

## **Dallington Grange, Northamptonshire**

### **geophysical survey phase 2**

*on behalf of*

**CgMs Consulting**

**Report 1535**  
September 2006

---

***Archaeological Services***  
***Durham University***  
South Road  
Durham DH1 3LE  
Tel: 0191 334 1121  
Fax: 0191 334 1126

archaeological.services@durham.ac.uk  
[www.durham.ac.uk/archaeological.services](http://www.durham.ac.uk/archaeological.services)

---

# Dallington Grange, Northamptonshire

## geophysical survey phase 2

### *Report 1535*

September 2006

*Archaeological Services Durham University*

on behalf of

*CgMs Consulting*

*Morley House, 26 Holborn Viaduct, London EC1A 2AT*

---

## Contents

1. Summary . . . . .	1
2. Project background . . . . .	2
3. Archaeological and historical background	3
4. Landuse, topography and geology . . . . .	3
5. Geophysical survey . . . . .	3
6. Conclusions . . . . .	10
7. Sources . . . . .	11
Appendix I: Trace plots of geophysical data	12

## **1. Summary**

### ***The project***

- 1.1 This report presents the results of two programmes of geophysical survey conducted in advance of proposed development at Dallington Grange.
- 1.2 The works were commissioned by CgMs Consulting and conducted by Archaeological Services Durham University in accordance with a methods statement provided by Archaeological Services.

### ***Results***

- 1.3 Extensive archaeological remains were detected in four parts of the study area, representing a multi-phase use of the landscape.
- 1.4 A probable Neolithic causewayed enclosure and associated features were recorded in Area 2.
- 1.5 A substantial settlement and a multi-vallate enclosure were recorded across Areas 1 and 4. This complex of enclosures, ring-ditches, tracks, pits and a probable post-lined avenue may date to the Iron Age.
- 1.6 Two rectilinear ditched enclosures were recorded in the western part of Area 6.
- 1.7 A further concentration of features, possibly representing occupation, was also detected in the northern part of Area 6 on a terrace above the Brampton arm of the River Nene.

## 2. Project background

### *Location (Figure 1)*

- 2.1 The study area is located at Dallington Grange on the north-western outskirts of Northampton, (NGR centre: SP 7316 6338), 1 km north-west of Kings Heath between two tributary streams of the River Nene. It is bounded by Lodge Farm Industrial Estate to the south-west, forestry to the north-west, a residential estate to the south-east and a railway line to the north-east. The study area covers approximately 189ha, of which 15.4ha was not available for survey. The surveyed areas total 99.3ha (Figure 2).

### *Development proposal*

- 2.2 The survey has been carried out in advance of a residential and employment development proposal, with associated services and access roads.

### *Objective*

- 2.3 The principal aim of the survey was to assess the nature and extent of any sub-surface features of potential archaeological significance within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in advance of development.

### *Methods statement*

- 2.4 The surveys were undertaken in accordance with instructions provided by CgMs Consulting and a methods statement prepared by Archaeological Services.

### *Dates*

- 2.5 Geophysical survey was undertaken in two phases: 15<sup>th</sup> to 26<sup>th</sup> May and 7<sup>th</sup> August to 8<sup>th</sup> September 2006. This report was prepared between 12<sup>th</sup> and 27<sup>th</sup> September 2006.

### *Personnel*

- 2.6 Fieldwork was conducted by Bryan Atkinson, Graeme Attwood, Edward Davies, Lorne Elliott, Jill Inglis, Sam Roberts, Natalie Swann and Richard Villis. This report was prepared by Lorne Elliott and Duncan Hale with illustrations by David Graham. The Project Manager was Duncan Hale.

### *Archive/OASIS*

- 2.7 The site code is **NDG06**, for **Northampton, Dallington Grange 2006**. The survey archive is currently held by Archaeological Services Durham University. Archaeological Services is registered with the **Online Access to the Index of archaeological investigationS** project (OASIS). The OASIS ID number for this project is **archaeol3-18498**.

### **3. Archaeological and historical background**

- 3.1 In 1994 The Royal Commission on the Historical Monuments of England (RCHME) carried out a 1:2500 scale 'level 3' survey over a possible Neolithic causewayed enclosure on Dallington Heath, at NGR: SP725635. The survey was undertaken as part of the Industry and Enclosure in the Neolithic Project. This was based primarily on ground survey and aerial photography of cropmarks. As a result of this survey one NMR record was updated (SP76SW53) and six new monument records were created (SP 76SW 99, 100, 101, 102, 103, and 104). Limited fieldwalking in 1988 recovered prehistoric flints, and a geophysical survey and trial trenching in 1992 confirmed the presence of a causewayed enclosure.
- 3.2 The earlier surveys conducted as part of the present project determined the nature and extent of the Neolithic causewayed enclosure and mapped a complex settlement of rectilinear and curvilinear enclosures and ring-ditches of presumed Iron Age origin, just to the south (Archaeological Services 2006).

### **4. Landuse, topography and geology**

- 4.1 The majority of Areas 1 and 2 (Phase 1 surveys, May 2006) comprised rough grassland with cow parsley over 1.5m high in many places. Oil seed rape was growing to a height of more than 1m in the east of Area 2. Area 3, largely comprising the interior of the causewayed camp, has not been surveyed.
- 4.2 For the Phase 2 surveys (August/September 2006), the north-western part of Area 4 contained a motorcycle scrambling track, which was in use most of the time. To the immediate south of this was high scrub vegetation. Neither of these areas could be surveyed. The remainder of Area 4 together with Areas 5 and 7 comprised rough grassland which had recently been cut. Area 6 had been ploughed and Area 8 was a mixture of ploughed fields and grass paddocks. Area 9 was overgrown scrub and waste ground used for dumping; it was not possible to survey this area.
- 4.3 The central part of the study area was broadly level at a mean elevation of c.100m OD, with land falling away to the south-west and north-east.
- 4.4 The underlying solid geology of the area comprises Sandstone, Ironstone and Limestone of the Great Oolite and Upper Lias series, which are overlain by a sandy soil ('Northampton Sand').

### **5. Geophysical survey**

#### ***Standards***

- 5.1 The surveys and reporting were conducted in accordance with English Heritage Research and Professional Services Guideline No.1, *Geophysical survey in archaeological field evaluation* (David 1995); the Institute of Field Archaeologists Technical Paper No.6, *The use of geophysical techniques in*

*archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Geophysical Data in Archaeology: A Guide to Good Practice* (Schmidt 2001).

### ***Technique selection***

- 5.2 Geophysical surveying enables the relatively rapid and non-invasive identification of potential archaeological features within landscapes and can involve a variety of complementary techniques such as magnetometry, electrical resistivity, ground-penetrating radar and electromagnetic survey. Some techniques are more suitable than others in particular situations, depending on a variety of site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.
- 5.3 In this instance, based on cropmark evidence and previous work, it was considered likely that cut features, such as ditches and pits, would be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.
- 5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting each of the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record minute anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

### ***Field methods***

- 5.5 The study area was divided into nine areas for survey purposes. Where possible, 100% of the land was surveyed in Areas 1, 2 and 4. It was not possible to collect data over the scrambling track in the north of Area 4, though attempts were made (T30 & 31), or in the scrubland south-west of the track. In Areas 5, 6, 7 and 8 a 50% sample was surveyed, collecting data from alternate 60m-wide transects. Area 9 was not surveyed due to the height of the vegetation and the large amounts of ferrous scrap.
- 5.6 A 30m grid was established across each survey area and tied-in to the Ordnance Survey National Grid using global positioning systems with real-time correction.
- 5.7 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 30m grid units. The instrument sensitivity was set to 0.1nT, the sample interval to 0.25m and the traverse interval to 1.0m, thus providing 3600 sample measurements per 30m grid unit.

- 5.8 Data were downloaded on-site into laptop computers for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

***Data processing***

- 5.9 Geoplot v.3 software was used to process the geophysical data and to produce both continuous tone greyscale images and trace plots of the raw data. The greyscale images and interpretations are presented in Figures 2-36; the trace plots are provided in Appendix I. In the greyscale images, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.

- 5.10 The following basic processing functions have typically been applied to each dataset:

*Zero mean traverse* – sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities.

*Destagger* – corrects for displacement of anomalies caused by alternate zig-zag traverses.

*Despike* – locates and suppresses random iron spikes in gradiometer data.

*Interpolate* – increases the number of data points in a survey to match sample and traverse intervals. In this instance the gradiometer data have been interpolated to 0.25 x 0.25m intervals.

***Interpretation: anomaly types***

- 5.11 Colour-coded geophysical interpretation plans are provided. Three types of geomagnetic anomaly have been distinguished in the data:

*positive magnetic* regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches.

*negative magnetic* regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids.

*dipolar magnetic* paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths.

***Interpretation: features***

**General comments**

- 5.12 For illustrative purposes the study area is divided into eleven parts, as shown on Figure 3. In the drawings and the following discussion, discrete survey

transects are prefixed with 'T', eg T6. Colour-coded archaeological interpretation plans are provided for all survey areas.

- 5.13 Except where stated otherwise in the text below, positive magnetic anomalies are taken to reflect relatively high magnetic susceptibility materials, typically sediments in negative archaeological features (such as ditches or pits) whose magnetic susceptibility has been enhanced by decomposed organic matter or by burning.
- 5.14 Small, discrete dipolar magnetic anomalies have been detected in all of the survey areas. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. A sample of these are shown on the geophysical interpretation plans, however they have been omitted from the archaeological interpretation plans and the following discussion.

**Areas 1 & 4 (Figures 4-6)**

- 5.15 A complex of rectilinear and curvilinear enclosures, ring-ditches, pits and other features have been detected throughout this part of the site. These features are typical of late prehistoric settlement and some have previously been recorded on aerial photographs.
- 5.16 The most prominent features comprise three substantial, almost concentric, soil-filled enclosure ditches in Area 4. These have been detected over an area of approximately 160m by 130m and appear to have continued into the area of the scrambling track. The anomalies representing these ditches measure up to 6m in width; this is likely to be an accurate representation of the actual ditch widths since, having given rise to cropmarks, the features are almost certainly near-surface. Each of the three ditch circuits has a causewayed entrance on its south-eastern side. The widest entrance is through the outermost ditch while the narrowest entrance is through the innermost; this funnelled approach from outside the monument to the innermost enclosure is flanked by pits, which may have housed large timber posts effectively forming an avenue. A number of discrete anomalies have been detected in the interior of the enclosure. Some of these may reflect the remains of ring-ditches, possibly associated with round-houses, while others are likely to reflect hearth and pit features. These types of feature are shown clearly on the trace plot (Appendix I). A number of additional ditches were detected on the northern side of this complex, some of which appear to cross the enclosure ditches and almost certainly reflect at least one other phase of activity here.
- 5.17 The remainder of Areas 1 and 4 also contain a high concentration of geomagnetic anomalies, almost certainly reflecting a substantial settlement associated with the above enclosures. The settlement has been detected over an area of *c.*12ha to the south and east of the enclosures and comprises both large and small rectilinear and curvilinear enclosures, miscellaneous ditches, ring-ditches, trackways, pits and pit alignments. Some elements of the settlement continue eastwards into Areas 2 and 6. As with the main enclosures to the north, there appears to be more than one phase of settlement represented.



- 5.18 One large rectilinear enclosure in the south of Area 1 contains a concentration of small intense dipolar magnetic anomalies. These probably correspond to ferrous or fired material of archaeological origin, probably associated with industrial activities. This area is also very clear on the trace plot (Appendix I).
- 5.19 Three alignments of small discrete positive magnetic anomalies have been detected in the south-western part of the site. Two of these are parallel, 7-8m apart, and are aligned broadly north-south in Area 4, turning to the north-east in Area 1 as they enter the main area of settlement. The anomalies almost certainly reflect soil-filled pits, some possibly up to 2m in diameter. These may have been kept open during their period of use, or perhaps it is more likely that they housed large timber uprights, in either case defining an avenue or track which has been traced geomagnetically over a distance of 220m; the feature continues south-south-west beyond the limit of the survey. This possible avenue is interrupted by a north-west/south-east aligned ditch, which again indicates more than one phase of activity at the site.
- 5.20 In addition to the archaeological remains, a number of modern features have also been detected by the surveys here. Two weak, narrow, curvilinear positive and negative magnetic anomalies in the area of the main enclosures may correspond to wheel ruts noted on the ground. This area is adjacent to the scrambling track, but has also been used by scramblers. An archaeological origin for these anomalies is also possible.
- 5.21 Parallel negative magnetic anomalies aligned north-west/south-east at intervals of about 30m correspond to open land drains that extend throughout this field (Areas 1, 4 and 7).
- 5.22 Two chains of intense dipolar magnetic anomalies aligned broadly north-south almost certainly reflect ferrous service pipes. One pipe traverses the entire study area through Areas 7, 1, 4, 2 and 6, whilst the other was only detected at the south-western boundary of the site.

**Area 2 (Figures 7-9)**

- 5.23 A large, weak, discontinuous curvilinear positive magnetic anomaly measuring roughly 270m by 240m was recorded in the approximate centre of this area. This oval feature comprises a series of elongated pits or ditches forming a causewayed enclosure. A second discontinuous curvilinear positive magnetic anomaly was detected on the western side of the enclosure, possibly reflecting a double-ditch or a re-alignment of the monument circuit here.
- 5.24 Both within and outside the southern part of the enclosure are several curvilinear positive magnetic anomalies which may represent ring-ditches or small enclosures. The north-western part of the enclosure is cut by a strong rectilinear positive magnetic anomaly and two weak linear positive magnetic anomalies which almost certainly reflect soil-filled ditch features.
- 5.25 A series of sinuous parallel positive magnetic anomalies in the northern part of this area (and also detected in T5, Area 6), with an approximate east-west

alignment, traverse the natural slope of the land. These may reflect some form of terracing no longer evident on the surface.

- 5.26 A scatter of small dipolar magnetic anomalies was detected across this area, particularly towards the scrambling track. These almost certainly represent near-surface soil litter of fired and ferrous material. A sample of these is highlighted in the geophysical interpretation. Two dipolar magnetic anomalies in the south-east of the area correspond to telegraph poles.
- 5.27 Dummy readings taken to the north and east of the large enclosure reflect two large oak trees on the site.
- 5.28 A banding effect in parts of the data was due problems of data collection in high grass and cow parsley at the time of the survey. A compromise was taken during processing of the data to keep some banding rather than mask any archaeological features in the greyscale images.

### **Area 3**

- 5.29 Survey may be undertaken within the causewayed enclosure at a later date.

### **Area 5 (Figures 10-12)**

- 5.30 This area contained Transects 1 to 3, aligned north-south. Two weak parallel positive magnetic anomalies and a linear concentration of small dipolar magnetic anomalies correspond to the location of an existing trackway aligned north-west/south-east across this area. A slight increase in the frequency of small dipolar anomalies (topsoil litter) was also recorded in T3 adjacent to the scrambling track. A weak anomaly detected parallel to the field boundary in T3 also corresponds to a track. The texture evident in T3 was caused by the instrument operator, but this has not hindered the identification of anomalies.
- 5.31 A weak magnetic 'texture' was detected in T1 and T2, aligned north-east/south-west. Although this area is now grassland the anomalies appear to reflect a former plough regime.
- 5.32 A discontinuous linear positive magnetic anomaly detected in the northern part of T1 may reflect a shallow ditch truncated by ploughing or a series of small soil-filled pits or postholes.

### **Area 6, T4-7 north (Figures 13-15)**

- 5.33 Two rectilinear ditched enclosures have been detected in the northern part of T4. The larger enclosure is *c.*40m square while the adjacent enclosure to the south-east is considerably smaller.
- 5.34 A weak negative linear magnetic anomaly aligned north-west/south-east in the southern half of T4 corresponds to an existing landuse boundary between grassland to the west and ploughed land to the east.
- 5.35 Features similar to the possible former terraces in Area 2 have also been detected in T5. A ferrous pipe traverses T5 and T6.

**Area 6, T5-7 south (Figures 16-18)**

- 5.36 A series of linear positive magnetic anomalies in the southern part of T7 reflects a continuation of ditch features associated with the settlement recorded in Area 1 to the south-west.
- 5.37 A weak linear positive magnetic anomaly with a north-west/south-east alignment appears to continue from T7 across the southern parts of T8 and T9. This may represent a former ditch feature, possibly a field boundary, or a feature associated with the slope of the land here such as the possible terraces in Area 2 and T5.

**Area 6, T8-11 north (Figures 19-21)**

- 5.38 Several linear positive magnetic anomalies were detected across the northern parts of T9-11, possibly continuing eastwards into T12 and north into T18. These almost certainly represent the remains of soil-filled ditches and broadly correspond to an area of cropmark features evident on aerial photographs. Although it is difficult to identify enclosures or structures from the data, the features appear to represent the truncated remains of a settlement. The lack of clarity here is in part due to the existing plough regime, which is evident as a north-east/south-west texture across these transects.
- 5.39 A chain of intense dipolar magnetic anomalies traversing T8 and T9 on a north-west/south-east alignment and T10 and T11 in a broadly north-south direction almost certainly reflects a buried service.

**Area 6, T8-11 south (Figures 22-24)**

- 5.40 A weak linear positive magnetic anomaly in the southern parts of T8 and T9 appears to be a continuation of one in T7 (see 5.37 above). A few similar anomalies in T9-11, all traversing the slope, are also of uncertain origin but may represent soil-filled ditches or some form of terracing no longer evident on the surface.

**Area 6, T12-13 (Figures 25-27)**

- 5.41 Possible ditch features detected in the northern part of T12 are likely to be associated with the probable settlement features detected in T9-11.
- 5.42 A concentration of positive, negative and dipolar magnetic anomalies in the south-east of T13 correspond to a trackway with a scatter of ferrous debris.

**Area 7 (Figures 28-30)**

- 5.43 A high concentration of small dipolar magnetic anomalies was detected across much of Area 7, T25-27. The north-western and south-eastern boundaries of this concentration are well-defined and correspond to the former boundaries of a group of allotment gardens. Part of the north-western boundary is represented by a linear positive magnetic anomaly.
- 5.44 Discrete positive magnetic anomalies in the central part of T25, to the east of the former allotments, could reflect soil-filled pits.

- 5.45 Two concentrations of dipolar magnetic anomalies, each about 15m in diameter, were recorded in the northern parts of T27 and T28 to the west of the allotments. These correspond to piles of rubble noted on the surface.
- 5.46 A series of parallel negative magnetic anomalies aligned north-west/south-east across the area correspond to open land drains that extend throughout this field.

**Area 8, T14-19 (Figures 31-33)**

- 5.47 Irregular, diffuse, positive and negative magnetic anomalies were detected in T14-17, on the floodplain of the River Nene at the northern limit of the development site. These almost certainly reflect palaeochannels and associated geomorphological features.
- 5.48 A group of positive rectilinear and linear magnetic anomalies was detected in the southern part of T18. These almost certainly reflect soil-filled ditches associated with the possible settlement recorded in T9-12 to the south.
- 5.49 In the northern part of T19 a series of strong positive magnetic anomalies was detected on a north-east/south-west alignment. These almost certainly reflect fired clay land drains.
- 5.50 A chain of intense dipolar magnetic anomalies on an approximate east-west alignment in T19 may reflect a service pipe or buried trackway.

**Area 8, T20-24 (Figures 34-36)**

- 5.51 A series of strong positive magnetic anomalies was detected in the northern part of T20 on a northeast-southwest alignment. These appear to be a continuation of the features recorded in T19 to the east and almost certainly reflect fired clay land drains.
- 5.52 A concentration of dipolar magnetic anomalies was detected in the northern part of T22. This may reflect land disturbed during the building of the adjacent railway bridge or an accumulation of fired or ferrous debris not evident on the surface.

**Area 9**

- 5.53 It was not possible to survey this area due to overgrown vegetation and its use as a dumping ground, particularly for ferrous materials.

## **6. Conclusions**

- 6.1 Fluxgate gradiometer surveys have been undertaken on land at Dallington Grange, Northamptonshire, in order to determine the nature and extent of features of potential archaeological interest prior to proposed development.
- 6.2 Extensive archaeological remains have been detected in four parts of the study area, representing a multi-phase use of the landscape.

- 6.3 Areas 1 and 4 contain the remains of a substantial settlement associated with a large multi-vallate enclosure. The settlement comprised both large and small rectilinear and curvilinear enclosures, miscellaneous ditches, ring-ditches, trackways, pits and pit or post alignments. Evidence for probable industrial activity was detected in one of the larger enclosures and the remains of more than one phase of activity are apparent. The form of this settlement is typical of the Iron Age period.
- 6.4 Survey of Area 2 recorded a probable Neolithic causewayed enclosure and detected both internal and external features which may be contemporary.
- 6.5 A third concentration of features, possibly representing occupation, was detected in the northern part of Area 6 and T18 in Area 8 on a terrace above the River Nene floodplain.
- 6.6 Two rectilinear ditched enclosures have also been recorded in the western part of Area 6, T4.

## **7. Sources**

Archaeological Services 2006 *Dallington Grange, Northamptonshire: geophysical survey*, unpublished Report **1463** for CgMs Consulting, Archaeological Services Durham University

David, A, 1995 *Geophysical survey in archaeological field evaluation*, Research and Professional Services Guideline **1**, English Heritage

English Heritage 2006 Pastscape Database, <http://www.pastscape.org.uk>

Gaffney, C, Gater, J & Ovenden, S, 2002 *The use of geophysical techniques in archaeological evaluations*, Technical Paper **6**, Institute of Field Archaeologists

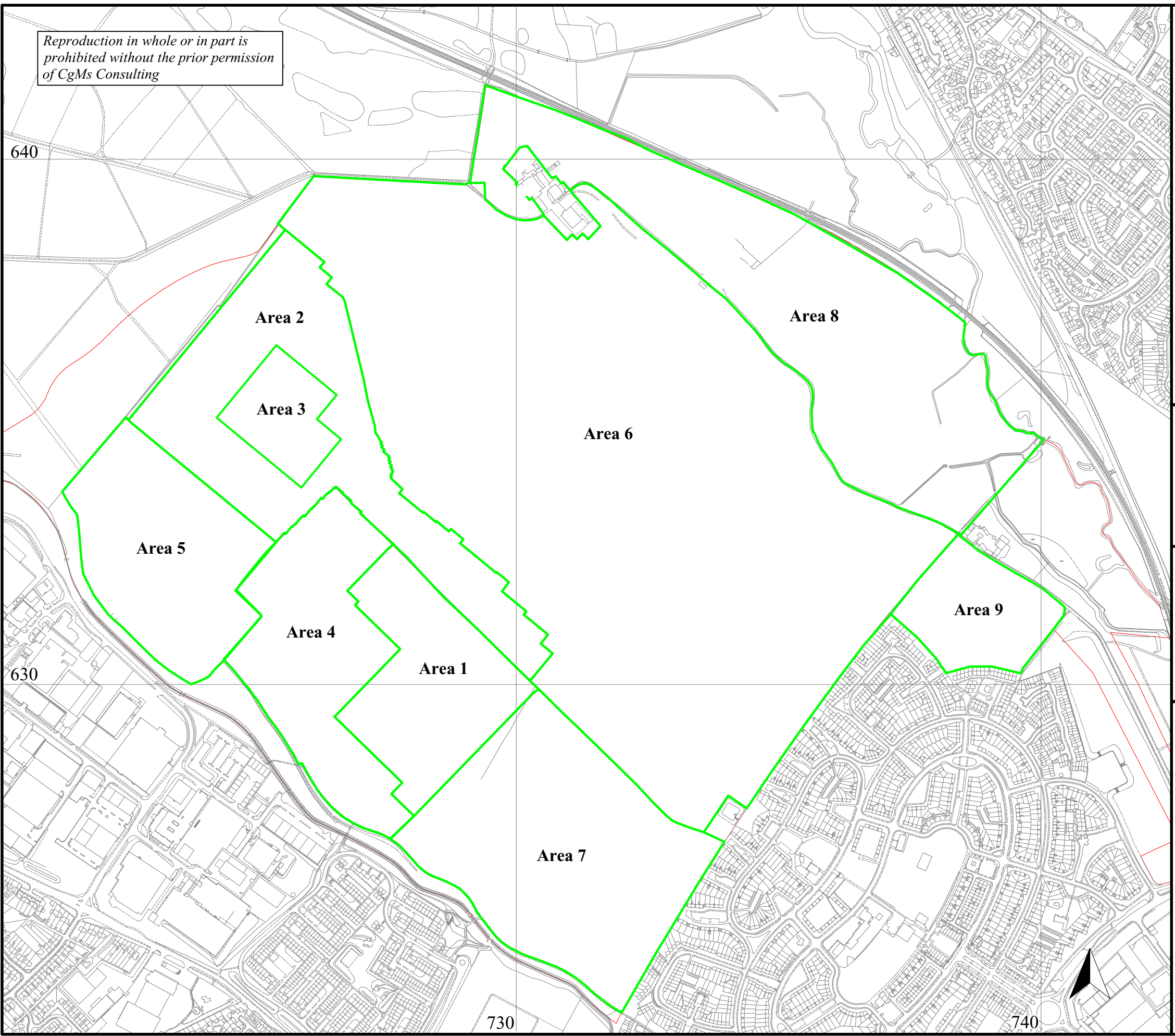
Schmidt, A, 2001 *Geophysical Data in Archaeology: A Guide to Good Practice*, Archaeology Data Service, Arts and Humanities Data Service

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting

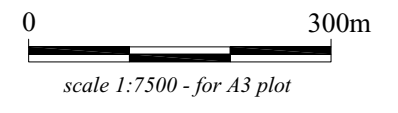
**Dallington Grange, Northamptonshire**  
**geophysical surveys phase 2**

**Report 1535**

Figure 1  
*Survey areas*



*on behalf of*  
**CgMs Consulting**



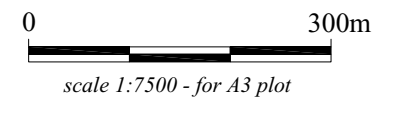
Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



**Dallington Grange, Northamptonshire**  
**geophysical surveys phase 2**

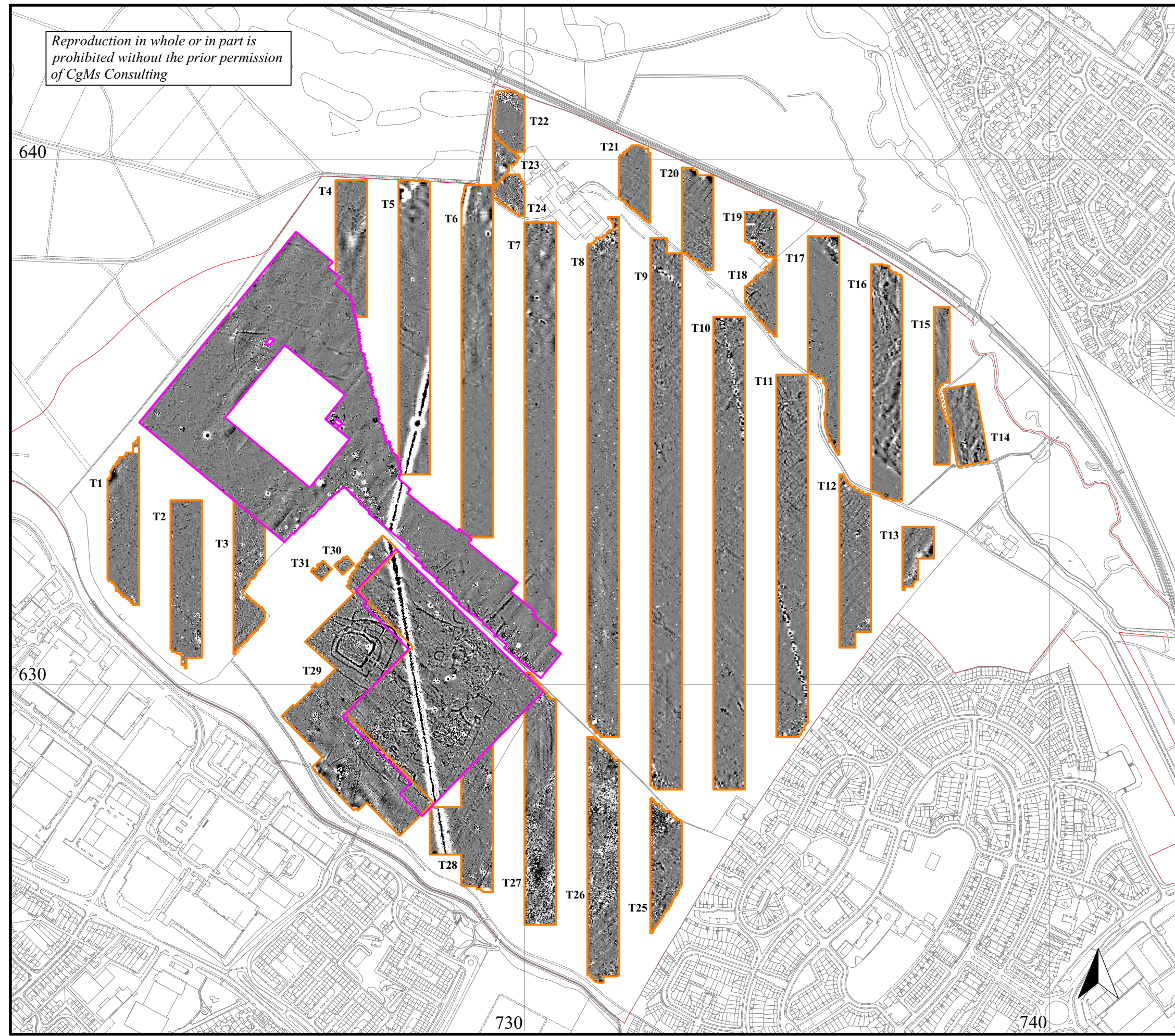
**Report 1535**

Figure 2  
*Geophysical surveys*

*on behalf of*  
**CgMs Consulting**



-  phase 1 surveys
-  phase 2 surveys



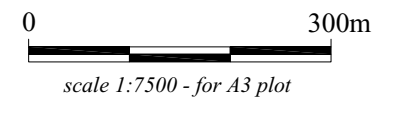
Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting


**Dallington Grange, Northamptonshire**  
**geophysical surveys phase 2**

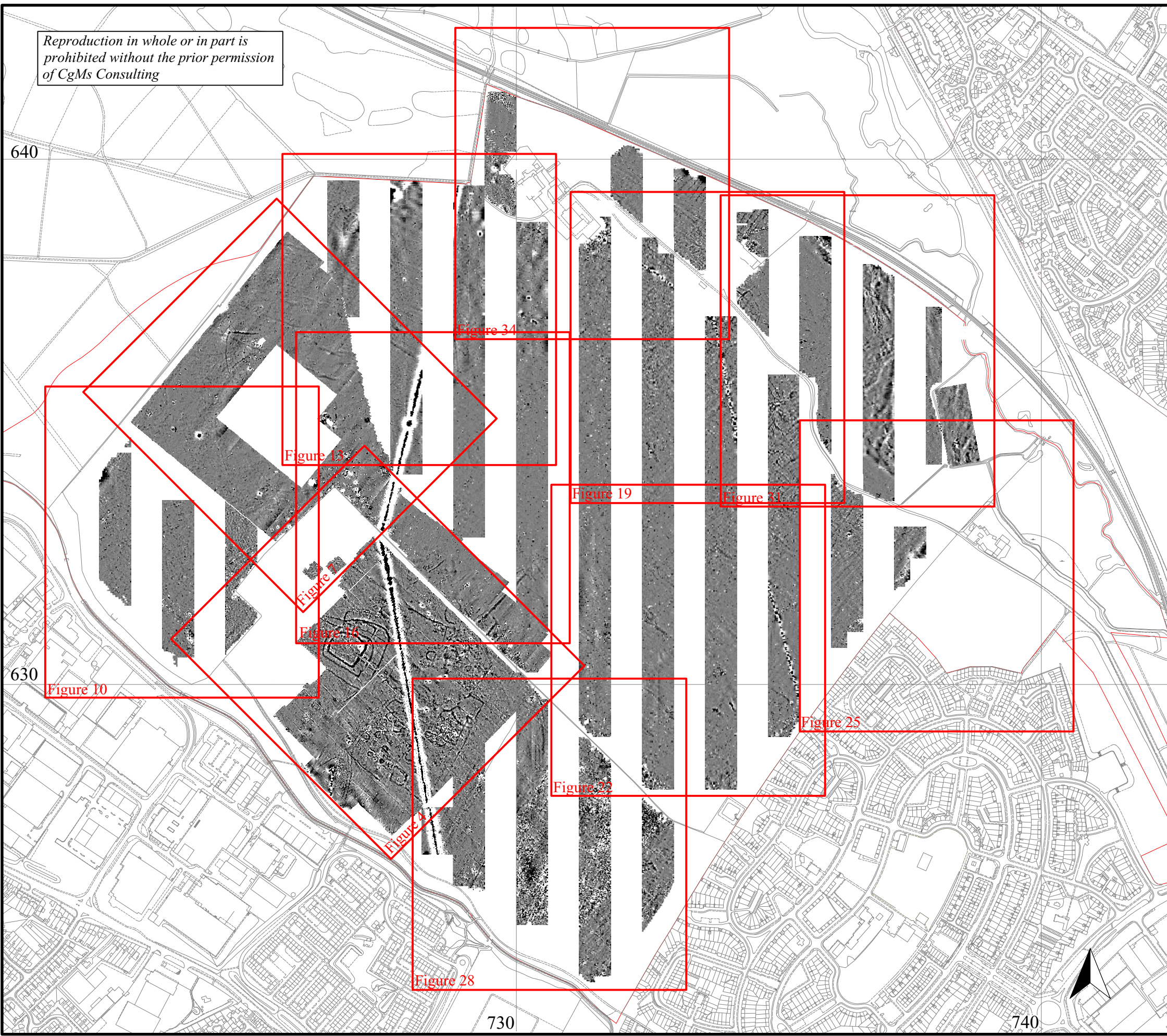
**Report 1535**

Figure 3  
*Guide to figures*

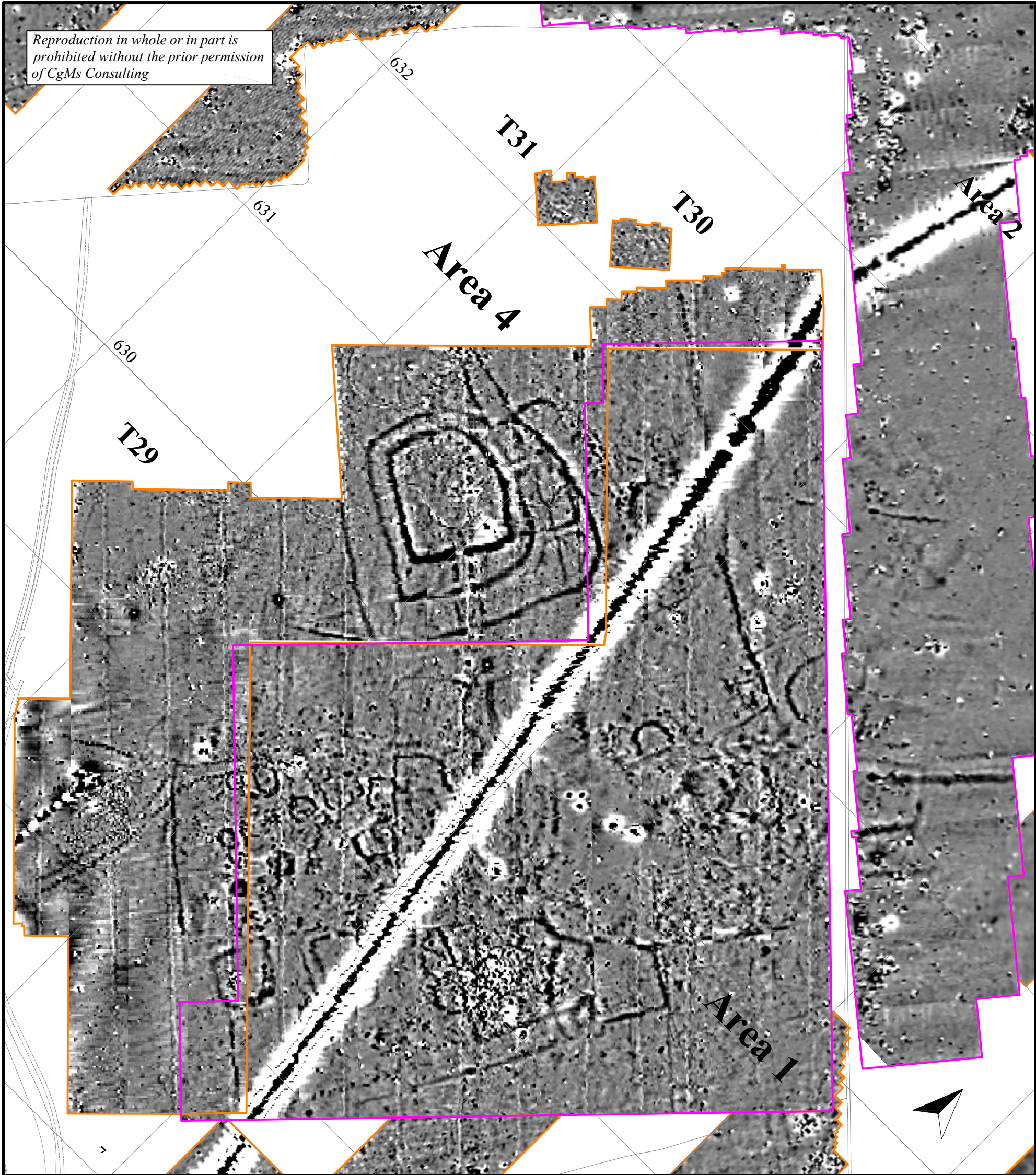
on behalf of  
**CgMs Consulting**



 figure reference







Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

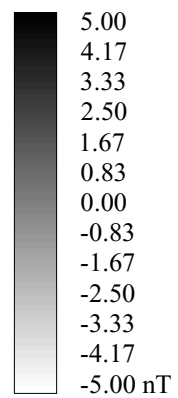
Report 1535

Figure 4  
Areas 1 & 4, transects 29, 30 & 31,  
geophysical surveys

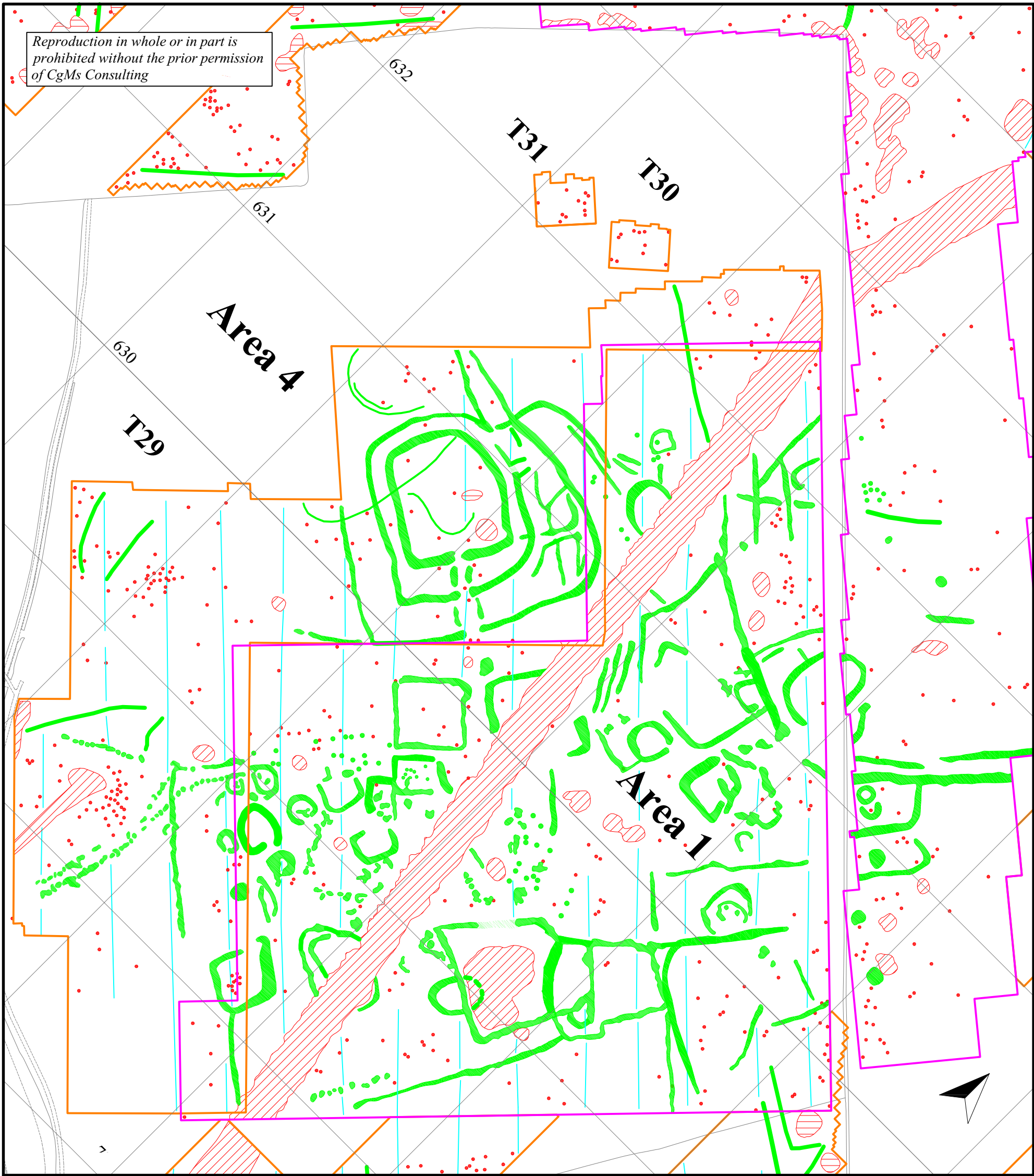
on behalf of  
CgMs Consulting



scale 1:2000 - for A3 plot



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

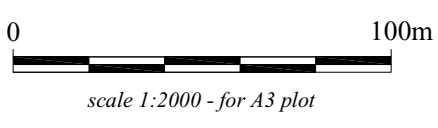
Dallington Grange, Northamptonshire




geophysical surveys phase 2

Report 1535

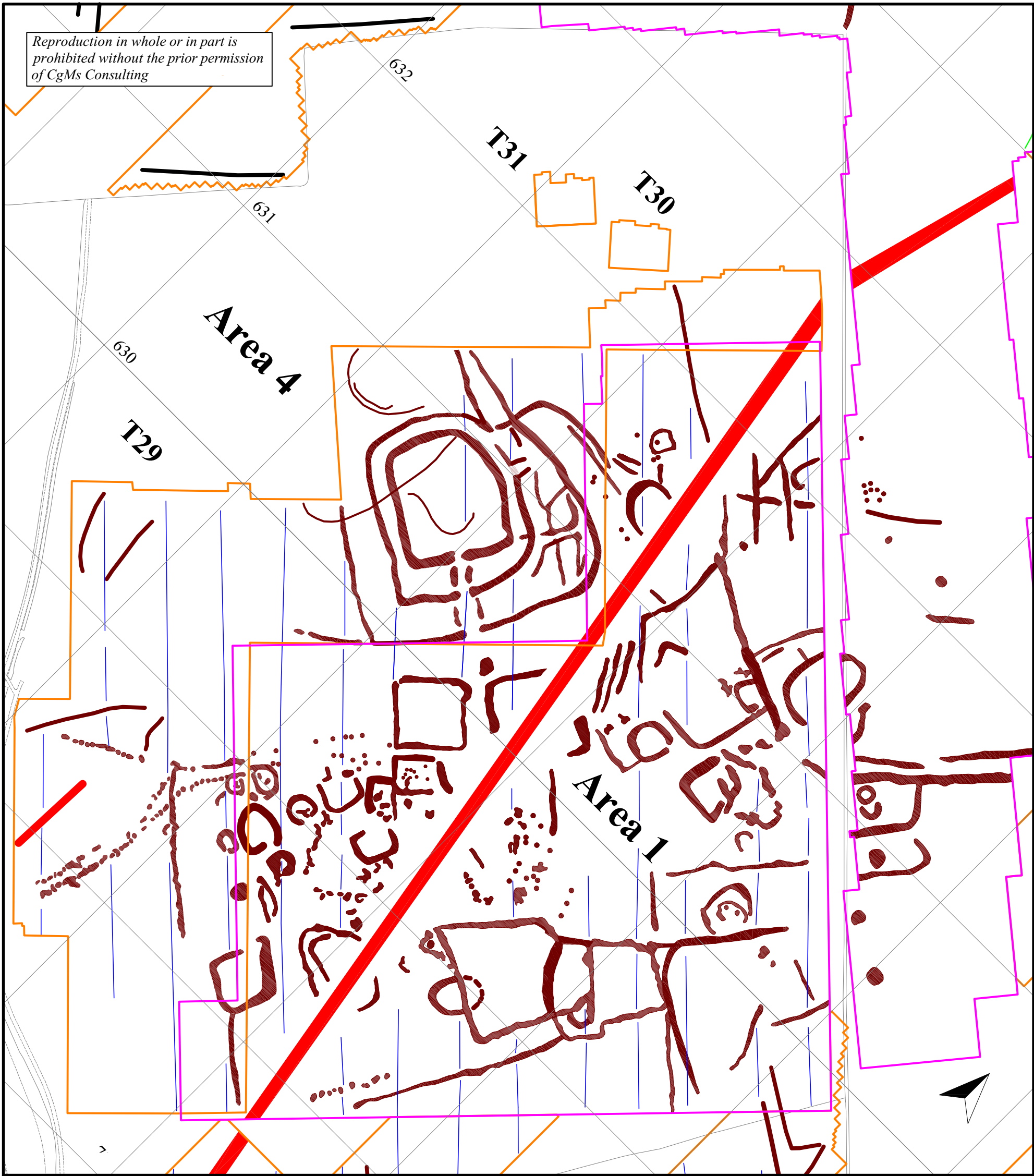
Figure 5  
Areas 1 & 4, geophysical interpretation

on behalf of  
CgMs Consulting



-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

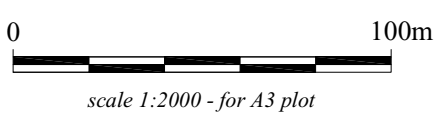
Dallington Grange, Northamptonshire




geophysical surveys phase 2

Report 1535

Figure 6  
Areas 1 & 4, archaeological interpretation

on behalf of  
CgMs Consulting



-  soil-filled features
-  service pipes
-  field drain

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire  
geophysical surveys phase 2

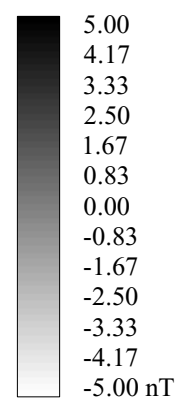
Report 1535

Figure 7  
Area 2, geophysical survey

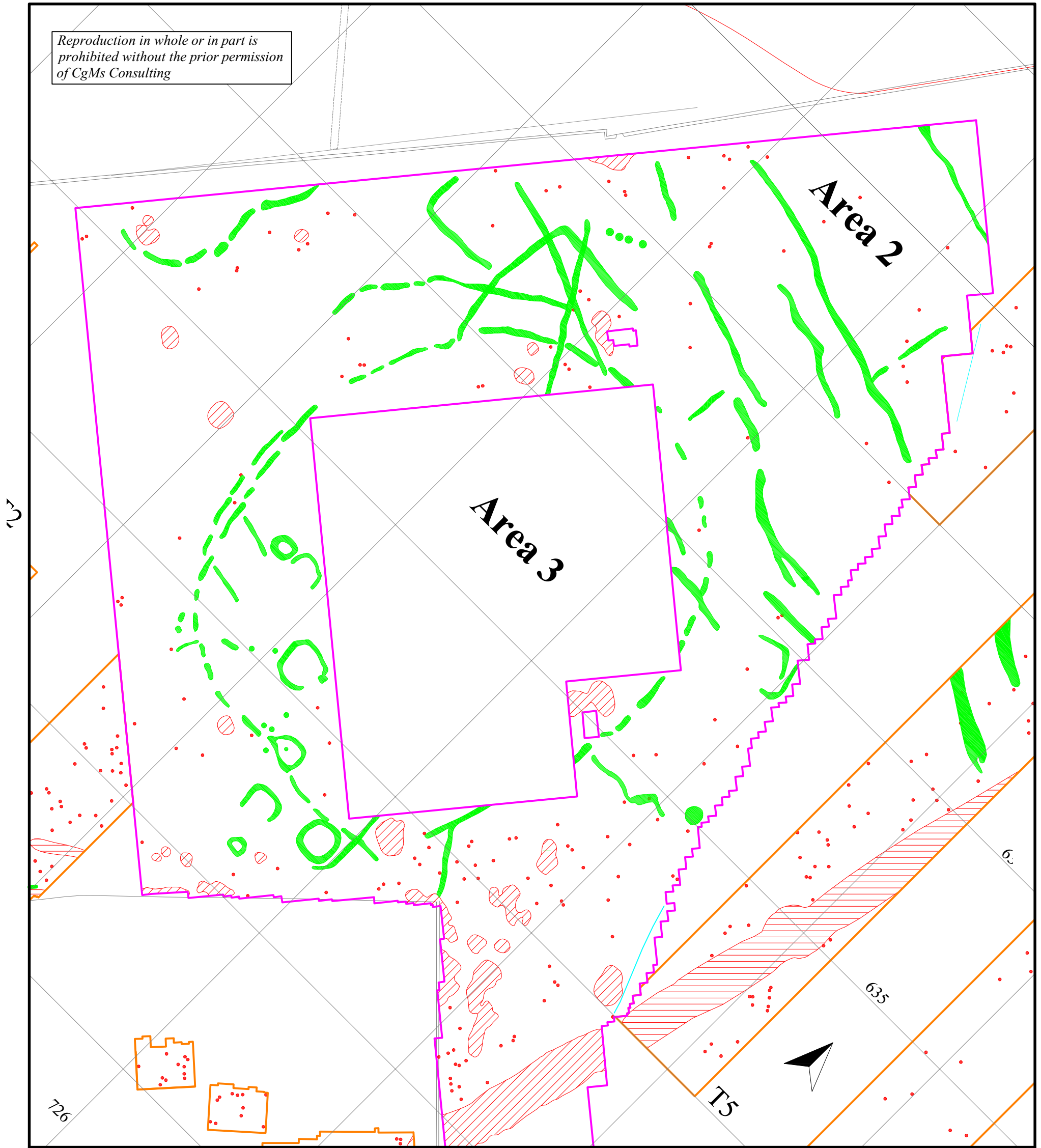
on behalf of  
CgMs Consulting




scale 1:2000 - for A3 plot



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting

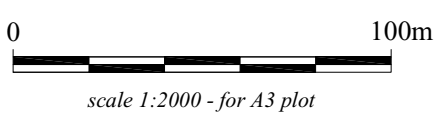



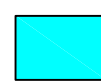
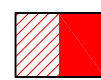
 Archaeological Services  
University of Durham

**Dallington Grange, Northamptonshire**  
**geophysical surveys phase 2**  
**Report 1535**

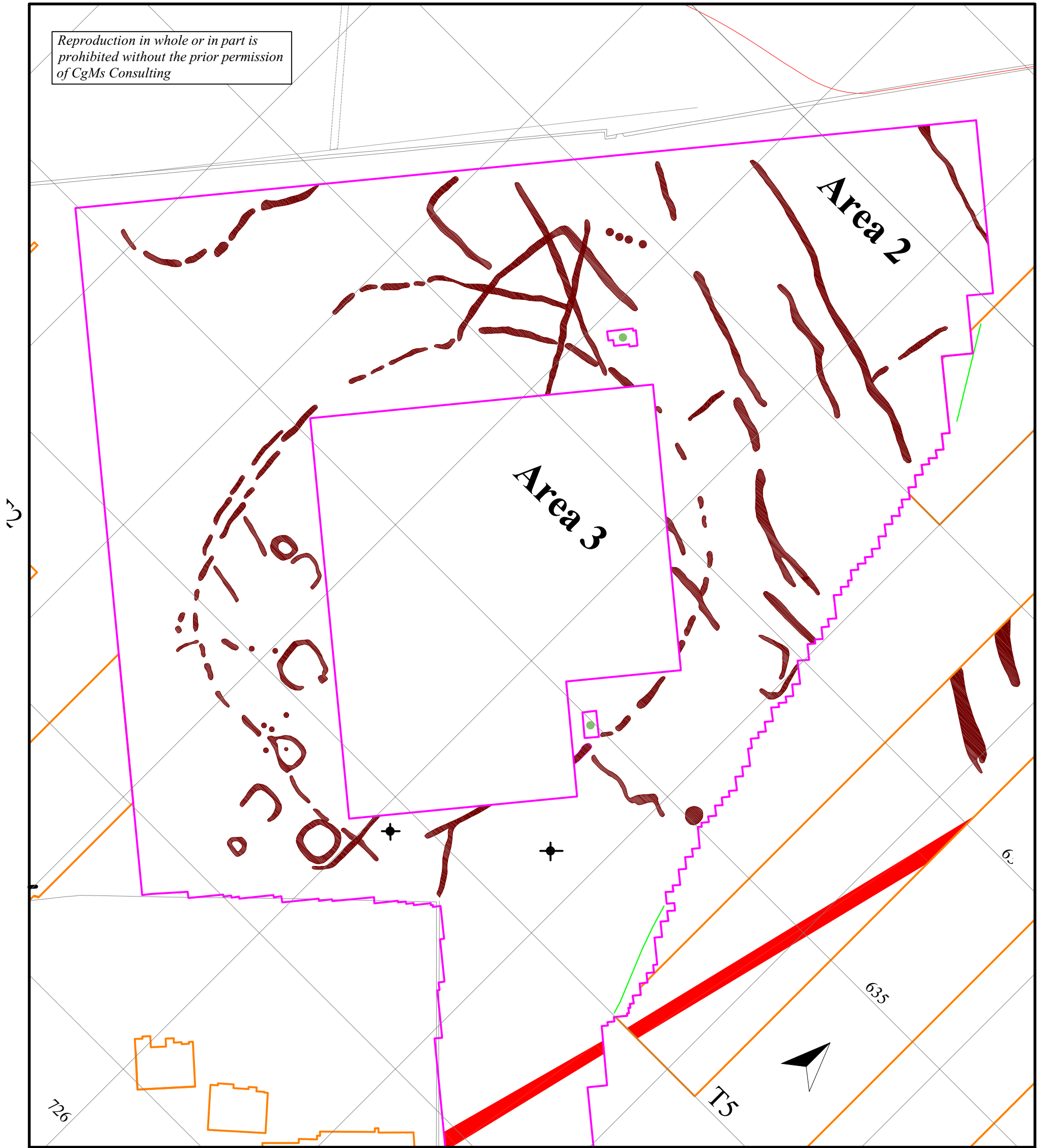
Figure 8  
*Areas 2, geophysical interpretation*

on behalf of  
**CgMs Consulting**



-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

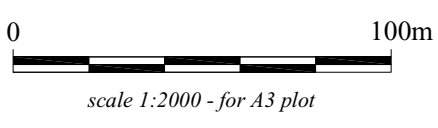
Dallington Grange, Northamptonshire






geophysical surveys phase 2

Report 1535

Figure 9  
Area 2, archaeological interpretation

on behalf of  
CgMs Consulting



-  soil-filled features
-  service pipes
-  telegraph pole
-  tree
-  change in landuse

