SURVEY RESULTS

2006 / 32 Hooke Court, Dorset

1. Survey Areas

1.1 Geophysical survey was conducted at two locations (Area 1 and Area 2) in the grounds of Hooke Court. Three geophysical techniques were employed in Area 1: ground penetrating radar survey (Sensors & Software Noggin Smartcart); magnetic survey (Bartington Grad 601-2) and resistance survey (Geoscan RM15 meter). Area 2 was investigated solely by magnetic survey.

1.2. The survey grid was set out by ***GSB Prospection Ltd*** and tied in to the Ordnance Survey (OS) by ***Dr Henry Chapman*** using a Trimble Differential GPS system. The location of the survey areas can be seen in Figure 1 at a scale of 1:1000.

2. Data Processing and Display

2.1 The magnetic data have been pre-processed by removing baseline shifts due to zig-zag data collection. Where appropriate, traverses have been corrected for minor misalignments; these are due to variations in walking speed, which are usually a result of ground conditions or topography. Unless stated in the report it should be assumed that no filtering has been undertaken on the datasets collected in this project. The data have been interpolated to improve the quality of the greyscale images.

2.2 Where necessary the resistance data have been pre-processed to correct for grid-mismatch errors resulting from survey on different days. De-spiking has been undertaken, to reduce minor errors from contact with the ground surface; this is carried out prior to interpolation, which is often employed to reduce pixelation in greyscale images. Filtering is commonly used on resistance data to suppress, for example, a geological background and where used this will be noted on the relevant diagrams.

2.3 The GPR data traverses (*radargrams*) have been reconstructed to form a 3-dimensional block of data which has been 'sliced' horizontally to produce plan maps (*time-slices*) of responses at increasing depths. In general, processing of the GPR data is kept to a minimum unless the outcome of applying some form of filtering is deemed to be specifically effective in refining the data plots. Further details of the display formats and possible processing routines are discussed in the *Technical Information* section at the end of the report.

2.4 Figure 3 shows the resistance data as a summary greyscale image and interpretation at a scale of 1:625. Figure 4 is a greyscale plot of the magnetic data and Figure 5 a summary interpretation. Figures 6 - 8 display selected time-slice images and a composite summary interpretation at a scale of 1:1000. The display and interpretation categories used are discussed in the *Technical Information* section at the end of the text

3. General Considerations and Complicating factors

3.1 Conditions for survey were good; the main survey area was flat and consisted of short grass. Area 2 has a slightly sloping topography and the northern section contained a children's adventure playground.

3.2 The gradiometer data were dominated by ferrous disturbance, which will have masked any archaeological responses.

3.3 Depths have been indicated on the GPR diagrams, but these have to be viewed with caution. The conversion from time to depth depends on the velocity of the electromagnetic signal through the ground. Given the nature of the site, this may vary markedly over relatively small distances (both laterally and vertically) and, as a result, any depth conversion *is only an approximation*. An average velocity of 0.08m/ns has been used for the time to depth conversions following velocity analysis using graphical methods which involve the fitting of curves to point source reflections.

3.4 Where there is a strong electromagnetic contrast, the GPR signal can be inter-reflected or reverberated, producing a delay in the reflection of the signal. This is termed 'ringing'. This happens, to some extent, with all reflections and results in a greater apparent depth than actually exists. As a result, it is often not possible to detect the base of features; only the tops of buried deposits/features are detected with certainty (Annan, 1996).

4. Results of Resistance Survey

4.1 The resistance results from Hooke Court are very difficult to interpret, mainly as a result of the complexity of the archaeology and the extent of past landscaping on the site. While clear linear anomalies are visible in the data, in most instances it is very difficult to say whether these indicate walls, robbed-out walls, paths or even services. And clearly when it comes to dating the buried features the geophysical data cannot help in this matter. The main use of the results, therefore, is in providing targets for investigation by excavation; the discussion that follows can at best be seen as speculative in terms of interpretation.

4.2 Some of the highest resistance readings were found at (A); it transpired that these coincided with the location of a former sand pit used by the school. The sand was found on excavation to still be *in situ*; the very high resistance readings are due to the fact water can drain very easily through the fine grains, unlike in 'garden' soils. It is unfortunate that the sand was overlying and effectively masking (from the resistance survey) several wall foundations associated with earlier buildings on the site.

4.3 Running across the lawn is a series of linear high resistance anomalies that follow a rectilinear pattern and appear to respect the existing school buildings. Given the complexity of the responses it would be possible to conjure up numerous buildings / room plans but in the absence of any documentary records this would be a facile exercise. While ***Time Team*** trenches confirmed the existence of many of the walls it proved impossible to fully characterise the nature of the building remains.

4.4 Amorphous spreads of high resistance readings presumably reflect concentrations of rubble demolition material, former yard and floor surfaces and possibly undocumented school play ground features (like the sand pit).

4.5 One response (B) stands out from the others in that it has a circular rather that rectilinear shape. While this could be indicative of a round tower or a kitchen block, the most likely explanation is that the high resistance readings represent a former dovecote. Such a building is recorded in the

documentary records though its location remained unknown prior to the present investigation.

4.6 A tree is present at (C) and this accounts for the lack of readings at this point.

5. Results of GPR Survey

5.1 The GPR survey identified a number of strong, high amplitude anomalies that are thought to represent archaeology but the complexity of the site in terms of the numerous linear responses makes interpretation of the data difficult. A number of modern surface and subsurface features have also complicated the interpretation.

5.2 Anomaly (1) coincides with the position of a dovecote as seen in the resistance data (Paragraph 4.5). The clear circular nature of the structure is shown in the time slices from an approximate depth of 0.36m to 1.0m. The high amplitude responses, presumably indicating either foundations or walls, add weight to the interpretation of such anomalies as archaeological in origin for the rest of the site.

5.3 The high amplitude anomaly (2) forms a distinct rectilinear feature - presumably the remains of a building. Less well defined anomalies (3 to 6) form linear anomalies which may also represent foundation or wall remains but the interpretation is more speculative. Although they follow a similar orientation to anomaly (2) it is not possible to say if this is either part of the same structure or some other feature.

5.4 A large number of trends have been highlighted on the interpretation diagram. Because the responses are weak and, in some cases disjointed, they have not been positively identified as archaeology. However it is likely that some or all of these trends relate to past buildings located at the site. The number of linear anomalies suggests that a series of buildings or building phases have taken place at this location.

6. Results of Magnetic Survey

Area 1

6.1 It was hoped that a magnetic survey might be able to identify features such as ovens or fireplaces associated with the kitchens. Unfortunately the results from Area 1 are dominated by responses of a ferrous nature and as such it has not been possible to interpret the results archaeologically.

Area 2

6.2 This area was investigated as a potential site for occupation associated with the spur of ground that is partially occupied by the school adventure playground. A handful of pit-type responses in the south of the data have the potential of being archaeological, however, due to lack of other responses any interpretation must be viewed with care.

6.3 A band of magnetic disturbance running north-south corresponds to a change in the topography. Ferrous responses dominate the data; a pipe can be seen running north-south and the northern section of the survey area contained a children's assault course which has added to the disturbance.

