



Proposed New Livestock Market **HEREFORD**

Archaeological Evaluation



July 2008 (Revised)

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Cover pictures – General view of evaluation trenches (main), Excavation of geotechnical trial holes (inset left), Prehistoric pot sherd and spindle whorl recovered from feature [6802] (inset right).

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Proposed New Livestock Market, HEREFORD (NGR SO 47500 42140)

Archaeological Evaluation

Site Evaluation

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Geophysics

Archaeological Investigations and Bartlett Clark Consultancy

Report

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Proposed New Livestock Market

HEREFORD (NGR SO 47500 42140)

Archaeological Evaluation

1. Summary

The project was undertaken on behalf of Owen Williams Consultants prior to the submission of a planning application to develop the site as a new livestock market for Hereford.

Archaeological Investigations Ltd. monitored the excavation of 20 geotechnical trial holes, carried out a geophysical survey of the site and excavated 75 evaluation trenches at the site of the proposed livestock market.

The geophysical survey identified a number of anomalies which were investigated further through excavation.

Excavation of one of the anomalies in the south of the site revealed a linear feature approximately 22 metres wide. The fill of this feature contained two spreads of charcoal, fragments of burnt bone and prehistoric pottery. The lower spread of charcoal was carbon dated to the Bronze Age and the upper spread dated to the late Roman/Dark Age period.

A potentially significant anomaly was identified through geophysics occupying a position to the south east of the current proposal area.

No other significant archaeology was present.

2. Introduction

Archaeological Investigations Ltd. were commissioned by Owen Williams Consultants on behalf of their client Herefordshire Council to undertake an archaeological evaluation at the proposed site of a new livestock market for Hereford (Fig.1).

The site lies on the A4103 (Roman Road) which runs from west to east across the north of Hereford. It is located adjoining the south side of the road just to the west of the urban conurbation of the city.

Prior to evaluation the field was an open arable field under stubble. The area of the proposal encompasses 6.1ha within a field measuring 21.3ha.

The underlying geology comprised solid, undivided Old Red Sandstone of Silurian date (Pridol). The drift geology is glacial till.

A planning application is to be submitted to develop the site as a new Livestock market for Hereford. The proposed works were considered to have the potential to affect a site of archaeological significance, therefore in line with PPG16, the Planning Authority was advised that a program of archaeological work was required, taking the form of an archaeological evaluation.

The archaeological evaluation had three components;

- Archaeological monitoring of Geotechnical trial holes.
- Geophysical survey of 21.3ha field.
- Archaeological trial trenching of proposal area.

The fieldwork was conducted between 17th September 2007 and 15th October 2007.

In November 2007 Archaeological Investigations Ltd. were informed by their client that alterations had been made to the original proposal. The livestock market would cover a smaller area than outlined in the previous proposal and the footprint of the buildings would shift north.

This change to the original proposal led to the excavation of a further six trenches on 5th December 2007.

3. Historical and Archaeological background

No archaeological work has previously been carried out on the site itself.

Initial inspection of the Sites and Monuments Record indicates a wealth of sites occupying the fertile plain in which the site is situated. These include Kenchester Roman town and the road (SMR11129) connecting it to Stretton Grandison to the east, with Credenhill Iron Age Hillfort (SMR906, SO 4510 4460) overlooking them both. The Roman Road forms the northern boundary of the site. There are also undated rectilinear enclosures in the vicinity of Credenhill (SMR7025, SO 4600 4100). Inspection of the vertical aerial photograph held by Herefordshire SMR did not reveal any features of archaeological interest within the site. The site is bounded to the west by a stream and the south by the line of the former Hereford-Hay-Brecon railway which

was in operation between 1864 and 1964 (SMR 19262). A footbridge in the centre of the southern boundary of the site is all that remains of the railway.

A scheme of archaeological work was undertaken on the Roman Road in 2004 prior to and during its widening and resurfacing. This included both geophysical survey in the form of radar and gradiometer survey and trenching, excavation and monitoring of groundworks. The geophysicist concluded that gradiometer survey would not be successful on the geology here. Excavation revealed the cobbled surface of the road. Cremated human remains and Roman pottery were found beneath the road surface.

A footpath crosses the site from north to south before crossing over the railway footbridge. Cartographic evidence shows that this path follows the line of a field boundary that was present on both the 1888 and 1952 Ordnance Survey Maps (Fig. 2). Also present on both these maps was a further east-west field boundary, a track and another footpath. Only the north-south footpath is present on modern maps of the area.

4. Aims and Objectives

The aim of the project was to enable archaeological features to be identified in the areas affected by the proposal.

The objectives were to;

- Survey the full 21.3ha field and excavate an area of 4% of the 7.9ha involved in the proposed new livestock market (figures correct prior to proposal alteration in November 2007)
- Identify the date and nature of the features being investigated.
- Assess survival, quality, condition and relative significance of any archaeological features, deposits and structures within the study area.
- Produce a record of the features.
- Produce a sufficiently detailed report of the findings.
- Deposit the archive.

5. Archaeological monitoring of geotechnical pits

5.1 Method

A total of twenty pits were excavated on the site on 17th and 18th September. The pits were excavated by a tracked machine using a 0.6m wide toothed bucket. The pits were located using a handheld GPS and a predetermined test pit plan (Fig 3). Each test pit was 0.6m in width and the length of each pit was determined by the ability of the machine to excavate to the required depth.

In practice this meant that the deeper the pit, the longer the pit. No test pit exceeded 3.2m in length.

The test pits were excavated under the supervision of two members of Owen Williams geotechnical staff. An archaeologist was present to monitor the excavations and make a suitable record should anything of archaeological interest be uncovered.

The depth of each test pit was recorded and one section of each test pit was photographed using 35mm colour and black and white film.

5.2 Results

For soil descriptions across the site refer to the later section on archaeological trenching.

Test Pit Number	Depth (m)	Archaeology Present?
1	2.0	No
2	2.0	No
3	2.0	No
4	3.7	No
5	3.1	No
6	1.6	No
7	2.15	No
8	2.0	No
9	3.8	No
10	2.1	No
11	4.0	No
12	1.9	No
13	3.5	No
14	3.3	No
15	2.0	No
16	1.7	No
17	4.2	No
18	1.9	No
19	1.9	No
20	4.5	No

5.3 Conclusion

All test pits excavated for geotechnical purposes were monitored by an archaeologist. No archaeologically significant finds or deposits were revealed.

6. Geophysical survey

6.1 Method

Two geophysical survey teams were employed to survey the field in which the proposed livestock market lies. Each team used a simultaneous fluxgate gradiometer array incorporating three high sensitivity 1m Bartington Tubes with a Bartlett-Clark Consultancy logging system. A survey guide grid was laid out using a differential GPS with sub metre accuracy.

Readings were taken on traverses spaced 1m apart with readings taken every 0.33m along each traverse.

The geophysical survey took place between 19th and 28th September 2007.

6.2 Results

The results are presented in both grey scale (Fig. 4) and x-y format (Fig. 5) in accordance with English Heritage guidelines.

6.3 Discussion

The majority of anomalies can be classed as discrete ferrous data spikes caused by the presence of iron objects within the topsoil. Other, faint linear anomalies are likely to be the result of geological variations or differential drainage.

The results show four areas of interest which have been indicated on the plots;

- A) Linear anomaly of multiple ferrous responses. Considering the positioning and orientation of this anomaly it seems probable that it relates to the field boundary present on this alignment prior to 1952, or the footpath that still respects the line of that boundary.
- B) Radial anomaly of extremely high ferrous response. Area of highest response measures 25m by 25m. Investigated by targeted evaluation trench **69**.
- C) Linear feature of high magnetic response. Tongue shaped in plan and apparently continuing beyond the southern field boundary and railway line. Investigated by evaluation trench **48** and targeted evaluation trench **68**.
- D) Group of rectilinear features of high magnetic response. Apparently a double ditched enclosure approximately 45m in length. Orientated northwest-southeast. The features appear to continue beyond the southern field boundary and railway line. These anomalies lie outside the proposal area so no further work was required.

7. Evaluation trenches

7.1 Method

A total of 56 trenches measuring 25m in length and 2m in width were excavated within the 7.9ha livestock market original proposal area to achieve a 4% sample rate. A further eleven trenches were excavated in a 1.6ha area intended for use as a wildlife conservation area. A 1.4ha area in

the northwest of the site was not evaluated. It was agreed with the local planning archaeologist that its intended use as a nature conservation area would not impact upon the possible presence of archaeology. Two further trenches were excavated to evaluate potential features identified by geophysical survey. A further six trenches were excavated to the north of the original proposal area in December 2007 (Fig. 6).

Trenches were positioned using a differential GPS with sub metre accuracy, using predetermined coordinates. Where necessary, trench positions were adjusted to avoid the public footpath running through the site.

Trenches were excavated by a tracked machine using a 2m wide toothless bucket. Deposits were removed in shallow spits until the first archaeological horizon was encountered. If archaeology was not present, deposits were removed until natural deposits were encountered. All excavation took place under archaeological supervision.

In trenches where no archaeological features or deposits were encountered;

- The sequence, form and dimensions of soil deposits were recorded on individually numbered trench record sheets.
- A two metre wide sample section was cleaned and photographed using 35mm black and white and colour film.
- The excavated trench was photographed in plan using 35mm black and white and colour film.
- The position and profile of the trench was recorded using a Leica TCR1105 total station.

In trenches where significant archaeology was encountered;

- Significant features were half sectioned using hand tools, or controlled machining in the case of bulk deposits.
- Archaeological deposits were recorded on individually numbered context record sheets.
- Samples were taken of potentially significant archaeological deposits for general biological analysis.
- Samples of charcoal were taken for C-14 dating.
- All finds were retained for dating purposes.
- At significant stages during excavation photographs were taken using 35mm colour, black and white and digital photographs.
- One long section was cleaned in full and photographed using 35mm black and white and colour film.
- The position of the trench and significant archaeology was recorded using a Leica TCR1105 total station.

All site levels (Appendix 5) relate to a Temporary Bench Mark established using a differential GPS with sub-metre accuracy. The value of the TBM was established by averaging multiple readings taken throughout a 48 hour period.

Registers were maintained for trench record sheets, context sheets, environmental samples and photographs.

7.2 Results

A detailed account of each context can be found in Appendix 2 at the back of this report.

7.2.1 Blank trenches (1-47, 49-67 & 69-75)

These trenches are characterised by a mid brown silty clay topsoil overlying a red/orange silty clay subsoil.

