YORK ARCHAEOLOGICAL TRUST

Desk-Based Assessment and Geophysical Survey

Land at Ashfield Estate, Tadcaster Road, York

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YAT Desk-Based Assessment Report 2018/100 July 2018

YORK ARCHAEOLOGICAL TRUST

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Abbreviations

AOD – above Ordnance Datum

BGL – below ground level

YAT – York Archaeological Trust

NON-TECHNICAL SUMMARY

Archaeological investigations in the vicinity of land at Ashfield Estate, Tadcaster Road, demonstrate the potential of archaeological activity from the Roman to post-medieval periods. Remains of medieval ridge and furrow are likely to be present across the entire study area, and there is also the potential of encountering post-medieval structures within the centre of the southern study area.

KEY PROJECT INFORMATION

Project Name	Land at Ashfield Estate, Tadcaster Road, York
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1 INTRODUCTION

York Archaeological Trust was commissioned by City of York Council to undertake an archaeological desk-based assessment and geophysical survey of land at Ashfield Estate, Tadcaster Road, York prior to development for football playing fields (Figure 1). This was carried out during July 2018.

2 METHODOLOGY

The archaeological sites summarised in Section 4 and Table 1 will provide the data for this assessment. A walkover survey of the site was carried out on the 25th of July 2018.

The bulk of the data was collated using the YAT site gazetteer, the York Historic Environment Record (HER) and the York Royal Commission on Historic Monuments Survey (RCHMY 1 1962; RCHMY 3, 1972).

3 LOCATION, GEOLOGY & TOPOGRAPHY

3.1 Location and Topography

The proposed development is located to the south-west of York, approximately 4km south-west of York city centre. It consists of three fields and lies between the A64 and the A1036, covering an area of approximately 19.2 acres located at NGR SE 58203 48169.

The site is bounded by a field to the north-east, the A1036 and its slip road to the north-west and south, and to the east and south-east by the A64. The topography of the site lies between 10m AOD in the north and 11m in the south.

3.2 Geology

The underlying bedrock is sandstone from the Sherwood group formed approximately 237 to 272 million years ago in the Triassic and Permian periods, when the local environment was dominated by rivers. Above this, superficial deposits of York Moraine - Sand, Clay, Gravel are present in the north-west of the site, while to the south-east are deposits of Elvington Glaciolacustrine Formation - Clay, Silt (www.bgs.ac.uk – accessed 19/07/18). Both of these superficial deposits were formed up to 2 million years ago in the Quaternary Period, when the local environment was dominated by ice age conditions.

4 PLANNING AND LEGISLATIVE FRAMEWORK

4.1 National Policy

In March 2012 the Government published the National Planning Policy Framework (NPPF) in an effort to make the overall planning system less complex and more accessible. In this document Chapter 12 titled “Conserving and enhancing the historic environment” deals with archaeological and historic issues. This section supersedes the previous planning legislation, Planning Policy Statement 5: “Planning for the Historic Environment” (PPS5). However, in a revision note published by English Heritage in June 2012 it is stated that “the PPS5 Practice Guide remains a valid and Government endorsed document pending the results of a review of guidance supporting national planning policy”. It also states that “the policies in the NPPF are

very similar and the intent is the same, so the Practice Guide remains almost entirely relevant and useful in the application of the NPPF".

The relevant paragraphs of NPPF Chapter 12 are 126–141.

4.2 Local Planning Policy - The Local Plan

The 'Local Plan' for York sets strategic priorities for the whole of the city and forms the basis for planning decisions. It sets out the opportunities and policies on what will (or will not) be permitted and where, including new homes and businesses. In 2005 a draft Local Plan document was approved for development management purposes to inform planning decisions. City of York Council have since submitted a new City of York Local Plan to the Secretary of State for Housing Communities and Local Government on 25th May 2018. The new Local Plan will be fully compliant with the NPPF and other relevant statutes and once adopted, will determine how the city develops over the next 15 years.

5 DESIGNATIONS AND CONSTRAINTS

5.1 Scheduled Monuments

There are no scheduled monuments located within the boundary of the study area.

5.2 Listed Buildings

There are no listed buildings within the boundary of the study area. There are three listed buildings within a 1km radius of the site: Aldersyde Cottage (List Entry 1245577), Garth Cottage and Garth Mews (List Entry 1132494) and Bishopthorpe Garth (List Entry 1166773). These are listed in detail in Appendix 4.

5.3 Local Listings

Local Listings are not afforded the same protection as statutory listed buildings. However they aim to show important buildings usually nominated by local people and thus are usually discussed during the planning process.

The Heritage Protection White Paper, published in March 2007, endorses and recommends the production of Local Lists, indicating that "local designation provides a means for local communities to identify and to protect the buildings, sites and spaces that matter to them. It helps to build a sense of local identity and distinctiveness, a sense of history, place and belonging".

The Development Control Local Plan for York of 2005 contains a commitment by the Council to "develop and approve policy which will be supported by Supplementary Planning Guidance for a Local List". The commitment has been carried forward into the evolving Core Issues document of the Local Development Framework which will eventually replace the Local Plan.

Ashfield House at York Technical College, 185 Tadcaster Road and a group of cottages on Old Moor Lane are all on the Local List.

5.4 Battlefield Sites, Historic Parks and Gardens

There are no battlefield sites, historic parks or gardens listed within the study area.

6 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

6.1 Historical Background

Roman period

The site lies about 4 km to the south-west of the legionary fort and *colonia* of *Eboracum* (York), and approximately 10.2 km north-east of the settlement at *Calcaria* (Tadcaster), along the route of the main road linking the two (Site 3) (RCHME II 1962). Founded in the late 1st century AD, the legionary fortress at *Eboracum* provided accommodation for around 5,200 men from the Ninth legion and later from the Sixth *Victrix*. The settlement of *Calcaria* lay at the crossing of the River Wharfe by the road from *Eboracum,* which continued south to *Danum* (Doncaster).

Approximately 500m to the west of the study area lies Askham Bog, a survivor of the ancient fenlands of Yorkshire (Site 4). It occupies the site of an ancient lake, created by a retreating glacier 15,000 years ago. By the Roman period Askham Bog was used by local communities as a source of peat for fuel, creating a network of ditches probably used for peat extraction (Yorkshire Wildlife Trust).

Medieval period

During the medieval period the study area was situated about 4 km to the south-west of the medieval city of York and was agricultural land, probably used by the nearby villages of Bishopthorpe and Middlethorpe. The large amount of medieval ridge and furrow visible within and around the study area is a clear indicator of the agricultural nature of this area (Sites 18, 19 and 23 within the study area, Sites 5–49, 71–72 in the vicinity). The village of Bishopthorpe is to the south-east of the study area and is mentioned in the Domesday Book, where it is referred to as *Badetorps* (Open Domesday). In 1202 AD the Prior of St. Andrew's, Fishergate, constructed a church in the village, and by 1241 AD a manor house and chapel had been built next to the river by Archbishop Gray. This property was given to the Dean and Chapter of York Minster, ensuring it remained with successive Archbishops. Documentary evidence from 1275 AD names the village as *Biscupthorpe,* the earliest record of the name Bishopthorpe (Adams 2016). The village of Middlethorpe lies to the north-east of the study area. It is recorded as *Torp* in the Domesday Book, with two lords listed post-Conquest: Richard son of Herfast, and Robert Malet.

Post-medieval period

In the post-medieval period the study area remained relatively unchanged until the 18th–19th centuries, continuing as agricultural land for the surrounding villages. Large scale parliamentary enclosure of this area began in the mid-18th century, with land around Bishopthorpe village to the south-east enclosed between 1757–1760 (Sites 55–58). During the early 19th century the lands around Askham, including the study area, were enclosed into medium sized fields defined by straight hedges (Sites 52–54). Large areas of late post-medieval woodland were established in Askham Bog, which consisted of blocks of broad-leafed plantation (Sites 50–51).

It was not until the 19th century that any major change occurred within the study area. In October 1835 the York & North Midland Railway was formed to connect York to London, by building a line from York to a junction on the planned North Midland Railway at Normanton.

The line of this railway was constructed in the later 19th century and cut across the study area from south-east to north-west, separating the north-east corner from the rest of the area. To the west of the study area lies the route of the former Derwent Valley Light Railway and the York & North Midland Railway, constructed during the 19th century (Site 59). This is now partly used as a cycle track.

There are numerous post-medieval buildings within the HER search radius of the study area. Middlethorpe Grange, a late 17th century grange, lies approximately 500m to the east (Site 60). The sites of two 19th century wind pumps lie approximately 700m to the north and north-west of the study area (Sites 61–62), and four 19th century cottages are also within the vicinity (Sites 63–66).

Modern period

During the 20th century, the improvement of the fields in this area continued. Former medieval strip fields, which had been enclosed during the 18th century, were developed into larger irregular fields, defined by hedgerows (Sites 67–70). Approximately 600m to the east of the study area are Bishopthorpe Garth, Garth Cottage and Garth Mews (Sites 77–78). Bishopthorpe Garth is a listed building built by Walter Brierley in 1908, with the cottage and mews the gatehouses to the main house.

York College, and its grounds, were constructed on the northern side of Sim Balk Lane in the mid-20th century (Site 73), and the construction of the modern A64 road junction forming the southern boundary of the study area completely changed the character of the landscape in this area (Sites 75–76).

6.2 Summary of archaeological investigations

Below is a summary of the relevant archaeological investigations that have been carried out within the area of the proposed development.

