensions: Length : 2.00m Width : 0.70m Depth : 3.00 m
	Client: LCC	Face Logged : E	
	Excavation Method: Backhoe Excavator	Logged By: CK	Log Scale: 3.50 m/page

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	NMC %	Atterberg Limits				Density		Shear Strength		Chemical		Other Test
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu"	SO ₄ g/l	
08/11		1	B	0.60-0.80		0.30		(Soft) brown slightly silty clayey TOPSOIL with frequent small roots.													
						0.30		(Firm) orange brown silty CLAY with frequent small roots. (TB)													
		2	B	1.80-2.00		0.60		(Firm) orange brown and occasional grey brown slightly silty CLAY with occasional small roots and orange and grey silt laminations. (TB)	20.0			(T)7.20 (B)9.20	1.690				45	v			
						0.90		(Firm) orange brown slightly silty CLAY with occasional light grey and orange laminations. (TB)													
		3	B	2.80-3.00		2.00		(Soft) orange brown and grey brown silty CLAY with occasional pockets of black organic matter. (TB)													
						1.00															
08/11						3.00		End of Trial Pit at 3.00 m									24	v			


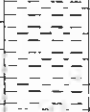
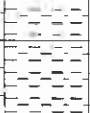
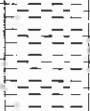
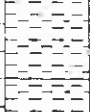
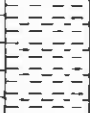
Scale	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tin J Jar	Undisturbed Samples U100 105mm Diameter U38 U100 Groundwater: ∇ Struck ∇ Rose to	Symbols PT Penetration Tests P Probe CBR (i) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu" Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	 Telephone (01522) 530355
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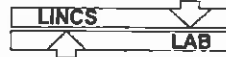
Job Number: 35361		Site: Boston WTS, Slippery Gowt Lane		Trial Pit.: TP4		Sheet 1 of 1	
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater was not encountered.		Location: 534116E - 341642N		Orientation: N - S		Dimensions: Length : 2.00m Width : 0.70m Depth : 3.20 m	
		Client: LCC		Face Logged : E			
		Excavation Method: Backhoe Excavator		Logged By: CK		Log Scale: 3.50 m/page	

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	Atterberg Limits				Density		Shear Strength		Chemical		Oth Tes
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	
08/11		1	B	0.60-0.80		0.50	0.50	Brown slightly silty clayey TOPSOIL with occasional small roots.												
						0.50	0.50	(Stiff) brown and grey brown slightly silty CLAY with occasional small roots. (TB)		24.0			(F)12.00 (B)11.00	1.590		97	v			
						1.00	1.00	(Firm) grey brown and brown CLAY with occasional orange silty laminations. (TB)								67	v			
		2	B	1.80-2.00		2.00	0.40	(Soft) orange brown and grey brown CLAY. (TB)												
						2.40	0.80	(Soft) dark grey and orange brown CLAY. (TB)												
		3	B	3.00-3.20		3.20		End of Trial Pit at 3.20 m								32	v			
08/11						3.20														










Scale W Water Sample as D Small Bag Shown B Large Bag T Tin J Jar	Undisturbed Samples U100 105mm Diameter U38 U100 Groundwater: ∇ Struck ∇ Rose lo	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (In brackets) are assessed from on-site observations	 Telephone (01522) 530355
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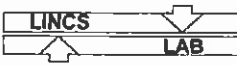
Job Number: 35361		Site: Boston WTS, Slippery Gowt Lane			Trial Pit.: TP5		Sheet 1 of 1		
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater was not encountered.		Location: 534099E - 341617N		Orientation: N - S		Dimensions: Length : 2.00m Width : 0.70m Depth : 3.00m			
		Client: LCC		Face Logged : E					
		Excavation Method: Backhoe Excavator		Logged By: CK		Log Scale: 3.50 m/page		Ground Level: - m AO	

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	NMC %	Atterberg Limits				Density		Shear Strength		Chemical		Oth Tes
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	Type of Shear Test	
08/11		1	B	0.60-0.80		0.40		(Stiff) brown clayey TOPSOIL with occasional small roots.													
						0.40		(Stiff) orange brown slightly silty CLAY with frequent grey clay laminations and occasional small roots. (TB)		24.0			(F)11.00 (B)12.00		1.540						
		2	B	1.80-2.00		1.00		(Stiff) orangey grey brown slightly silty CLAY with occasional grey laminations. (TB)									90		v		
						2.00		(Soft) orange brown slightly silty CLAY with grey and orange laminations. (TB)													
		3	B	2.80-3.00		2.80		(Soft) dark grey, black and grey orange CLAY. (TB)									27		v		
08/11						3.00		End of Trial Pit at 3.00 m									34		v		

Scale W Water Sample D Small Bag B Large Bag T Tin J Jar	Disturbed Samples U100 105mm Diameter U38 U100	Undisturbed Samples U100 105mm Diameter U38 U100	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	 Telephone (01522) 530355
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Job Number: 35361	Site: Boston WTS, Slippery Gowt Lane	Trial Pit.: TP6	Sheet 1 of 1
Remarks : Surface - stubble field. Pit sides did not collapse. Groundwater seepages encountered at 2.0m.	Location: 534122E - 341628N	Orientation: N-S	Dimensions: Length : 2.20m Width : 0.70m Depth : 3.00 m
	Client: LCC	Face Logged : E	
	Excavation Method: Backhoe Excavator	Logged By: CK	Log Scale: 3.50 m/page

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	NMC %	Atterberg Limits				Density		Shear Strength		Chemical		Other Tests	
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m AOD (m)				Thickness of Stratum (m)	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m ³	Dry ³ Mg/m ³	Cu kPa	Øu°	Type of Shear Test		SO ₄ g/l
08/11		1	B	0.60-0.80			0.30	(Soft) brown clayey TOPSOIL with occasional small roots.														
								0.30	(Loose) fine orange SILT with occasional small roots. (TB)													
								0.60	(Stiff) grey brown slightly silty CLAY with occasional small roots and rare small pocket of very soft black clay. (TB)			19.0			(T)14.00 (B)14.00		1.700					
		2	B	1.80-2.00			1.00	(Stiff) orange brown slightly silty CLAY. (TB)										99		v		
								1.50	(Firm) orange brown slightly silty CLAY with occasional grey and orange silty clay laminations. (TB)													
								2.00	(Soft) orange brown CLAY. (TB)													
		3	B	2.80-3.00			0.80															
08/11								2.80	(Soft) dark grey and orange brown CLAY with occasional large pockets of soft grey silty clay. (TB)													
							3.00	End of Trial Pit at 3.00 m														

Scale	Disturbed Samples W Water Sample S Small Bag B Large Bag T Tin J Jar	Undisturbed Samples U100 105mm Diameter U38 U100 Groundwater: ▽ Struck □ Rose to	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (In brackets) are assessed from on-site observations	 Telephone (01522) 530355
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Job Number: 35361		Site: Boston WTS, Slippery Gowt Lane			Trial Pit.: TP7		Sheet 1 of 1		
Remarks : Surface - stubble field. Pit slides did not collapse. Groundwater was not encountered.		Location: 534045E - 341595N		Orientation: N - S		Dimensions: Length : 2.00m Width : 0.70m Depth : 3.00 m			
		Client: LCC		Face Logged : E					
		Excavation Method: Backhoe Excavator		Logged By: CK		Log Scale: 3.50 m/page		Ground Level: - m AC	

Date (2011)	Depth of Water (m)	Sample/Test			Change of Strata			Description of Strata	MPT Test Result	Atterberg Limits				Density		Shear Strength		Chemical		Oth Tes
		No	Type	Depth (m)	Legend	Depth below GL (m)	Reduced Level m ADD (m)			Thickness of Stratum (m)	NMC %	LL %	PL %	PI %	CBR %	Bulk ³ Mg/m	Dry ³ Mg/m	Cu kPa	Øu°	
08/11		1	B	0.60-0.80		0.40		(Firm) brown slightly gravelly clayey TOPSOIL with occasional small roots and rare plastic bag.												
						0.20		(Firm) dark orange brown CLAY with rare blue plastic bag. (MG?)												
						0.60		(Stiff) dark orange brown slightly silty CLAY with occasional small roots. (TB)		19.0			(F)13.00 (B)13.00	1.680						
						0.90										52		v		
		2	B	1.80-2.00		0.50		(Soft) brown CLAY with occasional grey and orange laminations and mottles and frequent shells. (TB)												
						2.00														
						1.00		(Soft) dark grey black and light grey brown CLAY. (TB)								25		v		
08/11		3	B	2.80-3.00		3.00														
								End of Trial Pit at 3.00 m												
																29		v		

Scale W Water Sample D Small Bag B Large Bag T Tin J Jar	Disturbed Samples U100 105mm Diameter U38 U100	Undisturbed Samples U100 105mm Diameter U38 U100	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu° Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	 Telephone (01522) 530355
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**GROUND INVESTIGATION REPORT FOR
BOSTON WASTE TRANSFER STATION,
SLIPPERY GOWT LANE,
RIVERSIDE INDUSTRIAL ESTATE,
LINCOLNSHIRE**

NOTES ON SAMPLE DESCRIPTIONS AND SYMBOLS

1. **Sample Descriptions**

Sample descriptions are in accordance with BS 5930 : 1999 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**

(TB)	Quaternary Terrington Beds
(GT)	Quaternary Glacial Till
(GD)	Quaternary Glacial Deposits
(AmG)	Jurassic Ancholme Group

3. **Test Results**

Where a result of 0.09g/l is reported for SO₄, the laboratory test result report gave a result of less than 0.1g/l.

APPENDIX (iii)
LABORATORY TEST REPORT

Lincs Laboratory

Tel: (01522) 530355

Fax: (01522) 510573

www.Lincolnshire.gov.uk/Lincslab

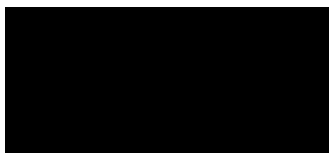
St Georges Lane
Riseholme
Lincoln LN2 2LQ

TO: Environmental Management
Witham Park House
Witham Park
Waterside South
LINCOLN

REPORT NO: 59526
JOB NO: 35361
DATE: 19 December 2011

PROJECT TITLE: BOSTON & SOUTH HOLLAND WTS
WORK UNDERTAKEN: ANALYSIS OF GROUND INVESTIGATION SAMPLES

Authorising Signature:



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.

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- √1 - Client (Via S Wells)
- 1 - Lab File

Lincs Laboratory

Tel: (01522) 530355

Fax: (01522) 510573

www.Lincolnshire.gov.uk/Lincslab

St Georges Lane
Riseholme
Lincoln LN2 2LQ

REPORT: 59526
JOB NO: 35361
DATE: 19 December 2011

PROJECT TITLE: BOSTON & SOUTH HOLLAND WTS
WORK UNDERTAKEN: ATTERBERG LIMITS TEST RESULTS

Lab Sample No.	BH (No)	Sample (type)	Depth (m)	NMC (%)	LL (%)	PL (%)	PI (%)	Ret 425um (%)
S765-11	1	d	3.20-3.65	51	59	28	31	0
S766-11	1	d	6.70-7.00	17	29	13	16	29
S768-11	1	d	10.50-10.95	11	44	18	26	39
S769-11	1	d	13.50-13.95	17	35	16	19	15
S770-11	1	d	16.50-16.95	19	33	20	13	14
S771-11	1	d	19.50-19.80	16	30	20	10	12
S774-11	2	d	1.20-1.65	28	37	20	17	0
S775-11	2	d	12.00-12.45	15	38	19	19	12
S776-11	2	d	16.50-16.95	14	38	23	15	9
S778-11	4	d	1.20-1.65	36	54	24	30	0
S779-11	4	d	7.50-7.95	14	28	15	13	40
S781-11	4	d	13.50-13.95	19	33	17	16	11
S782-11	5	d	4.20-4.65	84	66	39	27	27
S783-11	5	d	10.50-10.95	18	34	16	18	27
S784-11	6	d	9.00-9.45	32	33	28	5	2
S786-11	6	d	12.00-12.45	18	35	18	17	22

Notes:

- i) Sampler : Lincs Lab Contracted Drillers (SIS)
- ii) Sampling Procedure : BS5930:1999 (Not UKAS Accredited)
- iii) Date Received : 23.11.11
- iv) Date Tested : 2 to 9.12.11
- v) Test Procedures : (MC) BS 1377:Pt 2:1990 Cl 3.2 (UKAS Accredited)
(PL) BS 1377:Pt 2:1990 Cl 5.3 (UKAS Accredited)
(LL) BS 1377:Pt 2:1990 Cl 4.4 (UKAS Accredited)
(PI) BS 1377:Pt 2:1990 Cl 5.4 (UKAS Accredited)
- vi) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- vii) d = Disturbed
- viii) Samples S765, S774, S778 and S784-11 were tested in their material state and all the other samples were washed over a 425um sieve prior to testing.

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REPORT: 59526
JOB NO: 35361
DATE: 19 December 2011

PROJECT TITLE: BOSTON & SOUTH HOLLAND WTS
WORK UNDERTAKEN: CALIFORNIA BEARING RATIO TEST RESULTS

Lab Sample No.	TP (No)	Sample (type)	Depth (m)	Dry Density (Mg/m ³)	NMC		CBR Value			Retained 20mm (%)
					Top (%)	Base (%)	Top (%)	Base (%)	Mean (%)	
S758-11	1	B	0.60-0.80	1.52	23	23	13	15	14	0
S759-11	2	B	0.60-0.80	1.67	20	18	7.3	15	N/A	0
S760-11	3	B	0.60-0.80	1.69	20	20	7.2	9.2	N/A	0
S761-11	4	B	0.60-0.80	1.59	23	24	12	11	12	0
S762-11	5	B	0.60-0.80	1.54	24	23	11	12	12	0
S763-11	6	B	0.60-0.80	1.70	19	18	14	14	14	0
S764-11	7	B	0.60-0.80	1.68	18	19	13	13	13	0

Notes:

- i) Sampler : Lincs Lab (CK)
- ii) Sampling Procedure : BS 5930:1999 (Not UKAS Accredited)
- iii) Date Received : 23.11.11
- iv) Date Tested : 25.11.11 to 2.12.11
- v) Test Procedure : BS 1377:Pt 4:1990 Cl 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)
- vi) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)
- vii) B = Bulk
- viii) The sample was tested in an unsoaked condition.
- ix) Copies of the force penetration curves are available on request.

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REPORT: 59526
JOB NO: 35361
DATE: 19 December 2011

PROJECT TITLE: BOSTON & SOUTH HOLLAND WTS
WORK UNDERTAKEN: ANALYSIS OF GROUND INVESTIGATION SAMPLES

Lab Sample No.	BH/TP No.	Sample Type	Depth (m)
S758-11	TP1	B	0.60-0.80
S760-11	TP3	B	0.60-0.80
S763-11	TP6	B	0.60-0.80
S764-11	TP7	B	0.60-0.80
S766-11	BH1	d	6.70-7.00
S767-11	BH1	w	7.50
S769-11	BH1	d	13.50-13.95
S772-11	BH1	d	19.5-19.95
S773-11	BH1	d	23.50-24.00
S777-11	BH3	d	0.60-1.00
S778-11	BH4	d	1.20-1.65
S779-11	BH4	d	7.50-7.95
S780-11	BH4	w	7.90
S782-11	BH5	d	4.20-4.65
S785-11	BH6	w	10.00

SAMPLE DETAILS:

Sample Type:	U = Undisturbed, d = Disturbed, B = Bulk	Date Received:	23.11.11
Sampler:	Lincs Lab (CK) & SIS Lincs Lab	Date Tested:	10-13.12.11
Sampling Procedure:	Sub-Contracted Drillers		
	BS 5930:1999 (Not UKAS Accredited)		

REMARKS:

The above samples were sub-contracted to a UKAS accredited laboratory who are accredited for the tests as detailed in their report. A copy of their report can be found on pages 5 to 22 of this report.



