APPENDIX 4: GEOPHYSICAL SURVEY RESULTS FROM AMPTHILL & DISTRICT ARCHAEOLOGICAL & LOCAL HISTORY SOCIETY

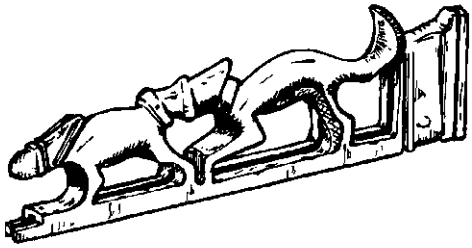
Resistance survey of area believed to be the site of Ampthill Castle in the County of Bedfordshire.
September 2002 & April 2003, Revised January 2011

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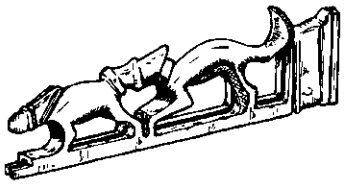


& Local History Society

Resistance Survey of the area believed to be the site of Ampthill Castle in the County of Bedfordshire.
September 2002 & April 2003.
Revised January 2011
&
Survey of Castle site using a Bartington 601 Gradiometer
September 2010

Parts 1 & 2
Kevan J. Fadden
Michael J. B. Turner
Brian D. Lazelle
Part 2
Clive Makin

Ampthill & District Archaeological



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In days of old, here in Ampthill's towers were seen,
The mournful refuge of an injured queen.
Here flowed her pure but unavailing tears
Here blinded zeal sustained her sinking years.
Yet freedom hence her radiant banner waved
And love avenged a realm by priests enslaved.
From Catherine's wrongs a nations bliss was spread
And Luther's light from Henrys lawless bed.

Horace Walpole

Part 1

Resistance Survey of the area believed to be the site of Ampthill Castle in the County of Bedfordshire
September 2002 & April 2003
Revised January 2011

TL026385

Legend & Brief History of Site

The site of Ampthill Castle is reputedly marked by Katharine's Cross, a Gothic style monument erected in 1773 by Lord Ossory in memory of Queen Katherine of Aragon who was imprisoned in the castle in 1533. The cross is said to have been placed in what remained of the castle ruins following a major re-landscaping of the park by Lancelot "Capability" Brown.

Immediately in the area of the cross is a platform, thought to mark the building, standing about 0.5m above the surrounding ground level which is effectively a large plateau of some 30,000 m^2, bordered on the north by the scarp slope of the Lower Greensand Ridge. A castle anywhere on the plateau would have provided commanding views of the countryside in all directions.

Mole hills and rabbit scrapes on the northern scarp slope regularly unearth oyster shells, bones, fragments of clay roof tiles and small shards of coarse unglazed pottery of 14th Century type.

Historical evidence suggests a castle was built in the 1420's on the site by Sir John Cornwall who had acquired the land following the death of Aymer Lord St. Amand in 1402.

Cornwall, created Lord Fanhope, died in 1443. In 1454 Lord Edmond Grey purchased the manor of Ampthill, including the castle and the park. Sir George Grey died at Ampthill Castle in 1503. In 1508 his son Richard, by that time in serious debt through gambling and bad management, forfeited Ampthill and the castle to Henry VII. After purchasing it in 1524 following protracted legal argument, Henry VIII (ruling from 1509-1547) was frequently at Ampthill Castle throughout his reign.

In his survey of the Crown estates and castles c.1533 John Leland refers to a fine castle at Ampthill. However in subsequent records the term Manor House appears more frequently which may reflect the changes made over the ensuing years.

Edward VII (ruling from 1547-1553) had a hunting party at Ampthill Castle but appears to have stayed in the Stewards Lodge.

A survey of the manor house in 1553 showed it to be "sore decayed" with tiling, leading and glazing missing, roofs caving in, timber rotting and stone walls on the point of collapse.

A plan of an existing courtyard manor house, drawn in 1567, with proposed alterations and said to be from Ampthill is in the records of Hatfield House. The plan which has been redrawn to scale (Figure 3) by Colvin does not show the orientation of the building. The assumption is that this building, often referred to as a castle, is where Katherine of Aragon was imprisoned. Some parts of the building were being demolished at the time of the plan being drawn.

By 1653 the castle had been totally demolished.

The site is scheduled and is owned by Ampthill Town Council so it is of obvious interest to the local community. Its history together with any verifiable archaeological information could have an impact on the tourist potential of the Town.

The Ampthill & District Archaeological & Local History Society undertook a resistance survey of the Plateau in September - October 2002 and completed it in April 2003.

Military activities in the 19th Century and both World Wars when camps were established in the park could have an effect on the survey, as could 20th Century sports pitches and the well trodden footpaths which meander across the site.

Geophysical Survey

To obtain a "picture" of the effects of archaeological activity that may lay under the surface of the ground several techniques can be used. The most common include ground radar, magnetic variations and resistance. This survey was carried out using the resistance method.

Meter TR/CIA with a 0.5 metre twin probe configuration.
32679 Readings taken at one metre pitch.
Mainly sandy soil, taken in a dry spell following an earlier wet period.
The final readings 140X, to 160X,160Y were taken the following spring.

Resistance surveys in simple terms rely on the moisture content of the soil allowing an electric current to flow between probes pushed into the ground. The higher the moisture content the lower resistance to flow. The resistance value (ohms) is then plotted on a computer to show the variation across the site. High readings (drier soil) show up in this survey as light, low readings (wet soil) show up dark. From this it follows that ditches which have been buried but still contain humus infill and remain moist can be readily seen (dark) as opposed to areas of stone or brick rubble that are quicker to dry out showing up light.
It should be appreciated that similar effects can be caused by natural geological features in the soil; it seems probable that some of the features to the east of the plot can be attributed to variations in the underlying sandstone bedrock.
The whole site was laid out in a grid of 20 m squares and the location of certain intersections defined with respect to the two memorial crosses is shown in appendix.

The following report shows the results of that survey with a possible interpretation of the readings obtained. It should be stressed that as with all such surveys it is impossible to be certain without an excavation to check the hypothesis.

Familiarisation and Interpretation of the Site.

The site roughly 260 m x 200 m can be described as a plateau on the top of a sandstone hill the north side defined by the scarp slope of the Lower Greensand Ridge. It has obviously been shaped to some extent by human activity. The countryside along the Ridge is undulating and no parallel exists for a similar plateau. Landscaping was carried out in the surrounding Park by Lancelot Brown in the 18 th century, typically placing clumps of trees at strategic points to enhance the view from Park House in the valley to the north. To ease interpretation the X,Y co-ordinates of the original 20 m by 20 m survey grid are used.
The results of the resistance survey are shown in Figure 1. A plot of the resistance survey but without the grid annotation is shown in Figure 2. Specific features shown in the survey are discussed below.

It is probable that the dark "holes" in the square (above and to the right) of 120X,0Y on the survey show where trees have fallen or their stumps have been removed after felling.

The large white areas in squares 0X,60Y and 80X,160Y are where readings were impossible due to the position of Katherine Cross and the W.W I. Ampthill Camp Memorial respectively. Other missed areas such as those in squares 120X,40Y and 120X,160Y were due to trees and bushes etc. preventing readings being taken.

There are five major features on the very complex plot which need an explanation.

1/ In the area bounded by the points 0X,40Y; 140X,60Y; 0X,120Y; 120X,140Y there is a large rectangular area defined by wide lines of low resistance which may represent ditches or a dry moat filled with a moisture retaining material. There appears to be an entrance on the south east corner. The ditch is up to 15 metres wide in places. Katherine's Cross is within this area as is most of the platform. It is where we expected to find the foundations of the castle. The buried earthwork certainly seems to suggest a small mediaeval castle or at least a defended house.

2/ In the area 0X,140Y; 40X,120Y; 0X, 220Y; 60X,200Y dark and light lines running roughly east west can be seen, equally spaced apart. They are of similar spacing to mediaeval ridge and furrow recently identified in Kings Wood at a similar elevation 5 km to the east east also on the Greensand Ridge. Suggestions of similar ridge and furrow can be seen in certain conditions within the park but it is by no means certain.
The lines respect the outline of the moat which suggests they are contemporary or the moat was dug first.

3/ In the area 0X,140Y; 40X,200Y; 80X,80Y; 100X,140Y a number of low resistance lines define a large rectangle cutting into the ridge and furrow (so post dates it) one set with a slightly obtuse angle in the North corner and a corresponding acute angle in the East. This reflects the shape of the plans drawn in 1567 complete with the unusual corner angles. (Figure 3). When drawn to the same scale as the plot the fit is remarkable, see Figure 4. This may well be the site of the court yard manor or castle. Some of the lines of this rectangle could be attributed to a football pitch shown to be in the area on an aerial photograph taken in 1947. The reason for dark lines would be the repeated application of lime to mark out the pitch affecting the moisture retaining ability of the soil. (Gaffney & Gater 2003). Whilst the lines in question are rectilinear there are other lines with angles of about 96 degrees and 84 degrees which agree exactly with the angles of the building shown on the 1567 plan. It would seem sensible to build a large house on a relatively flat plateau which in later post-demolition years would be ideally suited for a football pitch. The result would be a palimpsest of features in the geophysics.

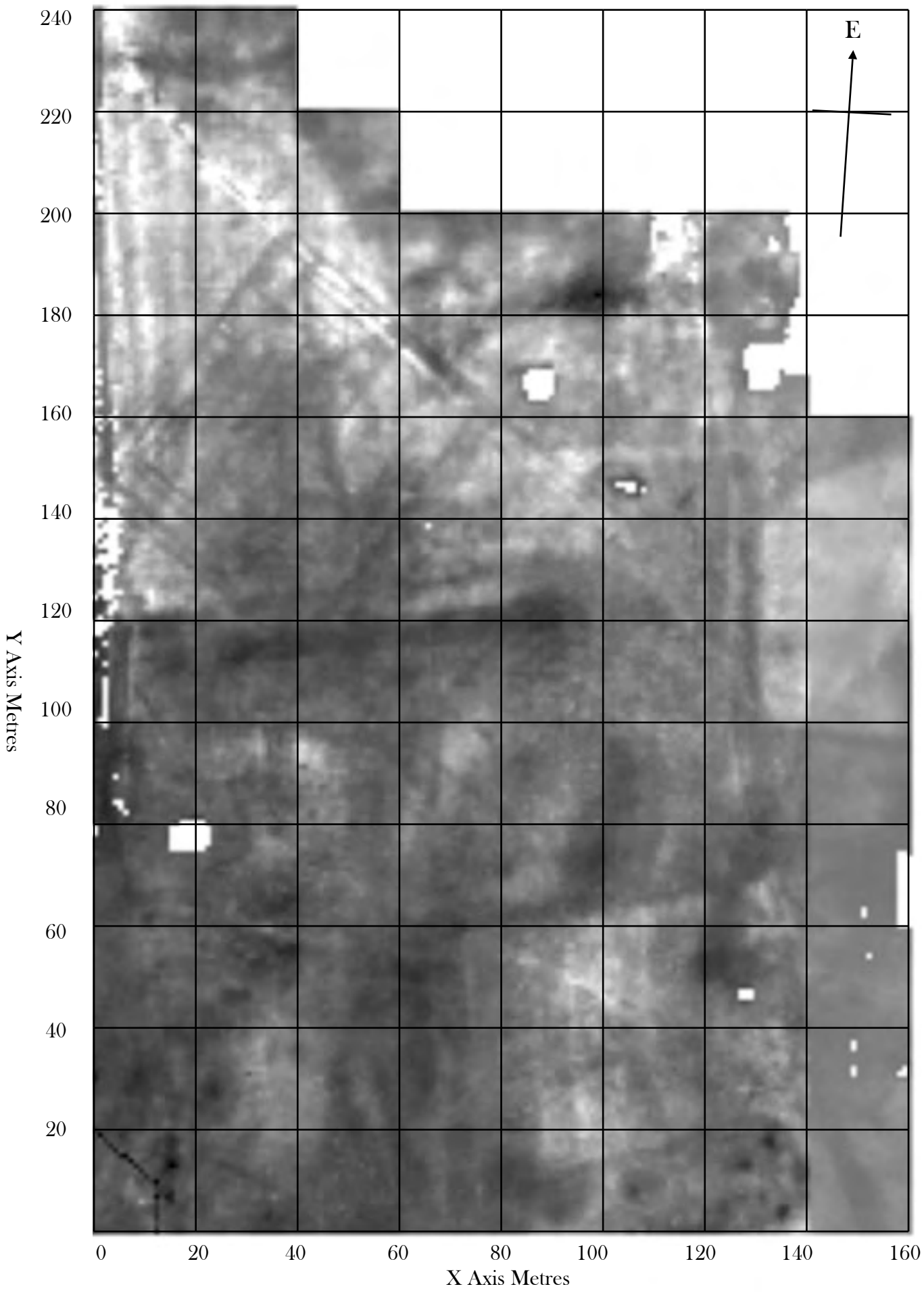


Figure 1: Results of the TR/Cia Resistance Survey

It should also be noted that a later rugby football pitch with a completely different alignment existed for many years within the area covered by the survey but left no trace at all even though a similar lime wash application was used. (Memories of local men who carried out the line maintenance of both pitches.)
The 1567 plans do not give their orientation, but if the above interpretation is correct it would appear that the gate house to the building faced south west looking across rolling countryside away from the nearby town of Ampthill. In the front on the plan is shown a base court and further buildings, including stables. There is no sign in the geophysical plot of this base court in the position shown. This can be explained as a careful look at the original plans in the Cecil collection at Hatfield House show that the range of the building containing the wellhouse court and the stables section of the base court had probably been demolished prior to the 1567 survey. The single lines show where the parts of the building had been.