An archaeological evaluation comprising 94 trenches was carried out on land south of Moor Lane, approximately 600m north-west of the study area (Site 1). Two separate areas of enclosures dating to the Later Iron Age/Romano-British period were found within the site, as well as other undated linear features, possibly a system of field enclosures. The archaeologically significant activity appeared to be constrained to the areas of higher ground, with lower lying areas relating to agricultural activity. At the southern extent of the site the trenches identified evidence relating to the formation of the Askham Bog glacial lake and raised mire sequence.

Further evidence of potential Romano-British activity was revealed at 187 Tadcaster Road, mainly in the form of ditches (Site 2). Ditch 2005 may represent the south-east ditch of the *Eboracum* to *Calcaria* road that lies under the present Tadcaster Road, and further ditches may represent a field boundary, perpendicular to the road. The lack of finds in these features indicates that the land alongside this stretch of the Roman road was not used as settlement or cemetery, rather it was farmland.

A geophysical survey of land east of Tadcaster Road returned results associated with existing landfill and soil disturbances (Site 79). These masked earlier land uses which included an area of well preserved ridge and furrow and a faint linear feature that may represent a ditch that underlies the ridge and furrow.

Aerial photographs north of Sim Balk Lane show linear features and possible pits and circular enclosures, but these are undated and have not been investigated further (Sites 80–82).

6.3 Historic map analysis

The 1851 Ordnance Survey map shows the study area prior to the construction of the railway line (Figure 4). The study area is comprised of seven small fields, a result of the 18th–19th century enclosures, with a barn marked close to the centre of the southern area. There is possibly a small enclosure or building south of the barn, but no further information is given.

By the 1891 Ordnance Survey map, the study area has been bisected by the North Eastern Railway Line (Figure 5). The study area is still comprised of the small 18th–19th century enclosed fields. In the southern part of the study area, the barn is still present and an L-shaped building has been built in the centre. Several ponds have also been marked in the southern study area. The study area to the north of the railway line is comprised of one field with no features or buildings marked within it.

The study area remained the same throughout the early 20th century, with the exception of the barn and L-shaped building appearing to have been demolished by the 1930 Ordnance Survey map (Figures 6–7).

6.4 Geophysical survey

A geophysical survey of the study area was undertaken by Magnitude Surveys Ltd on the 12th July 2018 (Cantarano 2018) (Appendix 5). Anomalies related to agriculture were seen in the form of ploughing trends and former boundaries. The two post-medieval buildings seen on the Ordnance Survey maps were detected as two dense clusters of magnetic disturbance, while a strong ferrous response between the two study areas relates to the former North Eastern Railway Line. A number of anomalies were marked as undetermined, as their origin is ambiguous.

7 SITE VISIT

A site visit was undertaken by the author on 25th July 2018. Visibility was good and the weather conditions were dry, with the fields parched from lack of rain.

The proposed study area is bounded by a field to the north-east, the A1036 and its slip road to the north-west and south, and to the east and south-east by the A64. The boundaries are all marked by fences, trees and hedges. The fields are currently grassed. No remaining ridge and furrow were present in either field, presumably ploughed away. No evidence of the ponds marked on modern maps was visible, but the areas were inaccessible due to nettles and trees.

The site is gently undulating in the southern study area, rising up towards the north-west; whereas the field to the north-west of the old railway line is generally flat.

8 CONCLUSION

The study area lies on the eastern side of the Roman road from York to Tadcaster. Archaeological investigations to the north and north-west of the site have found evidence of possible Romano-British settlement and field systems. There is therefore a **moderate** potential for Roman activity within the study area.

During the medieval period the study area was situated within an area of agricultural strip fields, of which the remains of ridge and furrow are numerous. Accordingly, there is **high** potential for the remains of medieval ridge and furrow field systems to be present within the study area, and **low** potential for any settlement activity.

The study area remained relatively unchanged throughout the post-medieval period, some of the main changes being the enclosure of the medieval strip fields, and the construction of the North Eastern Railway Line across the site, during the 19th century. However, the historic map analysis indicates that there may be the remains of two post-medieval buildings within the southern part of the study area, therefore there is **moderate** potential for post-medieval structural activity.

LIST OF SOURCES

British Geological Survey http://mapapps.bgs.ac.uk/geologyofbritain/home.html?

British History Online http://www.british-history.ac.uk/topographical-dict/england/pp96-100#h3-0016

Open Domesday http://opendomesday.org/place/SE5947/bishopthorpe/

York Archaeological Trust Archive Gazetteer www.yorkarchaeology.co.uk/gaz/index.htm

Yorkshire Wildlife Trust https://www.ywt.org.uk/nature-reserves/askham-bog-nature-reserve

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APPENDIX 1 GAZETTEER OF SITES

Table 1 Gazetteer of sites used in study

Number	Site Name	HER Code	Description
1	Moor Lane, York	EYO5899	Archaeological evaluation comprising 94 trenches on land south of Moor Lane, York. Two separate areas of enclosures dating to the Later Iron Age/Romano-British period were found within the site, both were well defined in extent. Other discoveries were primarily undated linear features; there was some suggestion in one area of the site that these might represent a system of field enclosures. Archaeologically significant activity appeared to be constrained to areas of higher – and presumably drier – ground, with lower lying areas containing only the undated features presumed to relate to agricultural activity. At the southern extent of the site the trial trenching also identified evidence relating to the formation of the Askham Bog glacial lake and raised mire sequence, including a thin horizon of organic material of potential Windermere Interstadial date. An Auger survey and palaeoenvironmental assessment was also carried out.
2	187 Tadcaster Road, York	EYO800	Observations were made in the northern part of the site (surface water drain and Trial Pit 101) of a sharp change from the topsoil to the underlying natural, which indicates that the subsoil and the original ploughsoil/topsoil had been removed. It is likely that this ground disturbance was associated with the building of The Wilberforce Home and the construction of the access road from Tadcaster Road, as prior to that the area had been open fields. This phenomenon would also explain the absence of any archaeological deposits overlying the natural subsoil in this part of the site, with the exception of cobble surface 2001. The cobble surface cannot be dated. Several features cut into the natural ground surface remain on the site. They are thought to have been ditches, perhaps Roman in date. It is possible that Ditch 2005 was the southeast ditch of the main Roman road that is known to lie under the present Tadcaster Road. Ditches 2002 and 2007 may have formed a single irregular feature, perhaps a field boundary, perpendicular to the road. The possible ditch 1012 in Trial Pit 104 could have been a field boundary parallel to the Roman road. The lack of finds of Roman date and the absence of features in Housing Block 6 indicates that the land alongside the Roman Road 10 hereabouts was not used as a settlement or as a cemetery, rather it was farmland. It apparently remained so until the 20th century.
3	Roman Road (RCHME Road 10)	MYO2033	Road approaching York from the south-west from Tadcaster, Calcaria. Thought to have been established soon after the Roman conquest in c.71.
4	Askham Bog	MYO2171	Askham Bog, is renowned for its ancient relict fen and bog flora and fauna, a rare and extraordinary combination. Askham Bog is a unique meeting place for wetland plants and animals from the south and east on one hand, and the

Number	Site Name	HER Code	Description
			north and west on the other. Some of the specialities include Great fen sedge, bog myrtle, water violet and gingerbread sedge. The quality of the Bog's insect life outshines even that of its plants. Some of the beetles and flies are found in very few other places, for example the marsh carpet and dentated pug moths. In the winter large flocks of redpoll and siskin join the woodcock and lesser spotted woodpeckers that breed in summer. The reserve is a good place to get a view of roe deer.
5	York	MYO2240	Medieval ridge and furrow
6	Bishopthorpe	MYO2309	Medieval ridge and furrow
7	Bishopthorpe	MYO2310	Medieval ridge and furrow
8	Bishopthorpe	MYO2311	Medieval ridge and furrow
9	Bishopthorpe	MYO2312	Medieval ridge and furrow
10	Bishopthorpe	MYO2313	Medieval ridge and furrow
11	Bishopthorpe	MYO2314	Medieval ridge and furrow
12	Bishopthorpe	MYO2315	Medieval ridge and furrow
13	Copmanthorpe	MYO2316	Medieval ridge and furrow
14	Copmanthorpe	MYO2317	Medieval ridge and furrow
15	Copmanthorpe	MYO2318	Medieval ridge and furrow
16	Askham Bryan	MYO2333	Medieval ridge and furrow
17	Askham Bryan	MYO2334	Medieval ridge and furrow
18	Askham Bryan	MYO2334	Medieval ridge and furrow
19	Askham Bryan	MYO3270	Medieval ridge and furrow
20	Askham Bryan	MYO3271	Medieval ridge and furrow

Number	Site Name	HER Code	Description
21	Askham Bryan	MYO3272	Medieval ridge and furrow
22	Askham Bryan	MYO3285	Medieval ridge and furrow
23	Askham Bryan	MYO3286	Medieval ridge and furrow
24	Copmanthorpe	MYO3287	Medieval ridge and furrow
25	Copmanthorpe	MYO3288	Medieval ridge and furrow
26	Copmanthorpe	MYO3289	Medieval ridge and furrow
27	Copmanthorpe	MYO3290	Medieval ridge and furrow
28	Copmanthorpe	MYO3291	Medieval ridge and furrow
29	Copmanthorpe	MYO3292	Medieval ridge and furrow
30	Copmanthorpe	MYO3293	Medieval ridge and furrow
31	Bishopthorpe	MYO3367	Medieval ridge and furrow
32	Bishopthorpe	MYO3371	Medieval ridge and furrow
33	Bishopthorpe	MYO3372	Medieval ridge and furrow
34	Bishopthorpe	MYO3374	Medieval ridge and furrow
35	Bishopthorpe	MYO3375	Medieval ridge and furrow
36	Bishopthorpe	MYO3376	Medieval ridge and furrow
37	Bishopthorpe	MYO3382	Medieval ridge and furrow
38	York	MYO3430	Medieval ridge and furrow
39	York	MYO3431	Medieval ridge and furrow
40	York	MYO3432	Medieval ridge and furrow
41	York	MYO3433	Medieval ridge and furrow

