LAND OFF WESLEY WAY AND WINCEBY GARDENS, HORNCASTLE, LINCS

HERITAGE IMPACT ASSESSMENT AND ARCHAEOLOGICAL EVALUATION REPORT

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Prepared for Robert Doughty Consultancy

On behalf of Lindum homes

by

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Summary

To inform a forthcoming planning application, a heritage impact assessment has been undertaken for land at Wesley Way and Winceby Gardens, Horncastle. This work has included a desk based assessment of potential, a geophysical survey and a trial trench archaeological evaluation. The site is currently a single field utilised as arable farmland.

The desk based work identified no known archaeological monuments lying within the development site, but did highlight that the site lies on the eastern side of the Romano-British settlement of Banovallum, and that Iron Age and Roman remains have been found in close proximity, notably a large Iron Age – Roman enclosure to the south, and a second enclosure of comparable date partially exposed during archaeological monitoring on the adjacent Wesley Way development.

The geophysical survey undertaken within the site identified a scatter of isolated responses suggesting modern ferrous rich objects within the plough soil, with a concentration along the western boundary with Wesley Way; no magnetic variation indicating archaeological remains was recorded.

Three linear features were revealed during the scheme of trenching; one possibly natural, and two dated to the 19th century, probably relating to post-medieval farming, thus identifying the potential for further archaeological remains within the site not identified on the non-intrusive geophysical survey.

It is concluded that whilst the geophysical survey did not identify any anomalies indicating archaeology, this evaluation has confirmed the presence of dispersed archaeological remains that would be impacted by the development proposals. In addition, the extent of the Iron Age – Roman enclosure identified at Wesley Way is as yet unconfirmed, and may intrude into the proposed development site. Therefore a scheme of archaeological monitoring and recording may be necessary to ensure any archaeology impacted by the development proposals would not be destroyed unrecorded.

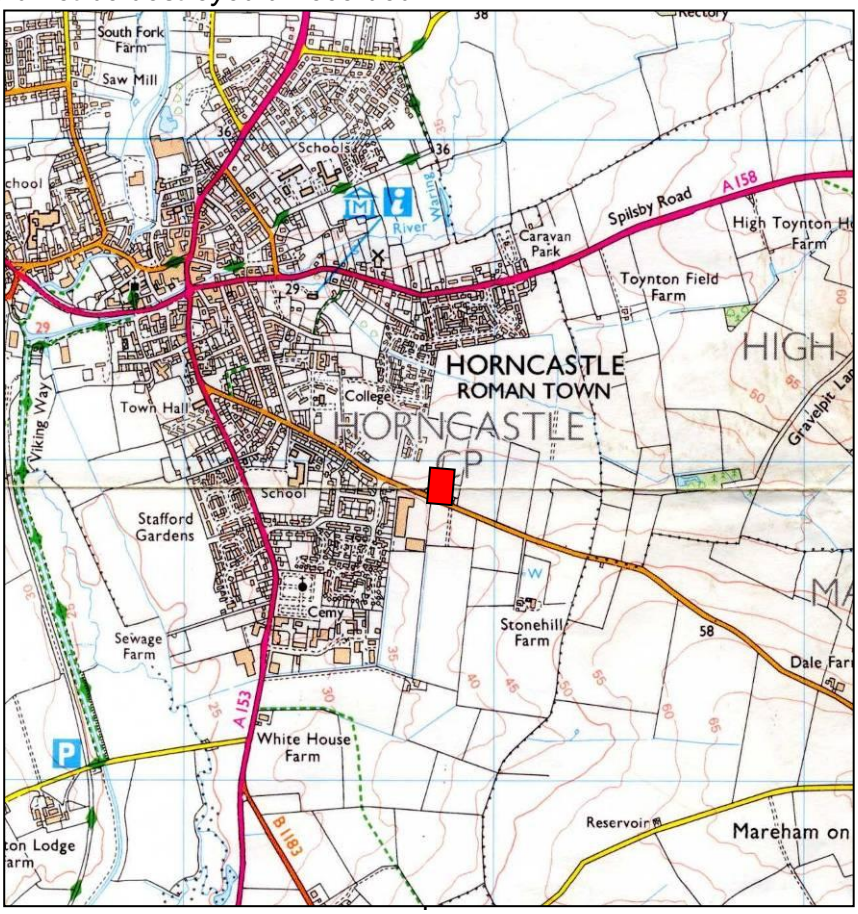

Figure 1: Location of the proposed development site at scale 1:25,000. The development areas are highlighted in red. OS mapping © Crown copyright. All rights reserved. PCAS licence no. 100049278.

1.0 Introduction

Pre-Construct Archaeological Services Ltd (PCAS) was commissioned by Robert Doughty Consultancy, on behalf of Lindum Homes, to complete a Heritage Impact Assessment for a prospective development on land off Wesley Way/Winceby Gardens, Horncastle.

The assessment combined desk-based research and an archaeological evaluation to advise and inform a future planning application for a residential development. The archaeological potential of the site was unknown, and the Planning Archaeologist for East Lindsey District Council advised that a scheme of archaeological investigation was required to inform the planning process.

2.0 Location and description (Figs. 1 and 2)

Horncastle lies within the administrative district of East Lindsey, approximately 28km east of Lincoln. The town is centred on the crossroads of the A153 and A158, with the confluence of the Rivers Bain and Waring directly to the north-west.

The proposed development site is a rectangular piece of land situated to the south of the A158 Spilsby Road and north of Mareham Road, approximately 800m ESE of Horncastle town centre. It is bordered to the north by the Thunker Drain; to the south and east by agricultural land; and to the west by residential properties fronting onto Wesley Way.

The national grid reference for the site is centred at TF 26830 69220.

3.0 Geology and topography

The solid geology of Horncastle and the proposed development site comprises mudstone (Kimmeridge Clay Formation). The majority of the Horncastle area, with the exception of the valleys of the Rivers Bain and Waring, is covered by a drift geology of Mid Pleistocene Till - Diamicton. A band of Quaternary Period alluvium, formed along the line of a natural channel, is also recorded along the northern edge of the development site and can be seen in aerial photographs as an irregular lighter band along the north side of the site (http://mapapps.bgs.ac.uk/geologyofbritain/home.html).

The site lies over the 35m contour line, where ground level slopes gently down towards Thunker Drain, descending sharply at the north end of the field (beyond evaluation Trenches 2 and 3).

4.0 Planning background

The National Planning Policy Framework (NPPF) of 2012 places the responsibility for dealing with heritage assets affected by development proposals with the developer. Local planning authorities now need to be assured by those applying for planning permission that any such remains are not under threat. As a result developers are required to produce a definitive method of mitigating the effect of development on the historic environment within the planning process. Paragraph 128 of NPPF states that *'Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit and appropriate desk-based assessment and, where necessary, a field evaluation'.*

A planning application for the residential development of land to the east of Wesley Way, Horncastle was submitted to East Lindsey District Council (ref: s/086/01494/13). The site lay in an area of unknown archaeological potential, and the Historic Environment Officer recommended as scheme of archaeological investigation took place to inform the planning

process. The application was withdrawn while this took place. The scheme comprised of a geophysical survey completed in summer 2013, followed by an archaeological evaluation combined with a desk-based heritage impact assessment. This document combines the desk-based research and the results of the archaeological evaluation to form a heritage impact assessment, thus fulfilling the minimum requirements of NPPF to inform the planning process.

5.0 Archaeological and historical background

A rapid archaeological assessment of the proposed development site conducted by PCAS Ltd in 2013 examined all known archaeology within a 350m study radius around the proposed development site (Savage, August 2013).This document has been updated and included as Appendix 5.

Horncastle lies at the southern end of the Caistor High Street, a prehistoric trackway that was probably once a major route from the Humber across the Wolds, to salt-making sites around The Wash (ELDC, 2008). A concentration of Neolithic to Bronze Age flints was recovered c. 150m south of the site (LHER ref: 43416).

Horncastle is archaeologically sensitive, with evidence of settlement dating from the early Roman period until the present day. The place-name originates from the Old English and means *'the Roman town on the horn-shaped piece of land (between the River Bain and River Waring*' (Cameron 1998). Horncastle is also identified with *Banavallum*, a primitive Welsh or Celtic name meaning '*strong spur'*. During the Roman period, Horncastle was the walled settlement (LHER 43747) referred to as *Banovallum*, situated in the angle formed by the confluence of the River Waring and the River Bain at TF 2610 6906 and covering a known area of c. 855m by 674m. Late Iron Age and Roman occupation spread out from this nucleus, and has been identified at multiple sites across the town. A Roman cremation cemetery in the vicinity of Albert Street, c.350m west of the site, possibly disturbed by later quarrying (HER ref: 41870).

