

**SCHEME OF ARCHAEOLOGICAL MONITORING  
AND RECORDING:  
TWO WIND TURBINES AT WADDINGHAM GRANGE FARM,  
WADDINGHAM, WEST LINDSEY, LINCOLNSHIRE**

NGR: SK 9753 9677  
Planning Authority: West Lindsey District Council  
WLDC Planning Ref.: 128608  
PCAS Job No.: 1052  
Site code: GRAM 13  
Archive acc. code: 2013.86

Report prepared for  
  
J.H. Walter LLP  
  
on behalf of  
  
Warden Farming Company

by  
  
L. Brocklehurst  
  
February 2014



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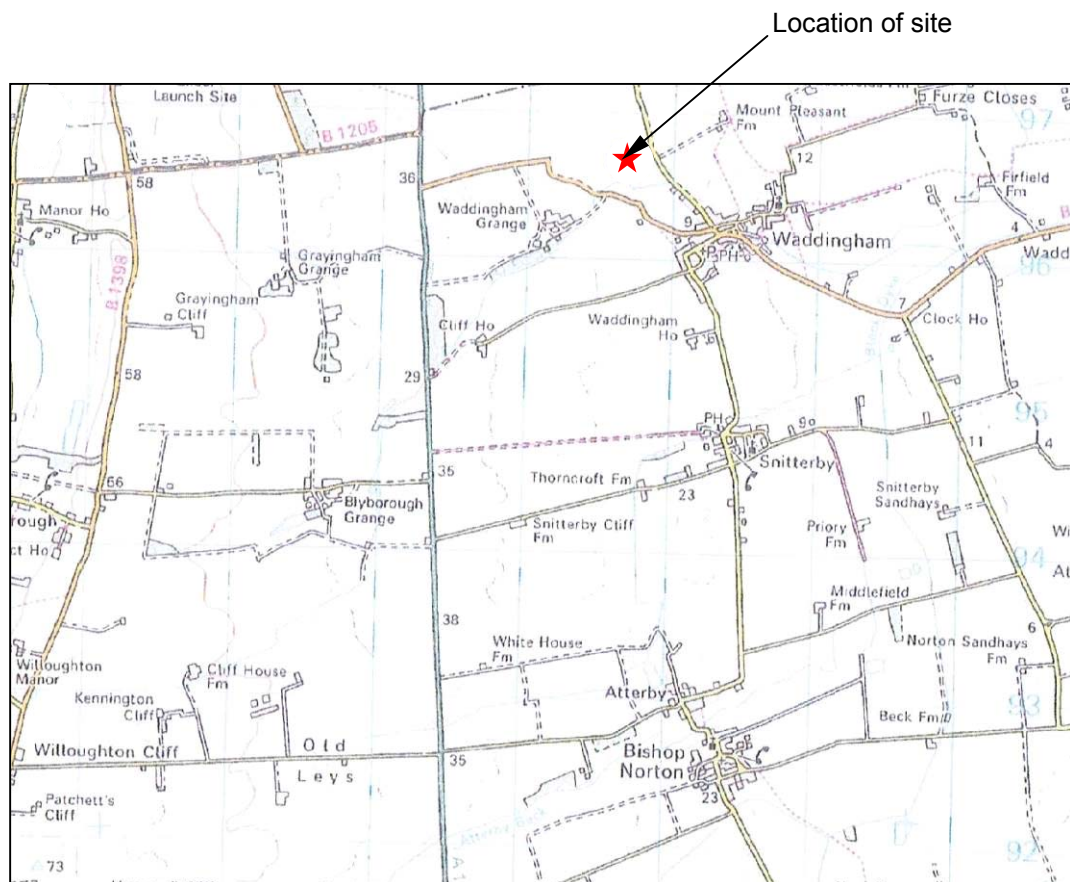
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## Summary

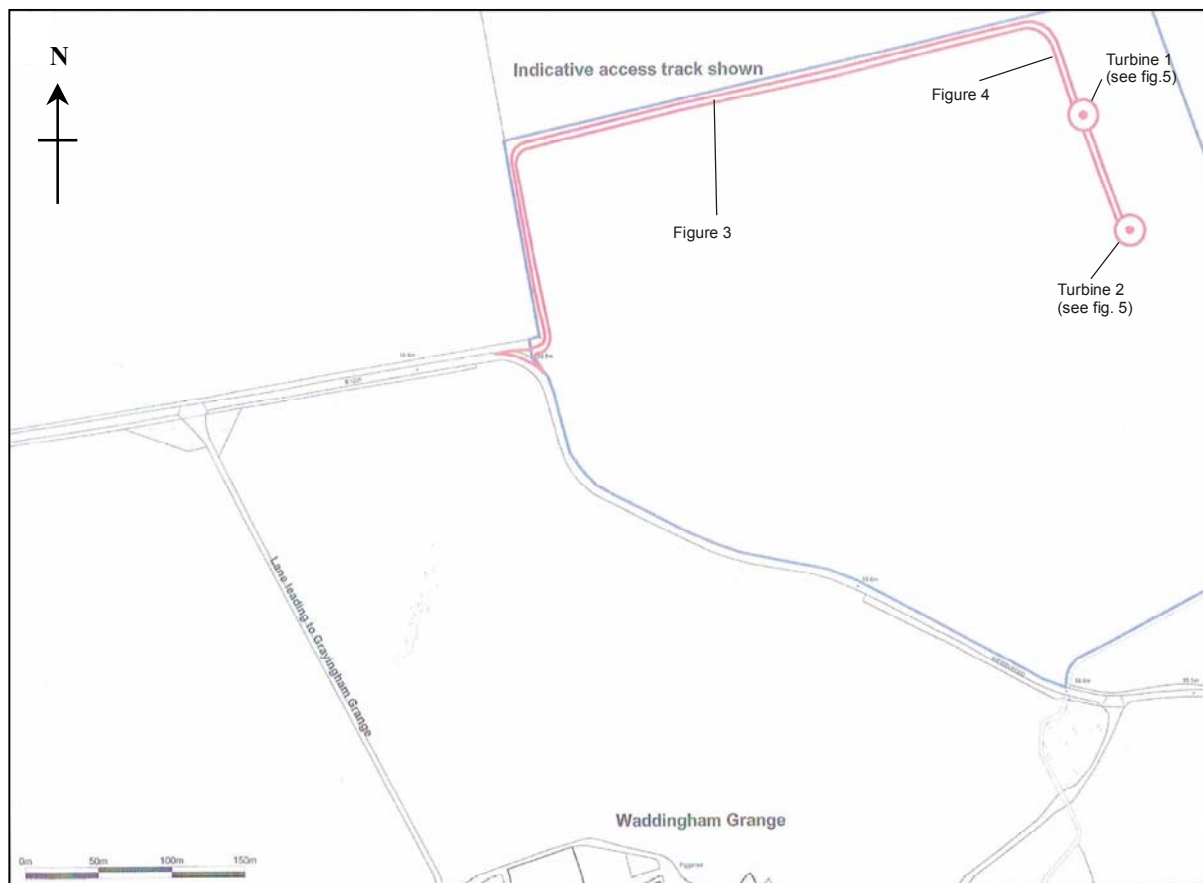
A scheme of archaeological monitoring and recording took place during the construction of two wind turbines on land at Waddingham Grange Farm in the district of West Lindsey in Lincolnshire, this was done in order to satisfy a planning condition.