Number	Site Name	HER Code	Description
42	York	MYO3447	Medieval ridge and furrow
43	York	MYO3448	Medieval ridge and furrow
44	York	MYO3449	Medieval ridge and furrow
45	York	MYO3451	Medieval ridge and furrow
46	Bishopthorpe	MYO3704	Medieval ridge and furrow
47	York	MYO3705	Medieval ridge and furrow
48	York	MYO3706	Medieval ridge and furrow
49	York	MYO3710	Medieval ridge and furrow
50	Character Area	HNY7535	This is a large area of late post medieval woodland which has been established in Askham bogs and consists of blocks of broad-leafed plantation. This area has partial legibility of the previous HLC which was planned enclosure
51	Character Area	HNY7535	This is a large area of late post medieval woodland which has been established in Askham bogs and consists of blocks of broad-leafed plantation. This area has partial legibility of the previous HLC which was planned enclosure
52	Character Area	HNY7536	This is an area of planned enclosure which consists of medium sized regular fields defined by straight hedges. This area is probably part of the Askham award and has partial legibility mainly due to the boundary loss to the west.
53	Character Area	HNY7536	This is an area of planned enclosure which consists of medium sized regular fields defined by straight hedges. This area is probably part of the Askham award and has partial legibility mainly due to the boundary loss to the west.
54	Character Area	HNY7536	This is an area of planned enclosure which consists of medium sized regular fields defined by straight hedges. This area is probably part of the Askham award and has partial legibility mainly due to the boundary loss to the west.
55	Character Area	HNY7338	This area represents the modern expansion of Bishopthorpe and consists of medium density housing arranged on a cul de sac pattern with front and back gardens defining private space and public space defined by playing fields. This area was previously enclosed as part of the Bishopthorpe agreement which was confirmed by award. This dates to 1757-1760.
56	Character Area	HNY7338	This area represents the modern expansion of Bishopthorpe and consists of medium density housing arranged on a cul de sac pattern with front and back gardens defining private space and public space defined by playing fields. This area was previously enclosed as part of the Bishopthorpe agreement which was confirmed by award. This dates to

Number	Site Name	HER Code	Description
			1757-1760.
57	Character Area	HNY6837	This is an area of large scale parliamentary enclosure which consists of medium sized fields defined regular external and straight internal hedgerows. This area has significant legibility with very little boundary loss since the first edition
58	Character Area	HNY6837	This is an area of large scale parliamentary enclosure which consists of medium sized fields defined regular external and straight internal hedgerows. This area has significant legibility with very little boundary loss since the first edition
59	Character Area	HYO22633	Former Derwent Valley Light Railway and York & North Midland railway. Now partly used as a cycle track.
60	Middlethorpe Grange	MYO29	Late 17th century grange
61	Wind Pump	MYO3938	Wind pump marked on 1st edition OS plan. Stands as a reasonably complete circular brick structure adjacent to pond.
62	Wind Pump Tower, Moor Lane, York	MYO4035	Sole remaining structure from the days of brick making in Dringhouses. The 19th century tower and some internal planking survive beside Pearce's Pond. Nominated for inclusion on the local list of heritage assets. Map location is approximate.
63	Ashfield House, York Technical College	MYO4026	c.1850. One of two remaining large Victorian properties in Dringhouses (there were originally four). Possibly by A J Penty. Home at different times to both the Swann and Lycett Green families. Nominated for inclusion on the Local List of heritage assets. Building is of significant style including the Fox weather vane, with many intact internal features.
64	Aldersyde Cottage and Stable Cottage	MYO4027	The two cottages (1895) have the same architectural features, weather vane , windows, chimneys etc. and are probably by the same architects, Penty & Penty. Aldersyde House is EH listed (DYO230). Nominated for inclusion on the local list of heritage assets.
65	185 Tadcaster Road	MYO4034	Ancillary building (cottage & stables) to the large Victorian house called 'Dringthorpe' demolished after WW II. Now part of St. Leonard's Hospice? Decorative barge boards, chimneys and porch. Also includes iron railings (pre 1890s) surrounding a small stand of beech trees. Part of the original landscaping of Dringthorpe House. Nominated for inclusion on the local list of heritage assets.
66	Group of cottages Old	MYO4042	19th century cottages including the signalman's cottage for the level crossing named "Chaloner Whin Gate" which used to cross Moor Lane. They are part of railway history as the road was realigned when Moor Lane railway bridge

Number	Site Name	HER Code	Description
	Moor Lane		was built, leaving a cul-de-sac. Nominated for inclusion on the local list of heritage assets. Map locations uncertain.
67	Enclosed Fields	HNY6838	This is a large field where some of internal boundaries have been lost. This area has fragmentary legibility and consists of a large irregular field defined externally by regular overgrown hedgerows. This was previously planned enclosure
68	Enclosed Fields	HNY7507	This is an area of modern improved fields which lies just to the south of the Knavesmire and consists of large irregular fields defined by erratic hedges. This area has fragmentary legibility of the previous HLC which was possible med strip fields
69	Enclosed Fields	HNY7507	This is an area of modern improved fields which lies just to the south of the Knavesmire and consists of large irregular fields defined by erratic hedges. This area has fragmentary legibility of the previous HLC which was possible med strip fields
70	Enclosed Fields	HNY7507	This is an area of modern improved fields which lies just to the south of the Knavesmire and consists of large irregular fields defined by erratic hedges. This area has fragmentary legibility of the previous HLC which was possible med strip fields
71	Enclosed Fields	HNY9364	This is a small area of strip fields which consists of small semi irregular fields defined by s curved overgrown hedges. This area has complete legibility and is very well preserved. This dates to the medieval period
72	Enclosed Fields	HNY9366	This is a small area of strip fields which consists of small semi irregular fields defined by s curved overgrown hedges. This area has complete legibility and is very well preserved. This dates to the medieval period
73	Character Area York College	HYO22944	York College and playing field College/school appears to have been on site since the late 1950s/early 1960s. Rebuilt in the mid 2000s.
74	Character Area Dringhouses and Tadcaster Road	HYO23323	Character Area Statement - Dringhouses and Tadcaster Road. Part of the York Historic Environment Characterisation Project.
75	Character Area	HNY9363	This is a significant road junction on the A64 which has fragmentary legibility of the previous HLC, which was strip fields, and is currently active. This has changed the character of the landscape in this area

Number	Site Name	HER Code	Description
76	Character Area	HNY9363	This is a significant road junction on the a64 which has fragmentary legibility of the previous HLC, which was strip fields, and is currently active. This has changed the character of the landscape in this area
77	Garth Cottage and Garth Mews, Gatehouses to Bishopthorpe Garth	MYO436	Pair of gatehouses. c1908. By Brierley. Hand-made pinkish-brown brick in English bond, rendered to rear left, and pantile roof to main block, concealed to right. Main block with central carriage arch, outshut to rear of left house and to end of right house. Single storey with attic, 6 bays with 3-bay outshut to right. House to left has central entrance under hood. 4-pane casement windows and single pane casement, all with moulded brick cills and under header arches. Walls bowed towards carriage entrance each containing one casement window under moulded arch and with header cill. Entrance in outshut to right house under carved oak hood. Casement windows with similar dressings to those to left. Pilasters articulate each bay of outshut. Ridge stacks. Listing NGR: SE5909847974
78	Bishopthorpe Garth	MYO570	House. 1908 (on porch) with later additions, By Walter Brierley. Pinkish brown hand-made brick in English bond with pantile roof. Dog-leg on plan. 2-storey, 2-bay wing to left with single storey with attic 2-bay centre and slightly-projecting 2-storey, single bay wing to right. Entrance in porch between left wing and centre, a panelled oak door. Leaded casement windows throughout with moulded cill bands. Straight-headed dormer to centre range. Moulded brick decoration to gables. Ridge and side stacks with dentil moulding. Centre under catslide roof. Interior: Jacobean revival open-well oak staircase and other original features, including doors, fireplaces. Listing NGR: SE5916947996
79	Land East Of Tadcaster Rd GP	EYO6394	Geophysical survey at Tadcaster Road ahead of development. Undertaken follwing a DBA. The survey was dominated by responses associated with existing landfill, soil disturbances and objects / landscape features at surface level. There is a large area of magnetic noise which is likely to be associated with imported fill soils or construction disturbance in the west side of the survey. Elsewhere responses from ferrous objects or building with ferrous component in their construction are present around the survey area, with localised disturbances in the topsoil present in the southeast corner. There are also several isolated ferro-magnetic spikes arising from material in the topsoil horizon. All of this contributed to significant masking of lower magnitude responses from natural geological conditions or past land use/ archaeological responses. Those pre-modern features that have been identified in the survey are restricted to an area of well preserved ridge and furrow which is also visible in the surface topography. There is also a faint linear feature aligned on a diagonal axis across the ridge and furrow. This feature may be associated with fill soils from a ditch feature that underlies the ridge and furrow soil responses, but its isolation in relation to any other features of the type in the survey make it impossible to determine its origin.
80	Aerial Photograph	EYO1206	Linear features seen in aerial photographs to the north of Sim Balk Lane. Possible enclosures?

