

**Aycliffe Secure Services, Newton Aycliffe,  
County Durham**

**archaeological desk-based assessment and  
geophysical survey**

*for*

**Turner & Townsend**

*on behalf of*

**Durham County Council**

**Report 2283**  
October 2009

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# **Aycliffe Secure Services, Newton Aycliffe, County Durham**

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***Turner & Townsend***

*Bede House, All Saints Business Centre,  
Newcastle upon Tyne, NE1 2ES*

on behalf of

***Durham County Council***

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## **1. Summary**

- 1.1 This report presents the results of an archaeological desk-based assessment and geophysical survey conducted in advance of a proposed development north of Aycliffe Young Person's Centre, Newton Aycliffe, County Durham. The assessment comprised a search of pertinent documentary and cartographic records, and a field visit. The geophysical survey comprised the geomagnetic survey of approximately 3ha of land.
- 1.2 The works were commissioned by Turner & Townsend on behalf of Durham County Council and conducted by Archaeological Services Durham University.

### ***Results***

- 1.3 There are no historic or statutorily protected buildings in the vicinity of the site. The structures on site are of 20<sup>th</sup>-century date.
- 1.4 There are no indications that the proposed development area was occupied during the prehistoric or Romano-British periods, however, there are cropmarks, potentially dating to the Iron Age, north of the proposed development area.
- 1.5 The geophysical survey detected a possible curvilinear ditch in the north-east corner of the site and two possible linear ditches in the north-west corner of the site.
- 1.6 A former field boundary was identified aligned east-west across the site. A high voltage electricity cable and land drains were detected.
- 1.7 The area remained undeveloped until the 1950s when Aycliffe School was constructed to the south of the proposed development area. Probable foundations relating to the 1950s buildings were identified by the geophysical survey. Demolition rubble was detected along the south edge of the proposed development area.
- 1.8 Ground investigations have shown that up to 1m of made ground is present along the south of the site due to relic foundations and demolition rubble. On the north of the site made ground was detected associated with trenches for field drains.

## **2. Project background**

### ***Location*** (Figure 1)

- 2.1 The site is located approximately 1.5km north-east of the modern town of Newton Aycliffe, within the parish of Great Aycliffe, County Durham (NGR centre: NZ 29177 25590). It covers an area of approximately 3.21ha. The site occupies former playing fields on the north side of the Aycliffe Young Person's Centre, east of the A167 road.

### ***Development proposal***

- 2.2 The development proposal is for a new Local Authority Secure Children's Home which will house 38 beds and occupy around 7000m<sup>2</sup>. The new buildings will include five residential house blocks, an education and training centre, fitness and leisure suites, and associated car parking and landscaping.

### ***Objective***

- 2.3 The objective of the scheme of works was to assess the nature, extent and potential significance of any surviving archaeological features 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 the proposed development.

### ***Specification***

- 2.4 The works have been undertaken in accordance with a Specification provided by Durham County Council Archaeology Section (Appendix 1).

### ***Dates***

- 2.5 The field visit took place on 1<sup>st</sup> October 2009. This report was prepared between 5<sup>th</sup> and 9<sup>th</sup> October 2009.

### ***Personnel***

- 2.6 Research was conducted by Natalie Swann; the geophysical survey was undertaken by Natalie Swann and Richie Villis. This report was prepared by Natalie Swann and edited by Duncan Hale (the Project Manager), with illustrations by Ed Davies.

### ***OASIS***

- 2.7 Archaeological Services Durham University is registered with the Online Access to the Index of archaeological investigations project (OASIS). The OASIS ID number for this project is **archaeol3-65395**. The site code is **ASS09** for Aycliffe Secure Services 2009.

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

- 3.1 At the time of this assessment the proposed development area (PDA) was mostly covered in tall thick grass, which was mown during the geophysical survey; a small area in the south-east corner of the site was maintained as a lawn. On the south-east edge of the PDA were the remains of concrete building footings, with standing buildings to the south-west. The site was surrounded by a belt of woodland to the north, east and west.

- 3.2 The survey area was predominantly level with a mean elevation of approximately 91m OD.
- 3.3 The underlying solid geology of the area comprises Middle Magnesian Limestone which is overlain by bolder clay.

#### **4. Historical and archaeological development**

- 4.1 Archaeological and historical sites, events and find spots within a 2km radius of the PDA were studied as part of the assessment. The HER numbers in the following text refer to sites in Durham County Council's Historic Environment Record; a map of these sites is given in Figure 2.

##### ***The prehistoric period (up to AD 70)***

- 4.2 There is no direct evidence of prehistoric activity within the PDA, however, there are a number of possible prehistoric sites within the wider study area. North of the PDA, west of Low Copelaw Farm, two cropmarks of possible Iron Age date have been identified from aerial photographs (Figure 3). A circular enclosure with a diameter of 60m (HER 1494) appears to overly an almost square enclosure measuring 83m by 85m (HER 1496).
- 4.3 North of the enclosures two parallel linear features have been identified from aerial photographs, measuring 125m and 200m in length. These may reflect ditches or a historic track or drove-way (HER 1495).

##### ***The Roman period (AD 70 to 5<sup>th</sup> century)***

- 4.4 There are no known Roman sites within the PDA but the Roman road from Chester-le-Street to Newton Aycliffe is presumed to pass through the wider study area (HER 3136).

##### ***The medieval period (5<sup>th</sup> century to 1540)***

- 4.5 There is no evidence that the PDA was occupied during the medieval period but the wider study area has been settled since at least the 8<sup>th</sup> century. The village of Aycliffe is mentioned in the Anglo Saxon Chronicles which states "782: *In this year Werburh, Coelred's queen and Cynewulf, Bishop of Lindisfarne, died. And there was a synod at Aclea.*" Aclea is the Anglo-Saxon name for Aycliffe meaning clearing in the oaks (Watts 2002) and remnants of the Anglo-Saxon church are still visible within the parish church of St Andrews in Aycliffe.
- 4.6 In the wider study area there are a number of deserted medieval villages. North of the PDA is the deserted medieval village of Woodham (HER 1497), which was mentioned in a charter of the 12<sup>th</sup> century and was still noted as a manor in 1615. The precise date of its desertion is not known but it is likely it was burnt down by the Scots (Archaeological Services 2006, 3). The site retained good earthworks until the 1970s when a survey showed that the remains were fragmentary, consisting of turf-covered banks averaging 3m wide and 0.4m high. They may have been damaged by the laying of a gas pipeline.

- 4.7 South of the PDA is the deserted medieval village of Ricknall, now the site of Ricknall Mill Farm (HER 7813). North-east of the PDA is the medieval fortified manor house of Great Isle farm, once home to the Lords of Bradbury and the Isle. The manor house, chapel, barn and stables probably date from around the 16<sup>th</sup> century and are all Grade II listed buildings (HER 337, 338, 12703, 12704, 12778).
- 4.8 South of Great Isle Farm an earthwork enclosure has been interpreted as a medieval fish pond (HER 339).
- 4.9 South of the PDA, ridge and furrow cultivation has been recorded in aerial photographs to the north, east and west of High Copelaw Farm (HER 23).

***The post-medieval period (1541 to 1899)***

- 4.10 The map of County Durham dating to 1746 (Figure 4) shows the villages of Great Aycliffe, Woodham and The Isle and appears to show the road, now the A167, which lies to the west of the PDA. However this map is at too great a scale to show any detail of the PDA.
- 4.11 The 1<sup>st</sup> edition Ordnance Survey (OS) map of 1859 (not included) shows more detail of the PDA; it shows that the boundary that forms the northern edge of the PDA did not exist at this date. The 2<sup>nd</sup> edition OS map of 1897 (Figure 5) shows that the area to the south of the PDA appears to be covered in rough grassland and trees.

***The modern period (1900 to present)***

- 4.12 The 3<sup>rd</sup> edition OS map of 1919 (Figure 6) shows that there has been little change within the PDA, the only difference being that the field the PDA is within is now marked as rough hilly grassland, and the field to the south of the PDA no longer has any trees in it.
- 4.13 During the Second World War a Royal Ordnance factory was opened to the west of Aycliffe. Temporary accommodation was provided for the mostly female workforce around the village. A note within the Durham Record Office archive states that as part of this a hostel for women workers was apparently opened in the field directly south of the PDA (Durham Record Office: DC SS.Ay; the school records are sealed for 100 years) and that on 23 July 1942 Aycliffe School was supposedly opened on the site of the hostel accommodation. However, the 4<sup>th</sup> edition OS map of 1948 does not show any buildings on the site, and other contemporary maps, such as that of the Ordnance factory, do not cover the PDA.
- 4.14 After the Second World War the ordnance factory was turned into an industrial estate employing 6,000 workers. In order to house these workers Aycliffe was designated as the site for a 'new town'. The first house of the new town of Newton Aycliffe was opened in 1948. The Aycliffe Designation Order map of 1947, which outlined the boundaries of the new town, shows the PDA and again shows no development of the surrounding area, nor does the Parish of Great Aycliffe (extension) Order map of 1952 (Figure 8).

- 4.15 The OS map of 1954 (Figure 9) shows Aycliffe School south of the PDA. Some of the buildings of the school encroach onto the southern edge of the site. The school has been separated from the field to the north by a new field boundary aligned east-west.
- 4.16 During the 1960s the buildings on and south of the PDA were demolished and the present buildings were constructed. The east-west boundary was also removed and a new boundary, the northern edge of the PDA, was instated.

***Previous archaeological works***

- 4.17 No previous archaeological work has taken place within the PDA but four desk-based assessments have been undertaken in the wider study area: one on land along the A167 from the Cock o' the North to Aycliffe in 1992 (HER 4781); one prior to development in Newton Aycliffe town centre in 2001 (HER 5868); an assessment for the A167 Chilton Bypass in 2002 (HER 6711); and an assessment undertaken on land around Woodham Bridge in 2006 (HER 9628),

***The buildings***

- 4.18 There are no statutorily protected buildings within the PDA. All the buildings along the south edge of the site are 20<sup>th</sup>-century in date.

**5. Site reconnaissance**

- 5.1 A field visit was conducted, to help ascertain the potential of the proposed development area to contain any archaeological resource. The visit considered any topography, earthworks and areas of modern overburden, modern services, boundaries, buildings and other upstanding remains. A *pro forma* recording sheet was completed.
- 5.2 Access to the site is via an access road that runs through the grounds of the Young Person's Centre.
- 5.3 The PDA is situated in an open field north of the Centre; most of the field was covered in tall thick grass, though some of this was mown at the time of the geophysical survey (Figure 10). In the south-east corner of the site there is a mown lawn area (Figure 11). A building along the south edge of the PDA has been demolished and only concrete footings remain (Figure 12). The building on the south-west corner of the PDA appears vacant and most of the windows are boarded up (Figure 13). A number of manhole covers were noted along the north side of the buildings. The current site layout is shown in Figure 14.
- 5.4 A bank ran along the edge of the field north of the demolished building; this is probably demolition rubble.
- 5.5 Any archaeological resource towards the south edge of the PDA is likely to have been impacted upon by the foundations for the present buildings and earlier buildings on the site. There is likely to be a large amount of building rubble along the edge of the demolished building where the bank is present.



