Witham Archaeology

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MILLFIELD NURSERY, SPALDING COMMON, SPALDING, LINCOLNSHIRE

ARCHAEOLOGICAL STRIP, MAP & RECORD INVESTIGATION

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MILLFIELD NURSERY, SPALDING COMMON, SPALDING, LINCOLNSHIRE

ARCHAEOLOGICAL STRIP, MAP & RECORD INVESTIGATION

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Cover Photograph: Aerial view of Area A, showing burials F114 – north to right of image

MILLFIELD NURSERY, SPALDING COMMON, SPALDING, LINCOLNSHIRE

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Archaeological Strip, Map & Record Investigation

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MILLFIELD NURSERY, SPALDING COMMON, SPALDING, LINCOLNSHIRE.

ARCHAEOLOGICAL STRIP, MAP AND RECORD INVESTIGATION

SUMMARY

This document presents results of archaeological strip, map and record investigations carried out as a second phase of mitigation in advance of the redevelopment of the Millfield Nursery site on land east of the B1172 at Spalding Common, Spalding, Lincolnshire. The redevelopment comprises residential development of up to 135 dwellings.

The fieldwork was undertaken after consideration of positive results of previous trial trench evaluation of the site and was intended to mitigate the destructive impact of construction groundworks by archaeological recording within two areas judged to be archaeologically sensitive and vulnerable to disturbance.

The site was considered to have potential to include significant archaeological remains. Undated cropmarks of possible enclosures and field boundaries have been identified in the immediate vicinity, some of which possibly extend into the site. Within the wider area, such cropmark evidence frequently corresponds with archaeological traces of Romano-British settlement. Following the Roman period until drainage in the late 17th century, the site was located within an area of freshwater fen known as Deeping Fen.

The project has revealed an additional settlement to add to the distribution of Romano-British settlement sites in the area around Spalding. It appears to have evolved in a manner similar to certain other sites in the vicinity, whereby saltmaking operations were succeeded by a phase of settlement sustained by more conventional agrarian activities. The unexpected discovery of a small group of burials of probable Romano-British date during the strip, map and record phase of mitigation is of particular interest.

Romano-British settlement occurred within a landscape of ditched boundaries and drains, the principal axis of which was probably laid out in the later 1st century AD. Occupation concentrated in the central-west part of the site, around strip, map and record Area A and appears to have been most intensive around the 2nd to 3rd centuries AD, with very little indication of significant continuation into the 4th century.

1.0 INTRODUCTION

This document presents results of an archaeological strip, map and record investigation carried out as a condition of housing redevelopment at Millfield Nursery, Spalding Common, Spalding, Lincolnshire. The proposed scheme of development provided for the construction of 135 new dwellings.

Planning permission for the development (SHDC Planning Ref. H-16-0668-16) was granted by South Holland District Council subject to the approval of a Written Scheme of Archaeological Investigation (WSI) (Condition 21) and the completion of any archaeological works detailed in the scheme.

In accordance with advice from the archaeological adviser to SHDC, initial investigations were agreed to be two-fold: first, a programme of historic building recording to mitigate demolition of the early 19th century remains of a windmill at the western edge of the site; second, a programme of trial trench evaluation designed to assess the potential for significant archaeological remains and, if necessary, to inform a strategy for mitigation of impact.

The trial trenching fieldwork was undertaken between 9th May 2022 and 20th June 2022, in parallel with final operations to demolish the former nursery complex. The fieldwork generated positive results, with

clear evidence for Romano-British settlement activity within the development area. To facilitate the desire of the developer to progress with construction operations, discussions with the archaeological advisor to SHDC enabled agreement to be reached regarding further archaeological mitigation at the site. Two areas were selected to be subject to strip, map and record investigations: Area A was located to further investigate the densest concentration of archaeological features, and Area B encompassed an area designated for deeper excavations as part of flood attenuation infrastructure.

Witham Archaeology was commissioned by Seagate Homes to prepare WSIs for the necessary works designed to comply with the usual requirements of the local planning authority. Prior to the commencement of any fieldwork, the WSIs were be submitted for approval by the archaeological adviser to South Holland District Council.

The strip, map and record investigation was carried out in accordance with the terms of an approved WSI dated 22nd August 2022. After an abortive start on 10th January 2023, the fieldwork was undertaken between 16th January 2023 and 28th February 2023, in parallel with other construction groundworks at the site. Weather and ground conditions during the fieldwork may be characterised as wet, cold, and generally unfavourable.

The information in this document is presented with the proviso that further data may yet emerge. Witham Archaeology cannot, therefore, be held responsible for any loss, delay or damage, material or otherwise, arising out of this report. The document has been prepared in accordance with the Code of Conduct of the Chartered Institute for Archaeologists.

2.0 SITE LOCATION, TOPOGRAPHY & GEOLOGY (see Fig. 1 & Fig. 2)

The town of Spalding is the administrative centre of South Holland District within the county of Lincolnshire. It is located approximately 25km north north-east of Peterborough and 30km south-east of Sleaford.

The Spalding Common Site, centred at NGR TF 2344 2004, lies at the southern edge of Spalding, approximately 2.5km from the centre of the town. It is located between the B1172 minor road through Spalding Common to the west, and Cradge Bank to the east; Cradge Bank follows the western edge of the embankment of the River Welland (Plate 1).

The site is sub-rectangular in plan, covering an area of approximately 4.62ha. Most of the site area had most recently been in use as a nursery complex and was largely built over with substantial glasshouses and associated storage and service buildings. A field at the southern end of the Site remained relatively undeveloped, except for a dwelling at its eastern edge which was also demolished as part of the current development.

The site is located on a geology of Oxford Clay Formation, a sedimentary bedrock formed approximately 157 to 166 million years ago in the Jurassic period. The bedrock is overlain by superficial deposits of tidal clay and silt formed up to three million years ago in the Quaternary period (BGS).

3.0 ARCHAEOLOGICAL & HISTORICAL BACKGROUND

A Heritage Impact Assessment of the site, carried out in 2016, indicates that the site is located in the vicinity of undated cropmarks, located to the west and south. These cropmarks were considered typical of the Late Iron Age and Roman periods, and to represent enclosures, trackways and field boundaries, possibly extending into the proposed area of development (Cope-Faulkner, 2016).

The earliest mention of Spalding may date to the 7th century, and the place-name derives from Old English translated as ‘the people of Spalde’ (Key to English Place-Names website). ‘Spalde’ is believed to reference a tribe mentioned in the ‘Tribal Hideage’, a document dating from the 7th to the 9th centuries listing thirty-five tribes south of the River Humber. Despite this there are no known Saxon remains in the vicinity of the site, probably reflecting the development of the freshwater fen that later became Deeping Fen (op cit.).

The 1086 Domesday Book mentions 91 households at Spalding, divided between three holdings held by Guy of Craon, Ivo Tallboys and by the abbey of Crownland. The Domesday Book also mentions six fisheries and two salthouses (Open Domesday website).

During the medieval period the site lay within or adjacent to freshwater fen and would therefore have been significant for its resources such as grazing, wildfowl and thatch. The place-name Spalding Common derives from communal management of access to the resources during the Medieval and Post-Medieval periods.

The area was drained in the late 17th century. A mid-18th century map based on a 1670 map shows the site clear of development and adjacent to a thoroughfare. The neighbouring fields are possibly shown as pasture fields, although sub-division of the land into the modern field pattern probably only occurred after enclosure in the early 19th century.

The earliest mapped structure on site is the Common Mill, which was originally built with five stories around 1816. The remains of the mill were demolished as part of the current project, following a historic building recording exercise. Demolition took place immediately before the trial trenching fieldwork.

Cartographic evidence shows the site largely clear of development until the mid-20th century when the Millfield Nursery came into being. By the 1980s most of the site was occupied by greenhouses.

4.0 PLANNING BACKGROUND

This document presents results of an archaeological strip, map and record carried out as a condition a housing redevelopment at Millfield Nursery, Spalding Common, Spalding, Lincolnshire. The proposed scheme of development provides for the construction of 135 new dwellings.

Planning permission for the development (SHDC Planning Ref. H-16-0668-16) was granted by South Holland District Council subject to the approval of a Written Scheme of Archaeological Investigation (WSI) (Condition 21) and the completion of any archaeological works detailed in the scheme.

In accordance with advice from the archaeological adviser to SHDC, initial investigations were agreed to be two-fold: first, a programme of historic building recording to mitigate demolition of the early 19th century remains of a windmill at the western edge of the site; second, a programme of trial trench evaluation designed to assess the potential for significant archaeological remains and, if necessary, to inform a strategy for mitigation of impact.

Following completion of the programme of trial trenching and the discovery of significant remains of Roman settlement, the archaeological advisor to SHDC recommended a programme of archaeological strip, map and record investigation within two discrete areas. The work was required to mitigate the impact of deep excavations on surviving archaeological remains.

5.0 AIMS & OBJECTIVES

The principal objectives of the project, as set out in a Witham Archaeology specification of 13th August 2022, were to:

- *investigate the archaeological remains which survive on the site in order to determine their date, character and function in order to the reveal the nature of occupation at the site.*
- *record the stratigraphic sequence of the archaeological deposits at the site with a view to reconstructing the chronology of occupation.*
- *integrate the stratigraphic and contextual record with artefactual and ecofactual material to elucidate any changes in the nature of occupation.*
- *analyse the archaeological remains recorded during the investigation within the context of the regional research agenda and framework.*

- *produce a project archive for deposition with the appropriate museum and from which the potential for further study and academic research could be assessed.*

- *provide information for accession to the Lincolnshire Historic Environment Record (HER).*

6.0 METHODOLOGY

The two strip, map and record excavation areas were located in accordance with the directions laid out in the Written Scheme of Investigation (WSI) and approved by the curatorial archaeologist. The most recent deposits were removed mechanically, using a tracked excavator fitted with a toothless ditching bucket. All mechanical excavation was undertaken under archaeological supervision. Mechanical excavation was discontinued when archaeological deposits were exposed, or when undisturbed natural deposits were revealed. Exposed surfaces, both vertical and horizontal, were then cleaned by hand to define the archaeological remains.

Potential archaeological features were further investigated by manual excavation in line with the sampling guidelines outlined in the WSI.

A record of the investigations was compiled through:

- Notes detailing the progress of archaeological fieldwork.
- Individual written descriptions of archaeological contexts made on pro-forma recording sheets and indexed appropriately.
- Measured section drawings showing specific archaeological contexts as well as general stratigraphic sequences, produced at scales 1:10 or 1:20 as appropriate.
- Measured plans of archaeological contexts (individual and/or multiple) at scale 1:20
- Sequences of colour digital photographs showing individual archaeological features and overall site circumstances.

The trenches, the features and the sample hand-excavated slots were located using survey grade GPS equipment, referenced to the Ordnance Survey National Grid.

7.0 RESULTS

The results of the investigations are described below, with reference to numbers assigned in the field to the various archaeological contexts. The numbers in square brackets refer to cut features, whereas those in parentheses describe deposits. Appendix A, the Context Summary, provides full descriptions of the contexts. Features and deposits are described approximately in stratigraphic order, beginning with the earliest. Where associated contexts have been interpreted to comprise elements of more extensive features within Area A, they have been grouped and are referenced by numbers prefixed by F and starting at 101, thus: F101.

7.1 AREA A (Fig. 4, Fig. 5, Fig. 20 & Fig. 21)

The area designates an expansion of archaeological investigations around the western end of SCSP21 Trial Trench 6, over a rectangular area approximately 27m by 25m in extent. The trial trench had revealed the densest concentrations of both archaeological features and Romano-British finds encountered during archaeological evaluation of the development site. The objective of the exercise was to attempt to clarify the nature of those archaeological remains at a location where road construction and service trenching was soon to cause significant damage to surviving archaeological features and deposits. The investigations were conducted in challenging wet mid-winter in conditions (Plate 2 & Plate 3).

Results within Area A are described below under the following headings:

1. *Natural Deposits*
2. *Earlier Romano-British Features*
3. *Principal Romano-British Ditches and Boundaries*

4. *Burials (Fig. 6)*
5. *Post Romano-British Features*
6. *Post-Medieval or Modern Features*

7.1.1 Natural Deposits
The underlying sequence of natural deposits was typified at the southwest corner of the site, in the flanks of Romano-British ditch [18199] (Fig.11, Section 135). Fine- grained firm and sticky mid brown clayey silt (18246) was the earliest estuarine deposit encountered, capped by thin (0.12m thick) layer of firm light bluish grey clayey silt (18245). Above (18245) lay similarly thin mid brown clayey silt layer (18244), which was sealed by laminated light brown deposit (18243), with laminations of silt and silty fine sand. The transition from the finer grained deposits to the coarser laminated alluvium occurred at approximately +1.56m OD, and the laminated deposit formed the exposed surface of the area after mechanical excavation (except where disturbed by archaeological features), at an elevation of between approximately +2m and 2.15m OD.

7.1.2 Earlier Romano-British Features
The evidence revealed indicated that the earliest feature to truncate the natural sequence was probably northeast to southwest aligned ditch [18103] (F112), only partially exposed at the southeast corner of the area (Fig. 7, Section 118. Plate 4). Although no datable artefacts were recovered from light brownish grey fill (18112), the ditch was truncated at the southern limit of excavation by later ditch [18104] (F110). Projection of the western side of [18103] towards the northeast correlated well with the location of early ditch [06017]/[06043] previously revealed within Trial Trench 6 and the features have been interpreted as directly related. Within the trial trench, the ditch also proved to be stratigraphically early.

Around the central part of the excavation area, a curious arrangement of intercutting features was revealed, the earliest surviving element of which appeared to be east southeast to west northwest aligned ditch segment [18156] (F103) (Fig, 9, Section 129 & Fig. 10, Section 130). The feature had previously been revealed within Trial Trench 6 and appeared to comprise the southeastern corner of a small, ditched enclosure. A section of the eastern side was also investigated as [18147] (Fig. 9, Section 126 & Section 127), whereas the western end of the feature was examined as [18148] (Fig 9, Section 128). No dateable artefacts were recovered during the excavation phase, but 'Roman' pottery had been retrieved during the evaluation investigations.

The results of earlier investigations in the Trial Trench had indicated that small enclosure ditch (F103) was truncated by almost perpendicular steep-sided narrow linear cut (F102). The southern end of the feature had been excavated within the trial trench, where it proved to terminate approximately 1.5m south of the southern edge of (F103). The southern end was also investigated during the excavation phase as cut [18143], where it appeared to truncate shallow sub-circular pit [18141] (Fig. 8, Section 125). Pottery of late 1st to 2nd century date was recovered from (18142), fill of [18141].

The excavation fieldwork demonstrated the northward continuation of the feature to a terminus immediately south of the southern edge of ditch (F104) (Fig. 10, Section 131 & Section 132. Plate 5). The total length of (F102) was 6.2m and its width up to around 0.7m, and vestiges of clay lining indicated that the feature had functioned as a channel or receptacle for water.

The feature was investigated to its full depth in its central part as [18145], where it was 0.48m wide and 0.5m deep with very steep sides and a concave base (Fig. 9, Section 127). It appeared to have been lined with stiff mid reddish brown silty clay (18163), above which lay, in the opposing section, thin very dark blackish grey silty sand and ash fill (18164) (Fig, 9, Section 126. Plate 6), and a main fill of light grey silty sand (18161); Section 126 did not show the feature to its full depth.

The flattish northern terminus of (F102) was investigated as cut [18177] and was at least 0.38m by 0.36m in plan and 0.4m deep with very steep sides and a concave base (Fig. 10, Section 131 & Section 132. Plate 5). Above earliest thin sandy fill (18180), deposit (18179) may have represented remains of clay lining. This was sealed in turn by main fill (18178), composed of a mottled mix of mid grey and light brown silty fine sand. No dateable finds were recovered from (F102) during the excavation stage of work, although 'Roman' pottery had been recovered previously during the trial trenching investigations.

In its central area, the observed archaeological deposits indicated that narrow ditch or channel (F102) had most likely been truncated by elongated northeast to southwest aligned pit (or short linear feature) (F101), the orientation of which was eccentric to those of earlier features (F103) and (F102), and that of later ditch (F104). The feature was up to 10.95m long and generally around 1.75m wide. Its flat northern end was investigated as [18113], where the gentler slope of the terminus contrasted with the very steep southeast side of the feature (Fig. 8, Section 119 & Section 120. Plate 7). The earliest 'fill', light brownish grey sandy silt (18118), may have been a product of staining around the edges of the cut, in which case dark blackish brown very organic silt (18117) probably represented the primary fill of the feature, from which cattle bone fragments were recovered. Above (18117) lay subsequent fill (18116).

Just to the south, the feature was investigated at its intersection with the northern side of ditch (F104), where cut [18113] was filled by deposits (18124), (18123) and (18122) (Fig. 8, Section 121, Section 122 & Section 123).

Beyond the southern edge of ditch (F104), direct continuation southward of the alignment of (F101) was revealed as steep-sided cut [18146], with a flattish uneven base (Fig. 9, Section 126 & Section 127. Plate 6). Amongst the fill deposits were blackish brown organic sandy silts (18167) and (18165). Analysis of a paleoenvironmental sample of (18165) found animal bone fragments, freshwater snail shells and rare traces of indeterminate charred grains. No additional evidence was recovered to suggest a function for the feature. Above (18165) lay fills (18162) and (18160).

The southern part of feature (F101) was partially and obliquely investigated as cut [18155] (Fig. 9, Section 129 & Fig. 10, Section 130), where very dark organic primary fill (18175) correlated with the similar deposits within [18146] just to the north. It was sealed by light brown silty sand deposits (18174) and (18173).

Southwest of (F101), it was noted that the alignment of the feature appeared to be reflected in the outline in plan of deposit (18255), located towards the southwest corner of the area, in the angle between ditches (F109) and (F110) (Fig. 5). A linear extension of (18255) approached, but did not reach, the southwest end of (F101). Investigation of the northeast limit of this 'finger' established that there was no underlying linear cut and that (18255) represented a thin spread, although possibly surviving within a shallow linear hollow. Whether the pattern was coincidental or had derived from wear or compression associated with use of (F101) was not entirely clear.

Near the western edge of the area, on the western side of ditch [18203] (F109), possible north to south aligned linear cut [18211] was at least 1.08m wide and 0.4m deep, with concave sides and a concave base (Fig. 11, Section 136.Plate 8). It was filled by deposits (18112), (18113) and (18114), and may have marked an earlier irregular course of (F109).

In the southeastern quadrant of the area, the southward continuation a small north northeast to south southwest aligned ditch (F115), formerly revealed within the trial trench as [06020], was exposed up to its truncation by ditch (F110) near the southern limit of excavation. During the evaluation phase, earlier Roman 1st to 2nd century pottery had been recovered from the feature.

7.1.3 Principal Romano-British Ditches and Boundaries

Close by to the west of (F115), similarly aligned small ditch (F111) was investigated as cut [18188] where truncated by ditch (F110) near the southern limit of excavation (Fig. 10, Section 134). Late 1st to mid 2nd century pottery was recovered from primary fill (18189), above which lay fill (18190). Roman pottery of 2nd to 3rd century date had been recovered previously from the feature when investigated as cut [06031] within the trial trench, where its northern end had apparently been truncated by ditch (F104). There did not appear to be any continuation southwards of (F111) beyond the line of (F110).

The area was divided into sections by five principal ditches, which, in their ultimate phases, were revealed to have truncated most of the earlier features already described above.

At the southeast corner of Area A, west northwest to east southeast aligned ditch (F110) [18104] was revealed to truncate early ditch (F112) and was at least 0.41m wide by 0.52m deep, with steep convex sides and a concave base (Fig. 7, Section 118. Plate 4). No dateable finds were recovered from fills of the feature, although deposits (18107), (18109) and (18111) were noted as particularly charcoal-rich.

Just west of Section 118, ditch (F110) was observed in plan to truncate ditch (F115), beyond which, as steep-sided cut [18191], it was also demonstrated to truncate ditch (F111) [18188] (Fig. 10, Section 134). Ditch [18191] was revealed as at least 1m wide and 0.64m deep. Amongst the fills of the feature, (18193) and (18195) were particularly charcoal rich, and both yielded finds of 2nd to 3rd century date. Mid to late 2nd century pottery was also recovered from fill (18197), and fire clay fragments of possible hearth linings from fills (18194) and (18196).

A section was excavated through (F110) midway along the southern edge of the area, where cut [18182] was 1.32m wide and 0.58m deep with steep convex sides and a flattish base (Fig. 10, Section 133. Plate 9). Analysis of a paleoenvironmental sample of charcoal-rich fill (18186) revealed cereal grains and chaff to indicate the presence of enmer wheat and spelt. Processing of the sample found small fragments of mid 2nd to 3rd century pottery in (18186), and late 1st to 2nd century pottery was recovered from overlying fill (18187).

Ditch (F110) was observed westwards of Section 134 up to its intersection with larger ditch (F109), beyond which it did not appear to continue. It was recorded as ditch [18200] in the corner of a mechanically excavated section of (F109), where it was 1.1m wide and 0.52m deep with very steep sides and a concave base (Fig. 11, Section 135). It was filled by deposits (18242), (18241) and (18240), none of which yielded dateable finds.

The most substantial, and certainly the deepest, of the principal ditches was (F109), aligned north northeast to south southwest at the western side of the Area A. Towards the southwestern corner of the area, in consideration of the difficult ground conditions at the time of excavation, the curatorial archaeologist gave permission for mechanical excavation of a section through the feature (Fig. 11, Section 135). The initial cut, [18256], may have been contemporary with near perpendicular ditch [18200] (F110) which fed into it from the east; 3rd century pottery fragments were recovered from a vestige of fill (18202) at the eastern edge of the ditch. It appeared to have been re-cut as ditch [18199], at least 1.9m wide and 1.1m deep with very steep sides and a concave base, filled by deposits (18239), (18237) and (18201) (Fig. 11, Section 135). Pottery of 3rd century date and animal bone fragments were recovered from deposit (18201). A column sample for molluscan analysis was taken through deposits from the central part of the ditch and its overlying tertiary deposits (Plate 10). Results of analysis revealed abundant freshwater molluscan fauna, together with other paleoenvironmental remains to suggest continuous wet conditions within the feature throughout the sequence of deposits accumulated within it (Appendix G).

Around 6.4m north of Section 135, the intersection of ditches (F109) [18151] and (F103) [18148] was investigated, to demonstrate truncation of the latter by the former (Fig. 9, Section 128). Ditch [18151] was at least 0.38m wide and 0.38m deep, with steep concave sides. No dateable artefacts were recovered from its fills.

Approximately 2m to the north, another mechanically dug section was excavated through ditch (F109), where it was revealed as cut [18203], 2m wide and 1.18m deep with steep concave sides and a broad concave base (Fig. 11, Section 136. Plate 8). The feature may have been a recut of [18211], of which it truncated the eastern side (see above). No dateable artefacts were recovered from fills (18210) and (18209).

The northern progress of ditch (F109) on the alignment recorded between Section 135 and Section 136 ended approximately 3m north of Section 136 at an intersection with northwest to southeast aligned ditch (F104). In the central part of Area A, ditch (F104) [18119] was investigated at its intersection with feature (F101) [18113], which it truncated (Fig. 8, Section 122 & Section 123). Ditch [18119] was at least 0.8m wide and 0.85m deep, with steep sides and a concave base. Animal bone fragments, and a fragment of Roman quernstone were recovered from fill (18127), and mid 2nd to 3rd century pottery from overlying dark greyish brown organic sandy silt fill (18126).

Approximately 5m east along (F104) from Section 122, the ditch was investigated in a mechanically excavated section as cut [18216]. It was 2m wide and 0.68m deep with concave sides and a concave base (Fig. 12, Section 137. Plate 11). Mid 2nd to 3rd century pottery was recovered from fill (18230), and 3rd century pottery from later fill (18229). Beyond Area A, just to the east, the ditch had previously been investigated within Trial Trench 6 as cut [06023], and Romano-British pottery of 3rd to 4th century date recovered from it.

In the northern part of Area A, west southwest to east northeast aligned ditch (F106) was investigated as cut [18061] at its intersection, near the western limit of excavation, with ditch (F105) (Fig. 7, Section 113). Ditch [18061] was at least 0.7m wide and 0.58m deep, and primary fill (18062) yielded late 1st to 2nd century pottery. Towards the eastern side of the site, the ditch was also partially excavated as cut [18075] to try to demonstrate its relationship with features (F107) and (F108) (Fig. 7, Section 114). It was revealed as 1.14m wide and 0.32m deep with gently sloping sides. Probable transitional Iron Age to Roman pottery was recovered from primary fill (18076), and animal bone fragments were also recovered from overlying fill (18077).

Mid way along the northern edge of the area, ditch (F106) (together with (F107)) was investigated in a mechanically excavated section as cut [18083]. It was 1.82m wide and 0.48m deep, with a steep north side, a more gently sloping south side and a concave base (Fig. 7, Section 115. Plate 12). No dateable finds were recovered from fills (18084) and (18185).

Near the northwest corner of the area, ditch (F106) was truncated by northeast to southwest aligned ditch (F105). At the intersection of the ditches, (F105) was recorded as cut [18065], 0.9m wide and 0.51m deep, with steep concave sides and a rounded base (Fig. 7, Section 113). Pottery of 2nd to 3rd century date was recovered from primary fill (18066), and a 'cattle-sized' bone from subsequent fill (18068). Nearby, continuation of (F105) to the northeast was obliquely recorded in the northern limit of excavation as cut [18218] (Fig. 12, Section 138. Plate 13).

Towards the northeast corner of the area, smaller northwest to southeast aligned ditch (F108) was revealed as cut [18098] at its intersection with, and truncation by, later ditch (F107). It was 0.5m wide and 0.3m deep, with moderately steep concave sides and a concave base, and its fills yielded no artefacts (Fig. 7, Section 117). Approximately 3m to the southeast, ditch (F108) was also sectioned as cut [18094], where it was 0.71m wide and 0.31m deep with uneven concave sides and a concave base (Fig. 7, Section 116. Plate 14). Amongst the fills, dark grey charcoal-rich deposit (18096) yielded 2nd century pottery.

To the east of Area A, the substantial Romano-British ditch revealed near the eastern end of Trial Trench 6 is included in this description of results as ditch (F113). During evaluation, the feature yielded finds suggestive of a 2nd to 3rd century date.

7.1.4 Burials (Fig. 6)
Towards the western side of the site, and located immediately east of ditch (F109), funerary feature (F114) was identified when human bones were observed during mechanical overburden stripping. Arm bones recovered as unstratified context (18130), had probably been displaced by the mechanical excavation. The unexpected discovery could be characterised as remains of a small cemetery.

Although the burial features and the human skeletal remains were poorly preserved and fragmentary, enough evidence survived to show that feature (F114) was made up of two certain burials, although the skeletal assemblage as a whole comprised remains of at least three individuals. Lower burial (18134) had been placed with an approximately north to south orientation within irregular grave cut [18133] (Fig. 6. Plate 15 & Plate 16). As far as could be established, the burial was a supine inhumation, with the head at the northern end of the grave. Analysis of the remains indicated that the individual was an older male, aged 45 years or over, although his stature could not be determined on account of the incomplete condition of the remains. His wrist showed signs of healed fracture and his vertebrae indicated that he suffered from osteoarthritis and spondylosis throughout his spine. No associated dateable artefacts were recovered from grave fill (18135).

Superimposed on (18134), burial (18137) was of much slighter frame and survived less well. It had been placed in a very different way to (18134), with the head to the south, located just west of the lower legs of the earlier burial (Fig. 6). The upper torso of (18137) lay across the legs of the (18134), and the remainder along its eastern side. As far as could be established given the condition of the remains, individual (18137) was probably an adult male, aged approximately 25 to 35 years.

Although the preservation and condition of the remains were poor, the excavator was confident that (18137) had been placed in grave cut [18136], and that burial (18137) had truncated burial (18134); it is probable, therefore, that the two individuals had not been buried as part of a single event within the same grave. No dateable artefacts were recovered from grave fill (18138).

'Extra' arm bones recovered with (18137), together with the unstratified arm bones recovered as context (18130) indicated the remains of at least one other individual in the immediate vicinity. Whether those remains had been disturbed by the subsequent interments, or by more recent truncation was not entirely clear.

7.1.5 Post Romano-British Features

Deposits revealed within the upper fills of the Romano-British features were interpreted to indicate changes in the environmental conditions at the site in the period after abandonment of the settled landscape. The phenomenon was typified in the upper fills of ditch (F109) [18199], where interface context [18257] appeared to punctuate the sequence of deposits (Fig. 11, Section 135. Plate 10).

Although immediately above [18257] thin deposits (18235) and (18238) may have been alluvial in origin, subsequent environmental variation was suggested by the very dark, peaty, organic component within overlying deposits (18236) and (18234). Above (18234), thin possible alluvial deposit (18233) was succeeded by 0.38m thick light brown silty sand (18232). Deposit (18232) included frequent small snail shell fragments and was taken as indicative of further environmental variation. A column sample of the deposits taken for molluscan analysis indicated that freshwater aquatic species were predominant throughout the sequence (Appendix G).

Around 7m to the north, also within ditch (F109), a similar sequence was noted, within which (18208) represented the more organic deposit, and (18207), (18206) and (18205) the overlying mollusc-rich silts (Fig. 11, Section 136. Plate 8). The deposits were discoloured bluish and greyish at this location, probably through a period of confinement below a concrete roadway within the former nursery facility. Just to the south of Section 136, dark grey deposit (18153) probably also represented the development of more organic deposits (Fig. 9, Section 128). Over the exposed surface of the excavation area, development of these more organic deposits was manifest in bands of very dark fill observed to mark the edges of the principal ditches (Fig. 20).

Within the upper fills of ditch (F104), the same general sequence of post-abandonment deposits was noted at its intersection with (F101), where darker organic silt (18120) lay below mollusc-rich light brown silty sand (18114) (Fig. 8, Section 122). A trace of the mollusc-rich deposit was also noted as upper fill (18159) in (F101) cut [18146] (Fig. 9, Section 126. Plate 6). To the east, the same deposit sequence was represented by contexts (18228) and (18225) in Section 137 (Fig. 12. Plate 11) and had been previously revealed just beyond the eastern limit of Area A in Section 45 within Trial Trench 6. Towards the eastern end of the trial trench, the sequence had also been noted during evaluation investigations of the upper fills of ditch (F113).

Observed in the northern edge of the excavation, organic silt deposit (18221) lay within the upper fills of ditch (F105) (Fig. 12, Section 138. Plate 13) and was probably formed during the same depositional conditions indicated by the comparable deposits noted above.

Within the northern half of the area, the southern side of east to west aligned ditch (F107) truncated small ditch (F108) near the eastern limit of excavation (Fig. 7, Section 117). It was partially excavated as cut [18101], at least 0.56m wide and 0.38m deep, with steep concave sides.

Nearby, the northern side of (F107) was investigated to establish whether continuation of (F108) beyond the feature could be identified; unfortunately, it could not (Fig. 7, Section 114). Within (F107), however, it seemed that initial cut [18070] and its fills had been re-cut as [18081], filled by mid brown sandy silt (18082). Just to the west, in the eastern side of the mechanically cut section through ditches (F106) and (F107), initial cut [18086] of ditch (F107) appeared to have been similarly re-cut as ditch [18091] (Fig. 7, Section 115. Plate 12). Ditch (F107) truncated ditch (F106).

At the western side of the area, continuation of (F107), as cut [18079], was traced to its intersection with, and truncation of, ditch (F105) (Fig. 7, Section 113). It was filled by mid brown silty clay (18080), from which no dateable artefacts were recovered; indeed, no dateable material was recovered from any context associated with ditch (F107). The ditch is, therefore, undated, except in the relative sense that it appears to post-date both the Romano-British pattern of boundaries and the naturally accumulated deposits accumulated within the features post-abandonment.

7.1.6 Post-Medieval or Modern Features

The ceramic land drain within east to west aligned linear cuts [18170] (Fig. 9, Section 127 & Section 129) and [18226] (Fig. 12, Section 137) represented works to improve drainage at the site in the later 19th or earlier 20th centuries.

Centrally within the southern half of the site, modern fire residue, including carbonized flower bulbs, filled pit [18131]. The pit was truncated by a linear cut containing a textile-wrapped plastic pipe which formed part of the drainage arrangements associated with the former nursery complex.

Centrally within the northern half of the site, loose very dark grey rectangular spread (18093), was 0.1m thick and included glass, rubble and charcoal (Fig. 4. Fig. 7, Section 115. Plate 12). It derived from demolition of the nursery complex. The most recent intrusion was probably cut [18172], which correlated with an archaeological slot excavated within Trial Trench 6.

At the northern edge of the site, 0.12m thick dark brown sandy silt (18223) included occasional brick or tile fragments and was interpreted as a truncated topsoil layer (Fig. 12, Section 138. Plate 13). Above it, similar deposit (18224) had been dumped or disturbed during demolition of the nursery complex.

7.2 AREA B (Fig. 13, Fig 14 & Fig. 15)

The area designates archaeological investigation of an area up to approximately 101m long by 20m wide within the circumference of a flood attenuation basin at the eastern side of the site (Plate 17 & Plate 18). The work was required by the archaeological advisor to the local planning authority, as it was deemed that excavation of the pond would be destructive to any surviving archaeological remains. The investigation took place in challenging wet mid-winter conditions (Plate 18 & Plate 19).

Results within Area B are described under the following headings:

1. *Natural Deposits*
2. *Romano-British Ditches and Boundaries*
3. *Romano-British Discrete Features and Pits*
4. *Post Romano-British Features*
5. *Post-Medieval/Modern Features*

7.2.1 Natural Deposits

For the most part, natural deposits identified within the area comprised sticky fine grained mid brown or reddish brown estuarine deposits typified by (18020) (Fig. 16, Section 101) and (18033) (Fig. 16, Section 106). Slight variation was provided at the southern end of the area by natural greyish brown silty sand deposit (18059) (Fig 17, Section 109).

7.2.2 Romano-British Ditches and Boundaries

The stripped expanse of Area B revealed, to a limited extent, continuation of ditch lines previously recorded during archaeological evaluation of the site. At the northwestern end of the area, approximately northeast to southwest aligned linear cut [18249] was 2m wide and suggested direct continuation of ditch [10012] recorded at the northern end of Trial Trench 10 (Fig. 13 & Fig. 14). Just to the east, across the northeastern part of the area, north northwest to east southeast aligned ditch [18021] was 2.2m wide and 0.78m deep with steep sides and a flattish base (Fig. 16, Section 106. Plate 21). Context [18027] recorded an irregularity in the base, and possibly indicated the initial cut of the feature before subsequent maintenance. Early sandy silt fills of ditch [18021], contexts (18025) and (18022), included occasional small fragments of fired clay, and fill (18022) also yielded pottery of possible Iron Age type. Site circumstances and conditions somewhat compromised full exposure of the feature in plan, although enough was revealed to demonstrate its continuation through the eastern boundary of the area, beyond its truncation by Post-Medieval ditch [18247]. The ditch may have represented continuation of ditch [08003] recorded at the eastern end of Trial Trench 8, although alignments did not correlate exactly.

In the south-central part of the area, approximately north northeast to south southwest aligned ditch [18041] was 0.92m wide and 0.2m deep, with steep concave sides and a very gently concave base (Fig. 15. Fig. 17, Section 111. Plate 22). The ditch correlated directly in its alignment with ditch [15012] revealed at the northern end of Trial Trench 15.

Some indication of potential complexity and irregularity in the ancient pattern of boundaries was provided by discontinuities in their arrangements; where features identified during trial trenching did not appear to continue through the wider area examined during the excavation phase. Examples include the central part of Area B, where no trace could be found to suggest continuation of Trial Trench 10 linear features [10010], [10009], [10007] or [10008]. Similarly, within the southern end of Area B, no surviving trace was revealed to indicate continuation of northeast to southwest aligned ditch [15003], identified towards the southern end of Trial Trench 15.

7.2.3 Romano-British Discrete Features and Pits

The 11 sparsely scattered discrete features revealed within Area B were broadly concentrated in the vicinity of Trial Trench 9, where three pits had previously been recorded during the evaluation phase of fieldwork. Fragments of animal bone, together with small briquetage fragments, had been recovered from the pits during the evaluation phase, although no associated pottery sherds or closely dateable artefacts had been encountered.

A group of four small features were revealed on the northern side of Trial Trench 9, close to the eastern edge of Area B. The features were similar in size and appearance and were arranged in a rough north northwest to south southeast trend or alignment (Plate 23). The northernmost was sub-circular cut [18007] (Fig. 16, Section 104), approximately 1m south southeast of which lay slightly larger sub-circular cut [18006] (Fig. 16, Section 103). Located 1.4m south southeast of [18006] was similar oval cut [18005] (Fig. 16, Section 102), and 0.8m beyond that to the south east lay sub-oval cut [18004] (Fig. 16, Section 101. Plate 24). The features were interpreted as small pits or possible post-holes, and, if the latter, may have defined part of a small structure or possible fence line. All were filled by similar reddish brown silt deposits.

Towards the western end of Trial Trench 9, just beyond its northern side, sub-oval pit [18001] was 0.95m by at least 0.6m in plan and 0.2m deep (Fig. 16, Section 100). It was filled by bluish grey silty sand (18003) and mid grey silt (18002), neither of which yielded dateable artefacts. Located 4.3m to the south, on the southern side of Trial Trench 9, oval cut [18008] was 1.25m wide and 0.25m deep (Fig. 16, Section 105). Fills 18017 and 18019 displayed fine laminations, suggestive of an estuarine environment.

At greater distance from Trial Trench 9, located 10.2m from its northern side, sub-circular pit [18055] was 0.46m wide and 0.35m deep, with very steep sides and a flattish gently concave base (Fig. 17, Section 112). Sherds of briquetage were recovered from fill (18056), and reddish flecking also noted in fill (18057) probably derived from similar material.

To the south of Trial Trench 9, around 3m from its southern edge, sub-circular pit [18039] was 0.8m wide and 0.32m deep with steep sides and a very gently concave base (Fig. 17, Section 110). No dateable artefacts were recovered from fills (18040), (18042) or (18043). Located 7m southwest of pit [18039], larger sub-circular pit [18028] was 1.3m in diameter and 0.72m deep with steep sides and a flat base (Fig. 17, Section 107). Animal bone fragments were recovered from fill (18031), whereas possible late Iron Age pottery, together with briquetage fragments were recovered from fill (18029). Fill (18031) had the appearance of a laminated deposit, and probably developed in an estuarine environment.

Away from Trial Trench 9 towards the southern end of Area B, approximately 22.5m from its southern edge, sub circular pit [18034] was 1.6m wide and 0.7m deep with mostly steep sides and a gently concave base (Fig. 17, Section 108. Plate 25). Amongst the earlier sandy silt fills, (18049) and (18051) included an organic component in their composition; the only artefacts recovered were animal bone fragments from fills (18035) and (18036). Just north east of pit [18034], smaller sub-circular pit [18037] was 0.78m in diameter and 0.36m deep with mostly steep sides and a concave base (Fig. 17, Section 109). A fragment of cattle bone was recovered from fill (18038).

7.2.4 Post Romano-British Features

Evolution of the environment within and around the site in the period following the phase of Romano-British settlement and occupation was indicated within Area B, as elsewhere at Millfield Nurseries, by the development of a highly organic ‘peaty’ deposit. The deposit was most evident within the upper fills of the larger ditches, and within Area B could be identified as deposit (18251) within ditch [18249] (Fig. 14), deposit (18024) within ditch [18021] (Fig. 16, Section 106. Plate 21), and deposit (18053) within ditch [18041] (Fig. 17, Section 111. Plate 22). Deposits (18053) and (18024) were both overlain by dark brown silty deposits distinguished by significant inclusions of mollusc (snail) shell fragments.

7.2.5 Post-Medieval or Modern Features

Towards the southern end of the area, east to west aligned ditch [18253] marked the eastwards continuation of ditch [15008] revealed near the northern end of Trial Trench 15 (Fig. 13). Although no artefacts were recovered from the ditch, brick and tile fragments were noted as inclusions within fill (18254), and examination of its stratigraphic position within the Trial Trench had demonstrated that it was of relatively recent date. It indicated a former ditched boundary along the southern edge of the Millfield Nurseries complex, on the line of a boundary existing at the time of the fieldwork and depicted on 19th century historic mapping (Fig. 22).

Similarly, ditch [18247] towards the northern end of Area B (Fig. 13) correlated with the location of a parallel former boundary depicted on historic mapping (Fig. 22); fill (18248) was also noted to include occasional brick or tile fragments.

Fragmentary traces of a pattern of at least five land drains with ceramic pipes were revealed within Area B, aligned with the Post-Medieval landscape defined, in part, by ditches [18253] and [18247]. The drains illustrate late 19th or 20th century attempts to improve productivity during agricultural use of the land before development of the nursery complex.

7.3 FINDS

The collection of finds recovered during the project comprises human skeletal remains (Appendix D), animal bone fragments (Appendix G), pottery of later Iron Age and Romano-British date (Appendix B), salt-making debris (briquetage) of probable Iron Age date (Appendix E), a Roman quernstone fragment, together with a few Post-Medieval glass (Appendix F) and brick or tile fragments (Appendix C).

The pottery assemblage is predominantly Romano-British and the types represented are mostly suggestive of 2nd to 3rd century activity. The assemblage indicates that few new ceramic vessels reached the site by the 4th century.

8.0 DISCUSSION & CONCLUSION

Archaeological trial trenching at Millfield Nurseries in 2022, required as a condition of planning permission for residential development, had demonstrated the presence of archaeological remains of Romano-British date within the proposed development area. Subsequent mitigatory works, the principal subject of this report, comprised two areas selected to undergo archaeological strip, map and record investigations. The areas were targeted with consideration to both potential archaeological sensitivity and to the degree of destruction of archaeological deposits likely to occur through construction operations.

The investigation provided welcome additional data to broaden the perspective already obtained through the results of the trial trenching fieldwork. The results from Area A, in particular, demonstrated the potential complexity of the pattern of remains which may be encountered when more extensive areas are cleared and examined.

To summarise, the investigation revealed remains belonging to four archaeological periods. The archaeological development of the site is discussed below under the following headings:

1. Period 1: Pre Roman Activity

2. Period 2: Romano-British Settlement and Activity

3. Period 3: Post Romano-British Features and Deposits

4. Period 4: Post-Medieval and Modern Features

5. Conclusions

6. Finds

8.1 PERIOD 1: PRE ROMAN ACTIVITY

In general terms, the Site is located upon tidal flat deposits (BGS) of later prehistoric date. Interpretation of details of the local topography formed by these deposits is somewhat compromised by the modern canalised river channel immediately to the east, and also by modification of most of the Site area during construction of the former nursery complex in the 20th century. Demolition and levelling of the complex immediately before the works referred to in this report have further masked the original topography.

From reference to LIDAR height data, it seems that the Millfield Nurseries Site occupies a slightly elevated location upon the alluvium, with indications of sinuous continuations of the elevated band traceable to the north and the south, and a lesser sinuous ridge observed to enter the Site area from the west (Fig. 18). The low ridges represent accumulations of alluvium that mark extinct channels. The environmental and archaeological phenomenon is common locally, and the elevated former channels are known as 'Roddons'.

The undeveloped field at the southern end of the Site had a ground surface level of approximately +2.1m OD at the time of the trial trenching investigation, whereas within the former nursery area to the north (following demolition of the former nursery structures), a surface level of around +2.5m OD was more typical. There were indications from the depths of overburden within trial trenches that the original site surface may have been variable in height. In Trenches 9 and 10 it was necessary to remove more overburden, for example, than within Trench 6, indicating that the latter (which provided most of the Roman finds) may have formerly had a slightly higher surface elevation. In a location relatively vulnerable to flooding a marginal increase in elevation may well have been a significant advantage.

Estuarine deposits revealed within the trial trenches showed a trend whereby the underlying layers (within the scope of the investigation) varied from south to north. Over the southern part of the site, the earliest estuarine deposit within the trenches was a firm dark brown silt layer, above which lay relatively thin accumulations of more coarse grained yellowish silty sand. By contrast, over the area northeast of Trench 6, including trenches 1, 2, 3, 4, 5 and the eastern end of Trench 8, a much deeper accumulation of light yellow-brown laminated silty sand was apparent. The trend was clearly the product of deposition around the early pattern of channels and had occurred through circumstances not fully explained by the results gathered within the scope of the project.

