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Final Report on Archaeological Excavation

at Society Street (Townparks), Ballinasloe, Co. Galway

Licence No. 20E0330

On behalf of SIAC Ltd.

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Atlantic Archaeology

September 2021

PROJECT DETAILS

Name	Ballinasloe Town Street Enhancement & Water Services Upgrade Contract 2
Report Type	Archaeological Excavation (Stratigraphic Report)
Authors	Angela Wallace and Fiona Maguire with drawings by Clare Ryan
Client	SIAC Construction
Archaeological team	Angela Wallace, Clare Ryan, Louise Callan, Micheál Forde, Aisling Alexander, Gerard Colleran and Fiona Maguire
Site	Society Street
Townland	Townparks
Town	Ballinasloe
County	Galway
ITM Co-ords:	E585151, N731151 (centre of archaeological area)
SMR No:	Vicinity of GA088-049
Licence No.	20E0330
Licensee:	Angela Wallace
Report Date	July 2021

NON-TECHNICAL SUMMARY

In May 2020, a human femur was identified on the southern side of Society Street (Townparks), Ballinasloe, Co. Galway, during the course of monitoring of works for the Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES; Licence No. 18E0405). Further investigation found that a quantity of articulated and disarticulated remains, possible grave cuts and a semi-circular or C-shaped stone wall were located immediately beneath the modern concrete footpath there. About fifty years previously, a skeleton (GA088-049) had been discovered by ESB workers on the street and reported to the National Museum of Ireland (NMI).

This report describes the results of the subsequent archaeological excavation on Society Street carried out under Licence No. 20E0330 and includes the results of specialist analysis.

During the course of the excavation, ten articulated burials in varying states of preservation were uncovered, as well as a large quantity of disarticulated human bone. All the skeletal material within the limits of the excavation area was fully excavated, as it was directly impacted by works. Specialist analysis indicated that at least eighteen individuals were present, comprising adult males and females, young adults, juveniles and two pre-term infants, who may have been twins. All the *in situ* burials were under forty-five years of age. The burials and disarticulated human remains represented the remains of a cemetery, which appears to have been detrimentally impacted by modern utility services as well as the construction of Society Street during the eighteenth and nineteenth/early twentieth centuries.

Bone fragments from two individuals from the cemetery were submitted for radiocarbon dating, The dates returned indicated that the cemetery was in use during the period 1477-1800AD). A sample of bone from Skeleton 10 was dated to 337±28 BP calibrated to 1477-1638 AD, Skeleton 4 was dated to 259±28 BP calibrated to 1520-1800AD

Research indicated that the Society Street burials may be associated with the site of a church marked on a map of the town dated to *c.* 1663. The church is shown on the summit of the present day Church Hill, which abuts the cemetery/archaeological area to the south. Furthermore, the Irish version of the placename includes the term *teampall*, usually associated with parish churches of post-twelfth century date.

A well-preserved *paternoster* or set of rosary beads (20E0330:843:16) was found around the feet and lower legs of one of the burials (SK10), a female aged between 35-44 years. The beads, which varied in size, are made from an organic material likely to be animal bone and included a tubular and a conical bead, which are likely to have formed elements of a cross. Both of these beads were decorated with incised lines. The Ballinasloe *paternoster* is comparable in style to a set of beads found in a seventeenth-century context during an archaeological excavation in Middle Street in Galway in the 1980s, although the Ballinasloe example is earlier in date.

A metalled road surface of eighteenth or early nineteenth century date was identified immediately north of the cemetery and recorded as part of the excavation. Impacted by later works, this appeared to respect the known limit of the burials and may indicate that a physical boundary existed when the street was created.

A substantial semi-circular stone wall with a possible internal step was also recorded at the south-eastern extent of the site, just under the concrete footpath. The wall, which was constructed from rubble masonry and bonded with lime mortar, enclosed the poorly-preserved remains of a well. It is possible that the semi-circular wall represents the foundations of a well house. It is most likely that the well is either contemporary with or pre-dates the cemetery. Much of the upper enclosing wall and the entire remains of the well were preserved *in situ*. A photogrammetry survey of the well was also carried out.

The archaeological excavation on Society Street marks a significant step forward in the understanding of the earlier history of the town, providing insights into the broader context of burial and ritual in Co. Galway during the late medieval/post-medieval period.

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1.0 INTRODUCTION & BACKGROUND TO THE DEVELOPMENT

This report details the results of an archaeological excavation at Society Street (Townparks), Ballinasloe, Co. Galway, undertaken during the Ballinasloe Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES) Contract 2 (**Fig**. **1**). Full details of the results of archaeological monitoring of this project are detailed in a separate report under Licence No.18E0405ext (Wallace and Maguire 2021). A preliminary excavation report was also submitted to the National Monuments Service earlier this year (Wallace and Maguire 2020). A number of changes have been made here based on updated information and research.

In May 2020 during the course of monitoring, *in situ* human remains were identified at the edge of the footpath outside a premises currently occupied by Supermacs on the southern side of Society Street, close to the junction with Church Hill (**Pl. 1**). Subsequently, further grave cuts and disarticulated human remains were identified immediately below the concrete footpath. A substantial semi-circular wall was noted immediately to the south-east, also just below pavement level.

All relevant authorities were notified of the discoveries immediately. The area was then cleaned by hand without further impacting the archaeology and a preliminary pre-excavation plan prepared. The area was then sealed off pending discussion with the National Monuments Service (NMS), the National Museum of Ireland (NMI) and the clients.

Following on-site consultation with Christine Grant, Archaeologist, NMS and Linda Lynch, Osteoarchaeologist, it was concluded that the upper levels of archaeological material were so close to the surface that they would be directly impacted by works. Although some changes to the street design were proposed and the ducting was diverted, the construction of a new footpath and kerb line would still have had an impact any below ground remains.

As a result, an excavation methodology was proposed and agreed on with the NMS and NMI. An excavation licence was subsequently issued (Licence No. 20E0330). The methodology proposed that the upper levels of burials be excavated fully, as these would be directly impacted by the street design and if a lower layer was found to be present, the excavation methodology would be re-assessed. In addition, the excavation proposed to determine the nature of the stone wall and its relationship, if any, to the burials.

The excavation commenced on June 25th 2020 and was completed on 12th August 2020. The excavation was carried out by Angela Wallace, Clare Ryan, Louise Callan, and Fiona Maguire of Atlantic Archaeology. The crew was assisted at various stages by Aisling Alexander and Micheál Forde. Gerard Colleran joined the team for the post-excavation phase. This work was carried out on behalf of SIAC and in agreement with Ryan Hanley Consulting Engineers on behalf of Galway County Council.

2. THE DEVELOPMENT

As outlined above, the archaeology was identified during the Ballinasloe Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES). Within the area where the archaeology was identified on Society Street, proposed works comprised the installation of gully pots and connections to the storm line, as well as foundations for new footpaths, kerbs, and a new road surface (**Fig. 3**). Street furniture, including the installation of a bench and tree planting was planned. The existing telephone kiosk was also to be removed and the existing ESB street light to be replaced. The excavation of duct trenches to facilitate underground cabling was re-directed around the archaeological area to avoid any impact.

3. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

3.1 Introduction

A detailed archaeological and historical background was included in the monitoring report for this project (Wallace and Maguire 2021; Licence No. 18E0405ext). The sections below provide a broad overview of that research in order to provide a context for the results of the archaeological excavation on Society Street. The sections below are separated into the prehistoric and medieval and post-medieval periods using accepted dates as outlines in the 2006 NMS publication *Excavation reports-guidelines for authors*. The prehistoric period encompasses the Mesolithic (*c.* 8000-4000BC), the Neolithic (*c*. 4000-2500 BC), the Bronze Age (*c*. 2500-500BC) and the Iron Age (*c*. 500 BC to 400 AD). The medieval period refers to the centuries between *c*. 400 AD-1550 AD; the post medieval period refers to *c*. 1550-1750 AD. The period of time after 1750 AD is referred to as the modern period.

3.1.1 The prehistoric period (8000 BC-400 AD)

There can be little doubt about the strategic importance of the area which now forms the town of Ballinasloe from earliest times. Located on a fording point on the River Suck, access to the area was enhanced by its proximity to the *Slí Mhór* or 'Great Road' which followed the line of the *Eiscir Riada* from East to West. The *Slí Mhór* lies on the southern side of the town and can still be traced in the streetscape, most notably along Pollboy, Hymany, the Harbour Road, Dunlo Hill and westwards along Brackernagh and Mackney. The river also acted a natural boundary, and in fact, marked the border between Counties Galway and Roscommon until the nineteenth century. It still marks the boundary between the baronies of Clonmacnowen and Moycarn, as well as the civil parishes of Kilcloony and Creagh (www.townlands.ie). As part of a wider river system, the Suck provided access to rich hunting and fishing grounds and combined with the *Slí Mhór*, enabled the early inhabitants to establish a network of settlements and trade routes.

A population was established in the area from at least the later prehistoric period onwards. According to Egan (1961, 18-19), one of these population groups was known as the *Cathraigh*, who lived on the shores of the Suck at *Tuaim Catraí* (now Kellysgrove/Pollboy) and at *Porta Fidigi* on the opposite side of the river. The

Catraigh are reputed to have been one of the enslaved tribes of the ruling *Uí Máine* dynasty, claiming descent from the legendary *Fir Bolg* (*ibid*.). Although no prehistoric monuments are recorded within the immediate area of the town, evidence for structures, including a well-preserved *fulacht fiadh* dated to the Middle Bronze Age, were uncovered during development works in the townland of Dunlo in 2009 (www.excavations.ie; 2009:394). The site is located *c*. 500m south of the excavation/archaeological area in Society Street. Pits and postholes of possible prehistoric date were also uncovered during archaeological monitoring at the south-western end of Dunlo Street as part of this project in 2018 (Wallace and Maguire 2021, 44-5). The remains of a large circular enclosure on Church Hill was reported to the Archaeological Survey of Ireland (ASI) during this project and is of potential prehistoric date (see Section 3.1.5 below).

Artefactual evidence can also be taken as an indicator of human movement within the landscape. Several artefacts spanning a wide date range have been recorded, which show that the wider area around Ballinasloe was known from the earliest times. Artefacts include a flint blade and worked chert, dated to between *c*. 8000-6500 BC, found in the townland of Urraghry on the south-western side of the town (Drumm *et al*, 2014, 168-9). Three stone axeheads and a stone sickle dating to the Neolithic period were recovered from Kellysgrove Bog on the south-eastern side of the town in the 1930s (NMI Reg. 1937:2803-6; Maguire 2009, 22-3). Underwater survey work at Correen Ford on the River Suck to the south-west of Ballinasloe in the late 1980s recovered artefacts including a Late Bronze Age sword and vessel (www.excavations.ie; 1989:79). Two Iron Age hoards, the Somerset Hoard (NMI Reg. no. 1958: 156, 157, 158; Raftery 1960, 2-5) and the Ardnaglug (Knock) Hoard (NMI Reg. No. W290, 291; Ireland 1992, 123-46) are also associated with the area.