6.4 Unfortunately the results do not help resolve whether or not the area was occupied in the past.

7. Conclusions

7.1 The geophysical survey at Hooke Court has met with mixed success; although the magnetic survey has failed to identify any definite archaeological features, the resistance and GPR surveys have identified a plethora of responses, most of which are likely to relate to the earlier buildings. Perhaps the most exciting find was the discovery of what is believed to be a former dovecote.

Project Co-ordinator: J Gater
Project Assistants: J Adcock, G Taylor, I Wilkins and E Wood

Date of Survey: 18th – 20th April 2006
Date of Report: 15th August 2006

References:

Annan A. P., 1996 *Ground Penetrating Radar Workshop Notes,* Sensors & Software Inc., Canada.

Edwards K., 2006 *Proposed Archaeological Evaluation at Hooke Court, Hooke, Dorset, DT8 3NX*, unpublished Time Team document.

SSEW, 1983 *Soils of England and Wales. Sheet 5, South West England.* Soil Survey of England and Wales.

SITE SUMMARY SHEET

2006 / 32 Hooke Court, Dorset

NGR: ST 531 004

Location, topography and geology

The survey was carried out at Hooke Court, an educational study centre, which is located on the outskirts of the village of Hooke, approximately 7km to the east of Beaminster, Dorset. The main area of survey was flat with a covering of short grass; the second area to the east occupied an elevated spur of land and had long grass. Soils of the area belong to the Wickham 2 association (711f) formed from a parent of drift over Jurassic and cretaceous clay or mudstone (SSEW, 1983).

Archaeology

Hooke Court is a Grade II* Moated Manor with origins dating back to the 11th century. The site has a long and complex history, with several major building phases having taken place. The surviving west wing of the house may contain elements as old as *c.*1450. The north wing of the house was demolished in 1965 to make way for the new school. The history of the site is documented in Edwards (2006).

Aims of Survey

The aims of the survey were to locate any detectable archaeological remains, in particular those associated with the moated manor and a possible settlement site lying to the east. This work formed part of a wider investigation being undertaken by Channel 4's **Time Team**.

Summary of Results #

The geophysical survey at Hooke Court has met with mixed success; although the magnetic survey has failed to identify any definite archaeological features, the resistance and GPR surveys have identified a plethora of responses, most of which are likely to relate to earlier buildings. Perhaps the most exciting find was the discovery of what is believed to be a former dovecote.

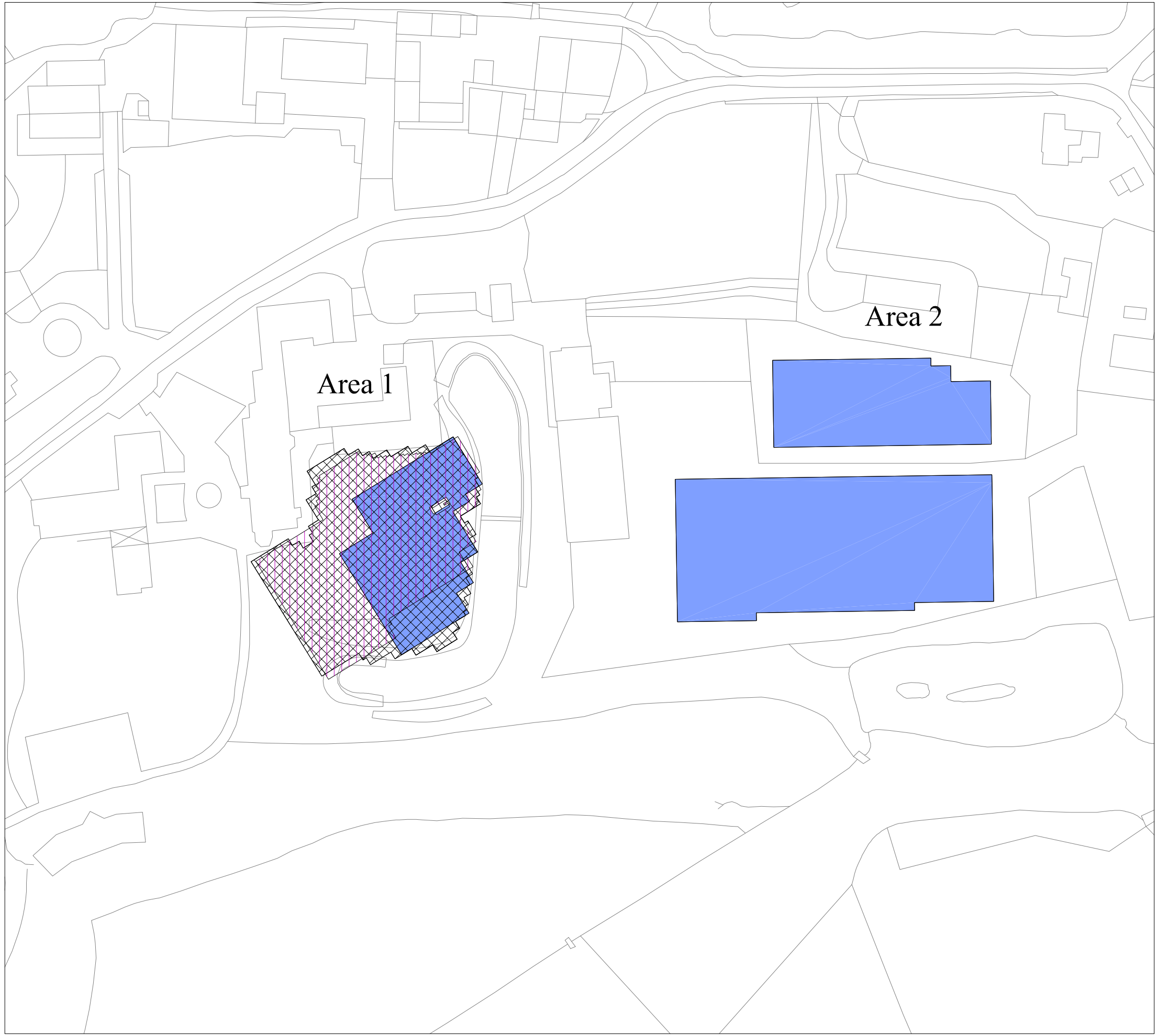
 # It is essential that this summary is read in conjunction with the detailed results of the survey.

