Presumably, the low resistivity anomaly at the natural subsoil was a response to the moisture maintained within the fill material of the post-pit feature. The feature was difficult if not impossible to reliably map between the 0.25 and 1m layers, which may be accounted for by a lack of contrasting fill material and moisture contained within the feature, so it appears the same as surrounding materials.

The geophysical character of this feature at a depth of 1m and deeper changed to high resistivity. One explanation for this may be that the bottom of the post-pit was being mapped through the contrasting moisture retained in the pit fill material and the gravel base that it was excavated into.

5.2.4 GPR Survey Results

The surface GPR survey initially appeared to map the 'Woodhenge' feature. A number of anomalies were interpreted in this data set; some correspond to the 'Woodhenge' post-pit features while others appeared to be natural. A gravel layer appeared in the data that was an obvious hydro-deposited gravel bank that slopes to the south

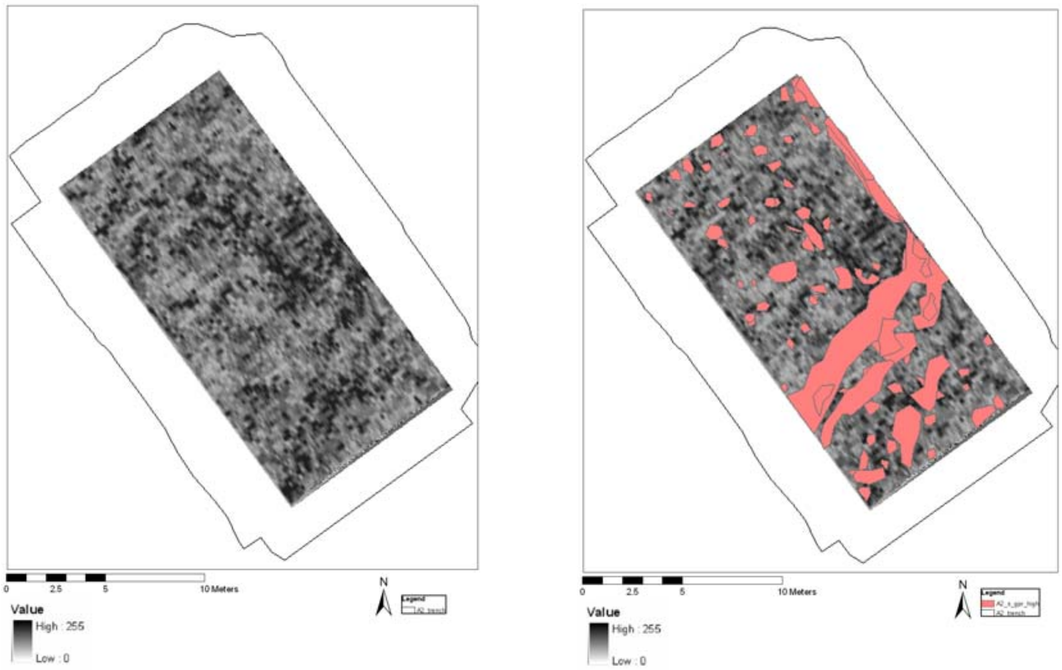

Figure 66. A2 GPR plan map at 0.75m (left) with interpretations (right).

The goal of this survey was to map the post-pit features of the 'Woodhenge' monument. During the interpretation process special attention was focused on identifying circular anomalies with similar appearances in the data. As can be seen in the image on the right of figure 66 a number of circular anomalies were identified. The second step in interpretation was to attempt to recognise patterns in the distribution of the circular anomalies that may reflect the concentric rings of post-pits visible in the cropmarks.