Although the trial trenching finds assemblage included no pottery fabrics dateable to the pre-Roman Iron Age, assessment of the briquetage (the fired clay remnants of equipment used in saltmaking) within that assemblage suggested that the modest collection matched known material typical of the 1st century BC (Appendix E). The subsequent fieldwork described in this report confirmed the indication of pre-Roman activity by yielding a sparse scatter of pottery of later Iron Age date, with examples recovered from both areas, together with more briquetage similar to the material encountered within the trial trenches. Remains of relatively small cattle in the animal bone assemblage, more typical of Iron Age stock than animals of the Romano-British period, may also be interpreted to suggest utilisation of the local landscape during the earlier period (Appendix G)

The conclusion prompted by the trial trenching results was that a later Iron Age saltern was likely to have been located in the immediate vicinity of the site and that it may have provided the initial foothold to prompt subsequent exploitation of the area. The results of subsequent fieldwork would appear to confirm and corroborate this conclusion.

Previous discoveries in the general locality suggest that Pre-Roman activity at the Site would not be entirely surprising, with remains of Iron Age saltmaking known from previous investigation at Tollbar Drove in Cowbit Wash around 1.9km to the southeast (Lane & Morris ed, 2001). Iron Age pottery, together with saltmaking debris, has also been recovered from a location at Clay Lake, 2.5km northeast of the site (Network Archaeology, 2011).

8.2 PERIOD 2: ROMANO-BRITISH SETTLEMENT AND ACTIVITY

8.2.1 General Observations on the Landscape

Whatever the character of any earlier activity within and around the site, the remains encountered in both the current fieldwork and in the trial trenching which preceded it indicated that settlement of the area was undertaken in earnest during the Romano-British period. Development included the creation of ditched boundaries to improve drainage and to define parcels of land, and, excepting trenches 1 and 9, all trial trenches across the development site included ditches which, either through artefacts or by association, could be ascribed to the Romano-British period.

The strip map and record fieldwork considerably expanded the extent of the Romano-British pattern of land division available for study, and, within Area A, demonstrated the potential for localised complexity within that pattern. Within Area B the concentration of features was not so great, but discontinuities in the pattern relative to the trial trenching results similarly indicated a degree of complexity and possibly irregularity. Most notably, the absence within Area B of continuations probable linear features recorded in the southern parts of Trial Trench 10 and Trial Trench 15 could indicate the presence of smaller enclosures within the wider pattern of boundaries and drains.

The trial trenching had identified a principal boundary within the pattern which appeared to traverse the entire site area on a north northeast to south southwest alignment and which passed through the eastern part of Trench 6 as feature group F113, just east of Area A; the ditch recorded as feature group F112, at the southeastern corner of the area, appeared to represent an early manifestation of the boundary. The trial trenching results had indicated that the boundary may have been a significant landscape feature from establishment in the 1st to 2nd century until the 4th century.

Continuing maintenance of this boundary, together with all boundaries on the site, would have been necessary for them to continue to function. The mobility of local deposits would have caused features to silt up readily, and the tendency would have been compounded by the relatively exposed estuarine location of contemporary occupation and its susceptibility to flooding. The observation complicates interpretation of the revealed pattern of ditches, as features which have yielded later 2nd or 3rd century finds may have been established as landscape features at a considerably earlier period.

8.2.2 Phases of activity within Area A

Information gathered from Trial Trench 6 had demonstrated the location as a particular concentration of Romano-British activity, in terms of the quantities both of artefacts recovered and of features revealed within the trench. Area A was opened up around the western end of the trench to facilitate further study of an area expected the be severely impacted by construction groundworks.

As expected, removal of overburden from Area A revealed a concentrated array of archaeological features, characterised mainly by a series of intersecting ditches (Fig 20 & Fig. 21). The overall trend of development within the area was reflected in the pottery assemblage, which indicated a surge of activity at the location in the 2nd century, which abated considerably from the 3rd century. By the 4th century the artefactual record seems to suggest a low intensity of activity, although sufficient evidence is available from fieldwork at the site to indicate a continuing presence within a maintained and utilised landscape.

At the western end of Trial Trench 6, it was initially postulated that some of the features revealed could have been structural and may have indicated the presence of former timber buildings or structures. When the examined area was expanded as Area A it was not possible to confirm this proposition, and no certain building or structural footprint could be confidently identified.

Despite the inconclusive structural evidence, it was apparent from the features revealed that the location, in the core of Area A, did provide a focus for Romano-British activity, the most notable aspect of which was probably a funerary function (Fig. 5 & Fig. 6). Burials were represented by skeletal remains of at least three individuals and included two surviving, but fragmentary, interments recorded as feature group F114. Although the burials were undated, with no artefactual accessories and no stratigraphic connection with the surrounding features and deposits, they are considered here as part of the Romano-British settlement phase. The remains could be characterised as a small cemetery, although close examination of the vicinity during the fieldwork did not reveal additional burials. Whether the graves constituted a

focus for subsequent surrounding activity or were deposited within an established settled landscape remains undetermined.

The burials lay towards the western edge of a small sub-rectangular parcel of land or enclosure, up to 9.5m by 6m in plan, defined on its southern and eastern sides by small ditch F103, on its northern side by ditch F104, and on its western side by ditch F109. Stratigraphically, ditch F103 seemed to be the earliest of the features in the vicinity, and served to define and isolate the patch of land southeast of the intersection of the other two ditches. This suggests either that the original northern and western sides of F103 were truncated by the other two ditches, or that those ditches were also established and present when F103 was cut. In the latter case, the stratigraphic mismatch probably derives from more longstanding functionality of the larger ditches and their continued maintenance as drains and boundaries.

Continuing activity at the location was indicated with the truncation of small enclosure ditch F103 by narrow 6.2m long linear cut F102. Indications of clay lining within the feature could indicate that it was designed to hold water, although to what purpose was not clear. The narrow cut was then itself truncated by slightly larger and broader northeast to southwest aligned elongated rectangular pit F101. The form of the feature again indicated a functional intent, again not fully determined by the fieldwork. Deposits to the southwest were interpreted as a pattern of wear and possibly indicated regular passage to ditch F109 at its intersection with F110; access to the water source may have been the prompt for the activity that caused the wear pattern, and possibly related to the function of F101.

Interpretation of the rest of the pattern of ditches is largely conjectural. It could be posited that features F115, F111 and F110 also served to define a parcel of land at the intersection of ditches F109 and F104 in a similar manner to F103, although an enclosure of slightly larger dimensions. What does seem clear is that the more intense period of habitation and activity within and around Area A was manifested in the multiplicity of smaller ditches revealed during the fieldwork. As occupation drifted away, the larger ditches continued to be maintained, presumably to enable them to continue to function as drains. Occasional localised alterations and variation in the pattern could be suggested by ditch F105 at the northwest corner of Area A, where a ditch of the Roman period was noted to truncate obliquely, and presumably replace, a silted earlier ditch located just to the south.

8.2.3 Habitation and Economy

In regard of contemporary habitation at the site, results of the strip, map and record fieldwork largely accord with those of the trial trenching, in that the evidence principally comprises the collection of artefacts recovered during the fieldwork; few features were revealed which might be interpreted definitively to represent domestic activity or structures. During evaluation of the site, artefacts were recovered from most trenches, apart from Trench 1 and Trench 13, albeit generally in quite small numbers. A greater assemblage of pottery was recovered from deposits and features within Trench 6, together with other artefacts perhaps indicative of habitation such as a bone peg, a fragment of possible quernstone and traces of iron smithing slag. The subsequent investigation has augmented the collection of artefacts, which mainly comprised pottery but also included another quernstone. The additional data has largely confirmed interpretation of the overall character of settlement at the site established by the initial fieldwork.

Towards the western end of Trench 6, two small pits may have functioned as post-holes, and feature [06051] was initially thought to potentially represent a slot for structural timbers. During subsequent investigation, a broader expanse around Trench 6 was opened and examined to clarify the character of the remains revealed within the trench. The additional work could not, unfortunately, confirm with certainty a structural interpretation or define the footprint of a building. It is likely that Romano-British buildings on the site would have included examples of relatively insubstantial construction, such as the 1st century mud-walled building at examined in Weston Fen (Hallam, 1970, 49). Previous cultivation of the Site would probably have degraded and destroyed evidence of any such structures.

Elsewhere across the development site, charcoal-rich fills within anomalous narrow curvilinear ditches previously revealed in Trial Trench 11 and Trial Trench 14 may also have indicated habitation or related domestic or craft activity in those vicinities. By contrast, pits revealed within Trial Trench 9 contained relatively sterile fills, with little artefactual evidence to suggest that they were in any way associated with nearby occupation. Expansion of the investigation around Trail Trench 9 as Area B revealed more of the sparse scatter of discrete features in the vicinity, including a possible alignment of small pits or post-holes just north of the eastern end of the trench. Pottery recovered from pits [18028] and [18055] and

from ditch [18021] provided further evidence for a contemporary presence, but the low quantities encountered can be interpreted to add weight to the original assertion that the southeastern part of the site could be considered peripheral to the focus of Romano-British settlement in the locality.

Analysis of paleoenvironmental samples taken during trial trenching, and during the subsequent phase of Strip Map and Record investigation described here, has added detail to knowledge of the state of the ancient environment locally (Appendix G). The overall impression presented is of a generally very wet landscape of water-filled ditches at a location peripheral to the main areas of Romano-British occupation and agriculture. More secure habitation may have been sought on marginally elevated estuarine deposits to the north and east as conditions at the Millfield site deteriorated during the later Roman period.

8.2.4 Dating
For both phases of fieldwork at the site, the trial trench evaluation and the strip, map and record investigation, assessment of the pottery assemblage dictates conclusions concerning relative dating of the remains revealed, and of the likely duration of habitation at the site. The presence of late 1st to 2nd century pottery in early fills of features can be taken to indicate the likely date of establishment of the initial pattern of Romano-British land-division, whereas the overall preponderance of 2nd to 3rd century pottery within the assemblage probably indicates the most intensive phase of habitation. Within Area A, early pottery was recovered, mostly as residual artefacts, from ditch F112, ditch F111, ditch F110, pit [18041], whereas from Area B contemporary fabrics were recovered from pits [18028] and [18055] and from ditch [18021]. Specialist opinion is that 'few, if any, new ceramic vessels reached the Millfield Nursery site by the 4th century AD', indicating that decline and eventual abandonment (possibly with relocation of settlement nearby) followed 2nd to 3rd century habitation (Appendix B).

By way of comparison, investigations at Backgate in Cowbit, situated at a similar elevation approximately 3.7km to the southeast, recovered pottery assemblages with comparable 2nd to 3rd century date ranges, although with the inclusion of some finer fabrics possibly suggestive of higher status occupation thereabouts (Rayner, 2003. Mellor & Trimble 2011). A similar distance to the north, investigation of extensive remains in advance of development west of Spalding at Wygate Park established that Iron Age and early Roman saltmaking was succeeded by 2nd to 3rd century occupation. Part of the site was subsequently abandoned, although, in contrast to the present Site, Area 2 at Wygate Park produced firm evidence for continuing occupation into the 4th century (Wood, 2006). Roman occupation also continued into the 4th century 6.5km northeast of the Site near Weston (Wood, 2008). The suitability of a particular site for habitation at any specific time was influenced by the general environmental trends and the susceptibility of local topography to the impacts of those trends.

8.3 PERIOD 3: POST ROMANO-BRITISH FEATURES AND DEPOSITS

Although considerable variation was noted in the way deposits within individual features accumulated, trends apparent at multiple locations across the site, both during trial trench evaluation and the subsequent strip, map and record investigations, can be interpreted to indicate more general environmental influences on the pattern of settlement and land use.

8.3.1 Development of organic 'peaty' deposit
Within many of the deeper features, a transition frequently was frequently noted whereby a very dark brownish grey organic (or 'peaty') silt deposit dipped into the upper part of a feature, to seal earlier, sandier, fill deposits. It is suggested here that the ditches, for the most part, were already in an abandoned state by the time this layer began to form, although still present in the landscape as prominent earthwork features. The fills below the dark layer were generally alluvial in character and may, in part, have derived from flooding episodes in deteriorating environmental conditions.

The dark layer was provisionally interpreted to indicate the development of freshwater fen conditions over the site area (or the lowest parts thereof), presumably occurring gradually as the result of rising water levels and persistent waterlogging. The date of this transition has not been directly established during this investigation, but a comparable instance of a 'peat' deposit was examined in trial trenching in advance of development at Holland Park, around 1.5km north of the Site (Anon., JSAC, 2000. Appendix B: Environmental Archaeology). A carbon 14 date for the deposit at Holland Park suggested that it had formed during the 6th to 7th century, in the early to middle Saxon period.

8.3.2 Post-Roman Siltation
Within the features revealed at Millfield Nurseries, the dark organic silt accumulation noted above was frequently sealed by deposits of an alluvial composition, suggestive of episodes of further flooding.

Although the results indicated that post-Roman silting did occur, it does not appear to have buried and masked the Roman landscape to a significant degree. Only a relatively shallow depth of excavation was necessary to reveal the archaeological remains in trial trenches 16 and 17 at the lowest end of the site. Residue of more general post-Roman silting is probably included within the thickness of topsoil and has been mixed and dispersed through cultivation, particularly in the 20th century.

Other sites in the area which provide better examples of the effects of Post-Roman silting include the area around Pennygate Drain (Herbert, 1996), 2.6km to the north northwest, a site on Holbeach Road, 5km to the northeast (Miller, 1998), and the site at Wygate Park, 2.5km to the north (Wood, 2006). At the former, cropmarks visible southwest of the site have been demonstrated to be masked by later silt to the east, whereas at Wygate Park Roman remains are sealed by up to 0.4m of later alluvium. At Holbeach Road, the interface between the proposed Roman land surface and overlying estuarine deposits lies at around +2.6m to +2.8m OD. Further east, the masking effects of Post-Roman silt have also been noted during excavations in advance of construction of the Weston bypass (Wood, 2008).

As part of excavations to examine a Roman saltmaking site at Wygate Park (SWP04) a sample of the alluvial silt revealed to seal Roman features was subjected to an OSL (Optically stimulated luminescence) test which indicated a 7th to 10th century date for the deposit (ref. in Wood, 2006, 2.11). The date may give an indication of the likely parameters of dating for comparable processes at the Millfield Site.

8.3.3 Shell-rich Deposit
On the Millfield Site, deposits (possibly alluvial) above the dark organic silt are generally capped by a light-grey-brown silty sand deposit rich in small snail shell fragments. A sample of shell-rich deposit (6003) from Trial Trench 6 revealed a molluscan assemblage indicative overwhelmingly of freshwater marshland or aquatic conditions.

In Trial Trench 4 and Trial Trench 10, deposits of similar shell-rich composition appear to have accumulated within shallow irregular cuts interpreted as small ponds or pools. Dating of this episode is indicated by Bourne-type pottery of Medieval date recovered from the fill of the Trench 4 feature, and, additionally, by pottery of the same fabric recovered as a surface find from the comparable upper fill within ditch [3007] in the northwest part of the site. The pale shell-rich deposit would seem to have accumulated, therefore, during the Medieval period within surviving earthwork hollows of elements of the Romano-British landscape, as well as within occasional irregular post-Roman features. The functions of the latter are not known, but one might speculate that they may have been formed as water-sources for animals put out to graze on the common land.

Although the grazing, together with the other resources the common and fen provided, would have been important resources to contemporary communities, the land would always have been vulnerable and subject to periodic inundation. In the Medieval period, following construction of the sea banks, the threat would mainly have been from freshwater flooding during the winter.

8.3.4 Area A, ditch F107
Towards the northern side of Area A, approximately east to west aligned ditch F107 appeared to truncate features and deposits of the Roman and immediately post-Roman periods but did not correspond with mapped Post-Medieval boundaries and yielded no finds attributable to the Post-Medieval period. The feature has, therefore, been interpreted as 'Post-Roman', although its orientation does approximately accord with those of the mapped Post-Medieval landscape.

8.4 PERIOD 4: POST-MEDIEVAL AND MODERN FEATURES

The site area remained as common land into the Post-Medieval period, and is depicted as such on Dugdale's map of Deeping Fen of 1662, and also on Featherstone's map of the same from 1763. Immediately east of the Site, the current artificial course of the River Welland was established in the seventeenth century as one stage in the prolonged campaign to improve fenland drainage (Lane & Morris

ed. 2001, 13). Canalisation to improve the flow of the river went together with creation of Cowbit Wash to temporarily hold floodwaters during periods of overflow.

The enclosure award of 1819 provided for division of the common into separate parcels of land and allowed more intensive agricultural exploitation of the area. The trend to 'improvement' is reflected in construction of the windmill at the western edge of the site, the derelict remains of which were demolished (after an archaeological photographic record was made) as part of the current project (Fig 38). Within Area B, ditch [18247] at the northern end and ditch [18253] at the southern and correlate with mapped Post-Medieval boundaries; a series of land drains were also revealed which largely conform with the alignment of the ditches.

Within Area A, as noted above, ditch F107 may also have been part of the Post-Medieval pattern of boundaries, and the scars of more recent land drainage pipes were similarly evident. Patches of modern disturbance and intrusion were also noted, particularly the large irregular rectangular anomaly (18093) in the central northern part of the Area.

The 20th century nursery complex was an extensive facility, and its construction necessitated significant modification of the original land surface to create a level area for the glasshouses, together with excavations for subterranean plant and tanks. The results of this modification were apparent when surface levels in the undeveloped field immediately south of the complex (around +2.1m OD) were compared with those of the developed nursery area (around +2.4m to +2.6m OD). Within the trenches, thicker overburden deposits revealed in trenches 9 and 10, indicate that soil may have been transferred there from formerly higher areas to the north.

8.5 CONCLUSIONS

A programme of archaeological investigations at Millfield Nursery, comprising both trial trench evaluation and strip, map and record excavations, has revealed an additional location to add to the distribution of Romano-British settlement sites in the area around Spalding. The information recovered provides data which will contribute to further study of contemporary rural settlement patterns and landscapes and the agricultural economy, both of which topics are highlighted within the regional research agenda.

The Site appears to have evolved in a similar manner to other sites in the vicinity, whereby saltmaking operations were succeeded by a phase of settlement sustained by more conventional agrarian activities. At this Site, the saltmaking is only indirectly recorded through fired clay waste material (briquetage) recovered as residual finds in later features. The form of the briquetage, however, indicates that the activity may have commenced in the 1st century BC, in the pre-Roman Iron Age.

Romano-British settlement occurred within a landscape of ditched boundaries and drains, the principal axis of which was probably laid out in the later 1st century AD. Occupation concentrated in the central-west part of the site, around Trial Trench 6 and subsequent strip map and record Area A, and appears to have been most intensive around the 2nd to 3rd centuries AD, with very little indication of significant continuation into the 4th century. Within Area A, the discovery of burials, and what could be broadly characterised as remains of a small cemetery is of considerable interest. Although the settlement appears to have re-located, it is likely that the divided landscape continued to be exploited for some time.

Eventual abandonment of the Romano-British landscape, however, is perhaps indicated by fills of alluvial character within some features, presumably accumulated in part through episodes of estuarine flooding. Partially filled features at various locations across the site show evidence for formation of a darker organic deposit, probably representing onset of wetland conditions over the Site area, succeeded by further alluvial accumulations. Tentative comparisons may be suggested with scientific dating of deposits examined within 2.5km north of the Site. Radiocarbon dating suggests that peat formation at Holland Park, possibly associated with the darker organic deposits observed at Millfield, may be of 6th to 7th century date, whereas overlying estuarine silts at Wygate Park, just to the north, have generated a 7th to 10th century OSL date. The precise sequence of environmental changes at Millfield will have been directed by its immediate topography, but the general trends accord with those of peer sites in the vicinity.

Through the medieval period the land was valuable as common pasture but remained relatively marginal and vulnerable to occasional freshwater inundation. Improvements to local drainage, beginning with major campaigns in the 17th century, led to enclosure in the early 19th century and to increasingly intensive exploitation for agriculture and horticulture. In the later 20th century this culminated in construction of the nursery complex demolished immediately before the investigations described in this report.

8.6 FINDS

The collection of finds recovered during the project comprises human skeletal remains (Appendix D), animal bone fragments (Appendix G), pottery of later Iron Age and Romano-British date (Appendix B), salt-making debris (briquetage) of probable Iron Age date (Appendix E), a Roman quernstone fragment, together with a few Post-Medieval glass (Appendix F) and brick or tile fragments (Appendix C).

The pottery assemblage is predominantly Romano-British and the types represented are mostly suggestive of 2nd to 3rd century activity. The assemblage indicates that few new ceramic vessels reached the site by the 4th century.

9.0 ACKNOWLEDGEMENTS

Witham Archaeology would like to thank Seagate Homes for commissioning the fieldwork and this report. The role and contribution of Ian Marshman of Lincolnshire County Council, the archaeological advisor to South Holland District Council, is also gratefully acknowledged. Thanks are due to the excavation team for their resilience under challenging mid-winter conditions.

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11.0 PROJECT/ ARCHIVE DETAILS

11.1 Project Information

SITE CODE: SCSG23

PLANNING APPLICATION No.: H16-0668-16

FIELD OFFICER: C. J. Moulis

NGR: TF 2344 2004

CIVIL PARISH: N/A

SMR No.:

DATE OF INTERVENTION: 16th January 2023 to 28th February 2023

TYPE OF INTERVENTION: Strip, Map and Record Investigation

UNDERTAKEN FOR: Seagate Homes

11.2 Archive Details

PRESENT LOCATION: Witham Archaeology Ltd, 2 High Street, Ruskington, Lincolnshire, NG34 9DT

FINAL LOCATION: Lincoln Museum, Danes Terrace, Lincoln

MUSEUM ACCESSION No.: LCNCC : 2023.8

ACCESSION DATE: -TBC

The Site Archive Comprises:

Context Register	11 Sheets	
Context Records	257 Sheets	
Plan Register	1 Sheet	
Section Register	1 Sheet	
Sample Register	1 Sheet	
Sample Sheets	3 Sheet	
Drawings at Scale (var.)	11 Sheets	(Drawing film)
	1 Sheet	(Annotated paper sheet)
Photographic Register	2 Sheets	
Digital Photographs	75 image files	
Photogrammetry (SfM) register	1 Sheet	
Digital photographs (SfM)	SfM52: 22 image files	
GPS digital survey data	2 Surveys (6 data files)	
Daily Record Sheets	22 Sheets	

It is intended that transfer of the archive in accordance with current published requirements will be undertaken following completion of this project.

COLOUR PLATES



Plate 1: Aerial view from the site across the River Welland, looking northeast



Plate 2: Pre-excavation view across Area A, looking southwest



Plate 3: Aerial view of Area A, looking west southwest



Plate 4: Ditches F110 and F112 in Section 118, looking east southeast. 1m scale



Plate 5: Feature F102 terminus in Section 131, looking east. 0.3m scale



Plate 6: Features F101 and F102 in Section 126, looking north northeast. 1m scale



Plate 7: Northeast terminus of feature F101 in Section 119, looking northwest. 2 x 1m scales



Plate 8: Ditch F109 in Section 136, looking north. 2 x 1m scales



Plate 9: Ditch F110 in Section 133. looking west. 1m scale



Plate 10: Ditch F109 in Section 135, looking north. 1m scale



Plate 11: Ditch F104 in Section 137, looking northwest. 2 x 1m scales



Plate 12: Ditches F106 and F107 in Section 115, looking west. 2 x 1m scales



Plate 13: Ditch F105 in Section 138, looking north. 2 x 1m scales



Plate 14: Ditch F108 in Section 116, looking northwest. 0.3m scale



Plate 15: Burial group F114, looking west. 1m scale



Plate 16: Aerial view of burial group F114. North to right of image. 1m scale



Plate 17: Aerial view over Area B, looking north



Plate 18: Aerial view over Area B, looking south southeast



Plate 19: View of Area B from the south, looking north



Plate 20: View of Area B from the north, looking south southeast



Plate 21: Ditch [18021] in Section 106, looking northwest. 1m scale



Plate 22: Ditch [18041] in Section 111, looking southwest. 1m scale



Plate 23: View of pits [18004], [18005], [18006] & [18007], looking northwest. 1m scale



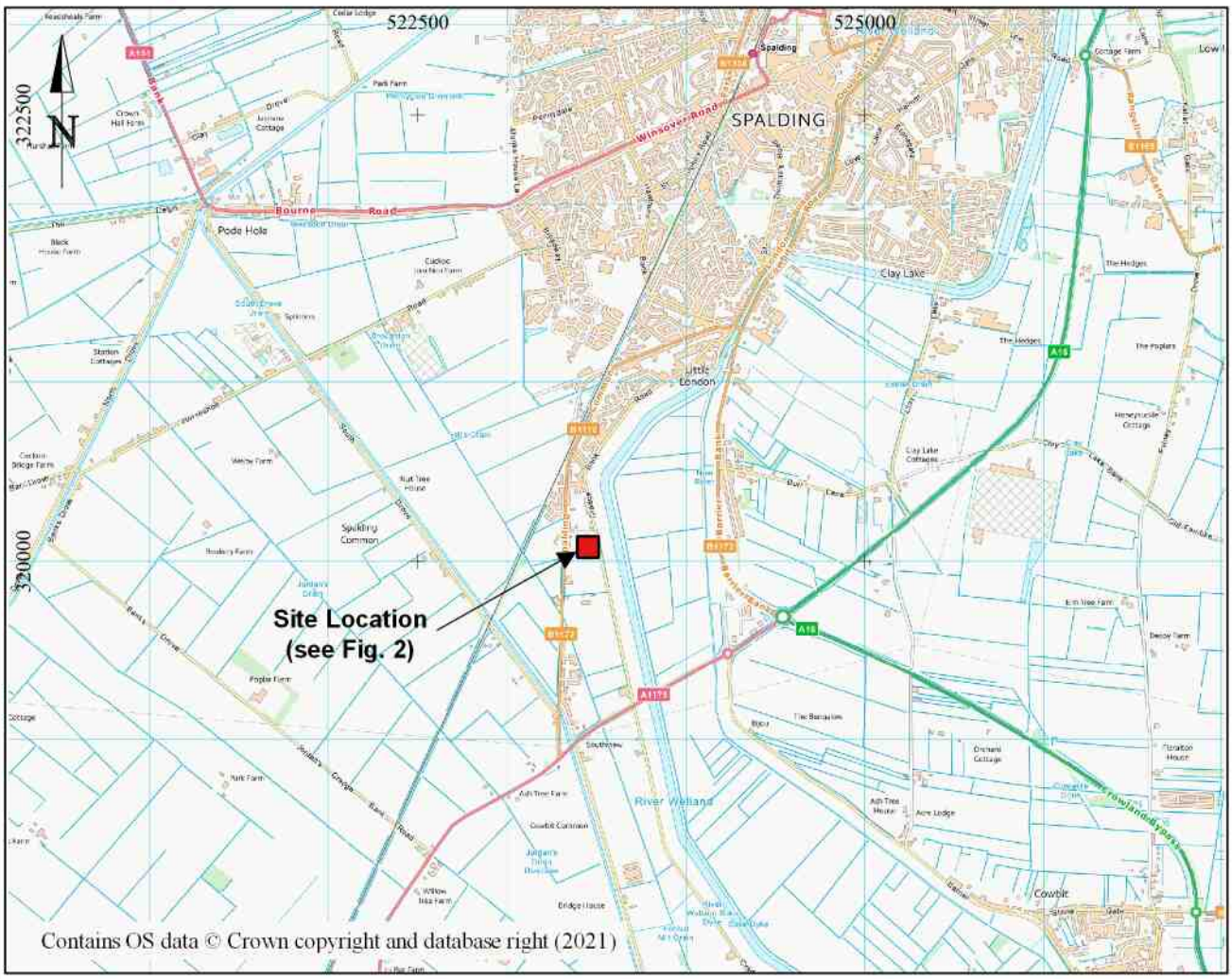
Plate 24: Pit [18004] in Section 101, looking north northwest. 0.5m scale



Plate 25: Pit [18034] in Section 108, looking northeast. 1m scale



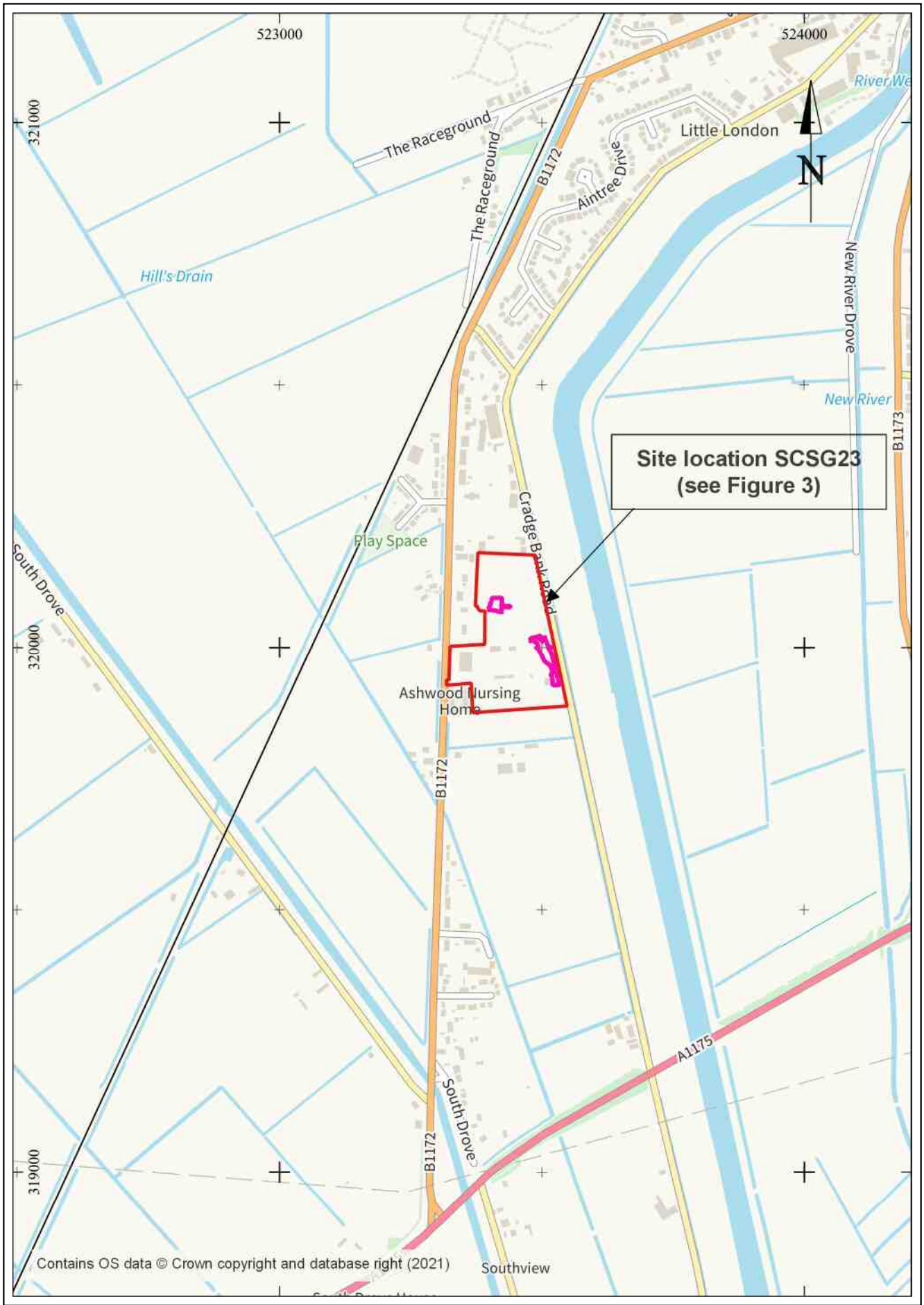




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General Location Maps

Fig. 1



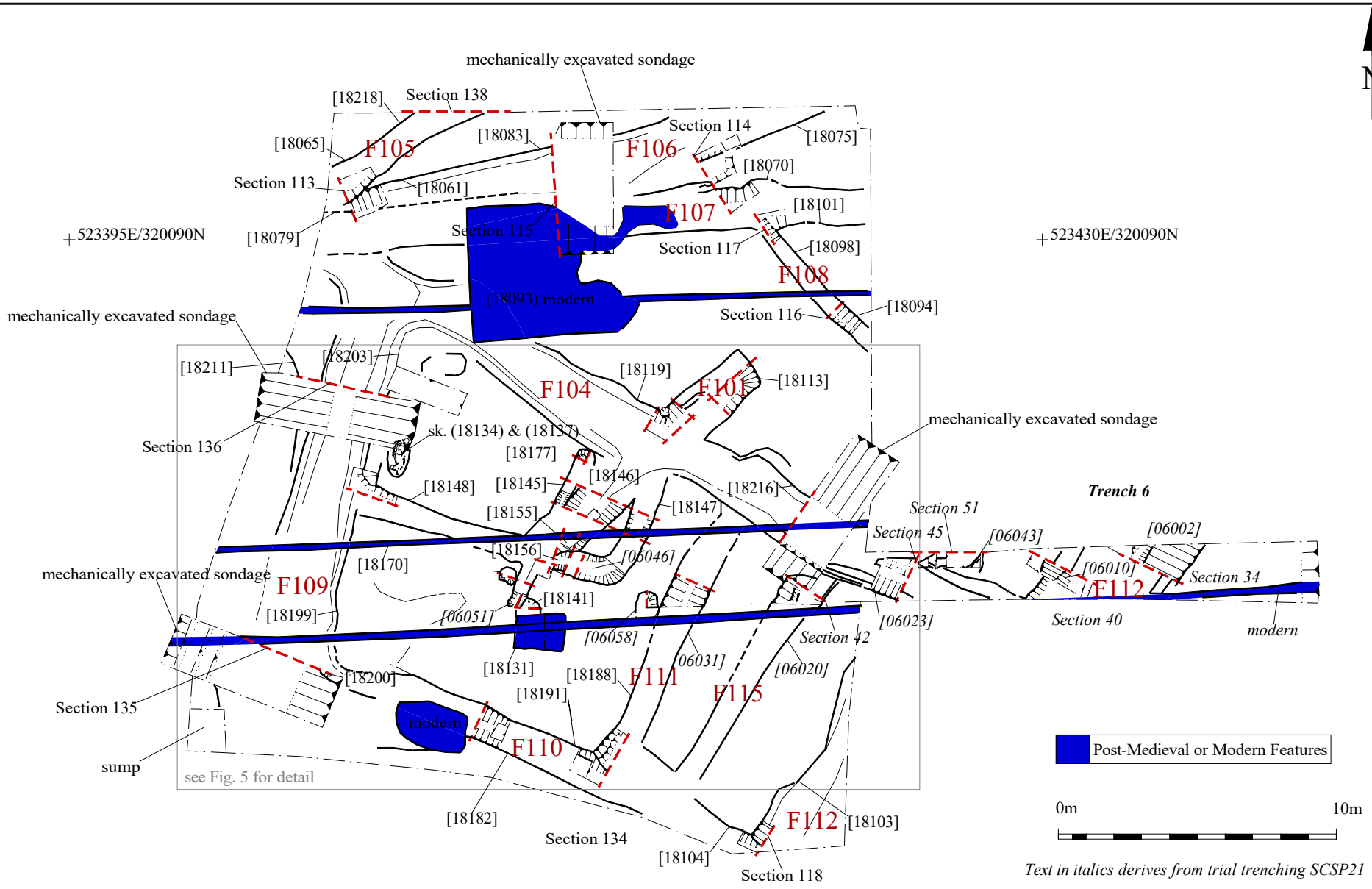
Witham Archaeology Site Location Map Scale 1:10 000 Fig. 2



Witham Archaeology

SCSG23 Site Plan
(showing the former nursery complex)
Scale 1: 2000

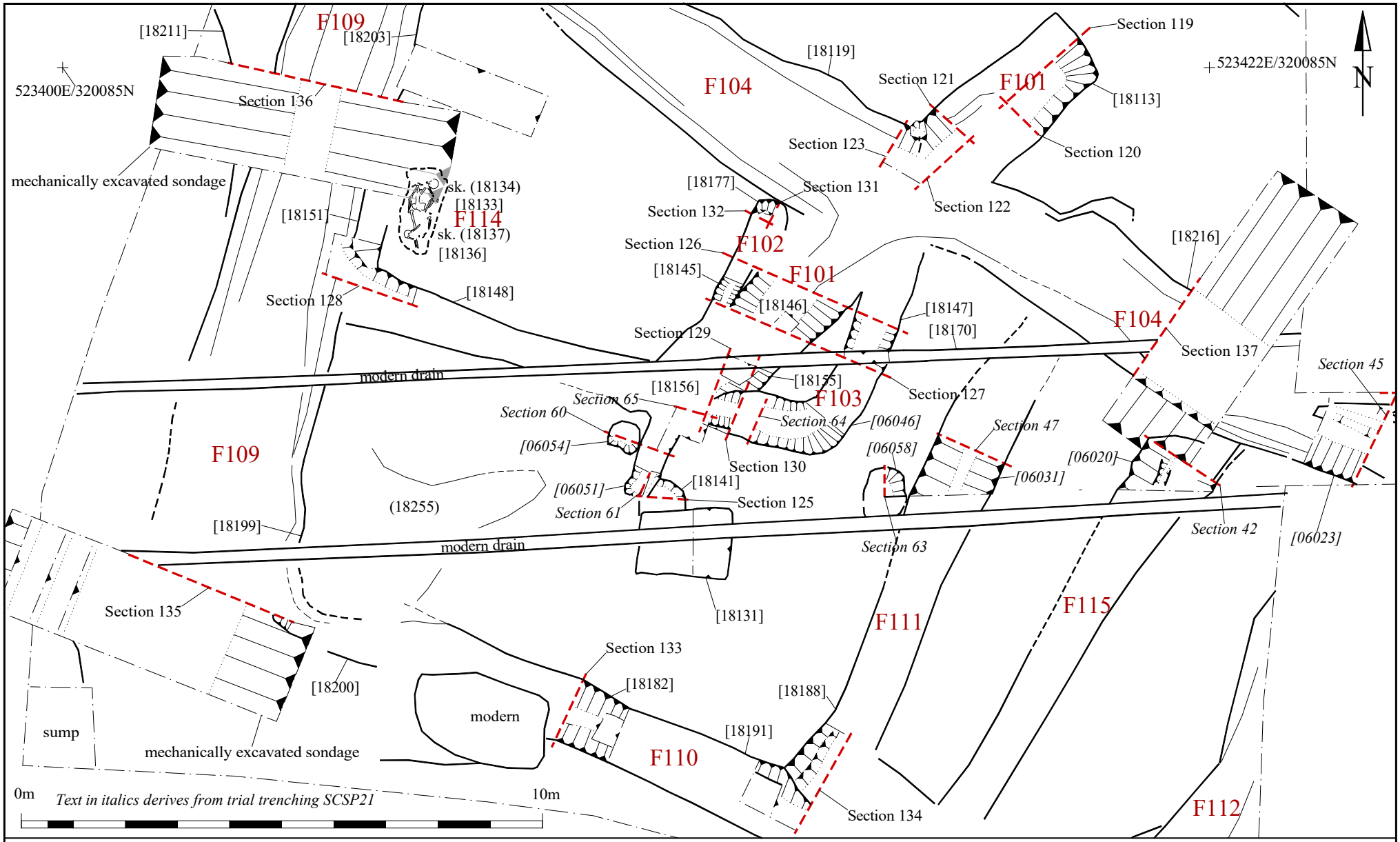
Fig. 3



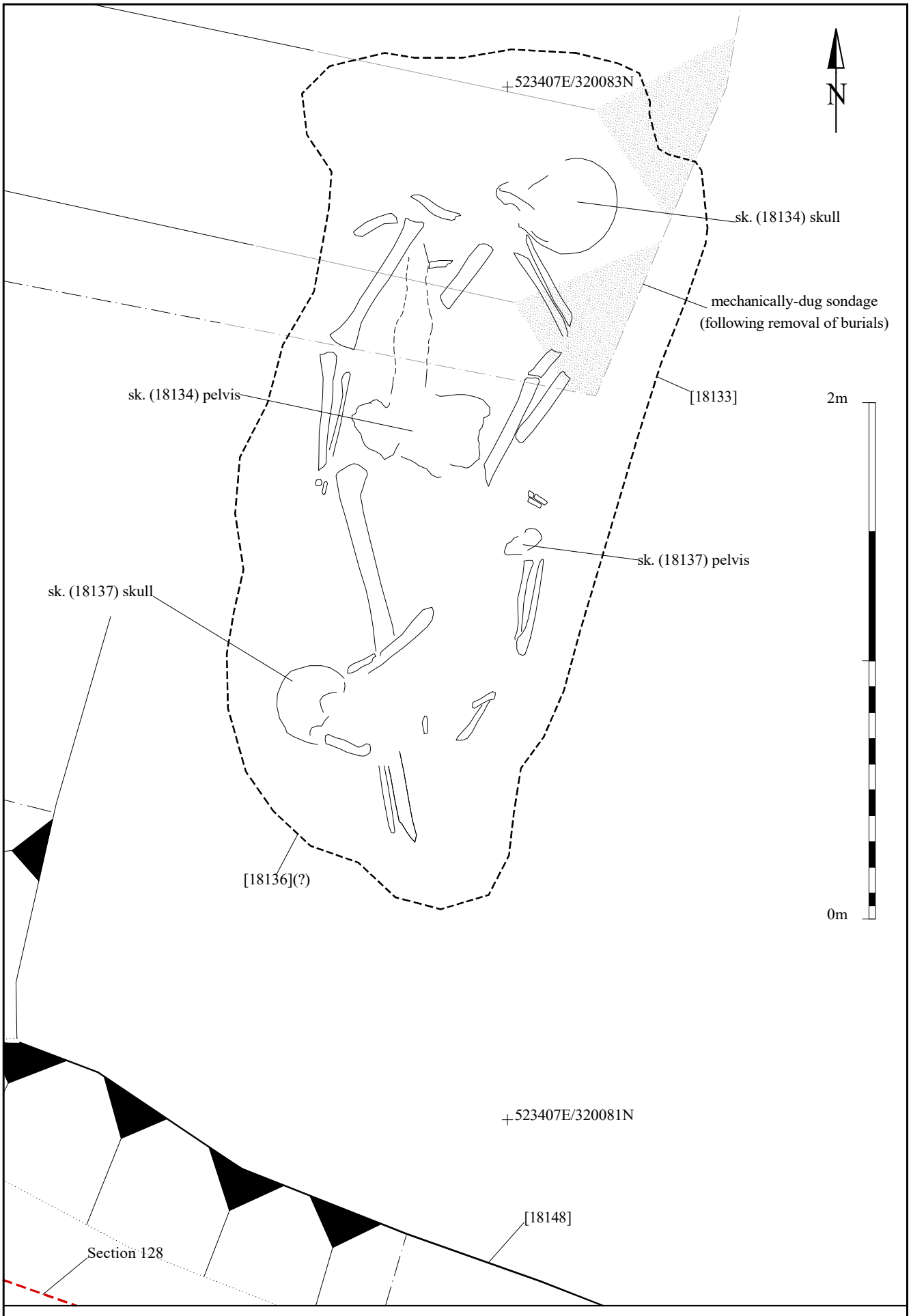
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SCSG23 Area A Scale 1: 200