List of Figures

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Location of Survey Areas



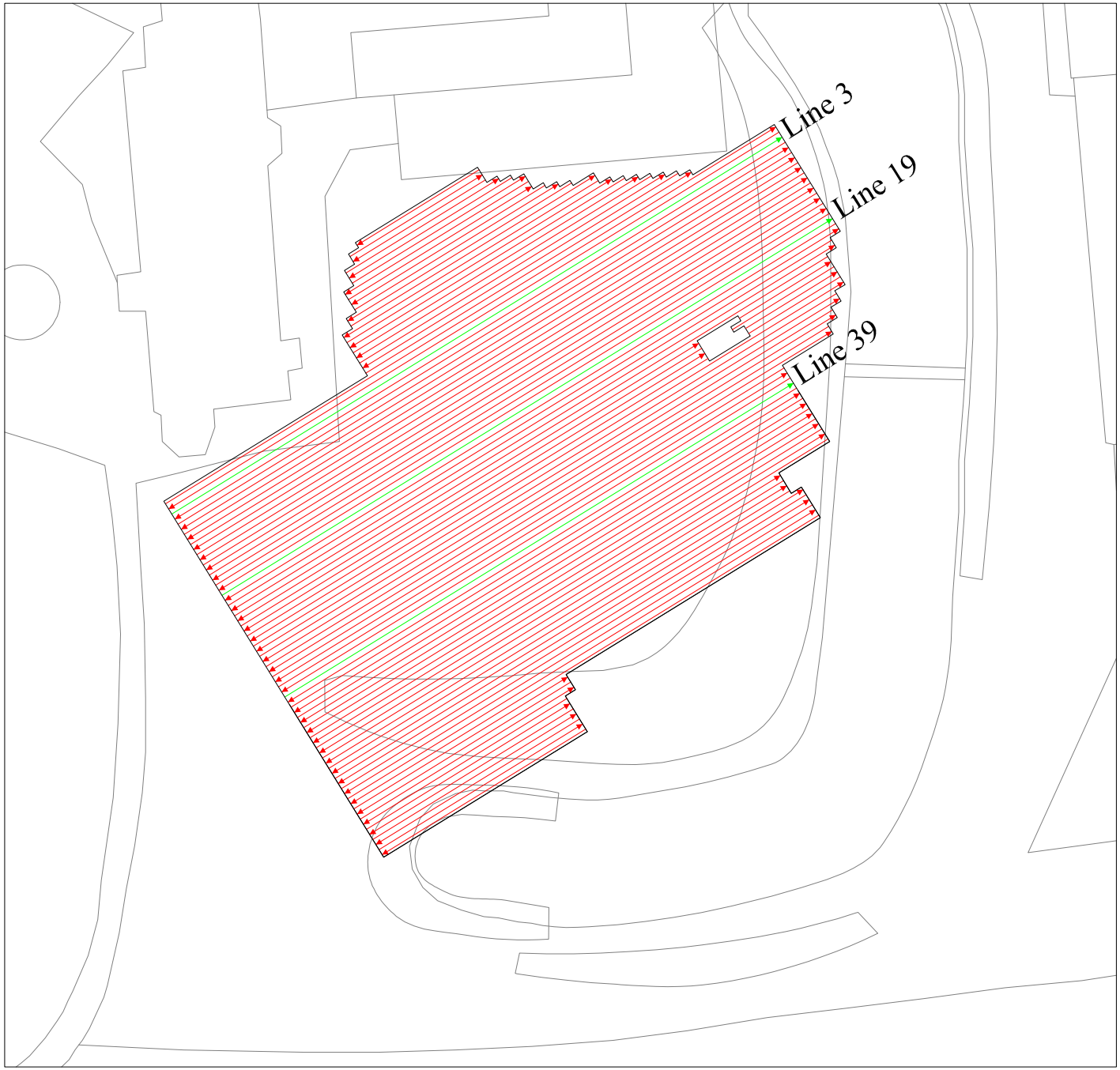
Gradiometer Survey

GPR Survey

Resistance Survey

0 metres 40

Figure 1



GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Location of GPR Traverses

GPR Traverses

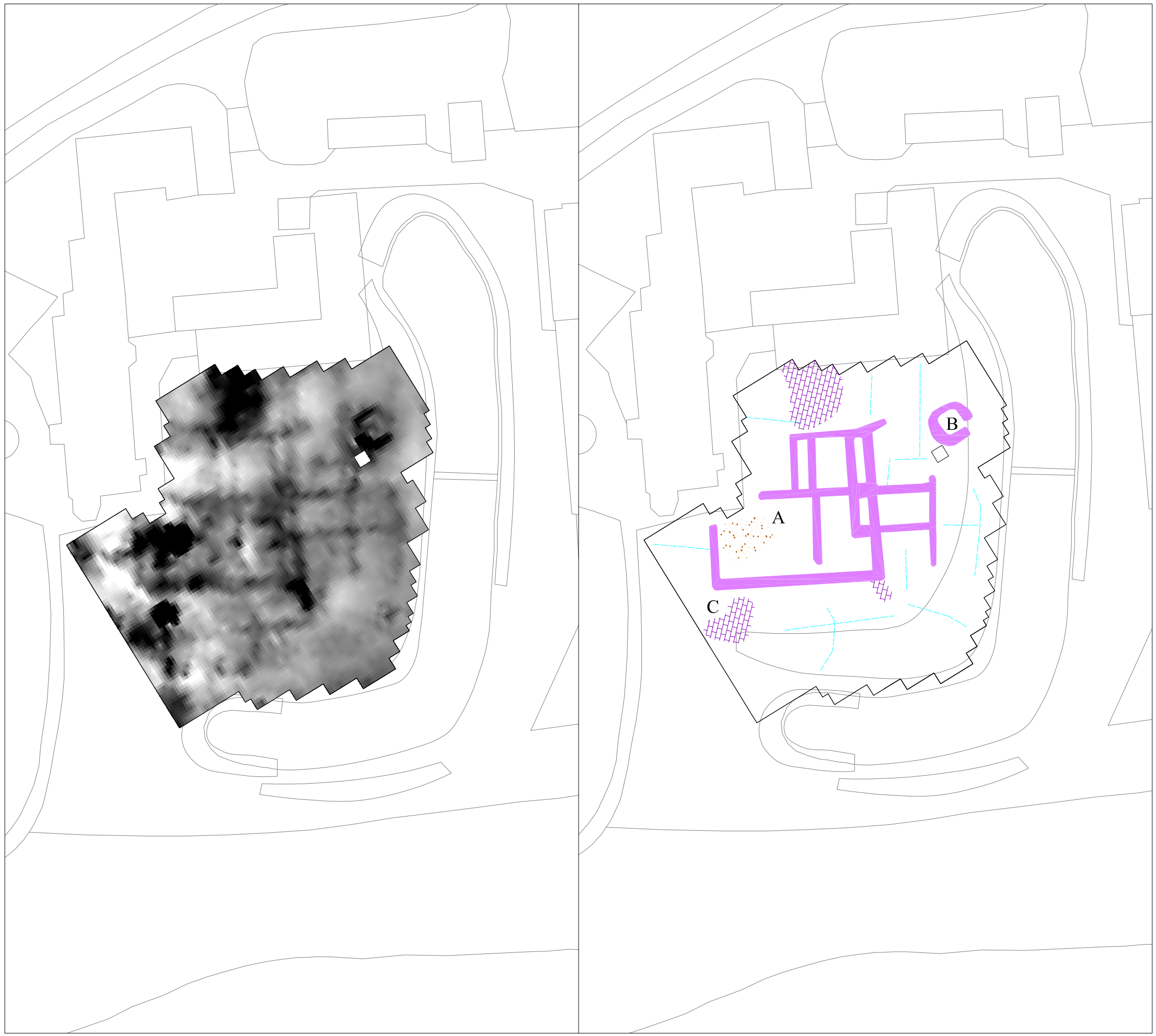
0 metres 20

Figure 2

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Summary Resistance Data



High Resistance - ?Walls

High Resistance - ?Concentration of Rubble

High Resistance - Trend

High Resistance - Sand Pit

1.5
SD
-1.5

0 metres 25

Figure 3

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Summary Gradiometer Greyscales

