

**Report on an Archaeological Excavation at
'Plot 2, Adjacent to The Lodge,
Manor Road, North Wootton, Norfolk'**

NHER ENF125352

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Summary

An archaeological excavation was carried out at 'Plot 2, Adjacent to the Lodge, Manor Road, North Wootton, Norfolk' (NHER ENF125352) in October 2010 prior to residential development. Romano-British metalworking debris (iron slag produced in a bloomery shaft-type furnace) and mostly locally made pottery sherds were recovered unstratified and from linear features and one pit. Despite no remains of furnaces being encountered, the slag recovered indicates that iron smelting was being carried out close-by between the 1st and 4th centuries and waste was being deposited into these features. It is highly probable this location was chosen for continued iron smelting due to the proximity to raw material – most probably the bog iron pan in the marsh deposits, close to the west of the site at that time. The results of this excavation and an evaluation by trial trenching in 2009 suggest a northern boundary for iron working activities in the area extending some 200m to the south. Smithing or finery activities occurred nearby and evidence of domestic refuse disposal indicates settlement, probably of low status according to the pottery assemblage, occurred in the vicinity of the site over a significant part of the Romano-British period, possibly with activity reoccurring in medieval times. The presence of a Tegula fragment that probably originated from a substantial structure with a heavy tiled roof may indicate higher status settlement nearby.

1.0 Introduction

- 1.1 A programme of Archaeological Excavation resulting from development proposals at 'Plot 2, Adjacent to The Lodge, Manor Road, North Wootton, Norfolk' (grid refs. TF 6403 2439, post code PE30 3PZ) has been requested by the Norfolk County Council Historic Environment Service (ref. CNF42821, James Albone/25 August 2010).
- 1.2 Planning application number 10/00524/F.
- 1.3 Project Design, CB219, details how Chris Birks (hereafter 'the Contractor') undertook these works and was prepared for Paul Back (hereafter 'the Client') to provide a quotation and Project Design for undertaking works. A *draft* copy of the Project Design was submitted to the Norfolk County Council Historic Environment Service in accordance with the Institute for Archaeologists' guidance. An alteration to the Brief was made by the Norfolk County Council Historic Environment Service (NHES ref. CNF42821, James Albone/24 September 2010 and email 24 September 2010 15:32 from James Albone to Shaun Gayton, Calvert Brain & Fraulo Architectural Ltd.) and the *final* Project Design was prepared accordingly.
- 1.4 This report describes the results of the archaeological excavation. A copy has been forwarded to the Norfolk County Council Historic Environment Service.
- 1.5 NHER ENF125352 and OASIS ID chrisbir1-103322 apply.

2.0 Project Background

- 2.1 The development site lies adjacent to a Roman ironworking site and within the core of the medieval settlement of North Wootton. An archaeological evaluation carried out at the present development site in 2009 identified evidence of Roman ironworking activity (Phelps 2009).

- 2.2 An Archaeological Excavation is required to replace by record archaeological features, deposits and structures which cannot be preserved *in situ* and which may be damaged or destroyed by the development.
- 2.3 Details of the relevant planning policy background can be seen in the Norfolk County Council Historic Environment Service Brief (bullet 1, page 2).

3.0 Archaeological & Historical Background

- 3.1 North Wootton's name comes from the Old English for 'settlement in the woods' (Rye 1991). However, despite its name, Wootton does not now lie in a heavily wooded area. The Domesday record shows little woodland in West Norfolk apart from a few patches on the outcrops of the gault clay (Smallwood 1989). The locality contains substantial areas of heathland, much of which was probably the product of prehistoric land exhaustion (Smallwood 1989).
- 3.2 Paleolithic flint handaxes have been found in the parish (Norfolk Historic and Environment Record (NHER) 11344 and 13024) and a Neolithic flint knife (NHER 13024) forming the earliest evidence of activities. Bronze Age finds include a copper alloy rapier tip (NHER 34683) and flint flakes (NHER 3310). A tree-covered mound (NHER 13899) on the heath east of the village has been interpreted as a much-mutilated Bronze Age barrow though may equally well be a natural feature. Aerial photography has identified a possible Bronze Age ring ditch (NHER 24974), the surviving traces of a flattened barrow.
- 3.3 Roman finds from the parish include coins and a brooch (NHER 34683) and pottery sherds (NHER 16822 and 24974). No evidence for Roman structures has been found. A Roman iron-working site (NHER) 24120) lies to the west/southwest of the development site and south of Manor Road. Building works in the late 20th century revealed evidence of metal working, including large quantities of iron slag, a possible furnace base and burnt clay (Smallwood 1989). Roman pottery fragments were also found. Evidence of iron smelting has been revealed at Gregory Close (NHER 24262) some 170m towards the south. Iron slag was observed in a field to the south of Church Farm (NHER 13351) though at this location it has been associated with early medieval pottery.
- 3.4 An archaeological evaluation was carried out at the development site in 2009 (ENF 123431). It revealed two ditches and a possible pit that produced significant quantities of iron slag and Romano-British pottery.
- 3.5 There is very little evidence of Saxon activities apart from a possible Roman or Saxon field system identified from aerial photographs approximately 1km to the northeast (NHER 24974) in the same area as the possible Bronze Age ring ditch (NHER 24974) and a strap fitting (NHER 36088) recovered through metal detecting in 2000.
- 3.6 An undated mound (NHER 24260) lies to the west of the development site (NHER 24120). It comprises an elongated mound observed during fieldwalking in 1987 and as a low earthwork on 1988 aerial photographs. It contains iron slag and may represent a dump of waste material associated with the site to the south (NHER 24120).
- 3.7 Although some distance from the site, it is worth mentioning a Roman iron smelting site revealed at Ashwicken (NHER 3382) during excavations in the 1950s after

scatters of iron slag were found on the surface. The excavations discovered several shaft furnaces that were dated to the 2nd century. Several pits containing evidence of smithing activity were also found, although there was no evidence to suggest that iron artefacts were being produced on the site. Two possible Iron Age pits were also excavated. An evaluation at the same site in 1998 revealed Roman slag and medieval/Post-medieval finds. Smelting slag has also been recovered from other parts of Norfolk such as Ingoldisthorpe (NHER 1553) and Middleton (NHER 3349).

- 3.8 A Roman ironworking furnace (NHER 1008) has been excavated at Scole. This was unusually complete and the excavation revealed parts of the shaft up to 0.4m high, a stoke hole and a pair of small depressions which were designed for slag to seep into.
- 3.9 The site of a medieval stone cross (NHER 3290), as marked on an old series of Ordnance Survey 6 inch maps, lies close-by to the west of the development site. No trace of it remains today and it is difficult to determine its exact location based upon the map evidence.
- 3.10 All saints' Church (NHER 3294) lies to the southwest of the development site on the south side of Manor Road. The present church was built in 1852 and replaced a medieval church that had fallen into disrepair. As such, this may mark the focus of the medieval settlement. Evidence of iron smelting has been reported through the identification of iron slag in the churchyard. Numerous finds of medieval pottery and metalwork have been recovered from the surrounding area (NHER 3291, 16828, 24974, 30826, 31243, 34683 and 36088).
- 3.11 A large number of medieval saltern mounds, the traces of salt making works, have been identified in the parish, mostly through the study of aerial photographs (e.g. NHER 36906, 36910 and 36911).
- 3.12 A number of Post-medieval buildings survive in the parish, probably the earliest is The Priory (NHER 25338), sometimes known as Church Farmhouse, to the south of All Saints' Church. It is originally of late 16th or early 17th century date with 18th and 19th century additions and alterations. Church Cottage (NHER 25337) on Nursery Lane dates to around 1600, extended in the 19th century with some reused medieval stone. The house was restored in the late 20th century.
- 3.13 Various Post-medieval sea defences, flood banks and breakwaters, now largely gone, are marked on old maps or visible on 1940s aerial photographs in North Wootton (e.g. NHER 5528, 36913, 36917, 36927 and 36937).
- 3.14 The site of a windpump as marked on an early 19th century map exists (NHER 2197), now occupied by a small modern pumphouse. A windmill (NHER 36897) stood to the north of this though no remains survive.
- 3.15 The parish was home to various military installations during World War Two. East of Wootton Marsh is the possible site of a World War Two Starfish decoy (NHER 23220), designed to fool enemy bombers into thinking they were bombed towns, with a variety of effects to represent both small fires and major conflagrations in order to protect King's Lynn. An artillery or bombing range (NHER 36921), a searchlight battery (NHER 36875) and anti-tank ditches (NHER 36873 and 36874) were once present, visible on contemporary aerial photographs.

- 3.16 The Lynn and Hunstanton Railway (NHER 13591) ran through the parish, opened in 1862 and closed in 1969. The railway track has since been removed though many associated buildings survive including stations at King's Lynn, Dersingham, Snettisham, North Wootton and Wolferton and several signal boxes.
- 3.17 An archaeological evaluation was carried out to the south of the development site and south of Manor Road by Lindsey Archaeological Services in 2005. The NHER (41950) records that one piece of building material and a few pieces of Post-medieval pottery were found.
- 3.18 To summarise, there is a high potential that important archaeological remains relating to the Roman and medieval periods in particular will be present at the development site, surviving as sub-surface archaeological finds, features and/or deposits. The recovery of such information would contribute greatly to Research Topics for the Eastern Counties.

4.0 Geology and Topography

- 4.1 The site, on the north side of Manor Road and approximately 40m northeast of All Saints' Church in North Wootton, is very close to the boundary between the marsh edge and (slightly) higher ground on the landward (east) side. It lies in the former gardens to the west of The Lodge on fairly level ground, slightly east-to-west sloping, at an elevation of c. 9m OD.
- 4.2 **Superficial deposits**
- 4.2.1 To the immediate west of the site lie Flandrian estuarine silts and clays, parts of which had been reclaimed by the time of the Domesday Survey of 1086 (Gallois 1978). Beyond that lie areas of 17th, 18th and 20th century reclamation (*Plate 1*). In the area between the Norman and 17th century reclamation limits there is a lot of made ground, probably associated with medieval salt workings (Gallois, *op cit.*).
- 4.2.2 At the site itself the superficial deposits consist of Older Gravel Beach Deposits; these are probably associated with some development of Head (solifluction deposits) though head deposits are more extensively developed slightly to the north. Both to the north and to the east are extensive areas of Anglian till.
- 4.2.3 Just over 1 km further north is the valley of the Babingley River with its associated alluvial deposits. The Babingley River allowed access to the medieval port at Castle Rising.
- 4.2.4 This whole area would have been within the zone of periglacial activity associated with the last (Devensian) glaciation and would therefore have been affected by ground ice, associated solifluction and other mass movements, and glaciofluvial and fluvial processes.
- 4.3 **Bedrock geology**
- 4.3.1 Underlying the Flandrian deposits to the west are Upper Jurassic Kimmeridge Clays, whilst the solid geology underlying the site itself consist of sands belonging to the Mintlyn Member of the Lower Cretaceous Sandringham Sands Formation. These are, in turn, overlain (to the east) by the Leziat Member of the Sandringham Sands; still further east are outcrops of the Dersingham Beds, Carstone and Chalk.

4.4 Post-depositional diagenetic change

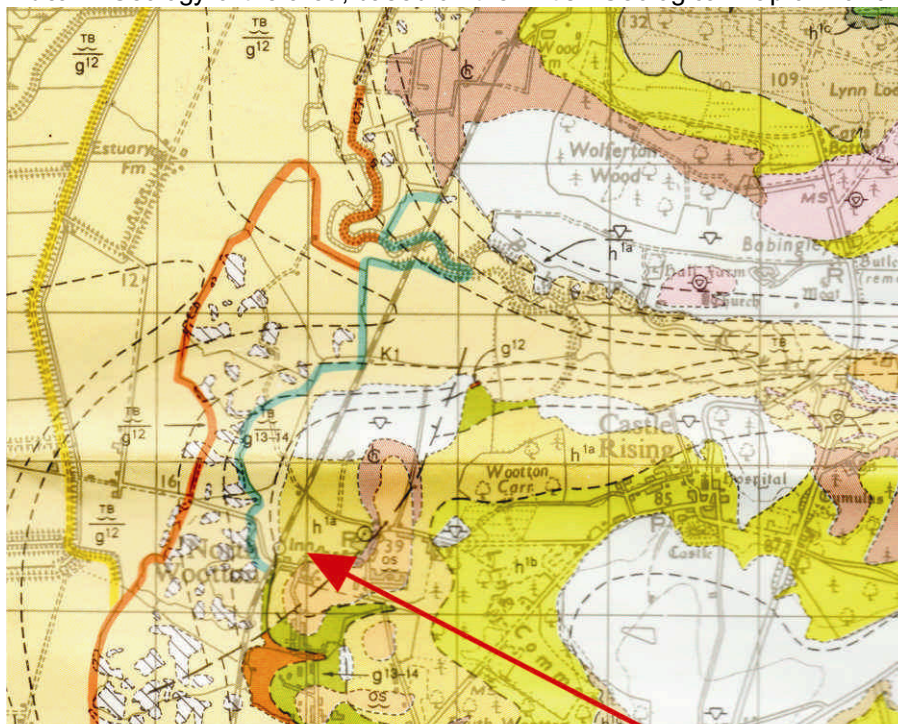
4.4.1 Many of the Lower Cretaceous deposits contain substantial amounts of iron. Originally this may have been in the form of primary deposits, such as glauconite, iron pyrite (FeS₂), or a variety of iron oxides. All, or any, of these could be leached downwards (and outwards), into superficial deposits where they could have acted as secondary cementing materials, or accumulated as more-or-less pure iron oxide deposits (bog iron). This is most likely to have occurred where downward moving iron rich solutions met an impervious stratum such as the Kimmeridge Clay.