3.1.2 The medieval (*c*. 400 AD – 1550 AD) and post-medieval (*c*. 1550-1750 AD) periods

Some of the earliest recorded monuments in the immediate environs of Ballinasloe are linked to settlement and ecclesiastical activity dating to the early medieval period (*c*. 400–1000 AD; also see Section 3.3. below). They include an early medieval ringfort and souterrain *c*. 1.4kms southwest of the archaeological area in Society Street, which was excavated in 2005 in the townland of Mackney (Delaney 2014, 187-200), as well as the site of a church and graveyard (SMR GA087-083001 and -083002) in the townland of Garbally Demesne. This site was detrimentally impacted by the construction of the St Joseph's Place housing estate, *c.* 1.2kms to the south-west of Society Street, in 1955. However, radiocarbon dates from recent investigations there confirmed that the ecclesiastical site was in use during the sixth and seventh centuries AD (530-650 cal. AD).

A wooden trackway or togher of likely early medieval date was uncovered in 1946 in Kellysgrove Bog, on the southern edge of the town, c. 3kms to the south (Prendergast 1946, 15-16). Known as the 'monk's pass', it is likely to have provided a link between various ecclesiastical establishments and would have formed part of a wider road network accessed from one of the numerous crossing points on the Suck.

Up until modern times a ford, which was said to have been passable with a horse and cart, was located at the bend in the river between Tulrush and the now demolished mill in Pollboy (SMR GA088-020) on the south-eastern side of the town. The ford undoubtedly has much older origins and is known locally as one the crossing places for the Williamite army during the Battle of Aughrim in 1691.

Much of the later medieval activity in the environs of the town is associated with Turlough Mór O'Conor (*Toirdelbach Ua Conchubair*), the twelfth century High King of Ireland. The *Annals of the Four Masters* (AFM) record that he hosted a gathering at his residence in *Dún Leodha* (the older name for the area) in 1114 AD. Those assembled (named below) then set out from there to the *Dál gCais* where they made peace with the men of Munster for a period of one year;

'M1114.10 *Slóigheadh lá Domhnall Ua Lachlainn co Raith Cendaigh, & do dheachaidh Eochaidh Ua Mathghamhna, co n-Ultaibh ina theach, & Donnchadh Ua Loingsigh co n-Dail Araidhe, & Aodh Ua Ruairc, co Fearaibh Breifne, & Murchadh Ua Maoilechlainn co Feraibh Midhe. Do-lotar iar sin dibhlinibh tar Ath Luain co Dún Leodha, & táinic Toirrdhealbhach Ua Conchobhair co c-Connachtaibh, & Niall, mac Domhnaill Meg Lochlainn, a mac fein co maithibh Cenel Conaill ina aireacht. Do-chótar dno uile iarsin co Tealach n-Deadhaidh i n-Dail c-Cais, co n-dernsat osadh m-bliadhna fri Fiora Mumhan. Do-dheachaidh tra Domhnall Ua Lochlainn ar fud Connacht dia thigh'* (AFM, 998).

O'Conor made a bridge over the Suck in *Dhúin Leódha* in 1120 AD;

'M1120.7 *Droichet Atha Luain, droichet Atha Cróich & droichet Dhuin Leódha for Suca do dhénamh la Toirrdhelbhach Ua c-Conchobair*' (AFM, 1010).

In 1124 AD, the annals record the erection of three 'castles' by the men of Connacht, '*namely the castle of Dún Leo, the castle of Galway, and the castle of 'Cúil Mhaoile'* (*i.e.* Collooney, Co. Sligo):

'M1124.15 Trí caisteoil do dhénamh lá Connachtaibh, caislén Dúin Leódha, caislén na Gaillmhe, & caislén Cúile Mhaoile.' (AFM, 1020 see https://celt.ucc.ie//published/G100005B/index.html).

The traditional location of a strategic fortification said to have been erected by Turlough O'Conor in 1124 AD (GA088-028) is located 260m to the southeast of the archaeological area, on ground now occupied by St. Michael's Church. An Anglo-Norman castle (GA088-040), built *c.* 1245 is also listed on the SMR in the townland of Townparks (Moycarn). It stood on the eastern bank of the River and it has also been proposed as a possible location for O'Conor's 'castle' (Alcock *et al* 1999, 418).

The present group of buildings on the site incorporate an O'Kelly castle dating to the fourteenth century, which was taken over by the forces of the Crown in the sixteenth century (*ibid.*). The poorly preserved remains of a crennellated bawn wall (GA088-040002), with a wall-walk and circular flanking tower in the southwest corner are still extant.

Bordered on its eastern and western sides by a possible moat, the castle site lies immediately east of Ballinasloe Bridge (GA087-047), which is still in use. Built in two phases, the earlier of which dates to *c*. 1570, its construction was overseen by Sir Henry Sidney (O'Keeffe and Simington 1991, 231). The bridge was widened in the mid-eighteenth century (*c*. 1754; *ibid.*) and subsequently altered in the late nineteenth century. Two arches were removed in the 1980s to facilitate the construction of *Slí na hAbhainn.* An account of the town published in *Slater's Directory of Ireland* for the year 1846, includes a description of the bridge before the alterations, noting that '*The passage over the river is accomplished by a succession of bridges and causeways resting on sixteen arches, and extending five hundred yards*.'

A later medieval church site (*An Teampoilín*; GA088-020001) is located immediately north of the *Slí Mhór* in the townland of Pollboy, *c*. 2kms to the south-east of the archaeological area on Society Street. Dated by Egan (1960, 25-6) to the early thirteenth century, it was used as a children's burial ground (GA088-020002) up until the 1950s. A cluster of church sites in Creagh, 1.3kms to the east, include an 18th century Protestant church, which, according to Egan (1960, 26-7) is likely to have been built on the site of a medieval parish church (GA088-006002), an associated graveyard (GA088-006001), an early 18th century mass-house (GA088-008001) and the remains of a rectangular church built in 1824 and abandoned in 1914 (GA088-008002).

A second castle (GA087-073) said to have been owned by Mahe McTully was in existence in 1574 in the townland of Garbally Demesne, on the outskirts of the town, immediately south-west of Garbally College and *c.* 2kms to the south-west of the archaeological site in Society Street (GA088-074; Alcock *et al* 1999).

3.1.3 The early modern town

A review of some of the early mapping below (see Section 3.2) shows the beginnings of the modern town emerging from the second half of the seventeenth century onwards on the western side of the River. Although disguised by the modern town, there can be little doubt that much of the late post-medieval/early modern history of Ballinasloe survives in some of the lanes behind the principal streets, such as Bolger's Lane, Ievers Lane, Tae Lane (Jubilee Street). Moreover, the physical characteristics of at least two buildings on the northern side of the junction of Main Street and Society Street, indicate that they pre-date many of the late eighteenth/nineteenth century buildings there.

During the course of monitoring for this project, artefacts, including James II coin dated 1690, a seventeenth century trade token and fragments of seventeenth and eighteenth century glass bottles and clay pipe fragments were recovered on Main Street (Wallace and Maguire 2021). In addition, sections of an early street layer which is likely to be seventeenth century in date were noted at intervals on Bridge Street, Main Street and Dunlo Street, all of which suggest sufficient population at that time to warrant civil works (*ibid.*).

The importance of the town as a centre of industry in the late eighteenth and nineteenth centuries is reflected in the architectural heritage and include a warehouse (GA088-010001), a forge (GA088-034), a brewery (GA088-036), mills (GA088-021 and -041002) and a quarry (GA088-045). Public buildings listed on the SMR date to the late eighteenth and nineteenth centuries and include churches (GA088-028, -029, -030, -032, 037) and the town hall (GA088-031).

3.1.4 Society Street

The archaeological remains which are the subject of this report were located on Society Street, one of the three principal streets of Ballinasloe. Lying at the foot of the northern side of Church Hill, Society Street extends north-westwards from Main Street and is lined with nineteenth and early twentieth century buildings. A section of it was originally known as 'Soldier's Row', presumably referencing the military barracks which was once located here. The dates on some of the surviving chimney plaques at the south-eastern end of Society Street demonstrate that many of the present upstanding buildings were erected from 1810 onwards. Public buildings, all constructed using local limestone, include the Town Hall Theatre (built by Clancarty for the Farming Society of Ireland in 1846; NIAH Reg. Ref. 30333043), the Presbyterian Church and Whigham Hall built dated to 1845 (SMR GA088-037----; NIAH Reg. Ref. 30333044), the courthouse (NIAH Reg. Ref. 303333015) and the Pillar House (built as the National Bank of Ireland *c*. 1830; NIAH Reg. Ref. 30333019). The present courthouse also replaced the site of an earlier building where the Petty Sessions were held every Wednesday and Friday. It was described by Lewis (1834) as '*an old house not adapted for either confinement or security*'.

Slater's Directory provides a snapshot of Society Street in 1846 which reflects a prosperous town with various businesses including two glass, china and earthenware dealers (Mary Cochlan and Daniel McDaniel), a linen and woollen drapers and haberdashers (Joseph Sharpe), numerous public houses (Mary Usher, John Shannon, Patrick Garvey amongst others are listed as publicans), and a grocer and tobacconist (John Connolly). Thomas Cochrane was the proprietor of a coach factory at the Farm Society buildings. The street was also home to two surgeons (William Heise and Thomas Harrison). Patrick Sweeny is listed as the sub-Inspector at the Constabulary Barrack and Thomas Grayson Esq. was the secretary of the Horticultural Society, which was also located on the street.

Other than the Presbyterian Church (built 1845) and the convent chapel of St. Gabriel (built 1864) there is no extant record of a church or graveyard on the Street. However, Society Street lies immediately below Church Hill, which placename evidence indicates has extended historical ecclesiastical associations pre-dating the present St. John's Church (see Section 3.1 5 below). Records also show that the land in the area, which includes the area of Society Street, was owned by the Augustinian Order during the late medieval period[1].Cartographic research undertaken for this report indicates that there was a church on the summit of the Hill in the mid-to late seventeenth century (see Section 3.2 below).

3.1.5 Placenames and topography

The archaeological site which is the subject of this report now lies within the townland of Townparks (*Páirceanna an Bhaile*) and just inside the eastern extent of the barony of Clonmacnowen (*Clann Mhac nEoghain).* This townland name is of relatively recent origin and reflects land changes relating to Ballinasloe's development during the nineteenth century. It formed part of the townland of Dunlo until at least 1837[2]. Society Street (*Sráid an Chumainn*) is so called as the Irish Farming Society was established there in the nineteenth century (https://www.logainm.ie/1401431.aspx).

The street and the archaeological site which is the subject of this report, are located on the northern side of Church Hill (*Cnoc an Teampaill*), which is a prominent feature in the town. The Hill was once known as 'Knockadoon' (MacLochlainn 1971, 44). Today the Church of St. John the Evangelist is located on its summit. Originally designed by the architect Joseph Welland and built between 1842-3, it was reconstructed following a fire in 1899 (SMR GA088-029; NIAH Reg. Ref. 30333049; www.buildingsofireland.ie). Welland's church replaced an earlier Board of First Fruits chapel of *c.* 1818, shown on the first edition of the Ordnance Survey six-inch map (**Fig. 4**; Lewis 1837).

The Irish versions of both placenames (*Cnoc an Teampaill, Cnoc an Dún*) include man-made structures in their names, both of which provide evidence for a long history of use of Church Hill and one which pre-dates the construction of the street. The former indicates the presence of a church on the hill.