Figure 4

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Summary Gradiometer Interpretation

?Archaeology

Magnetic Disturbance

Ferrous

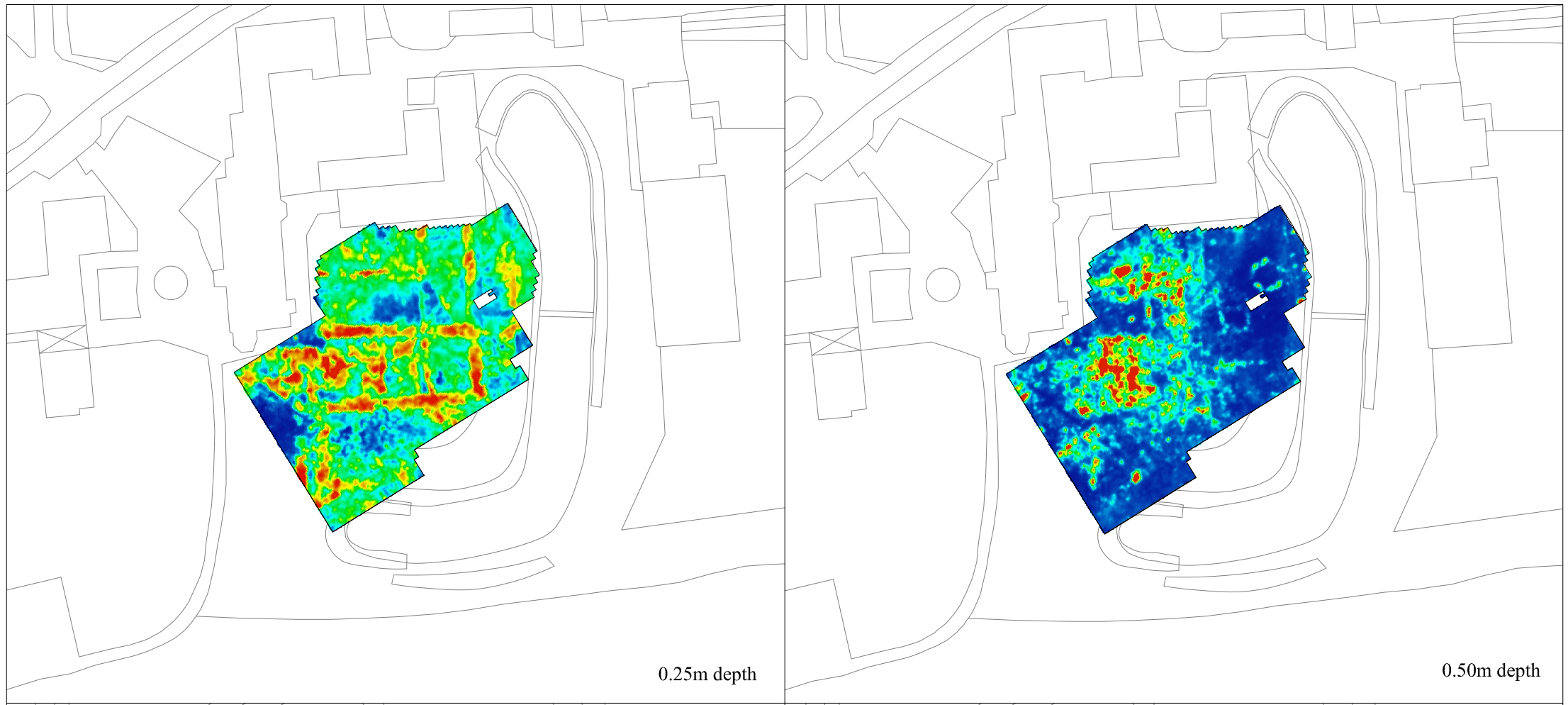
0 metres 40

Figure 5

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Summary GPR Colourscales



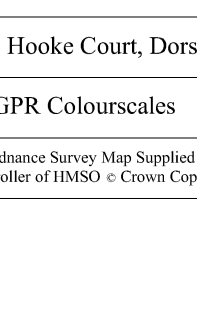


Figure 6

GSB PROSPECTION Ltd.

