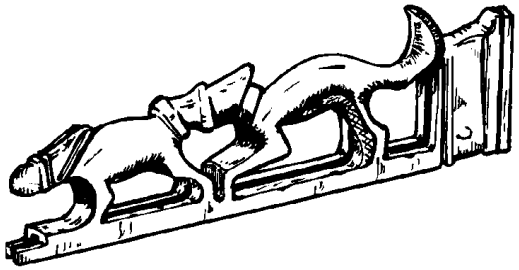
Ampthill & District Archaeological



& Local History Society

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.

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Updated December 2023
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Further Geophysical work on the area believed to be the site of Ampthill Castle.

These scans were carried out using a technique adapted from a system fairly widespread in geology but not often used 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 geophysical survey, as previously carried out on the castle site, it can greatly assist in deciding the best areas to excavate. It can for instance indicate the depth of archaeology down to bedrock in most cases.
A number of sections were carried out in advance of the excavations allowing non invasive investigation into some of the questions raised.

Objectives.

A/ 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..

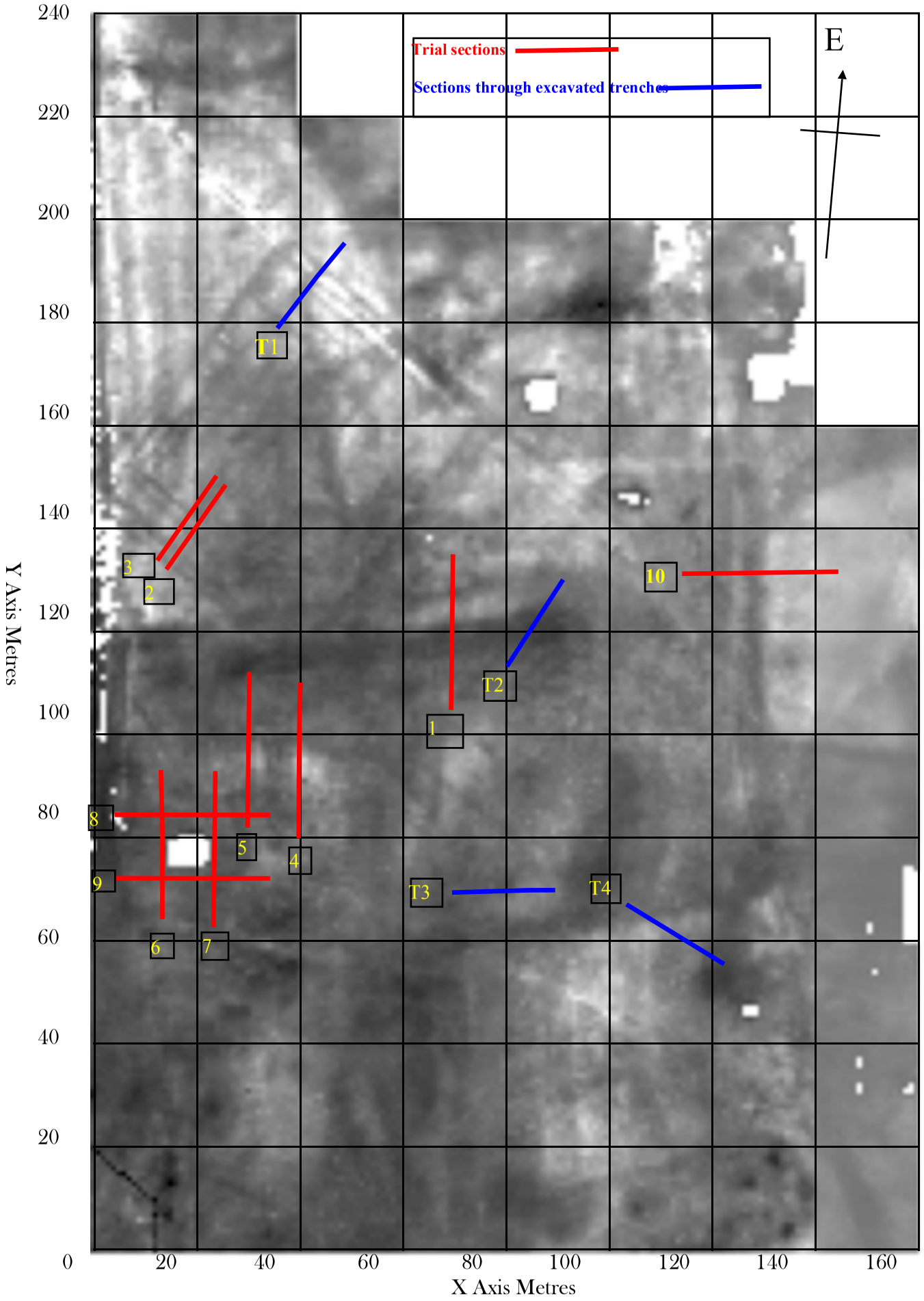
B/ To show where it would be advisable to excavate to obtain as much evidence as possible for the building's position and to establish whether an earlier building than that built by Sir John Cornwall in the early 15th century existed on the site.

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

D/ 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.

