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# LUDFORD, LINCOLNSHIRE: SMALL-SCALE INVESTIGATIONS OF A ROMAN ROADSIDE SETTLEMENT

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*Exploratory work for the purposes of supporting an application for a Higher Level Environmental Stewardship Scheme was carried out by Worcestershire Archaeology in 2012 and 2013 across a field believed to include the site of an Iron Age and Roman roadside settlement close to Ludford, Lincolnshire. This involved contour mapping, test pitting, geophysical survey and small-scale trial trenching. The potential extents and character of the remains were determined and the level of preservation of deposits under threat from arable cultivation was assessed. Combined with the existing knowledge of the surrounding archaeology and previous work in the vicinity, the investigations provided important further evidence to support the identification of the site as that of a Romano-British 'small town'. As a result of the work, an agreement was put in place with the landowner to limit damage through cultivation on deposits at the site for at least ten years.*

## INTRODUCTION AND BACKGROUND

During 2012 and 2013, Worcestershire Archaeology<sup>3</sup> (with specialist assistance from a geophysical subcontractor)<sup>4</sup> undertook exploratory work in a field known as 'The Tows' to the east of Ludford, Lincolnshire, across part of a site believed to be the focus of an Iron Age and Roman roadside settlement. This work was not explicitly research based, nor was it commercial archaeology in the generally accepted developer-funded sense; rather, it was an assessment for the purposes of supporting an application for a Higher Level Environmental Stewardship (HLS) Scheme on the farmland. This involved contour mapping, excavation of test pits, geophysical survey and small-scale trial trenching. The opportunity is taken to present the findings of this work as, although there is a long history of piecemeal archaeological work and chance finds in the area, with a growing recognition of their significance, only a limited amount of information on the site has been published to date.

Worcestershire Archaeology has been involved in numerous similar projects across The Midlands region focused upon risk assessment of archaeological sites under arable cultivation. These were all undertaken in order to inform applications for HLS with Natural England. The projects developed out of an initial methodology formulated by Oxford Archaeology,<sup>5</sup> with funding from DEFRA and English Heritage (now Historic England), for the assessment of scheduled monuments at risk from cultivation (termed *Conservation of Scheduled Monuments in Cultivation*, or, in short, COSMIC). The subsequent investigations by Worcestershire Archaeology have developed this model and are not restricted to scheduled monuments; therefore, this work has been referred to as COSMIC+, reflecting that the methodology is underpinned by the COSMIC risk assessment principles and processes but provides a mechanism whereby that approach can be enhanced for selected sites to inform the negotiation of HLS schemes.

The projects combined desk-based and fieldwork results to produce a risk factor score, dependent on cultivation regime, for individual fields within agricultural holdings considering an HLS scheme. By necessities of scale and the problems of intrusive and

destructive archaeological work on sites deemed suitable for protection, the investigations were wide-ranging but also limited in size, following a project design in five broad stages:

- collation of Historic Environment Record (HER) and other background information into a project Geographical Information System (GIS), particularly focused on cropmarks and previous discoveries in the fields;
- interviews with the landowner to gather information on fields and their current and past cultivation regimes;
- walkover survey to visually inspect sites and to record topographical information;
- field data gathering in the form of targeted test pits around cropmark sites, as well as geophysical survey of selected areas;
- additional investigation of selected sites based on the field data, using trial trenching, to provide further clarification on the character and preservation of archaeological deposits where they were felt to be at particular risk.

The results were used to identify suitable management options for the protection of archaeological sites within each holding. The reports provided were used by landowners and Natural England to inform decisions on whether or not an HLS scheme was appropriate and, if so, how vulnerable archaeological deposits could be best protected through changes to cultivation practice (typically either through reversion to pasture or use of minimum tillage options).

### THE SITE

The site examined for this project occupies part of a single large field (30.55ha), 1.8km to the east of Ludford (national grid reference TF 21253 89247) and within the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) (Fig.1). The field has a hilltop extending into the north-east corner at around 132m AOD, from which it slopes down to the south and to the west, leading to flatter land adjacent to the River Bain at 118m AOD (Fig.2). This forms the western boundary of the field. At the time of the investigation the field was under intensive arable cultivation, which was thought to be having a damaging effect on below ground archaeological remains of significance.