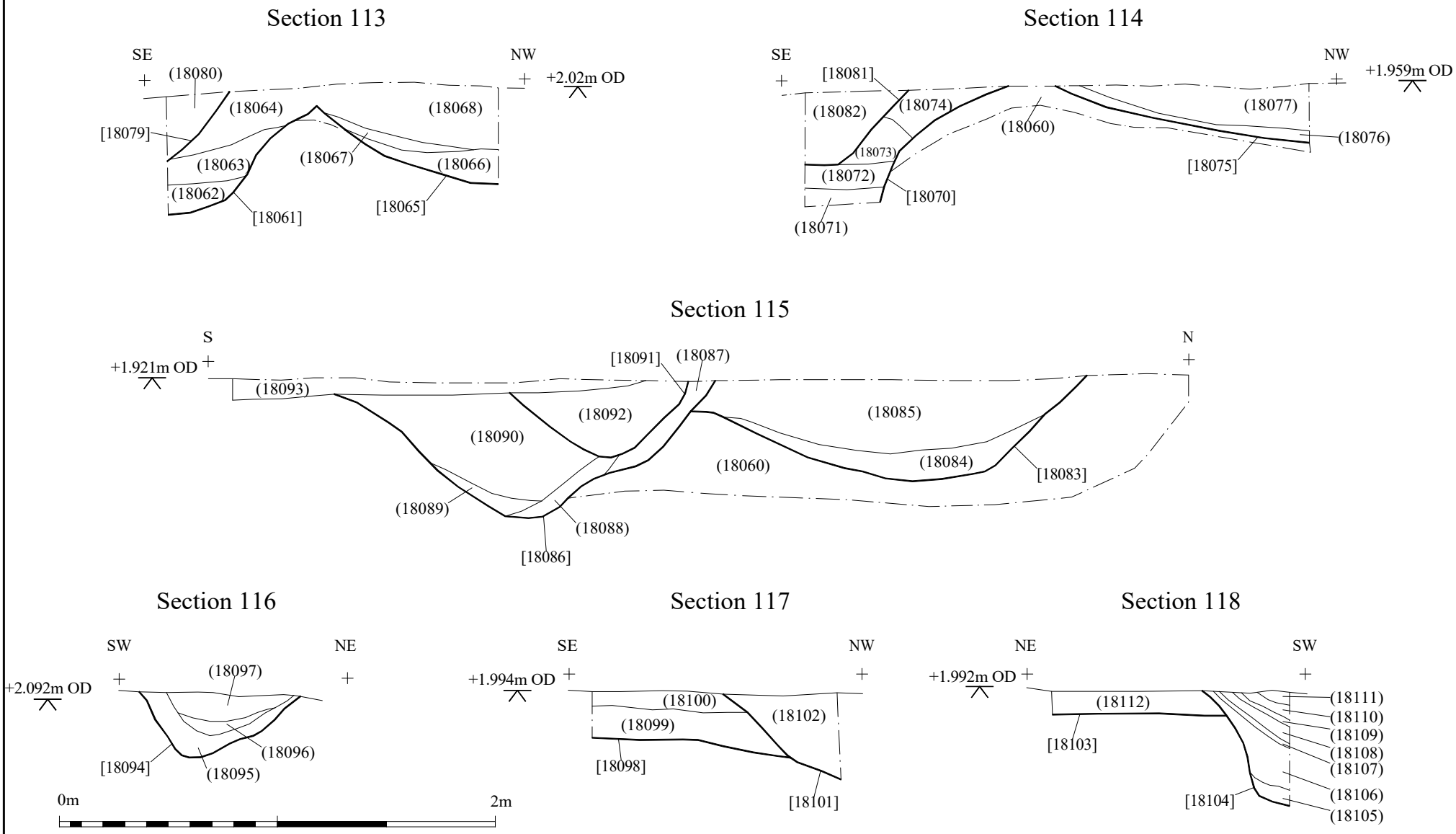
Fig. 4



Witham Archaeology SCSG23 Area A (detail) Scale 1: 100 Fig. 5



Witham Archaeology SCSG23 Area A Burials Scale 1: 10 Fig. 6

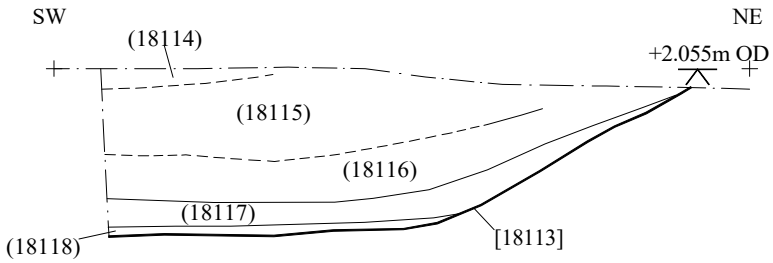


Witham Archaeology

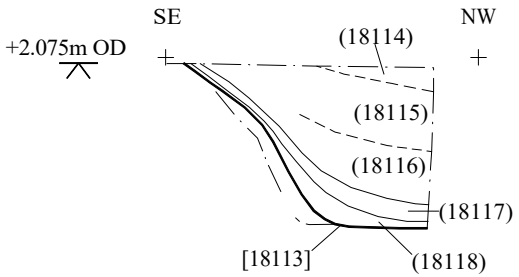
SCSG23 Area A Sections 113, 114, 115, 116, 117 & 118 Scale 1: 25

Fig. 7

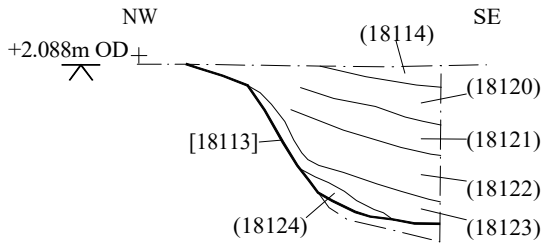
Section 119



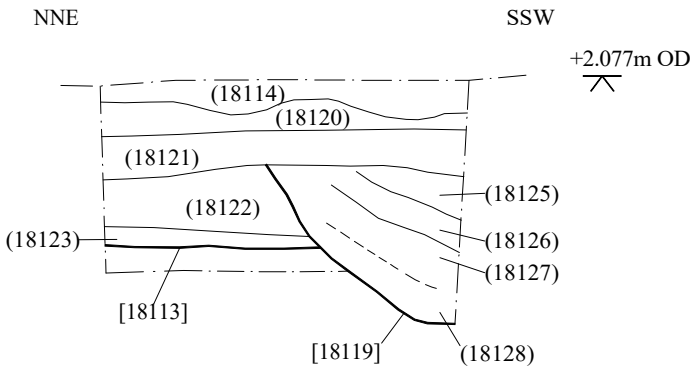
Section 120



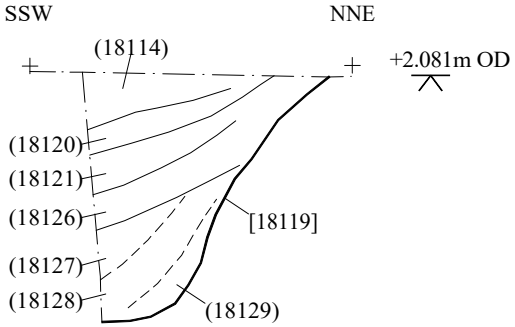
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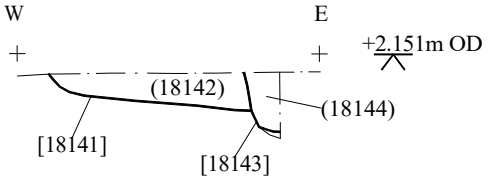
Section 122



Section 123



Section 125

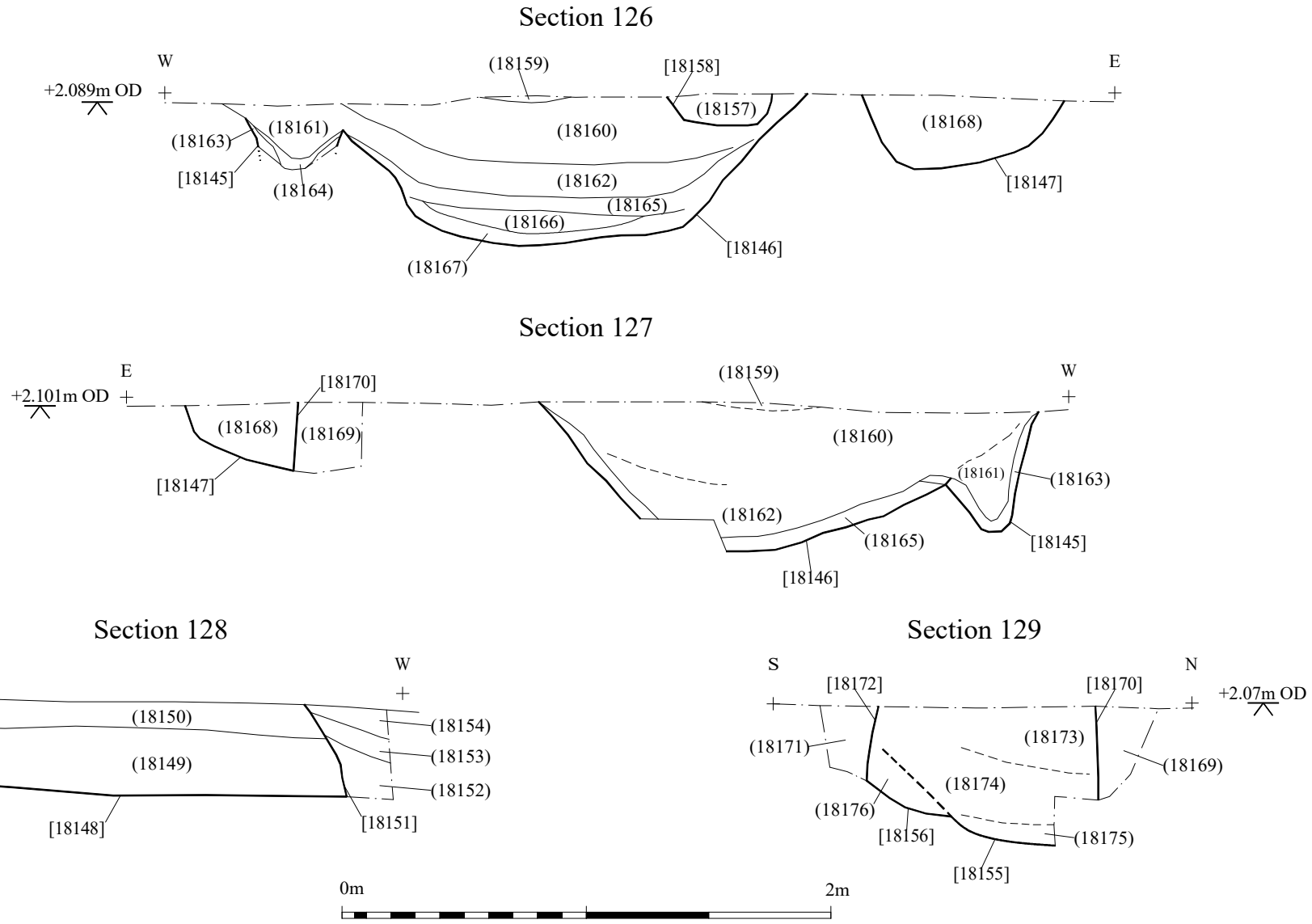


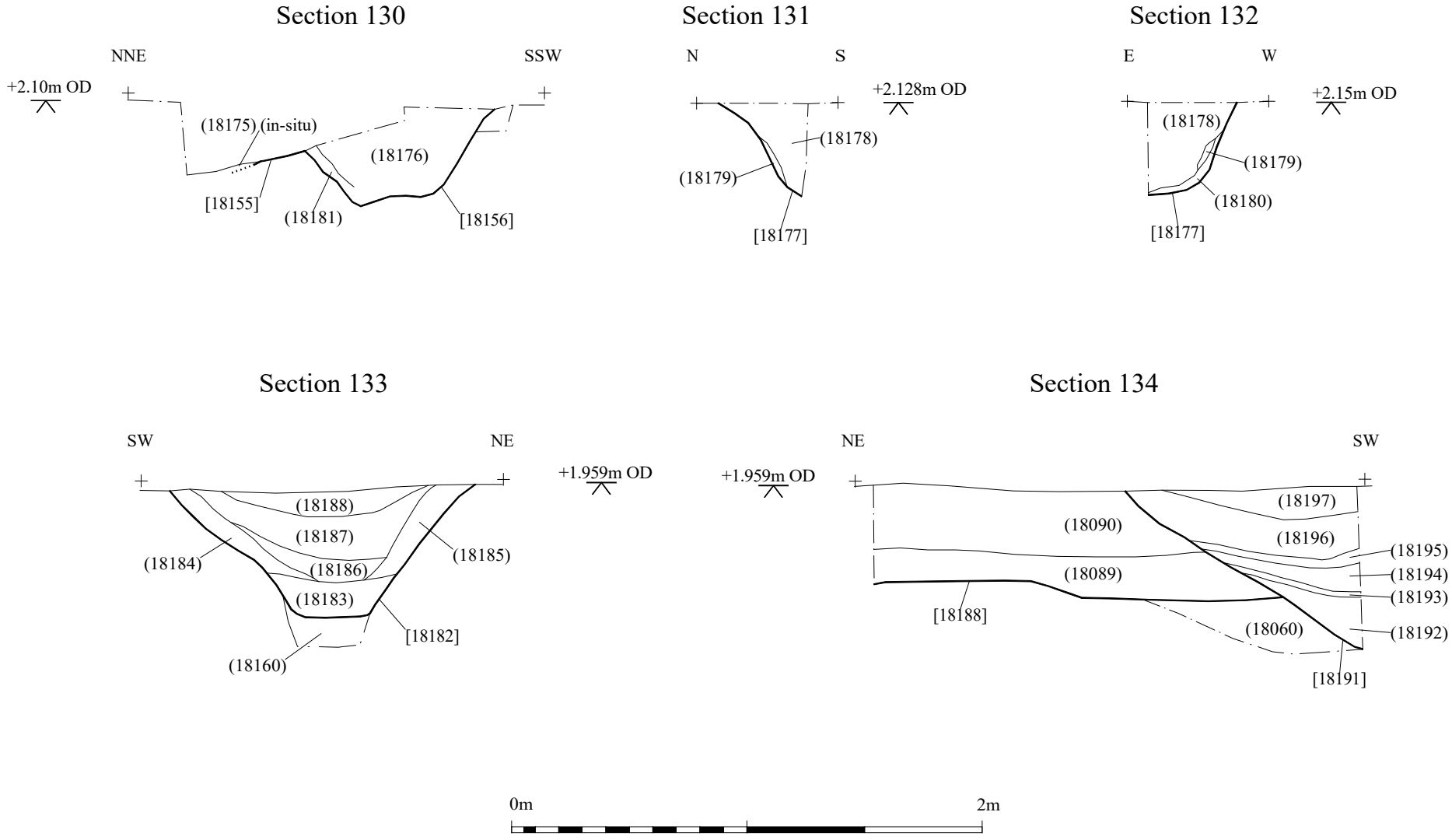


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SCSG23 Area A Sections 119, 120, 121, 122, 123 & 125 Scale 1: 25

Fig. 8


Section 126
W
E
+2.089m OD
(18159)
[18158]
(18157)
(18161)
(18163)
(18160)
(18168)
[18145]
(18164)
(18162)
[18147]
(18165)
(18166)
[18146]
(18167)
Section 127
E
W
+2.101m OD
[18170]
(18159)
(18168)
(18169)
(18160)
[18147]
(18161)
(18163)
(18162)
(18165)
[18145]
[18146]
Section 128
E
W
+2.037m OD
(18150)
(18154)
(18153)
(18149)
(18152)
[18148]
[18151]
Section 129
S
N
+2.07m OD
[18172]
[18170]
(18173)
(18171)
(18169)
(18174)
(18176)
[18156]
(18175)
[18155]
0m
2m

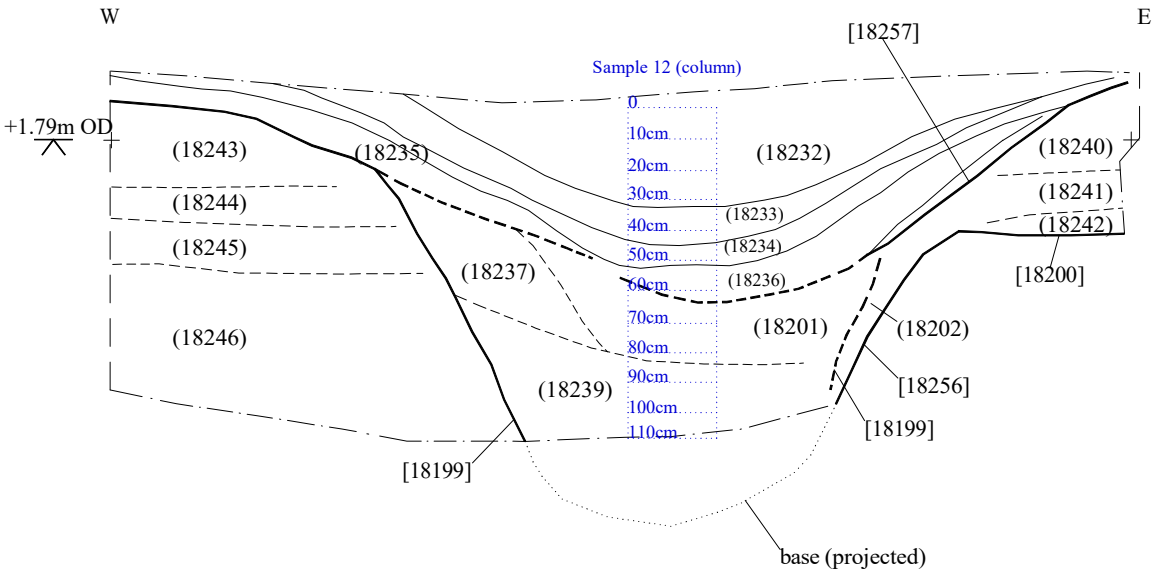


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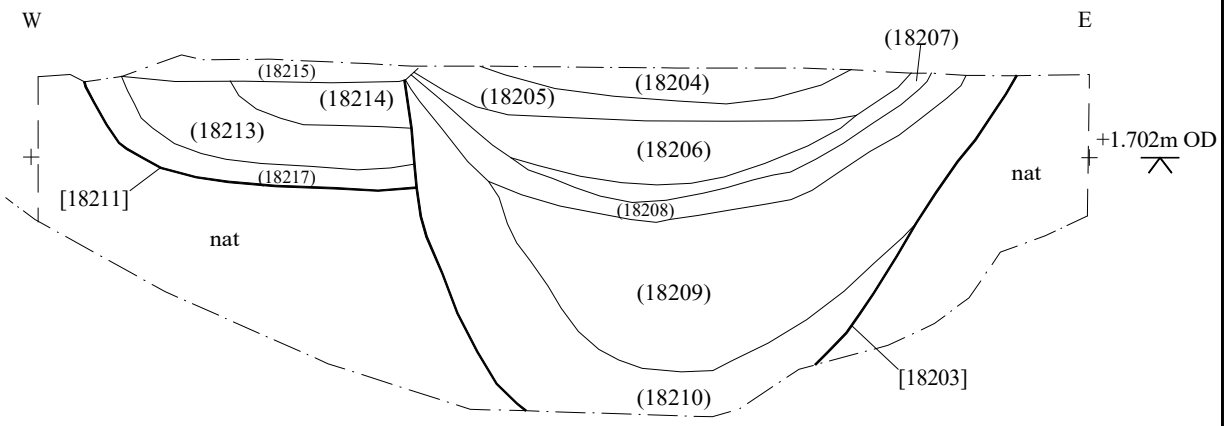
SCSG23 Area A Sections 130, 131, 132, 133 & 134 Scale 1: 25

Fig. 10

Section 135

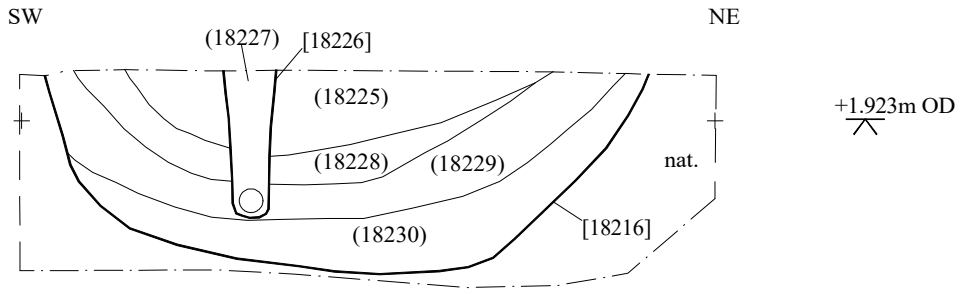


Section 136

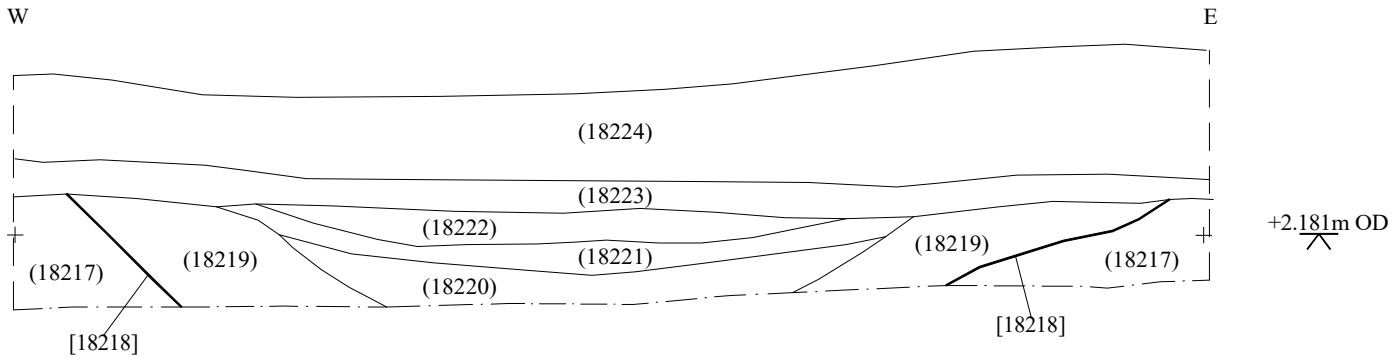




Section 137



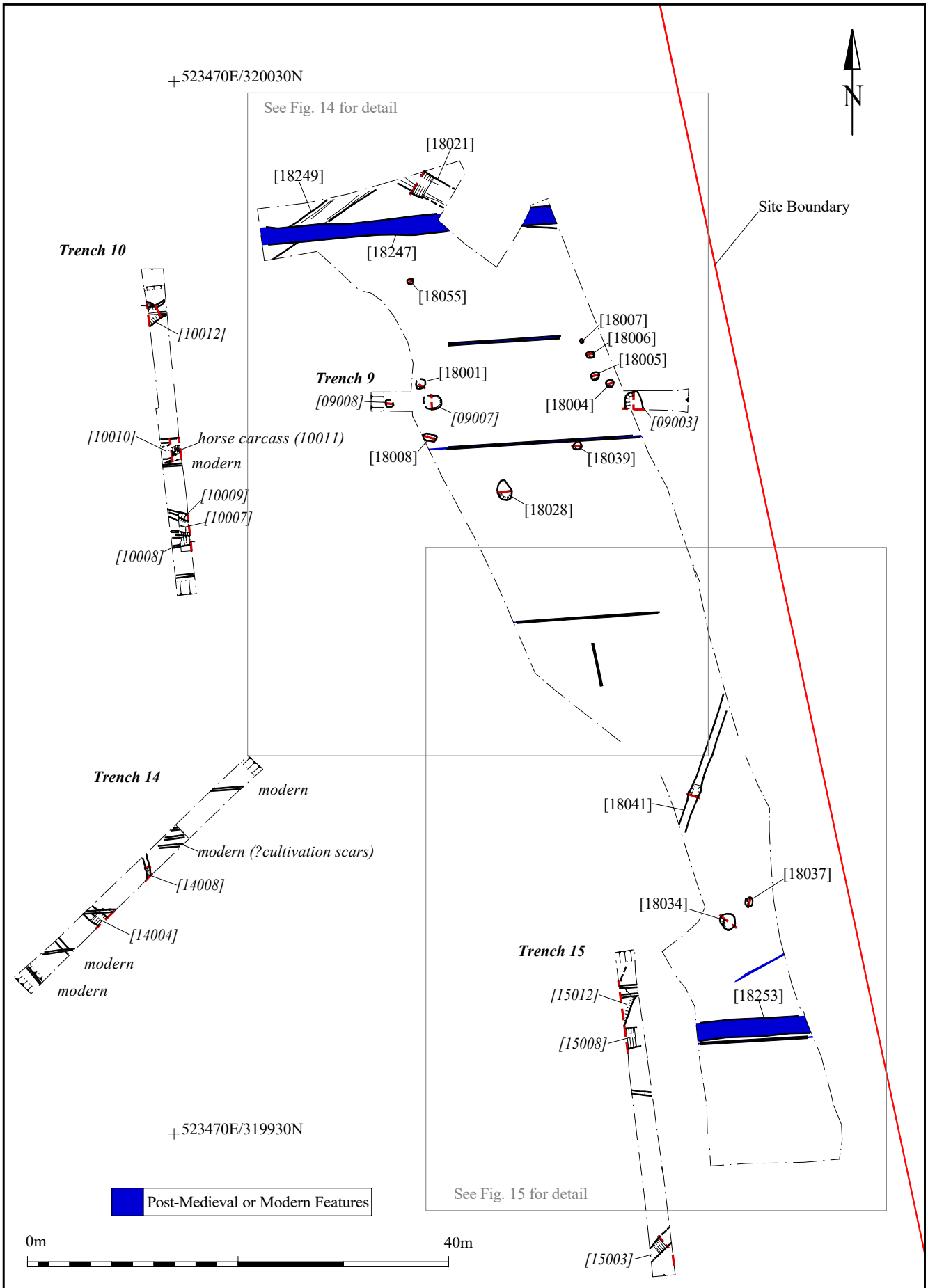
Section 138



Witham Archaeology

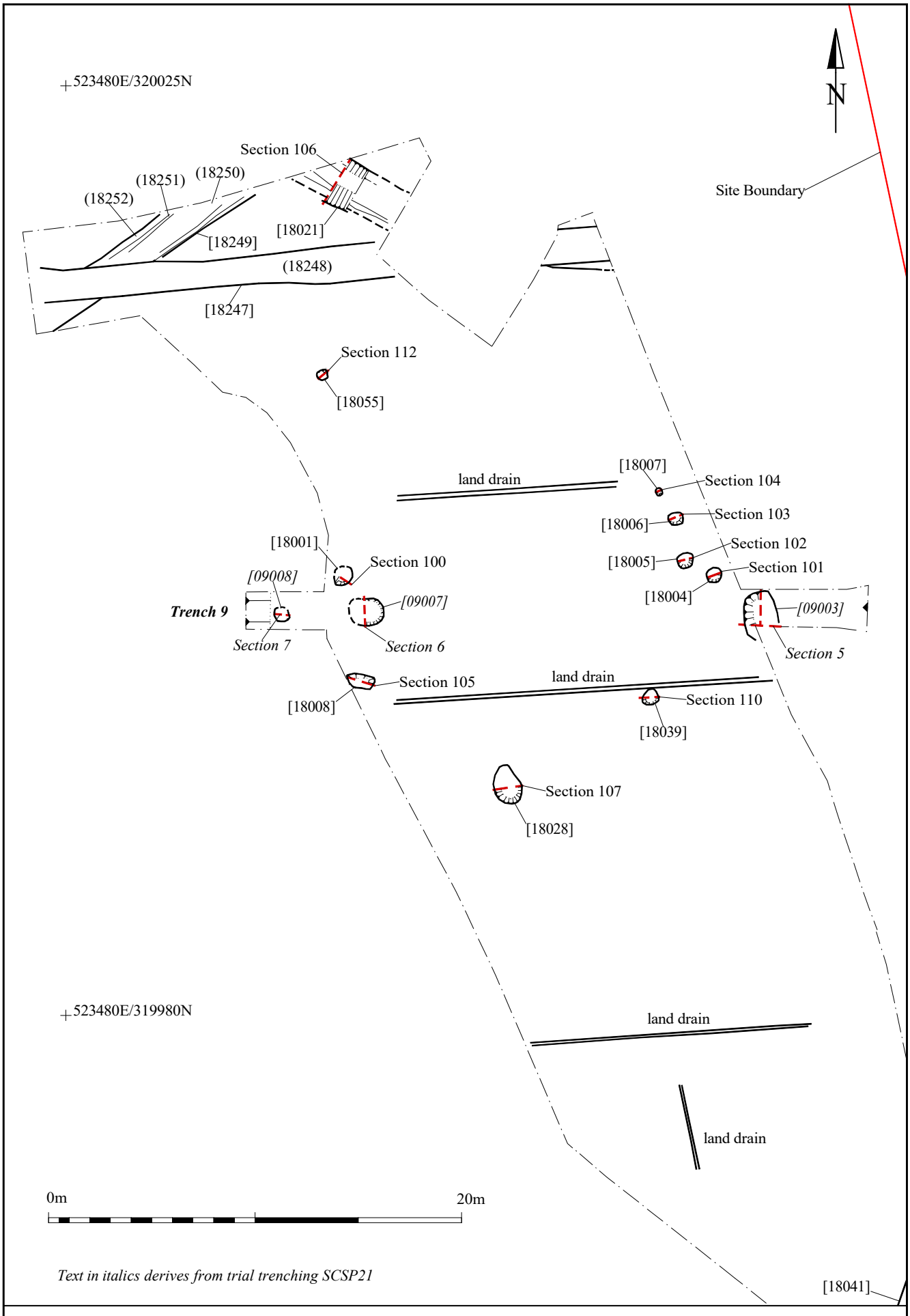
SCSG23 Area A Sections 137 & 138 Scale 1: 25

Fig. 12

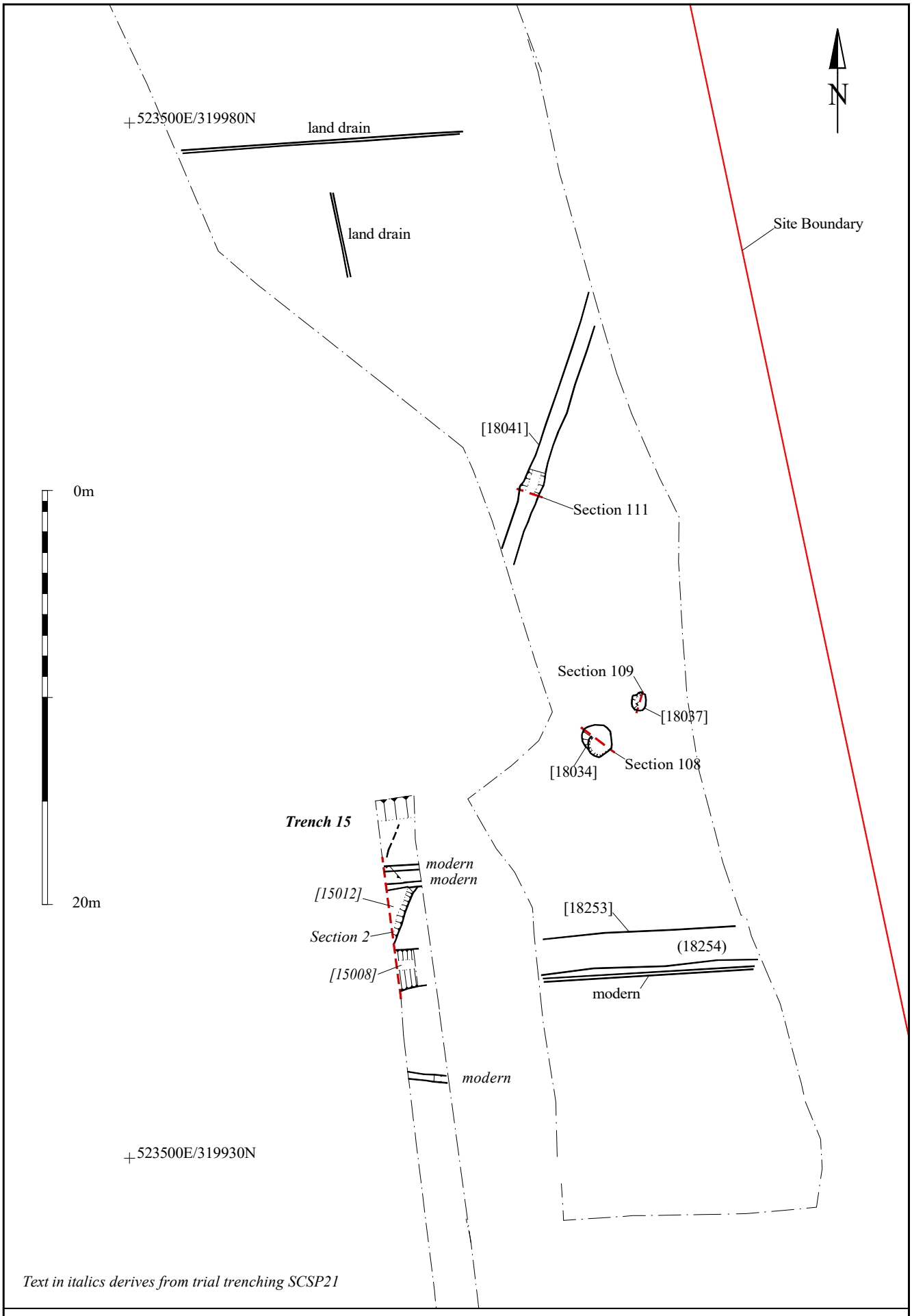


Text in italics derives from trial trenching SCSP21

Witham Archaeology SCSG23 Area B Scale 1: 500 Fig. 13

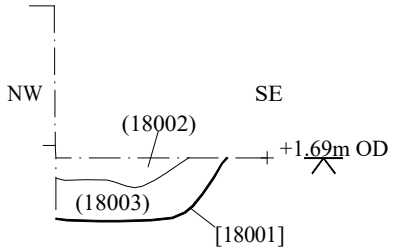


Witham Archaeology SCSG23 Area B (north) Scale 1: 250 Fig. 14

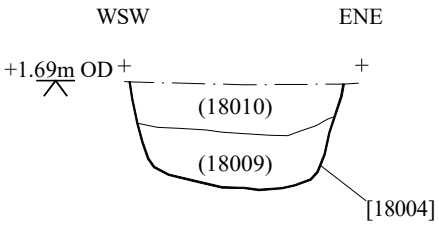


Text in italics derives from trial trenching SCSP21

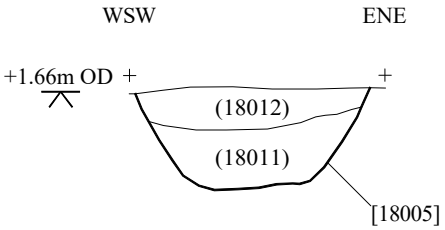
Section 100



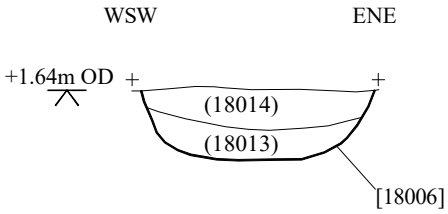
Section 101



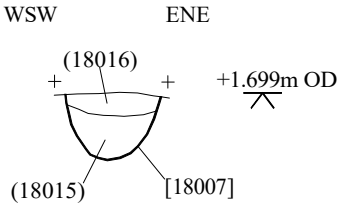
Section 102



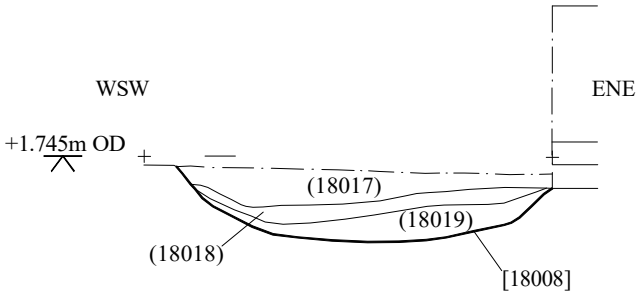
Section 103



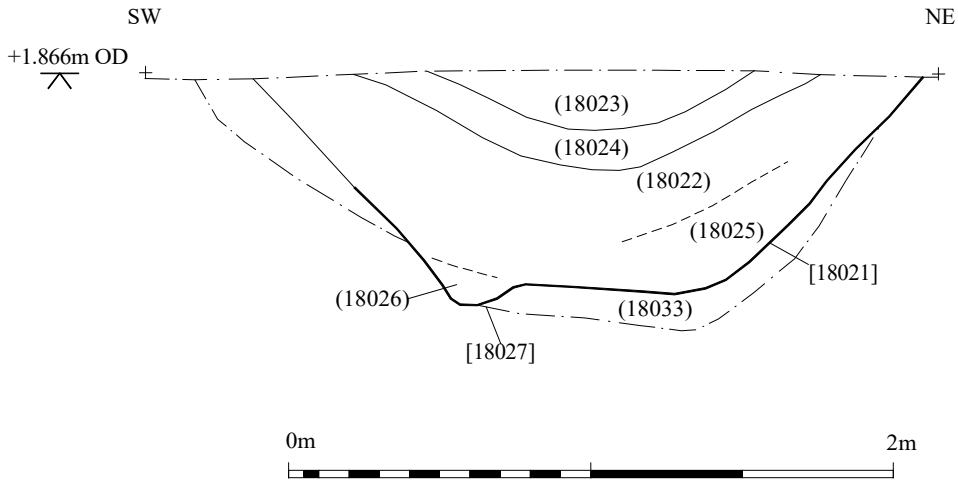
Section 104



Section 105



Section 106



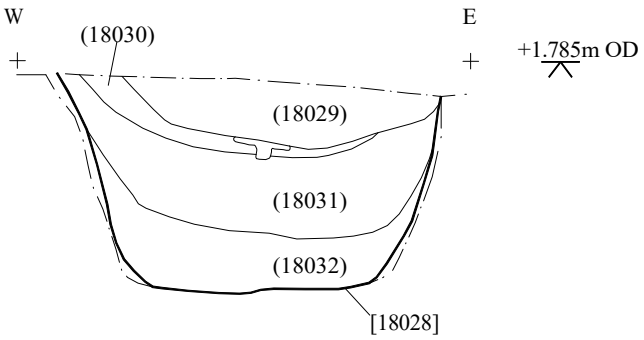
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SCSG23 Area B Scale 1: 25

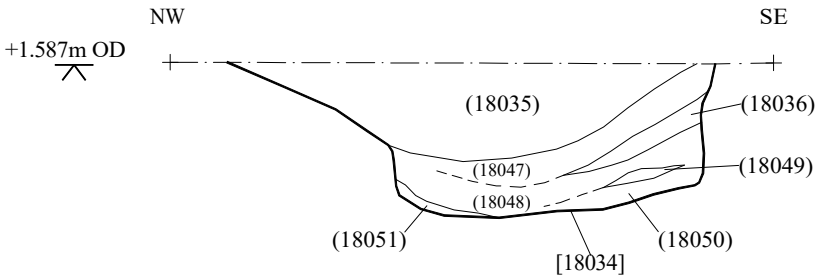
Sections 100, 101, 102, 103, 104, 105 & 106

Fig. 16

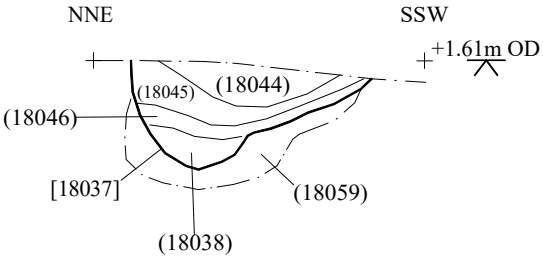
Section 107



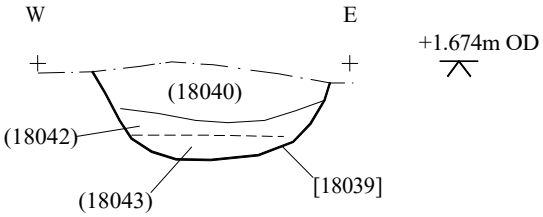
Section 108



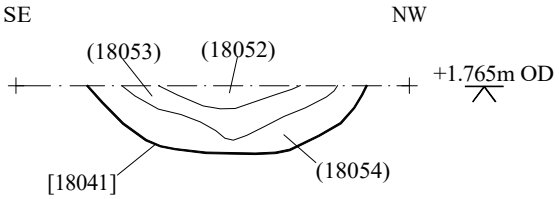
Section 109



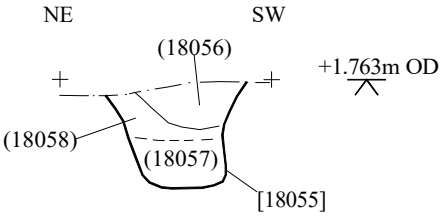
Section 110



Section 111



Section 112

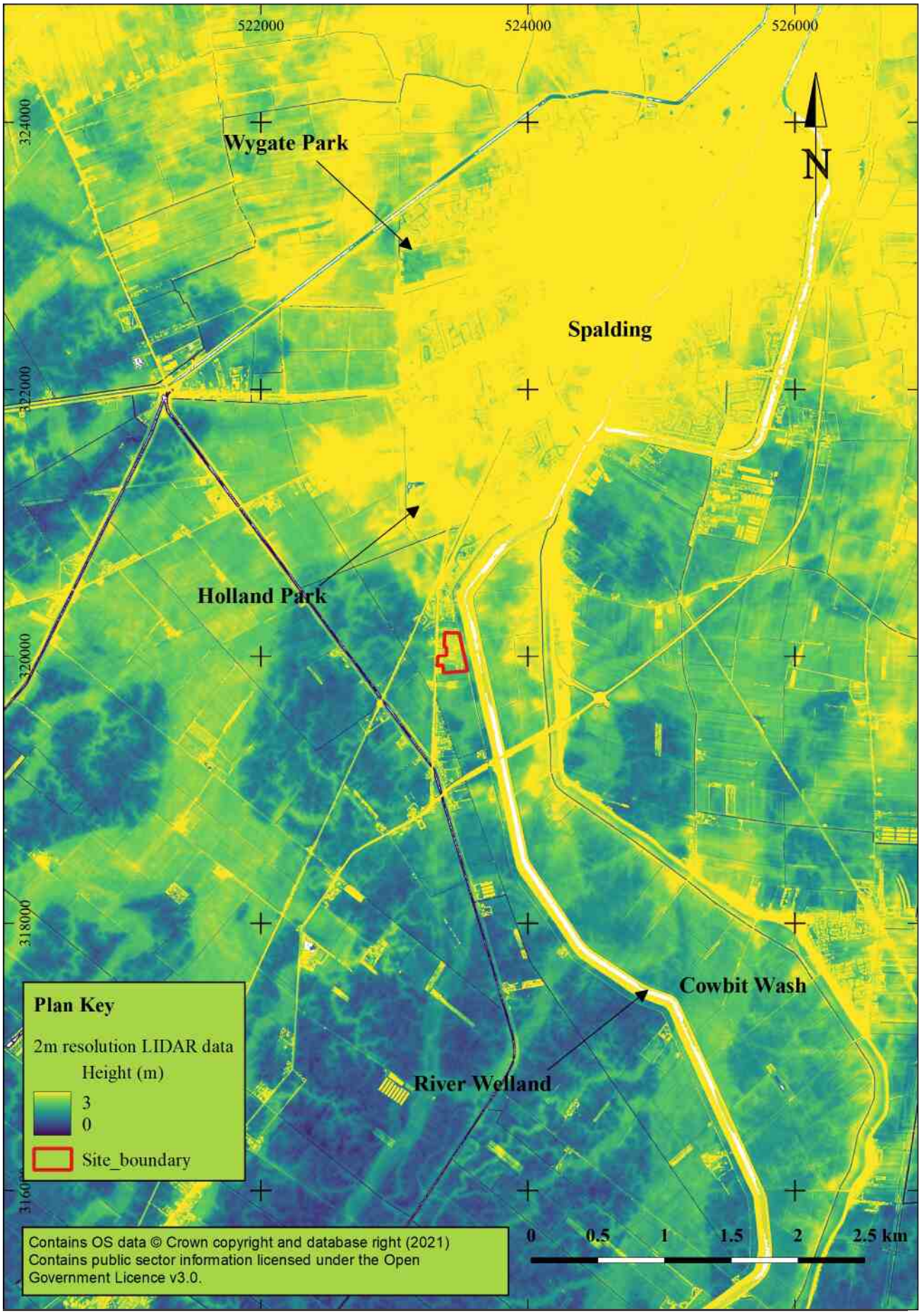




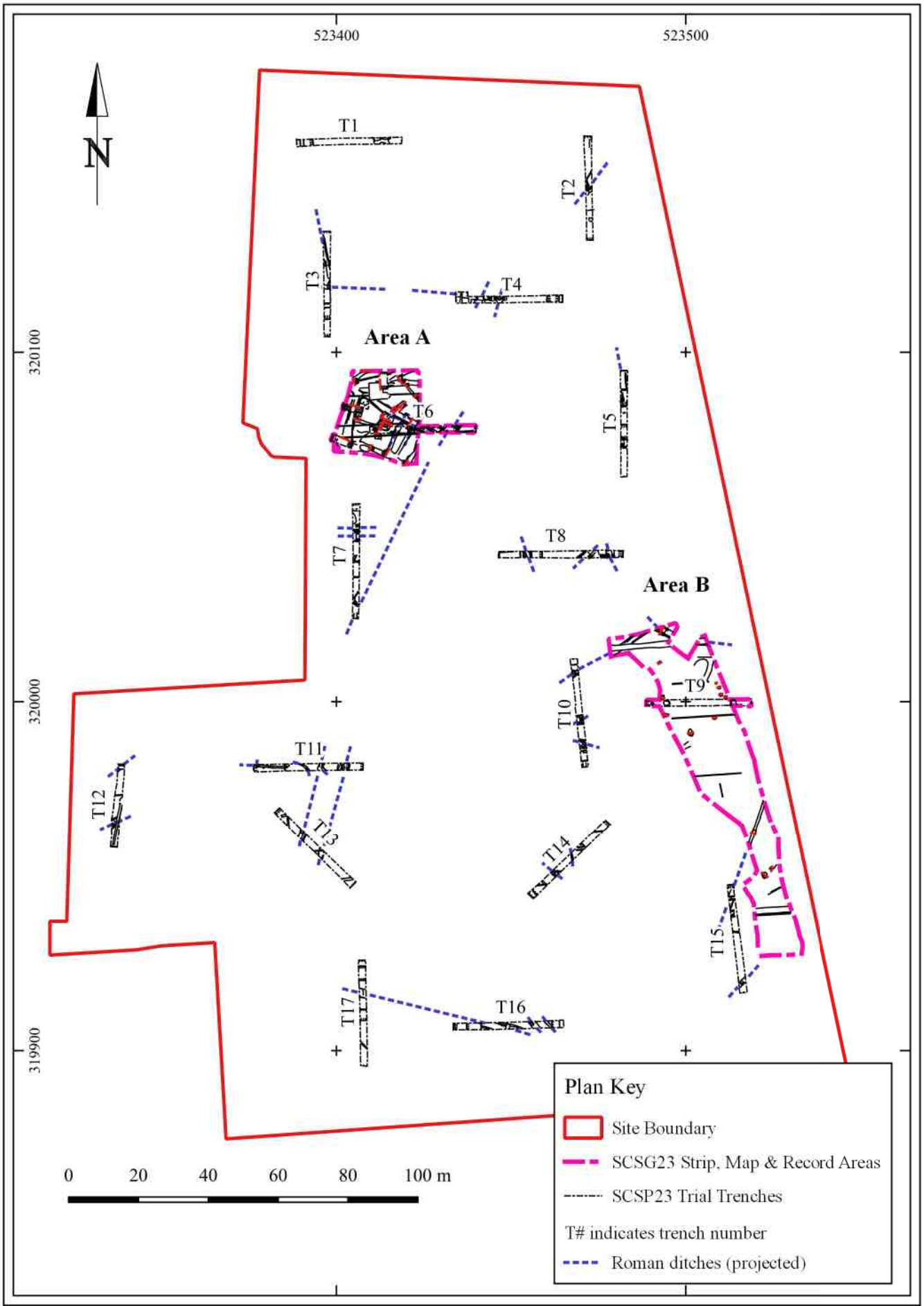
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SCSG23 Scale 1: 25
Sections 107, 108, 109, 110, 111 & 112