The wind turbine site is approximately 900m from the early medieval settlement of Waddingham St. Mary. There are few recorded archaeological remains in the vicinity of the site, but it is within 400m of two probable Bronze Age barrows.

The monitoring took place whilst the access road and turbine footings were excavated. This monitoring exposed two fairly shallow pits, neither of which contained dateable finds. Fragments of Roman pottery, however, were recovered from the plough soil suggesting that there had been some activity in the vicinity of the development area. No other archaeological features were identified during the course of the monitoring.



**Figure 1:** Location plan of the site (marked in red) at scale 1:50,000. OS mapping © Crown copyright. All rights reserved. PCAS licence no. 100049278.



**Figure 2:** Location plan of the site at scale 1:5000. The areas to be developed are marked in red. Plan supplied by client.

## 1.0 Introduction

Pre-Construct Archaeological Services Ltd (PCAS) was requested by J. H. Walter LLP to undertake scheme of archaeological monitoring and recording for the construction of two wind turbines near Waddingham Grange Farm, in the district of West Lindsey in Lincolnshire. The turbines had a maximum overall height to tip of 35m; with the associated ancillary development consisting of the construction of an area of hardstanding adjacent to the turbine location, the installation of an underground cable connecting the turbine to the National Grid, and the creation of a temporary access from the road (Wright, 2012a). The total built footprint of each turbine was approximately 81 square metres (Wright, 2012b).

This document presents the results of a programme of archaeological monitoring and recording. This followed current best practice and appropriate national guidance including:

- NPPF, National Planning Policy Framework, 2012;
- IFA Code of Conduct (1994 as revised);
- IFA Standards and Guidance for Archaeological Watching Briefs (2008);
- Management of Research Projects in the Historic Environment (MoRPHE)
- Lincolnshire Archaeological Handbook (Lincolnshire County Council, 2010).

## **2.0 Site location and description (figs. 1 & 2)**

The parish of Waddingham lies on the northern boundary of the district of West Lindsey; Waddingham village is approximately 5km south-east of Kirton in Lindsey and 22km north of Lincoln. Waddingham Grange is situated approximately 1km to the west of the village, roughly mid-way between Waddingham village and the A15 (Ermine Street).

Waddingham Grange Farm is a mixed farm, with both arable and pastoral agriculture, the arable land mainly being used to grow wheat to feed the farm's pigs. The present development, consisting of two single small-scale wind turbines, is located to the north-east of Waddingham Grange in an area of open arable land.

Central National Grid Reference: SK 9753 9677.

## **3.0 Geology and topography**

The British Geological Survey records little drift geology in the vicinity of the site, with the exception of a band of Shell Marl laid down along the course of the Waddingham Beck. As Waddingham Grange is on a scarp slope, a number of narrow bands of exposed solid geology are present in the area, including Priestland Clay with limestone, Thorncroft Sands and Snitterby Limestone (BGS, 1982).

Waddingham Grange and Waddingham village are situated near the foot of the east-facing slope of the Lincoln Edge, above the Ancholme Valley. The site is at an approximate Ordnance Datum height of 15m above sea level.

## **4.0 Planning background**

West Lindsey District Council granted planning permission for the construction of two small-scale 50kW wind turbines and associated infrastructure (application number 128608).

Planning permission was granted subject to the conditions that a written scheme of archaeological investigation should be submitted to and approved by the Historic Environment Officer for West Lindsey District Council prior to development, and that appropriate mitigation, in the form of a scheme of archaeological monitoring (results presented here), should be undertaken during development groundworks.

## **5.0 Archaeological and historical background**

A cropmark Bronze Age round barrow has been identified at SK 978 970, roughly 300m to the north-east of the wind turbine site (HER ref. 50384) and a cropmark ring ditch, also provisionally interpreted as a round barrow, at SK 972 966, roughly 400m west-south-west of the site (HER ref. 53891); the former is still visible as a circular ditched enclosure 20m in diameter, and the latter as a ploughed mound (EH PastScape refs. 1056652-3). The HER also records anecdotal evidence of a 'mound' seen in 1959 to the south of the Kirton Road at SK 974 964, which may represent a further barrow, but this has not been verified (HER ref. 50772). A linear cropmark at SK 978 970 is recorded as an undated boundary (HER ref. 53897); it appears to cut the north-eastern barrow (EH PastScape ref. 1056653).

