



CHURCH OF SAINT WILFRID, STANDISH, GREATER MANCHESTER

Archaeological Watching Brief



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ST WILFRID**

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SUMMARY

The Reverend Andrew Holliday and the Parochial Church Council (PCC) of St Wilfrid, Standish, commissioned Oxford Archaeology North (OA North) to undertake an archaeological watching brief during groundworks associated with the dismantling and rebuilding of the churchyard wall at the Church of St Wilfrid, Standish, Greater Manchester (NGR SD 5631 1026). The current wall delineates the northern boundary of the churchyard, and acts as a retaining wall to the graveyard. The force exerted from the raised level behind the wall, together with a number of mature trees that had been present, was pushing the wall outwards towards the public highway, Rectory Lane, hence the requirement for remedial work to the wall, which included the removal of a 30m section of the existing wall and part excavation of the graveyard behind the wall.

The removal of a section of the church wall revealed evidence of made ground deposits within the churchyard, which contained charnel deposits. These groups of human remains represented the disparate elements of several individuals of either sex and various ages; weathering and obvious damage from digging tools indicated where they had been disturbed in the past, presumably from the many years of grave digging within the churchyard, before being removed, piecemeal, to unused locations at the edge of the churchyard.

No other archaeological features were observed during the watching brief. However, should further work be conducted on the churchyard wall along Rectory Lane, then an archaeological presence would be required due to the potential for the uncovering or disturbance of further human remains.

ACKNOWLEDGEMENTS

OA North would like to thank the Reverend Canon Andrew Holliday and the PCC of the Church of St Wilfrid for commissioning the project, Peter Iles, the archaeological advisor to the Blackburn Diocesan Advisory Committee (DAC Archaeologist), and Ian Weir of Blakett-Ord Conservation Engineering for his assistance both on and off site. Thanks are also due to Kirk Howie, Dave Fleming and the site team of Askins and Little Ltd for all their assistance during the work.

The watching brief was undertaken by Vickie Jamieson and Karl Taylor. The report was written by Vickie Jamieson, with the drawings produced by Mark Tidmarsh. The finds were assessed by Chris Howard-Davis and the human and animal bone was assessed by Vickie Jamieson. The project was managed by Emily Mercer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 The Reverend Canon Holliday and the Parochial Church Council (PCC) commissioned Oxford Archaeology North (OA North), to undertake an archaeological watching brief during remedial work on a portion of the churchyard wall that delineates the northern edge of the graveyard for the Church of St Wilfrid, Standish, Greater Manchester (centred NGR SD 5631 1026). The church is an active Anglican parish church in the Diocese of Blackburn. It is of sixteenth century date, incorporating some thirteenth and fourteenth century fabric, and has been documented from 1206. Together with the graveyard, the church is a Grade 1 listed building within the Standish Conservation Area, and is included in the Greater Manchester Historic Environment Record as No. 4748.1.0.



Plate 1: North-west-facing view of wall before removal for reconstruction

- 1.1.2 Along the north side of the church, the level of the churchyard is typically 1.5 - 1.7m higher than the public highway, Rectory Lane, to the north, and this material is retained by a wall with no external buttresses, *c* 0.4m wide. Until recently, mature trees had been present around the edge of the graveyard, immediately behind the retaining wall, which was consequently bowing outwards. In order to remedy this, the trees were removed to the ground level of the graveyard, and the wall carefully taken down to the lower level of the pavement. The graveyard deposits immediately behind the wall were excavated, during the removal of the wall, in order to provide an area for a geotextile grid into which the wall could be tied in during rebuilding. The watching brief was required due to the excavation of graveyard deposits and

the high probability of disturbing human remains and other archaeological remains relating to the earlier phases of the churchyard.

- 1.1.3 The fieldwork was undertaken over six days in September 2013. The following report documents the results of the watching brief and highlights the significance of the findings.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The section of churchyard wall that was removed is bounded by Rectory Lane and lies *c* 10m to the north-west of St Wilfrid's Church, in the town of Standish (NGR SD 5631 1026; Fig 1).

- 1.2.2 The underlying geology of Standish forms part of the Lancashire Coal Measures, which extend from the Mersey Valley in the south to the Amounderness Plain in the north-west (Countryside Commission 1998, 127). The solid geology comprises productive coal measures, with Bunter sandstone and marls to the south (Ordnance Survey 1951). The overlying drift geology consists of glacial and post-glacial tills, with fluvial deposits of gravel along the course of the river Douglas (Countryside Commission 1998, 128).

- 1.2.3 The churchyard of St Wilfrid's is situated on a ridge of high land at *c* 112m AOD (Above Ordnance Datum), with the land to the north and east sloping downwards from the church.

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 The following archaeological and historical background is a précis of the information provided in the project specification (*Appendix 1*).

- 1.3.2 Mapping evidence of the church would suggest that the original churchyard was oval (Ordnance Survey 1849), with the northern perimeter wall still respecting this form, perhaps suggesting a pre-Conquest origin, although it has been considerably extended to the south and south-east.

- 1.3.3 The northern wall to the churchyard is formed from squared sandstone masonry, essentially all of one phase, although at the western end there is evidence in the larger sandstone blocks of the wall having been raised by three or four courses. The wall is topped with dressed sandstone coping with a shallow pointed profile, which appears to be original, albeit that the wall has been raised more recently by a number of courses.

- 1.3.4 Towards the western end of the section the churchyard wall curves away from the road and a secondary wall is butted against it to provide a continuation of the boundary to the footpath into the churchyard. Immediately before this junction of the two wall phases, a mid-sized rectangular slab with traces of engraving has been incorporated, with the appearance of an eighteenth century grave or memorial slab. Elsewhere in the churchyard wall other memorial and worked stones have also been incorporated into the perimeter wall. It is suggested that the northern section of the churchyard wall is of nineteenth century date, probably following an earlier boundary line, although it is

possible, however, that the wall is of earlier origin, and that the included inscribed stone and coping were placed there at the time the wall was raised.

- 1.3.5 The area of the graveyard to the north of the church contains a well-ordered series of gravestones, apparently dating from the eighteenth and earlier nineteenth century, which mainly run in north/south rows to within three to five feet of the boundary wall. The regularity of the arrangement may suggest that the stones have been re-set, but equally it could simply be a well-preserved area which has not been disturbed by later demands for burial space or subject to clearance. Some fragments of loose masonry, probably including remains of other grave markers have been placed on the ground adjacent to the boundary wall, and other material has also been placed and dumped against the wall, raising the local levels, particularly at the western end of the section.

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 The work was carried out in accordance with the specification provided by the archaeological advisor to the Blackburn Diocesan Advisory Committee (DAC Archaeologist) (*Appendix 1*), and the OA North method statement (*Appendix 2*), and was consistent with the relevant IfA and English Heritage guidelines (Institute for Archaeologists 2008a, 2008b, 2012; English Heritage 2006).

2.2 WATCHING BRIEF

2.1.1 A permanent archaeological presence was maintained during the groundworks, which was carried out both manually (Plate 1) and with a 360° mechanical excavator with a small toothless bucket (Plate 2). The purpose for the monitoring was to identify, investigate and record any archaeological remains encountered.



Plate 2: Careful removal of the wall manually

2.1.2 The watching brief consisted of observing the removal of a portion of churchyard wall, measuring 30m in length, ahead of reconstruction. The wall was removed to the bottom three courses and pavement level, to where it provided a stable platform for rebuilding. A section of the raised graveyard level behind the wall, measuring 0.5m in width, was excavated simultaneously, along with tree stumps and roots.



Plate 3: Excavation using a mechanical excavator

2.1.3 A daily record of the nature, extent and depths of groundworks was maintained throughout the duration of the project. All archaeological contexts were recorded on OA North's *pro-forma* sheets, using a system based on that of English Heritage former Centre for Archaeology. A digital photographic record was maintained throughout.

2.3 ARCHIVE

2.3.1 A full professional archive has been compiled in accordance with the project specification and method statement (*Appendices 1 and 2*), and in accordance with current IfA and English Heritage guidelines (English Heritage 2006). The original record archive will be deposited with the County Record Office in Manchester. All human remains are to be re-interred in a suitable location within the Church grounds.

3. WATCHING BRIEF RESULTS

3.1 INTRODUCTION

3.1.1 The removal of a wall and partial excavation of the graveyard was archaeologically monitored over an area measuring approximately 30m x 1m (Figs 2 and 3). The objective of the watching brief was to identify, investigate and record any archaeological and human remains encountered during the groundworks for the remedial works, as well as preserving any human skeletal remains *in situ* where possible. The following is a summary of the findings. A list of contexts used has been provided in *Appendix 3*, with a summary of the finds in *Appendices 4-6*.

3.2 RESULTS

3.2.1 The area of site under investigation consisted of a stone built wall, *I*, that measured *c* 30m in length and 0.4m in width, with a height of 1.7m. It was constructed of handcut sandstone blocks, two rows thick with a rubble infilling and bonded with a pink sandy mortar. The top three courses and the capping stones appear to have been added at a later date, with re-pointing on the outside of the wall with a grey sandy mortar. The date of construction for the wall is unknown, although there is a wall on the 1849 Ordnance Survey Map (Fig 2). It post dates 1772 as a gravestone of this date has been found built into the construction of the wall.



Plate 4: South-facing view of wall *I* and section through deposit *3*

- 3.2.2 The bank behind the wall consisted of three main layers (2, 3 and 4). The uppermost deposit was layer 2, a dark brown-black friable topsoil, which formed the current burial ground surface within the churchyard. It is within this deposit that the gravestones had been erected.
- 3.2.3 Beneath 2 was deposit 3, a layer of dark grey-brown firm sandy-silt. It had a maximum depth of 0.65m, and composed disturbed burial deposits from the interment of human remains. An adult skeleton, 5, was uncovered *in situ* in deposit 3, at a depth of 1m below the ground surface. Small fragments of coffin plate were found across the chest and pelvis, but there was no evidence of a grave cut. The skeleton was laid supine, with the head at the east end of the grave. The arms and legs were extended with the hands across the pelvis. Due to the requirement to excavate for the remedial works, it was necessary to remove the left side of the skeleton along with the skull and vertebrae, and the remainder was left *in situ*.
- 3.2.4 Within deposit 3 large amounts of disarticulated human remains were retrieved during the excavation (Plate 5). The remains were in a good condition (Appendix 6) and appear to have been redeposited during the nineteenth to twentieth century, dated by the pottery retrieved (see Section 4). It was common practice during this time to remove older inhumations from the burial ground and place them to the edge of the church boundaries to make room for new interments. Within deposit 3 a complete juvenile skeleton was retrieved mixed in the charnel remains.



Plate 5: South-facing view of charnel remains within deposit 3 behind wall 1

- 3.2.5 Deposit 4 was the last layer to be encountered during the watching brief. It was a light-medium brown, firm sandy-silt. It had a minimum depth of 0.25m.

Only a small amount of this deposit was observed behind wall **I** as the lower portion of the wall was left *in situ*. This burial deposit was much disturbed by the continuous reinterment. Various disarticulated human remains were also found within this deposit, and included an infant burial (see *Appendix 5*).

