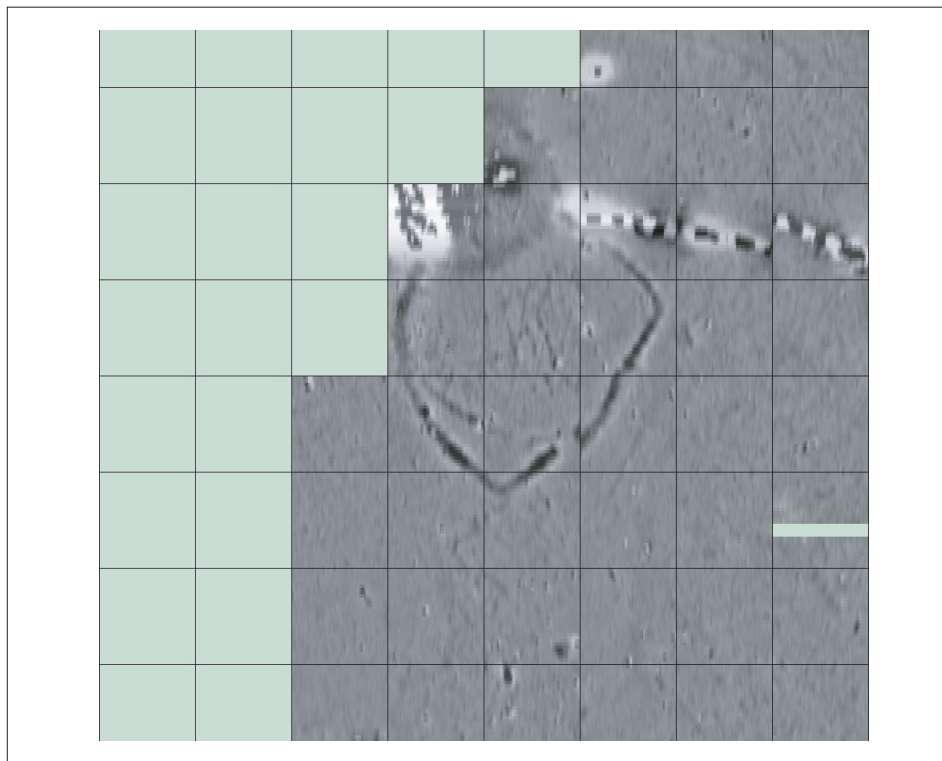


Archaeology Wales

Oswestry Eastern Approach Oswestry, Shropshire

Geophysical Survey



By
Chris Smith MCIfA
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Report No. 1370

Archaeology Wales

Oswestry Eastern Approach Oswestry, Shropshire

Geophysical Assessment

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Non-Technical Summary

This interim report results from work by Archaeology Wales Ltd (AW) for J Ross Developments. It draws on the results of a geophysical survey on land at Oswestry Eastern Approach, Oswestry, Shropshire, undertaken prior to proposed redevelopment of the area. This report covers Areas A, C, D, E, F and G. The survey was undertaken with a Bartington Grad601 gradiometer and was designed to locate any sub-surface archaeological remains present within the assessment area.

The survey showed evidence of significant archaeological features in Area A, including a possible D-shaped prehistoric enclosure, potentially Neolithic or Early Bronze Age. A ploughed-out ring ditch was tentatively identified in Area F, and evidence for medieval agriculture in Areas E and F.

There is a likelihood that Area A will not be developed, as it is located within an area designated as potential public open space. In this case, no further archaeological investigations will be required. If development is a possibility, targeted trenching is recommended. Elsewhere, it is recommended that a trench is cut across the possible ring ditch in Area F. Other areas should be subject to a watching brief during construction.

1 Introduction

1.1 Location and scope of work

- 1.1.1 In April and May 2015 Archaeology Wales Ltd (AW) carried out a geophysical survey on land at Oswestry Eastern Approach, Oswestry, Shropshire. The proposed development area is centred on NGR SJ 30363 28934 (Figs 1 & 2). The work was carried out at the request of J Ross Developments prior to submission of a planning application for development of the area
- 1.1.2 Following the advice of the Shropshire County Archaeologist, six areas (A & C-G) located within the development area were subject to geophysical survey.
- 1.1.3 Area B was not surveyed as part of this phase of evaluation, as it was the subject of a previous geophysical survey and field evaluation in 2007, prior to the construction of the Oswalds Park leisure centre (Smith 2007). The development

area itself is located within a larger area that was assessed in 2005 by the Clwyd-Powys Archaeological Trust, the results of which were included in a Desk Based Assessment (Grant & Jones 2005).

1.2 Geology and topography

- 1.2.1 The underlying soils in the area are a mixture of Clifton reddish till (slowly permeable seasonally waterlogged reddish fine and coarse loamy soils) and Cegin drift from Palaeozoic slaty mudstone and siltstone (slowly permeable seasonally waterlogged fine silty and clayey soils) (British Geological Survey 2001)
- 1.2.2 The proposed development area also lies on the boundary of two types of solid underlying sedimentary formations. The first is the Tournaisian and Visean Carboniferous Limestone series, the second is the Ashgill formation (British Geological Survey, 2001).
- 1.2.3 The proposed development area lies on the eastern outskirts of Oswestry immediately to the north of the B4579, to the west of the A483 and to the east of the Oswalds Park Active Lifestyle Centre.

1.3 Archaeological and Historical Background

- 1.3.1 Within the Oswestry Eastern Gateway Area A an enclosure (PRN 02286) of likely prehistoric or Romano-British date was seen on aerial photographs in 1978, 1986 and 1995. It has an entrance to the north-east, is 90m in length north-west to south-east and 70m in width north-east to south-west, with the ditch being 5m wide. Located on the highest point of a slight knoll, it was partly damaged by 19th century small-scale localised gravel extraction, but the majority is undisturbed and it is likely that buried deposits survive. During the gravel extraction works, prehistoric and Romano-British artefacts were found (PRN 02984). In Area A the Mead Cottage standing stone (PRN 00896) was also recorded on the 1st Edition OS Map of 1837, but was subsequently destroyed by the 19th century quarrying (Grant & Jones, 2005).
- 1.3.2 Previous work undertaken in Area B between 2007 and 2009 by Cambrian Archaeological Projects Ltd included a geophysical survey, a field evaluation, a watching brief of geotechnical trial pits and a small topographic survey (Smith, 2007 & Smith, 2009).
- 1.3.3 The geophysical survey and field evaluation located a number of features in the adjacent Area B including a 19th century pond, various post-medieval ditches and,

more significantly, a Bronze Age burnt mound radiocarbon dated to BC1940-1772 Cal.