Fig. 17



Witham Archaeology SCSG23 2m LIDAR data Scale 1:10 000 Fig. 18



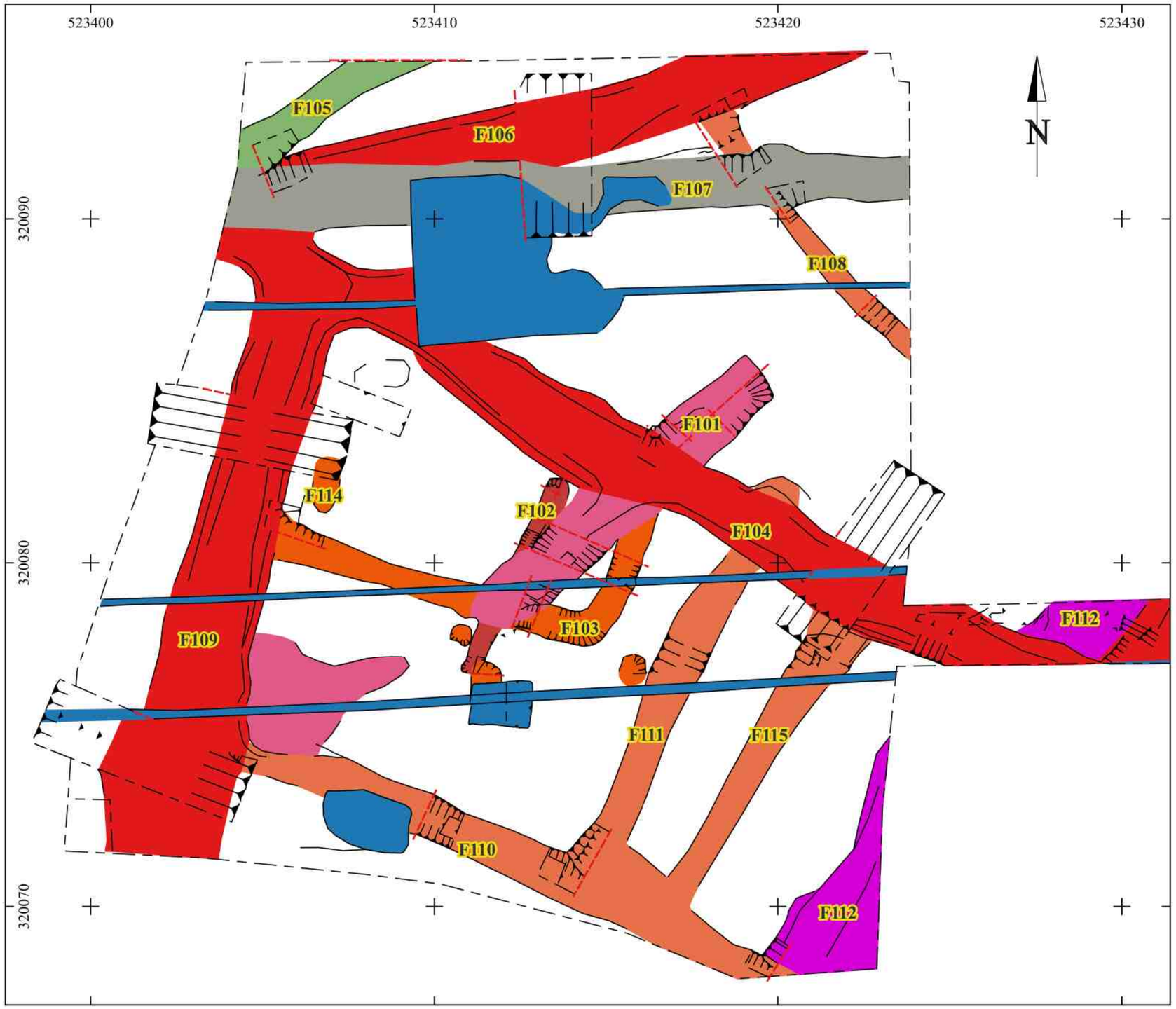
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SCSG23
The Romano-British Landscape. Scale 1: 1500

Fig. 19



Witham Archaeology SCSG23 Area A Orthophoto Image Scale 1:150 Fig. 20



Plan Key

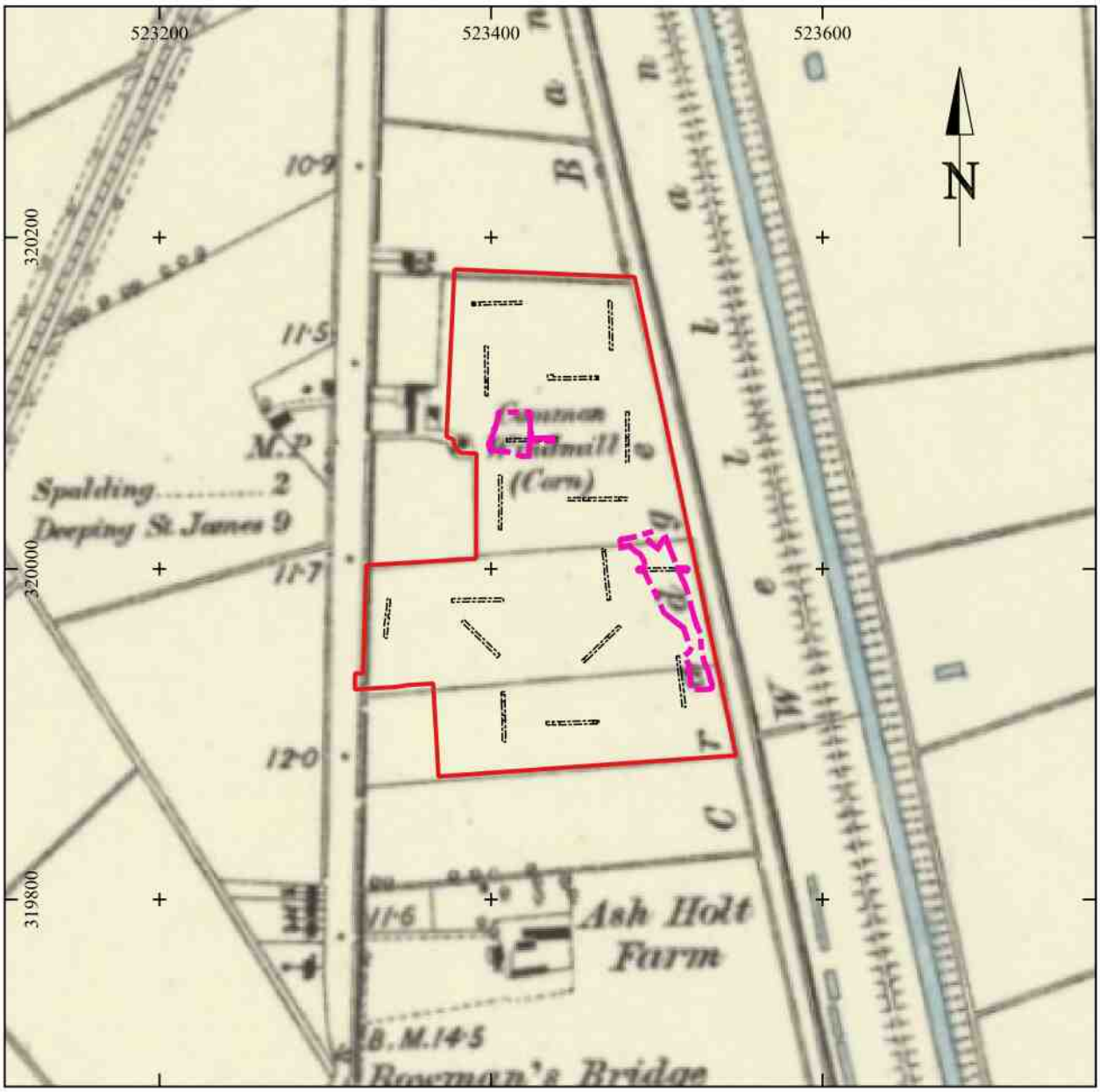
- Roman: Phase 01
- Roman: Phase 01A
- Roman: Phase 01B
- Roman: Phase 01C
- Roman: Phase 02
- Roman: Phase 02A
- Roman: Phase 03
- Roman: Discrete Features
- Post-Roman Features
- Post-Medieval or Modern Features

0 2 4 6 8 10 m

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SCSG23 Area A: Feature Groups & Archaeological Phases Scale 1:125 at A3

Fig. 21



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SCSG23 Ordnance Survey 6in Map 1888.
Scale 1: 4000

Fig. 22

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18001	B	Sub-oval cut, 0.95m by at least 0.6m in plan and 0.2m deep. Steep sides breaking gradually to a gently concave base	Pit
18002	B	Firm mid grey deposit with rusty mottles. Sandy silt, 0.08m thick	Fill of pit [18001]
18003	B	Moderately firm mid to light bluish grey silty fine sand, 0.11m thick	Fill of pit [18001]
18004	B	Oval cut, 0.65m by 0.67m in plan and 0.36m deep. Steep straight sides breaking gradually to a concave base. Longest axis east to west	Pit or post-hole
18005	B	Oval cut, 0.77m by 0.72m in plan and 0.34m deep. Steep concave sides breaking gradually to a flattish irregular base. Longest axix east to west	Pit or post-hole
18006	B	Sub-circular cut, 0.77m by 0.68m in plan and 0.24m deep. Steep concave sides bearking gradually to a flat base. Longest axis east to west	Pit or post-hole
18007	B	Sub-circular cut, 0.31m by 0.36m in plan and 0.22m deep. Steep concave sides breaking gradually to a concave base. Longest axis north to south	Post-hole
18008	B	Partially revealed oval cut, 1.25m wide and 0.25m deep. Concave sides continuous with a concave base. Longest axis northwest to southeast	Pit
18009	B	Firm light to mid reddish brown deposit with mid grey mottles. Silty clay, 0.21m thick	Fill of pit or post-hole [18004]
18010	B	Firm light to mid reddish brown deposit with mid grey mottles. Clayey silt, 0.21m thick	Fill of pit or post-hole [18004]
18011	B	Firm light to mid reddish brown deposit with mid grey mottles. Silty clay, 0.23m thick	Fill of pit or post-hole [18006]
18012	B	Firm light to mid reddish brown deposit with mid grey mottles. Clayey silt, 0.14m thick	Fill of pit or post-hole [18005]
18013	B	Firm light to mid reddish brown deposit with mid grey mottles. Silty clay, 0.17m thick	Fill of pit or post-hole [18006]
18014	B	Firm light to mid reddish brown deposit with mid grey mottles. Clayey silt, 0.14m thick	Fill of pit or post-hole [18006]
18015	B	Firm light to mid reddish brown deposit with mid grey mottles. Silty clay, 0.18m thick	Fill of post-hole [18007]
18016	B	Firm light to mid reddish brown deposit with mid grey mottles. Clayey silt, 0.07m thick	Fill of post-hole [18007]
18017	B	Soft deposit comprising fine yellowish and greyish laminations. Sandy silt, 0.12m thick	Fill of pit [18008]
18018	B	Soft grey silty sand, up to 0.08m thick	Fill of pit [18008]
18019	B	Soft deposit comprising fine greyish and orange laminations. Up to 0.13m thick	Fill of pit [18008]
18020	B	Firm mid reddish brown deposit with mid bluish grey mottles and yellowish brown lenses. Clay	Natural deposit
18021	B	Linear cut, 2.2m wide and 0.78m deep. Steep sides breaking gradually to a flattish base. Aligned approximately northwest to southeast	Ditch
18022	B	Firm mid grey sandy silt with moderate small mid red fragments of fired clay. 0.26m thick	Fill of ditch [18021]
18023	B	Soft mid to dark brownish grey sandy silt with frequent small mollusc shell fragments. 0.2m thick	Fill of ditch [18021]
18024	B	Firm very dark blackish grey sandy silt, quite organic. 0.12m thick	Fill of ditch [18021]
18025	B	Moderately firm mid grey sandy silt with moderate small fragments of mid red fired clay. 0.22m thick. Thin lens of whitish brown silt at interface with (18022)	Fill of ditch [18021]
18026	B	Moderately firm mid grey sandy silt with occasional small mid red fragments of fired clay. 0.12m thick	Fill of ditch [18027]

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18027	B	Linear cut, at least 0.3m wide and 0.16m deep. Steep sides breaking gradually to a concave base. Aligned northwest to southeast	Ditch
18028	B	Sub-circular cut, 1.3m in diameter and 0.72m deep. Steep sides breaking sharply to a flat base	Pit
18029	B	Soft bluish grey sandy silt, 0.23m thick	Fill of pit [18028]
18030	B	Soft yellow sandy silt with occasional granular concretions, 0.06m thick	Fill of pit [18028]
18031	B	Moderately firm deposit comprising fine orange and greysh laminations. Silty sand up to 0.35m thick	Fill of pit [18028]
18032	B	Firm orange reddish brown silty clay, 0.25m thick	Fill of pit [18028]
18033	B	Moderately firm and plastic mid brown clayey silt at least 0.6m thick	Natural estuarine deposit
18034	B	Sub circular cut, 1.6m wide and 0.7m deep. Mostly steep sides (more gentle to the southwest) breaking gradually to a gently concave base	Pit
18035	B	Moderately firm mid grey deposit with moderate rusty mottles. Sandy silt, 0.32m thick	Fill of pit [18034]
18036	B	Firm dark brownish grey sandy silt, 0.03m thick	Fill of pit [18034]
18037	B	Sub-circular cut, 0.78m in plan and 0.36m deep. Mostly steep sides (more shallow to the south southwest) breaking gradually to a concave base	Pit
18038	B	Soft light brown deposit with rusty mottles. Silty sand, 0.14m thick	Fill of pit [18037]
18039	B	Sub-circular cut, 0.8m wide and 0.32m deep. Steep sides breaking gradually to a very gently concave base	Pit
18040	B	Firm mid to light grey sandy silt, 0.2m thick	Fill of pit [18039]
18041	B	Linear cut, 0.92m wide and 0.2m deep. Steep concave sides breaking gradually to a very gently concave base. Aligned approximately northeast to southwest	Ditch
18042	B	Firm mid reddish brown sandy silt, 0.08m thick	Fill of pit [18039]
18043	B	Firm mid to light grey silt, 0.08m thick	Fill of pit [18039]
18044	B	Moderately firm light grey sandy silt, 0.15m thick	Fill of pit [18037]
18045	B	Soft light brown silty sand up to 0.13m thick	Fill of pit [18037]
18046	B	Soft light grey silty sand, 0.04m thick	Fill of pit [18037]
18047	B	Soft light brown silty sand, 0.1m thick	Fill of pit [18034]
18048	B	Firm mixed mid grey and mid brown deposit of silt and sandy silt. 0.1m thick	Fill of pit [18034]
18049	B	Moderately firm dark greyish brown sandy silt, quite organic. 0.04m thick	Fill of pit [18034]
18050	B	Soft light brown silty sand, 0.06m thick	Fill of pit [18034]
18051	B	Moderately firm dark greyish brown sandy silt, quite organic. 0.02m thick	Fill of pit [18034]
18052	B	Firm dark brown sandy silt with frequent small mollusc shell fragments, 0.07m thick	Fill of ditch [18041]
18053	B	Firm very dark brownish grey organic silt, up to 0.1m thick	Fill of ditch [18041]
18054	B	Firm mid to light grey sandy silt up to 0.11m thick	Fill of ditch [18041]
18055	B	Sub-circular cut, 0.46m wide and 0.35m deep. Very steep sides breaking gradually to a flattish gently concave base	Pit

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18056	B	Moderately firm mid to light grey sandy silt with occasional small fragments of fired clay. 0.15m thick	Fill of pit [18055]
18057	B	Soft light grey silty sand with occasional small fragments of fired clay. 0.15m thick	Fill of pit [18055]
18058	B	Moderately firm mixed mid reddish brown and mid grey sandy silt, up to 0.12m thick	Fill of pit [18055]
18059	B	Moderately firm mid greyish brown silty sand at least 0.36m thick	Natural estuarine deposit
18060	A	Medium firm greyish brown deposit with light bluish patches. Clayey silt	Natural estuarine deposit
18061	A	Linear cut, at least 0.7m wide by at least 1m long and 0.58m deep	Ditch
18062	A	Medium firm mid grey clayey silt with occasional charcoal, 0.16m thick	Fill of ditch [18061]
18063	A	Medium firm mid grey clayey silt, 0.3m thick	Fill of ditch [18061]
18064	A	Medium soft light greyish brown clayey silt, 0.34m thick	Fill of ditch [18061]
18065	A	Linear cut, 0.9m wide by at least 1m long and 0.51m deep. Steep concave sides breaking gradually to a rounded base. Aligned northeast to southwest	Ditch
18066	A	Soft light grey clayey silt, 0.22m thick	Fill of ditch [18065]
18067	A	Medium firm dark grey silt, rich in charcoal. 0.08m thick	Fill of ditch [18065]
18068	A	Medium soft mid grey clayey silt, 0.31m thick	Fill of ditch [18065]
18069		void	
18070	A	Linear cut, 0.91m wide by at least 1m long and 0.56m deep. Steep convex sides. Aligned east to west. Not bottomed at this location	Ditch
18071	A	Medium firm dark grey clayey silt with frquent charcoal. 0.09m thick	Fill of ditch [18070]
18072	A	Medium firm mid to light grey clayey silt, 0.1m thick	Fill of ditch [18070]
18073	A	Medium firm light grey clayey silt, 0.2m thick	Fill of ditch [18070]
18074	A	Medium firm mid greyish brown clayey silt, 0.18m thick	Fill of ditch [18070]
18075	A	Linear cut, 1.14m wide and 0.32m deep. Gently sloping sides. Aligned east northeast to west southwest. Partially excavated	Ditch
18076	A	Mediun firm dark grey silt, rich in charcoal. 0.06m thick	Fill of ditch [18075]
18077	A	Medium firm mid grey clayey silt, 0.21m thick	Fill of ditch [18075]
18078	A	Medium firm light grey clayey silt, 0.33m thick	Fill of ditch [18070]
18079	A	Linear cut, 0.3m wide by at least 1m long and 0.31m deep. Steep concave sides. Aligned east to west. Partially investigated	Ditch
18080	A	Medium loose mid brown fine silty clay, 0.31m thick	Fill of ditch [18079]
18081		Linear cut, at least 0.5m wide and 0.35m deep. Steep sides breaking gradually to a flat base. Aligned approximately east to west	Ditch (re-cut)
18082		Moderately firm mid brown sandy silt, with light brown mottles. 0.35m thick	Fill of ditch [18081]
18083	A	Linear cut, 1.82m wide by at least 1m long and 0.48m deep. South side gently sloping, breaking gradually to a concave base, north side moderately steep, breaking sharply to the base. Aligned east northeast to west southwest	Ditch

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18084	A	Medium firm light grey clayey silt with occasional iron mineral concretions. 0.28m thick	Fill of ditch [18083]
18085	A	Medium firm mid to dark grey deposit with bluish mottles. Clayey silt with occasional iron mineral concretions. 0.36m thick	Fill of ditch [18083]
18086	A	Linear cut, 1.75m wide by at least 1.8m long and 0.63m deep. Steep sides breaking gradually to a concave base. Aligned east to west	Ditch
18087	A	Medium firm mid grey clayey silt, 0.1m thick	Fill of ditch [18086]
18088	A	Medium firm light grey silt, 0.1m thick	Fill of ditch [18086]
18089	A	Medium firm light to mid grey clayey silt with occasional iron mineral concretions. 0.11m thick	Fill of ditch [18086]
18090	A	Medium firm mid grey deposit with blue mottles. Clayey silt with occasional iron mineral concretions. 0.49m thick	Fill of ditch [18086]
18091	A	Linear cut, 0.41m wide by at least 1.8m long and 0.35m deep. Steep concave sides breaking sharply to a concave base. Aligned east to west	Ditch
18092	A	Medium firm mid brown silty clay, 0.35m thick	Fill of ditch [18091]
18093	A	Loose very dark grey mixed clay and silt, including glass, rubble and charcoal. 0.1m thick	Modern deposit
18094	A	Linear cut, 0.71m wide and 0.31m deep. Uneven concave sides breaking gradually to a concave base. Aligned northeast to southwest	Ditch
18095	A	Medium firm light brownish grey clayey silt with occasional ‘chalky’ flecks. 0.3m thick	Fill of ditch [18094]
18096	A	Loose dark grey silt, rich in charcoal, 0.08m thick	Fill of ditch [18094]
18097	A	Medium soft light brownish grey clayey silt with occasional ‘chalky’ flecks and occasional charcoal flecks. 0.14m thick	Fill of ditch [18094]
18098	A	Linear cut, 0.5m wide by at least 0.9m long and 0.3m deep. Moderately steep concave sides breaking gradually to a concave base. Aligned northeast to southwest	Ditch
18099	A	Medium firm light greyish brown clayey silt with occasional charcoal flecks. 0.25m thick	Fill of ditch [18098]
18100	A	Medium firm mid grey clayey silt with occasional charcoal flecks and occasional ‘chalky’ flecks. 0.11m thick	Fill of ditch [18098]
18101	A	Linear cut, at least 0.56m wide and 0.38m deep. Steep concave sides. Aligned east to west	Ditch
18102	A	Medium firm mid greyish brown clayey silt with occasional flecks of broken shell fragments. 0.38m thick	Fill of ditch [18101]
18103	A	Linear cut, at least 0.6m wide by at least 0.79m long and 0.3m deep. Steep concave sides breaking gradually to a concave base. Aligned northeast to southwest	Ditch
18104	A	Linear cut, 0.41m wide by 0.52m deep. Steep convex sides breaking sharply to a concave base. Aligned northwest to southeast	Ditch
18105	A	Medium firm dark greish brown clayey silt with occasional charcoal flecks. 0.1m thick	Fill of ditch [18104]
18106	A	Medium firm mid bluish grey clay with occasional charcoal flecks. 0.25m thick	Fill of ditch 18104]
18107	A	Soft dark grey silt, rich in charcoal. 0.04m thick	Fill of ditch [18104]
18108	A	Soft light grey clayey silt, 0.04m thick	Fill of ditch [18104]
18109	A	Medium firm dark grey clayey silt, rich in charcoal. 0.03m thick	Fill of ditch [18104]

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18110	A	Medium firm light grey silty clay with occasional charcoal flecks. 0.06m thick	Fill of ditch [18104]
18111	A	Medium firm dark grey silty clay, charcoal rich. 0.05m thick	Fill of ditch [18104]
18112	A	Moderately firm light brownish grey sandy silt, 0.12m thick	Fill of ditch [18103]
18113	A	Flat terminus of a linear cut, corners rounded. At least 0.7m by 3.2m in plan and 0.55m deep. Steeply sloping sides breaking gradually to a longitudinally flat and transversely gently concave base. Aligned north northeast to south southwest	Ditch or elongated pit
18114	A	Soft mid greyish brown silty fine sand with frequent small mollusc shells. Up to 0.12m thick	Deposit
18115	A	Soft light grey deposit with occasional rusty mottles. Silty fine sand with occasional charcoal fragments. 0.2m thick	Fill of cut [18113]
18116	A	Soft light mixed grey and mid grey silty fine sand, 0.16m thick	Fill of cut [18113]
18117	A	Soft very dark blackish brown very organic silt, 0.1m thick	Fill of cut [18113]
18118	A	Firm light brownish grey sandy silt, 0.02m thick	Fill of cut [18113], or possible discolouration around the edge
18119	A	Linear cut, at least 0.8m wide by at least 1m long and 0.85m deep. Steep sides breaking gradually to a concave base. Aligned approximately east southeast to west northwest	Ditch
18120	A	Moderately firm mix of very dark greyish brown organic silt and light brown silty sand. 0.1m thick, with an uneven upper interface	Deposit
18121	A	Moderately firm mid to light grey silty fine sand, 0.14m thick	Deposit, probably estuarine
18122	A	Moderately firm mottled mix of mid to light grey and light brown silty fine sand, 0.16m thick	Fill of cut [18113]
18123	A	Soft very dark brown very organic silt, 0.08m thick	Fill of cut [18113]
18124	A	Plastic light bluish grey sandy silt, 0.03m thick	Fill of cut [18113]
18125	A	Soft mix of light brown silty sand and dark brown organic silt, 0.16m thick	Fill of ditch [18119]
18126	A	Soft dark greyish brown organic sandy silt, 0.1m thick	Fill of ditch [18119]
18127	A	Moderately firm mid to dark brownish grey sandy silt, 0.14m thick	Fill of ditch [18119]
18128	A	Moderately firm dark greyish brown silty sand, 0.12m thick	Fill of ditch [18119]
18129	A	Soft mid brown silty fine sand, 0.08m thick	Fill of ditch [18119]
18130	A	Bone recovered from vicinity of burial [18134] etc – possibly associated. Disturbed by mechanical excavtion	Finds recovery
18131	A	Rectangular cut with sharp corners, 1.25m wide and at least 0.7m long. Not fully excavated. Containing modern debris	Pit
18132	A	Loose mixed black and red scorched sandy silt. Includes occasional modern brick fragments and carbonized plant bulbs	Fill of pit [18131]
18133	A	Sub-rectangular cut with irregular rounded edges. 1.85m by 0.84m in plan and 0.2m deep. Gently sloping concave sides breaking gradually to a concave base. Aligned approximately north to south	Grave cut
18134	A	Skeletal remains of a supine adult inhumation, aligned north to south (head to north). Bone poorly surviving	Human burial
18135	A	Medium mix of light gray and light orangy blue clayey silt, 0.2m thick	Fill of grave [18133]

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18136	A	Sub-oval cut, 0.7m by 0.3m in plan and 0.1m deep. Gently sloping concave sides breaking gradually to a gently concave base. Aligned northeast to southwest. Not particularly well defined	Grave cut
18137	A	Skeletal remains of a supine juvenile inhumation, aligned northeast to southwest (head to southwest). Bones poorly surviving	Human burial
18138	A	Medium firm light grey-blue clayey silt, 0.05m thick	Fill of grave [18136]
18139	A	Pottery recovered from site surface following mechanical excavation. Unstratified but location recorded	Finds recovery
18140	A	Pottery recovered from site surface following mechanical excavation. Unstratified but location recorded	Finds recovery
18141	A	Sub-circular cut, 0.77m in extent and 0.13m deep. Concave sides continuous with a gently concave base	Pit
18142	A	Soft mottled greyish orange clayey sandy silt, 0.13m thick	Fill of pit [18141]
18143	A	Linear cut, at least 0.13m wide and 0.2m deep. Concave sides breaking to a concave base. Aligned north to south	Ditch
18144	A	Soft mottled greyish orange clayey silty sand, 0.2m thick	Fill of ditch [18143]
18145	A	Linear cut up to 0.48m wide and 0.5m deep. Very steep sides breaking gradually to a concave base. Aligned approximately north to south	Ditch
18146	A	Linear cut, at least 1.9m wide and 0.62m deep. Steep (1 in 1) sides breaking gradually to a flattish uneven base. Aligned approximately north northeast to south southwest	Ditch
18147	A	Linear cut, 0.84m wide and 0.3m deep. Steep sides breaking gradually to a gently concave base. Aligned approximately north to south	Ditch
18148	A	Linear cut, 0.57m wide by at least 1.61m long and 0.4m deep. Steep sides breaking gradually to a concave base. Aligned east to west	Ditch
18149	A	Medium firm mid greyish blue clayey silt with occasional charcoal flecks. 0.29m thick	Fill of ditch [18148]
18150	A	Medium firm light greyish brown clayey silt, 0.16m thick	Fill of ditch [18148]
18151	A	Linear cut, at least 0.38m wide and at least 0.38m deep. Steep concave sides	Ditch
18152	A	Medium firm mid bluish grey clayey silt, 0.23m thick	Fill of ditch [18151]
18153	A	Medium firm dark grey clayey silt, rich in charcoal. 0.11m thick	Fill of ditch [18151]
18154	A	Medium firm light grey clayey silt, 0.12m thick	Fill of ditch [18151]
18155	A	Linear cut, at least 0.9m by 0.6m in plan and 0.6m deep. Steep sides (1 in 1) breaking gradually to a flattish uneven base. Aligned approximately northeast to southwest	Ditch or elongated pit
18156	A	Linear cut, 0.9m wide and 0.38m deep. Steep sides breaking gradually to an uneven base. Aligned east southeast to west northwest	Ditch
18157	A	Soft mid brown silty fine sand with moderate grits, 0.14m thick	Fill of cut [18158]
18158	A	Sub-rectangular cut, at least 0.4m wide and 0.14m deep. Very steep sides breaking gradually to a flattish base	Modern intrusion
18159	A	Soft light brownish grey silty sand with frequent small mollusc shell fragments. At least 0.02m thick	Deposit, possibly alluvial

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18160	A	Soft mid to light brown silty fine sand, 0.3m thick	Fill of ditch [18146]
18161	A	Soft mid to light grey deposit with moderate light brown mottles. Silty sand with occasional charcoal flecks. 0.12m thick	Fill of ditch [18145]
18162	A	Soft mid to light grey deposit with moderate light brown mottles. Silty sand with occasional charcoal flecks. 0.12m thick	Fill of ditch [18146]
18163	A	Firm to stiff mid reddish brown silty clay, 0.02m thick	Possible clay lining of [18145]
18164	A	Soft very dark blackish grey silty sand and ash with occasional charcoal flecks. 0.02m thick	Fill of ditch [18145]
18165	A	Soft very dark brown very organic sandy silt, 0.06m thick	Fill of ditch [18146]
18166	A	Soft light yellowish brown sandy silt, 0.1m thick	Fill of ditch [18146]
18167	A	Soft very dark blackish brown organic sandy silt, 0.06m thick	Fill of ditch [18146]
18168	A	Soft mottled mix of light brown and mid orange brown silty fine sand, 0.3m thick	Fill of ditch [18147]
18169	A	Soft dark olive-brown silty fine sand with moderate grits, at least 0.4m thick. Cylindrical ceramic pipe at the base	Fill of cut [18170]- land drain
18170	A	Rectilinear cut, 0.26m wide and at least 0.4m deep. Vertical sides. Aligned approximately east northeast to west southwest	Land drain cut
18171	A	Soft mid brown silty fine sand with occasional grits and occasional wood fragments	Fill of cut [18172]
18172	A	Rectangular cut, at least 0.22m wide and 0.3m deep. Vertical sides	Modern intrusion
18173	A	Soft light brown silty fine sand, 0.3m thick	Fill of ditch or elongated pit [18155]
18174	A	Soft mottled mix of light brown and mid grey silty sand, 0.24m thick	Fill of ditch or elongated pit [18155]
18175	A	Soft very dark brown very organic sandy silt, 0.08m thick	Fill of ditch or elongated pit [18155]
18176	A	Soft light brown with moderate light to mid grey silty sand, 0.38m thick	Fill of ditch [18156]
18177	A	Flat terminus of a linear cut, with rounded corners. At least 0.38m by 0.36m in plan and 0.4m deep. Very steep sides breaking gradually to a concave base. Aligned north to south	Ditch, possibly clay-lined
18178	A	Soft mottled mix of mid grey and light brown silty fine sand with occasional charcoal flecks. 0.36m thick	Fill of ditch [18177]
18179	A	Firm to stiff mid reddish brown silty clay, 0.02m thick. Intermittent band around the edge of the cut	Possibly clay lining of cut [18177]
18180	A	Soft mid to light grey silty fine sand, 0.02m thick	Fill of cut [18177]
18181	A	Soft mid grey silty fine sand, 0.04m thick	Fill of ditch [18156]
18182	A	Linear cut, 1.32m wide by at least 1m long and 0.58m deep. Steep convex sides breaking sharply to a flattish base	Ditch
18183	A	Medium firm mid bluish grey clayey silt, 0.2m thick	Fill of ditch [18182]
18184	A	Medium soft mid greyish brown clayey silt, 0.1m thick	Fill of ditch [18182]
18185	A	Medium firm mid brownish grey clayey silt, 0.2m thick	Fill of ditch [18182]
18186	A	Medium firm dark grey clayey silt, charcoal rich. 0.12m thick	Fill of ditch [18182]
18187	A	Medium firm mid grey clayey silt with occasional ‘chalky’ flecks. 0.3m thick	Fill of ditch [18182]

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18188	A	Linear cut, 0.61m wide by at least 1.7m long and 0.51m deep. Moderately steep sides breaking gradually to a concave base. Aligned northeast to southwest	Ditch
18189	A	Medium firm mid bluish grey clayey silt, 0.2m thick	Fill of ditch [18188]
18190	A	Medium firm light greyish brown clayey silt, 0.3m thick	Fill of ditch [18188]
18191	A	Linear cut, at least 1m wide by at least 1m long and at least 0.64m deep. Steep convex sides	Ditch
18192	A	Medium firm mid bluish grey clayey silt, 0.28m thick	Fill of ditch [18191]
18193	A	Medium soft dark grey clayey silt, charcoal rich. 0.06m thick	Fill of ditch [18191]
18194	A	Medium firm mixed mid grey and mid orange sandy clay. 0.12m thick	Fill of ditch [18191]
18195	A	Medium firm dark grey clayey silt, charcoal rich. 0.08m thick	Fill of ditch [18191]
18196	A	Medium firm mid bluish grey clayey silt with occasional charcoal flecks and ‘chalky’ flecks. 0.2m thick	Fill of ditch [18191]
18197	A	Medium soft light greyish brown clayey silt, 0.15m thick	Fill of ditch [18191]
18198	A	Medium firm mid greyish brown clayey silt, 0.15m thick	Fill of ditch [18182]
18199	A	Linear cut, at least 1.9m wide and 1.1m deep. Very steep sides breaking gradually to a concave base. Aligned north northeast to south southwest	Ditch
18200	A	Linear cut, 1.1m wide and 0.52m deep. Very steep sides breaking gradually to a concave base. Aligned east southeast to west northwest	Ditch
18201	A	Moderately firm mid to dark grey silt ith darker grey organic bands and patches. 0.24m thick	Fill of ditch [18199]
18202	A	Moderately firm and sticky mid brown silt. A band 0.05m thick along the edge of the cut	Fill of ditch [18199]
18203	A	Linear cut, 2m wide and 1.18m deep. Steep concave sides continuous with a broad concave base	Ditch
18204	A	Soft dark grey-black silty sand with organic inclusions. 0.1m thick by 1.2m wide	Fill of ditch [18203]
18205	A	Soft orange brown sandy silt with frequent small mollusc shell fragments	Fill of ditch [18203]
18206	A	Soft bluish grey sandy silt with occasional small shell fragments. 0.22m thick	Fill of ditch [18203]
18207	A	Moderately firm bluish grey silty clay, 0.06m thick	Fill of ditch [18203]
18208	A	Soft black very organic silty sand, 0.1m thick	Fill of ditch [18203]
18209	A	Soft mottled bluish grey clayey silty sand, up to 0.5m thick	Fill of ditch [18203]
18210	A	Firm bluish grey clayey silty sand, 0.3m thick	Fill of ditch [18203]
18211	A	Possible linear cut, at least 1.08m wide and 0.4m deep. Concave sides continuous with a concave base. Aligned north to south	Possible ditch
18212	A	Soft orange grey clayey silty sand, 0.1m thick	Fill of ditch [18211]
18213	A	Soft mottled orange grey sandy silt, 0.24m thick	Fill of ditch [18211]
18214	A	Soft orange mottled yellow sandy silt, 0.14m thick	Fill of ditch [18211]
18215	A	Soft mixed grey-black very organic sandy silt. 0.1m thick	Fill of ditch [18211]
18216	A	Linear cut, 2m wide and 0.68m deep. Concave sides continuous with a concave base. Aligned east to west	Ditch
18217	A	Soft light orange brown silty fine sand, at least 0.36m thick	Natural estuarine deposit

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18218	A	Linear cut, at least 0.36m deep. Steep sides. Aligned east northeast to west southwest. Upper part only recoreded in section	Ditch
18219	A	Soft light grey silty fine sand, at least 0.36m thick	Fill of ditch [18218]
18220	A	Moderately firm mid grey sandy silt, at least 0.1m thick	Fill of ditch [18218]
18221	A	Moderately firm very dark blackish brown sandy silt, very organic. 0.1m thick	Fill of ditch [18218]
18222	A	Soft very light greyish brown silty fine sand with frequent small mollusc shell fragments. 0.12m thick	Deposit
18223	A	Moderately firm dark brown sandy silt with occasional brick or tile fragments. At least 0.12m thick	Truncated subsoil or topsoil
18224	A	Soft dark blackish brown clayey silty sand with occasional stones and fragments of modern debris, including glass. 0.3m thick	Dumped material, disturbed by current demolition and construction works
18225	A	Soft yellowish brown silty sand with occasional small fragments of shell. 0.28m thick	Fill of ditch [18216]
18226	A	Linear cut, 0.18m wide and 0.5m deep. Vertical sides and a flat base. Aligned east to west	Cut for land drain
18227	A	Soft brownish orange sandy silt, 0.5m thick. Cylindrical ceramic pipe at base	Land drain in cut [18226]
18228	A	Soft black organic sandy silt, 0.12 to 0.15m thick	Fill of ditch [18216]
18229	A	Soft greyish blue clayey sandy silt, 0.3m thick	Fill of ditch [18216]
18230	A	Soft greyish blue clayey sandy silt, 0.2m thick	Fill of ditch [18216]
18231	A	Finds recovered from the surface near Section 137, possibly from upper fills of ditch [18216]	Finds recovery
18232	A	Soft light brown silty sand with frequent small snail shell fragments. 0.38m thick	Deposit
18233	A	Moderately firm light brownish grey clayey silt, 0.12m thick	Deposit, possible natural estuarine/alluvial deposit
18234	A	Moderately firm very dark blackish grey very organic silt. Up to 0.07m thick	Deposit
18235	A	Moderately firm mid to light grey sandy silt, 0.1m thick	Fill of ditch [18199]
18236	A	Moderately firm dark grey silt with moderate organic inclusions. 0.12m thick	Fill of ditch [18199]
18237	A	Soft light brown deposit with moderate orange mottles. Silt, 0.28m thick	Fill of ditch [18199]
18238	A	Soft light greyish brown silty sand, 0.04m thick	Fill of ditch [18199]
18239	A	Moderately firm mid to dark grey silt with occasional to moderate darker organic bands, at least 0.38m thick	Fill of ditch [18199]
18240	A	Moderately firm light brownish grey deposit with orange mottles. Sandy silt, 0.28m thick	Fill of ditch [18200]
18241	A	Moderately firm light brownish grey sandy silt, 0.14m thick	Fill of ditch [18200]
18242	A	Soft light brownish grey silty fine sand, 0.08m thick	Fill of ditch [18200]
18243	A	Soft light brown deposit comprising clayey silt with silty fine sand laminations. 0.28m thick	Natural estuarine deposit
18244	A	Firm mid brown clayey silt, 0.12m thick	Natural estuarine/marine deposit
18245	A	Firm light bluish grey clayey silt, 0.12m thick	Natural estuarine/marine deposit
18246	A	Firm and sticky mid brown clayey silt, at least 0.58m thick	Natural estuarine/marine deposit
18247	B	Linear cut, 2m wide. Aligned east to west. Depicted on 19th century mapping. Not excavated.	Ditch
18248	B	Moderately firm mid brown silty sand with occasional brick or tile fragments.	Fill of ditch [18247]

APPENDIX A. CONTEXT SUMMARY

CONTEXT	AREA	DESCRIPTION	INTERPRETATION
18249	B	Linear cut, approximately 2m wide. Aligned approximately northeast to southwest. Continuation of ditch recorded in SCSP21 Trench 10. Not excavated	Ditch
18250	B	Soft mid to light brown sandy silt	Fill of ditch [18249]
18251	B	Moderately firm very dark grey silt – very organic. Recorded in plan only – not excavated	Fill of ditch [18249]
18252	B	Moderately firm light bluish grey silty sand, Recorded in plan only – not excavated	Fill of ditch [18249]
18253	B	Linear cut, 2m wide. Aligned east to west. Continuation of ditch recorded in SCSP21 Trench 15, and depicted on 19th century mapping. Not excavated	Ditch
18254	B	Moderately firm mid to dark brown sandy silt with occasional brick or tile fragments. Recorded in plan only – not excavated	Fill of ditch [18253]
18255	A	Moderately firm mottled mix of mid bluish grey and light brown sandy silt. In plan c. 5m south west to northeast, forming a narrow finger from the intersection of ditches [18199] & [18200]. Possibly discoloured by confinement, but does align well with feature [18113] etc.	Deposit
18256	A	Linear cut, at least 0.4m wide and 0.6m deep. Very steep sides. Aligned north northeast to south southwest. Original cut of ditch [18199]	Ditch
18257	A	Linear cut, 2.7m wide and 0.55m deep. Gently sloping sides breaking gradualy to a gently concave base. Aligned north northeast to south southwest	Interface. Weathering of the edges of partially filled ditches (18199] & [18200]

APPENDIX B

Roman pottery from archaeological excavation on land at Millfield Nurseries, Spalding Common, Lincolnshire

I.M. Rowlandson and Zs. Veres

December 16th 2023

Introduction

Fifty seven sherds from thirty seven vessels (1.738 kg, 2.36 RE) were recovered in total. Much of the activity dated to the mid-2nd to 3rd centuries AD and a high proportion of Nene Valley grey ware were present amongst the assemblage as would be expected for a site of that period in this part of Lincolnshire. Limited evidence for activity on the site in the early Roman period was present and some late Iron Age wares were also noted. It would appear likely that few, if any new ceramic vessels reached the site by the 4th century AD.