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

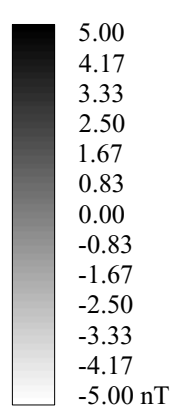
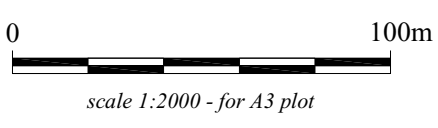
Dallington Grange, Northamptonshire

geophysical surveys phase 2

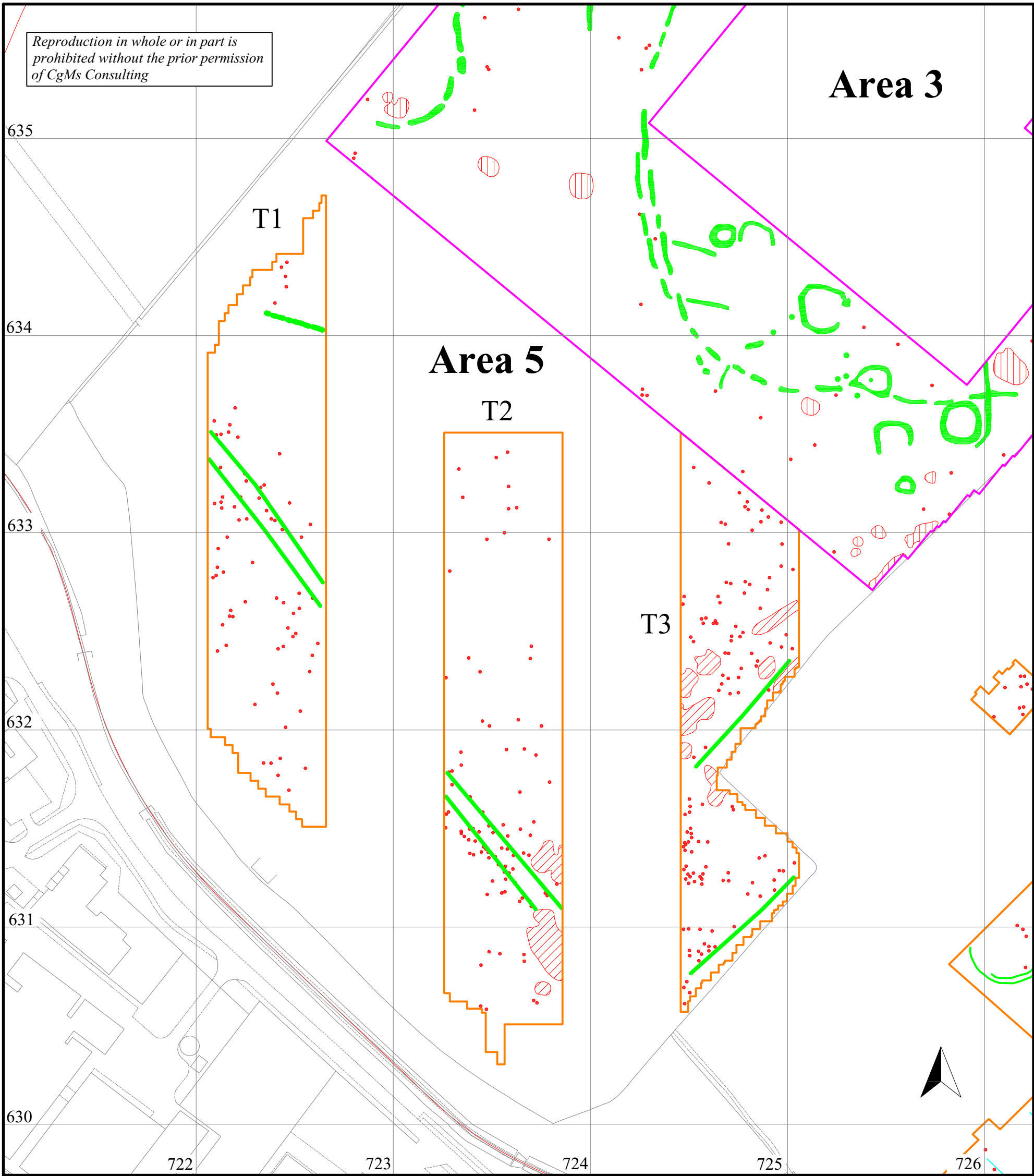
Report 1535

Figure 10  
Area 5, geophysical surveys

on behalf of  
**CgMs Consulting**



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

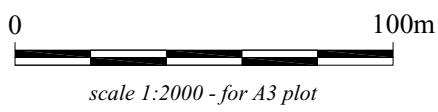
Dallington Grange, Northamptonshire




geophysical surveys phase 2

Report 1535

Figure 11  
Area 5, geophysical interpretation

on behalf of  
**CgMs Consulting**

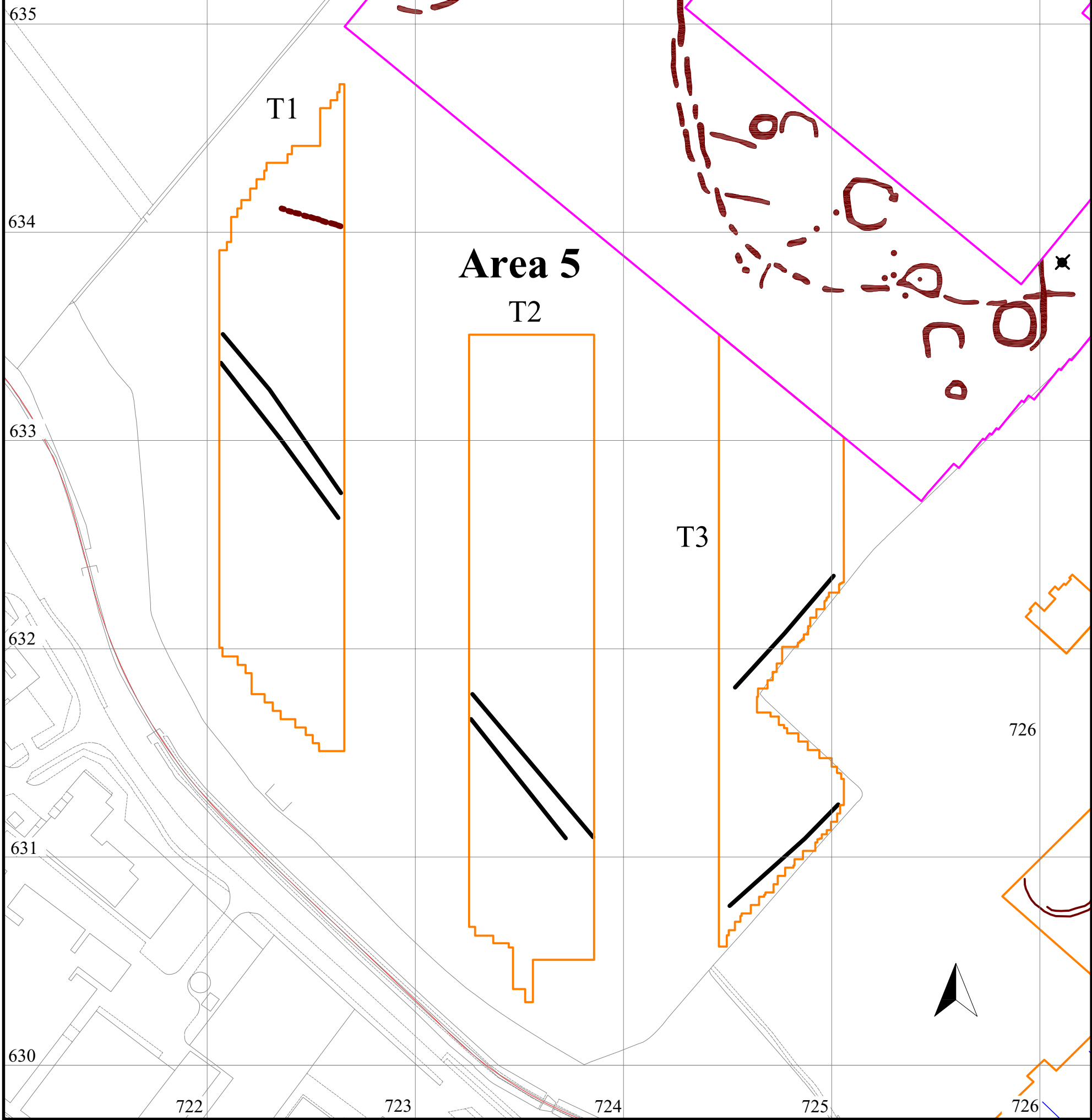


-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting

Area 3



Archaeological Services  
University of Durham



Dallington Grange, Northamptonshire

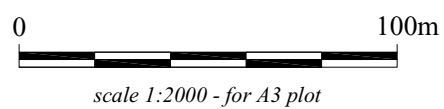
geophysical surveys phase 2

Report 1535

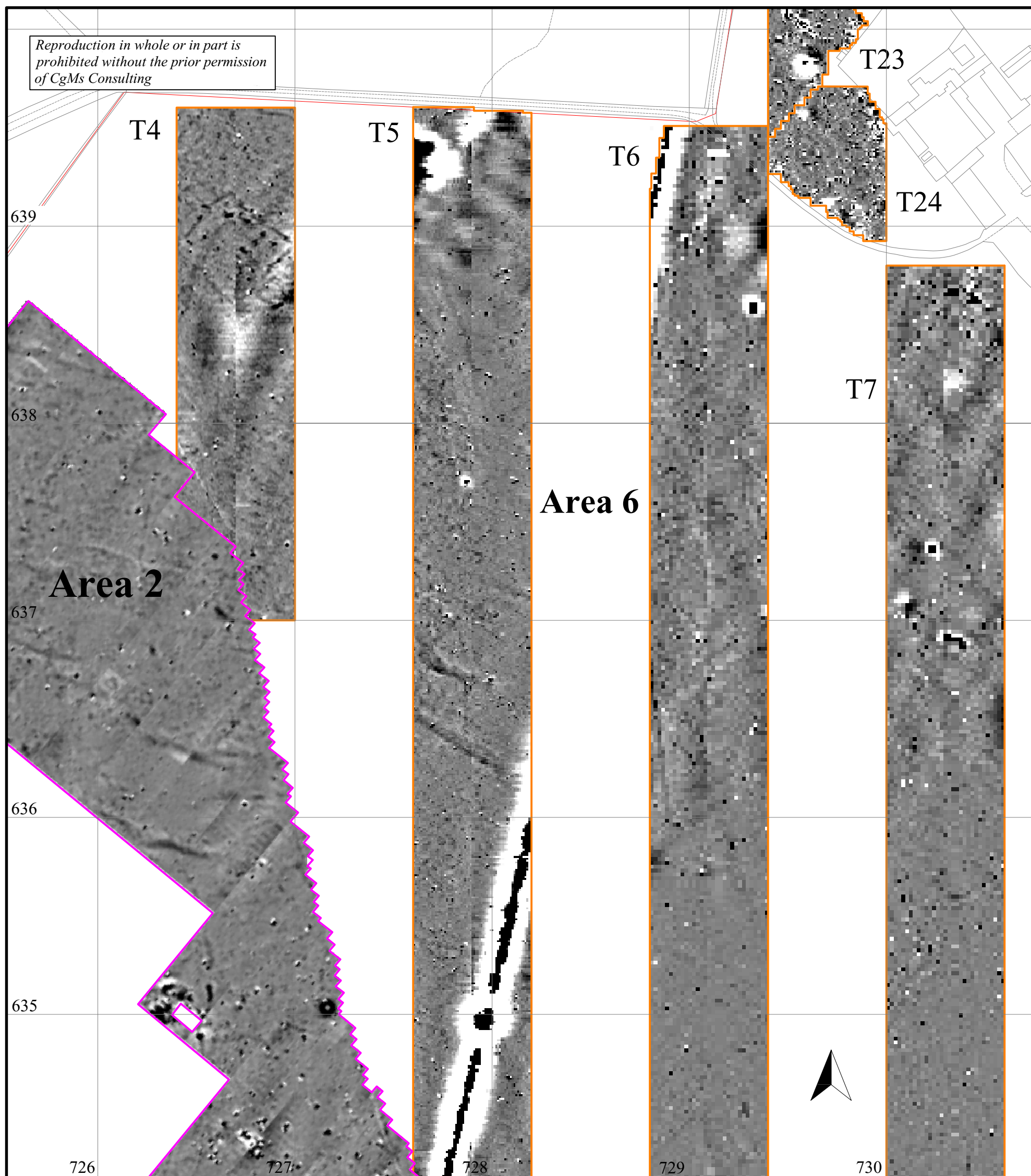
Figure 12  
Area 5, archaeological interpretation

on behalf of  
CgMs Consulting

-  soil-filled features
-  track



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

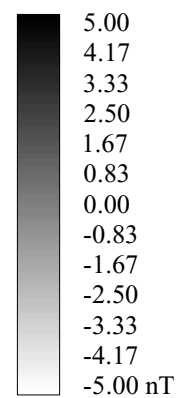
Report 1535

Figure 13  
Area 6, transects 4, 5, 6 & 7 (northern half), geophysical surveys

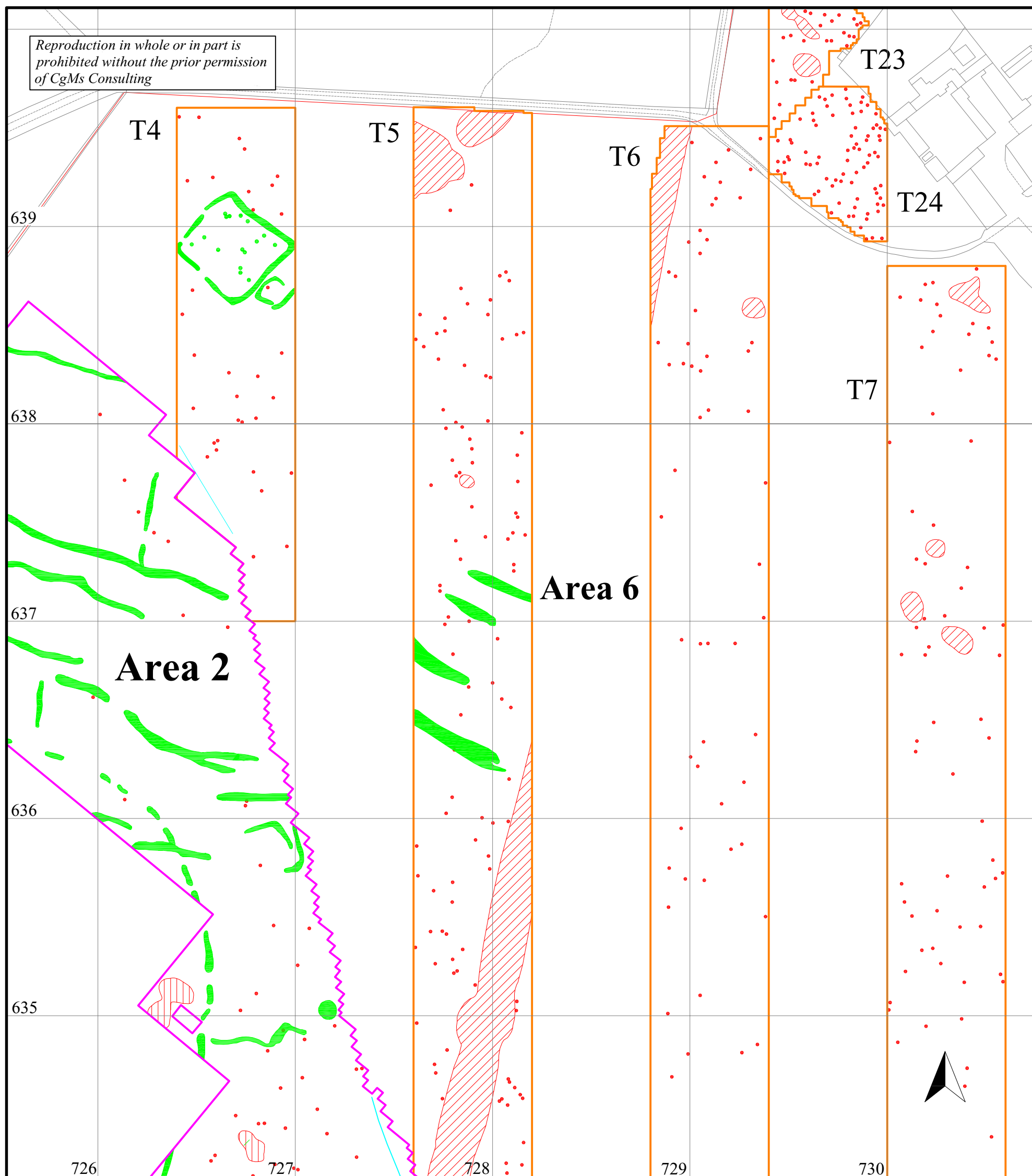
on behalf of  
CgMs Consulting



scale 1:2000 - for A3 plot



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2




Report 1535

Figure 14  
Area 6, transects 4, 5, 6 & 7 (northern half), geophysical interpretation

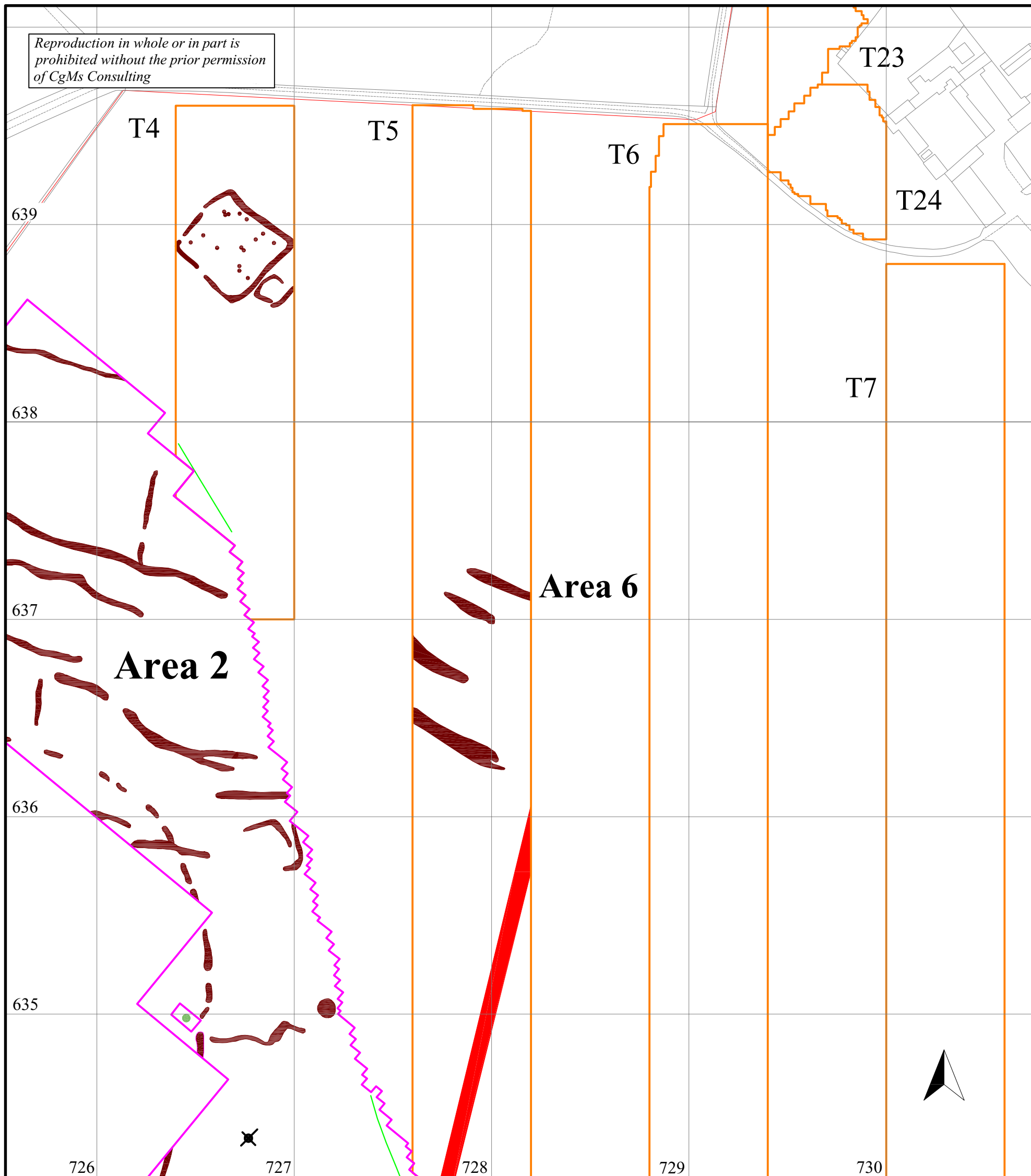
on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot

-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

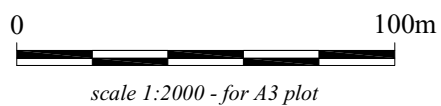
Dallington Grange, Northamptonshire





geophysical surveys phase 2

Report 1535

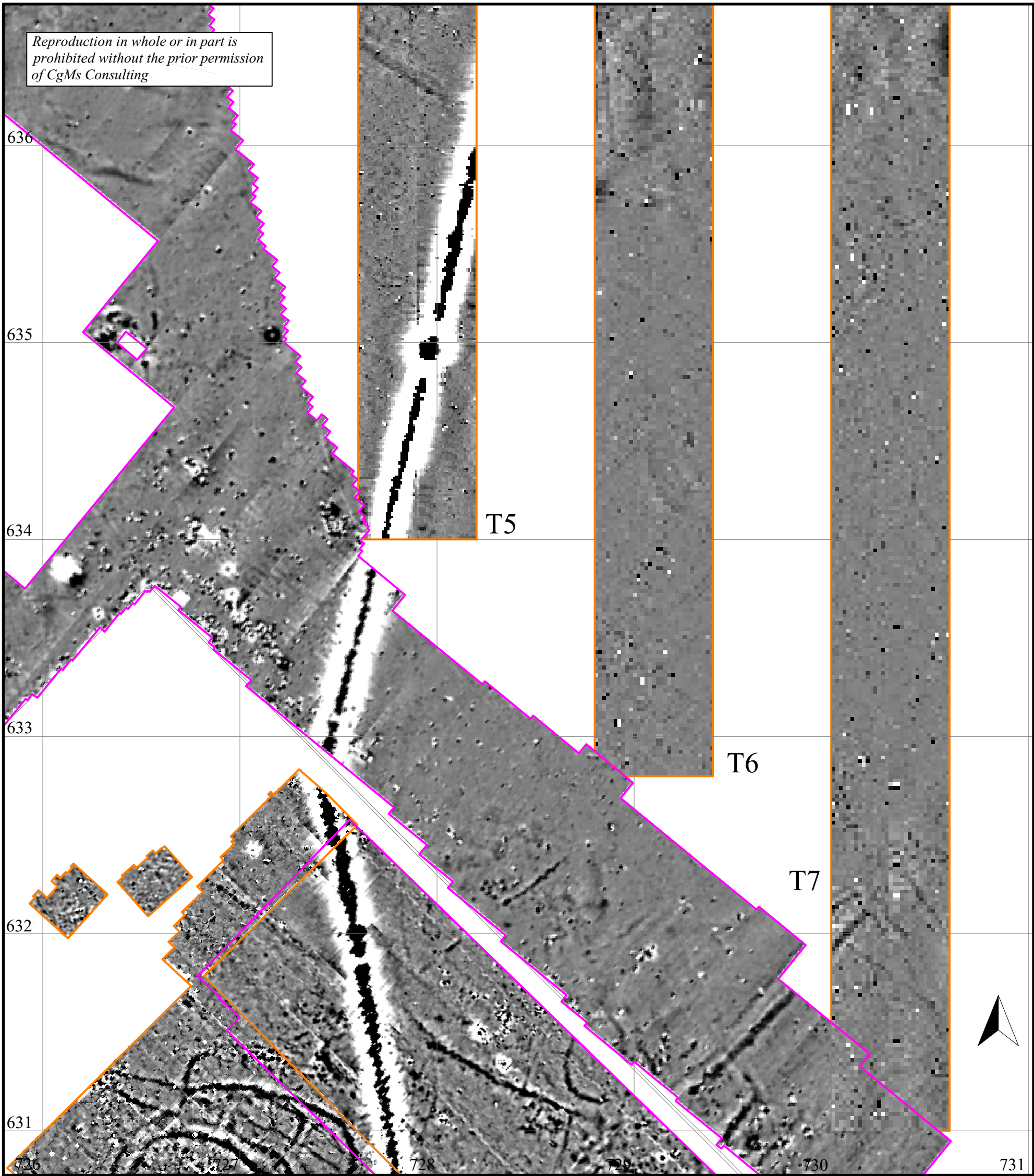
Figure 15  
Area 6, transects 4, 5, 6 & 7  
(northern half), archaeological  
interpretation

on behalf of  
**CgMs Consulting**



-  soil-filled features
-  service pipes
-  change in land use
-  telegraph pole

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

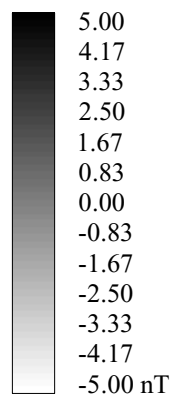
Report 1535

Figure 16  
Area 6, transects 5, 6 and 7  
(southern half), geophysical surveys

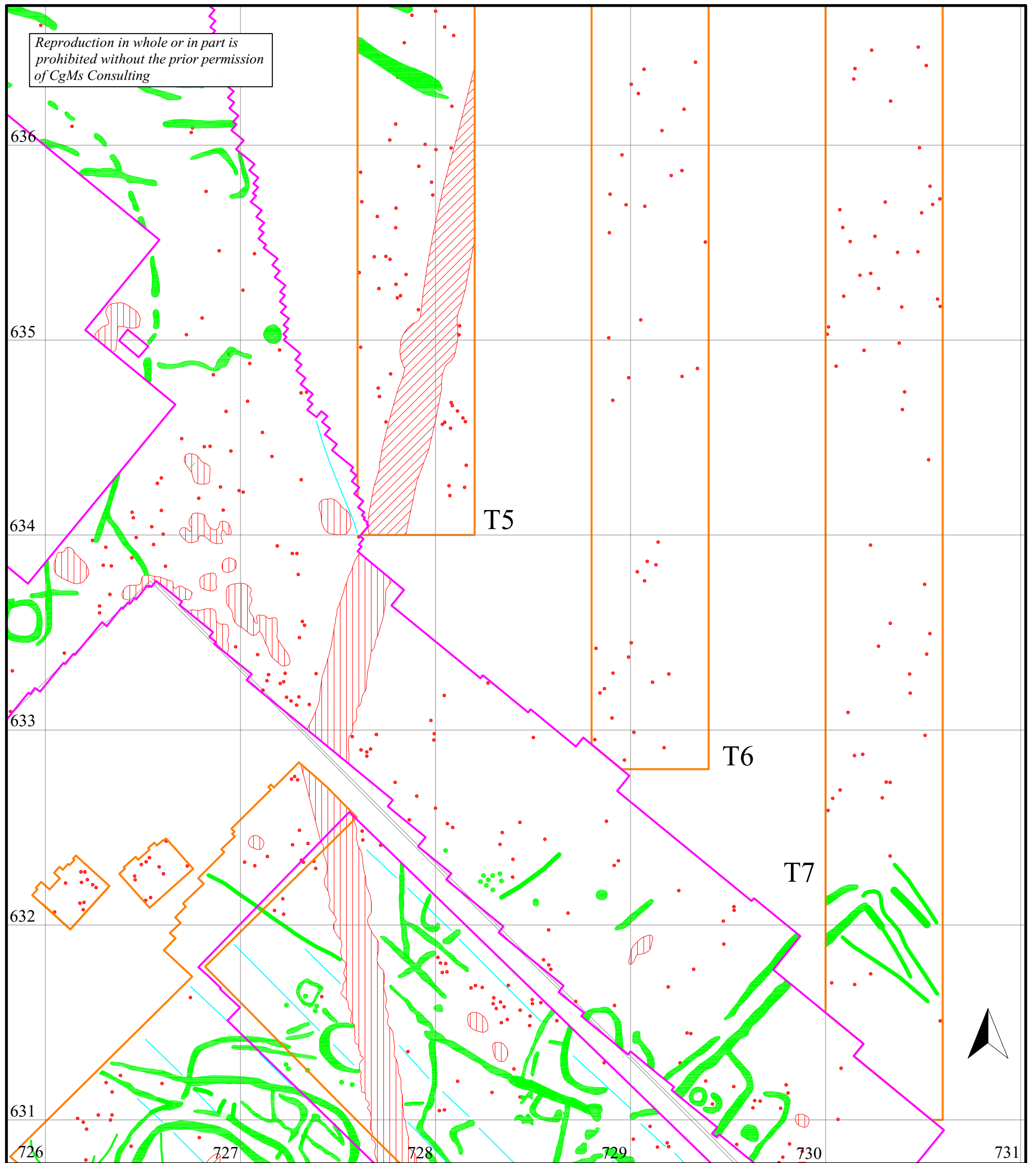
on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