4/ Within the area 80X,0Y; 140X,20Y; 80X,60Y; 140X,80Y a rectangle shows consistently high readings. It disturbs the line of the possible moat therefore post dating it. The higher readings could suggest a lining to a court yard (say cobbles, rubble, gravel or deep sandy area).

5/ Within 120X,80Y; 160X,80Y; 120X,160Y; 160X,160Y is another area with consistently high readings and indications of a ditch surrounding. At this point the edge of the plateau gives way to a pronounced downward slope comprising very soft sand (checked by a probe). A little further to the south the hill has been recently cut away to construct the Town Cricket Pitch.
To the north of this area there are signs of yet another rectangular area, this time bounded by high resistance lines. The site is obviously very complex and contains three rectangles of approximately the same size as the building shown on the 1567 survey plan.

Note: Other possible features can be seen with careful study, and may come to significance with further study of the historical evidence.

A topographical study of the area around Katherine's Cross carried out by the Bedfordshire County Council Heritage & Environment Section, to the same scale fits very well on to the plot and emphasises the changes in resistance on the platform.

If the site was to be investigated by archaeological excavation then we would recommend initial trenches at locations in the vicinity of 10X,150Y and 40X,110Y.

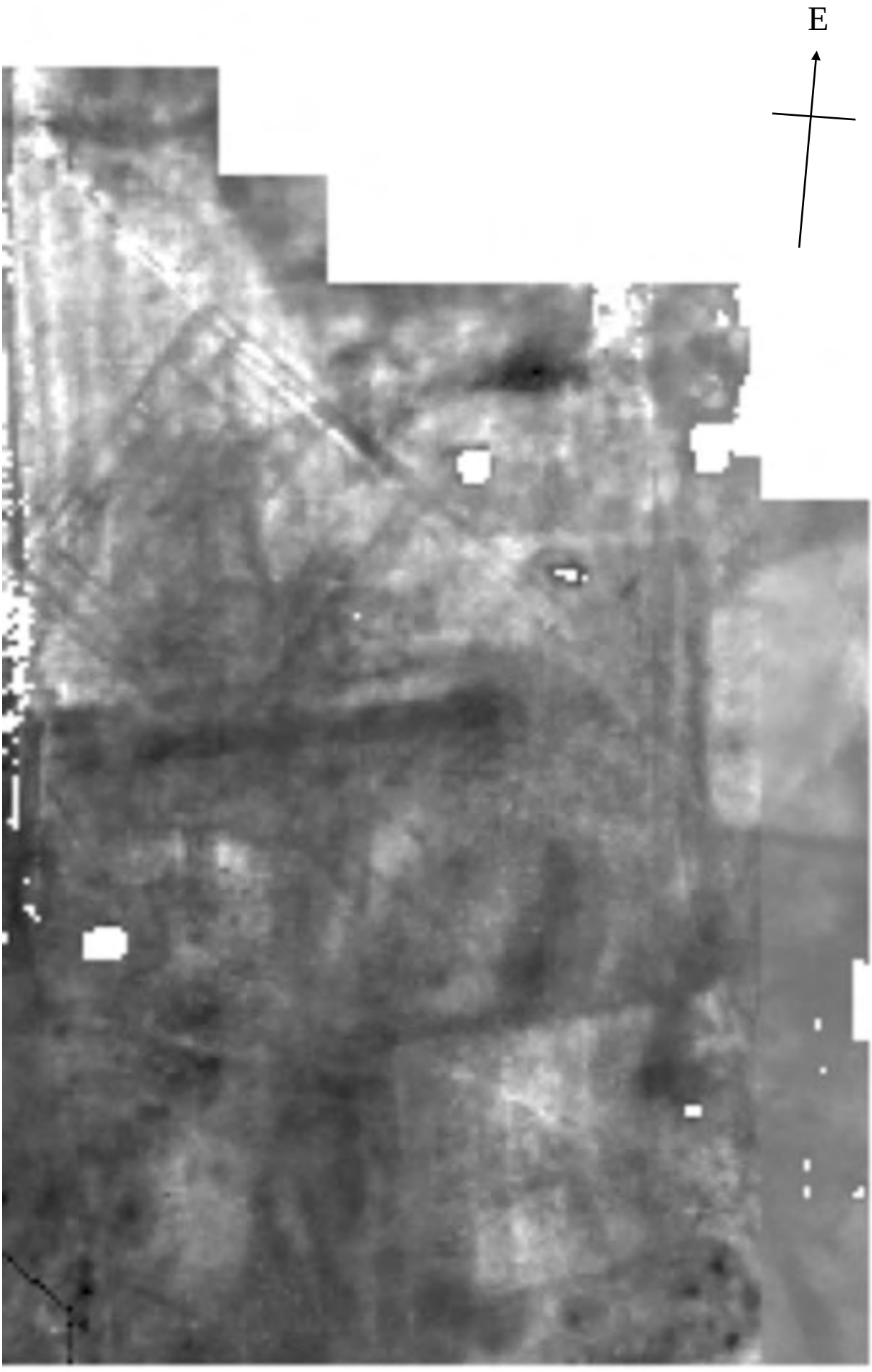


Figure 2: Results of the Resistance Survey
(Without grid annotations)

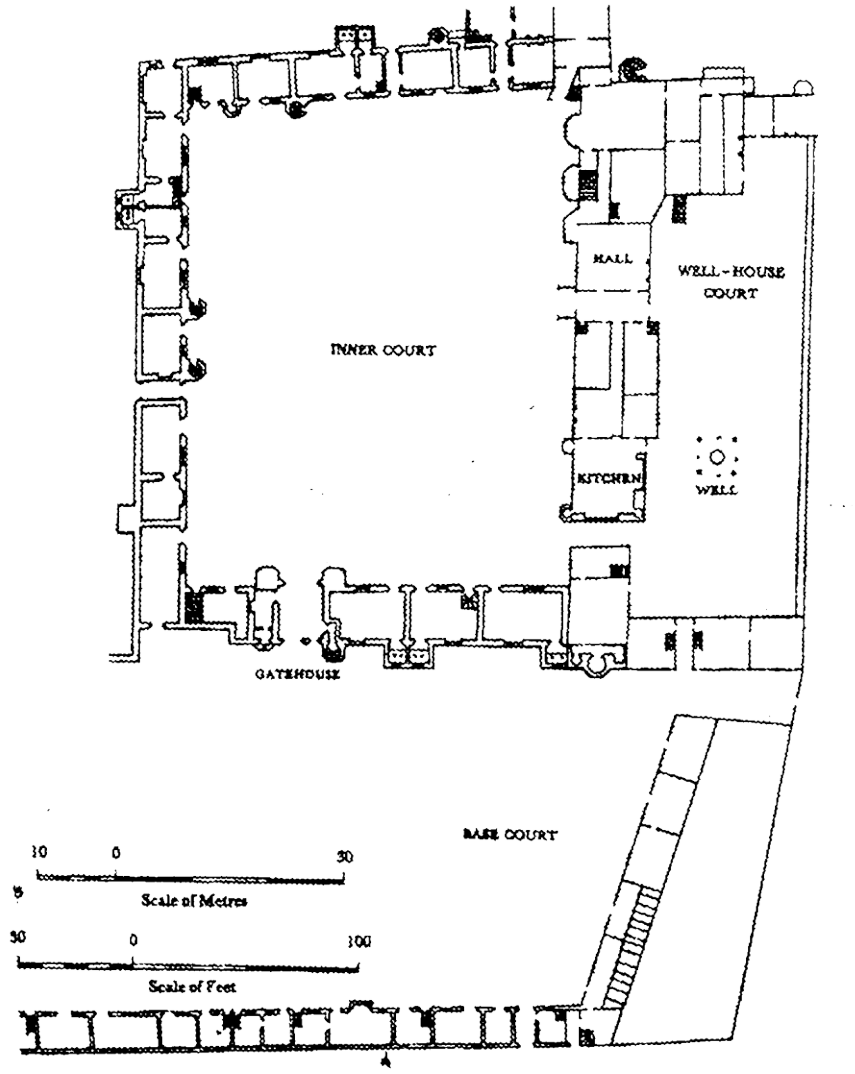


Fig. 3. Ampthill House, Bedfordshire, as surveyed *circa* 1567, with unexecuted propos (3A) for a new royal apartment and lodgings (redrawn from Hatfield House, CPM I.1.

Figure 3: Drawing as published in *The Kings Houses 1485-1660.* Rescaled to match the scale of the resistivity plot