The village of Waddingham appears to have originated as two separate settlements: Waddingham St. Mary to the west of Waddingham Beck, and Waddingham St. Peter to the east, around the surviving 13<sup>th</sup>-century church (now St. Mary and St. Peter). Archaeological work in Waddingham St. Mary has placed its origin in the 8<sup>th</sup>-10<sup>th</sup> century, while Waddingham St. Peter appears in documentation from the 11<sup>th</sup> century. The two villages are distinguished in documentary sources until the 14<sup>th</sup> century, but rarely thereafter, and had become a single

settlement by the 17<sup>th</sup> century; the two parishes were amalgamated in 1685 (HER refs. 50781, 50784, 50799). The village centre of the former Waddingham St. Mary is approximately 900m to the south-east of the site.

A programme of archaeological monitoring was carried out during groundworks for the construction of a steel-framed agricultural building at Waddingham Grange Farm in 1997: no significant archaeological remains were recorded (Schofield, 1997).

## **6.0 Aims and methodology**

The specific aims were:

- To identify and record all archaeological structures, deposits, features and artefacts exposed by the development works;
- To determine their form and function;
- To recover stratified dating evidence;
- To establish the sequence of archaeological remains on the site;
- To interpret the archaeological remains in the context of known archaeological remains in the vicinity.

The methodology for the scheme had been fully set out in the WSI that had been approved by the Historic Environment Officer for West Lindsey District Council in advance.

In summary, the methodology stated that archaeological attendance and recording by a suitably qualified / experienced professional archaeologist / PCAS Field Officer would take place during all intrusive groundworks at the site; that all archaeological features would have to be examined sufficiently to determine their date, character, state of preservation and extent, as well as to recover artefactual / ecofactual remains for further studying. A written record for each stratigraphic horizon and archaeological feature was to be made on standard PCAS recording forms. Sections were drawn at a scale of 1:20 and plans were drawn at a scale of 1:100. A photographic record and a narrative account in the form of a site diary would supplement these recording forms.

Any securely stratified archaeological deposits considered suitable for environmental analysis would have been sampled in 40ltr quantities, where possible. Sampling techniques and methods will comply with those outlined in *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation* (English Heritage, 2011, 2<sup>nd</sup> edition).

## **7.0 Results (See Appendix 1 and 2)**

The scheme of archaeological monitoring took place in two phases. The first phase of excavation took place during June 2013, over the course of three days. During these three days the access track to the wind turbines was put in place, this was an extension to an existing access track, which orientated S-N along the field's western hedge line. This involved excavating a 4m wide trench along the northern boundary of the field on a W-E orientation. This was excavated to a maximum depth of 0.5m. By the end this strip was about 360m in length and had exposed a stratigraphic sequence as follows (listed in stratigraphic order):

*(001): A moderately compacted mid greyish brown clayey gritty silt topsoil. Some small stones within deposit. 0.35m thick.*

*(002): A moderately compacted mid yellowish brown gritty silt subsoil. Occasional small stone inclusions located throughout deposit. Mid yellowish brown gritty silt. Moderately compacted, with occasional small stones. 0.28m thick.*

*(003): Another moderately compacted subsoil, which was light to mid yellowish brown sandy silt. Full depth of deposit is unknown.*

These three (above) overlaid varying natural deposits:

*(005): A light to mid yellowish brown clay silt natural. It was moderately compacted, with some limestone fragments throughout deposit.*

*(004): A light yellow weathered limestone natural deposit. It was firmly compacted.*

*(006): A mottled grey brown/ yellow brown clay natural. It was very firm for the most part, with some patches of sand interspersed throughout deposit.*

No archaeological features were identified during this phase of monitoring.

The second phase saw the continued stripping of the access track, turning 90° to the south, and excavation of the footings for turbine 1 and 2. The monitoring for this phase took place during September 2013. The access track was extended south for a further 160m and was approximately 4m wide, whilst each turbine base covered on area that was 13m<sup>2</sup>.

This part of the access road exposed a stratigraphic sequence as follows:

*(001): Topsoil (see above for description), which produced a small collection of Roman pottery and a flint core (mesolithic/early Neolithic).*

*[007]: Cut of a shallow pit. This was an irregular circle in plan with fairly sharp edges running into a shallow undulating base. This feature was filled by (008). It was 0.5m in diameter and 0.08m in depth. The feature itself definitely cuts through (004), but may have been cut from higher; however the relationship was lost during stripping.*

*(008): Fill of [007]. It was a dark brown to black fine sandy silt that was very friable.*

Two natural deposits were also exposed in this area:

*(005): (see above for description).*

*(004): (see above for description).*

The footing for turbine 1 was excavated to a depth of 1.74m below existing ground level and exposed a stratigraphic sequence as follows:

*(001): Topsoil (see above for description).*

*(004): Natural (see above for description).*

*(006): Natural (see above for description).*

No archaeological features were identified in this area.

The area surrounding turbine 2 was reduced by 0.5m from existing ground whilst the footing was excavated a further 1.4m below this. This meant that the base of the footing was 1.9m below original ground level. Excavations in this area exposed a stratigraphic sequence as follows:



*(001): Topsoil (see above for description).*

*(009): Cut of a pit. This was oval shaped in plan with steep but rounded edges and a flat base. It was filled by (010) and measured 1.33m in length, 1m in diameter and 0.29m in depth. Cut into (005).*

*(010): Fill of [009]. A firm dark brown sandy clay. Deposit contained frequent charcoal fragments. No finds were recovered, therefore date is not known.*

Four natural deposits were exposed in this area:

*(005): Natural (see above for description).*

*(004): Natural (see above for description).*

*(006): Natural (see above for description).*

*(011): Natural. Dark grey stone. Depth unknown.*

No samples were taken from the two features identified throughout the course of monitoring.