Following the COSMIC+ methodology, the Ludford project focused interest on the presence of archaeological features as identified through cropmarks. These were considered to be of possible earlier prehistoric and probable Iron Age and Roman date and have been interpreted as representative of a Roman road running broadly parallel to the modern road (located at the northern edge of the site), with adjacent ditch systems and pits.<sup>6</sup> Previous discoveries of twenty-two Roman coins of third- to early fourth-century date, and of flint cobbling on the projected line of the road, were supportive of this interpretation.<sup>7</sup> These form a small part of a wider, complex group of cropmarks, small-scale fieldwork finds, geophysical survey and metal detector discoveries which provide evidence for an extensive Iron Age and Roman settlement in the area.

It is only in recent years that the size and significance of this settlement has been recognised, despite antiquarian and local knowledge from at least the late eighteenth century suggesting the presence of an important Roman site.<sup>8</sup> Previous reference to Ludford in publication has been limited and often only in passing; discoveries are noted in the gazetteer attached to a survey of Lincolnshire's archaeology dating from the early 1930s, but not discussed in the text.<sup>9</sup> Likewise, it is marked as a major Roman settlement on the county map in Whitwell's

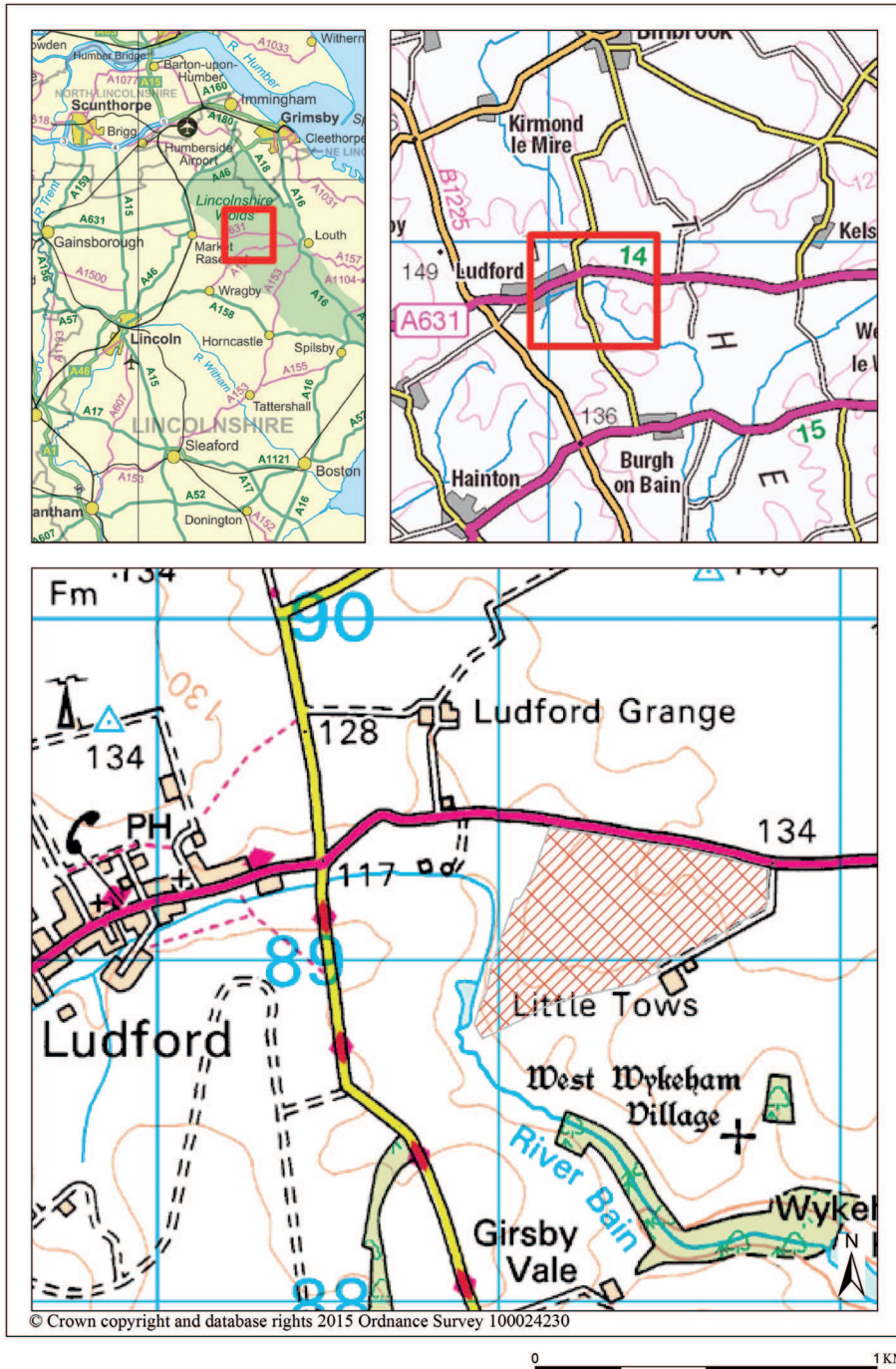


Fig. 1. Location of the site.



*Fig. 2. General view looking west from the higher ground in the north-east part of the field.*

1970 study of Roman Lincolnshire, though not mentioned beyond inclusion in a brief list.<sup>10</sup> Ludford is also noticeable by its total absence from Burnham and Wachter's seminal volume on the small towns of Roman Britain, though its likely importance in the late Iron Age had been highlighted by May in the 1980s.<sup>11</sup>

The increase in archaeological work since the 1990s has led to a clear upsurge in recognition and knowledge of Ludford. Of particular note is information from the fields immediately surrounding 'The Tows'.<sup>12</sup> Directly to the west, a geophysical survey in 1999 indicated the presence of a complex series of linear features including possible tracks and enclosures, as well as numerous anomalies consistent with discrete features likely to be archaeological in nature.