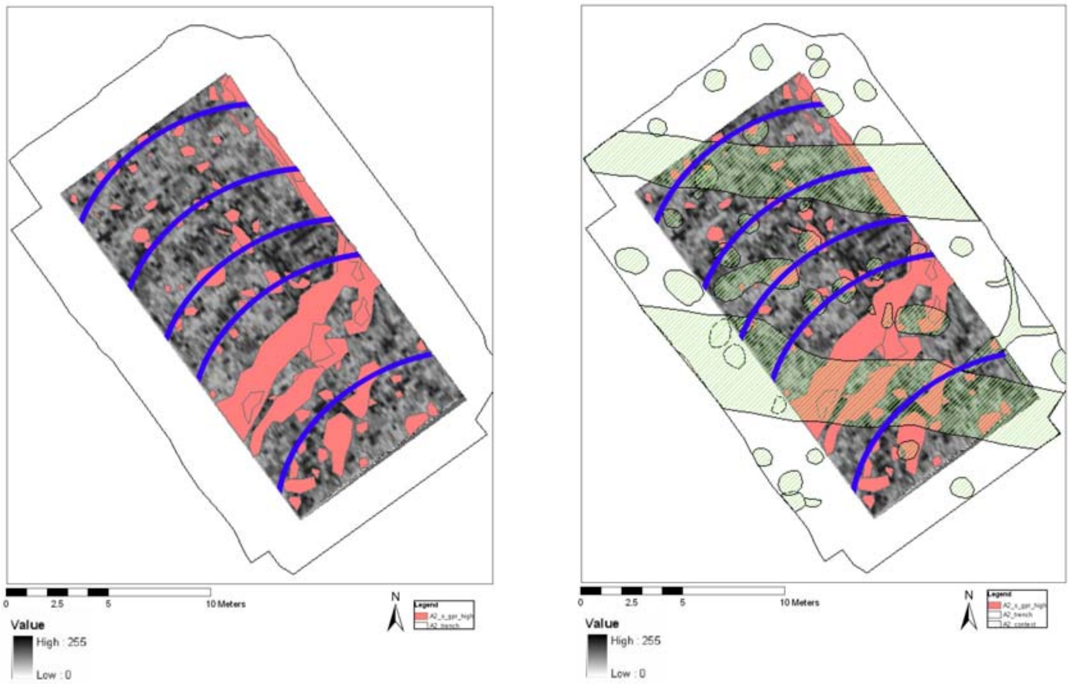

Figure 67. A2 GPR anomaly interpretation with overlain blue arcs at possible post-pit alignment (left). The image on the left shows the excavation plan mapping the position of post-pits.

This method of data interpretation identified the positions of post-pits of the 'Woodhenge' feature in the surface GPR survey, much to the surprise of the interpreter. Note that GPR anomalies were identified that lay beneath the broad plough furrows that cross the survey area (green hatched features in figure 67, image on the right). Some of these anomalies appeared to correspond to the arcs of pits in the plan map and may be post-pits. In this particular application, GPR appeared to be an effective survey tool to use to 'see' beneath other features that may block visible identification.

Very important to this identification process for the GPR data was the fact that the interpreted anomalies were not all in the same plan map, but instead they were distributed throughout the first 1.25m of the GPR data. Only through intensive assessment of individual plans (one every 0.05m) were the anomalies able to be grouped together to present a larger picture of the nature of the information within the GPR data. The fact that these data are in a GIS and each anomaly interpreted has an assigned depth provides a format for further investigations into individual features and their appearance or not, in the GPR data.

GPR survey on the natural subsoil provided detailed information on the archaeological features. Post-holes appeared mostly between approximately 0.30 to 0.40m in the GPR record as low amplitude anomalies. In a few instances, additional anomalies appeared at 0.55m depth.

As with the GPR survey in area A1, a detailed map of surface features was recorded in the ground coupling wave and provided a clear picture of the archaeological features of the 'Woodhenge'. But in the case of A2, the best plan of the archaeological features was seen at approximately 0.55m depth.

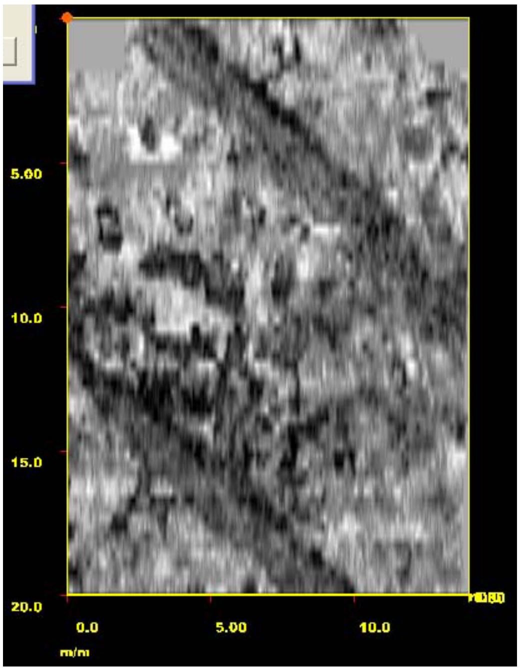

Figure 68. A2 GPR natural subsoil plan map at the ground coupling position.