4. FINDS

4.1 INTRODUCTION

4.1.1 A relatively small assemblage of 190 fragments of artefacts and ecofacts was recovered in the course of the fieldwork, excluding the human bone (detailed separately). All were in good condition, and in relatively large fragments. Their distribution between contexts is shown in Table 1 below and catalogued in *Appendix 4*.

CONTEXT	POTTERY	GLASS	CBM	CTP	BONE/ MOLLUSC	OTHER	TOTALS
4	1	1	1	1	0	0	4
3	95	9	10	11	11	15	154
2	18	4	0	0	3	6	31
Totals	114	14	11	12	14	21	189

Table 1: Distribution of finds, by material

4.2 ARTEFACTS

4.2.1 None of the pottery fragments can be dated to earlier than the mid-late nineteenth century, with the lustreware being produced from the early nineteenth century (Bagdade and Bagdade 2004, 158) and spongeware dating from *c* 1840 to *c* 1900 (*op cit*, 284). Little else amongst the pottery assemblage can be dated with any precision, although it is likely to be in the late nineteenth and twentieth-century range, suggested by other material classes. Blue and white transfer prints include the pattern ‘Asiatic Pheasants’ introduced in the mid-nineteenth century (Coysh and Henrywood 2001, 29). It is worth noting that deposits 2 and 3, which contained most of the pottery, also contained some plastic items, very unlikely to pre-date the 1960s, demonstrating the disturbed nature of the burial deposits.

4.2.2 There were some small fragments of clay tobacco pipe, probably, again, dating to the late nineteenth or early twentieth century, although none are particularly diagnostic fragments. The glass, with the exception of one late Codd-type bottle from burial deposit 3, can all be placed in the mid- to late-twentieth century, with a half-pint milk bottle from deposit 2 having the wide neck, rebated for a card closure, which went out of use in the 1950s. The same vessel was printed with the name of the dairyman (U Devine, High Farm Standish), with direct printing probably at its most popular in the 1940s to 1960s.

4.2.3 There is little of interest in the group apart from the handful of small fragments of medieval tile, one of which is glazed yellow and retains part of a line-impressed design (Plate 6), suggesting a fourteenth to fifteenth century date for a phase of flooring within the church.



Plate 6: Medieval tile from burial deposit 3

- 4.2.4 Few of the other fragments of ceramic building material can be dated with any precision, although it is likely that a narrow, possibly black or dark green-glazed tile fragment from deposit 4 is of similar date to the medieval tile. Its angled end perhaps suggesting its origin in a tile mosaic. A single small fragment of greenish window glass from deposit 4 is of seventeenth or eighteenth-century date, and a fragment of lead kame, originally housing a square glass quarry, is from a late element of the church glazing, the style of the leading suggesting a nineteenth century date. Nails from the site probably derive from coffins.
- 4.2.5 Finally, an unusual source of corroborative dating comes from the small group of marine mollusc shells found in burial deposit 3. Most are single valves of the Native oyster (*O edulis*) but one has been identified as *Crassostrea angulata*, the Portuguese oyster, widely commercially cultivated and effectively replacing the Native oyster from the late nineteenth century, until European stocks were wiped out by disease in the early 1970s (Batista *et al*, nd).

4.3 HUMAN BONE

- 4.2.4 **Introduction:** the remains recovered during the watching brief comprise 681 fragments, of which 260 were identifiable to element. The aims of the assessment were as follows: -
- to explore the potential of the material to yield biological information (for example, age, sex and stature);

- to explore the potential of the material to yield palaeopathological information;
- to establish the potential of the collection to contribute to archaeological knowledge at local and national levels;
- to explore the potential for further specialist analysis, including the application of biomolecular techniques (for example, stable isotope analysis) and other analytical approaches (for example, radiography).

4.3.2 **Methodology:** all skeletal remains were examined in accordance with English Heritage guidelines (Mays *et al* 2004), and with reference to standard protocols for examining human skeletal remains from archaeological sites (Brickley and McKinley 2004; Buikstra and Ubelaker 1994; Cox and Mays 2000; White and Folkens 2000). This involved assessing the completeness of the remains with particular reference to certain landmarks that may be used to establish biological parameters and explore health status.

4.3.3 Completeness was estimated by recording, as a percentage, how much of the skeleton had survived or, if charnel, how much of the element had survived and assigning it to one of the following categories:

1 = <25% complete

2 = 25-50% complete

3 = 50-75% complete

4 = >75% complete

4.3.4 The condition of the bone was assessed according to the degree of erosion of the cortical bone surface and how much of the epiphyses (the ends of the bones) and cancellous bone (the spongy bone that is beneath the outer layer) had survived. Based on these factors, skeletal remains were assigned to one of the following categories (adapted from McKinley 2004):

1 = Poor (cortical bone completely eroded. Very limited survival of epiphyses and cancellous bones);

2 = Fair (moderate erosion of cortical bone. Limited survival of cancellous bone and epiphyses);

3 = Good (occasional erosion on cortical bone. Cancellous bone complete and frequent survival of epiphyses);

4 = Excellent (cortical bone undamaged, cancellous bone and epiphyses complete).

4.3.5 All observations were made by rapidly scanning each skeleton. While these observations provide adequate guidance to the potential of the material for further work they are, by their very nature, preliminary and subject to change as a result of any future high resolution examination.

- 4.3.6 The potential of the skeletons to yield information relating to age and sex was estimated by determining if the appropriate skeletal elements were present to employ standard methods (Brickley and McKinley 2004).
- 4.3.7 The skeletons were also assessed for their potential to yield metrical data, in particular that which will allow stature estimation and that which will facilitate age estimation for sub-adults and sex estimation for adults. Stature may be estimated from human skeletal remains by applying the maximum length of complete long limb bones to the regression equations set out by Trotter and Gleser (1958 and revised by Trotter (Trotter 1970). Potential for metrical assessment was scored on a scale of 1-5, where '1' denotes skeletons that showed no potential (i.e. no elements could be measured owing to fragmentation/poor preservation), and '5' denotes skeletons that showed high potential (i.e. the full range of standard cranial and post-cranial measurements could be taken).
- 4.3.8 Other observations pertaining to metrical assessment involved noting which skeletons had sufficiently preserved bones, in particular crania that will facilitate comparisons between individuals and groups. This may indicate factors such as ethnic affinities, regional micro-evolution and biological distance, particularly when combined with the chemical analysis of the bones and teeth.
- 4.3.9 An assessment of the potential for the skeleton to yield non-metrical data was scored on a scale of 1-5, where '1' denotes skeletons that showed no potential for non-metrical analysis (i.e. preservation prevented the observation of all standard cranial and post-cranial sites) and '5' denotes skeletons that showed high potential for non-metrical analysis (i.e. all standard cranial and post-cranial sites could be scored).
- 4.3.10 More readily observable traits were noted (but not formally scored) to give an indication of the level and range of traits present in the population. This will inform a data collection strategy for full analysis. Non-metric traits are morphological variations in the skeleton. They are influenced by both the environment and genetics, but to variable and unpredictable degrees (Saunders 1989).
- 4.3.11 **Results:** a total of three articulated skeletons were recovered during excavation along with 941 fragments of disarticulated human remains. The skeletons were recovered from deposits 3 and 4, with the disarticulated remains found throughout all deposits.
- 4.3.12 The three skeletons excavated were less than 50% complete (Table 2, Appendix 5), in part due to two of them being juvenile, and the adult was only partially excavated. Overall, the condition of the bone was good. However, this does not entirely represent the taphonomic conditions which the remains were exposed to. There was a tendency for elements to be cracked, with cortical bone flaking. This was probably caused by a combination of contact with metal fittings from coffins and repeated wet and dry soil conditions which the remains were exposed to whilst interred. None of the skulls were complete enough for a full detailed analysis. Fragmentation of the post-cranial

skeleton was variable, with the majority of the bones exhibiting some degree of post-mortem break to them.

- 4.3.13 Only the two juvenile skeletons had one or more relevant age indicators surviving. Preliminary analysis of the juvenile skeletons shows one from deposit 3 to be a young child aged 5-6 years, and the other from deposit 4 to be an infant less than one year old at the time of death. The adult skeleton, 5, did not have the relevant indicators surviving to allow a more precise age estimate, other than it was over 18 years old when death occurred.
- 4.3.14 Only the adult skeleton had features surviving that would allow the application of standard techniques to estimate their biological sex (Cox and Mays 2000; Brickley and McKinley 2004). cursory analysis of the skeleton indicates that it is of a female.
- 4.3.15 There was no potential from any of the skeletons to yield data for metrical analysis. Therefore ancestry and stature could not be determined.

Context No.	ID No	Age Y/N	Sex Y/N	Completeness 1-4	Preservation 1-4	Metric Traits 1-5	Stature Y/N	Complete Skull Y/N
3	5	N	Y	2	3	1	N	N
3		Y	N	1	3	1	N	N
4		Y	N	2	3	1	N	N

Table 2: Articulated skeletal data

- 4.3.16 The adult skeleton had survived in a good enough condition to allow macroscopic analysis and documentation of typical pathological conditions that would be expected from an assemblage of this nature. Evidence of periostitis was found on the left mandibular ramus on the lateral aspect up to the condyle. Periostitis is a condition of inflammation of the periosteum caused by trauma or infection. It is not a disease itself but an indicator that disease had been present within the remains (Ortner 2003). In this case, it most likely indicates an infection within the tooth socket of the adjacent teeth. This is further indicated through the anti-mortem loss of the second and third mandibular molars. Abnormalities in the formation of a protuberance on the external skull from the lambdoid suture to the nuchal crest suggest a possible birth defect known as lambdoid craniosynostosis. Attrition on all surviving maxillary and mandibular teeth along with calculus was observed on this skeleton.
- 4.3.17 A large amount of disarticulated human bone was found within four separate contexts in the course of the removal of the wall. A total of 260 bones were identified to element (*Appendix 6*), with 681 unidentified fragments. This bone is most probably the accumulation of material from inter-cutting graves and Victorian exhumations of skeletal remains to make space for further interments. It was then placed away from the graves behind the church wall. The value of disarticulated material is very limited as any data collected cannot usually be related to age or sex and the exact date of individual remains

is difficult to determine. The disarticulated material from this site was given a cursory examination; it showed that both male and female remains were present along with those of varying age groups. The material was also scanned for unique or unusual pathologies or information that might be worthy of further comment. This produced a left *os coxae* belonging to an adult male, it had large pitting across the iliac, ischium and the acetabulum. Destructive lesions like this are caused by neoplastic disease, which includes multiple myeloma and leukemia.

- 4.3.18 **Discussion and Recommendations:** the remains represent a small collection of those buried within the graveyard at St Wilfrid's Church. The majority of which are disarticulated remains with only three articulated skeletons. Due to the small size of this assemblage very limited data can be obtained, and there is limited potential to add to any data about the population of Standish. It is recommended that no further analysis is required and that the remains be re-interred in a suitable location within the church grounds.