<sup>13</sup> Two subsequent small areas of excavation were focussed upon metal detector finds of two lead coffins and a lead tank. These revealed evidence for two main phases of site activity; the first phase was characterised by substantial late Iron Age to early Roman ditches and the second phase by a large pit full of domestic refuse and ten burials of later Roman date, indicative of the presence of a roadside cemetery.<sup>14</sup> Of the burials, two were contained within the lead coffins. The metal detectorists also reported a substantial range of finds from the wider area including coins and jewellery. The bulk of these finds were of third and fourth century date but they also included Iron Age coinage and part of an Anglo-Saxon brooch. Additional geophysical survey to the north of the road, near Ludford Grange, has identified a range of features considered to represent an extension of this settlement.<sup>15</sup> Roman finds including coins and pottery that have been recovered in this area and reported to the Lincolnshire HER throughout the later twentieth century correlate well with the results of this survey work.

Finds beyond the apparent immediate focus of activity are also of significance. A Roman pottery scatter and a stone wall were reported to the west of Ludford in 1977,<sup>16</sup> the recognition of which led to a small excavation in the 1979. The area opened was 50m south

of the River Bain and revealed a series of ovens or corn driers dated to the third and fourth centuries.<sup>17</sup> Also, in 1998, Jones published a plot of cropmark features observed through aerial photography which showed the position of former enclosures and roadways centring on Ludford; these were interpreted as likely to be of Roman date.<sup>18</sup> The site is near to the intersection of the modern main north-south arterial road, known as Caistor High Street, and the A631, which traverses the Lincolnshire Wolds from east to west. It is likely that these roads follow Roman (and indeed prehistoric) routes consistent with the topography of the area. Ludford, therefore, lies near the junction of the roads linking walled Roman sites at Horncastle and Caistor by the western fringe of the Wolds, and the Roman sites at Market Rasen, Lincoln and further into the East Midlands with the east coast. The recently published Roman roadside settlement at Nettleton/Rothwell, located around thirteen kilometres to the north-west on the Caistor High Street, has similar features to those emerging at Ludford.<sup>19</sup>