Report 1535

Figure 17

Area 6, transects 5, 6 and 7  
(southern half), geophysical interpretation

on behalf of  
**CgMs Consulting**



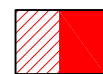
scale 1:2000 - for A3 plot



positive magnetic anomalies

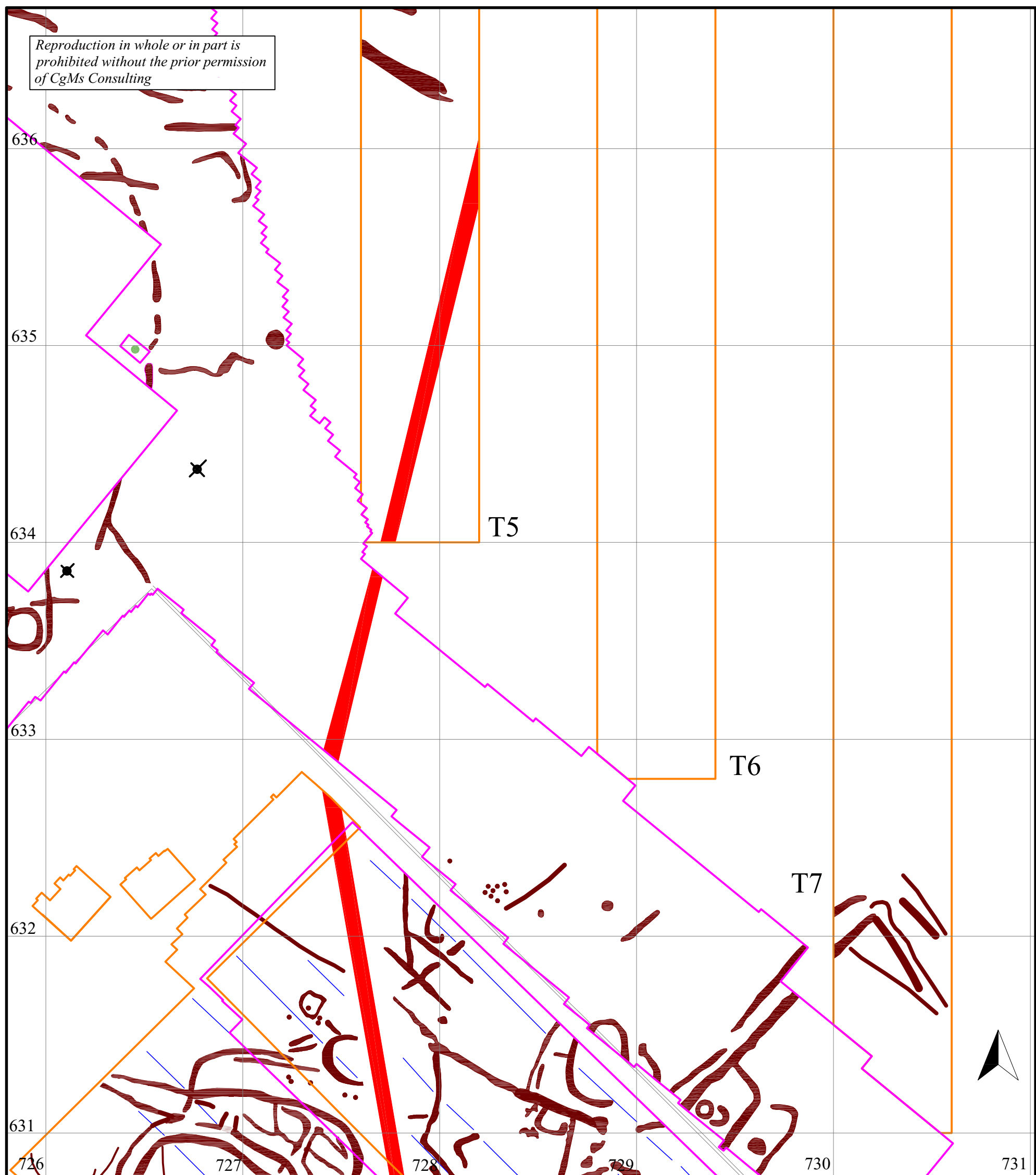


negative magnetic anomalies



dipolar magnetic anomalies

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire  
geophysical surveys phase 2





Report 1535

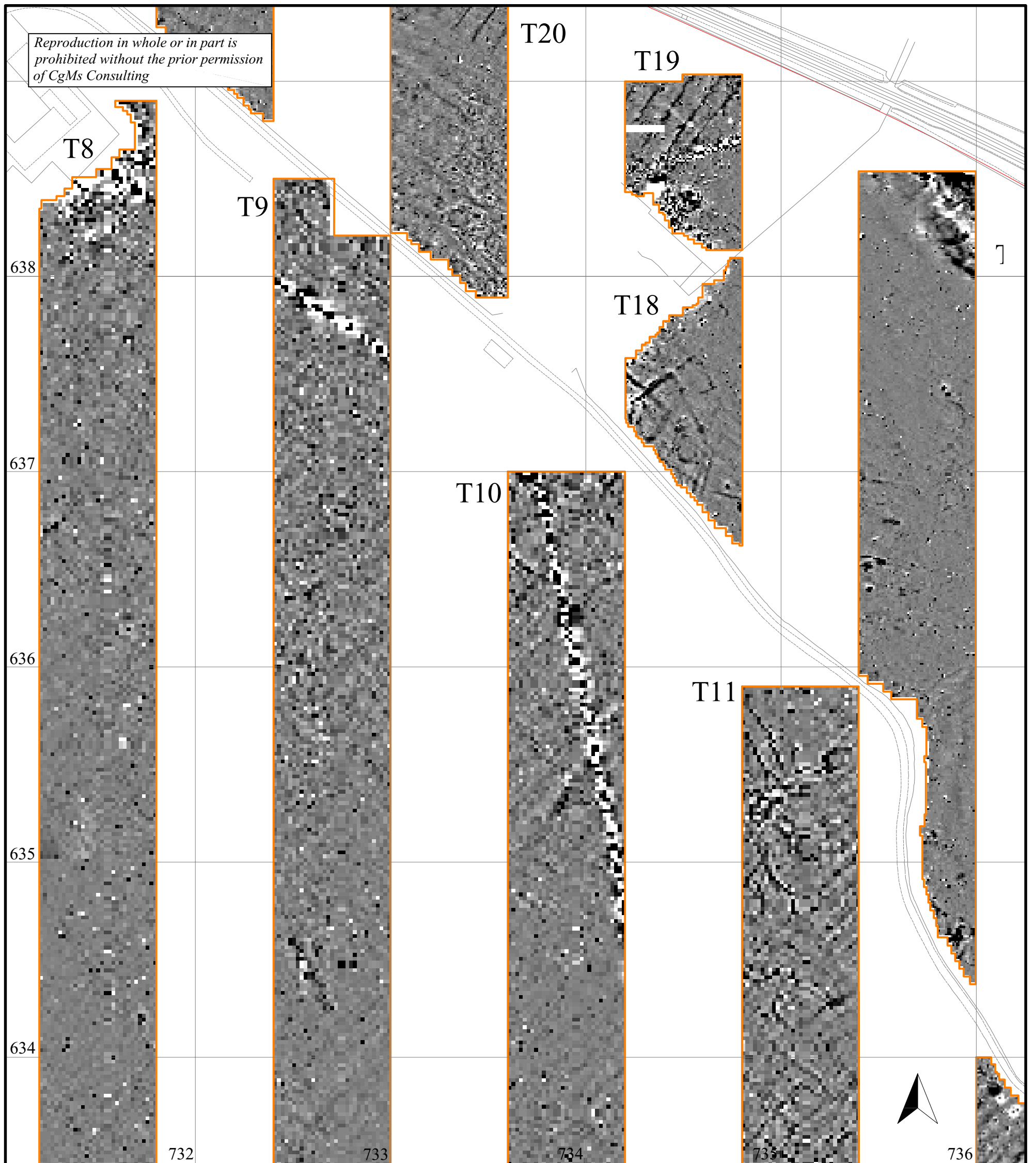
Figure 18  
Area 6, transects 5, 6 and 7  
(southern half), archaeological  
interpretation

on behalf of  
CgMs Consulting



scale 1:2000 - for A3 plot

-  soil-filled features
-  service pipes
-  field drain
-  telegraph pole



Archaeological Services  
University of Durham

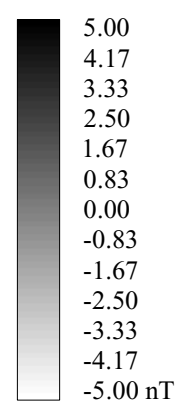
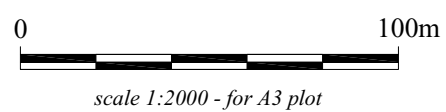
Dallington Grange, Northamptonshire

geophysical surveys phase 2

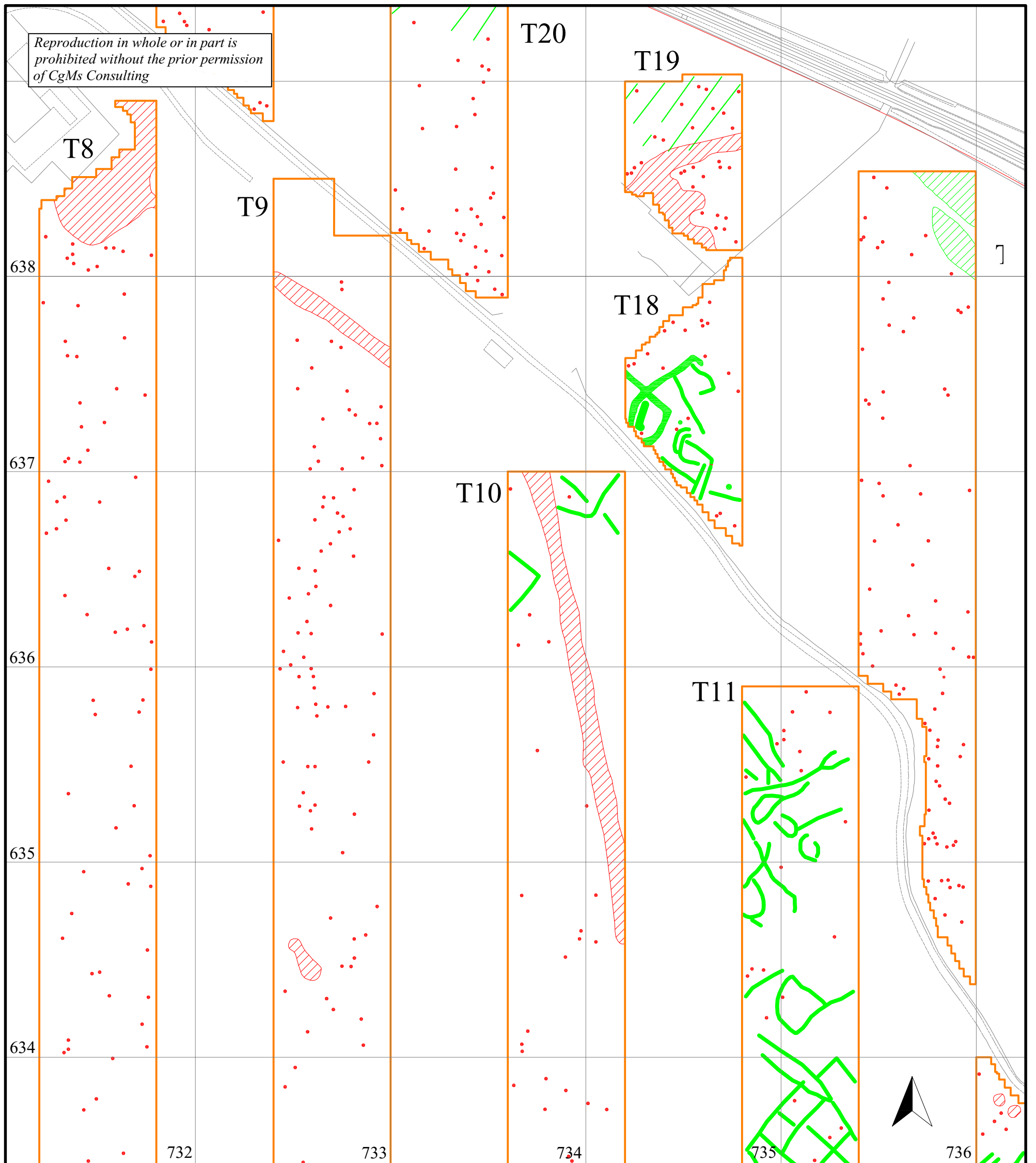
Report 1535

Figure 19  
Area 6, transects 8, 9, 10 & 11  
(northern half), geophysical surveys

on behalf of  
**CgMs Consulting**







Archaeological Services  
University of Durham

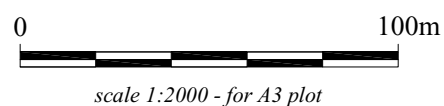
Dallington Grange, Northamptonshire




geophysical surveys phase 2

Report 1535

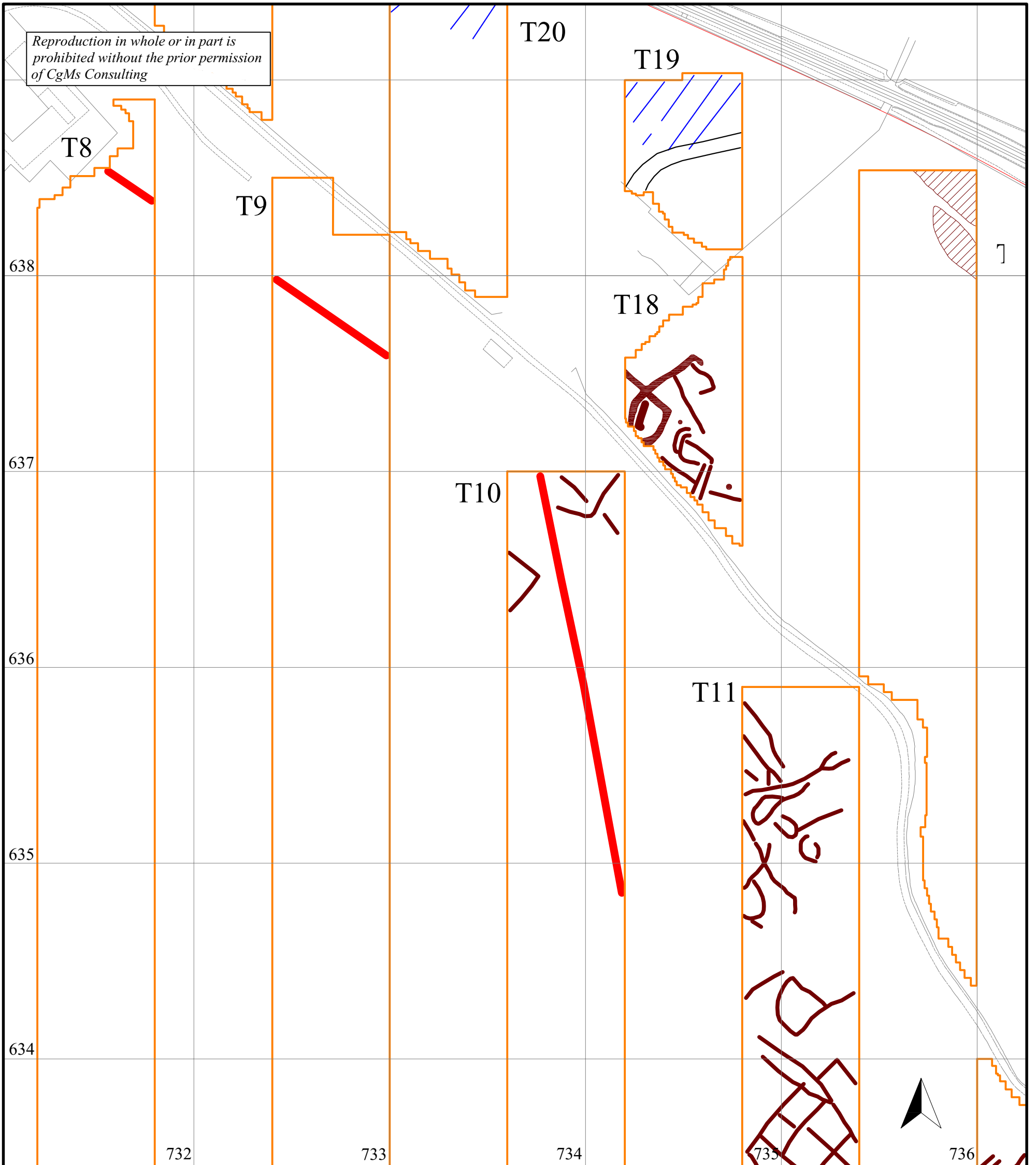
Figure 20  
Area 6, transects 8, 9, 10 & 11  
(northern half), geophysical  
interpretation

on behalf of  
**CgMs Consulting**



-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies

Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

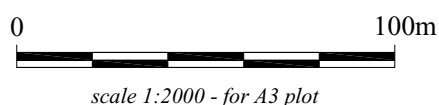
Dallington Grange, Northamptonshire





geophysical surveys phase 2

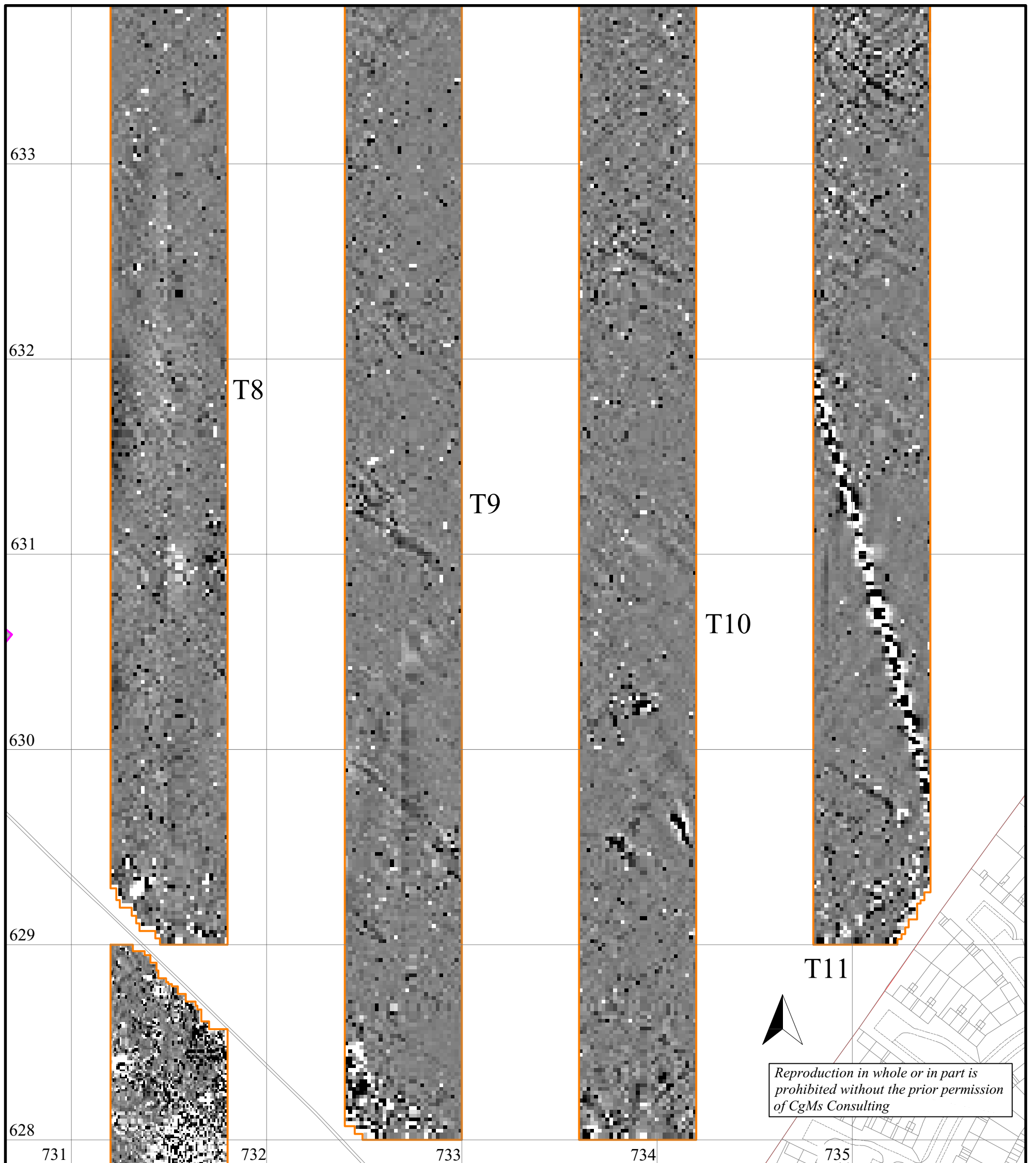
Report 1535

Figure 21  
Area 6, transects 8, 9, 10 & 11  
(northern half), archaeological  
interpretation

on behalf of  
CgMs Consulting



-  soil-filled features
-  service pipes
-  field drain
-  ?buried track



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

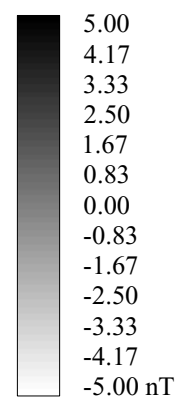
Report 1535

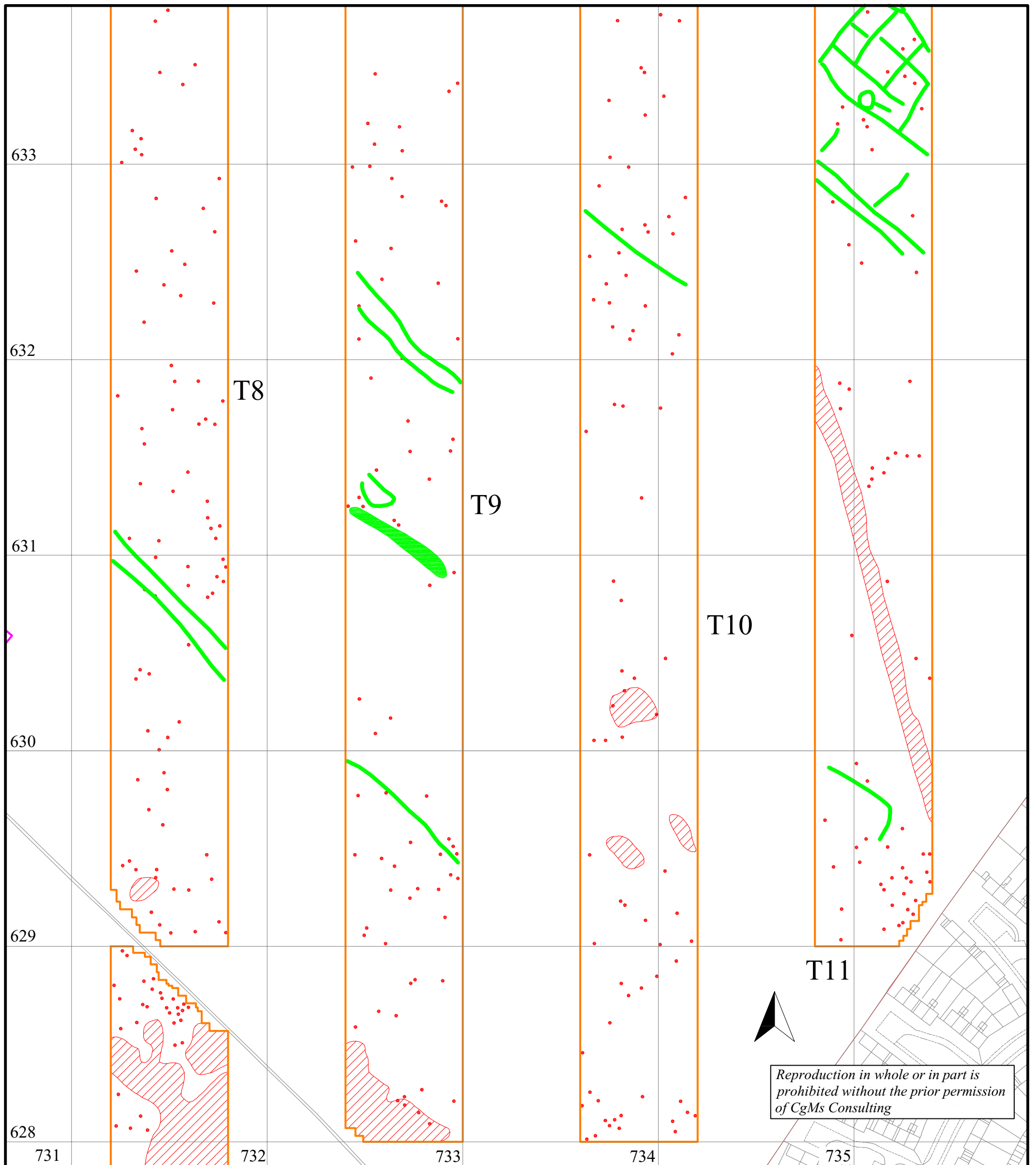
Figure 22  
Area 6, transects 8, 9, 10 & 11  
(southern half), geophysical survey

on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot





Archaeological Services  
University of Durham

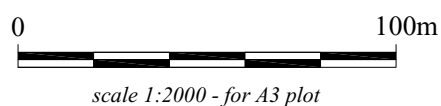
Dallington Grange, Northamptonshire




geophysical surveys phase 2

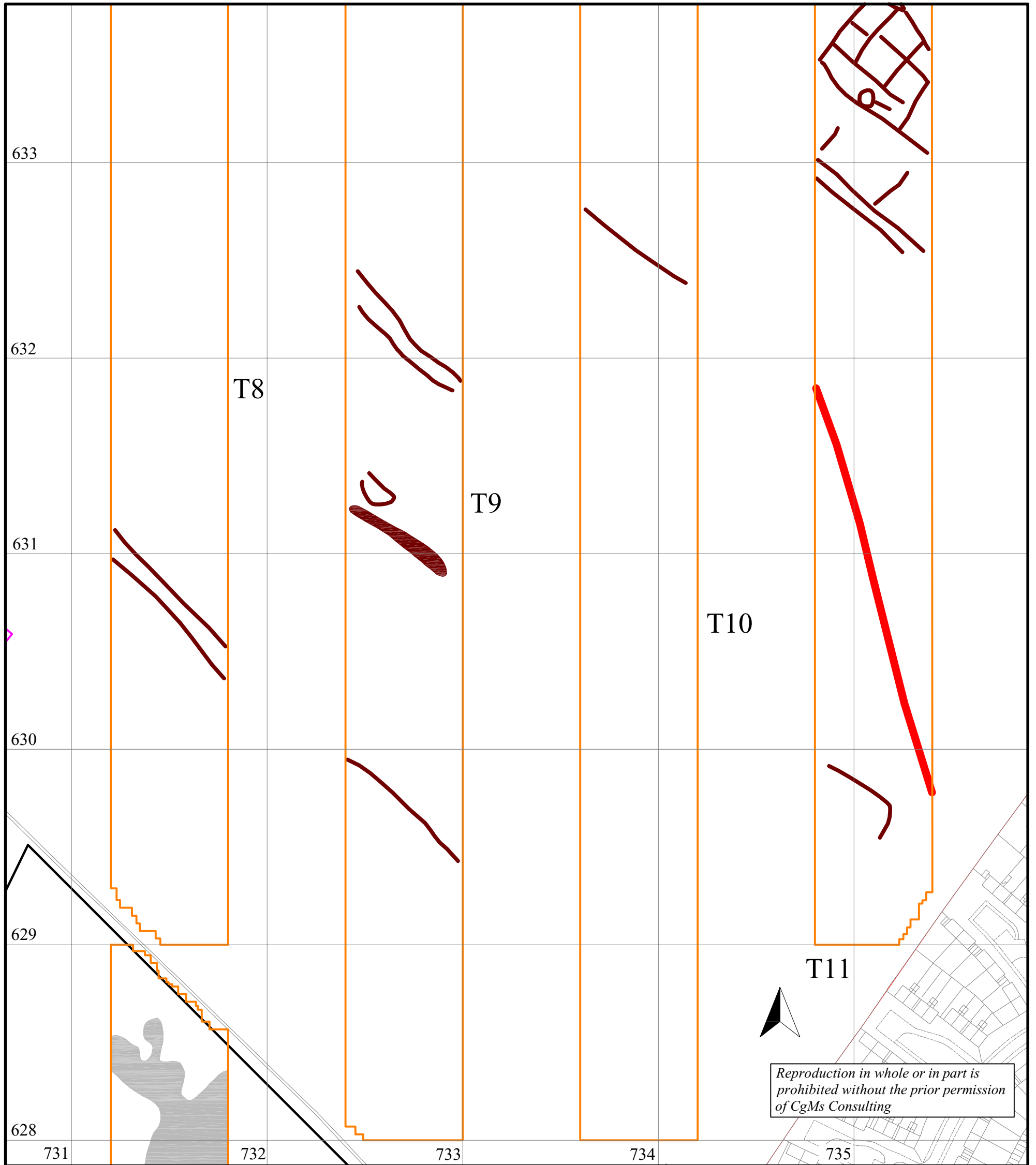
Report 1535

Figure 23  
Area 6, transects 8, 9, 10 & 11  
(southern half), geophysical  
interpretation

on behalf of  
**CgMs Consulting**



-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies



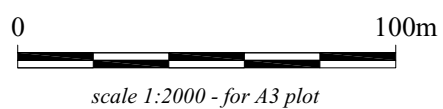
Archaeological Services  
University of Durham