4.4 ANIMAL BONE

- 4.4.1 **Introduction:** a small collection of post-medieval animal bone was recovered from three deposits across the site. Unstratified bone has been excluded from this assessment. Species including cattle, sheep/goat, fox and domestic fowl were identified within the assemblage, which weighed 301g (Table 3).
- 4.4.2 **Methodology:** identification was completed using reference material held by the author. Reference was also made to Halstead and Collins (1995) and Schmid (1972). The separation of sheep from goat followed Boessneck (1969), Kratochvil (1969) and Prummel and Frisch (1986).
- 4.4.3 For each species or species group the following were recorded: the number of individual specimens (NISP); total number of fragments; preservation category; the number of measurable bones; the number of butchered bones; the number of mandibles or mandibular loose teeth from which the wear pattern could be described; and the number of bones from which the epiphyseal fusion state could be identified. Tooth wear and fusion data is used to assess the age of death of the principal stock animals (cattle, sheep/goat and pig). Biometrical data is used to assess the size, and in some instance, the sex ratio of the principle stock animals. The preservation categories provide a useful indicator to the general condition of the assemblage. These categories are as follows:

Very poor: very fragmented bone with a highly eroded surface;

Poor: bone with an eroded surface and with less than half the anatomical part present;

Moderate: bone with approximately half or less than half the anatomical part present and with some erosion to the surface;

Good: bone with little or no erosion and with half or more than half the anatomical part present;

Very good: a complete, or near complete, bone with little or no erosion.

- 4.4.4 **Quantification and Condition**: of the 18 bone fragments, only 11 were identified to a species level or low order group. The assessed assemblage is quantified by context in Table 3 below. The sheep/goat category is likely to be predominantly sheep rather than goat. Generally the bone is in a good state of preservation (Table 4), often being fragmented with less than half the original bone present, but with limited erosion of the surface of the bone. The number of potential records used to assess the age of death of the stock animals (tooth wear and epiphyseal fusion), the size of the animals and the butchery of carcasses is rare (Table 5). No pathological specimens were recorded.

SPECIES	CONTEXT			TOTAL
	2	3	4	
Cattle	1	3		4
Cattle/Horse		1		1
Sheep/Goat		2	2	4
Fox		1		1
Domestic Fowl		1		1
Large Mammal		1	5	6
Unidentified Mammal		1		1
Total	1	10	7	18
Species Level or Low Order Group	1	8	2	11

Table 3: Number of Individual Specimens (NISP) by species and context

CONTEXT	PRESERVATION CATEGORY (%)					N
	Very Poor	Poor	Moderate	Good	Very Good	
2				100		1
3			10	90		10
4				100		7

Table 4: Preservation of animal bone fragments identified to species level (excluding loose teeth)

SPECIES	FUSION	MEASURABLE	BUTCHERY	TOOTH WEAR
Cattle	2	0	2	0
Cattle/Horse	0	0	0	0
Sheep/Goat	2	0	2	0
Fox	0	0	0	0
Domestic Fowl	1	0	0	0

Table 5: NISP of potential epiphyseal fusion, biometric, butchery and tooth wear records by species

- 4.4.5 **Potential**: the animal bone has limited potential for further analysis as an isolated data set, and is unlikely to present a reliable representation of the proportion of the stock animals husbanded by the local population. As such, wider comparisons to other sites of the region are unrealistic. The assemblage most likely represents food waste discarded over the cemetery wall, with the

exception of the fox bone, which occurred from a natural death of the animal. No further study of the assemblage is recommended.

5. CONCLUSION

5.1 DISCUSSION

- 5.1.1 The watching brief yielded very little of archaeological interest other than the human remains, the majority of which would appear to represent deposits of charnel material. As evidence by the presence of chop marks, likely to have been produced by the judicious usage of grave digging tools, all of the bones (with the exception of skeleton 5) were likely to have been disturbed from their original place of deposition. There are two possible explanations for this disturbance: subsequent grave digging activities across the churchyard; or truncation of *in situ* burials when the churchyard wall was re-constructed in the nineteenth century.
- 5.1.2 Assuming that the bones derive from burials disturbed during grave digging, it is not possible to determine whether each deposit relates to a single grave digging episode, or a more gradual accumulation. The latter might be suggested by the degree of weathering on some of the remains, but such effects might equally have been produced by leaving the bones on the ground surface by the churchyard wall, or the result of root action when buried at a shallower depth. Although it was possible to identify the age and sex of various bones, together with evidence for a range of pathological conditions, the fact that most of the bones could not be related to a specific skeleton means this data is of limited value in reconstructing demography and epidemiology of Standish.
- 5.1.3 Overall, the impact of the renovation of the churchyard wall has been fairly limited, and although there was an impact upon human remains within the churchyard, this was limited by the fact that the majority of these remains had been previously disturbed. The human remains are to be reburied in a location close to their place of discovery.
- 5.1.4 Should any further work be carried out on the wall along the graveyard in the future, it is recommended that a programme of archaeological work is undertaken in the form of a watching brief due to the potential for uncovering both archaeological and human remains.

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ILLUSTRATIONS

FIGURES

Figure 1: Site location

Figure 2: Watching brief area superimposed on the Ordnance Survey first edition 6": 1 mile map, 1849

Figure 3: Watching brief area superimposed on the Ordnance Survey first edition 25": 1 mile map, 1892

PLATES

Plate 1: North-west-facing view of wall before removal for reconstruction

Plate 2: Careful removal of the wall manually

Plate 3: Excavation using a mechanical excavator

Plate 4: South-facing view of wall **1** and section through deposit **3**

Plate 5: South-facing view of charnel remains within deposit **3** behind wall **1**

Plate 6: Medieval tile from burial deposit **3**

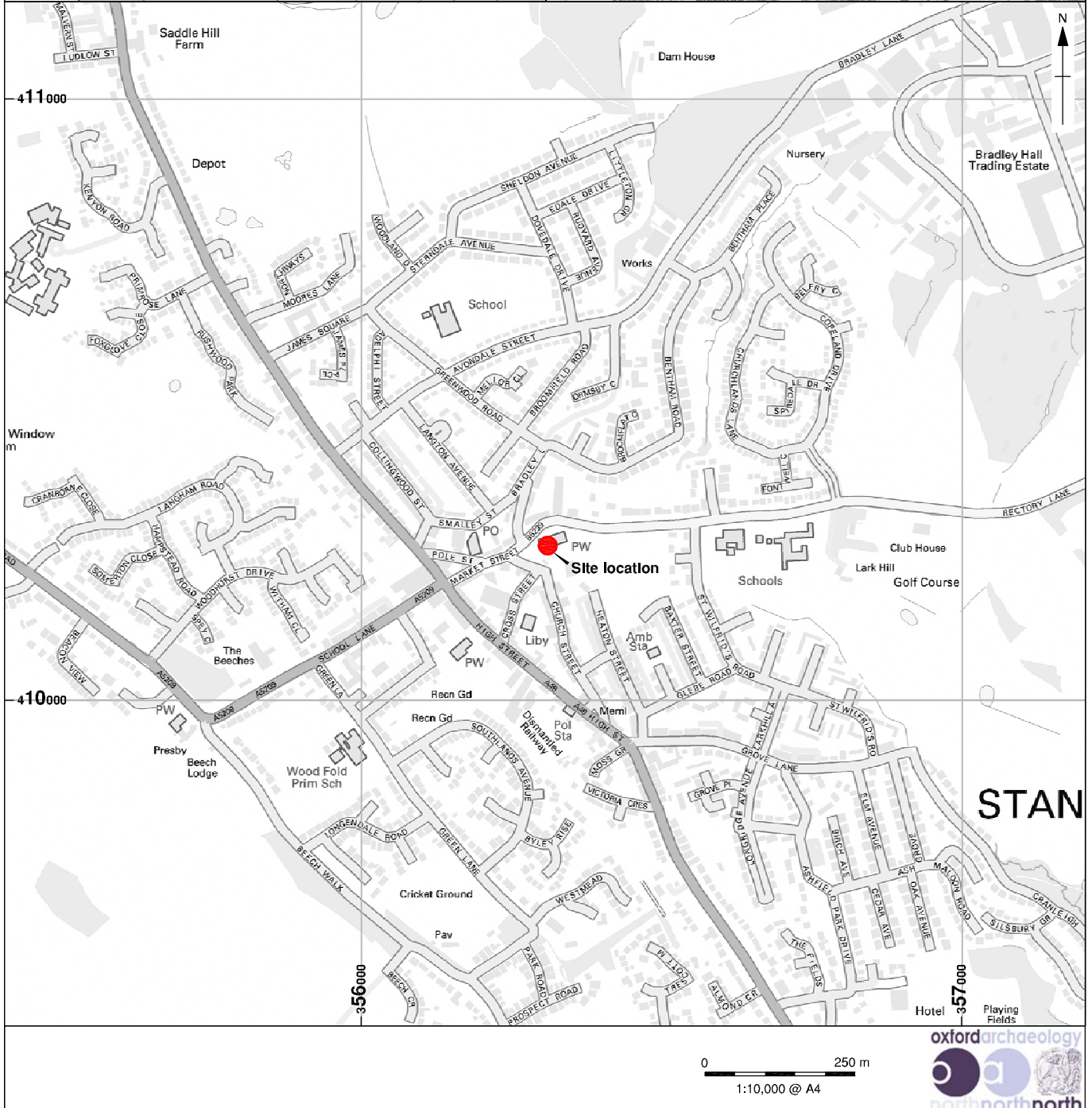
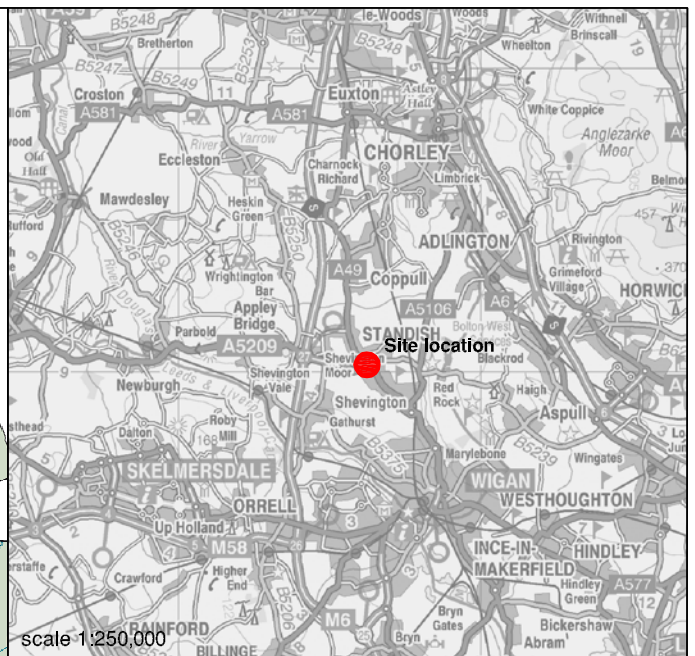