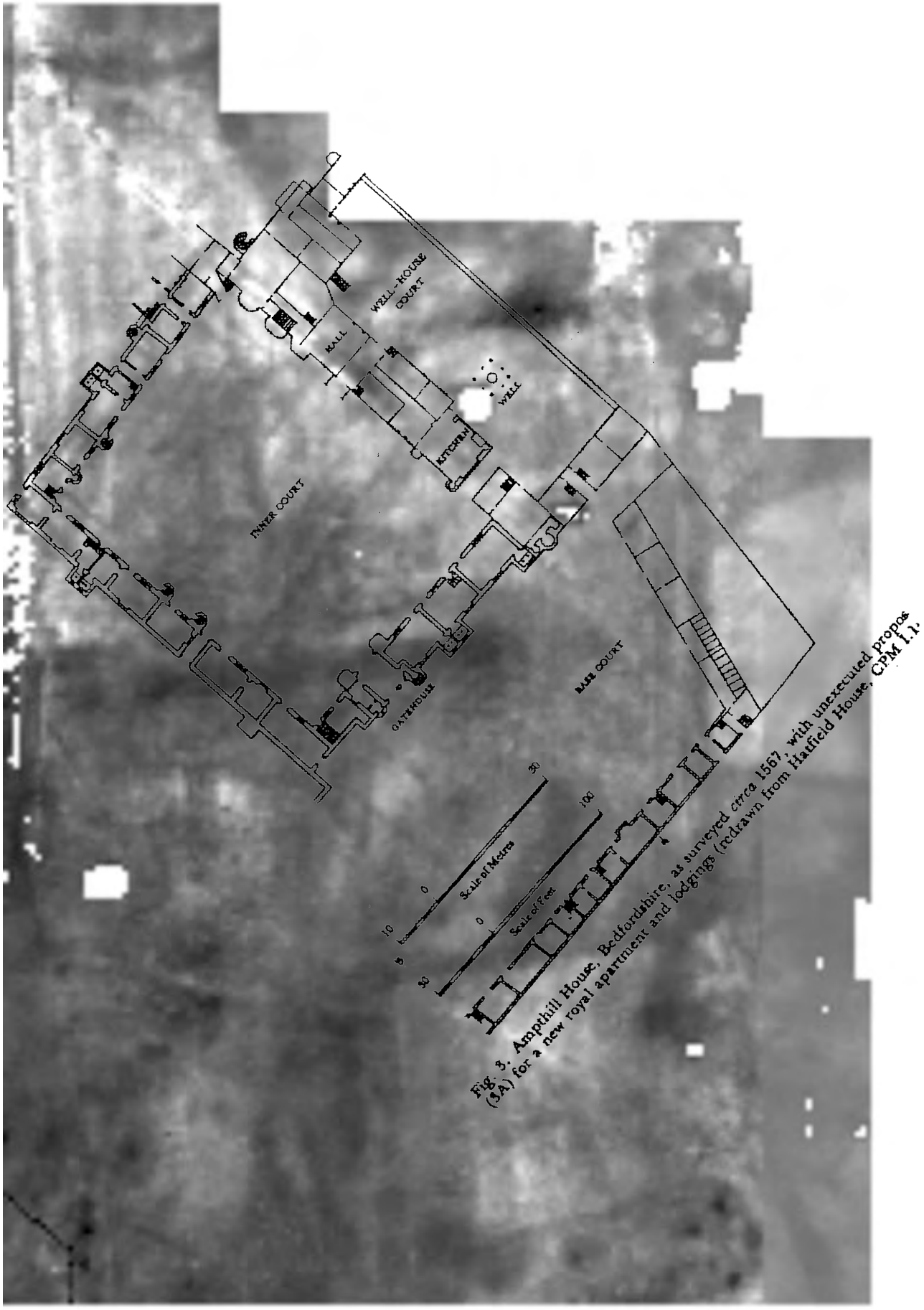


Figure 4: Resistivity Survey with circa 1567 drawing superimposed.

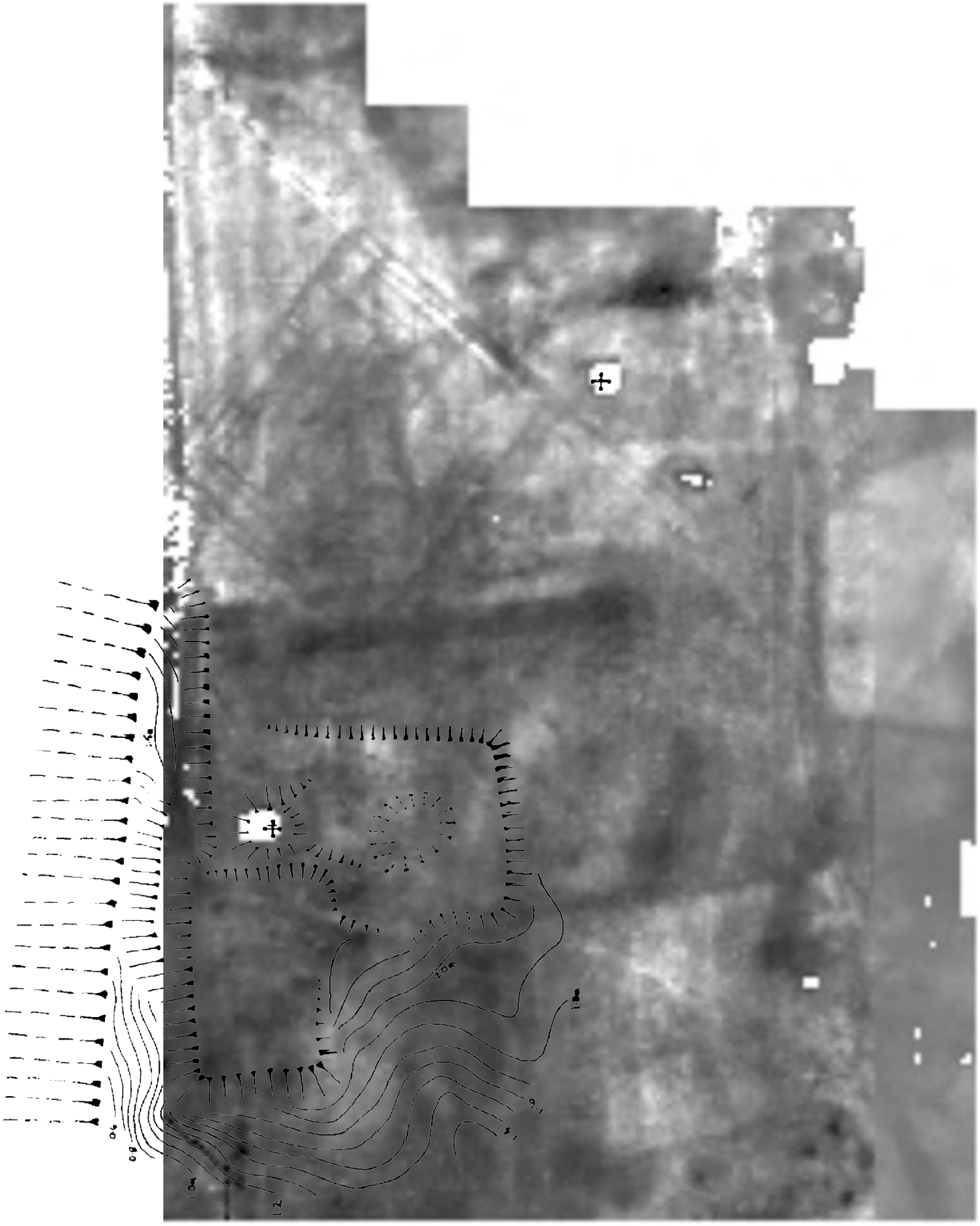


Figure 5: Resistance Survey with topographical survey of the platform superimposed

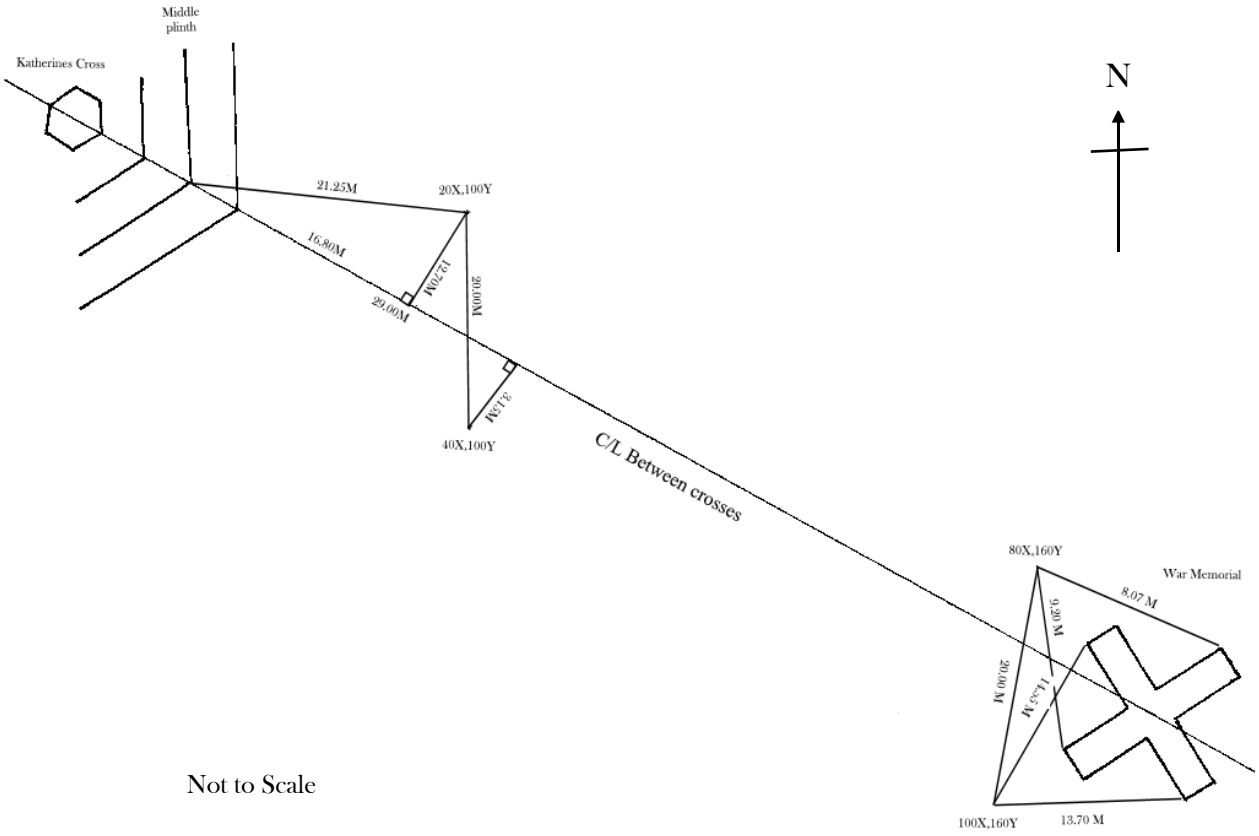
Appendix

Location of reference points for Ampthill Castle survey

On line joining the two crosses.
Measured from corner of middle plinth on Katherine Cross to perpendicular to ref point 20X, I00Y.
16.80 metres
From perpendicular point to 20X,100Y 12.70 metres.
From plinth to 20X,100Y 21.25 metres
Measured from corner of middle plinth on Katherine Cross to perpendicular to ref point 40X,100Y
29.00 metres.
From perpendicular point to 40X,100Y 3.15 metres.

On the War Memorial measuring from nearest, widest points of cross shaped plinth.
To 80X,160Y 8.07 metres from east point and 9.20 metres from west point.

To 100X,160Y 14.55 metres from north point and 13.70 metres from south point.



Part 2

Magnetometer Survey of Suggested Ampthill Castle Site

September 2010

TL026385

This survey was carried out by the Ampthill & District Archaeological & Local History Society on the same location as the 2002 - 2003.

A similar grid layout was used to help with comparison. The actual grid size for the magnetometer survey was 30m x 30m as opposed to the resistivity survey which was laid out on a 20m x 20m grid.