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

Report no. 10166-LIL/001			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18644	S758-11 TP1	Bulk /Disturbed	0.6-0.80	Brown clay	93	<0.1	<0.1	8.1

NOTES

- Sample preparation was in accordance with BS 1377 : Part 3 : 1990
- Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
- pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5.
- Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported.

.....
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Report No. 59526



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

Report no. 10166-LIL/002			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18645	5760-11 TP3	Bulk/ Disturbed	0.60-0.80	Brown clay	96	0.4	0.5	7.8

NOTES

- 1 Sample preparation was in accordance with BS 1377 Part 1: 1990.
- 2 Sulphate testing was in accordance with BS 1377: Part 3: 1990 Clause 5.5.
- 3 pH testing was in accordance with BS 1377: Part 3: 1990 Clause 9.5.
- 4 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377: Part 3: 1990 does not require SO₄ figures to be reported.



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

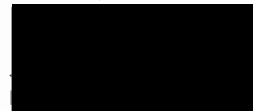
Boston and South Holland WTS

Report no. 10166-LIL/003			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18646	S763-11 TP6	Bulk/ Disturbed	0.60-0.80	Brown clay occasional root hairs	89	0.3	0.4	8.0

NOTES

- 1 Sample preparation was in accordance with BS 1377 : Part 2 : 1990
- 2 Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
- 3 pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5.
- 4 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

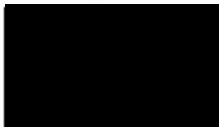
Boston and South Holland WTS

Report no. 10166-LIL/004			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18647	S764-11 TP7	Bulk/ Disturbed	0.60-0.80	Brown silty clay	87	<0.1	<0.1	8.1

NOTES

1. Sample preparation was in accordance with BS 1377 : Part 3 : 1990
2. Sulphate testing was in accordance with BS 1377 - Part 3 : 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5.
4. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

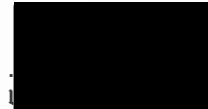
Report no. 10166-LIL/005

Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
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NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18648	S766-11 BH1	Disturbed	6.70-7.00	Light grey slightly gravelly clay	69	<0.1	<0.1	9.0

NOTES

1. Sample preparation was in accordance with BS 1377 - Part 1 : 1990
2. Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5.
4. Sulphate content as SO₃ has been calculated by multiplying the sulphate content as SO₄ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₃ figures to be reported.



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Report No. 59526



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BS 1377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER

Boston and South Holland WTS

Report no. 10166-LIL/016			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 12/12/2011	Date of issue: 14/12/2011

NCA sample reference:	Client sample reference:	Sample type	Depth (m)	Sulphate content as SO ₃ (g/l):	Sulphate content as SO ₄ (g/l):
11-18649	S767-11 BH1	Water	7.50	<0.1	< 0.1

NOTES

- 1 Testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5.
- 2 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported

.....
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TEST REPORT

BS 1377 pH VALUE

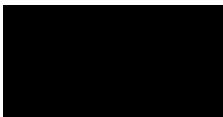
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Report no. 10166-LI/013	
Order reference: 4601568559	Date of testing: 12/12/2011
Date of receipt: 02/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18649	S767-11 BH1	Water	7.50	7.7

NOTES:

1. Samples were prepared in accordance with BS 1377 : Part 1 : 1990
2. Testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

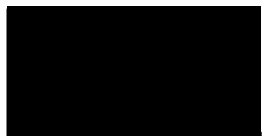
Report no. 10166-LIL/006

Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
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NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18650	S769-11 BH1	Disturbed	13.50-13.95	Dark grey slightly gravelly clay	87	0.4	0.5	8.0

NOTES

- 1 Sample preparation was in accordance with BS 1377 : Part 1 : 1990
- 2 Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
- 3 pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5
- 4 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2 BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported



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TEST REPORT

BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

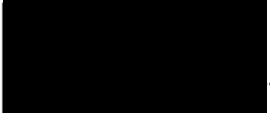
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Report no. 10166-LIL/007			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18651	S772-11 BH1	Disturbed	19.50-19.95	Dark grey chalky clay	96	0.2	0.2	7.9

NOTES

1. Sample preparation was in accordance with BS 1377 : Part 1 : 1990.
2. Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5
4. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported.



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

Report no. 10166-LIL/008

Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
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NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18652	S773-11 BH1	Disturbed	23.50- 24.00	Dark grey clay	87	<0.1	<0.1	8.0

NOTES

- 1 Sample preparation was in accordance with BS 1377 Part 1 : 1990
- 2 Sulphate testing was in accordance with BS 1377 Part 3 : 1990 Clause 5.5
- 3 pH testing was in accordance with BS 1377 Part 3 : 1990 Clause 9.5.
- 4 Sulphate content as SO₃ has been calculated by multiplying the sulphate content as SO₄ by 1.2 BS 1377 Part 3 : 1990 does not require SO₃ figures to be reported

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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

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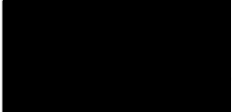
Report no. 10166-LIL/009

Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
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NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18653	S777-11 BH3	Disturbed	0.60-1.00	Brown silty clay	93	0.2	0.2	7.9

NOTES

1. Sample preparation was in accordance with BS 1377 : Part 1 : 1990.
2. Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5
4. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2 BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported



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BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

Report no. 10166-LIL/010			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18654	5778-11 BH4	Disturbed	1.20-1.65	Brown clay	98	0.5	0.6	8.0

NOTES

1. Sample preparation was in accordance with BS 1377 : Part 1 : 1990
2. Sulphate testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5.
4. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377 : Part 3 : 1990 does not require SO₃ figures to be reported

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Report No. 59526



0320

NICHOLLS COLTON

ANALYTICAL

TEST REPORT

Nicholls Colton Analytical
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Website: www.nicholls-colton.co.uk

BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

Boston and South Holland WTS

Report no. 10166-LIL/011

Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
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NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18655	S779-11 BH4	Disturbed	7.50-7.95	Grey slightly gravelly sand clay	89	0.5	0.6	9.2

NOTES

1. Sample preparation was in accordance with BS 1377 - Part 1 - 1990
2. Sulphate testing was in accordance with BS 1377 - Part 3 - 1990 Clause 5.5
3. pH testing was in accordance with BS 1377 - Part 3 - 1990 Clause 9.5
4. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.7. BS 1377 - Part 3 - 1990 does not require SO₄ figures to be reported



Operations Manager UK & Ireland
Nicholls Colton Analytical

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Riseholme
Lincoln
LN2 2LQ

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Report No. 59526



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NICHOLLS COLTON ANALYTICAL

TEST REPORT

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BS 1377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER

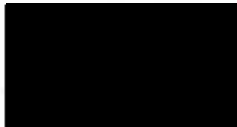
Boston and South Holland WTS

Report no. 10166-LIL/017			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 12/12/2011	Date of issue: 14/12/2011

NCA sample reference:	Client sample reference:	Sample type	Depth (m)	Sulphate content as SO ₃ (g/l):	Sulphate content as SO ₄ (g/l):
11-18656	S780-11 BH4	Water	7.90	0.6	0.7

NOTES

1. Testing was in accordance with BS 1377: Part 3: 1990 Clause 5.5.
2. Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2. BS 1377: Part 3: 1990 does not require SO₄ figures to be reported



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TEST REPORT

BS 1377 pH VALUE

Boston and South Holland WTS

Report no. 10166-LL/014	
Order reference: 4601568559	Date of testing: 12/12/2011
Date of receipt: 02/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18656	S780-11 BH4	Water	7.90	7.3

NOTES:

1. Samples were prepared in accordance with BS 1377 - Part 1 : 1990
2. Testing was in accordance with BS 1377 - Part 3 : 1990 Clause 9.5



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TEST REPORT

BS 1377 WATER SOLUBLE SULFATE CONTENT AND pH OF SOIL

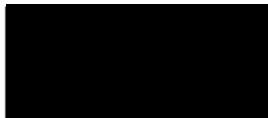
Boston and South Holland WTS

Report no. 10166-LIL/012 – Amendment A			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 20/12/2011

NCA sample reference	Client sample reference	Sample type	Depth (m)	Sample description	Material passing a 2mm BS test sieve (% dry mass of original sample)	Sulfate content as SO ₃ of 2:1 soil/water extract (g/l):	Sulfate content as SO ₄ of 2:1 soil/water extract (g/l):	pH value
11-18657	S782-11 BH5	Disturbed	4.20-4.65	Dark brown very silty clay	90	0.3	0.4	6.5

NOTES

- 1 Sample preparation was in accordance with BS 1377 - Part 1 : 1990.
- 2 Sulphate testing was in accordance with BS 1377 - Part 3 : 1990 Clause 9.5
- 3 pH testing was in accordance with BS 1377 - Part 3 : 1990 Clause 9.5
- 4 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₃ by 1.2 BS 1377 - Part 3 : 1990 does not require SO₄ figures to be reported



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NICHOLLS COLTON ANALYTICAL

TEST REPORT

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BS 1377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER

Boston and South Holland WTS

Report no. 10166-LIL/018			
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 12/12/2011	Date of issue: 14/12/2011

NCA sample reference:	Client sample reference:	Sample type	Depth (m)	Sulphate content as SO ₂ (g/l):	Sulphate content as SO ₄ (g/l):
11-18658	S785-11 BH6	Water	10.00	1.1	1.3

NOTES

- 1 Testing was in accordance with BS 1377 : Part 3 : 1990 Clause 5.5
- 2 Sulphate content as SO₄ has been calculated by multiplying the sulphate content as SO₂ by 1.2 BS 1377 : Part 3 : 1990 does not require SO₄ figures to be reported

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Report No. 59526



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TEST REPORT

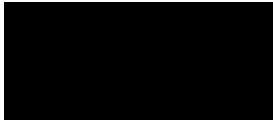
BS 1377 pH VALUE

Boston and South Holland WTS

Report no. 10166-LIL/D15	
Order reference: 4601568559	Date of testing: 12/12/2011
Date of receipt: 02/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18658	S785-11 BH6	Water	10.00	7.3

NOTES:
1. Samples were prepared in accordance with BS 1377 - Part 1: 1990
2. Testing was in accordance with BS 1377 - Part 3: 1990 Clause 9.5



Operations Manager UK & Ireland
Nicholls Colton Analytical

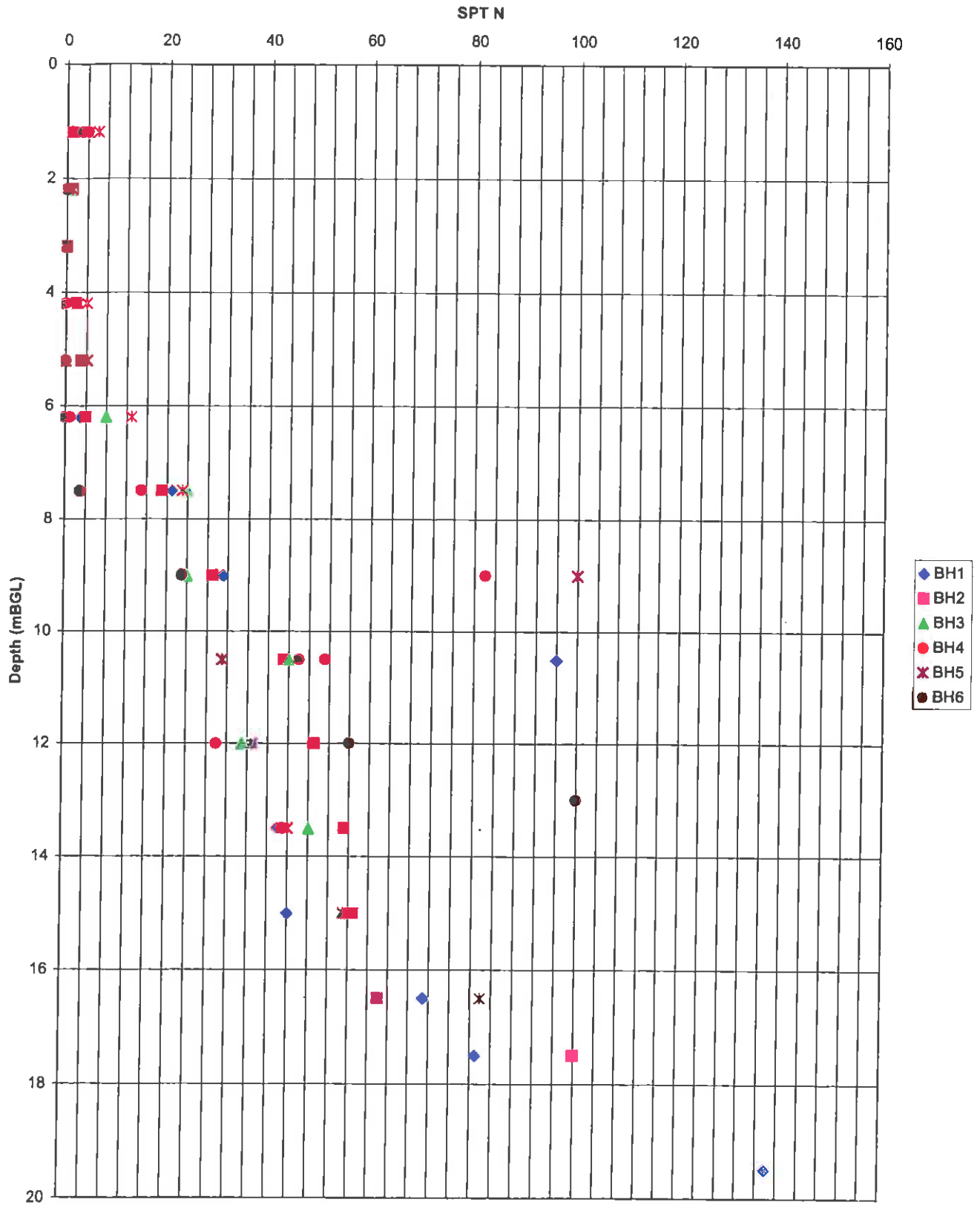
Lines Laboratory
St Georges Lane
Riseholme
Lincoln
LN2 2LQ



APPENDIX (iv)

