

HOLY TRINITY CHURCH, MILLOM, CUMBRIA

Archaeological Watching Brief



Client: DCC of Holy Trinity
Church Millom

NGR: 317101 481306

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August 2020



The Site	
Site Name	Holy Trinity Church, Millom
County	Cumbria
NGR	317101 481306

Client	
Client Name	DCC of Holy Trinity Millom
Client's architect/agent	Dearbhail Keating, John Coward Architects

Planning	
Pre-planning	N/A
Planning Application No.	N/A
Plans (e.g. conversion, extension, demolition)	Creation of toilet and kitchen and associated drainage
Condition number	N/A
Local Planning Authority	Copeland Borough Council
Planning Archaeologist	Jeremy Parsons (Cumbria County Council)
Groundworks subject to watching brief	Excavation of trenches for drainage system

Archiving	
Relevant Record Office(s)/Archive Centre(s)	Barrow-in-Furness
Relevant HER	Cumbria
Relevant museum	Millom Discovery Centre

Staffing	
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Date watching brief carried out	15 th June 2020

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Non-Technical Summary

Following proposals to install a new 'trench arch' drainage system at Holy Trinity Church, Millom, Cumbria, Greenlane Archaeology was appointed to carry out an archaeological watching brief on the groundworks. This comprised the excavation of two areas, which was undertaken in June 2020.

Holy Trinity Church is located on a low hill to the north of the centre of the modern town of Millom. It is recorded in documentary sources from the 12th century and elements of the existing building are considered to be medieval, but there is also evidence for an earlier church on the site in the form of fragments of carved stone cross, which were found during work in the 1930s. The church is immediately adjacent to Millom Castle, which is recorded from the early 14th century when a licence to crenellate was granted to the Huddlestons. There is also evidence for earlier activity on the same site, including a hoard of Roman coins found within the grounds of the castle.

The groundworks comprised the excavation of two trenches running from the west end of the church into the graveyard after cutting across a tarmac footpath. The southern trench was longer but shallower while northern was wider and deeper. In both cases a thick layer of topsoil containing loose human bone and various artefacts was encountered. In the northernmost trench this was partially disturbed by a deposit of brick and other building material, which appeared to be the remains of an inspection chamber, and a lightning conductor attached to copper rods driven into the ground also ran the length of this trench. Throughout the only finds were of probable or definite post-medieval date, and included several iron nails, some pottery and glass, and two silver sixpences of the 1880s. No earlier finds or features were encountered, although *in situ* burials were revealed at the base of excavation in the northern most trench.

Although relatively limited in scope and only revealing evidence of 19th century and later activity, the watching brief did provide some information about the nature of the deposits in the churchyard and the earlier burials. Although these could not be dated, they presumably pre-date the 19th century and could include elements that are medieval.

Acknowledgements

Greenlane Archaeology would like to thank the DCC of Holy Trinity Church Millom for commissioning the project, and Dearbhail Keating at John Coward Architects for providing information about the site and project. Special thanks are due to Joe Nuttall and colleagues for their assistance during the groundworks, and Duane Farren for providing impromptu metal detecting services. The human bone was assessed by Malin Holst at York Osteoarchaeology.

1. Introduction

1.1 Circumstances of the Project

1.1.1 The circumstances of the project are set out on the inside cover of this report.

1.2 Location, Geology, and Topography

1.2.1 Holy Trinity Church is located approximately 1km north of the centre of Millom and is located on a low hill immediately adjacent to Millom Castle at a little over 10m above sea level (Ordnance Survey 2011; Figure 1).

1.2.2 The site is situated on the junction of a complex series of solid geology comprising Bannisdale Slates and Coniston Grits, Coniston limestone, and volcanic material of the Eycott and Skiddaw group, with a small area of carboniferous limestone to the south (Moseley 1978, plate 1). The solid geology is overlain by glacially derived drift deposits and boulder clay; although sands and gravels are also present (Countryside Commission 1998, 27). The close proximity to the coast line is also likely have been an important influence, with former marine deposits and earlier, more meandering channels undoubtedly present in the local area, although these have been altered by land reclamation and industrial activity such as the construction of the railway.

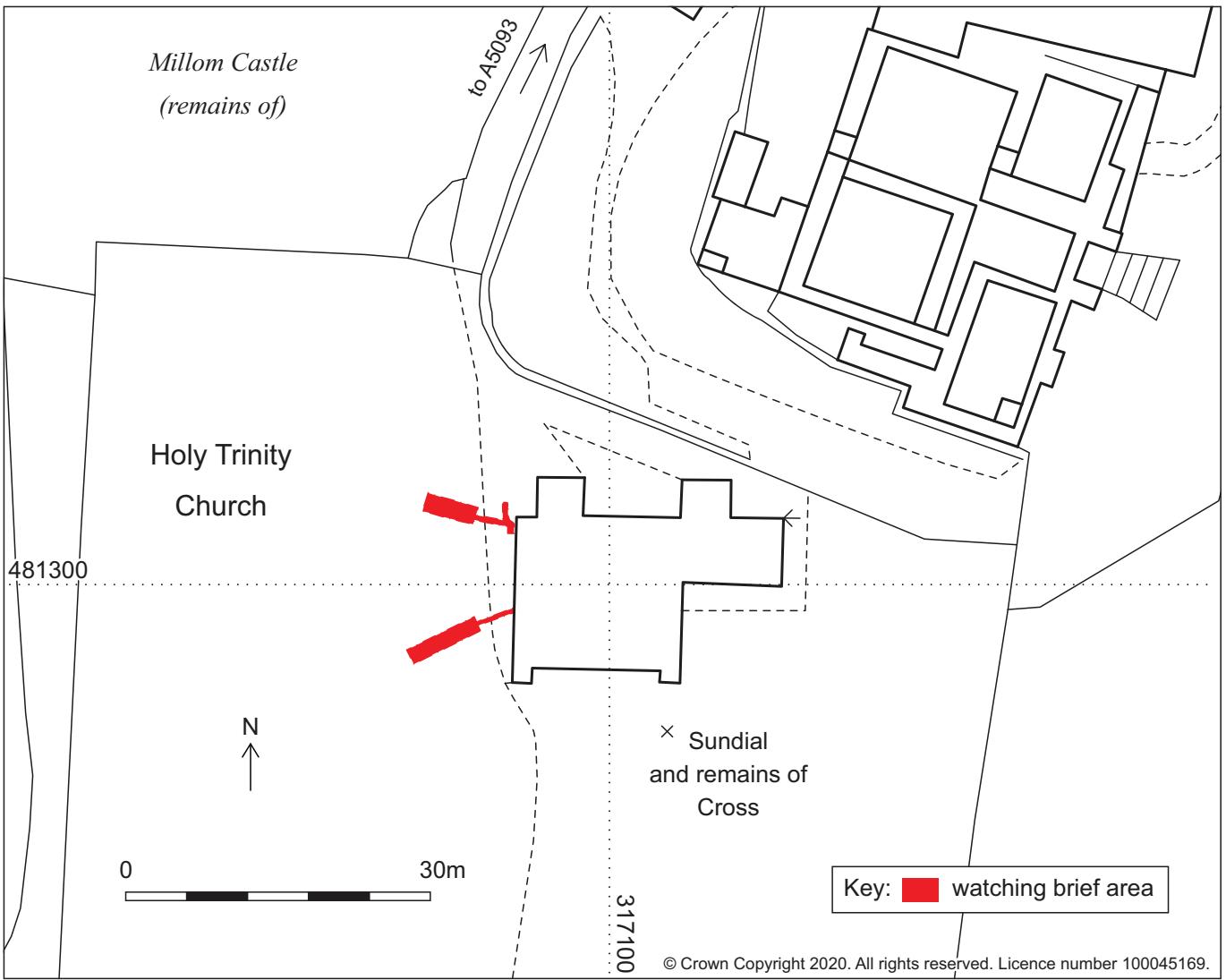
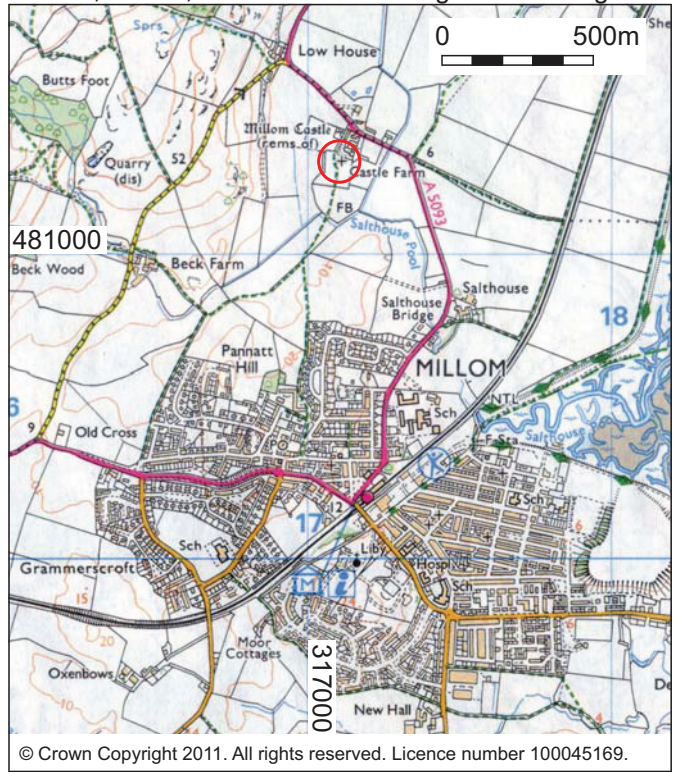
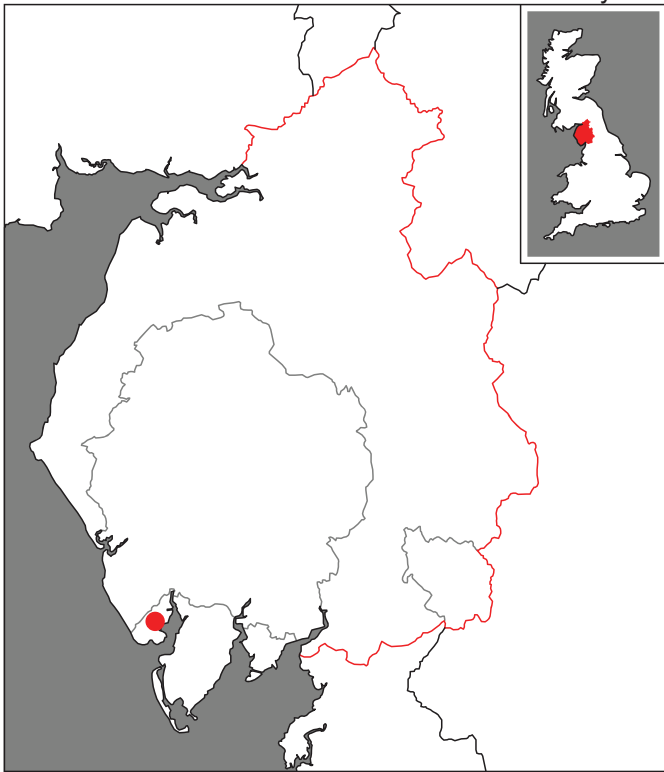


