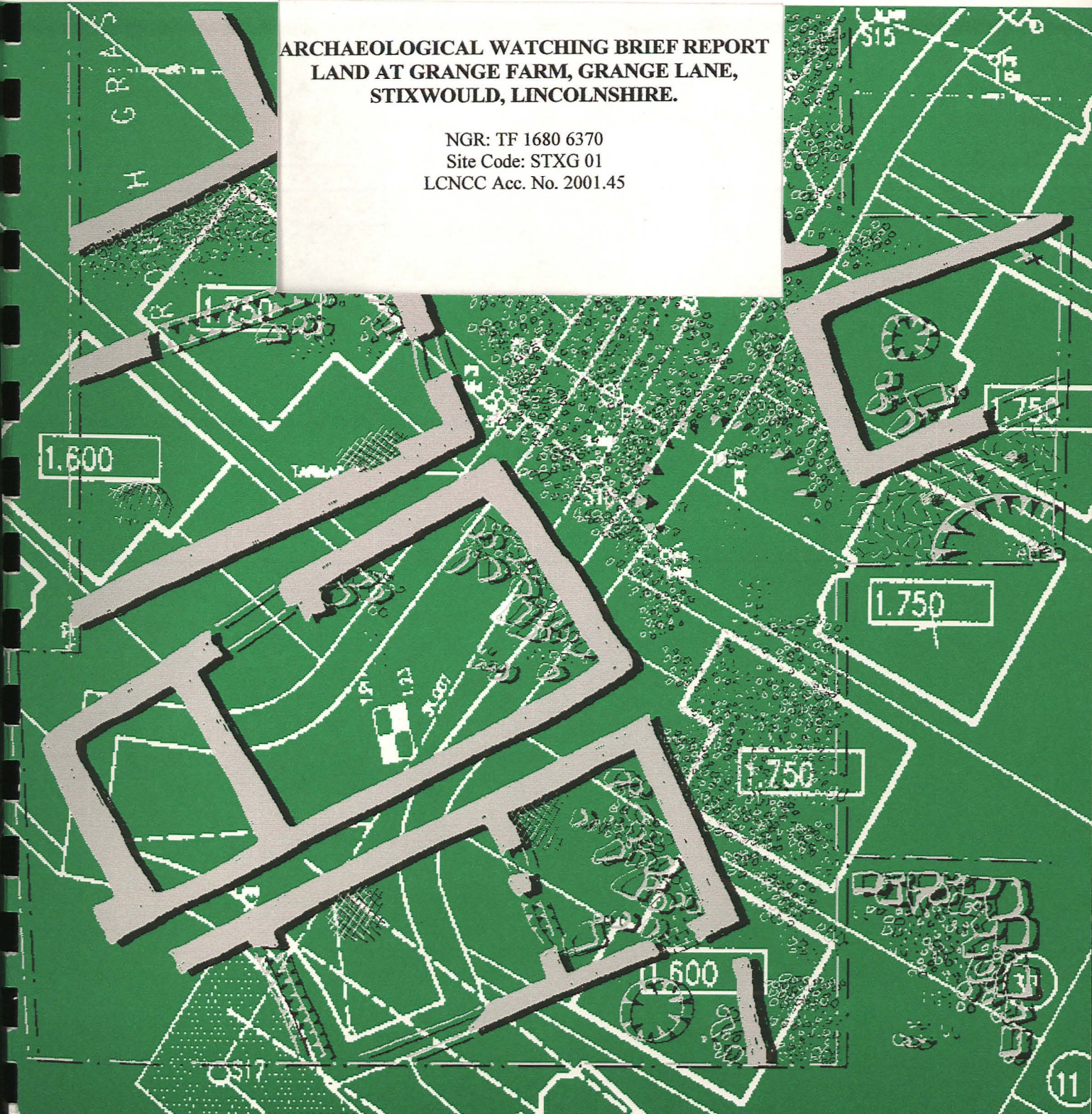


# PRE-CONSTRUCT ARCHAEOLOGY

L I N C O L N

**ARCHAEOLOGICAL WATCHING BRIEF REPORT  
LAND AT GRANGE FARM, GRANGE LANE,  
STIXWOULD, LINCOLNSHIRE.**

NGR: TF 1680 6370  
Site Code: STXG 01  
LCNCC Acc. No. 2001.45





Event L1 2714  
Source L17360  
L17361  
Mon L182308  
H4262

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Report Prepared for  
John Martin Construction Ltd.  
by Mark Allen BSc AIFA

January 2002

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### Summary

- *An archaeological watching brief took place at Stixwould Grange, Stixwould, Lincolnshire, during the groundworks for a clay extraction pit and irrigation reservoir.*
- *A previous desk top study and geophysical identified a former channel of the River Witham, which was sectioned during a recent programme of trial excavation. Archaeological features exposed during the evaluation were limited to a series of land drains of minimal interest. Despite this, a watching brief was required on all topsoil stripping activities in advance of clay extraction.*
- *A small mound of burnt stone and soil with an associated firepit/trough was sealed beneath deposits of peat, adjacent to the palaeochannel. Fragments of a collared urn dating to c. 1800 - 1700 BC were also found within the pit. A radiocarbon date was obtained, suggesting a date range of 1730 – 2060 and 2080 – 2130 BC.*



Figure 1: Location of site at 1: 25,000  
(OS copyright licence AL 515 21 A0001)



## 1.0 Introduction

An archaeological watching brief was carried out for John Martin Construction Ltd. on land situated to the south-west of Stixwould Grange, Stixwould, Lincolnshire (See figs. 1 and 2). The work was commissioned to fulfil a planning requirement associated with the groundworks for a clay extraction site and irrigation reservoir.

The fieldwork was conducted in accordance with the procedures set out in the Lincolnshire County Council publication *Lincolnshire Archaeological Handbook: A Manual of Archaeological Practice* (LCC, 1998); national guidelines produced by the Institute of Field Archaeologists were also adhered to (IFA, 1994). Both documents were also central to the structuring and content of this report.

The archive for this report will be held at the Lincoln City and County Museum.

## 2.0 Location and description

The development site lies on land at Grange Farm, approximately 20km south-east of Lincoln, and 2km south-south-east of Stixwould, in the administrative district of East Lindsey.

The development is contained within the northern two-thirds of a sub-rectangular field, approximately 2.6Ha in extent. The area formerly comprised pasture, at approximately 2m OD. The ground surface was relatively flat. Boundaries to the site comprise a mature hawthorn hedge to the north-west, a barbed wire fence to the south-west (with the Engine Drain beyond) and north-east, with the pasture continuing to the south-east.

Stixwould lies in the Lincoln Clay Vale, on the outside (to the north-east) of a meander of the present-day course of the River Witham. The uppermost geological strata of the area are Quaternary deposits comprising a glacial till overlain by Upper River Gravel deposits to the immediate north-east and east. Within the confines of the site itself, no Upper River gravels occur, although a low mound to the immediate south-east of the field derives from this material. The upper strata of the underlying solid geology comprise Jurassic Kimmeridgian and Oxfordian clay formations (BGS 1995).

Central National Grid Reference: TF 1680 6370.

## 3.0 Planning background

Prior to the development programme, Lincolnshire County Council required the undertaking of a desk-top study and geophysical survey to assess the archaeological potential of the site (Rylatt and Bunn 2001). The survey identified a former channel of the River Witham, which was sectioned during a subsequent programme of trial excavation (Clay 2001). Archaeological features exposed during the evaluation were limited to a series of land drains of minimal interest. Despite this, a watching brief

was required on all topsoil stripping activities in advance of clay extraction (Ref. ACW/(E)S170/-/00).