## **8.0 Conclusion**

To conclude, two archaeological features, [107] and [109] were identified during the course of this scheme of monitoring. However, neither of these features produced any dateable finds.

Although the features excavated on site could not provide any dating evidence, numerous residual finds were recovered from the topsoil and one of the subsoils, (003). These finds include; Mesolithic/Neolithic worked flints; 15 sherds of Roman pottery, including Samian and Greyware, as well as 2 pieces of Roman Tegula ; 1 fragment of animal bone; 2 sherds of medieval pottery; 6 sherds of post-medieval pottery; 46 fragments of fuel ash slag; and finally, 14 fragments of post-medieval to modern CBM. These finds indicate an occupation presence spanning a long period of time. For the full description of all the finds see appendices 4-9.

The amount of features identified on site suggests a fairly low-level of domestic activity. Coupled with the fact that no other features were identified during the monitoring process, it would stand to reason that if there was any occupation activity in this area, then the development site is almost certainly located on the periphery of it.

## **9.0 Effectiveness of methodology**

The methodology employed during this project achieved its primary objective, ensuring that the archaeological remains present on the site were not destroyed unrecorded, while causing the minimum of disruption to the construction process.

## **10.0 Acknowledgements**

PCAS Ltd would like to thank J.H. Walter LLP, on behalf of Warden Farming Company for this commission.

## **11.0 Site Archive**

The project archive is currently held at the offices of PCAS Ltd. in Saxilby, Lincolnshire while being prepared for deposition, and will be deposited with the Lincoln City and County Museum ('The Collection').

## 12.0 Bibliography

British Geological Survey (BGS), 1982, *Brigg: England and Wales 1:50,000 Series sheet 89, Drift Edition*. BGS, Keyworth, Nottingham.

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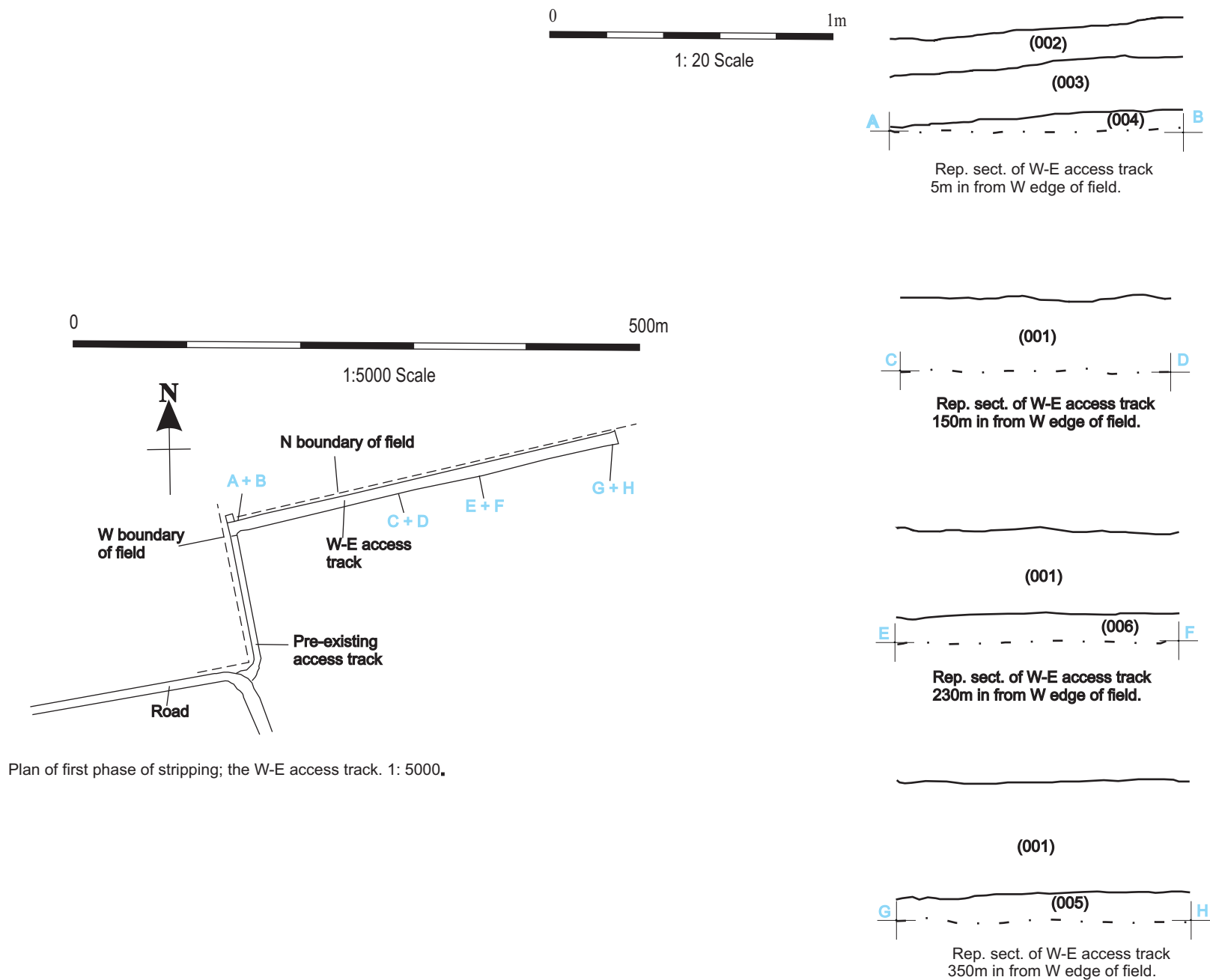


Figure 3. Plan (1:5000) and representative sections (1:20) of W -E access track.