Number	Site Name	HER Code	Description
81	Aerial Photograph	EYO1207	Linear features seen in aerial photographs to the north of Sim Balk Lane. Possible enclosures?
82	Aerial Photograph	EYO1887	Possible pits and circles seen on aerial photographs to the north Sim Balk Lane.

APPENDIX 2 FIGURES

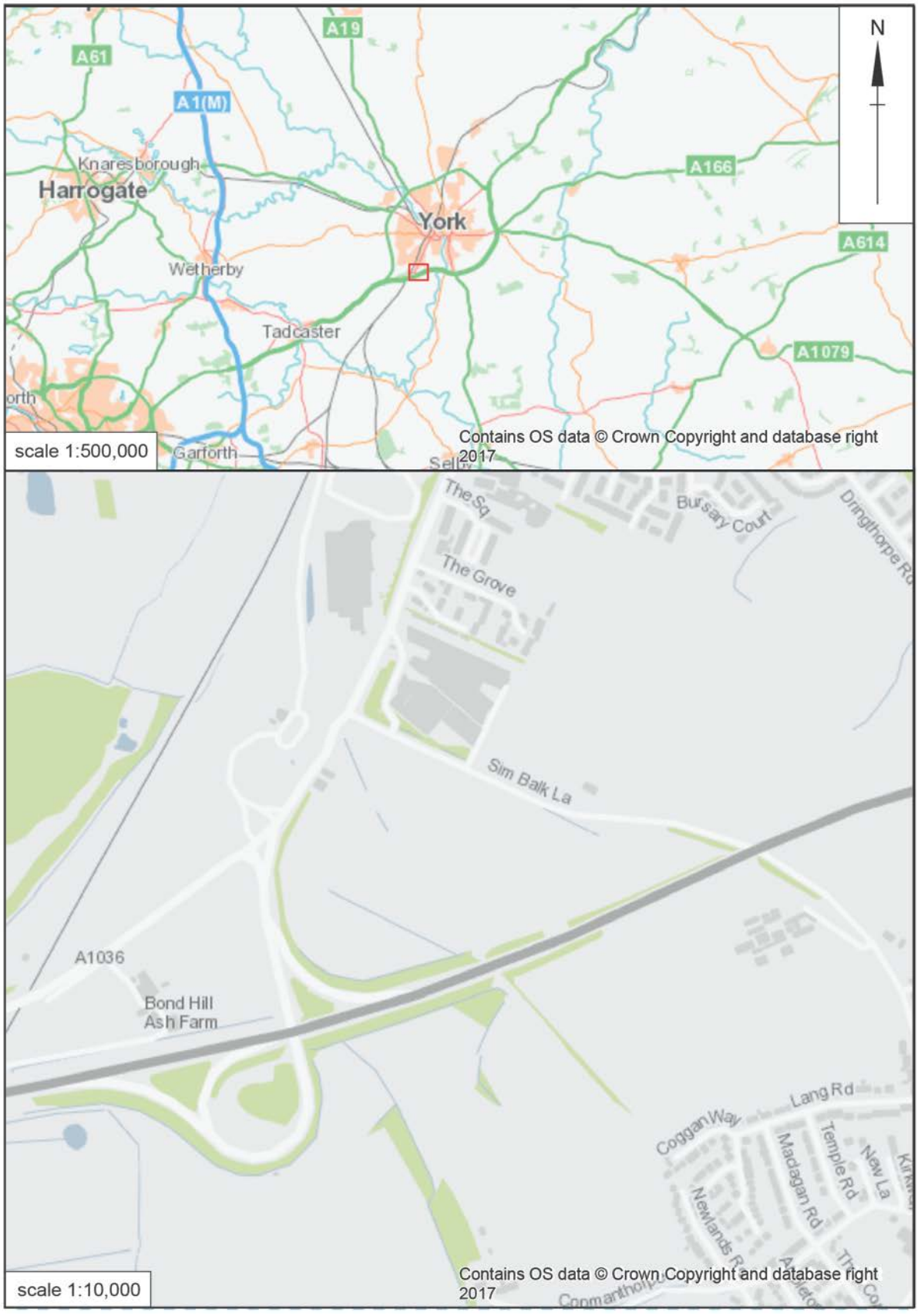

Figure 1 Site location

Figure 2 Location of sites from gazetteer within the immediate area

Figure 3 Location of sites from gazetteer within the immediate area

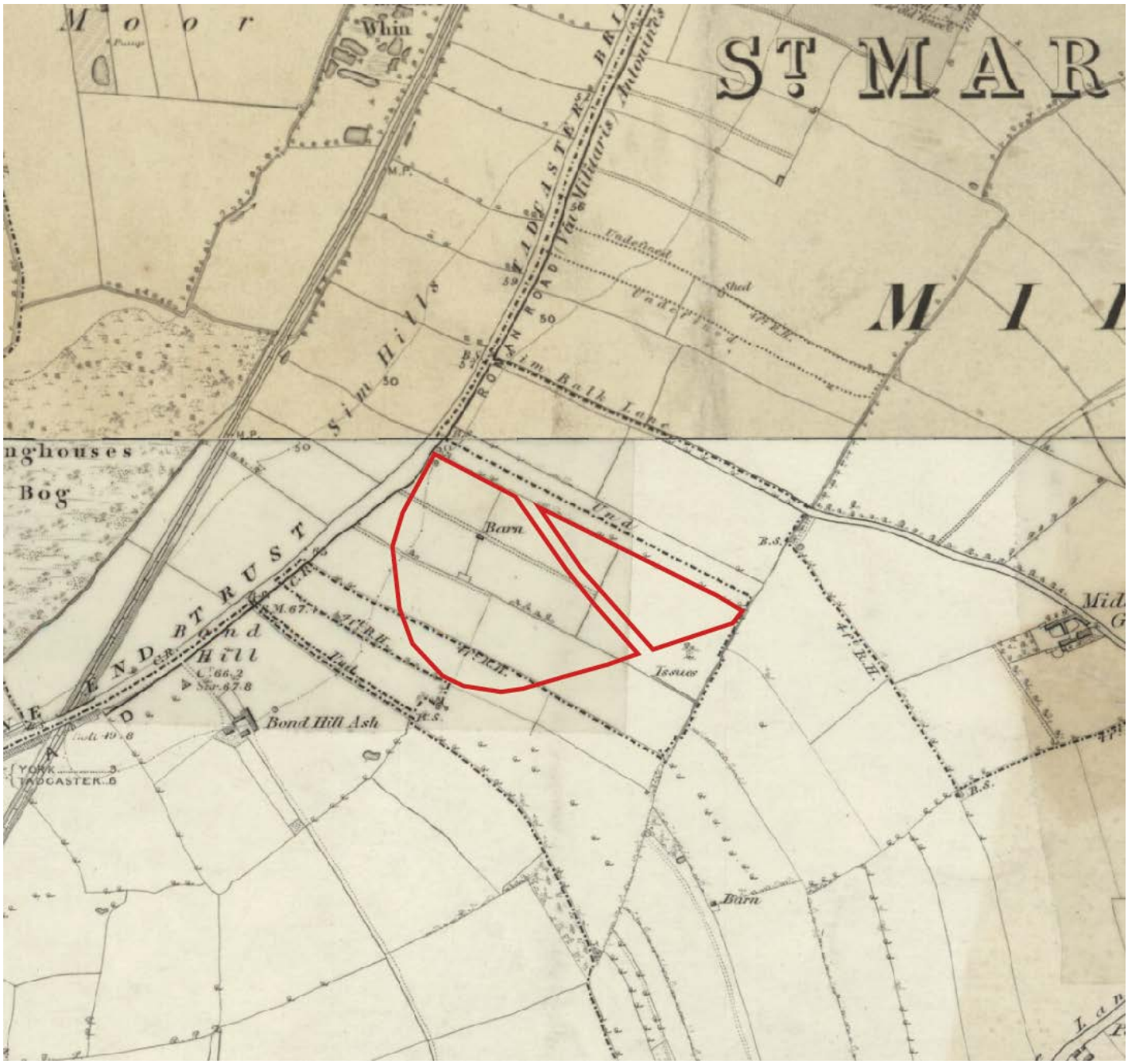

Figure 4 1851 Ordnance Survey map

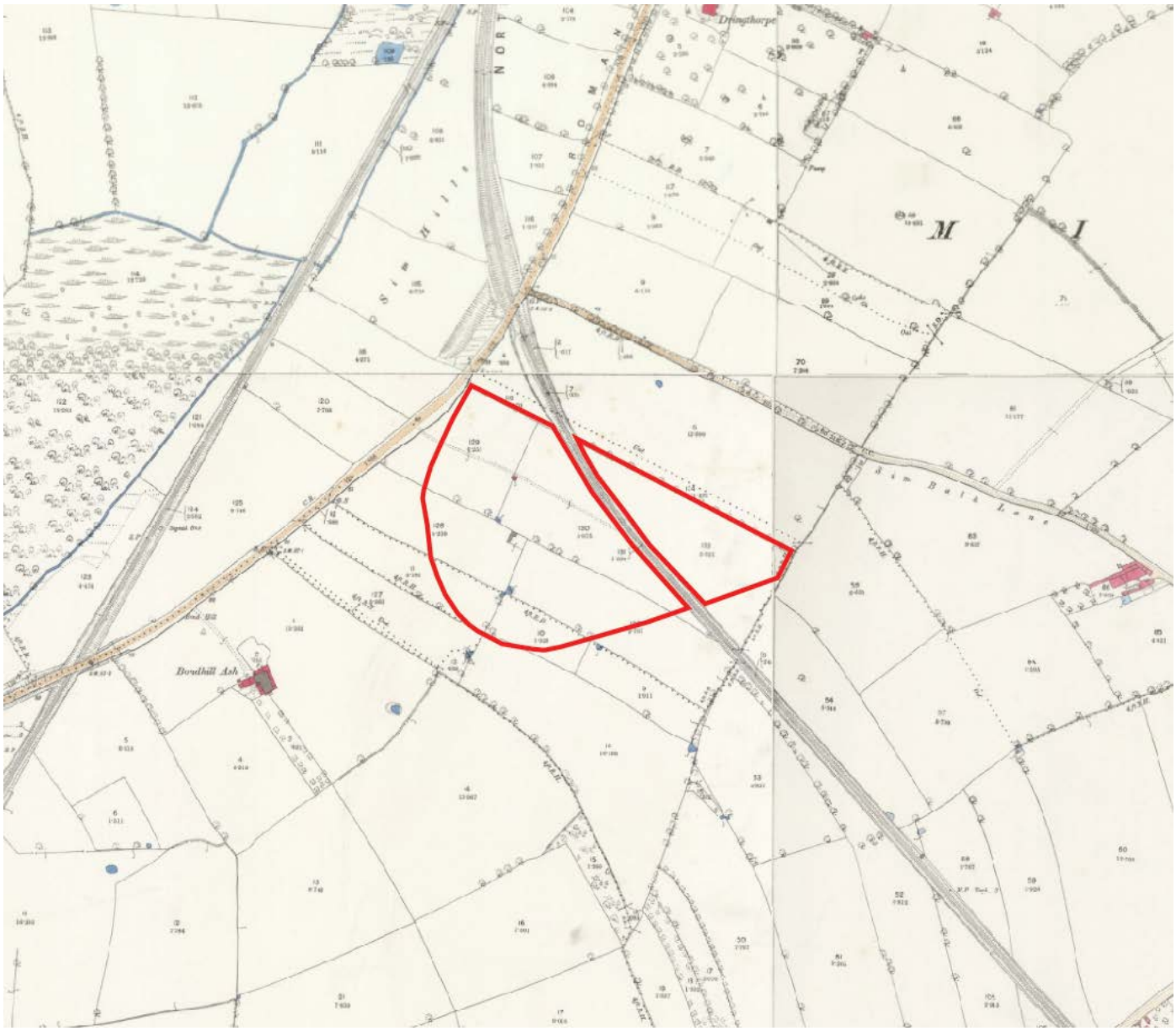

Figure 5 1891 Ordnance Survey map

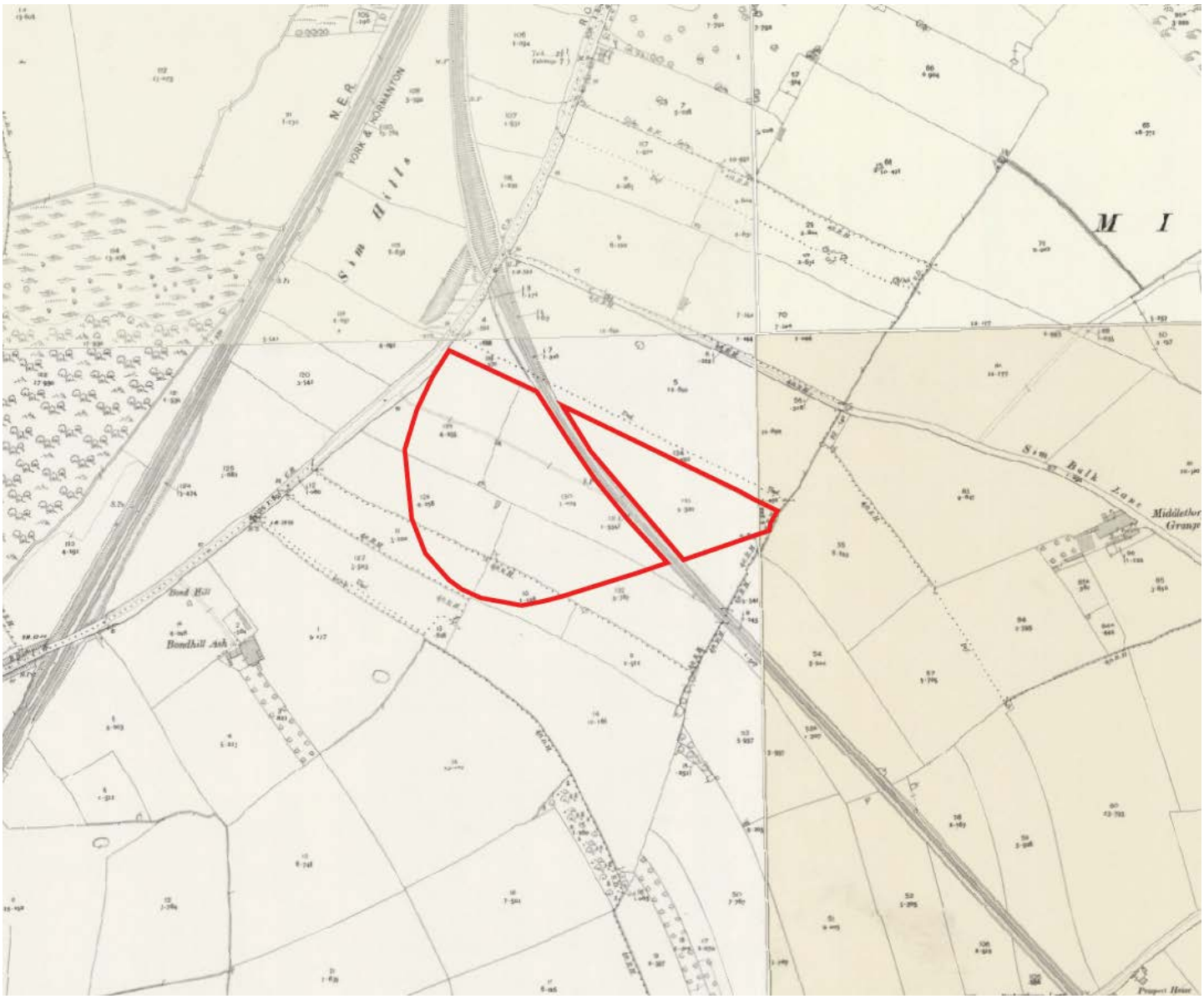

Figure 6 1907 Ordnance Survey map