Nearly all of the post-pit features were identified in the GPR data. Note the slight offset of the maps below, this is due to mapping inaccuracies and data rectification. Despite the offset, the anomalies identified can be related to the archaeological features. Post-pits located beneath the plough furrows were even more clearly mapped than in the surface GPR survey.

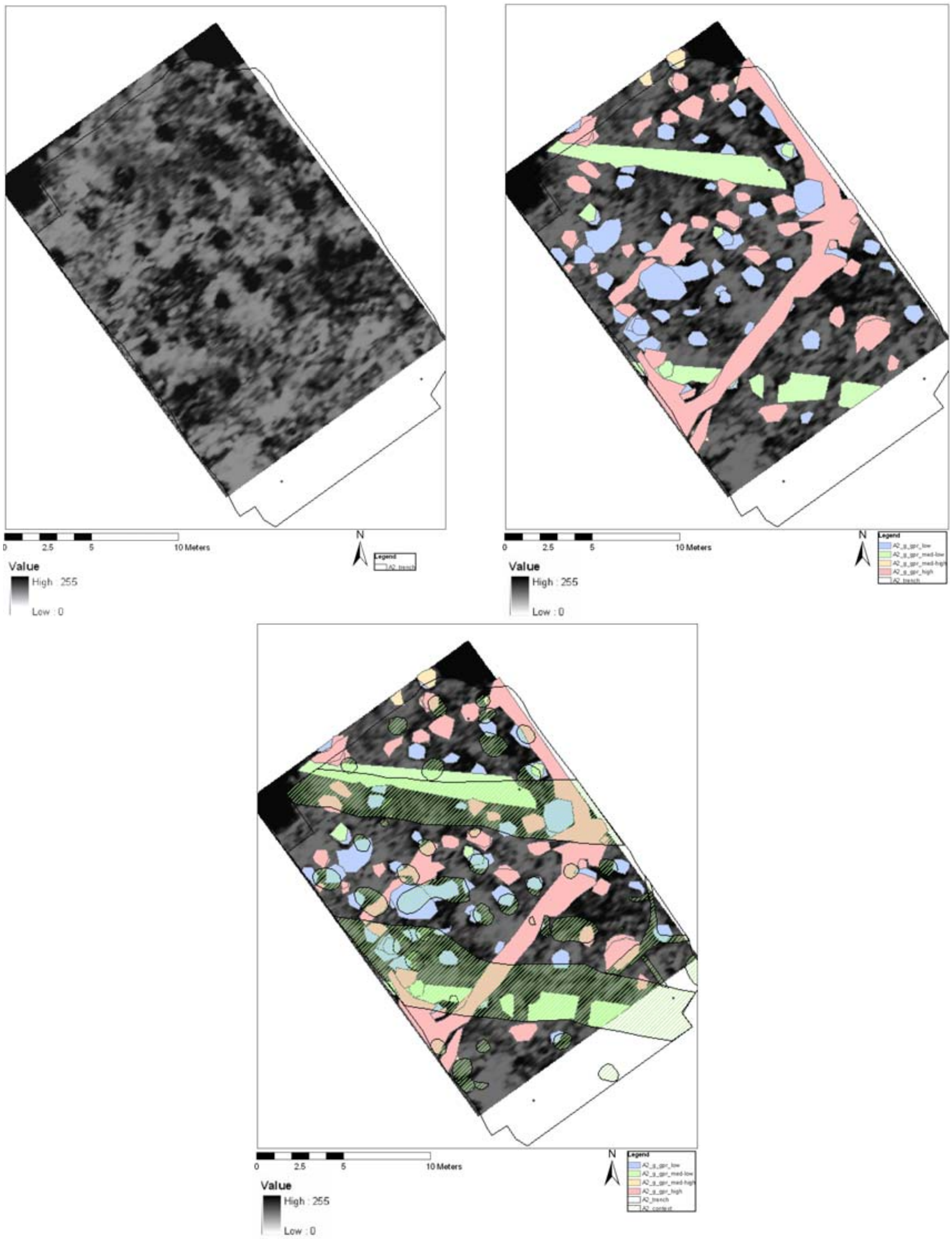

Figure 69 A2 GPR natural subsoil at 0.55m depth (left) with interpretations (right) and overlain excavation plan (bottom).