Figure 1: Site location

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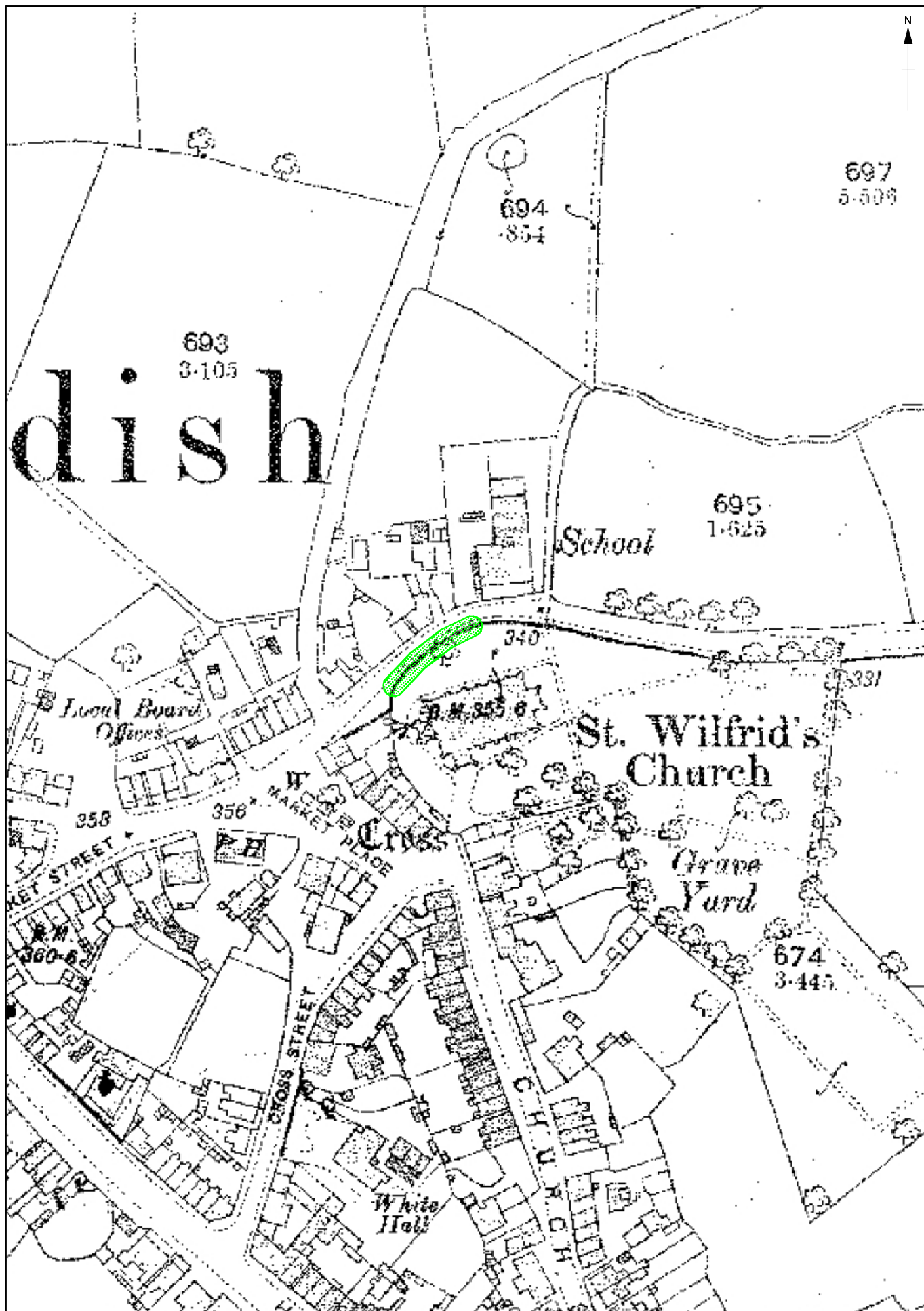
 watching brief area


Not to scale



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Figure 2: Watching brief area superimposed on the Ordnance Survey first edition 6":1 mile map, 1849



 watching brief area

Not to scale



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Figure 3: Watching brief area superimposed on the Ordnance Survey first edition 25":1 mile map, 1892

APPENDIX 1: PROJECT SPECIFICATION

Specification for an Archaeological Watching Brief Church of St Wilfrid, Market Place, Standish, Wigan, WN6 OXA SO 56311026

Prepared on behalf of Reverend Andrew Holliday, Rector, and the PCC of the Church of St Wilfrid, Standish.

1. Introduction

- 1.1 A portion of the churchyard wall on the north side of Standish St Wilfrid is considered to be unsafe, as it leans outwards across the public footpath, and it has been decided to rebuild c.30m of it on a new concrete strip foundation. The wall delineates the northern boundary of the churchyard; a site, which may have originally been oval and thus perhaps of pre-Conquest origin but which has been considerably extended to the east and south east.
- 1.2 The church itself is of 16th century date, but with evidence of 13th and 14th century work and is documented from 1206. The wall itself is probably of later post medieval date but retains a considerable depth of soil on the church side, which is likely to contain human remains and which will be disturbed by the proposed works. The site is listed at Grade I, is within the Standish Conservation Area and is included in the Greater Manchester Historic Environment Record as No. 4748.1.0.
- 1.3 A watching brief is required during all excavation works associated with the rebuilding of the churchyard wall. This specification has been prepared by Peter lies, the archaeological advisor to the Blackburn Diocesan Advisory Committee (DAC Archaeologist). The project is being managed by BlackettOrd Conservation Ltd (the Engineer) and has been commissioned by the Rector and PCC of the Church of St Wilfrid (the Client).

2. Archaeological Interest

- 2.1 A description of the church of St Wilfrid and a list of incumbents from 1206, the date of the separation of the Standish and Langtree portions of the Parish, is given by Farrer and Brownbill (1911, *A History of the County Palatine of Lancaster*. Vol. 6, pp.183-190, 192-3). Map evidence would suggest that the original churchyard was oval, perhaps suggesting a pre-Conquest origin, although it has been considerably extended to the south and southeast. Along the north side of the church the level of the churchyard is typically 1.5 -1.7m higher than the land outside and this material is retained by a wall with no external buttresses, c. 0.4m wide. The wall is formed from squared sandstone masonry, essentially all of one phase but with, at the western end, evidence of the wall having been raised by three or four courses of larger sandstone blocks. The wall is consistently topped with a dressed sandstone coping with a shallow pointed profile, with two steps within the raised area noted above. At the eastern end of the section under consideration there is a particularly large step with the coping being continued down the side of the step and being moulded into a curve to regain the horizontal this treatment does not occur at the other steps. As the same coping tops both the original and raised wall sections, it would suggest that it is original and was removed and reused at the time the wall was raised.
- 2.2 Towards the western end of the section the churchyard wall curves away from the road and a secondary wall is butted against it to provide a continuation of the boundary to the footpath, this secondary wall apparently delineating the boundary to a house-plot fronting onto the former market place, west of the church. Just before this junction the churchyard wall includes a mid-sized rectangular slab with traces of engraving. It has the appearance of a re-set (on its side) C18th grave-or memorial slab, the top surface of which is level with the change in masonry noted above. Elsewhere in the churchyard wall other memorial and worked stones have also been incorporated into the structure. It is suggested that the northern section of the churchyard wall is of 19th century in date, probably following an earlier (perhaps as early as

- pre-Conquest) boundary line. It is however possible that the wall is of earlier origin, and that the included inscribed stone and coping were placed there at the time the wall was raised.
- 2.3 The section of the churchyard to the north of the church contains a well ordered series of gravestones, apparently dating from the 18th and earlier 19th century, which mainly run in north-south rows to within three to five feet of the boundary wall. The regularity of the arrangement may suggest that the stones have been re-set, but equally it could simply be a well-preserved area which (unusually for Lancashire) has not been disturbed by later demands for burial space or subject to clearance. A number of trees are present in this area, including some sited up against the boundary wall. Some fragments of loose masonry probably including remains of other grave markers have been placed on the ground adjacent to the boundary wall, and other material has also been placed and dumped against the wall, raising the local levels, particularly at the western end of the section in question.
- 2.4 The proposed rebuilding of this section of churchyard wall includes a new concrete footing and the rebuilt wall being tied back into the churchyard soil with a geotextile grid. This will require significant disturbance to the soil behind the wall, and any archaeological remains that survive in this area will be revealed or damaged by the proposed development. It is almost certain that disarticulated or fragmentary human bones, teeth, coffin fittings and other devotional or funerary items will be present, but it is not possible to predict if any in-situ burials will be encountered during the works. There are no known or obvious grave plots right up against the wall, but it is certainly possible that grave markers have been lost and that there were unmarked and unrecorded burials alongside the wall.
- 2.5 Because of the possibility that human remains will be encountered during the works, and that there may also be evidence of the earlier history of the church or churchyard revealed, it has been recommended that a watching brief be held by an appropriate archaeological contractor during all ground disturbance works.

3. General Considerations

- 3.1 Prior to the commencement of any work, the archaeological contractor should confirm in writing adherence to this specification, or state (with reasons) any proposals to vary the specification. Should the contractor wish to vary the specification, then written confirmation of the agreement of the DAC Archaeologist to any variations is required prior to work commencing. The archaeologist carrying out the watching brief should be appropriately qualified and experienced. Any technical queries arising from the specification detailed below should be addressed to the DAC Archaeologist without delay.
- 3.2 The terms of the Treasure Act 1996 and the Treasure (Designation) Order 2002 must be followed with regard to any finds which might fall within its purview. Any such finds must be removed to a safe place and reported to the local coroner as required by the procedures laid down in the *Code of Practice* (DCMS 1996, revised 2002). Where removal cannot be effected on the same working day as the discovery, suitable security measures must be taken to protect the finds from theft.

4. Fieldwork Methodology

- 4.1 An archaeologist should be present on site during all excavation works on the site, including the excavation of exploratory or foundation design pits and any cutting back of the soil behind the existing churchyard wall. The archaeologist should view the area as it is being dug and any trench or soil sections after excavation has been completed. Where archaeology is judged to be present, the excavated area should be rapidly cleaned and the need for further work assessed. Where appropriate, any features and finds should then be quickly hand excavated, sampled and recorded, within the confines of the excavated area.
- 4.2 Where disarticulated human remains are encountered, these should be treated in a dignified and respectful manner in accordance with best practice and professional guidelines. Individual bones or bone fragments, teeth, funerary and devotional objects, etc. should be recovered and retained in a suitable closable container, prior to rapid assessment and recording. The rapid

assessment of any human remains should include the creation of a table indicating how many bones of each major type were recovered, a note of any obvious pathology or other features of note, including where age or sex can be quickly determined. It is anticipated that all human remains will be reburied in the churchyard by the Client following assessment and reporting at the end of the project.