The natural geology of the area is a mixture of old red sandstone and boulder clay. Excavation revealed distinct edges to these deposits which appeared to be manmade. Further investigation however confirmed that these edges were naturally occurring changes in the natural (Appendix 3).

A small amount of pottery was recovered from the topsoil within these trenches. A discussion on the pottery recovered from the site can be found in Appendix 4 at the back of this report.

Targeted Trench 69 appears to have missed the centre of the anomaly identified through geophysical survey.

7.2.2 Trenches containing archaeology (48 & 68)

Trench 68 was positioned to target an anomaly identified from the geophysical survey results. A linear cut [6802] approximately 22 metres in width was revealed (Plates 1 and 2), containing a light-mid brown silty clay fill (6803). Within the fill were fragments of coarse pottery, a possible clay spindle whorl, rounded cobbles and two distinct charcoal spreads. The cut was near vertical in the east, but very gradual in the west giving the feature an uneven profile (Fig. 7).

Samples were taken of the two charcoal spreads for general biological analysis. Spread <01> contained fragments of burnt bone and was dated by radiocarbon age determination (Appendix 6) to;

Wk22571 : 1513+/-103BP = 320AD – 690AD (94%)

Spread <02> was found approximately 0.50m lower in the fill and was dated by the same method to;

Wk22572 : 2941+/-42BP = 1300BC – 1010BC (95.4%)

The pottery found within the fill was not associated with either charcoal patch. The feature was half sectioned using controlled machining and the fill was carefully sifted to ensure that all finds were recovered.

Trench 48 appeared to contain the terminus of the feature revealed in trench 68. Extending approximately five metres into the southern end of trench 48 was a deposit (4803) similar in nature to the fill present in Trench 68. This was not excavated.

7.3 Discussion

From the 75 trenches excavated, only two produced significant archaeology. The results of the excavation and geophysical survey provided evidence for the presence of a linear feature with a rounded terminus beginning in Trench 48 and continuing in a southerly direction beyond the limits of the proposal area. The feature had a shallow break of slope (BOS) to the west, a flat bottom and a near vertical BOS to the east. At its deepest point the feature was 1.36m deep. The feature was filled by a relatively clean silty clay with round cobble inclusions and two charcoal spreads. Fragments of prehistoric pottery and a possible spindle whorl within the fill were considered by one local pottery specialist to belong to the Late Neolithic period. Another specialist considered the pottery to be Late Bronze Age/Early Iron age in date. While there is agreement that the pottery is Prehistoric, some debate remains over the exact period when the pottery was produced.

There are many possible interpretations of the function of this feature. Firstly, there is a possibility that the 'feature' is a natural depression which has been used for shelter on a sporadic basis during prehistory. The shallow, gradual 'cut' forming its west side might support this suggestion as it gives the impression of a natural undulation in the topography of the site. The cut to the east, however, is almost vertical and it seems highly unlikely that this could have formed naturally. The abrupt termination of the feature within Trench 48 has more in common with a manmade earthwork than a geological occurrence.

An assessment of the fill (6803) of the linear feature was conducted by A. Boucher during a site visit (Appendix 3). He concluded that the lack of structure or variation within the deposit gave the impression of deliberate dumps of material rather than a gradual accumulation through erosion of natural deposits from around the edges.

The radiocarbon dating evidence however, shows a large temporal difference between the charcoal deposits. The spreads were separated by only 0.50m depth of fill and 1200 years of history (taking mean value for dates). This equates to a depositional rate for the silting up of the feature of approximately 4mm every 10 years if we hypothesise that the deposition occurred naturally. If however the charcoal spreads are the result of secondary deposition, then the dating of the spreads is not relevant to understanding the feature. If we consider the radiocarbon age determination and the assessment of the soil morphology to be accurate then the most likely course of events is that soil containing evidence for both prehistoric and Dark Age activity (from the same or different locations) has been excavated and then purposely dumped within cut [6802].

The purpose of the feature is open to suggestion. At 22 metres wide it seems unlikely that this feature formed part of a field system, or that it was the work of a single person operating independently. If the profile of the feature is consistent along its full fifty metre length (as indicated by geophysical survey), then a conservative estimate would suggest that 1000m³ of material was displaced to create this feature, suggesting a collaborative effort between a number of people or groups. The excavation of a linear, negative feature is however only half of the story. The material that has been removed to create the feature must have been redeposited

elsewhere, and it is the result of this action which helps enhance our understanding of this feature.

The excavation of a linear feature of this scale within a Neolithic context would suggest the creation of a monument. A logical assumption would be that the excavated material was redeposited close to the negative feature and would form a positive earthwork. Considering the straight, linear nature of the ditch, the most likely monument which it could form part of is a long mound.

A long mound is a prehistoric monument dating to the early Neolithic period. They are rectangular or trapezoidal earth mounds traditionally interpreted as collective tombs, although a significant number have no primary evidence for burial at all. The mound was created using material excavated from ditches dug along the long sides of the earthwork.

There are a number of factors that argue against the linear feature [6802] being a quarry ditch for a long mound;

- Long mounds (or barrows) are usually orientated east-west and located on higher ground or a prominent ridge,
- There is no evidence for a mound on the site of the New Cattle Market,
- In the majority of cases there are quarry ditches on both sides of the mound. The New Cattle Market site only has evidence for one ditch.

Other possibilities for the function of this feature exist, but excavating a narrow section through such a large feature has shed little light on its purpose. The feature had attributes that may suggest it formed a boundary, but it is unlikely that a manmade boundary would terminate so abruptly without the presence of a natural feature such as a river to continue the demarcation of territory.

The feature then remains something of an enigma. A linear ditch with a northern terminus has been excavated and then backfilled over a relatively short period of time. Within the apparently homogenous fill were two charcoal spreads at different levels. The dispersal of charcoal suggests that burning of organic material occurred elsewhere and the resulting charcoal was dumped within the fill (6803). Radiocarbon age determination has revealed a large temporal difference between the charcoal spreads. Within the uppermost of these spreads was a very small amount of burnt bone. Unfortunately the fragments were less than 3mm in diameter and non-diagnostic, therefore contribute little to our understanding of the feature. It is possible that the bone is the remains of a meal tossed into a fire at some point between the 4th and 7th centuries AD, the product of which was subsequently redeposited in an already partially backfilled linear feature. Three sherds of prehistoric pottery and a spindle whorl of the same fabric were deposited within the fill, but were not concentrated or contained within a particular area.

8. Conclusion

Significant archaeology within the site of the New Livestock Market was confined to one linear feature at the south of the site which was identified by geophysical survey and subsequently investigated through the excavation of two evaluation trenches

The feature contained prehistoric pottery and two patches of charcoal which have been carbon dated to the Middle Bronze Age and Dark Ages.

The geophysical survey revealed an anomaly in the southeast of the field which lies outside the proposal area. This anomaly is apparently a rectilinear feature of archaeological significance. Should any development threaten this area in future, further archaeological work is required.

The objectives of the investigation have been satisfied through appropriate methods and an archaeological understanding of the proposal area has been achieved.

9. Bibliography

Boucher, A. 2007. **Hereford Proposed New Cattle Market. Specification for archaeological evaluation.** Archaeological Investigations Ltd.

Historic Herefordshire On Line www.smr.herefordshire.gov.uk

Appendix 1 – Site Archive

The site archive will be held at Hereford museum under the accession number **HFD-MG-2007-91** and will contain the following;

- One copy of this report
- Seventy-five trench recording sheets
- Four context sheets (Trench 68)
- One environmental sample register
- One copy of the ‘Specification for archaeological evaluation’ for this site
- Eight sets of 36mm colour film negatives with prints and registers
- One set of colour slides with register
- Four sets of black and white film negatives with prints and registers
- Eight sherds of pottery
- Selection of CBM recovered from the site
- Fragments of burnt bone from (6803)

Appendix 2 – Context Database

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
101	1	Mid brown silty clay, moderately compact with 35% stone inclusions	Topsoil	25	2	0.4
102	1	Reddish orange sandy silt, moderate compaction with 40% stone inclusions	Subsoil	25	2	0.35
201	2	Same as 0101	Topsoil	25	2	0.3
202	2	Same as 0102	Subsoil	25	2	0.2
203	2	Irregular cut in west of trench. Filled by 0204	Variation in natural	1	1	0.2+
204	2	Light greenish brown sandy silt. Loosely compacted, very infrequent charcoal flecks.	Variation in natural	1	1	0.2+
205	2	Irregular cut in east of trench. Filled by 0206.	Variation in natural	1	1	0.2+
206	2	Same as 0204.	Variation in natural	1	1	0.2+
301	3	Mid brown sandy silt. Moderate compaction. 35% stone inclusions.	Topsoil	25	2	0.4
302	3	Orange sandy silt. Moderate compaction. 20-25% stone inclusions.	Subsoil	25	2	0.3
303	3	Red stoney clay	Natural	22	2	0.4+
304	3	Silty red clay	Natural	3	2	0.4+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
401	4	Mid brown silty clay. Moderate compaction. 25-30% stone inclusions.	Topsoil	25	2	0.41
402	4	Red stoney clay	Natural	17.6	2	0.24+
403	4	Silty red clay	Natural	7.4	2	0.24+
501	5	Heavily compacted grey/brown silty clay.	Topsoil	25	2	0.25
502	5	Light brown clay. 30% small stone inclusions.	Subsoil	25	2	0.4
503	5	Red/brown stoney clay	Natural	25	2	Not excav.
601	6	Light-mid brown sandy silt. 40% stone inclusions. Moderate compaction	Topsoil	25	2	0.35
602	6	Orange sandy silt. Moderate compaction. 20-25% stone inclusions.	Subsoil	25	2	0.4
603	6	Red stoney clay	Natural	15.3	2	0.15+
604	6	Red silty clay	Natural	9.7	2	0.15+
701	7	Light-mid brown sandy silt. Moderate compaction. 30-35% medium stone inclusions.	Topsoil	25	2	0.47
702	7	Orange sandy silt. Compact. 20% stone inclusions.	Subsoil	25	2	0.13
703	7	Red stoney clay	Natural	25	2	0.35+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
801	8	Mid brown sandy silt. Moderate compaction.	Topsoil	25	2	0.35
802	8	Red/orange sandy silt. Moderate compaction.	Subsoil	25	2	0.2
803	8	Tapered cut in profile. Semi-circular in section (running into eastern section).	Not a man-made cut, but a mixing of the natural.	0.25	0.25	0.30
804	8	Greenish grey sandy silt fill of 803.	Excavation proved this deposit to be nothing more than a variation in the natural with some subsoil filtration.	0.25	0.25	0.30
805	8	Red stoney clay	Natural	25	2	0.2+
901	9	Mid brown silty clay. 20% small stone inclusions.	Topsoil	25	2	0.27
902	9	mid brown clay	Suboil	25	2	0.73
903	9	Red stoney natural	Natural	25	2	Not excav.
1001	10	Light-mid brown sandy silt. Moderate compaction. 30% small-medium stone inclusions.	Topsoil	25	2	0.4
1002	10	Small charcoal patch	Irregular in shape. Remains of a burnt out tree bole.	0.2	0.2	0.02
1003	10	Orange sandy silt. Firmly compacted.	Subsoil	25	2	0.15
1004	10	Red stoney clay	Natural	25	2	0.2+
1101	11	Light-mid brown silty clay. Loosely compacted	Topsoil	25	2	0.25