The rest of the field appears to have been undeveloped so there is the potential for an archaeological resource to exist there.

## **6. Geophysical survey**

### ***Standards***

- 6.1 The surveys and reporting were conducted in accordance with English Heritage guidelines, *Geophysical survey in archaeological field evaluation 2<sup>nd</sup> edition* (David, Linford & Linford 2008); the Institute for 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 2002).

### ***Technique selection***

- 6.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a suite of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar, electromagnetic survey and topsoil magnetic susceptibility survey. Some techniques are more suitable than others in particular situations, depending on 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.
- 6.3 In this instance, based on desk-based assessment and aerial photographic cropmark evidence, it was considered likely that cut features such as ditches and pits might 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.
- 6.4 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 the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record 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***

- 6.5 A 30m grid was established across the survey area and tied-in to known, mapped Ordnance Survey points using a Trimble Pathfinder Pro XRS global positioning system (GPS) with real-time correction.
- 6.6 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual 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.

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

***Data processing***

- 6.8 Geoplot v.3 software was used to process the geophysical data and to produce both a continuous tone greyscale image and a trace plot of the raw (unfiltered) data. The greyscale image and interpretations are presented in Figures 14-16; the trace plot is provided in Figure 17. In the greyscale image, 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.

- 6.9 The following basic processing functions have been applied to the data:

<i>clip</i>	clips, or limits data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic.
<i>zero mean traverse</i>	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.
<i>destagger</i>	corrects for displacement of anomalies caused by alternate zig-zag traverses.
<i>interpolate</i>	increases the number of data points in a survey to match sample and traverse intervals. In this instance the data have been interpolated to 0.25 x 0.25m intervals.

***Interpretation: anomaly types***

- 6.10 A colour-coded geophysical interpretation plan is provided. Two types of geomagnetic anomaly have been distinguished in the data:

<i>positive magnetic</i>	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.
<i>dipolar magnetic</i>	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***

- 6.11 A colour-coded archaeological interpretation plan is provided.
- 6.12 In the north-east corner of the survey area a curvilinear positive magnetic anomaly was identified, which could reflect the partial remains of a soil-filled feature such as a ditch.

- 6.13 In the north-west corner of the survey area two parallel positive magnetic anomalies have been identified, which could similarly reflect soil-filled features such as possible ditches or a trackway.
- 6.14 A series of parallel positive magnetic anomalies aligned north-west/south-east has been detected across the survey area; these anomalies almost certainly reflect clay field drains.
- 6.15 A second series of parallel positive magnetic anomalies aligned approximately north-south have also been detected; these anomalies are likely to reflect a former plough regime.
- 6.16 The intense linear magnetic anomaly across the centre of the survey area, aligned approximately north-east/south-west, almost certainly reflects a high voltage electricity cable shown on service plans of the site.
- 6.17 A line of small dipolar magnetic anomalies has been detected aligned east-west across the site. This probably reflects a former field boundary as shown on the Ordnance Survey map of 1954 (Figure 9).
- 6.18 Small, discrete dipolar magnetic anomalies have been detected across the survey area. 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.
- 6.19 Five pairs of dipolar magnetic anomalies have been identified across the survey area; these are likely to reflect buried sockets for goal posts, dating to when the site was in use as playing fields.
- 6.20 Along the south edge of the survey area the concentration of dipolar magnetic anomalies almost certainly reflects rubble from the demolition of buildings.
- 6.21 The intense linear magnetic anomalies detected in the south-east corner of the survey area probably reflect building foundations from the 1950s school.

## **7. Ground investigations**

- 7.1 Geotechnical investigations were conducted over the site by 3e Consulting Engineers Limited (Appendix 3), comprising 15 trial pits excavated to a maximum depth of 3m and six trenches excavated to a maximum depth of 2.3m.
- 7.2 Topsoil between 0.1 and 0.4m thick is present in all areas except around the existing floor slab.
- 7.3 In the southern part of the site up to 1m of made ground was recorded. This comprised reworked brown gravelly-clay with inclusions of demolition rubble and occasional ash, and was associated with areas of relic foundations from the old Aycliffe School.

- 7.4 Up to 1.1m of made ground was recorded in the north-east corner of the site comprising orangey brown sandy, very gravelly clay with gravel-sized sandstone, occasional brick and mixed aggregates. The made ground appears to be associated with a backfilled field drain trench. Field drains were encountered in two of the trial pits along the northern part of the site, at a maximum depth of 0.3m.
- 7.5 Beneath the made ground and topsoil the glacial soils comprise firm to stiff light brown sandy clay to depths of between approximately 0.5 and 1m. This is underlain by stiff to very stiff, dark brown mottled grey, slightly sandy gravelly clay and proved to the base of each exploratory hole to a maximum depth of 3m.
- 7.6 The report concluded that the use of traditional strip and pad foundations was appropriate and that the foundations should be placed in the stiff clays at a minimum depth of 0.8m and fully penetrate any made ground. The foundations may need to be deepened in areas of relic foundations and made ground.

## **8. The potential archaeological resource**

- 8.1 There is no direct evidence of any prehistoric activity on the proposed site, however, the cropmarks that are visible on aerial photographs of the surrounding area are indicators that the area was occupied in prehistory. Therefore an as yet unidentified resource has the potential to survive within the proposed development area.
- 8.2 Cartographic evidence shows that the PDA remained undeveloped until the 1950s when Aycliffe School was constructed on the south edge of the PDA. To the north of the school the field has remained undeveloped suggesting that there is the potential for an archaeological resource to have survived in this area.
- 8.3 The geotechnical investigation has shown that there is a large amount of made ground in the south of the PDA relating to the construction or demolition of the buildings in this area. Any archaeological resource there is likely to have been impacted upon.
- 8.4 The geophysics results show two possible soil-filled features, one in the north-east corner of the PDA and one on the north-west.

## **9. Impact assessment**

- 9.1 The proposed development will impact upon any archaeological resource that may survive through the construction of building foundations, service trenches, access routes and car parking.

## **10. Conclusions**

- 10.1 There are no historic or statutorily protected buildings in the vicinity of the site. The structures on site are of 20<sup>th</sup>-century date.
- 10.2 There are no indications that the proposed development area was occupied during the prehistoric or Romano-British periods, however, there are cropmarks, potentially dating to the Iron Age, north of the proposed development area.
- 10.3 The geophysical survey detected a possible curvilinear ditch in the north-east corner of the site and two possible linear ditches in the north-west corner of the site.
- 10.4 A former field boundary was identified aligned east-west across the site. A high voltage electricity cable and land drains were detected.
- 10.5 The area remained undeveloped until the 1950s when Aycliffe School was constructed to the south of the proposed development area. Probable foundations relating to the 1950s buildings were identified by the geophysical survey. Demolition rubble was detected along the south edge of the proposed development area.
- 10.6 Ground investigations have shown that up to 1m of made ground is present along the south of the site due to relic foundations and demolition rubble. On the north of the site made ground was detected associated with trenches for field drains.

## **11. Sources**

### ***Cartographic sources***

Anon 1746 A map of the County of Northumberland

Aycliffe designation order 1947 Durham Record office cc/x/185/4/35/2

Ordnance Survey 2nd Edition, 6" sheet 43 SW

Ordnance Survey 3rd Edition 6" sheet 43 SW

Ordnance Survey 4th Edition 6" sheet 43 SW

Ordnance Survey Map 1954

Parish of Great Aycliffe (extension) order 1952 Durham Record Office  
CC/X/185/4/35/3

Plan of the Royal Ordnance Factory Site, Newton Aycliffe 1948 Durham  
Record Office NT/AY/5/4/9

***Other sources***

Archaeological Services 2006 *Woodham Country Club, archaeological desk-based assessment*. Unpublished report **1478**, Archaeological Services Durham University

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Watts, V, 2002 *A Dictionary of County Durham Place-Names*, English Place-Name Society

WSP Environmental 2002 *Chilton Bypass: Environmental Statement*

***Durham County Hall Archive***

DC/Arch 1/2 Aycliffe School New Secure Assessment Centre 1958-1984

***Websites***

[www.dur.ac.uk/picturesinprint](http://www.dur.ac.uk/picturesinprint)

[www.aycliffeangels.co.uk](http://www.aycliffeangels.co.uk)

[www.keystothepast.info](http://www.keystothepast.info)

[www.greataycliffe.sedgefield.gov.uk](http://www.greataycliffe.sedgefield.gov.uk)

***Aerial photographs***

Aerial photographs of Newton Aycliffe, Durham Record Office NT/AY/7

Aerial photograph of Newton Aycliffe looking south showing the approved school, Durham Record Office NT/AY/7/5/4/43

Aerial photographs of Newton Aycliffe c.1960, Durham Record Office CC/Planning 514

## **Appendix 1: Project specification**

### **Specification for RAPID ARCHAEOLOGICAL ASSESSMENT and GEOPHYSICAL SURVEY: Aycliffe Young Person's Centre Newton Aycliffe County Durham**

#### **1.0 Site Location**

- 1.1 This specification is for an archaeological assessment and geophysical survey of a proposed development site at Aycliffe Young Person's Centre, Newton Aycliffe, Co. Durham.
- 1.2 The site is located on the east side of the modern town of Newton Aycliffe in Great Aycliffe Parish.
- 1.3 The proposed development site lies within the former playing fields on the north side of the Aycliffe Young Person's Centre. It is centred on NGR NZ2917725590 and lies on relatively flat land at a height of between 90-92mAOD.
- 2.1 The client for this work is Durham County Council via their agents Turner & Townsend (Newcastle). The Project Manager is Ryan Thirlaway at Turner & Townsend. The client is proposing to submit an application for planning permission for a new secure unit in the immediate future. The report on the archaeological assessment and geophysical survey will be required as supporting documents to help determine the application. The appointed archaeological contractor must be prepared to work to tight deadlines to ensure the report is submitted within the planning framework.
- 2.3 The proposed development will involve construction of several large scale buildings with associated carparking, infrastructure and landscaping.

#### **3.0 Historical Background**

- 3.1 The proposed development site lies within a wider area which has a background level of archaeological data recorded on the County Durham Historic Environment Record database (HER).
- 3.2 The local historic landscape can be characterised by its sparsely populated "patchwork quilt" of deserted medieval villages, mostly surviving as earthworks, interspersed by the occasional prehistoric cropmark site. The latter is suggestive of small scale, isolated farmsteads on the slightly higher ground above the carr lands of Bradbury and Mordon.