- 4.3 Where an intact burial is encountered the preferred option is for it to be retained in situ and protected prior to backfilling and reburial, rather than being removed. Where preservation in situ appears to be impossible the Engineer and DAC Archaeologist must be approached to agree an alternative strategy of recording and excavation. Intact burials should remain in situ until the agreement of the Engineer and DAC Archaeologist has been obtained for their excavation and recording. Such excavation should be limited to that minimum portion of the remains that need to be moved for the works to continue and remains should not be chased into sections unnecessarily. Where remains are left in situ they should be covered from view and protected from accidental damage as appropriate until such time as the excavation can be backfilled. Appropriate professional guidelines, including those produced by English Heritage (2002, 2005) and the Institute for Archaeologists (1993, 2004) should be followed.
- 4.4 The project design should include contingency arrangements and costings for the recovery and recording of at least one intact burial as above. An assessment report from an appropriate specialist should also be allowed for, but it is not anticipated that a full analysis or any scientific testing or dating will be necessary. Unless there are unusual circumstances or features revealed it is anticipated that all human remains will be reburied in the churchyard by the Client following assessment and reporting at the end of the project.
- 4.4 Excavated soil should be searched as practicable for finds, but formal sieving is not required. The presence and nature of 19th and 20th century material should be noted (quantified and summarily described) but finds of this date need not be retained for further processing. Finds judged to be 18th century in date or earlier and all human remains should be retained.
- 4.5 The actual areas of ground disturbance, and any features of possible archaeological concern noted within these areas, should be accurately located on a site plan and recorded by photographs, scale drawings (including height above 0.0.) and written description sufficient to permit the preparation of a report on the site.
- 4.7 The intention of the archaeological watching brief is not to unduly delay the work of other contractors on site. This work should not, therefore prejudice the progress of the main or subsidiary contractor's work, except by prior agreement and on-site co-operation. If, however, working practices on site do not allow adequate opportunity for recovery and recording of archaeological remains as detailed above, the Archaeological Contractor should consult as soon as possible with the Engineer and OAC Archaeologist.
- 4.6 The archaeologist on site will naturally operate with due regard for Health and Safety regulations. In this case, where archaeological work is carried out at the same time as the work of other contractors, regard should also be taken of any reasonable additional constraints that these contractors may impose. This work may require the preparation of a Risk Assessment of the site, in accordance with the Health and Safety at Work Regulations. The DAC Archaeologist cannot be held responsible for any accidents that may occur to outside contractors engaged to undertake this survey while attempting to conform to this specification.

5. Unexpectedly Significant or Complex Discoveries

- 5.1 Should there be, in the professional judgement of the archaeologist on site, unexpectedly significant or complex discoveries made that warrant more detailed recording than possible within the terms of this specification, then the archaeological contractor is to urgently contact the DAC Archaeologist with the relevant information to enable the matter to be resolved with the Engineer and the Client.

6. Monitoring

- 6.1 The recording exercise will be monitored as necessary and practicable by the DAC Archaeologist, who should receive as much notice as possible in writing (and certainly not less than one week) of the intention to start the watching brief. If it has not already been supplied a copy of the archaeological contractor's risk assessment of the site should accompany the notification.

7. Post-Excavation/Post-Recording Work and Report Preparation

- 7.1 On completion of the fieldwork, any samples shall be processed and all finds shall be cleaned, identified, assessed, dated (if possible), marked (if appropriate) and properly packed and stored in accordance with the requirements of national guidelines. Human remains should be assessed and reported on as noted in section 4 above and then returned to the Client for reburial in the churchyard. A fully indexed field archive shall be compiled consisting of all primary written documents, plans, sections, and fully labelled photographs. Labelling should be in indelible ink on the *back* of the print and should include film and frame number; date recorded and photographer's name; name and address of site; national grid reference. Photographic prints should be mounted in appropriate archivally-stable sleeves. A quantified index to the field archive should form an appendix to the report. The original archive is to accompany the deposition of any finds, providing the landowner agrees to the deposition of finds in a publicly accessible archive (see Section 8.1 below).
- 7.2 A report should be produced to provide background information, a summary of the works carried out, a description and separate interpretation of any features and finds identified. Details of the report's style and format are to be determined by the archaeological contractor, but it should include a full bibliography, a quantified index to the site archive and as an appendix, a copy of this specification. The report illustrations should include, as a minimum, a location map at a reasonable scale plus any drawings and photographs.
- 7.2 If nothing of archaeological interest is identified during the course of the watching brief, then a summary report will be adequate, as long as sufficient details are supplied for Historic Environment Record (HER) purposes. Illustrations would not be required, although it would be anticipated that black and white prints would form part of the archival record. A summary record should include: (1) details of the commissioning body; (2) the nature of the development and resultant ground disturbance; (3) the approximate position of any ground disturbance viewed with relation to adjacent existing fixed points; (4) the date(s) of fieldwork; (5) name(s) of fieldworker(s); (6) written observations on the nature and depth of deposits observed (this may include annotated sketch sections); (7) the conditions under which they were observed (for example, details of weather conditions, ease of access and views, attitude of other organisations *etc.*); (8) a quantified index to the field archive; (9) details of the archives present location and intended deposition and (10) a copy of this specification.
- 7.4 The report should be produced within three weeks of completion of the fieldwork, unless otherwise agreed with the DAC Archaeologist. Copies of the report should be supplied to the client, the DAC Archaeologist and the Greater Manchester HER. The report will become publicly accessible once deposited with the HER. The report for the HER should be supplied in digital format, preferably as a single PDF file, but with any accompanying gazetteers, images, plans, etc. in their original formats, to allow it to be easily incorporated into the digital HER.
- 7.5 Archaeological contractors must complete the online OASIS form at <http://ads.ahds.ac.uk/projectoasis/>. Contractors are advised to contact the HER prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, the HER may place the information on a web-site. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report.

8. Deposition of Archive

- 8.1 Before commencing any fieldwork, the archaeological contractor must contact the relevant museum archaeological curator in writing (copied to the DAC Archaeologist) to determine the museum's requirements for the deposition of an excavation archive.
- 8.2 The Relevant museum is, in this instance, The Museum of Wigan Life. Contact should be made in the first instance to Yvonne Webb, Service Manager Heritage Collections, Museum of Wigan Life, Library Street, Wigan WN1 1NU; t.01942 828123; e. Y.webb@wlct.org
- 8.3 It is the responsibility of the archaeological contractor to endeavour to obtain consent of the landowner, in writing, to the deposition of finds with the relevant museum (above). It is the responsibility of the archaeological contractor to meet the museum's requirements with regard to the preparation of fieldwork archives for deposition.

9. Contacts and Further Details

- 9.1 Any queries about the contents of the specification should be addressed to the DAC Archaeologist, Peter Iles, c/o Lancashire County Archaeology Service, Lancashire County Council, PO Box 100 County Hall, Pitt Street, Preston, Lancashire, PR1 0LD. T. 01772 531550, E. peter.iles@lancashire.gov.uk
- 9.2 The Engineer is Michael Taylor for Blackett-Ord Conservation Ltd, 33 Chapel Street, Appleby in Westmorland, Cumbria, CA16 6QR. T. 017683 52572, E. engineering@blackett-ordconservation.co.uk
- 9.3 The Client is Reverend Andrew Holliday and the Parochial Church Council of Standish St Wilfrid, The Rectory, 13 Rectory Lane, Standish, Wigan, WN6 0XA. T. 01257421396, E. andrew.holliday@tesco.net
- 9.4 The County Archaeologist is Norman Redhead, Greater Manchester Archaeological Advisory Service, Joule House, School of the Built Environment, 1 Acton Square, University of Salford, Salford, M5 4NW. T. 0161 295 5522, E. gmaas@Salford.ac.uk

10. References and Useful Documents

Association of Diocesan and Cathedral Archaeologists 2004, *Archaeological requirements for works on churches and churchyards*

English Heritage 1991, *Recommendations for processing human bone from archaeological sites* (AML report 124/91, May, S)

English Heritage 2002, *Human bones from archaeological sites: guidelines for producing assessment documents and analytical reports* (May S, Brickley M and Dodwell N)

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Institute for Archaeologists 1993, *Excavation and post-excavation treatment of cremated and inhumed human remains* (McKinley J and Roberts C)

Institute for Archaeologists 2004, *Guidelines for the recording of human remains* (Brickley, M and McKinley, J eds)

Institute for Archaeologists 2006, *Standard and guidance for an archaeological watching brief*

APPENDIX 2: METHOD STATEMENT

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 The Reverend Andrew Holliday, and the PCC of St Wilfrid, Standish (hereafter the 'client') has requested that Oxford Archaeology North (OA North) submit costs to undertake a programme of archaeological watching brief at the Church of Saint Wilfrid, Standish, Greater Manchester (centred NGR SD 5631 1026) during the proposed removal and rebuild of a portion (approximately 30m) of the churchyard wall on the northern side. The church and its graveyard is Grade I and within the Standish Conservation Area (GMHER 4748.1.0). A church is documented on the site from 1206, although the present construction is mainly sixteenth century incorporating some thirteenth-fourteenth century fabric. However, map evidence suggests that the original graveyard was oval, insinuating that it may be of a pre-conquest origin. The wall, believed to have been constructed in the nineteenth century on an earlier (possibly pre-Conquest) alignment, acts a revetment to this area of the graveyard, being 1.5-1.7m higher than the adjoining road, with several mature trees set immediately behind it. These factors have caused a precarious bulge outwards towards the public footpath and main road. The proposals are to rebuild the wall on concrete strip foundations and then tie the wall back with a geotextile grid.

1.1.2 Due to the position of the wall around the northern edge of the graveyard, the groundworks are likely to disturb remains, likely to be mainly disarticulated or fragmentary bones and teeth, and possibly some coffin fittings or similar. However, there is also a possibility that there may be *in situ* burials that are encountered. Other archaeological remains may also be encountered relating to the earlier phases of the church or churchyard.

1.1.3 The watching brief will be maintained during any ground moving or excavating works (i.e. ground reduction and excavation of foundation trenches). This work is in accordance with a detailed specification prepared by the archaeological advisor to the Blackburn Diocesan Advisory Committee (DAC Archaeologist), and should be read in conjunction with the following document, which outlines OA North's role within the site work.

1.2 OXFORD ARCHAEOLOGY NORTH

1.2.1 OA North has considerable experience of fieldwork and post-excavation, having undertaken a great number of small and large-scale projects during the past 30 years. Such projects have taken place to fulfil the requirements of the clients to rigorous timetables. OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute for Archaeologists (IfA) registered organisation, registration number 17, and all its members of staff operate subject to the IfA Code of Conduct (2010).

2. OBJECTIVES

2.1 INTRODUCTION

2.1.1 The following programme has been designed to identify investigate, and record any archaeological deposits affected by the proposed groundworks, in order that they can be preserved by record. To this end, the following programme has been designed to provide a watching brief in line with the Association of Diocesan and Cathedral Archaeologists guidelines (2004). The fieldwork will be carried out in line with current English Heritage (1991 and 2005) and IfA guidelines (2008a), and in line with the IfA *Code of Conduct* (2010).

2.1.2 **Watching Brief:** to provide a permanent presence archaeological watching brief during groundworks associated with the proposed removal of the wall, ground reduction, excavation of a foundation trench, and the removal of some of the mature trees behind the wall. This

will aim to determine the quality, extent and importance of any archaeological remains, and record their presence.

- 2.1.3 **Report and Archive:** a report will be produced for the client within six to eight weeks of completion of the fieldwork. A site archive will be produced to English Heritage and IfA guidelines (2008a and b) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

3. HEALTH AND SAFETY

3.1 RISK ASSESSMENT

- 3.1.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.

3.2 CONTAMINATION

- 3.2.1 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met, and that the risk is dealt with appropriately. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.