4.5 Soils

4.5.1 According to the 1:100000 Soil Map of Norfolk (Soil Survey of England & Wales, 1979) the local [numbered] soil units present are as follows:

- 4.5.1.1 On the marsh, to the west of the site: 532b – Silty soils over marine alluvium.
- 4.5.1.2 On site: 821b – Sandy & fine loamy soils over clayey; glaciofluvial drift over Jurassic clay and chalky till (Chalky Boulder Clay).
- 4.5.1.3 In the Babingley valley: 813b – Clayey and fine silty soils over marine alluvium.
- 4.5.1.4 To the east 551a Sandy & coarse loamy soils over sandy, glaciofluvial drift and coverloam.

Plate 1. Geology of the area, based on the British Geological Map of Norfolk



- | | | |
|------------------------------|---------------------------------|----------------------------|
| Ⓜ Head | g ¹² Kimmeridge clay | Ⓜ Made ground |
| Ⓜ Till | TB Marine alluvium | Ⓜ Reclamation limit 1096 |
| h ^{1a} Mintlyn beds | OS Older Gravel Beach | Ⓜ Limit of c17 reclamation |
| h ^{1b} Leziat sands | | Ⓜ Limit of c19 reclamation |
- Not to scale

5.0 Aims and Objectives

- 5.1 The requirement of the Brief for Archaeological Excavation prepared by Norfolk County Council Historic Environment Service is to replace by record archaeological features, deposits and structures which cannot be preserved *in situ* and which may be damaged or destroyed by the development. This forms part of the research agenda for the eastern counties of England in *Research and Archaeology: a Framework for the Eastern Counties, 1. Resource Assessment* (Glazebrook, J. (ed) 1997) and *Research and Archaeology; a Framework for the Eastern Counties 2. Research agenda and strategy* (Brown, N., and Glazebrook, J. (eds) 2000)
- 5.2 Generic Aims of the project are to;
- 5.2.1 Replace by record archaeological features, deposits and structures within the areas of excavation.
- 5.2.2 Create datasets relating to the stratigraphic, artefactual and environmental information recovered during excavations for analysis.
- 5.3 The specific aims of the project are;
- 5.4 To seek information regarding Research Topics in *Research and Archaeology; a Framework for the Eastern Counties 2. Research agenda and strategy* (Brown, N., and Glazebrook, J. (eds.) 2000)) through this programme of archaeological works.
- 5.5 Contributions may also be made to environmental archaeology research aims (Murphy 2000).

6.0 Method Statement

6.1 Introduction

- 6.1.1 The required archaeological works identified in the *Norfolk County Council Historic Environment Service Brief* specify that the primary purpose of the excavation was to replace by record archaeological features, deposits and structures which cannot be preserved *in situ* and which may be damaged or destroyed by the development. This was achieved through the following methodology.

6.2 Archaeological Excavation

- 6.2.1 An OASIS online record was initiated and key fields completed on Details, Location and Creators forms prior to fieldwork commencing.
- 6.2.2 Consultation of a service plan/s (to be provided by the Client) and CAT-scan of the area was carried out prior to any excavations.
- 6.2.3 The archaeological excavation comprised the footprint of the new dwelling and the foundation trenches for the garage (stated in the Brief as total 320m²), specifically the 3 sides to the garage and around the timber posts on the open side (*Fig. 2*). The Client marked the appropriate locations on site prior to excavations commencing.
- 6.2.4 The excavation areas characterised the full archaeological sequence down to undisturbed 'natural' deposits.
- 6.2.5 A tracked hydraulic-type excavator with qualified driver and toothless ditching bucket was used for the mechanical excavation of modern overburden deposits only.

- 6.2.6 Topsoil and subsoil deposits were removed in spits of no more than 0.1m under constant archaeological supervision and direction until archaeological remains or undisturbed 'natural' deposits were encountered.
- 6.2.7 Topsoil, subsoil, archaeological features & deposits and spoil were metal detected during machine (including each spit of topsoil) and manual excavation and finds were recovered, labelled and bagged, and retained for later analysis by relevant specialists.
- 6.2.8 Spoil arisings were stored at a safe distance of c.1m from the excavation areas.
- 6.2.9 Where archaeological remains were encountered, no further machine excavation was made and archaeological features were sample excavated by hand, using appropriate tools, as follows;

Linear features	10%
Pits, post-holes	50%
Structural remains	50% (depending upon extent of remains)
Burials	*

*No burials were encountered

- 6.2.10 Archaeological features and deposits were recorded on Chris Birks *pro-forma* context sheets. Section and plan drawings were recorded at an appropriate scale (1:50;1:20;1:10) depending upon the level of detail required.
- 6.2.11 A photographic record was made using digital and 35mm black & white film.
- 6.2.12 Appropriate registers for contexts, drawings, photographs and environmental samples were made.
- 6.2.13 All finds of archaeological significance were collected, bagged and labelled for processing, cataloguing and subsequent analysis by relevant finds specialists.
- 6.2.14 Environmental samples were taken from suitably well-sealed and dated archaeological features, deposits and/or structures.
- 6.2.15 A single-context planning methodology was employed and a matrix of the sequence of deposits was made on-site.
- 6.2.16 The Norfolk County Council Historic Environment Service monitored the project during fieldwork and provided advice accordingly.
- 6.2.17 The excavation areas were not backfilled and the Client assumed responsibility for safety implications once archaeological excavations were complete.

6.3 Post-excavation Analysis and Report

- 6.3.1 Artefactual remains recovered during excavations were cleaned, catalogued and sent to relevant finds specialists following fieldwork, in accordance with *Standards and Guidelines for the collection, documentation, conservation and research of archaeological materials* (Institute of Field Archaeologists 2001).
- 6.3.2 An assessment of the recorded evidence was made in accordance with *Management of Archaeological Projects (MAP2)* (English Heritage 1991).
- 6.3.3 The assessment report and updated project design was prepared in accordance with English Heritage 2006, *Management of Research Projects in the Historic*

Environment (MoRPHE), within 6 months of completion of fieldwork. The draft publication report will be provided to the Norfolk County Council Historic Environment Service for comment within 18 months of completion of the fieldwork.

- 6.3.4 The analysis of stratigraphical/structural records, artefactual and environmental materials has been made for inclusion in this site report.
- 6.3.5 A *draft* copy of the report was submitted for consideration by the Norfolk County Council Historic Environment Service on 20 June 2011 and comments were received on 14 July 2011. A digital *draft* copy was provided to the Client. Any amendments/alteration required by the Norfolk County Council Historic Environment Service were considered and made prior to submission of this *final* report.
- 6.3.6 Three copies of the *final* report have been submitted to Norfolk County Council Historic Environment Service; two copies to the Norfolk Historic and Environment Record, one copy to the Local Planning Authority; one copy to the Client, one copy to archive and one copy to the Regional Science Advisor for English Heritage.
- 6.3.7 The OASIS online form will be completed and submitted to the Norfolk Historic Environment Record, including an uploaded .pdf version of the report.
- 6.3.8 The archive will be prepared in a form suitable for microfilming, if required. It will be prepared consistent with the principles of *Management of Archaeological Projects* ('MAP2', English Heritage 1991) and submitted to the Norfolk Museums Service for long-term storage.
- 6.3.9 Excepting those covered by the Treasure Act of 1996, all archaeological materials remain the property of the landowner/s. A formal agreement will be sought regarding any items of local, regional or national significance for donation of finds to an appropriate Museums Service.

7.0 Results

7.1 Introduction

- 7.1.1 Fieldwork was carried out between 12 and 29 October 2010 and access was gained from Manor Road to the south of the site. The weather remained mostly dry with occasional rain showers.
- 7.1.2 The excavation areas comprised the footprint of the new dwelling and foundation trenches for the garage (*Fig. 2*). Archaeological features identified during the excavation are described.
- 7.1.3 Context numbers were allocated during fieldwork and are summarised in *Appendix 1*. A summary of the finds recovered during excavations is provided in *Appendix 2*.
- 7.1.4 Metal detecting was carried out during excavation of overburden deposits, archaeological features and deposits and spoil heaps.
- 7.1.5 A large amount of root disturbance was present and evidence of periglacial stone sorting was seen during the course of the excavations.

7.2 House footprint

- 7.2.1 The house footprint was centrally located within the plot and measured c. 20m by 16m (*Figs. 2 and 3, Plate 2*). It was excavated to a maximum depth of 0.6m from

present ground level, removing c. 0.2m of dark grey brown silty sand (70/30) topsoil [1] with occasional small sub-rounded flints. Topsoil overlay c. 0.4m of mid grey brown silty sand (80/20) subsoil [2] with frequent small sub-rounded flints and light to mid orange/yellow coarse to fine sand undisturbed 'natural' deposit [3] with small to medium rounded and sub-angular flints with areas of small to medium rounded gravels (at c. 8.4m OD). Ceramic building material, pottery and stone were recovered from [2]. Environmental sample number 5 was taken from [3]. Irregular-shaped possible archaeological features or deposits were shown to be 'natural' in origin through sample excavation (*Fig. 3*). No finds were recovered from these features that represented areas of root disturbance and periglacial stone sorting. A number of archaeological features were identified and investigated through manual excavation.

- 7.2.2 The remains of the 2009 backfilled evaluation trenches were observed during mechanical excavation. The slight remains of trench number 1 were visible in undisturbed 'natural' deposits [3] crossing the house excavation area in an approximate southwest-to-northeast orientation (*Fig. 3*).
- 7.2.3 Approximately east-to-west orientated linear feature [4] (at c. 8.4m OD) lay towards the southern edge of excavation (*Figs. 3 and 5, Plates 3 and 4*). It extended beyond the east edge of excavation and measured a maximum 0.8m wide, the width varying throughout the length of the feature between 0.4m and 0.8m. It had fairly steep sides and an irregular, concave base at c. 0.2m to 0.3m deep. The dark grey silty sand (60/40) fill [5] produced Roman pottery, metal working debris and stone. A mid to light pink silty clay (40/60) deposit [6] was identified within fill [5] that produced a sherd of Roman pottery. Environmental sample number 1 was taken from [5].

Plate 2. General view of the house footprint, looking northeast



Scale is 1m

- 7.2.4 A dark grey/black silty sand (60/40) deposit [7] with frequent charcoal was present on the northern edge of linear feature [4] (*Fig. 3, Fig. 5 Section 4*) and produced a sherd of pottery. Initially, this was thought to probably represent a dump of material

within the ditch though it may relate to a separate, discrete feature. Environmental sample number 6 was taken from [7].

- 7.2.5 Linear feature [4] reduced in depth to c. 0.03m close to curvilinear feature [8] at the west edge of excavation. However, it was observed to the west of [8] within the southwest corner of excavation (*Fig. 3*) and sample excavation showed that feature [4] was cut by [8] (*Fig. 5 – Section 10*). At this location, feature [4] measured between 0.58m and 0.78m wide with fairly steep sides and an irregular-concave base at c. 0.23m deep (*Fig. 5 - Sections 8 and 9, Plates 5 and 7*).

Plate 3. Linear feature [4], looking northwest



Scale is 1m

Plate 4. Sample section of linear feature [4], looking eastsoutheast



Scale is 1m

- 7.2.6 Feature [8] (at c. 8.38m OD) was curvilinear shaped in plan and measured between 0.4m and 0.8m wide and 0.3m to 0.16m deep from west to east with fairly steep

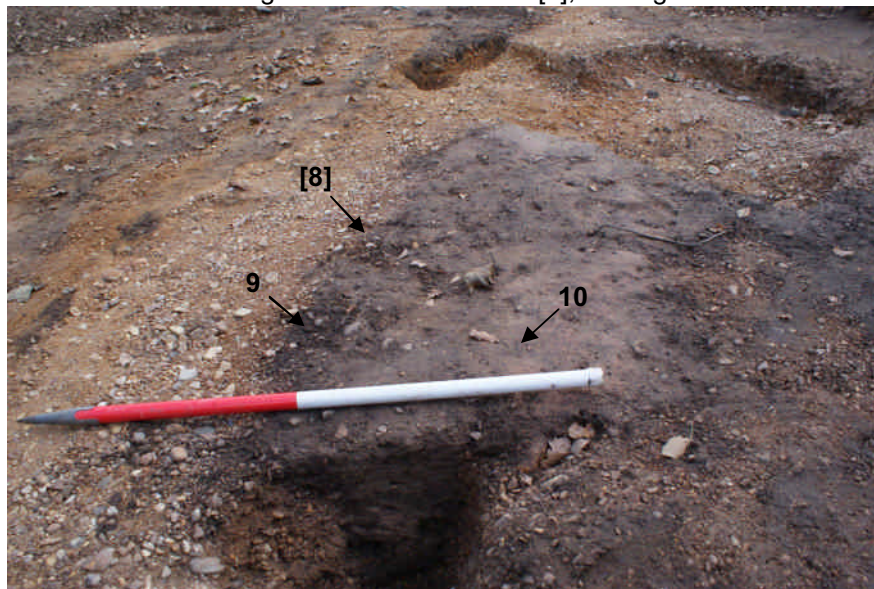
sides and an irregular-concave base (*Fig. 5 - Sections 6, 7 and 10, Plates 6 and 7*). There appeared to be a gravelly deposit following the north edge of [8] though it was difficult to distinguish between this and the surrounding 'natural' deposits [3] other than being more compact and with a slightly pinkish tinge to the colour. Dark grey silty sand (60/40) fill [9] produced metal working debris. An upper mid to light orange/pink silty clay (40/60) deposit [10] produced pottery, stone and metal working debris. Environmental sample number 3 was taken from [10].