CHARTS

SPT N v Depth



Nov-11

Chart 1

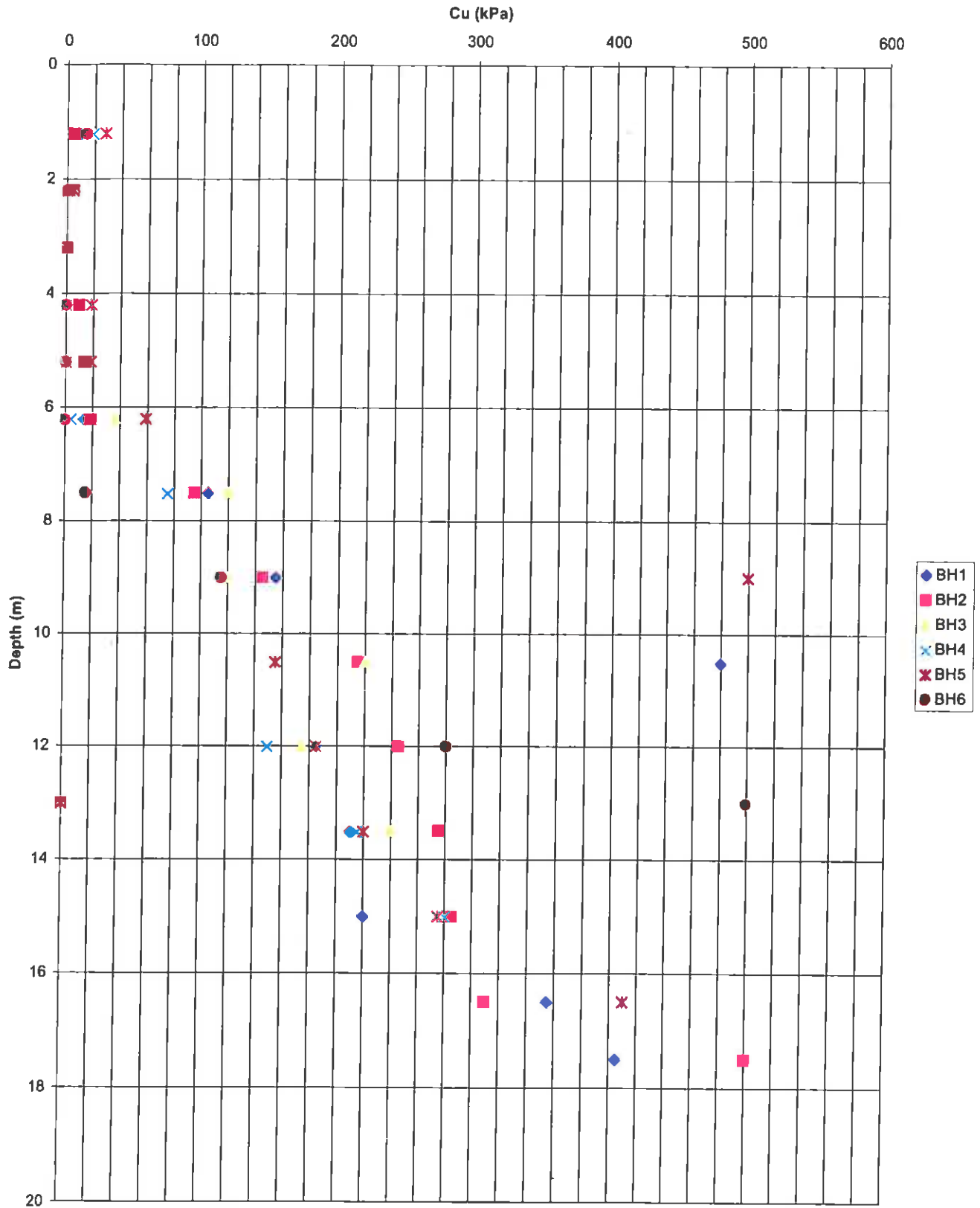
Boston & South Holland WTS

Standard Penetration Test Results



Tel 01522 530355

Undrained Shear Strength v Depth

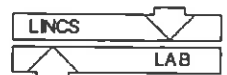


Nov-11

Chart 2

Boston & South Holland WTS

Undrained Shear Strength v Depth



Tel 01522 530355

APPENDIX (v)

HISTORICAL MAPS

Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 110,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 12,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Ms S Wells, Lincs Laboratory, St Georges Lane,
Riseholme, Lincoln, Lincolnshire, LN2 2LQ

Order Details

Order Number: 36684147_1_1
Customer Ref: G35361
National Grid Reference: 534090, 341690
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Site at 534060, 341760

LANDMARK STANDARD TERMS AND CONDITIONS

DEFINITIONS

In these Terms, the following terms have the following meanings

"Agreement" has the meaning set out in clause 1.d.
 "Authorised Reseller" means an agent or reseller who We have duly appointed to resell Our Reports and Services
 "Consumer" means a natural person acting for purposes other than his trade, business or profession
 "Content" means any data, computing and information services and software, and other content and documentation or support materials and updates included in and/or supplied by or through the Websites, in Reports or Services or in any other way by Us and shall include both material developed by or on behalf of Us and Third Party Content.
 "End User" means either: (i) a Consumer or a Consumer's friend or family member who uses the Services provided to the Consumer, or (ii) where You are not a Consumer, an employee of Yours who uses the Services provided to You; or (iii) a person identified in clause 2.b or their respective employees
 "Fees" means any charges levied by Us or an Authorised Reseller for Services provided to You.
 "First Purchaser" means the first person or legal entity to purchase the Property Site following provision of a Report.
 "First Purchaser's Lender" means the funding provider for the First Purchaser.
 "Information Pack" means a pack compiled by or on behalf of the owner or prospective buyer of the Property Site, designed to aid the marketing or purchase of the Property Site and containing information provided by or on behalf of the owner or prospective buyer of the Property Site.
 "Intellectual Property Rights" means copyright, patent, design right (registered or unregistered), services or trade mark (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right.
 References to "We", "Us" and "Our" are references to Landmark Information Group Limited, whose registered office is 7 Abbey Court, Eagle Way, Exeter, EX2 7HY.
 "Order" means the request for Services from Us by You
 "Property Site" means a land site in relation to which We provide a Service.
 "Report" includes any information that We supply to You including all reports, services, datasets, software or information contained in them
 "Services" means the provision of any service by Us pursuant to these Terms, including without limitation, any Report.
 "Supplier" means any third party organisation that provides services, software, data, information and other content or functionality of any form to Us
 "Terms" means these terms and conditions
 "Third Party Content" means the services, software, data, information and other content or functionality provided by Suppliers and linked to or contained in the Services.
 "Website" means any website hosted by Us and includes the Content and any report, service, document, data-set, software or information contained in such websites or derived from them

References to "You", "Your" and "Yourself" refer to the contracting party who accesses the Website or places an Order with Us.

1. Basis of Contract

- a. These Terms govern the relationship between Us and You where You purchase Services from Us. Where these Terms are not expressly accepted by You, they will be deemed to have been accepted by You, and You agree to be bound by these Terms, when You place any Order, or pay for any Services provided to You by Us
- b. You shall take all reasonable steps to check that the details that You provide in relation to Your Order are complete, accurate and correct and that the Report has been prepared for the correct location and property type. Neither We nor any Suppliers shall have any liability for errors or omissions in information provided by or on behalf of You or from Your failure to check that the Report relates to the correct location or property.
- c. We may modify these Terms, and may discontinue or revise any or all other aspects of the Services at Our sole discretion, with immediate effect and without prior notice, including without limitation changing the Services available at any given time. Any amendment or variation to these Terms shall be posted on Our Website. You acknowledge that it shall remain Your responsibility to check Our Website from time to time for any such amendments or variation to these Terms. Continued Orders of the Services by You shall be deemed an acceptance by You to be bound by any such amendments to the Terms
- d. These Terms together with Your Order, the Fees and delivery details in relation to Your Order and Our privacy policy, which is available on the Website, constitute the entire agreement between the parties relating to the supply of Services to You by Us ("Agreement"). You acknowledge that You have not relied on any statement, promise or representation made or given by or on behalf of Us which is not set out in the Agreement or delivery details. Nothing in this clause 1.d shall limit or exclude any liability for fraud.
- e. These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

2. Services and Licenced Use

- a. Subject to clauses 6.d, 8.k and 8.l, We shall use all reasonable skill, care and diligence in the performance of the Services.
- b. Subject always to these Terms You may, without further charge, make the Services available to:
 - i. the owner of the whole or part of the Property Site at the date of the Report,
 - ii. any person who purchases the whole

- iii. or part of the Property Site,
- iv. any person who provides funding secured on the whole or part of the Property Site,
- v. any person for whom You act in a professional or commercial capacity in relation to the Property Site,
- vi. any person who acts for You in a professional or commercial capacity in relation to the Property Site; and/or prospective buyers of the whole or part of the Property Site as part of an Information Pack but for the avoidance of doubt, We shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.
- c. You shall not hold yourself out or describe yourself as Our agent or an agent of any of the Supplier
- d. You shall ensure that acknowledgements of copyright and database right ownership are included in a conspicuous position in all copies of the Content. You may not delete any of Our or the Suppliers' intellectual property protection notices (including without limitation copyright notices or trade marks) from the Content
- e. You shall use Your best endeavours to use adequate technological and security measures, including measures We or Suppliers may reasonably recommend from time to time, to ensure that all Content which You hold or are responsible for is secure from unauthorised use or access.
- f. The Content shall only be used strictly in accordance with these Terms and not for any other purpose; nor shall any use of the Content be made that would or might be deemed to be disparaging to Us, the Suppliers or any of them. You shall not be entitled to resell or rent any Content or otherwise any supply products incorporating such Content for commercial sale or rental.
- g. You shall not reverse engineer, separate or otherwise tamper with the Content so that Content can be extracted and used for any purpose outside the scope of the Agreement.
- h. If you are a Company or public body, You agree that the licensed use of Content pursuant to the Agreement always excludes its use by any of Your subsidiaries, holding companies or subsidiaries of such holding companies (as such terms are defined in section 1159 of the Companies Act 2006) or by any government entity associated with You (in each case as applicable). You agree, and shall procure, that any such company or entity shall enter into a separate agreement with Us
- i. All other uses of the Content are prohibited. If you wish to use the Content in a manner which is not authorised by the Terms, then You must contact Us to seek the necessary consents or licences (which may include further licences from the Suppliers), for which there may be additional Fees.
- j. You agree to notify Us as soon as You

suspect any infringement of Our or any of Our Supplier's intellectual property rights and You agree to give Us all reasonably required assistance in pursuing any potential infringement

3. Intellectual Property and Confidentiality

- a. You acknowledge and agree that all Intellectual Property Rights in Content are and shall continue to be owned by Us or Our Supplier and nothing in the Agreement shall transfer, assign or grant any rights to You (save for the licence as set out above)
- b. Subject to any use of the Content in accordance with these Terms, You acknowledge and agree that You shall, and shall procure that any person to whom You provide access to the Content shall, treat as strictly private and confidential the Services, the Content and all information which they obtain from the Services and Content. You agree to indemnify Us against all liabilities, damages, penalties, costs, expenses (including legal expenses on an indemnity basis) or other loss suffered or incurred by Us in relation to any breach or alleged breach of this clause 3.b

4. Termination

- a. At any time, We may terminate the Agreement with immediate effect by giving You written notice:
 - i. if You are in breach of the Terms and, if such breach is capable of remedy, You fail to remedy the breach within 30 days of written notice from Us specifying the breach and requiring it to be remedied; and
 - ii. if You have a receiver or administrative receiver or administrator appointed over You or any part of Your undertaking or assets or shall pass a resolution for winding up (otherwise than for the purpose of a bona fide scheme of solvent amalgamation or reconstruction) or if a court of competent jurisdiction shall make an order to that effect or if You become subject to an administration order or enter into a voluntary arrangement with Your creditors or shall cease or threaten to cease to carry on business or if You are presented with a bankruptcy petition.
- b. In the event of the termination or expiry of the Agreement:
 - i. You shall, subject to clause 4.b.ii, immediately cease to use the Report and any Content,
 - ii. You shall, subject to clause 4.b.iii, within 30 days of such termination or expiry, destroy all Content in any media which You hold or for which You are responsible and provide, at Our request, a sworn statement by a duly authorised person that You no longer hold such Content;
 - iii. except in the event of termination by Us under clause 4.a, You may retain Content in an archive following expiry of the Agreement for the sole purpose of addressing a complaint or challenge from a regulator or other third party regarding Your use of such Content during the term of the Agreement

Your rights are on condition that: (a) the archive rights do not apply to Content that include third party Intellectual Property Rights (other than Content provided by Ordinance Survey to the extent that the Intellectual Property Rights in such Content are owned by Ordinance Survey); (b) You shall not disclose Content retained under this clause 4.b.ii to any regulator or other third party except strictly to the extent necessary for the relevant purpose of addressing a complaint or challenge from a regulator or other third party and in paper or read-only electronic format only; (c) You must store such Content separately from any other data which You hold, and (d) subject to clause 6.a, We shall have no liability for Your use of it following termination or expiry of the Agreement; and

iv. the parties shall have no further obligations or rights under the Agreement, without prejudice to those which have accrued to either party prior to termination or expiry save that the "Definitions", clauses 2.c to 2.j (inclusive), this clause 4.a, clauses 5.d, 6, 7, 9, 10 and 11 together with those other clauses the survival of which is necessary for the interpretation or enforcement of the Agreement or which by their nature can be reasonably interpreted as surviving the expiry or termination of the Agreement, shall continue to have effect after such expiry or termination.

5. Payments

- a. An individual or a monthly invoice showing all Orders created by You will be generated subject to these Terms. You will pay the Fees at the rates set out in Our or Our Authorised Reseller's invoice within 30 days of the date of each invoice without deduction, counterclaim or set off. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Us or its Authorised Reseller to provide an element or elements of the Services shall not prejudice Our or Our Authorised Reseller's ability to require payment in respect of the Services delivered to You. You acknowledge that time is of the essence with respect to the payment of such invoices.
- b. VAT shall be due in addition to any Fees You shall pay any other applicable indirect taxes related to Your use of the Services
- c. Neither We nor any Authorised Reseller shall be required to notify You in advance of any amendment to the Fees and the placing of any further Order for Services shall be deemed acceptance of any revisions to the Fees
- d. If you fail to pay by the due date any amount due and payable by You under the Agreement, We shall be entitled, but not obliged, to charge You interest on the overdue amount, payable by You immediately on demand, accruing from the due date up to the date of actual payment, after as well as before judgment, at the rate set out in the Late Payment of Commercial Debts (Interest) Act 1998 from

time to time and fixed sum compensation under the Late Payment of Commercial Debts Regulations 2002. Such interest shall accrue on a daily basis

6. Liability

- a. Nothing in these Terms excludes or limits either party's liability for death or personal injury caused by that party's negligence or willful default or for fraud, and the remainder of this clause 6 is subject to the provision, if You are a Consumer, Your statutory rights (which include, for example, that We will provide the Services to a reasonable standard and within a reasonable time) are not affected by anything in these Terms.
- b. Save as set out in clause 6.a, We shall not be liable to You or to any End User in contract, tort (including negligence) or for breach of statutory duty or in any other way for:
 - i. any indirect or consequential losses (which includes any loss that could not have been reasonably expected by You and Us at the time of entering into these Terms);
 - ii. loss arising from or in connection with loss of revenues, profits, contracts or business or failure to realise anticipated savings, or
 - iii. loss of goodwill or reputation
- c. Save as set out in clause 6.a, Our total liability to You and/or any End User in contract or tort (including negligence) or for breach of statutory duty shall not exceed an amount of ten million pounds (£10,000,000) per claim or series of connected claims
- d. The Content that Services are based on is derived from third party sources. Therefore, save as set out in clause 6.1 in respect of risk assessments and professional opinions, We do not warrant the accuracy or completeness of any information or Content provided, unless We should reasonably have been alerted to any omission, error or inaccuracy in the Content. Such Content is provided specifically from the sources as described by Us and We do not claim that these represent an exhaustive or comprehensive list of all sources that might be consulted
- e. You acknowledge and agree that neither You nor any End User shall have any claim or recourse against any Supplier of Third Party Content.
- f. You acknowledge and agree that We do not warrant that the online supply of Content or Services or any internet ordering service will be uninterrupted or error free or provide any particular facilities or functions, free from defects; free from software viruses; free of error from computer malfunction, inaccurate processing, free from corruption of data whilst geo-coding, processing by computer or electronic means or in the course of transmission; or similar, although We will use reasonable endeavours to correct any such issues within a reasonable period of them becoming known (which may be limited to notifying the relevant Supplier). Time shall not be of the essence in providing the Content or Services.
- g. You acknowledge and agree that no