There are two recorded Iron Age – Roman sites in the area immediately surrounding the development site. A pre-Roman ditched enclosure to the northwest (HER ref: 43307) is recorded at the Banovallum Gardens development, of which Wesley Way and Winceby Gardens is a part. This area was subject to a geophysical survey and archaeological evaluation prior to development, and a scheme of targeted archaeological monitoring during the groundworks. The geophysics results indicated an area void of archaeology, however during the subsequent evaluation and watching brief three ditches and evidence of an internal up-cast bank was identified, associated with a small collection of pottery indicating Roman occupation.

The second Roman site was initially identified as a cropmark, a sub rectangular enclosure with associated linear anomalies (HER ref: 41865) c. 150m southwest of the site. The site was investigated by geophysical survey and trial trenching, confirming a large enclosure defined by V-shaped ditches and with occupation spanning the late Iron Age to the late 3rd century AD. (Savage and Bunn, 2011; Keal, 2013);

Horncastle's position as a large, wealthy Roman town continued into the Saxon period: during the 10th century it was one of five towns in the Kingdom of Lindsey with a Royal Mint (Sawyer 1998); and the Domesday Survey of 1086, records Horncastle as a royal manor. Horncastle was granted the right to hold a market by Henry III in 1230; and continued to prosper throughout the Middle Ages (Pevsner and Harris, 1989). Medieval ridge and furrow was identified during the watching brief at Banovallum Gardens, suggesting this site was on the periphery of the medieval town and the focus of occupation and activity. There are no post-medieval or modern monuments listed within 250m of the site.

In 2013, a fluxgate gradiometer (geophysical) survey was undertaken on the development site by Pre-Construct Geophysics. The results indicated the presence of isolated modern ferrous-rich objects, probably related to modern agriculture and disturbance due to the development of Banovallum Gardens, however the overall magnetic variation across the site was not suggestive of archaeological remains and it was concluded that there was a low potential for significant archaeology to lie within the proposed development area (PCG, 2013 – Appendix 4). The geophysical survey completed on adjacent Banovallum Gardens had also been negative, however further investigation identified archaeological remains, therefore the negative results of the survey on the development site could not be presumed conclusive.

6.0 Heritage constraints

NPPF, Annex 2, names those elements of the historic environment with historic, archaeological, architectural or artistic interests that hold significance as *heritage assets*.

6.1 Designated heritage assets

There are no World Heritage sites, Registered Battlefields or Registered Parks and Gardens in Horncastle. The closest Registered Battlefield is east of Scrafield, 4km east of the site, which the Civil War Battle of Winceby took place in 1643 (List entry ID: 1000041). The grounds of Scrivelsby Court lying c. 2.5km south of the site is the closest site on the Registered Parks and Gardens list (List entry ID: 1000990).

The remains of the wall surrounding the Roman town of Banovallum are the only Scheduled Ancient Monument in Horncastle (List entry ID: 1005034). The wall is recorded as encompassing the area around Market Place, including parts of Bridge Street, High Street, Church Lane and Manor House Street, and is the focus of the late Iron Age – Roman settlement.

The development site does not lie within Horncastle Conservation Area, which protects the historic core of the town including Market Place and the High Street, extending west along Jubilee Way and east along East Street as far as Holt Lane. The eastern limit of the Conservation Area lies c. 400m west of the development site, on the opposite side of the Banovallum Gardens residential estate. The new development will have no direct or indirect impact on this heritage asset.

There are over 100 Listed Buildings in Horncastle, however these are concentrated around the historic core of the town c. 1km northwest of the development site. the closest Listed Building to the site is Grade II Tower Mill, a 19th century brick built mill lying c. 450m northwest along Spilsby Road (List entry ID: 1251947). The proposed residential development will have no direct or indirect impact on this designated heritage asset.

6.2 Non-designated heritage assets

The remaining heritage assets within the vicinity of the site and documented within the site itself are non-designated archaeological remains associated with Roman and medieval occupation on the periphery of the main settlement, and are considered of Local to Regional importance. These are considered in the above Archaeological and historical background.

7.0 Evaluation methodology

The evaluation comprised five trenches each measuring 20m x 2m, positioned across the site to confirm the negative results of the geophysical survey. Trenches were positioned according to an agreed proposed trenching plan. At the time of the evaluation the site had been tilled to a fairly smooth surface.

Trenches were machine excavated using a smooth bladed wide bucket. They were manually cleaned and archaeological features excavated by hand. Sections were drawn at a scale of

1:20, and features plotted on trench plans drawn at a scale of 1:50, which were tied into the GPS trench positions. Drawings were supplemented by a digital photographic record, a selection from which is reproduced in Appendix 1. Deposits were recorded on standard PCAS record sheets, and an excavation site diary was also kept. Finds were stored in labelled finds bags prior to their removal to the offices of PCAS for initial processing.

Following fieldwork completion, retained finds were processed and catalogued in-house (Appendix 3).

The fieldwork was completed over three days between 20th -24th February 2014, by J. Sleap. Ground conditions were fairly dry; weather conditions throughout remained overcast with periods of sunshine.

8.0 Results

8.1 Trench 1 (Fig 3)

Trench 1 lay in the south-east corner of the proposed development site on a c. NNE-SSW axis. No archaeological finds or features were revealed in this trench.

Natural geology was encountered at a depth of 0.50m below existing ground level. The earliest geological deposit encountered was mid brown limestone cornbrash (102). At the north end of the trench a band of pale brown silty marl (101) up to 5.20m wide covered (102); at the south end of the trench a 1.5m wide band of compact white silty marl (103) was recorded. These deposits were covered with modern silty topsoil (100).

8.2 Trench 2 (Fig 4)

Trench 2 was positioned in the north-east corner of the site, on an N-S axis. The base of a possible furrow was recorded, which contained post-medieval pottery.

Bands of natural geology were again identified. At the south end of the trench, a deposit of orange-brown cornbrash (201) was the earliest horizon exposed. This was overlain by white silty marl (203), a c. 3m wide deposit in the centre of the trench. Beyond this at the north end the natural comprised pale brown silty marl (202).

A single cut feature was revealed: a wide, shallow furrow-like feature [205] on a E-W alignment, lying towards the north end of the trench. It contained a single dark silty fill (204), from which a sherd of 19th century pottery and fragments of clay tobacco pipe were recovered. Several plough scars lying on the same east-west alignment were noted in this trench.

Trench 2 was sealed by 0.50m of modern topsoil (200).

8.3 Trench 3 (Fig 5)

Trench 3 lay in the north-west corner of the proposed development site on an E-W axis. An undated, possibly natural linear feature was recorded lying on a c. WNW-ESE alignment.

Natural cornbrash (301) was encountered at a depth of 0.54m below existing ground level at the west end of Trench 3; at the east end the natural was pale brown silty marl (306), which had striations of cornbrash (301) running through it on a NE-SW alignment.

A linear feature measuring 1.75m in width was recorded extending across the trench on a NE-SE alignment, close to the interface between (301) and (306). The feature was shallow with irregular sides [303], and contained three deposits. The lower fill was mid reddish-brown

sandy silt (302), which was covered by pale brown silt (304). Occasional patches of a natural looking concretion (305) were also noted. No finds were recovered.

8.4 Trench 4 (Fig 6)

Trench 4 lay close to the centre of the site, on an E-W axis. No archaeological finds or features were revealed in this trench.

Natural geology in this trench was recorded as orange-brown limestone cornbrash (401). This was covered by 0.44m of modern silty topsoil (400). No other horizons were revealed.

8.5 Trench 5 (Fig 7)

Trench 5 lay in the south-west corner of the site, on a NE-SW axis. A single ditch containing modern glass and fragments of animal bone crossed its centre.

Natural in this trench was also banded: at the south end this comprised orange brown sand (503), through which the underlying chalk (507) could be seen. At the north end the natural was orange "brashy" sand (505). These deposits were separated by a c. 6m wide band of pale buff coloured marl (506), which lay in the centre of the trench.

A ditch lying on a NW-SE alignment had cut through (506) in the centre of the trench. The ditch [501] had steep sides and a flat base, and contained two fills. The lower fill (504) was very similar to natural (506), this being redeposited natural. The upper fill (502) was mid orange-brown clay sand, similar to (505), and was again potentially redeposited natural. Two metapodials of a sheep/goat, and three sherds of 19th – 20th century glass were recovered from fill (504), indicating a post-medieval/modern date.

Trench 5 was covered by c. 0.44m of modern silty topsoil (500).