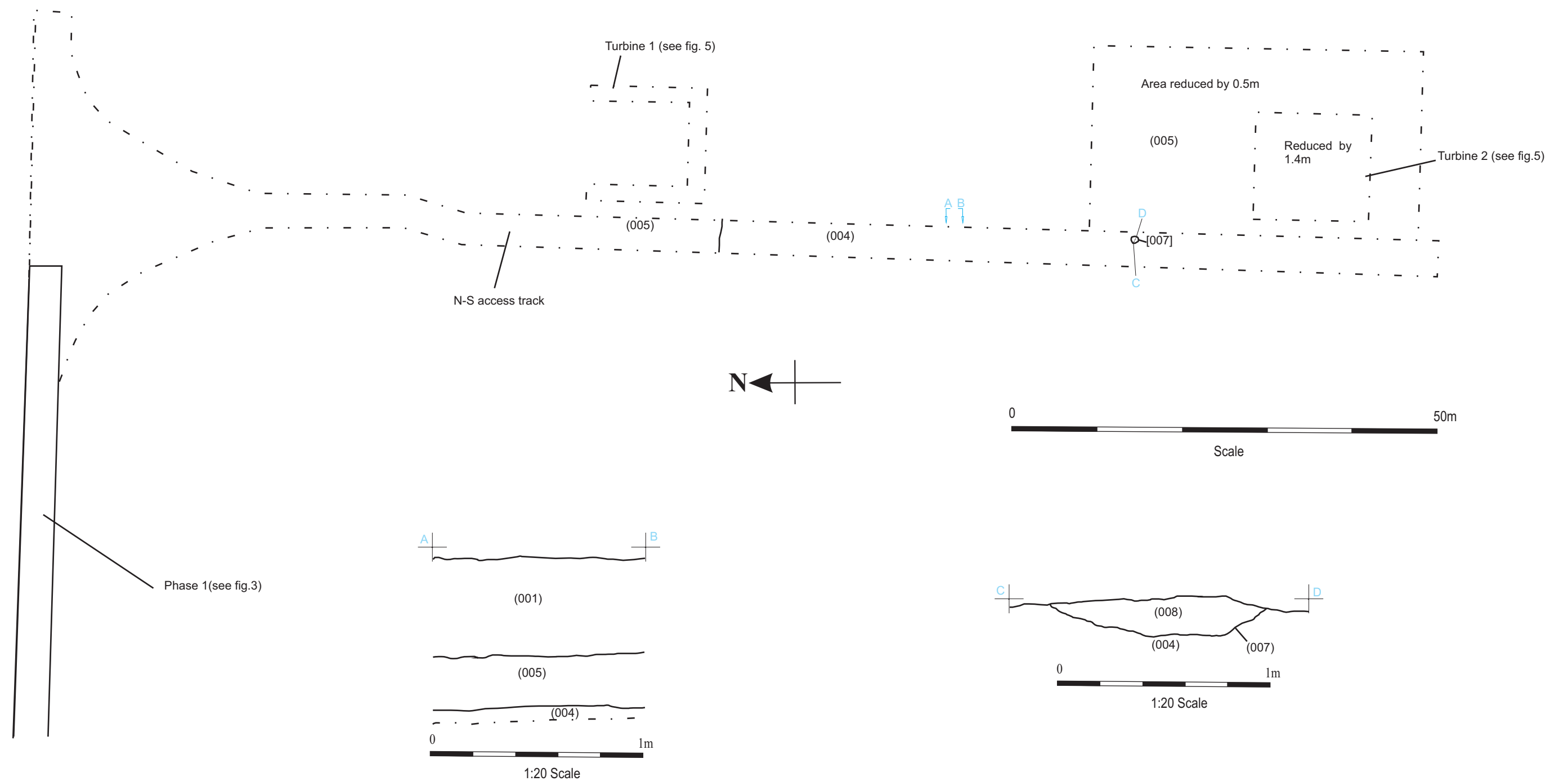


Figure 4: Plan (1:500) of N-S access track, representative section (1:20), and section (1:20) of pit [007].