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
1102	11	Red clay. Moderately compacted.	Subsoil	25	2	0.35
1103	11	Red stoney clay	Natural	25	2	Not excav.
1201	12	Grey/brown silty clay. Loose compaction.	Topsoil	25	2	0.2
1202	12	Heavy yellow clay interspersed with small pockets of red clay.	Subsoil	25	2	0.7
1203	12	Clean red clay	Natural	25	2	Not excav.
1301	13	Mid brown sandy silt. 30% stone inclusions.	Topsoil	25	2	0.22
1302	13	Orange sandy silt. Moderate compaction. 30% stone inclusions.	Subsoil	25	2	0.14
1303	13	Clean red clay	Natural	25	2	0.34+
1401	14	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.42
1402	14	Orange (with filtration from upper layer) sandy silt. Moderately compact. 35% stone inclusions.	Subsoil	25	2	0.22
1403	14	Red Silty clay	Natural	3	2	0.32+
1403	14	Red stoney clay	Natural	25	2	0.32+
1501	15	Light-mid brown sandy silt. Loose compaction. 30% stone inclusions.	Topsoil	25	2	0.3

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
1502	15	Orange sandy silt. Moderate compaction. 25% stone inclusions.	Subsoil	25	2	0.46
1503	15	Red stoney clay	Natural	25	2	0.12+
1601	16	Mid brown sandy silt. Moderate to firm compaction. 35% stone inclusions.	Topsoil	25	2	0.3
1602	16	Red/orange sandy silt. Moderate compaction. 30% stone inclusions.	Subsoil	25	2	0.22
1603	16	Red stoney clay	Natural	23	2	0.08+
1604	16	Red sandy silt	Natural	2	2	0.08+
1701	17	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.42
1702	17	Orange/brown sandy silt. Moderate compaction. 30% stone inclusions.	Subsoil	25	2	0.25
1703	17	Red stoney clay	Natural	25	2	0.13+
1801	18	Mid brown sandy silt. Moderate compaction. 35% stone inclusions.	Topsoil	25	2	0.35
1802	18	Brownish orange silty clay. Moderate to firm compaction. 20% stone inclusions.	Subsoil	25	2	0.22
1803	18	Red stoney clay	Natural	15	2	0.23+
1804	18	Red sandy silt	Natural	10	2	0.23+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
1901	19	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.35
1902	19	Orange/brown sandy silt. Moderate-firm compaction. 40% stone inclusions.	Subsoil	25	2	0.27
1903	19	Red stoney clay	Natural	25	2	0.13+
2001	20	Mid brown sandy silt. Moderate compaction. 35% stone inclusions.	Topsoil	25	2	0.35
2002	20	Orange/brown sandy silt. Moderate compaction. 40% stone inclusions.	Subsoil	25	2	0.3
2003	20	Red stoney clay	Natural	19.7	2	0.25+
2004	20	Red silty clay	Natural	5.3	2	0.25+
2101	21	Mid brown sandy silt. Loose-moderate compaction. 30-35% stone inclusions.	Topsoil	25	2	0.37
2102	21	Orange/brown sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.3
2103	21	Clean red clay	Natural	25	2	0.08+
2201	22	Mid brown silty sand. Moderate compaction. 35% stone inclusions.	Topsoil	25	2	0.4
2202	22	Orange/brown sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.17
2203	22	Red stoney clay	Natural	25	2	0.07+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
2301	23	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.4
2302	23	Orange/brown sandy silt. Moderate-firm compaction. 25% stone inclusions.	Subsoil	25	2	0.3
2303	23	Red stoney clay	Natural	20	2	0.10+
2304	23	Red silty clay	Natural	5	2	0.10+
2401	24	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.37
2402	24	Orange/brown sandy silt. Moderate compaction. 30% stone inclusions.	Subsoil	25	2	0.1
2403	24	Red silty clay	Natural	25	2	0.31+
2501	25	Mid brown silty clay. Loose compaction. Small flat rounded pebbles 30%	Topsoil	25	2	0.3
2502	25	Orange/brown silty clay	Subsoil	25	2	0.6
2503	25	Red stoney/gravelly clay	Natural	25	2	Not excav.
2504	25	Clean red silty clay	Natural	5	2	Not excav.
2601	26	Orange/dark brown silty clay.	Topsoil	25	2	0.3
2602	26	Orange/mid brown silty clay. Medium sized rounded stones 20%.	Subsoil	25	2	0.2

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
2603	26	Mixed red silts, gravels and grey silt	Natural	25	2	Not excav.
2701	27	Mid brown sandy silt. Loose-moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.3
2702	27	Orange/brown sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.5
2703	27	Channel on NE-SW axis filled by red silty gravel.	Boulder clay natural	2+	6+	0.5+
2704	27	Red stoney clay	Natural	19	2	0.5+
2801	28	Mid brown sandy silt. Loose to moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.42
2802	28	Orange/brown sandy silt. Moderate to firm compaction. 30% stone inclusions.	Subsoil	25	2	0.33
2803	28	Red stoney clay	Natural	10	2	0.07+
2804	28	Red silty clay	Natural	15	2	0.07+
2901	29	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.42
2902	29	Orange/brown sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.44
2903	29	Red stoney clay	Natural	22	2	0.43+
2904	29	Red silty clay with grey/yellow patches	Natural	22	2	0.43+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
3001	30	Mid-dark brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.36
3002	30	Light brown/orange sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.4
3003	30	Red stoney clay	Natural	10	2	0.32+
3004	30	Red silty clay	Natural	15	2	0.32+
3101	31	Mid brown sandy silt. Moderate compaction. 30% stone inclusions.	Topsoil	25	2	0.4
3102	31	Orange/brown sandy silt. Moderate-firm compaction. 30% stone inclusions.	Subsoil	25	2	0.15
3103	31	Red silty clay with patches of grey/yellow silty clay	Natural	25	2	0.12
3201	32	Mid brown sandy silt. Moderately compacted. 30% stone inclusions.	Topsoil	25	2	0.33
3202	32	Orange/brown sandy silt. Moderate-firm compaction. 35-30% stone inclusions.	Subsoil	25	2	0.29
3203	32	Red silty clay with patches of grey/yellow silty clay	Natural	25	2	Not excav.
3301	33	Mid brown silty clay	Topsoil	25	2	0.17
3302	33	Light grey/brown silty clay	Subsoil	25	2	0.2
3303	33	Dark red stoney clay	Natural	17.6	2	0.5

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
3304	33	Dark red sandy gravel	Glacial deposit (natural)	4+	2	0.53+
3305	33	Dark red clean silty clay	Boulder clay	7.4	2	1.5
3401	34	Mid brown silty clay	Topsoil	25	2	0.33
3402	34	Light brown/yellow clay	Subsoil	25	2	0.07
3403	34	Light brown/grey clayey silt	Natural forming patches within (3404)	25	2	0.28+
3404	34	Red stoney clay	Natural	25	2	0.28+
3501	35	Mid brown silty clay	Topsoil	25	2	0.34
3502	35	Light-mid brown silty clay	Subsoil	25	2	0.78+
3503	35	Red clay with multiple stone inclusions in patches	Natural	25	2	0.56+
3601	36	Mid brown silty clay	Topsoil	25	2	0.31
3602	36	Light brown/orange silty clay	Subsoil	25	2	0.2
3603	36	Mid grey/brown clayey silt forming fatches within (3604)	Natural	25	2	0.23+
3604	36	Red clayey silt	Natural	25	2	0.18+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
3701	37	Mid brown silty clay	Topsoil	25	2	0.2
3702	37	Light brown silty clay	Subsoil	25	2	0.2
3703	37	Red clay. Heavily compacted with multiple stone inclusions.	Natural	25	2	0.18+
3801	38	Mid brown silty clay	Topsoil	25	2	0.17
3802	38	Light brown silty clay	Subsoil	25	2	0.45
3803	38	Dark red silty clay	Natural	2	13.4	0.21+
3804	38	Dark red clay with multiple stone inclusions	Natural	2	11.6	0.21+
3901	39	Mid brown silty clay	Topsoil	25	2	0.19
3902	39	Light-mid brown clay	Subsoil	25	2	0.14
3903	39	Pink clay. Heavily compacted with multiple sandstone fragments.	Subsoil	25	2	0.28
3904	39	Dark pink gravelly clay with angular and rounded large stone inclusions.	Natural	25	2	0.22+
4001	40	Mid brown silty clay	Topsoil	25	2	0.26
4002	40	Red clay with multiple large stone inclusions	Natural	25	2	0.38+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
4101	41	Mid brown silty clay	Topsoil	25	2	0.3
4102	41	Mixed stoney red clay	Subsoil	18.2	2	0.55
4103	41	Clean red clay	Boulder clay deposit	2	6.8	0.55+
4104	41	Red clay with multiple large stone inclusions	Natural	18.2	2	Not excav.
4201	42	Mid brown silty clay	Topsoil	25	2	0.3
4202	42	Red clay with multiple large stone inclusions	Natural	4.4	2	0.52+
4203	42	Clean red clay with infrequent stone inclusions	Boulder clay deposit	20.6	2	0.52+
4301	43	Mid brown silty clay	Topsoil	25	2	0.26
4302	43	Light brown silty clay	Subsoil	25	2	0.46
4303	43	Red clay with multiple large stone inclusions	Natural	25	2	0.04+
4401	44	Mid brown/red silty clay	Topsoil	25	2	0.4
4402	44	Red/orange sandy silt	Subsoil	25	2	0.6
4403	44	Red silt with grey lenses	Natural	14	2	Not excav.