The range of pottery present was what might be expected from this part of Lincolnshire and was similar to an assemblage studied by Rowlandson and Fike from Clay Lake Bank site and the earlier phase of work at Millfield Nurseries (Rowlandson et al. 2020; Rowlandson and Fiske 2023a).

Methodology

An archive has been produced to comply with the requirements of the Study Group for Roman Pottery (Darling 2004) using the codes and system developed by the City of Lincoln Archaeological Unit following the requirements of the Lincolnshire Handbook (Darling and Precious 2014; Tomber and Dore 1998; Jennings (ed.) 2019). A tabulated summary by context and a sherd archive are presented below. The dates provided represent the pottery recorded here: the main text of the report and other specialist contributions should be consulted to ascertain the overall date attributed to each context.

The pottery by context

SCSG23 – Dating Summary							
F No	**F Type**	**Context**	**Spot date**	**Comments**	**Sherd**	**Weight (g)**	**Total RE %**
18021	Ditch	18022	IA?	A sherd from a jar with an inturned rim.	1	6	4
18028	Pit	18029	LIA?	Sherds from a globular jar with a bead rim.	3	34	5
18061	Ditch	18062	L1-2	A rim from a necked jar with cordon decoration (Perrin 1999, Fig.68.378).	1	51	16
18065	Ditch	18066	2-3C	A small sherd from a Bourne-type shell-gritted jar.	1	7	0
18075	Ditch	18076	IA-Roman	Sherds from a shell-gritted jar.	4	236	0

SCSG23 – Dating Summary							
F No	**F Type**	**Context**	**Spot date**	**Comments**	**Sherd**	**Weight (g)**	**Total RE %**
18094	Ditch	18096	2C?	A basal sherd from a beaker with a mid-orange fabric and orange-red slip. The fabric has traces of silver mica and a slightly patchy slip, possibly an import.	1	10	0
18114	Deposit	18114	M2+	A small group including a sherd from a colour-coated beaker with barbotine decoration and a shell-gritted sherd.	2	7	0
18113	Ditch or pit	18115	M1-2	A small group including a sherd from a shell-gritted jar.	2	18	7
18121	Deposit	18121	M2-3	A small group including a sherd from a white ware mortarium spout, a Nene Valley grey ware necked jar or beaker and a shell-gritted sherd.	3	52	11
18119	Ditch	18126	M2-3	A small group including a sherd from a Nene Valley grey ware necked jar or bowl.	2	23	2
Unstratified		18139	M2-3	A single sherd of a Nene Valley grey ware.	1	16	0
Unstratified		18140	M2-3	A small group including Nene Valley grey ware and a further grey ware jar.	4	166	0
18141	Pit	18142	L1-2	A small group including a sherd from a shell-gritted necked jar.	1	27	17
18182	Ditch	18186	M2-3	A small group from sample 11 including colour-coated beakers, Nene Valley grey ware and a shell-gritted lid. Two fragments of fired clay were also present.	7	69	12
18182	Ditch	18187	L1-2	A single grog and shell-gritted transitional ware sherd.	1	19	0
18188	Ditch	18189	L1-M2	A small group of shell-gritted sherds, including a necked jar with a rilled shoulder similar to an example from Orton Hall Farm (Perrin 1996, No.51)	3	95	27
18191	Ditch	18193	L2-3	A single sherd from a Nene Valley colour-coated lipped bowl.	1	9	6
18191	Ditch	18195	M2-3	A basal fragment from a Nene Valley grey ware jar.	1	159	0
18191	Ditch	18197	ML2	A rim sherd from a colour-coated beaker with a cornice rim.	1	2	7
18199	Ditch	18201	3C?	A large proportion of a Nene Valley grey ware bowl with a triangular rim (Howe et al. 1980, Fig. 2.18) and a large lipped bowl (Perrin 1996, No.301).	4	350	62
18199	Ditch	18201 Sample 12 (60-70)	M2-4?	A tiny sherd from a colour-coated beaker.	1	1	0
18199	Ditch	18202	3C?	A large proportion of a Nene Valley grey ware lipped bowl also present in context 18201 (Perrin 1996, No.301).	2	135	8
18216	Ditch	18229	3C?	Sherds from a Nene Valley grey colour-coated closed vessel.	5	54	0

SCSG23 – Dating Summary							
F No	F Type	Context	Spot date	Comments	Sherd	Weight (g)	Total RE %
18216	Ditch	18230	M2-3	Sherds from a necked jar with cordon decoration and a sherd from a jar or beaker with rouletted decoration.	3	129	50
Unstratified		18231	L3-4?	A small group including a Nene Valley grey ware and a heavily abraded bowl, possibly a colour-coated straight sided bead and flange type that would suggest a late Roman date.	2	63	2

The pottery by ware type

SCSG23 – Fabric Summary							
Fabric code	Fabric group	Fabric details	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
MOMD?	Mortaria	Midlands mortaria; precise source unknown	1	1.75%	13	0.75%	2
CC	Fine	Other colour-coated wares	1	1.75%	10	0.58%	0
CC?	Fine	Other colour coated wares	1	1.75%	13	0.75%	2
CC1	Fine	Colour coated fabric 1	6	10.53%	15	0.86%	13
NVGCC	Fine	Nene Valley grey colour-coated ware	5	8.77%	54	3.11%	0
IAGR	Reduced	Native tradition/transitional gritty wares	1	1.75%	19	1.09%	0
IAGR2	Reduced	Iron Age tradition 'Gritty': Site fabric 2	6	10.53%	254	14.61%	7
NVGW	Reduced	Nene Valley grey ware	17	29.82%	921	52.99%	131
NVGW?	Reduced	Nene Valley grey ware	1	1.75%	51	2.93%	16
NVGY	Reduced	Earlier Nene Valley grey ware	3	5.26%	118	6.79%	0
IASH1	Calcareous	Iron Age Shell Gritted: Site Fabric 1	5	8.77%	45	2.59%	9
SHEL	Calcareous	Miscellaneous undifferentiated shell-tempered	7	12.28%	211	12.14%	56
SLSHB	Calcareous	Bourne shell gritted	1	1.75%	7	0.40%	0
FCLAY	Fired Clay	Fired Clay	2	3.51%	7	0.40%	0

SCSG23 – Form Summary							
Form	Form Type	Form Description	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
BK	Beaker	Unclassified form	5	8.77%	14	0.81%	0
BKCOR	Beaker	Cornice rim	1	1.75%	2	0.12%	7
BFB	Bowl	Bead and flange bowl	1	1.75%	13	0.75%	2
BFL	Bowl	Flange rimmed (e.g. Gillam 1970 Types 218-220)	5	8.77%	194	11.16%	23
BTR	Bowl	Triangular rimmed (e.g. Gillam 1970 Types 222-3)	2	3.51%	300	17.26%	53
CLSD	Closed	Form	17	29.82%	637	36.65%	0
JBR	Jar	Bead rimmed	3	5.26%	34	1.96%	5
JIR	Jar	Inturned rim	1	1.75%	6	0.35%	4

SCSG23 – Form Summary							
Form	Form Type	Form Description	Sherd	Sherd %	Weight (g)	Weight %	Total RE %
JL	Jar	Large	1	1.75%	50	2.88%	0
JNK	Jar	Necked	9	15.79%	313	18.01%	126
JBK	Jar/Beaker	Small jar or beaker	1	1.75%	8	0.46%	0
JBL	Jar/Bowl	Large	1	1.75%	19	1.09%	0
JBNK	Jar/Bowl	Necked	1	1.75%	10	0.58%	2
L	Lid	Unclassified form	2	3.51%	59	3.39%	12
M	Mortaria	Unclassified Form	1	1.75%	13	0.75%	2
-	Unknown	Form uncertain	6	10.53%	66	3.80%	0

Samian

The second phase of the project did not contribute to the previously recovered samian material as all the sherds (four sherds of samian from three vessels) were recovered during the evaluation. One sherd was identified as a bowl from ditch 03001 (Rowlandson and Fiske 2023a). The low level of samian from this site would fit with the assemblage recoded from Spalding Clay Lake Bank and would relate to other small assemblages from basic rural sites in the area (Rowlandson et al. 2020).

Amphora

The site excavation yielded no amphora fragments, however a single possible amphora fragment was recovered from ditch 6010 during the evaluation trenching (Rowlandson and Fiske 2023a). Other similar sites in the area have also only produced limited evidence of imported amphora (Rowlandson et al. 2020). More significant groups of amphora have been found during excavations at larger settlements in southern Lincolnshire such as Bourne (e.g. Darling 1997, 2005, 2011), Stainfield (Davies 1995) and Sleaford (see discussion in Rowlandson et al. 2015). Those living in more nucleated settlements appear to have had greater access to amphora and their contents than those in more basic rural sites (Rowlandson and Fiske 2023a).

Mortaria

A single fragment of a Midlands white ware mortarium spout (MOMD) was recovered from deposit 18121 that was likely to date to the mid-2nd to 3rd century AD. The low level of mortaria from this assemblage would fit with a similar pattern observed by previous investigations in the vicinity of Baston and other sites in the area were there were typically few mortaria in circulation in comparison with the other coarse ware vessel types (Darling et al. 2020; Rowlandson et al. 2020; Rowlandson and Fiske 2023a).

Other fine wares

Nene Valley type colour-coated ware (CC1) was recovered in relatively great numbers. Beakers were well represented including a cornice rimmed type (BKCOR) unearthed from ditch 18191 and an abraded fragment of a beaker with barbotine decoration recovered from deposit 18114. Other forms included a flange rimmed bowl (BFL) excavated from the ditch 18191. The range of forms was what might be expected from a site predominantly occupied in the mid-late 2nd to 3rd centuries AD.

Another colour-coated ware (CC) was a poorly finished, small basal sherd from a beaker with a mid-orange fabric and slightly patchy orange-red slip was recovered from ditch 18094. The fabric has

traces of silver mica and the vessel may have been imported. Symonds has noted that the identification of some of these colour-coated can be difficult (1990) and other regional industries and other continental industries may have made similar vessels (Tomber and Dore 1998; cf. Brulet et al. 2010).

A heavily abraded, possibly colour-coated (CC?) straight sided bead and flange type bowl (BFB) was found on site from context 18140. The form would suggest a late Roman date of late 3rd to 4th century.

Five fragments of a Nene Valley grey colour-coated (NVGCC) closed form vessel was recovered from ditch 18216. The basal sherds may be dated to the 3rd century AD.

Oxidised wares

There were no oxidised wares recovered from the 2023 site excavation, however the evaluation trenching yielded some examples. White wares present (CR) mostly consisted of sherds from flagons with one diagnostic rim from a vessel with an expanded top rim (FTR, Gillam 1970, Type 5) likely to date to the later 1st to earlier 2nd century AD. Other oxidised wares included five body sherds, probably all of Roman date (Rowlandson and Fiske 2023a, OX and OX?).

Reduced wares

A total of three abraded sherds of one closed form vessel of the distinctive earlier Nene Valley grey wares (NVGY) were recorded from context 18140 and are dated to the mid-2nd to 3rd century AD. These grey wares have been characterised by Precious on sites from the south of Lincolnshire (2001; Davies 1993; 1995). Similar products were recorded from Phase 1 at Orton Hall Farm by Perrin (1996, No. 61-7 and discussion). Further examples of the fabric were recovered during evaluation included forms such as jars or beakers but no rims were present. This small assemblage suggests there was probably some activity on the site in the pre-Hadrianic period (Rowlandson and Fiske 2023a).

The largest group of pottery with seventeen sherds of thirteen vessels recovered from the site was from Nene Valley grey ware (NVGW) fabric group with light-fired cores and fumed grey surfaces. These wares were produced at sites in the Nene Valley (Perrin 1999) and perhaps elsewhere (e.g. near Stamford, Nick Cooper, ULAS pers. comm.). The range of forms present included fragments four closed form vessels, one sherd with burnished lattice decoration, a large jar, necked jars, one with cordon decoration, a necked jar or bowl, a jar or beaker with rouletted decoration, a large example of a lipped bowl (Perrin 1996, No.301) and a bowl with triangular rim (Howe et al. 1980, Fig.2.18) (Rowlandson and Fiske 2023a).

Further pottery forms of this fabric were found during the evaluation phase included a lid, barbotine decorated copies of samian Drag. 36 bowl, lipped bowls, a large bowl with rouletted decoration, necked jars, some with cordoned decoration, wide-mouthed jars some with burnished wavy line (Perrin 1999, Fig.56.19-20) (Rowlandson and Fiske 2023a).

The forms present are what might be expected from a site in this area in the later 2nd to 3rd century AD (Darling et al. 2020; Rowlandson et al. 2020). It would suggest that most of the grey wares in use on the site were produced within 25km of the site (Rowlandson and Fiske 2023a).

One necked jar with cordon decoration (Perrin 1999, Fig.68.378) with possible Nene Valley grey ware fabric (NVGW?) was recovered from ditch 18061.

The pottery assemblage from the 2023 excavation did not contain any sandy grey wares (GREY), however a small range of this fabric was found during the evaluation trenching (Rowlandson and Fiske 2023a). These vessels had similarities with the forms produced in Nene Valley grey wares. A number of kilns are known from the Lindsey region of Lincolnshire producing a distinctive range of forms (Cleary et al. 2020; Samuels 1983) but there are now also a growing number of kilns from the South Kesteven and Boston areas of Lincolnshire at Grantham, north of Spalding and most probably at Great Casterton into Rutland (Rowlandson and Fiske 2022; 2023b; Swan 1984) that were producing grey wares with similar stylistic influences to the products of the Nene Valley (Perrin 1996, 120-1). The forms present from this assemblage included lipped bowls, a bowl with a plain rim a narrow necked jar (form as Dannell and Wild 1987 Fig. 46.143 with burnished chevrons on neck) and wide-mouthed jars with rouletted decoration on the shoulder (form as Perrin 1999 Fig. 57.45). A local production source in the South Holland, Boston, South Kesteven or Peterborough area would appear most likely for the pottery recorded (Rowlandson and Fiske 2023a).

Iron Age and Transitional wares

There were a restricted range of 'native tradition' transitional wares (IAGR) including one shell and grog-gritted body sherd of a large jar or bowl from ditch 18182. Other examples of shell-gritted fabric (IAGR2) were represented by one rim sherd of a necked jar recovered from ditch 18113, a single burnt body sherd from the latter ditch and further four sherds form a possibly handmade closed form vessel excavated from ditch 18075.

The evaluation trenching yielded other examples of Iron Age and Transitional wares such as a comb decorated sherd, probably from a large jar decorated in the Late La Tène III style (Knight 2002) and a storage jar with scored wavy line decoration (IAGR2, form as Perrin 1999 Fig. 72.469 with a neater scored wavy line) (Rowlandson and Fiske 2023a).

Another group of sherds were of Iron Age shell-gritted fabric (IASH1). Three handmade sherds were from a globular jar with a bead rim recovered from pit 18028 and was similar to examples from the late Iron Age. Another handmade sherd belonged to a jar with inturned rim was excavated from ditch 18021. It is difficult to date closely this form as it was produced throughout much of the first millennium BC. A further single handmade body sherd was found in deposit 18114.

The small range of transitional wares from this site suggested some activity may have occurred on the site in the early Roman period. A limited range of transitional wares were also recorded from the Spalding Clay Lake Bank site where it was suggested that they represented activity 'in the Hadrianic period or earlier' (Rowlandson et al. 2020; Rowlandson and Fiske 2023a).

Shell-gritted wares

A total of seven sherds from four vessels were attributed to the generic SHEL code. Regrettably the condition of the pottery precluded the identification of the Punctate Brachiopod shells often seen within the fabrics from southern Lincolnshire and the South Midlands shell-gritted industries (e.g. Tomber and Dore 1998, HAR SH; Rowlandson and Fiske 2023a). The rim and body sherds present

were mostly from necked type jars; one sherd with rilling decoration was recovered from ditch 18188. Two further sherds of a lid were found in ditch 18182. Carbonised deposits were noted on three of these vessels suggesting that some were utilised as cooking pots for at least the later part of their life. These forms were similar to those noted from the Spalding Clay Lake Bank site (Rowlandson et al. 2020; Rowlandson and Fiske 2023a). One body sherd of a possible handmade vessel of SHEL fabric was also noted. This find was unearthed from a deposit 18121.

The range of shell-gritted pottery from this site and similar groups in the Welland valley (Rowlandson et al. 2020; Darling 2007) have a greater affinity with groups from the Nene Valley (Rollo 2001; Perrin 1996; 1999) than with assemblages from the Lincoln and Sleaford areas (Darling and Precious 2014; Rowlandson et al. 2010, 2015). Although it was not possible to attribute the SHEL group to a specific production area fossiliferous Jurassic deposits occur in a number of locations in the south Lincolnshire and the Nene Valley area, and it is likely that the majority of the pottery in this ware group was produced fairly locally (Rowlandson and Fiske 2023a).

Only one sherd with scored horizontal grooved decoration from a closed form vessel recovered from ditch 18065 was attributed the Bourne-type shell-gritted fabric (SLSHB) (Tomber and Dore 1998, BOGS SH). Two other sherds with the same fabric were found during the evaluation (Rowlandson and Fiske 2023a). The low number of sherds of this fabric suggests that this Spalding site was provisioned from a different source, perhaps more locally or upstream along the River Welland, as one would expect Bourne-type shell-gritted wares to be better represented from a site with activity in the 2nd to 3rd centuries AD (Rowlandson and Fiske 2023a).

Miscellaneous wares

Two small pale grey ceramic scraps were recorded from ditch 18182, Sample 11. Both appeared likely to be fired clay (FCLAY) with a fine, mica rich fabric.

Recommendations

- All of the pottery is stable and should be deposited along with the rest of the archive in the relevant museum.
- The key vessels have been paralleled and no illustration is recommended.
- Further investigations in the area appear likely to produce a greater quantity of Roman pottery.
- The small quantity of samian from this project so far would not benefit from being shown to a samian specialist at present. In the event of further investigations and a larger more significant samian assemblage being retrieved the four sherds from the evaluation phase of the project should also be considered as part of any final report.

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SCSG23 - Full Sherd Archive																
Context	Fabric	Form	Rim	Body	Base	Decoration	Vessels	Alt	Drawing	Comments	Join	Sherd	Weight	Rim diam	Rim eve	Sample
18022	IASH1	JIR	RD	U	-	HM	1	ABR		RIM; R		1	6	18	4	
18029	IASH1	JBR	BEAD	GLOB	-	HM	1	ABR		RIM GIRTH; R		3	34	14	5	
18062	NVGW?	JNK	-	-	-	CORD	1			RIM NECK		1	51	20	16	
18066	SLSHB	CLSD	-	-	-	SHG	1			BS		1	7	0	0	
18076	IAGR2	CLSD	-	-	-	HM?	1			BASE LOWER WALL; IRF		4	236	0	0	
18096	CC	BK	-	-	-		1			BASE; POORLY FINISHED; MICA IN FABRIC; PERHAPS GAULISH IMPORT?		1	10	0	0	
18114	CC1	BK	-	-	-	BA	1	ABR		BS		1	2	0	0	
18114	IASH1	-	-	U	-	HM	1			BS; R		1	5	0	0	
18115	IAGR2	JNK	-	-	-		1			RIM		1	10	18	7	
18115	IAGR2	-	-	-	-		1	BURNT		BS		1	8	0	0	
18121	SHEL	-	-	-	-	HM?	1			BS		1	30	0	0	
18121	NVGW	JNK	-	-	-		1			RIM NECK		1	9	14	9	
18121	MOMD?	M	-	-	-		1			RIM; MHK FORM		1	13	0	2	
18126	NVGW	CLSD	-	-	-		1	VAB		BASE PEDESTAL		1	13	0	0	
18126	NVGW	JBNK	-	-	-		1			RIM		1	10	0	2	
18139	NVGW	-	-	-	-		1			BS		1	16	0	0	
18140	NVGW	CLSD	-	-	-		1	ABR		BASE		1	48	0	0	
18140	NVGY	CLSD	-	-	-		1	ABR		BASE FTG		3	118	0	0	
18142	SHEL	JNK	-	-	-		1	CARBON DEP EXT		RIM NECK SHLDR		1	27	15	17	
18186	SHEL	L	-	-	-		1	CARBON DEP		RIM		2	59	27	12	11
18186	CC1	BK	-	-	-		2			BS		2	1	0	0	11
18186	NVGW	CLSD	-	-	-	LA	1	ABR		BS		1	2	0	0	11
18186	FCLAY	-	-	-	-		0	ABR		FINE MICA RICH FABRIC WITH SOME VOIDS; PALE GREY		2	7	0	0	11
18187	IAGR	JBL	-	-	-		1			BS		1	19	0	0	
18189	SHEL	JNK	-	-	-	RILL	1	CARBON DEP EXT		RIM NECK SHLDR		3	95	15	27	

SCSG23 - Full Sherd Archive																
Context	**Fabric**	**Form**	**Rim**	**Body**	**Base**	**Decoration**	**Vessels**	**Alt**	**Drawing**	**Comments**	**Join**	**Sherd**	**Weight**	**Rim diam**	**Rim eve**	**Sample**
18193	CC1	BFL	-	-	-		1			RIM		1	9	21	6	
18195	NVGW	CLSD	-	-	-		1	BURNT		BASE FTG		1	159	0	0	
18197	CC1	BKCOR	-	-	-		1			RIM		1	2	10	7	
18201	NVGW	BTR	-	-	-		1	CARBON DEP EXT; CONCRETION		RIM BASE		2	300	19	53	
18201	NVGW	BFL	-	-	-		1			RIM	18202	2	50	26	9	
18202	NVGW	BFL	-	-	-		1			RIM CHAMFER BASE	18201	2	135	26	8	
18229	NVGCC	CLSD	-	-	-		1			BASE		5	54	0	0	
18230	NVGW	JNK	-	-	-	CORD	1			RIM		2	121	17	50	
18230	NVGW	JBK	-	-	-	ROU	1			BS		1	8	0	0	
18231	NVGW	JL	-	-	-		1			BS		1	50	0	0	
18231	CC?	BFB	-	-	-		1	VAB		RIM SCRAP		1	13	0	2	
Sample 12	CC1	BK	-	-	-		1			BS		1	1	0	0	12

APPENDIX C: THE CERAMIC FINDS

Dr Anne Irving and Anna Jedrzejewska

CERAMIC BUILDING MATERIAL

Introduction

All the material was recorded at archive level in accordance with the guidelines laid out by the ACBMG (2001). A total of 33 fragments of Ceramic Building Material, weighing 5g, was recovered from the site.

Methodology

The material was laid out and viewed in context order. Fragments were counted and weighed within each context. The ceramic building material was examined visually and using x20 magnification. This information was then added to an Access database. An archive of the Ceramic Building Material is included in Table 2.

Results

Table 2, Archive of the Ceramic Building Material

Cxt	Cname	Full name	Fabric	NoF	W (g)	Description	Date
18114	CBM	Ceramic Building Material	oxidised	1	1	Low fired, flake	undateable
18165 ◊10	CBM	Ceramic Building Material	oxidised	15	1	Tiny flakes	undateable
18232 (0-10) ◊12	CBM	Ceramic Building Material	oxidised	6	1	Tiny flakes	undateable
18232 (10-20) ◊12	CBM	Ceramic Building Material	oxidised	6	1	Tiny flakes	undateable
18233 (30-40) ◊12	CBM	Ceramic Building Material	oxidised	5	1	Tiny flakes	undateable
			TOTAL	**33**	**5**		

Discussion

Evaluation trenching in 2021 produced four examples of Roman Ceramic Building Material, including two fragments of Tegula (TEG) (Irving and Jedrzejewska, 2023).

The assemblage from the 2023 excavation comprises thirty-two fragments of ceramic building material (CBM) recovered mainly from the sample processing of contexts (18232), (18233) ◊ 12 of ditch [18199] and (18165) ◊10 of ditch [18182]. One flake of CBM was retrivied from deposit (18114) along with two fragments of Roman pottery.

All these fragments are oxidised and very small in size.

CONTEXT DATES

The dating in Table 3 is based on the evidence provided by the finds detailed above.

Table 3, Spot dates

Cxt	Date	Comment
18114	undateable	
18165	undateable	
18232	undateable	
18233	undateable	

ABBREVIATIONS

CXT	Context	W <g>	Weight <grams>
NoS	Number of sherds		

REFERENCES

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Appendix D

Osteological Analysis: Millfield Nurseries, Spalding Common, Lincolnshire.

NGR: TF2344 2004
Site Code: SCSG23

December 2023

A report for
Witham Archaeology
Prepared by:
Samantha Tipper

Summary

In December 2023 I was commissioned by Witham Archaeology to carry out an osteological analysis of two inhumation burials and sixteen fragments of disarticulated bone recovered from the site of Millfield Nurseries, Spalding Common, Lincolnshire.

The dating of the skeletal remains is possibly Roman due to numerous Roman period artefacts recovered from the site, but further investigation to be done to confirm this.

Osteological analysis found that the burials contained the remains of a young adult individual, possibly male (18137) and one adult middle-aged male (18134). Extra arm bones were found in the bag for (18137), however the bones were much larger that the arm bones assigned to this individual and matched the arm bones found in the bag labelled (18130), indicating that there are at least three adult individuals in this assemblage. Poor preservation and severe fragmentation were observed, and the poor preservation resulted in limiting the amount of observable pathological lesions affecting the bone surface, however a fractured wrist, vertebral osteoarthritis and spondylosis was observed.

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1. Introduction

In December 2023, I was commissioned by Witham Archaeology to carry out an osteological analysis on an inhumation from the site at Millfield Nurseries, Spalding Common, Lincolnshire as part of an initial phase of archaeological trail trenching before the building of a residential development.

1.1 Methodology

The skeletal remains were analyzed to determine, sex, age, stature of the individual, as well as metric and non-metric traits, completeness and preservation according to the standards recommended by the British Association of Biological Anthropologists and Osteologists (BABAO) and the IFA (Brickley and McKinley, 2004).

2. Osteological Analysis

The aim of an osteological analysis is to attempt to provide a detailed biological profile of the individual to be examined, by providing an estimate of the age, biological sex and stature, as well as non-metric traits and pathology. This information is then used to help develop an understanding of the health and wellbeing of that individual and the population they belong to.

2.1 Preservation and completeness

An inventory of all present skeletal elements was carried out in order to assess the completeness of the skeletal remains and determine the number of individuals present in the assemblage. Each skeletal element was recorded as present or absent, with the proximal, shaft or distal end being recorded as present or absent for long bones. The completeness of a skeleton was recorded according to the skeletal preservation <25%, 25-50%, 50-75% and 75%. The completeness for (18137) was between 25-50%, while for (18134) it was between 50 – 75%. Surface preservation, which involves the condition of the bone cortex, can have a large impact on the amount and quality of the data that can be collected from skeletal remains. The severity grading system defined by McKinley (2004:16) was used and includes a range of grade 0 (excellent preservation) to grade 5 + (extremely poor). Both individuals had poor preservation and were graded at Grade 4-5.

2.2 Determination of Sex

Estimation of the sex of an individual is not just important for developing a demographic profile but can also provide comparative information on the sex differences in health, disease, occupation, diet and gender roles within a population (Grauer and Stuart-Macadam, 1998). Estimation of sex for 18137 was hard due to the limited amount of bone present that could be used to determine sex and so was estimated to be a possible male from part of the sciatic notch. Individual 18134 was estimated as a male from both pelvic and cranial features.

2.3 Determination of Age

The estimation of age at death from the skeleton is an important factor as it can impact the interpretation of the lifestyle and health of a population (Cox and Mays, 2000). There are a number of factors that impact age, such as genetics and sex, while burial practices and preservation can impact age assessment (Saunders, 2000). Individual 18134 was 45+ years at death and individual 18137 was 25 to 35 years of age at death. For both individuals the dental chart by Brothwell, 1981 was used as well as the auricular surface and epiphyseal fusion (Buikstra and Ubelaker 1994, Brickley and McKinley, 2004).

2.4 Metrical Analysis

Stature provides information on the health and in particular the nutritional stress of individuals. (Raxter et al, 2008: Goodman, 1993). Growth is considered a "very regular process" (Tanner,1989:6) and therefore, any variation in an individual's stature, may be reflective of external influences. In order to be able to determine stature at least one fully fused and complete long bone must be present, ideally the femur and tibia. Unfortunately, it was not possible to measure any of the bones from this assemblage due to the severe level of fragmentation.

2.5 Non -metric Trait Analysis

Non-metric traits are recorded as part of a standard osteological analysis. They are thought to be hereditary and present as additional facets, foramina, canals, extra sutures and bony processes (Brothwell, 1981; Saunders, 1989). Due to the amount of fragmentation and poor surface preservation no, non-metric traits were observed for 18134 and only a parietal foramen and a mandibular Torus on the left part of preserved mandible (Plate 1) was observed for 18137.

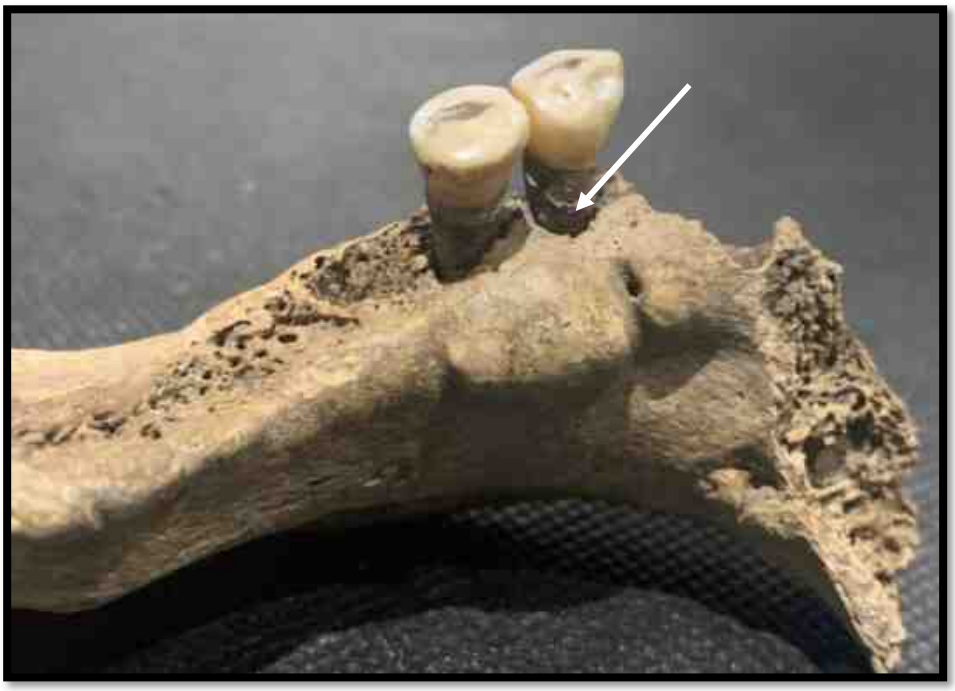


Plate 1: mandibular Torus (white arrow)

3 Pathology

Pathological lesions can manifest on bone, but usually as a result of either a chronic condition (as acute conditions rarely involve bone due to the shorter infection period) or trauma and can help to infer the health and wellbeing of an individual or population. Paleopathological lesions were identified and diagnosed on the skeletal remains based on traditional macroscopic analysis of pathological bone change and all bones were macroscopically examined for evidence for pathological change. Due to the low level of preservation only a few pathological conditions were identified.

3.1 Fractures

Fractures are commonly seen in archaeology and are often the result of a fall or accident and are the most common type of injury observed in human skeletal remains (Roberts and Manchester, 2005:85). They are defined as either a partial or complete break in the continuity of a bone and the resulting morphology of the fracture differs depending on the cause, amount of force and the site of the fracture and are classified as either traumatic or non traumatic (pathological) (White et al, 2012). Traumatic fractures are subdivided into direct or indirect trauma. Indirect trauma occurs in an area of the bone away from the site of impact and results in a number of fracture types, such as oblique, spiral, greenstick, impacted and burst, while direct trauma occurs at the site of impact and results in transverse, penetrating, comminuted or crush fractures (Lovell, 1997). One fracture of the wrist was observed in individual 18134, an old, aged male with a fracture of the left scaphoid that displayed eburnation and macro porosity (Plate 2). This would have possibly impacted other carpals such as the capitate and lunate, resulting in osteoarthritis of the left wrist.



Plate 2 fracture of the left scaphoid (18134)

3.2 Joint disease

Joint disease involves two processes; the formation and destruction of bone (Roberts and Manchester, 2005:135). In order to relieve the stress or load on a joint, formation of bone occurs in bony growths (osteophytes) along the margins and even the joint surface, in severe cases it can result in fusion. There are a number of factors that influence joint disease such as age, occupation, genetics and physical activity (Roberts and Manchester, 2005).

3.2.1 Spondylosis

Spondylosis (also referred to as degenerative disc disease) occurs as a result of the degeneration of the intervertebral disc, which causes pitting and marginal osteophytes on the vertebral end plates (McCormack, 1996). formation and porosity on the superior and/or inferior margins of the vertebral body (Resnick and Niwayama,1995). Spondylosis has a multifactorial etiology, including factors such as age, sex, genetics and activity (Roberts and Manchester, 2005:139-141; Tipper, 2020). In bioarchaeological studies spondylosis is diagnosed by macroscopic examination of the vertebrae and is recorded as present if there is osteophyte. Spondylosis was observed in both individuals.

3.2.2 Spinal Osteoarthritis

Osteoarthritis develops when the cartilage on the joint surface degenerates, which initiates the formation and destruction of bone. New bone forms (osteophytes) due to the joint being stressed/overloaded and the body tries to spread the load by increasing the joint surface. Osteoarthritis of the spine involves the apophyseal facets. The presence of eburnation is diagnostic of osteoarthritis in bioarchaeology, if not present then the presence of at least two of the following features is considered for diagnosis: new bone of the joint surface, marginal osteophytes, pitting of joint surface or alteration on the joint contour (Waldron, 2009:34). Individual 18134 displayed spinal osteoarthritis (Plate 3) throughout the spine.



Plate 3: Osteoarthritis of the superior left vertebral facet, showing porosity and joint contour change (white arrow).

3.3 Conclusion

Only two individuals were excavated from the site Millfield Nurseries, Spalding Common, Lincolnshire. Individual 18134 was an old, aged male, with a broken wrist and spinal osteoarthritis and spondylosis. Individual 18137 was a possible male, aged between 25 – 35 years at death with spondylosis and a couple of non-metric traits; a mandibular Torus and parietal foramen. Stature could not be recorded due to the lack of any complete bones.

4 Dental Analysis

Dental health can provide information on the diet and health of an individual (Roberts and Manchester, 2005). Individual 18134 had 20 teeth present (both mandible and maxilla bone preserved), with slight to medium amount of calculus on a few teeth with 4 teeth lost ante-mortem. Individual 18137 had only the left part of the mandible preserved, with two premolars present, the incisors and canine lost postmortem and all three molars lost antemortem with bone reabsorption observed. Two loose upper right molars (but no bone) were also present. No pathology was observed.

5 Funerary

Individual 18134 was buried in a North to East orientation and individual 18137 was buried in a NW to SE orientation. This varies from what was observed at the Newland, Lincoln assemblage where most individuals were buried in a north to south orientation (Wood, 2002). However, orientation of burials seems to vary considerable between different cemeteries in Roman Britain (Clark, 1979, 352), for example at Scole the majority of individual were oriented in a west to east direction (Petersone-Gordina and Holst, 2020), while at Horncastle (Caffell and Holst,2007) the majority of individuals were oriented in a north to south direction.

Individual 18134 was supine, with hands placed over the pelvis and this was similar to what has been observed in other Romano-British assemblages (Tipper, 2020; Wood 2002), however the burial position for individual 18137 was unclear. Individuals buried at Newland, Lincoln were mostly found in a supine position, with only one individual in a prone position (Wood, 2002). Newington Hotel, Driffield Terrace and Baldock all have over 70% of individuals buried

in a supine position (Keefe et al, 2015; Caffell and Holst, 2012; Keefe and Holst, 2020), while at Scole 100% of individuals were buried in a supine position (Petersone-Gordina and Holst, 2020).

6 Future Recommendations

In order to determine if the articulated individual in this assemblage was born in Lincoln or in a different region, strontium isotope analysis would be useful. Dietary isotopes, nitrogen and carbon, would possibly help to understand the dietary patterns of skeleton two and compare to other Romano-British populations.

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APPENDIX E: Briquetage

Introductio

Previous Trenching at the site in 2021 had resulted in the collection of a range of briquetage, predominantly Container fragments (35) and Miscellaneous pieces (92). A small number of Structural pieces, along with two pedestal fragments, one bar and one spacer/clip, was also retrieved. Of the 17 Trenches opened small quantities c briquetage were found in 11 of them.

Further work, in 2023, took the form of targeted excavation of Roman settlement in Area A and a Strip, Map and Record of Area B. This work resulted in more briquetage finds and is the subject of this report.

A selection of fired clay material thought to be briquetage was submitted for Assessment. The collection came predominantly from Ditch and Pit fills and comprised twelve briquetage container sherds (4 from Area A), 46 structural pieces, the majority from Area B, and the remainder in the Miscellaneous category.

While the Structural pieces appear to come from a hearth/oven it is by no means certain that the feature was connected to saltmaking. The same can be said of the Miscellaneous pieces.

Archaeological Background

Salterns of Iron Age and/or Roman date are well known in the Spalding area of the Fenland (Hallam 1970, Hayes and Lane 1992; Lane and Morris 2001; Lane 2018). Saltern sites of Iron Age date investigated in the area include Lane 2001a, Morris 2011, Failes and Peachey 2013, along with Roman sites in Spalding (eg Hallam 1970; Wood *et al* forthcoming).

The site is located in the Fenland on silty marine alluvial soils of the former saltmarshes.

Nature of the Assemblage

Briquetage, representing only a proportion of the types usually present on a working saltern, were retrieved at SCSG 23. Only Containers and Structural pieces (from hearth/oven structures, possibly unconnected to saltmaking) were present, along with the ubiquitous Miscellaneous pieces (442 pieces).

Method of Analysis

Each piece of briquetage was examined macroscopically.

Each piece was weighed and evidence of the intensity of use (bleaching) of the briquetage was noted, judged by the visible presence of saltwater residues. For the container class each piece was measured for wall thickness. Only small pieces were present and neither height/depth of the container nor its shape in plan or section could be determined. Where present, rim-types were recorded (Table 1).

The briquetage assemblages from the sites have been broken down into four groups of material, a variation of the work first established for the Fenland Project collections (Lane and Morris 2001; Morris 2007).

The four groups are defined as -

'Containers,' the ceramic 'pans' in which the brine is heated and crystallised.

'*Supports*', the pedestals, bricks, Spacer/Clips and bars which serve to stabilise the containers within the heating structures during crystallisation and, possibly, during any drying phase

'*Structural*', the remnants of the hearths/ovens where identifiable

'*Miscellaneous*', the usually small or unidentifiable fragments, often from samples.

There were no examples belonging to the 'Support' category in the 2023 collection.

Results

Descriptions of the individual pieces are detailed in Table 1.

Containers

Twelve small fragments of Container sherds were present, four from the excavated Area A, the remainder from Ditch and Pit fills on the Strip Map and sample conducted on Area B. The container pieces were very small and abraded. Two Rim sherds were present in Area A, both pointed and from Area B one pointed and one rounded example. All the pieces were very small and the original sizes and shapes of the containers could not be determined. In terms of the salt bleaching the majority of container sherds had light or no bleaching, suggesting strongly that they pre-dated the Roman period, when many container sherds were heavily bleached.

Supports

No briquetage in the Support category was present. This further indicates that the Areas did not have saltmaking sites on them.

Structural

Structural (hearth/oven) pieces were present in the collection and identified by their single flattened surface, with one example, from 18193, containing a piece with a second flat surface at right angles to the first. There is nothing to indicate that the hearth/oven was connected with saltmaking. Often such pieces would be expected to have evidence of a green salt glaze, either over the flat surface, or at least green salt glaze dribbles. None were present. The bags containing the structural pieces from 18168 were marked 'Possible Kiln Lining'.

Miscellaneous

These are small unidentifiable fragments of fired clay, of which some may be of briquetage but it is not possible to determine given the size.

Discussion

As with the Trenching in 2021 some briquetage was present in Areas A and B, but not in numbers, or in this case, breadth of briquetage types, to suggest that saltmaking was present actually on the sites. There is every likelihood, however, that one or more saltern sites lies in the vicinity as such sites are common in the area.

As stated above, the area is well-known for its saltmaking sites of the Iron Age and early Roman periods, when the conditions for making salt, ie access to tidal creeks and streams and to nearby sources of peat fuel were present. Neither of those types of natural conditions are particularly

amenable to settlement/occupation, although from sometime around the end of the first century AD settlement did start occurring in response to ameliorating conditions. The excavated site at Cowbit Wash (Lane 2018, Fig. 44), some 5km to the south of Spalding Common, was dated to 185-95 cal BC (UB-4026 and UB-4027; 2098+/-15BP) for a second phase of saltmaking.

It is likely that the briquetage from the Spalding Common site is of a first century BC/AD date and from nearby, earlier phase of saltmaking..

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Table 1

Sample No	Context No	FeatureType	Fabric	Quantit	Artefact type	Bleaching	Descriptio	Weight (g)
	18022 Area B			7	Miscellaneous	Nil		31.69
	18022		silty	1	Container	Light	**Rim sherd.** Pointed. 10mm	1.89
	18022		silty	1	Container	nil	Body sherd. 8mm	1.58
	18029 Area B			2	Miscellaneous	nil		9.61
	18056 AreaB		silty	1	Container?	nil	Body sherd? 7mm	1.55
	18056			1	Container	light	Base sherd? 8mm	9.55
	18056			1	Container	light	Body sherd? 10mm	2.08
	18056			1	Container	light	**Rim sherd**. Rounded. 6mm	2.23
	18056			1	Container	light	Body sherd. 8mm	2.53
	18056			1	Container	nil	Body Sherd. 7mm	1.54
	18114 Area A			1	Miscellaneous	nil		3.52
	18121 Area A		silty	1	Miscellaneous	nil		15.1

Sample No	Context No	FeatureType	Fabric		Artefact type	Bleaching	Description	Weight (g)
11	18168 Area A			57	Miscellaneous	nil		43.13
11	18168			320	Miscellaneous	nil		156
11	18168			12	Structural	nil	Pieces with one flat surface	127
11	18168			45	Miscellaneous	nil	Bag marked 'Possible kiln lining'	146
11	18168			5	Structural		Pieces with one flat surface	58
11	18168			7	Miscellaneous	nil	Bag marked possible kiln lining	11
11	18168			1	Container	Light	Body sherd. 7mm	2.26
11	18168			1	Container	Light	Body sherd. 8mm	3.15
11	18168			1	Container	Light	**Rim sherd.** Pointed. 9mm	1.91
11	18168			1	Container	Light	**Rim sherd.** Pointed. 11mm	2.28
	18193 Area A			2	Miscellaneous	nil		9.69
	18193 Area A			6	Structural	nil	Possible hearth linings. One has two flat surfaces at right angles.	213
	18194 Area A			21	Structural	nil	Possible hearth linings. Most have one flat surface	492

Sample No	Context No	FeatureType	Fabric		Artefact type	Bleaching	Description	Weight (g)
	18196 Area A			2	Structural	nil	Possible hearth linings. Both have one flat surface.	52.5

APPENDIX F

The Finds (Non-Ceramic)

By Gary Taylor

Artefacts recovered during investigations at Pinfold Nursery, Spalding Common, Lincolnshire (SCSG23), are reported, below.