#### **4.0 The Archaeological Brief**

- 4.1. This brief sets out which archaeological works are required in order to assess and evaluate the site, and how they must be carried out. Any further works required to mitigate the impact of the proposed development may be dealt with under a separate brief as a condition of future detailed planning permission. The report on the current works must be submitted in support of the imminent planning application.

##### *Assessment*

- 4.2. A desk-based assessment must be conducted to *Institute For Archaeology (IFA)* standards as set out in *Standards and Guidance For Archaeological Desk-Based Assessments (2001)*. The assessment is required in order to provide contextual information for any archaeological remains which may be found in the evaluation.
- 4.3. A search of pertinent and accessible documentary and cartographic records for, at a minimum, a **2km radial area from the site for standard archaeological data is required**. A search of this size is necessary due to the dispersed nature of the currently recorded archaeological data. Any relevant archaeological interventions in the locality should be referred to. The County Durham Historic Environment Record (HER) must be considered as the starting point for such research.
- 4.4. There are no recorded archaeological remains within the development site. But given the site's location, there are likely to be Prehistoric through to Post-Medieval activity on the site.
- 4.5. A site inspection and survey must be made in order to place the site in its setting. Sketch plans of features should be made as aide memoirs.
- 4.6. The on-line HER, *Keys To The Past* may be referred to but must not be used as the primary source of information.
- 4.7. Map regression showing the site over time must also be completed. The context of the site in the wider historic environment must be discussed and reference must be made to the recently published regional research framework (NERRF). The impact of possible construction techniques on the potential archaeological resource must be considered at all times. The appointed contractor is recommended to discuss possible construction techniques with the client so as to be able to comment on the latter.
- 4.8. A variety of sources must be used, including information which comes to light during research. It is suggested that as a bare minimum the following must be consulted:

- Durham County Council Historic Environment Record

- National Monument Record, Swindon
  - County Record Office (County Hall Durham)
  - Durham Local History Reference Library Clayport Library, Durham City)
  - local/national historical and archaeological journals and publications referred to on the HER
- 4.9. Finally, the archaeological potential of the surrounding area should be considered at all times when researching the site.
- 4.10. A search and interpretation of existing aerial photographic surveys which include the site should be undertaken
- 4.11. The search must make reference where appropriate to both local and national collections including those held by:
- Durham HER
  - NMR
  - Google Earth
  - Durham County Council aerial surveys (County Record Office)
  - University collection, Archaeology Department, Durham University

4.12. Copies of aerial photographs which provide evidence of archaeological features must be included within the assessment report together with a transcription of those features.

#### *Geophysical Survey*

4.13. In order to evaluate the archaeological potential for remains of any period the site will be subject to a 100% geophysical survey to provide archaeological evaluation data from within the proposed development area (PDA). The use of remote sensing geophysical techniques (magnetometry and/or resistivity) will be required to help define the potential archaeological features which may exist on the site.

4.14. Given the small size of the development area (3.21ha), the survey must cover 100% of the PDA except where ground conditions, vegetation or water cover makes it impracticable. In addition a buffer zone around field boundaries and buildings may be needed to reduce interference from fences, footpaths and debris often associated with field boundaries. Partial grids should not be excluded due to the small size of the survey area. The archaeological contractor must liaise with the client over development layout and discuss the final survey sample with the DCC Assistant Archaeology Officer.

4.15. The overall purpose of the geophysical survey will be:

- to establish the presence/absence, and nature of any archaeological anomalies within the area specified
- to define the extent of any such anomalies, and to characterise, if possible
- to establish the presence/absence, and nature of any known modern anomalies within the area of proposed development which may affect the results

4.16. Methodologies must be clearly costed in the tender document and information on how the contractor proposes to conduct the work clearly set out in the written scheme of investigation submitted by the appointed contractor to the DCC Assistant Archaeology Officer for approval.

4.17. A survey grid of 30m x 30m must be placed across the site and must be accurately tied in to local topographic features and overlaid onto an appropriate OS map base. The grid tie-in information should be made available in, or with, the final report so that the location plan can be related to the OS National Grid. Once the survey is complete any markers used must be removed from site. The results, including archaeological interpretation of the data must be set out in a report format with maps and must be available to aid placement of any subsequent evaluation trenches which may be required at a later date.

4.18. Depending on the results of this assessment and evaluation phase, further works may be required to mitigate the impact of the development on any archaeological remains. This will be dealt with by a separate brief should this be required.

4.19. This brief does not constitute the "written scheme of investigation" which must be submitted by the appointed contractor for approval by Durham County Council Archaeology Section prior to work commencing.

#### **5.0 OASIS**

5.1 The Durham County Council Archaeology Section supports the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.

5.2 The archaeological contractor must therefore complete the online OASIS form at



<http://ads.ahds.ac.uk/project/oasis/> within 3 months of completion of the work. Contractors are advised to ensure that adequate time and costings are built into their tenders to allow the forms to be filled in.

5.3 Technical advice should be sought in the first instance from OASIS ([oasis@ads.ahds.ac.uk](mailto:oasis@ads.ahds.ac.uk)) and not from Durham County Council Archaeology Section.

5.4 Once a report has become a public document by submission to or incorporation into the HER, Durham County Council Archaeology Section will validate the OASIS form thus placing the information into the public domain on the OASIS website.

5.5 The archaeological consultant or contractor must indicate that they agree to this procedure within the specification/project design/written scheme of investigation submitted to Durham County Council Archaeology Section for approval

## **6.0 The Report**

6.1 This report may be first stage of a phased programme of archaeological works. The client has commissioned it to be submitted in support of the planning process and as such it will be used by the local planning authority to help determine the planning permission. Based on the results of the assessment and evaluation further archaeological works may be required.

6.2 The assessment/evaluation report must include the following:

- executive summary
- a site location plan with NGR references at an appropriate scale to show both the site location within the wider area and specifically/detailed site location
- planning application reference number
- OASIS reference number
- Unique Site code
- contractor's details including dates work carried out
- nature and extent of the proposed development, including developer/client details
- description of the site location and geology
- discussion of planning policies and constraints which may have an impact on development in relation to the historic environment
- discussion of the known and potential archaeological sites within the development area and as indicated above
- discussion of potential impacts of the development on known and potential archaeological sites
- discussion on the impact on the settings of listed buildings, scheduled ancient monuments, historic parks and gardens, and historic battlefields
- suggestions regarding the need for, and scope of, any further archaeological work
- list of sources consulted
- copies of historical maps cross-referenced to the text

### **Regeneration & Economic Development: Design & Historic Environment 6**

- gazetteer of all known and potential all archaeological sites including listed buildings, scheduled ancient monuments, historic parks and gardens, and historic battlefields within the development and the immediate environs. This must be cross referenced to a map
- all aerial photographs within the detailed study area and immediate environs, quoting the reference number, date, and cross-referenced to the gazetteer where appropriate
- photographs, maps and plans to illustrate the report as necessary
- discussion of potential impacts of the development on known and potential archaeological sites
- suggestions regarding the need for, and scope of, any further archaeological work
- copies of historical maps cross-referenced to the text
- geophysical technical and processing information
- geophysical results
- geophysical discussion and interpretation
- a plot of the raw geophysical data (to an appropriate scale)
- geophysical plots must show the location of modern intrusions (i.e. services etc)
- geophysical X-Y trace and greyscale and/or dot density plots (to an appropriate scale)
- geophysical interpretative feature map (to an appropriate scale)
- additional plans/map extracts to display noted and recorded archaeological features as appropriate
- suggestions regarding the need for, and scope of, any further archaeological work, including

publication

- references
- bibliography

6.3 The report must be presented in an ordered state and contained within a protective cover/sleeve or

bound in some fashion (loose-leaf presentation is unacceptable). The report must contain a title

page listing site/development name, district and County together with a general NGR, the name of

the archaeological contractor and the developer or commissioning agent, as well as the OASIS

reference number. The report must be page numbered and supplemented with sections and paragraph numbering for ease of reference. All maps, figures and photographs must be cross referenced to the text.

### **7.0 Publication**

7.1 All assessments, evaluations and watching briefs which do not progress to further excavation and research (with the relevant post-excavation and publication scheme and costs), should have a time and budget allocation identified for publication. This must be to a minimum standard to include a summary of the work, findings, dates, illustrations and photographs and references to where the archive is lodged.

7.2 Editors of regional journals, either the *Durham Archaeological Journal* or *Archaeologia Aeliana* should be contacted for information on outline publication costs, fuller figures may be worked out on completion of the watching brief. As the final note is largely unpredictable in advance a contingency sum should be set aside at the outset of work in the tender.

### **8.0 The Tender**

8.1 Tenders for the work must include the following information set out in a clearly understood fashion.

8.2 Brief details of the organisation and the number of staff who are proposing to carry out the work including any

8.3 The earliest date at which the work can be commenced and the amount of notice required to initiate the assessment and geophysical survey.

8.4 Statement agreeing to complete the OASIS forms on completion of the assessment.

8.5 An estimate of how long the work will take broken down by time and cost in terms of data collection and report production. The tender should include a breakdown of costs attributable to:

- travelling and subsistence
- assessment research
- fieldwork
- report production
- administration
- archiving
- other

### **9.0 Submission of Report**

9.1 A final bound copy and a digital PDF copy of the report must be sent to the Archaeology Section, Durham County Council for inclusion into the County Durham Archaeological Archive (HER):

The County Archaeology Officer  
Archaeology Section  
Design & Historic Environment Team  
Regeneration & Economic Development  
Durham County Council  
The Rivergreen Centre  
Aykley Heads  
Durham  
DH1 5TS.

9.2 Additionally three bound copies of the report must be submitted to the client for planning purposes (or more if required by client).

### **10.0 The Archive**

10.1 The site archive comprising the original paper records and plans, photographs, negatives etc, must be deposited in the appropriate museum at the completion of post-

excavation. This must be in accordance with the Durham County Council Archaeological Archive policy, a guidance note on which can be obtained from the Durham County Council Archaeology Service.

**Regeneration & Economic Development: Design & Historic Environment 8**

**11.0 Bibliography**

Archaeological Archives Forum 2007 *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation.*

Durham County Council 2008 *2008-09 HER Charging Scheme* English Heritage 1991 *Management of Archaeological Projects 2*

2002 *Guidelines for Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation*

2008 *Geophysical Survey in Archaeological Field Evaluation* Institute of Field Archaeologists 1999 *Standard and Guidance: Archaeological Evaluation*

2001 *Standard and Guidance: Archaeological Desk-Based Assessment*

Petts, D and C Gerrard 2006 *Shared Visions: The North East Regional Research Framework for the Historic Environment.* Durham County Council, Durham.