9.0 Discussion of results

Despite the negative geophysical survey results, two archaeological features were revealed during the scheme of evaluation trenching. The wide shallow feature in Trench 2 is believed to be the base of a furrow. Ridge and furrow farming was a common arable agricultural practice in the medieval and post-medieval periods; the furrows are the last evidence of the undulating farmland which is largely ploughed out by modern farm machinery. The pottery recovered from this furrow is dated as 19th century, suggesting the furrow is probably post-medieval in date.

The ditch in Trench 5 is also dated as later post-medieval/modern. The profile of this feature may indicate that it was a drainage ditch related to agricultural practice.

A third, more tentative, ditch in Trench 3 lay along the interface between bands of natural geology. It is recorded as an undated ditch, however this feature may have been another of the marl-filled natural voids that were encountered during the evaluation. The short length exposed during the trenching was not sufficient to conclusively identify it as either a cut or natural feature.

The topography of the site suggests that this may be a glacial headland; to the north of Trench 3, the ground drops away to the field boundary before rising again into the adjacent field. Bands of natural geology encountered in the evaluation are consistent with the Mid Pleistocene Till and Quaternary Period alluvium drift geology recorded by the British Geological Society. These bands all run on an approximate E-W alignment with minor variations, perpendicular to the topography of the site.

10.0 Anticipated impact on the known archaeological remains

NPPF Appendix 2 describes the Setting of a heritage asset as "*The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral"*.

It has been established that the residential development of this site will not impact on any of the identified designated heritage assets.

Despite the geophysics indicating the site was void of archaeological potential, evidence of archaeological remains have been encountered during the trail trenching completed on the development site, indicating further remains may survive. Geophysical survey and evaluation trenching at the adjacent Wesley Way site were largely negative, however subsequent monitoring completed during groundworks identified an Iron Age – Roman enclosure, the extent of which is currently unknown. This archaeology was diffuse and would be difficult to target specifically.

That the archaeological remains encountered during the trenching were post-medieval agricultural features does not preclude that no further remains would be present. Archaeological trial trenching offers a narrow window to assesses the potential and survival of archaeological features on a site, to advise on the presence of any remains that would be impacted by any development.

The proposed development would have a direct adverse impact on the identified archaeological remains, and any other features not revealed during this scheme of trenching.

11.0 Conclusions

The heritage impact assessment has identified the presence of below ground archaeological remains despite the negative results of the preceding geophysical survey.

The desk-based assessment identified no known heritage assets within the proposed development site, however two Iron Age – Roman enclosures lie within close proximity. Later post-medieval features were encountered during the evaluation, proving the potential for this and further archaeological remains. This site has the potential to contain further features related to the enclosure at Wesley Way and the post-medieval agricultural landscape; the potential for evidence of activity in other periods remains low but cannot be discounted.

The archaeological remains will be adversely impacted by the development proposals. Section 141 of NPPF requires "*developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible'* The experiences on the adjacent site suggests that the archaeological remains are somewhat obscured by the natural geology, and therefore any archaeological mitigation would need to be carefully considered. If permission for this scheme is granted, a scheme of archaeological monitoring and recording to record any encountered remains during the development groundworks that would otherwise be destroyed unrecorded may be necessary to fulfil the requirements of NPPF.

12.0 Effectiveness of methodology

The desk-based research established that no designated heritage assets in the vicinity of the site would be impacted by the proposed development. Intrusive evaluation was an appropriate method for gathering further information about the sites below ground archaeological potential. Two early modern ditches and a third feature, a possible undated ditch, were exposed, despite the largely negative results of the preceding geophysical

survey. The body of data produced by this evaluation is sufficient to inform the planning and development process.

13.0 Project archive

The site records, currently in the custody of PCAS, will be deposited with a printed copy of this report at The Collection, Lincoln, by December 2014. It may be consulted by citing the global accession number, 2014.36.

14.0 Acknowledgements

Pre-Construct Archaeological Services would like to thank Robert Doughty Consultancy and Lindum homes for this commission and for their co-operation during the groundworks.

15.0 References

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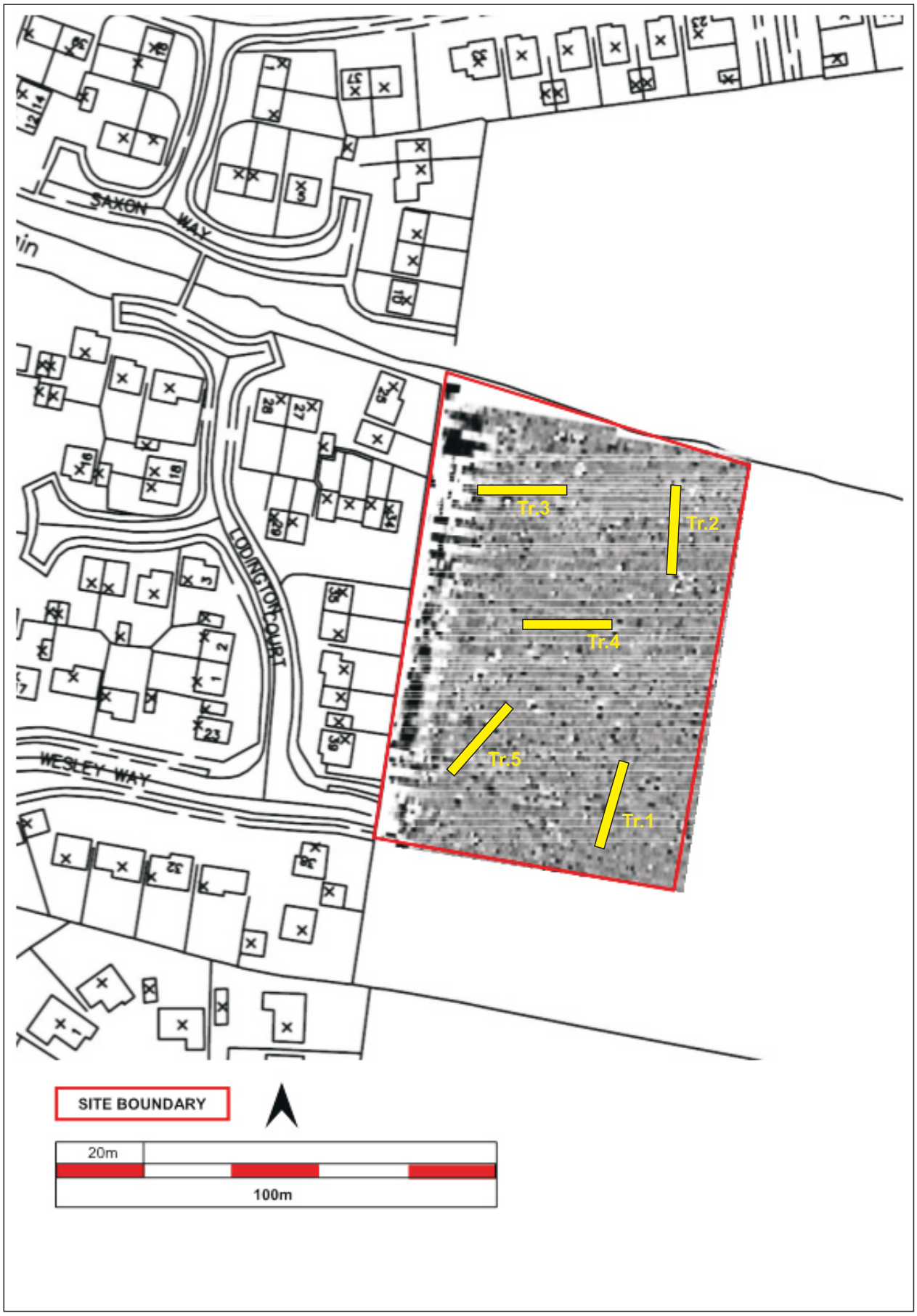


Figure 2. Trench location plan overlaid on geophysical survey results (PCG 2013). Scale c. 1:12,500

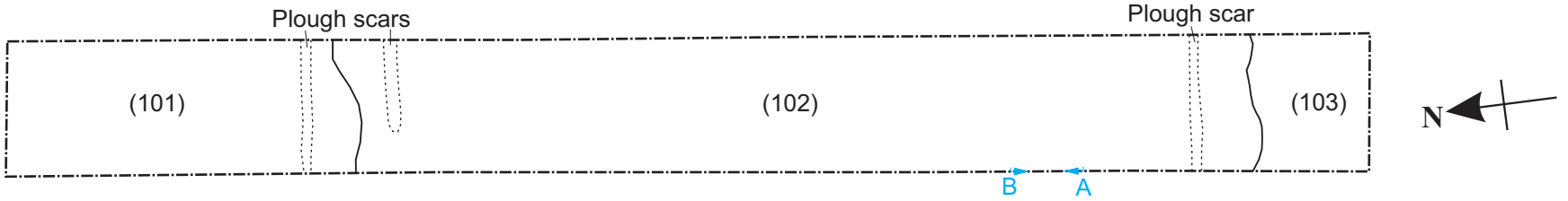
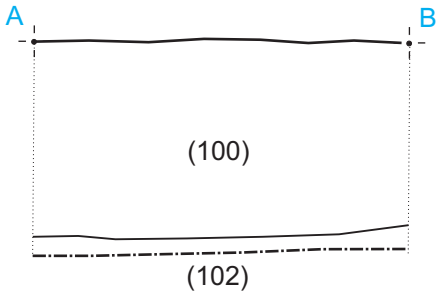