Figure 1: Site location

Client: DCC of Holy Trinity Millom

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2. Methodology

2.1 Desk-Based Assessment

2.1.1 A rapid desk-based assessment was carried out in accordance with the guidelines of the Chartered Institute for Archaeologists (CIfA 2014a). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the compilation of the desk-based assessment:

- **Online Resources:** where available, mapping such as Ordnance Survey maps were consulted online;
- **Greenlane Archaeology:** Greenlane Archaeology's office library includes maps, local histories, and unpublished primary and secondary sources. These were consulted where relevant, in order to provide information about the history and archaeology of the site and the general area.

2.2 Archaeological Watching Brief

2.2.1 The groundworks comprised the excavation of two trenches running from the west end of the church to provide new drainage systems (Figure 2). The watching brief therefore monitored the excavation of these, which involved digging down between 0.5m and 1.1m below the current ground level.

2.2.2 All aspects of the archaeological recording were carried out according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014b) and Greenlane Archaeology's own excavation manual (2007). The deposits encountered were recorded in the following manner:

- **Written record:** descriptive records of all deposits were made using Greenlane Archaeology's *pro forma* record sheets;
- **Photographs:** photographs in colour digital format (both 12 meg JPEG and RAW file format) were taken of the site as well as general working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology's *pro forma* record sheets;
- **Drawings:** a plan of the watching brief area was produced at a scale of 1:100 based on a site plan supplied by the client.

2.3 Environmental Samples

2.3.1 No environmental samples were taken as no appropriate deposits were encountered.

2.4 Finds

2.4.1 **Processing:** all of the artefacts recovered from the watching brief were washed, with the exception of metal objects, which were dry-brushed. They were then naturally air-dried or dried in the drying oven and packaged appropriately in self-seal bags with white write-on panels.

2.4.2 **Assessment and recording:** the finds were assessed and identified in the first instance by Jo Dawson. The finds were recorded directly into the catalogue produced as part of this report (*Appendix 3*).

2.5 Archive

2.5.1 The archive of the project will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this report, together with a copy of the report. The archive has been compiled according to the standards and guidelines of the CIfA guidelines (CIfA 2014c). In addition details will be submitted to the Online AccesS to the Index of archaeological investigationS (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public. A digital copy of the report will be

provided to the client and to the relevant Historic Environment Record, as detailed on the cover sheet of this report.

3. Site History

3.1 Site History

3.1.1 **Prehistoric Period (c11,000BC – 1st century AD):** while there is some limited evidence for activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay. Excavations of a small number of cave sites have found the remains of animal species common at the time but now extinct in this country and artefacts of Late Upper Palaeolithic type (Young 2002). The county was also clearly inhabited during the following period, the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field walking and eroding from sand dunes along the west coast, especially associated with the raised beach at Eskmeals, and on the uplands areas around the Eden Valley (Cherry and Cherry 2002). Lithic finds of Mesolithic date and probably later have also been discovered in the area around Haverigg (Cherry and Cherry 1987, 6-7).

3.1.2 In the following period, the Neolithic (c4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and one of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale to the north-west of Kendal (Hodgson and Brennand 2006, 45). An example of an axe of this type was found near Lowscales Farm in Millom Rural parish in 1824 (Cross 1939, 284). During the Bronze Age (c2,500 – 600 BC) monuments, particularly those thought to be ceremonial in nature, become more common still, and it is likely that settlement sites thought to belong to the Iron Age have their origins in this period. These are, however, not well represented in the immediate area around Millom, although the stone circle at Lacra is considered to belong to this period (Dixon and Fell 1949). Stray finds of Bronze Age date have been found in the region, however (although none are recorded within the study area), including a burial urn found at Beck Farm and stone axe-hammers from fields at Fenwick (Cross 1939, 283-284). Sites that can be specifically dated to the Iron Age (c600 BC – 1st century AD) are in general very rare and there are none recorded in close proximity to the site, although the crop-mark enclosure identified within the study area (Site 05) could belong to this period, although it could also be earlier or later. There is, however, likely to have been a considerable overlap between the end of the Iron Age and the beginning of the Romano-British period; it is evident that in this part of the country, initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74).

3.1.3 **Romano-British to Early Medieval Period: (1st century AD – 11th century AD):** there are no known sites of Roman date within the study area or the local environs, but two important finds of Roman date are recorded. A hoard comprising 'two great urns full of Roman silver coins' was reputedly found in the grounds of Millom castle in 1759 (Shotter 1982, 198) but no other details are known. This find, if accurate, is potentially significant as coins of high value (usually gold) were typically used 'to pay senior staff in the Roman army and administration' (Shotter and White 2009, 10). In addition, a piece red sandstone inscribed with the letters 'ANTEF' was discovered during renovation work at the nearby Parish Church of the Holy Trinity (Warriner 1931, 120). An examination of this inscription by RG Collingwood concluded that it was likely to be of the later Roman period in date and he suggested that its likely source was the Roman fort at Ravenglass, and that it did not necessarily indicate the presence of a Roman site at Millom (*ibid*). However, in combination with the coin hoard the case is perhaps more compelling that there was some form of Roman site at Millom, which was later occupied by the castle and church. This argument is perhaps strengthened by recent research in Furness, which re-emphasised the likelihood of a Roman military site, perhaps at Dalton, and a cross-peninsular Roman road that would have ultimately led to Millom and up the west coast to Ravenglass (Elsworth 2007).