Taken together, the cumulative evidence points to the presence of a substantial Roman settlement (or perhaps a shifting area of occupation) lying both to the north and south of the River Bain, either side of the east-west road and potentially ranging a considerable distance to the east and west of the extents of modern Ludford. This may even be classified as a 'small town', potentially one of a number of such settlements in the Wolds which developed from late Iron Age proto-urban sites.<sup>20</sup> These are very extensive and apparently undefended and, although they were not all necessarily occupied at the same time, seemingly functioned as political, economic and social centres during the late Iron Age and into the Roman period.

Apart from what was thought to represent a late Iron Age and Roman settlement, other cropmark evidence in the field being assessed was taken into consideration. These took the form of several dark, elongated features showing on aerial photographs taken in 2003. These were thought most likely to be relatively recent quarry pits, but because of cropmark evidence for a Neolithic Long Barrow and several round barrows in the area (indicative of nearby earlier prehistoric funerary activity) this required closer examination. The possibility also existed that these were related to the presence of the significant deserted medieval village of West Wykeham to the immediate south-east. This site is of national importance, being one of the best preserved examples in the country and protected as a scheduled ancient monument.

## THE RESULTS

### Geophysical Survey

The site proved highly responsive to geophysical survey and produced excellent results. These have provided considerable help in defining the potential extents and character of the archaeological remains. Magnetic susceptibility survey of the entire field revealed three main areas of enhancement extending from the north-west corner. On the basis of this and the position of previously plotted cropmark evidence, ten hectares of the field (111m by 30m by 30m grids) were selected for more detailed gradiometer survey (Fig.3). The results of this survey show a large number of geophysical anomalies likely to be related to areas of prehistoric or Romano-British settlement activity (Fig.4).<sup>21</sup> These can be summarised as follows:

- a linear arrangement of parallel positive anomalies either side of a linear negative anomaly running almost parallel to the road that forms the northern boundary of the site. The eastern end of this anomaly correlates well with the cropmark evidence assumed to be a road related to the Romano-British settlement. A large number of rectilinear enclosures can be seen extending north and south from this road feature and are likely to be related to the settlement identified through aerial photography, although they extend considerably further than the cropmarks indicate.

Fig. 3. Geophysical survey – gradiometer data.