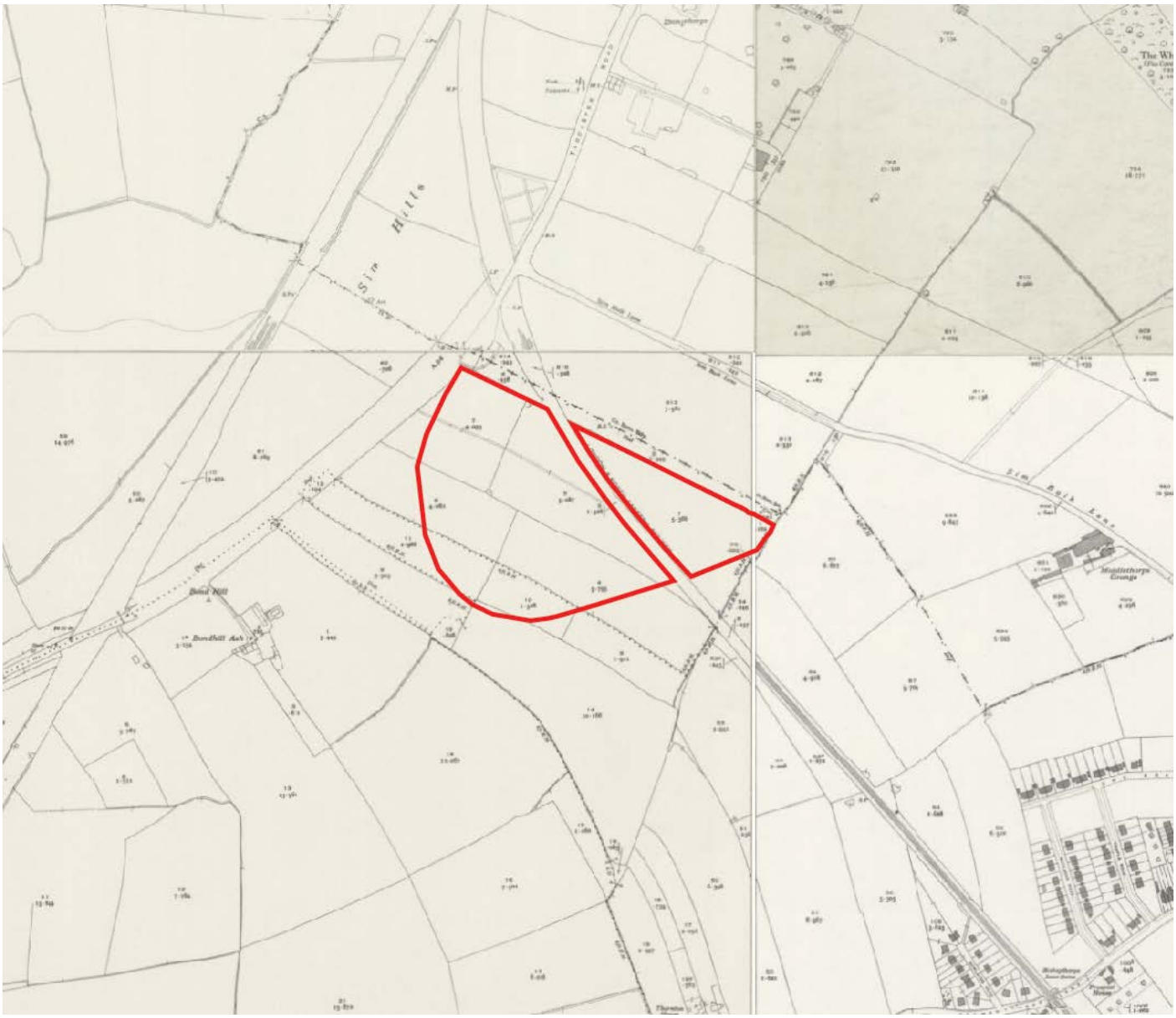

Figure 7 1930 Ordnance Survey map

APPENDIX 3 PLATES

Plate 2 View of the northern part of the southern study area, looking south-east

Plate 1 View of the north-western part of the southern study area, looking north-west

Plate 3 View of the southern part of the southern study area, looking south-east

Plate 4 View of the northern study area, looking south-east

APPENDIX 4 LISTED BUILDINGS

ALDERSYDE AND ATTACHED CONSERVATORY

List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: ALDERSYDE AND ATTACHED CONSERVATORY

List entry Number: 1245577

Location

ALDERSYDE AND ATTACHED CONSERVATORY, OLD MOOR LANE

The building may lie within the boundary of more than one authority.