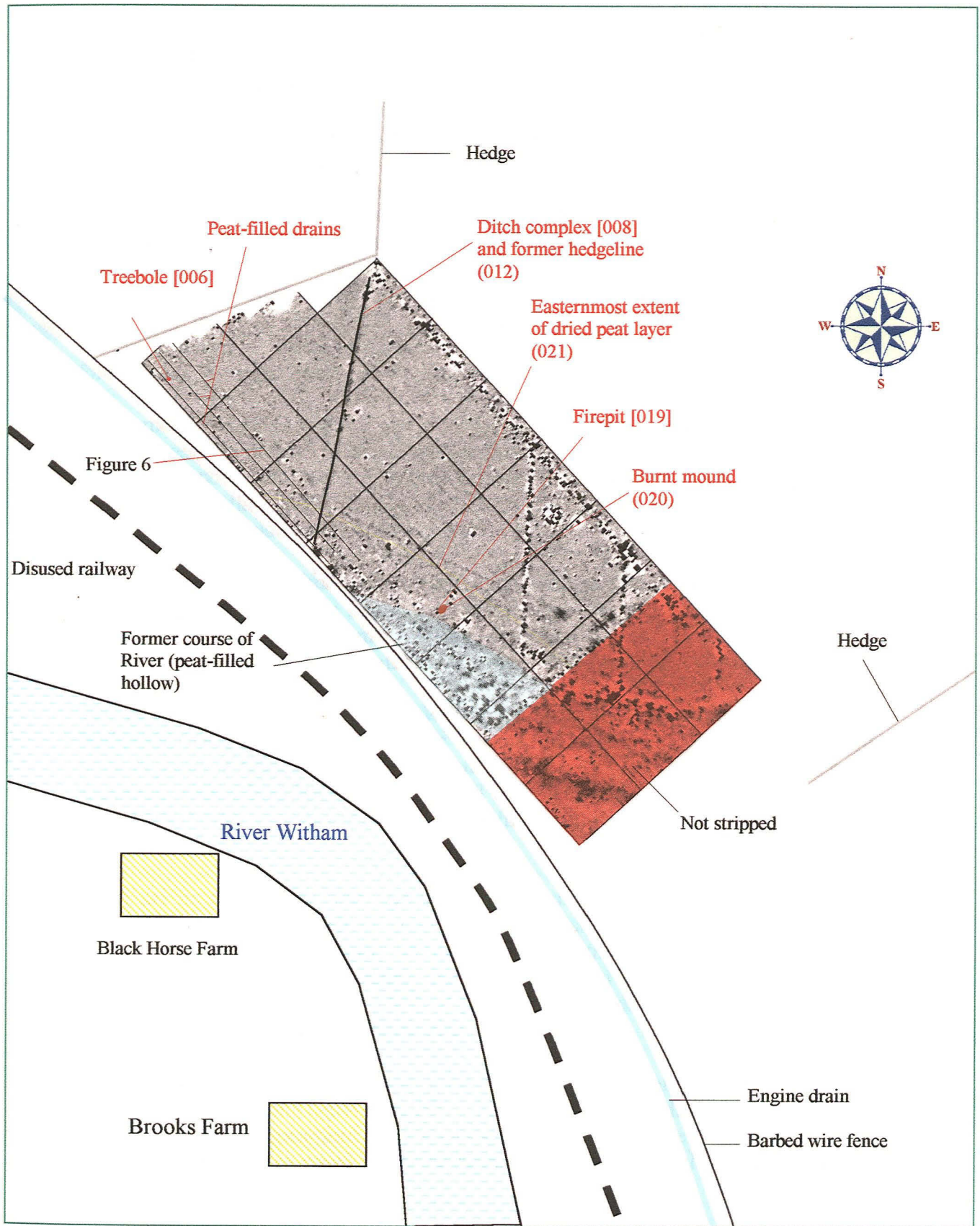


Figure 2: Location of archaeological deposits superimposed over geophysical survey results at scale 1:2000.



#### 4.0 Archaeological and historical background

To determine the archaeological potential of the site, a desk-top study (Rylatt 2001a) and a fluxgate gradiometer survey were undertaken (Rylatt and Bunn 2001), followed by a programme of intrusive evaluation. The geophysical survey identified a former channel of the River Witham, and this feature was sampled during a programme of trial excavation (Clay 2001).

Examination of the data held in the Lincolnshire Sites and Monuments Record indicates that the earliest artefactual material found in the parish is a series of isolated stone axes: in total, some five Neolithic axes and a pebble mace of similar date, and an undated biface stone axe, have been recovered, mostly within, or on the periphery of the Witham floodplain. The relationship between these artifacts and the edge of the floodplain is unlikely to be accidental or coincidental. Between the river basin and the foot of the Lincolnshire Wolds, the land was covered by dense mature forest throughout much of post-glacial prehistory, probably in the Bronze Age period. Overland movement would therefore have been easier at the boundary between the forest and reed swamp or carr of the estuarine fen.

While many unstratified stone axe discoveries are often considered to have been casual losses, the number of finds, coupled with their importance, suggests this to be unlikely. A more plausible explanation involves the ritual deposition of high status items within wetland zones during the Neolithic, a practice that continued into the Romano-British period and beyond.

Further suggestion of ritual activity along the Witham floodplain in the vicinity of Stixwold is suggested by a Bronze Age spearhead of the peg-hole type to the south of the current site and a Bronze Age axe to the north-west. No further artifacts of Bronze Age date are recorded from this section of the river basin.

The most recent strata within the Witham Fen are generally anaerobic in nature, facilitating the preservation of organic remains. A common artifact retrieved from these deposits in Lincolnshire is the dugout log boat. This part of the floodplain is no exception, with a boat being found in 1848 less than 1.5km to the north-west of the site (White 1978). The majority of these are thought to be of Bronze Age or Iron Age date.

There are no records for Iron Age or Romano-British activity in the vicinity of the site; a situation that is perhaps surprising, given that Roman pottery is frequently exposed by agricultural activity in most areas of the county, and a significant proportion of the fields surrounding the site are utilized for arable production. The negative results may be due to a lack of previous fieldwork or a failure to inform the SMR of chance finds of pottery in the area.

Several Anglo-Saxon artifacts have been recovered, also from watery contexts. A sword of Anglo-Saxon/Danish type (9<sup>th</sup> – 11<sup>th</sup> century AD), a dagger with a wooden handle, and an iron spearhead were found in 1788, 1.1km to the south of the site at Kirkstead Wath. These could represent further examples of ritual practice in watery contexts.



Later material found at Stixwold Station in 1848 may indicate that these practices were continuing into the 13<sup>th</sup> or early 14<sup>th</sup> centuries. The artifacts included a mass of chain mail, probably a hauberk (a tunic of ringed mail that extended below the knee), an iron sword, an iron spearhead and a human skull (White 1979).

The present settlement probably emerged in the late Saxon period. Stixwold is listed in the Domesday Book of 1086 as *Stigeswalt*, from the Old Danish meaning 'Stig's stretch of woodland on higher ground' (Cameron 1998).

## 5.0 Methodology

The author monitored the groundworks over a five day period in March 2001 (21<sup>st</sup> – 25<sup>th</sup>).

A D6 bulldozer fitted with a c. 3.8m blade was used to excavate the topsoil and subsoil horizons. Excavation of these deposits was monitored constantly to ensure that any archaeological features exposed were identified, although tracking across the area by the bulldozer made identification difficult.

The archaeological fieldwork entailed the cleaning by hand of possible archaeological features, followed by thorough inspection. All archaeological deposits identified by this process were subjected to limited excavation, in order to assess their nature, dimensions and to attempt to recover datable materials. These investigations resulted in the production of written descriptions of each layer upon standard watching brief context recording sheets. Colour photographs and scale drawings, in both plan and section, compliment these accounts.

A metal detector was used to scan both the stripped area and subsequent spoil heaps to recover any metal objects of archaeological interest. This method was used due to the presence of votive metal objects of prehistoric and later date throughout significant areas of the Witham floodplain. In the event, no such artefacts were recovered.

## 6.0 Results

The topsoil (001), a brown slightly clayey silt loam, and subsoil (002), grey coarse silt were stripped from the site using a bulldozer. The surface of the exposed buff/grey coarse silt (003) was churned by the tracks of the machine, making it difficult to identify archaeological deposits. A hand-dug slot towards the north-west corner of the site showed (003) to be an alluvial deposit, approximately 0.62m deep. This sealed blue clay with occasional patches of orange sand (004), identified as the solid geology Oxford Blue Clay (See fig. 3 below).



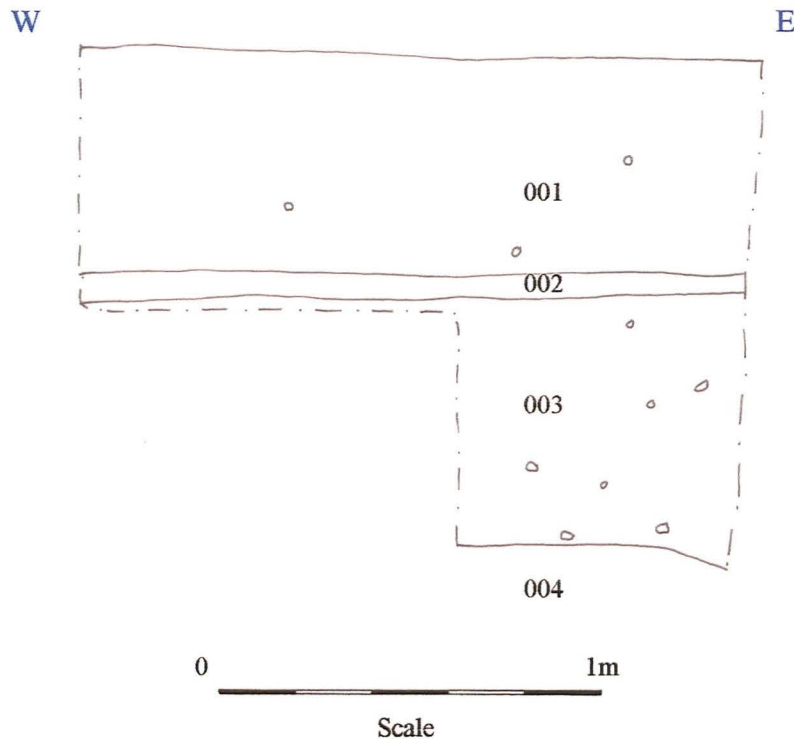


Figure 3: Representative section showing stratigraphic sequence at scale 1:20

### **Burnt mound (020)**

Towards the south corner of the area to be stripped, a discrete zone of blackened soil and burnt stone (020) was exposed (See fig. 2). Although mostly removed by the bulldozer, it was possible to determine that the spread of burning was roughly oval in plan, measuring approximately 7m x 5m in area (see fig. 4 below). The mound comprised a 0.22m deep spread of black silt, with occasional lenses of yellow and brown silty sand (See fig. 5 below). Context (020) incorporated numerous small and medium sized heat-shattered flint and sandstone pebbles, three pieces of fired clay of indeterminate form, and two pieces of worked flint. This 'burnt mound' had been sealed by a later peat formation, (021), now desiccated and shrunken.