[1] On August 11th 1550 Donat O'Kelly, a chaplain 'in the order of Saint Augustin' surrendered to the crown 'two cartrons of Donlo' which had been given to him by Pope Leo (Calendar of patent rolls for 1551, 110; 245).

[2] John O'Donovan, who visited the town in 1837 noted that '*the greater part of the town, indeed I may say all, is in the townland of that name*' (*i.e.* Dunlo. Letter dated June 16th 1837).

According to Flanagan (1981-2, 73), the Irish word *teampall* (from the Latin *templum* meaning 'medieval church; churchyard') occurs in placenames associated with ecclesiastical sites, notably parish churches of post-twelfth century date. It replaced the older word *cill* during the second millenium AD (see Muhr 2016, 598). McKay (1995, 138) observed that *teampall* can also refer to a graveyard associated with a church, which is significant in terms of the results of excavation outlined in this report.

Knockadoon refers to a fort or fortress (*dún*) on the hill (*cnoc*). It is shown on the first edition of the Ordnance Survey six inch map as a large circular enclosure on the summit of the hill, with the 1818 church in the interior (Sheet 88; **Fig. 4**; approx. overall diam. 47m north/south; 52m east/west; enclosing area *c*. 0.25ha). A section of this substantial enclosure survives in an arc from approximately north-west to north-east on the northern side of Church Hill today. Comprising a broad and high earth and stone bank, it currently forms the base of part of the nineteenth century churchyard wall. There is some evidence on the ground for a second external bank which has been substantially levelled, and which may indicate that this feature was originally bi-vallate or multi-vallate in nature. Its discovery was reported to the Archaeological Survey of Ireland during the course of this project as it was not previously recorded. Its location, on a strategically positioned hilltop, which, prior to the development of the modern town would have overlooked broad expanses of lowland, suggests that it may represent the remains of a hillfort, a type of monument which appeared in the Irish landscape *c*. 1000 BC.

The older name for the place which developed into the town of Ballinasloe was Dunlo (*Dún Leo*). As was the case above, *dún* refers to a fort or fortress and Dr Conchubar Ó Crualaoich from the Placenames Branch of the DAHG has suggested that *Leo* may derive from the Old Irish word *léod* meaning 'cutting off, hacking off' (pers. comm. 22/09/20).

The traditional site of *Dún Leo* is thought to be in and around the area of the present St. Michael's Roman Catholic Church at the south-eastern end of St. Michael's Square, adjacent to the River Suck (SMR GA088-028---; Alcock *et al* 1999, 256). Although no trace survives, its location was shown to the Gaelic scholar John O'Donovan during the course of the Ordnance Survey in 1837.

The gathering of noblemen at O'Conor's residence in *Dún Leodha* may have been commemorated in a name change some time after the twelfth century. *Béal Átha na Sluaighe*, translated by O'Donovan (1838, 525) as 'the mouth of the ford of the hostings' appears in correspondence (as Belathuaslugead) between the Vatican and the Prior of the Augustinian Abbey in Clontuskert in 1443 AD[3] (www.logainm.ie; http://www.british-history.ac.uk/cal-papal-registers/brit-ie/vol9/pp349-357).

[3] '*To the prior of the Augustinian monastery of St. Mary, Clonthuasgert Omayne, in the diocese of Clonfert, and his brethren present and future. Taking their monastery under the protection of St. Peter and the pope, and confirming their possessions present and future, with mention of the following: the place itself where their said monastery is situate with all its appurtenances, the half cartron dimidiam quartam) of Nakylla, the half of Clonrosgormayn, the half of Mulyndylaideog, the cartron of Crosconayll, the half cartron of Lurga, in spirituals and temporals, and the spirituals of another cartron of*

Although Ballinasloe was more commonly used in various forms in official correspondence from 1500 AD onwards (Ballynesloye, Ballenslowe, Ballaneslowe, Ballensloe), Dunlo was in use up until the early decades of the seventeenth century. Evidence for this can be found in the Books of Survey and Distribution, compiled during the reign of Charles II, which refer to a quarter of land '*belonging to ye towne of Donlow*' (Egan 1960, 15).

3.2 Cartography Review

Covid-19 restrictions have impacted cartographic research for the project. Available online and published sources were used in the interim.

Although the Down Survey maps for Galway have not survived, fortunately part of the town is recorded on the surviving map showing Co. Roscommon, whose border was the River Suck on Bridge Street at the time (**Fig.5**). The map, which dates to *c*. 1663, shows a section of the bridge (GA088-047) with the Anglo-Norman/O'Kelly castle (GA088-040) to the east of it. On the Galway (west) side of the river, a hill with a church on it is shown, along with several houses which appear to be laid out along a street, in a formal fashion. No townland name is given. 'Ballinasloe' is marked on the eastern side of the bridge. It is proposed that the hill and church within a seemingly built-up setting on the Galway side of the river depict the present-day Church Hill, as well as the precursor of the nineteenth century church on its summit.

The layout of the modern town had been established by the time it was surveyed in 1837, with linear streets bounded by terraces of houses, with houses and landscaped gardens to the rear. The map also shows a number of lanes with houses and buildings either side of them leading down to the river. A series of narrow linear plots recorded on the map on the northern side of the south-eastern end of Society Street are reminiscent of medieval burgage plots. These long, narrow plots were usually located at the rear of street-facing properties and marked their boundaries.

Society Street is named 'Soldier's Row' on the first edition of the Ordnance Survey six-inch map reflecting the earlier military history of the town (**Fig. 4**). The area where the excavation took place shows a building at the location, which fronted onto Church Hill. The gable end of the building was on Society Street. The newly-identified earthwork on top of Church Hill is shown as a circular enclosure, with the earlier nineteenth century church in its interior. The Fair Green was also much more extensive than it is today.

Crosconayll, all the spirituals of the four townlands (villatarum) of Sirtayir,the rectory and vicarage of the whole parish of Clonynthuasgert (sic), the rectory of Nacarha and the rectory of Carhacolmayn, the rectory of Belathuaslugead as far as Clocnaflotuath inclusive, the vicarage of Sucyn and the vicarage of Theachmicconayll in the said diocese, with all their rights and appurtenances: confirming, furthermore, all liberties or immunities granted to the said monastery by the pope's predecessors, and liberties and exemptions by kings etc. etc. as usual Religiosam vitam. (An. and G. de Elten. | An. xx. de Adria.)'. CPL9, 354 (From St Peter's, Rome dated November 1443). Accessed at http://www.british-history.ac.uk/cal-papal-registers/brit-ie/vol9/pp349-357 [accessed 15 October 2020]).

By the time the twenty-five inch map was published, the street had developed further to the north-west, and both an 'Agricultural Hall' (now Town Hall) and Presbyterian Church had been constructed (**Fig. 6**). There is no change in the in the area where the excavation took place.

3.3 Sites and Monuments Record

There are currently twenty-seven monuments listed on the Sites and Monuments Record for the three townlands which make up much of the core of the modern town of Ballinasloe *i.e.* Townparks (Clonmacnowen), Townparks (Moycarn) and Dunlo, reflecting its development from the medieval period onwards (**Table 1**).

Table 1 Recorded monuments within the environs of the excavation site in Society Street, Ballinasloe.

SMR No.	Class	Townland	Irish Grid (E)	Irish Grid (N)
GA088-028	Earthwork	Townparks (Clonmacnowen)	185383	230939
GA088-028001	Cathedral		185383	230940
GA088-028002	Church		185379	230934
GA088-029	Church		185124	231082
GA088-030	Church		185326	230956
GA088-031	Town hall		0	0
GA088-032	Church		185156	231034
GA088-034	Forge		185358	231089
GA088-035	House - 18th/19th century		185364	231080
GA088-036	Brewery		0	0
GA088-037	Church		185129	231130
GA088-038	House - 18th/19th century		185465	231220
GA088-039	Memorial stone		185320	231170
GA088-040001	House - 18th/19th century		185887	231081
GA088-041001	House - 18th/19th century		185955	231045
GA088-049	Burial		0	0
GA088-040	Castle - Anglo-Norman masonry castle	Townparks (Moycarn)	185887	231081
GA088-040002	Bawn		185880	231098
GA088-040003	Inscribed stone		185886	231106
GA088-041002	Mill - corn		185932	231044
GA088-042	House - indeterminate date		0	0
GA088-043	House - indeterminate date		0	0
GA088-045	Quarry		186533	230685
GA088-047	Bridge		185744	231066
GA087-066	Monumental structure	Dunlo	184854	230937
GA088-010001	Warehouse		185327	230723
GA088-012	Building		0	0

The listed monuments date from approximately the twelfth century onwards. The traditional location of a strategic fortification erected by Turlough O'Conor in 1124 AD (GA088-028) is located 260m to the southeast of the archaeological area, on ground now occupied by St. Michael's Church. An Anglo-Norman castle (GA088-040), built *c.* 1245 is also listed on the SMR in the townland of Townparks (Moycarn). It stood on the eastern bank of the River Suck and it too has been proposed as a possible location for O'Conor's 'castle' (Alcock *et al* 1999, 418). A fourteenth century castle site is also recorded from here. The poorly preserved remains of a crennellated bawn wall (GA088-040002), with a wall-walk and circular flanking tower in the southwest corner are still extant. The castle site lies immediately east of Ballinasloe Bridge (GA087-047), which is still in use and still one of the main access routes into and out of the town. Built in two phases, the earlier of which dates to *c*. 1570, its construction was overseen by Sir Henry Sidney (O'Keeffe and Simington 1991, 231). The bridge was widened in the mid-eighteenth century (*c*. 1754; *ibid.*).

The remainder of the monuments listed on the State's records reflect the development of the town from *c.* 1750 AD onwards. The importance of the town as an early centre of industry is represented by a warehouse (GA088-010001), a forge (GA088-034), a brewery (GA088-036), mills (GA088-021 and -041002) and a quarry (GA088-045). Public buildings listed on the SMR date to the late eighteenth and nineteenth centuries and include churches (GA088-028, -029, -030, -032, 037) and the town hall (GA088-031).

3.3.2 Topographical files NMI

Due to government restrictions in place at time of writing, it was not possible to access the Topographical files at the National Museum of Ireland. The museum kindly provided the information in **Table 2** below. None of the artefacts were found within the study area.

Table 2 Artefacts held on the NMI database relating to Ballinasloe and surrounding areas.

NMI Register No.	Simple Name	Component	Townland	Findplace	County
2001:20	Mortar	Stone	N/A	Vicinity of Lancaster House, near Ballinasloe	GALWAY
2013C1:115	Axehead	Bronze	N/A	Coreen Ford on river Suck, near Ballinasloe.	GALWAY
2013C1:118	Spearhead	Iron	N/A	Coreen Ford on the river Suck, near Ballinasloe (1	GALWAY
2013C1:121	Hook	Iron	N/A	Coreen Ford on river Suck, near Ballinasloe (1981)	GALWAY
2013C1:123	Spear butt	Iron	N/A	Coreen Ford on river Suck, near Ballinasloe.	GALWAY
2013C1:130	Knife	Iron	N/A	Coreen Ford on river Suck, near Ballinasloe.	GALWAY
6908:W10	Lunula	Gold	N/A	Possibly near Ballinasloe?	GALWAY
7073:W174	Torc	Gold	AUGHRIM	Near Aughrim, in the neighbourhood of Ballinasloe	GALWAY
SA1927:97	Ring	Gold	N/A	Bog near Ballinasloe	GALWAY

A number of additional finds from the vicinity have been discussed in Section 3.1.1 above.