The equipment used was a Bartington Grad601 magnetic field gradiometer. The readings were taken on the 0.1nT range, at 0.25 m intervals on zig-zag traverses 1m apart within 30m x 30m square grids

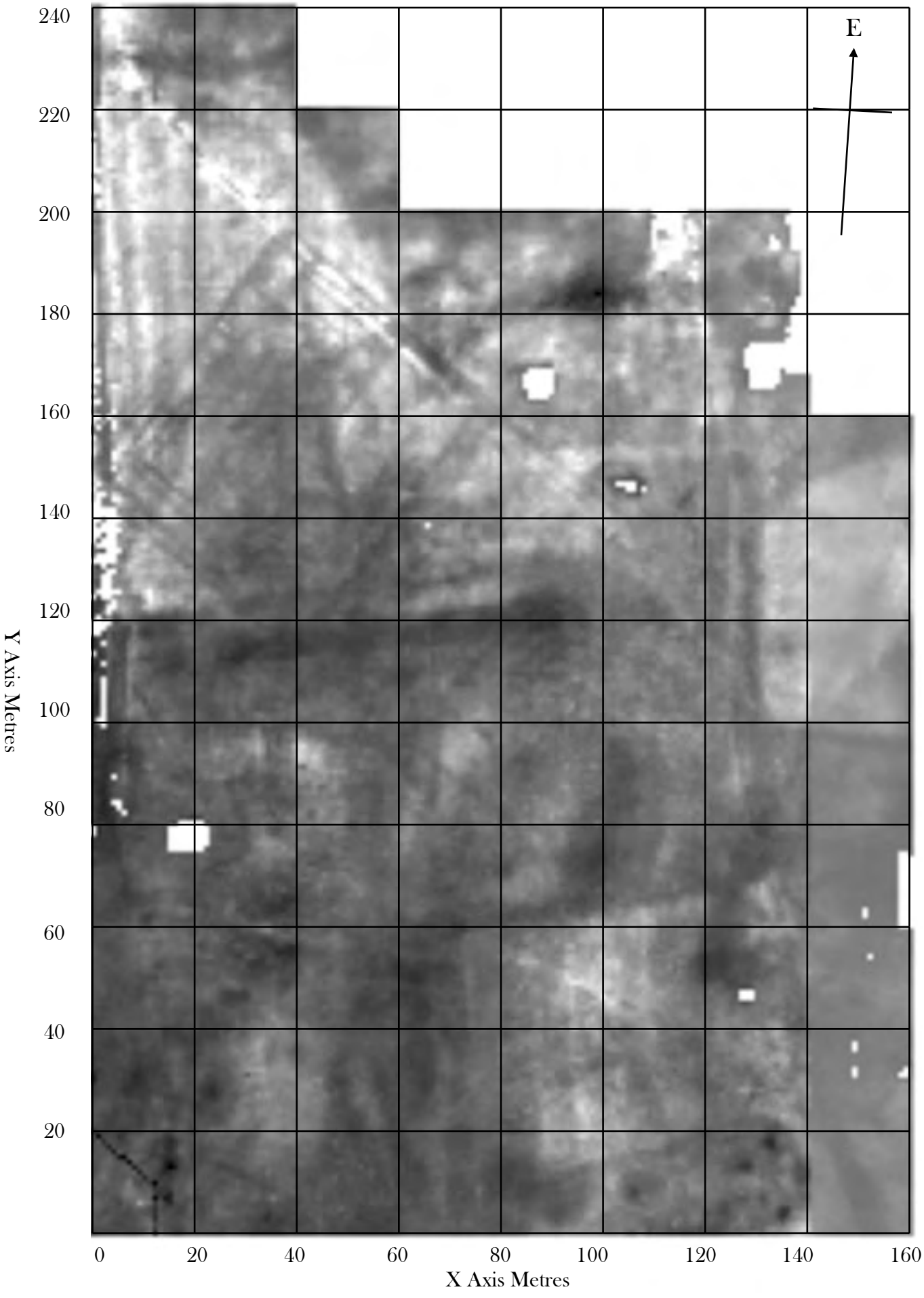


Figure 6: Results of the TR/Cia Resistance Survey. Repeated for easy comparison with Figure 7

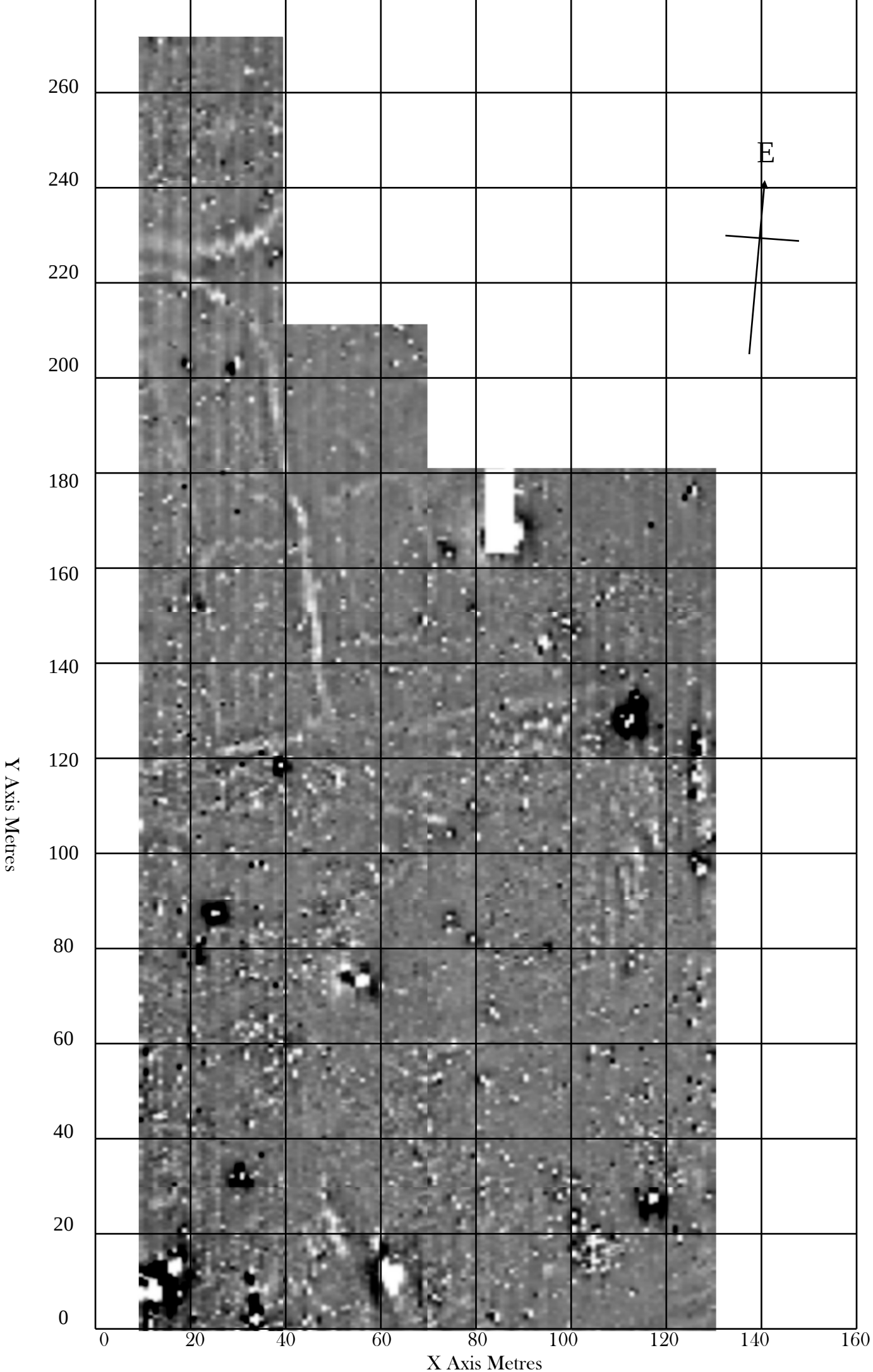


Figure 7: Results of the Bartington 601 Gradiometer Survey

Survey of Castle Site using a Bartington 601 Gradiometer

Further to the resistivity survey on the castle plateau in 2002 a survey was carried out in 2010 using a Bartington 601 gradiometer. The survey was carefully plotted to cover the main area as before using the same locations to allow for easy comparison. The gradiometer plots were 30 x 30 metres as opposed to the 20 x 20 m used for the resistivity survey. As explained in Part 1 the resistivity method measures the resistance of the soil at each point of test and gives a comparison of all such points within the area. When the plot has been completed high resistance (dry areas sandy soils, possible walls etc.) show up light while low resistance (wet soil, clayey soils, soils with more humus, refilled ditches etc.) show as dark. From this buried walls or rubble can produce light patches or lines, whereas early ditches or damp areas can produce dark lines.

A gradiometer works entirely differently and shows features by measuring the distortion of the earths magnetic field caused by metallic or magnetic sensitive objects in the soil or by variations caused by movements of soil such as when a ditch is refilled or when burning realigns the magnetisation of materials. (Gaffney & Gater 2003).

The consequence of this is that one method does not supercede or replace the other, gradiometers are often used in preference as they are much less labour intensive and therefore cheaper for large areas.
When a direct comparison is made it can produce interesting results but in the Ampthill Park surveys it also emphasises the risk taken by just using one method and that final conclusions can only be made following very careful excavation.

The gradiometer plot illustrated shows the results set in a 20 x 20 m grid, for direct comparison with the resistivity plot. It is a very “noisy” result, i.e. many disconnected high points occur, probably due to the intensive use of the land over the years as a public place. The most outstanding archaeological type features show within the eastern half of the plot. The light lines indicate what are most likely to be refilled ditches. The main one runs from X25,Y122 starting south and then sharply turning east to X35,Y200 before curving north. The resistivity plot also shows these features but their significance tends to be lost by the many features around them. On the magnetometer survey there are other apparent ditches, and these have been annotated in Figure 8. Clearer lines have been overlaid in blue. The red lines indicate where there are less clear lines leading into the western area where there is much more clutter on the survey. In the eastern area there are what appear to be three enclosures and a well defined curved ditch to the east which also shows on the resistivity plot.

The light and dark banding running parallel to the survey grid is thought to be the result of a shift in the balance of the fluxgates of the gradiometer as surveying progressed and can be ignored. On the other hand the wider spaced banding on the resistivity survey does not run parallel to the survey and may well be ridge and furrow ploughing.

The gradiometer though indicating some well defined ditches yields no firm evidence of the site of the castle and emphasises the need to be very careful when relying solely on one type of survey to establish what is below ground.

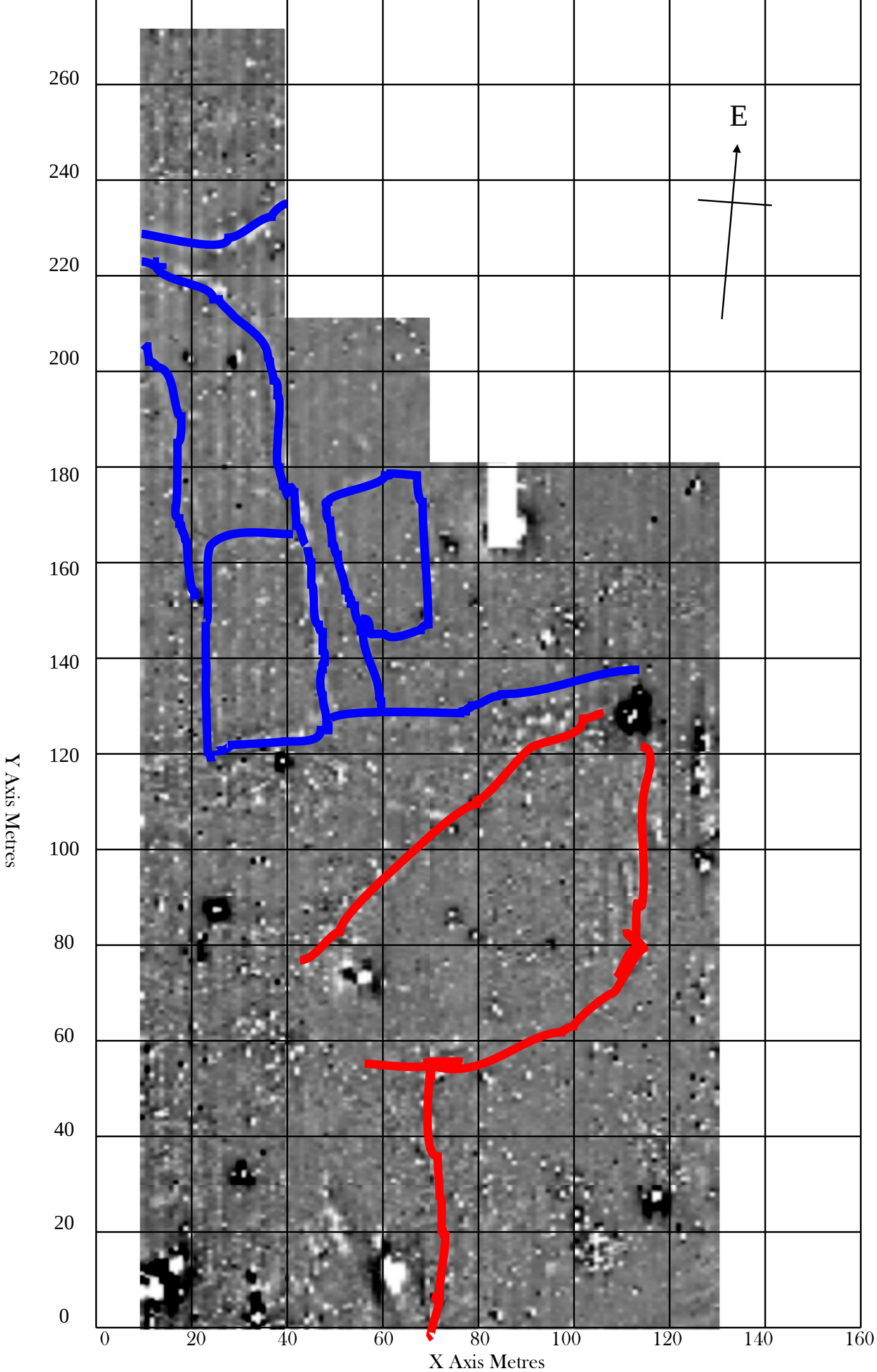


Figure 8: Results of the Bartington 601 Gradiometer Survey with apparent ditches annotated

Bibliography
1. Colvin, HM (ed.) (1982) *The History of the Kings Works,* vol. iv 1485-1660 (part ii), London: HMSO.
2. Houfe S (1995) *Bedfordshire,* Pimlico County History Guide (1995).
3. Godber Joyce 1969 *History of Bedfordshire,* Bedfordshire County Council.
4. Victoria County History. *History of County of Bedfordshire Vol III p. 270.*
5. Underwood A (1976) *Ampthill - A goodly Heritage,* Ampthill Parochial Church Council .
6. C.Gaffney & J Gater (2003) *Revealing the Buried Past, Geophysics for Archaeologists,* Tempus Publishing Ltd.