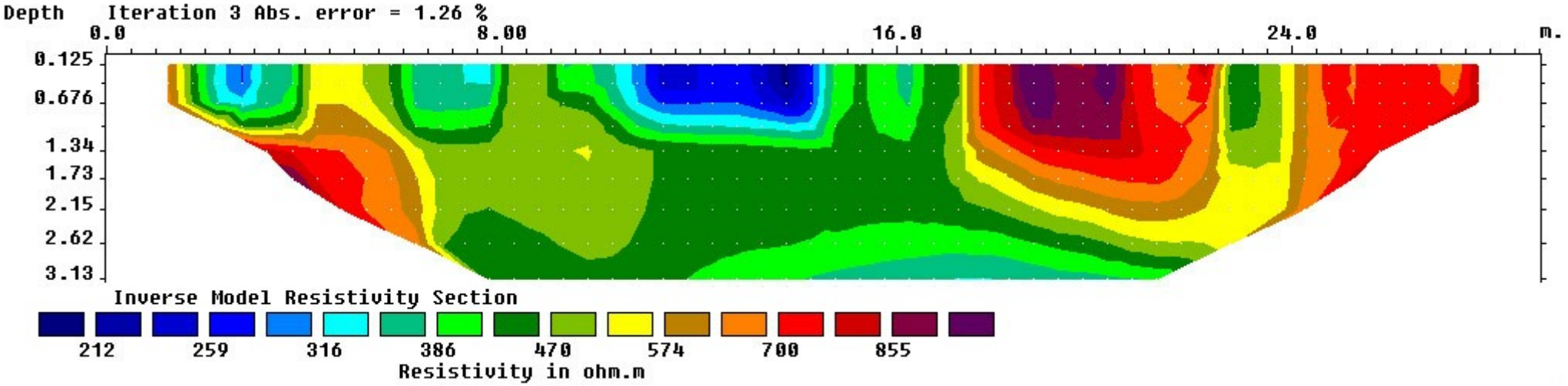
For record purposes and in case further excavations are contemplated; all the sections taken are included in this report.

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Pseudo - section positions on Resistivity Survey carried out in 2002/3

Section 1



30 Metre section across a linear area of very low resistance including the suggested moat X70,Y105, to X70,Y135

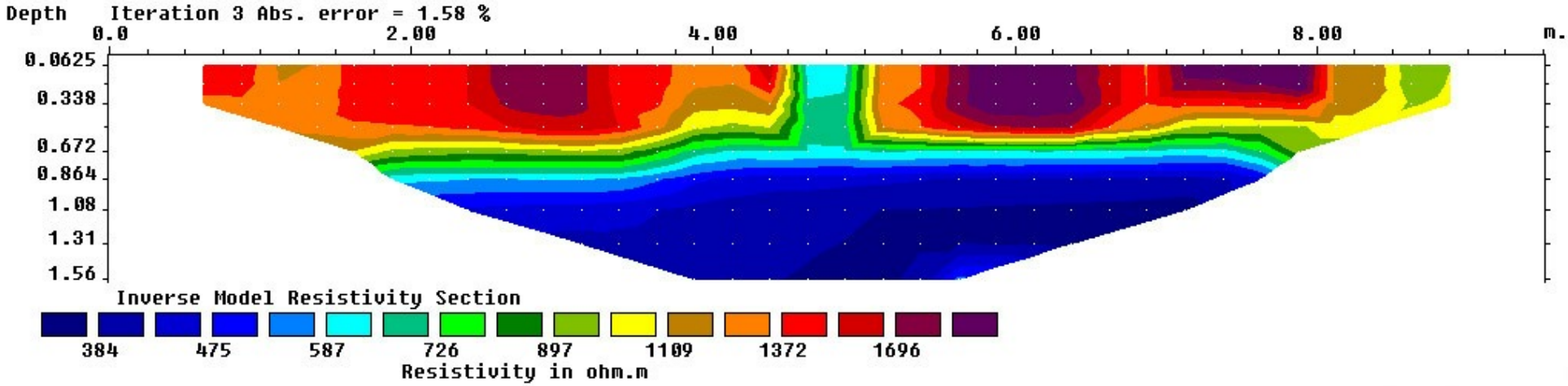
Reading Pseudo-sections.

All measurements are in metres, depth on left hand side width across the top.

The colour bands represent the resistance of the soil, the figures are not absolute as they change as moisture varies in the soil, but taken at the same time they give a fair comparison. From left to right the colours show increased resistance, e.g. low for ditches and high for walls etc.