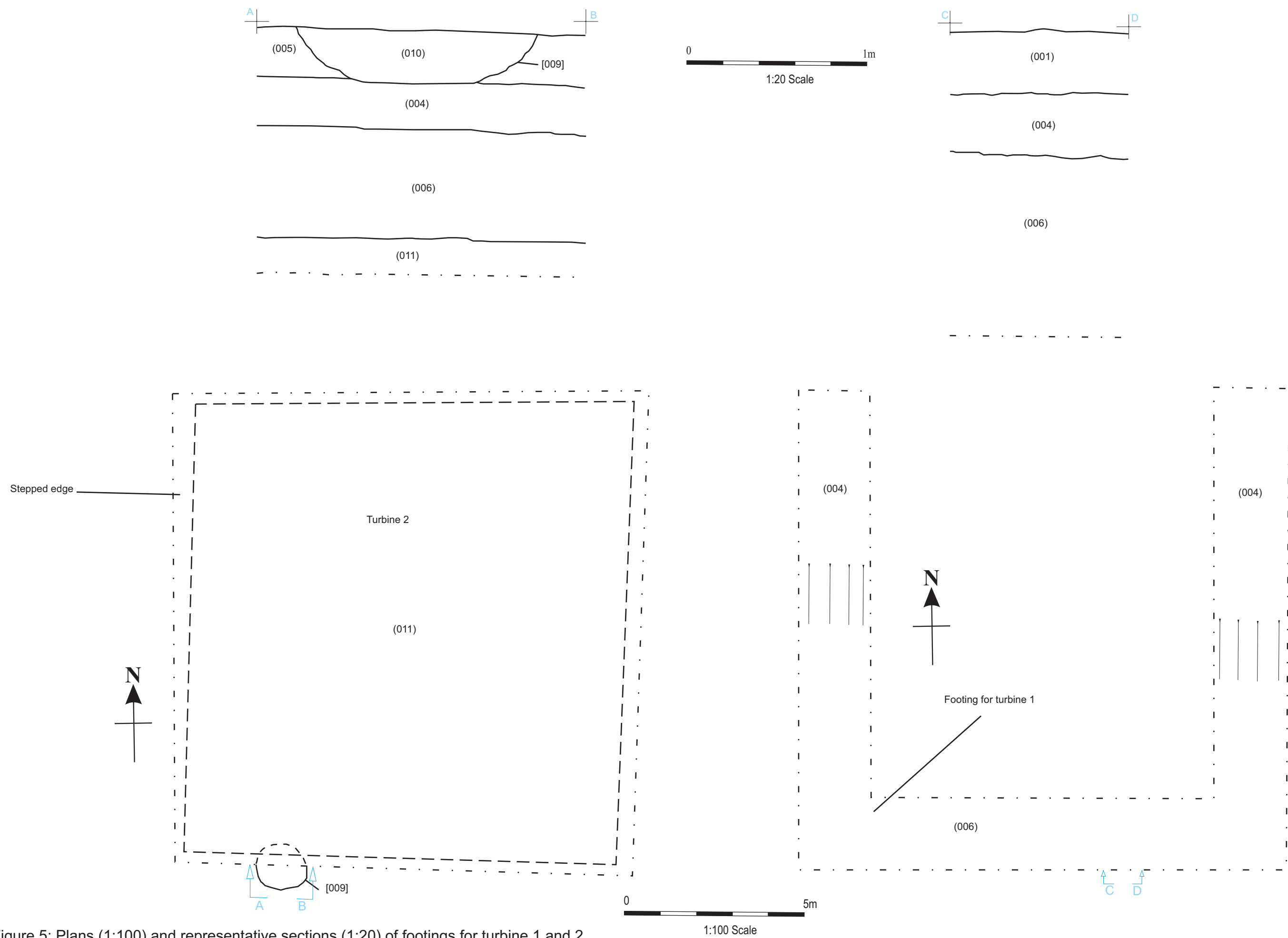


Figure 5: Plans (1:100) and representative sections (1:20) of footings for turbine 1 and 2.

## Appendix 1 – Colour plates



Plate 1: General shot of northern edge of field prior to excavation of access road. Looking E.



Plate 2: Shot of access road after excavation. Looking W.



Plate 3: Representative section of W-E access road. Looking S.



Plate 4: Working shot on N-S access road being excavated. Looking SE.



Plate 5: Shot of N-S access road once excavated. Looking N.



Plate 6: Representative section of N-S access road. Looking W.





Plate 7: Section through pit [007]. Looking S.



Plate 8: Representative section of footing for turbine 1. Looking S.



Plate 10: Representative section of footing for turbine 2. Includes section of pit [009]. Looking S.



Plate 9: Working shot. Footing of turbine 2 under excavation. Looking NW.



Plate 11: Shot of footing for turbine 2 once excavated. Looking SW.

## Appendix 2

Context No.	Type	Description	Finds/Dating
001	Layer	Mid greyish brown clayey gritty silt. Moderately compacted, with occasional small stones. Topsoil. 0.35m thick.	None
002	Layer	Mid yellowish brown gritty silt. Moderately compacted, with occasional small stones. Possible subsoil. 0.28m thick.	Slag
003	Layer	Light to mid yellowish brown sandy silt. Moderately compacted, with small to medium sized brash throughout. Subsoil. Depth unknown	Slag
004	Layer	Natural. Light yellow weathered limestone. Firmly compacted.	None
005	Layer	Natural. Light to mid yellowish brown clay silt. Moderately compacted, with some limestone fragments throughout deposit.	None
006	Layer	Natural. Mottled grey brown/ yellow brown clay. Very firm, with some patches of sand interspersed throughout deposit.	None
007	Cut	Shallow pit. Irregular circle with fairly sharp edges running into a shallow undulating base. Filled by (008). 0.5m in diameter and 0.08m in depth. Cuts into (004).	None
008	Fill	Fill of [007]. Dark brown to black fine sandy silt. Very friable. Covered by (001).	None
009	Cut	Pit. Oval shaped in plan with steep/concave edges and a flat base. Filled by (010). 1.33m in length, 1m in diameter and 0.29m in depth. Cut into (005).	None
010	Fill	Fill of [009]. Dark brown sandy clay. Firm. Deposit contained frequent charcoal fragments. No finds were recovered, therefore date is not known.	None
011	Layer	Natural. Dark grey stone	None



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## Waddingham Grange Farm - Pre-Construct Archaeological Services Ltd

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Details	Location	Creators	Archive	Publications
Yes	Yes	Yes	Yes	0/0

### Validated sections in current version

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## Waddingham Grange Farm, Waddingham, Lincolnshire (GRAM13)

### THE CERAMIC FINDS

*Dr Anne Irving*

#### THE POTTERY

##### Introduction

All the material was recorded at archive level in accordance with the guidelines laid out in Slowikowski *et al.* (2001) and to conform to Lincolnshire County Council's *Archaeology Handbook*. The pottery codenames (Cname) are in accordance with the pottery type series for Lincolnshire. A total of eight sherds from six vessels, weighing 111 grams was recovered from the site.