2 Aims and Objectives

2.1 Geophysical Survey

2.1.1 The geophysical survey was undertaken in order to:

- Locate any features of likely archaeological significance within the area of proposed development
- Provide sub-surface data to inform any future on-site works

3 Methodology

3.1 Geophysical Survey

3.1.1 A Bartington Grad601 gradiometer was used to undertake the survey. Previous research has shown that fired, or cut and backfilled archaeological features such as kilns and hearths, ditches and pits often have an anomalously higher magnetic susceptibility than the surrounding subsoil due to burning and biological processes. Differences in magnetic susceptibility within the subsoil and archaeological features can be detected as changing magnetic flux by an instrument such as a gradiometer. Data from this may be mapped at closely spaced regular intervals, to produce an image that may be interpreted to locate buried archaeological features (Clark, 1997) (Aspinall *et al*, 2011).

3.1.2 Detailed survey was carried out in grids of 30m x 30m along parallel traverses spaced at 2m intervals, recording data points spaced at 0.25m intervals to a maximum instrument sensitivity of 0.1nT in accordance with English Heritage Guidelines. The survey mode was set to bi-directional (traverses walked alternately south-north/north-south). At regular intervals the data was downloaded in the field onto a laptop computer for storage and assessment.

3.2 Data Processing and Presentation

3.2.1 Following the completion of the detailed survey, processing and analysis took place using the Geoplot software package. After downloading, the results were plotted in 2D. The most typical method of visualising the data is as a greyscale

image. In a greyscale, each data point is represented as a shade of grey, from black to white at either extreme of the data range. A number of standard operations (including destripping and despiking) were carried out to process the data. The mean level of each traverse of data was reduced to zero and all grids matched so that there were no differences between background levels. The data was then analysed using a variety of parameters and styles and the most useful of these were saved as *JPEG images and displayed using Adobe Illustrator software. The results of the survey were then overlaid onto a digital map of the study area. This was then used to produce interpretation figures.

3.2.2 All works were undertaken in accordance with the CIfA's Standards and Guidance for a geophysical survey (2014) and current Health and Safety legislation.

3.2.3 The on-site work was undertaken by Hywel Keen & Chris Smith MCIfA whilst the overall management of the project was undertaken by Kate Pitt ACIfA.

4 Geophysical Survey Results

4.1 Ground Conditions

4.1.1 The survey was undertaken during fine weather conditions.

4.2 Survey Location and Summary

4.2.1 The assessment was surveyed using grids 30m x 30m. Area A comprised a total of 41 grids, Area E comprised 11 grids and Area G used 9 grids.

4.3 Results of the Survey of Area A (Figs 3 & 4)

4.3.1 The results of the geophysical survey of Area A are of good clarity.

4.3.2 Several readily identifiable archaeological features are located within the survey results. The most notable archaeological feature is a large (60m x 60m), D-shaped, enclosure within which various other archaeological features are identifiable.

4.3.3 Areas of possible subdivision are visible within the main enclosure as well as several faint rectilinear features to the south.

4.3.4 A clear linear feature, most likely a ditch, is noted to the north of the enclosure, adjacent to the new leisure centre. Several further features, though faint, are also marked up on Fig 4.

4.4 Results of the Survey of Area E (Figs 5 & 6)

- 4.4.1 The results of the geophysical survey of Area E are of good clarity.
- 4.4.2 Several potential archaeological features are located within the survey results. Linear features aligned approximately north to south run up and down the slope of the field. Having slight curves suggests these features are furrows in a medieval open field ridge and furrow system. Two parallel linear features running on an approximate east to west alignment are likely to be a trackway, possibly associated with the ridge and furrow system which terminate at the northernmost east to west linear feature of the likely trackway.

4.5 Results of the Survey of Area G (Figs 7 & 8)

- 4.5.1 The results of the geophysical survey of Area G are not of good clarity. This field is dominated by metal to such an extent that the majority of potential archaeology is drowned out.
- 4.5.2 The only possible feature is defined by a linear response running east to west. However, it is close to the modern services that run north to south and is surrounded by metal spiking. It may therefore be a continuation of the metallic disturbance of the results.

4.6 Results of the Survey of Area C (Figs 9 & 10)

- 4.6.1 The area is dominated by two metal pipes or cables that cross the field, roughly northeast to southwest and northwest to southeast, intersecting in the middle of the survey area. Unfortunately, the very strong responses from these two pipes may have drowned out other data. The clarity of the results is, however, good.
- 4.6.2 There is no evidence of medieval furrows, as was the case in Area F for example.
- 4.6.3 The only clearly identifiable feature is defined by a slightly curvilinear mark in the north-west corner (**Fig 10**). This may be an old field boundary.

4.7 Results of the Survey of Area D (Figs 11 & 12)

- 4.7.1 The results of the geophysical survey of Area D are of good clarity.
- 4.7.2 The survey stopped short of the western and northern edges of the field, as the likelihood of modern contamination was very high, with new houses in the adjacent areas and a 5-bar steel gate in the northern boundary.

- 4.7.3 A near-linear response identified in two sections located in the north-east probably represent an old field boundary or drainage ditch. It does, however, line up with the gate and may simply be a modern track way. The two semi-circular features located in the south represent areas of negative magnetic response. Each is approximately 10m across. They are difficult to interpret based on the results of the geophysics alone, but are considered most likely to represent responses caused by variations in the underlying geology.
- 4.7.4 The response forming the dark area located in the north is characteristic of intense or recent burning. The most likely cause is modern bonfire. The feature measures approximately 7.0m from east to west, although the full extend north to south is unknown.