- physical inspection of the Property Site reported on is carried out as part of any Services offered by Us and We do not warrant that all land uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site for any particular purpose nor should it be relied upon for determining suitability or value or used as a substitute for any physical investigation or inspection.
- h. You acknowledge and agree that We will not be held liable in any way if a Report is used otherwise than as provided for in these Terms and/or in the Report.
- i. You acknowledge and agree that the Services have not been prepared to meet You or anyone else's individual requirements and it is Your responsibility to ensure that the Services ordered are suitable for You (or the End User's) intended purpose.
- j. You acknowledge and agree that You shall, on receipt of a Report carry out a reasonable inspection to satisfy Yourself that there are no apparent defects or failures with respect to the description and location of the Property Site and shall promptly inform Us if there are any such defects or failures.
- k. All liability for any insurance products purchased by You rests solely with the insurer. We do not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance We will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, You acknowledge and agree that all liability shall remain with the insurers and that You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. We do not guarantee that an insurance policy will be available on a Property Site. You acknowledge and agree that all decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and We accept no liability in this regard. The provision of a Report does not constitute any indication by Us that insurance will be available on the Property Site.
- l. We may provide You with professional opinions or a risk assessment in a Report. You acknowledge and agree that We shall carry out (or procure that third parties carry out) such assessment with reasonable skill and care and that We shall be liable where any such risk assessment is carried out negligently. Notwithstanding the foregoing We shall not be liable for any inaccurate statement, opinion or risk rating in a Report which resulted from a reasonable interpretation of the Content.
- m. Neither You, nor any End User or any other person may rely on a Service more than 12 months after it was originally provided.
- n. You shall use all reasonable endeavours to

ensure that End Users acknowledge and agree to the limitations and exclusions of liability set out in this clause 6

7. Contribution

- a. Save where expressly provided, this clause 7 shall apply solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6.
- b. We are prepared to offer, without any admission or inference of liability, a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution").
- c. In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part IIA of the Environmental Protection Act 1990 ("the Notice") We shall contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:
- the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report;
 - the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise;
 - the Contribution is strictly limited to the cost of works at the Property Site and at no other site, and
 - the Contribution will not be paid in respect of any of the following: (1) radioactive contamination of whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof; (2) asbestos arising out of or related in any way to asbestos or asbestos-containing materials on or in structures or services serving the structures; (3) naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration; (4) intentional non-compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative complaint, notice of violation, or notice letter of any Regulatory Authority; (5) any

condition which is known or ought reasonably to have been known to the First Purchaser or the First Purchaser's Lender prior to the purchase of the Report; (6) any condition which is caused by acts of war or an act of terrorism; (7) any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure; (8) any fines liquidated damages punitive or exemplary damages; (9) any bodily injury including without limitation, death, illness or disease, mental injury, anguish or nervous shock; (10) any financial loss in respect of any loss of any rental, profit, revenue, savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption; and/or (11) any losses incurred following a material change in use of, alteration or development of the Property Site.

- d. Without prejudice to Your other rights and remedies under the Agreement, the maximum sum that shall be contributed by Us in respect of any Contribution shall be limited to £60,000. In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.
- e. We shall only pay a Contribution where the Notice is served within 36 months of the issue date of the Report.

f. Any rights to a Contribution under this clause 7 are not assignable in the event of a sale of the Property Site and We shall not make any Contribution after the date of completion of such sale.

g. In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Us in writing within 3 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all Our reasonable requirements with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Our prior written consent to any estimates for such works or complying with any other reasonable request by Us. We shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Us the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the terms of any Notice.

h. In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve

a notice received under Part IIA of the Environmental Protection Act 1990 You shall ensure that they advise Us within a maximum period of two months from receipt of such communication. This clause 7 h and the service of any notice under it shall not affect the provisions of clauses 7 a and 7 g, and any such communications, even if advised to Us will not operate as notice under clause 7 a.

i. We reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g above, to withdraw the offer of payment of Contributions without further notice.

8. Assignment and Sub-contracting

- a. We shall be entitled to assign or transfer the Agreement as We reasonably see fit.
- b. The Agreement is personal to You. You shall not assign, transfer, sub-licence or otherwise deal with any of Your rights and obligations under the Agreement without Our prior written consent.
- c. We may authorise or allow Our contractors and other third parties to provide to Us and/or to You services necessary or related to the Services and to perform Our obligations and exercise Our rights under these Terms, which may include collecting payment on Our behalf.

9. Events Beyond Our Control

- a. Neither party to the Agreement shall be liable for any delay or failure to perform their obligations caused by any circumstance beyond their control, and such party shall be entitled to a reasonable extension of time for the performance of such obligation.

10. Complaints and Dispute Resolution

- a. Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at Our registered office. We will (or Our agents will) respond to any such complaints in writing as soon as practically possible.
- b. If any dispute arises out of or in connection with the Terms of the Agreement or their validity ("Dispute") the parties undertake, subject to clause 10.c, that prior to commencement of court proceedings they will negotiate in good faith to settle such Dispute by mediation in accordance with the Centre for Effective Dispute Resolution Medial Mediation Procedure as in force from time to time, which Procedure is deemed to be incorporated by reference into this clause. Unless otherwise agreed between the parties, the mediator will be nominated by the Centre for Effective Dispute Resolution. To initiate the mediation a party shall give notice in writing to the other party to the dispute requesting a mediation. The mediation will start not later than 21 days after the date of service of such notice. If the Dispute has not been resolved to the mutual satisfaction of the parties within 60 days (or such other period as they shall agree) after the date of service of such notice then either party may refer the Dispute to the courts in accordance with clause 11 f.

c. Clause 10.b shall be without prejudice to the rights of termination stated in clause 4 a and in addition shall not prevent Us from:

- applying for injunctive relief in the case of: (1) breach or threatened breach of confidentiality, or (2) infringement or threatened infringement of Our or Our Suppliers' intellectual property rights, or
- pursuing a debt claim for the payment of the Fees.

11. General

- a. If any provision of the Agreement is found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from the Agreement and never to have formed part of the Agreement and the remaining provisions shall continue in full force and effect.
- b. No delay, failure or omission on Our, or any Supplier's, part in enforcing, exercising or pursuing any right, power, privilege, claim or remedy conferred by or arising under the Agreement or by law shall be deemed to be or construed as a waiver of that or any other right, power, privilege, claim or remedy, nor shall any single or partial exercise of any such right, power, privilege, claim or remedy preclude the exercise of that or any other right, power, privilege, claim or remedy.
- c. Our privacy policy as displayed on Our Website and updated from time to time governs the use that We shall make of any information provided by You or an End User.
- d. A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Agreement and We shall not be liable to any such third party in respect of the Products, save that any Supplier may enforce any of these terms and conditions against You in accordance with the Contracts (Rights of Third Parties) Act 1999. Notwithstanding any other provisions of the Agreement, We may rescind or vary the Agreement in accordance with its terms without the consent of the Suppliers and accordingly section 2(1) of the Contracts (Rights of Third Parties) Act 1999 shall not apply.
- e. You shall ensure that each End User complies with and is bound by the Terms and shall procure that We may in Our own right enforce such terms and conditions against the End User pursuant to the Contracts (Rights of Third Parties) Act 1999. You shall be responsible for End User's compliance with the Terms and You shall be liable for all breaches of the Terms by the End Users as if they were breaches by You.
- f. The Agreement and any non-contractual obligations arising out of or in connection with it shall be governed by and construed in accordance with the laws of England and, subject to clause 10.b, each party irrevocably submits to the exclusive jurisdiction of the courts of England and Wales.

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Ostlers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furza		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Rough Grassland
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency		
	Civil Parish		
	Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Ostlers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lincolnshire	1:10,560	1888	2
Lincolnshire	1:10,560	1906	3
Lincolnshire	1:10,560	1906	4
Lincolnshire	1:10,560	1938	8
Lincolnshire	1:10,560	1981	8
Ordnance Survey Plan	1:10,000	1958	7
Ordnance Survey Plan	1:10,000	1973 - 1974	8
Ordnance Survey Plan	1:10,000	1985	8
10K Raster Mapping	1:10,000	2000	10
10K Raster Mapping	1:10,000	2006	11
10K Raster Mapping	1:10,000	2011	12

Historical Map - Slice A



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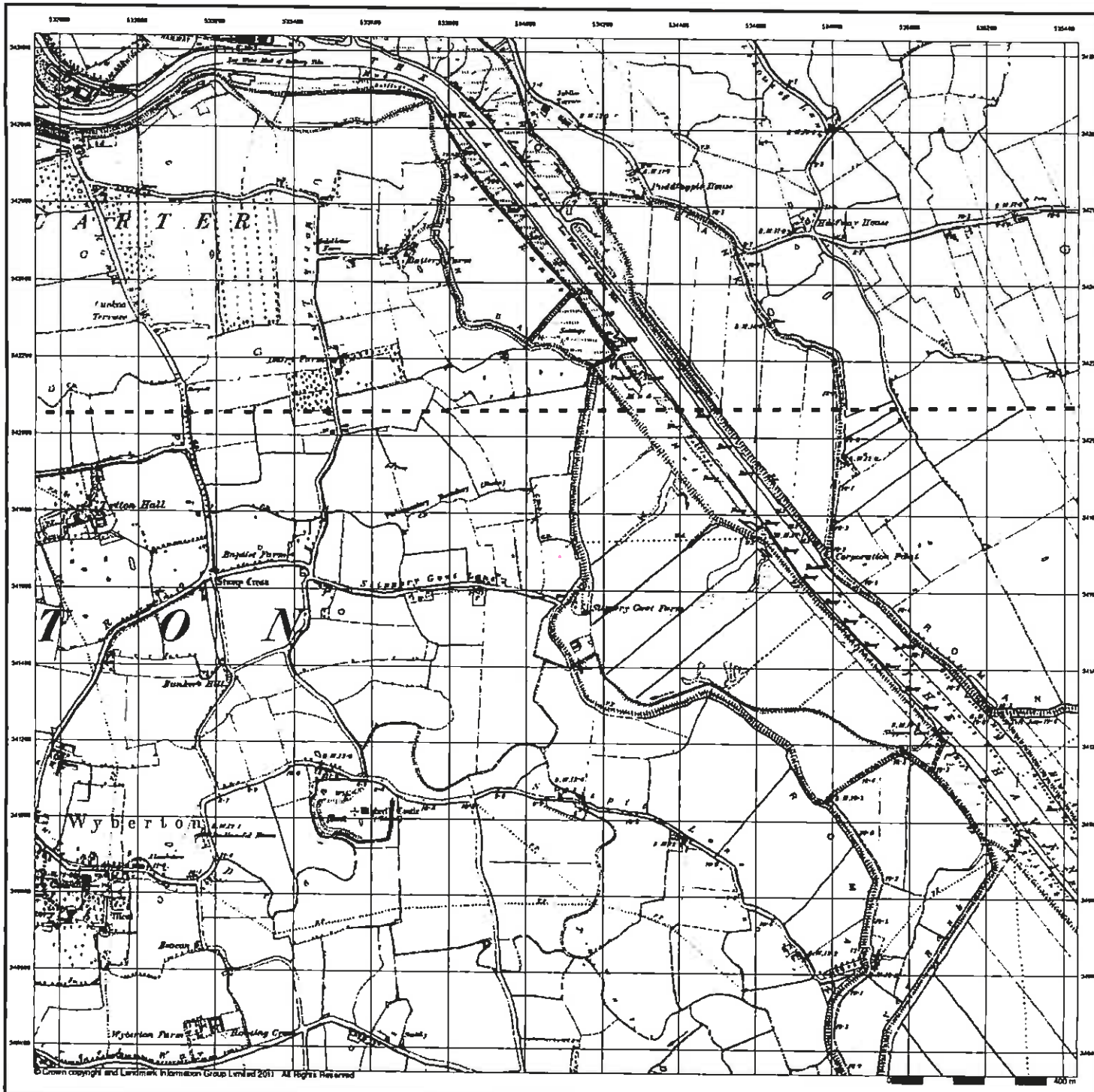
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 Search Buffer (m): 1000

Site Details

Site at 534060, 341760



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Lincolnshire
Published 1888

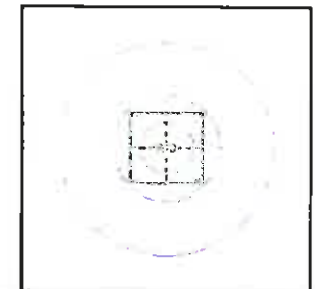
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 1:2,500 scale was adopted for mapping urban areas, these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970 the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

102SW
1888
1:10,560
116NW
1888
1:10,560

Historical Map - Slice A



Order Details

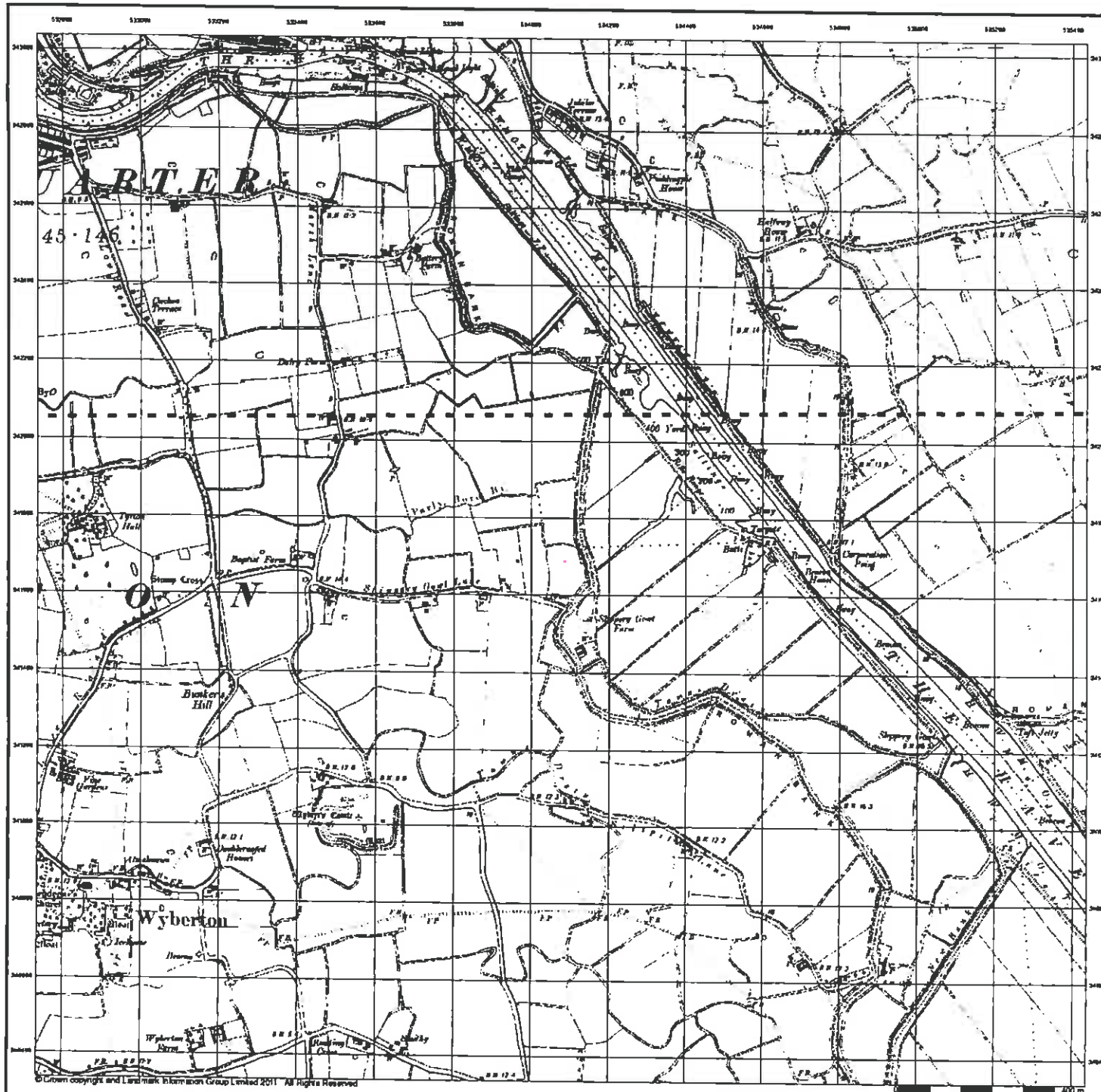
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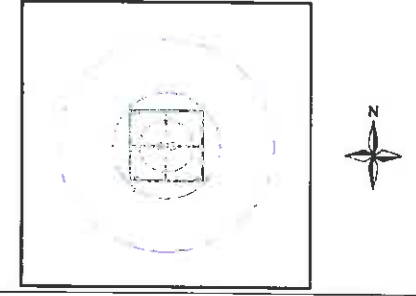
Lincolnshire
Published 1906
Source map scale - 1:10,560