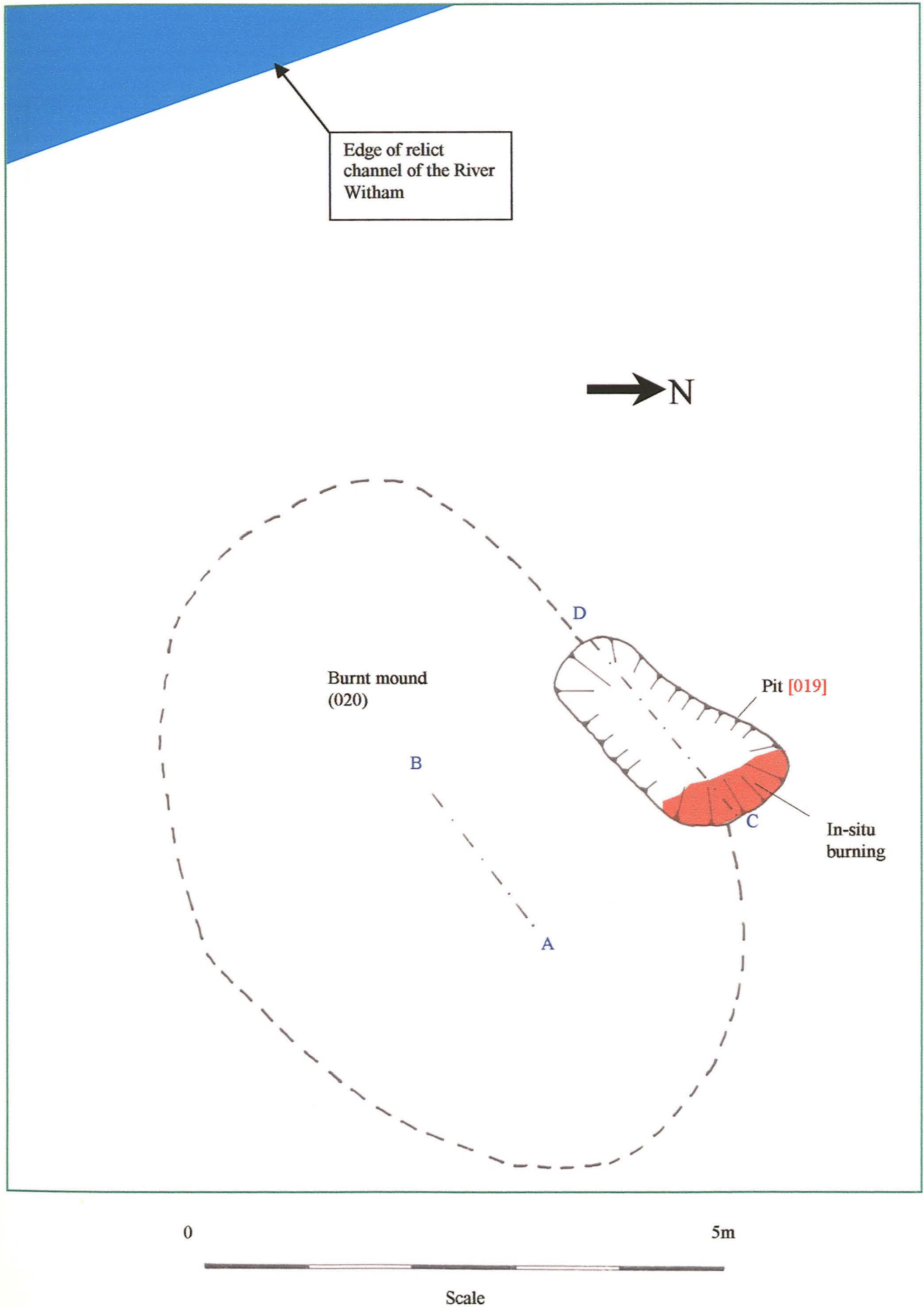


Figure 4: Plan of burnt mound (020) and associated pit [019] at scale 1:50



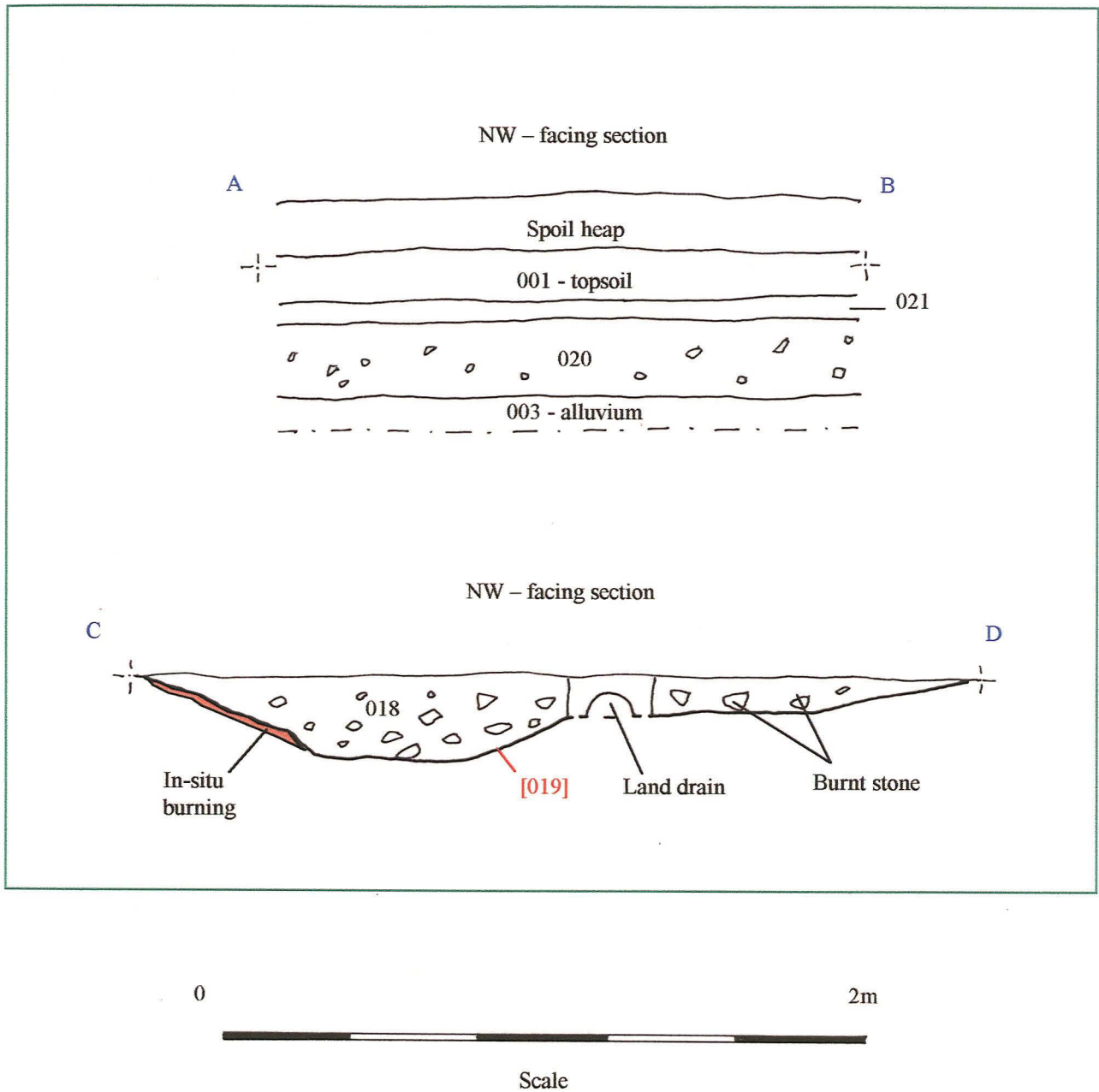


Figure 5: Sections through burnt mound and pit at scale 1:20

### Pit [019]

Immediately to the west, and slightly sealed by, the burnt spread, was a sub-oval pit, [019] (See figs. 2 and 4). This showed signs of burning along its north-east edge, and was filled with black silt (018) with patches of yellow and brown sand, similar to (020) above. Numerous heat-shattered flint and sandstone pebbles were also present. Pottery recovered from the fill was identified as being from a single Collared Urn of early Bronze Age derivation (See Appendix 2). A soil sample was taken for palaeo-environmental assessment and radiocarbon dating (See Appendix 3). This produced relatively large quantities of burnt flint and charcoal. The charcoal, probably formed through burning at the edge of the pit, comprised mainly oak heartwood. Other wood species included alder, hawthorn and blackthorn. It is possible the non-oak species were used for kindling, or to give the temperature of the fire a quick boost (See Appendix 3). All of the wood types were probably gathered from the local environment. The damp or waterlogged soils close to the river, without doubt, supported alder, while oak, blackthorn and possibly hawthorn are found on dryer land, possibly to the north-east of the site, at the edge of the river valley. A radiocarbon date taken from the charcoal gives a calibrated date range (95% confidence) for the pit as 1730 – 2060 and 2080 – 2130 BC. This fits well with the pottery, which has been dated to 1800 – 1700 BC. The function of the pit, other than to heat stones is not recognisable from the sample evidence.