3.3 STAFF ISSUES

- 3.3.1 All project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards.
- 3.3.2 All project staff will wear full basic PPE whilst on site, to include safety helmets, safety boots and high-visibility jackets. Noise defenders and eye protectors will be made available to staff as necessary.
- 3.3.3 It is assumed that OA North staff will be able to use the on-site contractor's welfare facilities.

4. METHOD STATEMENT

4.1 WATCHING BRIEF

- 4.1.1 A programme of field observation will accurately record the location, extent, and character of surviving archaeological features and/or deposits within the excavations associated with the wall rebuilding, including any remains associated with burials. For such purposes the on-site contractor should use a toothless ditching bucket for excavating purposes (toothed buckets inhibit observation of archaeological features and their recording). Any approach to the excavator will be made from the front of the machine (i.e. facing the driver) after signalling to the driver and being acknowledged.
- 4.1.2 The work will comprise observation during the groundworks, the systematic examination of any subsoil horizons exposed, and all archaeological features and horizons, and any artefacts identified during observation will be accurately recorded. Any resultant spoil will also be systematically examined during the course of the operation. The excavation area will only be entered by OA North staff if it is considered safe to do so.
- 4.1.3 The discovery of archaeological remains will require stoppage of the excavation to allow the OA North archaeologist sufficient time to undertake firstly an assessment for the requirement of further work and then the adequate recording under safe conditions. This will be carried out

as efficiently as possible in order to minimise disruption. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works will be approximately 2-4 hours. Clearance will be given for excavation to proceed once the archaeologist is satisfied that either no remains are present, or that they have been adequately recorded, or that the level of impact will not disturb any deeper remains that can be preserved *in situ*.

- 4.1.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be quickly cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 4.1.5 Recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the client, together with heights OD.
- 4.1.6 A photographic record (monochrome contact prints with replica digital photographs for presentation purposes) will be undertaken simultaneously of features and finds, and of general working shots.
- 4.1.7 A plan will be produced of the area of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.
- 4.1.8 **Contingency plan:** in the event of significant archaeological features being encountered during the watching brief, discussions will take place with the client and the DAC Archaeologist, as to the extent of further works to be carried out. All further works would be subject to a variation to this project design.

4.2 GENERAL PROCEDURES

- 4.2.1 **Human remains:** where disarticulated human remains are encountered they will be lifted and contained within lidded cardboard boxes or opaque burial sacks, and removed daily from the immediate vicinity for storage prior to their assessment.
- 4.2.2 Where *in situ* burials are encountered they will be left *in situ* as much as is practicable, and protected prior to backfilling and reburial. The burials will not be chased horizontally beyond the confines of the excavation area (English Heritage and the Church of England 2005, paragraphs 183-7). However, where preservation *in situ* is not possible, or particularly deep or complex 'stacked' or intercutting burials are encountered, this will require consultation with the structural engineer and the DAC Archaeologist as the extent of excavation required. Only the minimum portion of the remains will be removed if it is considered necessary and the remainder covered from view and protected from accidental damage
- 4.2.3 The grave cut and/or coffin and contents will be recorded in plan, where this is possible, at 1:20. Significant details of any grave goods, should they be discovered, will be planned at 1:10. Photography will be used to provide a further detailed record of the skeleton. The removal of such remains will be carried out with due care and sensitivity.
- 4.2.4 **Rapid osteological assessment:** any human remains retrieved during the fieldwork will be returned to OA North's offices for processing, including a rapid assessment by a suitably qualified OA osteologist, before being returned to site to be reburied. The assessment will be in accordance with *para 4.2* of the specification, and will include a table detailing the number of bones
- 4.2.5 This rapid assessment employs the same osteological methods set out by the IfA and BABAO (Brickley and McKinley 2004), and is described more fully in *Appendix 1*. Wherever bone survival permits, this will include:
- Minimum number of individuals

- Preservation and completeness (including dental inventory)
 - Full age and sex estimation
 - Stature estimation
 - Gross skeletal pathology
- 4.2.6 In addition to this palaeodemographic data, a rapid assessment of the dentition of any skeletons retrieved will be made. In addition, the remains will be rapidly scanned for pathological conditions, and the location and general appearance of any lesions described.
- 4.2.7 **Storage of Remains and Reinterment:** OA will be responsible for the individual bagging or boxing of skeletons and disarticulated remains. The excavated assemblage will be transported to OA North's offices at Lancaster on a regular basis, where they will reside whilst being assessed. Once the fieldwork and subsequent reporting is complete reburial will be undertaken soon after within the churchyard by the client.
- 4.2.8 **Environmental Sampling:** samples (bulk samples of approximately 30-60 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Monolith samples will be collected from freshly exposed sections through all buried soils/old ground surfaces by trained staff. These will be returned to OA North's offices for processing.
- 4.2.9 Deposits of particular interest may incur additional sampling, on advice from the appropriate in-house specialist.
- 4.2.10 The location of all samples will be recorded on drawings and sections with heights OD etc.
- 4.2.11 Between 50%-100% of bulk samples shall be selected for processing, based on the advice from OA North's in-house environmental manager. An assessment of the environmental potential would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits.
- 4.2.12 It may be required to obtain dating evidence through radiocarbon dating, dendrochronological or other such techniques. This would only be undertaken in consultation with the client and the DAC Archaeologist.
- 4.2.13 **Finds:** all finds recovered during the evaluation investigation will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) guidelines.
- 4.2.14 Finds recovery and sampling programmes will be in accordance with best practice (current IfA guidelines) and subject to expert advice. Neither artefacts nor ecofacts will be collected systematically during the mechanical excavation of the topsoil unless significant deposits are encountered. In such an eventuality, material will be sampled in such a manner as to provide data to enhance present knowledge of the production and dating of such artefacts. Other finds recovered during the removal of overburden will be retained only if of significance to the dating and/or interpretation of the site. It is not anticipated that ecofacts (e.g. unmodified animal bone) will be collected during this procedure.
- 4.2.15 All finds will be treated in accordance with OA standard practice, which is cognisant of IfA and UKIC Guidelines. In general this will mean that (where appropriate or safe to do so) finds are washed, dried, marked, bagged and packed in stable conditions; no attempt at conservation will be made unless special circumstances require prompt action. In such case guidance will be sought from OA North's consultant conservator. Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists. Initial artefact dating shall be integrated into the site matrix.
- 4.2.16 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

4.3 REPORT

4.3.1 A hard copy and a digital copy on CD of the report will be submitted to the client, and a further hard copy and digital copy supplied as pdf files will be submitted to the Greater Manchester Historic Environment Records (HER). A copy of the report will also be forwarded to the DAC Archaeologist within three weeks of completion of fieldwork. The report will include;

- a site location plan related to the national grid
- a front cover to include the planning application number, where relevant, and the NGR
- a concise, non-technical summary of the results
- the circumstances of the project and the dates on which the fieldwork was undertaken
- description of the methodology, including the sources consulted
- a summary of the historical background of the study area
- appropriate plans showing the location and position of features located
- photographs as appropriate
- a copy of this project design, and indications of any agreed departure from that design, and the DAC Archaeologist's specification
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted

4.3.2 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4.4 ARCHIVE

4.4.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the HER (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the County Record Office in Manchester, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with the Museum of Wigan Life. The Museum will be contacted as to their requirements.

4.4.2 **OASIS:** as part of OA North's standard archiving process, the OASIS form will be completed within three months of completion of the work.

5. OTHER MATTERS

5.1 PROJECT MONITORING

5.1.1 Monitoring of this project will be undertaken through the auspices of the DAC Archaeologist, who will be informed, with at least one week's notice, of the start date of the work.

5.2 WORK TIMETABLE

- 5.2.1 **Archaeological Watching Brief:** the duration of the archaeological presence for the watching brief will be dictated by the client's schedule of works, but is anticipated as being approximately 1 week for the main works, i.e. removing the wall and excavating out, plus one to two days for groundworks associated with the removal of the trees.
- 5.2.2 **Report:** the client report will be completed within approximately three weeks following completion of all assessment elements, subject to any outstanding specialist reports.
- 5.2.3 **Archive:** the archive will be deposited within six months following completion of the site work.

5.3 STAFFING

- 5.3.1 The project will be under the direct management of **Emily Mercer BA MSc MIFA** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 5.3.2 The fieldwork will be undertaken by an OA North supervisor or assistant supervisor experienced in this type of project, who will be responsible for liaison with the site contractors and the client, and other relevant interested parties with regards to on-site work and procedures. The archaeologist who will attend site is not presently known due to time-tabling constraints.
- 5.3.3 The site archaeologist will be supported by specialist staff both on site and in the office in Lancaster. The osteological assessment will be undertaken by **Vickie Jamieson** who is experienced in this field. Finds management will be undertaken by **Christine Howard-Davis** who will also provide specialist input on certain finds categories. Environmental management will be undertaken by **Elizabeth Huckerby**, who will also provide specialist input on charred remains and pollen. Elizabeth will advise on site sampling procedures and co-ordinate the processing of samples and organise internal and external specialist input as required.

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APPENDIX 1: OSTEOLOGICAL METHODOLOGY

INTRODUCTION

Osteological methodology will be undertaken using two different levels of detail: rapid osteological analysis and full osteological analysis. Both will use the same ageing, sexing and stature methodologies described below, as set out by the IfA and BABAO (Brickley and McKinley 2004).

RAPID OSTEOLOGICAL ANALYSIS

It is proposed that the entire assemblage of articulated burials will undergo rapid osteological analysis. This analysis will be performed on unwashed material, although judicious washing of specific skeletal features will be undertaken as the osteology requires. Rapid osteological analysis comprises full age, sex and stature estimation that is set out below.

Except in the cases where samples have been taken from unwashed material for biochemical analysis, a full dental inventory will be made, and dental pathologies fully recorded, making calculation of true prevalence possible. A skeletal inventory will not be made, although completeness and preservation of the skeleton will be recorded. The bones will be rapidly scanned for pathological changes, and their site and location will be recorded. From this crude prevalence will be calculated.

FULL OSTEOLOGICAL ANALYSIS

An appropriate sample of the assemblage will be selected during rapid analysis, according to the demographic profile and also to the criterion set out above, in order to achieve a representative cross section of the buried population in terms of demography and burial treatment. The type and intensity of analysis will be dependent upon the results of the MoRPHE assessment, which will consider the significance of the assemblage within a local and regional research framework.

Except for those elements selected for biochemical analysis, these skeletons will be washed, but not marked, and will undergo full osteological analysis, as set out by Brickley and McKinley (2004). This will be a more detailed analysis than the above, including the same ageing, sexing and stature techniques and dental inventory, but also a detailed skeletal inventory, metrical analysis, recording of non-metric traits, and more detailed description of pathological lesions.

General terminology and equipment used

The anatomical terminology used in this report will be in accordance with international nomenclature. The descriptive teeth formula used will be based on the Zsigmondy system (Zsigmondy 1861 in Hillson 2003, 8-9). All bones and teeth will be analysed macroscopically.

Preservation and completeness

Bone preservation and completeness of the assemblage will be rated on a four-point scale, ranging from 1 (poor) to 4 (excellent). Likewise, skeletal completeness will be scored on a scale of 1 - 4 : 1 (< 25 %); 2 (25- 50 %); 3 (50- 75 %); and 4 (> 75 %). Possible causes of the differential bone survival and diagenesis on the site will be discussed.