Discovery of human remains (GA088-049)

Skeletal remains were uncovered on Society Street by ESB workers in 1968 and were examined following discovery by the late Prof. Etienne Rynne on behalf of the National Museum (SMR GA088-049; Cahill and Sikora 2011, 453-54; https://excavations.ie/report/1968/Galway/0028663). The exact findspot was not recorded by Rynne but it was noted that they were '*at a depth of 0.75m below present ground level*' (*ibid.*). No excavation took place, and the burials were left *in situ* and not acquired by the NMI (*ibid.*).

In addition to the State records and published sources, it is worth noting here that the older Ballinasloe people have great knowledge and interest in the town's past, which they shared willingly during the course of the project, with some even recalling the day human remains were found on Society Street in the 1960s (now known to refer to SMR GA088-049; see Section 3.3.3 below). A second account of archaeological activity in the immediate area concerned the discovery of a crozier, which was called *Bachall Béal Átha na Slua* by the woman who told the story, since deceased. The crozier was found with a burial on Church Hill.

The story had come from her father, who owned a sweet shop there for many years and where she lived and worked until her death in 2009. Research yielded no further information. Egan (1960, 9) refers to a wooden staff associated with St Grellan (*Bachall Ghrealláin*) which was venerated by the ruling *Uí Máine* and which may have been encased in a metal shrine. During the course of the Ordnance Survey in the early 1830s *Bachall Ghrealláin* was said to have been kept by a family in the village of Ahascragh *c*. 12kms from the town, but disappeared soon afterwards and was thought to have been thrown into a river (*ibid.,* 9-12). However, the stories are sufficiently distinct to suggest that they are unlikely to be one in the same artefact.

3.3.3 Previous Archaeological Investigations in the Vicinity

A search of the excavations database (www.excavations.ie), as well as published material relating to Ballinasloe was carried out. The excavations database covers summary accounts of all the excavations carried out in Ireland from 1970 to the present and includes unpublished excavation reports held by the NMI.

National Broadband Scheme

Archaeological monitoring of trenches took place in 2006 to facilitate broadband installation (Licence No. 06E0656 & 06E0733). No archaeological features or deposits were encountered at that time. The trenches were excavated in the streets surrounding the town centre and outlying roadways. A fragment of a cut stone recovered from a trench excavated close to the town centre was the only find of archaeological significance. The stratigraphy throughout indicated previous disturbance, with pipes, cables and services encountered throughout.

Ballinasloe Watermain Rehabilitation

Monitoring of Ballinasloe Watermain Rehabilitation was undertaken during 2015 (Licence No. 15E0093). The scheme involved the laying of 2kms of watermain and 2kms of sewer pipes in the western part of Ballinasloe, west of the river. Works took place in the townlands of Dunlo, Townparks, Brackernagh (Clancarty) and Garbally Demesne, almost all located within the existing road network. Monitoring of pipe-laying was undertaken sporadically between April and September 2015 along four roads and in one greenfield location. No archaeological features or deposits were encountered.

N6 Ballinasloe to Galway Road Scheme

Several sites were discovered and excavated in the vicinity of Ballinasloe in advance of the N6 Galway–Ballinasloe road scheme in 2005. Partial excavation of two ringforts and cereal-drying kilns was undertaken at Loughbown to the south-west of Ballinasloe town in advance of the road scheme (Bower 2014, 172-184). A previously unrecorded early medieval ringfort and souterrain which had been re-used as a *cillín* took place at

Mackney, also to the south-west of the town during the same project (Delaney 2014, 187-200). Four corn-drying kilns dated to between 1323 and 1631 cal. AD and a building of similar date were also identified inside the enclosing bank and adjacent to the souterrain (*ibid.*, 194-95). Bronze Age occupation sites, two burnt mounds and stone tools dated to the Early Mesolithic were also identified in the townlands of Mackney, Urraghry and Barnacragh (Fallon and Tierney 2014. 185-187; Drumm *et al* 2014, 168-172).

Evidence for Bronze Age structures was identified in the townland of Dunlo, *c*. 500m south of the excavation area in 2009. A well-preserved *fulacht fiadh* was excavated in advance of construction work for new Tesco and Aldi supermarkets and dated to the Middle Bronze Age (507–386 cal. BC; www.excavations.ie; 2009:394). Evidence for iron-working, comprising smelting furnaces and associated features, was also found during the excavation (*ibid.*).

St Joseph's Place, Garbally Demesne, Ballinasloe (11E0242 & 18E0423)

Advance archaeological excavation along the route of the proposed water services upgrade within the area of GA087-083 (church) and GA087-083001 (graveyard) in the townland of Garbally Demesne was carried out in 2018 (Licence No. 18E0423). It followed on from an earlier programme of archaeological monitoring of slit trenches and testing carried out along the route under Licence No.11E0242, during which human remains were discovered. As noted earlier, the area had been levelled during the construction of the housing development (St. Joseph's Place) in the 1950s. The site was investigated at that time by Joseph Raftery. An account of what occurred has been included in Cahill and Sikora (2012) *Breaking Ground, finding graves – reports on the excavations of burials by the National Museum of Ireland, 1927-2006* and a sixth or seventh century AD date was suggested for the site, based on one of the artefacts recovered. Radiocarbon dating of a fragment of human bone uncovered during testing in St Joseph's Place (Garbally Demesne townland) by Angela Wallace in 2018 confirmed this early medieval date (530-650 cal. AD).

Ballinasloe Water Services Infrastructure Upgrade and TES (18E0405ext)

A programme of archaeological monitoring was undertaken by Atlantic Archaeology as part of the Ballinasloe Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES) in Ballinasloe, Co. Galway between July 2018 and October 2020 (Wallace and Maguire 2021; Licence No. 18E0405ext). Al number of archaeological features were identified, including the remains of the Market House in St. Michael's Square, a well on Dunlo Street, middens on Main Street and Dunlo Street, and pits and postholes on Society Street. It was also discovered that the sixteenth-century bridge on Bridge Street (GA088-047) extended further than is visible above ground today. Cobbled areas and sections of the early road surface were found to have partially survived on all the streets. The extensive system of nineteenth century infrastructural works, comprising cast iron water and sewage pipes, some of which were encased in cut stone culverts, were recorded, as were the early gas mains and gas connections for the street lighting. Finds recovered during the monitoring phase of

works included a seventeenth century trade token, a James II coin dated to 1690, a polished bone tool (of possible seventeenth century date) glass, pottery, clay pipes and stems, architectural stone fragments as well as miscellaneous objects and fragments of artefacts dating from *c*. 1700 onwards.

In May 2020, during the course of monitoring on this project, *in situ* human remains were identified by Fiona Maguire of Atlantic Archaeology at the edge of the footpath on the southern side of Society Street, close to the junction with Church Hill (**Pl. 1**). The section of existing footpath and street, within the works area adjacent to the human remains, was carefully removed by machine under supervision. Further articulated and disarticulated human remains were identified in a yellow/brown sand immediately under the concrete footpath, between 0.20-0.30m below present ground level (PGL). Potential grave cuts and other smaller features were also noted. Faunal remains and quantities of post-medieval ceramics, glass etc. were visible on the exposed surface. In addition, a substantial semi-circular mortared stone wall with a possible internal step was identified to the east of the human remains, closer to the junction with Church Hill (**Fig. 2**). The subsequent excavation of this area is the subject of this report.

4.0 ARCHAEOLOGICAL EXCAVATION

4.1 Background

Archaeological excavation, to investigate human remains and additional features including a well and later enclosing wall which were uncovered during monitoring on Society Street, took place between June 25th and 14th August 2020 under excavation licence 20E0330 issued to Angela Wallace of Atlantic Archaeology. The overall extent of the site was delimited to an area measuring 15m north-west/south-east x 7m north-east/south-west. From the outset it was very clear that construction of buildings on the street and the laying of ducting for various modern services had severely impacted the sub-surface remains.

The excavation methodology proposed to fully investigate the upper layer of archaeological material which would be directly impacted by the street design plans. Given the probability that the human remains were likely to be associated with Rynne's 1968 discovery (SMR GA088-049), which was recorded at a depth of 0.75m below ground level, it meant that the potential existed for a lower/earlier phase of burial[4]. It was agreed with all relevant parties that once the upper level of burials was excavated, work would cease pending a re-assessment of the excavation methodology. If a lower layer of burials existed at that stage, the preferred scenario was preservation *in situ*, providing an adequate buffer could be established. The excavation also proposed to determine the date and nature of the stone structure and well and its relationship, if any, to the burials.

[4] The skeletal material identified during monitoring was located between 0.25-0.30m below PGL. The depth that Rynne's 1968 burial (SMR GA088-049) was recorded at was considerably deeper, at 0.75m (Cahill and Sikora 2011, 453-54. This flagged the potential for finding an earlier phase of activity.

The modern concrete footpath was mechanically excavated to the top of archaeological layers. When the excavation proper commenced, all remaining material was hand-excavated and recorded. The remains of a cemetery, a stone well enclosed by a later stone wall, two pits, a posthole and a post-medieval road surface were identified during the excavation.

All features were drawn, recorded, photographed, and surveyed using Irish Transverse Mercator (ITM) co-ordinates. The drawings were prepared for this report by Clare Ryan. A photogrammetry/3D survey of the stone structure was undertaken by Gary Dempsey of Digital Heritage Age (see https://sketchfab.com/3d-models/ballinsloe-well-low-4847be7251544fd09b3c86571b1a04e5) and a site video diary, including drone footage, was filmed by Fionn Rogers.

All finds and features identified during the excavation at Society Street, Ballinasloe under Licence 20E0330 are outlined in detail below.

Post-excavation work commenced immediately after the archaeological excavation finished in August 2020. It was carried out at offices provided by the clients within the SIAC compound in Pollboy, Ballinasloe. All sampled material was stored here in a secure environment and in keeping with best practice. The skeletal material was processed (washed, dried, re-bagged, boxed) there before being delivered to Linda Lynch for analysis. Finds and samples were also processed and at the time of writing are stored at the office of Atlantic Archaeology in Sligo, along with the excavation archive. These will be deposited with the NMI in due course.

Two bone samples were selected for dating by Dr Linda Lynch, Osteoarchaeologist, and subsequently submitted to Vilnius Radiocarbon for AMS dating and isotope analysis in October 2020 under licence from the NMI (Licence No. 7104; FTMC-KJ22-1 and -2; See **Appendix 2**).

Analysis of the human remains is also complete and the results are compiled in a report by Dr Linda Lynch (Lynch 2021). The results have been incorporated into this report.