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Map Name(s) and Date(s)

109SW	1906	1:10,560
118NW	1906	1:10,560

Historical Map - Slice A

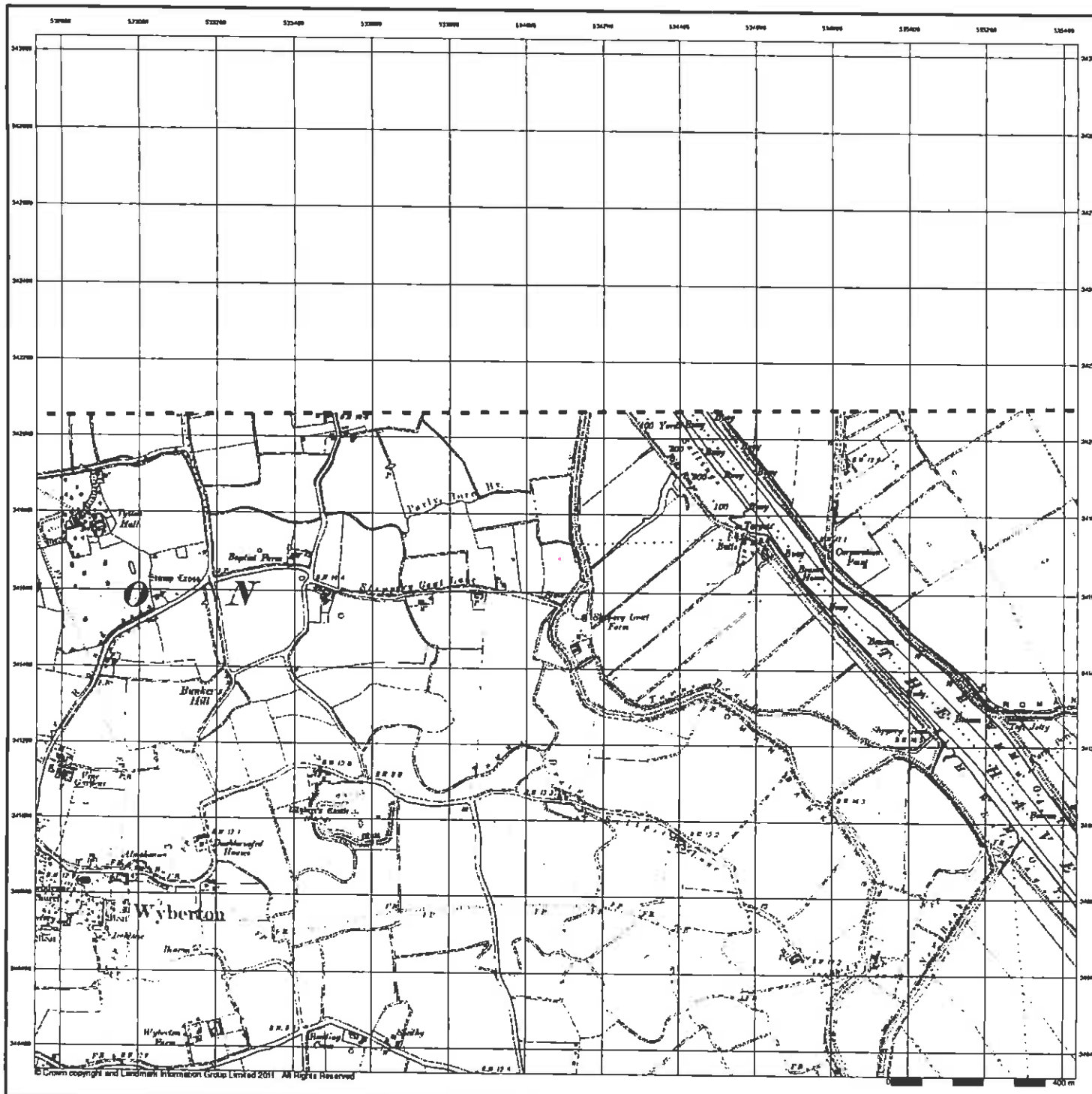


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Site Details
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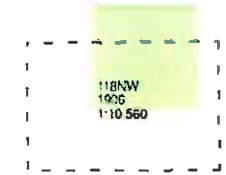


Lincolnshire
Published 1906

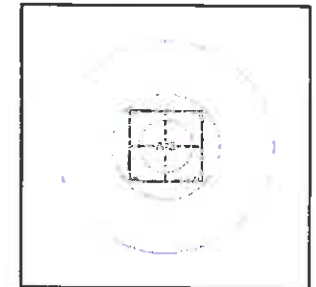
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

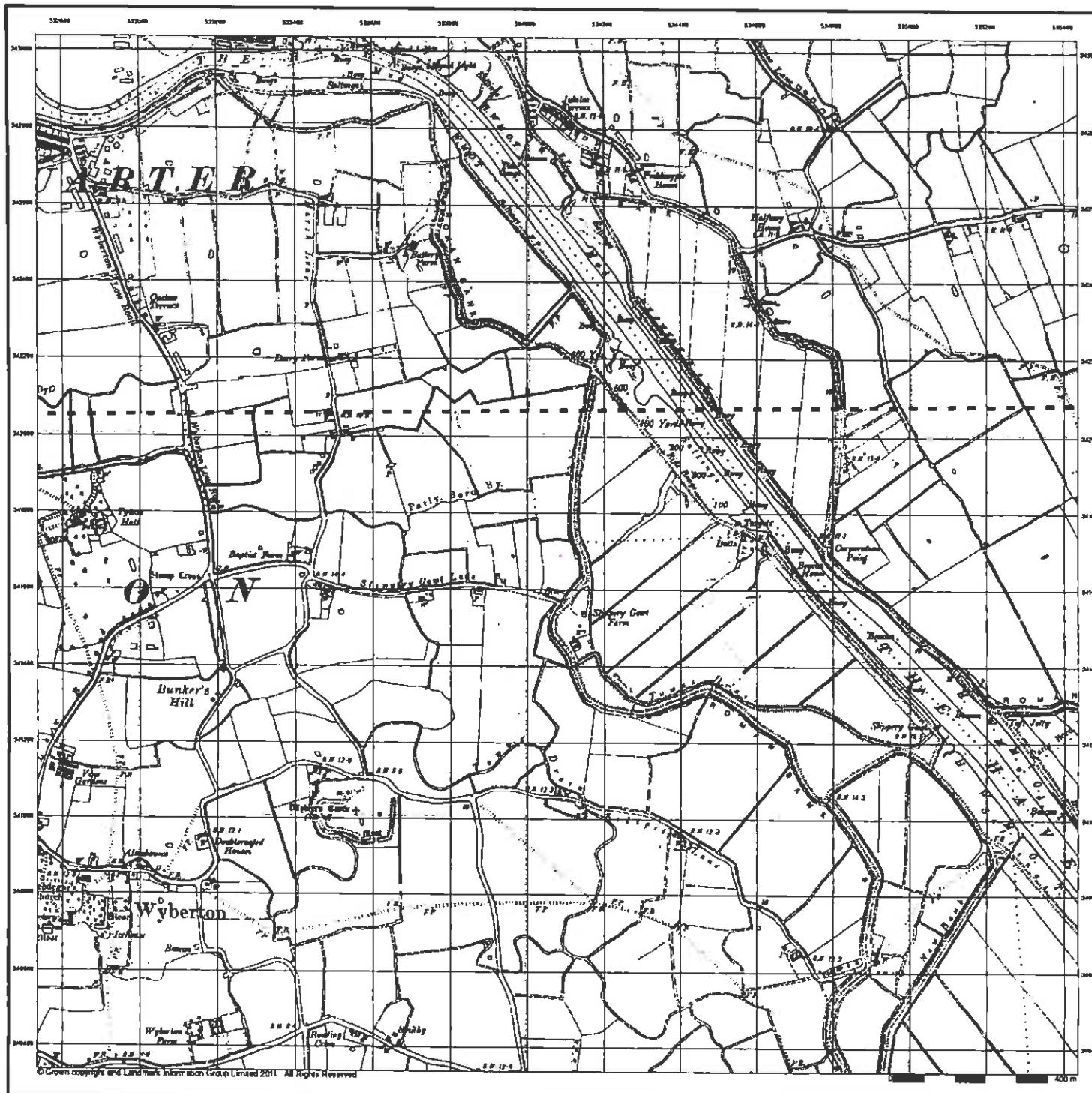
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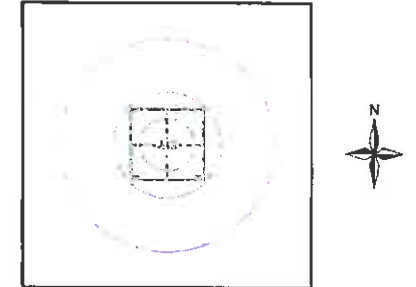
Lincolnshire
Published 1938
Source map scale - 1:10,560

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Map Name(s) and Date(s)

106SW	1938	1:10,560
118NW	1938	1:10,560

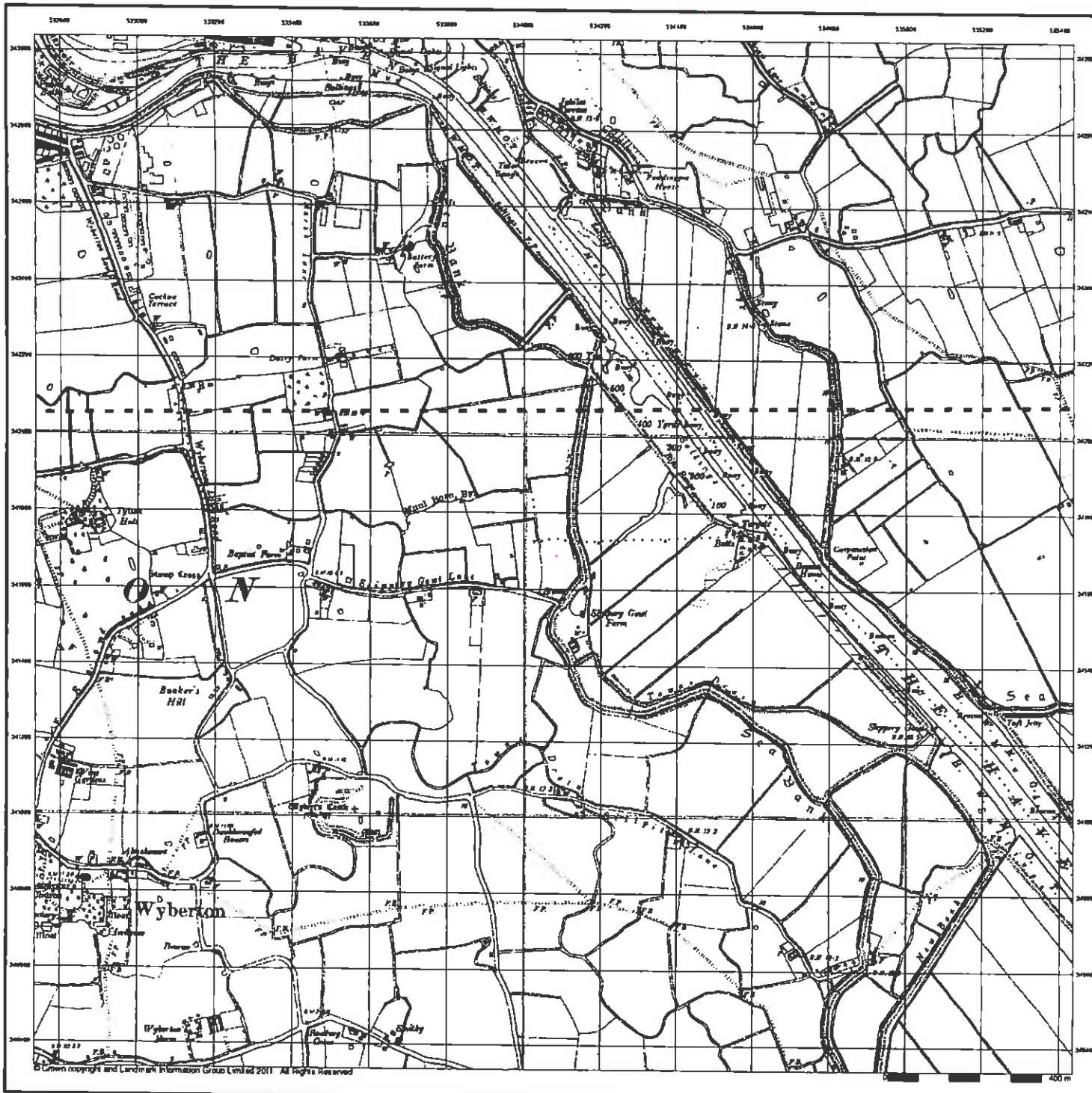
Historical Map - Slice A



Order Details
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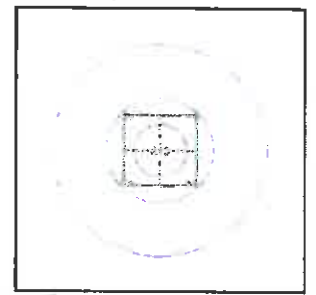
Lincolnshire
Published 1951
Source map scale - 1:10,560

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Map Name(s) and Date(s)