PROJECT: 2006/32 Hooke Court, Dorset

TITLE: Summary GPR Interpretation

High Amplitude Anomaly - Archaeology

High Amplitude Anomaly - ?Archaeology

Trend

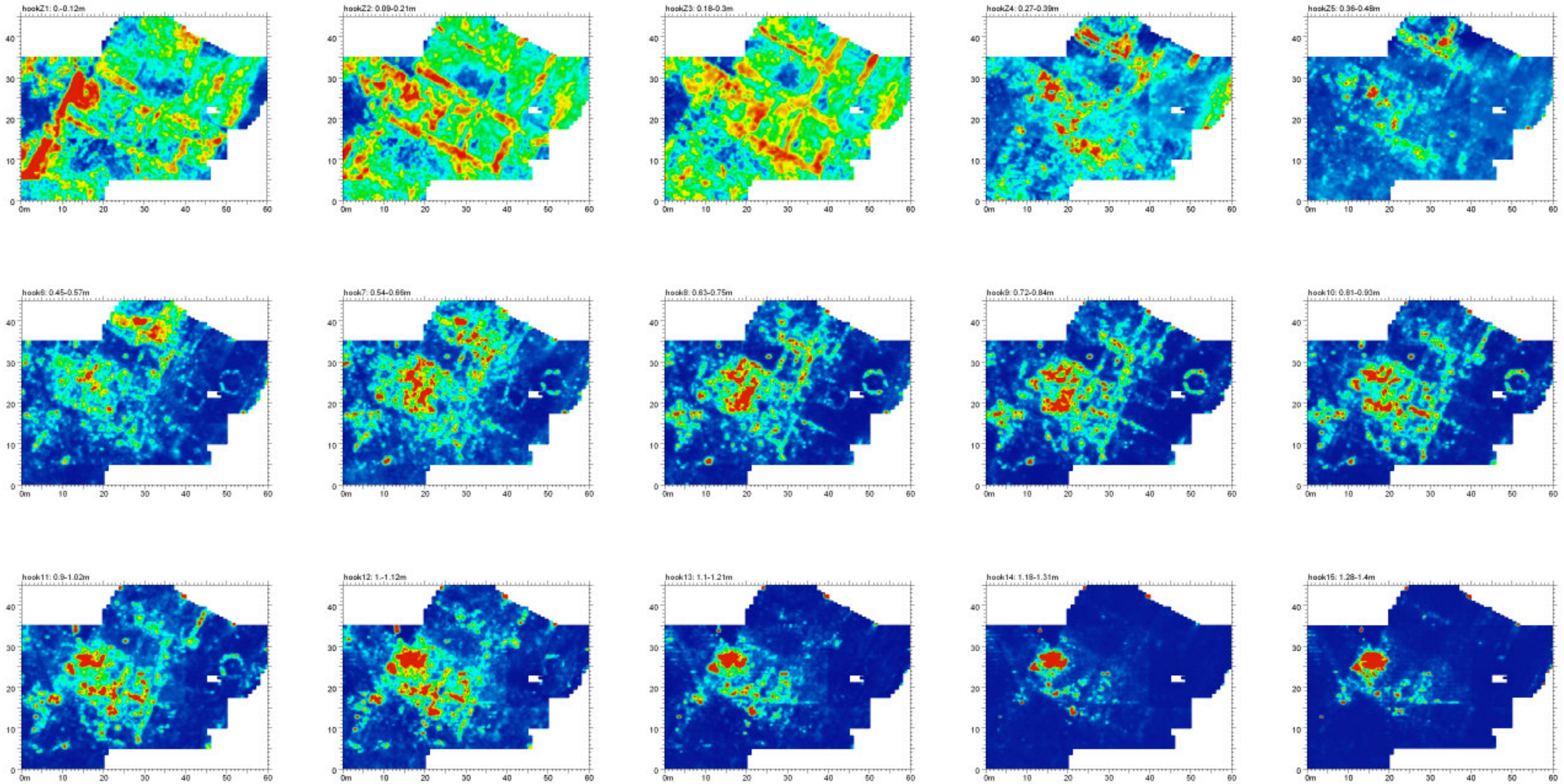
Increased Amplitude - Sand Pit

Service

0 metres 40

Figure 7

HOOKE COURT
GPR Time-slices



0 m 40

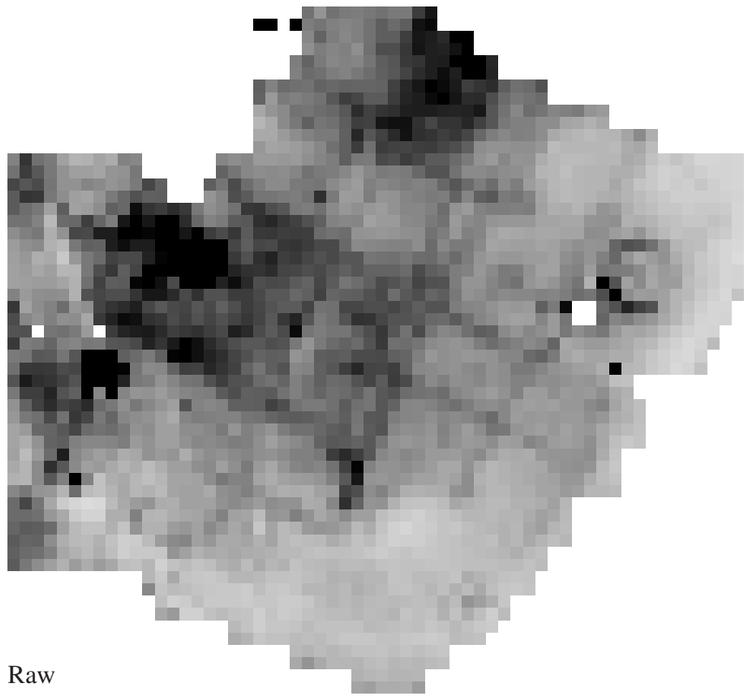
AMPLITUDE

HIGH LOW

GSB Prospection Ltd. 2006/32

Figure 8

HOOOKE COURT
Resistance data



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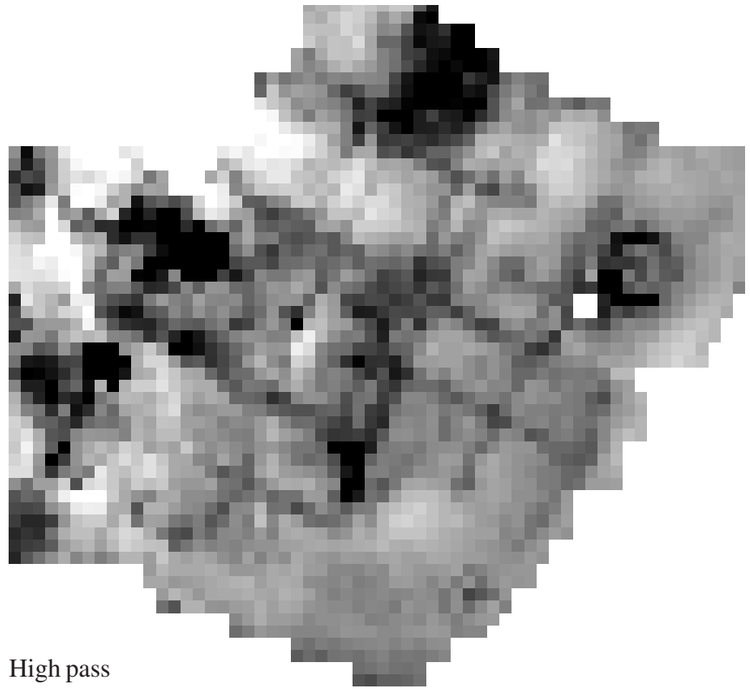

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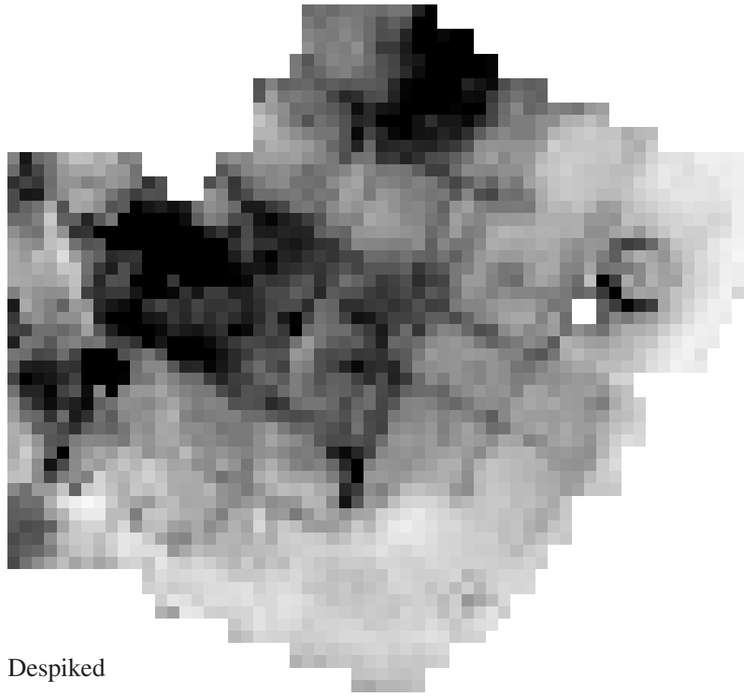
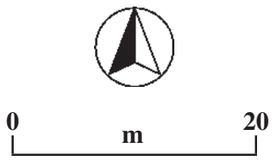
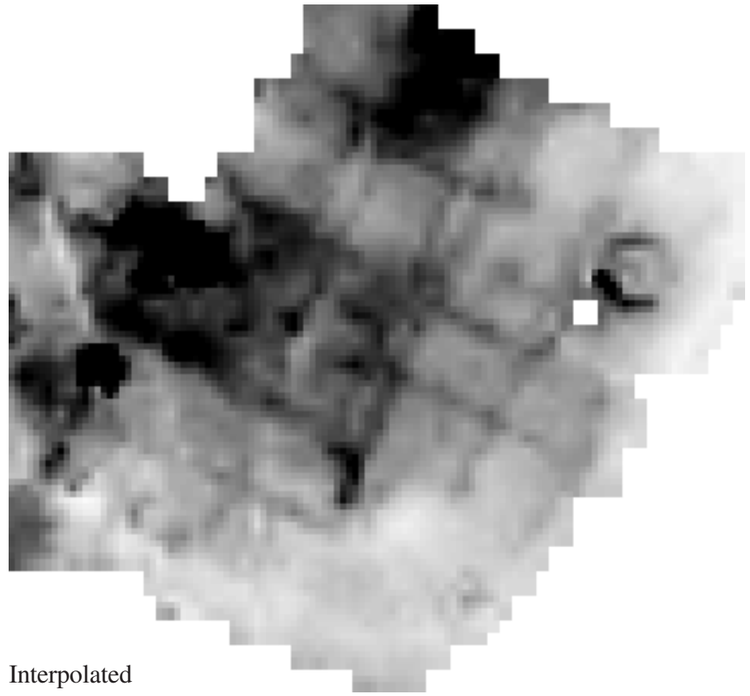