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Valuable discussions with Barry Dackombe.
Grateful thanks to Bedfordshire County Council Heritage & Environment Section for permission to reproduce the Topographical survey of the platform.

The Society wish to give special thanks to Mr. Tom Nichols of Geomatrix Earth Sciences Ltd. for making available the Bartington Gradiometer 601.

In his Survey of the Crown estates and Castles c.1533 John Leland refers to a fine castle at Ampthill. However in subsequent records the term Manor House appears more frequently which may reflect the changes made over the ensuing years.

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Points to consider when comparing the geophysics with the excavation by the Northampton Unit.

The excavation was primarily aimed at the location of the manor house/castle, using the resistivity scan to locate where to dig the trenches. Figure 1 shows the location of the excavated trenches with the 1576 building plan superimposed on the resistivity scan. The only trench excavated in the suggested area was Trench 1.

Trench 1

This trench immediately picked up some of the probable beam slots (Photos 1, 2 & 3) indicated by the scan and produced some 16th/17th century green glazed pottery, an iron arrow head and some pottery which later on in the excavation was identified as Saxon. The slots were immediately below the current turf line and with the exception of three probable post holes no further excavation took place in the trench. (Photo 4)

The excavation of this trench firmly established that the lines shown on the scan were archaeological features ie beam slots as opposed to football pitch lines. Outside the trench (Photo 5), enhanced grass growth extended the lines to the north and west as suggested in the scan, other lines consistent with the scan were also evident in the grass. The question which was not answered is; where did the Saxon pottery come from? A close look at the resistivity scan and the subsequent magnetometer scan shows an earlier ditch running through Trench 1 which was not identified in excavation. This is not surprising as the trench was closed down early in the programme as soon as the probable beam slots were exposed. Pottery from an earlier ditch would have been residual at the time the beam slots were produced. The latest artefacts in the beam slots can only be safely used as dating evidence. There is no illustrated evidence of material or earth moved by vermin. The author watched as the green pottery was recovered and saw no intrusions.

The other trenches were not located on the rectangular feature thought by the A&DA&LHS to be the manor house /castle. (see figure 1).

Trench 2

This trench was cut through what appears to be the end of a large ditch or moat at a point where some high resistance points were evident suggesting “rubble” in the infill. This trench was the scene of the greatest archaeological activity and revealed some interesting features some of which were contemporary with the 15/16th century building we were hoping to find, including some brickwork. There was also evidence of two possible walls which were not orientated to the expected walls of the manor/castle. The walls were of insubstantial sandstone and could well have belonged to an out house or outside kitchen, normal for that period. There was considerable evidence for burning and bones from cooking. The brickwork suggested in the excavation report as a fireplace was not supported by a substantial chimney which would have been essential in a site within the main building. The Trench 2 archaeology is in the ideal position for an outside kitchen within the bass court. (see Figure 1)

The large ditch which appeared on the scan was not identified by the excavation in Trench 2 but again the trench was not taken to bedrock.

Trench 3

This trench was located at a point on the geophysics which indicated a low resistance. Very well excavated it revealed a large ditch with evidence of Mediaeval material. If as predicted by the A&DA&LHS there was an earlier moated i.e. defended building on the site this would fit in very well.

Trench 4

The evidence from this trench supported the information from Trench 3 and the theory that the area was made up with rubble from an earlier building. Time and labour restraints did not allow the full potential of the area to be realised.

There appears to be no evidence to support the orientation and position of the castle suggested in the excavation report. The suggestion that the lower base court range followed what appears to be a wide ditch or moat in the resistivity scan is not plausible and the walls are somewhat remote from the main buildings on the 1567 plan. The topographical evidence does not appear to fit with the Northampton suggested orientation of the building in any way.

It should also be noted that A&DA&LHS produced pseudo-sections across the main features, these were ignored as apparently they were not understood.

As an historical note Colvin in his *Kings Houses 1485 - 1660* shows a chapel in the ground floor of the proposed castle alterations in the "acute angle" of the building. The only possible way to have an east window would be with the orientation as suggested by the resistivity survey.

It should also be noted that the resistivity plot shown in the report was produced by the Northampton Unit using data supplied by this Society in the November following the excavation. *(Reprocessed earth resistance survey data Fig 3.)*The data was manipulated in their programme, this is perfectly acceptable as a principle but it did not give a very good result. The picture is blocky and the finer details have been lost, for instance, there is no sign of a ditch through trench 1, which is evident on the A&DA&LHS resistivity survey and very obvious on the magnetometer survey. <u>If any plot was referred to during the excavation it must have been the one supplied by this Society.</u>

The resistivity scans were by the A&DA&LHS

All photographs by the author.

Kevan Fadden.

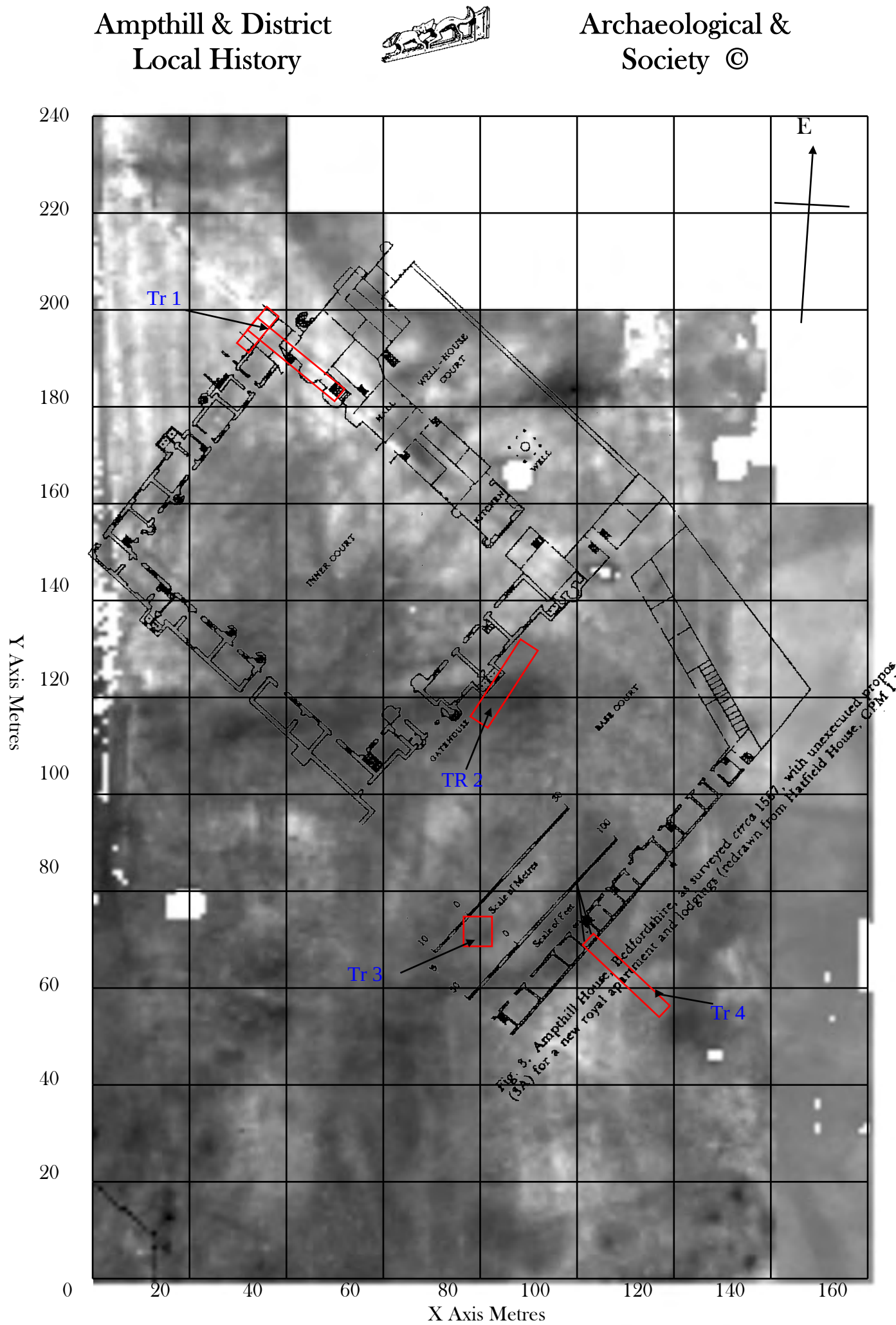


Figure 1 Relationship of excavated trenches with 1576 plan superimposed on geophysical scan



Photo 1. Trench 1. View south west after first scrape - Notice beam slot shadow in soil running approx E. W. & N. S. In foreground. Enhanced grass growth continues the line. A parallel grass line can be seen to the left (South) of trench.



Photo 2. Trench 1. Part of beam slot cleaned out.



Photo 3. Trench 1. Corner of beam slot.

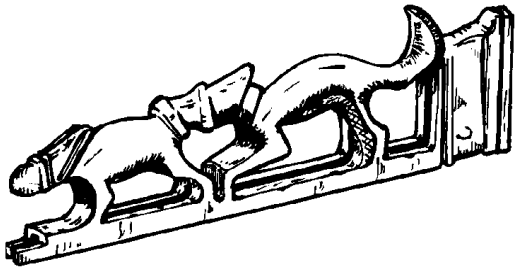


Photo 4. Trench 1. Final clean up of trench - not down to bedrock.



Photo 5. Trench 1. View north east showing lines in grass some weeks after turf re instatement. Note grass marks in same pattern as geophysical scan and superimposed 1576 house plans.