At 0.65m we began to see a gravel bank that first appeared on the northeastern edge of the area and crossed over just below the middle of the survey area. This feature appeared as a linear high amplitude anomaly and was traced across the site with increasing depth as it travels to the south. In this gravel bank, one post-hole was clearly seen to be excavated down into the gravel, revealed very distinctly in the data. The area of this excavation was smaller than, presumably, the same anomaly identified closer to the surface. In this instance we saw the GPR data provided not only positional information on the archaeological feature, but depth and diameter as well.

The actual post-pit anomaly did not appear in all of the GPR plan. Instead, we saw it at the very surface of the survey and at the bottom of the feature but not in between. On the surface we saw the contrasting dielectric values of the pit fill and the surrounding materials and at the base of the feature we probably saw the contrasting properties of the pit fill and the underlying gravels. The reason why we did not see the feature clearly between these two stages is probably related to the geometry of the GPR radar wave pattern and the structure of the feature in its surrounding context.

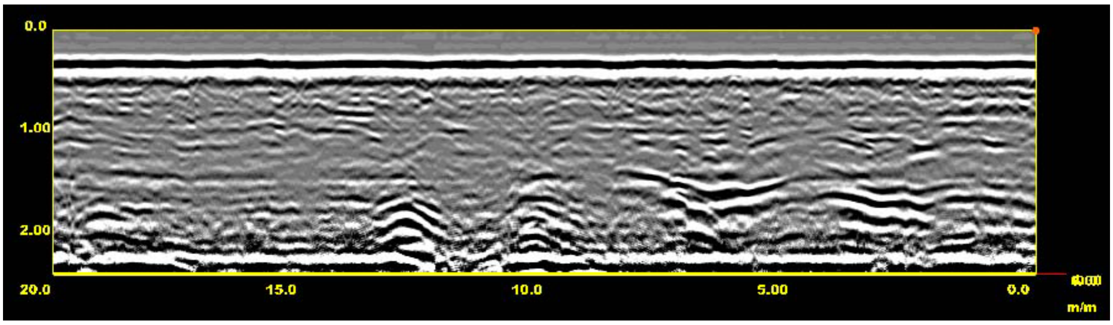

Figure 70. A2 GPR profile across post-pit features.

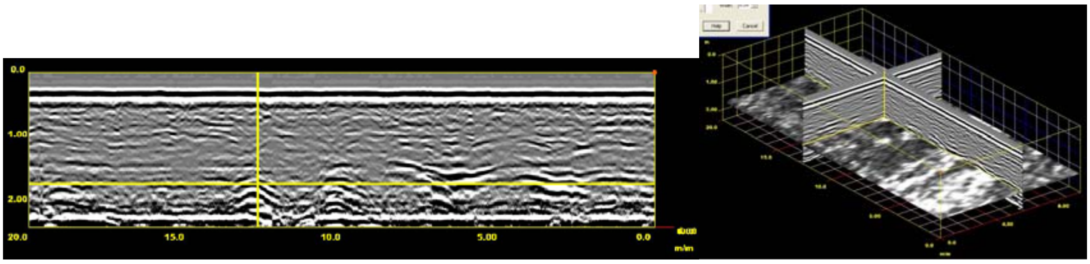

Figure 71. A2 GPR profile across post-pit features with yellow crosshair identifying position of post-pit in the plan map.

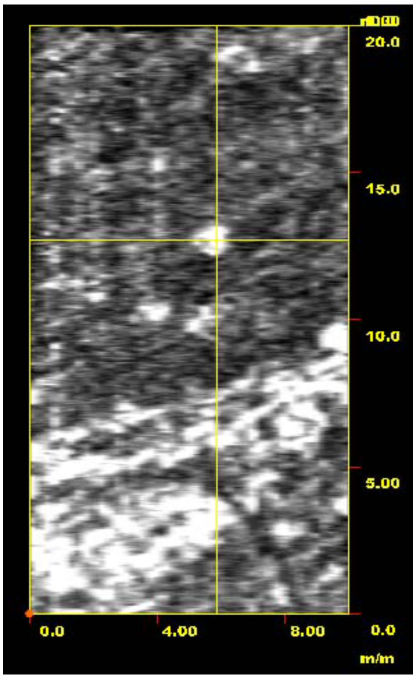

Figure 72. A2 GPR plan map at approximately 0.65m depth.