4.2 Results of excavation

All the skeletal material was excavated. Bulk soil samples were also taken from the graves and pits. All features were drawn and recorded, and a digital record was also created. Registers for skeletons (SK), contexts (**C**), samples (**S**), finds and photographs were maintained during the excavation, and are included as **Appendix 1**. All the *in situ* skeletal material was given a skeleton number (**SK**). Where disarticulated human remains were present, they were ascribed a bone sample (**BS**) number. The stone tokens found within the grave fills were given sample (**S**) numbers and have been retained. Artefacts recovered were numbered and photographed in line with current best practice.

Each element of the site is described separately below. The site was very disturbed and the archaeology had been severely impacted by modern services and by the construction of the street and adjacent buildings. The stratigraphic sequence was recorded as part of the excavation, which included the modern features. The concrete footpath (C800) on Society Street overlay a mottled yellow/brown sandy clay layer (C803), which extended across the burial area on southern side of the gas pipeline (C848). It was visible in section under the foundations of the nineteenth century terrace of buildings which marked the southern extent of the site (C847) and under the north-western section of the substantial semi-circular stone wall (C806). It varied in depth from 0.40m to 1m and overlay a natural grey sand (C839). C803 was cut by all the burials, as well as by the north-western section of the stone wall (C806), the nineteenth century gas line (C846) and the modern service trenches for Eircom (C815), broadband (C822), gas (C848), the phone kiosk and the ESB street light. The upper 0.15m contained inclusions of bone, stone, glass, ceramics, metal, clay pipe stem and bowl fragments, oyster shell, brick fragments etc. The well (C825) and associated revetting feature (C824) were cut into the lower grey sandy natural (C839).

4.2.1. The cemetery

The area where the burials were located extended for 7.5m north-west/south-east x *c*. 4.5m north-east/south-west. Ten *in situ* burials in varying states of preservation were fully excavated, comprising one adult aged +45 years, six adults aged between 25-45 years at death, two young adults aged between 17-25 years and one juvenile aged between 7-10 years (Lynch 2021, 17; SKs 1 to 10; **Fig. 7**). The graves comprised simple sub-rectangular pits. In some cases, mid-sized stones marked the edge of the grave *e.g.* C845. In addition to the ten *in situ* burials, thirty-two samples of disarticulated human bone were recovered, suggesting the cemetery was once more extensive.

Two small circular/sub-circular pits were also identified within the burial area (C837 and C851).

As noted in the previous section, two bone samples from the *in situ* burials were selected for AMS and isotope analysis by the Mass Spectrometry Laboratory, Vilnius Radiocarbon, in Lithuania (**Appendix 2**). The proximal end of the diaphysis of the right fibula of SK4, a female aged between 30-34 years, returned a date of between 1520-1800 AD (FTMC-KJ22-1; cal. 2 Sigma). The second sample was taken from the anterior distal diaphysis of the left femur of SK10, also a female, and aged between 35-44 years and was dated to 1477-1638 AD (FTMC-KJ22-2; cal. 2 Sigma). The results indicate that the cemetery was in use during the later medieval/post-medieval period and possibly into the modern era (**Table 3**).

Table 3 Summary of dating results from Society Street, Ballinasloe, Co. Galway.

Lab ID	Licence No.	Sample ID	Sex	Age-at-death	Calibrated date (95% confidence)
FTMC-KJ22-1	20E0330	SK4	Female	30-34 yrs	cal. AD 1520-1800
FTMC-KJ22-2	20E0330	SK10	Female	35-45 yrs	cal. AD 1477-1638

The *in situ* burials

Each *in situ* burial is described below based on information recorded during the course of the excavation (see also **Fig. 7**). This has been augmented by summarised results of osteoarchaeological analysis provided by Dr Linda Lynch in her report on the skeletal material from Society Street (Lynch 2021).

SK1 (C801, C813, C814)

SK1 comprised the partially-preserved remains of an adult extended and supine (**Pl. 6**). The burial was heavily disturbed and truncated by a modern service trench (C815). Oriented north-west/south-east, with head to north-west. Located within a concave, sub-rectangular grave cut (C813; Dims: 1.90m north-west/south-east; 0.20m deep; max. 0.65m wide), which was truncated at south and east by a stone wall (C806). C813 was filled with, a reddish-brown sandy clay (C801). Small to mid-sized angular, sub-angular and rounded stones (C814) noted around the skull and at edge of the grave cut and at the feet. SK1 was identified as a male adult, 169.3cm in height (Lynch 2021, 54). Mild evidence for degenerative joint disease (DJD) was noted in the knee, ankle and cervical spine. Osteoarthritis was noted in the right ankle. Lesions noted on teeth are suggestive of clay-pipe smoker (*ibid.*, 27). There is also some evidence to suggest that SK1 underwent physiological stress in childhood which arrested his growth (*ibid.*, 38).

SK2 (C820, C821, C823)

Juvenile skeleton aged between 7-10 years (although dentition and long bones suggest considerably younger; Lynch 2021, 54, 59; **Pl. 7**). Oriented north-west/south-east with head to north-west. Lying partially on left side with legs slightly flexed and right arm flexed over lower torso and right hand over pelvis. The left arm was extended by the left side. Although heavily impacted by a service trench (C822), possible indication that skull tilted to left. Feet abutting a stone wall (C806). Sub-rectangular concave grave cut (C823) partially survived on southern side only (Dims: 1.12m in length north-west/south-east; 0.12m deep). Filled with a light brown/reddish sandy clay (C820; Dims: 1.20m north-west/south-east; 0.13m deep; 0.26m wide).

Small to mid-sized rounded and sub-rounded stones (C821) located along right leg and around right side of skull. Three sub-rectangular stones placed diagonally across left shoulder (also C821). Post-excavation analysis found evidence of metabolic disease in the form of porotic hyperostosis, indicative of physiological stress, which ultimately may have impacted on the life expectancy of the child (Lynch 2021, 43). Stature undetermined. Note that it is not possible to accurately determine the sex of juvenile individuals (*ibid.,* 13, 14).

SK3 (C816, C817)

Partial remains of an adult oriented north-west/south-east with feet and right lower leg/foot truncated by late nineteenth century building foundations (**Pl. 8**). Extended and supine. Bone in good condition. Cranium did not survive or is missing, although BS9 may be associated. Arms crossed at elbow resting on abdomen. Partially surviving grave cut (C817; Dims: 1.30m long x max. 0.30m deep x max. 0.40m wide) filled with a reddish-brown sandy clay (C816). SK3 partially cuts SK4/C818. May be associated with a scatter of disarticulated bone (BS9 and BS28). BS10, comprising (infant?) cranial fragments, was located to west of C817. Post-excavation analysis found that SK3 was a female aged between 25-44 years, 157.6+/-3.72cm in stature with mild DJD in right shoulder and thoracic vertebrae (Lynch 2021, 60). A bone growth known as an exostosis is present on the lateral end of the right clavicle, that is, near the shoulder on SK3 (*ibid*., 31).

SK4 (C818, C819)

Extended and supine adult female between 30-34 years, 163.0+/-3.55cm (right femur and tibia) in stature (Lynch 2021, 61; **Pl. 8**). In moderate condition. Oriented west/east with feet at east. As was the case with SK3, the skull is missing but fragments may be included in BS9. The left arm was flexed at the elbow and the left hand was placed under the upper right arm. The right arm was extended with the hand on the right hip. The legs were extended with the right foot resting on the left. Truncated at south-west by SK3/C817, indicating that it is the earlier of the two burials. Sub-rectangular grave cut (C818) with sloping sides and flat base, extant on north-eastern side only (Dims: 1.50m x max. 0.30m in depth x 0.42m wide). Single rounded mid-sized stone *in situ* to south-east of burial, likely to mark extent of grave. Filled with a reddish-brown sandy clay (C819). BS10 located to north-east of C818. Analysis also found evidence for an injury to left wrist, which had healed prior to death and also evidence for chronic infection on both tibiae (*ibid.*, 33, 61). The proximal end of diaphysis of right fibula from SK4 selected for AMS dating and stable isotope analysis and collagen extraction. Dated to between 1520-1800 AD (cal. 2 Sigma; FTMC-KJ22-1; 259+/-28 BP, 95% probability; see **Appendix 2**).

SK5 (C828, C829)

SK5 was only partially extant, as its lower half was truncated by the semi-circular stone wall (C806; **Pl. 9**). Position of burial oriented north-west/south-east with head at north-west. Skull slightly tilted to right and downwards. Left shoulder slightly higher than right, hunched in towards the ribs and spine. Left and right arms extended but hands missing. Both legs and both feet missing, although small quantity of bone (BS13) including rib fragments, toes, fingers noted within rubble fill of C806, which may be associated. Sub-rectangular, concave grave cut (C828) with sharp break of slope at top and gradual break of slope at base. Grave cut truncated at south-east by C806 (section of stone wall, which also contained two rusty iron nails). Dims: 0.78m E-W; 0.38m N-S; 0.17m deep. Filled with a reddish-brown sandy clay (C829) with small sub-rounded and sub-rectangular pebbles (C866) throughout.

Analysis identified SK5 as an adult male, 181.0±4.05cm in stature (based on measurement of right humerus), with a robust orbital ridge and mild DJD (Lynch 2021, 55-6, 62). It was also noted that SK5 had very poor dentition, with excessive wear as a result of an overbite and severe carious lesions (*ibid*., 26). Age at death was calculated between 30-45 years.

SK6 (C857, C858, C859)

The upper half of SK6 was almost entirely missing and was truncated by a service trench C822 (**Pl. 10**). North-west/south-east orientation, with head to north-west. Fragments of skull including mandible and teeth present. Pelvis/sacrum partially surviving, as well as part of right hand which was located next to right pelvis. Legs flexed to right (roughly south/south-west), feet apart and turned right. A quantity of disarticulated bone (BS12) noted in immediate area and may be associated. Noteworthy because of the deliberate placement of rounded and angular stones (C859) on the remains on the left-hand side of the body, on the left ankle, at the proximal end of the left tibia. An angular stone (20E0330:858:004), which is deliberately shaped and possibly heat-affected was placed on the proximal end of the right femur, close to the pelvic area. Faint traces of grave cut (C857) oriented north-west/south-east noted, cutting into C803. Filled with reddish-brown sandy clay (C858).

SK 6 represents the poorly-preserved remains of an adult male aged between 17-25 years, 166.1+/-3.27cm in stature (Lynch 2021, 63). This individual had evidence of soft tissue trauma in the left femur and left fibula, as well as some developmental anomalies including symphalangism, a condition which causes the joints in the toe bones to fuse (*ibid.,* 2021, 34-5).

SK7 (C831, C832, C833)

Extended and supine skeleton oriented north-west/south-east with head to the north-west (**Pl. 11**). Lower end of SK7 truncated by nineteenth century gas connection (C846) and left arm and shoulder impacted by broadband service trench (C822). The skull was partially intact and facing south-west. The right arm was supine and extended and the right hand lay by the right side. The finger bones of the left hand were overlying a round stone (20E0330:832:008) located in the pelvic area. A number of stones (C833) were noted in the mottled reddish-brown sandy clay grave fill (C832). The grave cut (C831) was extant on the southern, eastern, and western sides but partially truncated by services on its northern side. Dims: 1.40m in length north-west/south-east; 0.50m wide; 0.18m deep. BS26 may be associated with SK7.