Plate 5. Sample section of feature [4] at west edge of excavation, looking northwest



Scale is 1m

Plate 6. During excavation of feature [8], looking southeast



Scale is 1m

7.2.7 Feature [17] (at c. 8.42m OD) extended beyond the northern edge of excavation, possibly a pit or the butt end of a linear feature (*Fig. 3, Fig. 5 Section 16*). It was approximately semi-circular in plan and measured c. 0.44m in diameter. It had fairly steep sides with a concave case at c. 0.23m deep and was sealed by overlying

subsoil deposit [2]. It contained a light to mid grey silty clay (70/30) fill [18] that produced a sherd of pottery and a burnt flint.

Plate 7. During excavation of features [4] and [8], looking northwest



Scale is 1m

7.3 Garage footings

- 7.3.1 Approximately northeast-to-southwest orientated linear feature [19] (at c. 8.49m OD) was present in the eastern garage footing (*Figs. 4 and 6 – Sections 17 and 18*). It extended beyond the west and east edges of excavation and measured c. 0.6m wide. It had steep sides and a concave base at c. 0.4m deep, sealed by subsoil deposit [2]. The dark grey silty sand (60/40) primary fill [20] produced a sherd of pottery.
- 7.3.2 Approximately northeast-to-southwest orientated linear feature [11] (at c. 8.48m OD) was present in the eastern foundation trench, south of [19] (*Figs. 4 and 6 – Sections 17 and 18*). It extended beyond the west and east edges of excavation and measured between c. 0.4m and 0.5m wide. It had fairly steep sides and an irregular, concave base at c. 0.17m deep and was sealed by subsoil deposit [2]. The dark grey silty sand (60/40) fill [12] produced pottery, iron pieces, metal working debris and stone.
- 7.3.3 Approximately east-to-west orientated linear feature [13] (at c. 8.52m OD) was present in the southern end of the eastern foundation trench and in the west end of the southern foundation trench (*Figs. 4, 6 – Sections 19 and 20 and Fig. 7 – Sections 21 and 22*). It extended beyond the west and east edges of excavation and measured c. 1.35m wide. It had fairly steep sides with a concave base at c. 0.3 to 0.4m deep and was sealed by subsoil deposit [2]. The dark grey silty sand (60/40) fill [14] produced pottery, metal working debris, ceramic building material and animal bone. Environmental sample number 2 was taken from [14]. Hammerscale was recovered unstratified from spoil close to feature [13] using a magnet.
- 7.3.4 A possible pit or linear feature [15] (at c. 8.52m OD) was present in the southern of the two western foundation trenches (*Figs. 4, 7 – Sections 23, 25 and 26*). It extended beyond the west east and south edges of excavation with approximately

1.2m exposed within the trench. It had concave sides with a flat base at a maximum 0.36m deep and was sealed by subsoil deposit [2]. The dark grey silty sand (60/40) fill [16] produced pottery, metal working debris, animal bone and stone. Environmental sample number 4 was taken from [16].

8.0 Pottery

by Alice Lyons

8.1 Introduction

8.1.1 A total of 34 sherds of pottery (0.379kg) were recovered from subsoil [2], a deposit [7], a pit [17] and four linear features ([4], [8], [11], [13]). The majority of the material are Romano-British coarse wares (32 sherds; weighing 0.299kg), although 2 sherds (0.032kg) of medieval coarse ware pottery were also found.

8.1.2 The pottery was in fair condition, only slightly abraded with an average weight of c. 11g; some evidence of use (soot residues) survived on the surface of the pottery.

8.2 Methodology

8.2.1 The assemblage was analysed in accordance with the guidelines laid down by the Study Group for Roman Pottery (Webster 1976; Darling 1994; Willis 2004). The total assemblage was studied and a catalogue prepared.

8.2.2 The sherds were examined using a hand lens (x20 magnification) and were divided into fabric groups defined on the basis of inclusion types present. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted.

8.3 Results by context

8.3.1 Subsoil [2]. Ten sherds of Romano-British pottery were recovered from this layer (0.101kg). Most were undiagnostic locally produced coarse wares jar and storage jar fragments (8 sherds weighing 0.088kg). The local fabric, which was produced in the Nar Valley and surrounding areas, is a hard rough fabric, very dark grey throughout, with a moderate amount of quartz and the odd fragment of flint (Andrews 1985, 89-90 (RW1); Gurney 1990, 89; Lyons 2004, 34). Also found were two non local micaceous grey ware jar/bowl sherds (0.013kg) probably originating from North Suffolk (Tomber and Dore 1998, 184).

8.3.2 Linear feature [4]. Six sherds (0.039kg) from a single proto grey ware Early Romano-British jar/bowl (mid 1st to early-mid 2nd century AD) were identified in a layer [6] within linear feature [4]. Slightly later in date (mid 2nd to 3rd century AD) coarse grey ware pottery (3 sherds; weighing 0.02kg) typical of West Norfolk production was also retrieved from another layer [5] within the same ditch. A single fragment (0.021kg) from a quite finely locally produced Sandy reduced ware jar with an everted rim was also recovered with these sherds.

8.3.3 Deposit [7]. A single coarse greyware cooking pot sherd (0.025kg), dating to the medieval period (13th-15th centuries) was recovered from this deposit.

8.3.4 Linear feature [8]. A single locally produced Romano-British (0.008kg) grey ware jar/bowl sherd, decorated with three grooves around the girth which can be dated

between the mid 1st and 2nd centuries AD was recovered from a layer [10] within this feature.

- 8.3.5 Linear feature [11]. Two Romano-British (0.020kg) grey ware jar/bowl sherds, which contained silver mica as a natural component of the clay, were recovered from a layer [12] within this feature. Clay with silver mica was widely used for pottery production in North Suffolk during the Romano-British period (Tomber and Dore 1998, 184).
- 8.3.6 The largest single group of pottery within this small assemblage (10 sherds, weighing 0.098g) was recovered from four deposits [14], [16], [18], [20]. This pottery consists of locally produced grey and reduced wares of undiagnostic jar/bowl type, (2nd to 4th AD) although a straight-sided grey ware dish with a small flange (dating between the mid 3rd to late 4th centuries AD) was also found. In addition, a single coarse grey ware sherd (0.007g) that originated from the 'saggy base' of a medieval (unglazed) jar was also found.
- 8.3.7 Pit [17]. A single (0.007kg) coarse sandy grey ware jar/bowl sherd was recovered from a layer [18] within this pit. This fragment can only be dated between the 2nd and 4th centuries AD.

8.4 Summary

- 8.4.1 The assemblage is small and includes both diagnostically Early, Mid and Late Romano-British locally produced coarse ware pottery; although two micaceous sherds may have originated in North Suffolk. The lack of finewares or imported pottery and the utilitarian nature of the sherds (some sooted) suggest low-status domestic activity, perhaps associated with settlement near the site, took place over a significant part of the Romano-British period, with activity reoccurring in medieval times.

9.0 Ceramic Building Material

by Alice Lyons

9.1 Introduction

- 9.1.1 Eight Romano-British fragments (0.281kg) of ceramic building material (CBM) were found in both the subsoil [2] and linear feature [13].

9.2 Results

- 9.2.1 Subsoil [2]. The two pieces (0.087kg) of undiagnostic Romano-British CBM that were recovered from his deposit included a grog tempered example.
- 9.2.2 Linear feature [13]. A total of 4 sandy CBM fragments (0.194kg) were recovered from fill [14] within this feature. Most were undiagnostic pieces; however, one was a Tegula roof tile (0.157kg) fragment.

9.3 Summary

- 9.3.1 This is a small assemblage of much abraded Romano-British ceramic building material, most of which is undiagnostic. One piece of Tegula, which originated from a substantial structure with a heavy tiled roof, was identified however.

10.0 Metal working debris

by Robin Stevenson

10.1 Introduction

10.1.1 A total of 6.005kg of metal working debris and an iron nail (0.007kg) was recovered from 6 excavated features and deposits – [5], [9], [10], [12], [14] and [16].

10.2 Results by context

10.2.1 The primary fill [5] of linear feature [4] produced a total of 1.836kg of metal working debris - fragments of slag derived from iron smelting. The relatively high specific gravity, metallic sheen and the presence on many fragments of surface flow textures (similar to those found on lavas) and vesicles ('frozen' gas escape bubbles) in others were indicative and typical of slag from a bloomery furnace. The heavy, dense fabric of the slag indicates a high iron content, probably due to the smelt not being particularly efficient.

10.2.2 Fill [9] of linear feature [8] produced a total of 0.493kg of metal working debris comprising 5 fragments of slag derived from iron working.

10.2.3 Fill [10] of linear feature [8] produced 0.52kg of metal working debris comprising 4 fragments of slag

10.2.4 Fill [12] of linear feature [11] produced 4 small fragments of slag (0.16kg).

10.2.5 Fill [14] of linear feature [13] produced 15 pieces of iron slag (1.527kg). Hammerscale (0.04kg) was recovered unstratified from spoil close to feature [13] in the garage footings.

10.2.6 Fill [16] of feature [15] produced a total of 42 pieces of iron slag (1.469kg).

10.3 Conclusions

10.3.1 The slag derived from iron smelting is typical of slag produced in a bloomery shaft-type furnace. The heavy, dense nature of the slag indicates a high iron content, probably due to the smelt not being particularly efficient. Evidence of flow when the slag was molten was observed and it seems likely this slag was run out from the furnace. The quantity of slag recovered may indicate that furnaces were not located a great distance away.

10.3.2 Although it was not noted whether the hammerscale was spherical or flake, it is likely to have derived from smithing or finery activities.

11.0 Stone

by Robin Stevenson

11.1 Introduction

11.1.1 A total of 2.767kg of stone, 0.012kg of lava and 0.034kg of flint was recovered from 7 excavated features and deposits – [2], [5], [10], [12], [14], [16] and [18].

11.1.2 An examination of the stone assemblage was made in order to establish any relevance to source material for iron ore.