The identification of post-pit features in the vertical GPR profiles was difficult compared to the pits of Area A1. The most effective mapping of the post-pit feature was through the plan view maps.

5.2.5 A2 2m x 5m Sub-area

5.2.5.1 Magnetic Susceptibility

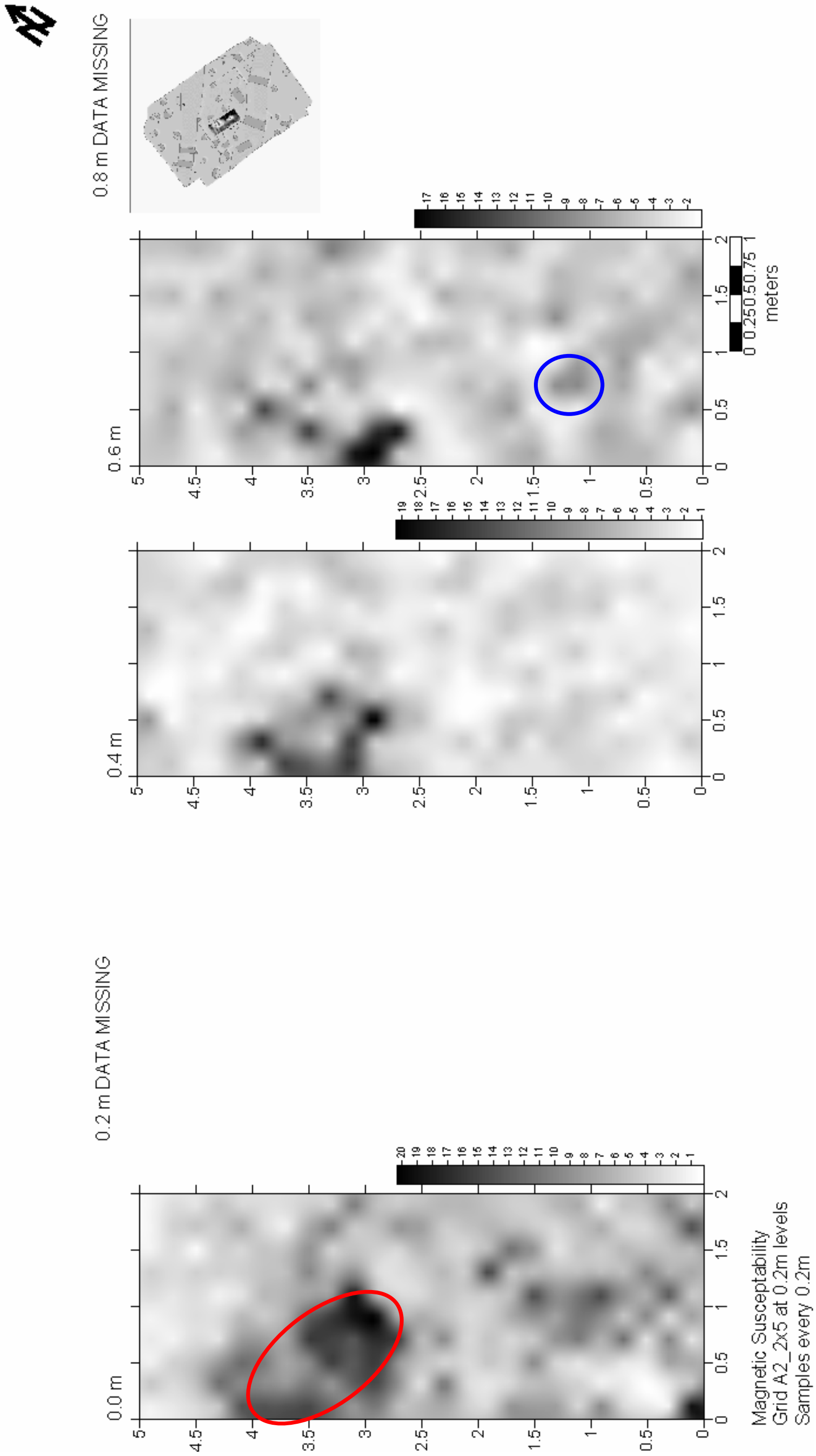

Figure 73. A2 2m x 5m sub-area magnetic susceptibility survey results.

The magnetic susceptibility maps showed the large pit feature (circled in red in the top layer) throughout all levels surveyed. The anomaly outlined in blue may represent the post-pit in the bottom of the sub-area.