SK7 is a male adult, whose age at death was calculated to between 25 and 30 years (Lynch 2021, 64-5). This individual was 169.0+/-3.72cm in stature. Mild DJD was noted in the cervical, thoracic and lumbar vertebrae. In addition, mild spina bifida occulta was noted in the sacrum at the base of the spine. Regarded as a common developmental anomaly which would have been asymptomatic, evidence for it may have appeared as a dimple or tuft of hair at the base of the spine during the life of this individual (*ibid.,* 35).

SK8 (C840, C841)

Partial skeletal remains severely impacted by construction of late nineteenth/early twentieth century building (now McGorisk's Chemist) and various services (**Pl. 12**). This burial was located at the north-western extent of the cemetery. Most of torso and skull missing. From the surviving remains (part of pelvis, lower vertebra, left femur, tibia and fibula and part of right fibula and ankle/toe bones, the burial appears to have been oriented north-west/south-east, with feet at south-east. Extended and supine. Possible grave cut (C841) noted on northern side only but so damaged, it was barely perceptible (Dims: min. length 0.65m north-west/south-east; max. 0.20m wide; min. depth 0.10m). Cut into yellow sandy clay (C803). Filled with a reddish sandy clay (C840)-also very disturbed. Two small blue/grey pebbles found with burial (C867). Disarticulated bone (BS20 and BS21) may be associated with this burial.

Post-excavation analysis identified SK8 as a possible male, 165.2+/-4.32 in stature whose age at death was calculated at between 17 and 20 years (Lynch 2021, 65).

SK9 (C844, C842, C860)

Adult skeleton, extended and supine (**Pls. 13, 14**). Oriented north-west/south-east with head at north-west. The right side of the body was impacted by dig for old ESB street light, leading to the presumption that SK9 is SMR GA088-049, examined by Etienne Rynne on behalf of the NMI in 1968 (see Cahill and Sikora 2012, 453-54). In moderate to poor condition. Skull tilted to the left. Cranium intact although mandible damaged.

Left side of torso extant, including ribs, clavicle, scapula and lower vertebrae. Left humerus extended and supine; left ulna partially missing. Disarticulated finger bones present within fill. Left leg (portion of femur, patella, tibia, fibula and ankle, foot) extended and leaning slightly towards surviving portion of right foot. Right patella, tibia, fibula extant. Ankle and foot partially damaged. Feet side by side and extended. Small to mid-sized stones (C860) placed around skull and shoulders and over left clavicle and left ankle, in a similar fashion to SK6. Stone on right side of cranium. Sub-rectangular grave cut (C844), rounded at both ends, sloping side and flat to concave base disturbed on southern side by historic ESB works (dims: 1.90m north-west/south-east; 0.15m deep; *c*. 0.40m wide). Filled with a mid-brown/reddish friable sandy clay (C842).

Osteological analysis indicated that SK9 represented the remains of a female between 25-35 years and 158.6+/-3.57cm in stature (Lynch 2021, 66). A stress fracture was noted on the left shoulder bone (*ibid.*).

SK10 (C843, C845, C852)

Well-preserved adult skeleton, extended and supine placed within a narrow sub-rectangular grave (C845). Identified as a female between 35-44 years (Lynch 2021, 67; **Pls. 13, 15**). Oriented north-west/south-east with head at north-west. 156.5+/-3.55cm in stature (i*bid*.). Skull turned to right, shoulders pulled upwards and appear constricted. The left arm was flexed at the elbow at an acute angle with the left-hand bones located under the right ribs. The right arm was extended and the right hand tucked under the right side of the pelvis. Confined appearance of skeleton indicates use of shroud/winding sheet. Legs extended and meeting at feet, which were well preserved, and resting on a small, level sub-rectangular stone. The sides of the grave cut (C845) were concave and the base was relatively flat. A number of rounded/sub-angular blue grey stones (C852) were placed over the right ankle/foot, around the skull and on the northern edge of the grave (av. dims. 45mm x 33mm x 31mm). The stone assemblage also included a rose quartz pebble (30mm x 30mm x 23mm), a fragment of black chert (19.5mm x 23mm x 13.5mm) and a small red (hematite?) pebble (19mm x 12mm x 5.5mm) which was located between the lower leg bones, just below the knees (all C852). The grave cut had been disturbed by the modern gas pipeline (C848) but the skeletal remains were unaffected. Sixty-five round beads of varying diameters, as well as a tubular bead and a conical bead (all 20E0330:843:16) were located between and around the feet and at the distal end of the right tibia. Some disarticulated toe bones were found in this area also. SK10 was located within a reddish-brown sandy clay (C843; dims: 1.90m E-W; max. 0.24m deep; between 0.28-0.44m wide). BS 18 and 19 (C850) overlay (C843). A fragment of the anterior distal diaphysis of the left femur of SK10 was selected by Dr Linda Lynch for AMS/isotope analysis and returned a date between 1477-1638 cal. AD (see **Appendix 2**). Post-excavation analysis showed that this individual had significant dental problems as well as mild DJD (*ibid.*). There was also some evidence to suggest that SK10 had endured some physiological stress during her childhood (*ibid.*, 38).

Disarticulated human remains

Thirty-two samples of disarticulated bone, comprising eight thousand six hundred and seventy-five fragments weighing 4777.1g were also recovered during the excavation (BS1 to 32; Lynch 2021, 12; see **Appendix 1**). Adult or possible adult remains accounted for the majority at 4777.1g, 151.5g was classed as juvenile/adult, while 275.1g originated from juvenile individuals (*ibid.).* The disarticulated remains included at least four adults, two pre-term infants (possibly twins), an older juvenile aged between 7-12 years and one adolescent aged between 14-17 years (*ibid.*). Based on the overall weight of the disarticulated skeletal remains, it was evident that the cemetery was more extensive. According to Lynch (2021, 41-2),

'*The skeleton of a modern young adult male weighs, on average, 4000g, while that of a young female adult averages 2800g (Malina 2005, 291). These average out at 3400g. On the basis that the disarticulated adult remains from Society Street represent at least four adults, but accepting that at least some of the disarticulated adult remains may originate from the in situ burials, it is clear that significant quantities of remains are effectively missing from the record. It is likely that this is due to the unfortunate modern location of the burial ground, in an area that has been extensively disturbed for many years, primarily for utility services.*'

As was the case with the *in situ* burials, evidence for mild DJD in the disarticulated assemblage was noted (Lynch, 2021, 29). The possible use of the teeth as an occupational tool was identified in a single disarticulated tooth which had a notch worn in the incisal edge (*ibid.,* 28, 39). It was suggested that this occurred as a result of repeatedly using the teeth for cutting a material such as thread.

A full catalogue of the disarticulated assemblage is included in Section 6.3 of the final osteoarchaeological report (Lynch 2021).

Much of the disarticulated bone was located in the upper levels of C803, a yellow, sandy clay layer which overlay much of the area of the excavation. The remainder, including a human femur (BS30) found embedded in concrete under the telephone kiosk, had been disturbed during the installation of modern services. This was excluded from osteoarchaeological analysis (Lynch 2021, 41).

Pits and Postholes

Two small pits (C837 and C851) and a posthole (C811) were also identified within the cemetery area (**Fig. 10; Pl. 17**).

The larger of the two pits (C837) was circular in plan with straight sides and a rounded base (Dims.: 0.39m x 0.38m x 0.28m deep). It was filled with a reddish-brown sandy clay (C838/S26) rounded and sub-angular blue-grey pebbles, characteristic of the graves. It was located immediately north of SK9/C844.

The second pit (C851) was located *c*. 6m to the south-east and comprised a sub-circular feature which was broadly U-shaped in section with straight sides and a flat to slightly undulating base (Dims: 0.39m north-south; 0.30m east-west; 0.20m deep). It was filled with mottled reddish/orange sandy clay/grey sand (C853/S27). Twelve blue/grey pebbles and a single white stone (all C865) were noted within the fill (Av. dims. 36mm x 30mm x 18mm). Both features are located within the area of the burials. However, no human remains were found in the samples sieved from these pits.

A D-shaped posthole (C811), which was U-shaped in profile and filled with (C812), a mix of loose gritty mortar fragments, red and yellow brick fragments and slate (Dims: 0.45m deep; 0.21m wide north-south; 0.28m long east-west). This feature is non-archaeological, of recent date and related to later service activity on the street.

4.2.2. Drystone well

The well (C825)

The poorly-preserved remains of a circular drystone well (C825) was identified *c*. 0.60m below ground level at the south-eastern extent of the archaeological area (Dims: Overall external diameter 2.05m; 1.2m internal diameter; min. 1.05m high on north-western side; min. 0.15m high on south-eastern side; walls between 0.40-0.50 thick: **Fig.9**; **Pls. 20-22**). Constructed from angular limestone blocks built to courses, it showed evidence of having been repaired with angular and sub-angular stone (C827) on its southern side (Dims: 1.60m long north-west/south-east; min. 0.65m high; 0.25m wide). The well was backfilled with layers of post-medieval building material (C807=C808), comprising brick fragments, wall plaster, slate, rounded and sub-angular stone, mortared stone rubble, composite rubble, indiscriminate metal fragments *etc*. The infill material overlay a compacted peaty, sandy deposit (C826) which contained some charcoal and a sandy grey fill with inclusions of brick and charcoal (C830). The well (C825) was revetted on its eastern side by layers of rounded and sub-angular stones (C824), some of which were found within the upper layer of backfilled material.

The well could not be excavated fully due to the unstable nature of the ground and proximity to the building. It was preserved *in situ*. The location is marked by contrasting paving stones on the new footpath. A 3D/photogrammetry survey of the well was undertaken prior to it being preserved *in situ*.

Enclosing stone wall (C806)

The upper level of the well C825 was enclosed by a wider semi-circular or C-shaped stone wall (C806) built to courses using angular limestone blocks bonded with a strong lime mortar (Dims: overall external diameter 3.60m north-west/south-east; 2.20m in internal diameter; 1m high; between 0.75-1.40m wide on western side; approx. 0.60m wide on eastern side; **Fig. 7; Pls. 18-19**). Originally circular in plan, it was located just under the concrete footpath (C800) and was impacted by a water hydrant on its northern side and cut by the ducting for broadband (C822). It truncated SK1 and (C813), (C823) the grave cut associated with SK2, SK5 and (C828) and (C855), a grave cut. When it was initially uncovered, a step was identified 0.20m below the top of the interior of the north-western side of the wall. The step comprised a level surface made of stone and mortar (**Pl. 19**). Fragments of this were found in the upper layer of the rubble infill (C807). Much of this C806 was preserved *in situ*. It marked the south-eastern extent of the excavation area.

No diagnostic artefacts were recovered during the excavation of the well C825 or the wall C806. The upper wall (C806) extended under the foundations of the building now housed by Supermacs, indicating that it pre-dated it. Neither the well (C825) nor the wall (C806) is marked on the first or subsequent editions of the Ordnance Survey maps, suggesting that both features are pre-nineteenth century in date. There is undoubtedly a connection between the two structures, and this is supported by the identification of the remains of a step during the excavation. Both the well and mortared wall were heavily impacted by modern services, notably ducting for broadband (C822).