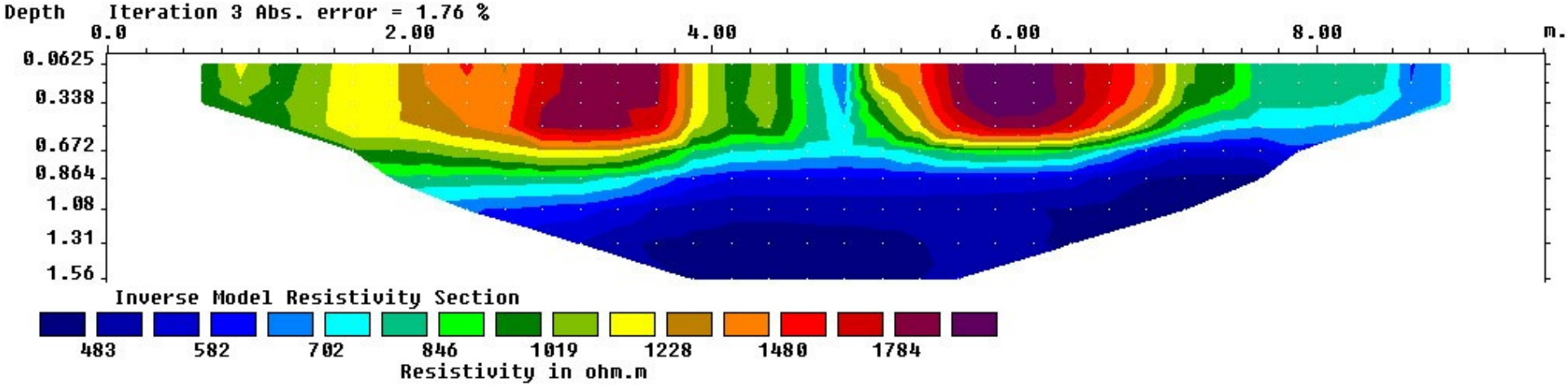
The results in the above section are complex showing possible ditches and walls, but the bright blue coincides with the suggested moat. Only excavation can be precise.

Section 2



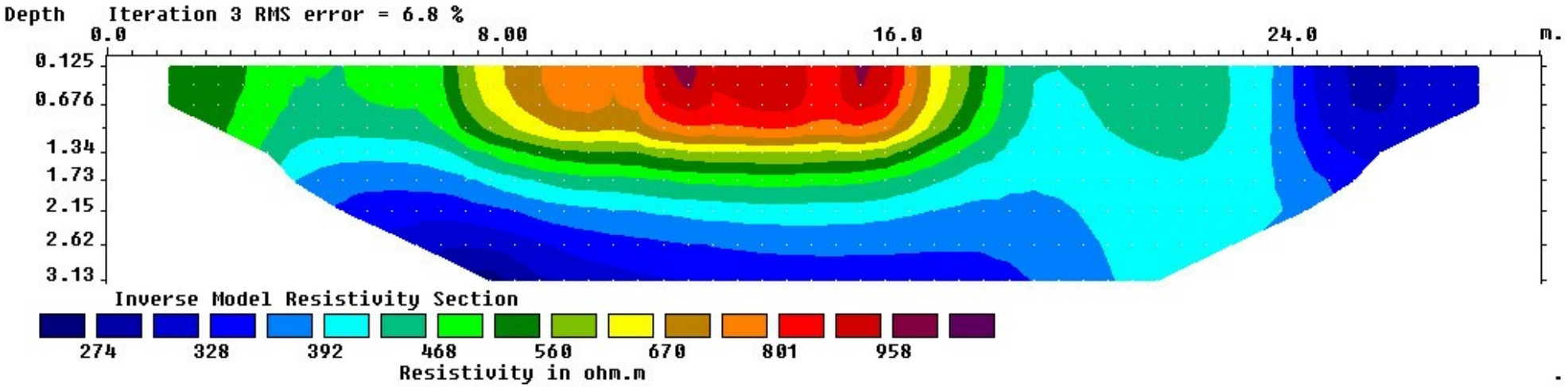
20 metre section through possible foundation trench X13,Y133 to X27,Y147

Section 3



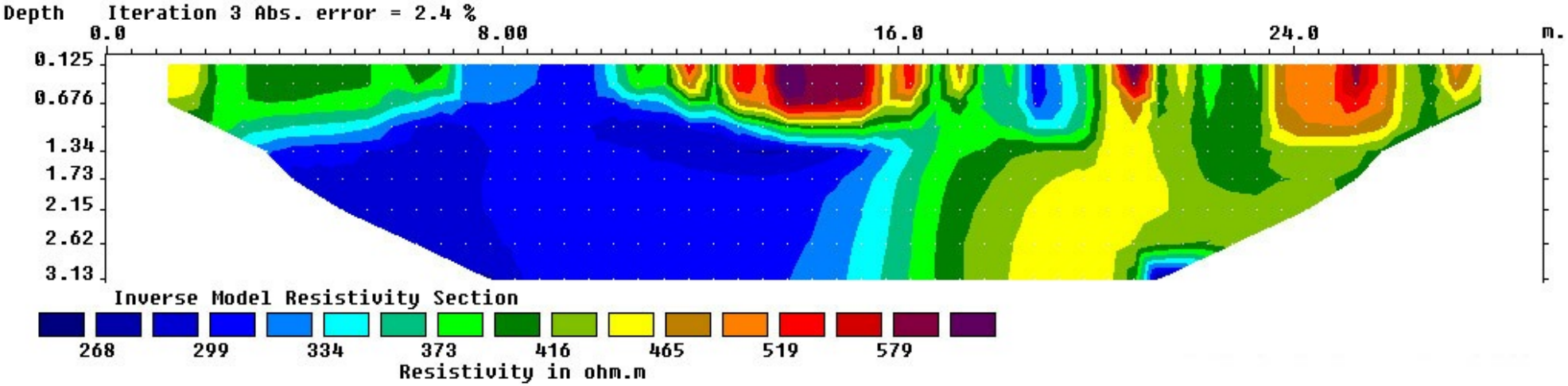
20 metre section parallel to section 2 - 2 metres to north. X12,Y134 to X26,Y148