11.2 Results by context

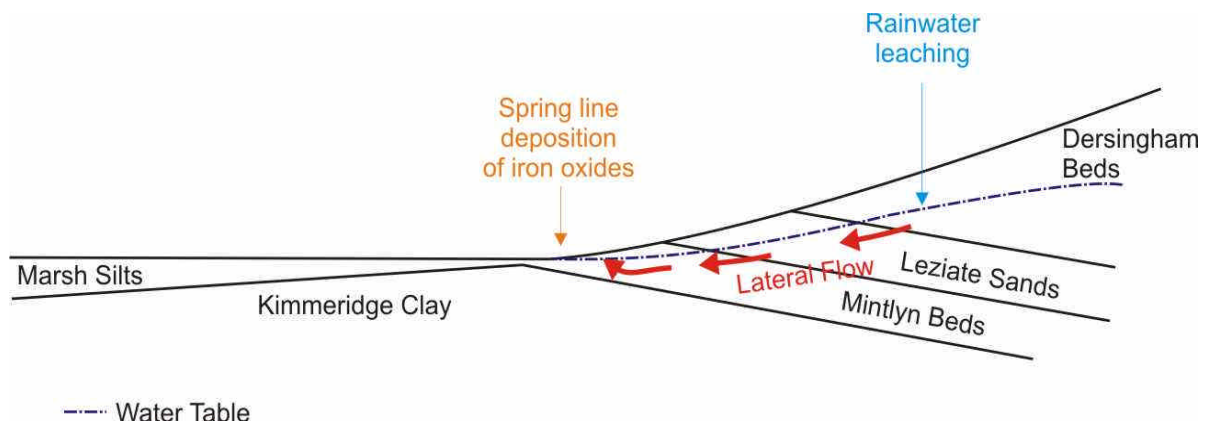
- 11.2.1 Nine fragments (0.96kg), of differing size, of an iron cemented, coarse, poorly sorted quartz arenite (sandstone) were recovered from [5]. Some of these fragments contain flint pebbles, which, because flint only formed in the Chalk, indicate that they must be younger than the Chalk. Despite a superficial resemblance these cannot be derived from the Carstone – which is older than the Chalk. This could be locally cemented material from the Older Breach Gravels – certainly the shape of the clasts indicates that they have not travelled very far. A c. 0.06m fragment (0.08kg) of porphyritic lava was recovered from [5]. The clast is rounded/subangular and is presumably of glacial origin – possibly derived from nearby till sources.
- 11.2.2 Fill [9] of linear feature [8] produced a sub-rounded clast of a fine grained, well cemented, brown stained quartz sandstone. Rather anonymous material like this is difficult to place, but is probably of glacial origin – possibly transported from some of the Carboniferous sandstones of northern England.
- 11.2.3 Fill [10] of linear feature [8] produced 2 fragments of coarse, poorly sorted iron cemented sandstone (0.052kg). The fragments were angular, showing few signs of transport. This material closely resembles that found in [5].
- 11.2.4 Fill [12] of linear feature [11] produced 8 angular fragments of coarse pebbly sandstone (0.528kg) similar to that recovered from [5]. Small, flint pebbles were also present.
- 11.2.5 One large (c. 12 cm long, 0.212kg), very flattened clast with rounded edges was recovered from [12]. It consisted of well sorted fine sandstone, was well cemented, and had a light brown colour. Similar material to this is available locally in the Dersingham Beds. Two small fragments of material of similar origin were also recovered, this time showing the sort of differential cementation associated with the formation of boxstones – which are not uncommon in parts of the Dersingham Beds.
- 11.2.6 A 5cm long, very narrow piece of coarse iron cemented sandy material was recovered from [12] (0.07kg). This looks as if it might have been caused by differential cementation around something like an old nail. It could also be of organic origin with differential cementation occurring round a plant root or a burrow of some sort.
- 11.2.7 Fill [14] of linear feature [13] produced 2 fragments of basaltic lava (0.012kg). Initially, the lava was thought to be a piece of slag with many gas vesicles. However, the abundance and shape of the vesicles, very different from those found in the slag, is very distinctive. The presence of phenocrysts and mineral infills to some of the vesicles indicates a volcanic origin. The larger of the two fragments shows signs of rounding, by transport, which none of the slag fragments do, but the lack of a soil infill in any of the vesicles is slightly puzzling. These most probably relate to a lava stone quern, commonly found in contexts associated with Roman settlement. Hammerscale (0.04kg) was recovered unstratified from spoil close to feature [13] in the garage footings.
- 11.2.8 Fill [16] of feature [15] produced a total of 0.705kg of stone including several sub-angular/sub-rounded clasts of a dark brown (iron stained) well cemented pebbly

sandstone, the pebbles being of flint. A single sub-rounded clast of a fine grained, light brown, well cemented sandstone was present, probably glacially transported. A single clast of a shelly oolitic sparite cemented limestone – possibly Barnack Rag. Possibly of glacial origin, possibly from nearby building. A single angular piece of white burnt flint was present (0.034kg). Forty-two pieces of iron slag (1.469kg) were recovered from [16].

11.3 Conclusions

- 11.3.1 The fragments of the coarse pebbly sandstone were the most frequent in the assemblage. Although it is a material which might not survive transport very well, the lack of signs of transport indicate it is probably of very local origin – lithified material within the Older Gravel Beach deposits is the most likely source. It is unlikely they would have been used as an iron ore on account of the sand and gravel content which would have made them virtually useless.
- 11.3.2 Next most frequent were a variety of clasts which, based on similarity of lithology and proximity to source, are probably derived from the Dersingham Beds. Although these, and the abundant fragments of iron cemented sand and gravel present, have iron oxide cements it is unlikely that they would have been used as actual ores because of the technical difficulties associated with dealing with silica sand impurities. The main source of usable ore is likely to have been the relatively pure iron oxides associated with Bog Iron Ore pan forming at the marsh edge (*Plate 8*) which, during the Romano-British period, was probably very close to the west of the site. Other sources may include limonite nodules or ironstones (Tylecote 1962) though these are likely to have been some distance from the site.
- 11.3.3 The single clasts are from a variety of origins, glacial transport being the most likely mechanism by which they reached the Norfolk area, with subsequent reworking of tills and glaciofluvial deposits being the probable way by which they reached the site. There is no archaeological significance to these stones.

Plate 8. Transport of iron oxides leading to formation of bog iron ore pan



12.0 Faunal Remains

by Julie Curl – Sylvanus – Archaeological, Natural History & Illustration Services

12.1 Methodology

12.1.1 The assessment was carried out following a modified version of guidelines by English Heritage (Davis 1992). All of the bone was examined to determine range of species and elements present. A note was also made of butchering and any indications of skinning, hornworking and other modifications. When possible a record was made of ages and any other relevant information, such as pathologies. Counts and weights were noted for each context. As this is a small assemblage, the data was directly input into the table in this report.

12.2 The assemblage

- 12.2.1 A total of 0.168kg of faunal remains, consisting of twenty-three pieces, was recovered from this excavation. Bone was produced from two fills, [14] and [16], from the linear feature [13]. The faunal remains were produced with ceramics and other finds of a Roman date. All of the remains are in good condition, although they are fragmentary from butchering and wear.
- 12.2.2 Context [14] produced the butchered remains of sheep and cattle (0.142kg). The cattle remains are derived from an adult animal. The cattle metatarsal shows a cut mark that attests to the animal being skinned, the bone has also been chopped, presumably to allow access to the nutritious marrow inside. The sheep from [14] largely consists of fragments of skull and a horncore. The sheep horncore is of particular interest as it shows a depression close to the base, known as 'thumbprint depressions' (Albarella, 1995); this depression usually arises as a result of stress (either physical or nutritional) upon the animal, causing it to re-absorb the calcium from the horncore. The stress upon the sheep may be from over-breeding or milking, a poor diet or a harsh winter.
- 12.2.3 The bone from [16] consists of a chopped cattle vertebrae (0.026kg).

12.3 Conclusions

12.3.1 The remains in this assemblage are derived from the butchering and food waste from domestic mammals. The pathology noted on the sheep horncore would suggest this animal had been under some stress and would suggest some pressures on stock at this site in the Roman period.

13.0 Environmental Evidence

by Val Fryer

13.1 Introduction and method statement

- 13.1.1 Excavations at North Wootton, undertaken by Chris Birks Archaeological Services in advance of building work, recorded a limited number of features, all of which were situated within and adjacent to a known focus of Roman metal working activity. Samples for the retrieval of the plant macrofossil assemblages were taken from ditch fills and a possible 'natural' deposit, six were submitted for assessment.
- 13.1.2 The samples were processed by manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. The dried flots were scanned under a

binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed in Table 1. Nomenclature within the table follows Stace (1997). All plant remains were charred. Modern fibrous roots were also recorded.

13.1.3 The non-floating residues were collected in a 1mm mesh sieve and will be sorted when dry. Any artefacts/ecofacts will be retained for further specialist analysis.

13.2 Results

13.2.1 The recovered assemblages were all very small (<0.1 litres in volume), with most being largely composed of charcoal/charred wood fragments. Many of the latter had a distinct flaked appearance, probably indicating that combustion of the material had occurred at very high temperatures. Other plant macrofossils were scarce, but wheat (*Triticum* sp.) grains were noted within the assemblages from samples 2 and 3 and a single, small vetch/vetchling (*Vicia/Lathyrus* sp.) cotyledon was recovered from sample 1. Heather (Ericaceae) stem fragments were recorded within samples 1, 2 and 3. The preservation of these macrofossils was generally quite poor, with the grains in particular being puffed and distorted as a result of high temperature combustion.

13.2.2 Other remains were also scarce. Whilst the majority of the pieces of black porous and tarry material were possible residues of the combustion of organic remains at very high temperatures, other fragments were hard and brittle, possibly indicating that they were bi-products of the burning of coal, fragments of which were found in four of the assemblages studied. Small pellets of burnt or fired clay were recorded from samples 2 and 4 and a single piece of ferrous hammer scale was noted from sample 2.

13.3 Conclusions and recommendations for further work

13.3.1 In summary, the macrofossil assemblages recovered from the current site are very similar in composition to those from an earlier evaluation undertaken on this site (Fryer 2009). Charcoal, some of which has obviously been burnt at a very high temperature, is predominant, and although other plant remains are present, it is thought most likely that these were either accidental inclusions within the assemblages or the remains of waste materials used as kindling or fuel. Heather stem fragments are again present, emphasising the value of this locally gathered resource as a fuel within Roman industrial contexts.

13.3.2 As none of the current assemblages contain a sufficient density of macrofossils for quantification (*i.e.* 100+ specimens), no further analysis is recommended. However, this area has now been confirmed as a site of industrial significance and, therefore, if any further interventions are planned, it is strongly recommended that additional plant macrofossil samples of 20 to 40 litres in volume are taken from all dated and well-sealed contexts recorded during excavation.

14.0 Site Conclusions and Discussion

- 14.1 Although only a small number of archaeological features and deposits were encountered during the excavations, evidence relating to industrial, settlement and subsistence activities has been gained. This information contributes to Research Topics in *Research and Archaeology; a Framework for the Eastern Counties 2. Research agenda and strategy* (Brown, N., and Glazebrook, J. (eds.) 2000)) and to environmental archaeology research aims (Murphy 2000) for the Romano-British period.
- 14.2 Iron smelting (bloomery) activities occurred on and close to this site during the early, mid and late Romano-British periods. The pottery assemblage mostly comprised locally produced wares though two sherds may have originated in North Suffolk. Excavated features correspond to those recorded in the 2009 evaluation (*Fig. 8*). Despite no remains of furnaces being encountered, the slag recovered from features on site indicate that iron smelting was being carried out close-by and waste was being deposited into these features. The furnaces were probably short lived and may have only been fired three times, possibly 100 furnaces existed in this area (Smallwood 1989).
- 14.3 The archaeological evaluation by trial trenching in 2009 produced evidence that this bloomery extended further north than previously expected and the results of this excavation support this evidence. The lack of remains in the northern part of the site indicates that activities occurred no further to the north (*Fig. 9*).
- 14.4 The iron slag recovered during excavations is typical of slag produced in a bloomery shaft-type furnace, similar to those found at Ashwicken and Scole. The heavy, dense nature of the slag indicates a high iron content, probably due to the smelt not being particularly efficient. Evidence of flow when the slag was molten suggests a similar construction to that proposed at Ashwicken where slag was run-off from the furnace into pits/hollows. Hammerscale pieces recovered during excavations (debris produced through the reworking of a hot bloom from a furnace to remove slag or through smithing/finery processes), also present in one of the environmental samples, indicate that the reworking of blooms, or smithing/finery activities, was carried out nearby.
- 14.5 It is highly probable this location was chosen for continued iron smelting due to the proximity to raw material – most probably the bog iron pan in the marsh deposits, very close to the west of the current site, the iron oxides for which most likely originated in the nearby Dersingham Beds. Charcoal, burnt at very high temperatures was predominant in the environmental samples indicating the use of such in the furnaces. Although heather stem fragments were present in the samples, it is likely charcoal rather than heather was used in order to achieve the high temperatures required. The limited timber resources of the area could never have supported a large iron industry even though the sites, including that of North Wootton, appear impressive (Smallwood 1989).
- 14.6 Additional to the investigations in 1987 and 2009 in which domestic refuse was practically non-existent, the present excavations have produced evidence of domestic refuse disposal indicating settlement, probably of low status according to

the pottery assemblage, occurred in the vicinity of the site over a significant part of the Romano-British period, possibly with activity reoccurring in medieval times

- 14.7 Of particular interest from the faunal remains, the sheep horn core indicates the animal had been under some stress and would suggest some pressures on stock at this site in the Roman period. Although plant macrofossils were scarce, wheat grains were noted within the current environmental assemblages and a single, small vetch/vetchling cotyledon was also recovered. Vetches (*Vicia*) and vetchlings (*Lathyrus*) are genera within the Pea family and can occur in both agricultural and natural habitats. Its presence may indicate the proximity to meadows used for hay to produce fodder for the animals though may simply been a wild occurrence.
- 14.8 The piece of Tegula recovered during the present excavation most probably originated from a substantial structure with a heavy tiled roof located in the vicinity of the site, possibly indicating higher status settlement.
- 14.9 Despite the proximity to All Saints' Church, a probable focus of medieval activities, medieval evidence was minimal including one sherd of 13th to 15th century pottery from a deposit. However, this sherd was probably from a cooking pot and has soot consistent with its use indicating settlement activities were occurring nearby. A sherd from an unglazed medieval jar was recovered from a feature that also produced mid to late Romano-British pottery and iron slag remains. This may tentatively indicate smelting continued into the medieval period though the lack of Saxon or further medieval remains may suggest this find was intrusive.
- 14.10 The amount of root disturbance has no doubt had a detrimental effect on sub-surface archaeological features or deposits.