C806 truncated three of the burials (SKs 1, 2 and 5), indicating that it post-dates them. The wall also cut the yellow/brown sandy layer (C803) on its north-western side. This layer is likely to represent re-deposited material excavated during the construction of the well (C825). In turn, this suggests that the well is likely to be the earliest feature within the area excavated, as the graves had been dug into the upcast/re-deposited material.

Although it may just have been a water source, the proximity of the burials to the well seems to suggest it may have had some ecclesiastical association, and/or was the focus for ritual activity. It seems unlikely, to modern eyes at least, that burials were placed in proximity to a potable water source, due to the risk of contamination.

While it cannot be established with any certainty, the rubble infill (C807) associated with both C806 and C825 may have resulted from the demolition of an overground structure associated with the well.

4.2.3. Metalled surface (C834)

A short section of a compacted, metalled road surface (C834) with a clear edge (C835) was identified immediately north of the existing limit of the burial area and appeared to respect the known limit of the burials (Dims: *c*. 9m long x 0.60m wide x 0.30m deep; **Fig. 7**; **Pl. 5**). This may indicate that a physical boundary demarcating the edge of the cemetery existed when the street was laid down. Post-medieval material, including fragments of glass, ceramics etc. was associated with this surface, as well as a small quantity of butchered animal bone. The surface was located immediately under modern street foundations/tarmac, *c*. 0.30m below PGL.

4.3 The artefactual assemblage

Much of the artefactual assemblage from Society Street comprised post-medieval glass, ceramics, oyster shell, clay pipe fragments, brick fragments and fragments of indiscriminate iron objects, including nails which came from disturbed contexts within the excavation area. However, a number of finds were found in association with the skeletal remains excavated and are described below.

Token deposits associated with *in situ* burials

Small token deposits of white or light-coloured stones, and a moderate quantity of small, uniformly-sized blue/ grey pebbles were found in association with the grave fills in Society Street (SK1/C814, SK2/C821, SK5/C866, SK6/C859, SK7/C833, SK8/C867, SK9/C860, SK10/C852, BS17, 18 & 19/C850, C853; **Pl. 23**). A rose quartz pebble, a small reddish-brown (hematite?) pebble and a fragment of black chert, all of which represented token deposits, were also found within a secure context associated with SK10 (all C852).

It was noted also during the excavation on Society Street that some stones had been placed deliberately on the skeletal remains. Rounded and angular stones (C859) were recorded on the remains on the left-hand side of the body, on the left ankle, at the proximal end of the left tibia of SK6 (**Fig. 7**; **Pl. 10**). Similar apparently deliberate placement of stones was noted on SK9, where small to mid-sized stones (C860) were noted around the skull and shoulders and over the left clavicle and left ankle (**Fig. 7**; **Pl. 17**). Gilchrist (2008, 149) has suggested that stones were deliberately placed where the person had pain or injury while alive and reflects a commonly-held belief that body could be healed of its afflictions after death. It is probable that evidence for this practice was recorded from Society Street. Osteoarchaeological analysis on the skeletal assemblage showed that SK6, a young male, had a congenital condition known as *coxa vara* on his right side, which would have meant that he walked with a limp (Lynch 2021, 45). Although no anomalies were recorded from the ankle of SK9, this individual, a female aged between 25 and 35 years had a condition called *os acromiale*, a stress fracture involving the shoulder blade (*ibid.*, 66). It should be noted that the observations in relation to this burial ritual may simply be a coincidence, given that the sample size of the assemblage was small.

The remainder of the grave goods assemblage from Society Street comprised a worked rectangular stone placed on the proximal end of the right femur of SK6, close to the pelvic area (20E0330:858:004; **Fig. 7; Pl. 24**). A round disc-shaped pebble, was recorded from the lower pelvic area of SK7 (20E0330:832:008; **Pl. 25**). Although identified as a possible plug-stone used in the post-mortem preparation of the body in the preliminary excavation report (Wallace and Maguire 2020), this disc-shaped stone is no longer regarded as such. Based on discussion with Dr Linda Lynch, it unlikely such a stone would remain *in situ* in the pelvic area during the process of decomposition (Lynch 2021, 46).

The rectangular stone (20E0330:858:004) found with SK6 may have been altered in appearance in preparation for deposition in the grave. Similar examples of stones like these from burial contexts were found during the excavation of a small enclosure known as '*Garraidh Mhichíl*' at Iniscealtra, Co. Clare in the 1970s (De Paor 2013). The enclosure, within which lay the foundation of a small church or cell dedicated to St Michael the Archangel, was re-used as a *cillín* and contained the remains of a maximum of forty-four individuals (McCarthy *et al* 2018, 71-2). A handful of quartz pebbles and a rectangular stone object accompanied each burial. Some or the rectangular objects were fragmented whetstones and others were described by the excavator as '*a shaped stone of phallic appearance'* (De Paor 2013, 36). A suggested date span of 1500 AD to the late nineteenth century was proposed for the *cillín* burials, although de Paor (*ibid.*) cast some doubt over this himself, saying that the dateable artefacts may simply reflect '*pilgrimage rather than burial activity*'.

Stray or *ex-situ* finds

A small copper alloy (probably brass), open-backed button with a shank on the underside for attaching the button to cloth was found within (C803) (20E0330:803:2; Dims: 15.5mm diameter; 1mm in thickness; shank= 6mm diameter; **Pl. 31**). The maker's mark on the underside, although quite worn, reads 'JONES CORK HILL, with the words separated by small star motifs. There is also lettering around the edge of the outer face of the button, but it is too abraded to read. Edward Jones was a well-known button manufacturer working out of Dublin in the early decades of the nineteenth century. His business premises was located adjacent to Dublin Castle. Listed in the 1835 edition of the *Dublin Almanac and General Register for Ireland* as '*Jones, Edward, button manufacturer to his Excellency the Lord Lieutenant, 2 Cork-hill, Christchurch'*, he died in Cork Hill in 1837 (www.limerickcity.ie/media/03%2029%201837.pdf). Although the button is a stray find, it is an interesting one nonetheless, as it reflects the early social history of the modern town, as research has shown that it was most likely to have been lost from a constabulary uniform (www.britishbadgeforum.com/forums).

5.0 ROSARY BEADS OR PATERNOSTER

The most significant find from the excavation was that of sixty-seven well-preserved beads found at the feet and lower legs of SK10, a female aged between 35 and 44 years (20E0330:843:16; **Pls. 26-29;** see **Table 4**). Sixty-five are spherical to squat, barrel-shaped examples, which vary in diameter from 3mm to 9.5mm, with perforations which vary from 1.5m to 2mm in diameter. They are made from an organic material, most likely to be animal bone, with at least two highly polished cream-coloured examples included. The remaining beads comprise a worked tubular example with incised linear decoration around its circumference and a delicate conical bead. The beads are discussed in detail later in this report.

Table 4 Detail of the paternoster found in association with SK10 (20E0330:843:016).

Find No.	Description	Dimensions
20E0330:843:016	Sixty-seven beads of various sizes made from organic material, most likely to be animal bone. Sixty-five are squat barrel/spherical in shape, made from organic material (bone and polished bone?). In good condition, some wear, buff in colour, and buff/cream when polished with rounded ends. The remainder of the assemblage comprises a tubular bead with perforations at both ends and across middle, cut/slightly rounded at both ends. Decorated with three incised lines around circumference, one at either end and one around middle and a conical bead, perforated, cut ends. Found *in situ* around foot and lower leg of SK10, which has been radiocarbon dated to 1477-1673 cal. AD. Conserved by Susannah Kelly in September 2020.	Tubular bead: L 12.5mm; W 3mm around middle; max. diam. perforation. 1.5mm; Conical bead: L 5mm; max. W 2.5mm; max. diam. perforation 1.5mm. Six large spherical beads: Between 7.5mm-9.5mm diam., between 7mm-8mm thick, perforation between 1mm-2mm: Thirty-one mid-sized spherical beads: Between 5mm-5.5mm diam., 3.5-4.5mm thick, max. diam. perforation 2mm. Twenty-eight small spherical beads: Between 4mm-4.8mm diameter, 3mm-4mm in thickness, max. diam. perforation 1.5mm.

A *paternoster* or rosary was found around the feet and lower legs of SK10, a female aged between 35-44 years. Made from bone and polished bone, the beads vary in size and include one tubular and one conical example, which are likely to have formed elements of a cross. Altogether sixty-seven beads were recovered. They appear to represent a six-decade rosary, of a type known as a *corona* which became popular in the fifteenth century.

The beads are remarkably similar to a set of forty-three found during the excavation of a post-medieval house in Middle Street, Galway in 1987 (Clyne 2004, 211; Hurley *et al* 2004, 464; NMI Reg. No. E401:8:128). Classified as a *paternoste*r, the bone beads were found within a seventeenth century house in a sealed deposit (C8). It is likely that the deposit was contemporaneous with the construction of the house - seventeenth century pottery and a clay pipe bowl dated to between *c*. 1660-1690 AD were found within the same context (Miriam Clyne, pers. comm. 11/10/2020; see also Norton 2004, 446). The radiocarbon dates from Society Street returned a wide date range for SK10 (1477-1638 cal. AD).

Paternosters consist of a set of beads, usually in some symbolic number, threaded on a cord or string, which were used for counting repetitions of prayers (Lightbown 1992, 344). They are generally- though not always- divided into small groups by larger marker beads. Each bead represented a prayer, with the smaller beads representing the *Ave Maria (*Hail Mary) and the larger the *Pater Noster* (Our Father). Using beads as a mnemonic aid emerged during the medieval period in Europe, and may have evolved from the custom of stones as prayer counters, a practice still to be seen at holy wells and pilgrimage sites in Ireland (Redington 1914, 240; Gottschall 2008, 1).

As early as the eighth century the Irish church set out rules for the recitation of sets of *Pater Nosters* but it is a matter of some discussion as to whether strings of beads were used (Lysaght 1998, 10). Reports were made to a church synod in 816 AD about strings of *paternoster* beads worn around the waist by the faithful in England '*as a circlet or belt*' (Redington 1914, 241). In 1040 AD, Godiva or Godgifu, an Anglo-Saxon noblewoman, gave a gift of a '*circle of gems strung together on which she used to tell her prayers*' to the religious house she founded in Coventry, '*that it might be hung on the statue of the BVM*' (*ibid.*).

By the twelfth century both *paternosters* and *aves* (beads for reciting the Hail Mary) were in use in monastic settings in Ireland (Lysaght 1998, 10). Examples of *paternosters* made from amber have been found during excavations in Cork and on Peter Street in Waterford dating to the thirteenth century (Hurley *et al* 2004, 463). By the fifteenth century, their form and the order in which the prayers were said had evolved into the Rosary, a devotional prayer dedicated to the cult of Mary (Lysaght 1998, 10). With the backing of the Council of Trent and the Dominican Order, the structure and elements of the Rosary were standardized by the sixteenth century (*ibid.,* 14). Such was its popularity that decrees issued by Henry VIII prohibiting '*saying over a number of beads*' in AD 1538 and again in AD 1549 were unsuccessful (McGuire 1954, 98). Its place at the core of Christianity came when the Feast of the Holy Rosary was established by Pope Gregory XIII in AD 1573 as a result of the victory of Christian armies over Turkish forces at the Battle of Lepanto in 1571 AD (Lysaght 1998, 16).