Figure 3: Trench 1 plan (1:100) and section (1:20)



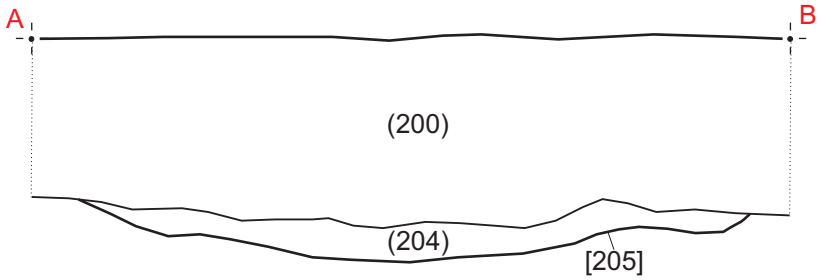
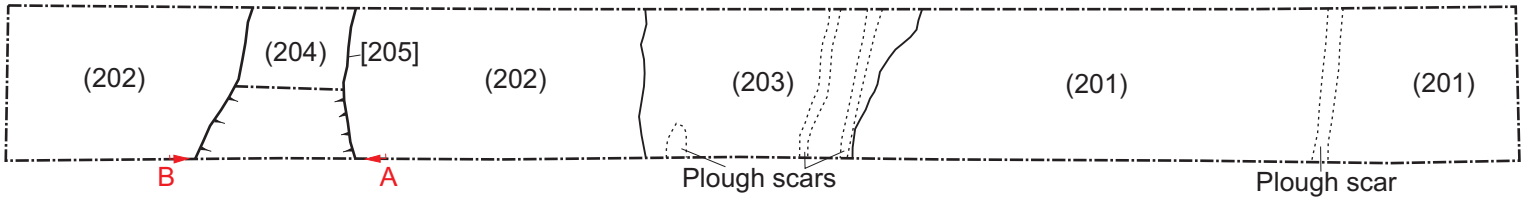


Figure 4: Trench 2 plan (1:100) and section through ditch [205] (1:20)



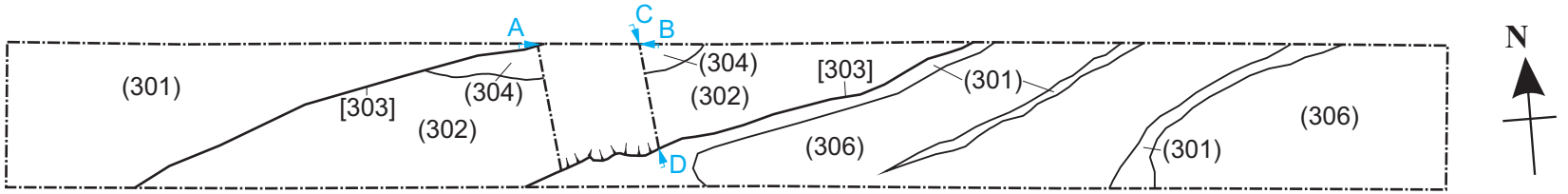
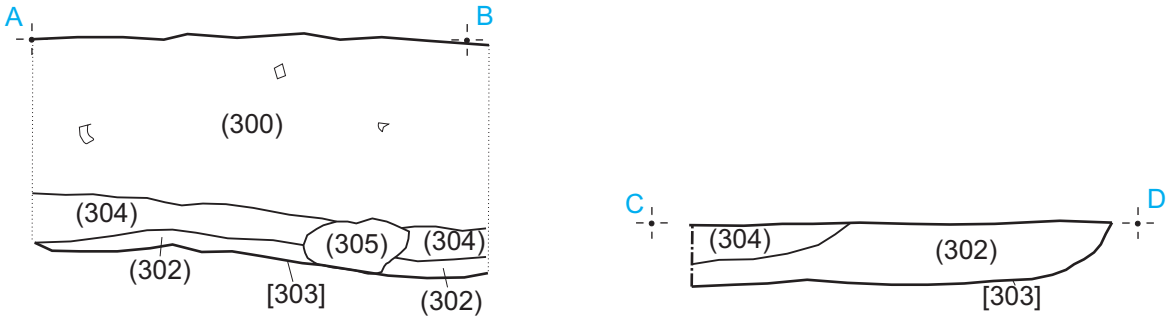


Figure 5: Trench 3 plan (1:100) and sections through ditch [303]



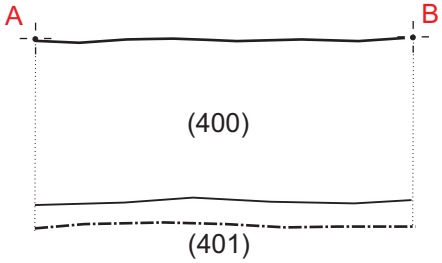
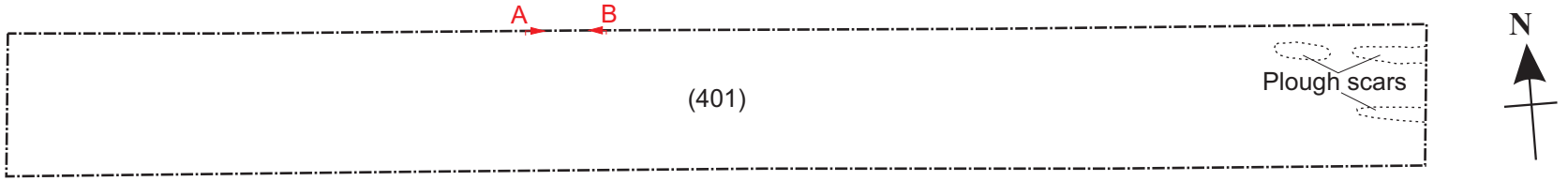


Figure 6: Trench 4 plan (1:100) and section (1:20)