Despiked





Interpolated

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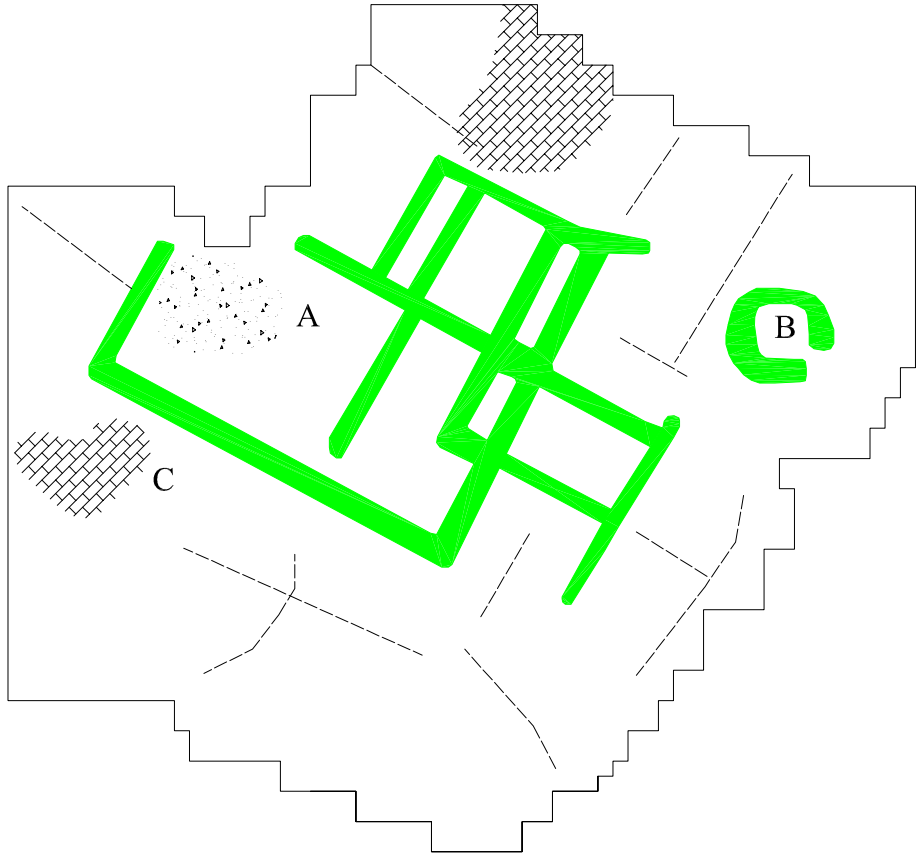
FigureA.1