Estimation of age at death

Diaphyseal long bone lengths will be used as the basis for ageing foetuses and neonates using methods developed by Fazekas and Kósa (as adapted in Scheuer and Black 2000). Subadults will be aged by the stage of dental eruption (Mooreess *et al.* 1963a and b), stage of epiphyseal fusion (Scheuer and Black 2000) and diaphyseal length of the major long bones (Mareš 1970).

The adult skeletons will be aged by degeneration of the auricular surface of the pelvis (Lovejoy *et al.* 1985), the sternal end of the ribs (İşcan and Loth 1986 a and b) and the pubic symphysis (Brooks and Suchey 1990; Todd 1921a and b); epiphyseal fusion of the medial clavicle (Scheuer and Black 2000); dental attrition (Miles 1962), and suture obliteration (Meindl and Lovejoy 1985).

All individuals will be assigned a suitable precise age group as defined in Table 1.

Age group	Age range
Foetus	< 0 years
Neonate	0-1 months

Infant	0-1 years
Young child	2-5 years
Older child	6-12 years
Adolescent	13-17 years
Young adult	18-25 years
Prime adult	26-35 years
Mature adult	36-45 years
Older adult	> 45 years
Child	2-12 years
Subadult	< 18 years
Adult	> 18 years

Table 1. Age groups employed in analysis

Estimation of sex

Sexually dimorphic features of the pelvis and cranium will be used to diagnose osteological sex based on standards set out in Buikstra and Ubelaker (1994) and Schwartz (1995).

Estimation of stature

Calculation of body stature will be estimated from the maximum length of the major long bones will be based on the method for Caucasians developed by Trotter and Gleser (Trotter 1970). Combined measurements of the femur and tibia will be utilised wherever possible, and in the absence of one of these bones the femur and then the tibia will be used. The major bones of the upper limb will be used if no lower limb bones are present. The left side will be used preferentially in keeping with standard osteological practice.

For comparative studies on stature between populations, it is recommended to use the actual bone measurement rather than the calculated estimates (Brothwell and Zakrzewski 2004, 33). The raw long bone lengths will be given as an appendix to the specialist report.

Skeletal and dental pathologies

The terminology and descriptions of the skeletal pathologies used in the report will be based largely upon palaeopathology texts, such as Ortner (2003) and Aufderheide and Rodríguez-Martín (1998).

Dental pathologies will be described in accordance with Hillson (2003), Ortner (2003) and others. Dental calculus will be recorded according to Brothwell's methods (1981), and dental enamel hypoplasia according to Hillson (2005). The location on the tooth and severity of the carious lesions will also be described in the primary record.

Reporting

The results of the full analysis will be detailed within a report or publication draft, detailing the demography of the burial population, prevalence of skeletal and dental disease limited osteometrics. The data will be considered in its archaeological context, taking into account phasing and burial practices.

The osteological analysis will be compared with osteological work undertaken on contemporary skeletal assemblages, such as those listed in *Section 4.1.3*. The prevalence of pathologies will also be compared to rates calculated for the period by Roberts and Cox (2003).

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APPENDIX 3: SUMMARY CONTEXT LIST

CONTEXT NUMBER	INTERPRETATION
<i>1</i>	Sandstone wall forming boundary to church grounds
<i>2</i>	Dark brown-black friable silt. Topsoil
<i>3</i>	Dark grey-brown firm sandy-silt. Made ground layer
<i>4</i>	Light-medium brown firm sandy-silt. Made ground layer
<i>5</i>	Adult skeleton. Laid supine with head facing upwards. Only left side recovered. The right side was left <i>in situ</i> . Evidence of a coffin plate across the pelvis and chest area, but highly fragmented.

APPENDIX 4: FINDS CATALOGUE

Cxt = Context number; OR no = Object Record number; Qty = Quantity; Mat = Material; Cat = Category

CXT	OR NO	QTY	MAT	CAT	DESCRIPTION	DATE
2	1008	4	Plastic		Various fragments	Late twentieth – twenty-first century
2	1009	2	Glass	vessel	One fragment colourless milk bottle, one fragment dark brown beer bottle	Late twentieth – twenty-first century
2	1021	7	Ceramic	tobacco pipe	Undiagnostic stem fragments	
2	1023	1	Plastic		Fragment	Late twentieth – twenty-first century
2	1024	1	Iron	vessel	Crushed steel container	Twentieth century or later
2	1025	3	Bone	animal		Not closely dateable
2	1026	18	Ceramic	vessel	One late stoneware jar, one ceramic bottle stopper, two fragments lustreware, three fragments black-glazed redware, 11 fragments refined white earthenwares, including spongeware	Mid-late nineteenth – twentieth century.
2	1027	2	Glass	vessel	One complete half-pint milk bottle printed 'U Devine, High Farm, Standish', one complete screw-threaded jar, embossed Heinz on the base	Before c 1950s
3	1000	1	Stone		Possibly graveyard plot marker	Nineteenth-twentieth century
3	1001	2	Ceramic	building material	Two fragments floor tile, one probably medieval, but very worn	Medieval and later
3	1002	5	Ceramic	vessel	Two fragments black-glazed redware, three fragments refined white earthenwares	Late nineteenth – early twentieth century
3	1003	2	Ceramic	tobacco pipe	Undiagnostic stem fragments	Post-medieval
3	1010	23	Ceramic	vessel	One neck and rim brown stoneware, five fragments black-glazed redware, four fragments redware, 13 fragments refined white	Late nineteenth – early twentieth century

					earthenwares.	
3	1011	3	Ceramic	building material	Two undiagnostic fragments and one worn ?medieval floor tile fragment.	Medieval and later
3	1012	2	Plastic		Various fragments	
3	1013	3	Ceramic	tobacco pipe	Undiagnostic stem fragments	Post-medieval
3	1014	1	Ceramic	marble	Bottle stopper	Late nineteenth – early twentieth century
3	1015	6	Glass	Window, vessel	Three pane-edge fragments colourless sheet glass, two fragments and one complete bottle colourless mould-blown glass. Manufacturer CTG not traced. Metal screw-top	Mid-late twentieth century or later
3	1016	1	Mollusc	marine	Native oyster	Not closely dateable
3	1017	1	Lead	building material	One cell of leaded light, with square quarry. Long, H-section kame suggests late nineteenth century date	Late nineteenth – twentieth century
3	1018	4	Ceramic	building material	One brick and three tile fragments, one is line-impressed, with a yellow glaze	Medieval and later.
3	1019	2	Glass	vessel	Two fragments very badly weathered colourless bottle glass	Late nineteenth – twentieth century
3	1020	2	Mollusc	marine	One native oyster, one mussel	Not closely dateable
3	1022	40	Ceramic	vessel	Nine fragments black-glazed redware, one fragment cream-bodied redware, one fragment late yellow ware, one fragment late slip-decorated ware, two fragments self-glazed redware, 26 fragments refined white earthenware, two ceramic marbles	Late nineteenth – twentieth century
3	1028	1	Glass	vessel	Mineral water bottle, embossed CM (Charles Mason) Skelmersdale	Late nineteenth to early twentieth century
3	1029	3	Mollusc	marine	Two native oyster, one possibly Portuguese oyster	Not closely dateable
3	1030	1	Ceramic	tobacco pipe	Undiagnostic stem fragment	Late nineteenth century
3	1031	5	Iron	nail		Not closely dateable
3	1032	14	Ceramic	vessel	One fragment creamware, seven fragments refined white	

					earthenwares, including underglaze transfer-prints and spongeware, one fragment late brown stoneware, one rim fragment self-glazed redware dish, three fragments redware	
3	1033	4	Bone	animal		Not closely dateable
3	1034	1	Ceramic	building material	Undiagnostic tile fragment	
3	1035	1	Stone	writing slate	Fragment of ruled writing slate	Later nineteenth – early twentieth century
3	1036	5	Ceramic	tobacco pipe	Undiagnostic stem fragments	Post-medieval
3	1037	12	Ceramic	vessel	Four fragments refined white earthenware, one fragment blue-edged plate, four fragments cream-bodied black-glazed wares, one fragment self-glazed dish, two fragments redware	Late nineteenth century or later
3	1038	1	Iron	nail	Coffin nail	Not closely dateable
3	1039	2	Iron	nail	Coffin nail	Not closely dateable
4	1004	1	Glass	window	Small pane-edge fragment greenish glass	Seventeenth-eighteenth century
4	1005	1	Ceramic	tobacco pipe	Undiagnostic stem fragment	Post-medieval
4	1006	1	Ceramic	building material	Narrow, ?black glazed floor tile, with angular ends	Medieval?
4	1007	1	Ceramic	vessel	Rim fragment lustreware saucer	1805 – 1840?

APPENDIX 5: ARTICULATED SKELETAL REMAINS CATALOGUE

Ctxt = Context; Comp = completeness; Pres = Preservation; MT =Metrical Traits; Stat = Stature

Ctxt No.	ID No.	Age Y/N	Sex Y/N	Comp 1-4	Pres 1-4	MT 1-5	Stat Y/N	Comp Skull Y/N	Comments /Observations
3	5	N	Y	2	3	1	N	N	Female – from nuchal creast, mastoid process and mental eminence. Has protuberance on external skull from lambdoid suture to nuchal crest. Internally this forms a depression in the occipital with new woven bone surrounding it. Tumor? The odontoid peg deviates to the left. Flaring of the acromial end of the left clavicle with woven bone on the area connecting with the pectoralis major muscle. Ossified costal cartilidge. Mandible left & right M2 & M3 missing and healed sockets. New woven bone on left mandibular ramus on lateral aspect up to the condyle. Attrition on all surviving maxillary and mandibular teeth, along with calculus. Mandibular incisor & canine with caries.
3		Y	N	1	3	1	N	N	Young child, only skull frags, right femur and unfused femoral head, right illium, right ischium and right tibia with unfused distal end surviving. Age 5-6 yrs.
4		Y	N	2	3	1	N	N	Infant burial, only skull frags, mandible, vertebrae and ribs surviving. Teeth and fusion place skeleton <1yr.