United Kingdom Institute of Conservation 1990 *Guidelines for the Preparation of Excavation Archives for long-term storage*

17<sup>th</sup> September 2009

L. White

Assistant Archaeology Officer

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## **Appendix 2: Historic Environment Record**

*The tables include sites recorded within the vicinity of the study area (within an approximate radius of 2km from the site).*

### ***Historic Environment Record***

<b>PRN</b>	<b>Description</b>	<b>Date</b>
23	Ridge and furrow earthworks	Medieval
339	Great Isle Farm Earthworks	Roman/Medieval
408	Enclosure	Prehistoric
1494	Enclosure	Uncertain
1495	Ditch on arial photograph	Uncertain
1496	Enclosure on arial photograph	Iron Age
1497	Woodham deserted medieval village	Medieval
3136	Chester-le-Street to Aycliffe Roman road	Roman
7813	Ricknall Deserted Medieval Village	Medieval
9629	Earthwork mounds	unknown
9630	Sub-rectangular building platform	Modern

### ***Listed buildings***

<b>PRN</b>	<b>Description</b>	<b>Grade</b>
337	Medieval Chapel	II
338	Fortified Manor House	II
12703	Former Chapel, Great Isle Farm	II
12704	Stable with loft	II
12710	Farmhouse and yard wall	II
12725	Railway Bridge	II
12778	Barn	II

### ***Previous archaeological work***

<b>PRN</b>	<b>Description</b>
4781	A167(T) Cock O' the North to Aycliffe desk-based assessment
5868	Newton Aycliffe desk-based assessment
6711	Chilton Bypass desk-based assessment
9628	Woodham Bridge desk-based assessment

### **Appendix 3: Geotechnical investigation results summary conducted by 3e Consulting Engineers (Brock 2009)**

<b>Site investigation</b>	<p>The investigation has involved:</p> <ul style="list-style-type: none"> <li>• A review of a phase I assessment report prepared in June 2009.</li> <li>• 15 trial pits to a maximum depth of 3 metres.</li> <li>• 6 trenches to a maximum depth of 2.3 metres.</li> <li>• Geotechnical and contamination related testing of soils.</li> </ul>
<b>Previous Reports</b>	<p>A phase I geo-environmental assessment report was prepared by 3e Consulting Engineers in June 2009 and should be read in conjunction with this report.</p>
<b>Ground conditions</b>	<p>Localised made ground, up to 1.1 metres thick, comprising reworked, brown gravelly clay with inclusions of demolition rubble and occasional ash in the south and orangey brown sandy, very gravelly clay with gravel size sandstone, occasional brick and mixed aggregates in the north. A mound of brown sandy, very gravelly clay with gravel size brick, mixed aggregates and concrete with occasional glass, plastic, timber and wire is present in the south eastern parts.</p> <p>Topsoil between 0.1 and 0.4 metres thick is present in all areas except around the existing floor slab.</p> <p>Beneath the made ground and topsoil, natural soils comprise firm to stiff light brown sandy clay to depths of between approximately 0.5 and 1 metre. This is underlain by stiff to very stiff dark brown mottled grey slightly sandy gravelly clay and proved to the base of each exploratory hole to a maximum depth of 3 metres.</p>
<b>Groundwater</b>	<ul style="list-style-type: none"> <li>• Groundwater was not encountered during the fieldwork.</li> </ul>
<b>Contamination</b>	<ul style="list-style-type: none"> <li>• With the exception of occasional ashy made ground in the southern parts of the site and asbestos containing materials within the demolition rubble and adhered to the base of the existing floor slab, no visual or olfactory evidence of contamination was encountered during the investigation.</li> <li>• Contamination screening of topsoil, made ground and natural soils indicate no determinands exceeding the generic assessment criteria for the main development. However, within the proposed walled garden, vanadium exceeds the generic assessment criteria. Laboratory testing has confirmed the presence of chrysotile asbestos within the demolition rubble and adhered to the base of the floor slab.</li> </ul>
<b>Appraisal</b>	<ul style="list-style-type: none"> <li>• Remediation – Across the main development, remediation is not considered necessary. However, within the walled garden, a 600mm clean cover should be incorporated into areas proposed for growing vegetables for human consumption. Further assessment of the asbestos present in the south of the site and possible disposal offsite.</li> <li>• Disposal of Waste Materials – Preliminary assessment suggests that any waste materials generated would be classed as inert. However, it should be borne in mind that topsoil and asbestos containing materials can not be disposed of to an inert landfill and will require disposal to appropriate facilities.</li> <li>• Water Supply Pipes – Chemical analysis suggest that standard potable supplies can be used.</li> <li>• Mining – The site is unaffected by coal mining.</li> <li>• Foundations – Traditional strip and pad foundations are appropriate and should fully penetrate any made ground to be placed in the stiff clays at a minimum depth of 0.8 metre. An allowable bearing capacity of 150kN/m<sup>2</sup> is considered appropriate and will limit settlements to less than 25mm.</li> <li>• Floor slabs – Ground bearing floor slabs can be used, however, some limited ground improvements will be required in areas of deeper made ground and relic foundations.</li> <li>• Gas precautions – No specialist gas protection measures are required.</li> <li>• Sulphate attack on buried concrete – Buried concrete should be designed to BRE Special Digest 1:2005 Design Sulphate Class DS-1 with an ACEC site classification AC-1s.</li> </ul>



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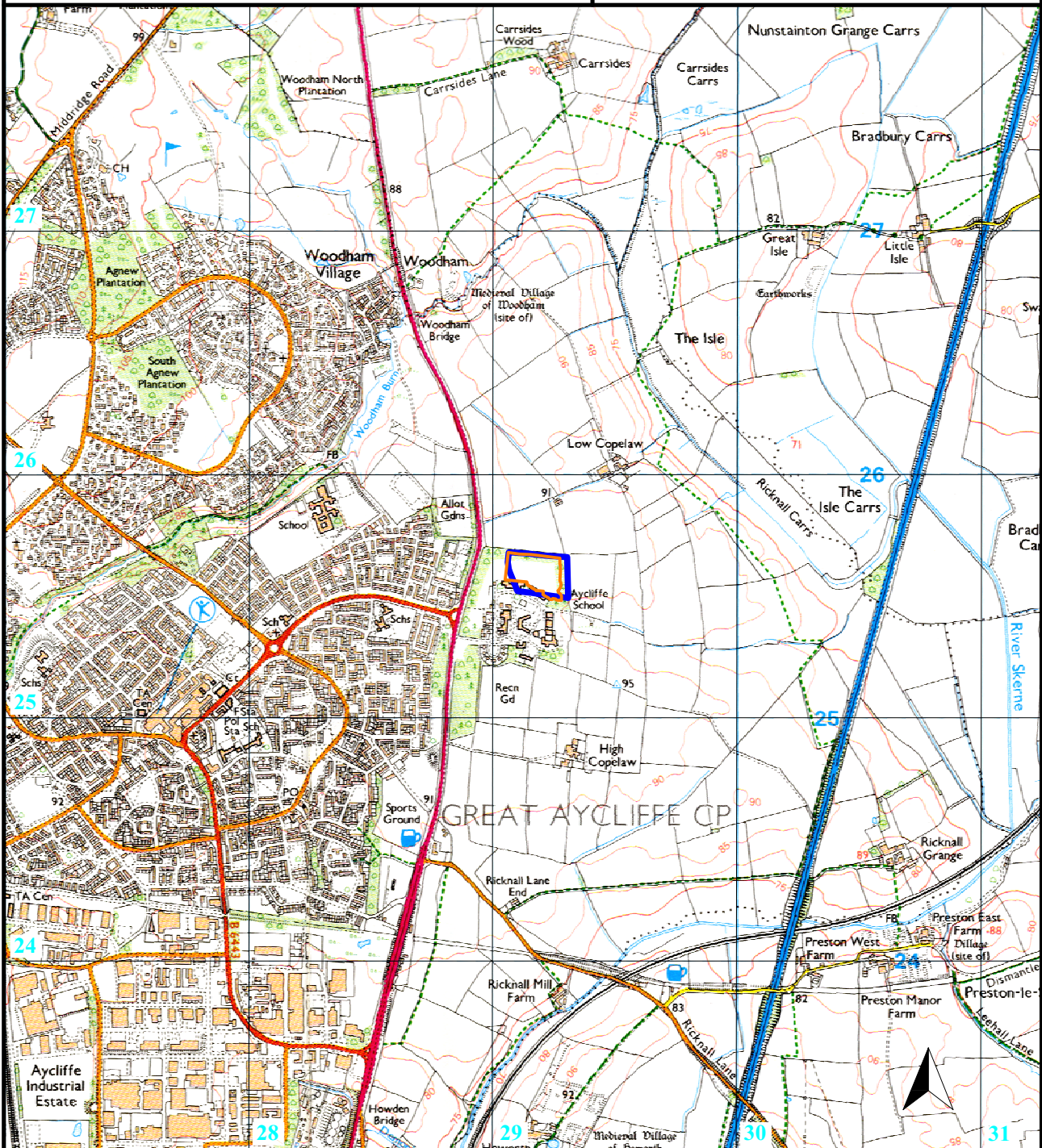
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and geophysical survey