Section 4



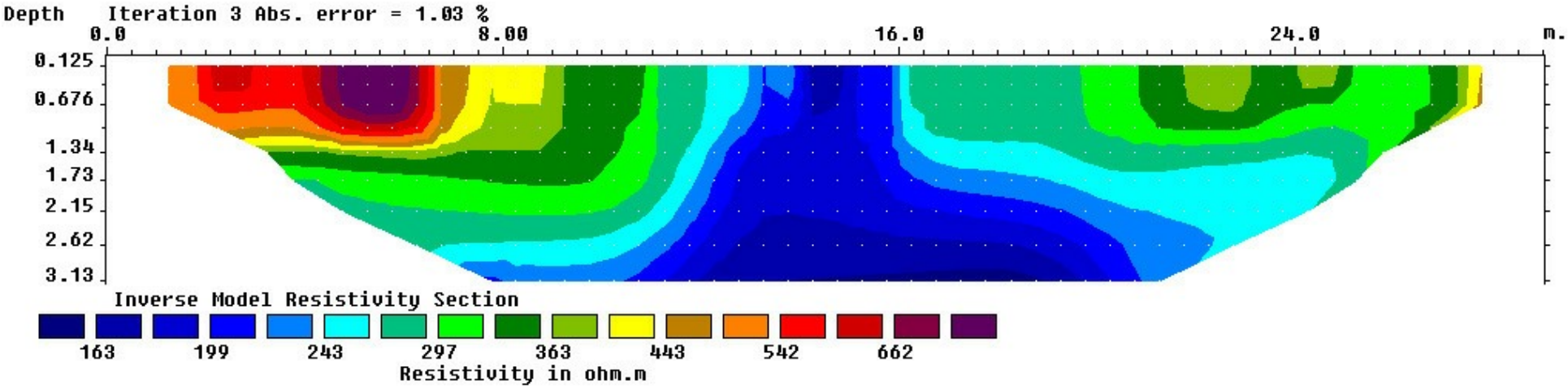
30 metre section across a high resistance area on survey within "moat" X40,Y80 to X40,Y110.

Section 5



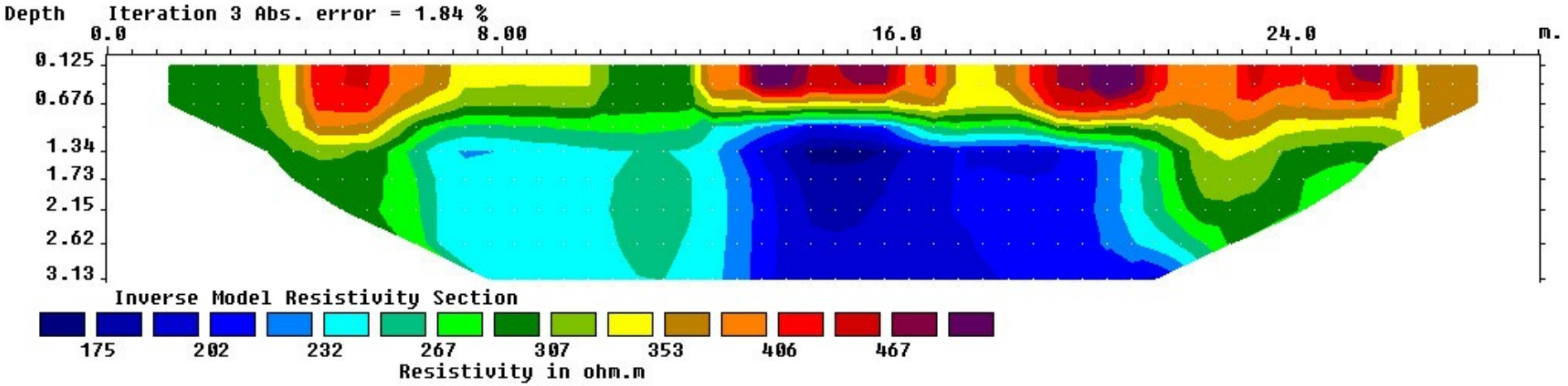
30 metre section within "moat", high and low resistance areas showing in remarkable contrast X30,Y80 to X30,Y110