### Former water channel

Approximately 5m to the south-west of the burnt mound and pit was the edge of a former water channel. This was identified in an earlier gradiometer survey (Rylatt and Bunn 2001) and sample excavated during an archaeological evaluation (Clay 2001). At that time, it was suggested that the channel was late glacial, at least 10,000 years old (J. Rackham *pers. comm.*), although the presence of a burnt mound at its edge suggests that water was still present within the channel in the early Bronze Age. The hollow formed by the channel was filled with peat (017); in turn sealed by a desiccated peat horizon (021).

### Peat-filled drains

Running north-west – south-east along the southern half of the field were three peat-filled drains ([009], [010], [011]), approximately 6.5m apart. A section through drain [009] showed it to be relatively shallow, with vertical edges and a flat base (See fig. 6 below). It was filled with brown, slightly clayey, silty loam, similar to peat. Although no datable material was recovered, it is suggested that the drains are post-medieval/early modern in date.



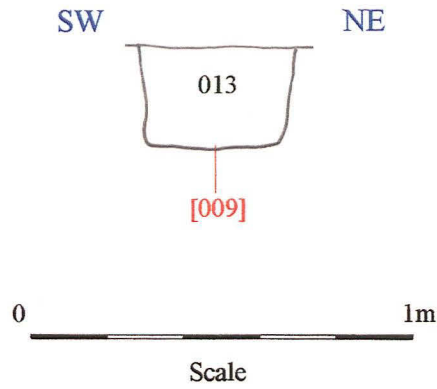


Figure 6: SE facing section through drain [009]

**Treebole [006]**

A suspected treebole ([006]) was exposed at the western corner of the site (See fig. 7 below). This irregularly-shaped feature was filled with peat and pieces of root. No dateable material was recovered.

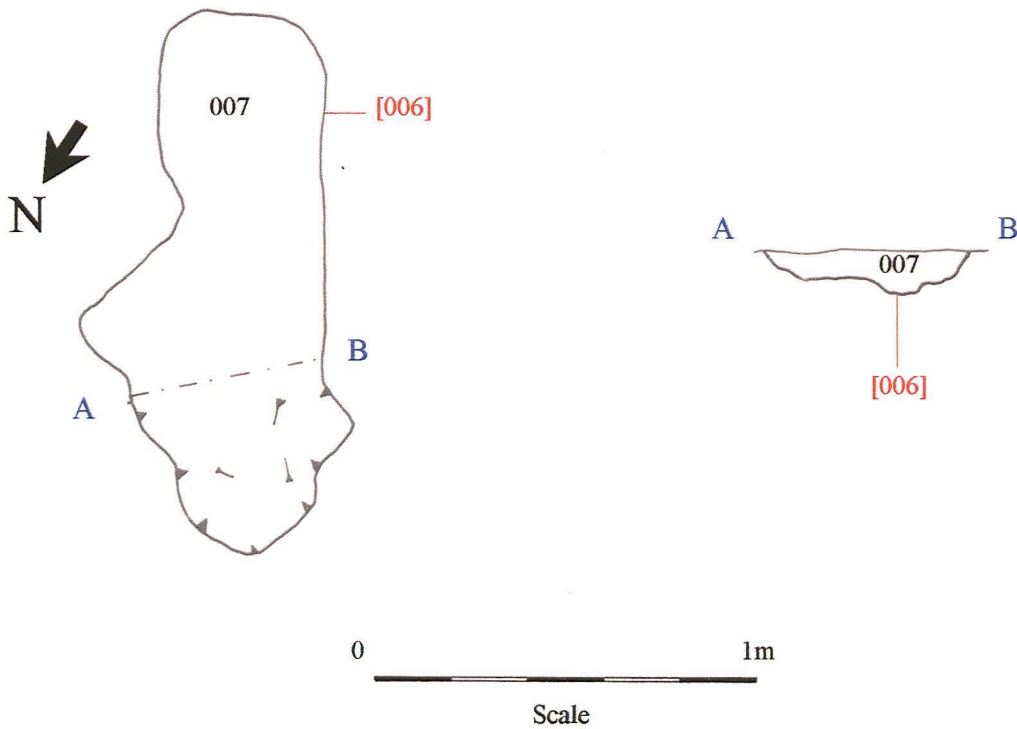


Figure 7: Plan and section of treebole [006] at scale 1:20

## Ditch complex [008] and former hedgeline (012)

A north-north-east – south-south-west aligned linear feature was exposed in the north-west half of the stripped area (See fig. 2). A section through this anomaly in Trench 4 of the previous evaluation identified it as a complex of ditches: recuts of a former field boundary; and a former hedgeline (Clay 2001); now depicted as a footpath on the current Ordnance Survey 1:25,000 map (See fig. 1).

### 7.0 Discussion and conclusions

The watching brief was extremely productive. An oval mound of burnt soil and heat-shattered stone was exposed at the south-west end of the site, adjacent to a former channel of the River Witham. This monument, commonly referred to as a burnt mound, provides previously unknown and important evidence for early Bronze Age activity in the area. The importance of this is further enhanced by the lack of evidence for other burnt mounds in the Witham Fen. A recent study showed no evidence for such monuments in the Witham Valley (Rylatt 2001b). This does not suggest that the Stixwold example is unique; more that others have never been found.

Although a large number of burnt mounds have been investigated elsewhere, their functional status is a matter of some debate. They generally follow certain criteria; a location close to water, accumulations of heat-shattered stones and charcoal (usually devoid of other artefacts), traces of hearths, and a rectangular basin trough, or basin with, stone, clay or wooden lining, clearly designed to hold water (Barfield and Hodder 1987).

Barfield and Hodder (1987) provide a strong case for burnt mounds as saunas, stating that the general absence of animal bone or other artefacts suggest a non-domestic use. Their position, adjacent to streams and rivers that were liable to flooding makes it unlikely that they were kitchen areas associated with a settlement; and the large quantities of burnt stone indicates long-term use; not likely to rise from extemporized cooking during hunting expeditions. Furthermore, the use of temporary 'sweat lodges' would leave little evidence in the archaeological record.

Previous work, mainly in Ireland, has generally maintained their use as cooking areas, citing historical evidence and local folk law (Ó Drisceoil 1988). O'Drisceoil suggests that such monuments, which are often found in groups, may have been used for both purposes: cooking, followed by cleaning or cleansing of the body after eating. This would perhaps suggest a ritual aspect to the meal in question.

Other functions, discounted in this instance due to a lack of evidence, include brewing, textile processing and leatherworking.

Recent research on these monuments has moved away from the sites themselves, and has refocused on the landscapes in which they occur. Sites examined within the Trent valley at Castle Donington in Leicestershire have produced evidence of settlement within 400m of a palaeochannel and associated burnt mounds (Beamish and Ripper 2000). Cattle teeth were found in the trough of one of the mounds, and a few fragments of animal bone were discovered in the channel. The settlement evidence



comprised Bronze Age flint scatters, pits, a post-built roundhouse and a small ring ditch. A further site examined by the same authors located on a palaeochannel of the River Soar at Birstall, Leicestershire, included a double row of posts running from alongside the mound into the channel, perhaps the remains of a jetty or bridge. Again, animal bones were recovered from within the channel, and also the part-remains of two humans, including one that may have been decapitated. Additional fieldwork in West Sussex has shown that burnt mounds tend to occupy 'edge' locations (defined by watercourses). Metalwork is often close-by, separating the mound from the associated settlement, which is likely to be positioned on adjacent rising ground (Dunkin 2001).

It is not possible to ascertain the function of the Stixwould burnt mound, though what is of certainty is that the heating of water or the production of steam was of paramount importance, and that this activity was done away from the permanent settlement. The lack of animal bone may be due to degradation from the local soil conditions, though coupled with a lack of other domestic refuse in the mound or in the vicinity, perhaps points towards a bathing or cleansing activity. It has been suggested this activity could be associated with spring cleaning; washing away the grime accumulated throughout the winter months (J. Rackham *pers. comm.*). Although five pieces of worked flint were recovered from the stripped area, this hardly constitutes evidence for domestic activity.