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
4404	44	Red clay with multiple large stone and gravel inclusions	Natural	16	2	Not excav.
4501	45	Light brown silty clay. Moderately compact with small pockets of yellow clay	Topsoil	25	2	0.35
4502	45	Red clay with multiple large stone inclusions	Natural	25	2	0.3
4601	46	Light brown clay. Moderately compacted	Topsoil	25	2	0.3
4602	46	Red clay. Heavily compacted with multiple large stone inclusions.	Natural	25	2	0.2+
4603	46	Dark brown silty clay deposit	Variation in natural	2.1	2	Not excav.
4701	47	Dark brown silty clay. Moderately compact.	Topsoil	25	2	0.3
4702	47	Red clay with few stone inclusions.	Subsoil	25	2	0.3
4703	47	Reddish/brown clay	Natural	25	2	Not excav.
4801	48	Mid brown silty clay	Topsoil	25	2	0.2
4802	48	Orange/brown friable clay loam. Small-medium pebble inclusions 20%.	Subsoil	25	2	0.2
4803	48	Reddish with grey/green hue friable clay loam.	Fill of 4806. Same as 6803.	5	2	Not excav.
4804	48	Red clay. Small amount of angular and rounded stones 20%.	Natural	5	2	Not excav.

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
4805	48	Red clay loam. Pea grit - medium stones 60%.	Natural	15	2	Not excav.
4806	48	Cut. Curving east-west across the southern end of trench 48.	Terminus to feature identified on geophysics. Same as 6802.	Not known	2+	Not excav.
4901	49	Mid/dark brown silty clay	Topsoil	25	2	0.35
4902	49	Red clay. Heavily compacted.	Subsoil	25	2	0.25
4903	49	Light red/brown clay. Heavily compacted.	Natural	25	2	0.9+
5001	50	Mid brown silty clay.	Topsoil	25	2	0.4
5002	50	Red clay. Heavily compacted.	Subsoil	25	2	0.3
5003	50	Patch of gravel within dark brown silty clay.	Natural	0.6	Section only	0.14
5004	50	Dark red/brown silty clay. Heavily compacted.	Natural	25	2	Not excav.
5101	51	Dark brown silty clay. Moderately compacted	Topsoil	25	2	0.35
5102	51	Red clay. Heavily compacted. Very clean.	Natural	4.3	2	Not excav.
5103	51	Red/Mid brown clay with 40% large stone inclusions.	Natural	25	2	Not excav.
5201	52	Dark brown silty clay. Moderately compacted.	Topsoil	25	2	0.3

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
5202	52	Red clay. Heavily compacted. Very clean.	Natural	25	2	0.3+
5301	53	Mid brown silty clay	Topsoil	25	2	0.33
5302	53	Pink/red stoney clay	Natural	25	2	0.13+
5401	54	Mid brown silty clay	Topsoil	25	2	0.2
5402	54	Light brown clay	Subsoil	25	2	0.08
5403	54	Pink/red stoney clay	Natural	25	2	0.2+
5501	55	Mid brown silty clay	Topsoil	25	2	0.24
5502	55	Light brown/yellow clay with mica fragments distributed evenly throughout	Subsoil	25	2	0.44+
5503	55	Pink/red clay	Natural	25	2	Not excav.
5601	56	Mid brown silty clay	Topsoil	25	2	0.3
5602	56	Pinky brown clay	Subsoil	25	2	0.18
5603	56	Light brown/yellow clay with mica fragments distributed evenly throughout	Subsoil	25	2	0.37
5604	56	Pink/red clay	Natural	25	2	0.39+

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
5701	57	Mid brown silty clay	Topsoil	25	2	0.3
5702	57	Light brown silty clay	Subsoil	21	2	0.2
5703	57	Red, clean silty clay	Natural	9.9	2	0.72+
5704	57	Light brown/grey silt	Variation in natural	25	2	Not excav.
5705	57	Red silty clay with multiple large stone inclusions	Natural	15.1	2	Not excav.
5801	58	Mid brown silty clay	Topsoil	25	2	0.13
5802	58	Light brown silty clay	Subsoil	25	2	0.3
5803	58	Dark red stoney/gravelly clay	Natural	25	2	Not excav.
5901	59	Mid brown silty clay	Topsoil	25	2	0.3
5902	59	Red clay with multiple large stone inclusions	Natural	25	2	0.15
6001	60	Mid brown silty clay	Topsoil	25	2	0.3
6002	60	Grey/green clay mixed with red silty clay	Interface. Possible root interference	25	2	0.1
6003	60	Orange/brown sandy silt	Subsoil	25	2	0.5

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
6004	60	Clean red silt. 15% rounded stones	Natural	25	2	Not excav.
6101	61	Mid brown silty clay	Topsoil	25	2	0.3
6102	61	Orange/brown sandy loam	Subsoil	25	2	0.3
6103	61	Red/brown clay loam	Natural	5	2	Not excav.
6104	61	Clean red silts	Natural	20	2	Not excav.
6201	62	Mid brown silty clay	Topsoil	25	2	0.2
6202	62	Orange/brown silty clay subsoil	Subsoil	25	2	0.2
6203	62	Red gravels	Natural	16	2	Not excav.
6204	62	Small pea grit band in hard reddish clay loam.	Natural	3	2	Not excav.
6205	62	Red clay loam with 60% small rounded pebbles	Natural	2	2	Not excav.
6206	62	Red loam with 10% small rounded pebbles	Natural	4	2	Not excav.
6301	63	Mid brown silty loam	Topsoil	25	2	0.3
6302	63	Orange/brown silty loam free from stone inclusions	Subsoil	25	2	0.3

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
6303	63	Yellow/green sticky silty loam. Medium flat stones approx 5%	Natural	6	2	Not excav.
6304	63	Orange/brown clay loam	Natural	19	2	Not excav.
6401	64	Mid brown silty clay	Topsoil	25	2	0.3
6402	64	Orange/brown sandy clay	Subsoil	25	2	0.3
6403	64	Orange/red silty loam. Free of stone inclusions.	Natural	10	2	Not excav.
6404	64	Orange/red clay. Loose/friable. 75% stone inclusions.	Natural	15	2	Not excav.
6501	65	Mid brown silty clay	Topsoil	25	2	0.3
6502	65	Orange/brown silty clay	Subsoil	25	2	0.4
6503	65	Red clay with mixed gravels	Natural	25	2	Not excav.
6504	65	Orange/red clay	Natural	14	2	Not excav.
6601	66	Mid brown silty clay	Topsoil	25	2	0.3
6602	66	Orange/brown silty clay	Subsoil	25	2	0.2
6603	66	Red/orange clay loam. Stone free.	Natural	25	2	Not excav.

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
6701	67	Mid brown silty loam	Topsoil	25	2	0.4
6702	67	Orange/red silty clay	Subsoil	25	2	0.4
6703	67	Grey/red silts	Natural	8	2	Not excav.
6704	67	Red clay gravels	Natural	17	2	Not excav.
6801	68	Mid brown silty clay. Small angular and sub-angular stones. Moderate compaction.	Topsoil	25	2	0.3
6802	68	Cut of linear on north-south alignment. 80 degree break in east to concave base. Gradual 30 degree break in west.	Very unclear whether this is a manmade feature or a natural hollow. Filled by (6803).	2+	22	1.36
6803	68	Fill of 6802. Light-mid brown silty clay. Moderate compaction. Rounded cobbles (15x5cm av.) 2%. Two spreads of charcoal within fill. Prehistoric pottery present.	Fill showing evidence for prehistoric archaeology	2+	22	1.36
6804	68	Red stoney clay	Natural	25	2	Not excav.
6901	69	Mid brown silty clay	Topsoil	25	2	0.3
6902	69	Red clay with multiple large stone inclusions	Natural	7	2	Not excav.
6903	69	Clean red clay	Natural	18	2	1.05
6904	69	Light brown silty clay patches	Variations in natural	25	2	Not excav.
7001	70	Mid brown clayey silt.	Topsoil	25	2	0.37

Context	Trench	Description	Interpretation	L (m)	W (m)	D (m)
7002	70	Red silty clay natural	Natural	25	2	Not excav.
7101	71	Mid brown clayey silt	Topsoil	25	2	0.35
7102	71	Red silty clay natural	Natural	25	2	Not excav.
7201	72	Mid brown clayey silt	Topsoil	25	2	0.3
7202	72	Red silty clay natural	Natural	25	2	Not excav.
7301	73	Mid brown clayey silt	Topsoil	25	2	0.35
7302	73	Red silty clay natural	Natural	25	2	Not excav.
7401	74	Mid brown clayey silt	Topsoil	25	2	0.30
7402	74	Red silty clay natural	Natural	25	2	Not excav.
7501	75	Mid brown clayey silt	Topsoil	25	2	0.37
7502	75	Red silty clay natural	Natural	25	2	Not excav.

Appendix 3 – A report on the natural geology and soils (New Livestock Market)

by A. Boucher

A rapid assessment of the variations in geology and geomorphology of the site was undertaken on the 16th October 2007 by A. Boucher of Archaeological Investigations Ltd. This involved comparison of the deposits exposed in a number of open trenches where diversity in what was apparently natural soils manifested itself.

The drift geology on the site, which is what interested us here, is described as a glacial till. The topography of the site is level, being cut on its west side by a small stream channel. It lies on a plain on the north side of the Wye Valley.

Trench 68 contained what had been interpreted as a large, anthropogenic, cut feature [6802]. A proportion of this feature had been sectioned using a mechanical excavator and the subsequently exposed section was rapidly cleaned and inspected. Deposits outside the area of the cut (effectively natural) demonstrated a wide variety of clast sizes ranging from clay through to rough cobbles. (dimension c. 0.1m-0.3m). In the base of the feature the exposed natural was a clayey sand with occasional stones. Working up the section from this there were lenses or bands of a similar deposit mixed with much coarser material. The natural matrix, whilst varied, was predominantly a mid orange brown. The fill of the feature itself (6803) comprised a mid-dark brown silt with pockets of material that were clearly derived from the natural deposits on the site (i.e. clusters of cobble size stones). However, within the fill of the feature there was no apparent structure or variation in material giving the impression of deliberate dumps of material rather than, for example, a gradual accumulation through erosion of natural from the surrounding edges of the feature. The presence of what appeared to be discrete clusters of charcoal within the fill of the feature would also support such an interpretation. There was no apparent structure to the silt, which demonstrated a prismatic structure in all planes when breaking clods apart, and might imply it resulted from a rapid, if not deliberate deposition process.