15.0 Assessment of Recorded Evidence

15.1 Excavation Archive Material

15.1.1 This assessment is based on the following archive material.

- 20 contexts
- 10 drawings
- 4 registers
- 32 digital colour photographs
- 32 black and white transparencies

15.2 Stratigraphic Assessment - Historical Periods

Two main periods were originally identified from the artefactual assemblage and included in the Updated Project Design (CB219U). Following pottery analysis, the medieval period has been added.

Table 1. Summary of periods

Period	Name	Dates
1	Romano-British	1 st to 4 th century
3	Medieval	13 th to 15 th century
2	Modern	19 th to 20 th century

15.3 Excavation Results and Statement of Potential (by period)

15.3.1 Context numbers allocated during excavations are summarised in *Appendix 1*. A statement of potential is provided by period.

15.3.2 **Prehistoric.** No prehistoric remains except a possible flint pot boiler were encountered and this period of activity on the site has no potential for further analysis.

15.3.3 **Romano-British.** Archaeological remains encountered during the present excavations are similar to those recorded in the Archaeological Evaluation of the site in 2009. This period of activity on the site has high potential for further analysis.

15.3.4 **Saxon.** No Saxon remains were encountered and this period of activity on the site has no potential for further analysis.

15.3.5 **Medieval.** No medieval archaeological features were encountered. Analysis of the pottery identified a sherd of 13th to 15th century date from a deposit and a further medieval shed of unspecified date. Although All Saints' Church lies on the opposite side of Manor Road from the present excavations, there was no evidence that a different boundary to the present churchyard existed or that occupation of this area expanded from the church toward the northeast. This period of activity on the site has little potential for further analysis.

15.3.6 **Post-medieval and Late Post-medieval.** No Post-medieval or Late Post-medieval remains were encountered and this period of activity on the site has no potential for further analysis.

15.3.7 **Modern.** Evidence of burning most probably related to garden fires was seen. Further analysis would not increase understanding of the modern activity recorded during present excavations.

15.4 **Artefactual Data**

15.4.1 Finds material from the site is summarised in *Appendix 2*. The majority of the finds were in fair to good condition.

Metalworking Debris

A total of 6.005kg of metal working debris was recovered during excavations.

Stone

A total of 2.767kg of stone was recovered during excavations.

Pottery

A total of 0.379kg of pottery sherds was recovered during excavations. The majority date to the Early, Mid and Late Romano-British periods and a single sherd to the medieval period.

Ceramic Building Material

A total of 0.281kg of Romano-British ceramic building material was recovered.

Bone

A total of 0.168kg of animal bone was recovered during excavations, derived from butchering and food waste.

Flint

A total of 0.034kg of (burnt) flint was recovered during excavations.

15.5 **Statement of Potential**

15.5.1 The finds assemblage is of reasonable size; the pottery, stones and faunal remain finds have been described and dated and further information through additional specialist analysis is unlikely to provide any information that would contribute to further understanding of the site or contribute to regional research aims and objectives.

15.5.2 Further analysis of the metal working debris may provide further information that would contribute to further understanding of the site and contribute to regional research aims and objectives.

15.5.3 Six environmental samples were taken from well dated, sealed contexts and were sufficiently reported upon.

16.0 **Updated Project Design**

16.1 Proposals for further analysis of the stratigraphic, artefactual and environmental evidence are presented based on the assessment sections of this report and the statements of potential which demonstrate the academic potential of the data available.

- 16.1.1 The metal working debris assemblage will be forwarded to an archaeometallurgy specialist, to be agreed with the Norfolk County Council Historic Environment Service. The results will be presented as an addendum to this final report. Photographs and/or illustrations of metal working debris could be included in the addendum.
- 16.1.2 Contributions to research aims and objectives have been made through the reporting of the excavated, artefactual and environmental evidence. New research questions may arise from further study of the results of this archaeological excavation and there is potential value to local and regional, though unlikely national, research priorities.
- 16.2 Most Roman iron working sites in Norfolk are evidenced through associated remains, in particular scatters of slag and features containing slag. Few *in situ* remains of the furnaces have been excavated, exceptions including Ashwicken and Scole. It seems highly likely such remains exist close to the present site and further archaeological investigations prior to development would be highly recommended the results of which could contribute greatly to the understanding of iron smelting in West Norfolk.

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Fieldwork was undertaken by Chris Birks. Many thanks to Kevin Elfleet for his assistance with metal detecting. Drawings were prepared by Chris Birks and the report was written by Chris Birks.

Finds analysis was carried out by Alice Lyons (Roman pottery and ceramic building material), Robin Stevenson (metalworking debris and geology) and Julie Curl (Sylvanus – Archaeological, Natural History and Illustration Services) who studied and reported upon the faunal remains.

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Appendix 1. Context Summary

Context No.	Location	Type	Description	Initials/Date
1	HF/GF	D	Dark grey brown silty sand (70/30) topsoil with occasional small sub-rounded flints	CB/12.10.10
2	HF/GF	D	Mid grey brown silty sand (80/20) subsoil with frequent small sub-rounded flints	CB/12.10.10
3	HF/GF	D	Mid to light orange/yellow coarse to fine sand undisturbed 'natural' deposits with small to medium rounded and sub-angular flints	CB/12.10.10
4	HF	C	Linear feature	CB/14.10.10
5	HF	D	Dark grey silty sand (60/40) fill of [4] with small to medium sub-angular flints	CB/14.10.10
6	HF	D	Mid to light pink silty clay (40/60) deposit within fill [5] of [4]	CB/14.10.10
7	HF	D	Dark grey/black silty sand (60/40) deposit with frequent charcoal	CB/14.10.10
8	HF	C	Linear feature	CB/14.10.10
9	HF	D	Dark grey silty sand (60/40) fill of [8] with small to medium sub-angular flints	CB/21.10.10
10	HF	D	Mid to light orange/pink silty clay (40/60) deposit within fill [9] of [8]	CB/21.10.10
11	GF	C	Linear feature	CB/21.10.10
12	GF	D	Dark grey silty sand (60/40) fill of [11] with small to medium sub-angular flints	CB/21.10.10
13	GF	C	Linear feature	CB/21.10.10
14	GF	D	Dark grey silty sand (60/40) fill of [13] with small to medium sub-angular flints	CB/22.10.10
15	GF	C	Pit/linear feature	CB/22.10.10
16	GF	D	Dark grey silty sand (60/40) fill of [13] with small to medium sub-angular flints	CB/22.10.10
17	HF	C	Pit	CB/22.10.10
18	HF	D	Light to mid grey silty clay (70/30) fill of [17]	CB/22.10.10
19	GF	C	Linear feature	CB/22.10.10
20	GF	D	Dark grey silty sand (60/40) fill of [13] with occ. small to medium sub-angular flints	CB/22.10.10

Key

HF	House footprint
GF	Garage footings
C	Cut
D	Deposit

Appendix 2. Finds Summary

Context No.	Cut No.	Context Description	Material	Weight (kg)	Period	Date	Comments
2	-	Subsoil	CBM	0.087	Romano-British		
2	-	Subsoil	Pottery	0.101	Romano-British	C1 - C4	
2	-	Subsoil	Stone	0.304	Romano-British		
5	4	Fill of ditch	Stone	0.968	Romano-British		
5	4	Fill of ditch	MWD	1.836	Romano-British		
5	4	Fill of ditch	Pottery	0.041	Romano-British	C2 - C3	
6	4	Fill of ditch	Pottery	0.039	Romano-British	C1 - C4	
7	4	Fill of ditch	Pottery	0.025	medieval	C13 - C15	
9	8	Fill of ditch	MWD	0.493	Romano-British		
10	8	Fill of ditch	Pottery	0.008	Romano-British	C1 - C2	
10	8	Fill of ditch	Stone	0.050	Romano-British		
10	8	Fill of ditch	MWD	0.520	Romano-British		
12	11	Fill of ditch	Pottery	0.020	Romano-British	C1 - C4	
12	11	Fill of ditch	Stone	0.740	Romano-British		
12	11	Fill of ditch	MWD	0.160	Romano-British		
12	11	Fill of ditch	Iron	0.007	Romano-British		Iron nail
14	13	Fill of ditch	MWD	1.527	Romano-British		
14	13	Fill of ditch	Lava	0.012kg	Romano-British		?Quern stone
14	13	Fill of ditch	Pottery	0.020	Romano-British	C2 - C4	
14	13	Fill of ditch	CBM	0.194	Romano-British		
14	13	Fill of ditch	Bone	0.142	Romano-British		Animal bone
16	15	Fill of ditch	Pottery	0.161	Late RB/ ?medieval		
16	15	Fill of ditch	MWD	1.469	Romano-British		
16	15	Fill of ditch	Bone	0.026	Romano-British		Animal bone
16	15	Fill of ditch	Stone	0.705	Romano-British		
18	17	Fill of pit	Flint	0.034	Romano-British		Burnt flint
18	17	Fill of pit	Pottery	0.007	Romano-British	C2 - C4	
20	19	Fill of feature	Pottery	0.029	Romano-British	C1 - C4	
U/S	-	From spoil	Iron	0.004	Romano-British		Hammerscale

Key

MWD Metal working debris

U/S Unstratified

Appendix 3. Pottery Summary

CONTEXT NUMBER	CLASS	CERAMIC TRADITION	FABRIC GROUP/FAMILY	FABRIC TYPE	TEXTURE	SHERD TYPE	HANDMADE OR WHEEL-MADE?	DECORATIVE CATEGORY	DECORATIVE POSITION	NO. SHERDS	WT. (G)	RIM DIA.	RIM %	NO. REFITS	FORM	CLASS	RIM TYPE	BASE TYPE	RESIDUE TYPE	LOCATION OF RESIDUE	CERAMIC SPOT DATE	CONTEXT DATE	NOTES
2	CBM	RB		SAND AND FLINT	COARSE	U				1	17										C2-C4	C2-C4	
2	POT	RB	SREDW	SAND	COARSE	B	WM			1	20				SJAR		FLAT				MC1-C4	C2-C4	
2	POT	RB	SGW	WNGW	COARSE	UD	WM	DOUBLE GROOVE	ON GIRTH	6	60				JAR/C POT				SOOT	ON BODY	LC1-C4	C2-C4	
2	POT	RB	SGW	SGW(MICA)	FINER	U	WM			2	13				JAR/B OWL						LC1-C4	C2-C4	
2	?CBM	RM	GW	GW(GROG)(OX SURFACES)	COARSE	U	HM			1	70				?TILE						C1-C4	C2-C4	?TILE FRAGMENT, OR A GRIDDLE PLATE – MIGHT EVEN BE PART OF A LARGE SJAR (BUT THAT SEEMS UNLIKELY)
2	POT	ERB	GW	GW(GROG)(OX SURFACES)	COARSE	U	HM			1	8				JAR/SJAR						MC1-C4	C2-C4	
5	POT	RB	SRW	WNRW	COARSE	RU	WM			2	11	18	5		JAR/B OWL						MC2-C4	MC2-C3	
5	POT	RB	SGW	WNGW	COARSE	U	WM			1	9				JAR/B OWL						LC1-C4	MC2-C3	
5	POT	RB	SGW	SGW(BLACK SLIP)	FINER	RU	WM			1	21	15	1		JAR	4.13	EVERTED				C2-C3	MC2-C3	

CONTEXT NUMBER	CLASS	CERAMIC TRADITION	FABRIC GROUP/FAMILY	FABRIC TYPE	TEXTURE	SHERD TYPE	HANDMADE OR WHEEL-MADE?	DECORATIVE CATEGORY	DECORATIVE POSITION	NO. SHERDS	WT. (G)	RIM DIA.	RIM %	NO. REFITS	FORM	CLASS	RIM TYPE	BASE TYPE	RESIDUE TYPE	LOCATION OF RESIDUE	CERAMIC SPOT DATE	CONTEXT DATE	NOTES
10	POT	RB	SGW	SGW	FINER	D	WM	TRIPLE GROOVE	ON GIRTH	1	8				JAR/B OWL						MC1-C2	MC1-C2	
7	POT	MED	GW	SGW	COARSE	UB	SW/WM			1	25				JAR/C POT				SOOT	ON BODY	?MED	?MED	IS THIS THETFORD-TYPE WARE?
12	POT	RB	SGW	SGW(MICA)	FINER	U	WM			2	20				JAR						LC1-C4	LC1-C4	
20	POT	RB	SGW	WNGW	COARSE	UB	WM			4	26				JAR/B OWL						MC1-C4	MC1-C4	VERY ABRADED
18	POT	RB	SGW	SGW	COARSE	RU	WM			1	7	11	10		WJAR/BOWL						C2-C4	C2-C4	
16	CBM	?	SAND	SAND	COARSE	U	HM			1	87				TILE						?	LRB+ ?MED	
16	CBM	RB		SAND	COARSE	U	HM			1	11				TILE						C2-C4	LRB+ ?MED	
16	POT	RB	SGW	SGW	FINER	RU	WM			1	45	18	4		FDISH	FLANGED DISH (6.17)					M/LC 3-C4	LRB+ ?MED	
16	POT	RB	SGW	WNGW	COARSE	U	WM			2	1				JAR/B OWL						LC1-C4	LRB+ ?MED	
16	POT	?MED	SGW	SGW	COARSE	B	WM			1	7				JAR						?MED	LRB+ ?MED	
6	POT	ERB	SGW(PROTO)	SGW(SANDWICH)	FINER	RU	WM			5	31	15	9		JAR				FLAT; SLIGHT FOOTRING		M/LC 1-E/MC 2		M/LC1-E/MC2
14	POT	RB	SGW	WNGW	COARSE	U	WM			1	6				JAR/B OWL						LC1-C4	C2-C4	
14	POT	RB	SRW	WNRW	COARSE	U	WM			1	13				JAR/B OWL						C2-C4	C2-C4	
14	CBM	RB		SAND	COARSE	U	HM			1	157				TEGULA						C2-C4	C2-C4	