Section 6



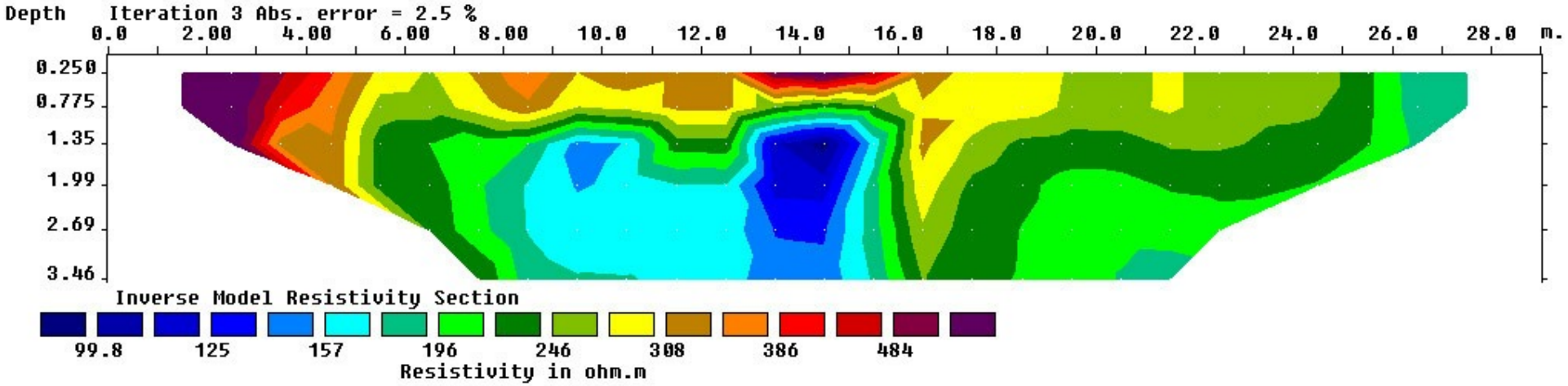
30 metre section to north of Katherine's Cross cutting through proposed foundation of fence X15,Y63 to X15, Y93

Section 7



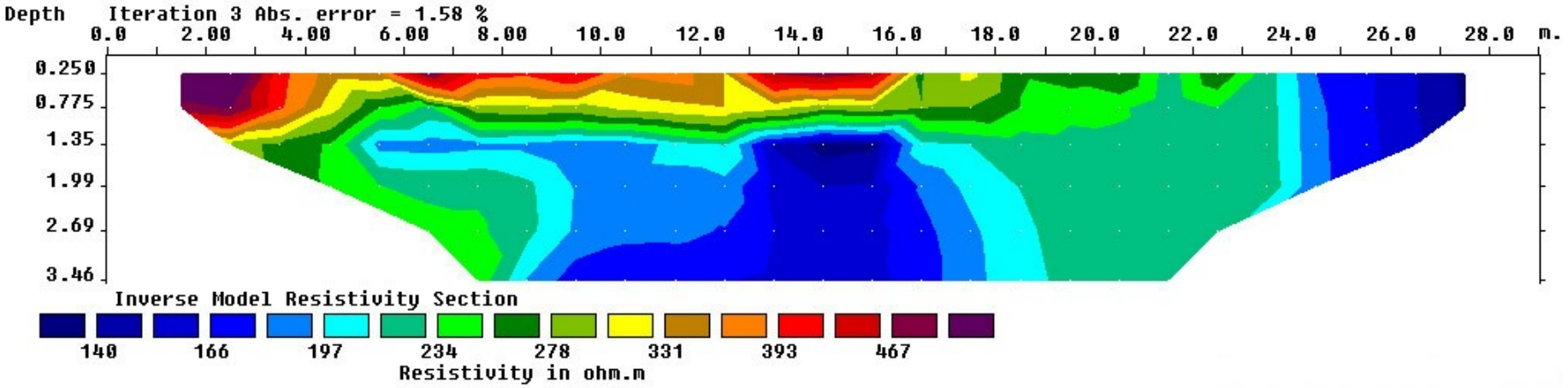
30 metre section to south of Cross cutting through proposed fence line. X22,Y63 to X22,Y93

Section 8



30 metre section to east of Cross X4,Y83 to X34,Y83

Section 9

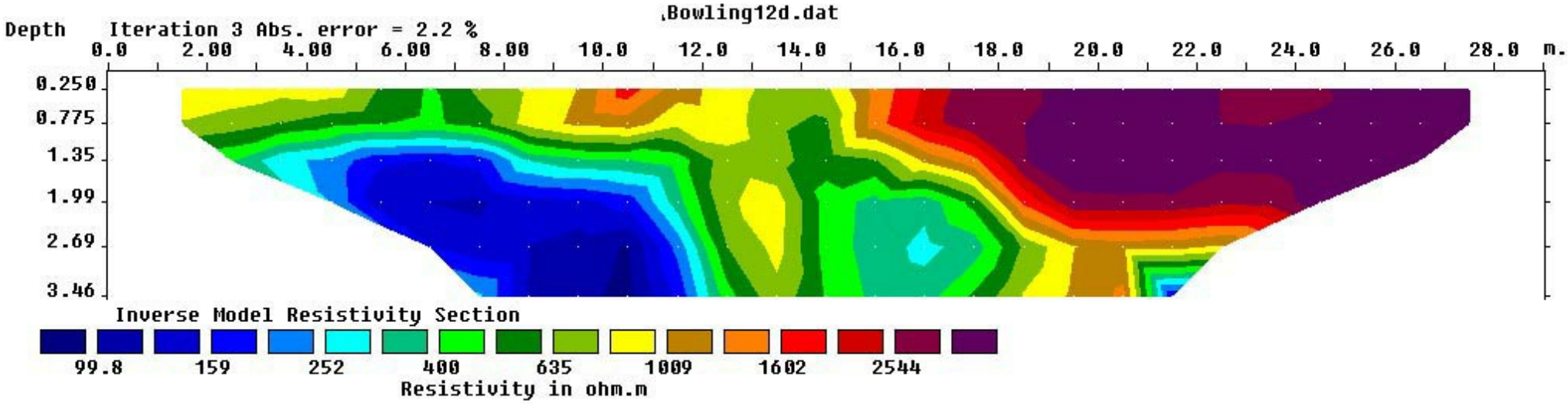


30 metre section to west of Cross X4,Y72 to X34,Y72

Pseudo- Section of Possible Bowling Alley.