The interface between the lower part of the fill of the feature and the natural lying beneath it was also inspected. Whilst the surface of the natural was relatively uneven and irregular this would not necessarily imply a natural formation process for the feature itself, which had steep sides and produced a very regular shape in the geophysics plot. The base of the fill of the feature did not show any signs of mixing with the natural, nor was there any indication of variations in deposition against its edge. This latter point again indicates that the feature filled rapidly, before any erosion process could take place of its sides.

On the basis of the lack of mixing or deposition of bands of other materials in its bottom, the geophysical response and the mixed and random nature of the material filling the feature it is much more likely to have been dug and at least in-part filled by man rather than natural processes.

There were a number of other variations in the natural across the site, these also having linear edges – but not giving any response on the fluxgate gradiometer survey. Investigation of these deposits demonstrated them to be a mixture of sand and clay with little silt. Such mixing of particles whose sizes lie at each end of the spectrum will normally occur where a variety of deposition velocities and other mechanical processes occur, e.g. windblown sands into lagoons, or under freeze-thaw conditions such as might occur towards the end of an ice age. In this respect the deposits are more akin to a glacial till than rapid silting of an open feature. Mixed banding of more stony material in a clayey matrix would tend to support this. Therefore the other features identified on the site are more likely to have been part of the glacial till.

Appendix 4 - The pottery and ceramic building material from the site of the New Cattle Market

by Jane Evans and K H Crooks

Introduction

A total of eight sherds of pottery were recovered from the site of the new cattle market in Hereford – four of which were probably from the same object. In addition eight sherds of ceramic building material were found. With the exception of the prehistoric pottery which was all recovered from the fill (6803) of the same feature, the material was spread over the site with no particular concentration in any one area.

The prehistoric pottery

Three sherds of pottery and a spindle whorl of the same fabric were recovered from the fill of a linear feature [6802]. The pottery was identified as being of the Late Neolithic Period by Derek Hurst of Worcestershire Historic Environment and Archaeology Service. The fabric is broadly within the Worcestershire fabric 5 and is typical of the Neolithic period in this region. The body sherd is from the shoulder of a necked vessel, with finger impressed decoration around the shoulder (not enough of the vessel survives to say whether the decoration extended down the lower part of the vessel) and is within the ‘later Neolithic impressed ware’ tradition, otherwise known as ‘Peterborough ware’. This tradition is broadly dated between 3400BC and 2600BC. The pottery was dated during a rapid assessment and a further assessment is required.

A further assessment by Alex Gibson of Bradford University identified the pottery as Late Bronze Age/Iron Age. He considered that the rounded piece of ceramic was almost certainly a spindle whorl and the tell-tale finger tip impressions on the shoulder of the necked sherd would suggest a Late Bronze Age/ Iron Age date.

The Roman pottery

One sherd of heavily abraded Severn Valley type ware was recovered from the topsoil of Trench 6 (0601). This was not a form sherd and suggests a broadly Roman date from the 1st to 4th centuries AD. The presence of a single unstratified sherd cannot be taken as suggesting Roman settlement in the vicinity.

The post-medieval pottery

Three of the sherds were of post-medieval date. The first was a highly abraded sherd of a large bowl in fabric A7D dating to the 16th to 17th and into the 18th centuries, found in the topsoil of trench 21. The sherd was much abraded but the remnants of a clear lead glaze were apparent.

The second sherd was part of a plate of modern machine made ware dated to the 19th century or later.

The third was a sherd of Black Basalt ware, or Basaltes, ware made by Josiah Wedgwood from about 1768 onwards. This was a hard, black vitreous stoneware with ground glass, manganese oxide and calcined ochre added to the Staffordshire clay. The designs for this ware, particularly in the later 18th century, borrowed heavily from classical forms.

The Ceramic Building material

The ceramic building material was highly abraded to an extent where it was difficult to ascertain whether it was brick or tile with neither forms nor dimensions surviving. While some of this material seems to have been post-medieval in date the lack of form fragments and the similarity in fabric made it difficult to ascertain the date of the remaining material.

Appendix 5 – Site Levels Register

LEVELS REGISTER						
TRENCH No	TOP NORTH	TOP EAST	TOP SOUTH	TOP WEST	BASE MAXIMUM	BASE MINIMUM
T1		66.72m		65.91m	65.58m	65.85m
T2		66.70m		67.17m	66.26m	66.56m
T3		67.70m		66.17m	65.96m	66.03m
T4		66.55m		66.66m	65.91m	66.01m
T5		67.08m		66.41m	65.82m	66.34m
T6		67.06m		67.11m	66.33m	66.37m
T7	66.88m		67.07m		66.26m	66.36m
T8	66.47m		66.47m		65.48m	65.69m
T9	66.81m		67.05m		66.10m	66.36m
T10	66.83m		66.97m		66.11m	66.19m
T11	66.50m		66.79m		65.95m	66.00m
T12	65.48m		65.39m		64.66m	64.76m
T13	67.25m		66.95m		66.31m	66.68m
T14		66.70m		66.87m	65.93m	66.02m
T15	66.48m		66.62m		65.77m	66.02m
T16		66.53m		66.52m	65.63m	65.77m
T17		66.21m		65.61m	65.16m	65.45m
T18	66.62m		66.60m		65.78m	65.93m
T19		66.64m		66.75m	65.93m	65.97m
T20	66.78m		66.53m		65.75m	65.90m
T21		66.86m		66.78m	66.06m	66.21m
T22	66.74m		66.61m		65.94m	66.21m
T23		66.57m		66.62m	65.88m	66.94m
T24	66.56m		66.70m		65.69m	65.85m
T25	65.83m		65.66m		64.80m	65.06m
T26		66.39m		66.39m	65.69m	65.94m
T27	66.45m		66.32m		65.47m	65.62m
T28		66.41m		66.39m	65.53m	65.74m
T29	66.58m		66.45m		65.51m	65.67m
T30		66.43m		66.47m	65.67m	65.86m
T31	66.52m		66.54m		65.84m	65.92m
T32		66.57m		66.73m	65.93m	66.20m
T33	66.28m		66.01m		65.34m	65.70m
T34		66.55m		66.40m	65.77m	65.84m
T35	66.48m		66.94m		65.57m	65.76m
T36		66.61m		66.65m	65.85m	65.86m

T37	66.56m		66.69m		65.89m	66.04m
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LEVELS REGISTER

TRENCH No	TOP NORTH	TOP EAST	TOP SOUTH	TOP WEST	BASE MAXIMUM	BASE MINIMUM
T38		66.67m		66.64m	65.84m	66.14m
T39	66.71m		66.58m		65.58m	65.93m
T40	67.03m		67.34m		66.35m	66.54m
T41		66.86m		66.92m	66.09m	66.14m
T42	66.90m		67.01m		66.16m	66.20m
T43		66.36m		66.86m	66.11m	65.93m
T44		67.15m		67.62m	66.64m	66.97m
T45	66.95m		66.93m		65.86m	66.42m
T46		66.91m		67.01m	66.34m	66.51m
T47	66.72m		66.68m		66.05m	66.32m
T48	67.76m		67.81m		67.33m	67.37m
T49		66.91m		67.06m	65.58m	66.41m
T50	67.03m		67.06m		65.54m	66.48m
T51		66.36m		66.79m	65.97m	66.17m
T52		66.21m		67.30m	66.69m	66.74m
T53		66.37m		66.50m	66.01m	65.91m
T54	65.80m		66.31m		65.91m	65.37m
T55		65.18m		65.10m	64.63m	64.81m
T56	65.13m		65.01m		64.47m	64.25m
T57		66.02m		65.62m	64.79m	65.42m
T58	66.79m		66.90m		66.33m	66.68m
T59		67.49m		67.27m	66.91m	67.00m
T60	65.75m		65.66m		64.70m	64.75m
T61		67.26m		66.35m	65.68m	66.71m
T62	67.53m		67.69m		67.03m	67.32m
T63		66.00m		65.67m	64.84m	64.90m
T64	66.81m		67.11m		66.28m	66.64m
T65		67.80m		67.37m	66.88m	66.96m
T66	65.74m		66.29m		65.41m	65.71m
T67		67.56m		66.98m	66.72m	66.80m
T68		68.14m		68.36m	66.98m	67.46m
T69		66.72m		66.67m	65.38m	66.34m

T70	65.34m		65.78m		64.97m	65.33m
T71		65.67m		65.63m	65.02m	65.22m
T72	65.48m		65.96m		64.98m	65.46m
T73	65.68m		65.81m		65.13m	65.26m
T74		65.70m		65.81m	65.25m	65.36m
T75	65.48m		65.96m		64.98m	65.47m

Appendix 6 – Radiocarbon Age Determination

The University of Waikato *Radiocarbon Dating Laboratory*



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Head: Dr Alan Hogg

Report on Radiocarbon Age Determination for Wk- 22571

Submitter A.R. Boucher
Submitter's Code HFD-MG-2007-91-1
Site & Location Hereford Cattle Market, United Kingdom
Sample Material Charcoal
Physical Pretreatment Possible contaminants were removed. Washed in ultrasonic bath.
Chemical Pretreatment Sample washed in hot 10% HCl, rinsed and treated with hot 1% NaOH. The NaOH insoluble fraction was treated with hot 10% HCl, filtered, rinsed and dried.

$\delta^{13}\text{C}$	-26.4 ± 0.2 ‰
D ¹⁴ C	-171.7 ± 10.5 ‰
F ¹⁴ C%	82.8 ± 1.0 %
Result	1513 ± 103 BP

Comments

29/1/08

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- F¹⁴C% is also known as pMC (percent modern carbon).