CONTEXT NUMBER	CLASS	CERAMIC TRADITION	FABRIC GROUP/FAMILY	FABRIC TYPE	TEXTURE	SHERD TYPE	HANDMADE OR WHEEL-MADE?	DECORATIVE CATEGORY	DECORATIVE POSITION	NO. SHERDS	WT. (G)	RIM DIA.	RIM %	NO. REFITS	FORM	CLASS	RIM TYPE	BASE TYPE	RESIDUE TYPE	LOCATION OF RESIDUE	CERAMIC SPOT DATE	CONTEXT DATE	NOTES
14	CBM	RB		SAND	COARSE	U	HM			3	37				TILE						C2-C4	C2-C4	

Appendix 4. Faunal Remains Summary

Context	Context Quantity	Context Weight (kg)	Species	NISP	Comments
14	22	0.142	Cattle	5	Metatarsal fragment, rib and vertebrae fragments. Chopped and cut.
			Sheep	7	Skull fragments and sheep horncore with pathology (depressions).
			Mammal	10	Butchered. No diagnostic pieces.
16	1	0.026	Cattle	1	Vertebrae, chopped

Appendix 5. Environmental Summary

Sample No.	1	2	3	4	5	6
Context No.	5	14	10	16	3	7
Feature No.	4	13	8	15		4
Feature type	Ditch	Ditch	Ditch	Ditch	Nat.depos.	Ditch
Plant macrofossils						
<i>Triticum</i> sp. (grains)		x	x			
<i>Vicia/Lathyrus</i> sp.	x					
Charcoal <2mm	xx	xxx	x	xx	x	xxxx
Charcoal >2mm	x	xxx		xx		xxx
Charcoal >5mm		x				x
Ericaceae indet. (stem)	x	xcf	x			
Charred root/stem		x				x
Other remains						
Black porous 'cokey' material	x	x	x			x
Black tarry material	x	x	x			
Bone			x			
Burnt/fired clay		x		x		
Ferrous hammer scale		x				
Small coal frags.	x	x	x		x	
Vitreous material			x			
Sample volume (litres)	5	6	4	6	4	7
Volume of flot (litres)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% flot sorted	100%	100%	100%	100%	100%	100%

Key to Table

x = 1 – 10 specimens xx = 11 – 50 specimens xxx = 51 – 100 specimens xxxx = 100+ specimens
cf = compare Nat.depos. = 'natural' deposit