4.8 Results of the Survey of Area F (Figs 13 & 14)

- 4.8.1 The results of the geophysical survey of Area F are of good clarity.
- 4.8.2 This area was relatively quiet, with only a few spikes, probably the result of metal artefacts. The most obvious anomalies are marked by the series of parallel lines (shown in green). These are likely to represent ploughed-out ridge and furrow, and apparently terminate at a linear, perpendicularly aligned, feature in the centre. The termination is marked in orange with another parallel line located to the south. Initial interpretation is that this marks a thoroughfare 10m to 15m wide set within two boundary ditches.
- 4.8.3 The circular area in the centre (marked in red) highlights an anomaly some 15.0m across. This seems to be overlain by the ridge and furrow, although it is very difficult to determine stratigraphy from a survey like this. This feature is tentatively interpreted as a ring ditch. However, given the low level of the response, if this is the case it would have to have been mainly ploughed out.
- 4.8.4 The northern-most anomaly (light blue) is a telegraph pole. The feature in the east (yellow) is an anomaly caused by the large tree just outside the survey area. The southern (blue) anomalies are two linears that cross each other. These may be field boundaries. They are in an area that does not seem to contain furrows, indicating it had been subject to less ploughed. This area may be more influence by the underlying geology, the slope here being sharper as it continues up to the ridge.

5 Interpretation and Discussion

Area A

- 5.1.1 The geophysical survey identified a comparatively large number of archaeological features in Area A, the most striking element of which was a D-shaped enclosure.

The evidence complements the results of the previous Desk-Based Assessment of the area (Grant & Jones 2005).

5.1.2 During the walking of the survey in Area A, two flint artefacts were located including a barbed and tanged flint arrowhead of late Neolithic/early Bronze Age date and a scraper tool, likely of a similar date. Both were located on the surface of the field.

5.1.3 Given the evidence of prehistoric activity from the previously undertaken survey in Area B (Smith, 2007 & Smith, 2009), combined with the flint items found whilst undertaking the survey in Area A, there is a strong possibility that the majority of the archaeological features located on the geophysical survey relate to later Neolithic/Early Bronze Age activity.

Area E

5.1.4 Area E yielded results likely to be representative of medieval agriculture

Area G

5.1.5 The results of Area G were disturbed by metal content.

Area C

5.1.6 The results of Area C were dominated by two metal pipes. A single, linear, feature was identified that might represent the remains of an old field boundary.

Area D

5.1.7 A linear response in the northeast potentially represents the remains of an old field boundary or drainage ditch. Sub-circular features in the south may have resulted from variations in the underlying geology, while a similarly shaped feature in the north is characteristic of burning. This was probably a modern bonfire.

Area F

5.1.8 The results of Area F provided evidence for an older field system, with ridge and furrow in the northeast, and two intersecting linears within a field located in the southwest, the two being separated by a northwest to southeast aligned set of linear features that might represent the remains of a road and associated side ditches.

5.1.9 The only other feature of potential interest was a circular feature in the centre of the field, which is tentatively interpreted as the remains of a ploughed-out ring ditch.

Summary

5.1.10 The results reveal that the density of archaeological features alters from area to area, with Area A having the highest density and potentially those with greatest significance.

5.1.11 Apart from a possible ploughed-out ring ditch in Area F, other evidence recovered was suggestive of medieval field systems (particularly Area E and Area F). The remaining features were more likely to be modern.

Recommendations

5.1.12 There is a likelihood that Area A will not be developed, as it is located within an area designated as potential public open space. In this case, no further archaeological investigations will be required. If development is a possibility, targeted trenching is recommended in this area.

5.1.13 Elsewhere, it is recommended that a trench is cut across the possible ring ditch in Area F. Other areas should be subject to a watching brief during construction.

6 Acknowledgements

6.1.1 Thanks are due to Hywel Keen and Chris Smith (AW) for undertaking the on-site survey and the resident farmers for allowing access to the land.

7 Bibliography and References

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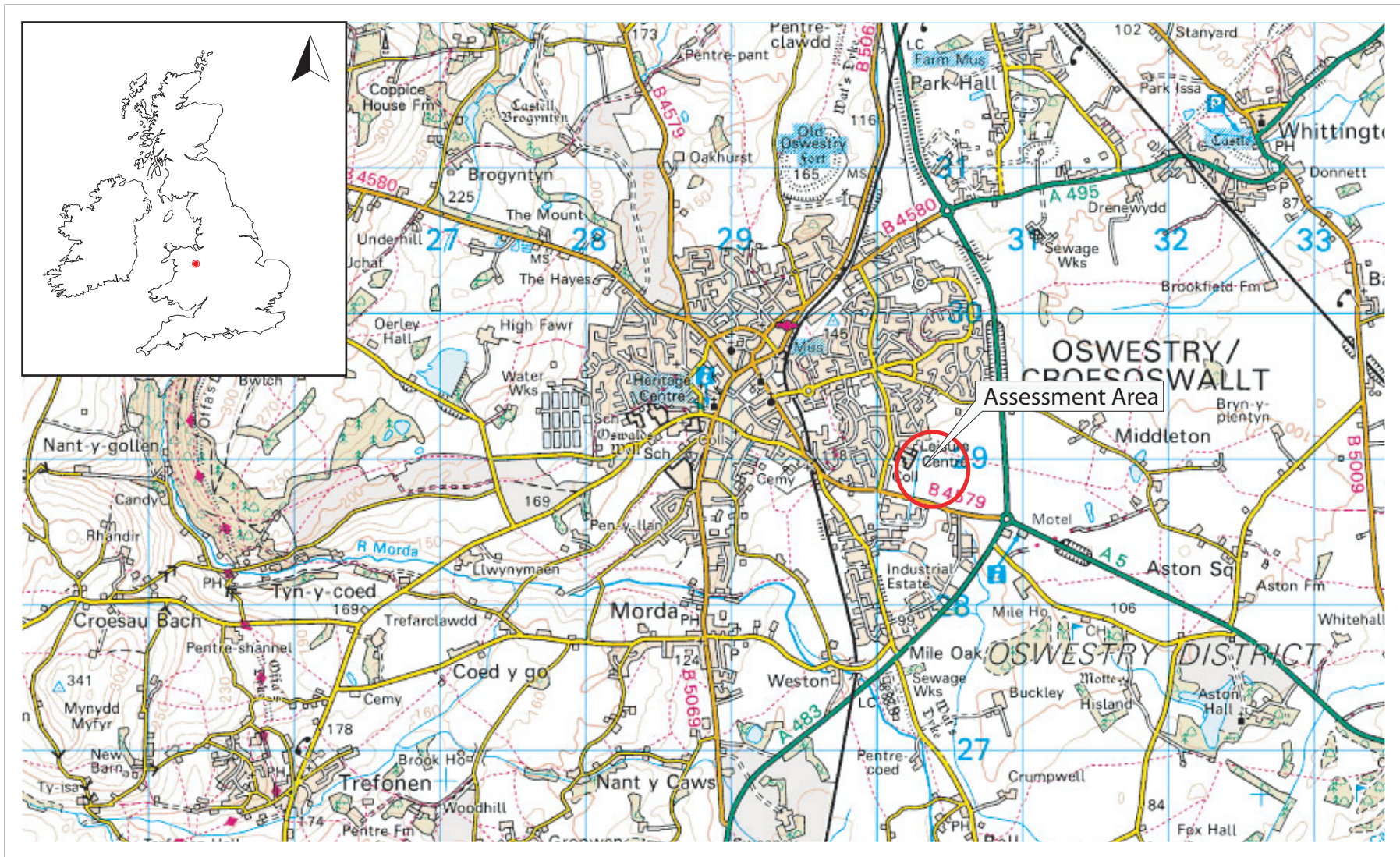