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Figure 1 Site location

on behalf of  
**Turner & Townsend**

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proposed development area



survey area



scale 1:25 000 - for A4 plot



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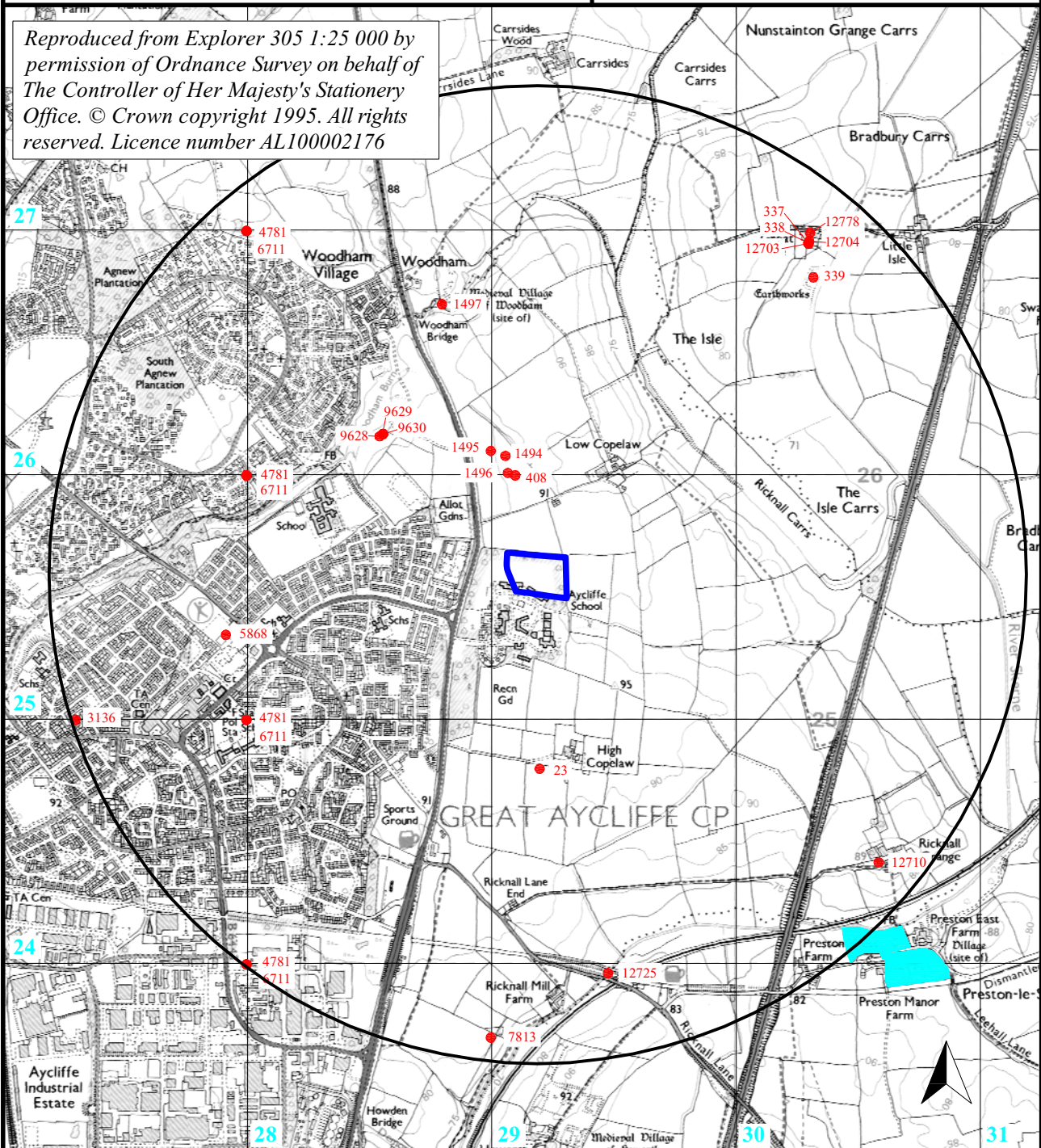
Figure 2 *Historic Environment Record*

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proposed development area



HER sites



Scheduled Ancient Monument



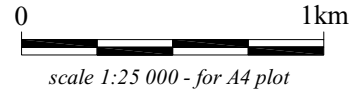
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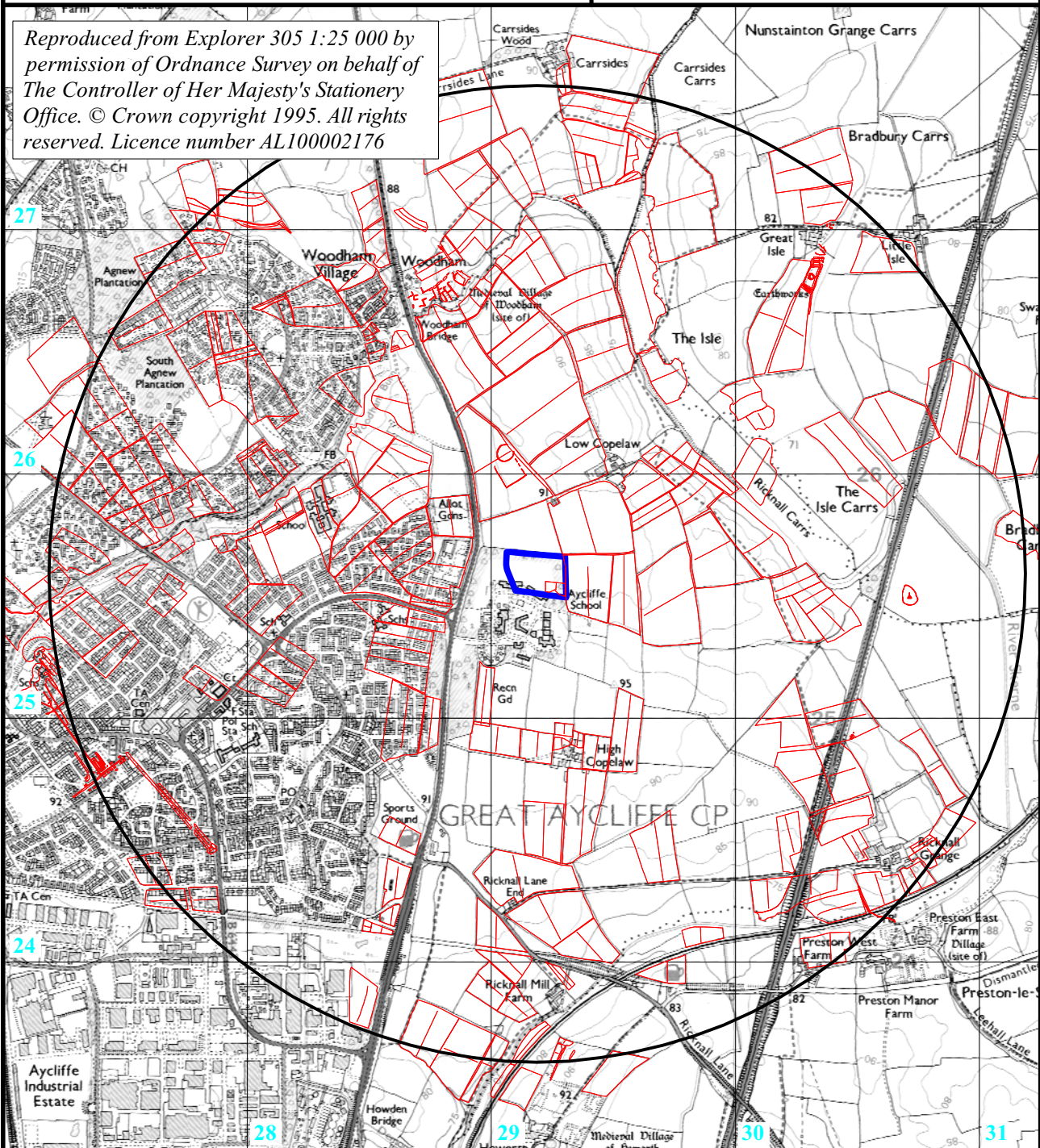
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Figure 3 Aerial photograph features

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proposed development area



aerial photograph features







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Figure 4 Extract from a map of County Durham of 1746

on behalf of  
**Turner & Townsend**

not to scale



approximate location of  
proposed development area





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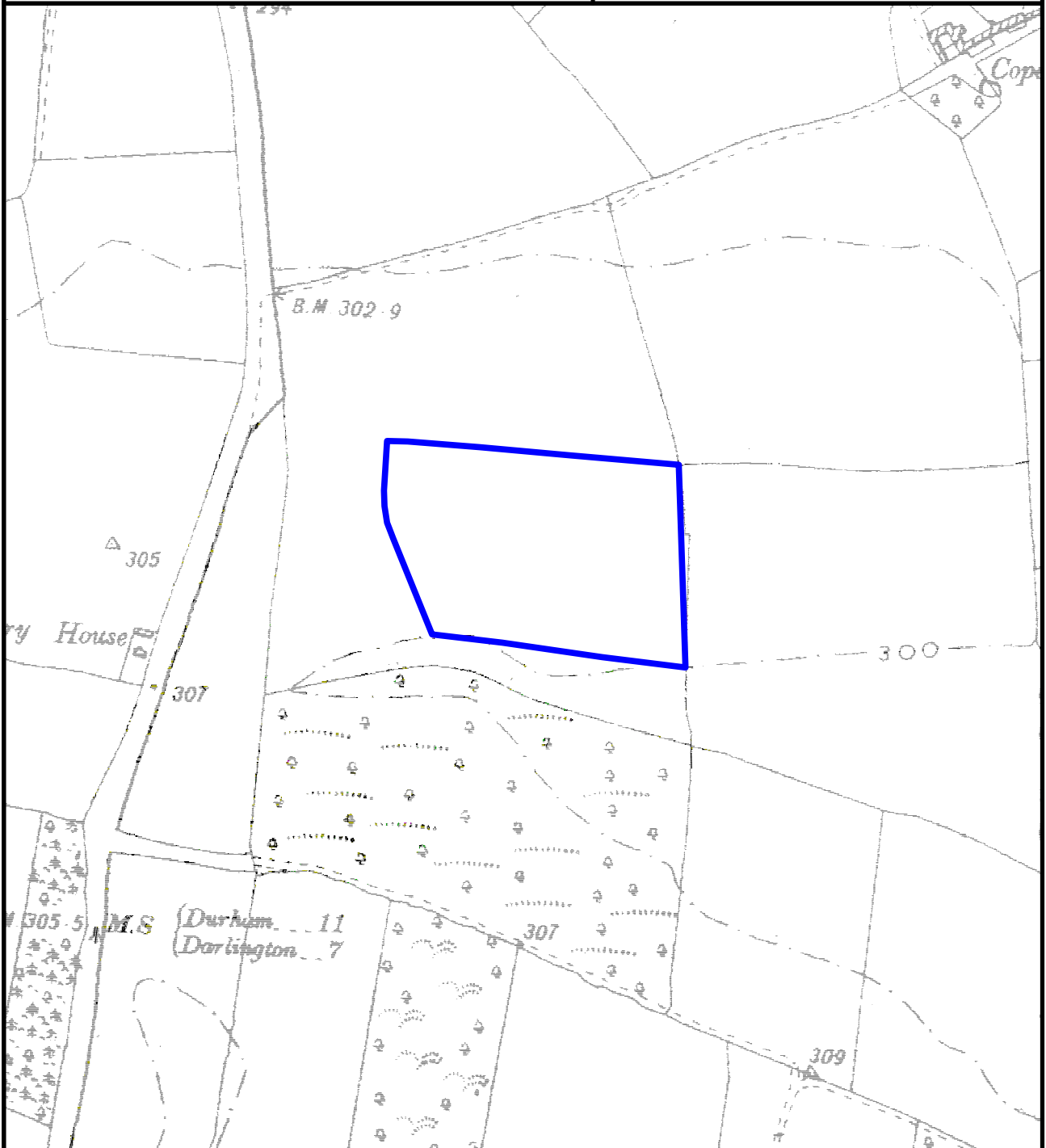
Figure 5