HOOKE COURT
Resistance Data



High Resistance - ?Walls

High Resistance - ?Concentration of Rubble

High Resistance - Trend

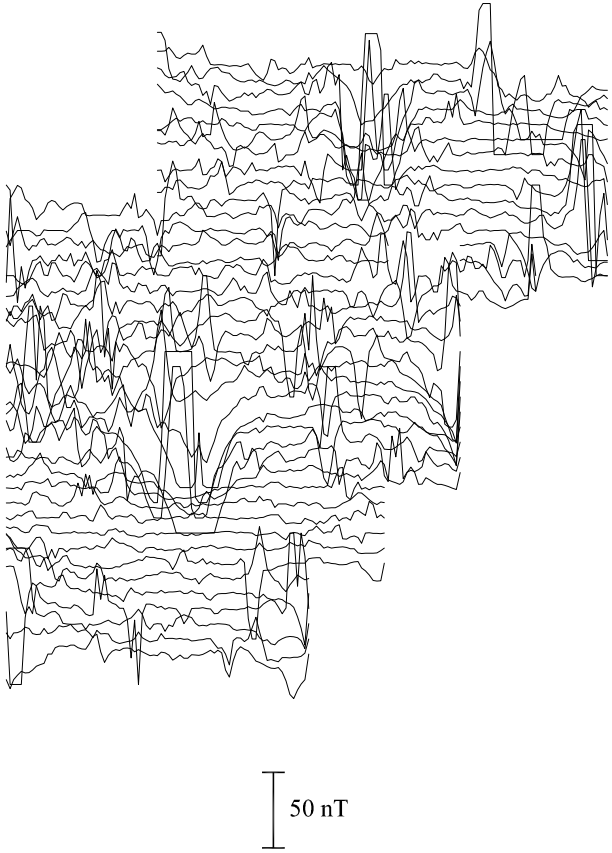
High Resistance - Sand Pit

0 m 20

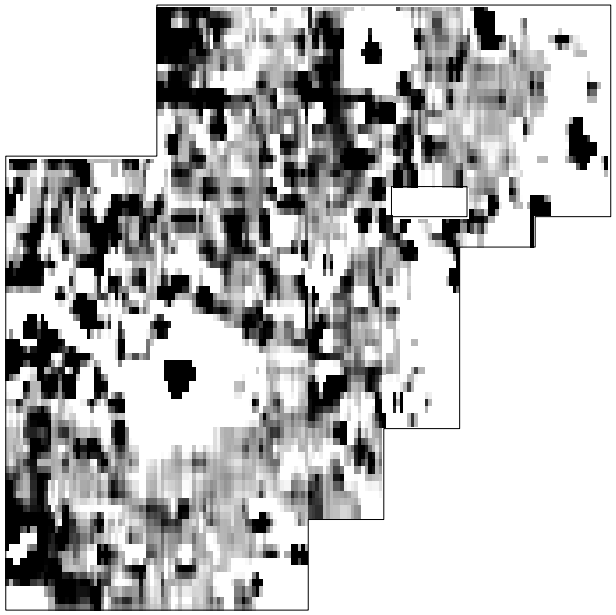
GSB Prospection Ltd. 2006/32

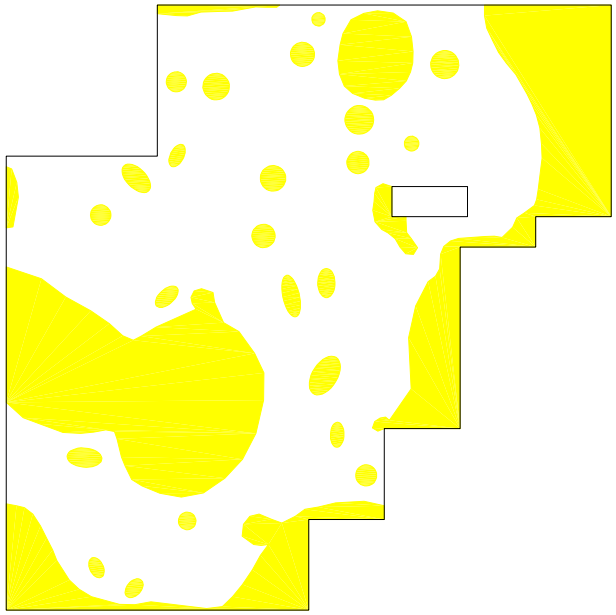
Figure A2

HOOKE COURT
Gradiometer Data
Area 1



50 nT





2
nT
-1

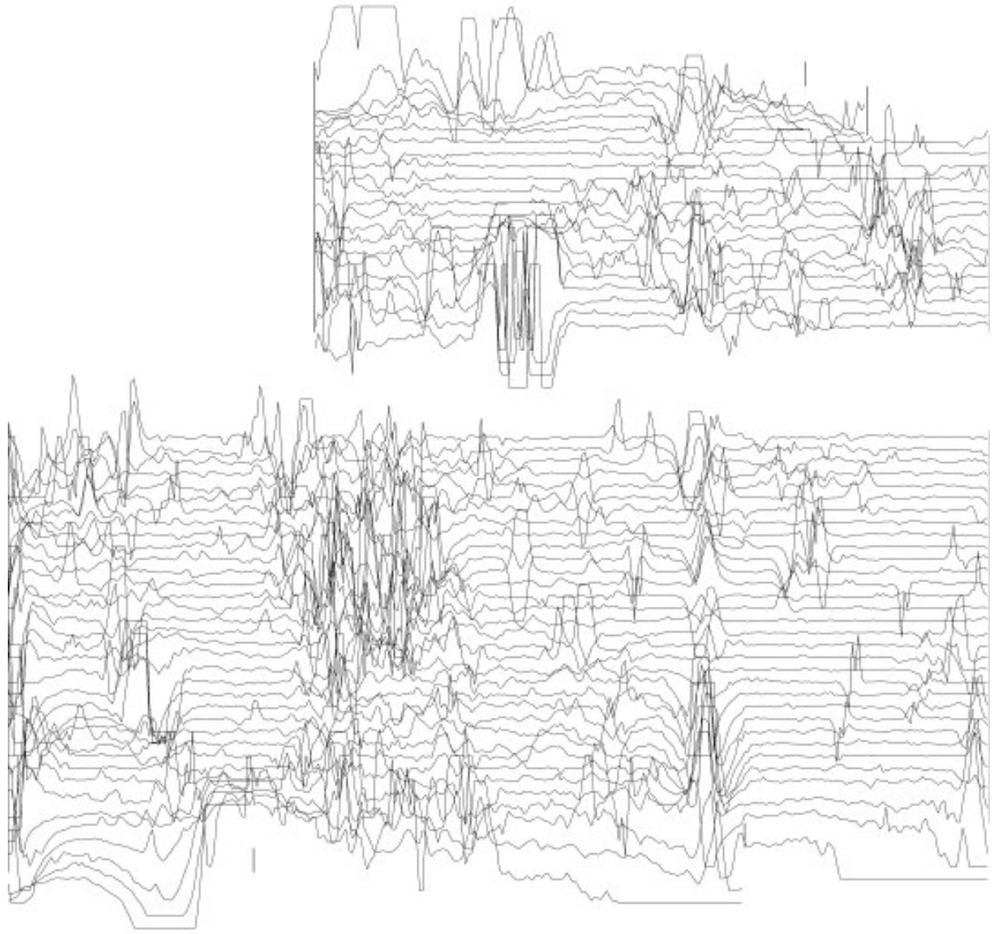
Ferrous

0 m 20

GSB Prospection Ltd. 2006/32

Figure A3

HOOKE COURT
Area 2: Gradiometer Data



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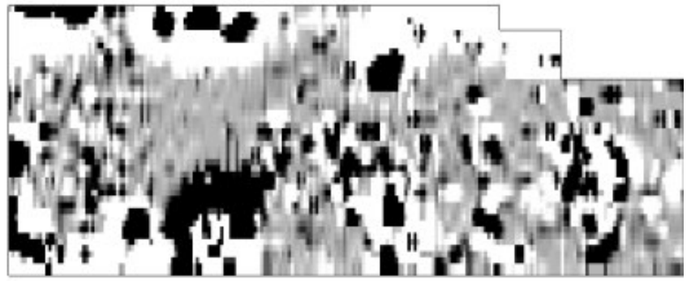