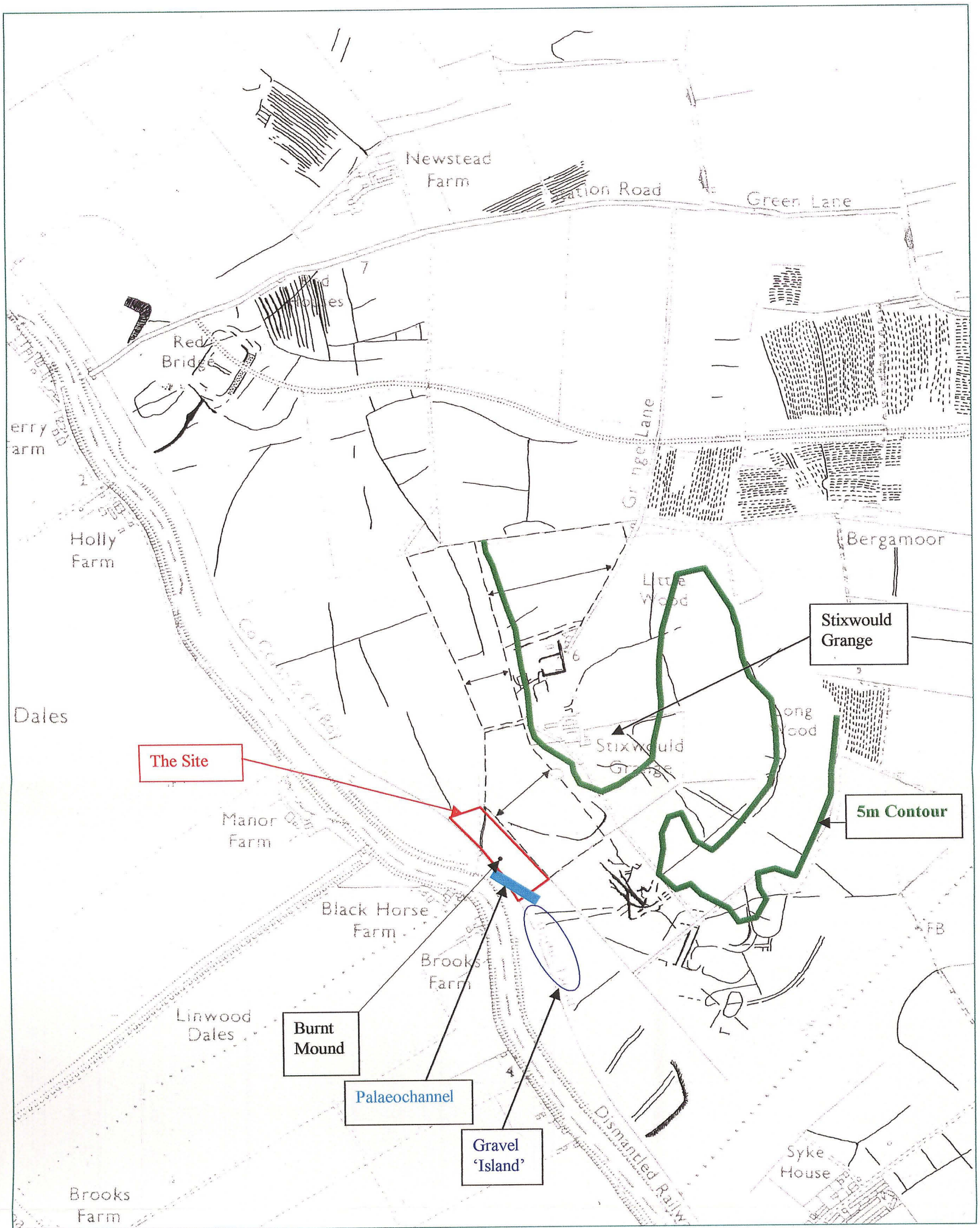
The pit is slightly puzzling, in that it exhibits characteristics of both a hearth and a trough. *In-situ* burning has occurred on the north-east side of the pit, although both the base and other sides remained unburnt. No further evidence for a trough was exposed in the area of the burnt mound, and although tracking from the bulldozer had obscured and disturbed the ground surface, the author carefully cleaned around the feature to attempt to identify associated remains. The most likely explanation is that the burning occurred at the edge of a trough. As the stones became heated, they could then have been rolled or dropped into the water. This seems unusual, as other examples tend to have separate hearths and troughs, rather than a single entity.

The presence of pottery within the Stixwould pit would normally indicate a possible domestic function, although such a hypothesis would have to be treated with caution. It is suggested that the abraded sherds, all from a single vessel, may have been swept into the pit from another nearby feature. The pottery does have parallels with other known examples in Lincolnshire, including a vessel with a similar form from a barrow in Dunston parish to the west of the current site (other side of the River). Other vessels with similar forms have been noted at Caythorpe, Broughton, Colsterworth, Grantham, Grimsby, Lenton and Salmonby (Appendix 2).

Analysis of the charred wood remains from the mound suggests that alder from the surrounding wetland was probably used for kindling or to raise the temperature, whilst oak, blackthorn and hawthorn were presumably gathered upslope to the north-east.

No early Bronze Age settlement remains were exposed, although it has already been noted that any associated settlements were further upslope on dry land, away from the wetland zone (see above). Such a settlement may have existed in the vicinity of Stixwould Grange, above the 5m contour, an arbitrary height above sea level used to depict the transition from wetland (downslope) to dry ground (upslope) (See fig. 8).





**Figure 8:** Rectified plot of cropmarks and earthworks surrounding the site, as shown in aerial photographs. Burnt mound, palaeochannel and observed gravel island also included, along with 5m contour. At scale 1: 10,000.



During the Bronze Age, the land below 5m would have become increasingly wetter as reed swamp or carr was inundated by freshwater peat. The peat formed from the edges inwards, towards the centre of the floodplain from around 2600BC (Coles and Hall 1998). Figure 8 below clearly shows that the Grange is located on a spur of land that has remained dry in the past, free from the encroaching peat that sealed the burnt mound, possibly causing its abandonment. Throughout the environs of the Witham valley it has been noted that monastic sites were placed at the ends of earlier, prehistoric causeways, and although the author is not suggesting the presence of a causeway, it is possible the Grange has utilised the same piece of land as an earlier settlement.

A former course of the present River Witham was exposed towards the south end of the stripped area. Although this was superficially believed to be at least 10,000 years old, the presence of a burnt mound at its edge suggests that water was present within the channel when the mound formed. Radiocarbon dating suggests a date range of either 1730 – 2060 BC or 2080 – 2130 BC, whilst the pottery evidence suggests a date of around 1800 – 1700 BC, both indicating an early Bronze Age date. The sealing of the palaeochannel (and the burnt mound) by peat suggests that the peat formed in this locality after c.1700 BC.

To the south of the site, a small gravel rise is visible within the field. This comprises Upper River Gravel, forming a small 'island' in prehistory of dry land surrounded by the fen mire. Analysis of the rectified cropmarks (See fig. 8) shows a double linear anomaly running east – west from dry land onto the 'island'. It is possible that this delineates a trackway leading onto the island, although as all the cropmarks appear to be truncated by the engine drain, it may be that the linears continued further to the west. This proposed trackway must post-date the early Bronze features and palaeochannel, across which it must cross. This further suggests that the cropmarks here were created after the peat had formed.

During the post-medieval period, a series of drains were cut through the topsoil and subsoil horizons, running roughly parallel with the westernmost field boundary. These were dug to aid in the draining of the land adjacent to the River, to provide good agricultural land. At the time of the stripping, the land had been left as pasture for a number of years.

## **8.0 Effectiveness of methodology**

The use of a bulldozer to remove the topsoil and subsoil layers made it difficult to recognize archaeological deposits. Although the more obvious peat-filled features and burnt mound were easy to pinpoint, ephemeral features are likely to have been missed.

## **9.0 Acknowledgements**

Pre-Construct Archaeology (Lincoln) would like to thank John Martin Construction Ltd. for this commission. Additionally, we are extremely grateful to Beryl Lott of Lincolnshire County Council for providing information on burnt mounds.



## 10.0 References

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## 11.0 Site archive

The site archive (documentary) for this project is in preparation and will be deposited at the Lincoln City and County Museum and the Lincolnshire Archives Office (documentary) within six months. Access may be granted by quoting the global accession number 2001.185.