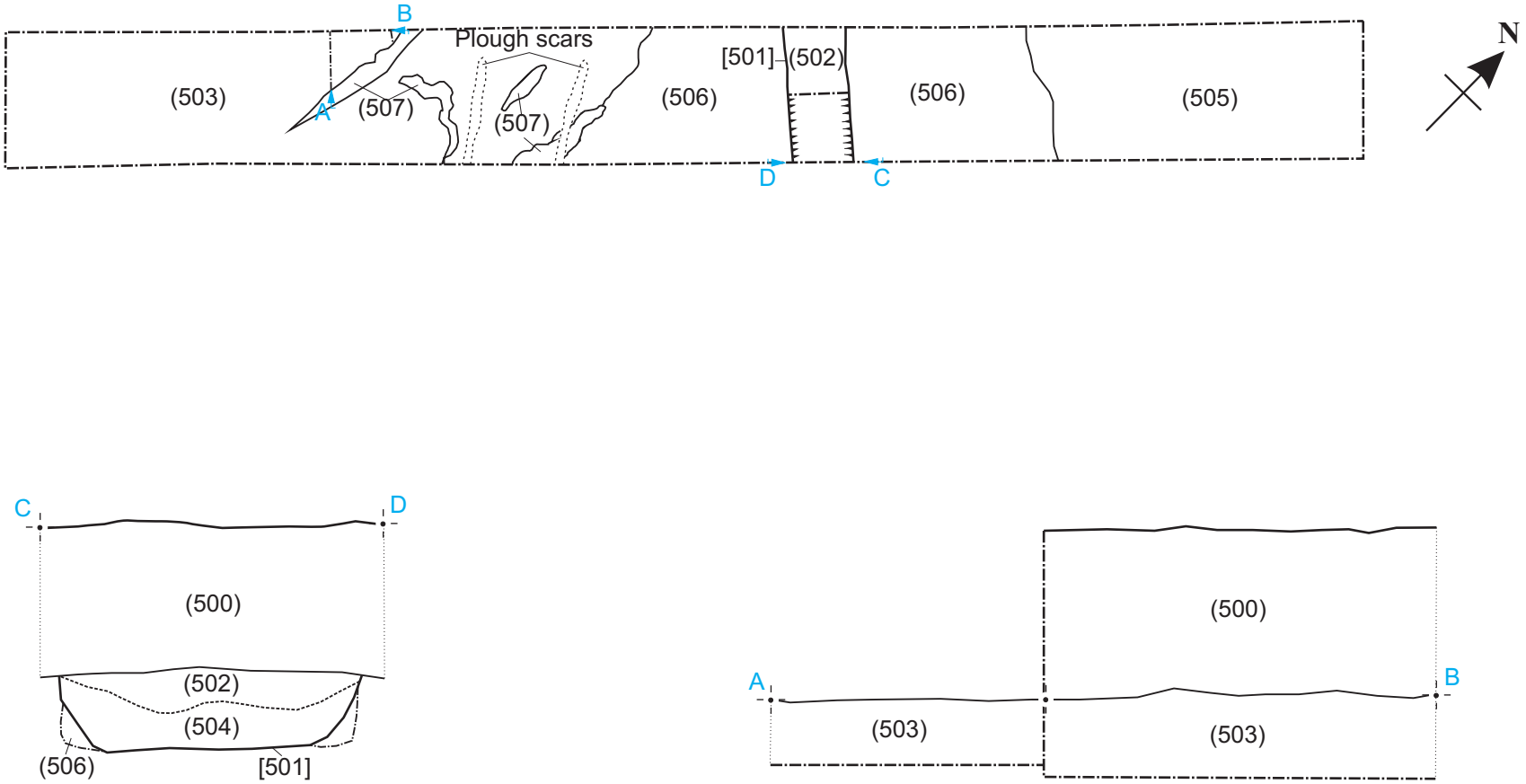


Figure 7: Trench 5 plan (1:100) and sections through [501] (1:20)

0 1m

1:20 Scale

0 5m

1:100 Scale

Appendix 1: Colour plates

Plate 1: Looking north-east across proposed development site.

Plate 2: Trench 2 looking north. Figure 4

Plate 4: Trench 3 looking east. Figure 5

Plate 3: West facing section of furrow [205]. Figure 4 A-B

Plate 5: South facing section through possible ditch [303]. Figure 5 A-B

Plate 6: west facing section through possible ditch [303]. Figure 5 C-D

Plate 9: Trench 5 natural. Figure 7 A-B

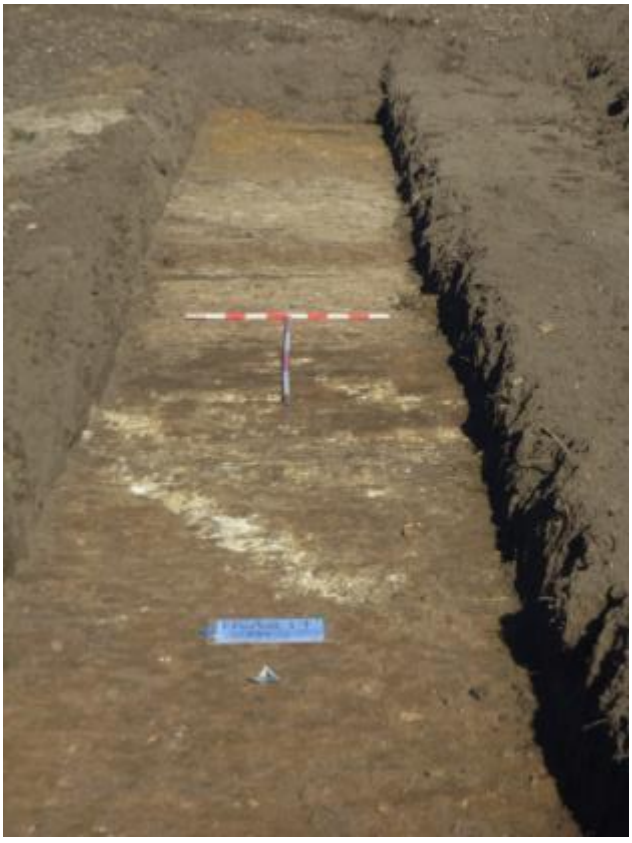


Plate 7: Trench 5 looking north-east. Figure 7

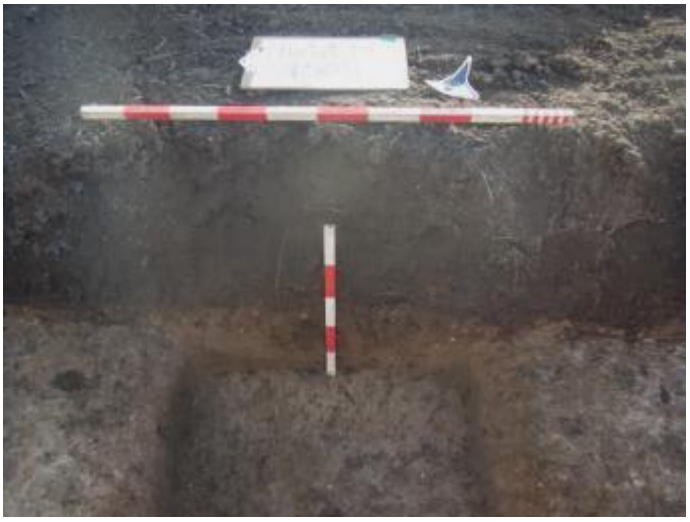


Plate 8: Ditch [501], looking south east. Figure 7 C-D

Appendix 2: Context Summary

Trench 1

Context	Type	Description
100	Layer	Mid brown sandy topsoil. 0.50m thick. Modern
101	Layer	Pale brown silty marl. Natural
102	Layer	Mid brown silty cornbrash. Natural
103	Layer	White compact silty marl/brash. Natural

Trench 2

Context	Type	Description
200	Layer	Mid brown sandy topsoil. 0.50m thick. Modern
201	Layer	Mid orange brown silty cornbrash. Natural
202	Layer	Pale brown silty marl. Natural
203	Layer	Band of white silty marl. Natural
204	Fill	Dark brown friable sandy silt. Single fill of [205]
205	Cut	Linear feature on E-W axis, shallow sides and wide concave base. Base of furrow. 1.60m wide; 0.10m deep. **DATING**

Trench 3

Context	Type	Description
300	Layer	Mid brown sandy topsoil. 0.54m thick. Modern
301	Layer	Natural cornbrash
302	Fill	Mid red brown sandy silt. Lower fill of [303]. 0.16m deep
303	Cut	Possible ditch on NW-SE axis, very shallow. 1.75m wide; 0.16m deep. Possibly a natural feature as this is on same alignment as bands of natural.
304	Fill	Pale brown sandy silt. Upper fill of [303]. 0.09m deep.
305	Fill	Natural looking concretion associated with ditch [303]. 0.30m wide; 0.14m deep.
306	Layer	Pale brown silty marl, filling voids in brash. Natural.

Trench 4

Context	Type	Description
400	Layer	Mid brown sandy topsoil. 0.44m thick. Modern
401	Layer	Orange silty cornbrash. Natural

Trench 5

Context	Type	Description
500	Layer	Mid brown sandy topsoil. **Deep**. Modern
501	Cut	Ditch cut on E-W axis. Steep sides and irregular base. 0.84m wide; 0.30m deep.

502	Fill	Mid orange brown clay sand. Upper fill of [501]. 0.84m wide; 0.10m deep.
503	Layer	Brown/orange sand, occasional flint inclusions at south end of trench. Natural.
504	Fill	Pale grey/white/buff clay sand. Lower fill of [501]. 0.84m wide; 0.30m deep.
505	Layer	Orange “brashy” sand at north end of trench. Natural.
506	Layer	Pale buff/white marl in centre of trench. Natural
507	Layer	Natural outcrops of chalk

Appendix 3: Finds Catalogue

Finds Land off Wesley Way and Winceby Gardens, Horncastle (HWWE14**)**

Context	No	Weight (grams)	Description	Date
204	1	6g	Pottery – 1 sherd from a blue transfer printed willow pattern whiteware cup	C19th
204	2	3g	Clay tobacco pipe stems	C19th
504	3	20g	3 fragments of same olive green bottle	C19th/20th
504	2	53g	Sheep/Goat metatarsals	

pre-construct geophysics ltd

ARCHAEOLOGICAL GEOPHYSICAL SURVEY

LAND OFF WESLEY WAY
HORNCASTLE
LINCOLNSHIRE

NGR 526830 369220

REPORT PREPARED FOR
PRE-CONSTRUCT ARCHAEOLOGICAL SERVICES LTD
ON BEHALF OF
ROBERT DOUGHTY CONSULTANCY
BY DAVID BUNN
JULY 2013

pca pre-construct archaeological SERVICES LTD

rdc Robert Doughty Consultancy

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Non-technical summary

A fluxgate gradiometer survey was undertaken on land to the east of Wesley Way, Horncastle, Lincolnshire.