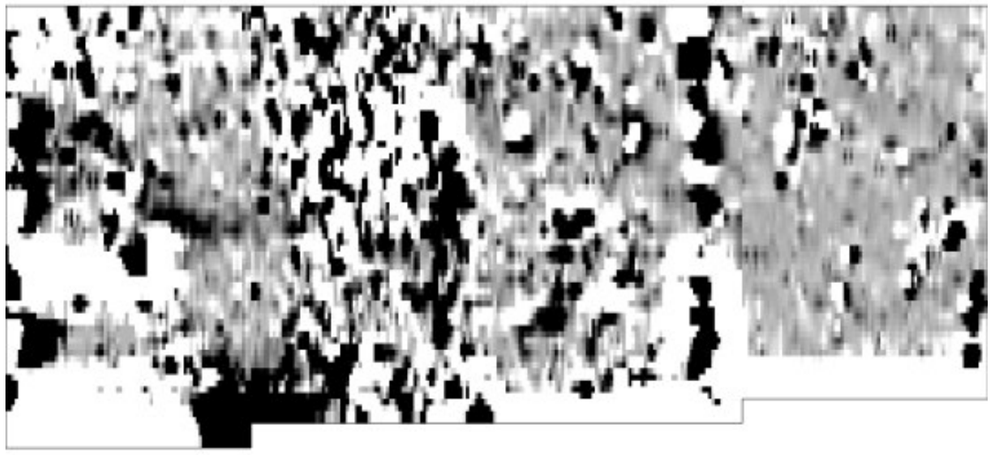
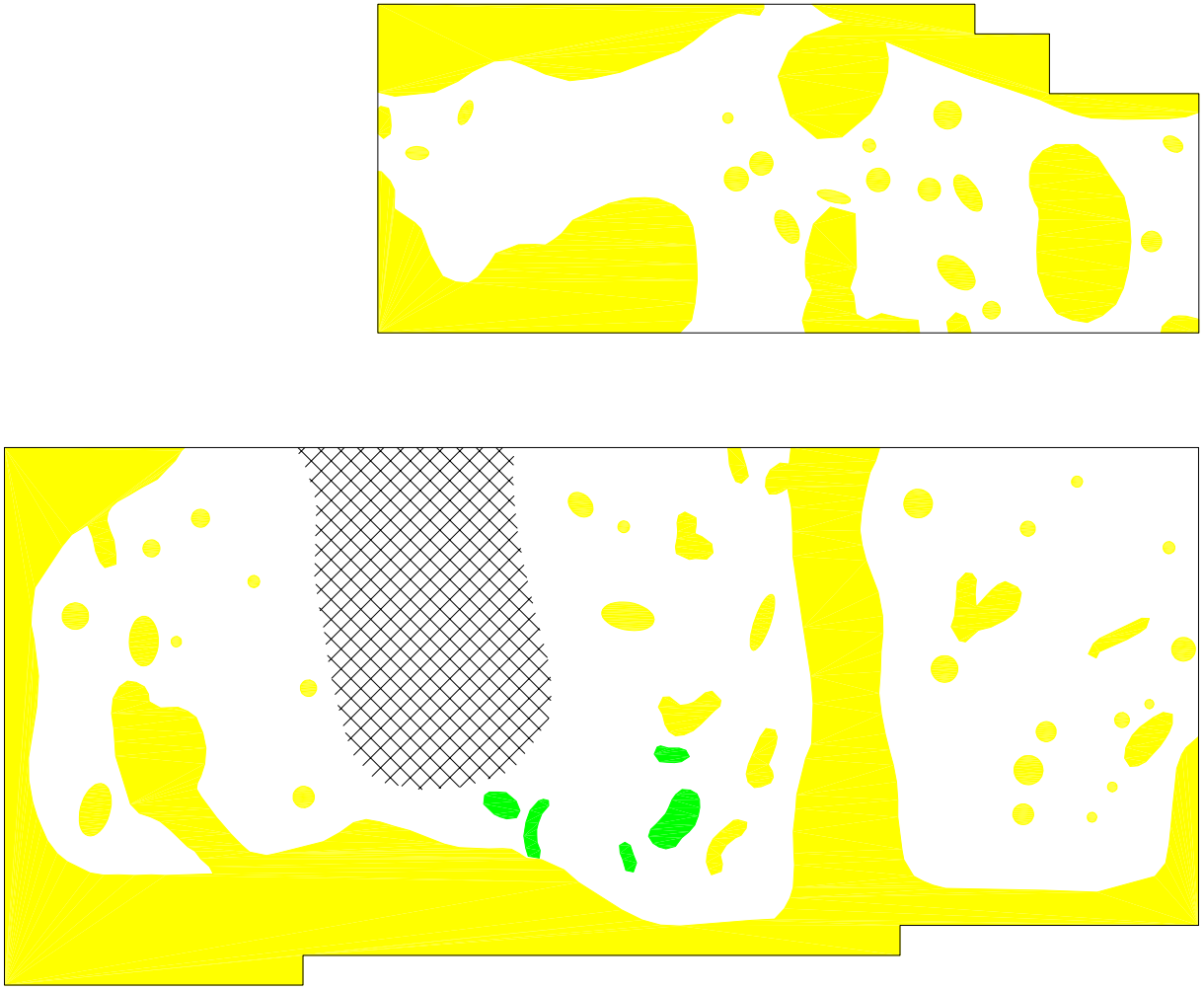




5.0
nT
-2.0

0 m 20

HOOKE COURT
Gradiometer Data: Area 2



?Archaeology

Magnetic Disturbance

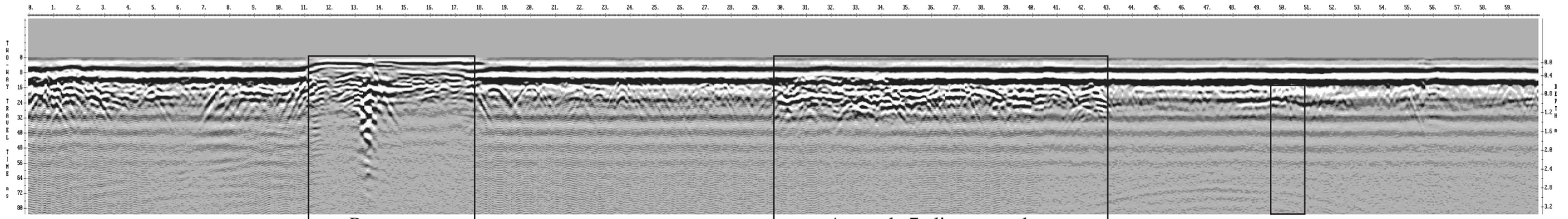
Ferrous

GSB Prospection Ltd. 2006/32

Figure A5

Hooke Court, Dorset
GPR Radargrams

Line 3



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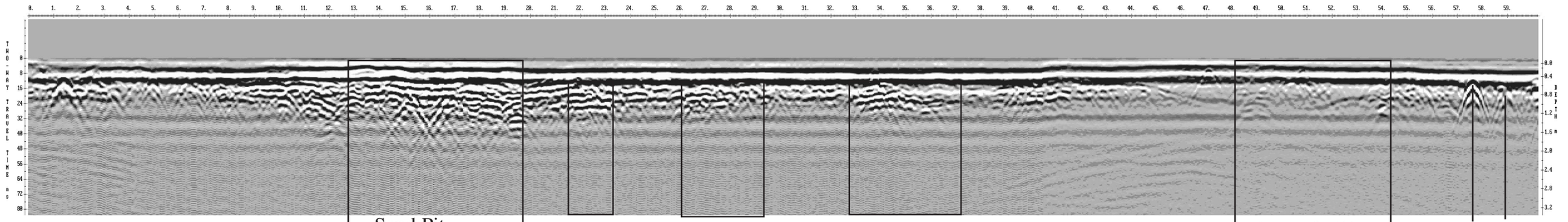

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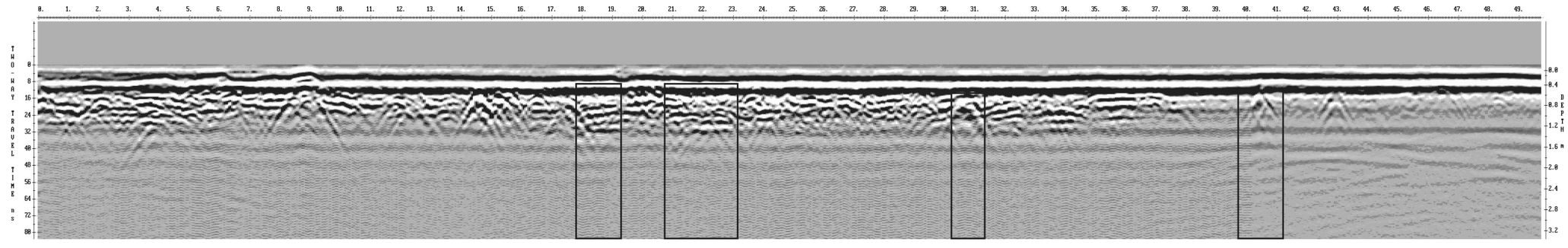

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Figure A6