5.2.5.2 Resistivity

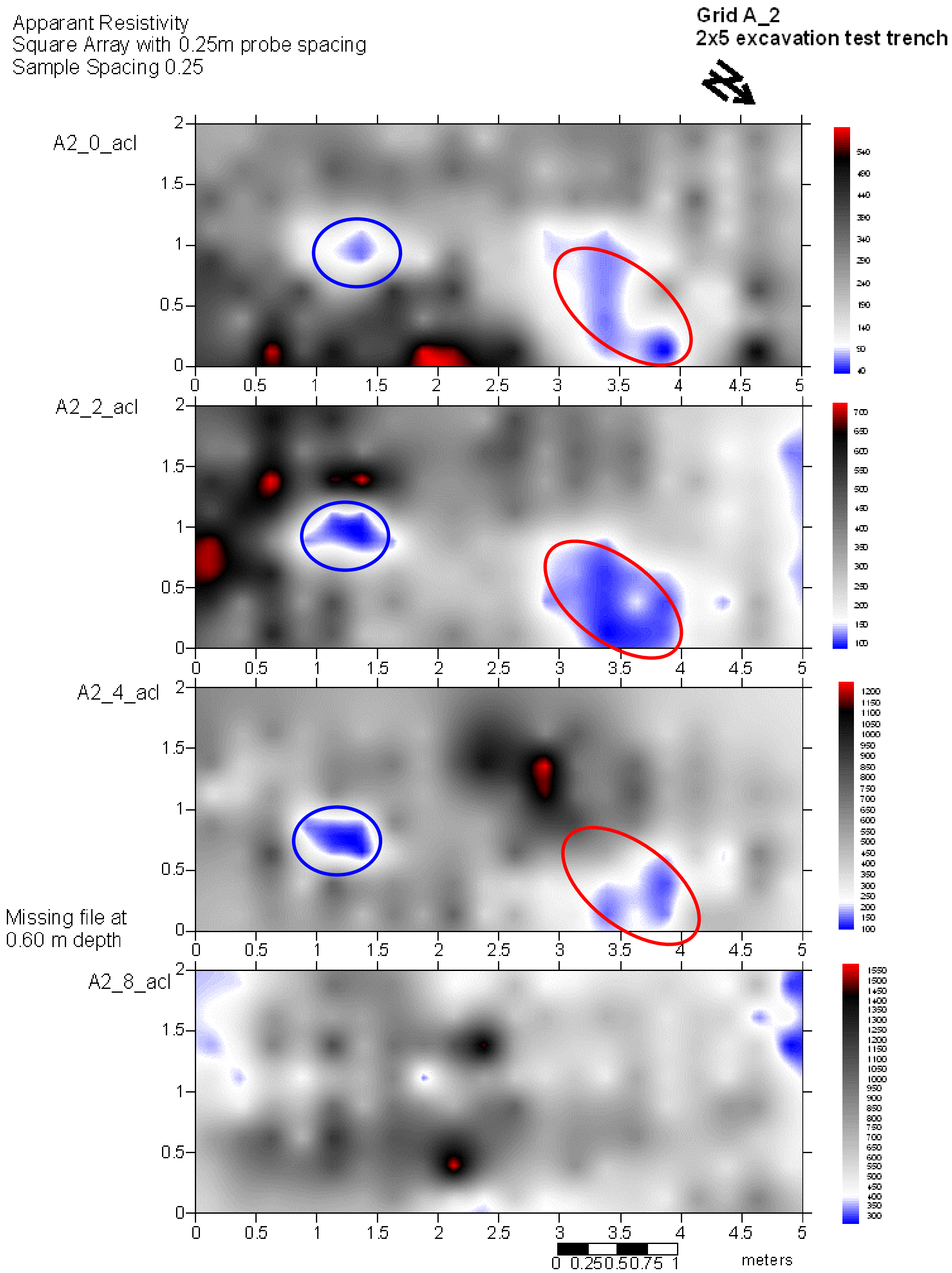

Figure 74. A2 2m x 5m sub-area resistivity survey results.

The apparent resistivity maps may show evidence for the large pit feature circled in red and the same post-pit that was mapped in the magnetic susceptibility survey, circled in blue.