Below is a 30 metre section taken through a possible site for Henry VIII's bowling alley. If this is the case 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.

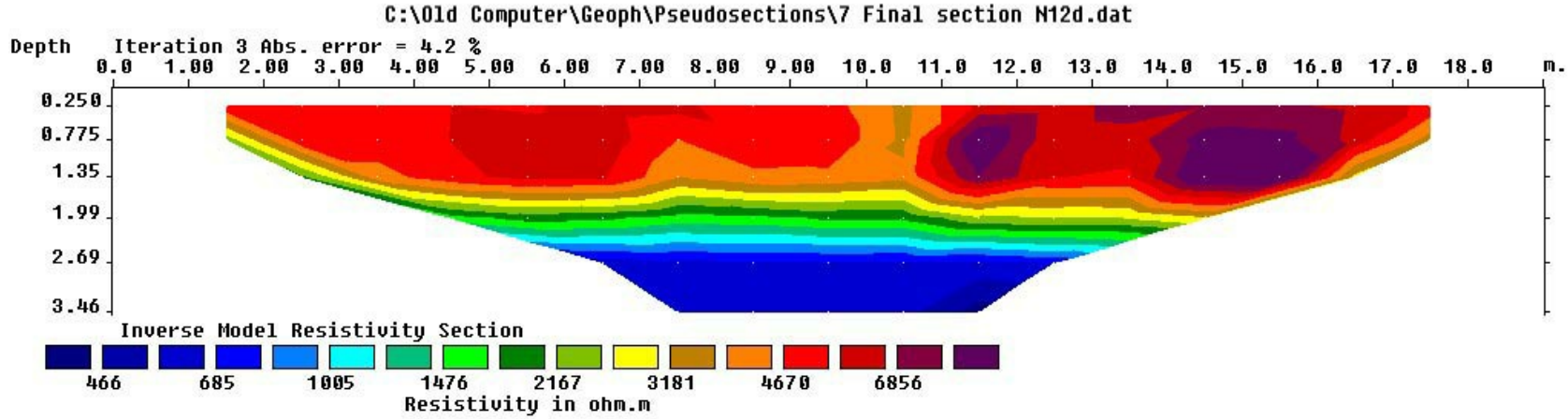
Section 10



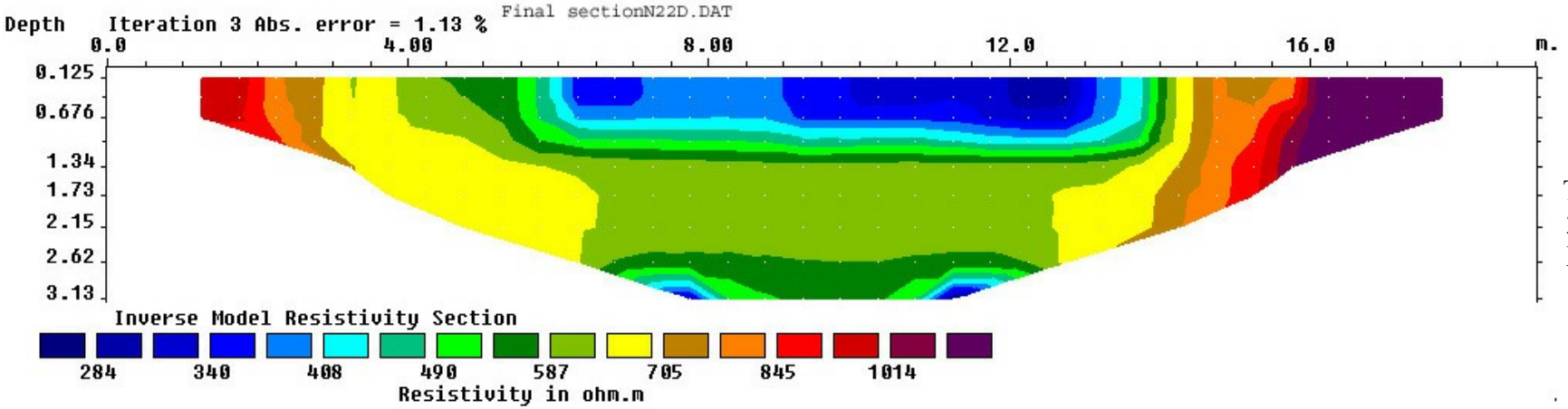
30 Metre Section X115,Y130 to X145,Y130

Trenches to be excavated

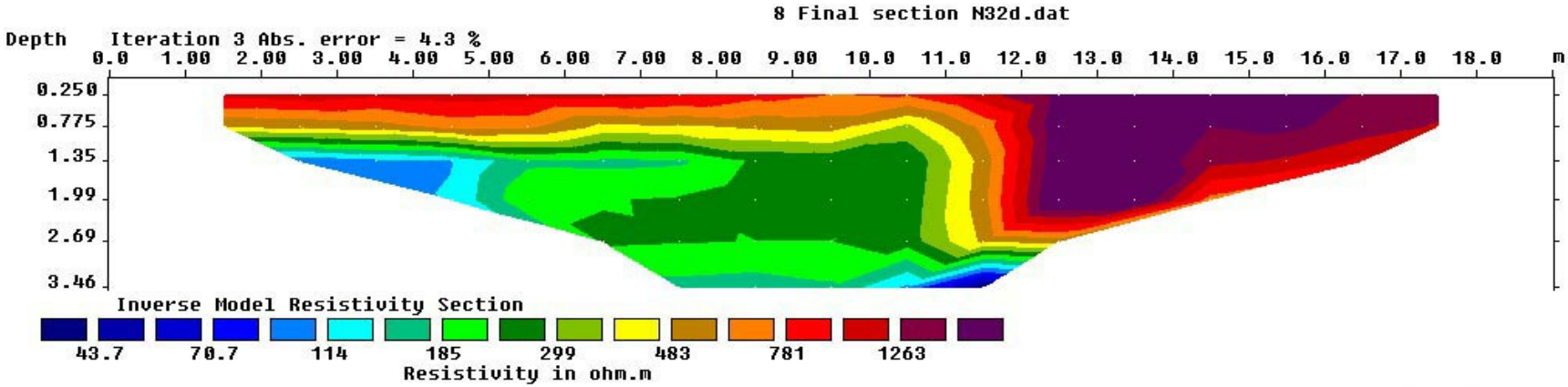
When the positions for the exploratory trenches were decided the Society sectioned the proposed areas. Trenches 1& 3 were sectioned across the trench while 2 & 4 followed the centre line of the trench. The sections were made available to the excavator.



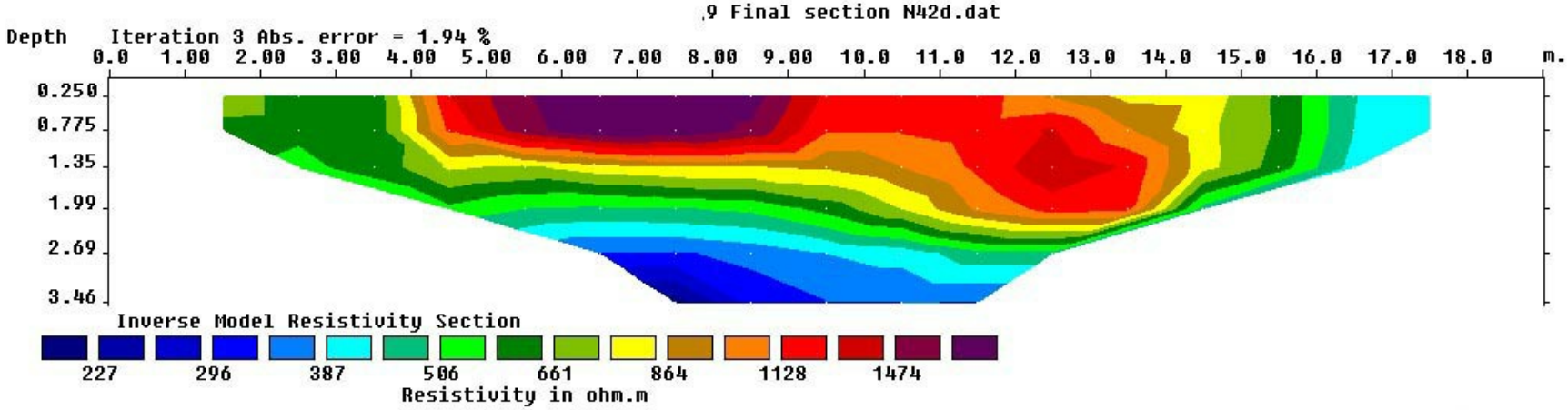
Trench 1
20 m Section T1
X38,Y179 to X51,Y196



Trench 2
20m SectioT2
X80,Y113 to X89,Y129



Trench 3
20m Section T3
X70,Y70 to
X90,Y70



Trench 4
20m Section T4
X105,Y65 to
X122,Y54

All the pseudo-sections were taken using a TR/CIA resistivity meter with a TR/CIA add on pseudo-sectioning kit. Processed by Geoelectrical Imaging 2D& 3D Geotomo Software. - RES2DINV ver. 3.56.

Comparisons of pseudo sections with excavation.

Pseudo-sections are designed to give an indication of where features occur below the soil surface, how deep they are and their shape. They in effect give an indication of the archaeological section that would be seen on the side of a trench if excavated. Taking this information into account the Society recommended where trial trenches should be cut. In the event their suggestions were ignored.

Objective A/. The pseudo-sections taken across the lines showing up on the resistivity survey were approximately 40 cm deep 60 cm wide as shown clearly on pseudo sections 2 & 3, so suggestions that they were caused by football pitch lines can be discounted.

Objective B/. The only trench excavated on the suggested castle site was Trench 1 which cut through an area where it is recorded that some walls were taken down before the 1567 survey* was carried out, and were represented by single lines on the plan.(See Pho.3).