Fig 1: Map showing location of survey area



Figure 2.
Geophysical
Survey Areas

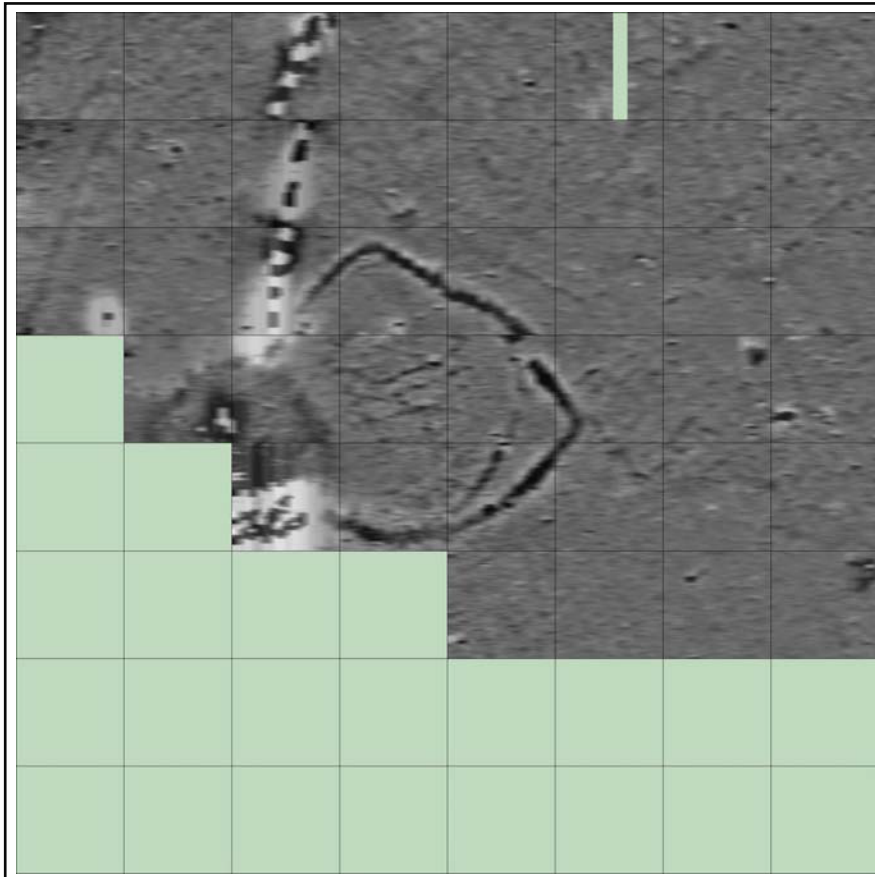


Figure 3.

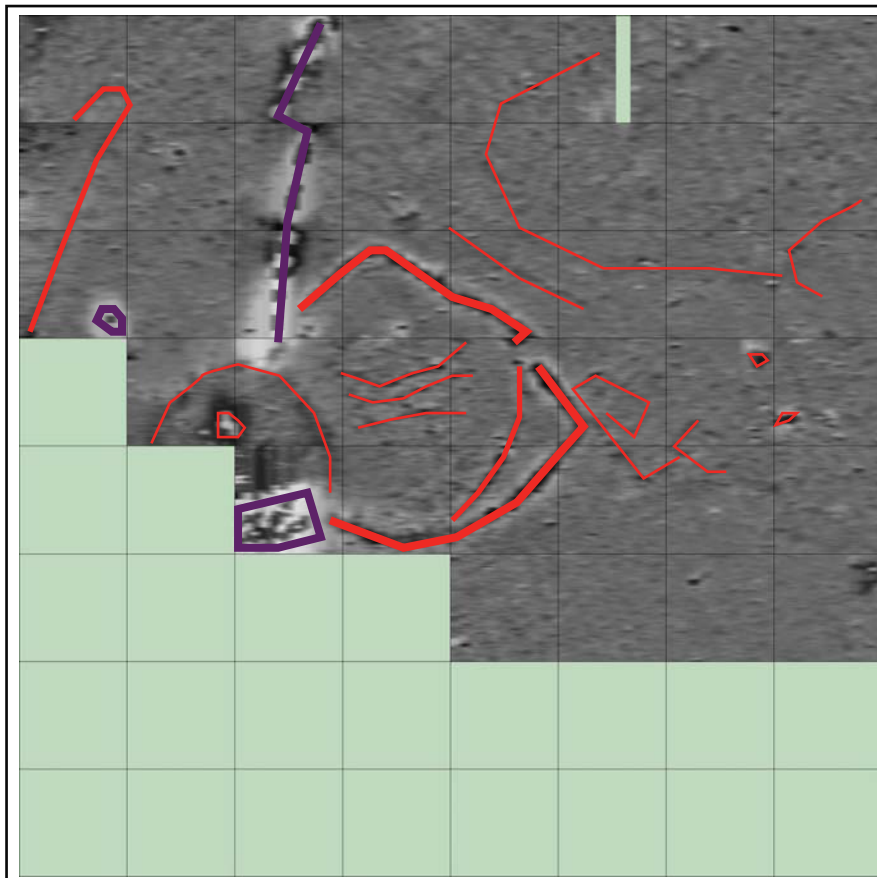


Figure 4

150m

Figure 3 Area A Geophysical Survey Results. North to top of page.
 Figure 4 Area A Traced Interpretation of Archaeological Features
 Archaeology - Red. Modern - Purple.