The University of Waikato
Radiocarbon Dating Laboratory



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Report on Radiocarbon Age Determination for Wk- 22572

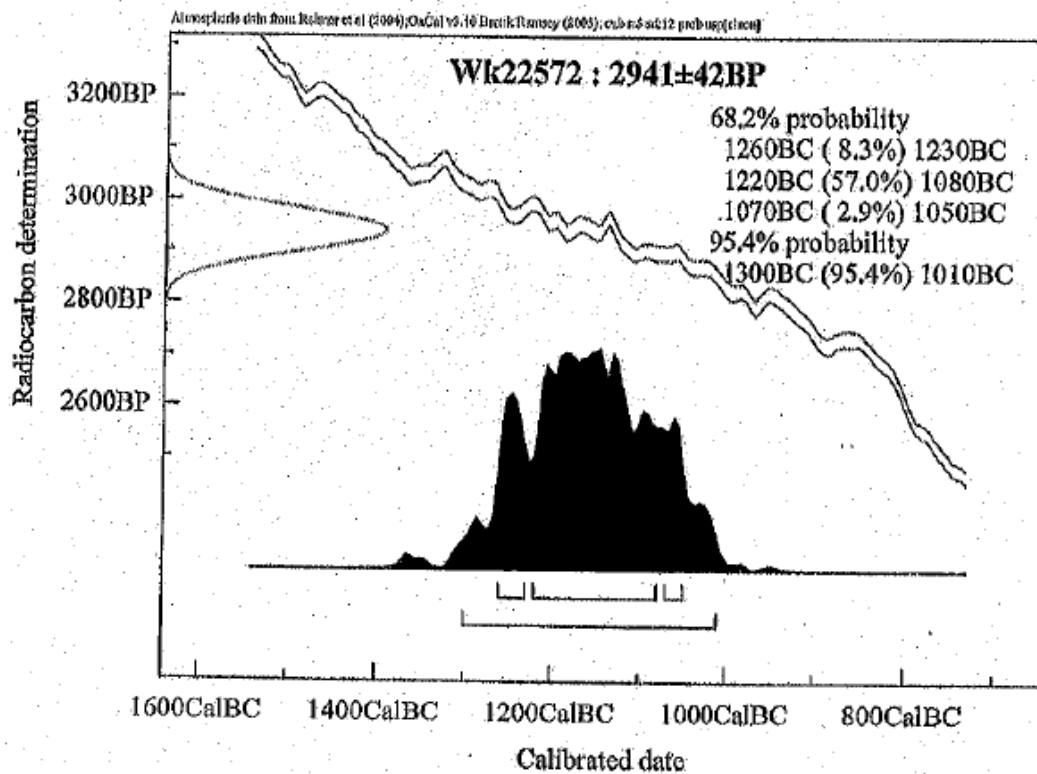
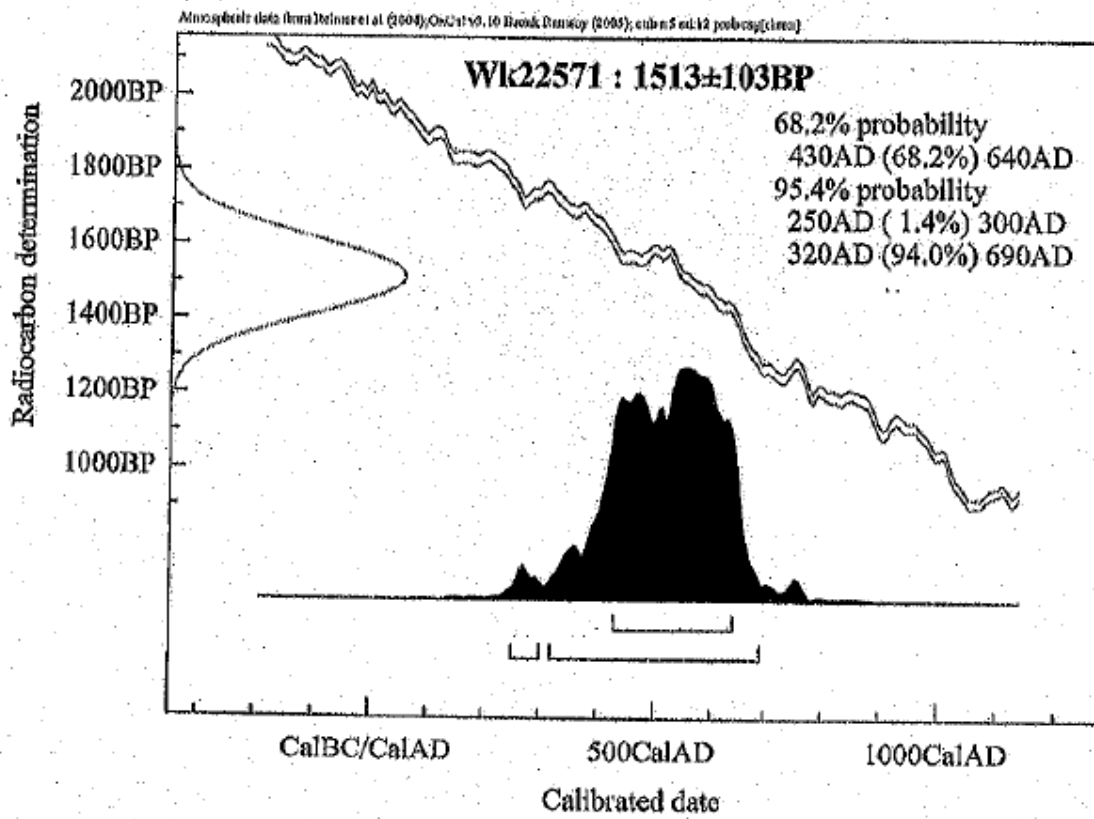
Submitter A.R. Boucher
Submitter's Code HPD-MG-2007-91-2
Site & Location Hereford Cattle Market, United Kingdom
Sample Material Charcoal
Physical Pretreatment Possible contaminants were removed. Washed in ultrasonic bath.
Chemical Pretreatment Sample washed in hot 10% HCl, rinsed and treated with hot 1% NaOH. The NaOH insoluble fraction was treated with hot 10% HCl, filtered, rinsed and dried.

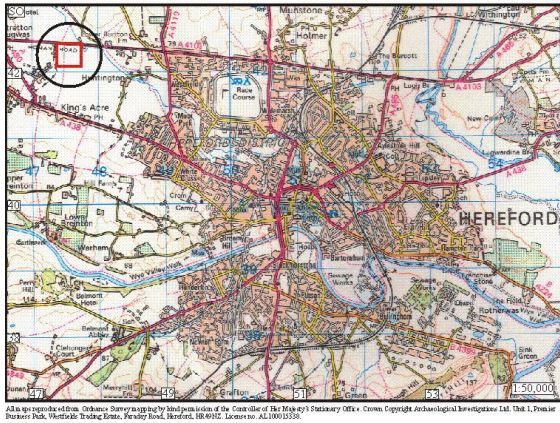
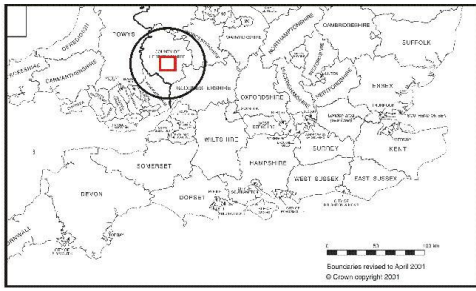
$\delta^{13}\text{C}$	-25.1 ± 0.2	‰
D^{14}C	-306.6 ± 3.5	‰
$\text{F}^{14}\text{C}\%$	69.3 ± 0.4	%
Result	2941 ± 42 BP	

Comments

Alan Hogg
29/1/08

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- $\text{F}^{14}\text{C}\%$ is also known as pMC (percent modern carbon).





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Site location map

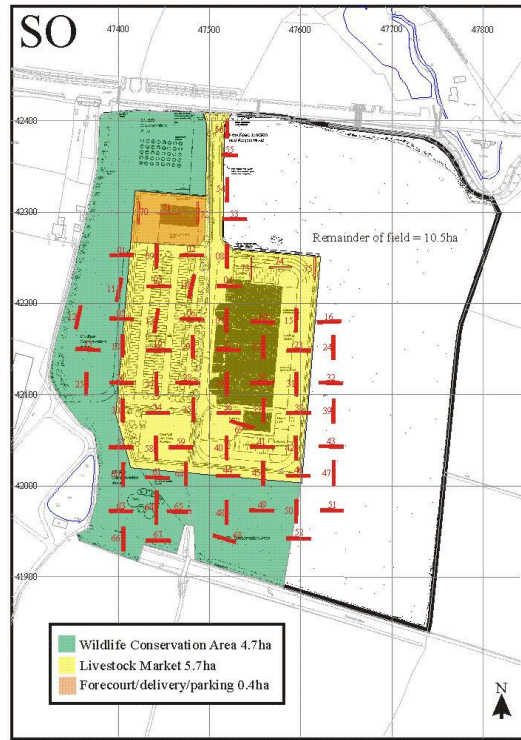
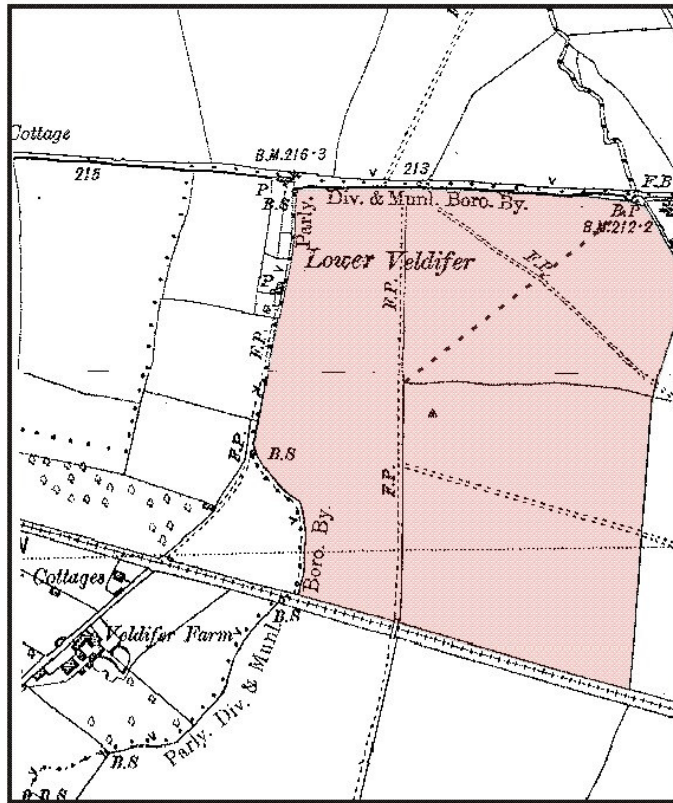
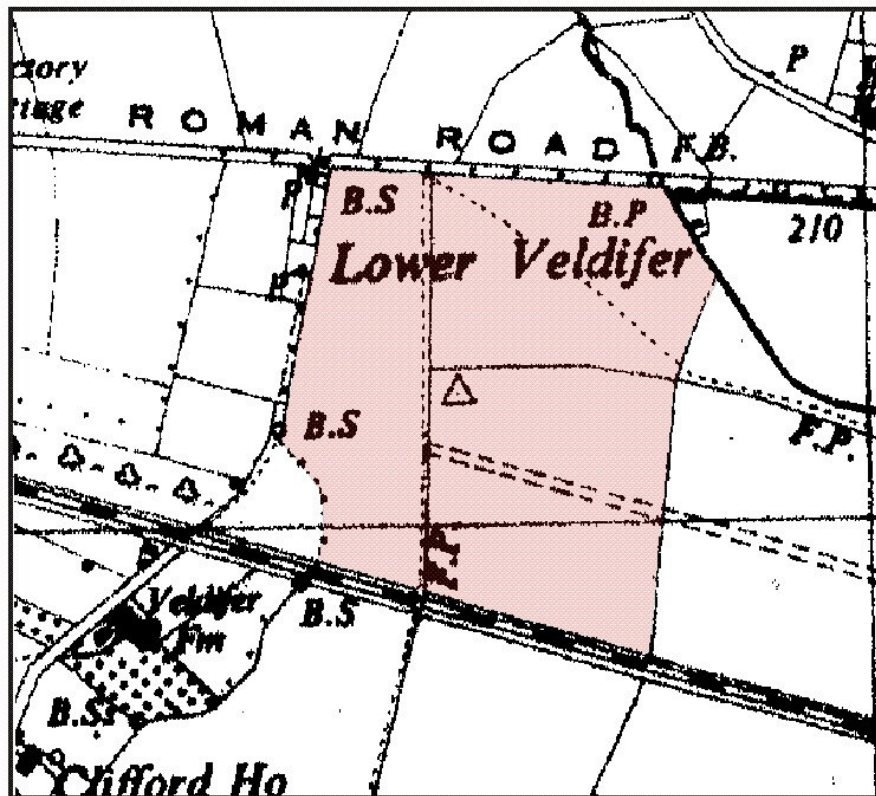