APPENDIX 1: Colour plates

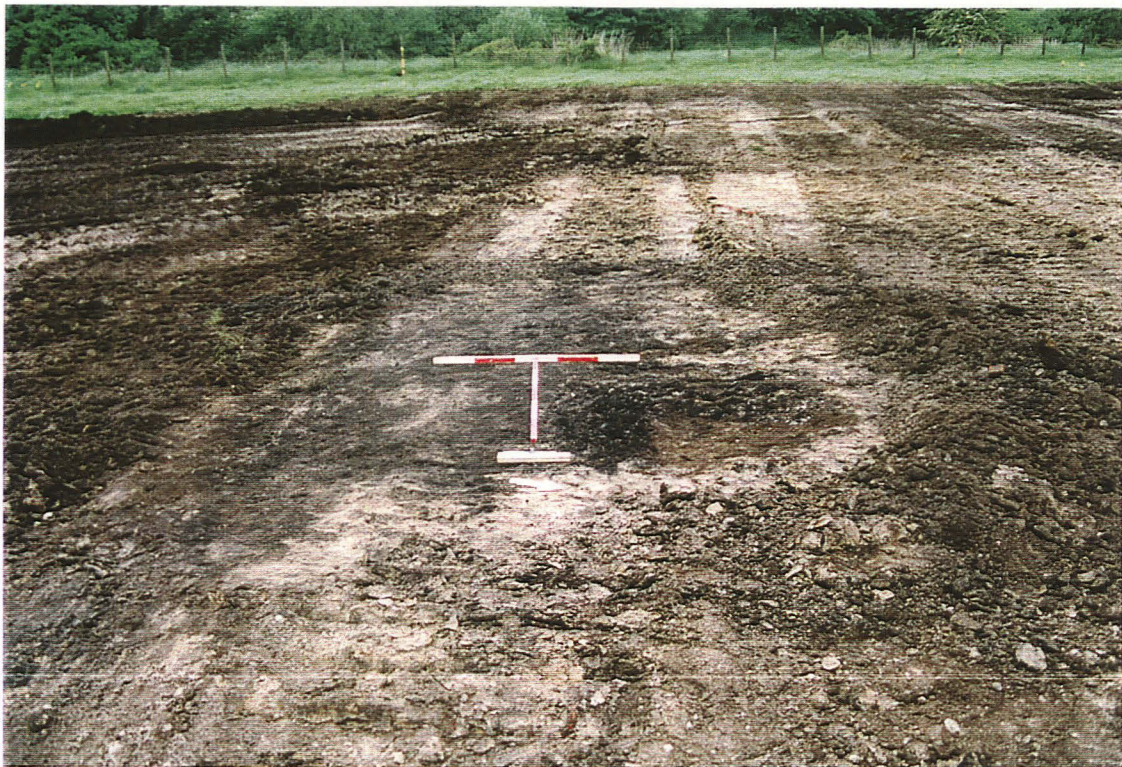


Pl. 1. General view of site, showing tracked bulldozer stripping topsoil and subsoil, looking SE. Treebole [006] is visible in the foreground as a dark area.



Pl. 2. Exposure of the burnt mound (020) during stripping, NW-facing section, looking SE.





Pl. 3. Burnt mound (020) after stripping by bulldozer and subsequent cleaning, looking W.

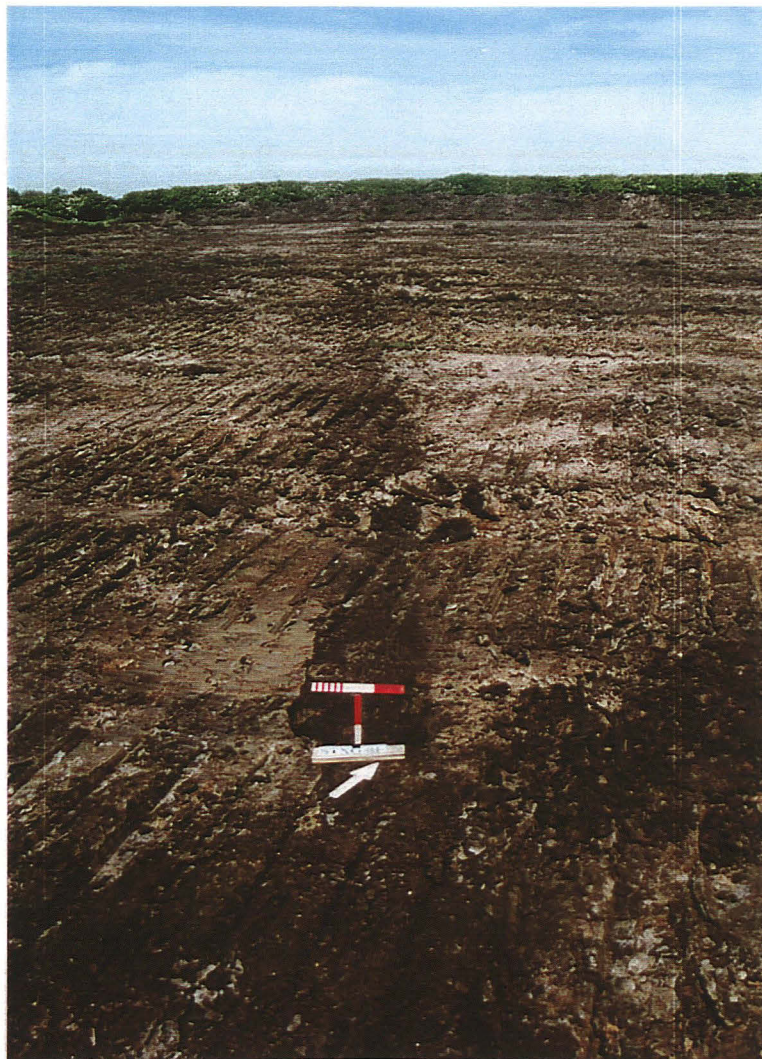


Pl. 4. NW-facing section through pit [019], looking SE.





Pl. 5. Pit [019] after full excavation, looking SE. Note burning (orange) to left of pit.



Pl. 6. Peat-filled drain [009] prior to excavation, looking NW.





Pl. 7. Ditch complex [008] after stripping, looking W.

**STIXWOULD, LINCS**  
**STXG 01 – TF 1680 6370**  
**REPORT ON PREHISTORIC POTTERY**

**1 Introduction and Quantification**

Two very abraded sherds of pottery and 2 sherds which were moderately abraded were found on this site, together with a few pieces of fired clay. All the pottery sherds were found to join and came from the firepit adjacent to the burnt mound. One piece of fired clay, also from 018, may be from the base of a pot, and the remainder of the fired clay, from 020 the burnt mound, has no recognisable form

<i>Description</i>	<i>Context</i>	<i>Sherds/Pieces</i>	<i>Weight</i>
Pot sherds	018	4 joining	13 g
Base piece	018	1	13 g
Irregular pieces of sandy fired clay	020	3	9 g
<b>Total</b>		<b>8</b>	<b>35 g</b>

**2 Fabrics**

**2.1 Types**

The pot sherds and pieces were made from a shelly fabric with grog and quartz. The clay contained a sparse quantity (3-9%) of poorly sorted angular and sub-angular shelly material, or voids which indicated the former presence of shelly material. The shelly pieces or voids were of medium size (0.25-1.00 mm) and were mainly elongated and of low sphericity. Also in the clay was a sparse amount of grog, poorly sorted and angular, of low sphericity and coarse size (1.00-3.00 mm). A rare amount (<3%) of quartz, well sorted, well rounded and of high sphericity and fine size (<0.25 mm) was also present in the clay, and this may have been naturally occurring rather than tempering. The angular shell and grog were most likely added to the clay as tempering materials. Shell tempered pots are commonly known in this region in the early Bronze Age (Allen and Hopkins 2000, fig. 8).



## 2.2 Source

The site lies in an area dominated by the Upper Jurassic formations, principally Corallian, Ampthill Clay and Kimmeridge Clay (Geological Survey 1" Map of England sheet no 143). The sherds were probably made from clay rich in fossil shell or shelly limestone and these are available in the vicinity of this site. Grog is fired pottery crushed for use as a tempering material, and as it is of the same consistency as the pot this makes an ideal tempering material. It is very likely that all the materials used in the manufacture of this pottery could have been obtained close to the site.

## 3 Form and Decoration

### 3.1 Description

The joining sherds form the rim and collar of a Collared Urn of early Bronze Age type. Two of the sherds are abraded and two more joining sherds are moderately abraded. The exterior and interior surface of the sherds is black with signs of burning, but the interior margin is buff coloured and oxidised, the more usual colour of a Collared Urn. The rim is simple and rounded and the collar fairly straight. The edge of the collar is shallow, as illustrated in figure 1. The wall thickness varies between 7 and 10 mm, and the sherds are friable due to the shell tempering. There are remains of a vague decoration on the collar. It is not clear how the decoration was made or the pattern, but it is possible that it is the remnants of twisted cord, perhaps in short rows. The large piece of fired clay from the same context (018, the firepit) is of the same fabric as the pot sherds and it is very likely that this is a broken part of a base of the same or a similar pot. The fired clay pieces are of a sandy fabric and came from the associated burnt mound. These pieces have no form and cannot be identified. Fired clay is usually considered indicative of domestic occupation on or near a site.

### 3.2 Comparisons

A number of Collared Urns are known in Lincolnshire, with rounded rims and straight shallow collars. A vessel with similar form and twisted cord decoration on the collar was found in a barrow at Dunston (Longworth 1984, 889) just to the west of this site. At Caythorpe a pot with very similar form, rounded rim and shallow sloping collar, was found (*ibid*, 887). Other vessels with similar form are known elsewhere in Lincolnshire at Broughton (May 1976, fig. 41.1), Colsterworth, Grantham, Grimsby, Lenton and Salmonby (Allen 1988). All these vessels are decorated on the collar,

mainly with twisted cord decoration, some with whipped cord and occasionally, as at Grantham, with small circular impressions. It is clear that this form and these types of decoration were common to this region.

### 3.3 Dating

A radiocarbon date of 2130 to 2080 and 2060 to 1730 Cal BC (95% probability at 2 sigma range:  $3570 \pm 70$  BP Beta-161060) was obtained for a soil sample associated with a this pottery. There are no other radiocarbon dates for material associated with this type of vessel from Lincolnshire, but charcoal associated with a Collared Urn from Barnack, Cambs, gave a radiocarbon date of 1950 to 1730 cal BC ( $3522 \pm 38$ BP: BM368, recalibrated with OxCal 3.5, Bronk Ramsey 2000). Elsewhere in Britain, based on stratigraphic evidence and associations, Collared Urns are thought to have emerged about 2000 BC and to have been most popular around 1800 to 1700 BC, and they probably continued in use until about 1500 BC (Needham 1996, 131-3). These vessels are mainly attributed therefore to the early Bronze Age period. All these dates therefore concur well.