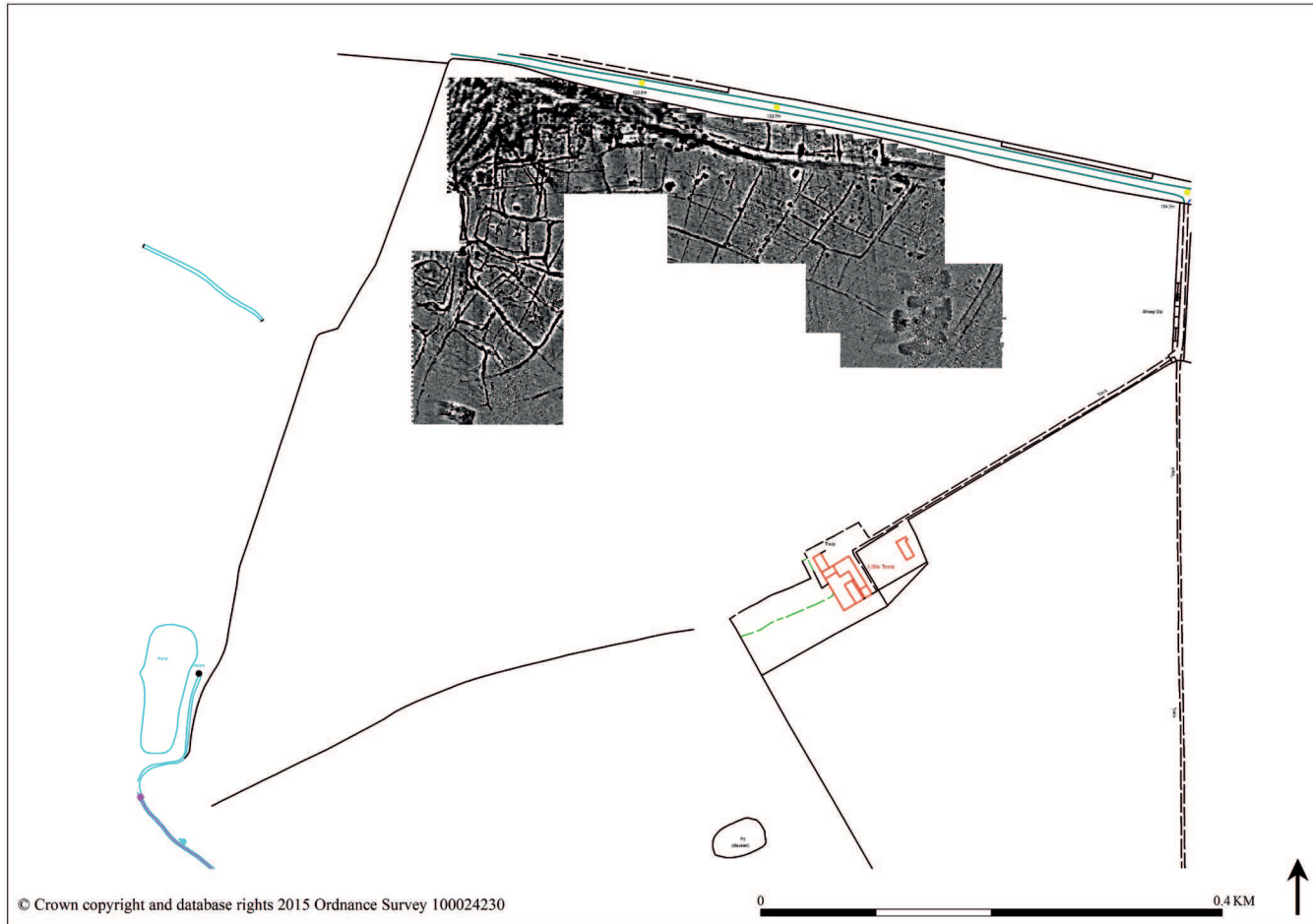




Fig. 4. Geophysical survey highlighting features.



- A complex series of rectilinear cut features dominates the western limits of the detailed survey area. The complex nature of these anomalies, with features seemingly cutting each other, would suggest that the survey data is showing multi-phase activity in this area.
- Several discrete bipolar anomalies can be noted throughout the detailed gradiometer data. These anomalies have a relatively high magnetic value and as such may be related to a thermoremanent feature such as a kiln, corn drier or area of burning.
- A series of parallel linear anomalies can be noted in the survey data. These anomalies are characteristic of medieval ridge and furrow.
- Two large, relatively weak positive area anomalies have been identified in the south-eastern and south-western limits of the survey area. These anomalies can be seen in the cropmark data and form visible depressions in the field, likely related to quarry pits.
- A large number of positive area anomalies, possibly related to cut features of an archaeological origin, can be noted in the north-west region of the survey area. These anomalies are highly complex and amorphous.

### Walkover Survey and Test Pits

Examination of the exposed ploughed surface of the field provided no indications of spreads of artefacts such as might indicate the presence of below ground features disturbed by ploughing. However, it was noted that on the hilltop and along the break in slope that more chalk and flint was present, indicating that soil cover was thinner here and that ploughing was bringing some of the natural substrate to the surface.