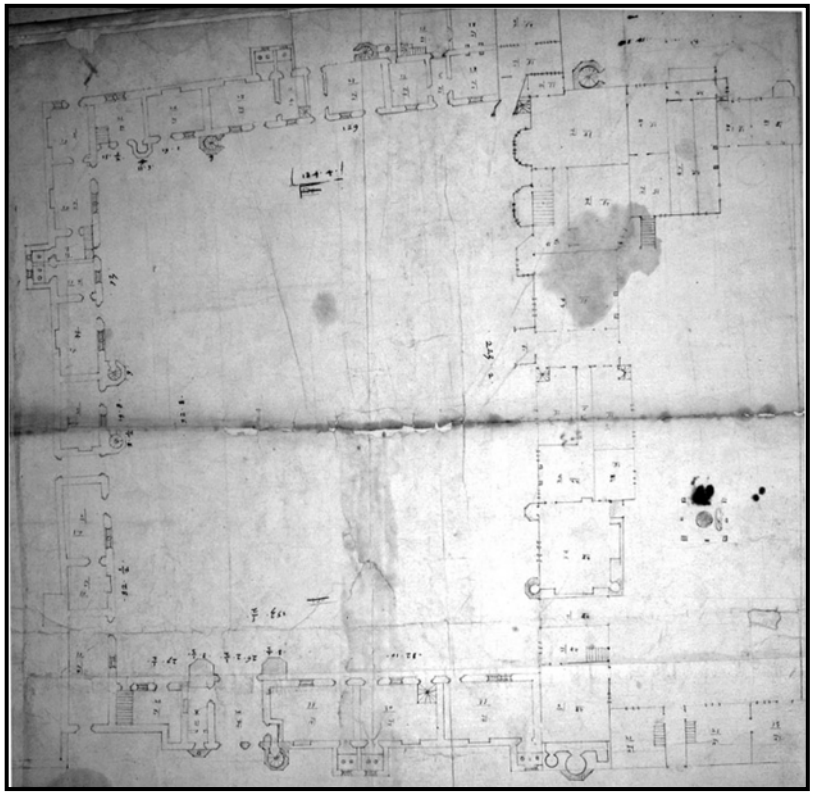


Pho.1 Trench 1 with turf removed.



Pho.2 Section through beam slot

*Detail from the 1567 plans held in Hatfield House. See Transcript of Manuscript E351/3203. Nat. Archivesssss Kew 1567. www.adalhs.org.uk



Pho.3 Detail from the 1567 plan in Hatfield House.

Pho.1. Shows Trench 1 with the turf removed. The beam slot stands out clearly, the dry weather had left a visible crop mark in the grass beyond the excavation. A similar crop mark ran parallel, to the right of the photograph (Personal observation by author). The section through the wall foundation fill is shown on Pho. 2, confirming objective A/.

Trench 2, was cut through the suggested moat, the pseudo-section clearly shows the moat in outline (in yellow and green), the infill shows a layer of low resistance (blue) which coincides with the layer of lime shown in Pho.4.



Pho.4. Detail from Trench 2.



Pho. 5. Brick structure, thought to be a hearth.

This large deposit was probably intended for lime mortar when the manor house was built c.1420. The trench was not excavated to bedrock. A considerable amount of clay roof tiles were in this trench which could have come from the castle, or from earlier buildings. There was of evidence of fire and what was suggested to be a brick hearth, but there was no sign of a substantial chimney as would be expected if it was within the castle building.

Trench 3 was excavated to bedrock, see pho.5; it revealed a hearth with a sherd from a couvre feu (a cover to extinguish fires in the evening while people slept). The pseudo-section is laterally inverted compared with the photograph, but it clearly shows a similar outline with layers dropping sharply to where the hearth can be seen.

Trench 4 was not taken to a point for any assessment. To be relevant.



Pho.5. Trench 3 showing the infill in section.



Pho.6. Trench 3. With hearth at bottom.

Objective C/. The pseudo-sections 6 & 7 show potential archaeology at the base of the cross. This would have been disturbed if the proposed iron railings had been installed. The instillation was not carried out.

Objective D/. The pseudo-section across the suggested bowling alley looks promising and could be followed up in any future excavation.

Objective E/. Trench 1 showed where the beam slot was located; it contained glazed pottery of probable 17th century, (witnessed by the author) plus some mid Saxon pottery. It was decided by the Excavator to abandon the trench which was pity as a subsequent magnetometer survey showed a buried ditch running under the Trench 1 site and a nearby excavation of a Saxon site in 2018 linked up the ditch. The Saxon pottery plus some prehistoric flints found in Trench 1 were undoubtedly residual

Conclusions

Taken overall the pseudo-sections taken across the plateau proved that with careful study prior to an excavation the system can assist in deciding where trial trenches should be located. They also give an indication of the depth of archaeology, this is very useful when excavating anywhere on the Greensand Ridge as the colour of the soil changes quickly as it dries out, this can mislead the excavators to believe they have reached bedrock when there may be a sealed layer below.

All photographs were taken by the author, who watched the excavations throughout.

There is no official report of the excavation in the public domain.