3.1.4 The early medieval period is not well represented in the area in terms of physical archaeological remains, which is a common situation throughout the county. However, two fragments of carved stone cross of early medieval date were also discovered in the church during renovation in the 1930s (Warriner 1931, 119-120). One of these, thought to date to the 10th or 11th century AD, shows a Norse influence seen elsewhere in the region and denoting connections with the Isle of Man and the Irish Sea area (Bailey 1960). Other evidence belonging to this period is very scarce in the area, although local place-

names show that many settlements in the region were established before the Norman Conquest. Millom, the largest settlement in the area, seems to derive from an early form of the dative plural of *myln* (mill), and therefore means at or amongst the mills, although it is not recorded until c1180 (Armstrong *et al* 1950, 414). Other settlements in the wider area, such as Kirksanton and Whicham, are listed in the Domesday Book (*op cit*, 415) but the region is on the edge of what was recorded at that time. There is place-name evidence for the existence of a church at an early date in a field known as 'children's' or 'childrum' field near the castle, taken to be a corruption of the Gaelic *Cill-dhruim* meaning 'ridge of the chapel' (Sykes 1924, 235).

3.1.5 Medieval Period (11th century AD – 16th century AD): as already mentioned, at least some of the settlements in the vicinity of the site are recorded in the Domesday Book, although apparently not Millom itself (Armstrong *et al* (1950, 414-415) suggest that Millom is listed but as 'Hougun', but this idea is typically not now supported (see for example Kenyon 1991, 147-148)). Millom Castle and the Parish Church of the Holy Trinity clearly did exist during the medieval period, and the former evidently comprised a number of elements including a potentially very large deer park and fishponds, and also the gallows. The chronology of Millom castle is not known in detail; a licence to crenellate was granted to John de Huddleston in 1335, but it is possible that some remains on the site relate to an earlier phase (Cowper 1924, 198; Perriam and Robinson 1998). It remained the centre of the Huddleston's property in Millom for several centuries (until their entire estate was sold to the Lowthers of Whitehaven in the mid-18th century (*op cit*, 231)), and underwent several phases of alteration (Cowper 1924). More pertinent to the site are the extant remains of the Parish Church of the Holy Trinity, the earliest elements of which probably comprise the north side of the nave and belong to the 12th century, with the chancel thought to be 13th century and the southern extension to the nave 14th century (Sykes 1924; Salter 1998, 76-77). It is perhaps most famous for its western 'fish window' which has been described as almond shaped (Salter 1998, 76) but is technically 'vesica' shaped (Hyde and Pevsner 2010, 524).

3.1.6 Post-medieval Period (16th century AD – present): during the initial part of the post-medieval period there is likely to have been relatively little change in the area, although the Dissolution of the Monasteries in the 1530s probably led to an increased influence in the local area of Millom Castle. They may also have increased in their manorial control at this time, which might explain the establishment of a gallows, which were probably in use from the medieval period (Wilson 1915, xxvi) but certainly well recorded by the late 17th century (Winchester and Wane 2003, 71). From an early stage the region was affected by the beginnings of what would become the Industrial Revolution. The lords of the manor, based at the castle, established a forge (probably a bloomery forge) on their lands from at least the late 17th century and in the process felling much of their woodland to provide charcoal (*op cit*, 70). The location of this is not known, although it is thought that Furnace Beck, to the east of the castle, takes its name from it. However, the acquisition of iron ore and the construction of a 'smithy' is recorded in the early 16th century (Winchester 1983, 87) and so there may well have been an earlier forge. In addition to felling trees for their iron forge the lords of the manor used some of the timber to build a ship (Winchester and Wane 2003, 70), perhaps indicating a wider interest in this industry as well. It was not until the later part of the 19th century, however, with the establishment of a large iron works in Millom, that the present town began to develop (Harris 1966; Hughes 2006). The church of Holy Trinity underwent a substantial programme of renovation in 1930 (see Warriner 1931), which included widening the chancel (the work was undertaken by Hicks and Charlewood of Newcastle) (Hyde and Pevsner 2010, 524).

3.2 Map Regression

3.2.1 Introduction: early maps of the area tend to be relatively lacking in detail but in this case even the tithe map (CRO(B) IR30/7/116 1848) only shows the church as a simple structure with no associated information. The earliest useful maps are therefore only those produced by the Ordnance Survey from the late 19th century onwards.

3.2.2 Ordnance Survey, 1867: both trenches ought to cut across a track to the west side of the church (Plate 1). The south and west boundaries of the churchyard were closer to the church at this point.



Plate 1: Extract from the Ordnance Survey map of 1867

3.2.3 **Ordnance Survey, 1898:** various features around the church are shown in more detail on this map (due to the scale at which it was produced), including the moat of Millom Castle and the location of the cross (Plate 2; cf. Plate 1). The grave yard is also clearly labelled as such and has been extended substantially to the south and west.

3.2.4 **Ordnance Survey, 1924:** the site appears unchanged (Plate 3; cf. Plate 2).

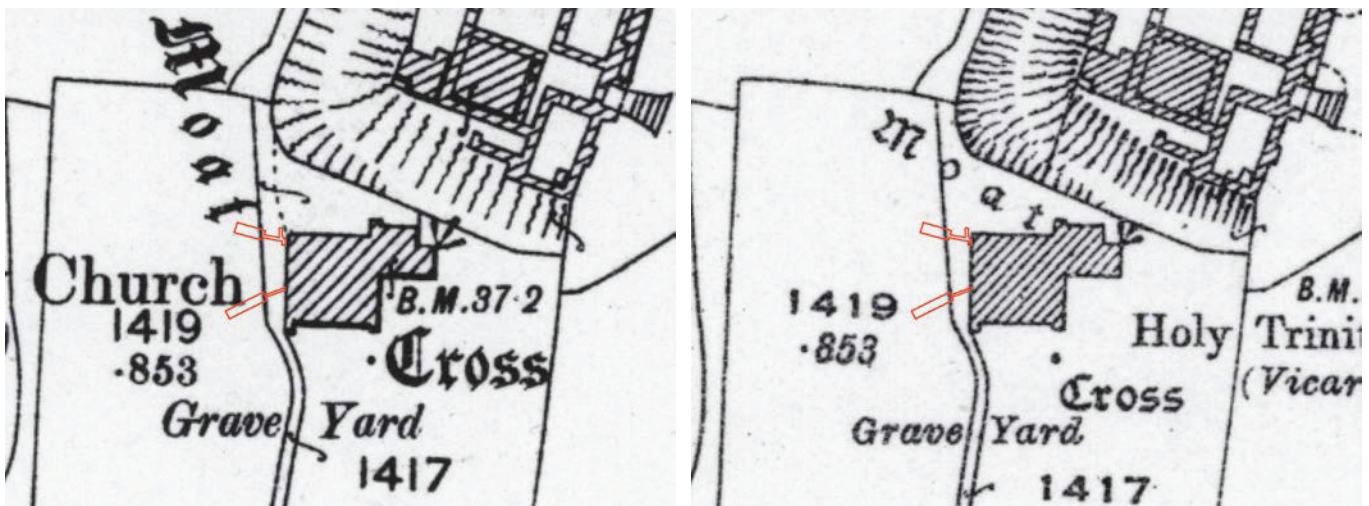


Plate 2 (left): Extract from the Ordnance Survey map of 1898

Plate 3 (right): Extract from the Ordnance Survey map of 1924

3.3 Lidar

3.3.1 **Lidar:** lidar imagery for the site is freely available online (Houseprices.io 2020). It shows the route of the track to the west of the church and the old field boundary is also traceable as a shadow to the south side of the church. Some gravestones can also be seen.