County:

District: York

District Type: Unitary Authority

Parish:

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 09-Feb-1999

Date of most recent amendment: Not applicable to this List entry.

Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 472971

Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

List entry Description

Summary of Building

Legacy Record - This information may be included in the List Entry Details.

Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

History

Legacy Record - This information may be included in the List Entry Details.

Details

SE 54 NE OLD MOOR LANE (North side) 1112-1/3/10002 Aldersyde and attached Conservatory

II

House now flats and attached conservatory. 1895-96, converted mid C20. Designed by A J Penty , of Penty & Penty , for the miller Ernest Leetham. Red brick with ashlar dressings, timber-framed upper floors with rough-cast and brick nogging. C20 concrete tile roofs with tall ornate chimney stacks. 2 storey plus attics. North entrance front has projecting 3 storey porch with deep chamfered plinth and timber-framed ground floor with brick herring-bone nogging. Ground floor has 2-light to north side, 4-light casement to front and doorway to south, with double panel doors in segment arched opening with 4-light overlight topped with fascia board carved with "ALDERSYDE" under wooden hood with copper lantern suspended from bracket above. Above 4-light cross casement and above again 4-light casement. Set back to right 2 small casements to left side remainder of front blank. Set back to right large ashlar 5-light mullion and transom window to main staircase. Beyond ground floor has ashlar mullion window with jettied and timber-framed gable with cross cal sement. East front has canted 2 storey corner bay window to right, with three 3-light cross casements on both floors, to the left the ground floor has a glazed doorway. To right 3-light cross casement on both floors, beyond again projecting gabled wing with pair of linked ashlar cross casement windows, jettied upper floor with 3-light cross casement and 3-light casement to gable. South front has off-centre projecting gable wing with pair of linked ashlar 3-light cross casements, and above 3-light oriel cross casement with linked flanking 2-light windows, above again jettied gable has 4-light casement. To right set back section with doorway to left and single light casement under remains of timber loggia. Above glazed doorway to left and attached 5-light cross casement. Beyond to right large brick stack with 2 small fire windows in ashlar surrounds on each floor. To left doorway under porch with 3-light cross casement beyond, above 2 cross casements with double dormer window to roof. Ingle storey wing links to gabled conservatory . Conservatory has brick lower walls with 5 x 7 windows above, each window has 3 x 3 panes. Central entrance on east side reached up flight of 5 steps with double glazed doors. Gables to north and south ends. INTERIOR has fine panelled hall with triple arcade to entrance lobby and built-in sideboard, further triple arched arcade to staircase now in-filled with reused panelling. Large and ornate marble fireplace with carved central marble relief Fitted original low sideboard below window. Study beyond also panelled with fitted drawers and cupboards, fine quality wooden fireplace with segment arched ovennantle. Staircase hall has triple arched loggia and stair has turned bulbous balusters with square newels and carved finials. Upper landing has fine coved plaster ceiling and pilaster supports. Corridor to first floor flat has dado panelling and original doors. Main room has deep inglenook fireplace, and bedroom has high quality fitted cupboards, dressing table and bed arch.

Listing NGR: SE5834949098

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 58349 49098

GARTH COTTAGE AND GARTH MEWS, GATEHOUSES TO BISHOPTHORPE GARTH

List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: GARTH COTTAGE AND GARTH MEWS, GATEHOUSES TO BISHOPTHORPE GARTH

List entry Number: 1132494

Location

GARTH COTTAGE AND GARTH MEWS, GATEHOUSES TO BISHOPTHORPE GARTH, SIM BAULK LANE

The building may lie within the boundary of more than one authority.

County:

District: York

District Type: Unitary Authority

Parish: Bishopthorpe

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 12-Jul-1985

Date of most recent amendment: Not applicable to this List entry.

Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 325956

Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

List entry Description

Summary of Building

Legacy Record - This information may be included in the List Entry Details.

Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

History

Legacy Record - This information may be included in the List Entry Details.

Details

SE 5847-5947 BISHOPTHORPE SIM BAULK LANE (east side)

7/40 Garth Cottage and Garth Mews, Gatehouses to Bishopthorpe Garth

GV II

Pair of gatehouses. c1908. By Brierley. Hand-made pinkish-brown brick in English bond, rendered to rear left, and pantile roof to main block, concealed to right. Main block with central carriage arch, outshut to rear of left house and to end of right house. Single storey with attic, 6 bays with 3-bay outshut to right. House to left has central entrance under hood. 4-pane casement windows and single pane casement, all with moulded brick cills and under header arches. Walls bowed towards carriage entrance each containing one casement window under moulded arch and with header cill. Entrance in outshut to right house under carved oak hood. Casement windows with similar dressings to those to left. Pilasters articulate each bay of outshut. Ridge stacks.

Listing NGR: SE5909847974

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 59098 47974

BISHOPTHORPE GARTH

List Entry Summary

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Name: BISHOPTHORPE GARTH

List entry Number: 1166773

Location

BISHOPTHORPE GARTH, SIM BAULK LANE

The building may lie within the boundary of more than one authority.

County:

District: York

District Type: Unitary Authority

Parish: Bishopthorpe

National Park: Not applicable to this List entry.

Grade: II

Date first listed: 12-Jul-1985

Date of most recent amendment: Not applicable to this List entry.

Legacy System Information

The contents of this record have been generated from a legacy data system.

Legacy System: LBS

UID: 325955

Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

List entry Description

Summary of Building

Legacy Record - This information may be included in the List Entry Details.

Reasons for Designation

Legacy Record - This information may be included in the List Entry Details.

History

Legacy Record - This information may be included in the List Entry Details.

Details

SE 5847-5947 BISHOPTHORPE SIM BAULK LANE (east side)

7/39 Bishopthorpe Garth

GV II

House. 1908 (on porch) with later additions, By Walter Brierley. Pinkish brown hand-made brick in English bond with pantile roof. Dog-leg on plan. 2-storey, 2-bay wing to left with single storey with attic 2-bay centre and slightly-projecting 2-storey, single bay wing to right. Entrance in porch between left wing and centre, a panelled oak door. Leaded casement windows throughout with moulded cill bands. Straight-headed dormer to centre range. Moulded brick decoration to gables. Ridge and side stacks with dentil moulding. Centre under catslide roof. Interior: Jacobean revival open-well oak staircase and other original features, including doors, fireplaces.

Listing NGR: SE5916947996

Selected Sources

Legacy Record - This information may be included in the List Entry Details

National Grid Reference: SE 59169 47996

magnitude surveys

Geophysical Survey Report

of

Tadcaster Road, Ashfield Estate Land

For

York Archaeological Trust

On Behalf Of

City of York Council

Magnitude Surveys Ref: MSSE335

July 2018

Unit 17, Commerce Court

Challenge Way

Bradford

BD4 8NW

01274 926020

info@magnitudesurveys.co.uk

Version	Purpose / Revision	Author	Interpretation by	Approved/ Reviewed By	Date Issued
Draft 1.0	Initial draft to line manager	Julia Cantarano, Ingénieur	Julia Cantarano, Ingénieur	Graeme Attwood MSc MCIfA	18 July 2018
Draft 1.1	Final Draft to Client	Julia Cantarano, Ingénieur	Julia Cantarano, Ingénieur	Graeme Attwood MSc MCIfA	20 July 2018

Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 8ha area of land off Tadcaster Road, Ashfield Estate Land, York, Yorkshire. A fluxgate magnetometer survey was successfully completed and no anomalies of probable or possible archaeological origin have been identified. The geophysical results primarily reflect agricultural activity located in the western part of the site. Ploughing trends, former field boundaries and small agricultural structures are observed. Along a former branch line of the North-Eastern Railway, strong ferrous responses have been detected which are likely to be related to the former railway rather than the path present today. Several anomalies were marked as undetermined for neither archaeological, agricultural or natural origin could be ascribed with confidence.

Contents

List of Figures

1. Introduction

1.1. Magnitude Surveys Ltd (MS) was commissioned by York Archaeological Trust on behalf of City of York Council to undertake a geophysical survey on a c.8ha area of land off Tadcaster Road, Ashfield Estate, York, Yorkshire (SE 58156 48160).

1.2. The geophysical survey comprised hand-carried GNSS-positioned fluxgate magnetometer survey.

1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute for Archaeologists (CIfA, 2014) and the European Archaeological Council (Schmidt et al., 2015).