The finds were examined and reported in accordance with CIfA guidelines (2020) and the *Lincolnshire Archaeological Handbook* (Lincolnshire County Council 2019). The initial collection of finds was examined and reported in December 2023. Following processing of environmental samples further finds were retrieved and these were examined, and the complete report updated, in March 2024.

The Glass

By Gary Taylor

Introduction

Three pieces of glass were recovered through environmental sampling. All context groups were weighed to a minimum of 1g, but the pieces were minute and cumulatively weighed less than 1g in total.

Condition

The pieces are minute but appear to be in moderate condition.

Results

Table 1: The Glass

Context	Description	No.	Wt(g)	Context date
18165 ◊10	Colourless splinters	2	1	20th century
◊12	Splinter, colourless?	1	1	20th century?
Totals		**3**	**2**	

Note: ◊ = environmental sample (and number)

Provenance

The glass was recovered from ditch fills (18165 sample ◊10, and sample ◊12 which is a column sample through the fills (probably 18232/18233) of ditch [18199]).

Discussion

A few minute glass splinters were recovered. Those from (18165) are 20th century and that from sample 12 is possible also of this date. Due to their extremely small size, they are very possibly intrusive in the deposits they were recovered from.

Potential and Recommendations

The glass fragments are of very limited potential. They are too small to be conclusively identified but at least some of them are likely to be 20th century. In all likelihood they are intrusive in the deposits they were retrieved from.

No further work is necessary, and the glass can be discarded.

Other Finds

Introduction

A small quantity of other finds weighing a total of 137g were recovered.

Some of the material was recovered through environmental sampling and comprised of numerous minute pieces. Consequently, these were weighed as a group but not counted.

Results

Table 2: The Other Finds

Context	Material	Description	No.	Wt(g)	Context date
18127	stone	Quern, probably top stone, 1 face very smooth, 30mm max thickness	1	136	Roman
18165 ◊10	Clinker & slag	Cinders, clinker and iron smithing slag	-	1	
Totals			**1+**	**137**	

Note: ◊ = environmental sample (and number)

Provenance

The other finds were recovered from ditch fills (18127, 18165). One of the finds is formed of material probably from Derbyshire.

Discussion

A fragment of coarse gritstone, probably from the Derbyshire area, was recovered from (18127). This item has one very smooth flat face. It is part of a rotary quern, probably the top stone. Other than the prominent wear-trace the piece has no distinctive features. However, it is probably of Roman date.

Substantial thickness appears to be a characteristic of early Roman, mid 1st-2nd century, grinding stones (Palfreyman and Ebbins 2007, 42), with specimens identified in Derbyshire often from about 65mm to 150mm or more, while thin examples are later Roman. Being fairly thin, 30mm at the perimeter, it is likely that the recovered example is late Roman.

A small quantity of burnt material was recovered via environmental sampling. Most of this is provided by tiny fragments of cinders and clinker though there are also occasional pieces of iron smithing slag.

Iron production and working, both smelting and smithing, usually generate large quantities of slag residues, often with substantial pieces (Historic England 2018, 5), whereas this is a small amount of minute fragments. This suggests that iron smithing did not take place in the investigated area. Smithing slag was used in the early modern period for track metalling and this purpose may have led to the introduction of the slag to the investigation area.

As noted, tiny fragments of cinders and clinker were also recovered. The quantities are small and seem unlikely to signify fires in the area. They are, perhaps, more likely to be detritus from steam ploughing in the early modern period.

Potential and Recommendations

The other finds are of limited-moderate potential. The quern is of moderate significance and indicates Roman activity at the site and provides functional evidence of food grinding, probably on a domestic level. The quantities of burnt debris and slag are too limited to confirm functions though seem unlikely to indicate fires or iron smithing on site and, hence, are of very limited potential.

No further work is required. The quern is suitable for long-term storage and should be retained for archive-deposition. The other material can be discarded.

Context Date Summary

The dating in the following table is based on the evidence provided by the finds detailed above.

Spot dates

Cxt	Date (Century AD)	Comments
18127	Roman	Based on 1 stone
18165	20th	Based on glass, possibly intrusive
◊12	20th?	Based on glass, possibly intrusive

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Abbreviations

CIfA Chartered Institute for Archaeologists

No. Number

Wt(g) Weight (grams)

APPENDIX G
ENVIRONMENTAL ARCHAEOLOGY AND ANIMAL BONE REPORTS (SPSC21 AND SCSG23 COMBINED)

Millfield Nursery, Spalding Common, Spalding, Lincolnshire - SCSP21 and SCSG23
Environmental Archaeology Report (including hand-collected animal bone)

Introduction

Eight samples and a column of eleven samples (Table 1 and Figs 1 and 2) were taken from the evaluation and subsequent excavations conducted by Witham Archaeology at Millfield Nursery, Spalding Common, Spalding, Lincolnshire (SCSP21 and SCSG23). All the dated samples have been assigned to the Romano-British period, with the bulk provisionally placed in the 2nd and 3rd centuries and sample 11 spot dated to the 1-2nd century although pottery from the continuation of the ditch is dated to the 2-3rd C.. The majority of the samples also derive from ditch deposits and one (sample 1) from an undated horse burial. Sample 11 was taken as a column of 8 litre samples through the fills of ditch 18199. This was primarily to establish if the environmental conditions changed during the ditches filling, for instance whether fen or marine conditions developed. The fills of several of the ditches on site are characterised by an organic rich/darker horizon (see archaeological reports for SCSP21 and SCSG23 and Fig 3). In the Spalding area such organic horizons reflect a post-occupation period of wetland development associated with a late Roman and post-Roman rise in sea level. The paler mineral sediments forming the upper infilling of these Roman ditches are typically freshwater or marine sediments associated with the late and post-Roman inland movement of the coastline (see Rackham *et al* in Wood, M., 2006).

The samples were initially submitted to the Environmental Archaeology Consultancy for processing and assessment for the potential recovery of biological materials including charred plant remains for information on crop-husbandry and processing and other human activities at the site. Selected remains have subsequently been subjected to post-excavation analysis. In addition to the samples the small collections of animal bone recovered by hand during the evaluation and subsequent excavation have been identified and are reported.

Table 1. Millfield Nursery, Spalding Common – SCSP21 and SCSG23**.** Samples collected for environmental study

sample no.	context no.	samp. vol (l).	sample weight (kg)	context type	period
1	10029	33	43.5	Fill of ditch 10010, matrix around horse burial	undated
2	11049	37	43	Fill of cut 11014	Roman?
3	06005	40	45	Fill of ditch 06002	3rd+ C.
4	06003	38	40.5	Upper fill (alluvial?) of ditch 06002	3rd+ C.
5	06032	40	46	Fill of ditch 06031	Mid 2-3rd C.
6	03004	40	48	Fill of ditch 03001	Mid 2-3rd C.
10	18165	25	33	Organic rich fill of cut 18146	2-3rd C.
11	18186	30	35	Charcoal rich tip line fill of ditch 18182	2-3rd C.
12	0-10	8	10	Column through fills of ditch 18199 - top	RB?
12	10-20	8	10	"	RB?
12	20-30	8	10	"	RB?
12	30-40	8	10	"	RB?
12	40-50	8	10	"	RB?
12	50-60	8	10	"	RB?
12	60-70	8	10	"	RB – mid 2-4th C.
12	70-80	8	10	"	RB?
12	80-90	8	10	"	RB?
12	90-100	8	10	"	RB?
12	100-110	6	8	Column through fills of ditch 18199 - bottom	RB?

Methods

The soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet-sieve of 1.0mm mesh for the

residue. The wet residues from samples 1-4 were then washover floated for the recovery of snails, charred material and organics and added to the flot, but for samples 5 and 6 after floating in the Siraf tank, the residues were then dried and the dried residues refloated in a bowl for the efficient recovery of charred material, producing two flots. Samples 10 and column sample 12 were washover floated to recover all the organics, charred remains and snail shells, while the sample 11 residue was dried and then refloated, producing two flots. The basal five samples of column <12> produced organic material during the first flotation so this was washover floated and retained wet, with the residue dried for sorting.

Fig. 1. Location of the samples (in red) from the evaluation trenches



Fig. 2. The location of the environmental samples (in green) in the Area A excavations and Evaluation Trench 6.

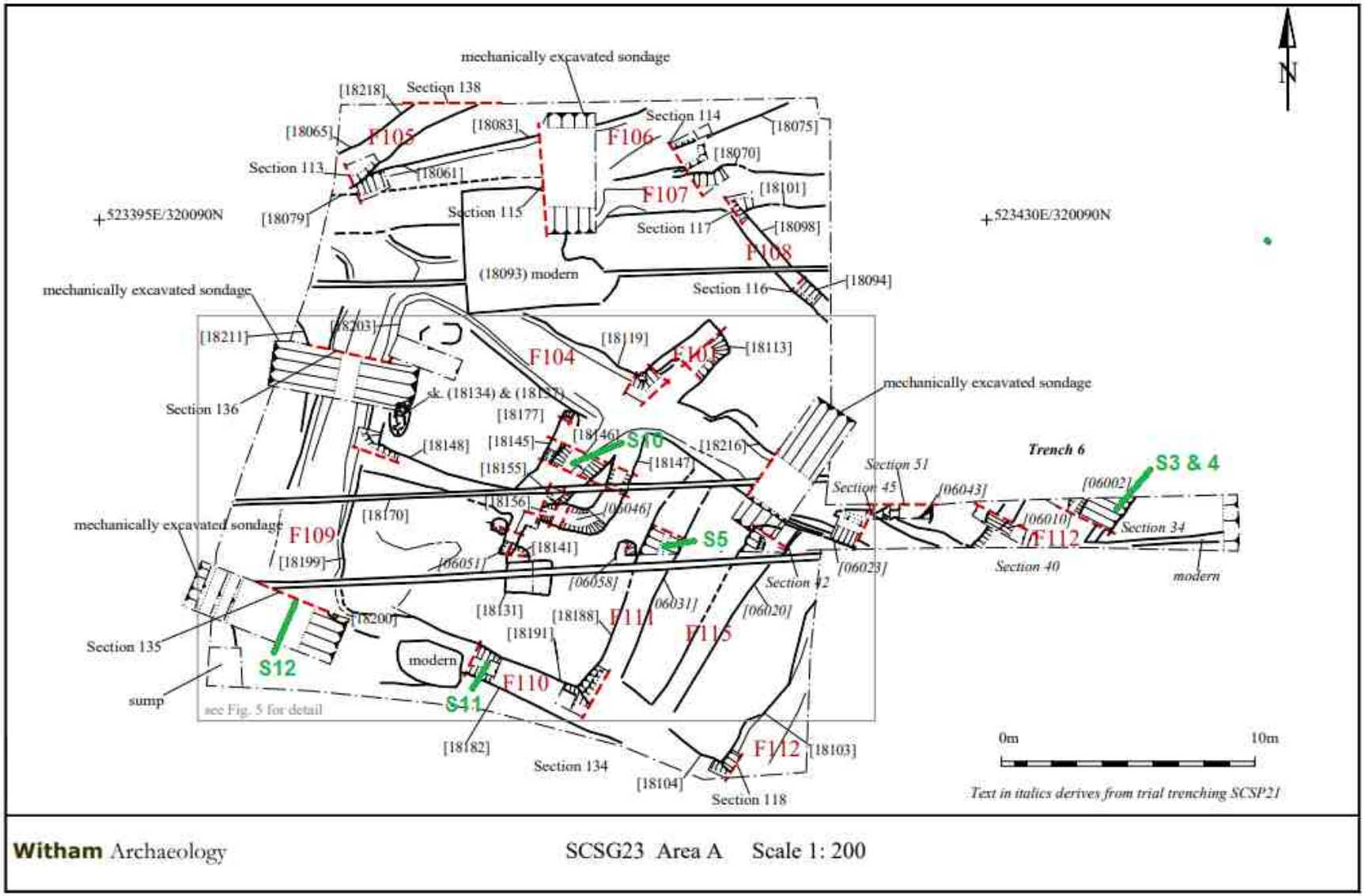
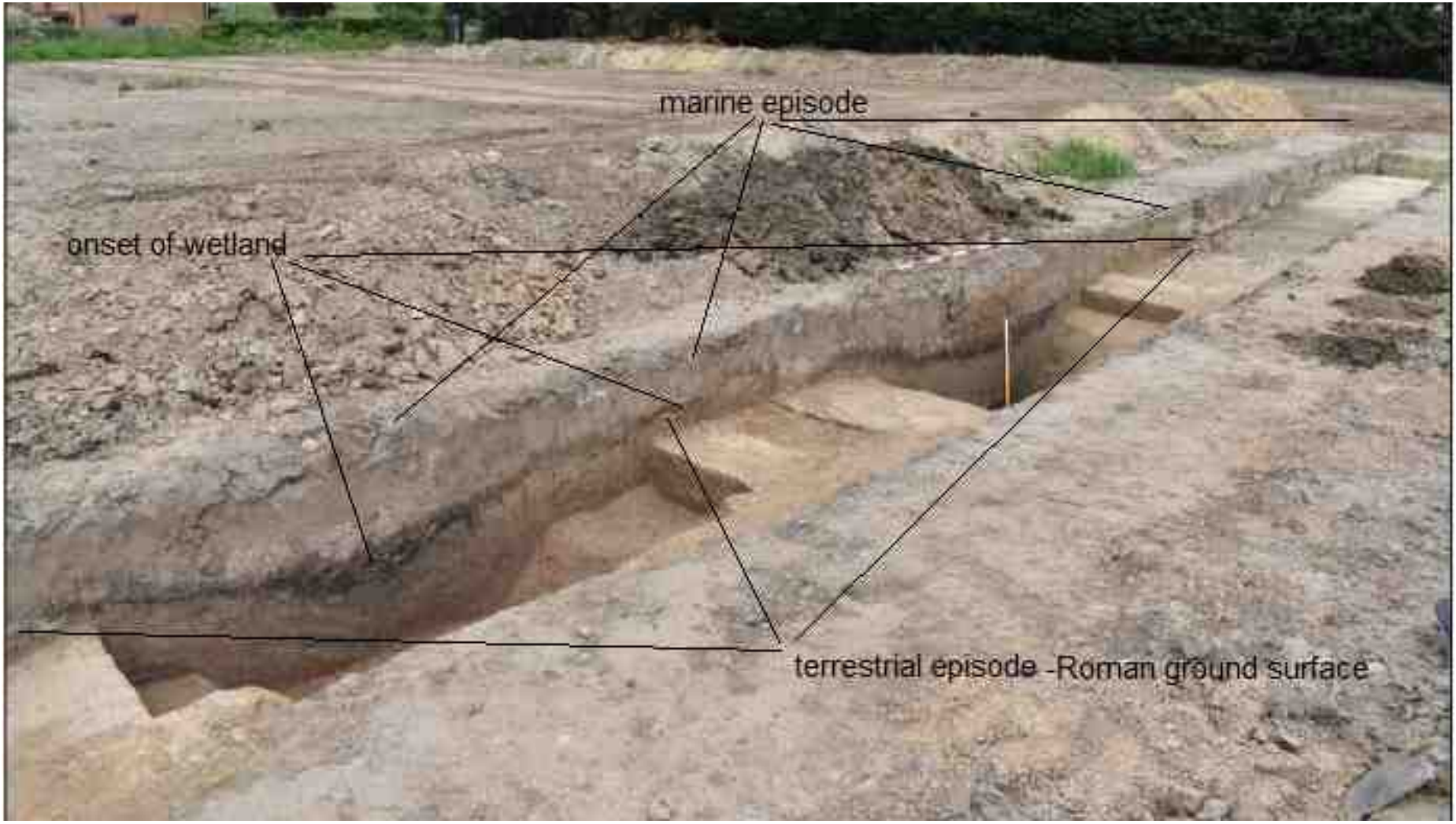


Fig. 3. Broad interpretation of a characteristic ditch section showing the organic horizon interpreted as associated with a period of wetland development. (image -Fig. 9 - taken from evaluation report). Context 04012 in ditches 04002 and 04005 would represent the initial development of the wetland phase. The pale silts above the dark horizon in the ditch sequences are still dominated by freshwater aquatic snails, the marine episode is at the top of the sequence and the overburden removed by machine.



The dry and wet volumes of the flots were measured, and the volume and weight of the dried residues recorded.

The residues were sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheets and bagged independently. A magnet was run through the residues in order to recover magnetised material such as hammerscale and prill. The residues were then discarded. The flots were divided into fractions using a stack of sieves for ease of assessment and scanned using a stereo-binocular microscope, with a magnification of up to x40. The presence and abundance of charred plant remains was recorded, along with the frequency of charcoal fragments larger and smaller than 2mm, the larger pieces being potentially identifiable and thus suitable for analysis. Other biological evidence in the flots was also noted, including un-charred plant material, bones, snails, ostracods, foraminifera and insect remains. The item frequency of the charred plant and other environmental remains was scored using a scale (see Table 3). The flots were then bagged. The flots and finds from the sorted residues constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified with the results summarised below in Tables 2 and 3 and selected material was studied further and are presented in Tables 4-9.

Results

The samples washed down to a residue of silt crumb, silt concretions, root pseudomorphs, worm granules and archaeological and environmental debris. Stone was absent from all samples except 5 and 6 where a little flint, limestone and quartz occurred. The bulk of the mineral component in these samples derives from marine sedimentation either prior to or post-occupation which is generally stone free silts and fine sands.

The archaeological finds (Table 1) included pottery from six samples, corroded iron in one, tiny fragments of probable ceramic building material (possibly intrusive through soil processes) in three, glass chips in samples 10 and 12/30-40cm, burnt stone in sample six, fired earth in four samples, animal bone, marine shell in one, and a magnetic fraction in all the bulk samples and the top of the column that produced occasional flakes of hammerscale and ‘slag’. The pot sherds in sample 5 appear to be from a vessel. Samples 2, 3, 5 and 6 contained material that could be classed as deriving from ‘ash’, and samples 1, 2, 3, 4, 5, 6, 10, 11 and the top five samples of the column contained brown silicaceous slags, with the top two samples of the column producing what might be small fragments of smithing slag. Many of the samples produced small quantities of coal and cinder in the flot but whether this is intrusive from recent or modern deposits or contemporary is not known. The silicaceous slags, possible smithing slags, small quantities of hammerscale and the small fragments of coal and cinder could derive from Roman smithing activities at the site. The density of these finds is low suggesting any smithy was probably beyond the areas excavated. The use of coal for smithing in the Roman period is known from sites in the Fens. There appears to be no evidence for recent or post-medieval smithing on the site that could account for these finds which could have moved down through the soil for some distance as a result of soil processes such as earthworm activity. Sample 11 produced 615 grammes of fired earth. Several of the fragments had one surface, but not a second. This material seems too bulky for briquetage and may be more consistent with structural baked/fired clay associated with a hearth or oven feature.

Table 2: Spalding Common – SCSP21 and SCSG23**.** Archaeological finds from the sample

sample	cont	vol in l.	residue vol .in ml.	pot no/wt g	Fe no/wt g.	CBM wt	Burnt stone g.	Fired earth g.	magnetic comp. g.	hammer-scale no. fl'k/sph	bone wt g.	marine shell wt g.	other
1	10029	33	200					46+	0.2		73		Glass – 2 sherds; a little slag in mag. component; a little coal and cinder in flot; contaminated by polystyrene and plastic!
2	11049	37	350	7/7.6				3.4	2.7	1fl	126.4		Poss. pot fabric among fired earth; occ. coal & cinder in flot; fuel ash slag and lots 'ash' in flot; polystyrene in flot;
3	06005	40	100	22/41.6	1/1				0.6	1sph	24		Fe- corroded iron; a little slag in mag. component; a little coal & cinder in flot, also 'ash';
4	06003	38	123			0.6			0.6	4fl 1sph	1		A little slag in mag. component & flot; coal & cinder in flot;
5	06032	40	600	20/336 + crumbs					0.4	2sph	3.8		Pot – fragmented vessel?; a little coal, cinder & slag in flot; a little silicaceous 'ash' in 2nd flot;
6	03004	40	750	13/58			58	60	0.4		194.2		Fired earth – may include pot fabric?; a little slag in mag. component & flot;, a little coal, cinder, silicaeous slag, fuel ash slag and 'ash' in the flot;; burnt stone- fire-cracked quartz;
10	18165	25	250			0.4			3.8	5fl 13sph	12.6	<0.2	Coal & cinder-1.6g, a little coal, cinder and slag also in flot; glass x2 –small clear chips-modern?
11	18186	30	1000	7/78				615	1.6	14fl 3sph	1.4		Fired earth- all with one surface-oven/kiln lining? Fired earth and slag in mag. component; 'ash' in flot;
12	0-10	8	30						2	13fl 9sph	-		Smithing slag in mag. component; a little fuel ash slag in flot;
12	10-20	8	24						0.9	5fl 3sph			A little smithing slag in mag. component; a little coal, cinder & slag in flot;
12	20-30	8	20						1.5	6fl			A little slag in flot & mag. component; also a little coal, cinder & slag in flot;
12	30-40	8	20			0.2			3.2	1fl	0.1		A little slag & poss. corroded iron in mag fraction; also a little coal, cinder & glassy slag in flot; glass x1 – fine chip clear glass-modern?
12	40-50	8	20						0.8		0.1		A little slag and poss. iron corrosion in mag. fraction;
12	50-60	8	-						-				
12	60-70	8	100	1/0.4					-				
12	70-80	8	200						-				
12	80-90	8	120						-				
12	90-100	8	125						-				
12	100-110	6	20						-				

fl-flake and sph- spheroidal hammerscale

The environmental finds include charcoal, charred cereals, charred weed seeds, charred herbaceous stems (including possible straw), uncharred plant remains, mammal and fish bones, rare marine mollusc shells and bird eggshell, small terrestrial vertebrates, aquatic and terrestrial molluscs, ostracods, *Daphnia* (water fleas), foraminifera and occasional insects. Many of the insects are probably intrusive (having walked in before the sampling) but some of those in the waterlogged deposits may be contemporary. There is evidence suggesting the survival of a little organic material in some of the samples and the base of column sample 12, 50-110cm, produced well preserved organic remains, but with the deposits immediately above producing degraded organic remains, partially mineralised material or no organic remains. Sub samples of 'unprocessed' deposit were retained from the column sequence for potential pollen analysis, which could yield information on the character of the local environment during the Roman period.

Charcoal is abundant in two of the samples (6 and 11), these include small and medium roundwood, twigs, some larger fragments, but much comminuted material. These samples also include herbaceous stems and fragments of 'straw sized' stems and nodes. Straw type stems also occurred in samples 3 and 4. These coincide with higher densities of 'ash', also identified in samples 2, 3 and 5. The concentrations of charcoal and 'ash' in samples 6 and 11 suggest a primary deposit of ashes from a fire, but whether this was a domestic fire or an 'industrial' fire is not known. The fired clay in sample 11 suggests this assemblage probably derives from an oven structure or clay lined hearth, while abundant charred cereal grain and weed seeds in sample 6 might suggest the final cleaning or possible parching of grain prior to milling, although with possible straw also present the material burnt and charred on the fire may have come from several sources. Charred cereal remains are abundant in only one sample, 6, but charred seeds were fairly common in several (Table 4). Cereal chaff was generally absent, but some of the herbaceous stems probably derive from cereal straw. Wheat and barley, with rare oat and possible rye, have been identified but there is very little evidence for the larger pulses (pea and bean), with just a couple of larger items potentially crop legumes. Charred and uncharred seeds occur in most of the samples, generally in some numbers, and organic and calcareous oospores of the green freshwater alga *Chara* (stoneworts) are very abundant in several of the samples.

Bones of domestic animals occur in the samples but are not abundant. Fragments of horse, cattle, sheep/goat and pig have been identified, and a single fragment of a bird carpo-metacarpus of chicken size but not yet identified was recorded in sample 4. Just two fragments of bird eggshell, provisionally identified as chicken were recorded from all the samples. Several of the samples have produced small numbers of fish bones with stickleback the most abundant, followed by eel and a few other small fish. Most of these bones indicate very small fishes and they probably reflect the natural fauna in some of the ditches, but those from the evaluation samples may derive from food remains. Considering the site lies in Spalding an absence of marine elements in the food remains is perhaps surprising with just one sample (10) producing fragments of mussel and cockle shell.

The palaeoenevironmental evidence includes small vertebrates, terrestrial and aquatic snails, ostracods, foraminifera, uncharred plant remains and occasional beetle fragments. The basal samples of the column through the fills of ditch 18199 contained well preserved organic debris with rich assemblages of uncharred plant remains (Tables 5and 6) and some insects, while other samples produced numerous aquatic snails, oospores of green algae, ostracods and foraminifera. The small vertebrates include bones of mouse, field vole, water vole, newt and frog/toad.

Table 3. Spalding – SCSP21 and SCSG23**.** Environmental finds from the eight processed samples and column sample 12.

sample	context	vol. in l.	flot vol. ml	char-coal */*	charr'd grain *	charr'd chaff *	charr'd seed *	uncharr'd seeds	mineral seed *	insects*	snail *	bird eggshell wt g.	Comment
1	10029	33	8	1/1	-			2	1		1		Uncharred seed – *Ranunclus* (aquatic), *Chenopodium, Urtica, Fumaria, Juncus* (Table 5); animal bone – 96 fragments (none burnt) – horse (partial skeleton), indet; snails – see Table 7;
2	11049	37	48	4/5	2	1	2	2	5#		5		Charred grain –spelt wheat?, wheat, barley and wheat chaff, weed seeds (Table 4); uncharred seeds – *Fumaria, Chenopodium, Ranunculus* (aquatic), *Urtica*, *Sambucus, Stellaria, Juncus (*also mineralised*)*, etc (Table 5); charcoal – comminuted, but several id. frags; animal bone – 124 fragments (49 burnt) , cattle, sheep/goat, cattle size, sheep size, water vole, field vole, frog/toad, stickleback, eel; snails – see Table 7
3	06005	40	40	3/5	2		3	3	3#	1	5		Charred grain – wheat, large grass, spelt chaff, grasses, *Rumex*, *Eleocharis*, culm nodes (straw?) (Table 4); uncharred – *Ranunculus, Chenopodium, Stellaria, Sambucus, Lemna, Juncus* (Table 5); charcoal – much comminuted but includes id. fragments incl. roundwood, twigs; animal bone – 61 fragments (26 burnt), cattle, pig, cattle size, sheep size, water vole, small fish; insects – occ frags-modern?; snails – see Table 7; ostracods, foraminifera; *Daphnia* sp.;
4	06003	38	63	3/4	1		1	4	5#	1	5		Charred grain – emmer/spelt wheat, seeds (incl. grasses) (Table 4); uncharred seeds – *Ranunculus* (aquatic), *Urtica*, *Rumex*, *Rubus, Chenopodium, Lemna, Chara*; mineralised seed? – *Juncus, Chara* (Table 5) ; charcoal – comminuted, including 'straw',other herbaceous stems; animal bone – 4 fragments (2 burnt), ind, water vole, frog/toad, stickleback, eel, small fish; snails – Table 5; ostracod;
5	06032	40	28	3/4		1	2/3	5	5	2	5		Charred wheat chaff, weed seeds, *Eleocharis* (Table 4); uncharred - *Ranunculus* (aquatic), *Sambucus, Chenopodium, Lemna, Juncus, Chara*; mineralised seed *Chara* (Table 5); charcoal – comminuted with a few identifiable fragments; animal bone – 12 fragments (2 burnt), cattle size, sheep size, field vole, small fish; snails – See Table 7; ostracods; insects – occ. frags;
6	03004	40	400	5/5+	4	1	5	1		2	2	1	Charred grain – barley, wheat, grasses, *Eleocharis, Schoenoplectus*, Cyperaceae, straw/herbaceous stems (Table 4); uncharred seeds – *Ranunculus* (aquatic), *Chenopodium, Lemna, Juncus, Chara* (Table 5); charcoal – lots id. fragments – includes small and medium Roundwood, large fragments, occ. twigs, 'straw' and herbaceous stems; animal bone – 130 fragments (67 burnt), horse, cattle, sheep/goat, sheep size, cattle size, mouse, newt, frog/toad, eel, small fish; bird eggshell – 1x cf chicken; snails – see Table 7; ostracods; insects – occ. fragments- walked in?;
10	18165	25	20	3/4	?		1	2			1		Indet. charred grain, a couple seeds (Table 4); uncharred *Ranunculus,Lemna, Juncus, Chenopodium, Urtica* (Table 5); charcoal – comminuted but with some identifiable fragments; animal bone – 62 fragments (1 burnt), sheep size, indet.; marine shell – mussel, cockle; snail – see Table 7; *Daphnia* sp.;
11	18186	30	255	5/5	1	2	5		2		1		Charred grain- emmer/spelt barley, emmer & spelt chaff, *Rumex*, small legumes, *Eleocharis*, sedges, grasses, tubers, other species, 'straw'?, herbaceous stems, hazel nutshell (1), lots seeds, 'straw' abundant; uncharred – *Atriplex, Medicago/ Trifolium*, *Eleocharis, Schoenoplectus, Carex*, etc (Table 5); charcoal – abundant, several; larger frags, roundwood, twigs; animal bone – 4 fragments (2 burnt), indet, water vole (incl. burnt), snails –Table 7; ostracods;

sample	context	vol. in l.	flot vol. ml	char-coal */*	charr'd grain *	charr'd chaff *	charr'd seed *	uncharr'd seeds	mineral' seed	insects*	snail *	bird eggshell wt g.	Comment
12	0-10	8	8	1/2	1		1	4	5#		5		Charred grain- free-threshing wheat, oat/grass (Table 4); uncharred *Chenopodium, Lemna, Juncus, Chara,* etc (Table 6); charcoal – comminuted; animal bone – vole, stickleback; snails – see Table 8; ostracods;
12	10-20	8	14	1/2	1			2	5#		5		Charred grain – barley (Table 4); uncharred *Chenopodium, Papaver, Stellaria, Lemna, Juncus, Chara*; mineralised *Chara*-abundant (Table 6); charcoal – comminuted; animal bone – eel, stickleback; snails – see Table 8; ostracods;
12	20-30	8	10	1/1	1			1	5#		5	1	Charred grain –free-threshing wheat, barley (Table 4); uncharred seed – *Chenopodium, Chara*; mineralised – *Chara* (Table 6); charcoal – very little; animal bone – stickleback; bird eggshell – cf chicken x1; snails – see Table 8; caddis larval cases; ostracods;
12	30-40	8	7	1/1				1	1		3		Uncharred seeds - *Chenopodium*; mineralised seed - *Chara*; animal bone – 1 fragment, indet, stickleback; snails – see Table 6; ostracods;
12	40-50	8	100w					2			1		Degraded organics, some identifiable seed?-wet flot; indet small vertebrate; snails – see Table 8;
12	50-60	8	100w					3/4					Uncharred seeds – several taxa, incl. *Sambucus, Urtica*; organics degraded, but some seeds present;
12	60-70	8	100w					4/5		2			Uncharred seeds – abundant – see Table 6, also bark; insects – caddis larval cases and beetle fragments; *Daphnia* sp.; preserved organics – seeds, wood fragments, etc
12	70-80	8	100w					5		4/5			Uncharred seed- abundant, incl. *Chenopodium, Rumex, Ranunculus* (aquatic), etc; animal bone – frog/toad; insects – beetle fragments; leach egg cases; *Daphnia* sp.; good organic preservation, lots vegetable matter, seeds and insects;
12	80-90	8	120w					4/5		3			Uncharred seeds – abundant, see Table 6; insects – common beetle fragments; wood – occasional fragments; good preservation of organics- much fine vegetable material (grassy?);
12	90-100	8	120w					4/5		2/3	2		Uncharred seed – abundant, incl. *Ranunculus* (aquatic), *Bidens, Rumex, Sambucus*, etc; insect- beetle fragments; animal bone – frog/toad, stickleback; snails – see Table 8; good organic presaervation – 'grassy'?, iron and vivianite stained sediment crumb;
12	100-110	6	130w					5		1	2/3		Uncharred plants – abundant – see Table 6; animal bone – frog/toad, stickleback, small eel; insect –caddis larval cases; snails – see Table 8; *Daphnia* sp.; good organic preservation, fine fibrous vegetable matter,('grassy'?)

HNS – hazel nutshell; */*- frequency of >2mm/<2mm fragments of charcoal
* frequency of items: 1=1-10; 2= 11-50; 3=51-150; 4=151-250; 5= >250
# some *Juncus* seeds have been classed as mineralised (white) but may not technically be
'w' – wet flot;

Several elements of this material have been further analysed to understand the economy and environment of the site.

Charred Plant remains *(John Giorgi)*
All identifiable charred plant remains were sorted and identified from the flots using a binocular microscope (with a magnification of up to x40) together with modern and charred reference material and reference manuals (Cappers *et al* 2006; Jacomet 2006). All the charred remains were counted with the exception of charcoal and small unidentifiable and unquantifiable cereal grain fragments (less than 2*mm*) which were scored using the following rating system: + =1-10; ++=11-50; +++=51-150; ++++=151-250; +++++=250+ items. The results are shown in Table 4, taxonomic order for the wild plants following Stace (2005) which was also used for ecological data together with Ellenberg (1988), Hanf (1983) and Wilson and King (2003). Ten of the 19 samples produced identifiable charred plant remains, over a thousand charred items being counted consisting mostly of wild plant/weed seeds (80% of the quantified remains) together with cereal grains (19%) and a little charred cereal chaff (1%).

Cereals
Variable amounts of charred cereal debris (grains in nine and chaff in five) were recovered from the ten samples, with over a half (*c* 60%) recovered from ditch [03001] fill (03004) sample 6, with only occasional, small or modest amounts of charred cereal remains in the other nine samples. Preservation was generally poor with just over 50% of the quantified grains being unidentifiable.

The two best represented identifiable cereals were wheat (*Triticum*) and barley (*Hordeum vulgare*) in seven and four samples respectively. The wheat debris included evidence of hulled wheat (*Triticum dicoccum/spelta*) in six samples, identified on the basis of both grains and chaff fragments in four samples each, six diagnostic hulled wheat chaff fragments in ditch [18182] fill (18186) (sample 11) showing the presence of spelt (*Triticum spelta*) and also emmer wheat (*T. dicoccum*) albeit on the basis of just a single glume base; one hulled wheat grain was also tentatively identified as spelt. Five grains of free-threshing wheat (*Tritcum aestivum/turgidum*) were also found in two upper fills of the column through Ditch section [18199] in the south-west corner of Area A.

The barley grains were virtually all found in the rich grain assemblage from ditch fill (03004) and included hulled and twisted grains indicative of six-row hulled barley; a few barley rachis fragments were also found in the same ditch fill. An oat (*Avena*) grain and a possible rye (cf *Secale cereale*) grain were also recovered from separate samples. There were a good number of large ribbed hollow nodes and internode fragments in several samples which may belong to burnt cereal straw which would have been a valuable asset on site with uses for flooring (bedding), thatching and fuel.

Current archaeobotanical evidence shows that hulled wheat (mainly spelt) and hulled barley were the main cereal crops grown during the Romano-British period with less evidence for the cultivation of emmer and free-threshing wheat (Greig 1991, 309; Carruthers and Hunter Dowse 2019, 65-66, Lodwick 2017, 16). All these cereals may have been used for making bread, hulled wheat and free-threshing wheat containing the proteins required for making a well-risen loaf

while barley may have been used for making flat bread and griddle cakes (Cool 2006, 70-71) as well as for animal fodder. The one oat and rye grain are probably cereal weeds.

Other foodstuffs

Other potential food remains may be represented by the few large legume seeds in two samples from ditch fills (03001) and (18182) but poor preservation and the absence of a hilum meant that it was not possible to identify these remains to species which were broadly identified as *Vicia/Lathyrus/Pisum* (vetch/tare/vetchling/pea) and as such may be from wild rather than cultivated pulses. Archaeobotanical remains of pulses are not particularly common in Romano-British deposits (Lodwick 2017, 33) although they probably played an important role in the diet at the time (Cool 2006, 127). A single fragment of charred hazel (*Corylus avellana*) nut shell in ditch fill (18186) may represent debris from nuts collected for food from shrubby/hedgerow/woodland habitats close-by.

Wild plant remains

Wild plant/weed seeds made up the bulk of the charred plant assemblages from the site dominated by the remains of wetland species. There was a small range of potential arable weeds represented by occasional and small numbers of charred seeds although these provide limited information on crop husbandry; *Galium aparine*, represented by a few seeds in five samples, is a loam indicator found in clays and loam soils and its presence along with *Chenopodium/Atriplex* (goosefoots/oraches) in a few samples, may point to the cultivation of nutrient rich soils; on the other hand, the good representation of small-seeded leguminous weeds, specifically *Medicago/Trifoilum* (medick/trefoil) may indicate poor soil fertility, such plants occurring in soils with low nitrogen levels, perhaps as a result of over cropping in some areas around the site. Both *Galium aparine* and another possible cereal weed *Bromus* (brome), may be indicators of the winter sowing of cereals.

A good range of wetland species (aquatic, semi-terrestrial and bankside/marshland plants) represented in the samples were dominated by the remains of Cypercaeae (sedges etc) including good representation (including mineralised seeds) of *Eleocharis paustris/uniglumis* (spike-rush), *Schoenoplectus lacustis/ tabernaemonani* (club rush) and *Carex* (sedges). Some of these sedges may point to the cultivation of damper areas of ground or may be from wetland plants growing in ditches around the edges of fields although both *Eleocharis* and *Schoenoplectus lacustis/tabernaemonani*, along with occasional and a small number of records for *Sparganium erectum* (branched bur-reed) and *Oenanthe fistulosa* (tubular water-dropwort) are all characteristic of a Reed and Tall Swamp (slow moving shallow water) plant community as defined by Ellenberg (1988). These plants may have been collected from the surrounding fenland for various uses on site including perhaps roofing/flooring materials, for basket making and fuel.

There was also a small range of potential grassland plants represented by occasional and small numbers of seeds of *Plantago major* (greater plantain*), P. lanceolata* (ribwort plantain) and *Rhinanthus minor* (yellow rattle), good numbers of small and large-seeded wild grasses (Poaceae indet) and perhaps some of the *Carex* species. These remains may perhaps represent the burnt remains of grassland plants collected from areas around the site for use as hay fodder and/or fuel.

There were also good numbers of charred thin ribbed stem fragments in two samples that may belong to a number of the wild plants in these samples.

The composition of the individual charred plant assemblages and spatial distribution

The charred plant remains in the ten samples were from ditches from across the site, seven of the ten only containing occasional or small amounts of material (40 items or less) with low densities (0.1 to 1.3/litre) of cereal debris and wild plant/weed seeds (mostly Cyperaceae seeds), with the grain accidentally burnt during final processing and food preparation mixed with fuel debris probably from hearths from small-scale (domestic) activities that may have been taking place at some distance from these features.

Three of the samples, however, produced larger assemblages; ditch fill (06005) (sample 3) at the far eastern end of Excavation Area A produced a fairly good amount of charred material (item density 3.1/litre) consisting of a little cereal debris, mainly grains (16%) and a little chaff (1%) of hulled wheat, but mostly the remains of wild plants (83%), mainly wetland plants (Cypercaeae) but also possible straw fragments. These remains largely represent residues of burnt fuel mixed with a small number of accidentally burnt grains deposited into the ditch from activities close-by.

Fill (03004) (sample 6) from ditch [03001], north of Excavation Area A (in Evaluation Trench 3 – Fig. 1), produced a larger charred plant assemblage (item density of 6/litre) consisting mostly of cereal grains (57%) of mainly hulled barley with a few barley rachis fragments (1%), the other 43% again consisting mainly of the remains of wetland species (mostly Cyperaceae), weed seeds and stem fragments (possibly straw and stems of other plants). The proportions of quantified remains, however, do not take into consideration the unsorted finer fraction of the flot which produced additional material, particularly large numbers of Cyperaceae seeds (especially *Eleocharis*) and fairly good amounts of small wild grass seeds and thin ribbed stem fragments. These remains are broadly similar to the previous sample, mostly representing residues of burnt fuel (as represented by collected wetland plants) together with grains accidentally burnt perhaps while being dried before storage or use, this debris perhaps representing the clean out of a hearth/oven perhaps close-by which was subsequently dumped into the ditch.

The largest quantified charred plant assemblage was from ditch fill (18186) (sample 11) with a relatively high item density 21.8/litre, from a ditch (18182) on the southern boundary of excavation Area A. The charred plant remains consisted of only a little cereal debris (2% grains and 2% chaff) of hulled wheat and barley, the other 96% made up of wild plants represented mainly by seeds of wetland species, again mostly Cyperaceae, particularly *Eleocharis* and to a lesser extent *Schoenoplectus* and *Carex*, along with the remains of several potential grassland plants including a good number of small wild grass seeds; there was also a good number of *Medicago/Trifolium* seeds that may be from grassland habitats or represent cereal weeds although there were few other potential arable weeds in this sample. Again stem fragments (including possible straw) were present in fairly good amounts. These charred remains represent a little debris from the final stages of crop-processing (including the de-husking of hulled wheats) and food preparation mixed with a large amount of burnt fuel debris, as represented by both collected wetland and grassland plants, the ditch serving as a receptacle for this debris from activities perhaps taking place close-by.