5.2.5.3 Dielectric Permittivity

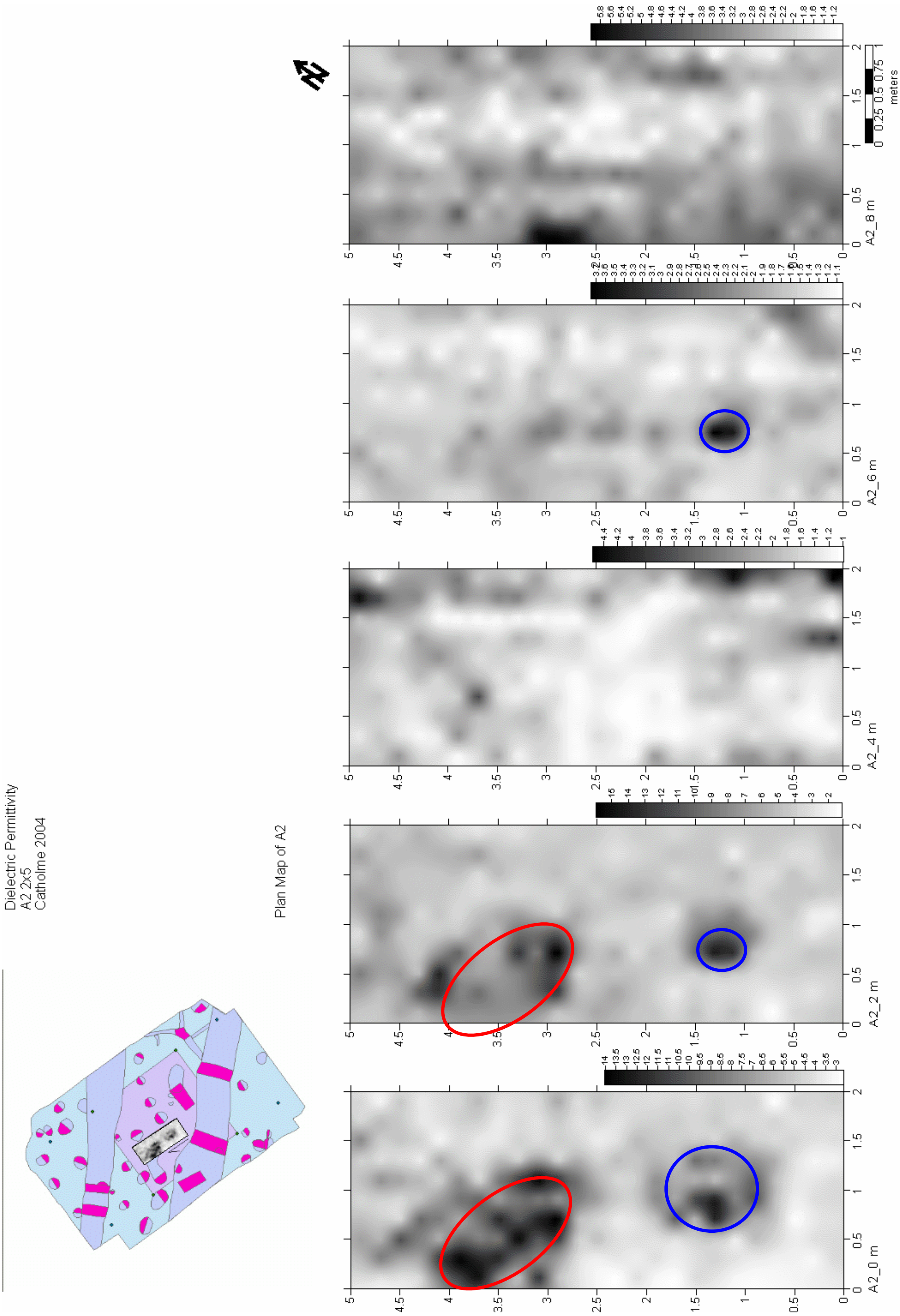

Figure 75. A2 2m x 5m sub-area dielectric permittivity survey results.

The dielectric permittivity maps showed evidence for the large pit feature circled in red and the same post-pit, circled in blue, that was mapped in the magnetic susceptibility and resistivity surveys.

5.3 Area B2

5.3.1 Magnetometry Survey Results

The surface magnetometry survey with the G858 was the best surface magnetic map for the entire Catholme surface survey in terms of positively identifying the underlying archaeological features. In this map the ring ditch (A), central burial (B) and area with *in situ* burning (D) are easily identified in figure 76.