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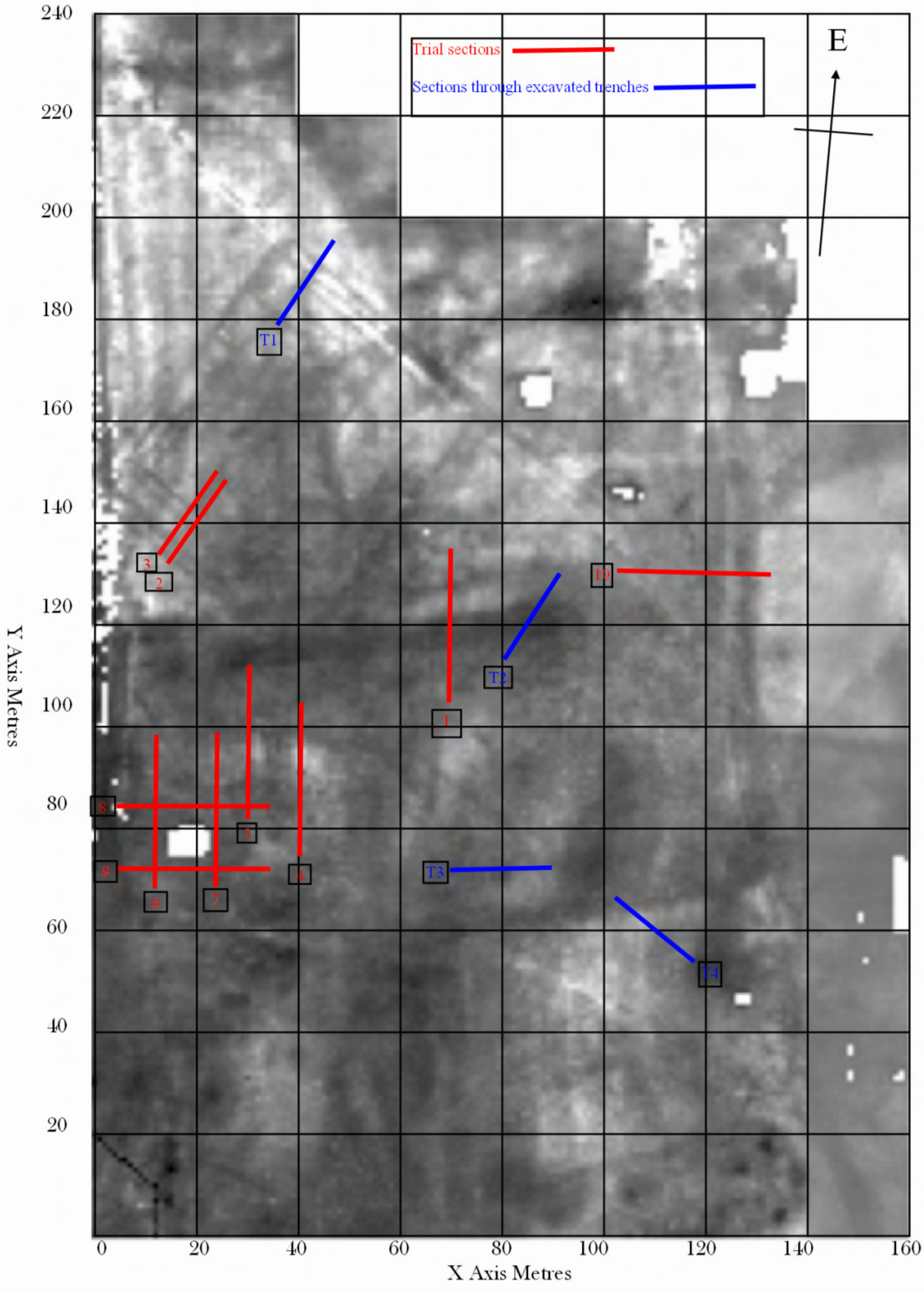
Pseudo-sections of selected areas of the original geophysical survey carried out on the area believed to be the site of Ampthill Castle in the County of Bedfordshire.
2008 & 2009.

TL026385

Kevan J. Fadden
Michael J. B. Turner

Ampthill & District Local History

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Further Geophysical work on the area believed to be the site of Ampthill Castle.

This was carried out using a technique adapted from a system which is fairly widespread in geology but previously not in archaeology. The equipment was developed by the Council for Independent Archaeology with testing carried out by this Society. It uses resistivity principles but is taken in a straight line across a designated area and gives a vertical profile of what is under the surface. When used in conjunction with a standard geophysics survey as previously carried out on the castle site it can greatly assist in positioning the best areas to excavate. It can for instance indicate the depth of archaeology before reaching bedrock.

A number of sections were carried out in advance of the excavations to allow non evasive investigations into some of the questions raised.

1/ To evaluate whether the lines on the geophysical scan were substantial and had enough depth to be archaeological as opposed to the effects of football pitch lines..

2/ To show where it would be advisable to excavate to obtain as much evidence as possible for the buildings position and to establish whether an earlier building than that built by Sir John Cornwall in the early 15th century existed on the site.

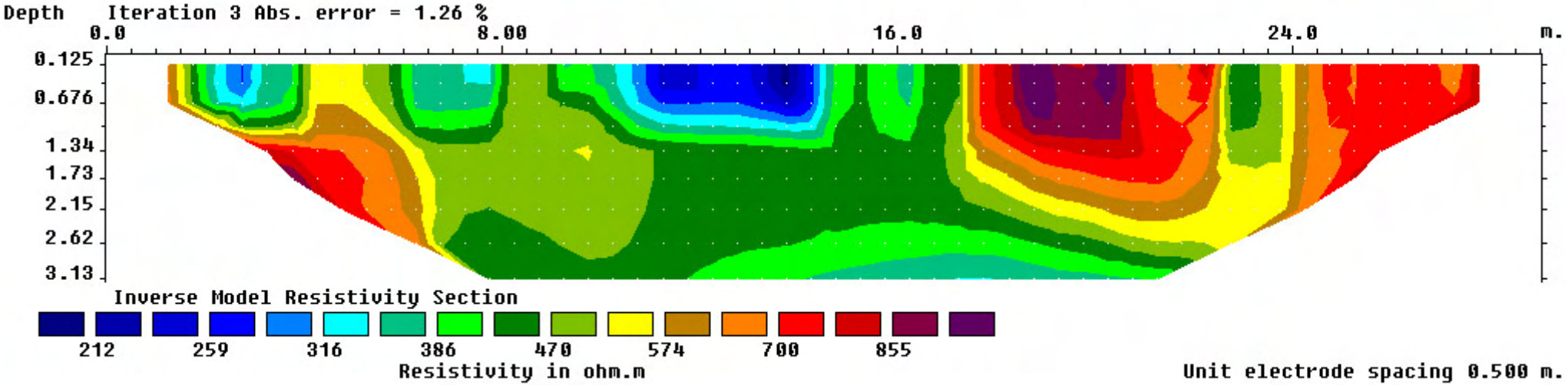
3/ In 2008 a decision by the Ampthill Town Council site was made to restore the memorial to Katherine of Aragon on the site; a gothic style cross erected in 1772/3. As part of the work a new surrounding fence was to be erected and this was likely to disturb the archaeology under and around the cross. Sections were taken across the affected area.. In the event the fence proved too expensive and was not pursued

4/ Immediately before the excavations in July 2009 a possible site for Henry VIII's bowling alley, referred to historically, was identified on the original geophysical survey, so a section was included .

5/ When the areas for the actual excavations in July 2009 were designated they did not coincide with the sections carried out so four further sections were carried out while the site was measured up by the contractors.

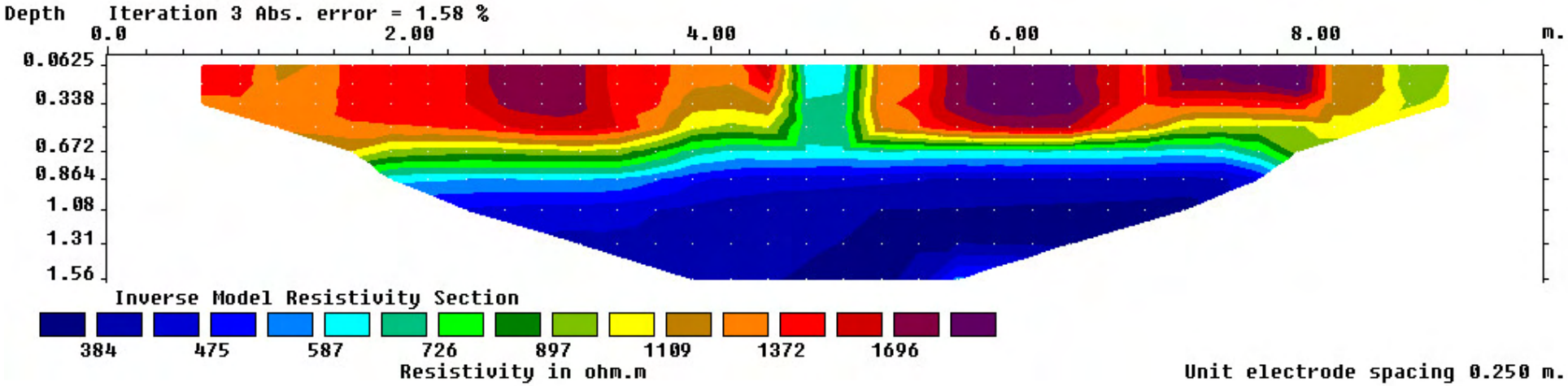
For record purposes and in case further excavations are contemplated all the sections taken are included in this report.

Section 1



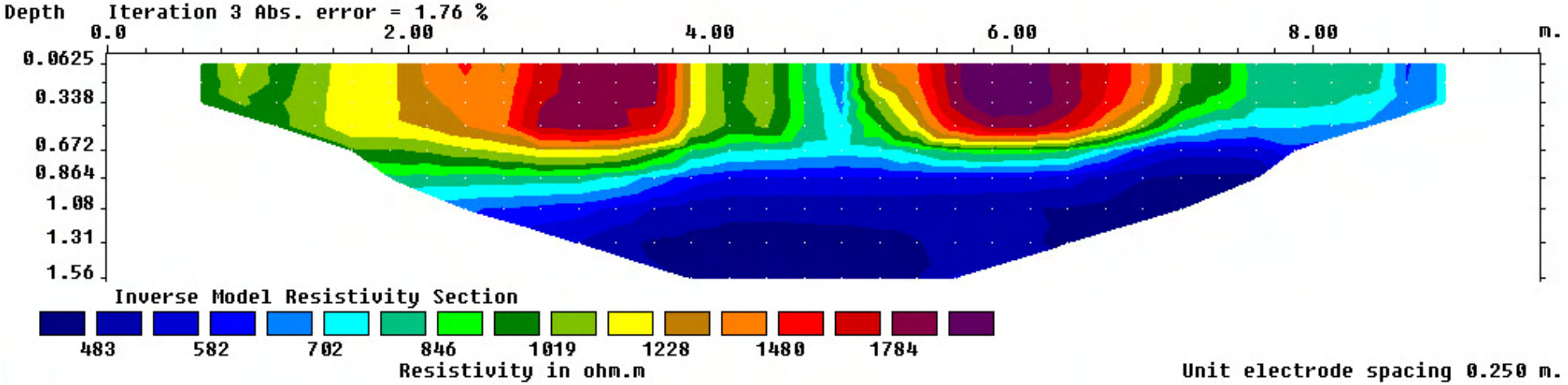
30 Metre Section across suggested moat. X70 Y120 W-E

Section 2



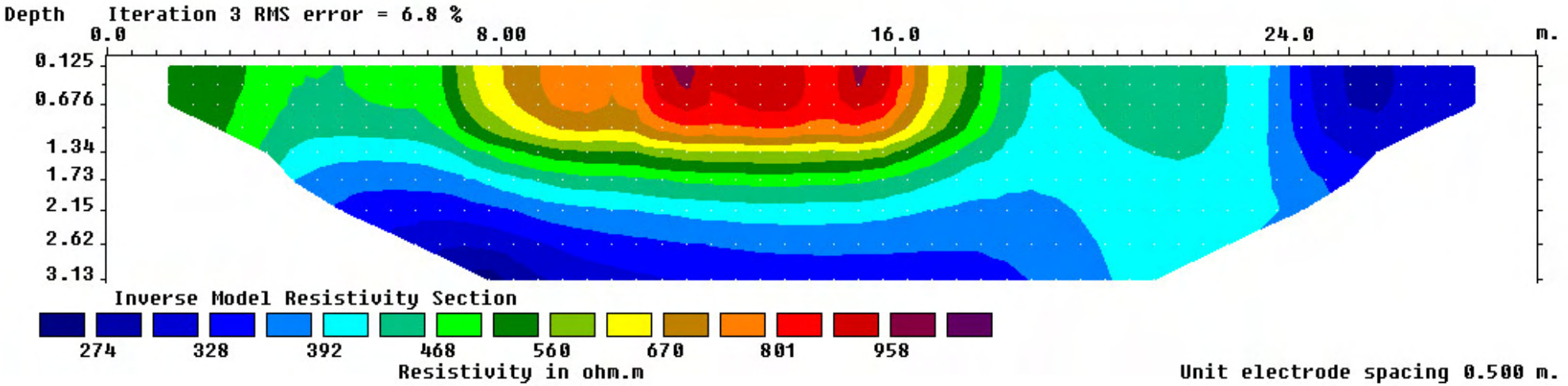
20 meter section through suggested wall foundation X20 Y140 N-W