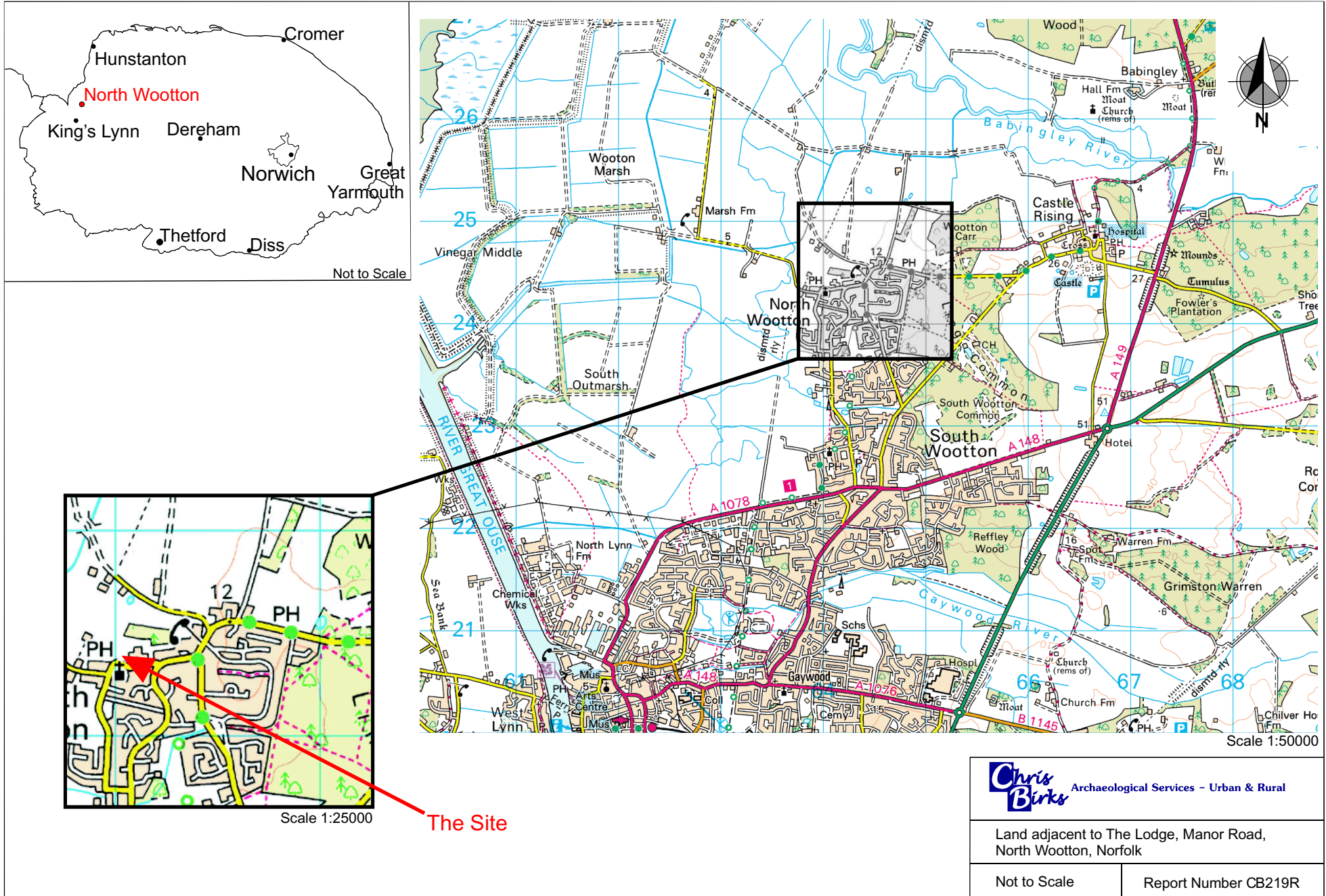


Figure 1. Site location

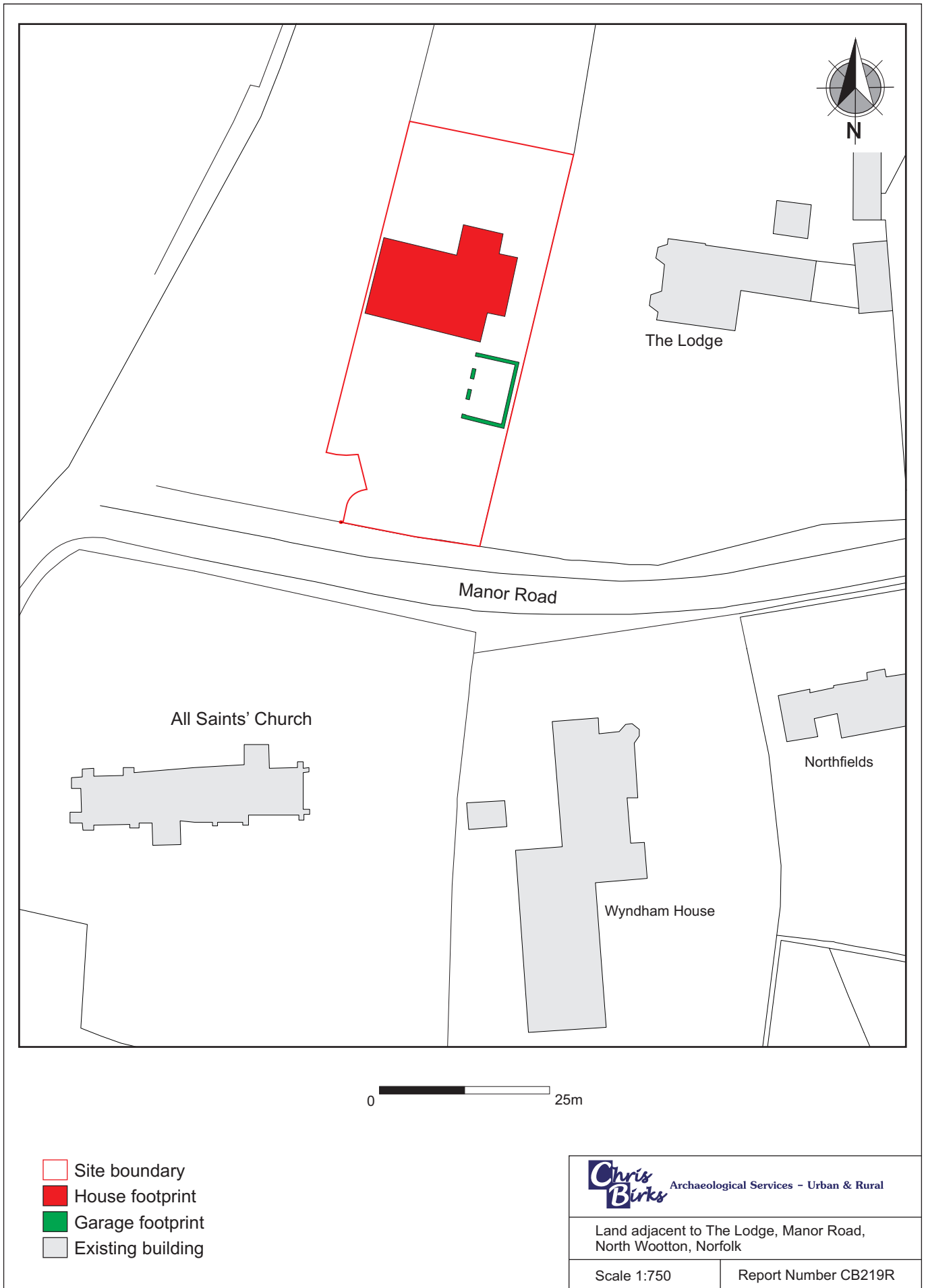


Figure 2. Site plan

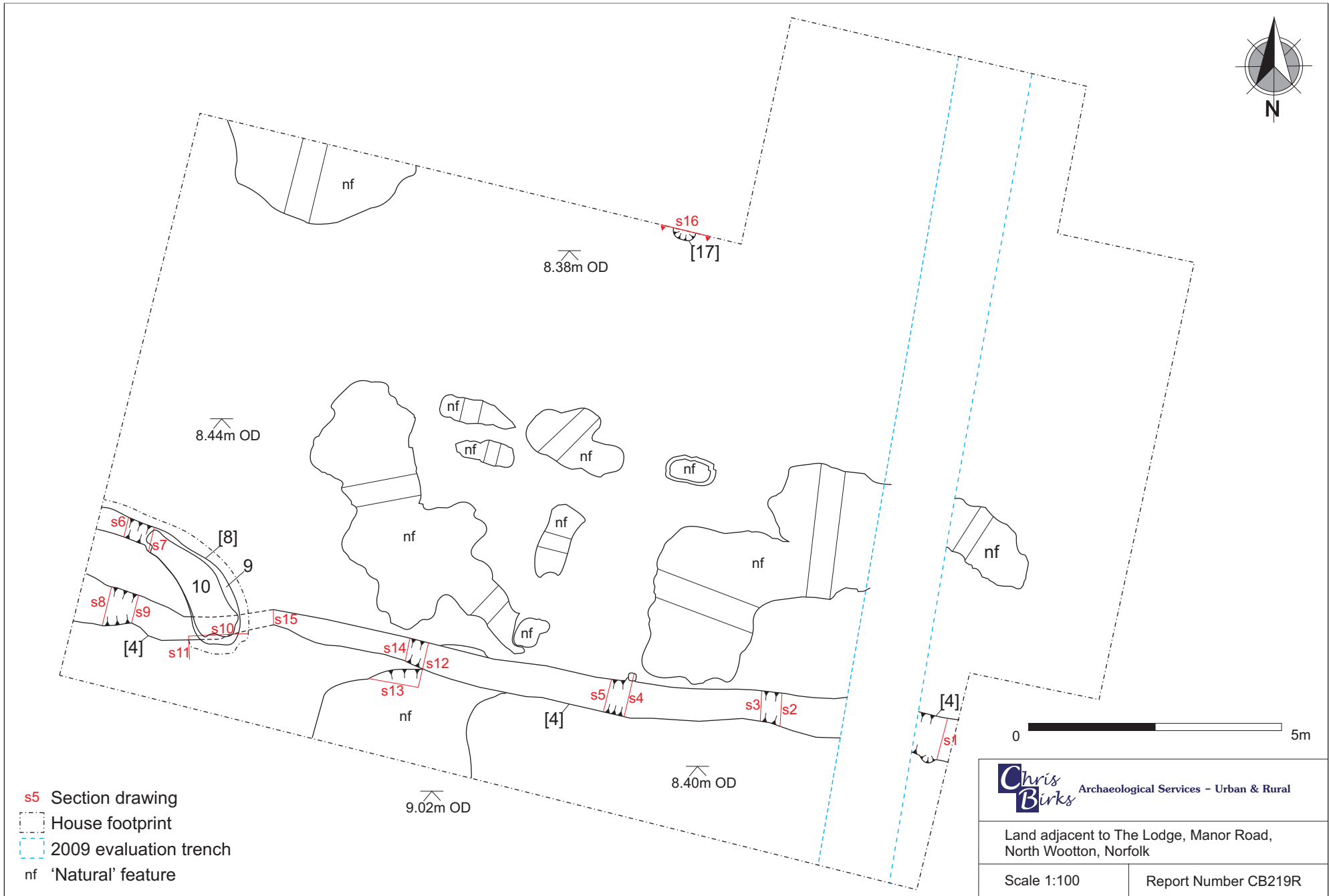


Figure 3. Excavation plan - house footprint

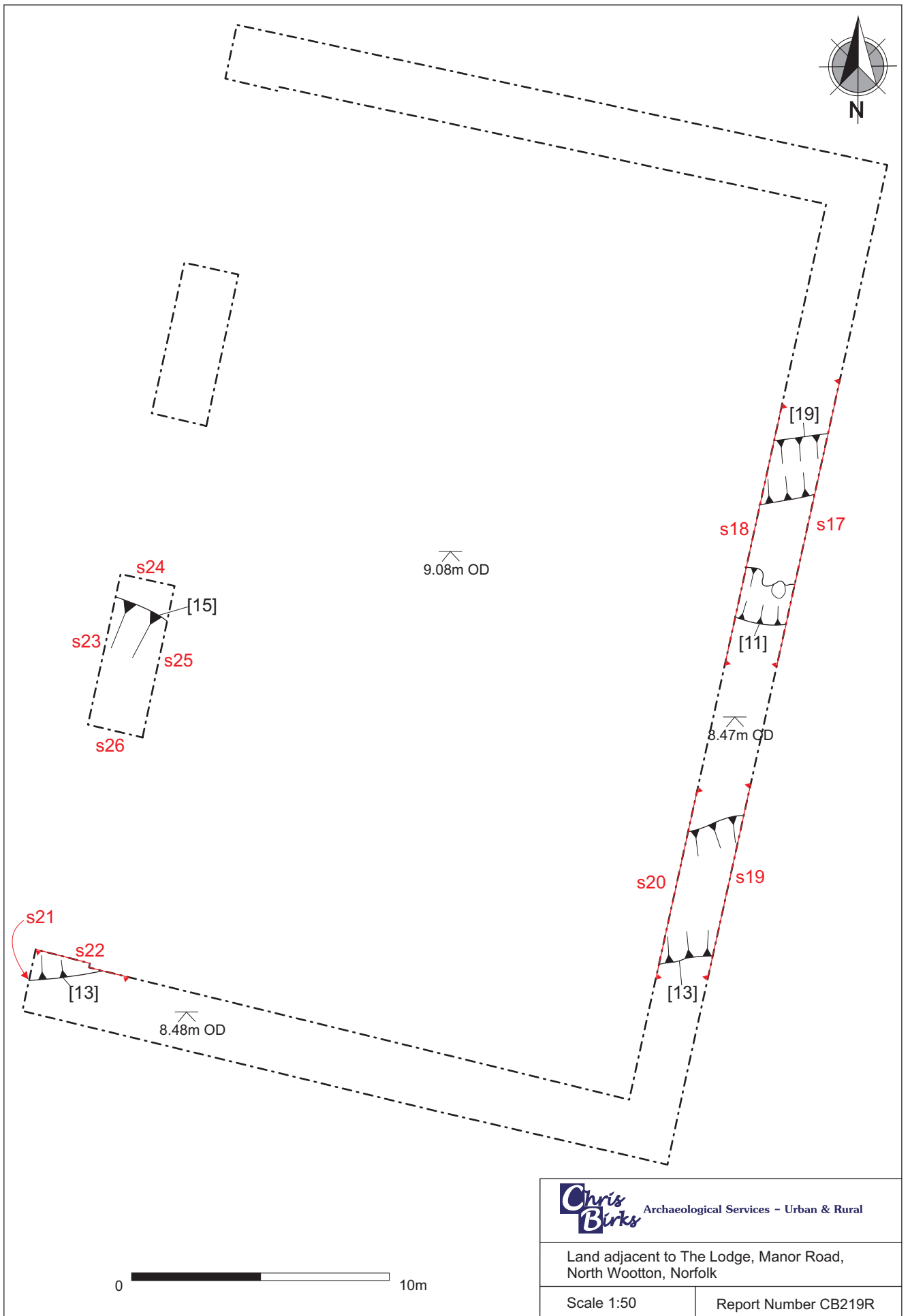


Figure 4. Excavation plan - garage footprint

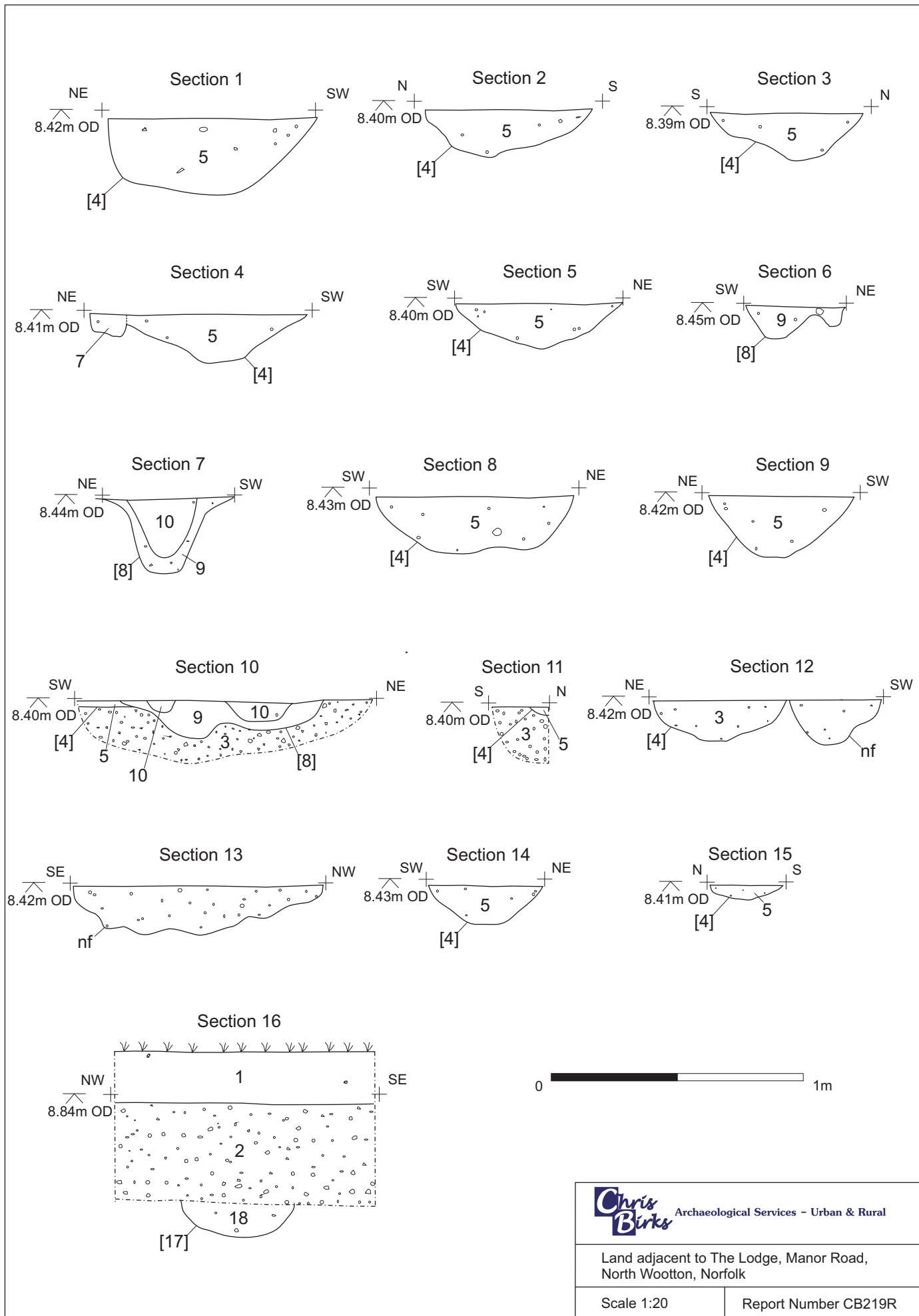


Figure 5. Section drawings 1 to 16

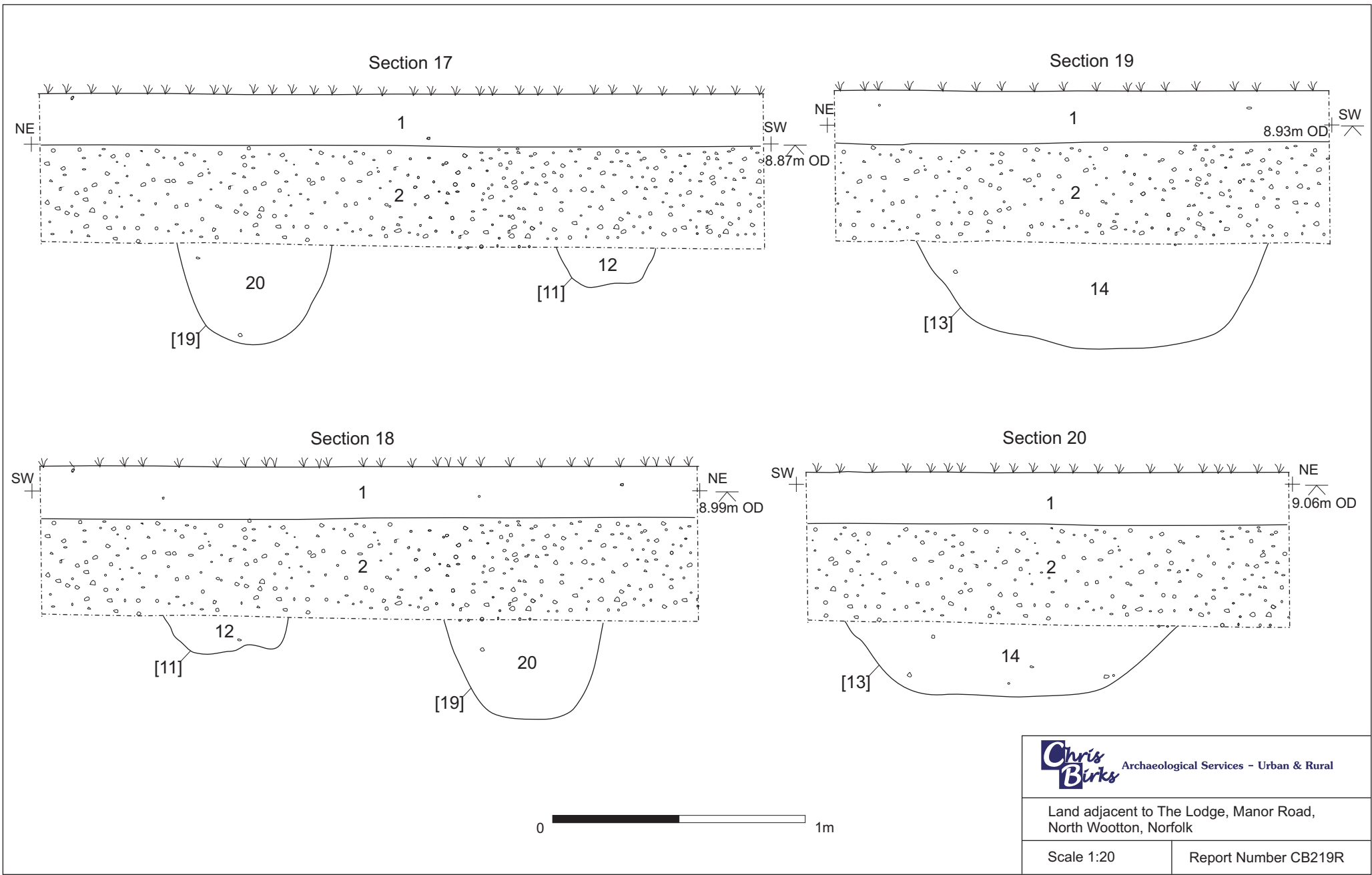
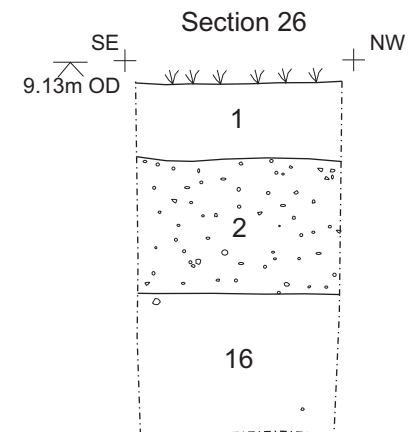
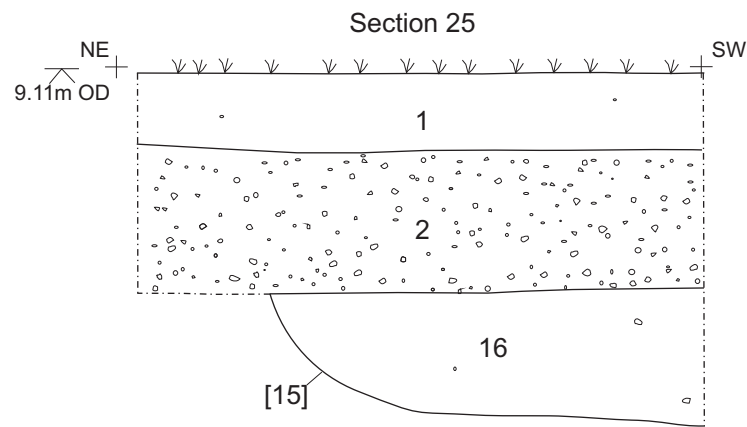
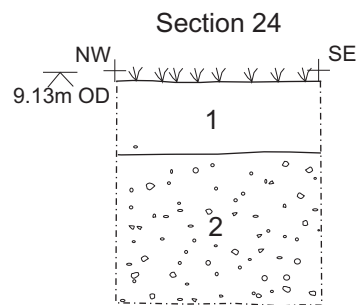
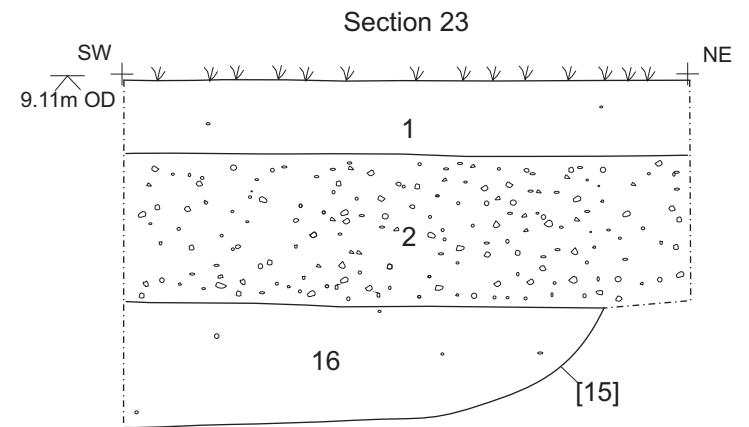
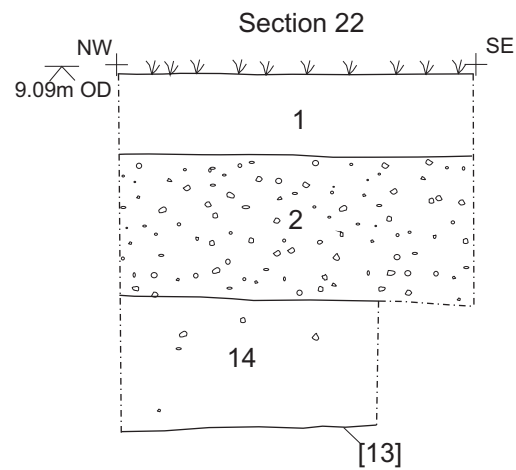
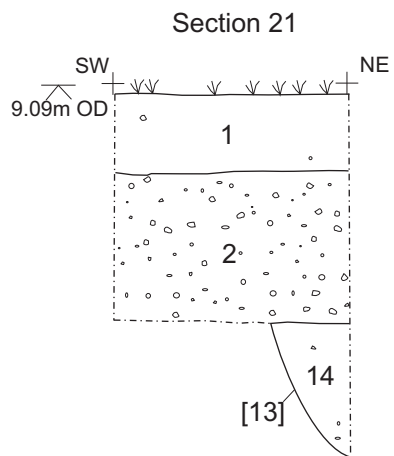