Table 4. Millfield Nursery, Spalding Common, Spalding – SCSP21 and SCSG23: The Charred Plant Remains

	Date	**?RB**	**3rdC+**		**2nd -3rdC.**				**ROMANO-BRITISH/2nd - 4th C.**		
	Feature	**ditch**	**ditch**		**ditch**	**ditch**	**ditch**	**ditch**	**ditch**		
	Feature number	**11014**	**06002**		**06031**	**03001**	**18146**	**18182**	**18199**		
	Context number	**11049**	**06005**	**06003**	**06032**	**03004**	**18165**	**18186**			
	Sample number	**2**	**3**	**4**	**5**	**6**	**10**	**11**	**12**	**12**	**12**
	Depth of sample (cm)								**0-10**	**10-20**	**20-30**
	vol sample (l)	**37**	**40**	**38**	**40**	**40**	**25**	**30**	**8**	**8**	**8**
	vol flot (ml)	**48**	**40**	**63**	**28**	**400**	**20**	**255**	**8**	**14**	**10**
LATIN_NAME	ENGLISH										
Cereal grains											
cf *Triticum spelta*	?spelt wheat	1									
T. dicoccum/spelta	emmer/spelt wheat	1		1				1			
T. cf. *dicoccum/spelta*	?emmer/spelt wheat			1		1		2			
T. aestivum/turgidum type	free-threshing wheat								2		1
T. cf. *aestivum/turgidum* type	?free-threshing wheat								1		1
Triticum sp(p).	wheat	2	6	1		3					1
cf. *Triticum* sp(p).	?wheat	5	2			1		1			
cf. *Secale. cereale*	?rye					+					
Hordeum vulgare L.	barley, hulled twisted					12					
H. vulgare L.	barley, hulled straight					2					
H. vulgare L.	barley, hulled indet.					4					
H. vulgare L.	barley, indet twisted					6					
H. vulgare L.	barley, indet straight					4					
H. vulgare L.	barley, indet	1				15		1		1	1
cf. *H. vulgare*	?barley					18		1			
Avena sp.	oat										1
Cerealia indet.	indet. cereal (estimate)	12	12	7		70		6	2		
Cerealia indet.	indet cereal fragments <2mm	+	+	+		+		+		+	
cf Cerealia indet.	?indet cereal fragments						2		2		
Cereal chaff											
Triticum dicoccum Schubl	emmer wheat glume bases							1			
T. spelta L.	spelt wheat spikelet bases/forks							3			
T. spelta L.	spelt wheat glume bases							3			
Triticum sp(p).	wheat glume bases	2	1		1			3			
Triticum sp.	wheat spikelet bases							1			
Hordeum vulgare L.	barley rachis					2+					

	Sample number	2	3	4	5	6	10	11	12	12	12
Other plant/weed seeds											
Ranunculus flammula L.	lesser spearwort							1			
Corylus avellana L.	hazel nut shell fragments							1			
Chenopodium spp.	goosefoot etc					+		5			
Atriplex spp.	orache					+		10			
Rumex sp(p).	dock	1	7			2+		20			
Malva sp.	mallow							1			
Vicia/Lathyrus spp.	vetch/tare/vetchling (<2mm)							2			
Vicia/Lathyrus/Pisum sp.	vetch/tare/vetchling/pea (>2mm)					1		1			
Vicia/Lathyrus/Pisum spp.	vetch/tare/vetchling/pea (<2mm)					2		3			
Medicago/Trifolium sp(p).	medicks/clovers		1		5	1+		87			
Fabaceae indet.	large legumes (frags >2mm)					2					
Fabaceae indet.	small round legumes <2mm					1					
Oenanthe fistulosa L.	tubular water-dropwort							1			
Plantago major L.	greater plantain							9			
P. lanceolata L.	ribwort plantain							1			
Euphrasia/Odontites spp.	eyebrights/bartsias							2			
Rhinanthus minor L.	yellow rattle							1			
Galium aparine L.	cleaver			1	1	2	1	1			
Galium sp.	bedstraws					1		1			
Eleocharis palustris/uniglumis	spike-rush	4 +1m	34 +17m		19	1+++		143/+18m			
Schoenoplectus lacustris/ tabernaemontani	club rush	3	3		2	2++		44			
Carex sp(p).	sedge	1	2		6	++		42			
Cyperaceae indet.	sedges etc	3	8	1	6	5++		127			
Bromus sp(p).	brome		1			3					
Avena/Poaceae indet	oat/wild grasses (large seeds)	1							1		
Poaceae indet.	wild grasses (seeds >2mm)		1	1		7+		4			
Poaceae indet.	wild grasses (seeds <2mm)		4			++	1	35			
Poaceae indet.	cereal/wild grasses culm frags		24	3		30		26			
Sparganium erectum L.	branched bur-reed	2	1			8		7			
indet.	thin ribbed stem fragments					33+++		32			
indet	rhizome fragments							1			
indet	tuber fragments					1		1			
charcoal	charcoal >/<2mm fragments	++++/ +++++	+++/ +++++	+++/ ++++	+++/ ++++	+++++/ +++++	+++/ ++++	+++++/ +++++	+/++	+/++	+/+
Total of quantified items		**40**	**124**	**16**	**40**	**240**	**4**	**650**	**8**	**1**	**5**
charred items (per litre of processed soil)		*1.3*	*3.1*	*0.4*	*1*	*6*	*0.2*	*21.7*	*1*	*0.1*	*0.6*

frequency of items: +1=1-10; ++= 11-50; +++=51-150; ++++=151-250; +++++= >250 (includes scanning of unsorted fraction <2mm in sample 10; m=mineralised seeds

The Waterlogged Plant Remains

Variable amounts of uncharred seeds were present in virtually all of the samples but particularly in the lower samples of the column through the fills of ditch [18199] with the results from 13 of the samples presented in Tables 5 and 6; six from various levels within the column sample through the fills of ditch [18199] and seven from other ditch fills from across the site. The uncharred seeds from three of the basal samples of ditch [18199] were examined from wet flots while the other uncharred seeds were recorded from the dry flots.

It is difficult to separate out those uncharred seeds that may be contemporary with the sampled features from those that may be intrusive although it is likely that the rich assemblages from the basal sampled fills of ditch [18199] are contemporary – these deposits were fairly deeply buried. It is, however, more problematic with regard to the uncharred seeds from the other ditches (but all these deposits were overlain by later marine sediments) although a broadly similar range of species were represented in all the samples from all the ditches from across the site with no significant differences between the three rich basal samples from ditch [18199] and the other ditch fill samples other than in a greater species diversity in ditch [18199]. The uncharred remains mainly represented wetland species along with smaller numbers of seeds from a smaller range of plants of mostly disturbed ground and waste places.

The three studied samples of the lower fills of ditch [18199] and other ditches across the site contained similar wetland species including true aquatics *Chara* (stoneworts), *Potamogeton* (pondweed), *Lemna* (duckweed) and other aquatic/semi-terrestrial and bankside/marshland species such as *Ranunculus Batrachium* (crowfoots), *R. sceleratus* (celery-leaved crowfoot), *Alisma* (water plantain), *Eleocharis*, *Schoenoplectus lacustis/tabernaemonani*, *Carex* and other Cyperaceae. As noted above, the Cyperaceae and also *Alisma* are indicative of Ellenberg's Reed and Tall swamp (with slow-moving shallow water) plant community. Other wetland plants only in the basal fills of ditch [18199] included a good representation of *Rumex maritimus* (golden dock) along with occasional records for *Lycopus europaeus* (gypsy wort), *Hydrocotyle vulgaris* (marsh pennywort), *Oenanthe fistulosa, Apium* (marshwort) and *Bidens* (bur marigold) while *Juncus* (rush) seeds were only found in the other ditch fills.

There was no botanical evidence to suggest the definite presence of saline soils or salt/brackish water associated with the late Roman and post Roman rise in sea level and inland movement of the coastline. Several species including *Hydrocotyle vulgaris* and *Eleocharis palustris* are slightly salt tolerant and may occasionally be found in salt containing soils while *Ranunculus sceleratus* tolerates brackish water but may be found in both saline and non-saline situations. *Eleocharis uniglumi*s and *Schoenoplectus tabernaemonani* are most common in coastal sites but also appear in freshwater or non-saline soils inland (Hill *et al* 2004). Other plant genera which could not be identified further including *Carex, Potamogeton, Juncus* and *Lemna* also include species that may be found in saline conditions. However, no species were identified that are only found in saline soils or salt/brackish water.

Table 5. Millfield Nursery, Spalding Common, Spalding – SCSP21 and SCSG23: The Waterlogged Plant Remains from the bulk sampled ditches

	Date	**?RB**	**3rdC+**		**2nd-3rd C**			
	Feature	**ditch**	**ditch**		**ditch**	**ditch**	**ditch**	**ditch**
	Feature number	**11014**	**06002**		**06031**	**03001**	**18146**	**18182**
	context number	**11049**	**06005**	**06003**	**06032**	**03004**	**18165**	**18186**
	sample number	**2**	**3**	**4**	**5**	**6**	**10**	**11**
	vol sample (l)	**37**	**40**	**38**	**40**	**40**	**25**	**30**
	vol flot (ml)	**48**	**40**	**63**	**28**	**400**	**20**	**255**
LATIN_NAME	ENGLISH							
Chara spp.	stoneworts			+++	+++++	+++		++
Ranunculus acris/repens/bulbosus	buttercups						+	
R. sceleratus L.	celery-leaved crowfoot		+					
R. subgen. *Batrachium* (DC) A Gray	crowfoots	+		+++	+++	+		
Papaver spp.	poppy	+						
Fumaria officinalis L.	common fumitory	+		+				
Urtica dioica L.	common nettle		+					
Urtica urens L.	small nettle	+		+			+	
Betula pendula Roth	silver birch							
Chenopodium hybridum L.	maple-leaved goosefoot		+	++	+			
Chenopodium spp.	goosefoot etc	++	++	++	++	+	++	
Atriplex spp.	orache	++	+	++	++	+		++
Stellaria media (L.) Vill.	common chickweed	++	+					
Polygonum aviculare L.	knotgrass						+	
Rumex sp(p).	dock			+				+
Rubus spp	brambles etc.			+				
Medicago/Trifolium spp.	medicks/clovers							+++
Euphorbia helioscopia L.	sun spurge					+	+	
Oxalis stricta L.	Upright tallow-sorrel	+		+				
Aethusa cynapium L.	fool's parsley			+			+	
Solanum nigrum L.	black nightshade			+				
Lamium spp.	dead-nettles	+					+	
Sambucus nigra L.	elder	+	+		+			
Picris spp.	ox-tongues				+			
Sonchus oleraceus L.	smooth sow-thistle							
Sonchus asper (L.) Hill	spiny milk-/sow-thistle	+	+	+	+		+	
Alisma spp.	water-plantain		+					
Potamogeton spp.	pondweeds			+				
Lemna spp.	duckweed	+++++	+++	++++	++	+	++	+
Juncus spp.	rushes	+++	++		+++	+++	++	
Eleocharis palustris/uniglumis	spike-rush		+					+++m
Schoenoplectus lacustris/ tabernaemontani	club rush							++
Carex sp(p).	sedge							+
Cyperaceae indet.	sedges etc							++
Poaceae indet.	wild grasses (short thin seeds <2mm)	++						++
Poaceae indet.	cereal/wild grasses culm node & internode frags							+
indet.	thin ribbed stem fragments			++				+

frequency of items: +1=1-10; ++= 11-50; +++=51-150; ++++=151-250; +++++= >250; m= includes mineralised seeds

Table 6. Millfield Nursery, Spalding Common, Spalding - SCSP21 & SCSG23: The waterlogged plant remains from three of the basal samples, & the top three in the column from ditch 18199

	Date	**?ROMANO-BRITISH/2-4th C.**					
	Feature	**DITCH**					
	Sample number	**12**	**12**	**12**	**12**	**12**	**12**
	Depth of sample (cm)	**100-110**	**80-90**	**60-70**	**20-30**	**10-20**	**0-10**
	vol sample (l)	**6**	**8**	**8**	**8**	**8**	**8**
	vol flot (ml)	**130w**	**120w**	**100w**	**10**	**14**	**8**
LATIN_NAME	ENGLISH						
Chara spp.	stoneworts		+			+++++	
Ranunculus acris/repens/bulbosus	buttercups		++				
R. sceleratus L.	celery-leaved crowfoot	+++	++	+			
R. subgen. *Batrachium* (DC) A Gray	crowfoots	+++	+++++	++			
Papaver spp.	poppy					+	
Urtica dioica L.	common nettle		++	+			
Chenopodium hybridum L.	maple-leaved goosefoot				+		
Chenopodium spp.	goosefoot etc	+++	+++	+	+	++	++
Atriplex spp.	orache	++	++			+	
Stellaria media (L.) Vill.	common chickweed	++	+			+	
Rumex maritimus L.	golden dock	++++	+++				
Rumex sp(p).	dock	+	+				
Brassica/Sinapis spp.	cabbages, mustards	+					
Potentilla anserina L.	silverweed		++				
Hydrocotyle vulgaris L.	marsh pennywort	+	+				
Oenanthe fistulosa L.	tubular water-dropwort	+	+				
Oenanthe spp.	water-dropwort	+	+				
Conium maculatum L.	hemlock	+	++				
Apium spp.	marshworts	+	+	+			
Apiaceae indet.	carrot family	+		++			
Solanum nigrum L.	black nightshade			++			
Lycopus europaeus L.	gypsy-wort		++	+			
Mentha spp.	mints		+	+			
Plantago major L.	greater plantain	++	++	+			
Sambucus nigra L.	elder		+	++			
Carduus/Cirsium spp.	thistles	++	+	+			
Sonchus asper (L.) Hill	spiny milk-/sow-thistle	+	+				
Bidens sp.	bur-marigolds	+					
Alisma spp.	water-plantain	+++	++	+++			
Potamogeton spp.	pondweeds	+	+				
Lemna spp.	duckweed	++++	+++	++++		++	++
Juncus spp.	rushes	+++	+++	+++++		+	+
Eleocharis palustris/uniglumis	spike-rush	+++	++++	++			
Schoenoplectus lacustris/ tabernaemontani	club rush	++	+	+			
Carex sp(p).	sedge	++	++	+			
Cyperaceae indet.	sedges etc	++	++	++			
Poaceae indet.	wild grasses (short thin seeds <2mm)	++	++	+			
Poaceae indet.	cereal/wild grasses culm fragments	+	+				
Indet.	Small twigs/round wood fragments	++		++			
indet.	thin ribbed stem fragments	+++	+				
indet	seeds	+	+	+			
Bryophyta indet.	moss	++++	+++	+			

frequency of items: +1=1-10; ++= 11-50; +++=51-150; ++++=151-250; +++++= >250; w – wet flots, otherwise dry;

Remains of wild plants associated with disturbed (including cultivated) ground and waste places were better represented in the samples from all the ditches other than [18199] although species common to both the basal samples of ditch [18199] and the other ditch fills across the site, included: *Urtica dioica* (common nettle), *Atriplex/Chenopodium* (orache/goosefoot), *Stellaria media* (common chickweed), *Rumex, Solanum nigrum* (black nightshade)*, Plantago major, Sonchus asper* (spiny milk-/sow-thistle), *Sambucus nig*ra (elder) and small-seeded Poaceae, most of which are indicative of nutrient and nitrogen rich soils which may reflect human activities and rubbish tips/refuse deposits close-by. Other species exclusive to ditches other than [18199] were a number of other plants of disturbed ground and waste places also found in nutrient rich soils including *Fumaria officinalis* (fumitory), *Urtica urens* (small nettle), *Euphorbia helioscopia* (sun spurge) and *Aethusa cynapium* (fools parsley), while *Conium maculatum* (hemlock), found in nutrient rich soils in damp ground, ditches, waste ground and rubbish tips was only represented in the basal samples of ditch [18199]. Grassy areas around the ditches or perhaps the residues of gathered grassland vegetation may be represented by records of potential grassland plants, *Ranunculus acris/repens/bulbosus* (buttercups), *Plantago major, Carex* and Poaceae seeds.

Snail assemblages *(James Rackham)*
Snails are present in many of the samples but their absence or relative absence from a band of the deposits in ditch 18199 seems to be attributable to soil conditions, reflecting possibly both a period of peat formation likely to have been acid and an episode of fluctuating water table and iron salt build-up which is also likely to have led to corrosion of the shells. Samples 1, 10 and 11 also lacked shells, although in these cases the opercula of *Bithynia tentaculata* survived when the shells did not, another indication of probable slightly acid conditions removing the shells.

The abundance of aquatic species over terrestrial snails suggested that detailed quantification of the shells was not likely to appreciably increase the information from the assemblages, and combined with some budget constraints and the clear indications of a wetland environment from the waterlogged plant taxa, it was decided to sort, scan, identify and only roughly quantify the most abundant taxa in each sample (Tables 7 and 8). Shells of the blind burrowing species *Cecilioides acicula* are present in several of the samples, and common in two, these are likely to be intrusive and probably burrowed into the deposits in recent times after the area was reclaimed from the sea in the Saxon or medieval period. The other species are considered to be *in situ* and contemporary with the deposits. The terrestrial elements have both a low diversity and, apart from *C. acicula*, a low abundance. The few shells recorded are from catholic taxa or species associated with grassland. A small group of taxa typical of wet ground and marsh (Table 7) occur with a similar frequency to the grassland fauna.

Four things are clear from the snail data.

1. All the ditches have an abundant freshwater molluscan fauna and there is no evidence for any marine or saline influence, which would have introduced shells of the estuarine and brackish water species *Hydrobia ulvae* and *Hydrobia ventrosa,* both of which occur in their millions along the Lincolnshire coastal tidelines and estuaries.
2. The sampled ditch sediments appear to have been permanently underwater. The species *Anisus leucostoma* is characteristic of ditches that dry up seasonally but it is absent or present in very low abundance in these samples, while taxa characteristic of open water and moving water – *Bithynia tentaculata, Lymnaea peregra, Planorbis vortex, Valvata cristata* and *Valvata piscinalis* occur commonly or in abundance.

3. The abundance of aquatic mollusca is an indication that these occur *in situ* and are not introduced with 'collected' marshland vegetation.
4. The abundance of this aquatic fauna in ditch 18199 right up to the top of the section (Fig.4, Table 8) indicates continuous wet conditions throughout this sequence, even in the upper fills laid down at the same level as the adjacent Roman ground surface (see Figs. 4 and 5) at 1.8-2.0m OD.

Table 7. Spalding – SCSP21 and SCSG23**.** Molluscan taxa from samples 1-11.

	Sample	1	2	3	4	5	6	10	11
	% of sample studied								
	Context	10029	11049	06005	06003	06032	03004	18165	18186
	Feature type	Burial	ditch						
	Frequency	1	5	5	5	5	2	2	1
catholic	*Cecilioides acicula*		+++	+++	+	+	+		+
	Cochlicopa lubrica			1	+				
grassland	*Pupilla muscorum*					1			
	Vallonia excentrica			3	+		+		
wet ground/ marsh	*Vallonia pulchella*		+		+	2			
	Succinidae				+				
	Galba truncatula				+	+			
freshwater	*Anisus leucostoma*		+	+	+		+		
	Segmentina nitida				+	+			
	Planorbis crista				+	++			
	Planorbis corneus				+				
	Planorbis planorbis		++	++	++	+++	+	1	+
	Planorbis vortex			+	+	+			
	Planorbis carinatus				+				
	Planorbis contortus			+	+	+			
	Planorbis laevis			+	+	+			
	Planorbis sp.	+							
	Bithynia tentaculata	+	+	++	+++	+++	++	10	
	Bithynia leachii			+	+	+	+		
	Valvata piscinalis	+			+	+			
	Valvata macrostoma			+	+				
	Valvata cristata				+	+++			
	Lymnaea peregra				+	+++	+		
	Lymnaea glabra					1			
	Lymnaea palustris				+				
	Viviparus sp.				+				
	Pisidium sp.				+	+			

* frequency of items: *=1-10; **= 11-50; ***=51-150; ****=151-250; *****= >250;
\+ - present in the sample, but not quantified.

These results indicate a wet site, with a rising water table throughout the filling of ditch 18199. Such a rising watertable can be associated with a period of rising sea level causing the 'backing up' of freshwater, the development of marsh (reflected by the dark band in Figures 4 and 6), and subsequently probably open water or meres across the site. Unfortunately no samples were taken from the non-archaeological upper sediments across the site, but these are assumed to be marine in origin on the basis of other sites in the area, reflecting an episode in the post-Roman period when the site lay within the tidal range. Whether the Roman and post-Roman course of the tidal Welland lay as close to the site as the modern channel is not known but the site must certainly have been inundated by tidal waters in the post-Roman period.

Table 8. **Spalding – SCSP21 and SCSG23.** Molluscan taxa recorded from the column sample in ditch 18199

	Sample 12	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110
	context											
	Frequency*	5	5	5	3	1	-	-	-	-	2	2
	Trochulus hispidus		+									
	Cochlicopa lubrica	+										
	Vallonia sp.	+										
	Succinidae			+								
	Galba truncatula	+			+							
Freshwater species	*Anisus leucostoma*	+	+	+								
	Segmentina nitida	+	+	+								
	Planorbis crista	+	+	+								
	Planorbis planorbis	+	+	+	+							
	Planorbis vortex	+	+	+								
	Planorbis carinatus		+	+								
	Planorbis contortus	+	+	+	+							
	Planorbis laevis	+	+		+							
	Planorbis albus			+								
	Menetus dilatatus			+								
	Bithynia tentaculata	++	++	+	++	+					++	++
	Bithynia leachii	+	+	+								
	Valvata piscinalis	+	+	+	+							
	Valvata macrostoma		+	+								
	Valvata cristata	+	+	+								
	Lymnaea peregra	+	+	+	+	+						
	Lymnaea palustris				+							
	Viviparus fasciatus		+									
	Acroloxus lacustris			+								
	Pisidium sp.		+									

* frequency of items: *=1-10; **= 11-50; ***=51-150; ****=151-250; *****= >250; + - present in the sample, but not quantified.

Fig. 4. Section drawing 135 for column sampled ditch 18199 (sample 12)

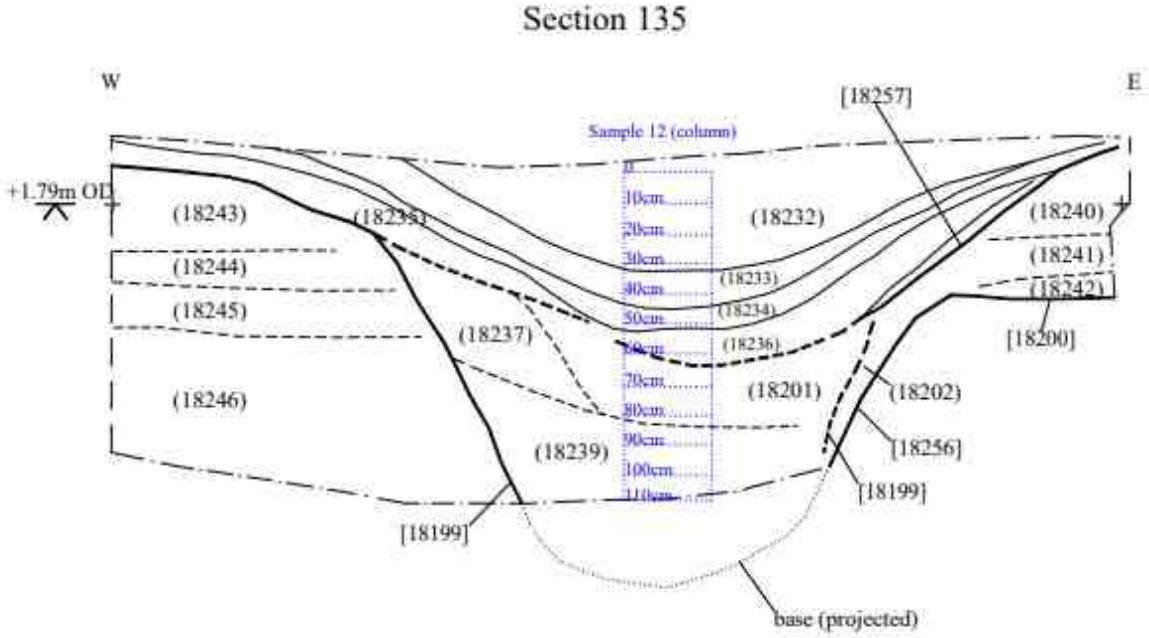


Fig. 5. Photograph of the column sample, sample 12, ditch 18199. The upper fills formed under equally wet conditions as the lower fills.



The freshwater character of the site in the lower and upper fills of the ditches is testified by the uncharred plant remains, aquatic snails, and other indicators such as freshwater crustaceans (ostracods), caddis fly larval cases, freshwater fleas (*Daphnia*), the sticklebacks and probably some of the other small fish (of natural rather than human origin). The only marine element recorded are a few foraminifera in sample 3, quite possibly derived from the roddon sediments the Roman site sits on, although sticklebacks can tolerate brackish water as can several of the uncharred plants identified (see above).

Animal bone and shell *(James Rackham)*

In addition to the samples animal bone and shells were collected by hand during the excavation of the evaluation trenches and the subsequent main excavation trench, Area A. These fragments have been recorded and catalogued following the standard procedures of the Environmental Archaeology Consultancy (see attached Archive catalogue and key). The assemblage comprised 194 bone fragments and a partial skeleton of a horse from SCSP21 and 34 fragments and a partial skeleton of a dog, plus two freshwater shells, from SCSG23. The bone assemblages together weighed a total of 13576.5 grammes, with an average fragment weight excluding the partial skeletons of 36.65 grammes. The partial horse skeleton in context 11010 comprised 277 fragments weighing 5081g. and the partial dog skeleton in context 18009 comprised 16 bones weighing a total of 139 grammes. A number of the bones were fragmented either recently or in antiquity and these where possible were reconstructed and recorded as a single record in the catalogue rather than individually. The condition of the bones was variable but in general good, with a few bones showing localised surface erosion. There is little to suggest that any discarded bones have been lost through corrosion in the soil but recovery is unlikely to have been efficient since the average fragment weight of the 494 ‘domestic’ (ie excluding the small vertebrates such as small mammals, amphibians and fish) animal bone fragments from the samples is 0.88g compared to the 36.65g for the hand collected assemblage. While the bulk of these fragments could not be identified to species

there is nevertheless an implication that the smaller animals such as sheep/goat and dog, and probably also pig, will have been under-represented in the hand collected assemblage, bone fragments of just a few grammes or less almost certainly being missed during 'trowelling'. This has implications for the assessment of the relative abundance and importance of the different food species on the site.

Fragments of horse, cattle, sheep/goat, sheep, pig, dog, chicken and duck have been identified among the hand collected assemblage, along with two shells of the large freshwater species *Planorbarius corneus* or Great Ramshorn, a taxa rarely found in small water bodies. In the samples the additional possible food species recorded include eel, other small fish, common mussel and cockle, with a range of small terrestrial vertebrates including water vole, field vole, a mouse, a newt and frog or toad and also freshwater fishes such as stickleback, eel and other small fish many of which will have been naturally deposited in the wet environment rather than a product of human rubbish (Table 10). The relative frequency of each species in the hand collected assemblage has been analysed using fragments counts, total weight and also the frequency of anatomical zones (see Appendix; Table 10). Cattle bones are clearly dominant using all three methods, followed by frequency of sheep (or goat), then horse and finally pig among the main farm animals, although clearly the weight of horse bones far exceeds that of sheep. However these figures can only give a guide because both the level of fragmentation of each species (no. zones/no. fragments – horse – 1.43, cattle – 1.49, sheep – 1.26, pig 0.67) and the relatively large average fragment weight (ie a bias in favour of larger bones) will both impact on the proportion of each species recorded and recovered. We can assume that the smaller animals will be under-represented. Where 'samples' with bone are abundant these can offer some control but in Table 10 the samples with bone are insufficient to give any guide as to the relative frequency of the different species.

Table 9. Number of fragments, weight and number of zones in the hand collected bone and shells from contexts from SCSP21 and SCSG23.

		SCSP21			SCSG23		Average frag. wt g
species	number	weight	zones	number	weight	zones	
Horse	22 (+1*)	2225 (+5081*)	31	1	187	2	98
Cattle	67	4253	96	16	871	28	61.7
Cattle size	42	293	1	4	41		7.26
Sheep/goat	34	245	35	9	7	16	5.86
Sheep	1	22	3				
Sheep size	15	22.5	2	7	13		1.61
Pig	4	46	1	5	119	5	18.3
Dog	1	15	3	1*	139*		
Chicken	1	2					
Duck	1	1					
Unidentified	6	11		2	5.5		-
Planorbarius corneus				2			

* Partial skeleton

The large average fragment weight of the hand collected bones may have another explanation. There are clearly skeletons buried on the site and the low fragmentation of a number of the cattle bones, such as several intact jaws, complete bones, or juvenile bones only lacking an epiphysis suggest a lack of butchery, supported by only five bones being recognised with visible chop marks. This would be unusual in a Roman assemblage derived

from food waste so it is possible that a proportion of this ‘disarticulated’ material may also have come from burials or discarded carcasses. The partially excavated horse skeleton in Trench 10 of the evaluation (Fig. 6) lies in a cut in the base of ditch 10010 and although it is undated by finds it appears to lie stratigraphically beneath a dark grey silt that can perhaps be equated with the ‘wetland’ horizon noted above (see Figs 6 and 3) suggesting it is Roman or earlier. This is a young animal – distal humeral and proximal radial epiphysis recently fused – perhaps 18 months, but with the dpm4 still present (but about to be shed) and the m3 erupting with the m2 and p3 in wear –an age according to Silver (1969) of between 2.5 and 3.5 years, somewhat older than the epiphyses suggest. It is also possible that the horse bones in context 06012 also derive from one animal, including a mandible, pelvis and skull fragments, suggesting a possible disturbed second burial. The dog skeleton in context 18009 is adult and had a badly broken but healed femoral fraction. It must have been lame and suggests a certain level of care that the animal was kept, and presumably tended, despite the injury. A few other bones may also have been associated, but this could not be confidently ascertained.

Fig. 6. Horse burial in evaluation Trench 10 (Taken from Plate 19, Evaluation Report)



The whole assemblage is broadly assigned to the Roman period on the basis that the features lay beneath an alluvial and marine overburden and all but one sherd of the 333 recovered have been dated to the Roman period, the single sherd being medieval green glaze from the fill of pit 04007 in evaluation Trench 4. This feature produced just seven bone fragments but whether it cut through the dark ‘wetland’ horizon in Trench 4 (see Fig. 3) or lay stratigraphically beneath it is not indicated in the evaluation report. Two bones suggest the possibility of earlier archaeology on the site. They were both found in context 12007 and are horn cores of cattle previously described as ‘celtic shorthorns’, they are small – one very small, and are typically associated with later prehistory. No ceramics were recovered from Trench 12 and these finds might indicate an Iron occupation episode. The evaluation report noted briquetage ‘typical of the 1st century BC being recovered from the site, but the horn cores might fit better a bit earlier in the 1st millennium BC. Such small cattle would be very unusual in 2-3rd century Roman deposits.

The small assemblage unfortunately limits the potential of this collection but a little information can be gleaned. Juvenile and immature cattle are relatively common in the assemblage. Of nine cattle mandibles and skulls with teeth two were adult, one was sub-adult with six classified to calves or immature beasts. Of nineteen bones showing evidence for the state of epiphyseal fusion at least seven derive from calves or immature animals indicating a relatively high 'slaughter' of calves and immature cattle unless as noted above some of these derive from disturbed carcasses. Several small calf bones, some 'chewed/gnawed' suggest casualties rather than food waste and could have derived from scavenged carcasses or 'fallen stock' fed to the dogs. In contrast among the fifteen sheep (technically sheep or goat) bones with epiphyseal data only one indicates a juvenile, although of six mandible or skull fragments with teeth only one is adult with the others dying probably in their first winter or the following spring. The sheep are small and gracile suggesting little evidence for improvement of the stock from earlier Iron Age animals. All the pig bones that allow age to be estimated are juvenile or immature animals, with quite small pigs (piglets?) being utilised for food, since a small skull has been chopped longitudinally through the cranium.

As noted above the evidence for butchery is fairly rare, but a much higher proportion of fragments, 22 in total, have been burnt – rather more sheep than cattle. Eleven bones were recorded with evidence for dog gnawing or tooth marks and included cattle, horse and sheep bones.

Discussion (JG and JR)

The site was wet, probably very wet, with the ditches apparently water filled throughout the year. Almost all the samples produced evidence of these wet conditions with the uncharred plant remains dominated by wetland and aquatic plants, the snails equally showing a dominance of open water, possibly flowing, and other elements indicating a wet environment such as caddis fly larval cases, sticklebacks and ostracods, with water voles and frogs/toad the most numerous of the small terrestrial vertebrates. The few terrestrial snails 'washed' into the ditches suggest local grassland and wet grassland or marshy vegetation, but the plants also indicate species of disturbed (including possible cultivated) ground and 'waste' places suggesting a probable human or grazing animal impact on local areas. If the sequence recorded in ditch 18199 was repeated across the site - 'almost a certainty except perhaps where the Roman ground surface rises', then the conditions became wetter until the wetland covered the former Roman ground surface leading to the development of a marsh/fen silt peat forming the 'dark' horizon that dips in and out of the ditches (Figs. 3 and 5) before possibly becoming an area of open water. This horizon has almost certainly degraded, humified and shrunk since the medieval drainage and reclamation of the area. The 'dark' horizon is overlain by much paler sediments but these in ditch 18199 (Fig. 5) are still full of freshwater snails (Table 8) and it is probable that an organic component in these deposits has been completely lost as a result of them drying out leading initially to the thought that they were marine in origin. The marine sediments are probably represented by the unsampled deposits at the top of the sequence in Fig. 5 and the removed overburden that was above it.

We can put this picture into context by considering the location of the site. In Fig. 7, a lidar image of the area (see also Fig. 36 of the evaluation report), it can be seen that the site is located on the edge of an area of slightly higher ground (cyan and green in the figure) with the modern land surface falling to the west, the pale grey blue colour reflecting an altitude of 0m OD or less. The Lidar images in Fig. 7 and Fig. 36 of the evaluation report show Spalding sitting on an area of higher ground created by the deposition of marine sediments at a time of

relatively higher sea level. The ribbons of higher ground (cyan coloured) visible on Fig. 7 represent former tidal watercourses infilling with mineral sediments, particularly laminated sands and coarse silts, that ran through a landscape of peats and silty peats that have since largely been lost through dessication and degradation. A significant component of this degradation and shrinkage will have occurred in the Iron Age and Roman periods when there was a relative drop in sea level. The loss or reduction of these organic sediments has resulted in the ribbons of mineral sediments now standing proud of the surrounding areas and these ribbons of higher ground are termed roddons. The lack of marine indicators in the upper fill of ditch 18199, and presumably the other ditches on the site, can be attributed to the fact that the site lies in the southern (ie landward) complex of roddons (see Fig. 36 of the evaluation report) and was initially protected from the late and post-Roman rising sea-levels by a body of marine sediments laid down in tidal rivers and estuaries of the prehistoric period that raised the ground to the north protecting this area (Millfield Nursery) from marine inundation until this higher ground was overtopped or circumvented. It was exactly this higher ground that would have been the focus for late Iron Age and Roman settlement as relative sea level dropped in the 1st millennium BC. Millfield Nursery lies at the western edge of a roddon with probable wetland lying to the west contemporary with the Roman occupation. The main focus of settlement at this period would probably have been to the north beneath present day Spalding. Rising water levels in the adjacent wetland, as sea levels rose in the late/post-Roman period, will have begun to saturate the site causing the development of a fen environment and the formation of peats (the dark horizon), subsequently perhaps leading to open water meres as the water level continued to rise. The focus of activity in the 2nd-3rd century AD but an absence of ceramics of 4th century date (Rowlandson 2023) may suggest that by the later Roman period this area had already become too wet for normal agricultural activity and settlement, although this suggestion will have to wait for further sites before it can be confirmed.

Although the ditches appear to have been waterfilled from the time they were dug the archaeological debris in the samples clearly indicates the presence of settlement activity on the site. Fired earth, pottery, burnt stone, animal bone and a little edible marine shellfish all testify to domestic rubbish entering the deposits, with the ash and charcoal rich deposits (Tables 2 and 3) suggesting primary deposits. A scatter of hammerscale (Table 2) also suggests iron smithing on the site in the Roman period. While some of the animal bone may derive from the burial of fallen stock some is butchered or burnt and hence reflects domestic food waste. Whether the fish fall into this category or derive from natural deaths in the ditches is more problematic. Clearly the sticklebacks are likely to be part of the natural death assemblage, but this could be true for the eel and other small fish, none of which were indicative of any great size, although still potentially edible. Only one sample produced marine shellfish and this just a few very small fragments of mussel and cockle, which could possibly have derived from marine sediments on the site rather than be archaeological in origin. The charred plant remains indicate a scatter of debris across the site with sample 6 from evaluation trench 3 being relatively rich in charred cereals and sample 11 in excavation Area A having almost as many chaff fragments as grain. The identified cereals show the consumption of emmer, spelt and barley with just traces of oats and rye probably reflecting contaminants in the cereal crops. The emmer and spelt chaff in sample 11 might indicate cultivation locally, perhaps on the slightly higher drier ground on the roddon to the east or further north. Crop marks are clearly visible in the fields on the east side of the modern River Welland immediately east of the site (see Google Earth images) and at a slightly higher elevation in the centre of the roddon. The range and frequency of foodstuffs recovered is listed in Table 10.

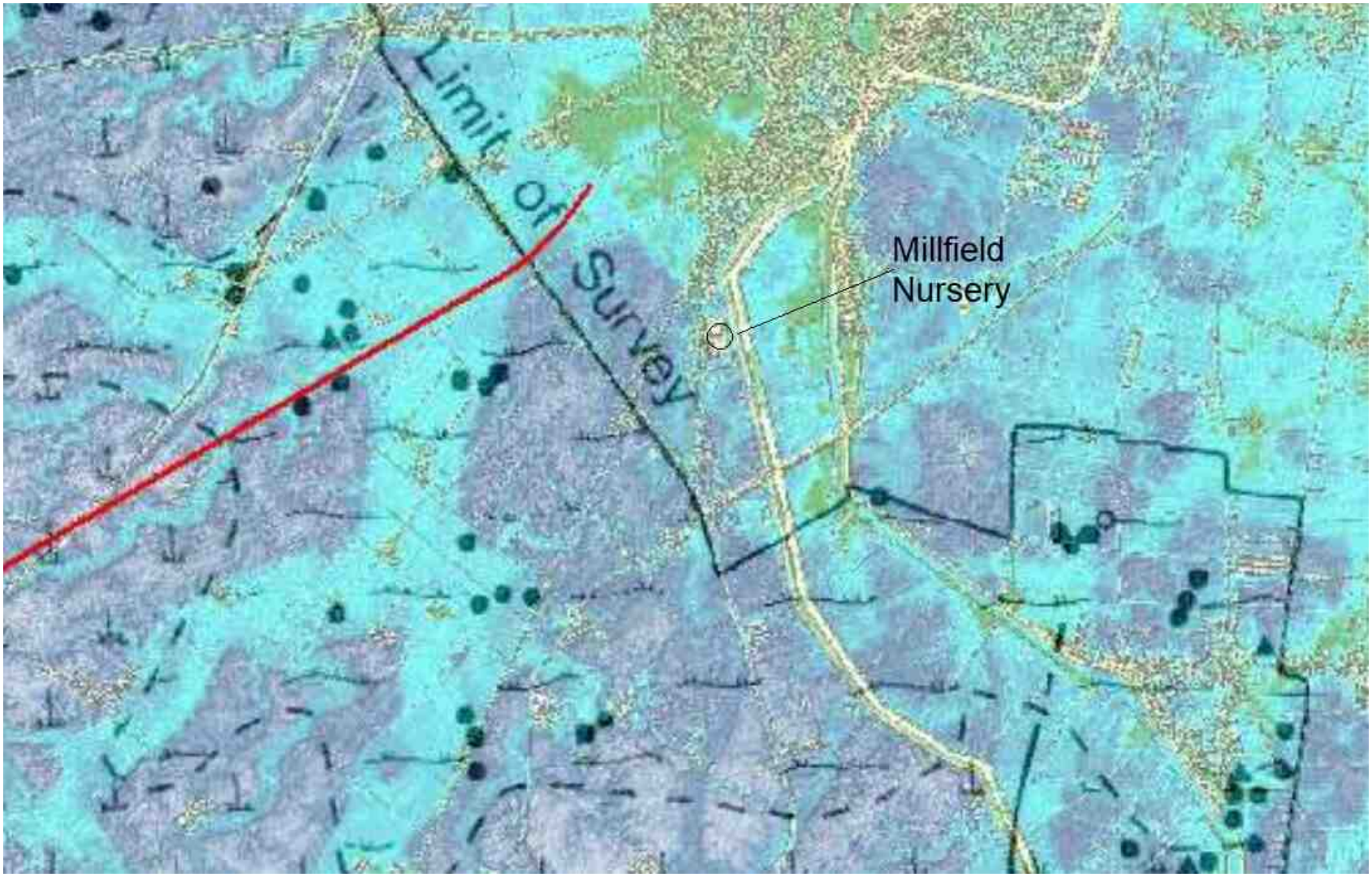


Fig. 7. Taken from Lincolnshire Fenland Lidar S J Malone, Fig. 16. Green and cyan show the higher ground, blue and pale blue/grey the lower ground. The site is marked and lies on the edge of an area of higher ground (cyan).

The dominant elements in the charred plant assemblages are however spike-rush, club rush and other sedges and grasses (Table 4) suggesting the cutting and collection of hay and wetland vegetation for fodder, building material (thatch or fibre for daub – a lack of stone in the local area would suggest mud/daub and stud buildings were more likely), bedding or floor cover. The rushes collected in summer or autumn could even have been used for rushlights. Given the fenland context for this site some of this material could derive from dried peats cut from local peat bogs and used as fuel for the domestic fires. Charcoal is certainly present in all but some of the column samples, but most woodland on the fen is likely to have been carr, a wet woodland of willow and alder, with limited dry woodland available as a resource for fuel. The single find of a charred hazel nutshell fragment in one sample might indicate local hazel, and some fields may have been accompanied by hedgerows affording some wood fuel, but local peat cuttings may have been a major source of domestic fuel particularly in the poorer households.

Table 10. Frequency of samples & hand collected contexts with each taxa/category identified of small terrestrial vertebrates, domestic & food species.

	No samples	No. hand collected contexts SCSP21	No. hand collected contexts SCSG23
total	19	57	21
Horse	2	11	1
Cattle	3	31	10
Cattle size	4	22	4
Sheep/goat	2	22	8
Sheep size	5	9	5
Pig	1	4	4
Dog		1	1
Chicken		1	
Duck		1	
Eggshell – cf chicken	2		
Mouse	1		
Field vole	2		
Water vole	4		
vole	1		
Newt	1		
Frog/toad	5		
Eel	5		
Small fish	4		
Stickleback	7		
Common mussel	1		
Cockle	1		
Free threshing grain	2		
Emmer/spelt grain	4		
Spelt? wheat grain	1		
Wheat grain	6		
Barley grain	5		
Oat grain	1		
Rye? grain	1		
wheat chaff	4		
Emmer chaff	1		
Spelt chaff	1		
Barley chaff	1		
Legume/ possibly *Pisum*, pea	1		
Hazel nutshell	1		

The animal bones and bird eggshell indicate that horses, cattle, sheep, pigs and chickens were probably kept at the site, and also dogs, with only limited evidence for local fishing and even less for the importation of marine foods such as shellfish and fish from coastal fisheries. Burials of fallen stock and possible disturbed burials make up a significant component of the small bone assemblage, and this area may have been primarily pastoral, perhaps seasonal pasture – which would fit with the limited terrestrial snail evidence, but the excavations within Area A show the site to be relatively 'busy' (Fig. 2) implying significant local activity. The relatively high proportion of young cattle and sheep, and a young horse might point towards a pastoral focus, with animal breeding on site, but the bone assemblage is perhaps a little too small to be confident, although lambs and calves do appear to have been born on site.

It appears the site may lie on the periphery of Roman settlement in the area south of present day Spalding, bordering an area of probable wetland fen to the west. The site was clearly wet and became wetter with time perhaps already untenable for occupation in the 4th century AD. The Roman ground surface finally became saturated with the formation of organic deposits and a sequence of sediments above this remained indicative of an open freshwater environment in the upper ditch fills and probably across the whole site. Prior to this deterioration in site conditions there was local occupation, with possible iron smithing, and perhaps a largely pastoral economy, although cereal crops were available to the site. There are traces suggesting that there may have been earlier Iron Age activity on the site, particularly two horn cores of small celtic shorthorn cattle type unlikely to be found on a 2nd-3rd century Roman site.