Section 3

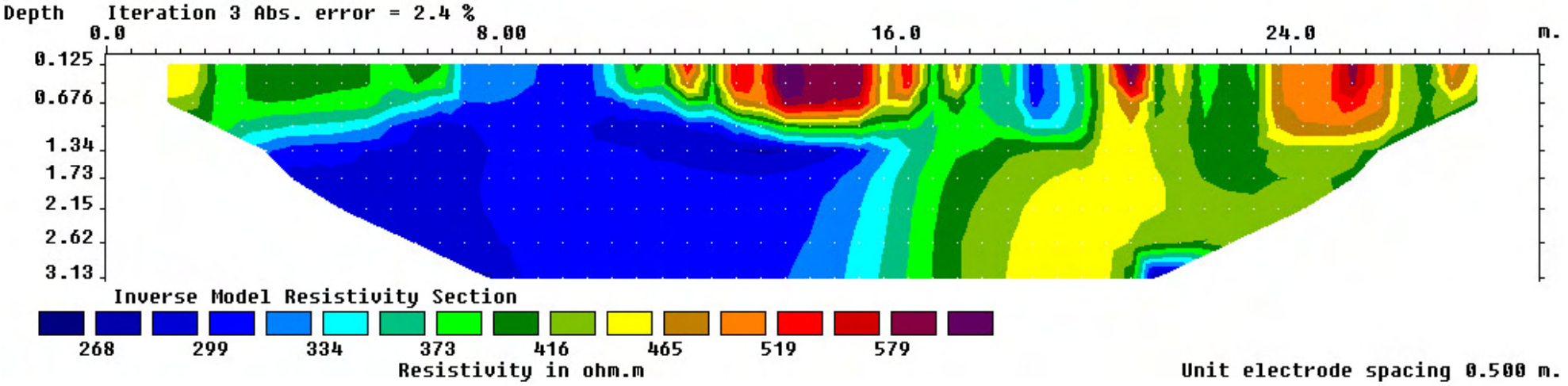


20 metre section through suggested wall foundation. Parallel to section 2 - 2 metres to north. Second wall appearing.

Section 4

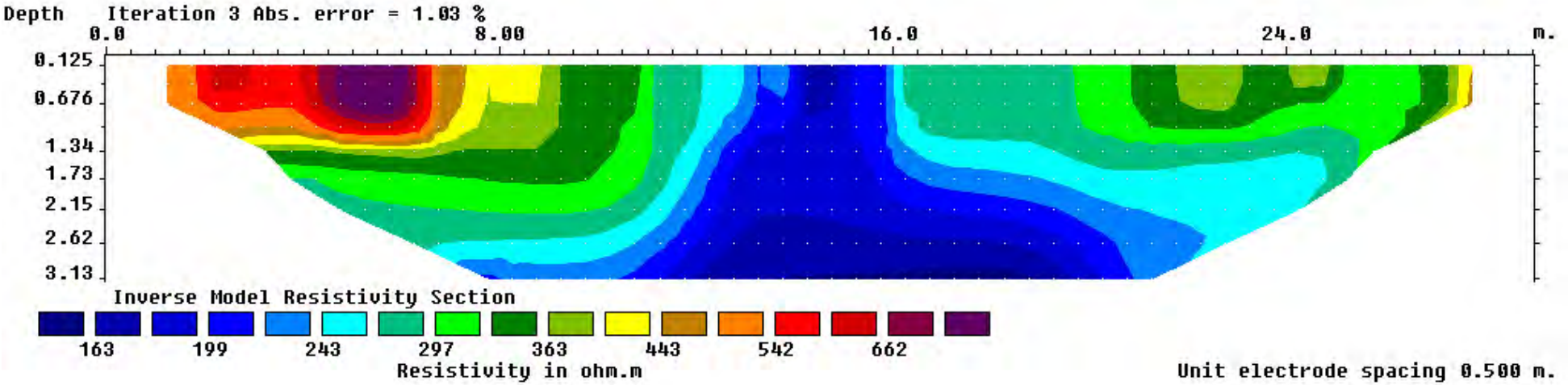


30 metre section within suggested moat, high resistance area on survey. X40 Y95 W-E.



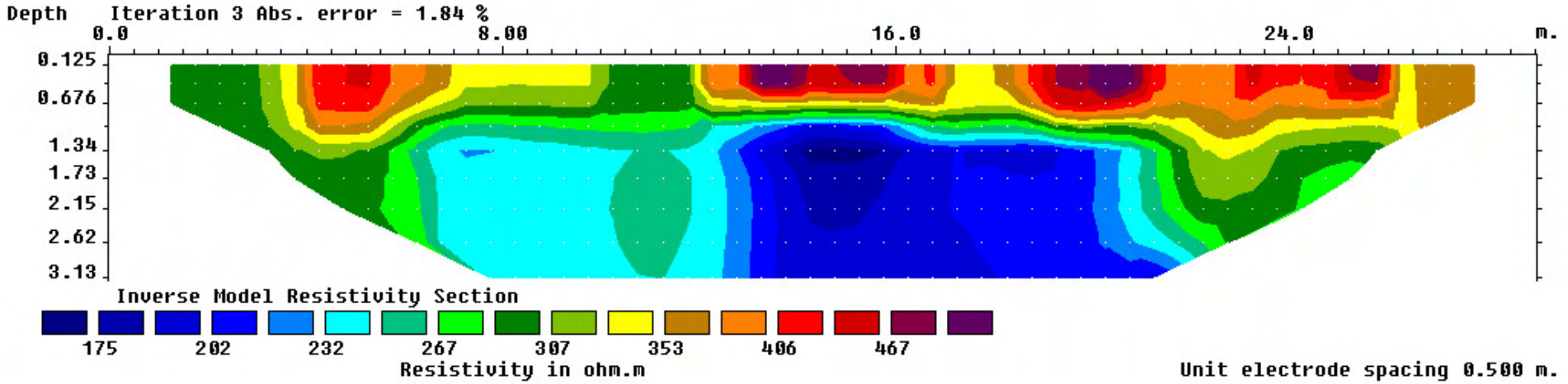
30 metre section within suggested moat, high and low resistance areas showing in remarkable contrast X30 Y95 W-E.

Section 6



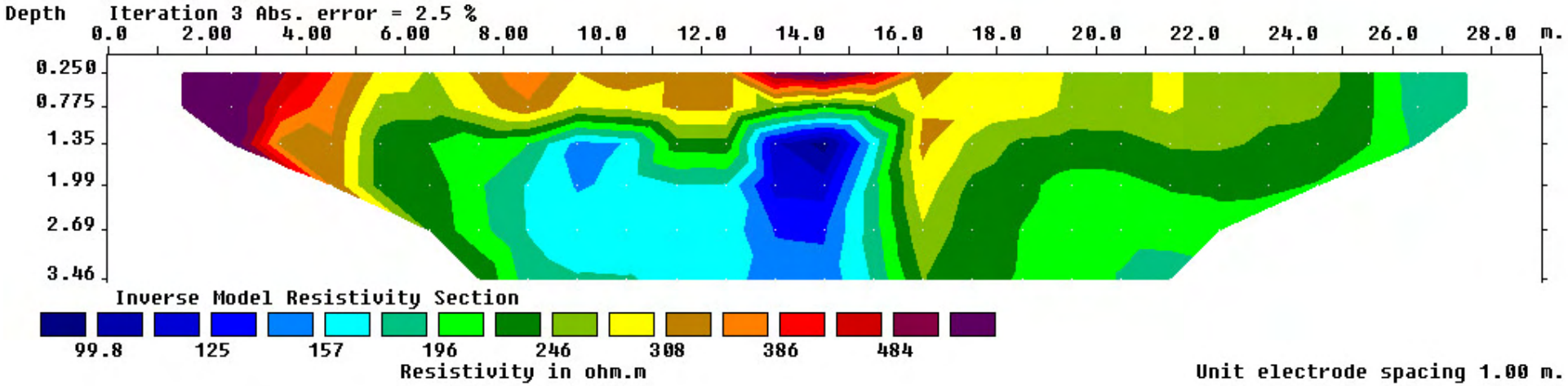
30 metre section to north of Katherine's Cross cutting through proposed foundation of fence X15 Y78

Section 7



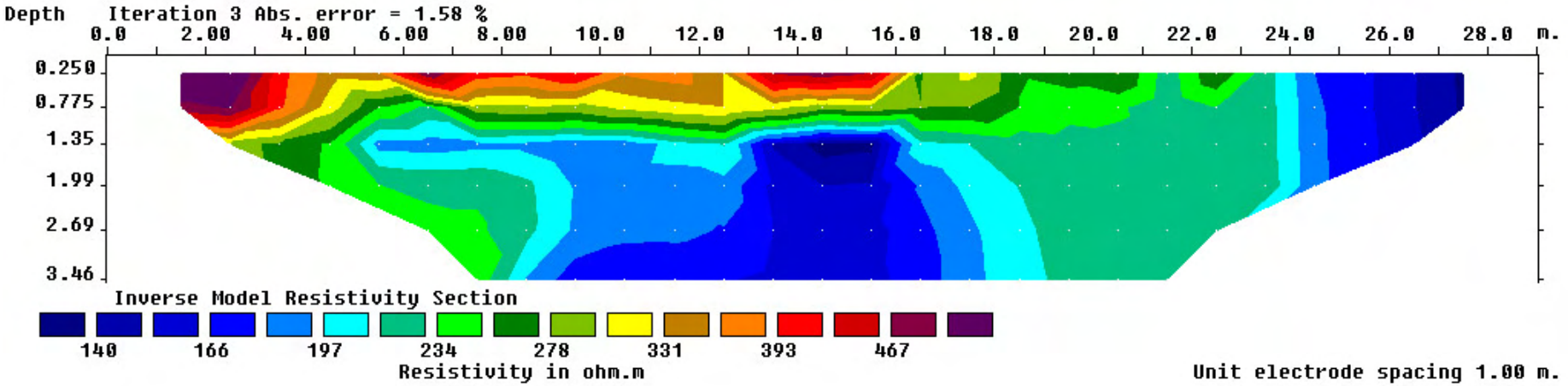
30 metre section to south of cross cutting through proposed fence line. X22 Y78