Dallington Grange, Northamptonshire  
geophysical surveys phase 2

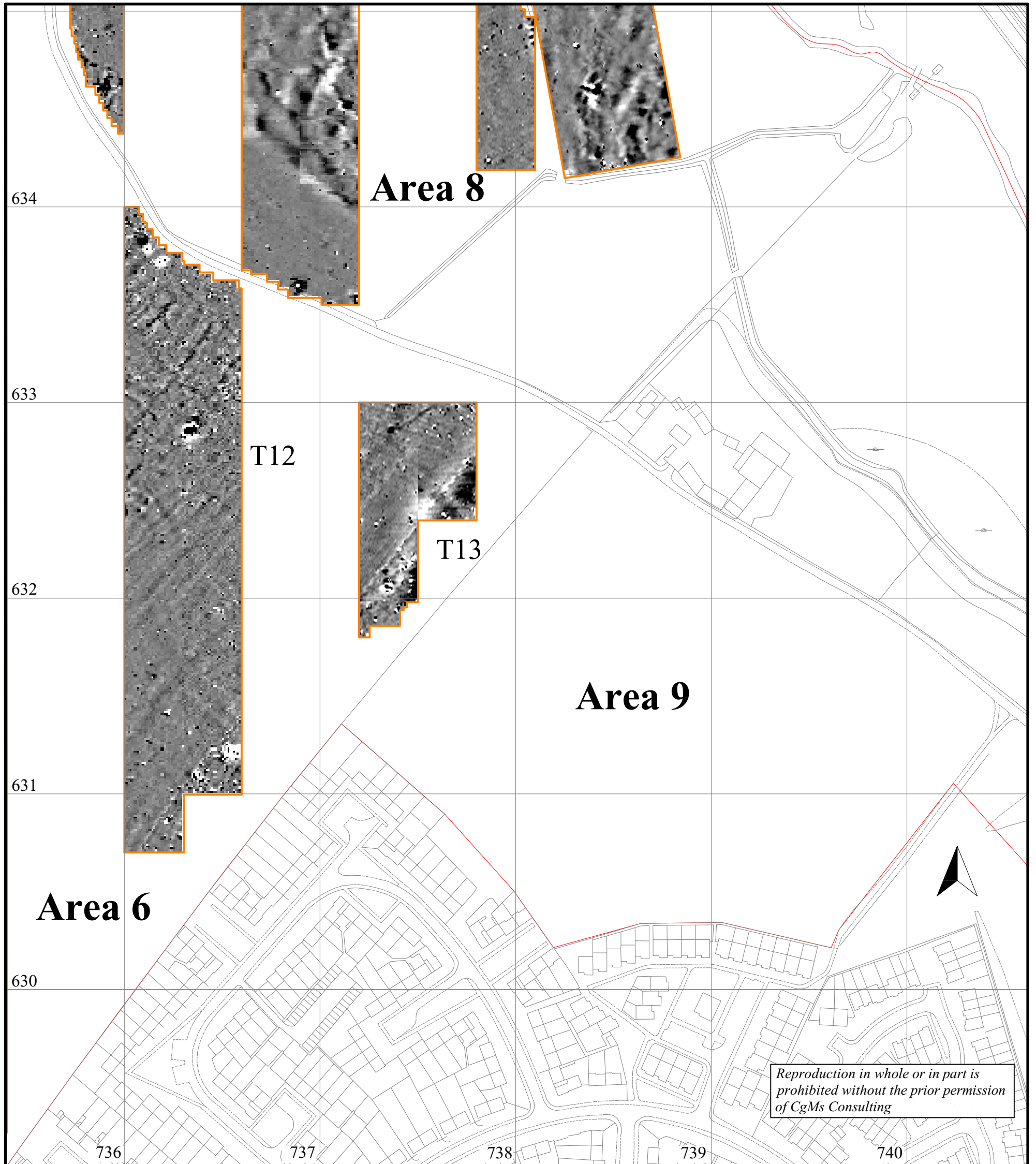
Report 1535

Figure 24  
Area 6, transects 8, 9, 10 & 11  
(southern half), archaeological  
interpretation

on behalf of  
**CgMs Consulting**



-  soil-filled features
-  service pipes
-  former allotments
-  former allotment gardens



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

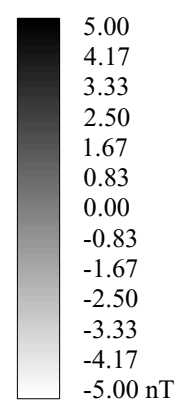
Report 1535

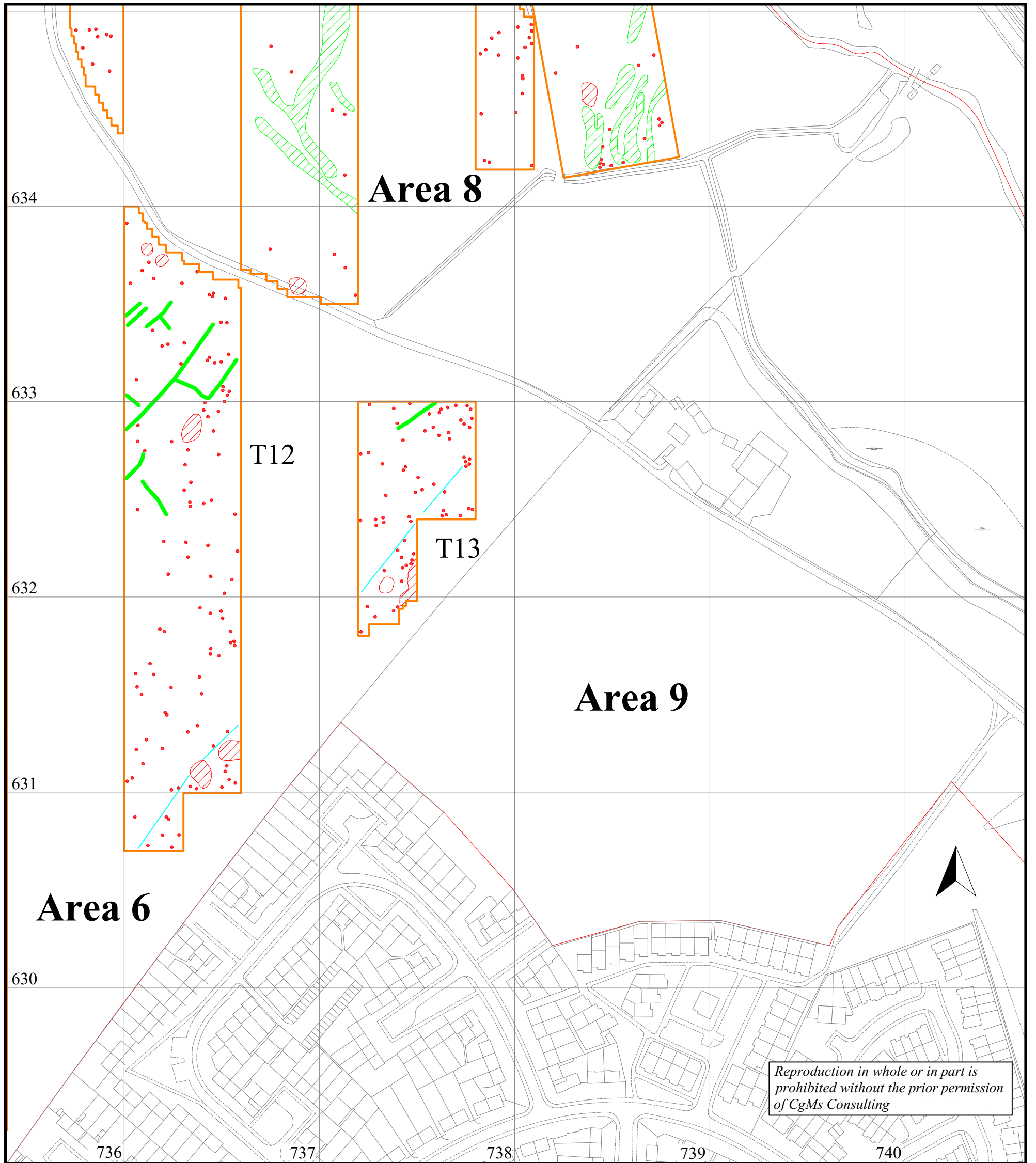
Figure 25  
Area 6, transects 12 & 13, geophysical  
surveys

on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot





Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

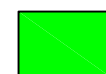
Report 1535

Figure 26  
Area 6, transects 12 & 13, geophysical  
interpretation

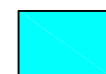
on behalf of  
**CgMs Consulting**

0 100m

scale 1:2000 - for A3 plot



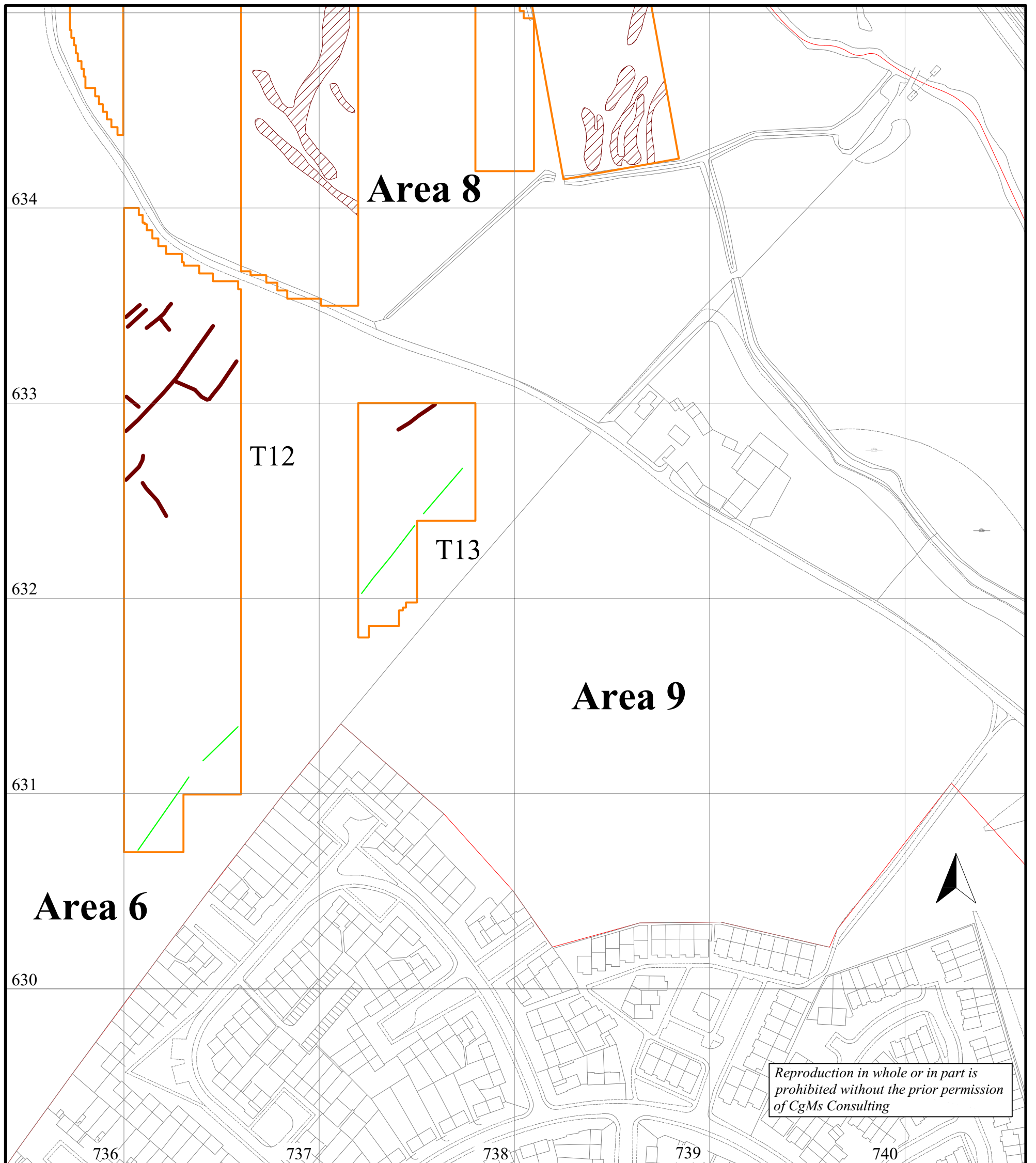
positive magnetic anomalies



negative magnetic anomalies



dipolar magnetic anomalies



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2




Report 1535

Figure 27  
Area 6, transects 12 & 13, archaeological  
interpretation

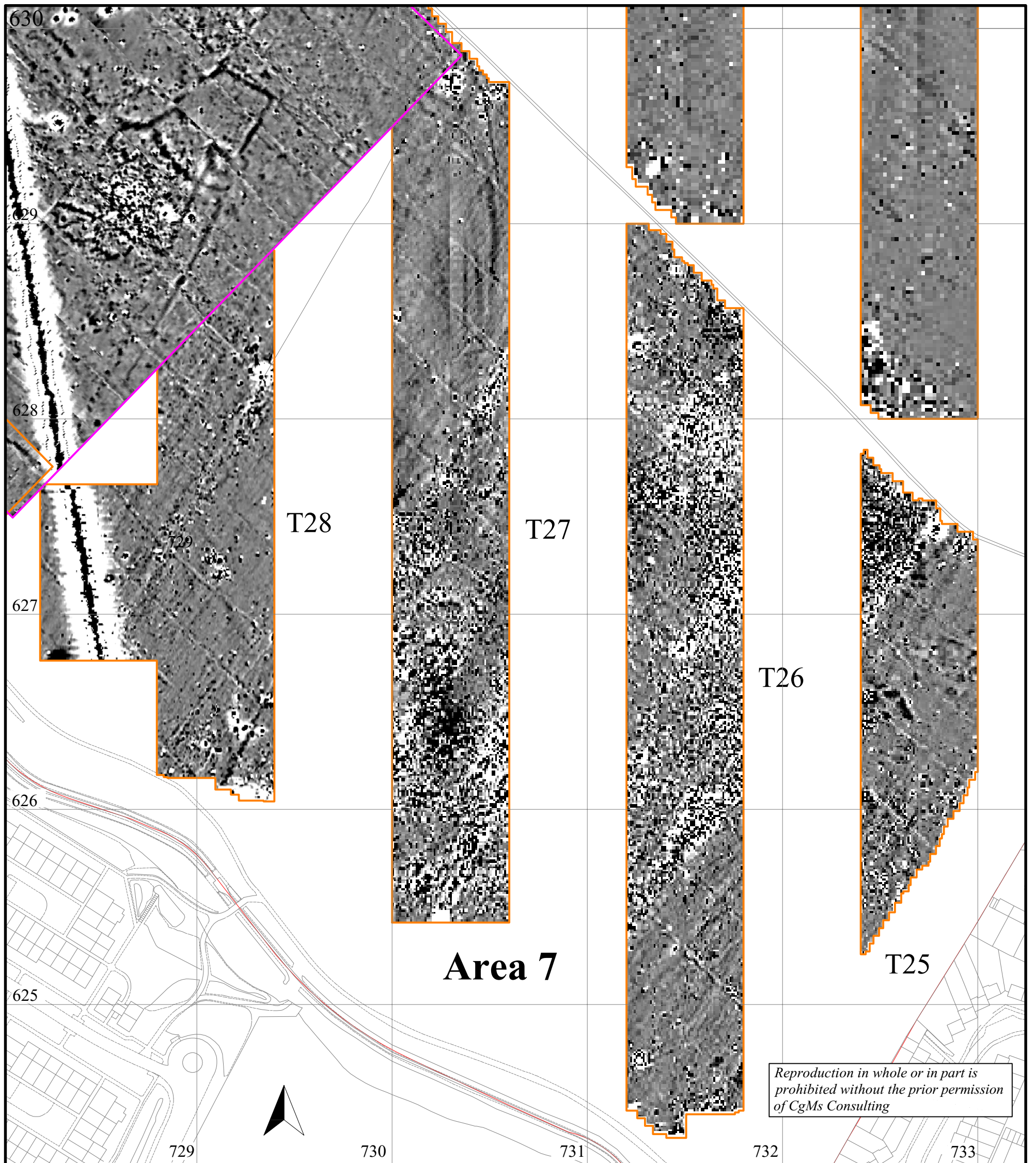
on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot

-  soil-filled features
-  service pipes
-  change from ploughsoil to track





Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

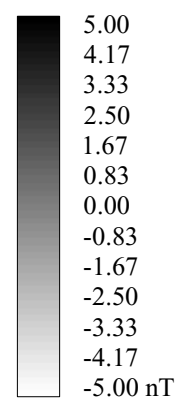
Report 1535

Figure 28  
Area 7, transects 25, 26, 27 & 28,  
geophysical survey

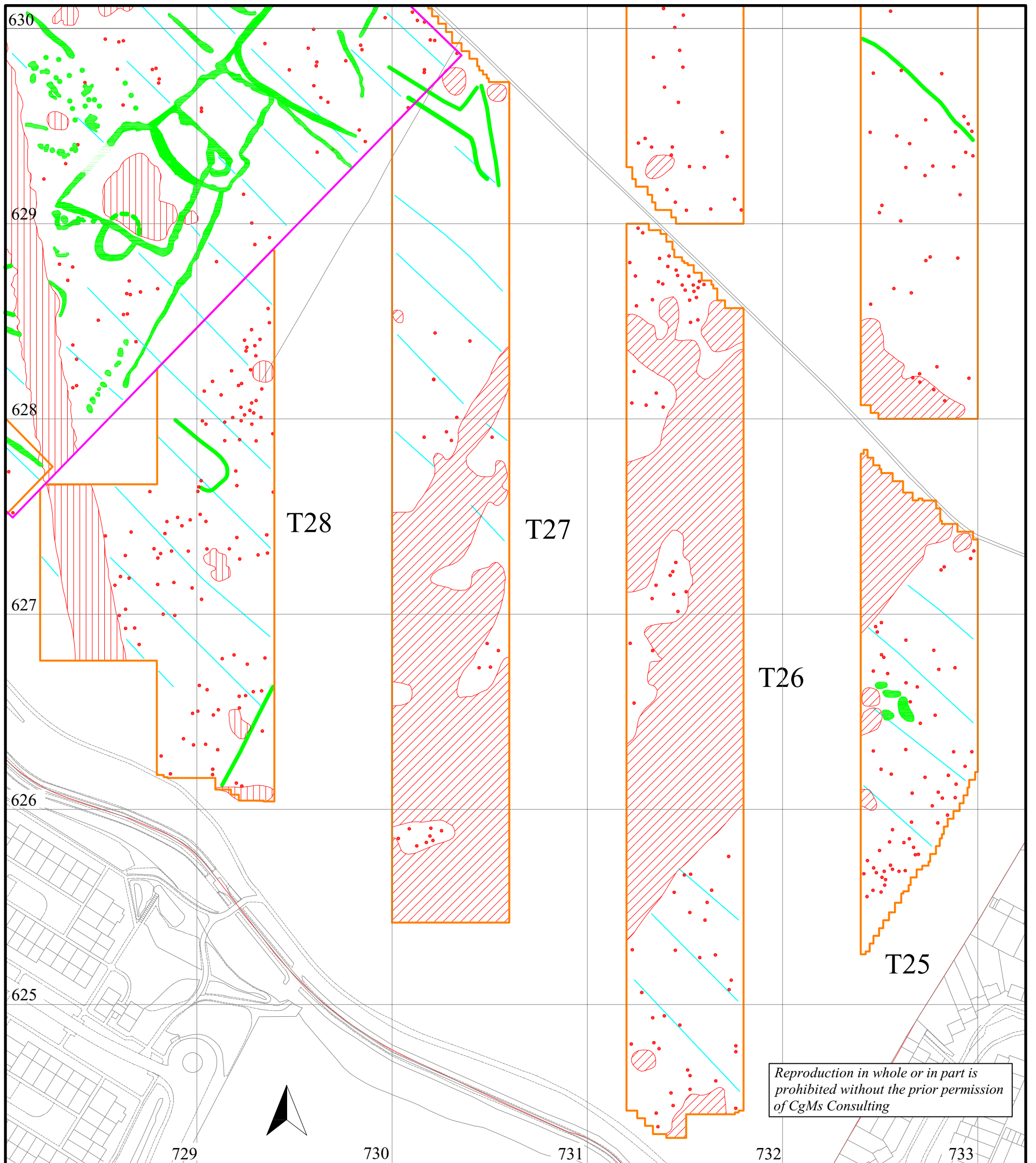
on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot



Reproduction in whole or in part is  
prohibited without the prior permission  
of CgMs Consulting



Archaeological Services  
University of Durham

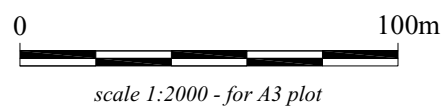
Dallington Grange, Northamptonshire




geophysical surveys phase 2

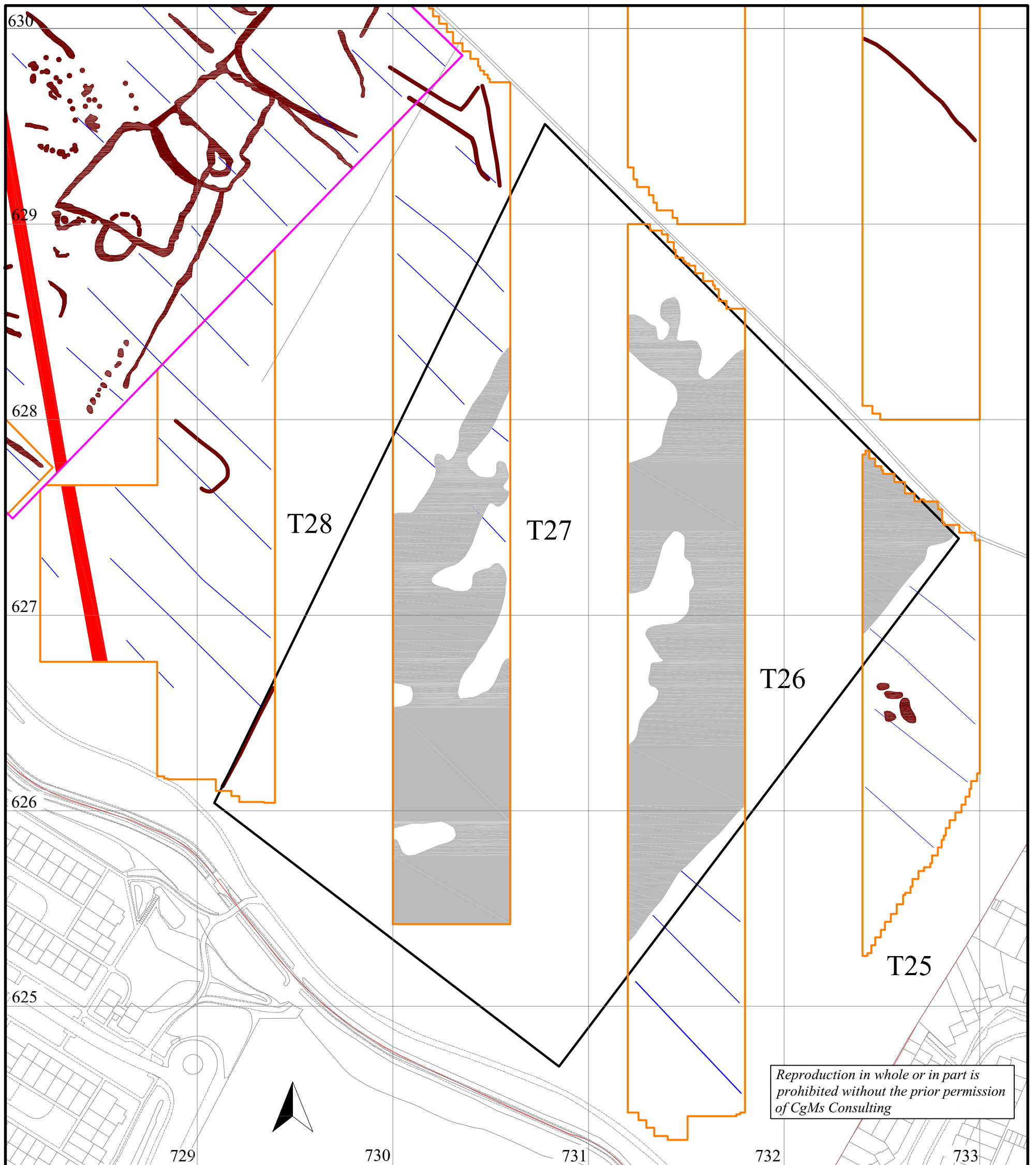
Report 1535

Figure 29  
Area 7, transects 25, 26, 27 & 28,  
geophysical interpretation

on behalf of  
**CgMs Consulting**



-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies



Archaeological Services  
University of Durham

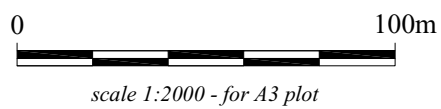
Dallington Grange, Northamptonshire






geophysical surveys phase 2

Report 1535

Figure 30  
Area 7, transects 25, 26, 27 & 28,  
archaeological interpretation

on behalf of  
**CgMs Consulting**



-  soil-filled features
-  service pipes
-  field drain
-  area of disturbance/burning (former allotment)
-  former allotment gardens



Archaeological Services  
University of Durham

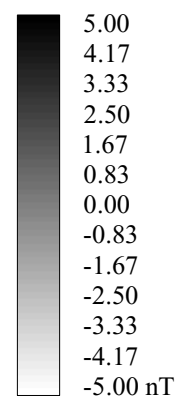
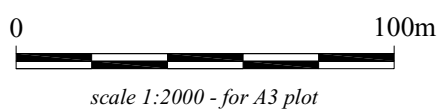
Dallington Grange, Northamptonshire