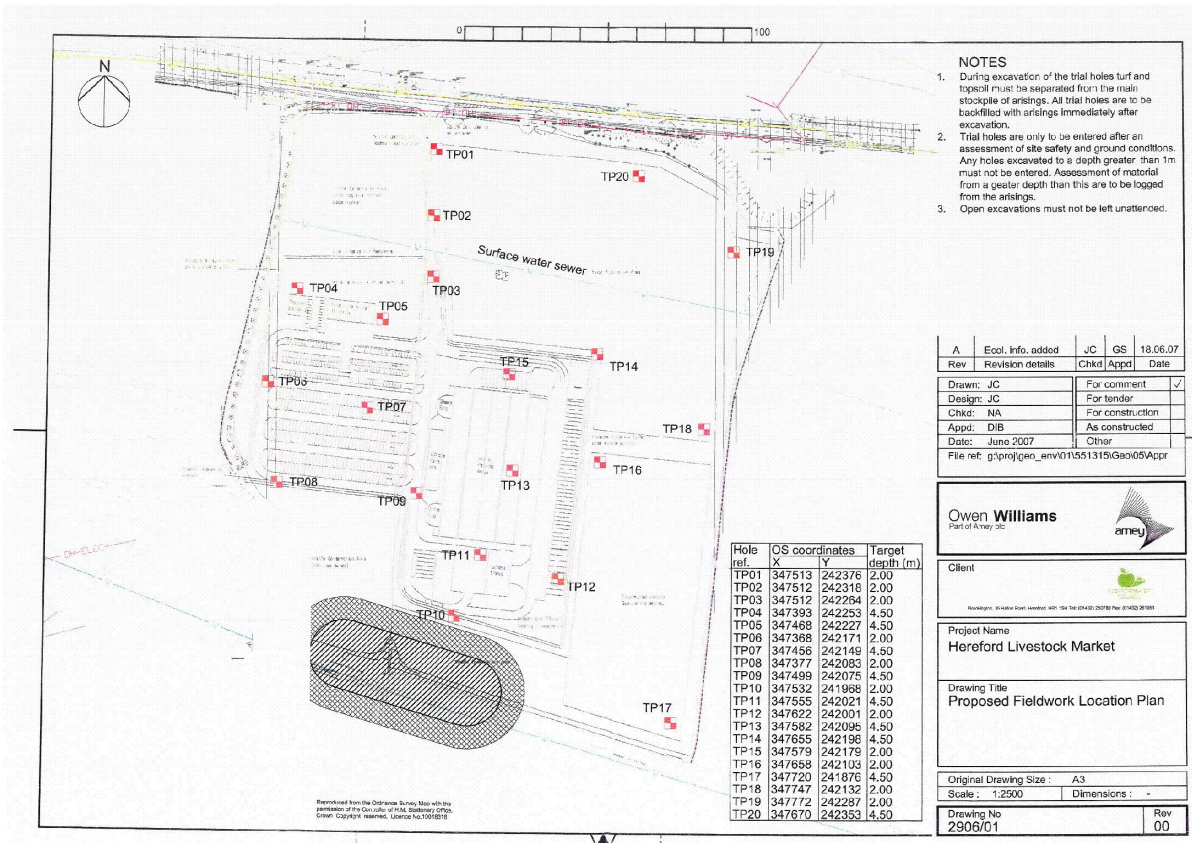
Figure 1



1888 Ordnance Survey map

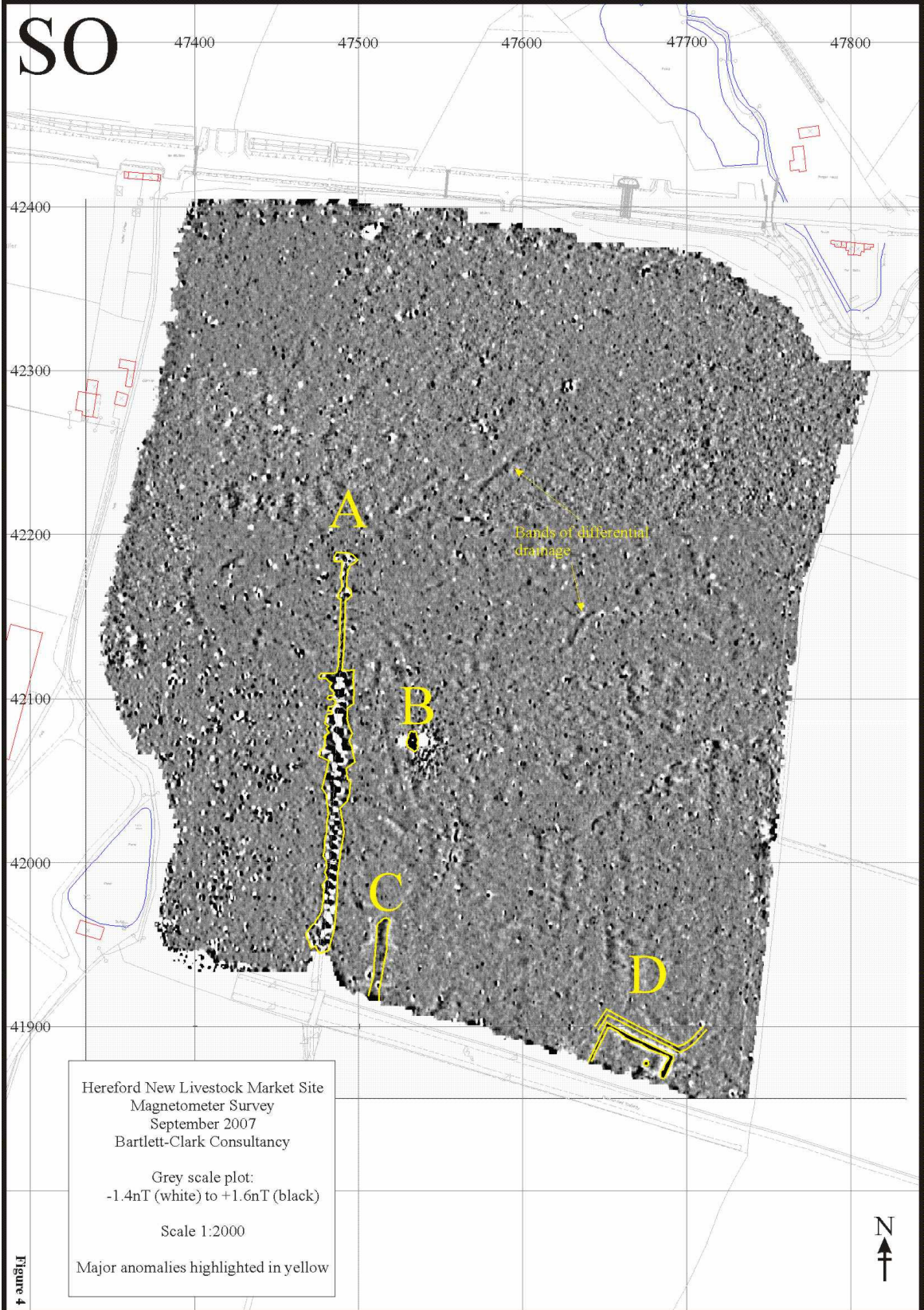


1952 Ordnance Survey map



Geotechnical test pit location map

Figure 3