The survey has not recorded magnetic variation suggestive of archaeological remains.

Recorded magnetic variation includes the strong response of modern ferrous-rich debris/features, the majority recorded along the western edge of the survey in close proximity to a modern boundary and existing houses. Elsewhere, a scatter of discrete and magnetically stronger anomalies signify miscellaneous ferrous-rich objects contained with the plough soil, such as plough shares, horseshoes and brick fragments.

Weaker responses probably reflect natural features, such as tree throws or erratics contained within the upper deposits of Till.

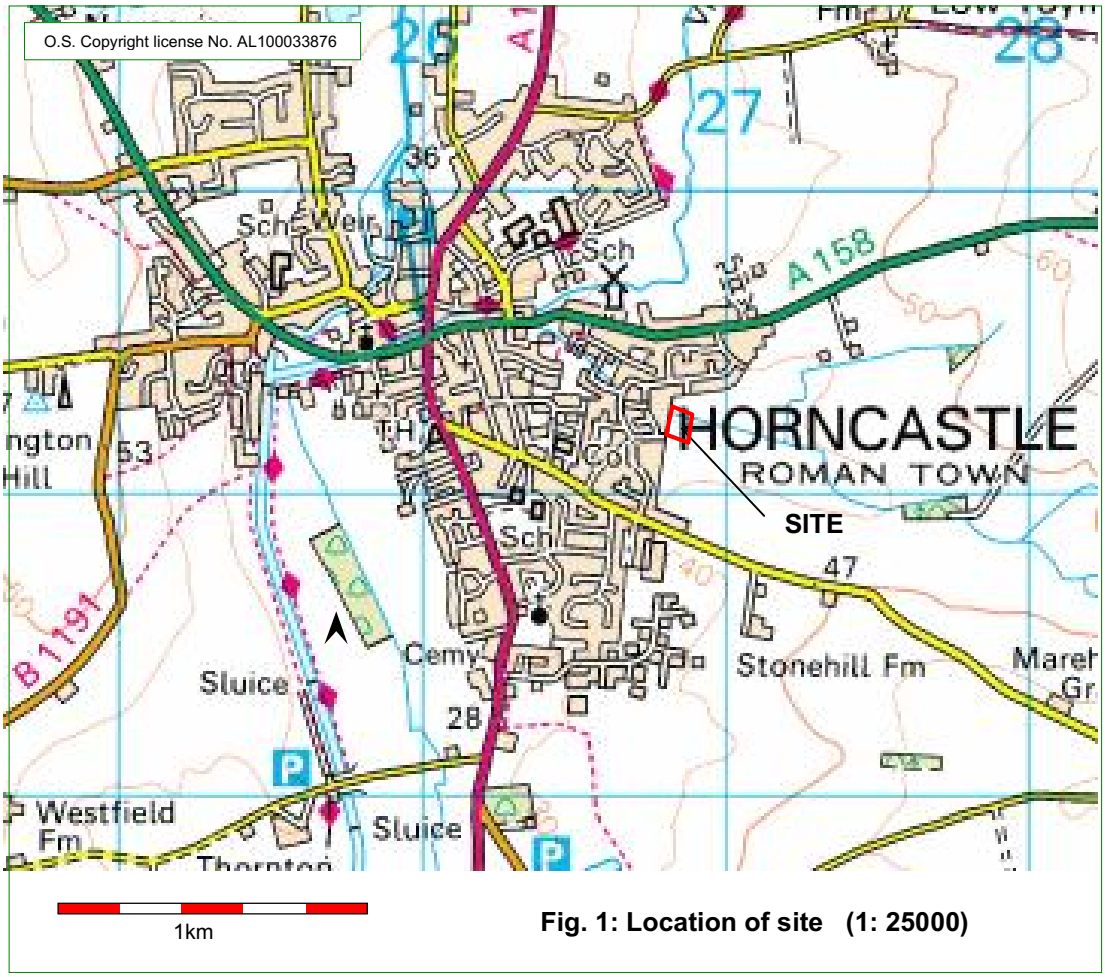

Fig. 1: Location of site (1: 25000)

1.0 Introduction

Acting for their clients Robert Doughty, Consultancy Pre-Construct Archaeological Services Ltd commissioned Pre-Construct Geophysics Ltd to undertake a fluxgate gradiometer survey on land off Wesley Way Horncastle, Lincolnshire (centred at NGR 526830 369220).

The site is proposed for residential development.

2.0 Location and description (Figs. 1 – 2)

The site is situated at the eastern edge of Horncastle, to the immediate east of Wesley Way and comprises 1ha of arable land.

3.0 Geology and topography

The solid geology of the survey areas comprises mudstone (Kimmeridge Clay Formation)[1]. This is overlain principally by Till (Diamicton).

The magnetic response of archaeological features within these geologies is variable (English Heritage, 2008).

The site is level and lies at a height of approximately 40m AOD.

4.0 Archaeological context

Edited extracts from a DBA of land to the immediate south/southeast of the proposed development (Savage & Bunn, 2012):

> *'Aerial photography and geophysical survey have established the presence of Romano-British cropmark enclosures across the western half of the site. An archaeological evaluation carried out on part of one enclosure (which lies outside the site to the west) found its ditches to be of a substantial size, with a lifespan beginning in the late Iron Age and continuing into the 3rd or 4th century AD.'*

5.0 Aims and objectives

The geophysical survey was undertaken to establish the presence/absence of magnetically anomalous archaeological features within the general locality of proposed turbine sites and, if recorded, define the extent and (where possible) nature of such anomalies in order to inform the requirement for further archaeological works (if required).

6.0 Methodology

The survey methodology was based upon English Heritage guidelines: *'Geophysical Survey in Archaeological Field Evaluation'* (English Heritage, 2008).

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6.1 Fluxgate Gradiometry is a non-intrusive scientific prospecting tool that is used to determine the presence/absence of some classes of sub-surface archaeological features (e.g. pits, ditches, kilns, and occasionally stone walls).

The use of gradiometry should help to establish the presence/absence of buried magnetic anomalies, which may reflect sub-surface archaeological features, and may therefore form a basis for a subsequent scheme of archaeological trenching.

The use of magnetic surveys to locate sub-surface ceramic materials and areas of burning, as well as magnetically weaker features, is well established, particularly on large green field sites. The detection of anomalies requires the use of highly sensitive instruments; in this instance the Bartington 601 Dual Fluxgate Gradiometer. This is accurately calibrated to the mean magnetic value of each survey area. Two sensors, mounted vertically and separated by

1m, measure slight, localised distortions of the earth's magnetic field, which are recorded by a data logger.
The survey was undertaken on 28th June 2013 using a Bartington Grad-601 Dual Fluxgate Gradiometer. The zigzag traverse method of survey was used, with readings taken at 0.25m intervals along 1.0m wide traverses.

The survey grid was established by Global Positioning Satellite using a Topcon GRS-1, with an accuracy of +/- 0.1m.

The data sets were processed using *ArcheoSurveyor 1.3.2.8*.

Raw data set are presented on Fig 3 (clipped to +/-10nT to enhance resolution).

The 'Despike' function was applied to reduce the effect of extreme readings induced by metal objects, and 'Destripe' to eliminate striping introduced by zigzag traversing. The data sets were clipped to +/- 20nT on trace plots (Fig. 4) and +/-3nT on greyscale images (Fig. 5).

6.2 Character, interpretation and presentation of magnetic anomalies (Fig. 6)

Anomalies in excess of +/-10nT are highlighted as on the interpretive image (Fig. 6). These are characterised magnetically as (dipolar) 'iron spikes', often displaying strong positive and/or negative responses, which reflect ferrous-rich objects (particularly apparent on stacked trace plots). Examples include those forming/deposited along current or former boundaries (e.g. wire fencing), services and random scatters of horseshoes, ploughshares etc across open areas. Fired (ferro-enhanced) material, such as brick/tile fragments (often where the latter are introduced during manuring or land drain construction) usually induce a similar though predominately weaker response, closer to c+/-5nT (highlighted in pink/blue on interpretive images). Collectively, concentrations of such anomalies indicate probable rubble spreads, such as backfilled ponds/ditches and demolished buildings. On a cautionary note, fired clay associated with early activity (e.g. villas sites and kilns) has the same magnetic characteristics of modern brick/tile rubble. As such, interpretation of such variation considers the context in which it occurs.

Probable natural responses are highlighted as green.

7.0 Results, discussion and conclusions (Figs. 3 - 6)

The survey has not recorded magnetic variation suggestive of archaeological remains.