Plate 4: Lidar imagery of the site

4. Watching Brief

4.1 Introduction

4.1.1 The groundworks comprised the excavation two trenches intended to provide new drainage systems running from the new kitchen and toilet in the west end of the church westward into the churchyard. The southernmost trench (Trench 1) was 11.5m long, with the main part to the west 1.5m wide while the east end was only up to 0.5m wide. The northernmost trench (Trench 2) was 9m long, with the main part to the west 1.8m wide and the east end only up to 0.5m wide, where there was also a short spur of similar width running north from its east end and an even shorter one running south. In both cases the shorter east end was located below an existing tarmac path running around the outside of the church, while the rest was below the turf of the churchyard. The trenches were primarily excavated with a small tracked excavator, with the exception of the turf, which was removed by hand, although the east end of Trench 2 was excavated by hand.



Plate 5 (left): The site prior to excavation of the trenches (marked by the red spray mark), viewed from the north

Plate 6 (right): The site prior to excavation of the trenches, viewed from the north-west

4.2 Results

4.2.1 **Trench 1:** the removal of the turf in the main western section revealed very loose soft sandy/loamy topsoil with 5% rounded and sub-angular pebbles extending to a depth of 0.4m-0.5m (**100**) (Plate 7). At the base of the trench this changed to a noticeably firmer mid-orange sandy clay with more angular pebbles, c20% (**101**). This probably represented the beginning of the natural geology but was essentially encountered at the point at which excavation stopped. Below the tarmac path was an essentially identical deposit to **100** but firmer due to increased water content and so appearing more clayey (**100A**) (Plate 8).



Plate 7 (left): The west end of Trench 1 fully excavated, viewed from the south-west

Plate 8 (right): The east end of Trench 1 fully excavated, viewed from the south-west

4.2.2 **Trench 2:** at the west end, below the turf, was loose sandy clay with 30% rounded pebbles extending to a depth of at least 0.8m (**200**) (Plate 9). Essentially contained within this was a dumped deposit of red brick (some frogged and marked 'WHITEHAVEN' and some with finished with white tiles or green paint), ceramic roofing tile, roofing slate and slate flag, and at least one quarry tile marked '...KL' (**201**) (Plate 10). This evidently formed the remnants of a structure, probably an inspection hatch for a drain as a piece of *in situ* but broken stoneware pipe was still present running towards it, that had been demolished *in situ*, disturbing the surrounding deposits over an area of approximately 1.2m east/west and 0.6m north/south. Below deposit **200**, essentially at the limit of excavation, a deposit of dark orangey grey gravelly sand with lots of charcoal was encountered (**202**). This was evidently the result of burials because the arm of an articulated skeleton, with associated coffin nails with timber still attached, was exposed while investigating the deposit but this was left *in situ* as it was below the depth of excavation. Patches of a firm gravelly orange clay, apparently cut by several features filled with **202** (probably intercutting graves) were also observed at this depth and probably represent the natural geology (**203**). Below the tarmac path a similar deposit to **200** was present but as in Trench 1, the increased moisture made it appear firmer and more clayey (**200A**) (Plate 11). The east/west orientated part of the east end of the trench was cut by three early metal cables (Plate 11), while the north end of the north/south spur was cut by a single plastic one (Plate 12). At least two of these had a clean white sand in the backfill of the cut. In addition, a copper lightning conductor ran almost the length of the trench just below the surface and connected to at least two long copper rods inserted into the ground (Plate 13).



Plate 9 (left): The west end of Trench 2 fully excavated, viewed from the north-west

Plate 10 (right): Brick rubble 201 in section in the south side of Trench 2, viewed from the north



Plate 11 (right): The east end of Trench 2 fully excavated, viewed from the north-west



Plate 12 (left): The north/south spur off the east end of Trench 2, viewed from the north

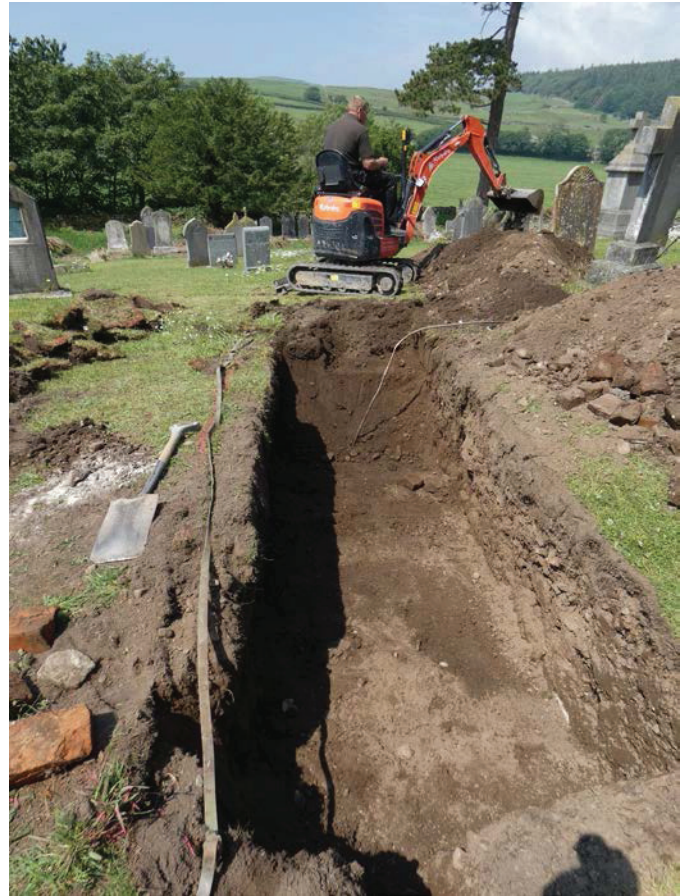
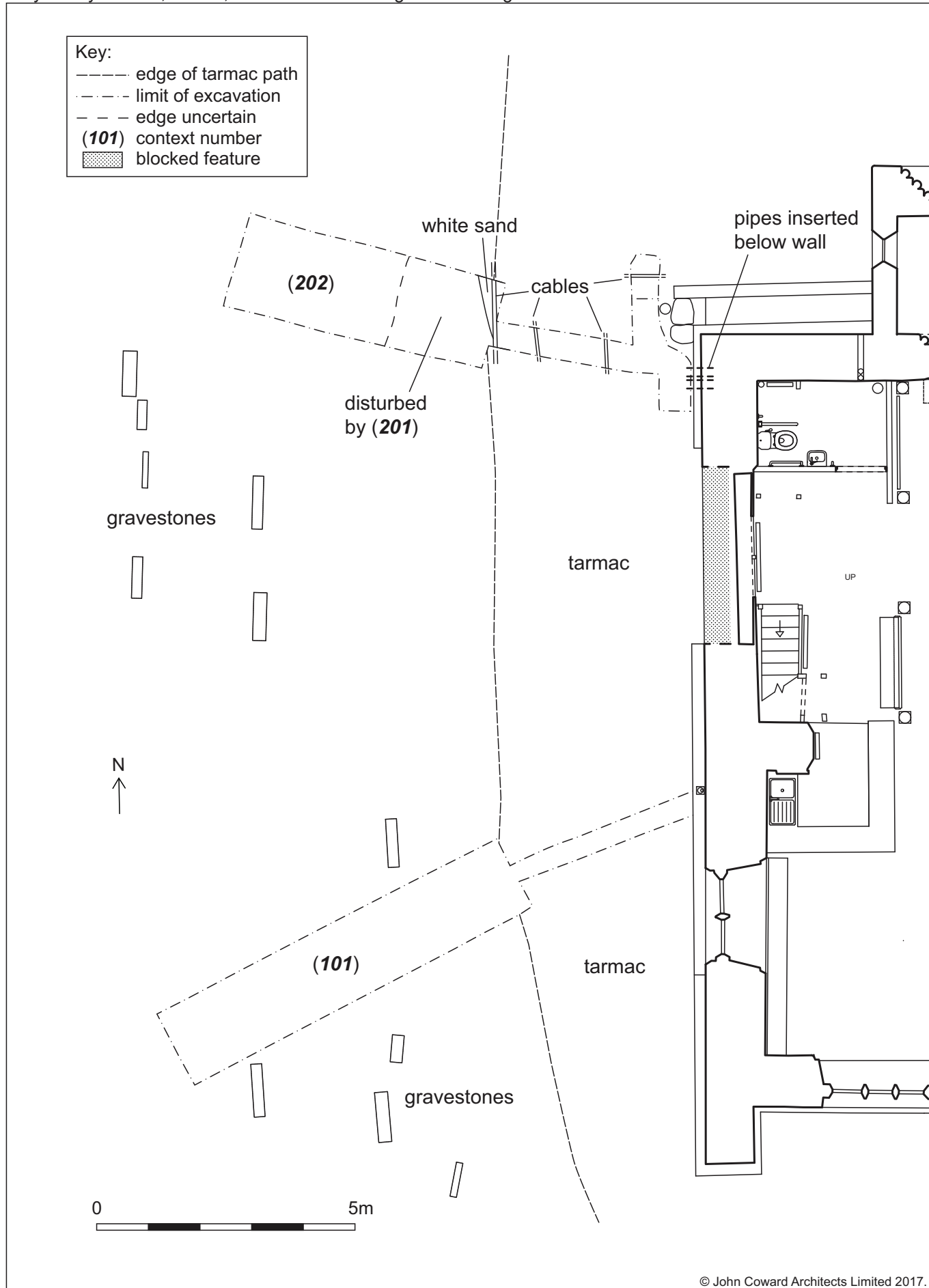