In conjunction with the indications from the geophysical survey that the area of archaeological interest lay in the northern half of the field, the topography dictated the locations of eleven hand-excavated test pits (Fig.5). Of these, four were placed around the hilltop extending into the north-east corner of the field (Test Pits 4, 5, 8 and 9; above the 126m contour), four were placed across the more steeply inclined slopes extending south and west from this (Test Pits 3, 7, 10 and 11) and three on the flatter ground near the river (Test Pits 1, 2 and 6; below the 122m contour). These revealed relatively shallow soil profiles to the south and east (Test Pits 4-11; on the hilltop and slopes). In contrast, considerably deeper profiles were present in the north-west corner of the field in Test Pits 1-3. The deeper soil in the north-west of the field almost certainly indicates downslope erosion from the most steeply sloping part of the field adjacent to the road; the eroded soil being re-deposited at the base of the slope leading to deeper soil depths. This process of erosion in turn will have contributed to shallower depths observed on the hilltop and sides. The soil here may also have been added to by build-up from modern road construction in this area, to alleviate the drop as the road dipped down into the river valley, which may explain the atypical geophysical anomalies detected in this area.

### Trial Trenching

Three small trenches were excavated in order to provide further data on the depths of overlying soil and to assess the character and preservation of the archaeological deposits that the geophysical survey had indicated to exist on the site.

Trench 1 was 9.30m long and was located towards the north-east part of the field, on the higher ground above 130m AOD. It was positioned in order to assess the presence of two parallel linear features seen on the geophysical survey, orientated north-east to south-west. Both features were observed and found to correlate well with the geophysics, being around 4.30m in total width (Fig.6). The fills were dark and humic, with fragments of Roman pottery