Section 8



30 metre section to east of cross X19 Y83 S-N

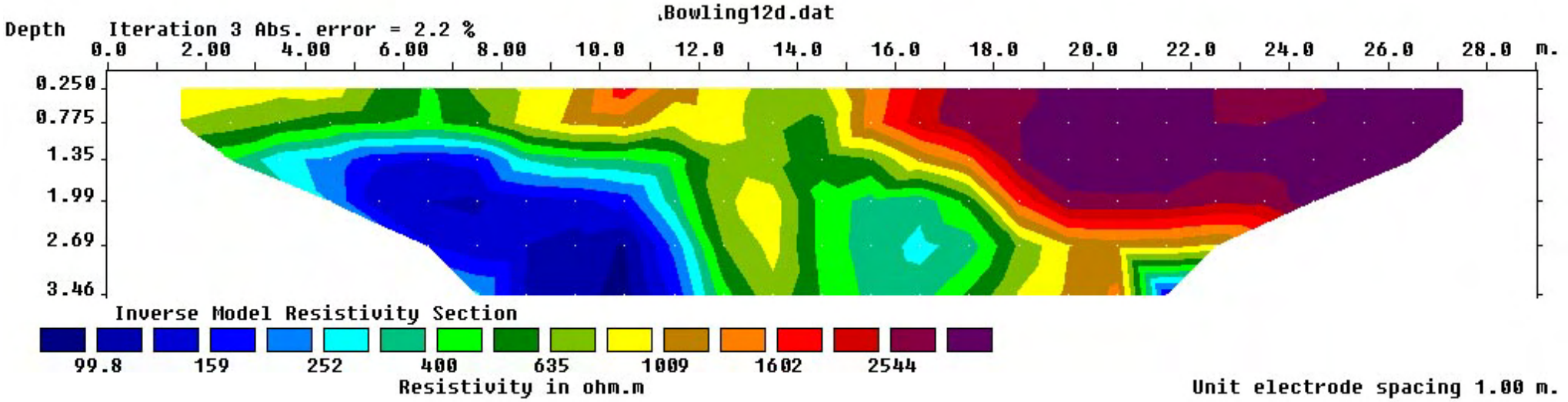
Section 9



30 metre section to west of cross X19 Y72 S-N

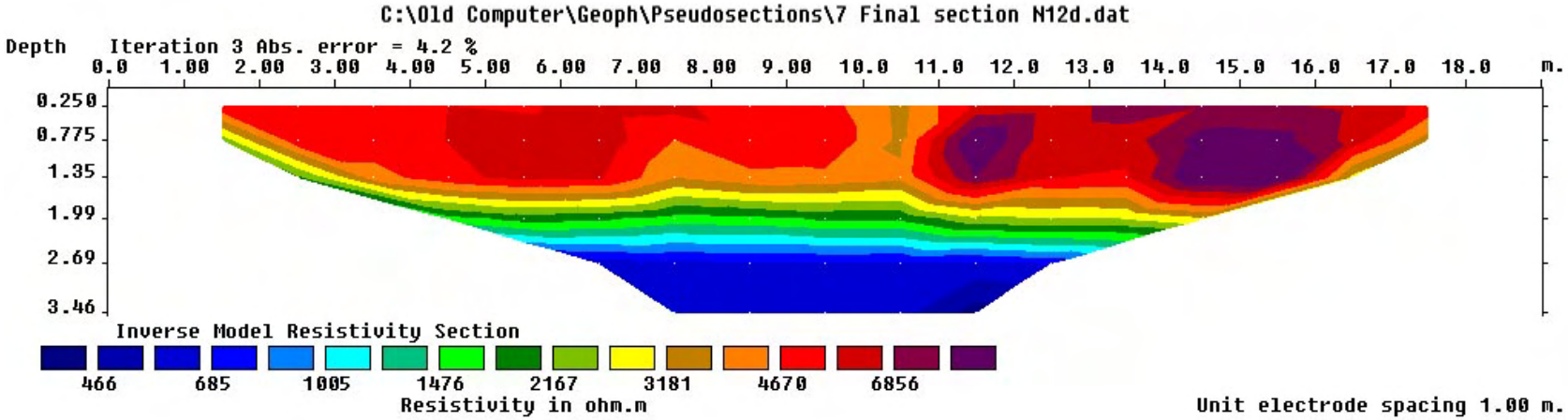
Pseudo Section of the Bowling Alley.

Below is a 30 metre section taken through the suspected Henry VIII's bowling alley. If it is true then the alley would have been in the ditch between 7.0 and 14 metres on the scale. The very high reading to the right of the section is showing pure sand. The ground appears to have been cut away and refilled at this point .

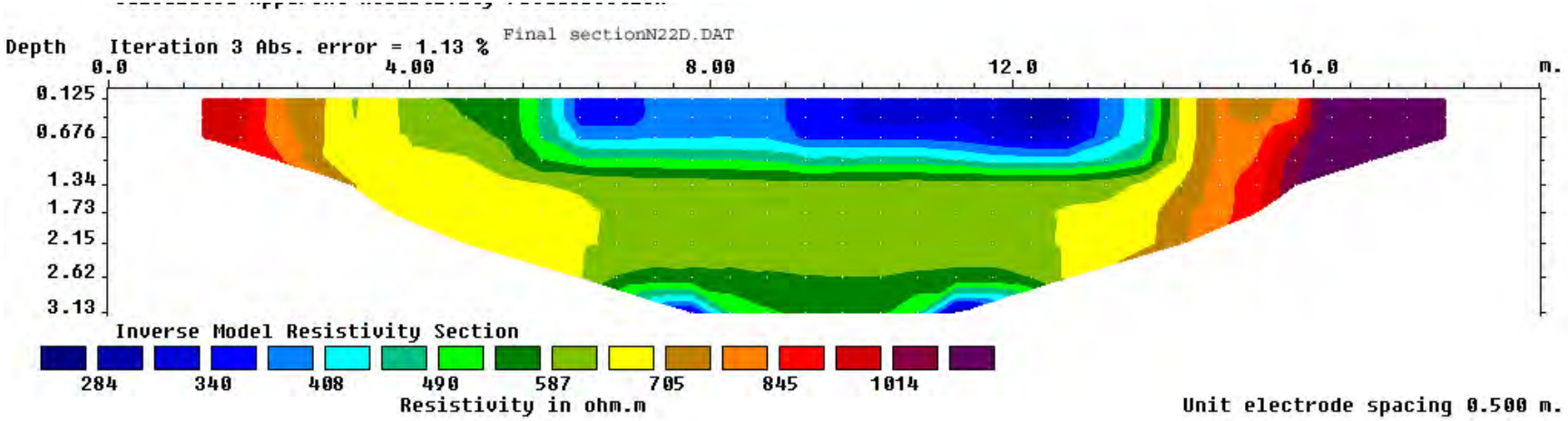


Trenches to be excavated

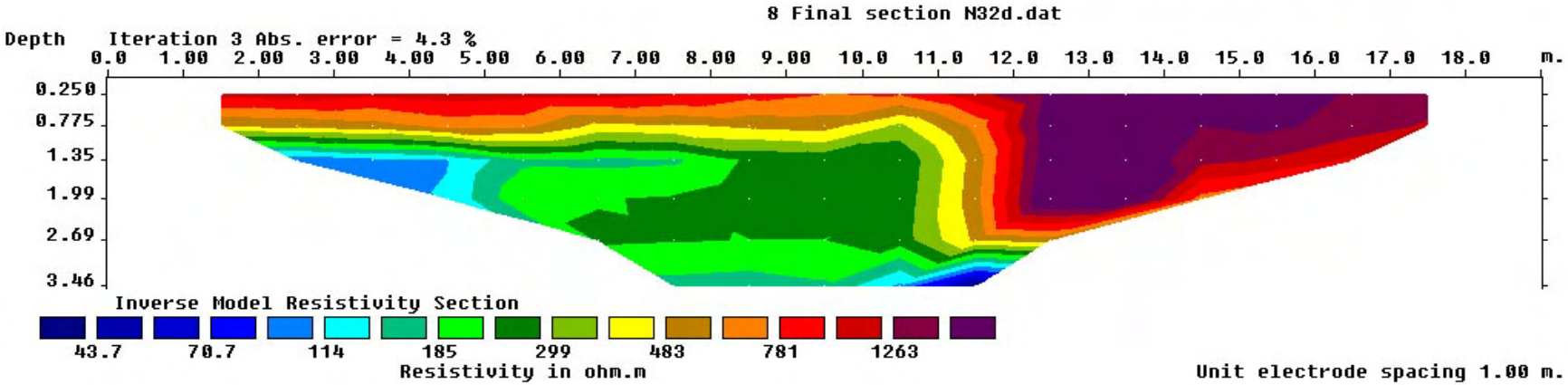
When the positions for the exploratory trenches were decided the Society sectioned the proposed area. Trench 1& 3 were sectioned across the trench while 2 & 4 followed the centre line of the trench.



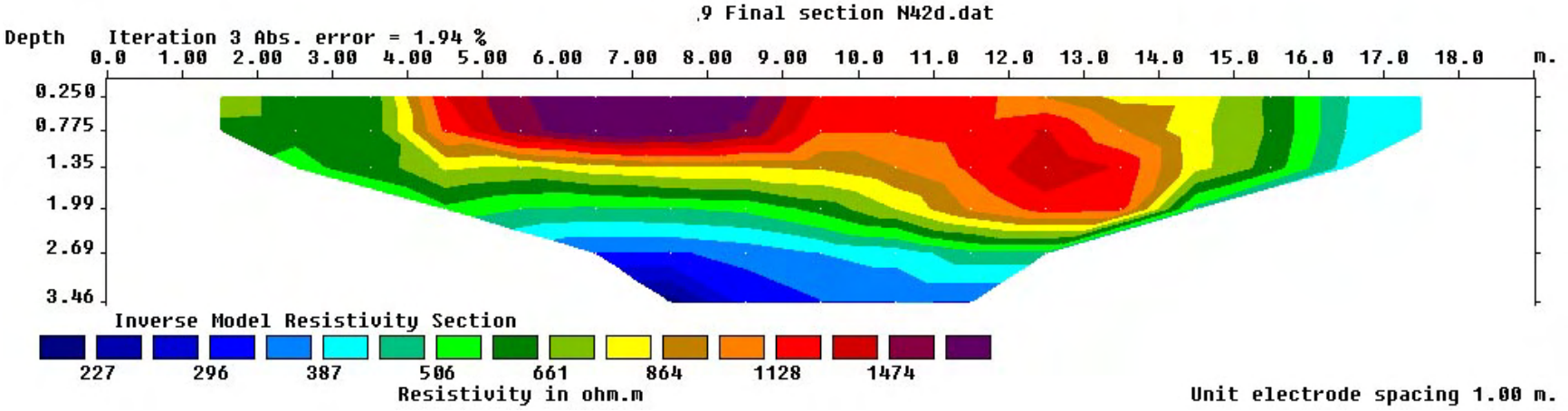
Trench 1



Trench 2

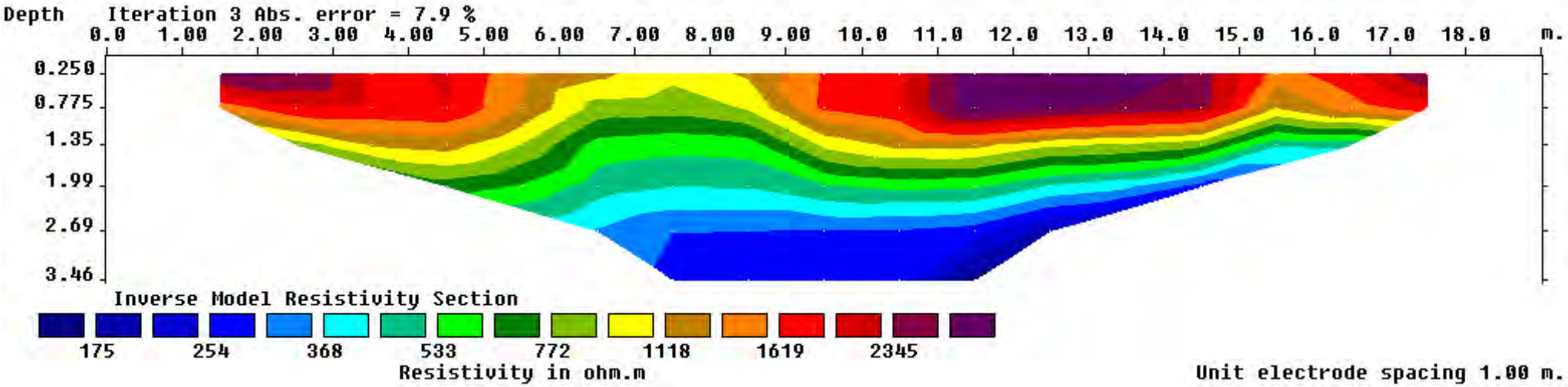


Trench 3



Trench 4

Section 10



Section taken during excavation parallel with trench 2 X115 - Y130.

Northamptonshire County Council

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