Plate 13 (right): Copper rod exposed during excavation of Trench 2, viewed from the east



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Figure 2: Site plan

4.3 Finds

4.3.1 **Introduction:** a total of 219 finds were recovered during the watching brief, the majority of which (182 fragments) comprised fragments of human bone. All of the dateable finds were post-medieval in date and they are catalogued in *Appendix 3*, and are listed below by find type.

4.3.2 **Human bone:** a total of 182 fragments of human bone were recovered; a full assessment is presented in *Appendix 4*. In summary the assemblage represented at least four adults (representing a range of ages, one of which was definitely female), one juvenile, and an adolescent. Evidence for lesions that were healing at the time of death was present on two shin bone fragments and one individual had suffered tooth loss before death.

4.3.2 **Pottery:** the assemblage comprised just two fragments of post-medieval pottery, both from context **100**. One of these was the earliest artefact recovered - a fragment of tin-glazed earthenware of probable early 18th century date or slightly earlier. The other was more likely 19th or early 20th century. Both undoubtedly represent accidental losses and are of limited archaeological importance, except for dating the topsoil deposits as broadly post-medieval in date.

4.3.3 **Glass:** in total, four fragments of glass vessels and window glass were recovered, all from context **100**. These could be broadly dated to the 19th and 20th centuries and again most likely represent accidental losses or rubbish, although the window glass could have derived from the church itself.

4.3.4 **Industrial residue:** a single lump of coke was recovered from deposit **200**. It is difficult to determine its date but coke was not produced until the late 18th century when it was widely used in a range of industrial processes. Its presence on the site is perhaps unexpected but such material would have been widely used in the area and it is likely to represent an accidental loss or was utilised after use in path construction or similar.

4.3.5 **Metal:** in total, 30 metal items were recovered from across the four contexts; 26 iron, two copper alloy, and two silver. The majority of the iron items comprise nails, which were heavily corroded but seemed to be largely square section and with flat heads. Nails of this type, although also found much earlier, typically represent the earliest phases of mass-production when nails were cut by machine into strips and the heads hand-forged. They are likely to date from the 19th century, prior to the fully mechanised manufacturing techniques that began in the late 19th century (Bodey 1983, 21-24). The other iron items are less easy to identify or date. The copper alloy items include a two-part button with bronzed or gilded surface and alpha-style shank, which is also likely to be 19th century in date (Peacock 1996). The two silver coins are marked 'VICTORIA DEI GRATIA BRITANNIAR REG F D' on the obverse and 'SIX PENCE' and the date on the reverse. They are of a type used between 1838 and 1887 (Lobel *et al* 1997, 536) but these two examples are dated 1881 and 1882.

5. Discussion and Conclusion

5.1 Discussion

5.1.1 The watching brief did not reveal any features or structures of great archaeological interest, although a small assemblage of finds was recovered. The interpretation of the site is therefore limited but does provide some information about the development of the site.

5.1.2 **Phase 1 – Natural:** in Trench 1 a more compacted sandy clay was encountered at the base of the excavation (**101**), this is likely to be the natural geology, although the nature of the work meant that it was not possible to examine in any detail and so it is difficult to be sure of this. In Trench 2 a much cleaner orange gritty clay (**203**) was exposed in a few isolated areas, but again this was at the base of the excavation and so it was not possible to examine it in any detail. In Trench 2 this deposit had been clearly cut by a number of features, undoubtedly extant graves filled, which were not evident in Trench 1.

5.1.3 **Phase 2 – medieval/ post-medieval?:** as mentioned, in Trench 2 the probable natural (**203**) was cut by a number of features, the exact extent of which was unclear, filled by a darker gravelly sandy clay (**202**), although this appeared as a layer across the east end of the trench. The presence of an apparently articulated skeleton within this deposit indicates that it represents the fill of, probably intercutting, graves cut into the underlying natural. It is not possible to date this deposit: gravestones in this area tended to be late 19th and early 20th century but this deposit was below later deposits that were evidently post-medieval in origin (see *Section 5.1.4* below) so the burials could be earlier. The good condition of the bones and the presence of timber still attached to coffin nails in the *in situ* burial revealed suggests that a post-medieval date is likely.

5.1.4 **Phase 3 – post-medieval:** in both trenches the uppermost deposit (**100** and **200**) comprised a loose sandy clay, essentially a topsoil, but presumably resulting from repeated episodes of grave digging. In Trench 2 this was as much as 1m thick, but it was perhaps as little as 0.5m thick in Trench 1. Finds recovered from this included pottery, glass, iron nails and two coins dating from the 1880s, which indicate a post-medieval date but the presence of relatively large amounts of human bone demonstrates that this deposit includes the remains of numerous disturbed burials of earlier date.

5.1.5 **Phase 4 – early 20th century/modern:** in Trench 2 a deposit of bricks and other building rubble (**201**) was revealed, apparently comprising the remains of an *in situ* inspection tank for some form of drainage system that had been demolished into itself and then presumably backfilled with additional rubble. The bricks marked 'WHITEHAVEN' cannot date to before the mid-19th century (Brooks 2017), and the other material recovered from this is also suggestive of a late 19th century date. It is probable therefore that this structure was constructed in the late 19th century and demolished and backfilled in the early 20th, perhaps in association with the work carried out at the church in 1930. Trench 2 was also cut by three metal cables and a blue plastic pipe, all of which are 20th century in date or even more recent. The lightning conductor running just below the turf in this trench was clearly later than everything else, although it is possible that the cables could have been inserted beneath it, and is also probably 20th century, again probably relating to the work carried out in 1930, or later.

5.2 Conclusion

5.2.1 The investigation, although relatively limited, made some interesting discoveries relating to the development and use of the graveyard in the 19th century, although in general the limited depth of excavation will have meant that earlier deposits were left *in situ*. No dateable finds were recovered dating to before the post-medieval period, although it is possible that the fragmentary human bone recovered from the topsoil is of medieval or even earlier date.

5.2.2 Ultimately a piece of work of this scale will not be able to answer very many of the outstanding questions regarding the understanding of the church and its origins. It does, however, provide some useful information about the earlier burials, albeit from disturbed material.

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Appendix 1: Project Design

Archaeological Watching Brief Cover Sheet and Project Design

The Site	
Site Name	Holy Trinity Church, Millom
County	Cumbria
NGR	317101 481306

Client	
Client Name	PCC Holy Trinity, Millom
Client's architect/agent	Dearbhail Keating, John Coward Architects

Planning	
Pre-planning?	N/A
Planning Application No.	N/A
Plans (e.g. conversion, extension, demolition)	Alterations to church
Condition number	N/A
Local Planning Authority	Copeland Borough Council
Planning Archaeologist	Jeremy Parsons (Cumbria County Council)
Groundworks subject to watching brief	Installation of trench arch drainage system

Archiving	
Relevant Record Office(s)/Archive Centre(s)	Barrow-in-Furness
Relevant HER	Cumbria County Council
Relevant museum	Millom Discovery Centre



1. Introduction

1.1 Project Cover Sheet

1.1.1 All the details specific to this project are set out on the cover sheet of this project design. The project design itself covers all elements that are involved in an archaeological watching brief.