APPENDIX 6: DISARTICULATED HUMAN REMAINS CATALOGUE

Cxt = Context; Copm = Completeness; Pres = Preservation

CXT	ELEMENT	SIDE	COMP	PRES	AGE	SEX	PATHOLOGY	COMMENTS
1	lumber vert		2	3	adult			
1	rib	right	1	3	adult			
2	humerus	left	1	3	adult			
2	ulna	right	2	3	adult			
2	2nd metatarsal	right	1	3	adult			
2	3rd metacarpal	right	3	3	adult			
2	proximal hand phalange		3	4	adult			
2	rib	right	1	3	adult			
2	femur	right	1	3	adult			
2	skull	left	1	3	adult			temporal
2	clavicle	left	3	3	adult			
3	1st metatarsal	left	4	3	adult		liping on distal articulation	
3	tibia	right	1	2	adult			
3	femur	left	1	2	adult			
3	femur	right	2	2	adult			Spade marks apparent
3	T1		4	3	adult			
3	C6		3	3	adult			
3	femur	left	3	2	adult			
3	tibia	right	4	3	sub-adult			
3	femur	right	4	3	adult			
3	femur	right	4	3	adult			

3	femur	right	4	3	adult		osteophytic growth on the linea aspera from the muscle attachment
3	tibia	left	4	3	sub-adult		
3	tibia	left	3	2	adult		
3	tibia	right	2	2	adult		
3	femur	left	4	3	adult		
3	femur	right	4	2	adult		
3	tibia	right	3	2	adult		
3	femur	right	3	2	adult		
3	femur	left	3	3	adult		
3	humerus	right	4	3	adult		
3	ulna	right	4	3	adult		
3	radius	right	4	3	adult		
3	femur	right	4	3	adult		
3	femur	left	3	2	Sub-adult		horizontal cut marks on the proximal anterior aspect of shaft
3	tibia	left	2	2	adult		
3	femur	right	4	3	adult		
3	femur	right	4	3	adult		woven bone on lateral side of lesser trochanter
3	femur	left	3		adult		horizontal chop mark on posterior shaft
3	femur	left	3	3	adult		
3	tibia	left	3	3	adult		woven bone growth on medial aspect of shaft - infection
3	femur	right	3	3	adult		
3	femur	right	3	3	adult		
3	ulna	left	2	3	adult		
3	femur	left	3	3	young		

					child			
3	tibia	right	2	3	adult			
3	tibia	left	3	3	sub-adult			
3	radius	left	4	3	adult			
3	femur	left	2	3	adult			
3	humerus	left	3	3	adult			
3	femur	left	2	3	adult			chop mark on posterior shaft
3	femur	right	2	3	adult			chop mark on lateral aspect of shaft
3	humerus	right	2	3	adult			
3	femur	right	2	3	adult			
3	femur	left	3	3	subadult			
3	tibia	left	1	3	adult		healed fracture on the distal shaft	
3	tibia	left	2	3	adult			
3	femur	left	2	3	adult			
3	femur	left	2	2	adult			
3	humerus	left	4	3	adult			chop mark on medial aspect of distal shaft
3	tibia		1	3	adult			
3	femur	left	1	3	adult			
3	femur	right	2	3	adult			
3	femur		1	3	adult			
3	femur		1	3	adult			
3	femur		1	3	adult			
3	femur		1	3	adult			
3	femur		1	3	adult			

3	femur		1	2	adult			
3	femur		1	2	adult			
3	femur		1	2	adult			
3	femur		1	2	adult			
3	tibia	left	2	2	adult			
3	tibia		1	2	adult			
3	tibia		1	2	adult			
3	tibia		1	3	adult		woven bone on shaft - infection	
3	humerus		1	2	adult			
3	humerus		1	2	adult			
3	humerus		1	2	adult			
3	ulna	right	2	3	adult			
3	humerus	left	2	3	adult			
3	tibia	right	1	3	sub-adult			
3	radius	right	3	3	sub-adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	ulna		1	3	adult			
3	axis		4	3	adult			
3	C7		4	3	adult		spinous process has divided into two halves	
3	C6		4	3	adult			
3	C3		4	3	adult			
3	T5		4	3	adult			

3	T6		4	3	adult			
3	T11		3	3	adult			
3	thoracic vert		1	3	adult			
3	thoracic vert		1	3	adult			
3	thoracic vert		1	3	adult			
3	cervical vert		1	3	adult			
3	cervical vert		1	3	adult			
3	cervical vert		1	3	adult			
3	cervical vert		1	3	adult			
3	os coxae	right	2	3	mature adult	female		
3	os coxae	right	1	3	older adult	male		
3	os coxae	left	1	3	adult	male		
3	os coxae	left	1	2	adult			
3	os coxae	left	1	3	adult			
3	os coxae		1	3	adult			
3	os coxae		1	3	adult			
3	os coxae		1	3	adult			
3	os coxae		1	3	adult			
3	os coxae	left	1	3	adult			
3	os coxae		1	2	adult			
3	os coxae	right	2	3	mature adult			
3	patella	right	4	3	adult			
3	calcaneus	left	4	3	adult		pin prick porosity on posterior talar facet	
3	calcaneus	left	4	3	adult			
3	calcaneus	left	3	3	adult			
3	calcaneus	right	4	3	adult			

3	talus	left	4	3	adult			
3	talus	right	3	3	adult			
3	talus	right	4	3	sub-adult			
3	talus	right	4	3	adult			
3	cuboid	right	4	3	adult			
3	medial cuneiform	left	4	3	adult			
3	medial cuneiform	left	4	3	adult			
3	medial cuneiform	right	4	4	adult			
3	medial cuneiform	left	3	3	adult			
3	lateral cuneiform	right	3	3	adult			
3	scaphoid	left	4	3	adult			
3	triquetral	right	4	3	adult			
3	2nd intermediate hand phalange		4	4	adult			
3	5th intermediate hand phalange		4	4	adult			
3	4th proximal hand phalange	left	4	4	adult			
3	2nd proximal hand phalange	right	4	4	adult			
3	2nd proximal hand phalange	right	4	4	adult			
3	1st proximal hand phalange	left	4	4	adult			
3	proximal foot phalange		4	4	adult			
3	proximal foot phalange		4	4	adult			
3	proximal foot		4	4	adult			

	phalange							
3	1st metatarsal	right	4	3	adult			
3	1st metatarsal	right	4	3	adult			
3	5th metatarsal	left	4	3	adult			
3	5th metatarsal	right	4	3	adult			
3	3rd metatarsal	left	3	3	adult			
3	4th metatarsal	left	4	3	adult			
3	4th metatarsal	right	3	3	adult			
3	1st metacarpal	left	4	4	adult			
3	3rd metacarpal	left	4	4	adult			
3	3rd metacarpal	left	4	4	adult			
3	3rd metacarpal	right	4	4	adult			
3	3rd metacarpal	right	4	4	adult			
3	4th metacarpal	right	4	4	adult			
3	2nd metacarpal	left	4	4	adult			
3	skull		1	3	adult			left and right parietal
3	skull		1	3	adult			left and right parietal
3	skull		1	3	adult			occipital
3	skull		1	3	adult			occipital
3	skull	right	1	3	adult			zygomatic
3	skull	right	1	3	adult			temporal
3	skull	right	1	3	adult			temporal
3	skull	left	1	3	adult			temporal
3	skull	left	1	3	adult			temporal
3	skull	left	1	3	adult			temporal
3	skull	left	1	3	adult			temporal
3	skull	right	1	3	child			temporal

3	skull		1	3	adult			occipital
3	skull		1	3	adult			occipital
3	skull		1	3	adult		Smooth bone depression on the left frontal eminence	frontal
3	skull		2	3	adult			left and right parietal
3	skull		1	3	adult			frontal
3	skull		3	3	adult	male		
3	skull		3	3	adult	male		
3	skull		2	3	adult	female		
3	skull		2	3	adult			
3	skull		2	3	adult	male	cribra orbitalia	
3	radius	left	1	3	adult			
3	radius	right	1	3	adult			
3	radius	right	1	3	adult			
3	cervical vert		2	3	adult			
3	thoracic vert		2	3	adult			
3	femur	left	4	3	infant			
3	humerus	left	1	2	adult			
3	humerus	left	1	2	adult			
3	femur	right	1	3	adult			
3	cervical vert		4	4	older child			
3	os coxae	right	2	3	adult	female		
3	femur	left	1	3	adult			
3	femur	left	1	3	adult			
3	clavicle	left	4	3	adult			
3	clavicle	right	3	3	adult			
3	scapula	right	1	3	adult			

3	radius	right	1	3	adult			
3	rib	left	1	3	adult			
3	rib	right	1	3	adult			
3	fibula		1	2	adult			
3	fibula		1	2	adult			
3	mandible		4	3	older child			calculus on both 1st molars
3	mandible		4	3	adult			teeth missing, total closure of sockets
3	mandible		4	3	older child			
3	mandible	left	2	3	adult			
3	mandible	left	1	3	adult			calculus on left 2nd and 3rd molars
3	maxilla	right	1	3	adult			calculus on I1, C1 and PM1. C1 has caries on lingual cusp
3	maxilla	right	1	3	sub-adult			
3	mandible	left	1	3				
3	os coxae	left	2	3	adult	male	large pitting across the iliac, ischium and the acetabulum	
3	axis		4	3	adult			
3	lumbar vert		3	3	adult		osteophytic growth on vertebral body	
3	talus	left	4	4	adult			
3	1st metacarpal	left	4	4	adult		osteophytic growth on palmer aspect of distal articulation	
3	3rd proximal hand phalange	right	4	4	adult			
3	calcaneus	left	3	3	adult			
3	tibia	right	1	3	adult			
3	vertebra		1	3	adult			

3	medial cuneiform	left	4	3	adult			
3	vertebra		1	2	adult			
3	thoracic vert		2	3	adult			
3	lumbar vert		2	3	adult			
3	rib		1	3	adult			
3	4th metatarsal	left	3	3	adult			
3	5th metatarsal	right	3	3	adult			
3	3rd metacarpal	right	4	3	adult			
3	os coxae	right	4	3	infant			
3	os coxae	left	4	3	infant			
3	femur	right	4	3	infant			
4	lumbar vert		3	3	adult			
4	talus	left	4	3	adult			
4	skull	left	1	3	adult			temporal
4	calcaneus	right	4	3	adult			
4	ulna	right	2	3	adult			
4	1st metatarsal	right	4	3	adult			
4	2nd metatarsal	left	4	3	adult			
4	skull	left	1	3	adult	female		temporal
4	calcaneus		1	3	adult			
4	skull	right	1	3	adult			temporal
4	proximal hand phalange		4	3	adult			
4	5th metatarsal	left	3	3	adult			
4	5th metatarsal	left	2	3	adult			
4	4th metatarsal	right	4	3	adult			
4	1st metatarsal		2	3	adult			
4	proximal hand		4	3	sub-adult			

	phalange							
4	lumbar vert		2	3	adult			
4	femur	left	1	3	adult			
4	radius	right	1	3	adult			
4	tibia	right	1	3	adult			
4	5th metacarpal	right	4	4	adult			
4	intermediate cuneiform	right	4	3	adult			
4	os coxae	left	2	3	adult	male		
4	os coxae	right	1	3	adult			
4	os coxae	right	1	3	adult			
4	os coxae	right	1	3	mature adult			
4	os coxae		1	3	adult			
4	os coxae		1	3	adult			
4	os coxae		1	3	adult			
4	os coxae		1	3	adult			
4	os coxae		1	3	adult			
4	os coxae		1	3	adult			

Total number of elements = 260

- 1 5 unidentified fragments
- 2 1 juvenile skull fragment
- 2 2 adult skull fragments
- 2 3 rib fragments
- 2 5 unidentified fragments
- 3 5 juvenile skull fragments
- 3 90 adult skull fragments
- 3 1 juvenile rib fragment
- 3 30 adult rib fragments
- 3 436 unidentified fragments

4	15 skull fragments
4	5 rib fragments
4	83 unidentified fragments
	Total number of fragments = 681