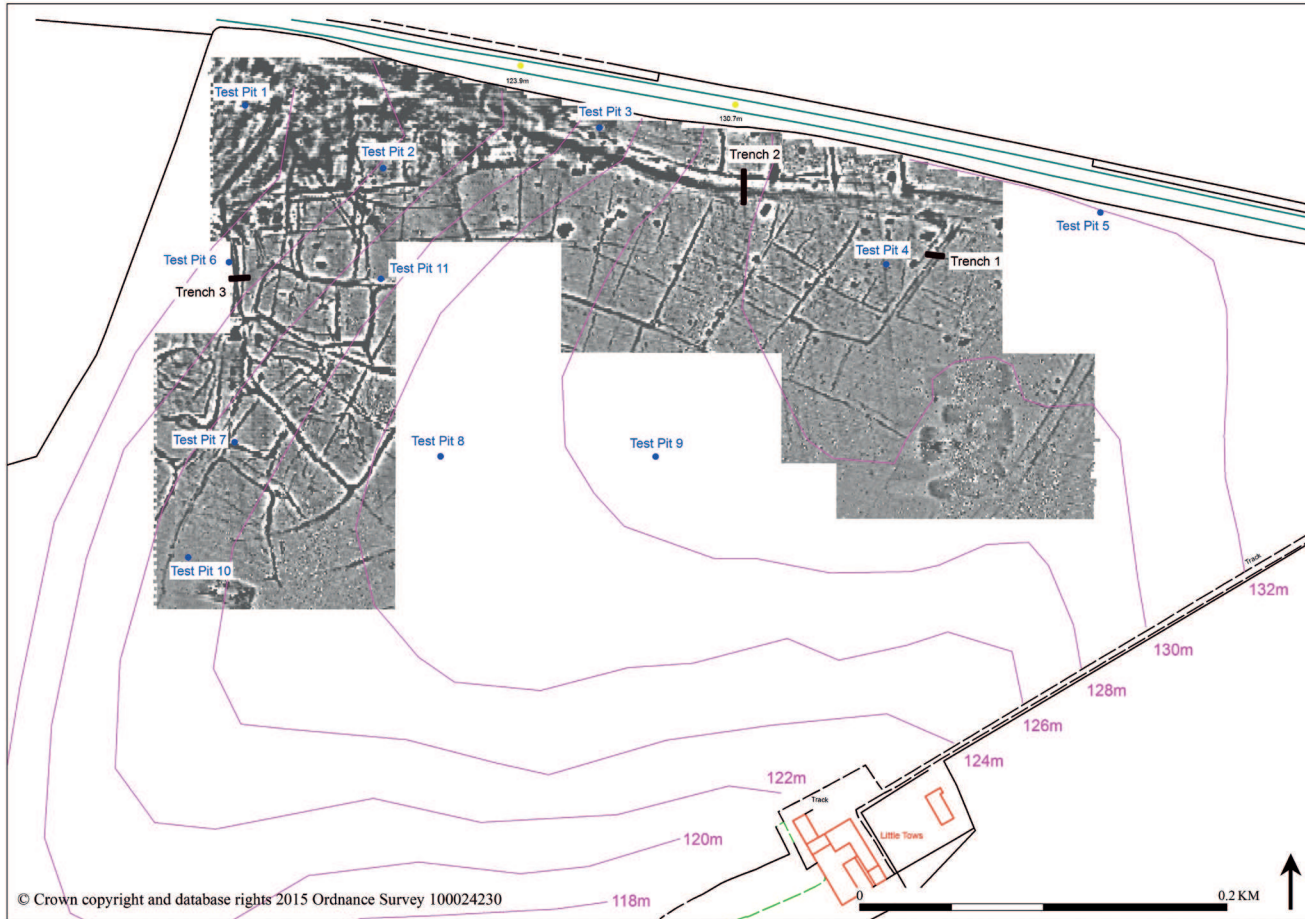


Fig. 5. Geophysical survey with contour survey and location of test pits and trenches.

visible on the surface. They exhibited signs of disturbance and damage from ploughing with scoring observed on the features which lay directly below the current cultivation layer (there was no protecting subsoil deposit). Although they were not excavated and thus the relationship between them was not established, hand augering indicated that the western ditch had survived to a depth of 0.66m and the eastern ditch 0.28m.

Trench 2 was the longest of the trenches excavated at 18.40m, and was located in the north of the field. This was positioned perpendicular to the route of the probable roadway identified on the geophysical survey at a height of around 130m AOD. The trench contained numerous archaeological features covering a wide area, many of which appeared to be interrelated. There was no indication of the survival of a road surface, but a sequence of ditches on the alignment of the road was observed. These were not excavated but hand augering found they had survived to a range of depths, from 0.24m to 1.04m. It is possible that these represent either a shifting and redefined series of roadside ditches or, perhaps, the irregular and truncated remains of a former hollow way.

A small feature, provisionally interpreted as a construction cut, was present at the northern end of the trench and when excavated was found to contain large but roughly shaped limestone pieces (Tealby Limestone) and a complete quern stone, as well as a burnt deposit (Fig.7). These potentially represent vestigial foundations and/or demolition debris from a building. The quern was unusually well-preserved, although worn and exhibiting damage from use. It was 350mm in diameter and a maximum of 75mm in height at the edge, with a central hole 70mm in diameter. On one side was a near-circular socket for a handle; this was 24mm in diameter and 40mm in depth. Roman pottery fragments and a Roman coin were also recovered from the trench and the surface of features.

The trench was not close to any of the test pits, but the cultivation soils correlated with the typical, shallow depths seen on the higher ground and the slopes. The features were directly below the current cultivation soil, as with Trench 1, so there was no protective subsoil buffer between the archaeology and truncation by ploughing.

Trench 3 was 10.30m long and located in the west of the field on the lower ground at around 119m AOD. It was positioned across a group of linear features identified on the geophysical survey and when opened was found to contain two parallel ditches orientated north to south (Fig.8). These were not excavated but hand augering found that the western ditch had survived to a depth of 0.50m and the eastern one 0.30m. A patchy former cultivation soil was visible in places but the features were directly below the current cultivation soil and again exhibited signs of plough damage.

## DISCUSSION

All test pits and trenches were located in the northern part of the field, in and around the features identified from cropmark and geophysical survey evidence. Despite the limited nature of the intrusive work it was possible to determine that the archaeology is clearly complex and extensive; it comprises linear and discrete features, containing pottery and other artefacts, as well as potential structural elements associated with and alongside a Roman road, and covers an area of at least 18ha. Combined with the existing knowledge of the surrounding archaeology and previous work in the vicinity this can be taken to provide further support to the identification of the site at Ludford as that of a Romano-British 'small town'. These deposits are, therefore, of considerable significance.