## 4 Discussion

A few sherds of the rounded rim and straight collar (Fig. 1) of an early Bronze Age Collared Urn were found in the firepit (018) associated with the burnt mound on this site. The sherds were made from a shelly fabric with grog and quartz included, and the shell has leached out leaving the sherds quite fragile. The shell and quartz tempering is very likely to have been available fairly close to the site. Grog, or crushed fired pottery in early Bronze Age vessels, was an ideal tempering being of the same material as the pot being fired, and therefore assisting a successful firing. It is also suggested that the presence of pieces of earlier pots may have had another significance, as fragments of the past went into the future (Allen and Hopkins 2001, 310).

The sherds were abraded and burnt, but all joined. There are remnants of decoration on the collar, but the exact type and pattern is unclear, although it may have been twisted cord decoration in short rows. A piece of fired clay in the same fabric could be from the base of the same or a similar pot. A number of Collared Urns of similar rim and collar form are known in Lincolnshire, some nearby this site, and may reflect



a regional style. The form and possible decoration suggest that this pot is of early to middle style (Longworth 1984: Allen 1988, fig. 7.26 and 7.28) and therefore probably could be dated to about 1800 – 1700 BC. The radiocarbon date confirms this with a 95% probability that the date for the associated material lies between 2130 to 2080 and 2060 to 1730 Cal BC.

The sherds are abraded and therefore could be residual material perhaps swept into the pit from another nearby feature.

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CA/10/9/01, revised 6/1/02

Catalogue of Illustrated Prehistoric Pottery

**Figure 1**

Rim and collar of Collared Urn, with simple rounded rim and straight collar with shallow edge, vague decoration on collar, possible twisted cord in short rows, 4 joining sherds, 2 at rim very abraded, and 2 of collar moderately abraded, fabric SHSM/GRSC/QURF, context (018) pit associated with burnt mound.

CA/10/09/01

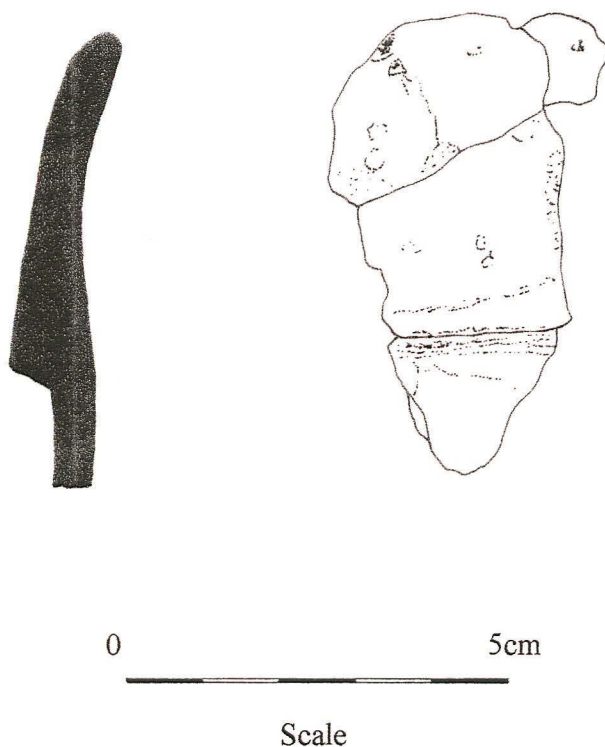


Figure 1: Stixwould: Early Bronze Age Collared Urn sherds (018) at 1:1.



**Land at Grange Farm, Grange Lane, Stixwould,  
Lincolnshire  
STXG 01**

**Lithic Materials: Catalogue and Assessment**

Report by Jim Rylatt – January, 2002

**1.0 Catalogue**

5 pieces of worked flint were recovered during the watching brief.

Context No.		Description
020	Secondary flake	Blade-like conchoidal flake, with small flat platform, moderately pronounced bulb and feathered termination. Dorsal surface has scars suggesting removal of similar parallel-sided flakes from a single platform. The dorsal surface is <5% cortical, thin abraded cortex. Mottled brown semi-translucent flint. 34 x 9mm.
020	Core Fragment	Fragment of core, evidence of flake removal (4+) from 1 or more platforms: c. 50% of surface cortical, thin abraded cortex. Brownish-grey opaque flint with some chalky inclusions.
020	Core Fragment	Fragment of core, evidence of flake removal (4) from 2 platforms: c. 30% of surface cortical. Dark grey opaque flint.
020	Secondary flake	Long burnt flake, no platform evident, possibly broken or of natural origin. A Flake has been removed from the distal end of the ventral face. Additionally one lateral edge appears to have been retouched by the removal of a series of small abrupt flakes from the ventral face. The dorsal surface is c. 75% cortical, thin abraded cortex, with curving section. Brownish-grey opaque flint, with chalky inclusions. 59 x 26mm.
<i>Unstratified</i>	Secondary flake	Conchoidal flake, with flat platform, relatively pronounced bulb, having erailure flake removed, and hinged termination. The dorsal surface is c. 30% cortical, relatively thin abraded cortex. Dorsal surface has scars suggesting removal of similar flakes from a single platform. Orangey-brown semi-translucent flint, with dark inclusions. 35 x 29mm.

*NB:* Measurements are given only for complete flakes. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

Additionally a single piece of modified stone was also recovered.

Context	Number present	Burnt (pot boilers)	Quartzite	Notes
017	1	1	1	Small cube with flat faces, thermally shattered.



## 2.0 Description and context

All of the worked stone is flint, most, if not all, of which appears to be derived from secondary deposits. The secondary flakes have a thin, abraded cortex, and where relatively large areas of this surface survive, exhibit a rounded profile. This indicates that they are water-transported nodules, a factor accounting for the considerable variation in colour, composition and quality. The source of this material is likely to be local. Procurement is likely to have been expedient, entailing collection of flint from riverbanks, tree throws, or slight delves into the gravel beds.

There were two core fragments in the assemblage, which suggests that the initial stages of the core reduction sequence were undertaken on the site. However, such observations are tentatively made, because the assemblage is very small and so is likely to amplify any biases.

There was 1 fragment of potboiler, which is likely to have been derived directly from the burnt mound, or from activity associated with that structure.

The small size of the assemblage mitigates against the provision of date for this activity.



## APPENDIX 4: Environmental Archaeology Report

### Introduction

An excavation conducted by Pre-Construct Archaeology (Lincoln), at Stixwould, Lincolnshire, investigated a burnt mound, situated just north of the River Witham. One sample was collected from the feature, and was submitted to the Environmental Archaeology Consultancy for processing and assessment (Table 1).

### Methods

The soil sample was processed in the following manner. Sample volume and weight was measured prior to processing. The sample was washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet sieve of 1mm mesh for the residue. Both residue and flot were dried and the residue subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flot was measured and the volume and weight of the residue recorded.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through the residue in order to recover magnetised material such as hammerstone and prill. The residue was then discarded. The flot was studied using x10 magnifications and the presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The flot was then bagged and along with the finds from the sorted residue, constitute the material archive of the sample.

The individual components of the sample were then preliminarily identified and the results are summarised below in Tables 1 and 2.

### Results

The sample contained modern root fragments and moderate to abundant numbers of modern seeds, including *Chenopodium* spp (goosefoot), *Sambucus* spp (elder) and *Carex* spp (sedges). This material represents low levels of recent contamination and is not considered contemporary with the archaeology. Individual pieces of charred material therefore need to be treated with caution, as they may also be contaminants. No bone or snail shell was preserved, suggesting acidic or decalcified soil conditions. An abundance of unidentified spores were recorded in this sample.

**Table 1:** Stixwould, Lincolnshire. Finds from the processed sample

samp no.	cont. no.	samp vol (l)	samp wt (Kg)	feature	residue vol. (l)	flot vol (ml)	charcoal */<2*	charr'd grain #	charr'd seed *	mag wt. g.	comment
2	018	30	29	Fill of firepit? 019	5	195	5/5	1	1	<1	Grass, persicaria

\* = abundance: 1=1-10, 2=11-50, 3=51-150, 4=151-250, 5=250+

\*/<2\* = abundance/<2mm abundance

The sample contained very few finds and included only one charred grain of unidentifiable cereal. A few charred weed seeds were recorded which included grasses. The magnetised material was predominantly ironstone but no other material finds were recorded. The residue was composed almost entirely of burnt flint with occasional burnt sandstone. Charcoal was



taken from the sample and sent for identification and radiocarbon dating, the results of which are presented below.

### *Charcoal*

Rowena Gale

#### *Introduction*

Charcoal from a Bronze Age burnt mound feature was examined and identified to species.

#### *Materials and methods*

Although fairly abundant the charcoal was rather comminuted and degraded, and many of the fragments included silty deposits that had permeated throughout the wood structure and obscured diagnostic features. The charcoal was too fragmented to include intact radial segments of roundwood. Charcoal fragments measuring >2mm in cross-section were considered for species identification and, in view of the large number, a 50% subsample was examined.