Recorded magnetic variation includes the strong response of modern ferrous-rich debris/features, the majority recorded along the western edge of the survey in close proximity to a modern boundary and existing houses (Fig. 6: highlighted blue). Elsewhere, a scatter of discrete and magnetically stronger anomalies signify miscellaneous ferrous-rich objects contained with the plough soil, such as plough shares, horseshoes and brick fragments (highlighted blue).

Weaker responses probably reflect natural features, such as tree throws or erratics contained within the upper deposits of Till (examples highlighted green).

8.0 Acknowledgements

Pre-Construct Geophysics Ltd would like to Pre-Construct Archaeological Services Ltd for this commission.

9.0 References

English Heritage. 2008 *Geophysical Survey in Archaeological Field Evaluation*. London, English Heritage.

Savage, R. D. & Bunn, D 2012 *Land off Mareham Road, Horncastle, Lincolnshire.* Archaeological Desk-Based Assessment. Pre-Construct Archaeological services Ltd: JOB No. 818.

[1]http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html, 1:50,000. British Geological Survey, Keyworth.

Fig. 2: Location of site and survey

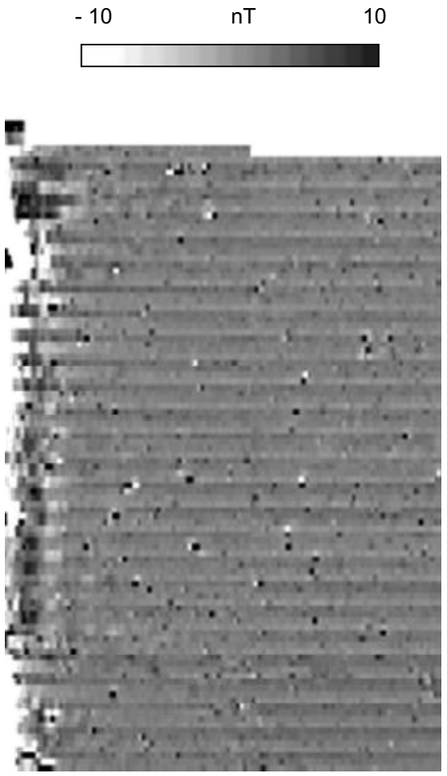


Fig. 3: Greyscale image - unprocessed data

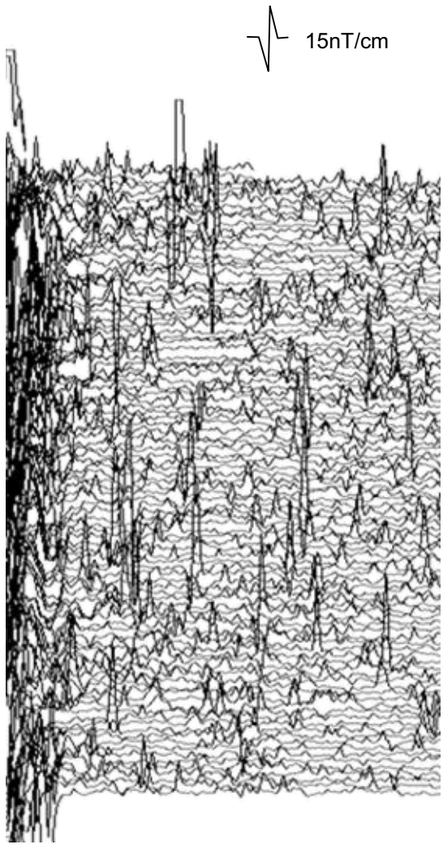


Fig. 5: Trace plot image

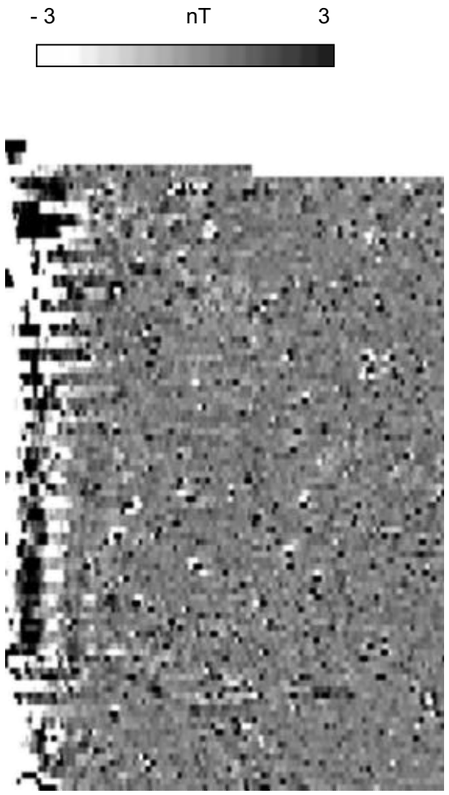


Fig. 5: Greyscale image - processed data

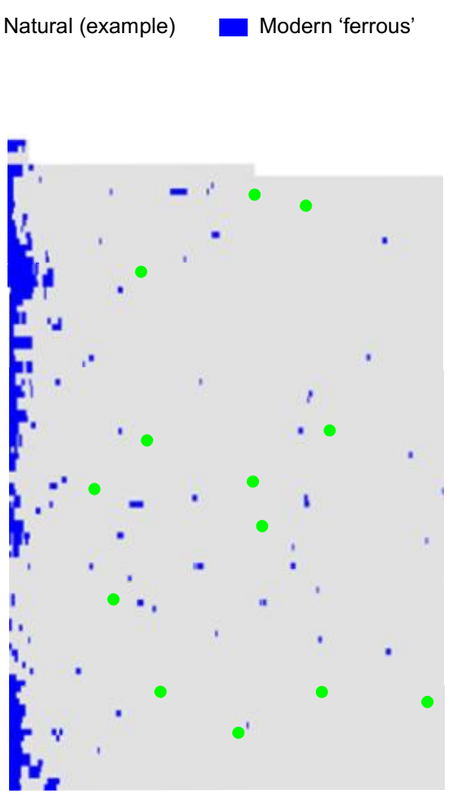
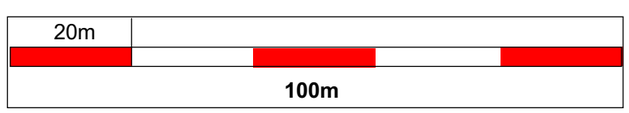


Fig. 6: Interpretation



LAND OFF WESLEY WAY, HORNCASTLE, LINCOLNSHIRE

BRIEF ARCHAEOLOGICAL ASSESSMENT

Report prepared for

Robert Doughty Consultancy

by

R .D. Savage

August 2013

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Prehistoric sites and findspots

A programme of fieldwalking carried out within the eastern half of the quadrilateral Romano-British cropmark (see below), approximately 150m to the south of the proposed development site, retrieved 31 Neolithic to Bronze Age worked flints (HER ref. 43416). An evaluation on the western side of the main cropmark enclosure, in the area adjoining the present development site, noted that flint cores and flakes were frequently seen on the surface of the field between the trenches, but these were not retrieved, and no features containing stratified material pre-dating the late Iron Age were encountered (Savage and Bunn, 2011).

A pre-Roman ditched enclosure, associated with flint tentatively dated to the Bronze Age, was found during a programme of archaeological works in advance of development at Banovallum Gardens, directly to the west of the proposed development site (HER ref. 43167). Neolithic to Bronze Age flint artefacts were also found during an archaeological evaluation on land near Horncastle College, but all artefacts of this phase were residual in later contexts (HER ref. 43678).

Late Iron Age and Romano-British sites and findspots

A quadrilateral cropmark resembling an enclosure was identified to the north of Mareham road, approximately 150m to the south of the proposed development site, on an aerial photograph taken in July 1946 (HER ref. 41865). A series of archaeological works was carried out when the field containing the western side of the cropmark was developed in the mid-1990s, beginning with a geophysical survey. Both the cropmark enclosure and an eastern extension were identified as geophysical anomalies, and a number of other linear anomalies, apparently representing a system of field boundaries, extended to the north, west and east across and out of the survey area. (Savage and Bunn, 2011).

Following the geophysical survey, an archaeological evaluation was targeted on the western portion of the cropmark, which was scheduled to be developed. Seven trenches were excavated. The cropmark feature was proven to be a an enclosure of some 3400m^2, defined by large ditches with V-shaped sections. It could not be certainly said whether or not a bank had been present, although the pattern of ditch silting conjecturally suggested an external bank. Dating evidence and the sequence of fills suggested that the enclosure had originally been constructed in the late Iron Age, and continued in use, probably with recutting of the ditches, until the late 3rd century, and possibly into the 4th. No entrances were located and no internal features were identified (HER ref. 41865; Savage and Bunn, 2011). A recent evaluation carried out by Pre-Construct Archaeology on the eastern side of the enclosure, now under development, encountered the main enclosure and its eastern extension, with possible associated features (Keal, 2013).