1.4. The survey commenced on the 12th of July and took 1 day to complete.

2. Quality Assurance

2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society of Archaeological Prospection).

2.2. Director Graeme Attwood is a Member of CIfA, as well as the Secretary of GeoSIG, the CIfA Geophysics Special Interest Group. Director Finnegan Pope-Carter is a Fellow of the London Geological Society, the chartered UK body for geophysicists and geologists, as well as a member of GeoSIG, the CIfA Geophysics Special Interest Group. Director Chrys Harris has a PhD in archaeological geophysics from the University of Bradford and is the Vice-Chair of the International Society for Archaeological Prospection.

2.3. All MS managers have relevant degree qualifications to archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees and/or field experience.

3. Objectives

3.1. The geophysical survey aimed to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The site is located on the outskirts of York, 4km southwest of the city-centre. (Figure 1). Survey was undertaken across 4 areas (Figure2). The land consisted cut pasture, bounded to the northeast by fields and to the northwest by a petrol station. It is located between the A64 to the east, the A1036 to the west and the junction of the two to the south. (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Flat, cut grass	The small area to the south of Area 1 was unsurveyable due to overgrown vegetation. To the east, the area is bounded by the A64. Area 3 is located to the north and Area 2 to the west. There is a wide gap in the boundary between Area 1 and 2. There is no visible fence around the area, which is surrounded by hedges.
2	Sloped down from west to east, cut grass	The junction between A64 and A10336 bounds the area to the west. An area of trees is located to the south. Half of the northern boundary is a hedge and the other half is an opening onto Area 3. An open manhole was found in the east close to the end of the hedge and the gap between Area 1 and 2.
3	Sloped down from east to west, cut grass	The A1036 runs to the west of the area. A path framed by trees runs in the northwest-southeast direction and is the separation between Area 3 and Area 4. A petrol station is located to the north.
4	Flat, cut grass	Another field is found north of Area 4 with a hedge line between them. The area has a triangular shape. The southwest border is the limit of Area 3, with a gap between the row of trees and the path linking the two areas. The southeast border is made of overgrown vegetation, wire and wood fencing. The A64 is found behind the border.

4.3. The underlying geology comprises sandstone of the Sherwood Sandstone group. Superficial geological deposits include clayey and gravelly sand of the York Moraine Member along the western boundary, an indentation of clayey sand of the Naburn Sand membrane on the south-western boundary, and silty clay of the Elvington glaciolacustrine formation towards the east (British Geological Survey, 2018).

4.4. The soils consist of loamy soils with naturally high groundwater (Soilscapes, 2018).

5. Archaeological Background

5.1. The following archaeological background is a brief summary of a search of archaeological sites within c.250m of the survey area, using the online resource Heritage Gateway (2018).

5.2. Encompassing the site is broad undated ridge and furrow identified in aerial photographs from 1936. The ridge and furrow cultivation extends into fields to the west, northeast and southeast of the site, and again c.250m to the north of the site. The line of the Roman road between Tadcaster and York is postulated to follow the route of the present-day road just to the north and west of the site.

5.3. Historic 1st edition OS maps show that the site in 1851 is marked by several narrow strip fields running across the site c. NW-SE. Also marked on the map is a roofed barn towards the northern boundary of the site and an unroofed structure towards the centre of the site. In the 2nd ed. OS map of 1906, the layout of the site is very similar except the barn is unroofed and the eastern half of the survey area is bisected by the North Eastern Railway. The site layout does not change significantly until the OS map of 1982, by when the A46 had been constructed along the southern boundary of the site and a number of field boundaries had fallen out of use.

6. Methodology

6.1. Data Collection

6.1.1. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.3. The magnetic data were collected using MS' bespoke hand-carried GNSS-positioned system].

6.1.3.1. MS' hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.3.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.3.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2.Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to Historic England's standards for "raw or minimally processed data" (see sect 4.2 in David et al., 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al. (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3.Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the upper and/or lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figure 8). XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historic maps, LiDAR data, and soil and geology maps. Google Earth (2018) was consulted as well, to compare the results with recent land usages.

7. Results

7.1.Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports as well as reports of further work in order to constantly improve our knowledge and service.

7.2.Discussion

7.2.1. The geophysical results are presented in consideration with satellite imagery (Figure 6) and historic maps (Figure 7).

7.2.2. The fluxgate magnetometer survey has responded well to the survey area's environment. The site shows strong ferrous and magnetic disturbance anomalies, although these are largely restricted to the edges of the survey areas; a range of anomalies from a variety of sources are also visible with varying degrees of magnetic enhancement. The majority of the responses are located in the west of the site where the superficial bedrock consists of clayey and gravelly sand, which may have enhanced the anomalies visible. Also, a few anomalies are visible in Area 1 where the superficial bedrock is composed of a silty clay material (see section 4.3).

7.2.3. Anomalies related to agriculture are observed in the form of ploughing trends and former boundaries. The presence of two former small buildings (a barn and an unroofed structure) are detected as two dense clusters of magnetic disturbance in Area 2 and Area 3. A strong ferrous response along the separation between Area 3 and Area 4 relates to the former north-eastern railway.

7.2.4. A number of anomalies have been marked as undetermined, their origin is ambiguous. One in the centre of Area 2 may be of an archaeological origin although a natural responses source is perhaps the more likely. A second, in the west of Area 1 is more likely to have an anthropogenic origin, however, its position on the edge of the survey area adjacent ferrous material hinders a more confident interpretation.

7.3. Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

7.3.1.2. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally not ferrous in nature.

7.3.1.3. **Ferrous (Discrete/Spread)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of modern metallic disturbance on or near the ground surface. A ferrous spread refers to a concentrated deposition of these discrete, dipolar anomalies. Broad dipolar ferrous responses from modern metallic features, such as fences, gates, neighbouring buildings and services, may mask any weaker underlying archaeological anomalies should they be present.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Agricultural (Strong - Weak - Spread)** – Numerous anomalies have been marked as agricultural responses. They are predominantly located in the west of the site, where the superficial bedrock is composed of sandy, clayey, gravelly material (see section 4.3). Several former field boundaries are visible in Area 2 and Area 3 [**2a & 3a**], they correspond to former field boundaries visible on the historic mapping (Figure 7). The linear anomaly [**2b**] located in Area 2 in a northeast-southwest orientation is in exact same alignment as the former field boundary [**3a**] which may indicate a non-recorded former field boundary. Another potential non-recorded field boundary is visible in area 1 [**1b**] and follows a similar axis to [**2b & 3a**]. Perpendicular to the anomalies [**2b & 3a**], linear trends are running in the northwest of Area 3, in the south of Area 2 and in the west of Area 1, probably related to ploughing. Two anomalies [**2c & 3b**] have been marked as Agricultural Spread in Area 2 and 3; these correspond to two small structures, a barn in Area 3 and an unroofed structure in Area 2 (see Section 5.3 and Figure 7).

7.3.2.2. **Ferrous (Former Railway - Services)** – Strong magnetic responses are observed along the path lying between Area 3 and Area 4. These are likely to be related to the construction of the former North-Eastern Railway rather than the current path, which is only bounded by trees. A service in Area 4 [**4a**] runs in the west-east direction towards the former railway and before turning and following the alignment of the railway northwest through area 3.

7.3.2.3. **Natural** – The anomalies of natural origin are mainly visible in the Total Field data (Figure 4). They are not observed across the whole site and are mostly confined to the west of Area 3 and the south east of Area 1.

7.3.2.4. **Undetermined** – Several anomalies have been identified as Undetermined. Anomaly **2c,** located in the centre of Area 2, is "V" shaped and has a stronger response compared to the other linear anomalies. The left branch of the "V" seems to curve and join another linear anomaly located southeast of it. Likewise, with the right branch and the linear anomaly located to the southwest. This could indicate an anthropogenic origin, however, when looking at the Total Field data (Figure 4) strong geological responses [**3c**] to the north align with the anomaly [**2c**] so, a natural origin cannot be ruled out. A strong set of responses [**1a**] are apparent in the southwest corner of Area 1. The shape of the anomalies may indicate an anthropogenic origin, however, there position on the edge of the survey, in an area of ferrous responses precludes a more confident interpretation.

8. Conclusions

8.1. A fluxgate magnetometer survey has been successfully completed at the site, and no anomalies of possible or probable archaeological origin have been identified. The geophysical results primarily reflect magnetic disturbance, and agricultural anomalies.

8.2. Agricultural activity in the west of the site is possibly enhanced by the superficial clayey and gravelly sand bedrock. Agricultural utilisation of the land is shown through a range of features including; ploughing trends, former boundaries and spreads of demolition material from small mapped structures. A few undetermined anomalies may also be related to agricultural activity but a natural or anthropogenic origin cannot be ruled out.

8.3. Located along the former North-Eastern Railway a halo of ferrous anomalies is observed. They are likely to be related to the construction or demolition of the railway rather than the current path.

9. Archiving

9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.