##### Methodology

The material was laid out and viewed in context order. Sherds were counted and weighed by individual vessel within each context. The pottery was examined visually and using x20 magnification. This information was then added to an Access database. An archive list of the pottery is included in Table 1. The pottery dates to the early medieval period.

##### Results

*Table 1, Pottery Archive*

Cxt	Cname	Full name	Form	NoS	NoV	W (g)	Part	Description	Date
001	BL	Black-glazed wares	Jar/ bowl	3	3	45	BS	Abraded	17th to 18th
001	CIST	Cistercian-type ware	Drinking vessel	1	1	1	BS		Late 15th to 16th
001	LSW2	13th to 14th century Lincoln Glazed Ware	Jug/jar	1	1	4	BS		13th to early 14th
001	NOTS	Nottingham stoneware	Jar	3	1	61	Base + BS	Machine turned lines	18th to 19th

##### Potential

The sherds are stable and suitable for long-term storage. No further work is required on the assemblage.

### THE CERAMIC BUILDING MATERIAL

##### Introduction

All the material was recorded at archive level in accordance with the guidelines laid out by the ACBMG (2001) and to conform to Lincolnshire County Council's *Archaeology Handbook*. A total of 16 fragments of ceramic building material, weighing 508 grams was recovered from the site.

##### Methodology

The material was laid out and viewed in context order. Fragments were counted and weighed within each context. The ceramic building material was examined visually and using x20 magnification. This information was then added to an Access database. An archive list of the ceramic building material is included in Table 2.

## Results

*Table 2, Ceramic Building Material Archive*

Cxt	Cname	Full name	NoF	W (g)	Description	Date
001	BRK	Brick	2	172	Fragments of brick; abraded; handmade	17th to 18th
001	CBM	Ceramic Building Material	10	103	Flakes	16th to 20th
001	LANDDRAIN	Land Drain	2	63	Abraded	18th to 20th
001	TEG	Tegula	2	170	Abraded; ?ID	Roman?

## Potential

The fragments are stable and suitable for long-term storage. No further work is required on the assemblage.

## SPOT DATING

The dating in Table 3 is based on the evidence provided by the finds detailed above.

*Table 3, Spot dates*

Cxt	Date	Comments
001	18th to 20th	

## ABBREVIATIONS

ACBMG	Archaeological Ceramic Building Materials Group	NoF	Number of Fragments
		NoS	Number of sherds
BS	Body sherd	NoV	Number of vessels
CBM	Ceramic Building Material	TR	Trench
CXT	Context	UHJ	Upper Handle Join
LHJ	Lower Handle Join	W (g)	Weight (grams)

## REFERENCES

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## The Roman Pottery archive- Waddingham Grange Farm, Lincolnshire (GRAM13, SK9753 9677)

I.M. Rowlandson

March 31<sup>st</sup> 2013

A small group of Roman pottery (15 sherds, 268g, RE0.20) was presented to this author for archiving. An archive has been produced to comply with the requirements of the Study Group for Roman Pottery (Darling 2004) using the codes and system developed by the City of Lincoln Archaeological Unit augmented by those used by this author for Navenby (Darling and Precious 2014, Rowlandson 2011). A tabulated summary by context and a sherd archive are presented below. The dates provided represent the pottery recorded here: the main text of the report and other specialist contributions should be consulted to ascertain the overall date attributed to each context.

It is recommended that this pottery should be deposited with the relevant local museum along with the rest of the archive.

GRAM13- Roman pottery dating summary					
Context	Spot date	Comments	Sherd	Weight (g)	Total RE %
001	ML2-E3	A small group including a trimmed samian base, a Mancetter-Hartshill mortarium with a flanged rim, a native tradition bowl in a grog-tempered fabric and sherds of greyware	15	268	20

GRAM13- Roman pottery archive												
Context	Fabric	Form	Decoration	Vessels	Alt	D.No	Comments	Join	Sherd	Weight (g)	Rim diam	Rim eve
001	SAMCG	B		1	DISC; ABR		BASE FTG; TRIMMED AROUND EDGE TO FORM DISC OR USED AS RUBBER		2	27	0	0
001	MOMH	MFL		1			RIM; BROKEN FLANGE; BROAD DATE GIVEN TO THIS FORM; SEE D&P 2014 = AD150-230		1	24	0	2
001	IAGR	BNAT	HB; WF	1			RIM; GROG & QUARTZ GRITTED WITH TRACES OF ?SHELL; INTURNED RIM WITH SLIGHT GROOVE		2	84	26	14
001	DSGR	JBL		1	ABR		BS		3	40	0	0
001	GREY	CLSD		1			BS		1	42	0	0
001	GREY	CLSD		3			BS		3	43	0	0
001	GREY	CLSD		1	ABR		BS		2	3	0	0
001	GREY	BREED		1	VAB		RIM		1	5	25	4

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Darling, M.J. and Precious, B.J., 2014, *Corpus of Roman Pottery from Lincoln*, Lincoln Archaeological Studies No. 6, Oxbow Books, Oxford

Rowlandson, I.M., with Darling M.J. and Monteil, G., 2011, The Roman pottery, in Palmer-Brown, C. and Rylatt, J., *How Times Change: Navenby Unearthed*, PreConstruct Archaeological Services Ltd. Monograph No. 2, Saxilby

**Waddingham Grange Farm, Waddingham,  
West Lindsey (GRAM 13)**  
*The Animal Bone*  
*By Jennifer Wood*

## **Introduction**

A total of 1 (50g) refitted fragments of animal bone were recovered by hand during archaeological works undertaken by Pre-Construct Archaeology Services Ltd at Waddingham Grange Farm, Waddingham. The remains were recovered from deposit (001).