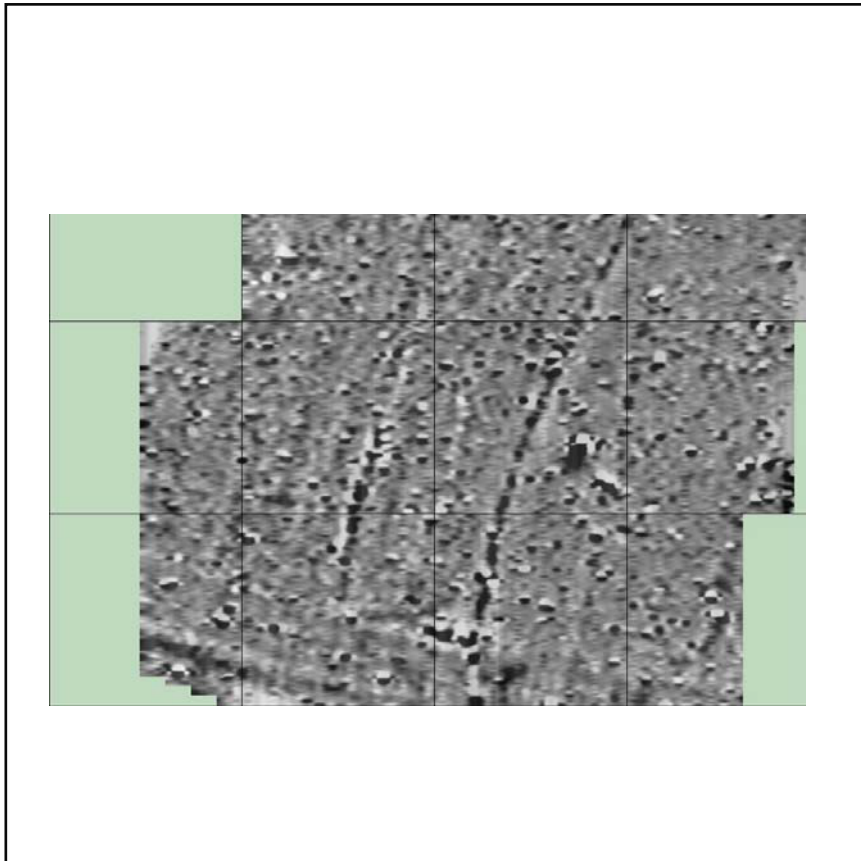


Figure 5

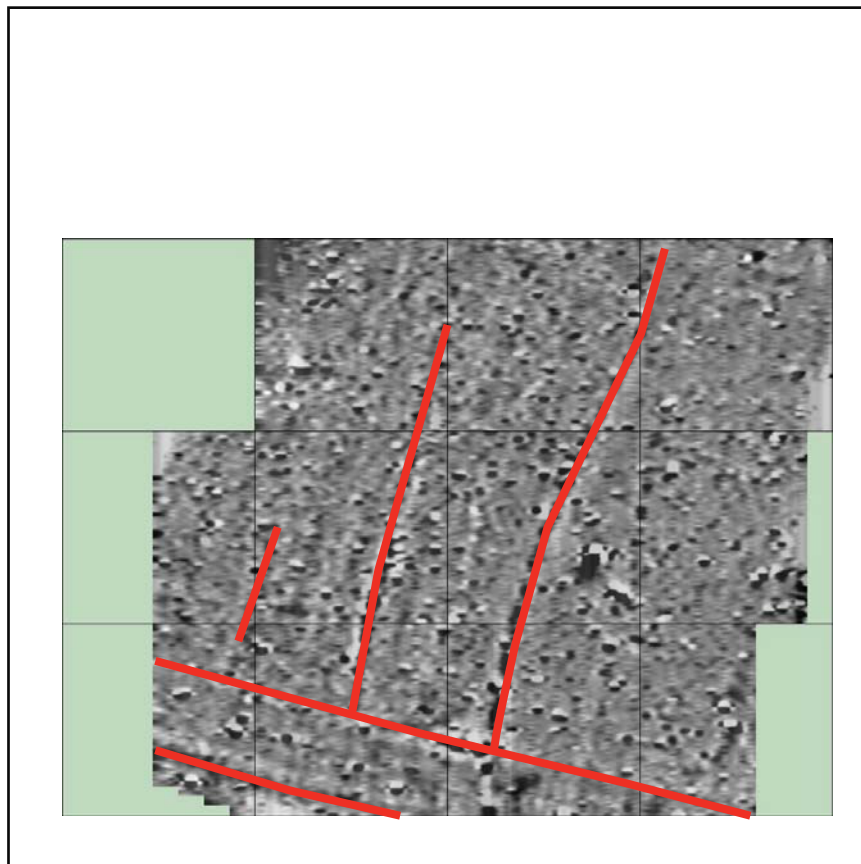


Figure 6

60m

Figure 5 Area E Geophysical Survey Results. North to top of page.
 Figure 6 Area E Traced Interpretation of Archaeological Features
 Archaeology - Red.