109SW	1951	1:10,560
118NW	1951	1:10,560

Historical Map - Slice A



Order Details

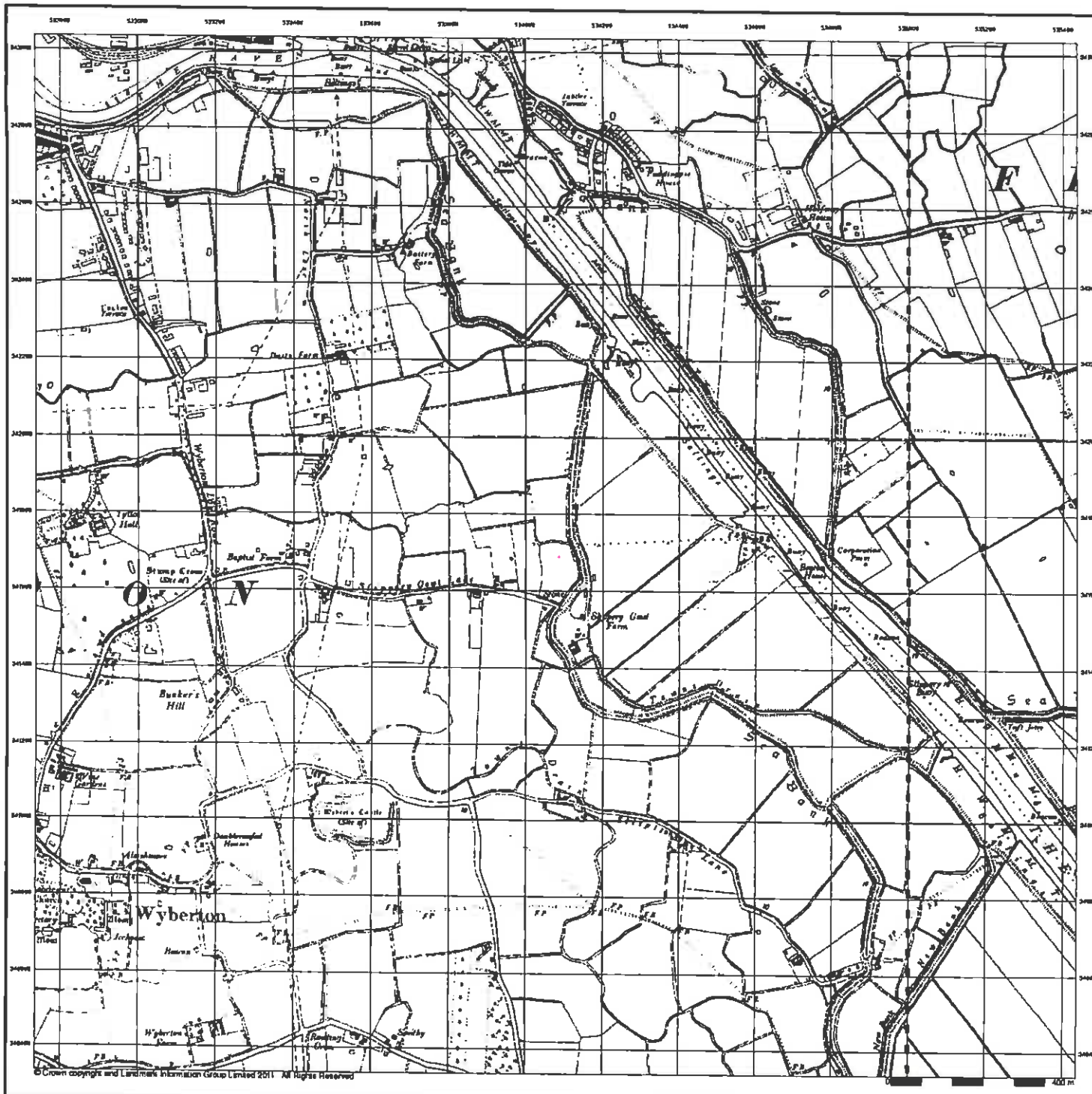
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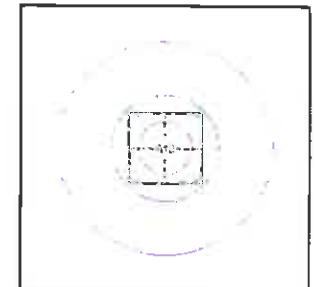
Ordnance Survey Plan
Published 1956
Source map scale - 1:10,000

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Map Name(s) and Date(s)

TF 34SW 1956 1:10,560	TF 34SE 1956 1:10,580
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Historical Map - Slice A



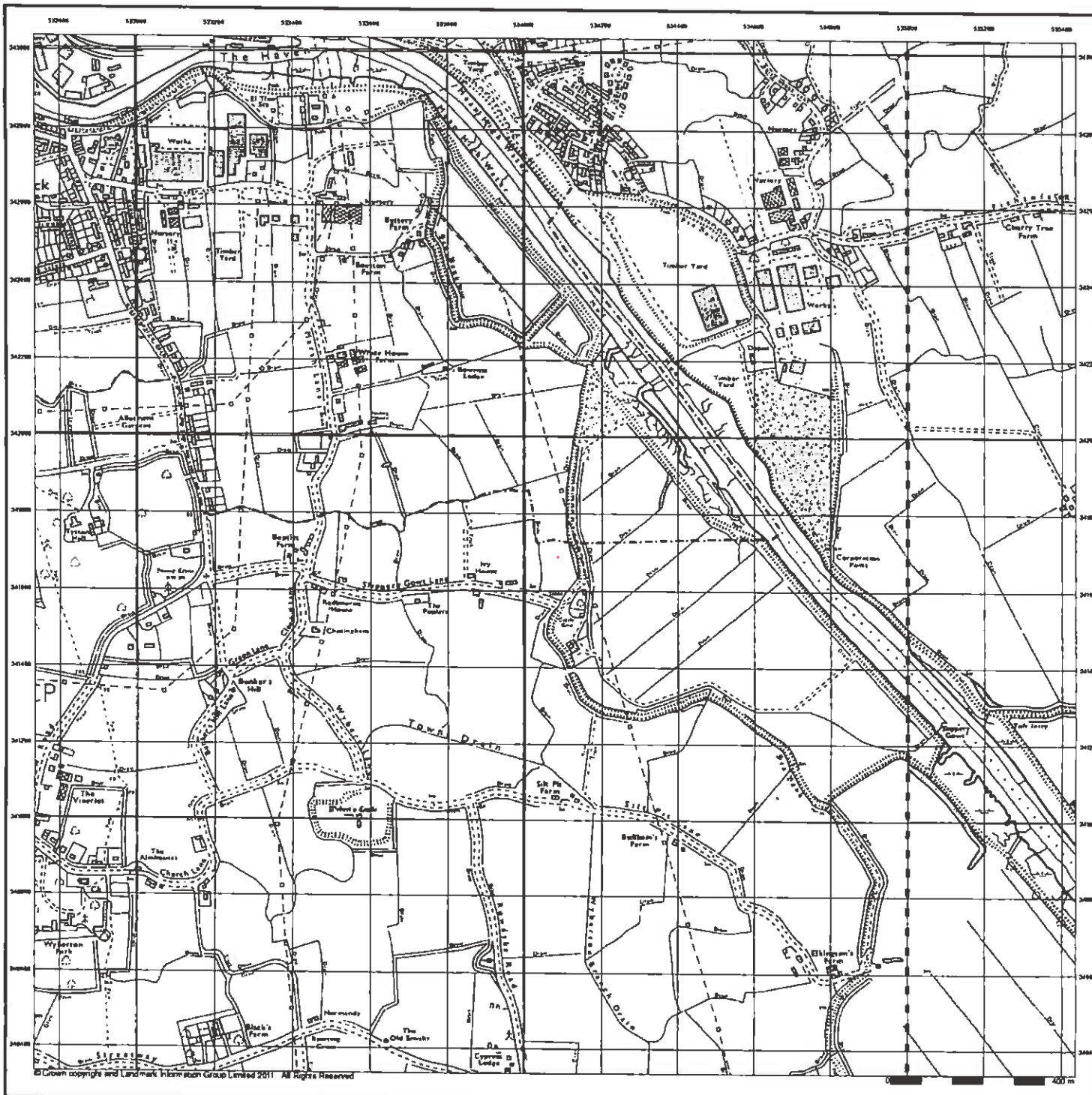
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Site Details

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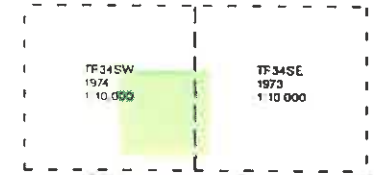




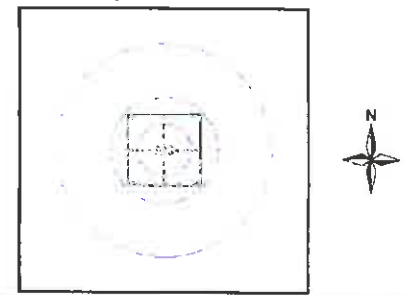
**Ordnance Survey Plan
Published 1973 - 1974
Source map scale - 1:10,000**

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Map Name(s) and Date(s)



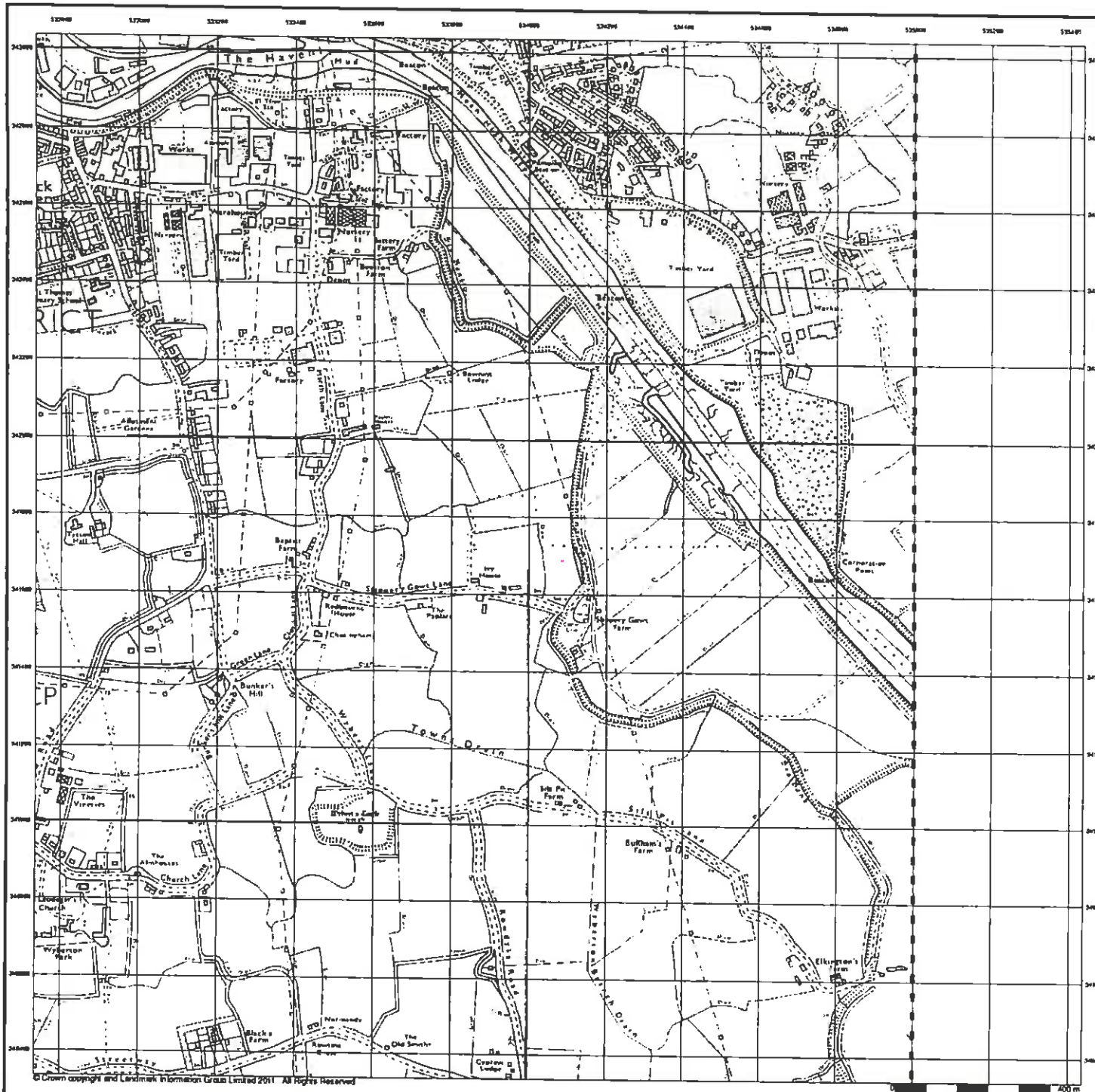
Historical Map - Slice A



Order Details
 Order Number: 36684147_1_1
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Site Details
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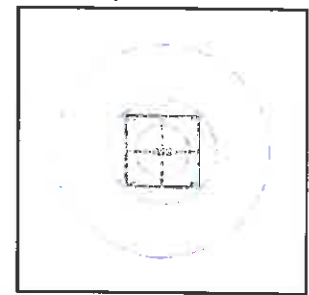
**Ordnance Survey Plan
Published 1985
Source map scale - 1:10,000**

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Map Name(s) and Date(s)



Historical Map - Slice A

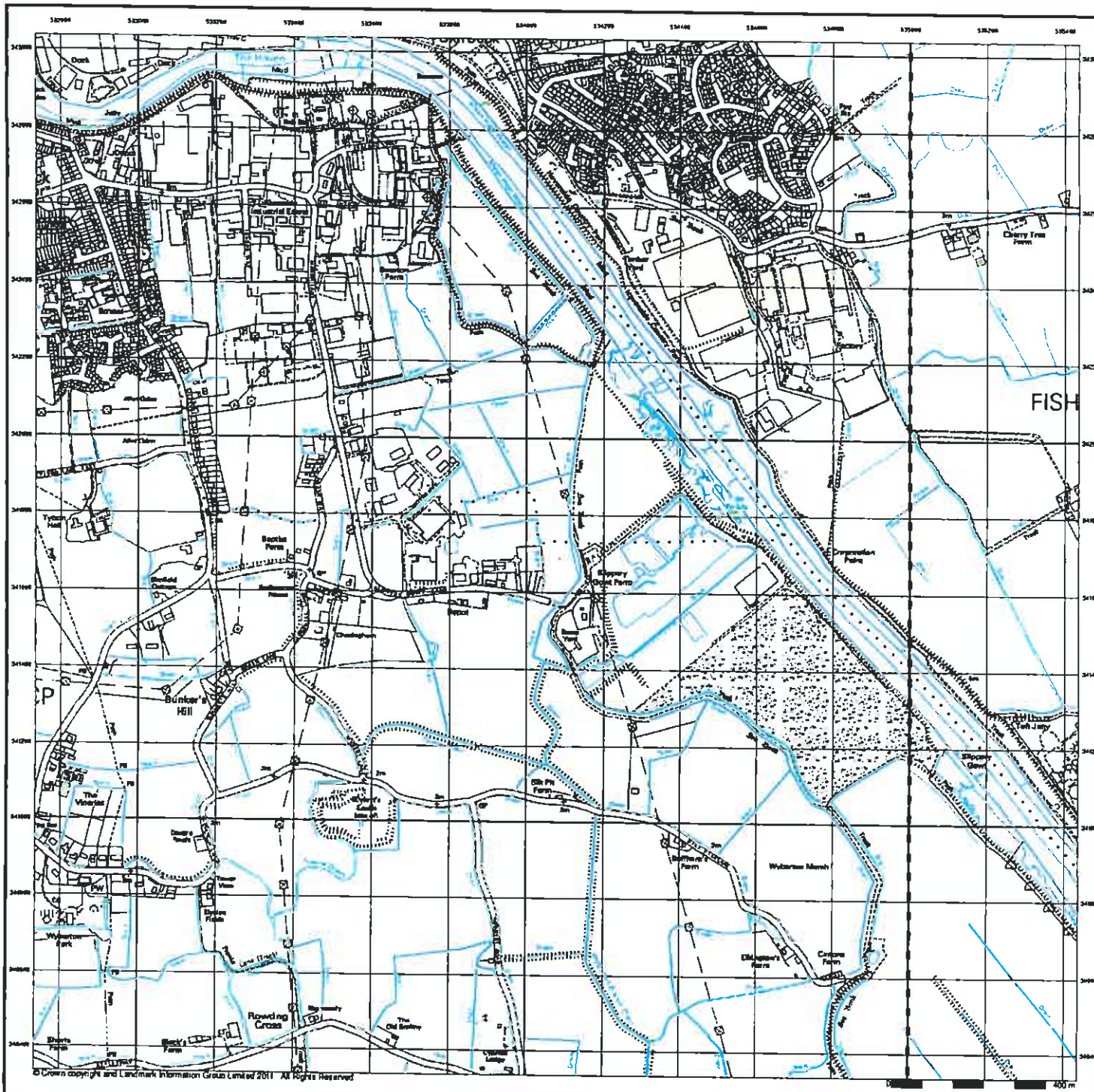


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Site Details
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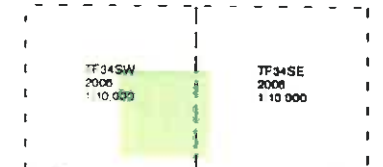
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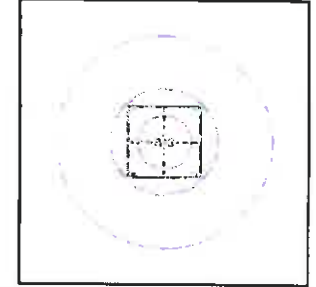
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 36684147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 534060, 341760



Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

	Quarry		Gravel Pit		Sand Pit
	Clay Pit		Shingle		Refuse Heap
	Sloping Masonry		Flat Rock		
	Marsh		Reeds		Osiers
	Rough Pasture		Furze		Wood
	Mixed Wood		Brushwood		Orchard
	Fir		Ford		Stepping Stones
	Ferry		Waterfall		Lock
	Trig. Station		Altitude at Trig. Station		
	Bench Mark		Surface Level		
	Arrow denotes flow of water		Antiquities (site of)		
	Cutting		Embankment		
	Railway crossing Road		Level Crossing		Road crossing Railway
	Railway crossing River or Canal		Road over single stream		Road over River or Canal
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Borough Boundary (Scotland)				
	Boundary Post or Stone		Police Call Box		
	Bridle Road		Pump		
	Electricity Pylon		Signal Post		
	Foot Bridge		Stake		
	Foot Path		Spring		
	Guide Post or Board		Telephone Call Box		
	Mile Stone		Trough		
	Measuring Post or Piling		Well		

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

	Inactive Quarry, Chalk Pit or Clay Pit		Active Quarry, Chalk Pit or Clay Pit
	Rock		Boulders
	Cliff		Slopes
	Roofed Building		Glazed Roof Building
	Sloping Masonry		Archway
	Non-Coniferous Tree (surveyed)		Coniferous Tree (surveyed)
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Orchard Tree		Scrub
	Coppice, Osier		Bracken
	Rough Grassland		Reeds
	Heath		Marsh, Saltings
	Culvert		Triangulation Station
	Electricity Transmission Line		Electricity Pylon
	Bench Mark		Antiquity (site of)
	Cave Entrance		Electricity Pylon
	County Boundary (Geographical)		
	County & Civil Parish Boundary		
	Civil Parish Boundary		
	Admin. County or County Bor. Boundary		
	London Borough Boundary		
	Symbol marking point where boundary merging changes		
	Beer House		Pillar, Pole or Post
	Boundary Post or Stone		Post Office
	Capstan, Crane		Public Convenience
	Chimney		Public House
	Drinking Fountain		Pump
	Electricity Pylon		Signal Box or Bridge
	Fire Alarm Pillar		Signal Post or Light
	Foot Bridge		Spring
	Guide Post		Tank or Truck
	Hydrant or Hydraulic		Telephone Call Box
	Level Crossing		Telephone Call Post
	Manhole		Trough
	Mile Post or Measuring Post		Water Point, Water Tap
	Mile Stone		Well
	Normal Tidal Limit		Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

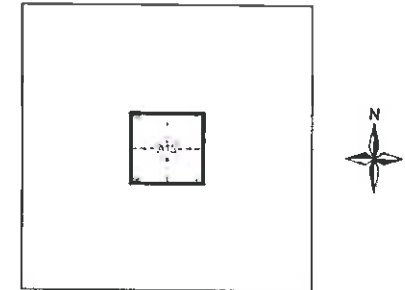
	Cliff		Slopes
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Positioned Boulder		Scree
	Non-Coniferous Tree (surveyed)		Coniferous Tree (surveyed)
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Orchard Tree		Scrub
	Coppice, Osier		Reeds
	Rough Grassland		Heath
	Culvert		Triangulation Station
	Direction of water flow		Antiquity (site of)
	Electricity Transmission Line		Electricity Pylon
	Bench Mark		Buildings with Building Seed
	Roofed Building		Glazed Roof Building
	Civil parish/community boundary		
	District boundary		
	County boundary		
	Boundary post/stone		
	Boundary merging symbol (note: these always appear in opposed pairs or groups of three)		
	Barracks		Pillar, Pole or Post
	Battery		Post Office
	Cemetery		Public Convenience
	Chimney		Pump
	Cistern		Pumping Station
	Disrupted Railway		Piece of Waste
	Electricity Generating Station		Sewage Pumping Station
	Electricity Pole, Pillar		Signal Box or Bridge
	Electricity Sub Station		Signal Post or Light
	Fiber Bed		Spring
	Fountain / Drinking Fin		Tank or Truck
	Gas Valve Compound		Trough
	Gas Governor		Wind Pump
	Guide Post		Water Point, Water Tap
	Manhole		Works (Building or area)
	Mile Post or Mile Stone		Well



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lincolnshire	1:2,500	1889	2
Lincolnshire	1:2,500	1905	3
Ordnance Survey Plan	1:2,500	1970 - 1971	4
Additional SIMs	1:2,500	1988	5
Large-Scale National Grid Data	1:1,250	1993	6
Large-Scale National Grid Data	1:2,500	1993	7
Large-Scale National Grid Data	1:1,250	1995	8
Large-Scale National Grid Data	1:2,500	1996	9

Historical Map - Segment A13



Order Details

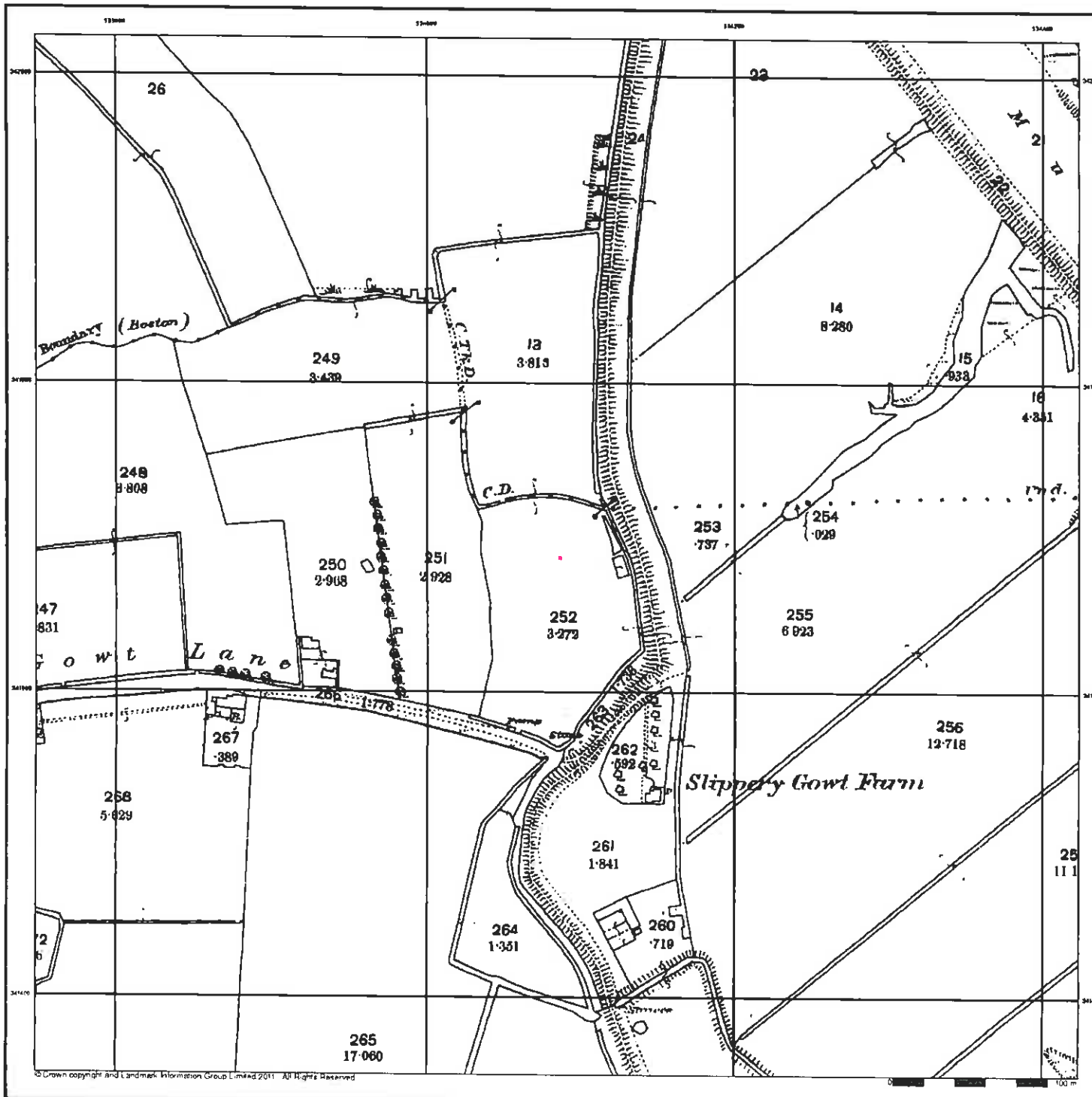
Order Number: 36684147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760



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 Web: www.envirocheck.co.uk



Lincolnshire
Published 1889

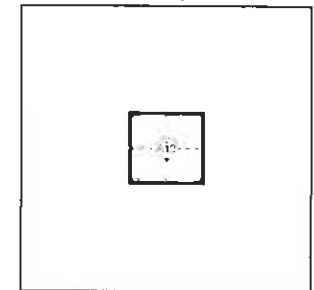
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1895 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

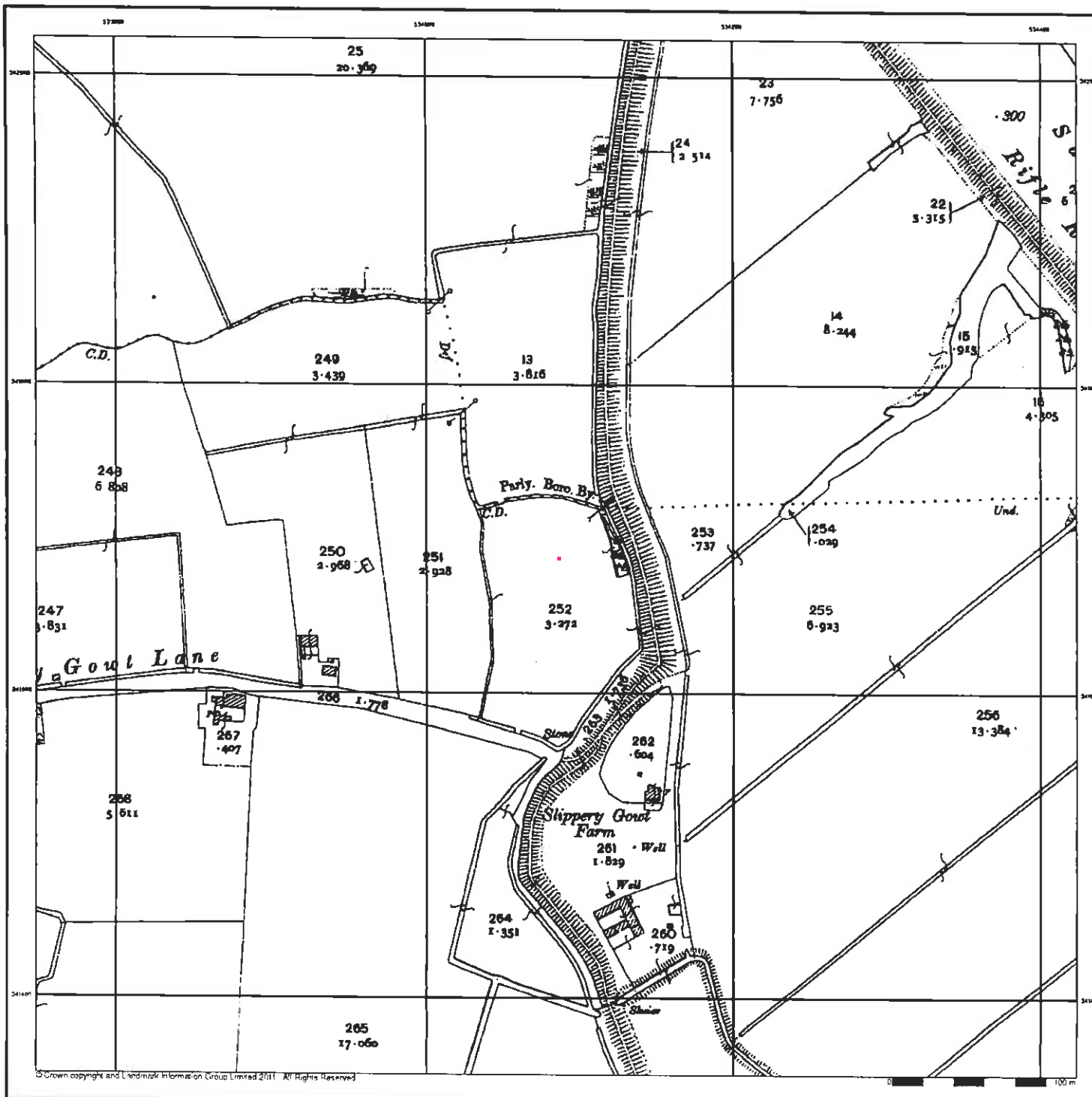
Order Number: 36684147_1_1
Customer Ref: G35361
National Grid Reference: 534090, 341690
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 100

Site Details

Site at 534080, 341780



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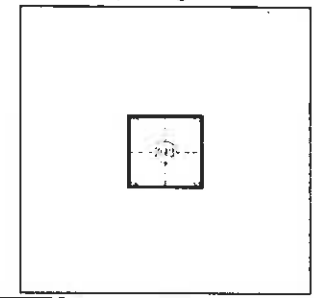
Lincolnshire
Published 1905
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840 s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