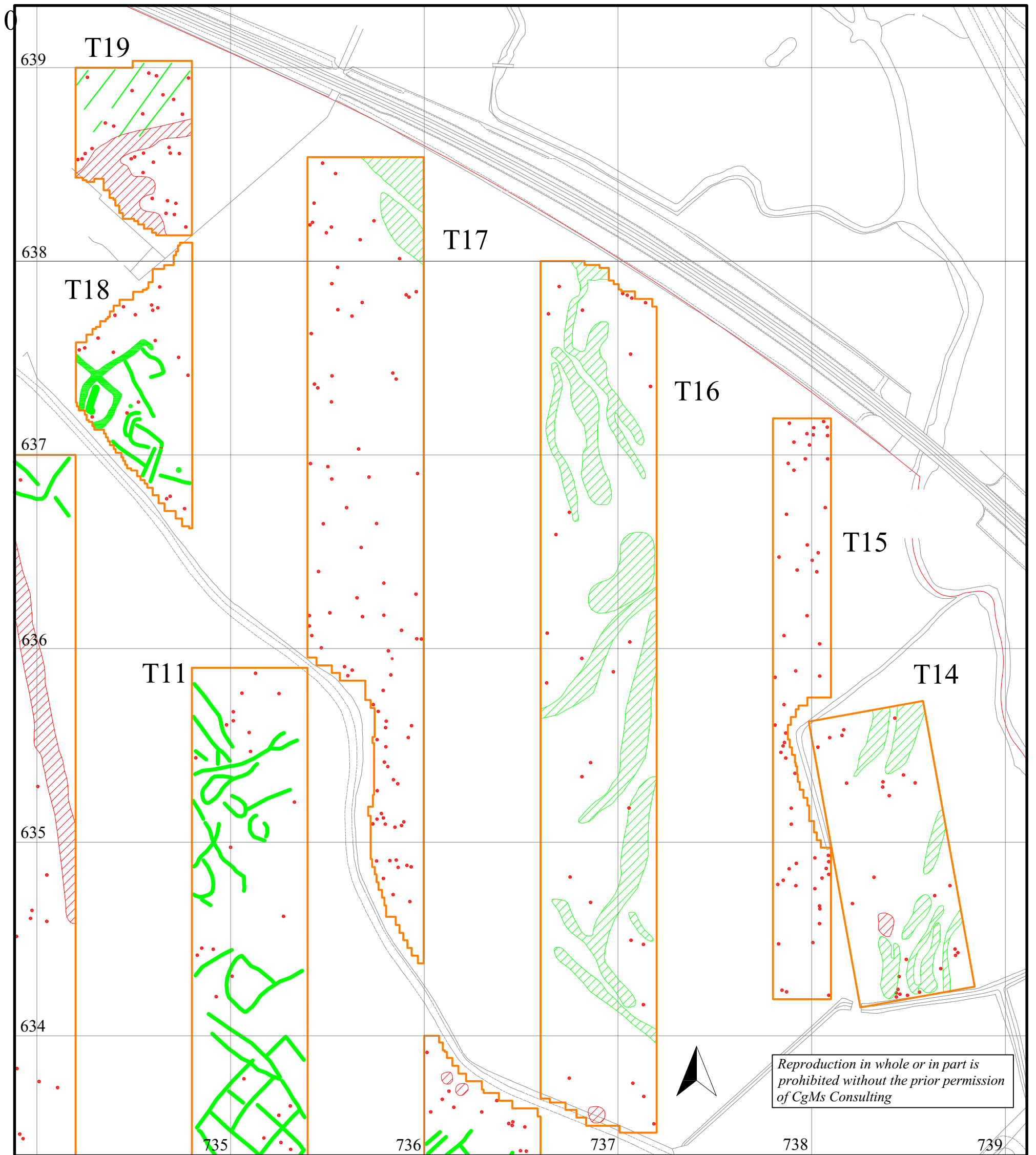
geophysical surveys phase 2

Report 1535

Figure 31  
Area 8, transects 14, 15, 16, 17, 18 &  
19, geophysical surveys

on behalf of  
**CgMs Consulting**





Archaeological Services  
University of Durham

**Dallington Grange, Northamptonshire**

**geophysical surveys phase 2**




**Report 1535**

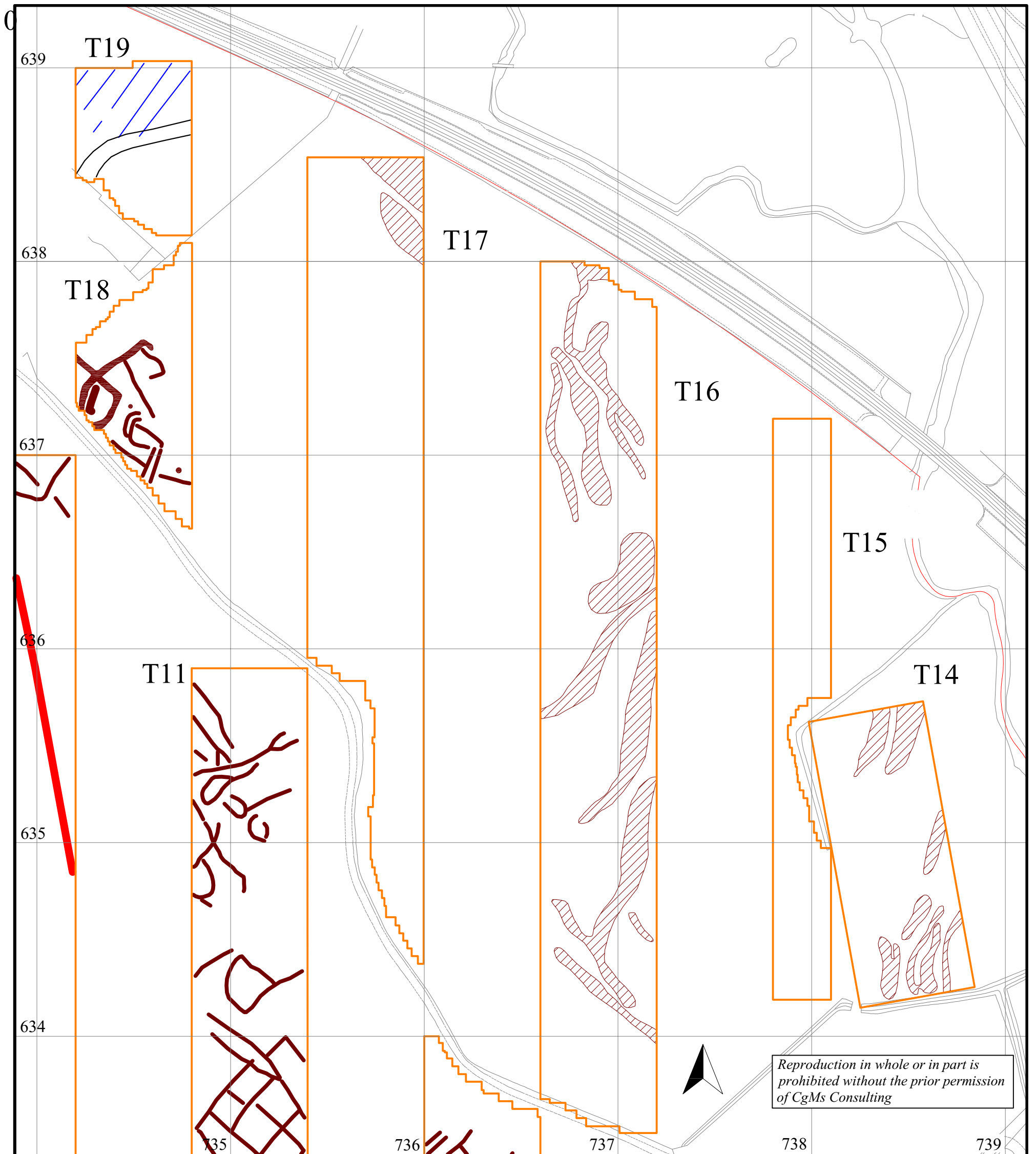
Figure 32  
Area 8, transects 14, 15, 16, 17, 18 & 19, geophysical interpretation

on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot

-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies



Reproduction in whole or in part is prohibited without the prior permission of CgMs Consulting

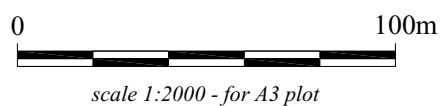







Archaeological Services  
University of Durham

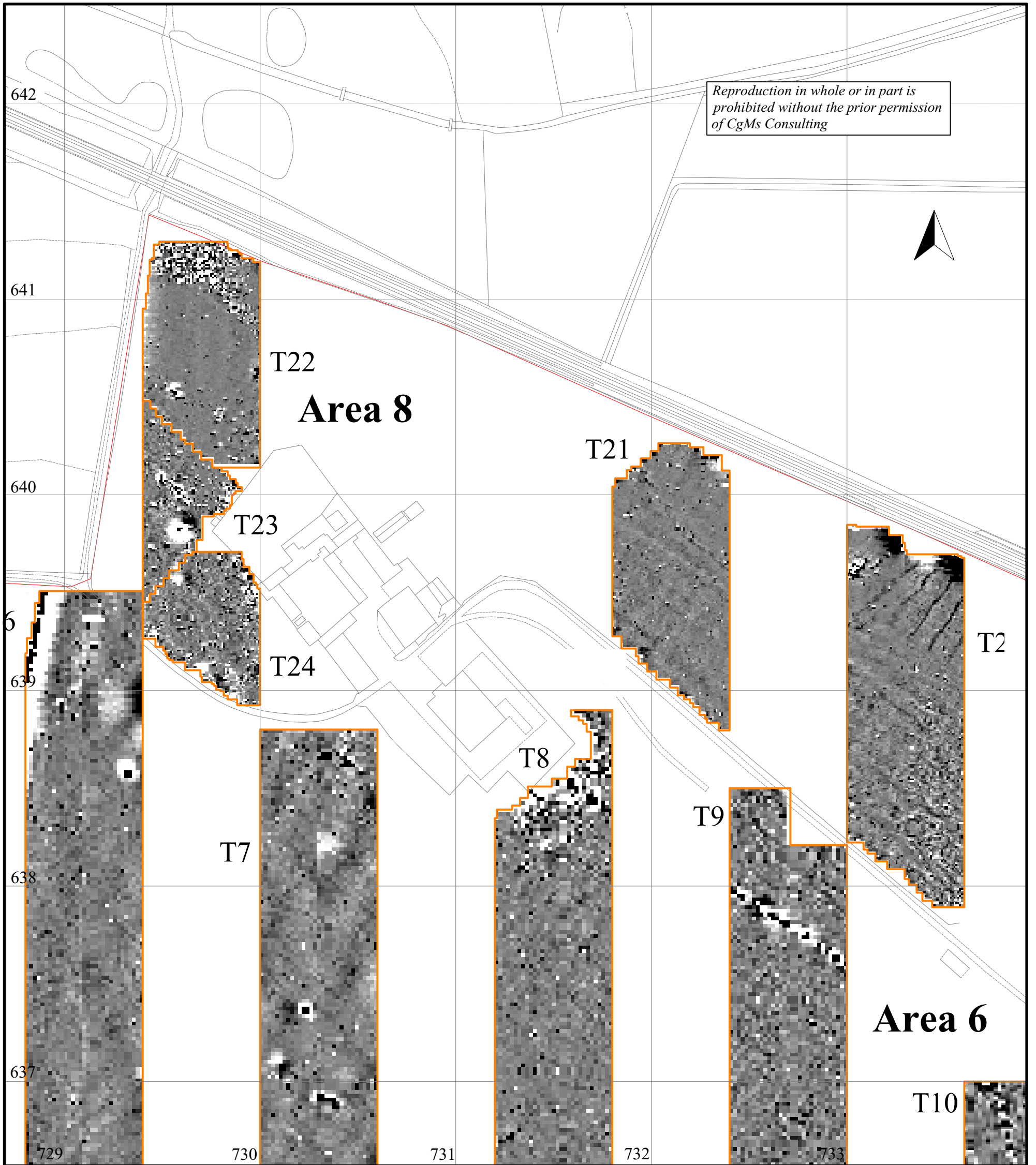
**Dallington Grange, Northamptonshire**  
**geophysical surveys phase 2**  
**Report 1535**

Figure 33  
Area 8, transects 14, 15, 16, 17, 18 & 19,  
archaeological interpretation

on behalf of  
**CgMs Consulting**



-  soil-filled features
-  palaeochannels
-  service pipes
-  field drain
-  ?buried trackway



Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2

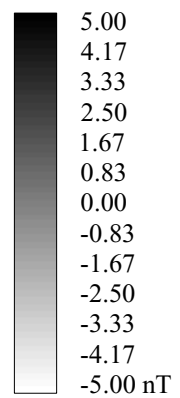
Report 1535

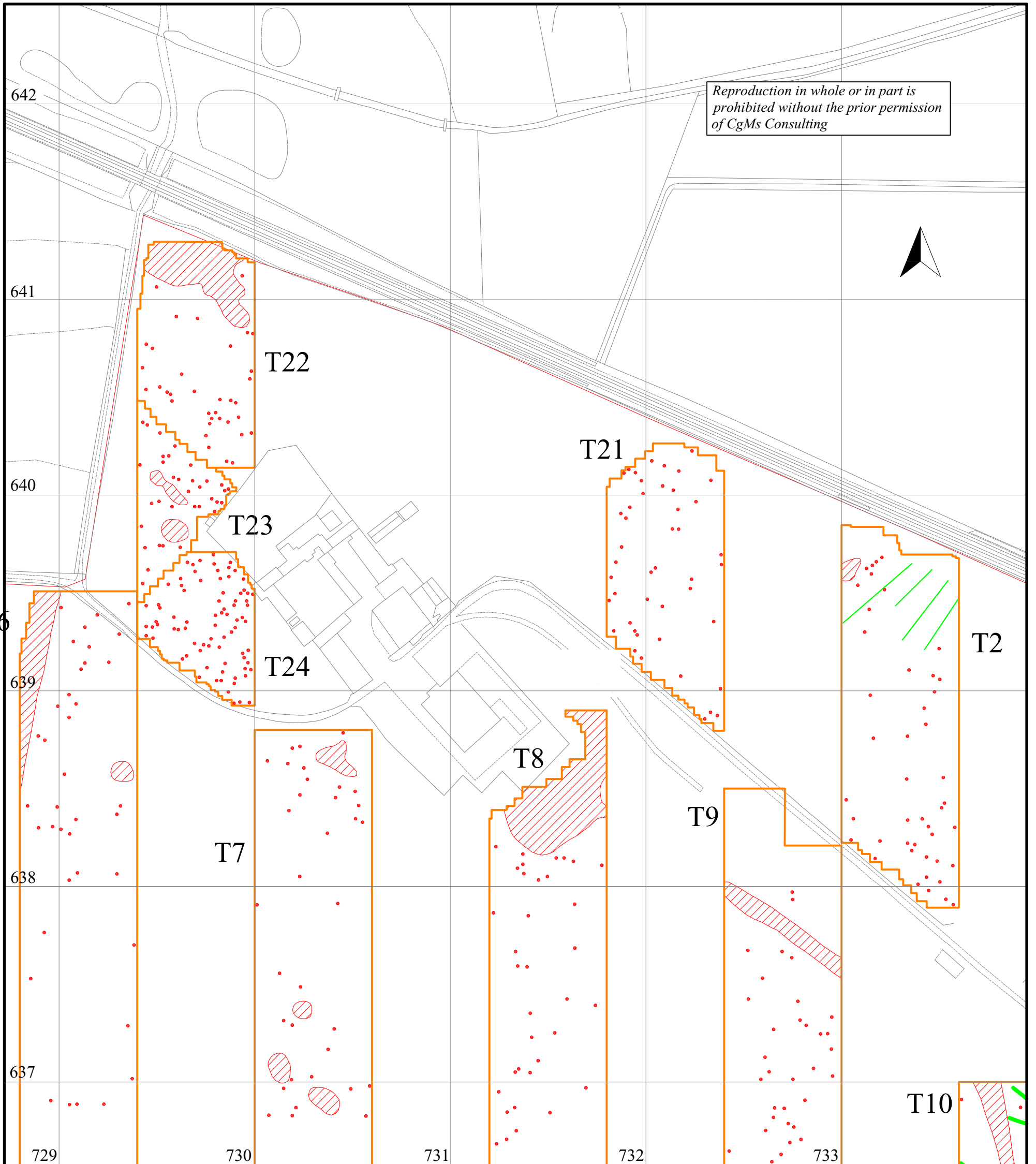
Figure 34  
Area 8, transects 20, 21, 22, 23  
& 24, geophysical survey

on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot





Archaeological Services  
University of Durham

Dallington Grange, Northamptonshire

geophysical surveys phase 2




Report 1535

Figure 35  
Area 8, transects 20, 21, 22, 23  
& 24, geophysical interpretation

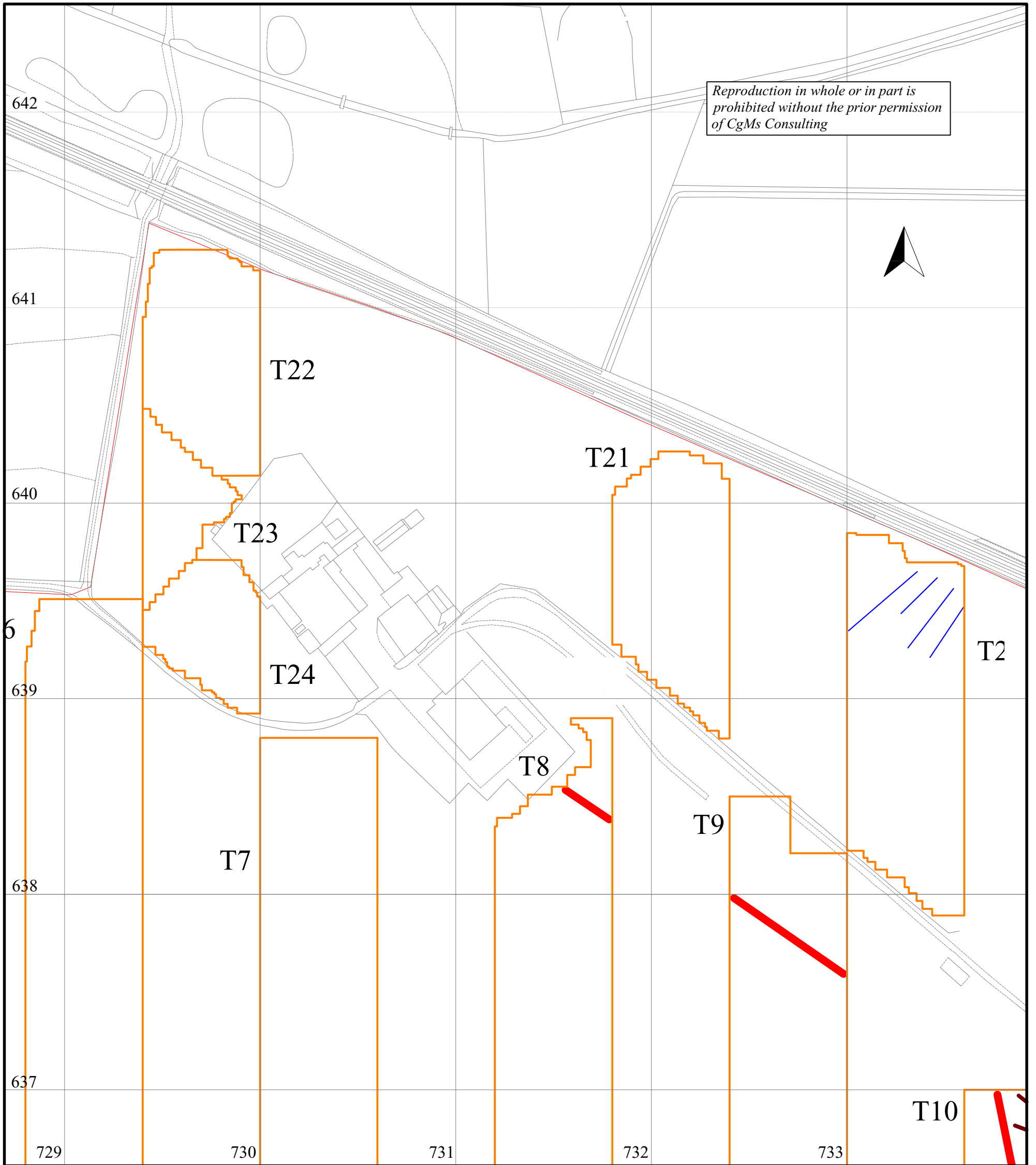
on behalf of  
**CgMs Consulting**



scale 1:2000 - for A3 plot

-  positive magnetic anomalies
-  negative magnetic anomalies
-  dipolar magnetic anomalies





Archaeological Services  
University of Durham

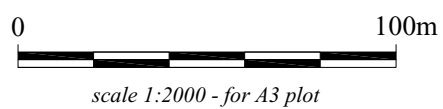
Dallington Grange, Northamptonshire




geophysical surveys phase 2

Report 1535

Figure 36  
Area 8, transects 20, 21, 22, 23  
& 24, archaeological interpretation

on behalf of  
**CgMs Consulting**

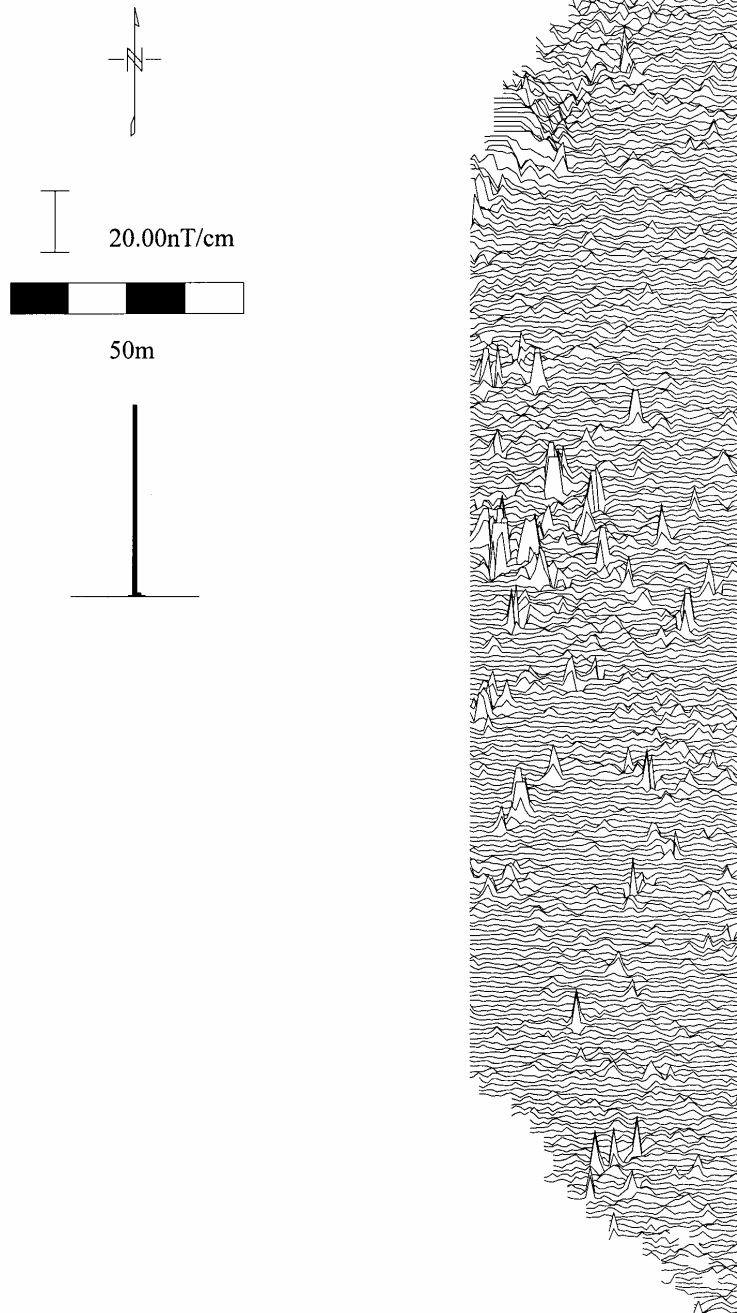


-  soil-filled features
-  service pipes
-  field drain

## Appendix I: Trace plots of geophysical data

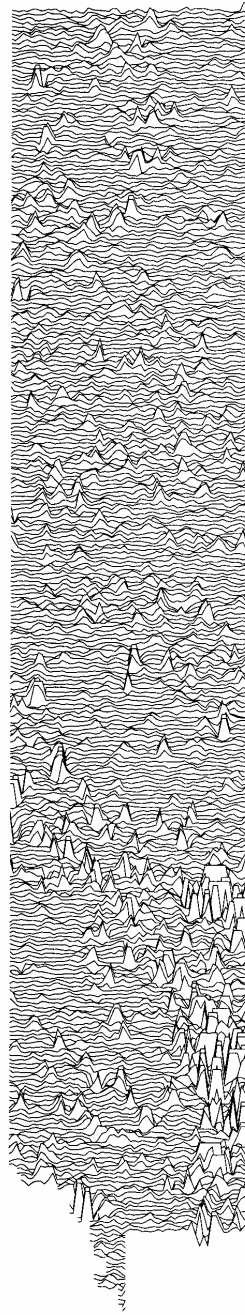
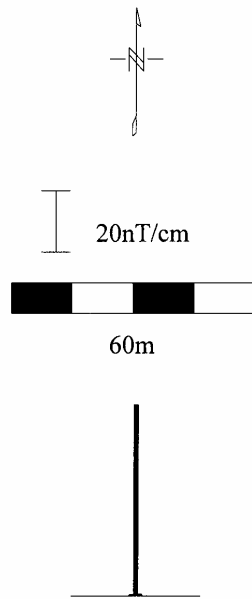
Geomagnetic Data

Area 5 (Transect 1)



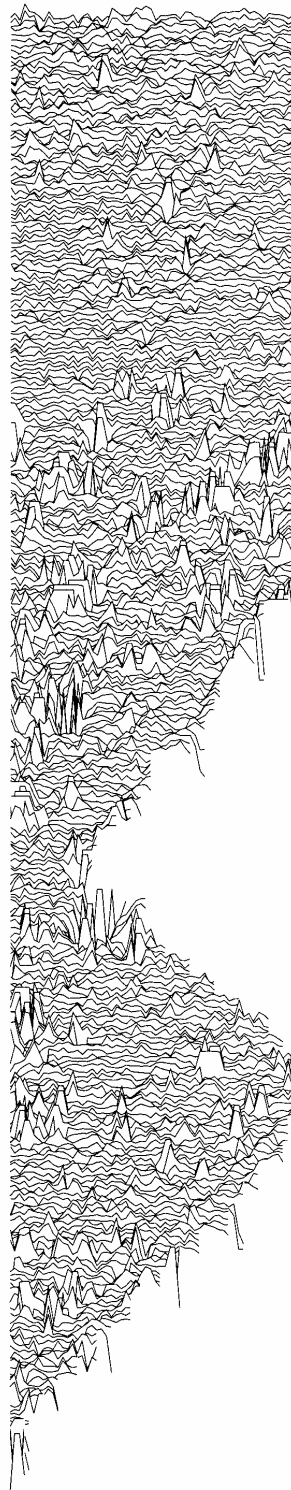
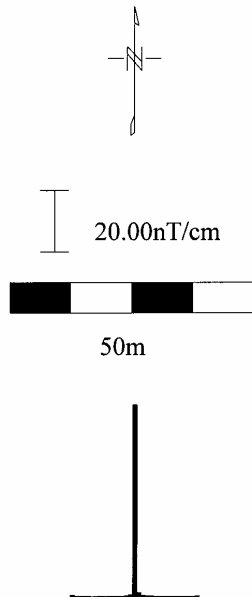
Geomagnetic Data

Area 5 (Transect 2)



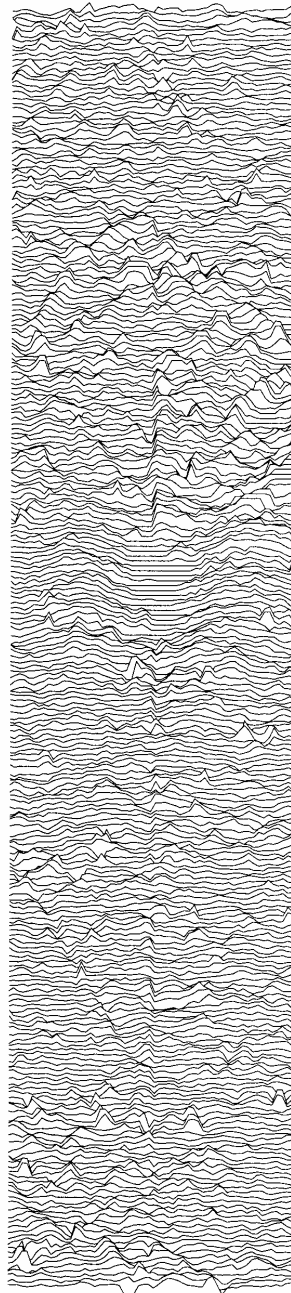
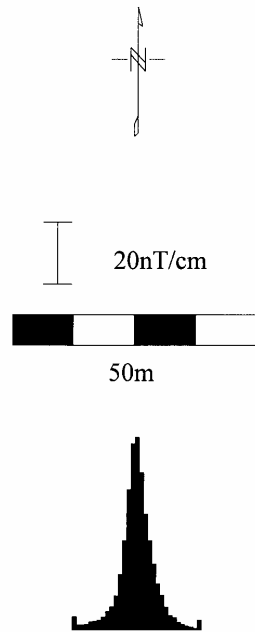
Geomagnetic Data