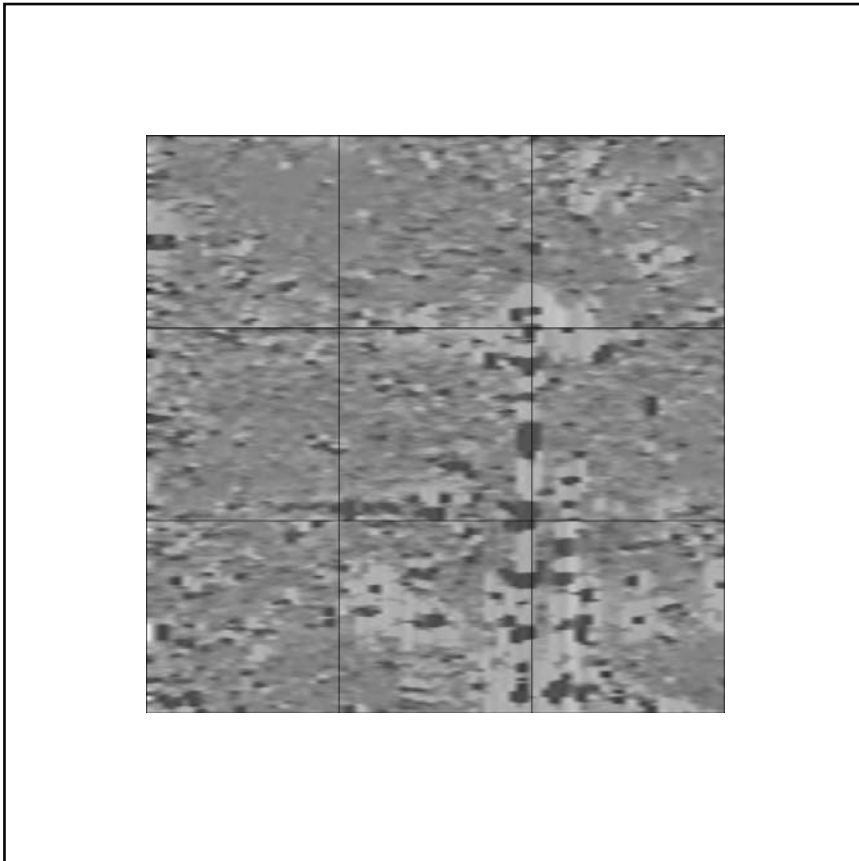


Figure 7

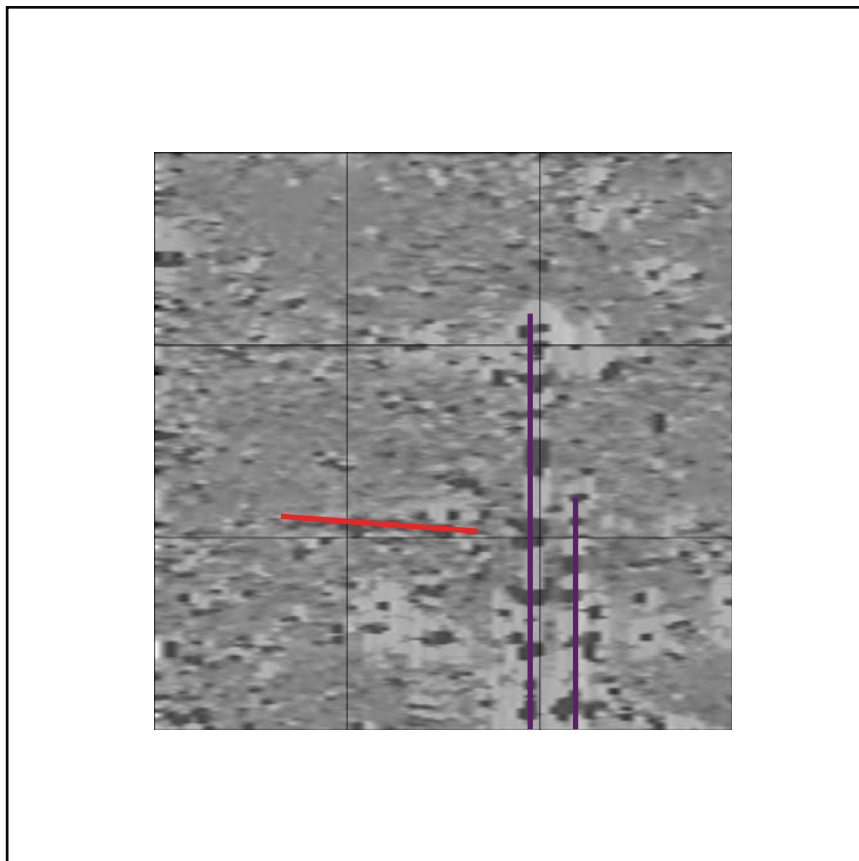


Figure 8

60m

Figure 7 Area G Geophysical Survey Results. North to top of page.
 Figure 8 Area G Traced Interpretation of Archaeological Features
 Archaeology - Red. Modern - Purple.

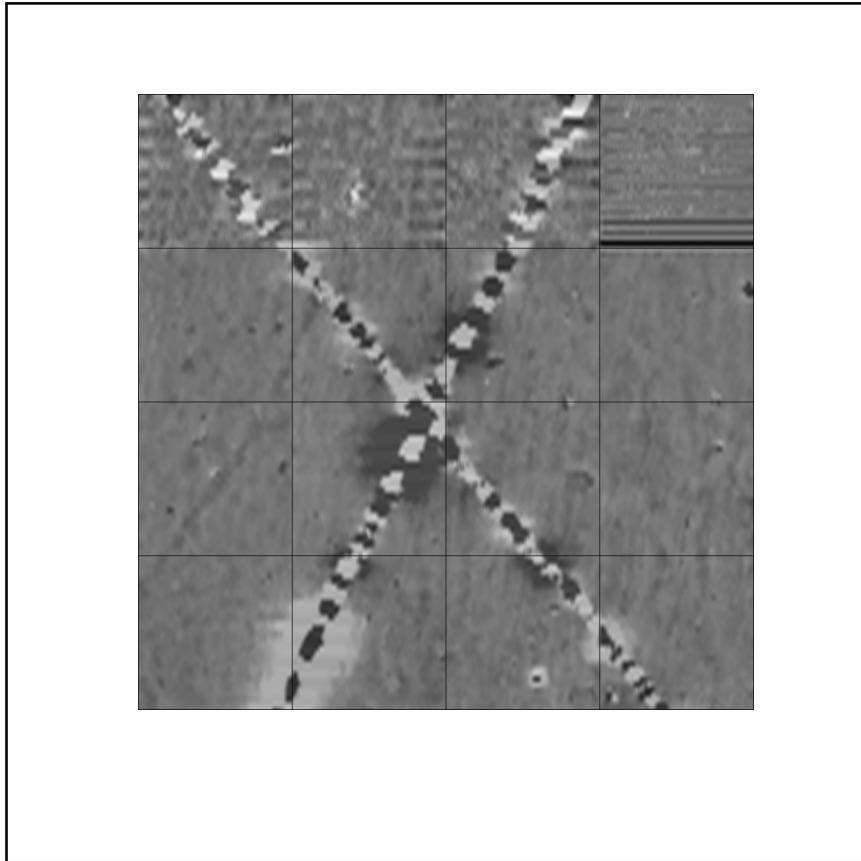


Figure 9.