Figure 6. Section drawings 17 to 20



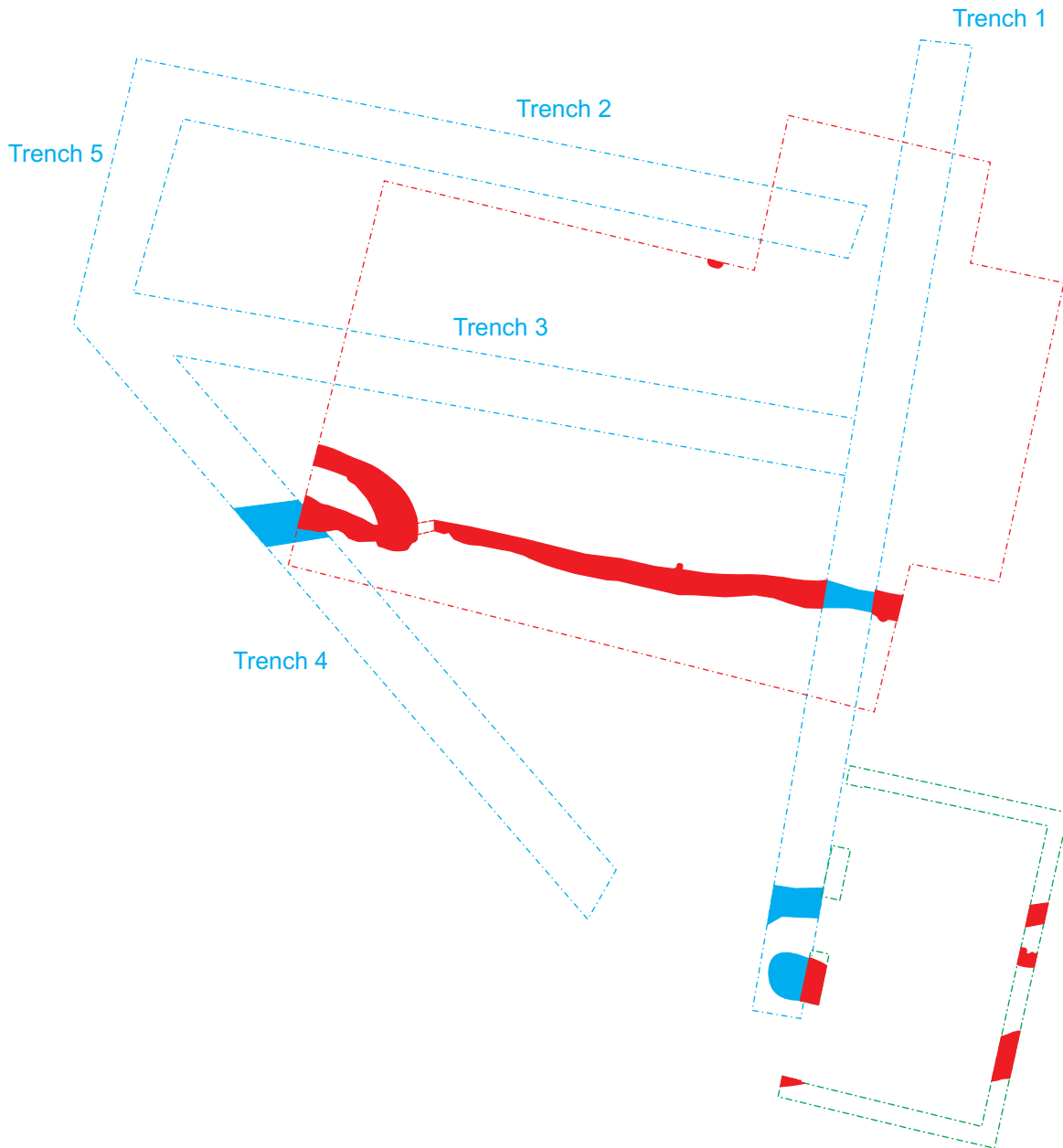
Chris Birks Archaeological Services - Urban & Rural

Land adjacent to The Lodge, Manor Road,
North Wootton, Norfolk






Scale 1:20

Report Number CB219R

Figure 7. Section drawings 21 to 26



0  10m

-  House footprint
-  Garage footprint
-  2009 evaluation trench
-  Excavation archaeological feature
-  Evaluation archaeological feature

 Archaeological Services - Urban & Rural

Land adjacent to The Lodge, Manor Road,
North Wootton, Norfolk

Scale 1:200

Report Number CB219R

Figure 8. Summary of archaeological features

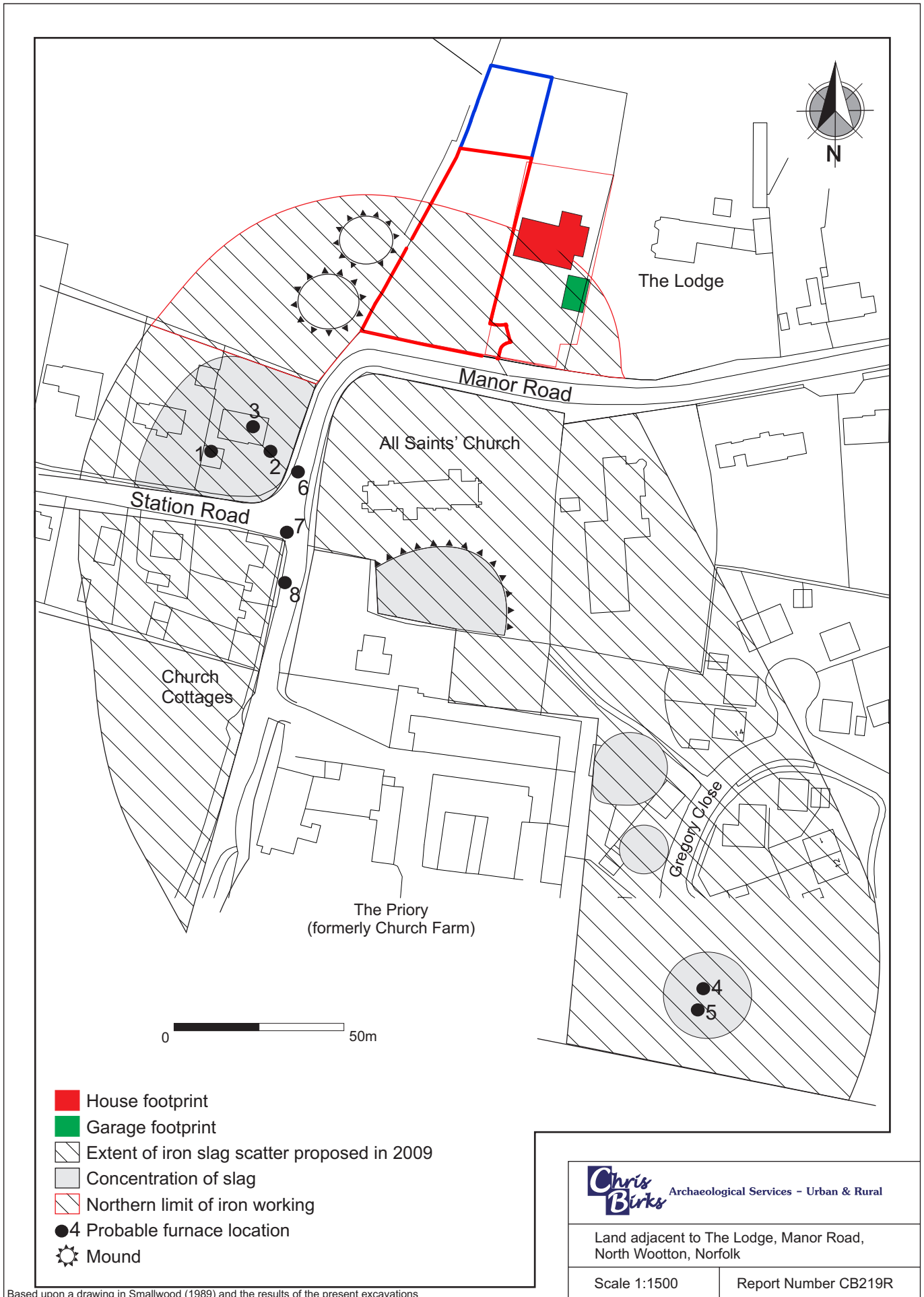


Figure 9. Extent of iron working evidence