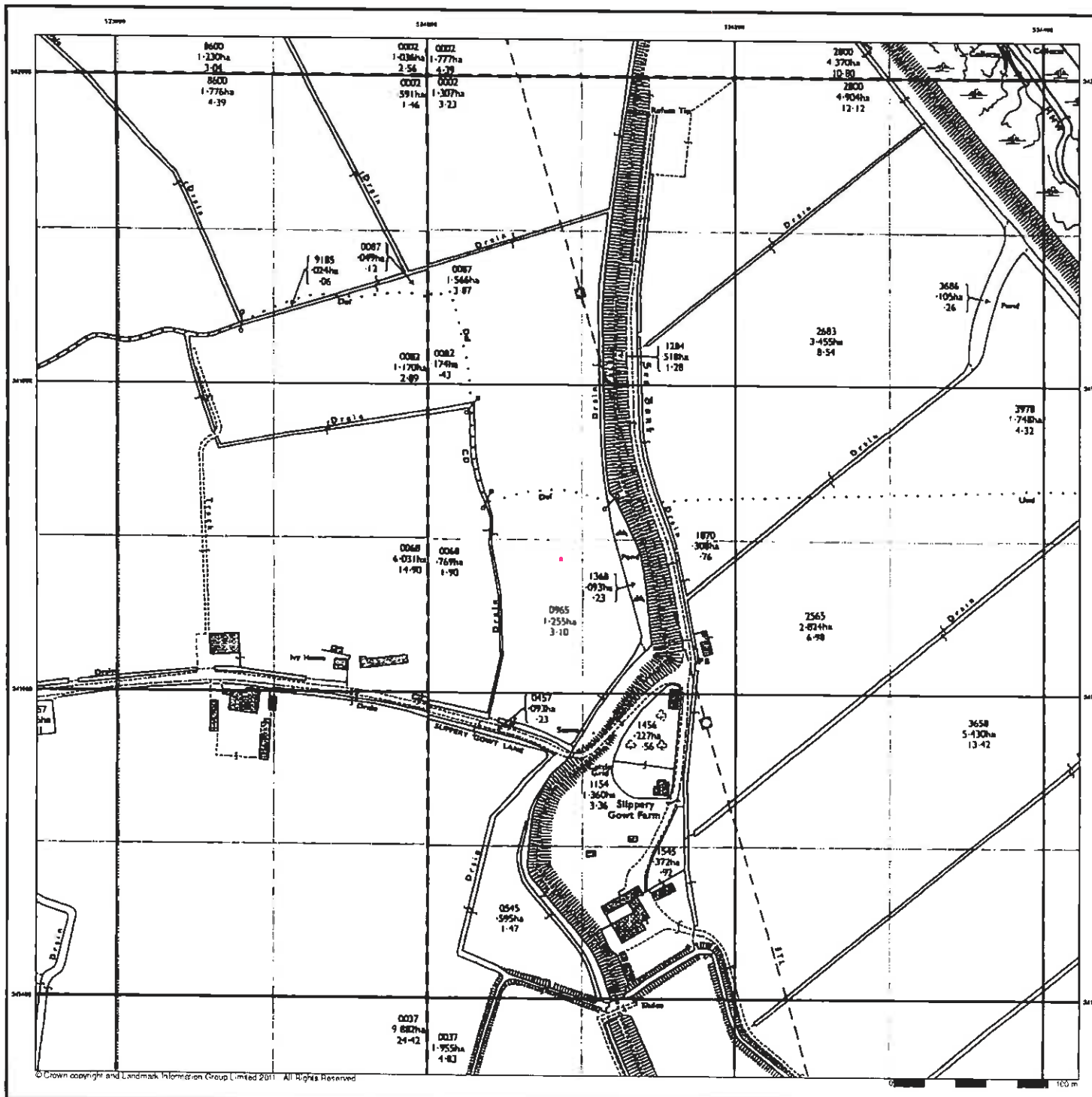
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 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760



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**Ordnance Survey Plan
Published 1970 - 1971**

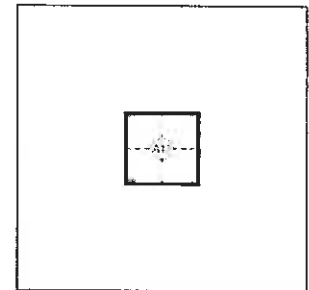
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1895 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TF 3342 1971 1:2 500	TF 3442 1970 1:2 500
TF 3341 1971 1:2 500	TF 3441 1971 1:2 500

Historical Map - Segment A13



Order Details

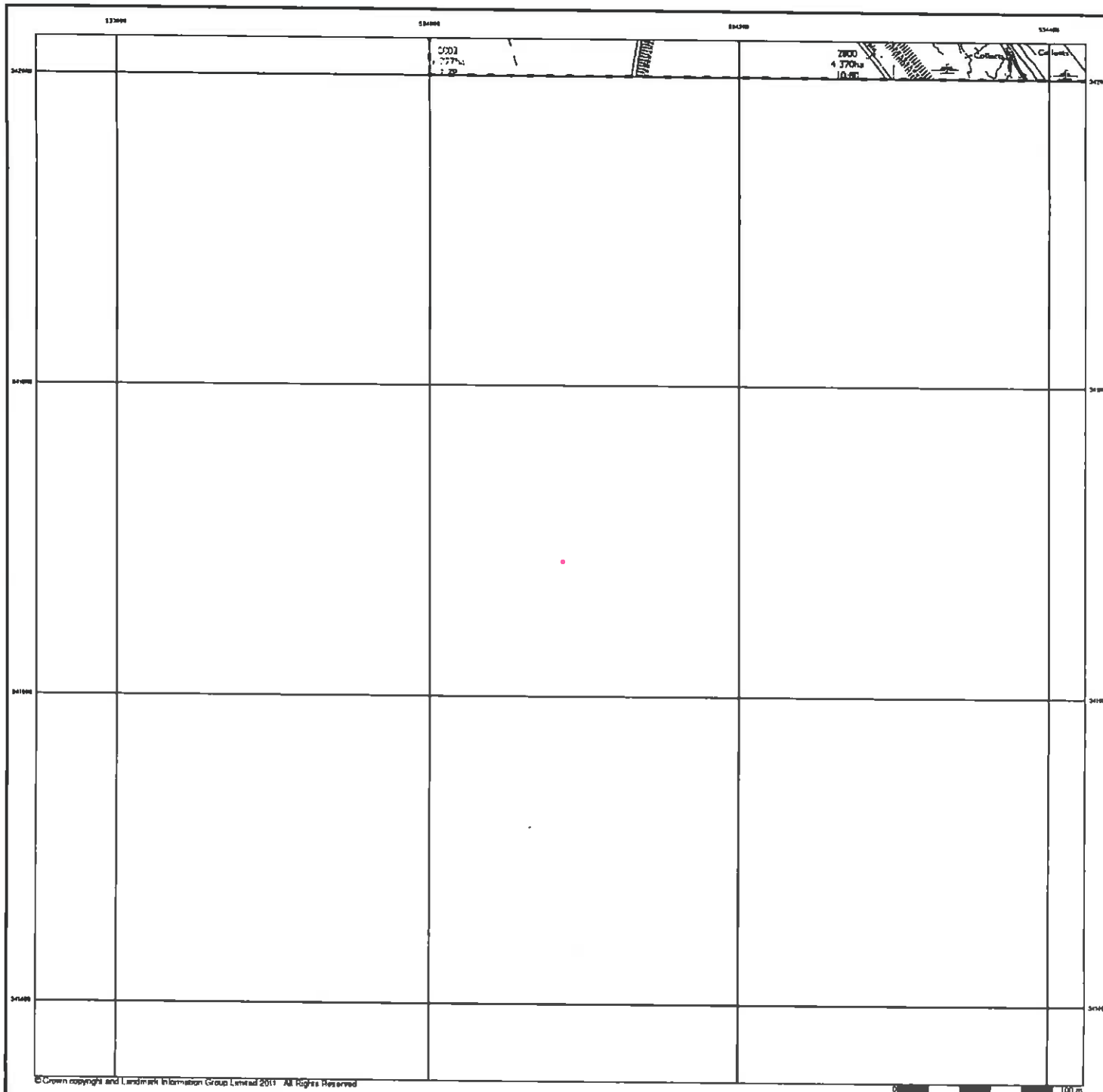
Order Number: 36684147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760



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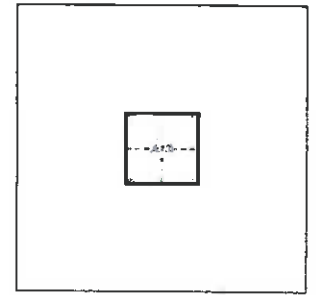
**Additional SIMs
Published 1986
Source map scale - 1:2,500**

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TS 3442
1986
1:2,500

Historical Map - Segment A13

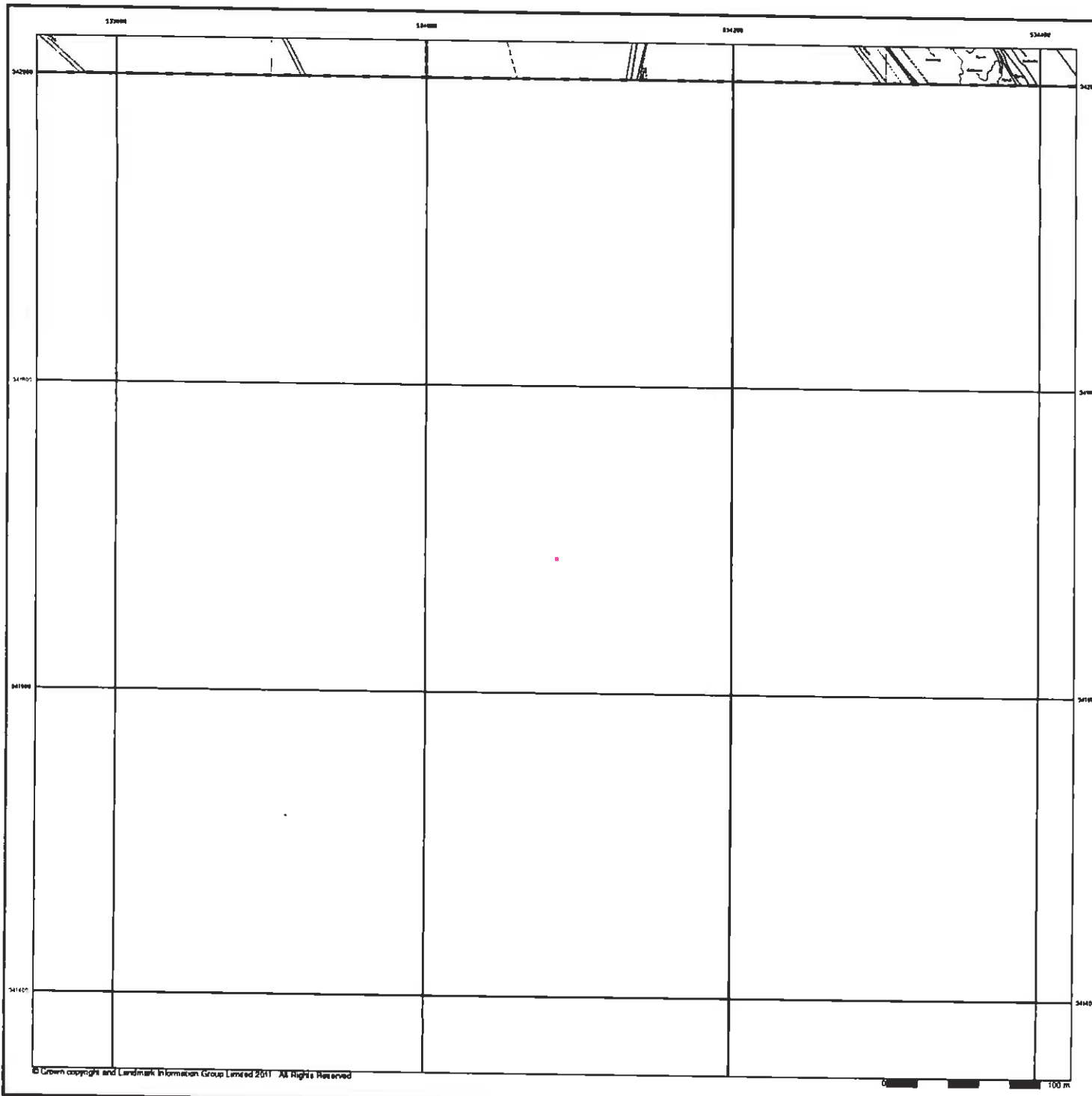


Order Details

Order Number: 36884147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Sflce: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760



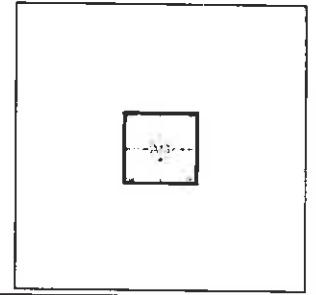
**Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the forerunners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TF3342SE	TF3442SW
1993	1993
1:1,250	1:1,250

Historical Map - Segment A13



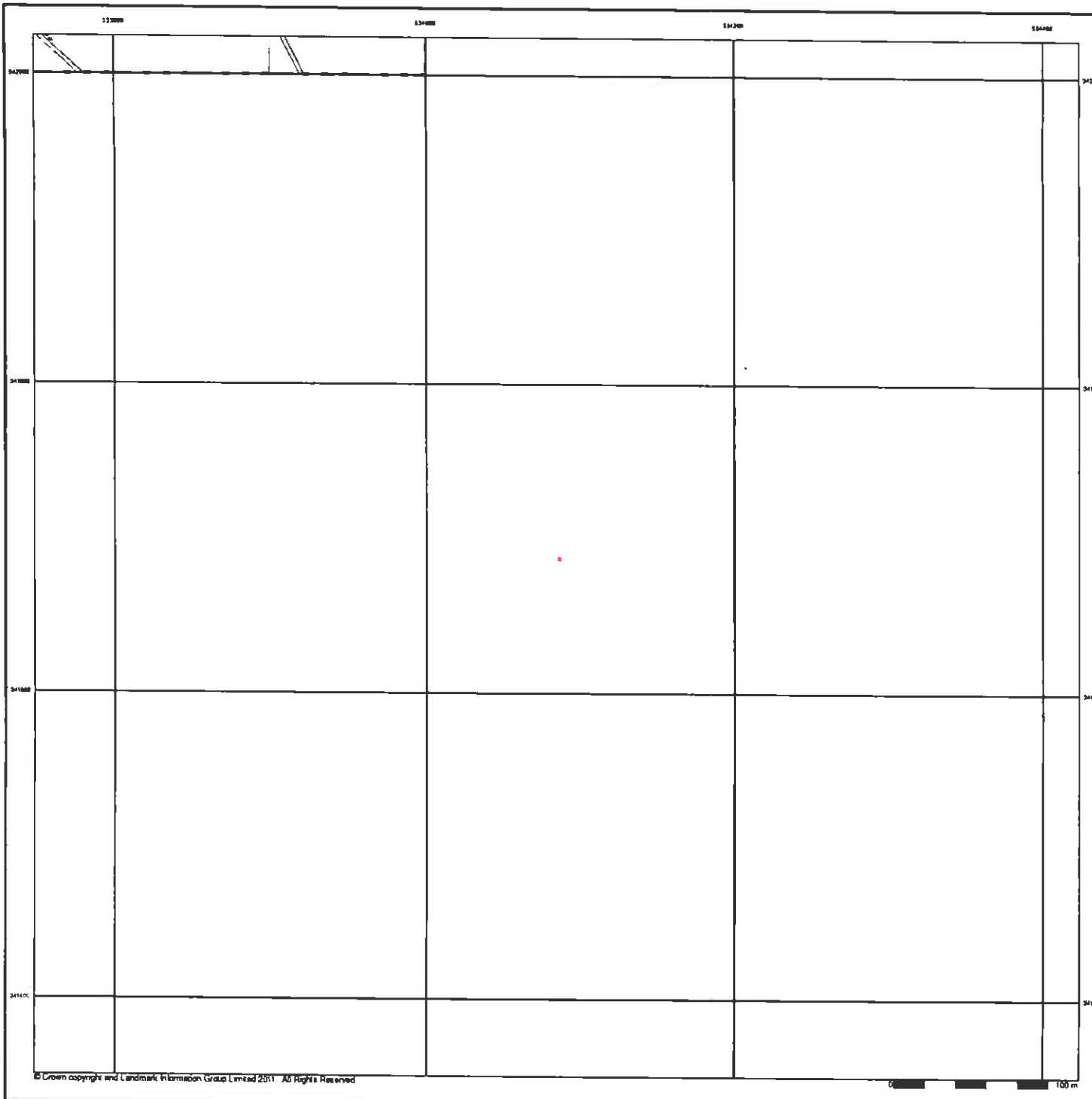
Order Details

Order Number: 36684147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760





Large-Scale National Grid Data

Published 1995

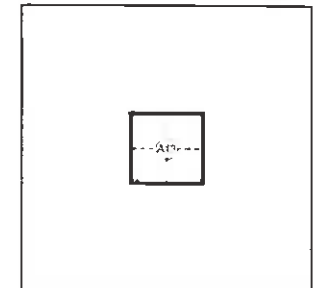
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TF 34125E
1995
1:1,250

Historical Map - Segment A13



Order Details

Order Number: 36884147_1_1
 Customer Ref: G35361
 National Grid Reference: 534090, 341690
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 100

Site Details

Site at 534060, 341760