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APPENDIX - THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

Key to codes used in the cataloguing of animal bones and marine shells

SPECIES:

SPECIES CODE			SPECIES CODE	
MAN	human		DOVE	Dove species
EQU	Horse		FER	Feral dove
EQSZ	Horse size		PART	Partridge
BOS	Cattle		SWAN?	Swan?
BOSL	Cattle-large		WOOD	Woodcock
CSZ	cattle size		CURL	Curlew
SUS	Pig		WADE	wader
OVCA	sheep or goat		CROK	Crow or rook
OVI	Sheep		CORV	Crow or rook
CRA	Goat		JACK	Jackdaw
SSZ	sheep size		OWL	Owl indet.
FEL	Cat		BUZZ	Buzzard
CAN	Dog		GULL	Gull sp.
AUR	Aurochs			
AUR?	Aurochs?		TURD	Turdidae
CER	red deer		BIRD	Identifiable but not id'd
DAM	Fallow deer		PASS	Passerine
CLS	roe deer		LBIRD	Large bird
LEP	Hare		UNIB	Bird indet
ORC	Rabbit			
LAG	Lagomorph		FROG	Frog
CARN	Carnivore		FRTO	Frog or toad
FOX	Fox			
PINE	Pine marten			
POLE	Polecat/ferret			
WEA	weasel		GAD	Gadid, cod family
BADG	Badger		LING	Ling
SEAL	seal		HADD	Haddock
SQU?	Squirrel?		RAY	ray
BEAV	Beaver		FISH	Fish
ROD	Rodent		UNIF	Fish indet
RAT	Rat			
AGR	Field vole		OYS	oyster
ARV	Water vole		COK	Cockle
MUS	House mouse		MUSS	Common Mussel
SORA	Common shrew		WHELK	Common whelk
MOLE	Mole		HEL	Helix aspersa
SMA	Small mammal		HELIX	Helix sp.
UNI	Unknown		HELN	Helix nemoralis
			SNAIL	snail
CHIK	Chicken			
CHKZ	Chicken size		FOSS	Fossil bone
GOOS	Goose, dom			
GOOS?	Goose, dom.?			
GSSZ	Goose size			
GSSP	Goose species			
GOSZ	Goose, poss. Wild			
DUCK	Duck, domestic sp.			
DUCK?	Duck?			
DKSP	Duck species			
DSP	Duck species indet			
MALL	Duck, dom.			
TURK	Turkey			

BONE ELEMENT:

BONE CODE		BONE CODE	
SKEL	skeleton	SCP	scapula
SKL	skull	HUM	humerus
ANT	antler	RAD	radius
ANT?	antler?	ULN	ulna
ATT	antler tine	RUL	radius and ulna
HC	horn core	C/T	carpus/tarsus
TEMP	temporal	C23	carpus 2+3
FRNT	frontal	CAR	carpus
PET	petrous	CPA	accessory carpal
PAR	parietal	CPI	intermediate carpal
OCIP	occipital	CPR	radial carpal
ZYG	zygomatic	CPU	ulnal carpal
NAS	nasal	MTC	metacarpus
PMX	premaxilla	MC1-5	metacarpus 1-5
MAN	mandible	MTP	metapodial
MNT	mandibular tooth	MPL	lateral metapodial
DLI	deciduous lower incisor	INN	innominate
DLPM1-4	deciduous lower premolar 1-4	ILM	ilium
LI	lower incisor (and 1-3)	PUB	pubis
LC	lower canine	ISH	ischium
LPM1-LPM4	lower premolar 1-4	FEM	femur
LM1-LM3	lower molar 1 - molar 3	PAT	patella
MAX	maxilla	TIB	tibia
DUI	deciduous upper incisor	FIB	fibula
UI	upper incisor (1-3)	LML	lateral malleolus
UC	upper canine	AST	astragalus
DUPM	deciduous upper premolar	CAL	calcaneum
DUPM1-4	deciduous upper premolar 1-4	CQ	centroquartal
UPM1-UPM4	upper premolar 1-4	TAR3	tarsus 3
UM1-UM3	upper molar 1 - molar 3	T4	tarsus 4
MXT	maxillary tooth	TAR	tarsus
TTH	indeterminate tooth	MTT	metatarsus
INC	incisor	MT1-5	metatarsus 1-5
HYD	hyoid	MTL	lateral metatarsus
ATL	atlas	SES	sesamoid
AXI	axis	PH1	1st phalanx
CEV	cervical vertebra (and 3-7)	PH2	2nd phalanx
TRV	thoracic vertebra (and 1-13)	PH3	3rd phalanx
LMV	lumbar vertebra	PHL	lateral phalanx
SAC	sacrum	LBF	long bone
CDV	caudal vertebra	UNI	unidentified
VER	vertebra		
STN	sternum	CLV	clavicle
CC	costal cartilage	COR	coracoid
RIB1	first rib (2 etc)	CMP	carpo-metacarpus
RIB	rib	CMC	carpo-metacarpus
		WPH1-3	wing phalanges 1-3
URO	urostyle	WPH	wing phalanx
		LSA	lumbosacrale
DENT	dentary		
CLEI	cleithrum		
RAY	fin ray		
SHELL	shell		
UV	upper valve		
VAL	valve		

NUMBER: number of fragments in the entry

SIDE: W - whole L - left side R - right side F - fragment

FUSION: records the fused/unfused condition of the epiphyses
P - proximal; D - distal; E - acetabulum; N - unfused; F - fused; C - cranial; A - posterior

ZONES: records the part of the bone present.
The key to each zone on each bone is on page 4

BUTCHERY: records whether a bone has been chopped (CH), cut (KN), worked (W), burnt (C)

GNAWING: records if a bone has been gnawed by dogs (DG), cats (FEL) or rodents (RG)

TOOTH WEAR - Codes are those used in Grant, A. 1982 The use of tooth wear as a guide to the age of domestic animals, in B.Wilson, C.Grigson and S.Payne (eds) *Ageing and sexing animal bones from Archaeological sites*, 91-108.

Teeth are labelled as follows in the tooth wear column:

Deciduous	Permanent
f ldpm2/dupm2	F lpm2/upm2
g ldpm3/dupm3	G lpm3/upm4
h ldpm4/dupm4	H lpm4/upm4
	I lm1/um1
	J lm2/um2
	K lm3/um3

MEASUREMENTS :Any measurements are those listed in A.Von den Driesch (1976*) A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA
Some measurments have been taken on juveniles. Measurements marked L1 are the greatest length of long bones lacking one unfused epiphysis – the measurement being taken from the epiphyseal junction. Measurements marked L2 are the greatest length of the long bones between epiphyseal junctions when both epiphyses are unfused.

PATHOLOGICAL: A 'P' indicates that the bone fragment carries a pathology

COMMENTS: This may include a short description of the fragments, any pathologies, butchery or gnawing evidence

PRESERVATION: records the condition of the bone in the following manner

1- enamel only surviving
2- bone very severely pitted and thinned, tending to break up; teeth with surface erosion and loss of cementum and dentine
3- surface pitting and erosion of bone, some loss of cementum and dentine on teeth
4- surface of bone intact, loss of organic component, material chalky, calcined or burnt
5- bone in good condition, probably with some organic component

ZONES - codes used to define the zones on each bone

SKULL	1. paraoccipital process	METACARPUS	1. medial facet of proximal articulation, MC3
	2. occipal condyle		2. lateral facet of proximal articulation, MC4
	3. intercornual protuberance		3. medial distal condyle, MC3
	4. external acoustic meatus		4. lateral distal condyle, MC4
	5. frontal sinus		5. anterior distal groove and foramen
	6. ectorbitale		6. medial or lateral distal condyle
	7. entorbitale		
	8. temporal articular facet	FIRST PHALANX	1. proximal epiphysis
	9. facial tuber		2. distal articular facet
	0. infraorbital foramen		
		INNOMINATE	1. tuber coxae
MANDIBLE	1. Symphyseal surface		2. tuber sacrale + scar
	2. diastema		3. body of illium with dorso-medial foramen
	3. lateral diastemal foramen		4. iliopubic eminence
	4. coronoid process		5. acetabular fossa
	5. condylar process		6. symphyseal branch of pubis
	6. angle		7. body of ischium
	7. anterior dorsal acsending ramus posterior M3		8. ischial tuberosity
	8. mandibular foramen		9. depression for medial tendon of rectus femoris
VERTEBRA	1. spine	FEMUR	1. head
	2. anterior central epiphysis		2. trochanter major
	3. posterior central epiphysis		3. trochanter minor
	4. centrum		4. supracondyloid fossa
	5. neural arch		5. distal medial condyle
			6. lateral distal condyle
SCAPULA	1. supraglenoid tubercle		7. distal trochlea
	2. glenoid cavity		8. trochanter tertius
	3. origin of the distal spine		
	4. tuber of spine	TIBIA	1. proximal medial condyle
	5. posterior of neck with foramen		2. proximal lateral condyle
	6. cranial angle of blade		3. intercondylar eminence
	7. caudal angle of blade		4. proximal posterior nutrient foramen
			5. medial malleolus
HUMERUS	1. head		6. lateral aspect of distal articulation
	2. greater tubercle		7. distal pre-epiphyseal portion of the diaphysis
	3. lesser tubercle		
	4. intertuberal groove	CALCANEUM	1. calcaneal tuber
	5. deltoid tuberosity		2. sustentaculum tali
	6. dorsal angle of olecranon fossa		3. processus anterior
	7. capitulum		
	8. trochlea	METATARSUS	1. medial facet of proximal artciulation, MT3.
	9. coronoid fossa		2. lateral facet of proximal articulation, MT4
	0. teres tubercle		3. medial distal condyle, MT3
RADIUS	1. medial half of proximal epiphysis		4. lateral distal condyle, MT4
	2. lateral half of proximal epiphysis		5. anterior distal groove and foramen
	3. posterior proximal ulna scar and foramen		6. medial or lateral distal condyle
	4. medial half of distal epiphysis		
	5. lateral half of distal epiphysis		
	6. distal shaft immediately above distal epiphysis		
ULNA	1. olecranon tuberosity		
	2. trochlear notch- semilunaris		
	3. lateral coronoid process		
	4. distal epiphysis		

Archive catalogue of animal bone from Spalding - SCSP21 and SCSG23

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
SCSP21	02008	SSZ	LBF	1	2	F								MIDHSFAT FRAGMENT- 3 PIECES	4
SCSP21	03003	BOS	MAN	1	65	R		7			K3			POST DORSAL HORI RAMUS WITH UNERUP0TED M3- 2 PIECES	4
SCSP21	03003	CSZ	LBF	1	2	F								INDET SHAFT FRAGMENT	4
SCSP21	03004	BOS	MTC	1	13	L				DG				2 THIRDS SHAFDT-SMALL-POROUS-CALFPROX END CHEWED	4
SCSP21	03004	OVCA	SCP	1	5	R								DISTAL HALF BLADE- 2 PIECES-IMM?	4
SCSP21	03009	BOS	MAN	1	8	F								VENTRAL FRAG HORI RAMUS-SMALL-JUV/IMM	4
SCSP21	03009	BOS	MAN	1	187	L		47			h17 I14J11K3			HORI RAMUS WITH DP4-M3 TOOTH ROW AND PART ASC- 6 PIECES	4
SCSP21	03009	OVCA	MAN	1	6	L					I10J6			2 LOOSE TEETH-MANDIBLE LOST?-SK1?	4
SCSP21	03009	OVCA	MAN	1	5	R					I10J6			2 LOOSE TEETH-MANDIBLE LOST?-SK1?	4
SCSP21	03009	OVCA	SKL	1	8	F								LOOSE UM2-LEFT AND RIGHT SIDE-SKULLGONE?? SK1?	4
SCSP21	03009	OVCA	TIB	1	10	L		4						2 THIRD MIDSHAFT-GRACILE-SMALLNOT POROUS-PREHIST??	4
SCSP21	03009	OVCA	TIB	1	4	R								FRAG DISTAL SHAFT-SAME ANIMAL AS ABOVE TIB?	4
SCSP21	04006	BOS	DLP4	1	9	L					h14			COMPLETE-SAME JAW AS ABOVE?	4
SCSP21	04006	BOS	LM1	1	18	L					I9			COMPLETE	4
SCSP21	04006	CSZ	LBF	1	4	F								SHAFT FRAGMENT-POSS OFF EQU FEM	4
SCSP21	04006	CSZ	SKL	1	6	F								FRAGMENT	4
SCSP21	04006	EQU	FEM	1	31	F								DISTAL SHAFT FRAGMENT- 2 PIECES	4
SCSP21	04006	EQU	UT	1	26	L								COMPLETE-WELL WORN	4
SCSP21	04006	EQU	UT	1	27	R								COMPLETE-WELLWORN-SAME SKULL AS ABOVE?	4
SCSP21	04011	BOS	MTT	1	38	F	DN			DG				MID AND DISTAL SHAFT--FUSING DOWN MIDLINE-SMALL-POROUS-CALF- 2 PIECES	4
SCSP21	04011	BOS	RIB	1	49	R								DISTAL HALF SHAFT	4
SCSP21	04011	BOS	SCP	1	5	L								DISTAL BLADE-SMALL-POROUS-CALF	4
SCSP21	04011	CAN	INN	1	15	R	EF	345						ILIAL SHAFT AND PART ACETAB- 2 PIECES	4
SCSP21	04011	OVCA	LMV	1	4	F	CNAF	24						CENTRUM AND ANT ZYGA	4
SCSP21	04012	OVCA	TIB	1	20	R		4						MOST OF SHAFT-LONG GRACILE-PREHIST?	4

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SCSP21	04012	SSZ	LBF	1	6	F								MID/DISTAL SHAFT-ERODED-POSS MTT	3
SCSP21	04013	BOS	MAN	1	14	R		5						CONDYLE-SMALLISH	4
SCSP21	04013	CSZ	UNI	1	7	F								POSS SCAPULA BLADE FRAG	4
SCSP21	04013	EQU	SKL	1	13	F								SUPRAORBITAL FRAGMENT	4
SCSP21	04013	EQU	SKL	1	130	F					IJK			M1-3-MED WORN-LOOSE	4
SCSP21	04013	EQU	SKL	2	16	F								FRAGMENTS	4
SCSP21	04013	OVCA	MTC	1	14	L								MOST OF SHAFT AND BIT PROX END	4
SCSP21	04015	OVCA	LMV	1	6	F	CJAJ	2345						CENTRUM AND NEURAL ARCH	4
SCSP21	05010	CSZ	CEV	1	8	F								FRAGMENT	4
SCSP21	05014	CSZ	RIB	1	15	F								MIDHSFAT- 2 PIECES	4
SCSP21	06003	OVCA	HUM	1	22	R	DF	6789				SD-14.9 BT-28.8 HT5-19.2		DISTAL HALF	4
SCSP21	06005	CSZ	LBF	1	5	F			C					CALCINED SHAFT FRAGMENT	4
SCSP21	06005	CSZ	LBF	2	4	F			C					CALCINED SHAFT FRAGMENT	4
SCSP21	06005	CSZ	LBF	1	4	F			C					CALCINED SHAFT FRAGMENT	4
SCSP21	06005	CSZ	UNI	4	12	F			C					CALCINCED FRAGMENTS BONE-PROX END?RAD?	4
SCSP21	06005	EQU	MTC	1	181	R	DF	123				GL-220 Bp-46.2 Dp-31 SD-31.5 Bd-47.3 Dd-35		COMPLETE	4
SCSP21	06005	OVCA	CQ	1	2	W			C					COMPLETE-CALCINED	4
SCSP21	06005	OVCA	MAN	1	4	R		5						CONDYLE AND PART VENTRAL ASC RAMUS	4
SCSP21	06005	OVCA	MTT	1	2	F								ANT MIDSHAFT FRAGMENT	4
SCSP21	06005	SUS	SCP	1	3	R								CAUDAL MARGTIN BLADE	4
SCSP21	06005	UNI	UNI	1	4	F								INDET FRAGMENT	4
SCSP21	06006	EQU	MTC	1	17	R								PROX MEDIAL SHAFT FRAGMENT	4
SCSP21	06006	EQU	MTCL	1	5	F								SHAFT LATERAL MTC-POSS FROM ABOVE	4
SCSP21	06006	OVCA	CEV	1	9	F	CFAF	234						CENTRUM AND ZYGA FOR RIGHT SIDE- 2 PIECES	4
SCSP21	06006	UNI	UNI	1	1	F								INDET-SES?	4
SCSP21	06007	CSZ	HUM	1	40	F	PF	1						PART OF FUSED HEAD	4
SCSP21	06007	CSZ	LBF	1	4	F								SHAFT FRAG-PROB FEMUR	4
SCSP21	06007	CSZ	SKL	1	11	F								FACIAL FRAGMENT	4
SCSP21	06007	EQU	MPL	1	7	F								TIP LOST	4
SCSP21	06007	OVCA	RAD	1	13	L		3	CH					MOST OF SHAFT- PROX AND MIDSHAFAT CHOPPED MEDIALLY	4
SCSP21	06007	OVCA	TRV	1	2	F	CN	4						ANT CENTRUM	4

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
SCSP21	06007	SUS	TIB	1	11	F			CH					PROX MIDSHAFT FRAGMENT-CHOPPED THRU SHAFT	4
SCSP21	06008	OVI	SKL	1	22	R		48HC						HORN CORE, PART FRNT, PAR AND TEMP-4 PIECES-EWE/CAST	4
SCSP21	06011	CSZ	LBF	1	12	F								SHAFT FRAGMENT	4
SCSP21	06012	CSZ	LBF	1	23	F								MIDSHAFT FRAGMENT	4
SCSP21	06012	CSZ	LBF	1	10	F								SHAFT FRAGMENT	4
SCSP21	06012	EQU	CAR	1	4	W		1						CARPAL - SK?	4
SCSP21	06012	EQU	INN	1	407	LR	EF	2233455677	48					BOTH PELVES- 7 PIECES-SAME ANIMAL - SK?	4
SCSP21	06012	EQU	MAN	2	853	RL		237						FRAGMENTED RAMI-BOTH L & r-SAME ANIMAL-38 PIECES-ADULT-TEETH-MED-WORN-SK?	4
SCSP21	06012	EQU	RIB	1	7	F								PROX SHAFT-ERODED- SK?	3
SCSP21	06012	EQU	SKL	1	8	F								ZYGOMATIC ARCH FRAG - SK?	4
SCSP21	06013	BOS	RAD	1	120	L	PNDN	36		DG		L2-215		MOST OF SHAFT-CALF-DISTAL CHEWED	4
SCSP21	06015	BOS	MAN	1	10	R		6						ANGLE OF JAW-SL POROUS-FAIRLY SMALL-IMM?	4
SCSP21	06015	BOS	MTC	1	135	L	DF	12345				GL-178 Bp-48.4 Dp-29 SD-28.2 Bd-50.5 Dd-28.3		COMPLETE-SMALL	4
SCSP21	06015	CSZ	CC	1	1	F								COSTAL CARTILAGE	4
SCSP21	06015	OVCA	HUM	1	11	L	DF	6789				BT-28.8 HT-18.6		DISTAL END	4
SCSP21	06018	SSZ	LBF	1	3	F			C					CALCINED SHAFT FRAGMENT- 2 PIECES	4
SCSP21	06018	SSZ	RIB	1	1	R								PROX SHAFT FRAGMENT	4
SCSP21	06025	BOS	TRV	1	13	F								BASE SPINE AND PART NEURAL ARCH	4
SCSP21	06025	CSZ	RIB	1	30	F								DISTAL SHAFT- 2 PIECES	4
SCSP21	06025	EQU	MAN	1	27	R			CH					POST EDGE ASC RAMUS	4
SCSP21	06025	SSZ	RIB	1	1	R			C					CHARRED PROX SHAFT	4
SCSP21	06026	BOS	LI	1	3	R								UNWORN	4
SCSP21	06026	BOS	LM	1	6	F								M1/2 ONE CUSP UNWORN	4
SCSP21	06026	BOS	MAN	1	30	L								VENTRAL FRAGMENT HORI RAMUS	4
SCSP21	06026	BOS	MAN	1	313	R		12345678		DG	fgh14 I12J7			COMPLETE - 3 PIECES-M3 LOST PROBABLY ERUPTING-ANGLE CHEWED	4
SCSP21	06026	OVCA	AST	1	4	R		1				L1-28.1 L2-27.3 Bp-20.2		COMPLETE-SOME PERIPHERAL DAMAGE	4
SCSP21	06026	OVCA	AST	1	4	R		1				L1-27.2 L2-25 BGp-19.3 Bd-17.9 Dd-13.1		COMPLETE	4
SCSP21	06026	OVCA	MTT	1	15	F				DG				2 THIRDS SHAFT- BOTH ENDS CHEWED	4

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
SCSP21	06026	SSZ	TRV	1	1	F		1						PART OF SPINE	4
SCSP21	06026	SSZ	TRV	1	1	F								SMALL FRAGMENT	4
SCSP21	06029	OVCA	SCP	1	24	L		34						SPINE AND CAUDAL MARGIN- 3 PIECES	4
SCSP21	06029	SSZ	LBF	1	1	F								INDET SHAFT FRAGMENT	4
SCSP21	06029	UNI	RIB	1	1	F								INDET-POROUS	3
SCSP21	06032	OVCA	HUM	1	6	F								PROX SHAFT FRAGMENT	4
SCSP21	06048	OVCA	LI	1	1	R								MED WEAR	4
SCSP21	06057	SSZ	UNI	1	0.5	F								INDET FRAGMENT	4
SCSP21	06060	OVCA	RAD	1	4	R	PF	12						CALCINED PROX END	4
SCSP21	06061	CSZ	UNI	1	3	F								INDET FRAGMENT	4
SCSP21	06061	EQU	MAN	1	86	L		3						SYMPHYSEAL FRAGMENT WITH PARTS Z1 AND 3- 6 PIECES- 3 INCISORS	4
SCSP21	06062	CHIK	ULN	1	2	L						L-76		COMPLETE	4
SCSP21	06062	SUS	SKL	1	30	L			CH					POST DORSAL PAR AND OCCIP-POROUS-SMALL-JUV/IMM-CHOPPED DOWN R SIDE	4
SCSP21	06062	UNI	UNI	1	2	F								INDET	4
SCSP21	07003	BOS	MTT	1	41	F								SPLIT MIDSHAFT FRAGMENT	4
SCSP21	07005	BOS	MTC	1	120	L		125				Bp-50.6 Dp-30.7 SD-29		PROX END AND MOST OF SHAFT	4
SCSP21	07010	EQU	SCP	1	192	R	DF	12345				GLP-61.1 LG-55.7 SLC-53.9		GLENOID NECK AND DISTAL 2 THIRD BLADE-SURFACE ERODED	3
SCSP21	07027	BOS	MAN	1	20	R								LATERAL FRAG ANT HORI RAMUS-WITH PM ALVEOLI-POSS SAME AS ABOVE	4
SCSP21	07027	CSZ	MAN	1	5	F								LATERAL FRAG HORI RAMUS	4
SCSP21	07035	EQU	UM	1	25	W							P	BAD UNEVEN WEAR ON CUSP-POST PEAK!	4
SCSP21	07035	SUS	PH2	1	2	R	PN	2						LACKING PROX EPI	4
SCSP21	08005	BOS	SKL	1	19	R		2						OCCIPTAL CONDYLE	4
SCSP21	08009	DUCK	TIB	1	1	L								DISTAL HALF - 3 PIECES- SMALLER THAN MALLARD	4
SCSP21	08021	BOS	MAN	1	10	FL								MEDIAL FRAG HORI RAMUS WITH ALVEOLIU	4
SCSP21	09002	BOS	MAN	1	3	F								FRAGMENT CORONOID PROCESS	4
SCSP21	09004	BOS	INN	1	14	F								ILIAL SHAFT FRAGMENT	4
SCSP21	09004	UNI	SCP	1	2	F								SMALL BLADE FRAGMENT	4
SCSP21	09009	BOS	RAD	1	107	R	PFDN	1236				L1-192 SD-30.1		PROX END AND SHAFT-DISTAL EPI LOST-JUV/IMM	4
SCSP21	09010	BOS	MAN	1	399	R		12345678			g12h15			COMPLETE - 4 PIECES-	4

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
				1							G3I13J11K4				
SCSP21	09010	BOS	RIB	1	34	R								DISTAL MIDSHAFT- 2 PIECES	4
SCSP21	09010	BOS	SKL	1	44	R					g12h14			FRAGMENT MAXILLA - 7 PIECES-JUV/IMM	4
SCSP21	09010	CSZ	RIB	2	9	F								SPLIT SHAFT FRAGMENT	4
SCSP21	09012	BOS	MTT	1	158	L	DF	12345				GL-200 Bp-40.6 Dp-38.2 SD-24 Bd-47.6 Dd-27.5		COMPLETE-SMALLISH	4
SCSP21	09013	CSZ	LBF	1	12	F								SHAFT FRAGMENT	4
SCSP21	10011	BOS	FEM	1	75	L								2 THIRDS SHAFT- 2 PIECES-SOME SURFACE EROSION	4
SCSP21	10011	EQU	SKELa	1	665	P								POST SKUL-SYMPHYSES UNFUSED-ATL-TRV2-CNAN-10PIECES-COMPLETE	4
SCSP21	10011	EQU	SKELb	1	734	P								RIBS-ULN/PN-3TRV/CNAN-STN-PH1/PN-PH2/PN-CAR-MTL-HUMPN-RAD/DN-63 PIECES	4
SCSP21	10011	EQU	SKELc	1	1065	P								SCP/DN-HUM/DJ-RAD/PJDN-MTC/DC-5 BONES	4
SCSP21	10011	EQU	SKELd	1	1098	P								ALL TEETH-34-DEC UPM-UNWORN INCISORS-P2MED WEAR-M2UNWORN-M3PROB ERUPTING	4
SCSP21	10011	EQU	SKELe	1	602	L/R		1123677445	58					MANDIBLES- 15 PIECES-BOTH JAWS-INCISORS ERUPTING	4
SCSP21	10011	EQU	SKELf	1	857	P								94 FRAGMENTS SKULL-	4
SCSP21	10011	EQU	SKELg	1	60	P								56 SMALL SKULL FRAGMENTS	4
SCSP21	11013	BOS	HUM	1	77	L		69		DG				SPLIT DISTAL SHAFT-DISTAL END CHEWED	4
SCSP21	11013	BOS	MAN	1	10	F								ANT VENTRAL FRAG HORI RAMUS	4
SCSP21	11013	BOS	MTT	1	8	F				DG				PROX ANT SHAFT FRAGMENT-PROX END CHEWED	4
SCSP21	11013	BOS	SKL	1	324	F		99			fg14h15 I14J9K4			MAXILLA AND ZYGOMATIC ARCH-FRAGMENTED - 56 PIECES-JUV/IMM	4
SCSP21	11013	CSZ	RIB	1	6	F								SHAFT FRAGMENT	4
SCSP21	11013	CSZ	RIB	1	5	F								SHAFT FRAGMENT	4
SCSP21	11013	CSZ	RIB	1	7	F								SHAFT FRAGMENT	4
SCSP21	11013	CSZ	UNI	1	3	F								INDET FRAG-LONG BONE SHAFT?	4
SCSP21	11017	BOS	RIB	1	16	L								MIDSHAFT- 2 PIECES	4
SCSP21	11017	CSZ	RIB	1	2	F								SPLIT PROX RIB FRAGMENT	4
SCSP21	11017	CSZ	SKL	1	3	F								CRANIAL FRAGMENT-2 PIECES	4
SCSP21	11017	OVCA	RAD	1	10	L	PF	123				SD-12.2		PROX END AND MOST OF SHAFT-SMALL-DISTAL PROBABLY UNFUSED-DISTAL	4

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
														ERODED	
SCSP21	11020	BOS	AXI	1	31	F		24						ANT CENTRUM AND ODONTOID PEG	4
SCSP21	11020	BOS	FEM	1	30	L		4						SHAFT FRAGMENT WITH PROX PART FOSSA	4
SCSP21	11020	BOS	MAN	1	44	R								VENTRAL PART HORI RAMUS	4
SCSP21	11020	BOS	SKL	1	109	F		4822						10 FRAGMENTS-OCCIP-TEMP-FRNT-ALL SAME SKULL?	4
SCSP21	11028	BOS	LM	1	16	R					I11			PROBABLY M1?	4
SCSP21	11028	BOS	SKL	1	13	F								CRANIAL FRAG- 2 PIECES	4
SCSP21	11028	BOS	SKL	1	7	F								CRANIAL FARGS-PART OF ABOVE?	4
SCSP21	11028	BOS	SKL	1	5	F								BASIOCCIPITAL-PART OF ABOVE?	4
SCSP21	11028	BOS	SKL	1	16	F								BASE OF HORN CORE- 3 PIECES-PART OF ABOVE?	4
SCSP21	11028	BOS	TIB	1	20	L	DN	7				SD-17.8		DISTAL HALF SHAFT-SMALL-CALF	4
SCSP21	11028	BOS	UM3	1	35	R					K15			ROOT BROKEN	4
SCSP21	11028	CSZ	UNI	1	1	F			C					INDET CALCINED FRAGMENT	4
SCSP21	11029	BOS	FEM	1	80	L	DN	48				SD-21.7		MOST OF SHAFT- 2 PIECES-SMALL-JUV	4
SCSP21	11029	CSZ	SKL	1	6	F								CRANIAL FRAGMENT	4
SCSP21	11029	OVCA	TRV	1	4	F	CNAN	45						POST THORACIC VERT	4
SCSP21	12006	BOS	SKL	1	102	F		9			H12I15K15			MAXILLA FRAGS WITH LEFT AND RIGHT TEETH- 6 PIECES	4
SCSP21	12006	BOS	SKL	1	30	F								FRAGMENT WITH PETROUS-POSS SAME SKULL AS ABOVE	4
SCSP21	12006	OVCA	UM1	1	3	R					I14			COMPLETE	4
SCSP21	12006	OVCA	UM3	1	6	L					K12			COMPLETE-STAGE 12 JUST REACHED	4
SCSP21	12007	BOS	CPI	1	7	W		1						COMPLETE	4
SCSP21	12007	BOS	CQ	1	20	W		1						COMPLETE	4
SCSP21	12007	BOS	HC	1	23	L		1						VERY SMALL 'CELTIC' SHORT HORN-6CM LONG EXTERNAL	4
SCSP21	12007	BOS	HC	1	48	L		1						SMALL CELTIC SHORT HORN-- 9.5 EXTERNAL LENGTH-OVAL	4
SCSP21	12007	BOS	MAN	1	338	R		1234578			FGH7I14J12K9			COMPLETE EXCEPT FOR ANGLE	4
SCSP21	12007	BOS	PH1	1	14	R	PF	12						COMPLETE- 2 PIECES-SL PROOUS-IMM?	4
SCSP21	12007	BOS	PH2	1	6	L	PF	1						PROX END-DISTAL BROKEN OFF	4
SCSP21	12007	BOS	PH2	1	8	R	PF	12	?					PROX END DAMAGED POSS CHOPPED	4
SCSP21	12007	BOS	TIB	1	19	L						SD-19.8		MIDSHAFT-SMALL-POROUS-0JUV/IMM	4
SCSP21	12007	CSZ	SKL	3	4	F								CRANIAL FRAGS	4
SCSP21	14005	BOS	RUL	1	218	R	PFDF	123456/3		DG		GL-238 Bp-68.4 Dp-33.6		RADIUS COMPLETE-SOME SL DAMAGE-	4

site	context	species	bone	no.	wt.g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
												SD-33.5 Dd-36.7		ULNA MPROX SHAFT AND DISTAL SEMILUNARIS- 2 PIECES	
SCSP21	14006	BOS	MAN	1	27	R		13						SYMPHYSIS	4
SCSP21	14006	OVCA	MAN	1	1	F			C					CALCINED LATERAL FRAG HORTI NRAMUS	4
SCSP21	14006	OVCA	MAN	1	1	R		7	C					CALCINED ZONE 7	4
SCSP21	14006	OVCA	SCP	1	1	R	DF	2	C					CALCINED GLENOID FRAG	4
SCSP21	14006	OVCA	TIB	1	6	F			C					DISTAL SHAFT-CALCINED- 4 PIECES	4
SCSP21	14006	SSZ	HUM	1	1	F			C					CALCINE SHAFT5 FRAGMENT	4
SCSP21	14006	SSZ	RIB	1	1	F			C					CALCINED SHAFT FRAG	4
SCSP21	14006	SSZ	TRV	1	1	F	CNAN	4						CENTRUM ONLY'FLAT BOTTOMED"?	4
SCSP21	14007	BOS	LMV	4	119	F	CNAN	44445531						FOUR LUMBAR VERT-SAME ANIMAL?- 9 PIECES	4
SCSP21	14010	BOS	RAD	1	121	L	PF	123				Bp-68.5 Dp-35.9 SD-34.2		PROX THIRD	4
SCSP21	14010	BOS	TIB	1	232	L	PF	1234				SD-30.8		PROX END AND MOST OF SHAFT- 2 PIECES	4
SCSP21	14010	OVCA	TIB	1	8	L								DISTAL SHAFT	4
SCSP21	14010	SSZ	LBF	1	1	F								INDET SHAFT FRAGMENT	4
SCSP21	14010	SSZ	RIB	1	1	F								DISTAL SHAFT FRAGMENT	4
SCSP21	14010	SSZ	RIB	1	1	R								PROX SHAFT	4
SCSP21	14010	UNI	UNI	1	1	F								INDET	4
SCSP21	15004	CSZ	RIB	1	11	F								MIDSHAFT FRAGMENT- 2 PIECES	4
SCSP21	15004	CSZ	RIB	1	4	F								SHAFT FRAGMENT	4
SCSP21	15004	CSZ	VER	2	14	F								INDET FRAGMENTS	4
SCSP21	17008	EQU	RAD	1	163	R	PF	123				Bp-71 Dp-39		PROX END AND SPLIT HALF SHAFT- 2 PIECES-ADULT-DIST ULN SHAFT FUSED ON	4

site	context	species	bone	no.	wt g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
SCSG23	18009	CAN	SKEL	1	139	P	CFAF	FEM-TIB/PF				ULN-GL-156	P	16 PIECES-LMV-RAD-HUM-TIB-ULN-FEM-INN-MTP-BADLY BROKEN BUT HEALED PROX FEM-LAME	4
SCSG23	18022	BOS	MAN	1	34	L		23						SYMPHYSIS AND DIASTEMA FRAGMENT	4
SCSG23	18022	BOS	PH1	1	15	R	PF	1						PROX 2 THIRDS	4
SCSG23	18022	BOS	PH3	1	16	R		1						COMPLETE	4
SCSG23	18022	BOS	SKL	1	12	L								ZYGOMATIC ARCH	4
SCSG23	18022	EQU	FEM	1	187	R		48		DG		SD-30.6		MOST OF SHAFT-DISTRAL END CHEWED	4
SCSG23	18022	SNAIL	SHELL	2	2	W								PLANORBIS CORNEUS	4
SCSG23	18022	SSZ	RIB	1	5	F								PROX MIDHSHAFT-PIG SIZE?	4
SCSG23	18022	SUS	TIB	1	14	R	PN							PROX SHAFT FRAGMENT	4
SCSG23	18029	OVCA	RAD	1	10	L	PF	123						PROX END-2 THIRDS SHAFT-SMALL-GRACILE-SURFACE EROSION	3
SCSG23	18029	UNI	INN	1	5	F								LATERAL FRAGMENT ILIAL SHAFT-PIG OR BIGGER	4
SCSG23	18031	BOS	MAN	1	271	R		12345678			fgh14 I12J7K1			COMPLETE- 6 PIECES-INCISORS UNERUPTED-OLD CALF?	4
SCSG23	18035	BOS	CEV	1	78	W	CNAN	145						LACKING EPIPHYYSES	4
SCSG23	18036	OVCA	RAD	1	17	R	PF	1		DG				2 THIRDS SPLIT SHAFT-DISTAL END CHEWED-GRACILE	4
SCSG23	18036	SSZ	UNI	1	1	F								INDET FRAG-SKL/VERT?	4
SCSG23	18038	BOS	SCP	1	179	L	DF	1235				GLP-58 LG-47.6 SLC-40.4		GLENOID-NECK AND HALF SPINE AND BLADE	4
SCSG23	18057	BOS	CPI	1	8	W		1						COMPLETE	4
SCSG23	18057	BOS	MAN	1	16	R		7						ANT FRAG ASC RAMUS- 3 PIECES	4
SCSG23	18068	CSZ	RIB	1	24	L								MIDSHAFT	4
SCSG23	18077	BOS	MTT	1	14	F	PN	12						PROX END AND 2 THIRDS SHAFT-PROX UNFORMED-SMALL-POROUS-CALF	4
SCSG23	18077	OVCA	HUM	1	12	L	PNDC	567890				L1-100.3 SD-9.5 BT-24.7 HT-15.7		DISTAKL END AND SHAFT-EPI LOST-SMALL GRACILE-OLD LAMB	4
SCSG23	18115	OVCA	MAN	1	3	R					fgh12			ANT RAMUS WITH NP2-P4-LAMB-SMALL	4
SCSG23	18115	OVCA	RAD	1	5	L								SPLIT PROX MEDIAL SHAFT FRAGMENT	4
SCSG23	18115	SSZ	LBF	1	2	F								INDET SHAFT FRAGMENT	4
SCSG23	18115	SSZ	RIB	1	1	R								PROX MIDSHAFT FRAGMENT-SMALL	4
SCSG23	18115	SUS	MAN	1	12	L		6						VENTRAL ANGLE FRAGMENT-POROUS-SMALL-JUV	4
SCSG23	18115	SUS	SKL	1	35	L		9			I9J6K2			MAXILLA FRAG WITH M1/M2 MR UNERUPTED	4

site	context	species	bone	no.	wt g.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preserv-ation
SCSG23	18117	BOS	FEM	1	7	F								ANT DISTAL SHAFT FRAGMENT- 2 PIECES-SMALL-POROUS-CALF	4
SCSG23	18117	BOS	MAN	1	12	L		4		DG				PART CORONOID-TOOTH MARKS-VERY SMALL-CALF- 2 PIECES	4
SCSG23	18117	CSZ	LBF	1	9	F								PROX SHAFT FRAGMENT	4
SCSG23	18121	OVCA	LM1/2	1	3	R					I/J6			ROOT BROKEN	4
SCSG23	18126	OVCA	PH2	1	1	R	PF	12	C					COMPLETE-CALCINED-SMALL	4
SCSG23	18127	BOS	HUM	1	36	F			DG					PROX SHAFT FRAGMENT-TOOTH MARKS	4
SCSG23	18127	BOS	SKL	1	41	L		0			J5/6			FRAGMENT MAXILLA - 5 PIECES WITH M2 JUST ERUPTED	4
SCSG23	18161	BOS	RUL	1	125	L	PF	13/3	CH					FUSED PROX RAD & ULN-CHOPPED THRU Z2	4
SCSG23	18189	OVCA	CQ	1	1	F			C					CALCINED- 2 PIECES-SMALL	4
SCSG23	18189	SSZ	LBF	1	2	F			C					CALCINED SHAFT FRAG- 4 PIECES	4
SCSG23	18189	UNI	SKL	1	0.5	F								POROUS-INDET	4
SCSG23	18194	CSZ	RIB	1	3	F								MID-DISTAL SHAFT FRAGMENT-SMALL	4
SCSG23	18194	SUS	SKL	1	55	F	SN	55						FRNT-PAR-TEMP-SUTURES OPEN/UNFUSED-11 PIECES	4
SCSG23	18196	BOS	AST	1	7	L			C					CHARRED PROX FRAG ASTRAGLUS	4
SCSG23	18196	SSZ	LBF	2	2	F								INDET SHAFT FRAGMENTS-SMALL-?HUM SG	4
SCSG23	18197	CSZ	LBF	1	5	F								SPLIT MIDSHAFT FRAGMENT	4
SCSG23	18197	SUS	RIB	1	3	R		1						PROX SHAFT-SL POROUS-JUV/IMM	4
SCSG23	18205	OVCA	CEV	1	18	W	CJAN	1245						COMPLETE EXCEPT FOR POST EPI	4

APPENDIX H
OASIS SUMMARY FORM

OASIS Summary for withamar1-523778

OASIS ID (UID)	withamar1-523778
Project Name	Strip Map And Sample at Land at Millfield Nursery, Spalding Common, Spalding, Lincolnshire
Sitename	Land at Millfield Nursery, Spalding Common, Spalding, Lincolnshire
Sitecode	SCSG23
Project Identifier(s)	
Activity type	Strip Map And Sample
Planning Id	H16-0668-16
Reason For Investigation	Planning: Post determination
Organisation Responsible for work	Witham Archaeology
Project Dates	16-Jan-2023 - 28-Feb-2023
Location	Land at Millfield Nursery, Spalding Common, Spalding, Lincolnshire NGR : TF 23440 20040 LL : 52.76386492093955, -0.172018073137938 12 Fig : 523440,320040
Administrative Areas	Country : England County/Local Authority : Lincolnshire Local Authority District : South Holland Parish : South Holland, unparished area
Project Methodology	Two strip, map and record excavation areas were located in accordance with the directions laid out in the Written Scheme of Investigation (WSI) and approved by the curatorial archaeologist. The most recent deposits were removed mechanically, using a tracked excavator fitted with a toothless ditching bucket. All mechanical excavation was undertaken under archaeological supervision. Mechanical excavation was discontinued when archaeological deposits were exposed, or when undisturbed natural deposits were revealed. Exposed surfaces, both vertical and horizontal, were then cleaned by hand to define the archaeological remains. Potential archaeological features were further investigated by manual excavation in line with the sampling guidelines outlined in the WSI. A record of the investigations was compiled through: •Notes detailing the progress of archaeological fieldwork. •Individual written descriptions of archaeological contexts made on pro-forma recording sheets and indexed appropriately. •Measured section drawings showing specific archaeological contexts as well as general stratigraphic sequences, produced at scales 1:10 or 1:20 as appropriate. •Measured plans of archaeological contexts (individual and/or multiple) at scale 1:20 •Sequences of colour digital photographs showing individual archaeological features and overall site circumstances. The trenches, the features and the sample hand-excavated slots were located using survey grade GPS equipment, referenced to the Ordnance Survey National Grid.

Project Results	A programme of archaeological investigations at Millfield Nursery, comprising both trial trench evaluation and strip, map and record excavations, has revealed an additional location to add to the distribution of Romano-British settlement sites in the area around Spalding. The Site appears to have evolved in a similar manner to other sites in the vicinity, whereby saltmaking operations were succeeded by a phase of settlement sustained by more conventional agrarian activities. At this Site, the saltmaking is only indirectly recorded through fired clay waste material (briquetage) recovered as residual finds in later features. The form of the briquetage, however, indicates that the activity may have commenced in the 1st century BC, in the pre-Roman Iron Age. Romano-British settlement occurred within a landscape of ditched boundaries and drains, the principal axis of which was probably laid out in the later 1st century AD. Occupation concentrated in the central-west part of the site, around Trial Trench 6 and subsequent strip map and record Area A, and appears to have been most intensive around the 2nd to 3rd centuries AD, with very little indication of significant continuation into the 4th century. Within Area A, the discovery of burials, and what could be broadly characterised as remains of a small cemetery is of considerable interest. Although the settlement appears to have re-located, it is likely that the divided landscape continued to be exploited for some time. Eventual abandonment of the Romano-British landscape, however, is perhaps indicated by fills of alluvial character within some features, presumably accumulated in part through episodes of estuarine flooding. Partially filled features at various locations across the site show evidence for formation of a darker organic deposit, probably representing onset of wetland conditions over the Site area, succeeded by further alluvial accumulations. Tentative comparisons may be suggested with scientific dating of deposits examined within 2.5km north of the Site. Radiocarbon dating suggests that peat formation at Holland Park, possibly associated with the darker organic deposits observed at Millfield, may be of 6th to 7th century date, whereas overlying estuarine silts at Wygate Park, just to the north, have generated a 7th to 10th century OSL date. The precise sequence of environmental changes at Millfield will have been directed by its immediate topography, but the general trends accord with those of peer sites in the vicinity. Through the medieval period the land was valuable as common pasture but remained relatively marginal and vulnerable to occasional freshwater inundation. Improvements to local drainage, beginning with major campaigns in the 17th century, led to enclosure in the early 19th century and to increasingly intensive exploitation for agriculture and horticulture. In the later 20th century this culminated in construction of the nursery complex demolished immediately before the investigations described in this report.
Keywords	Ditch - ROMAN - FISH Thesaurus of Monument Types Ditch - POST MEDIEVAL - FISH Thesaurus of Monument Types Grave - ROMAN - FISH Thesaurus of Monument Types Pit - ROMAN - FISH Thesaurus of Monument Types Pot - ROMAN - FISH Archaeological Objects Thesaurus Briquetage - LATE IRON AGE - FISH Archaeological Objects Thesaurus Human Remains - ROMAN - FISH Archaeological Objects Thesaurus Animal Remains - ROMAN - FISH Archaeological Objects Thesaurus Rotary Quern - ROMAN - FISH Archaeological Objects Thesaurus
Funder	Private or public corporation Seagate Homes
HER	Lincolnshire HER - unRev - STANDARD
Person Responsible for work	Russell Trimble
HER Identifiers	

Archives	Physical Archive, Documentary Archive, Digital Archive - to be deposited with The Collection: Art and Archaeology in Lincolnshire;

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