1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have worked continuously in commercial archaeology since 2000 and 1999 respectively, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Chartered Institute for Archaeologists' (CIfA) Code of Conduct. The watching brief will be carried out according to the Standards and Guidance of the CIfA (CIfA 2014a).

1.3 Staff

1.3.1 **Dan Elsworth (MA (Hons), ACIfA)** graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has managed many recent projects in Cumbria and Lancashire including several archaeological building recordings and watching briefs. He is very experienced at building recording, having carried out numerous such projects, mainly in Cumbria and Lancashire.

1.3.2 **Tom Mace (BA (Hons), MA, MIfA)** has extensive experience of working on a variety of archaeological projects, especially watching briefs, but also excavations, evaluations, and building recordings, as well as report writing and illustration production. He joined Greenlane Archaeology in 2008 having worked for several previous companies including Archaeological Solutions and Oxford Archaeology North. He currently works on a broad range of projects and is also responsible for the production of all illustrations for reports and publications as well as some post-excavation assessments. He is a Member of the Chartered Institute for Archaeologists.

1.3.3 **Jo Dawson (MA (Hons), ACIfA)** graduated from University of Glasgow in 2000 with a joint honours degree in Archaeology and Mathematics, and since then has worked continuously in commercial archaeology. Her professional career started at Glasgow University Archaeological Research Division (GUARD), following which she worked for Headland Archaeology, in Edinburgh, and then Oxford Archaeology North, in Lancaster. During this time she has been involved in a range of different archaeological projects. She has extensive experience of both planning and pre-planning projects, and has undertaken assessments of all sizes. Since establishing Greenlane Archaeology in 2005 she has managed numerous projects in south Cumbria, including desk-based assessments and evaluations. She currently mainly carries out quality control of reports and post-excavation assessments. She is an Associate member of the Chartered Institute for Archaeologists.

1.3.4 **Specialists:** Greenlane Archaeology have a range of outside specialists who are regularly engaged for finds and environmental work. Engagement is dependent upon availability, but specialists typically engaged are as follows:

Specialism	Specialist
Animal bone	Naomi Sewpaul
Ceramic building material, medieval and Roman	Phil Mills
Conservation	York Archaeological Trust
Clay tobacco pipe	Peter Davey (or Tom Mace in house for smaller assemblages)
Flots	Headland Archaeology, Edinburgh
Human bone	Malin Holst
Industrial residue	Gerry McDonnell
Medieval pottery	Chris Cumberpatch for assemblages from the North East of England
Miscellaneous find types, for example Roman glass and medieval and earlier metalwork	Chris Howard-Davis
Prehistoric pottery	Blaise Vyner
Radiocarbon dates	Scottish Universities Environmental Research Centre
Roman pottery	Ruth Leary
Samian	Gwladys Monteil
X-ray of metal finds	York Archaeological Trust

2. Objectives

Client: DCC of Holy Trinity Millom

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2.1 Desk-Based Assessment

2.1.1 Where an archaeological desk-based assessment has not already been carried out in a previous phase of work, the objective will be to examine early maps of the site and any other relevant primary and secondary sources in order to better understand its dating and development, and set it in its historic context.

2.2 Watching Brief

2.2.1 To carry out an archaeological watching brief on the relevant areas of groundworks, in order to identify any and record surviving any archaeological remains that are revealed.

2.3 Report

2.3.1 To produce a report detailing the results of the watching brief.

2.4 Archive

2.4.1 Produce a full archive of the results of the project.

3. Methodology

3.1 Desk-Based Assessment

3.1.1 Where an archaeological desk-based assessment has not already been carried out in a previous phase of work, an examination of various sources, particularly early maps and plans relating to the site, will be carried out, including other relevant primary and secondary sources. The sources that will be used as part of the desk-based assessment will include:

- **Record Office/Archive Centre:** the majority of original and secondary sources relating to the site are deposited in the relevant Record Office(s) or Archive Centre(s), as specified in the cover sheet of this project design. Of principal importance are early maps of the site. These will be examined in order to establish the development of the site, date of any structures present within it, and details of land use, in order to set the site in its historical, archaeological, and regional context. In addition, any details of the site's owners and occupiers will be acquired where available;
- **Online Resources:** where available, mapping such as Ordnance Survey maps and tithe maps will be consulted online;
- **Greenlane Archaeology:** Greenlane Archaeology's office library includes maps, local histories, and unpublished primary and secondary sources. These will be consulted where relevant, in order to provide information about the history and archaeology of the site and the general area.

3.2 Watching Brief

3.2.1 The relevant area of groundworks will be monitored, with one archaeologist on site. If there are several areas being excavated concurrently it may be considered necessary to have more than one archaeologist on site.

3.2.2 The watching brief methodology will be as follows:

- All excavation will be carried out under supervision by staff from Greenlane Archaeology. Should the excavation technique utilised be deemed liable to have an adverse effect on any archaeological deposits that might be present an alternative method will be sought, where feasible;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not and photographs in both colour print and colour digital format. In addition, photographs will also be taken of the site before work begins and after completion;
- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;

- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have, for example, preserved environmental remains, industrial residues, and/or material suitable for scientific dating will be sampled. Bulk samples of between 20 and 60 litres in volume (or 100% of smaller features) where possible, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (e.g. gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors, who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;
- Any articulated human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. The client will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise. Any loose human bones discovered during the watching brief will be retained and removed from site for specialist assessment before being returned in order to be reinterred;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and securely stored off-site, or covered and protected on site if immediate removal is not possible;
- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of the Planning Archaeologist so that the need for further work can be confirmed. Any additional work will be carried out following discussion with the Planning Archaeologist and subject to a new project design, and the ensuing costs will be agreed with the client. It is considered unlikely in this case that the excavation will be deep enough to reach the significant archaeological deposits encountered during a previous period of archaeological investigation.

3.3 Report

3.3.1 The results of the watching brief will be compiled into a report, which will provide a summary and details of any sources consulted. It will include the following sections:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the watching brief, including finds and samples;;
- Discussion of the results including phasing information;
- Bibliography;
- Illustrations at appropriate scales including:
 - a site location plan related to the national grid;
 - a plan showing the location and extent of the area subject to archaeological watching brief;
 - plans and sections of any features discovered during the watching brief;
 - photographs of any features encountered during the watching brief;

- copies of selected historic maps and plans of the site relevant to the understanding of its development.

3.4 Archive

3.4.1 The archive, comprising the drawn, written, and photographic record of any deposits of archaeological interest and/or working shots identified during the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this project design, together with a copy of the report. The archive will be compiled according to the standards and guidelines of the ClfA (ClfA 2014b). In addition details will be submitted to the Online AccesS to the Index of archaeological investigationS (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.4.2 A copy of the report will be provided to the client and a copy will be provided for the relevant Historic Environment Record, as detailed on the cover sheet of this project design.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project on the date specified on the Order Form, or at another date convenient to the client. It is envisaged that the elements of the project will be carried out in the following order:

- **Task 1:** rapid desk-based assessment (where this has not already been carried out as a previous phase of archaeological work);
- **Task 2:** archaeological watching brief;
- **Task 3:** production of draft report including illustrations;
- **Task 4:** feedback on draft report, editing and production of final report;
- **Task 5:** finalisation and deposition of archive.

5. Other matters

5.1 Access and clearance

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s). It is assumed that the watching brief will be able to be undertaken without obstruction. Greenlane Archaeology reserves the right to increase the price if problems with access result in delays to the work.

5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£1,000,000**. Details of this can be supplied if requested.