The results of the investigations fit with a wider pattern of evidence emerging across the Lincolnshire Wolds. Jones' aerial photographic survey work revealed widespread cropmark



*Clockwise from top left:*

*Fig. 6. Parallel linear features in Trench 1.*

*Fig. 7. Small linear cut with quern stone in situ in Trench 2.*

*Fig. 8. Ditches in Trench 3.*

sites of likely Iron Age and Roman date (comprising farmsteads, occasional villas and larger settlements) with similar morphological organisation and enclosure complexes, as seen in the data from Ludford. Where surveyed by geophysics and fieldwalking, the cropmark sites have produced similar evidence in terms of artefacts to those encountered by the present work.<sup>22</sup> The remains at Ludford are at the larger end of the scale of these sites.

The comparable settlement at Nettleton/Rothwell, together with other sites of the period known elsewhere in Lincolnshire, such as Hibaldstow, Navenby and Sapperton, are similarly strung out along roads with clear property plots and stone and timber buildings. The limestone noted in Trench 2 at Ludford will probably have been brought to the site from the exposures of this rock on the Wolds scarp to the west, as was the case with building stone at Nettleton/Rothwell. The rotary quern from the same trench (used for corn milling) is a noteworthy find, representing an unusually complete example of a top stone with a broad feeder pipe (hopper) to receive the cereal grains. In this case there is a circular ridge to avoid spill, as seen with an example from Nettleton/Rothwell;<sup>23</sup> it appears to have been manufactured from Spilsby Sandstone. A quern production site exploiting this local stone is thought to have existed in the Iron Age and Roman periods near Nettleton, with a distribution across the East Midlands.<sup>24</sup>

In the COSMIC+ assessment for the HLS scheme, the significance of the deposits resulted in the archaeological factors receiving a high score. Therefore, the potential for loss of information arising from cultivation damage was regarded as very significant. The trial trenching phase provided certain evidence of this risk, with plough damage to a number of features observed. This took the form of scoring of the surfaces of fills and sections showing that the current cultivation soil (the ploughsoil) directly overlay the archaeological features in places, and therefore demonstrated an absence of any protective subsoil buffer. This impact has been noted elsewhere in the region; for example, excavations at Nettleton/Rothwell have shown that routine modern agricultural practice can seriously erode sites of this nature on the Lincolnshire Wolds (fortunately, a HLS arrangement has resulted in protection for that site).<sup>25</sup>

Regarding the longer term preservation of the Roman roadside settlement here at Ludford, presentation of the results of the COSMIC+ survey enabled a negotiated settlement to be achieved by the landowner and Natural England. This has seen agreement of a non-inversion tillage option with a depth limit of 10cm (4 inches) for the whole of the at risk area (the northern part of the field) in order to limit the potential for cultivation damage occurring to archaeological deposits. This agreement should ensure that the integrity of the archaeological site is maintained for at least the next decade. As there is unlikely to ever be any major development across the site, due to its rural location and position within an AONB, the possibility that the settlement will ever be fully investigated through archaeological excavation is small. The COSMIC+ work presented here is, therefore, likely to remain as the only intrusive demonstration of feature types and dating evidence from the site. It is hoped that the observations will support any further research into the site and the surrounding landscape.

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Worcestershire Archive and Archaeology Service: The project was managed by Robin Jackson and led by Darren Miller and Richard Bradley. The fieldwork was undertaken by Darren Miller, Richard Bradley, Chris Gibbs and Michael Nicholson.

#### NOTES

1. Worcestershire Archive and Archaeology Service, Worcestershire County Council.
2. University of Kent.
3. Part of Worcestershire Archive and Archaeology Service.
4. Stratascan (now part of SUMO Surveying Services).
5. Oxford Archaeology, 'Conservation of Scheduled Monuments in Cultivation (COSMIC)', report for English Heritage and DEFRA (BD 1704) (2006).
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7. Lincolnshire HER 40634 and 40625.
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9. Such as the human remains found with gold coin of Nero in field south-west of Ludford Grange, C. W. Phillips, 'The present state of archaeology in Lincolnshire' (Part II), *Archaeological Journal*, 91 (1935), p.174.
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25. *Ibid.*, *passim*.