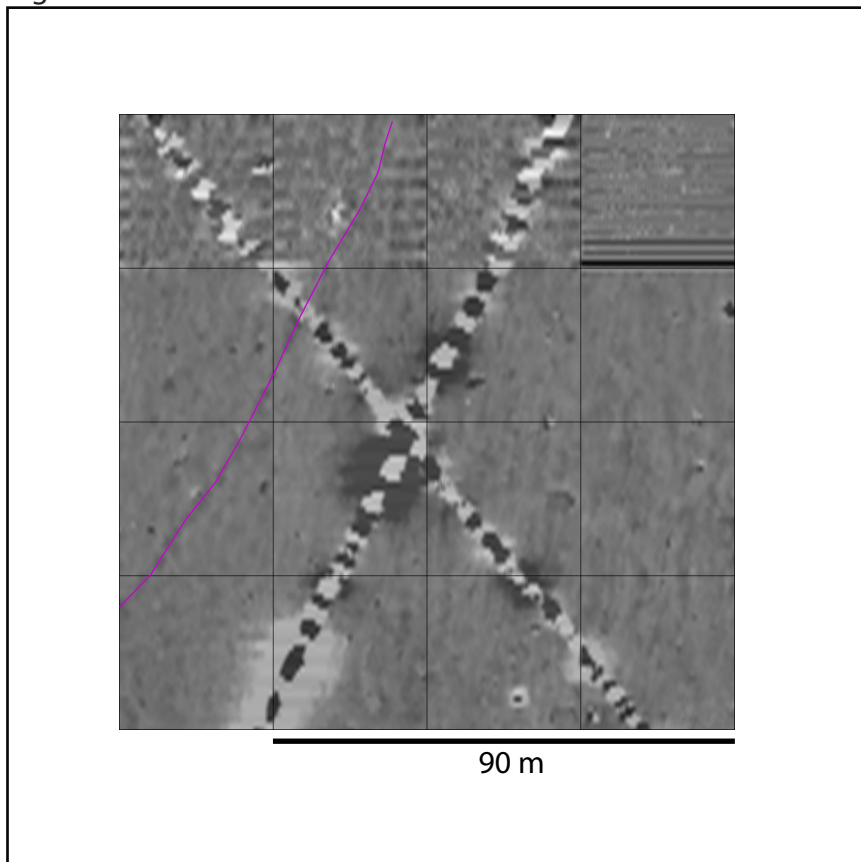


Figure 10.

Figure 9. Area C Geophysical Survey Results. North to top of page.
 Figure 10. Area C Traced Interpretation of Archaeological Features
 Archaeology - n/a Modern - Purple.

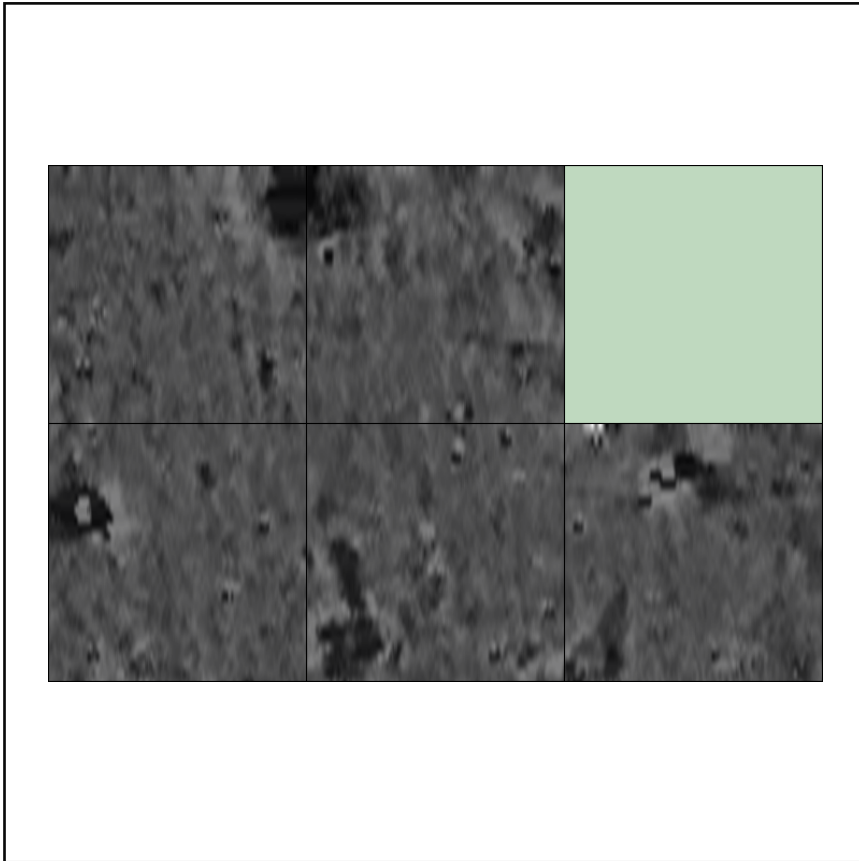


Figure 11.

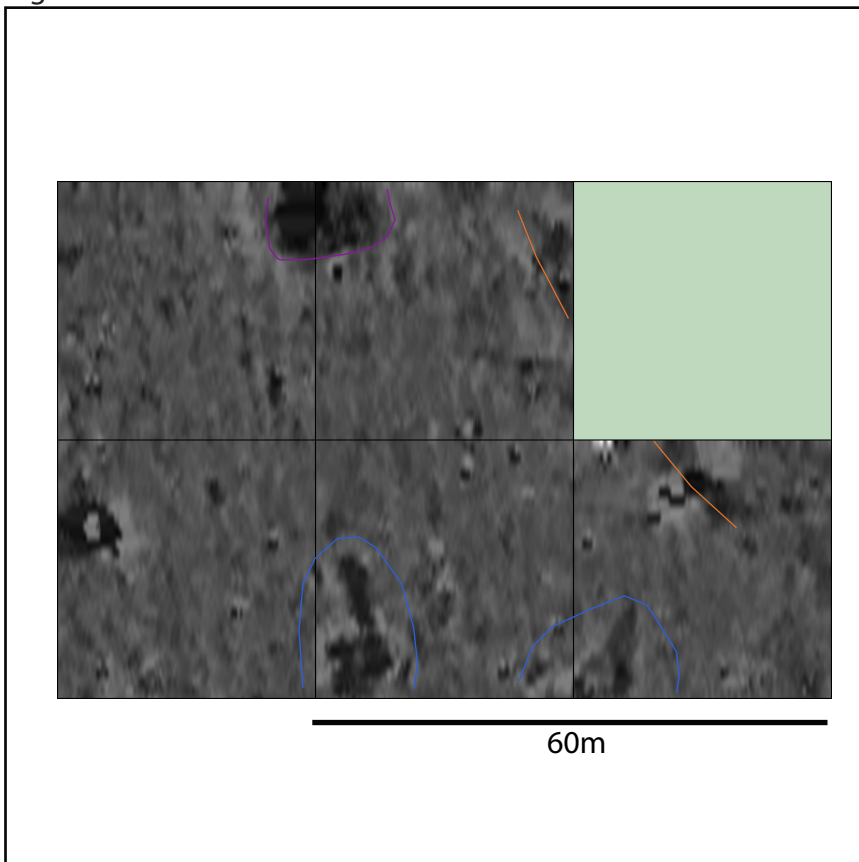


Figure 12.