Extract from the Ordnance Survey 2nd edition map of 1897

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scale 1:5000 - for A4 plot



proposed development area





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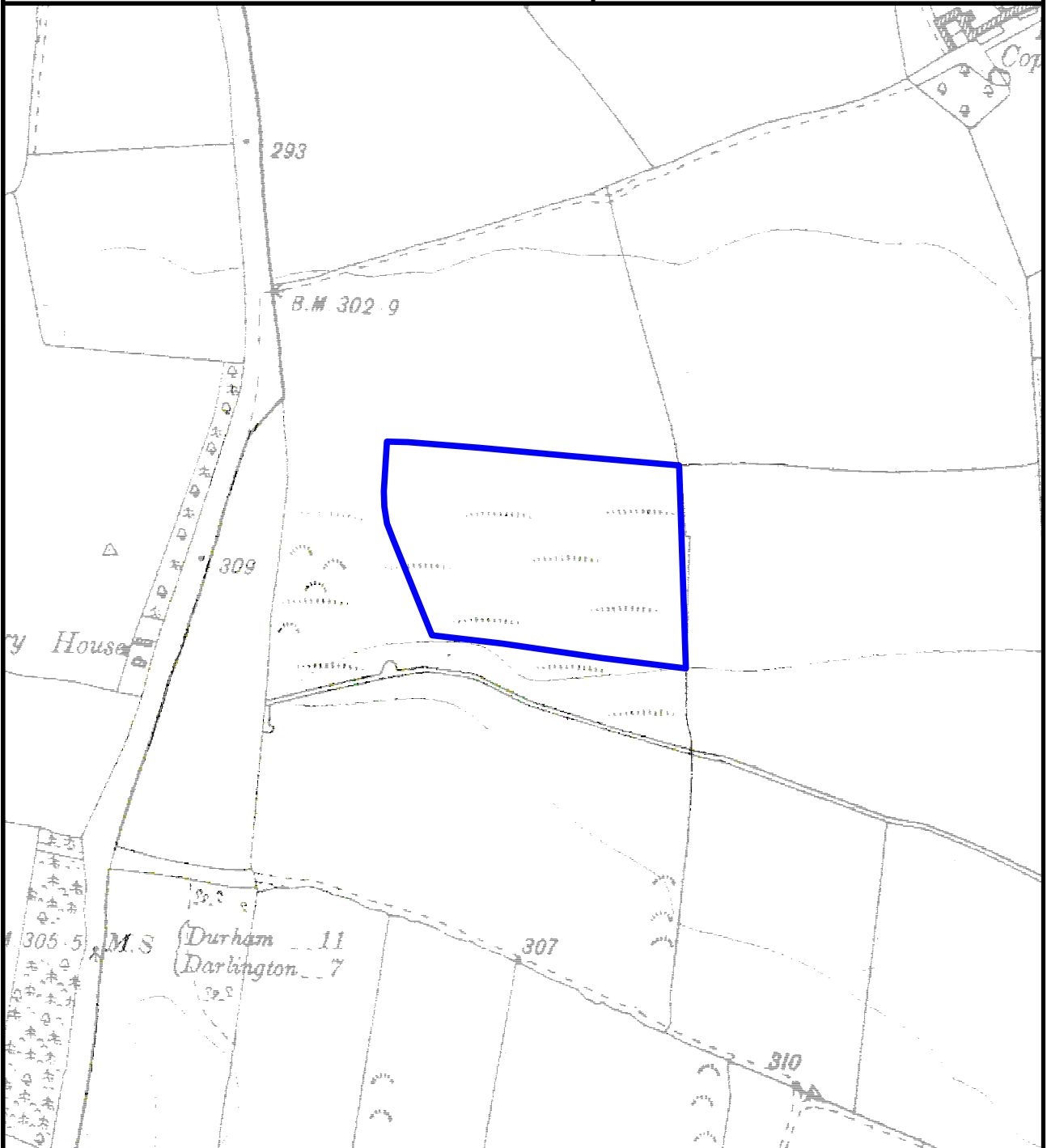
Figure 6

Extract from the Ordnance Survey 3rd edition map of 1919

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scale 1:5000 - for A4 plot



proposed development area





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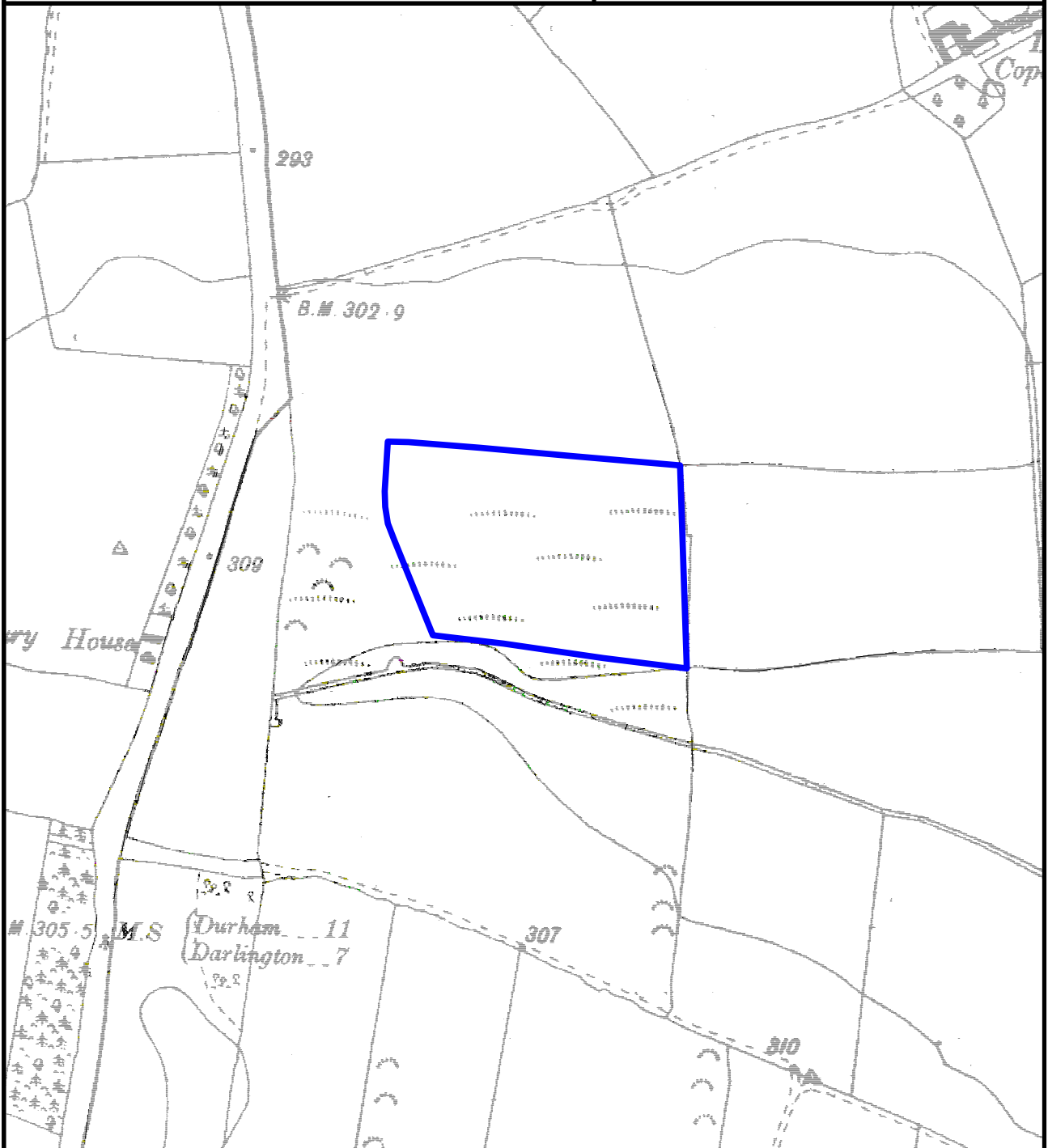
Figure 7

Extract from the Ordnance Survey 4th edition map of 1948

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scale 1:5000 - for A4 plot



proposed development area





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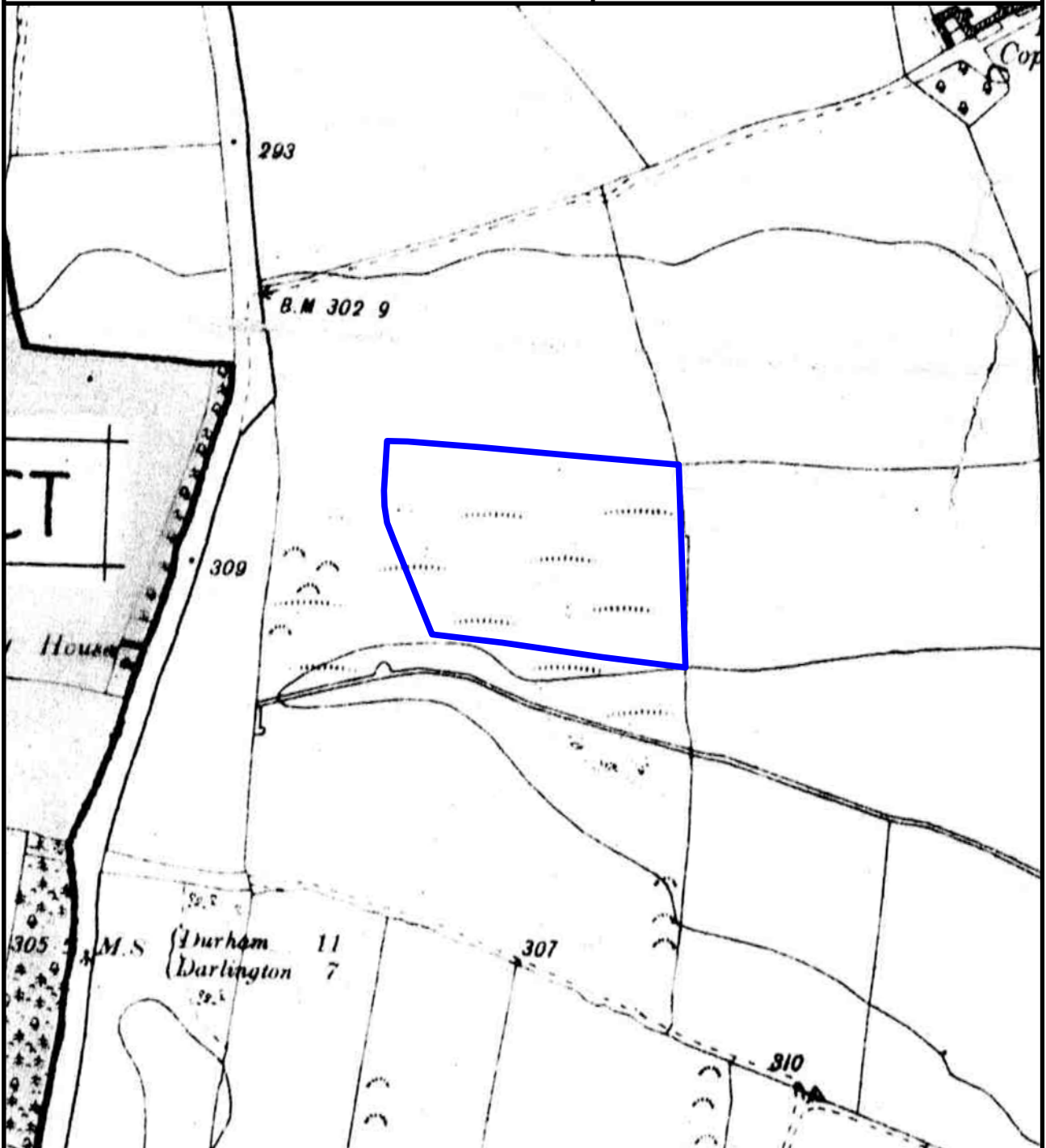
Figure 8