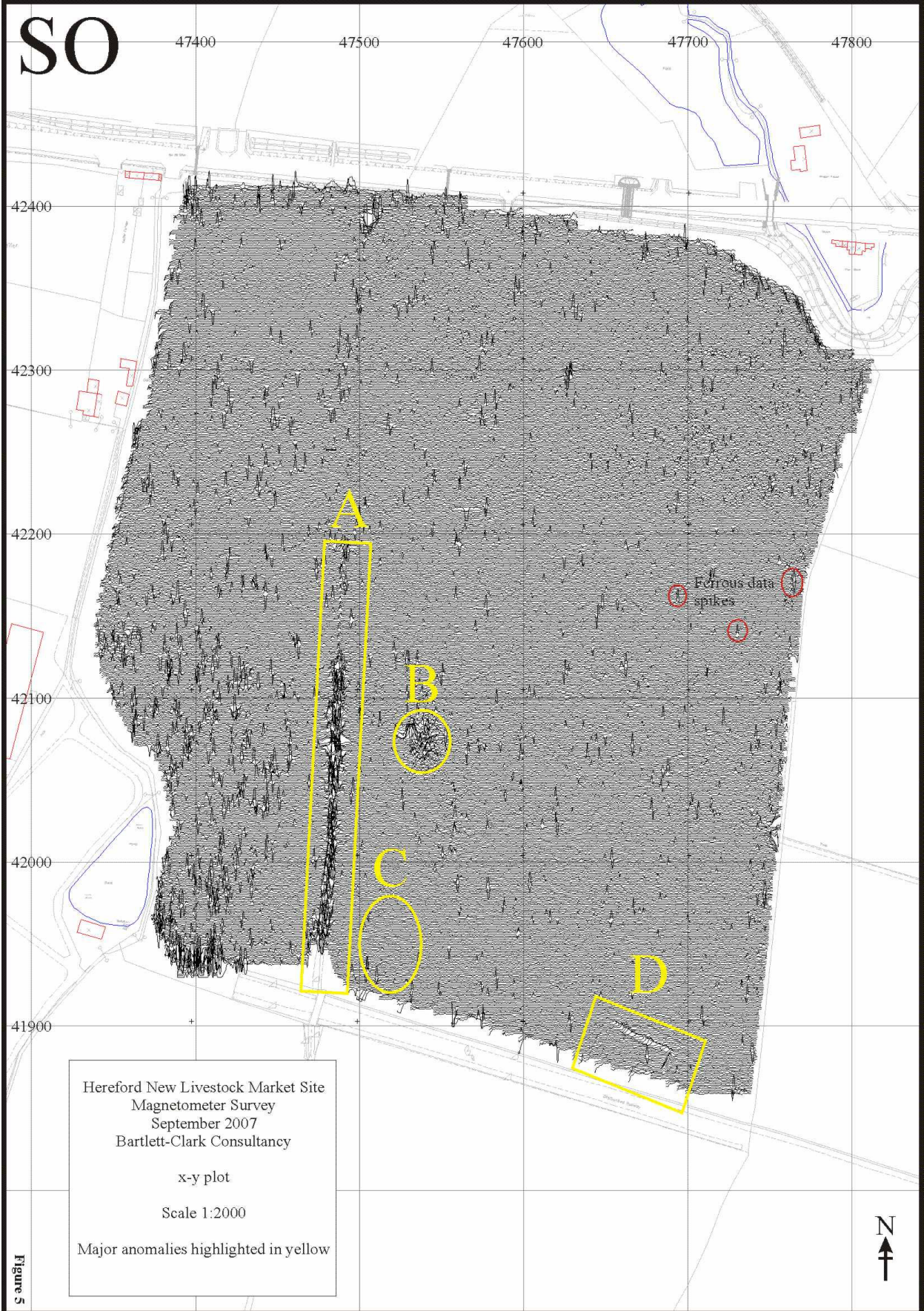
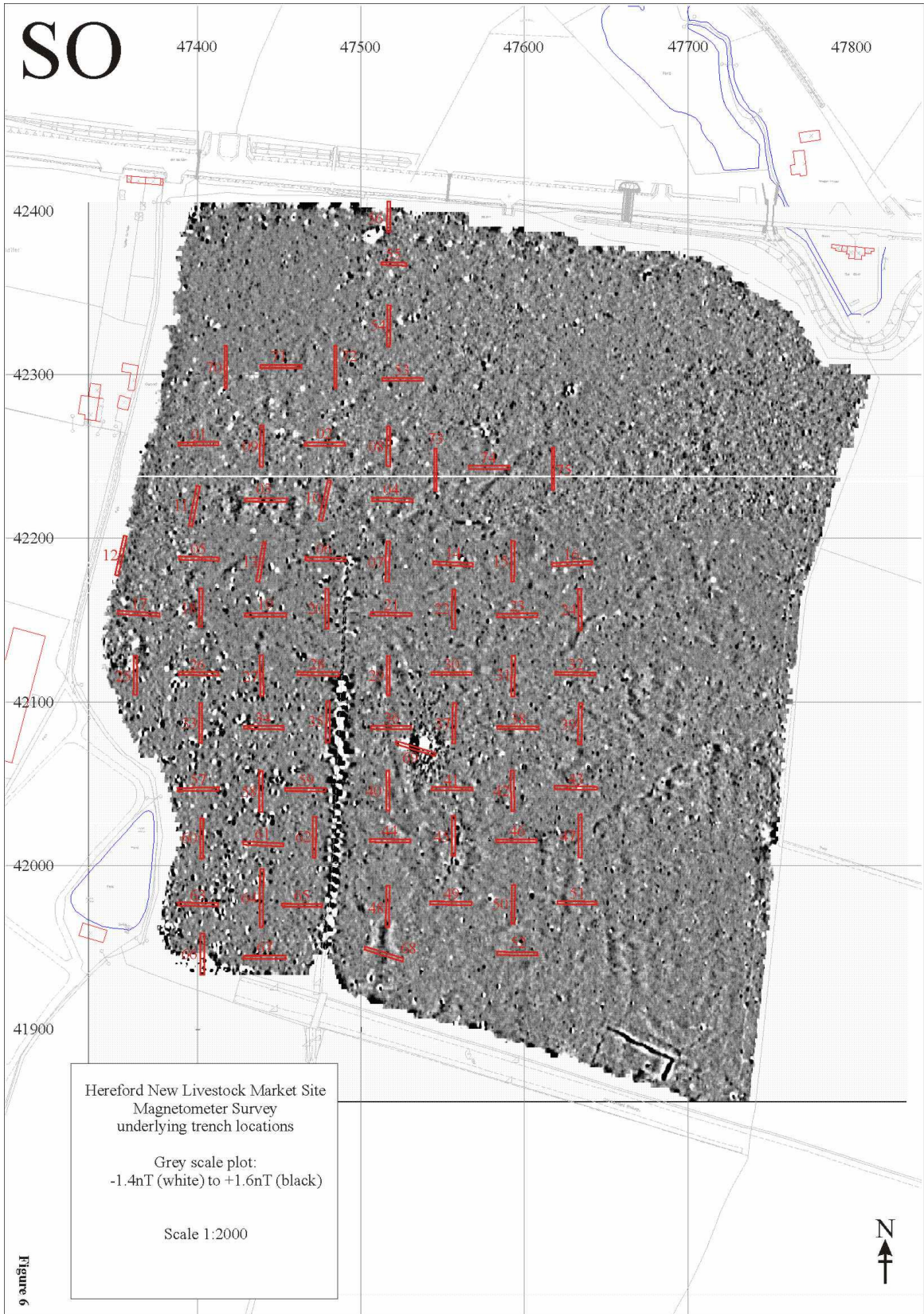


Figure 5



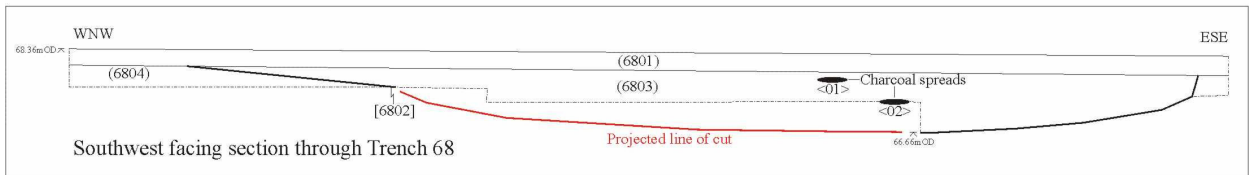
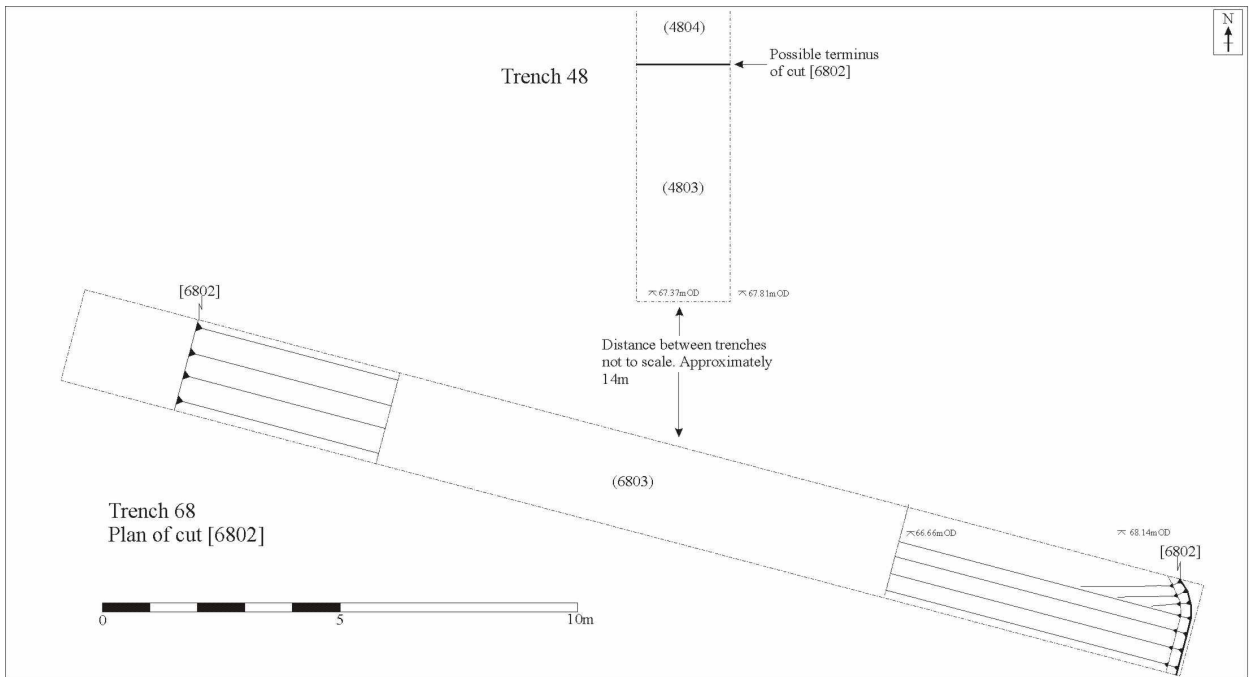


Figure 7