Area 5 (Transect 3)



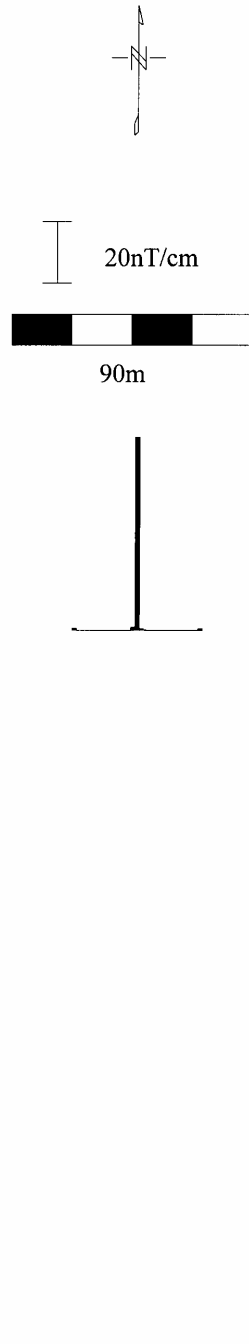
Geomagnetic Data

Area 6 (Transect 4)



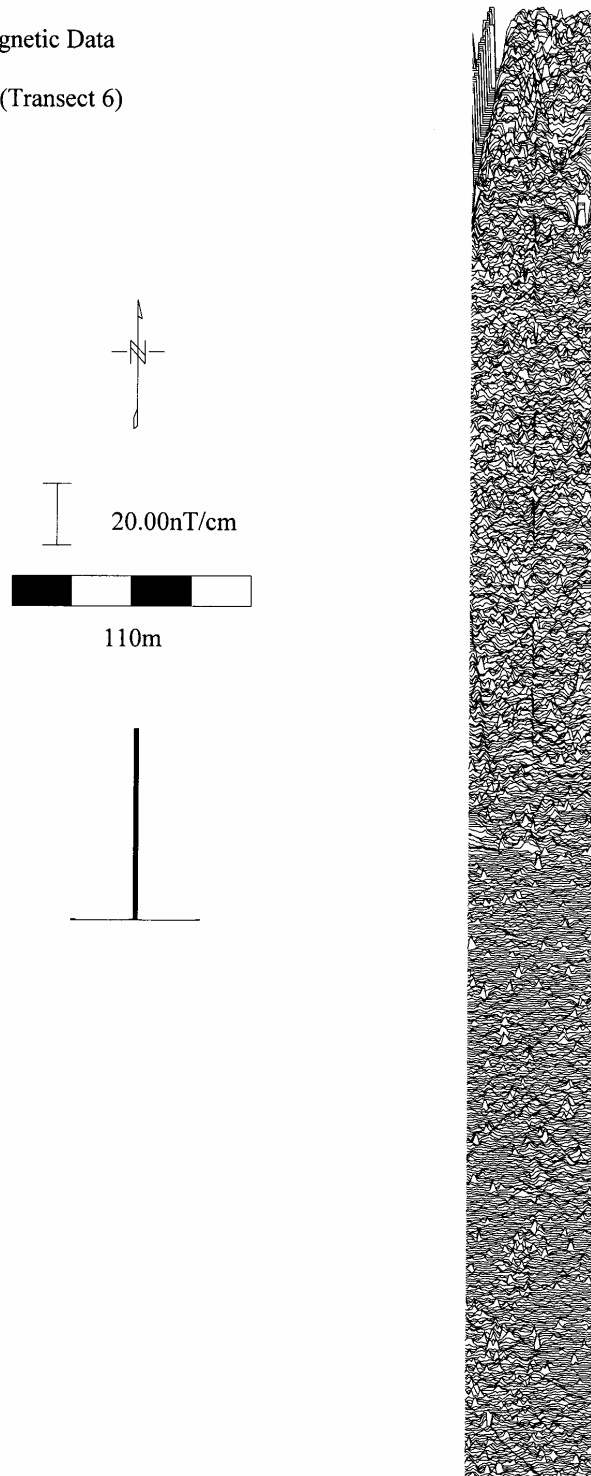
Geomagnetic Data

Area 6 (Transect 5)



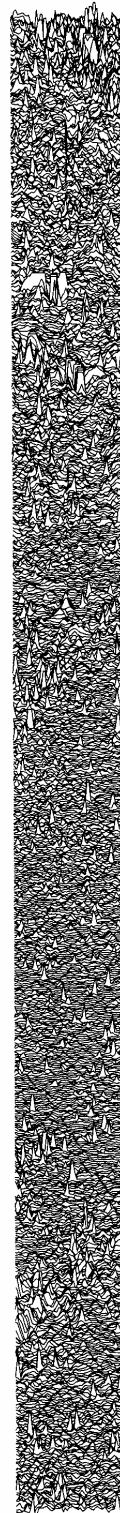
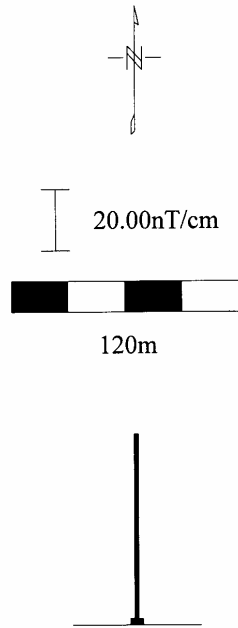
Geomagnetic Data

Area 6 (Transect 6)



Geomagnetic Data

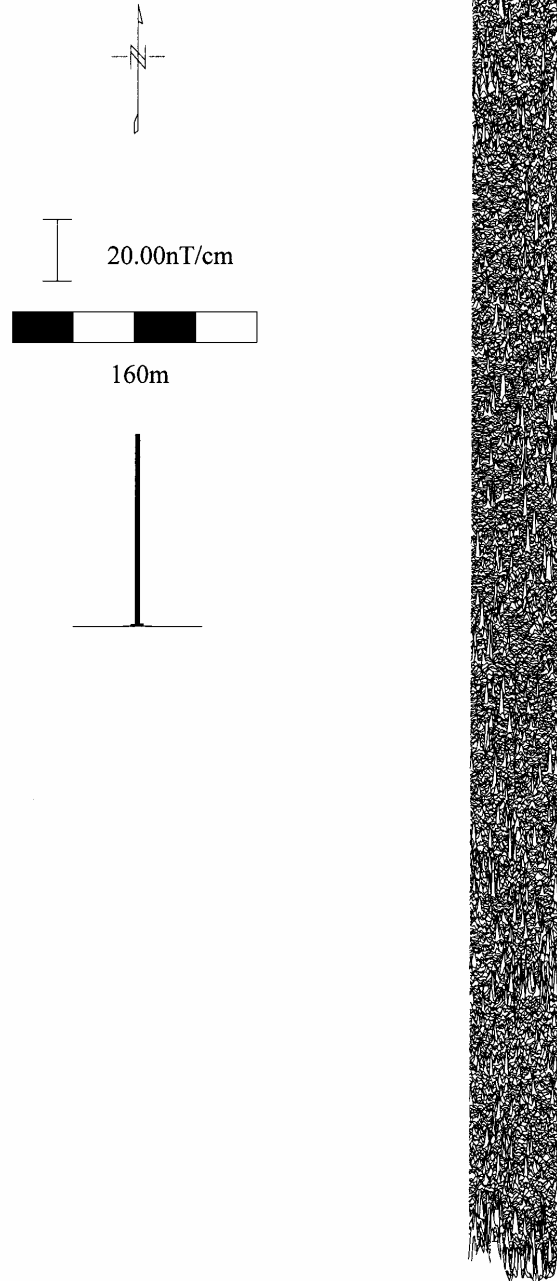
Area 6 (Transect 7)





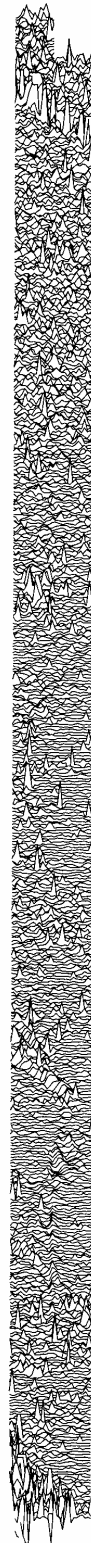
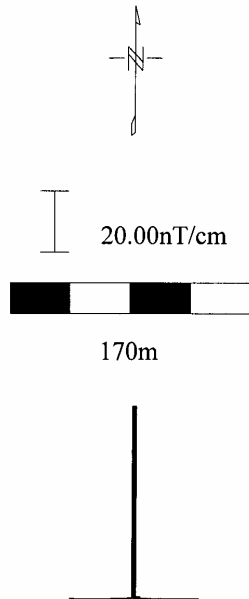
Geomagnetic Data

Area 6 (Transect 8)

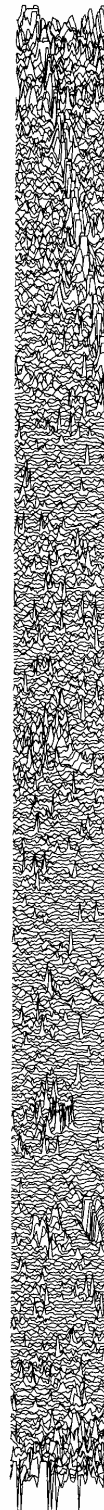
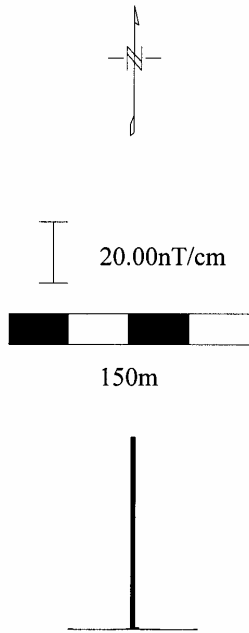


Geomagnetic Data

Area 6 (Transect 9)

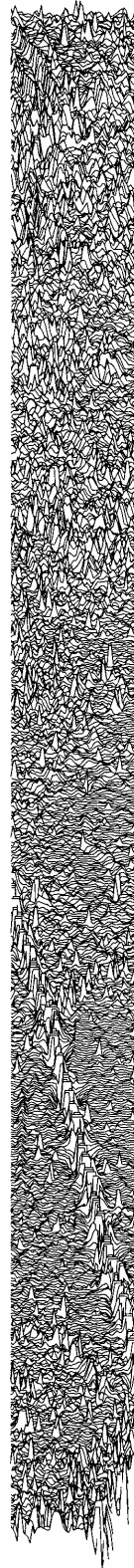
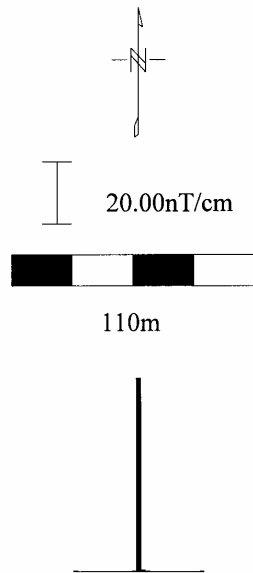


Geomagnetic Data  
Area 6 (Transect 10)

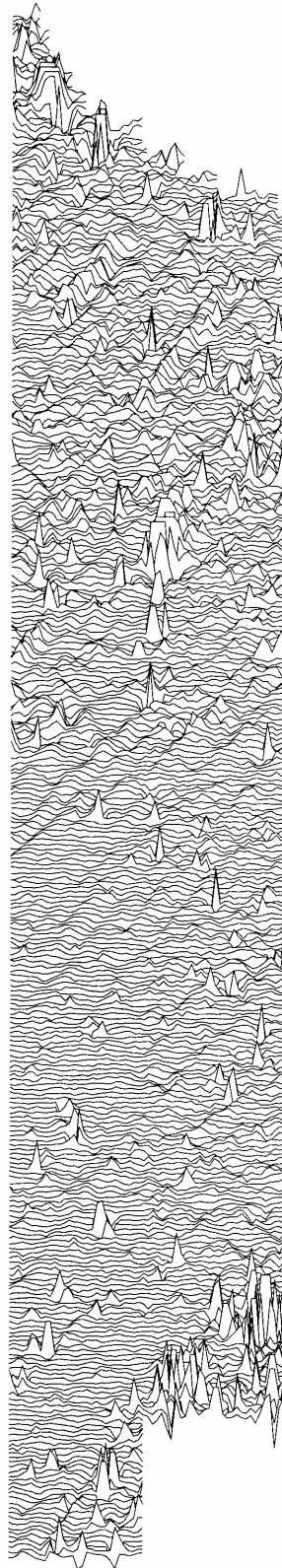
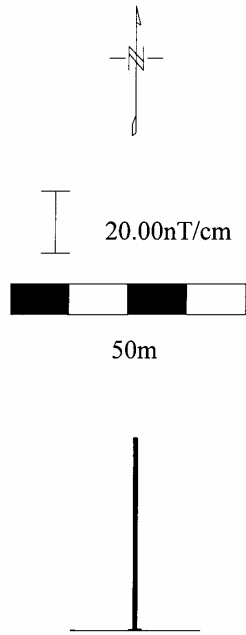


Geomagnetic Data

Area 6 (Transect 11)

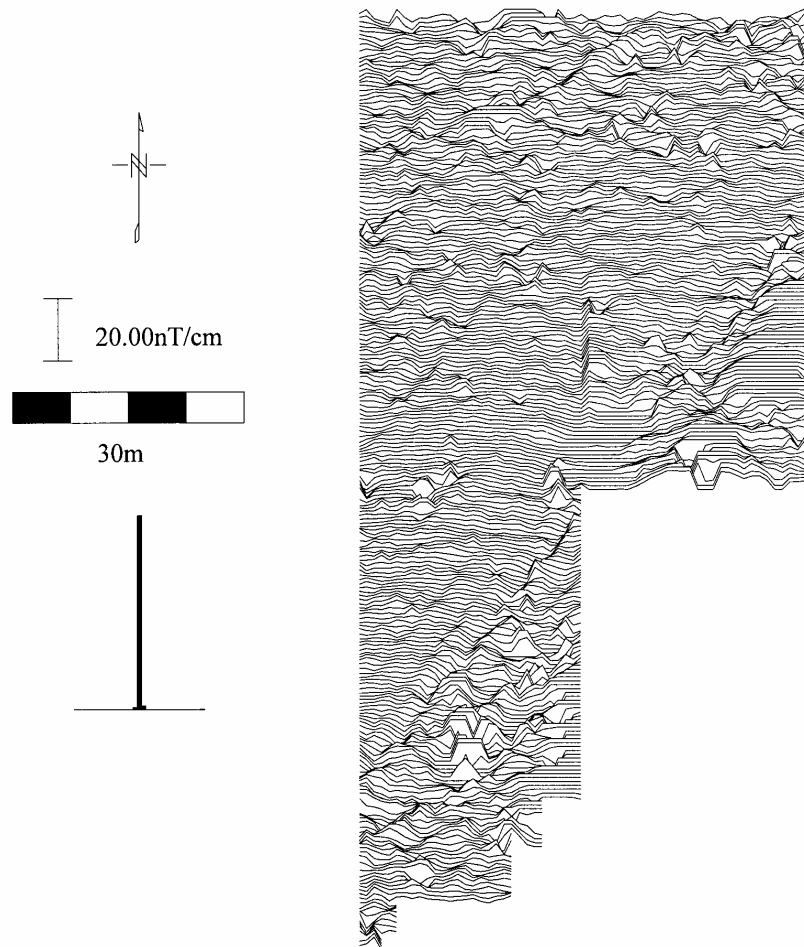


Geomagnetic Data  
Area 6 (Transect 12)



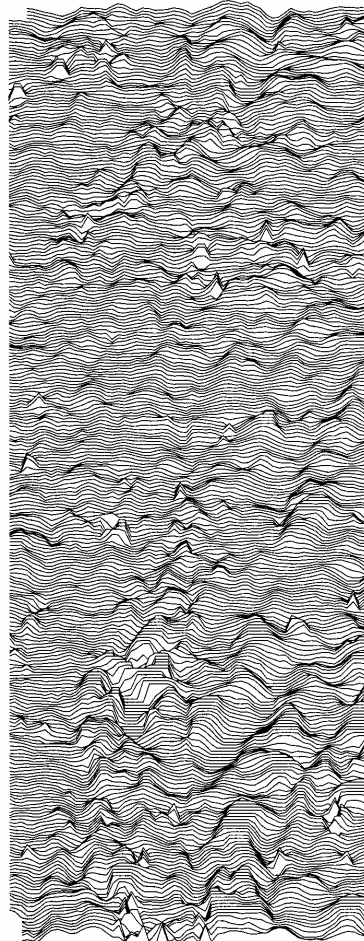
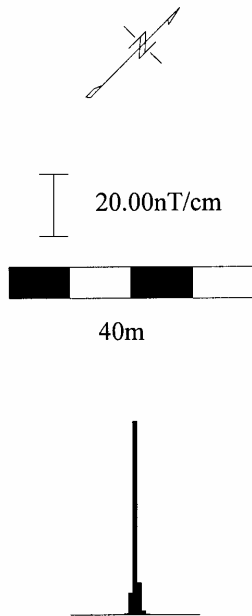
Geomagnetic Data

Area 6 (Transect 13)



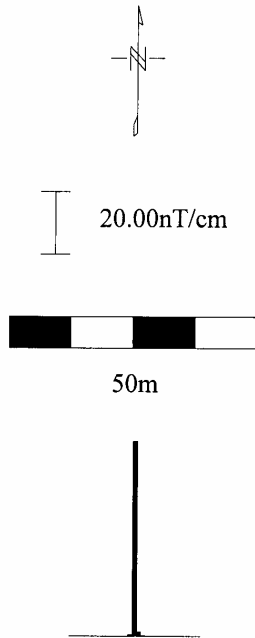
Geomagnetic Data

Area 8 (Transect 14)



Geomagnetic Data

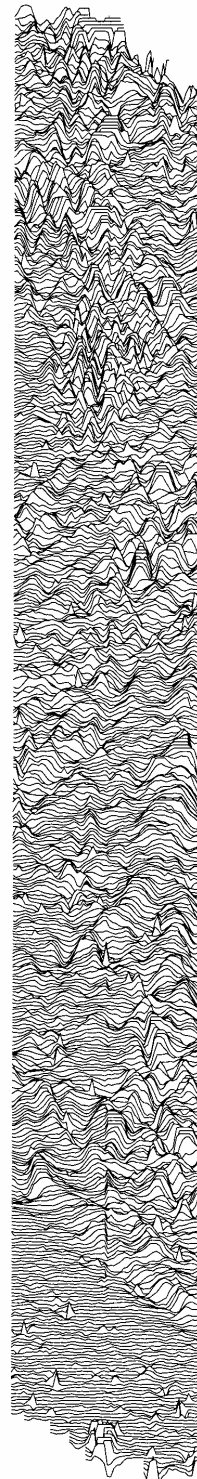
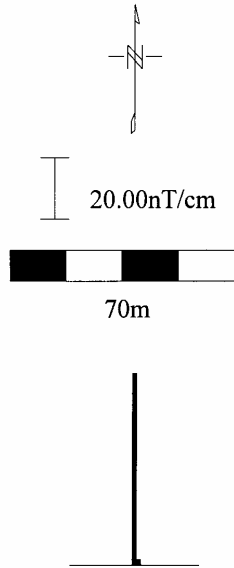
Area 8 (Transect 15)





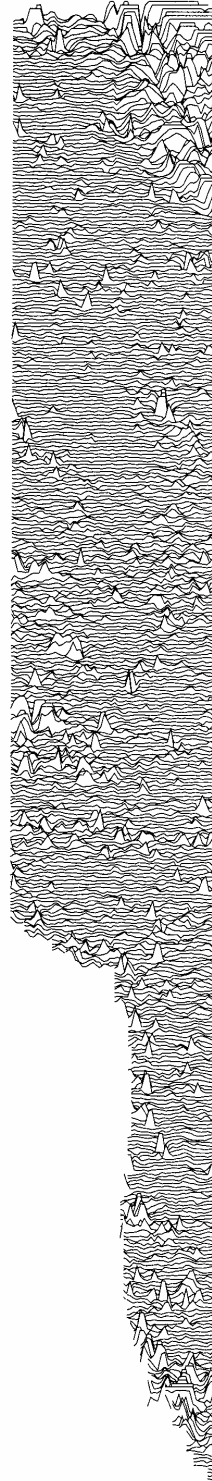
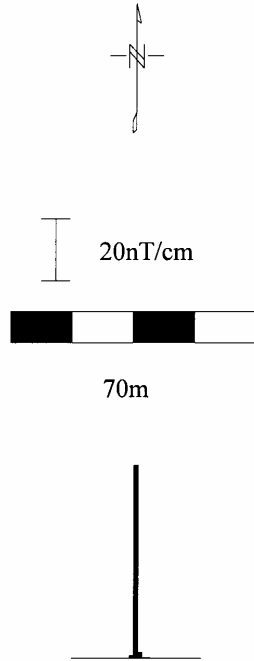
Geomagnetic Data

Area 8 (Transect 16)



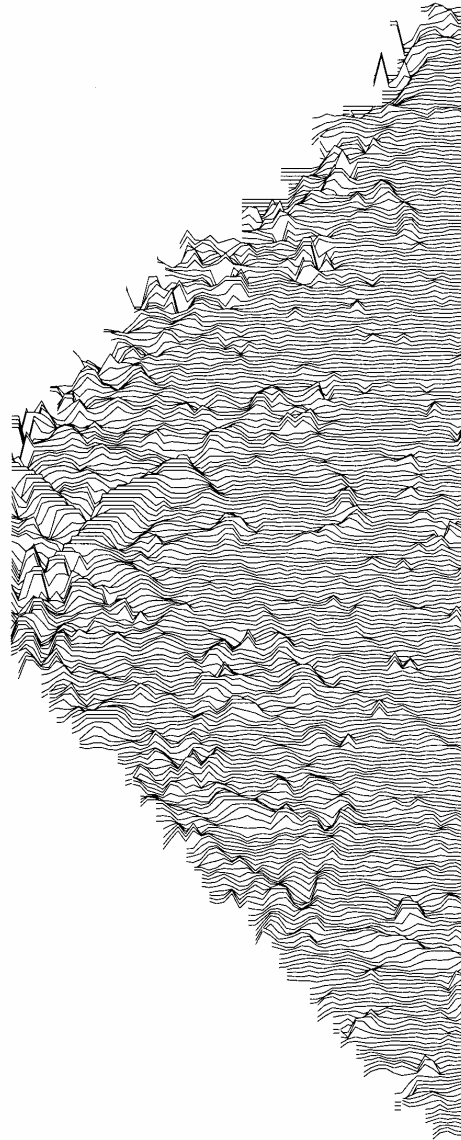
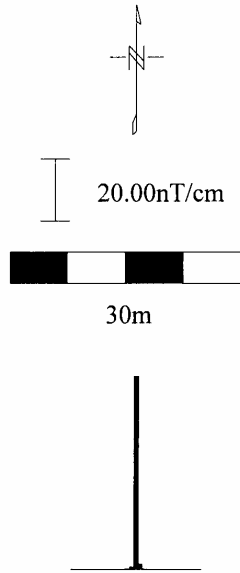
Geomagnetic Data

Area 8 (Transect 17)



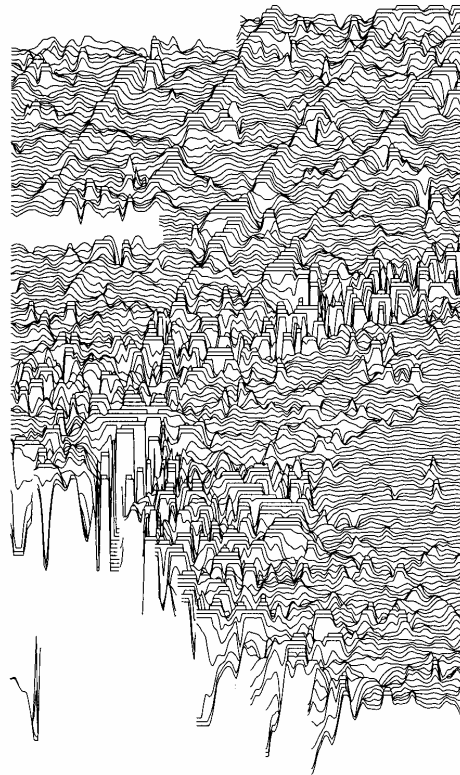
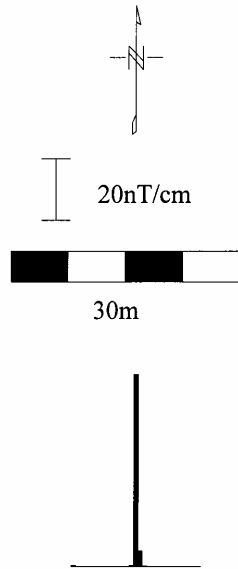
Geomagnetic Data

Area 8 (Transect 18)



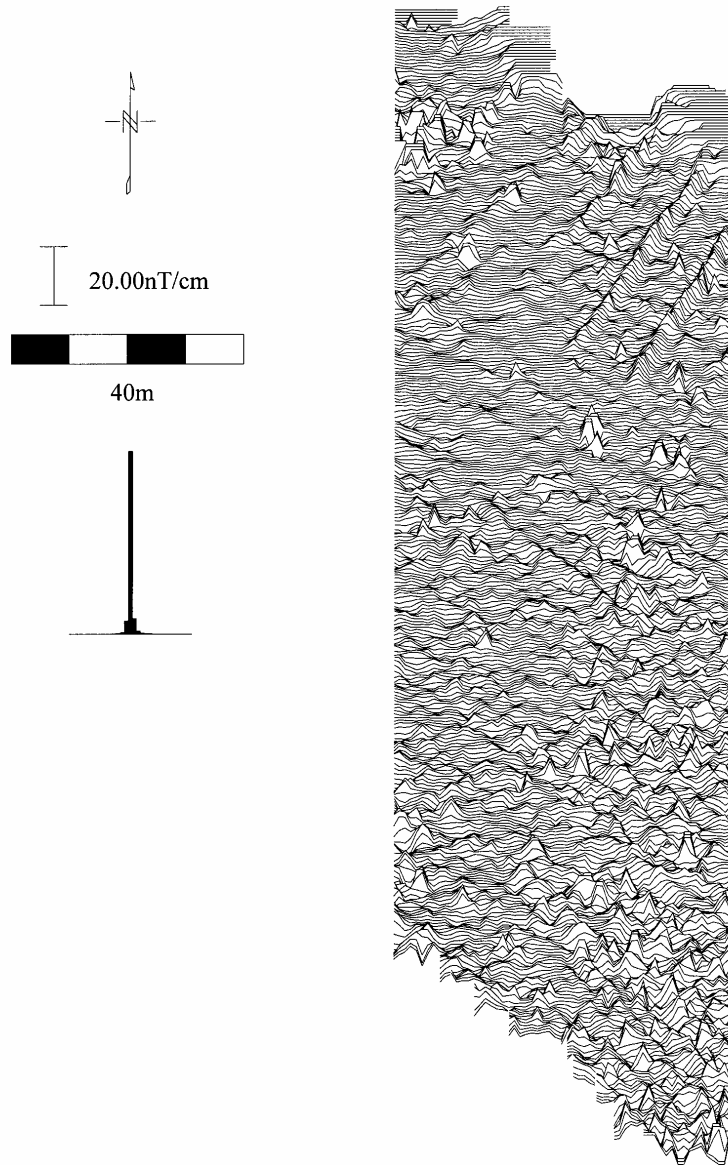
Geomagnetic Data

Area 8 (Transect 19)