Figure 11. Area D Geophysical Survey Results. North to top of page.
 Figure 12. Area D Traced Interpretation of Archaeological Features
 Archaeology - Orange, Purple Blue - Negative responses, possible due to Geology

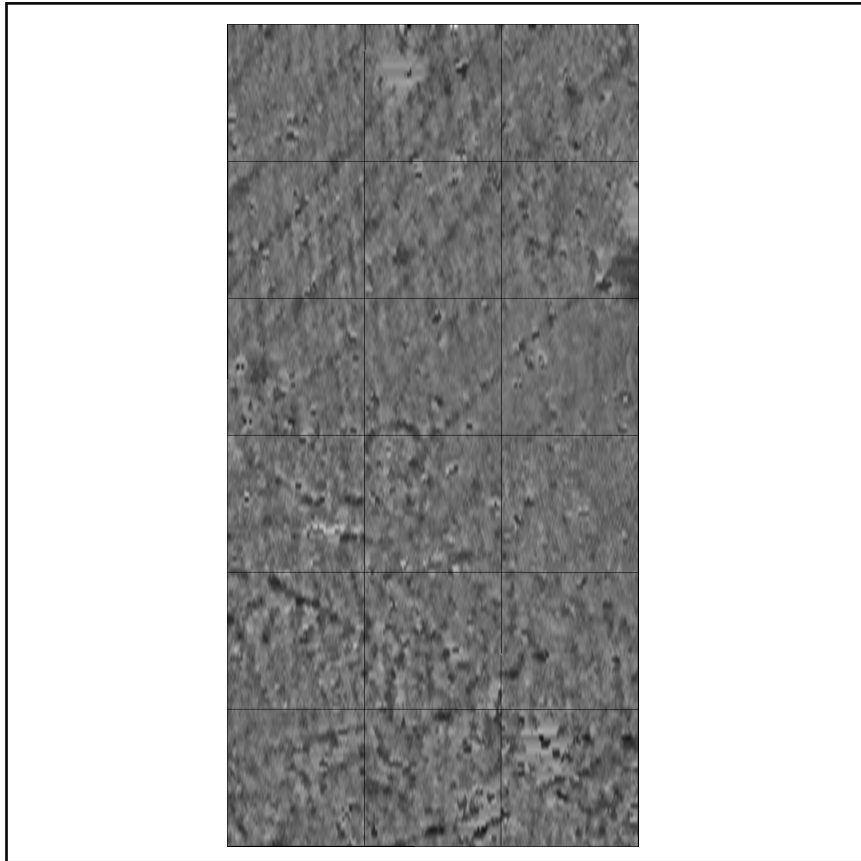


Figure 13.

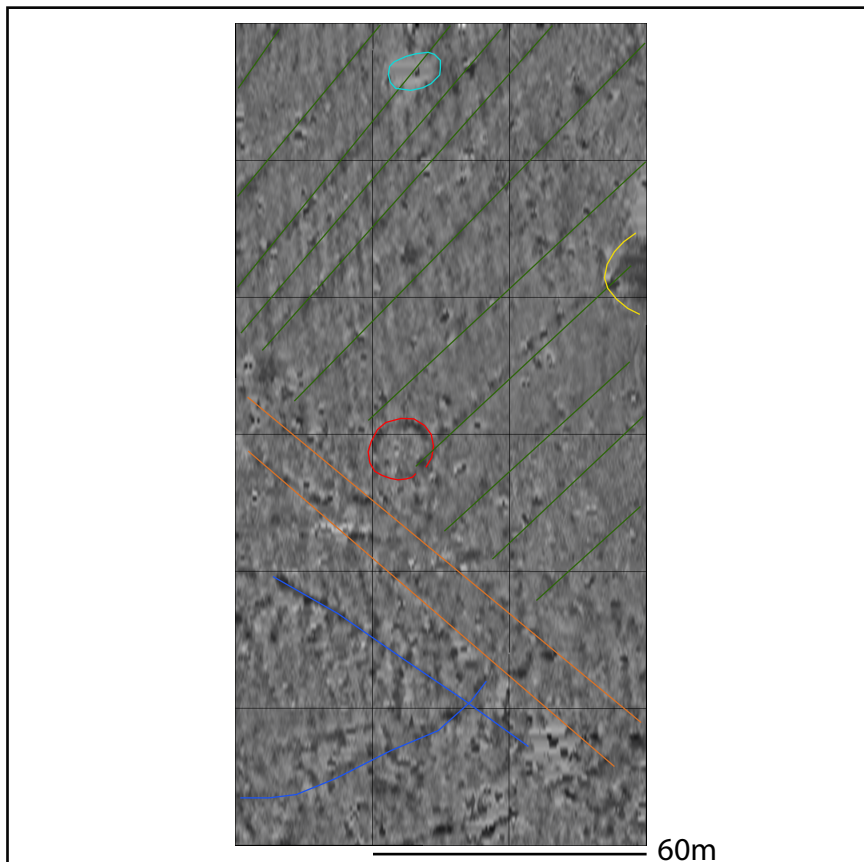


Figure 14.

Figure 13. Area F Geophysical Survey Results. North to top of page.

Figure 14. Area F Traced Interpretation of Archaeological Features
 Archaeology - Red, Green, Blue & Orange Modern - Yellow & Light Blue

ARCHIVE COVER SHEET

Oswestry Eastern Approach, Oswestry, Shropshire

Site Name:	Oswestry Eastern Approach
Site Code:	OEA/15/GEO
PRN:	02286
NPRN:	-
SAM:	-
Other Ref No:	-
NGR:	NGR SJ30363 28934
Site Type:	Green Field
Project Type:	Geophysical Assessment
Project Manager:	Kate Pitt
Project Dates:	April-July 2014
Categories Present:	Prehistoric to Modern
Location of Original Archive:	AW
Location of duplicate Archives:	Shropshire Museum
Number of Finds Boxes:	NA
Location of Finds:	NA
Museum Reference:	NA
Copyright:	AW
Restrictions to access:	Confidential

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