The development of the Banovallum Gardens area, directly to the west of the proposed development site, was accompanied by a series of archaeological interventions. Geophysical survey proved to be unprofitable, as the area had such a low magnetic susceptibility that even the positions of recently excavated evaluation trenches were unclear. Archaeological monitoring during the construction works recorded two linear features that may have corresponded to two sides of a ditched enclosure with possible internal bank, dubiously dated by uncertainly stratified Romano-British pottery. Two undated ditches and two undated pits were also seen; all features were cut into the chalk bedrock. All features of interest were towards the southern side of the development area, and it was suggested that the area in the vicinity of the Thunker Drain had been too wet for habitation or cultivation in the Iron Age and the Romano-British period (HER refs. 43307, 44053; Savage and Bunn, 2011).

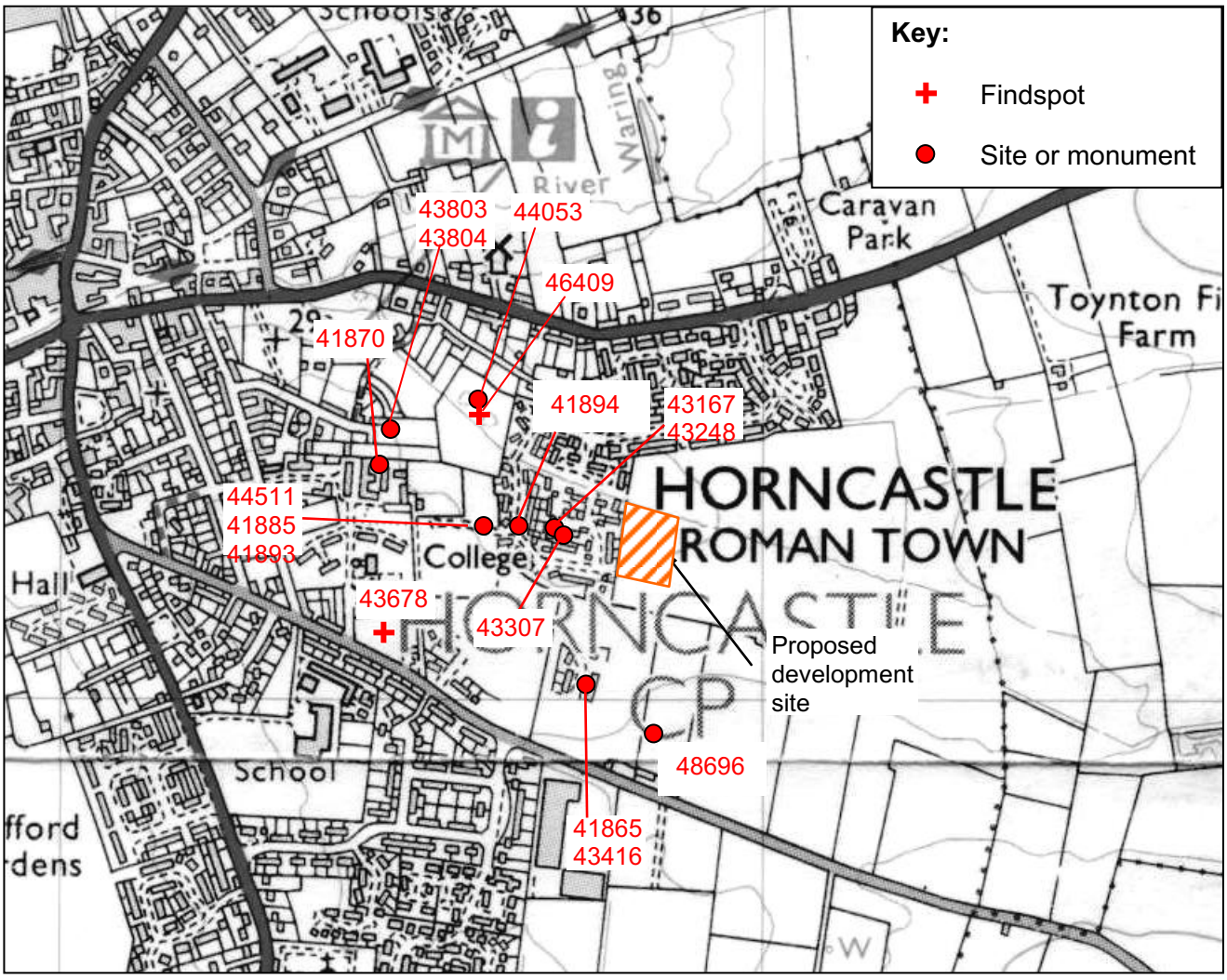
A Roman cremation cemetery in the vicinity of Albert Street, approximately 350m to the west of the proposed development site, is attested to by repeated finds of cinerary urns during the

19th century (HER ref. 41870). An archaeological evaluation carried out in 1999 on land to the east of Albert Street retrieved six sherds of Romano-British pottery, but all were within the backfill of late post-medieval gravel quarries: it is possible that quarrying had disturbed mid-3rd-century or later Roman remains (HER refs. 43803-4).

References

Keal, L. L., 2013, *Land off Mareham Road, Horncastle, Lincolnshire: Archaeological Evaluation*. Unpublished client report for Pre-Construct Archaeological Services.

Savage, R. D. and Bunn, D., 2011, *Land off Mareham Road, Horncastle, Lincolnshire: Archaeological Desk-Based Assessment*. Unpublished client report for Pre-Construct Archaeological Services.



Plan of selected sites and findspots recorded by the Lincolnshire Historic Environment Record within c. 350m of the proposed development site, at scale 1:10,000.

HER No.	Record Type	Description	NGR
41865	Monument	Iron Age to Roman agricultural site centred on a large quadrilateral enclosure, with extensions to the east and possibly the west, and a possible associated field system. Evidence suggests this is a stock enclosure.	TF 2675 6901
41870	Monument	Roman cremation cemetery in Albert Street, encountered several times during the 19th century.	TF 2645 6933
41885	Findspot	2 Neolithic flints found at Horncastle residential college	TF 264 692
41893	Findspot	An AE 3 of Constantine II as Caesar Obverse.: CONSTANTINVS IVN.NOB.C Reverse.: C(AE)S(AR)V(M) NOSTRORVM VOT.V IN WREATH found at the college.	TF 264 692
41894	Findspot	Medieval spindle whorl, near Jessops Close	TF 265 692
43167	Monument	Pre-Roman ditched enclosure with possible circular enclosure found at Banovallum Gardens, associated with worked flint, some possibly Bronze Age.	TF 2671 6924
43248	Monument	Traces of medieval plough furrows running parallel to an existing field boundary were recorded at Banovallum Gardens.	TF 266 692
43307	Monument	Three ditches, possibly part of an enclosure, found during a watching brief at Banovallum Gardens: four sherds of Romano-British pottery were not sufficient to date the features.	TF 2672 6923
43416	Findspot	31 late Neolithic to early Bronze Age struck flints found during fieldwalking at Mareham Road: no concentrations of debitage identified.	TF 2675 6901
43678	Findspot	Neolithic to Bronze Age struck flint, including a possible core, flakes and a hammerstone, residual in Romano-British contexts during an evaluation at Mareham Road	TF 2646 6909
43803	Monument	Evidence of late post-medieval gravel quarrying on land near Albert Street: one of the quarry pits may have disturbed a late Romano-British occupation site	TF 2647 6938
43804	Findspot	Six sherds of 2nd to 3rd- century pottery retrieved from the fill of a post-medieval gravel quarry	TF 2647 6939
44053	Monument	Two undated ditches found on a site at Holt Lane/Banovallum Gardens	TF 2659 6942
44511	Monument	Undated features found on a site at Banovallum Gardens	TF 2661 6925
46409	Findspot	Waste flint flakes found during evaluation trenching at Banovallum Gardens	TF 26588 69402
48696	Monument	Possible enclosures, ditches and pit previously identified as cropmarks, confirmed by geophysical survey, land off Mareham Road, Horncastle	TF 270 689

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Land at Wesely Way/Winceby Gardens, Horncastle - Pre-Construct Archaeological Services Ltd

OASIS ID - preconst3-173146

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View 1	1	Alison Lane	alison@pre-construct.co.uk	4 March 2014

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Yes	Yes	Yes	Yes	0/0

Validated sections in current version

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File submission and form progress

Grey literature report submitted?	No	Grey literature report filename/s	
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Boundary file submitted?	No	Boundary filename	
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