5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally and ethically sound working practices. Its office is supplied with 100% renewable energy by Good Energy, and uses ethical telephone and internet services supplied by the Phone Co-op. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

6. Bibliography

ClfA, 2014a *Standard and Guidance for an Archaeological Watching Brief*, Reading

ClfA, 2014b *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*, Reading

Appendix 2: Summary Context List

Context	Trench	Type	Description	Interpretation
100	1	Deposit	Loose and soft sandy/loamy material with 5% rounded and sub-angular pebbles, 0.4m-0.5m thick	Overburden/topsoil
100A	1	Deposit	Essentially identical to 100 but firmer due to increased water content	Overburden/topsoil (below tarmac path)
101	1	Deposit	Firm mid-orange sandy clay with c20% angular stone	Natural?
200	2	Deposit	Loose sandy clay with 30% rounded pebbles, up to 0.8m thick	Overburden/topsoil
200A	2	Deposit	Essentially identical to 100 but firmer due to increased water content	Overburden/topsoil (below tarmac path)
201	2	Deposit	Dump of red brick, ceramic roof tile, floor tile (quarry tile) roof slate and slate flag covering an area of approximately 1.2m east/west by 0.6m north/south	Dumped building material/remains of inspection pit
202	2	Deposit	Dark orangey-grey gravelly sand with charcoal	Fill of <i>in situ</i> graves?
203	2	Deposit	Firm gravelly orange clay	Natural

Appendix 3: Summary Finds List

Context	Type	Quantity	Description	Date range
100	Pottery	1	Tin-glazed earthenware fragment with blue painted decoration	17 th – early 18 th century?
100	Pottery	1	Buff-bodied stoneware ridged jam/marmalade jar base fragment	19 th – early 20 th century
100	Glass	1	Colourless jar/bottle base fragment	20 th century
100	Glass	3	Very light turquoise flat sheet fragments; probably window glass	19 th – early 20 th century
100	Silver	2	Sixpence of Queen Victoria: dated 1881 and 1882	1881-1882
100	Cu alloy	1	Flat sheet bent over and with various holes crudely punched in each side	Post-medieval
100	Fe	9	Corroded fragment x 1, thin flattened bar with deliberate bend x 1, large square section bar with flattened head (grave marker) x 1, and nails of various sizes, typically square section with flat heads x 6	Post-medieval/not closely dateable/nails 19 th century
100	Human bone	76	See <i>Appendix 4</i>	Not closely dateable
100A	Fe	3	Piece of curved cast iron, probably guttering x 1, small square section nails with flat heads x 2	Post-medieval/19 th century
100A	Human bone	6	See <i>Appendix 4</i>	Not closely dateable
200	Human bone	90	See <i>Appendix 4</i>	Not closely dateable
200	Cu alloy	1	Button; two-part construction with alpha-type shank and bronzed gilt front	19 th – early 20 th century
200	Indust. residue	1	Lump of burnt coke	18 th – early 20 th century
200	Fe	13	Corroded lumps x 4, square section nails with flat heads x 9	Not closely dateable/19 th century
200A	Fe	1	Large square section nail with flat square head	19 th century
200A	Human bone	10	See <i>Appendix 4</i>	Not closely dateable

Appendix 3: Human Bone Assessment Report

13 August 2020

ANALYSIS OF HUMAN REMAINS FROM HOLY TRINITY CHURCH, MILLOM, CUMBRIA

Malin Holst

Introduction

Excavations conducted by Greenlane Archaeology in 2020 in advance of the installation of a drainage system in the churchyard of Holy Trinity Church, Millom, Cumbria (NGR SD 17098 81300), identified disarticulated human remains in Trench 1 and 2. Parts of the church dates from the 12th century and the skeletal remains are thought to date to the medieval or, more likely, post-medieval period. This document presents the objectives, methods, and results of the analysis of these remains.

Objectives

The aim of the skeletal analysis was to determine the age, sex, and stature of the disarticulated skeletal remains, as well as to record and diagnose any skeletal manifestations of disease and trauma.

Methodology

The bones were analysed in detail, assessing the preservation and completeness, as well as determining the age, sex, and stature of the individuals (Appendix A). All pathological lesions were recorded and described.

Osteological Analysis

Preservation

Skeletal preservation depends upon several factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition (Henderson 1987, Garland and Janaway 1989, Janaway 1996). Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation is important, as it can have a large impact on the quantity and quality of information that it is possible to obtain from the skeletal remains.

Surface preservation, concerning the condition of the bone cortex, of the inhumations, was assessed using the seven-category grading system defined by McKinley (2004), ranging from 0 (excellent) to 5+ (extremely poor). Excellent preservation implied no bone surface erosion and a clear surface morphology, whereas extremely poor preservation indicated heavy and penetrating erosion of the bone surface resulting in complete loss of surface morphology and modification of the bone profile. The degree of fragmentation was recorded, using categories ranging from 'minimal' (little or no fragmentation of bones) to 'extreme' (extensive fragmentation with bones in multiple small fragments). Finally, the completeness of the skeletons was assessed and expressed as a percentage: the higher the percentage, the more complete the skeleton.

In total, 182 human bone fragments were recovered, which were largely in good (2-4) to moderate condition (Appendix A).

MNI

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure during osteological assessments of inhumations in order to establish how many individuals were represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements, such as the hip joints and cranial elements.

The MNI for the human remains recovered from Holy Trinity Church was six, including four adults (based on four distal left femur epiphyses) one juvenile (based on a proximal tibia, sacral vertebra, ulna shaft fragment and ischium) and one adolescent (based on a proximal tibia and distal femur).

Age

Age is usually determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). Age estimation in adults relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual (Lovejoy et al 1985; Meindl and Lovejoy 1989). Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years), mature adult (ma; 46+) to adult (an individual whose age could not be determined more accurately as over the age of seventeen).

One adolescent and one juvenile were recorded. A pelvis fragment belonged to a mature adult, another to an old middle adult and another pelvis and a mandible fragment derived from a young middle adult. Age could not be established in most other remains other than to suggest that the individuals were aged at least eighteen years, but likely older.

Sex

Sex determination is usually carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood.

Sex could only be established in one a mandible fragment, which was female.

Pathological Analysis

Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles. All bones were examined macroscopically for evidence of pathological changes.

Infection

Infectious disease can involve the skeleton, but since bone cannot respond quickly only evidence for chronic, longstanding infections can be observed in archaeological skeletal remains (Roberts and Manchester 2005, 167). Acute conditions, where the patient either recovers or dies within a short space of time will not be seen. Initial bone formation in response to infection is disorganised (woven bone), but with time, as healing takes place, woven bone is remodelled and transformed into lamellar bone. Consequently, woven bone presence indicates an infection that was active at the time the person died, whilst lamellar bone indicates an infection that had healed. A combination of both suggests a recurring or longstanding infection (*ibid*). Although specific diseases may cause new bone to be deposited on the skeleton, it is almost always impossible to diagnose these from the bones alone. Hence, evidence for infection is discussed as 'non-specific' infection.

Lamellar bone was recorded on the medial shaft of two tibia shaft fragments from Context 200, suggesting the inflammation was healing at the time of death.

Dental Health

Analysis of the teeth from archaeological populations provides vital clues about health, diet, and oral hygiene, as well as information about environmental and congenital conditions. All teeth and jaws were examined macroscopically for evidence of pathological changes.

A total twelve permanent teeth were present. A mandible from Context 200 exhibited ante-mortem tooth loss of the first to third right molars. No other dental pathology was observed.

Discussion and Summary

The small disarticulated skeletal assemblage contained at least four adults, one juvenile and one adolescent. Three adults could be aged more closely, including a young middle adult, an old middle, and a mature adult. One of the adults was female.

Healing inflammatory lesions were recorded on two tibia (shin) shaft fragments and one individual had experienced ante-mortem tooth loss.