9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

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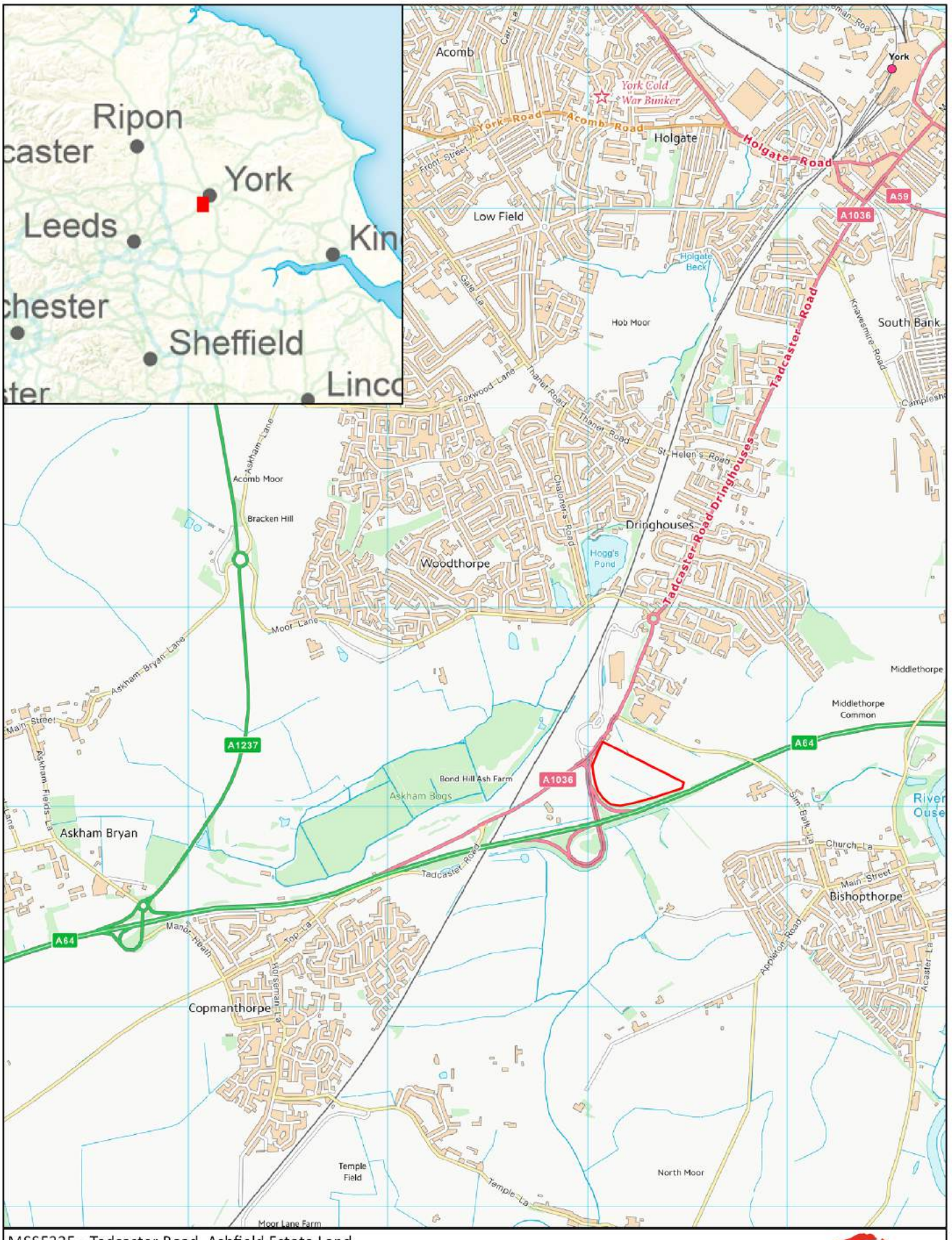


MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 1 - Site Location
1:25,000 @ A4

Site Boundary

N

0 0.5 1 km

magnitude surveys

458000

459000

Area 3

Area 4

Area 2

Area 1

A1036

A64

Bond Hill Ash Farm

448000

448000

Sim Balk La

Road

MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 2 - Location of Survey Areas
1:5000 @ A3

Survey Extent
Unsurveyable

N

0 100 200 300 m

magnitude surveys

458000 458100 458200 458300 458400 458500

448300

448200

448100

448000

Area 3

Area 4

Area 2

Area 1

MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 3 - Magnetic Gradient
1:1500 @ A3

-1 nT 2

N

0 40 80 120 m

magnitude surveys

458000
458100
458200
458300
458400
458500
448300
448200
448100
448000
Area 3
Area 4
Area 2
Area 1
MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 4 - Magnetic Total Field (Lower Sensor)
1:1500 @ A3

48,997 nT 49,005
N
0 40 80 120 m
magnitude surveys

458000 458100 458200 458300 458400 458500

448300 448200 448100 448000

Area 3

Area 4

Area 2

Area 1

3a 3b 3c 4a 2a 2c 2b 1a 1b

MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 5 - Magnetic Interpretation
1:1500 @ A3

- Agricultural (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Service
- Natural (Weak)
- Undetermined (Strong)
- Undetermined (Weak)

N

0 40 80 120 m

magnitude surveys

458000 458100 458200 458300 458400 458500

448300 448200 448100 448000

Area 3

Area 4

Area 2

Area 1

3a 3b 3c 4a 2a 2c 2b 1a 1b

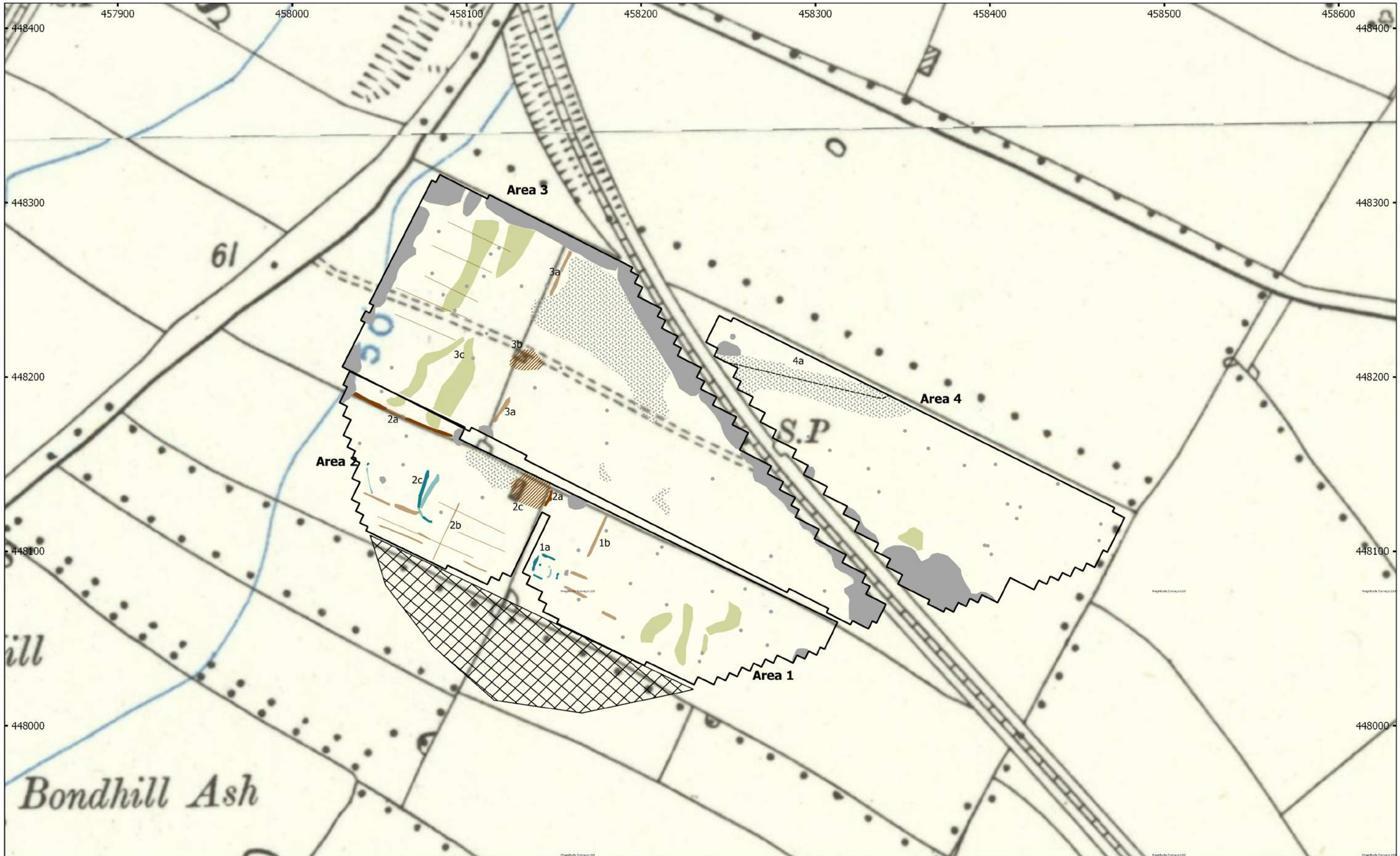
MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 6 - Magnetic Interpretation Over Satellite Imagery
1:1500 @ A3

- Agricultural (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Service
- Natural (Weak)
- Undetermined (Strong)
- Undetermined (Weak)

N

0 40 80 120 m

magnitude surveys



MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 7 - Magnetic Interpretation Over Historic Maps
1:2000 @ A3

Contains historic maps: Ordnance Survey, 6" 2nd edition c. 1882-1913 © National Library of Scotland

- Agricultural (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Service
- Natural (Weak)
- Undetermined (Strong)
- Undetermined (Weak)

N

0 50 100 150 m

magnitude surveys

458000
458100
458200
458300
458400
458500
448300
448200
448100
448000
Area 1
Area 2
Area 3
Area 4
MSSE335 - Tadcaster Road, Ashfield Estate Land
Figure 8 - XY Trace Plot
30nT/cm at 1:1500 @ A3

N
0
40
80
120 m
magnitude surveys

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