Extract from the Parish of Great Aycliffe map of 1952

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scale 1:5000 - for A4 plot



proposed development area





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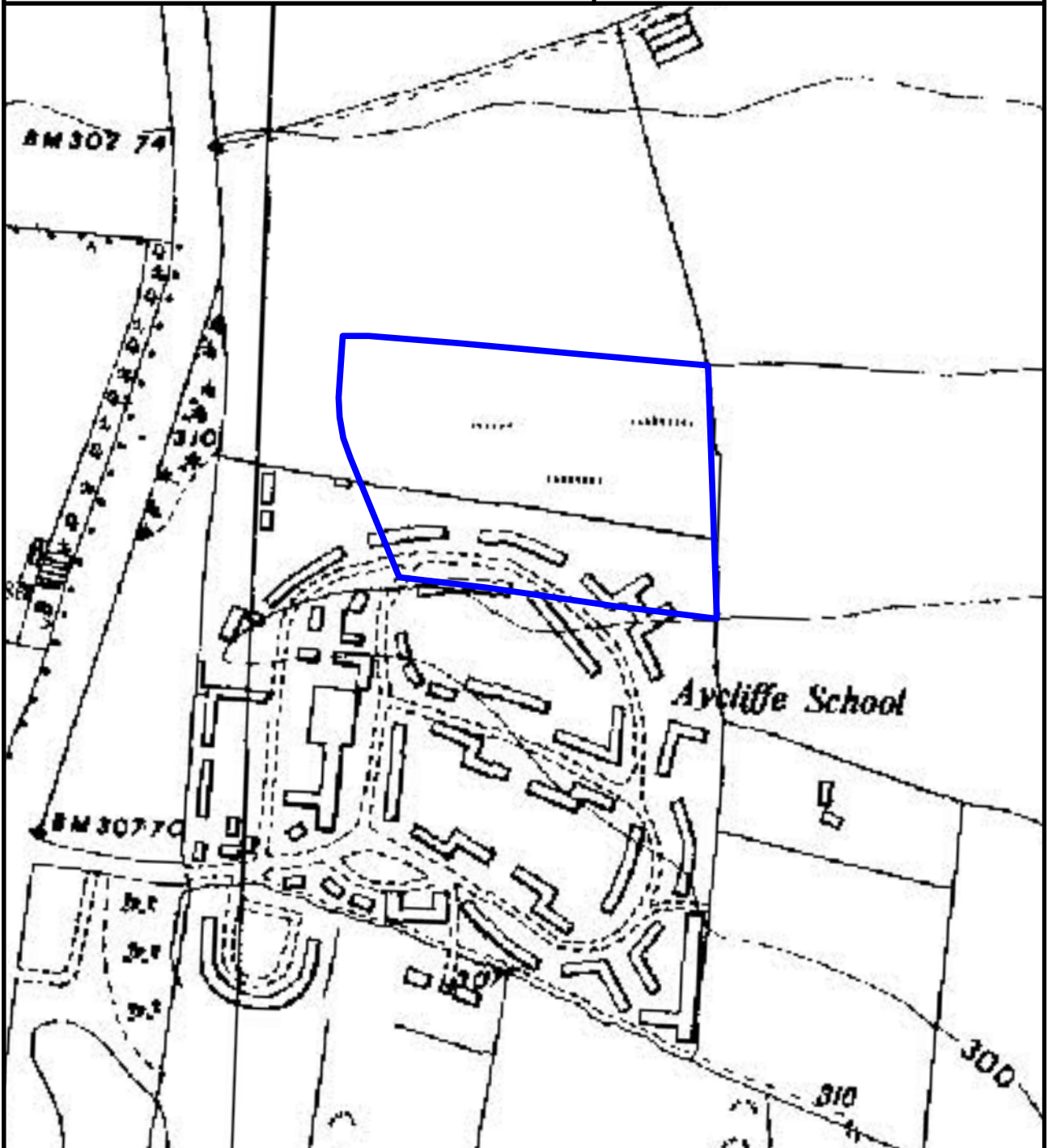
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Figure 9 Extract from the Ordnance Survey map of 1954

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scale 1:4000 - for A4 plot



proposed development area





**Figure 10**  
General view of the proposed development area, looking north-west



**Figure 11**  
General view across the proposed development area showing the bank left by demolition rubble (left hand side of photo), looking west



**Figure 12**  
1960's building foundations, looking south-east



**Figure 13**  
Derelict building, looking south-west



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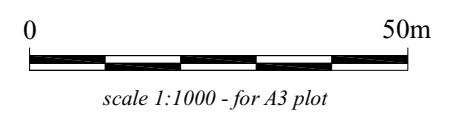
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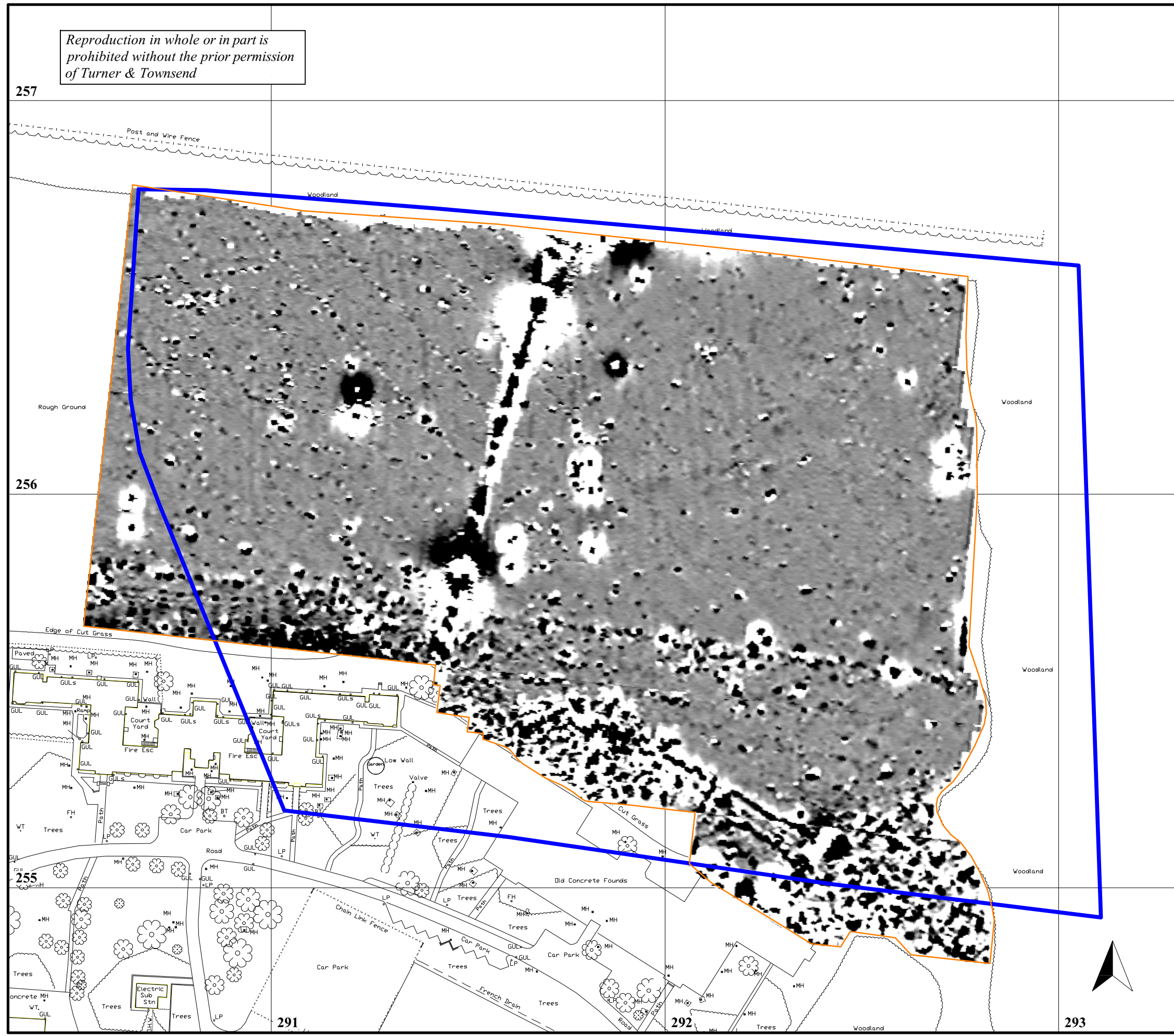
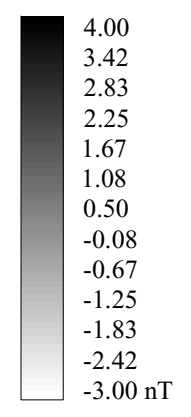
Figure 14