Samples were prepared for examination using standard methods (Gale and Cutler 2000). The fragments were supported in washed sand and examined using a Nikon Labophot-2 microscope at magnifications up to x400. The anatomical structures were matched to prepared reference slides. When possible, the maturity of the wood was assessed (i.e. heartwood/ sapwood).

#### *Results*

The charcoal analysis is shown in Table 2. Where a genus is represented by a single species in the British flora this is named as the most likely origin of the wood, given the provenance and period, but it should be noted that it is rarely possible to name individual species from wood features, and exotic species of trees and shrubs were introduced to Britain from an early period (Godwin 1956; Mitchell 1974). Classification follows that of *Flora Europaea* (Tutin, Heywood *et al* 1964-80). The anatomical structure of the charcoal was consistent with the following taxa or groups of taxa:

Betulaceae. *Alnus glutinosa* (L.) Gaertner, European alder

Fagaceae. *Quercus* spp., oak

Rosaceae. Subfamilies:

Pomoideae which includes *Crataegus* spp., hawthorn; *Malus* sp., apple;

*Pyrus* sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically similar; one or more taxa may be represented in the charcoal.

Prunoideae which includes *P. avium* (L.) L., cherry; *P. padus* L., bird cherry, and *P. spinosa* L., blackthorn. In this instance the broad heterocellular rays suggest *P. spinosa* as the more likely.

The charcoal (sample 2) was recovered from a burnt mound feature dated (from the charcoal) to 3570 ± 70 BP (see radiocarbon calibration), from which other environmental/ organic evidence was sparse. The close proximity of the burnt mound to the River Witham probably accounted for the poor condition of the charcoal – frequent floodwaters and fluctuating water levels in the soils was almost certainly the cause of the infiltration of soil sediments noted in the woody tissues.



The charcoal is likely to have originated from fuel used to heat the stones. This appears to have been composed predominantly of oak (*Quercus* sp.). Although the fragments were too small to assess diameters, it was clear that they represented roundwood or cordwood wide/mature enough to have developed heartwood (heartwood is denser than sapwood and has a higher calorific value, Tillman 1981). There was no evidence to suggest the use of narrow oak roundwood. In addition, small quantities of alder (*Alnus glutinosa*), the hawthorn/ *Sorbus* group (Pomoideae) and blackthorn (*Prunus spinosa*) were also recorded. These may, perhaps, have been used as kindling or, if from narrow roundwood, to give the temperature of the fire a quick boost.

The firewood was probably gathered from the immediate environment. The damp or waterlogged soils close to the river undoubtedly supported alder (*Alnus glutinosa*), while oak (*Quercus* sp.), blackthorn (*Prunus spinosa*) and possibly hawthorn (*Crateagus* sp.) colonised dryer land.

**Table 2.** Charcoal from a Bronze Age burnt mound feature

Sample	Context	<i>Alnus</i>	Pomoideae	<i>Prunus</i>	<i>Quercus</i>
2	018	12	2	3	106 h

Key. h = heartwood

### Discussion

The sample collected from the feature provided limited information relating to the function of the burnt mound. Only one unidentifiable cereal grain was recorded, which could be a contaminant and a few charred weed seeds, which can occupy a variety of habitats. An abundance of spores were also noted, although these have not been identified. No other finds were collected from the sample.

The charcoal from the sample has been identified as predominantly oak, with some alder, hawthorn/*Sorbus* and blackthorn, although most of the charcoal was in poor condition. A radiocarbon sample from the charcoal provided a date of  $3570 \pm 70$  BP for the feature.

### Conclusions

The sample from the burnt mound feature predominantly produced burnt flint, charcoal and spores. The charcoal has been used to date the feature using radiocarbon assay and provided an early Bronze Age date calibrated at 1730-2060 and 2080-2130 BC (see curve below). The charcoal has been identified, despite its poor condition and is likely to have originated from the fuel used to heat the stones and is composed mainly of oak heartwood. No other evidence was recovered from the sample, which is fairly typical of such features. It is possible that the burnt mound is on the edge of an old river channel, as indicated by the magnetic survey, although whether these are contemporary has not been assessed. The further function of the fire pit, other than to heat stones is not discernable from the sample evidence.

### Acknowledgements

We should like to thank Trude Maynard for the sample washing and processing. Beta Analytic of Miami, Florida, conducted the C14 analysis.

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The Environmental Archaeology Consultancy  
21st December 2001

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Honorary Research Associate, Royal Botanic Gardens, Kew



## CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: est. C13/C12=-25:lab. mult=1)

Laboratory number: **Beta-161060**

Conventional radiocarbon age<sup>1</sup>: **3570±70 BP**

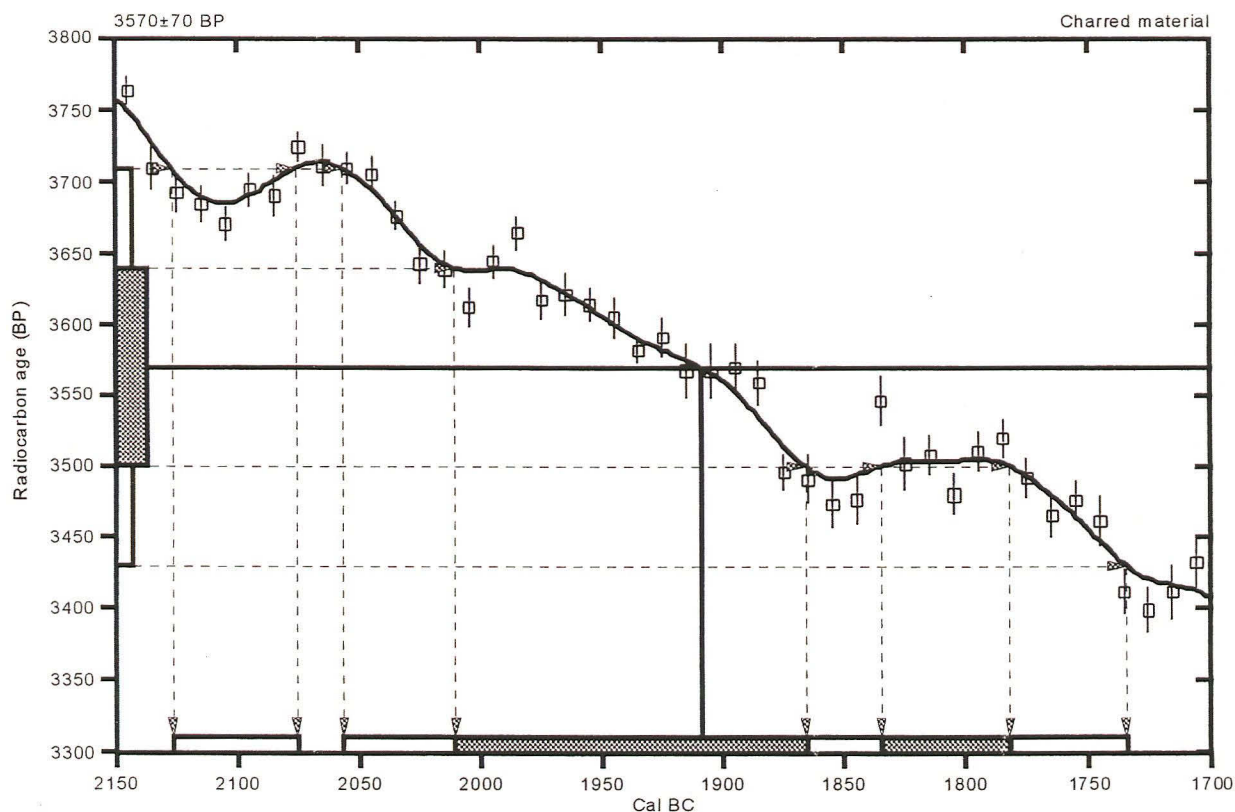
2 Sigma calibrated results: **Cal BC 2130 to 2080 (Cal BP 4080 to 4030) and  
(95% probability) Cal BC 2060 to 1730 (Cal BP 4010 to 3680)**

<sup>1</sup> C13/C12 ratio estimated

### Intercept data

Intercept of radiocarbon age  
with calibration curve: **Cal BC 1910 (Cal BP 3860)**

1 Sigma calibrated results: **Cal BC 2010 to 1870 (Cal BP 3960 to 3820) and  
(68% probability) Cal BC 1840 to 1780 (Cal BP 3780 to 3730)**



### References:

*Database used*

*Calibration Database*

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*Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322*

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## APPENDIX 5: List of Archaeological Contexts

<i>Context No.</i>	<i>Category</i>	<i>Description</i>
001	layer	topsoil
002	layer	alluvium?
003	layer	alluvium
004	layer	Oxford Blue Clay
005	spread	peat patches
006	cut	treebole
007	fill	fill of [006]
008	cut	ditch complex
009	cut	peat-filled drain
010	cut	peat-filled drain
011	cut	peat-filled drain
012	cut	?hedgeline
013	fill	fill of [009]
014	fill	fill of [010]
015	fill	fill of [011]
016	fill	fill of [012]
017	layer	peat
018	fill	fill of [019]
019	cut	pit/trough
020	spread	burnt mound
021	layer	desiccated peat