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Appendix

Table 1 Summary of disarticulated bones

Context	Bone Element	Bone	Side	% of Bone	SP	No. of Fragments	Age	Sex	Other
100	Skull	Generic	-	0.5-2	3	25	-	-	25 generic skull fragments
100	Skull	Frontal	-	2	2	1	A	-	-
100	Skull	Parietal	-	1	2	1	A	-	-
100	Skull	Temporal	-	0.2	3	1	A	-	Mandibular fossa
100	Fibula	Shaft	-	1	3	1	-	-	-
100	Fibula	Shaft	-	5	2	1	-	-	-
100	Ulna	Proximal 1/8	R	5	4	1	A	-	-
100	Ulna	Proximal 1/8	R	3	3	1	A	-	-
100	Ulna	Shaft	-	5	2	1	-	-	-
100	Ulna	Shaft	-	10	2	1	-	-	-
100	Ulna	Shaft	-	5	2	1	-	-	-
100	Humerus	Distal epiphysis	R	1	2	1	A	-	-
100	Sacrum	S1	-	10	1	1	J	-	-
100	Vertebra	Lumbar facet	-	5	2	1	A	-	-
100	Hand	MC1	L	90	1	1	A	-	-
100	Hand	MC1	L	100	1	1	A	-	-
100	Hand	MC4	L	90	3	1	A	-	-
100	Hand	Proximal phalanx	-	70	2	1	A	-	-
100	Foot	Talus	R	60	2	1	A	-	-
100	Foot	Calcaneus	L	30	2	1	A	-	-
100	Foot	Proximal phalanx	-	100	2	1	A	-	-
100	Foot	Proximal phalanx	-	100	2	1	A	-	-

100	Foot	Proximal phalanx	-	90	2	1	A	-	-
100	Tooth	M2	L	100	1	1	A	-	-
100	Tibia	Proximal epiphysis	R	3	3	1	A	-	-
100	Tibia	Shaft	L	50	2	1	A	-	-
100	Tibia	Shaft	R	20	3	1	-	-	-
100	Tibia	Shaft	L	20	3	1	-	-	-
100	Tibia	Shaft	-	2	3	1	-	-	-
100	Tibia	Distal epiphysis	-	1	3	1	-	-	-
100	Tibia	Proximal shaft	L	2	3	1	Adol	-	-
100	Femur	Shaft	-	20	2	1	-	-	-
100	Femur	Shaft	-	10	2	1	-	-	-
100	Femur	Shaft	-	2	3	1	-	-	-
100	Femur	Proximal shaft	R	10	3	1	A	-	-
100	Femur	Distal epiphysis	L	10	2	1	A	-	-
100	Femur	Distal epiphysis	L	10	2	1	A	-	-
100	Femur	Distal epiphysis	L	5	2	1	A	-	-
100	Femur	Distal epiphysis	L	5	2	1	A	-	-
100	Femur	Distal epiphysis	-	2	2	1	A	-	-
100	Femur	Distal epiphysis	-	2	2	1	Adol	-	-
100	Femur	Proximal epiphysis	-	1	4	1	-	-	-
100	Femur	Proximal epiphysis	-	1	3	1	A	-	-
100	Pelvis	Ilium	L	10	2	1	A	-	-
100	Pelvis	Pubic symphysis	R	5	2	1	YMA	M	-
100	Pelvis	Ilium	R	30	4	1	MA	-	-
100	Pelvis	Ilium	-	4	2	1	A	-	-
100	Pelvis	Ilium	-	1	2	1	-	-	-

100	Pelvis	Ilium	-	1	2	1	-	-	-
100	Pelvis	Ilium	-	1	5	1	-	-	-
100	Pelvis	Ilium	-	1	4	1	-	-	-
100	Pelvis	Ilium	-	1	3	1	-	-	-
100A	Ribs	Rib shaft	-	30	2	1	A	-	-
100A	Tooth	Mandibular M2	L	100	1	1	A	-	Moderate wear
100A	Hand	Proximal phalanx	-	30	2	1	A	-	Distal end
100A	Ulna	Distal shaft	-	5	4	1	J	-	-
100A	Unid.	-	-	-	3	2	-	-	-
200	Mandible	Right side	R	30	2	1	A	-	AM tooth loss of molars, PM2 present
200	Mandible	Right side	R	20	2	1	A	-	M2 and M1 present, little wear, PM2 lost PM
200	Hand	MC4	R	60	2	1	A	-	-
200	Ribs	2 shaft fragments	-	10	2	2	A	-	-
200	Ribs	Vertebral end	L	30	2	1	A	-	-
200	Humerus	Shaft	-	5	2	1	A	-	-
200	Humerus	Proximal epiphysis	L	1	2	1	A	-	-
200	Humerus	Proximal epiphysis	-	1	2	1	A	-	-
200	Tibia	Shaft	R	20	2	1	-	-	Lamellar bone on medial surface
200	Tibia	Shaft	L	20	2	1	A	-	-
200	Tibia	Shaft	R	30	4	1	A	-	-
200	Tibia	Shaft	-	10	3	1	-	-	-
200	Tibia	Shaft	-	10	3	1	-	-	-
200	Tibia	Shaft	-	10	3	1	-	-	Lamellar bone on medial

									surface
200	Tibia	Shaft	L	10	3	1	-	-	-
200	Femur	Head	-	1	4	1	A	-	-
200	Femur	Distal shaft	-	15	3	1	A	-	-
200	Femur	Proximal shaft	L	10	2	1	A	-	-
200	Femur	Proximal shaft	R	10	4	1	A	-	-
200	Femur	Shaft	-	15	3	1	-	-	-
200	Femur	Shaft	-	10	3	1	-	-	-
200	Femur	Shaft	-	5	2	1	-	-	-
200	Fibula	Shaft	-	2	3	1	-	-	-
200	Fibula	Shaft	-	2	2	1	-	-	-
200	Pelvis	Ilium	L	5	3	1	OMA	-	-
200	Pelvis	Ischium	R	2	2	1	A	-	-
200	Pelvis	Ilium	-	1	3	2	-	-	-
200	Vertebra	Lumbar body	-	60	4	1	A	-	-
200	Vertebra	Lumbar body	-	50	4	1	A	-	-
200	Vertebra	Lumbar body	-	10	4	1	A	-	-
200	Vertebra	Thoracic body	-	10	4	1	A	-	-
200	Vertebra	Thoracic body	-	10	4	1	A	-	-
200	Vertebra	Thoracic body	-	40	4	1	A	-	-
200	Vertebra	Thoracic spinous process	-	40	4	1	A	-	-
200	Skull	Occipital	-	2	2	1	A	-	-
200	Skull	Generic	-	2-5	3	9	-	-	-
200	Skull	Frontal	L	5	2	1	A	-	-
200	Skull	Frontal	L	0.5	2	1	A	-	-
200	Skull	Zygomatic	R	0.5	2	1	-	-	-
200	Skull	Sphenoid	-	0.5	2	1	-	-	-
200	Skull	Temporal	L	2	2	1	A	-	Mastoid

									process
200	Skull	Temporal	L	1	4	1	A	-	Mastoid process
200	Skull	Maxilla	-	0.1	2	1	A	-	Tiny alveolar bone fragment
200	Long bone	Shaft	-	-	3	23	-	-	23 Unidentified long bone shaft fragments, tibia, femur or humerus
200	Unid.	-	-	-	3	14	-	-	14 Unidentified fragments
200A	Mandible	All	-	90	3	2	YMA	F	M3s lost PM, M1s M2s, Left premolars and canine present, right premolars and left incisors lost PM
200A	Femur	Proximal epiphysis and shaft	L	90	3	2	A	-	Coxa vara, enthesal change at gluteus maximus attachment
200A	Tibia	Shaft	-	2	3	1	-	-	-
200A	Pelvis	Ischium	R	5	2	1	J	-	-
200A	Tibia	Proximal shaft	R	10	2	2	J	-	-
200A	Foot	Proximal phalanx	-	100	1	1	A	-	-
200A	Long bone	Shaft	-	-	2	1	-	-	-

Key: Preservation: Unid. - Unidentified; SP = surface preservation, graded according to McKinley (2004); F = fragmentation; C = completeness. ** identified during analysis; Age: f - foetus, n - neonate, i - infant, j - juvenile, adol - adolescent, na - non-adult, ya - young adult, yma - young middle adult, oma - old middle adult, ma - mature adult, a - adult, ? - unknown; Sex: M - male, F - female, ? - unknown; DEH - dental enamel hypoplasia; DJC = Degenerative Joint Changes