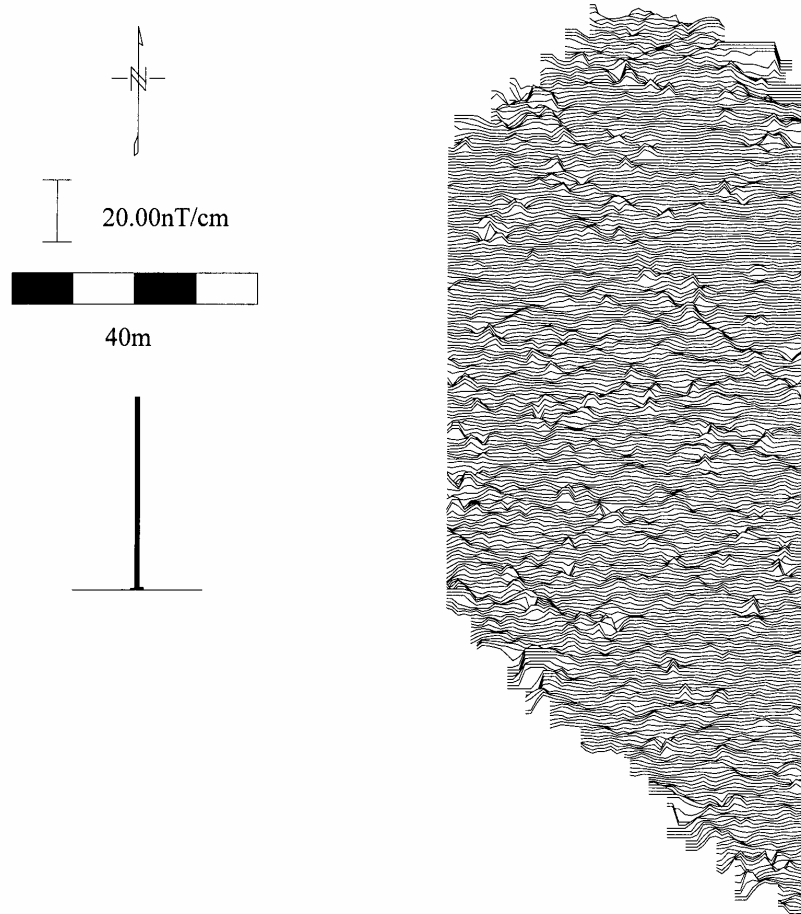
Geomagnetic Data

Area 8 (Transect 20)



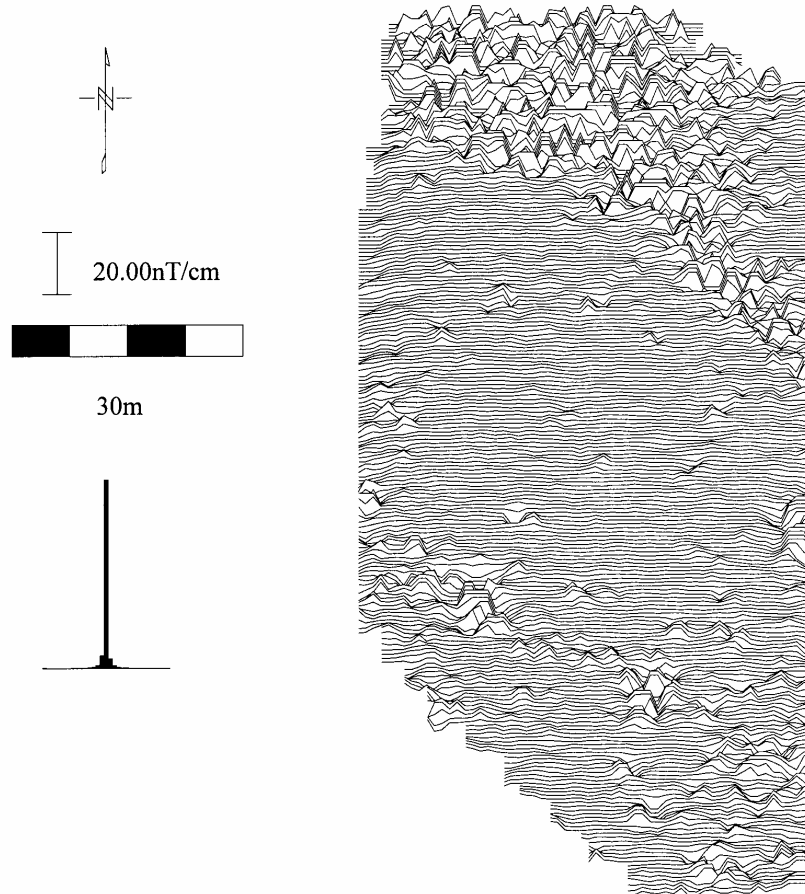
Geomagnetic Data

Area 8 (Transect 21)



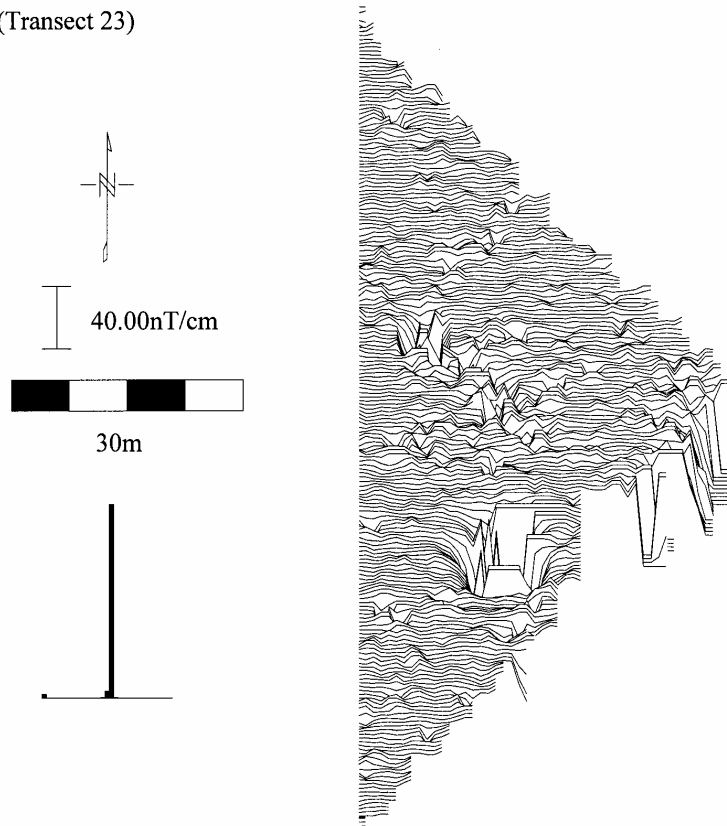
Geomagnetic Data

Area 8 (Transect 22)



Geomagnetic Data

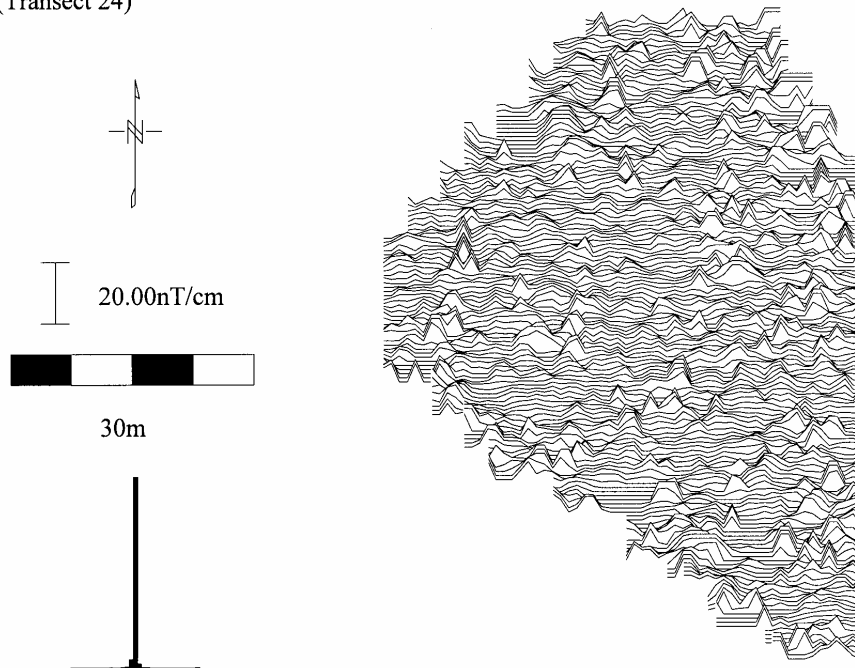
Area 8 (Transect 23)





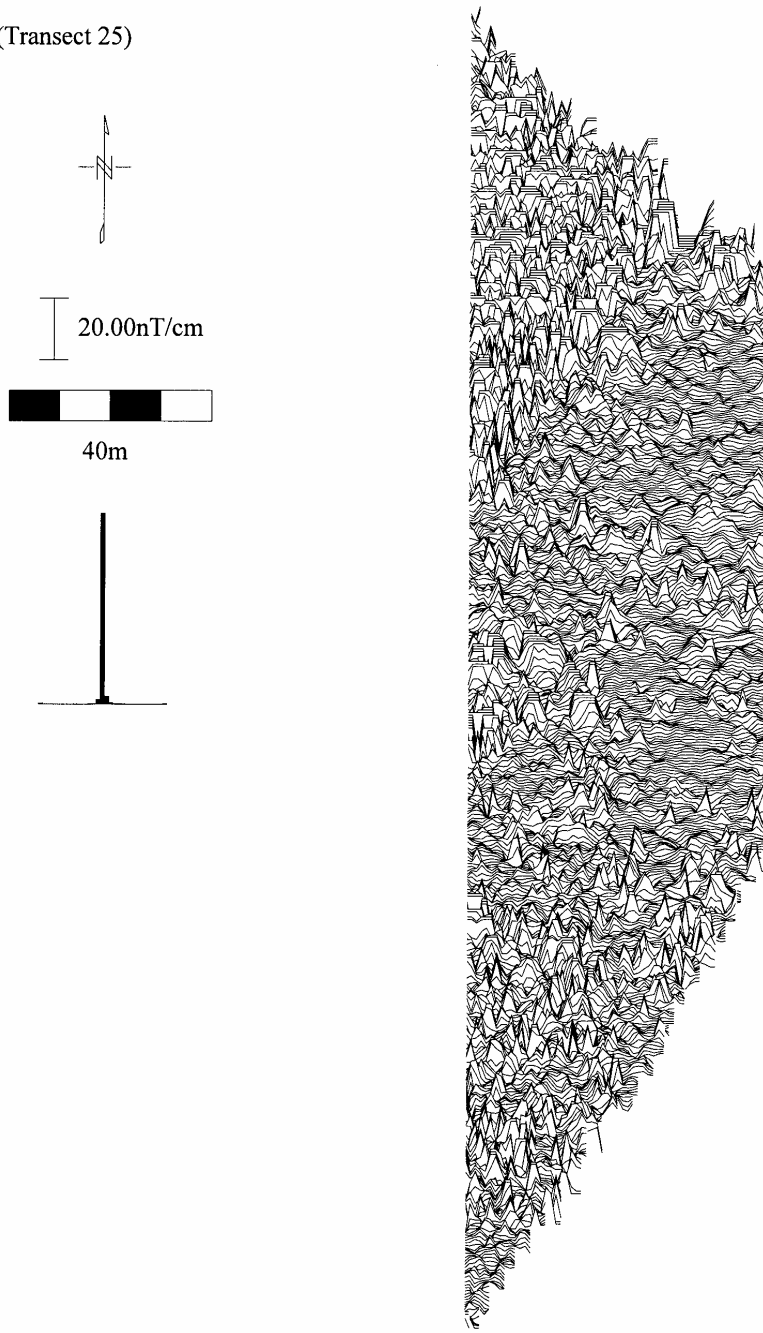
Geomagnetic Data

Area 8 (Transect 24)



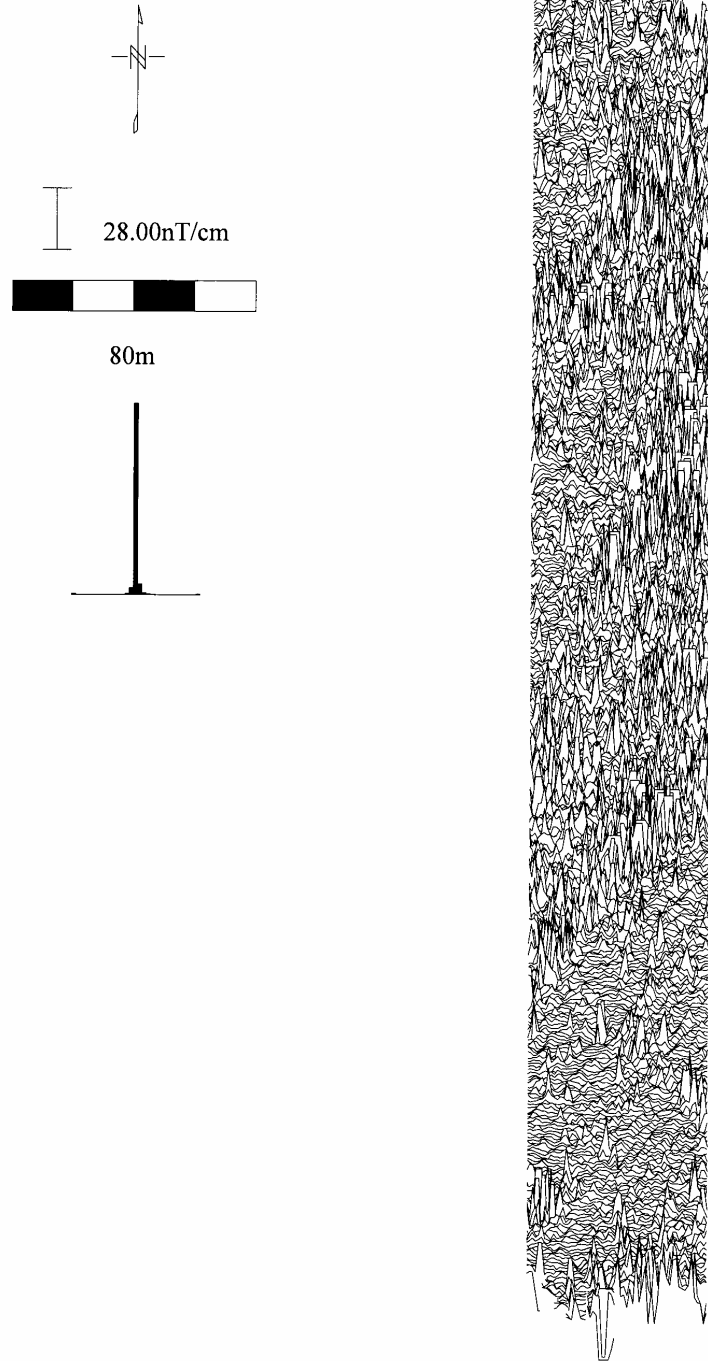
Geomagnetic Data

Area 7 (Transect 25)



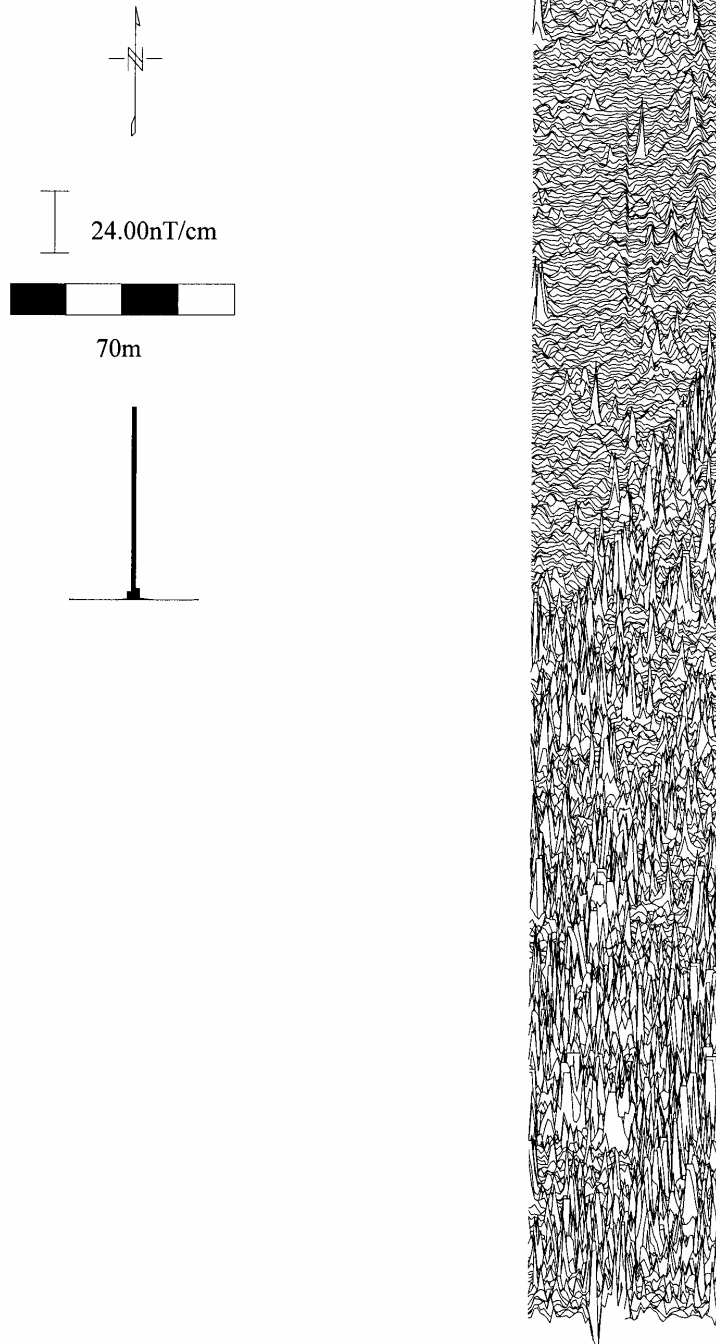
Geomagnetic Data

Area 7 (Transect 26)



Geomagnetic Data

Area 7 (Transect 27)



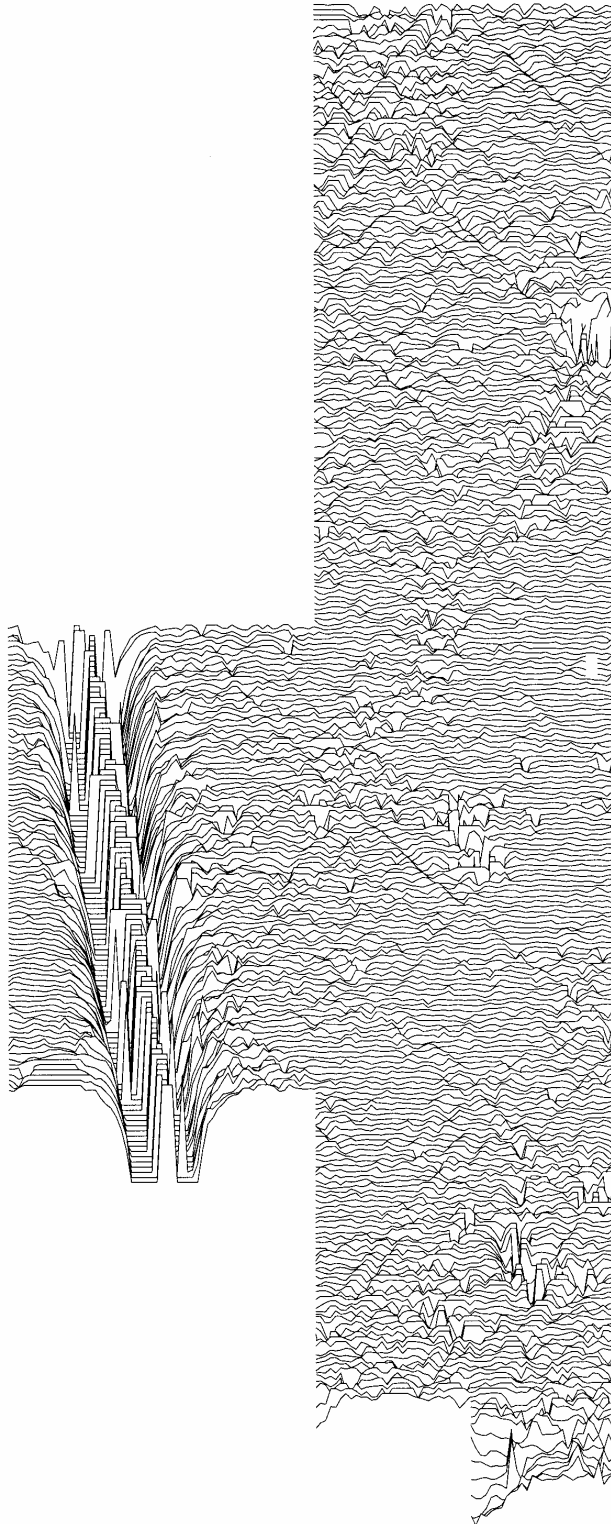
Geomagnetic Data  
Area 7 (Transect 28)



28nT/cm

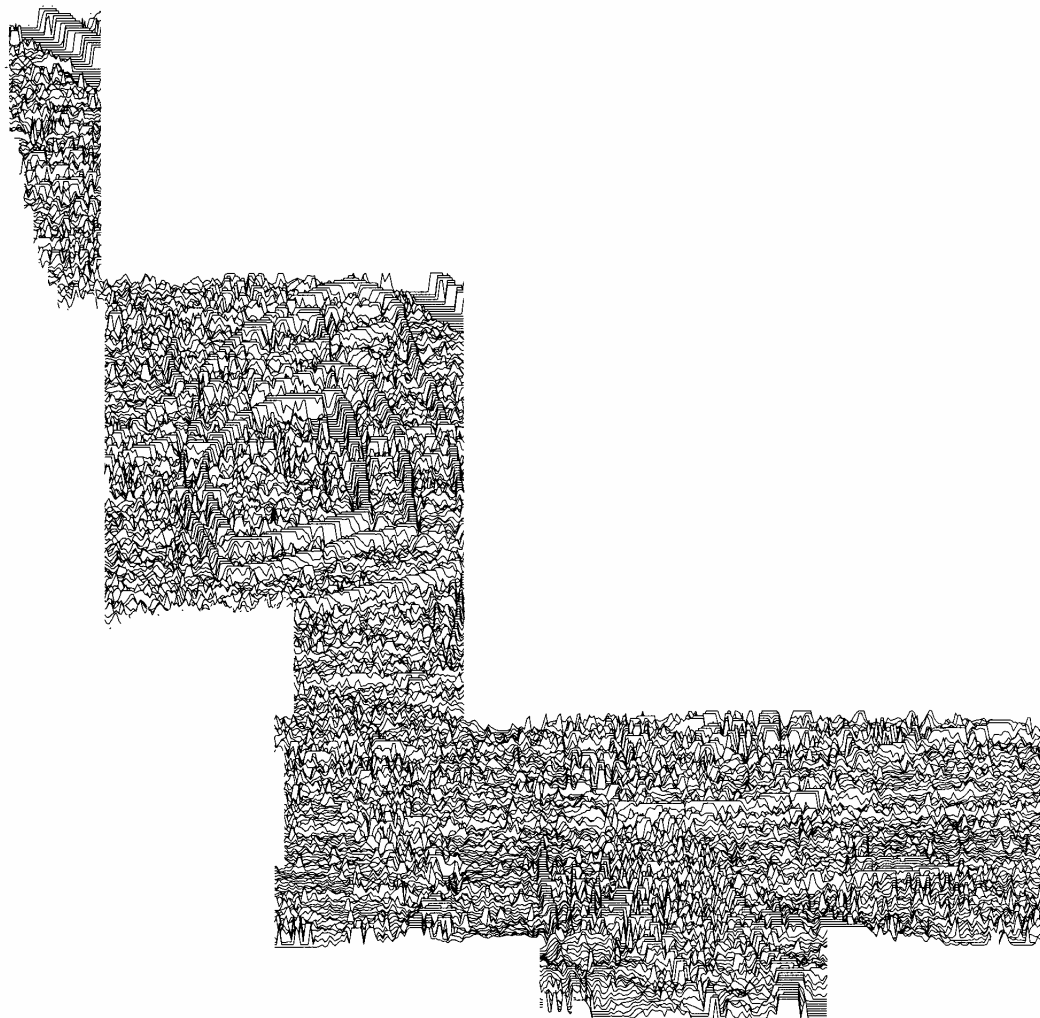
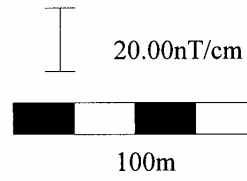
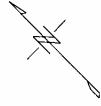


40m



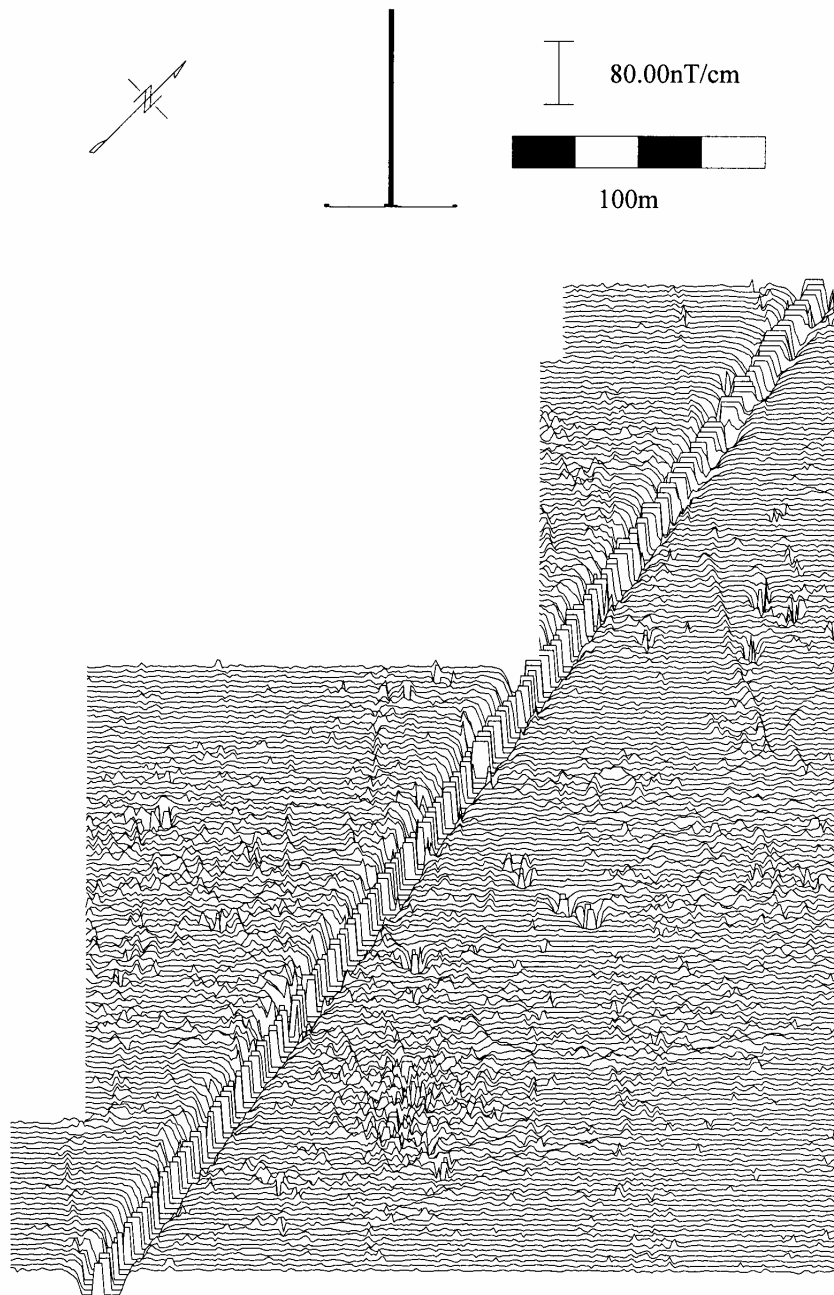
Geomagnetic Data

Area 4 (Transect 29)



Geomagnetic Data

Area 1



Geomagnetic Data

Area 2