## **Results**

The remains were generally of a poor overall condition, averaging at grade 4 on the Lyman criteria (1996). The remains had been heavily leached and weathered.

No evidence of butchery, pathology, burning or gnawing was noted on the remains.

*Table 1, Summary of Identified Bone*

Context	Taxon	Element	Side	Number	Weight	Comments
001	Cattle	Metatarsal	L	1	50	Proximal Shaft

As can be seen, cattle was the only species identified within the assemblage.

The assemblage is too small to provide meaningful information on animal husbandry and utilisation on site, save the presence/use of the animals on site.

## **References**

Lyman, R L, 1996 *Vertebrate Taphonomy*, Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge

## **Flint**

*By Tom Lane*

### **Introduction**

Three worked flints were found in the topsoil.

### **Condition**

All items were abraded. None will require any specialist conservation treatment.

### **Results**

<b>Cxt No</b>	<b>Description</b>	<b>No</b>	<b>Wt(g)</b>	<b>Date</b>
001	Blade Flake. Moderately Patinated . 29 x 10 x 2mm	1	1	Mesolithic/early Neolithic
001	Core fragment. Non-patinated. Blade scar removals. 30 x 18 x 20mm	1	16	Later Neolithic
001	Tool. Piercer. Edge-working indicates re-use of earlier, patinated , flake. 36 x 23 x 8mm	1	8	Later Neolithic/Early Bronze Age

### **Provenance**

All items are topsoil finds.

### **Range**

Together, the items indicate the making and using of flint artefacts in the area, with a core, flake and finished tool present.

### **Potential**

Other than highlighting the presence of flint workers in the area over a long period the items have little potential to help in the understanding of prehistoric communities in the area.

### **Summary**

Three worked flints were collected from the topsoil. They indicate the presence of flint-gathering and flint-working communities.

## FINDS REPORT

### FIRED CLAY

By Alex Beeby

#### Introduction

All the material was recorded at archive level in accordance with the guidelines laid out in the Lincolnshire County Council's *Archaeology Handbook*.

#### Methodology

The material was viewed and then weighed. This information was then added to an Access database. An archive list of the fired clay is included in Table 1 below.

#### Condition

The piece is small with just a single smooth surface.

#### Results

Table 1, Fired Clay Archive

Cxt	Fabric	Sub type	NoF	W (g)	Description
005	Reduced; medium sandy	Pottery?	1	4	Curved; rim or neck? rare shell; moderate rounded to sub rounded sand; rare iron Oxide; IA-Roman?

#### Range

There is a single fragment in a dark reduced sandy fabric, which also includes rare shell inclusions. The piece is curved and has a single area of surface. Although the item is too fragmentary to be certain, it is probably a pottery sherd of Prehistoric, most likely Iron Age, or Roman date.

#### Potential

There is limited potential for further work. The fired clay should be retained as part of the site archive.

#### Summary

A single fragment of fired clay was recovered. This piece is probably a pottery sherd of Roman date or earlier.

### OTHER FINDS

By Gary Taylor

#### Introduction

A single other find weighing 54g was recovered.

#### Condition

The other find is corroded but otherwise in good condition.

#### Results

Table 2, Other Materials

Cxt	Material	Description	NoF	W (g)	Date
001	iron	rectangular loop, 67mm x 59mm x 7mm, possibly harness buckle (no pin) or machinery belt link	1	54	post-medieval

#### Provenance

The other find was recovered from the topsoil.

#### Range

A single rectangular metal loop, possibly a harness fitting or a machinery belt link, and likely to be of post-medieval date, was recovered.

**Potential**

The other find is of limited potential. It is probably a stray loss.

**SPOT DATING**

The dating in Table 3 is based on the evidence provided by the finds detailed above.

*Table 3, Spot dates*

<b>Cxt</b>	<b>Date</b>	<b>Comments</b>
001	post-medieval	based on 1 metal
005	Iron Age or Roman	Based on a single fragment of fired clay

**ABBREVIATIONS**

ACBMG	Archaeological Ceramic Building Materials Group
CXT	Context
NoF	Number of Fragments
W (g)	Weight (grams)

**REFERENCES**

~ 2012, *Lincolnshire Archaeological Handbook* [internet]. Available at  
 <<http://www.lincolnshire.gov.uk/residents/environment-and-planning/conservation/archaeology/lincolnshire-archaeological-handbook>>



## GRAM13 Slag assessment

*M. Wood BA (Hons) Mlitt MIfA*

### Introduction

Forty six fragments of slag were recovered during a scheme of archaeological monitoring and recording on land at Waddingham Grange Farm in West Lindsey. The material was all collected from context (003), at two different points, along an access track.

### Methodology

The assemblage was cleaned of surface debris, counted, weighed and macroscopically examined to identify diagnostic material. Full reference was made to published guides (Crew 1996, English Heritage 2011).

### Results

A summary of the assemblage is recorded below in Table 1.

Context	Feature	No. Frags	Weight (g)	Description	Recommendations
003	Track	46	165	Fuel ash slag	Discard

Table 1: Slag

### Discussion

The assemblage comprised Forty five fragments of fuel ash slag. Fuel ash can form from non-industrial processes; however, the slag from this site includes elements of charcoal and clinker fused into the material and suggests it is the by-product of a firing process.

With no dating available and the material derived from an access track, there is little value in any further analysis.

### Recommendations

No further work is recommended. The material could be returned to the landowner or discarded.

### References

Crew, P. 1996 *Bloom refining and smithing slags and other residues* The Historical Metallurgy Society Data sheet 6

English Heritage, 2011 *pre-industrial ironworks* Introductions to Heritage Assets