Geomagnetic survey results

on behalf of Turner & Townsend



- outline of survey area
proposed development area



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



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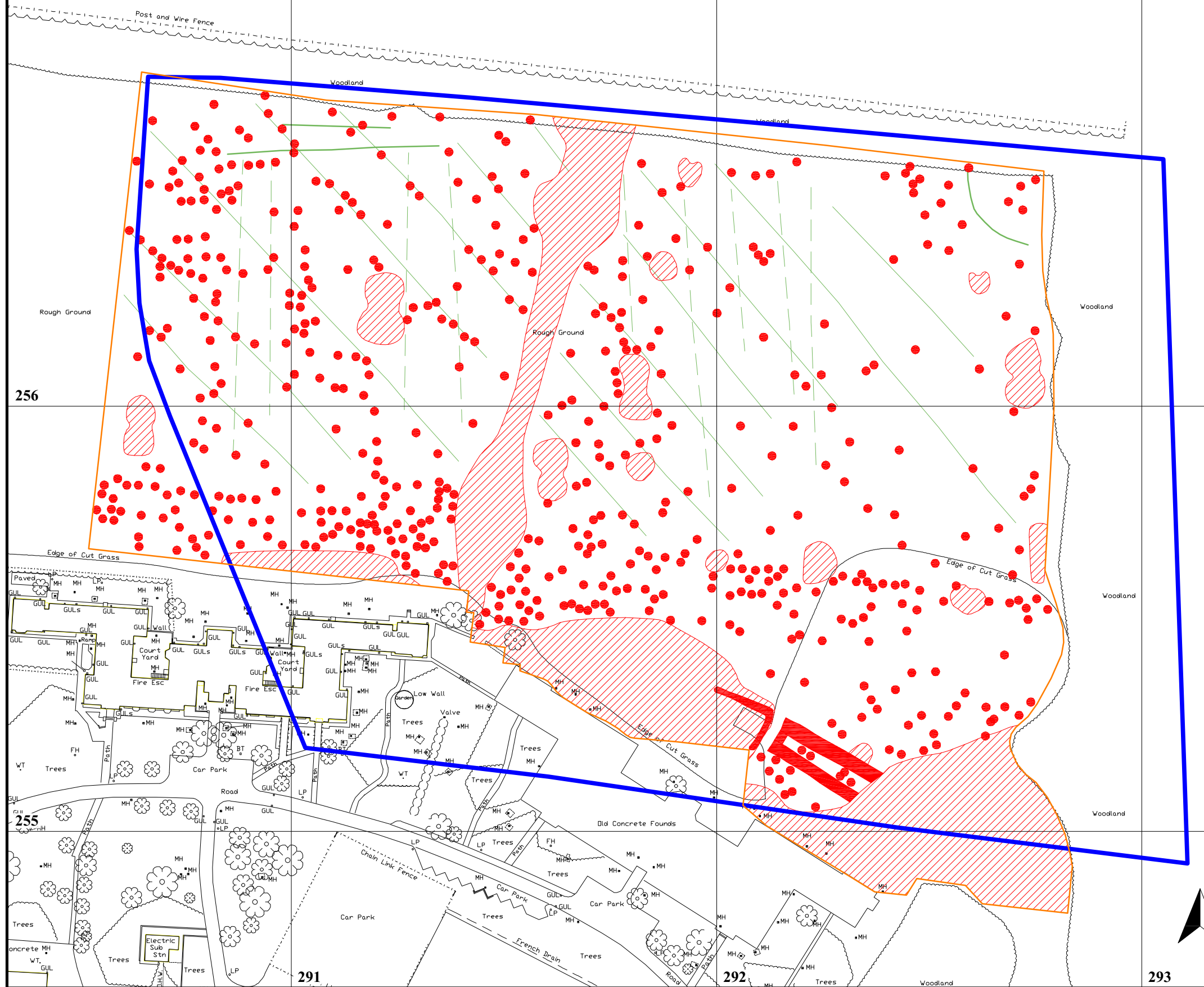
Figure 15

Geophysical interpretation

on behalf of  
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scale 1:1000 - for A3 plot

-  outline of survey area
-  proposed development area
-  positive magnetic anomalies
-  dipolar magnetic anomalies



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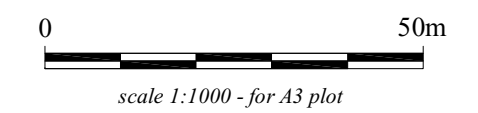
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







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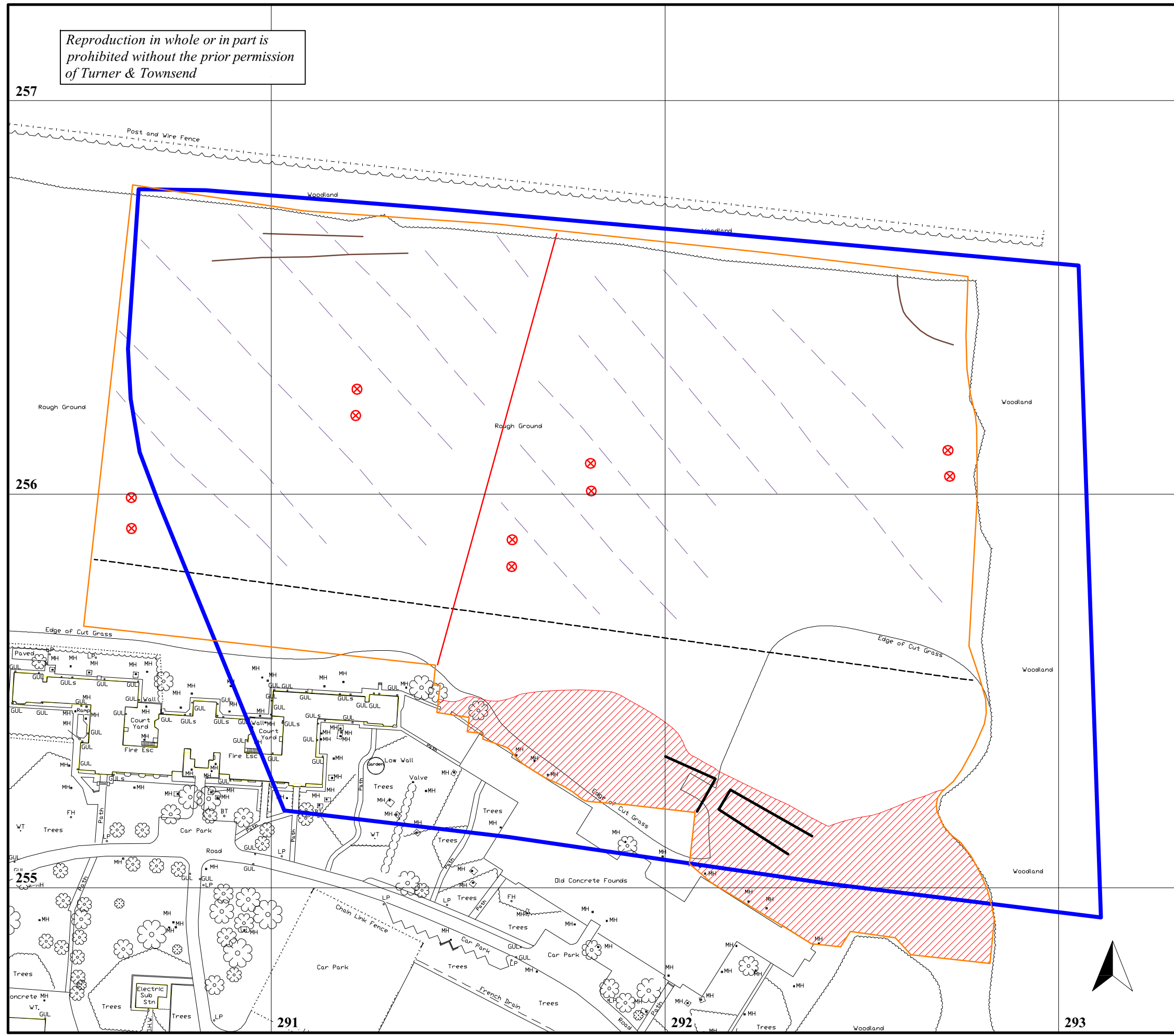
Figure 16

Archaeological interpretation of  
geophysical survey

on behalf of  
**Turner & Townsend**



-  outline of survey area
-  proposed development area
-  building foundations
-  soil-filled features
-  high voltage cable
-  demolition rubble
-  land drains
-  goal posts
-  old field boundary



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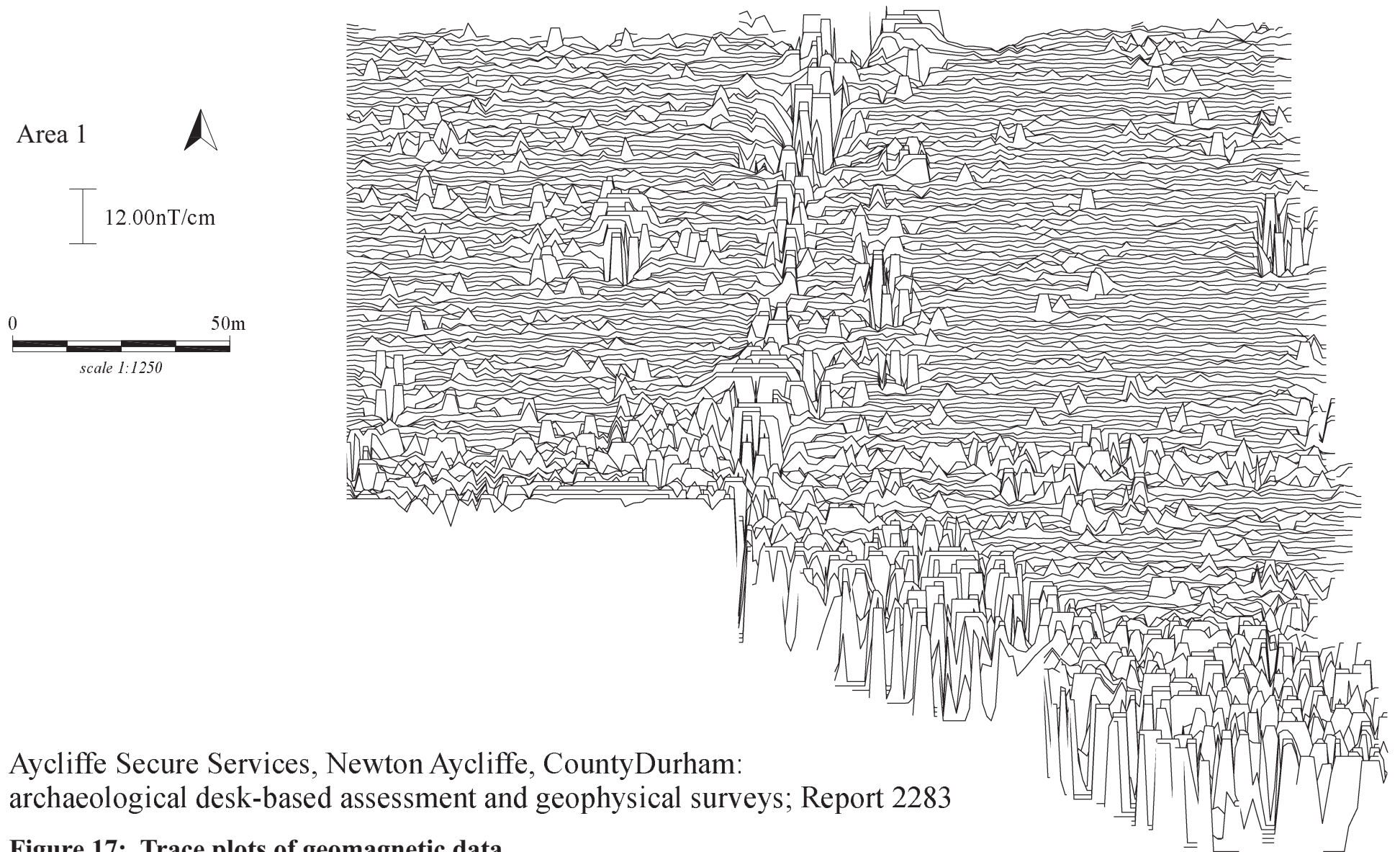
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**Figure 17: Trace plots of geomagnetic data**