As noted above, separate strings or sets were used to recite either the *Pater Noster* (Our Father) or the *Ave Maria* (Hail Mary), although sets of beads combining both prayers were being manufactured by the fourteenth century (Harvey 2000, 28). Part of an inventory compiled in 1381 following a theft at the shop of Adam Ledyard, a London goldsmith, included '*four sets of Paternosters of white amber, sixteen sets of Paternosters of amber… twenty-eight sets of Aves gilt with gaudees* (large beads) *of silver gilt, fourteen sets of Aves of blue glass with Paternosters of silver gilt, twenty-eight sets of Paternosters of gilt, fifteen sets of Paternosters of mazer* (maple) *and five sets of Paternosters of white bone for children*.' (*ibid.;* McGuire 1954, 97; Lysaght 1998, 10-11).

Manufactured by *pater nosterers* (*paternostrarii*) or 'turners of beads', the sets were both devotional aids and worn for personal adornment (McGuire 1957, 98; Gottschall 2008, 1-2). In a society where life could be tenuous, they were imbued with a talismanic power and worn as amulets to guard against evil. Being kept for a time near a painting of the Virgin or being blessed in a church was thought to increase their protective power (Winston-Allen 1997, 116). Paintings of the Middle Ages show that the sets of prayer beads were worn around the waist, across the body (baldric-style) or around the neck (Lightbown 1992, 351). Smaller sets could be worn as bracelets.

The raw materials used included amber, glass, crystal, coral, precious stones and metals, bone, shell, horn, ivory, seeds, nuts, and wood. The bead-makers trade was loosely organized according to materials used, most notably in France and Belgium (Harvey 2000, 28). In some cases, the bead manufacturers also produced buttons and other items. The manufacture of gold and silver beads was undertaken by goldsmiths (*ibid.*).

There can be no doubt either about the role the sets of beads played in the economy of religious devotion. Many of the bead-making workshops were located on streets close to important churches and centres of pilgrimage. Paternoster Row in London was the site of several workshops associated with the church of St. Michael-le-Querne, destroyed by the Great Fire of London in 1666 (Harvey 2000, 29). In fourteenth century Rome, English *paternosterers* sold their wares from booths on the steps of St. Peter's (*ibid.*). Although at the time of writing there is no record of a bead-making workshop in Galway, there is a tradition of bead-makers in the city trading with Spanish ships for amber and coral during the medieval period (McGuire 1954, 99). The style of rosaries made in Ireland were also said to have been influenced by examples imported from Spain (Redington 1914, 242).

Some of the earliest and most popular examples were made using the jaw and limb bones of animals (Gottschall 2008, 2). Gottschall (*ibid*.) has suggested that the manufacturing process underwent change sometime around 1400 AD, when the exclusive use of limb bones and the introduction of the bow-lathe reduced the waste material involved and increased production. Fragments of limb bones were drilled longitudinally and shaped on the lathe (Hurley *et al* 2004, 463). Large quantities of small beads (4mm to 5mm in diameter) were produced, as well as a smaller amount of larger beads (6mm to12mm) (Gottschall 2008, 3).

During the Middle Ages paternosters were not standardized in terms of size. According to Lightbown '*Records of individual paternosters throw very little light on the mediaeval devotions they represented: very rarely is there mention of the reason for a given number of beads….*' (1992, 344). Broadly speaking, the number of beads in the set varied according to the number of prayers making up the devotion preferred by the owner. Beads could be arranged in groups of five or seven, as found in France and Germany (Thurston 1902, 273). Other surviving examples were made up of between thirty-three and eighty beads without divisions of any kind (*ibid*). The Templar Knights in Belguim were said to have worn *paternosters* made from one hundred beads forming ten decades in the year 1273 AD (Lightbown 1992, 341). Another type which was popular in Rome in the fifteenth century was called a *corona*. Made up of sixty beads divided into decades (ten beads), it had a 'pendant' of three or sometimes four beads (*ibid*.). Seventy-four amber beads were found in during excavations on Peter Street in Waterford, which have been dated to *c*. 1250 AD and thought to represent a complete set (Gottshall 2008, 4).

The Langdale Rosary, which dates to *c*. 1500 AD, was made from fifty-seven enameled gold beads. Forty-three beads were found during the Middle Street excavations in Galway (forty round beads and three tubular ones, which more than likely were strung together to form a cross). Smaller types thought to represent a single decade containing between eleven and fourteen beads attached to a ring are known as the *páidrín beag.* Two eighteenth century examples are known from Galway and referred to as 'Galway rosaries' (Bigger 1914, 244-45).

Both looped rosaries and linear strings of beads are depicted in contemporary paintings, held together using brightly coloured silk, wool, linen, cord, or ribbon and sometimes with a tassel (Gottschall 2008, 5, 8). Just as different stones were imbued with certain spiritual and quasi-magical powers in the medieval church, the colour of the thread used also retained a particular symbolism. Red thread was a very popular choice and represented 'blood, destiny and the power of Pentecost' (*ibid.*, 6).

In some, but not all, cases rosary beads made from rare or valuable material were passed down through generations of families. Surviving records show that in 1374 AD, a Roman widow listed amongst her possessions a rosary made from coral belonging to her husband (Harvey 2000, 28). The gold and enamel Langdale Rosary was associated with a family from Yorkshire from the 17th century until the early 1930s (https://collections.vam.ac.uk/item/O17851/the-langdale-rosary; Thurston 1902, 273).

Closer to home, a *páidrín beag* made from amber, silver, and chalcedony, owned by Dr. Costello of Tuam at the beginning of the twentieth century, originally belonged to his great-grandfather, who died over a hundred years previously (Bigger 1914, 244). Thought to have been made in Galway around the beginning of the eighteenth century, Bigger (*ibid.*) suggested that the amber beads were re-used and dated to a much earlier period. Another amber rosary was associated with the Lynch family of Galway from the fifteenth century (Reddington 1914, 243). Given by the then pope to James Lynch FitzStephen, Mayor of Galway, after he hanged his son in AD 1493, the set of beads was passed down through generations of the family until it was broken up in the nineteenth century (*ibid.*).

It seems likely, based on comparative evidence, that the Ballinasloe beads represent a rosary or *paternoster* and formed part of the burial rite. Remarkably, given the level of disturbance across the site, they were found *in situ* around the feet and lower leg of a female aged between 35-44 years, who had been wrapped in a shroud or winding sheet before being placed in a simple pit grave. Other grave goods included sixteen mid-sized blue/light grey pebbles, three white pebbles, a fragment of grey flint, a rose quartz pebble, a fragment of chert and a red hematite pebble (all C852).

The beads are well preserved and appear to be made from bone and polished bone. Comparable in size to examples from Britain and Europe, they are slightly smaller than the Middle Street beads (Gottschall 2008, 3; Hurley *et al* 2004, 463). The quantity found is reminiscent of the fifteenth century *corona* referred to above, which was made up of six decades (*i.e.* sixty beads) with a pendant and cross decorative motif made from the remaining beads. The tubular 'toggle' and the conical 'spacer' beads from Society Street would have formed the shaft and one arm of the cross decoration; no trace of the second arm was found during the excavation. The beads which form the cross are almost identical to the Middle Street *paternoster*.

The beads were cleaned and conserved by Susannah Kelly. As noted earlier in this report, a sample of bone from SK10 was dated to 1477-1638 cal. AD, which provides a *terminus ante quem* for the Ballinasloe *paternoster*.

6.0 CONCLUSION

Excavations were carried out at Society Street, Ballinasloe, from June to August 2020 (Licence No. 20E0330) in response to the discovery of human skeletal remains during monitoring of groundworks in the area. After the human remains were identified, the planned duct trench was re-directed around the archaeological area to ameliorate any impact on any sub-surface features. Plans were also modified for tree planting and the installation of the street furniture.

A total of ten in-situ burials and quantities of ex-situ disarticulated human remains were fully excavated, and are considered to have formed part of a well-laid out cemetery. C14 dates for one of the burials (SK10) returned a date of 1477-1673 cal. AD. Skeleton 4 was dated to 1520-1800AD, these dates combined give a range from 1477-1800 AD for use of the cemetery.

Other features, including a well with later enclosing stone wall, pits, postholes, and a metalled roadway were also fully or partly excavated.

From the outset it was evident that all features were severely impacted by the construction of a terrace of buildings, (dated to *c*. 1880), the footpath, previous street lighting and service trenches. Part of the southern side of the stone wall (C806) was located under the foundation of the end building on the terrace, which is now a Supermacs fast food restaurant, pointing to a pre-nineteenth century date for this feature. The buildings had also truncated the lower part of SK3, as well as much of SK8, a child/juvenile identified outside the front door of what is now McGorisk's Pharmacy (**Fig. 7**). Excavation also showed that the construction of the mortared wall (C806) which enclosed the well (C825) had impacted at least one grave cut (C855) and removed the lower half of SK5/(C828), located on the south-eastern side of the cemetery. Some of the disturbed bone had subsequently been stacked or moved to one side (*e.g*. BS18, 19, 22). This occurred well after the period of use of the cemetery.

The well and later wall were undoubtedly connected, as the upper wall encloses the lower well. The remains of a step linking the two were also identified. Although it was not fully excavated, it seems likely that the well is of early construction and may have had some significance to the local population, perhaps forming some element of a religious complex. Based on the stratigraphic sequence, it may pre-date the cemetery. The upper wall truncates a number of the burials and extends under the wall of the building now occupied by Supermacs, suggesting that it is no later than eighteenth century in date.

The interior of the well and wall was filled with slate, brick fragments and mortared rubble. Although it cannot be established with any certainty, this fill may represent the remains of an overground structure. There are recorded examples of wells which are enclosed by overground walls and/or covered with roofed structures *e.g*. St Brighid's Well in Liscannor, Co. Clare or Tobar Mhuire, near Rosserk in Co. Mayo. No dateable artefacts were found. The well and wall were preserved *in-situ,* with their location marked on the new footpath.

The constricted nature of some of the skeletons (*e.g.* SK5) and the neat and 'tucked in' placement of limbs indicated the use of shrouds or winding sheets. Research showed that this was a common practice for the treatment of the dead during the later medieval and post-medieval period.

The presence of light-coloured and/or coloured stones in burial contexts is well documented during the historic and modern periods *e.g*. Iniscealtra. Research has shown that certain stones were imbued with apotropaic qualities, linked with a belief in healing and the journey to the afterlife. It was also noted during the excavation on Society Street that stones had been placed on certain selected parts of the body. This practice was not uncommon during the medieval period and was thought to reflect a belief that even in death, the stones could heal the body parts which were afflicted during life.

The Ballinasloe beads are analogous in style to a smaller set from Middle Street in Galway (NMI Reg. E401:8:128), which were found in a domestic setting dated to the late seventeenth century. Other finds included a copper alloy button (20E0330:803:2) dating to the early nineteenth century, as well as moderate quantities of early modern glass, ceramics and metal, which were found throughout excavated area.

The results of the excavation on Society Street are a significant step forward in the understanding of the earlier history of the town, as well as the broader context of burial and ritual in Co. Galway.

Fiona Maguire & Angela Wallace

Atlantic Archaeology

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Much of the folklore and history of the town came from the people themselves.

8. Figures

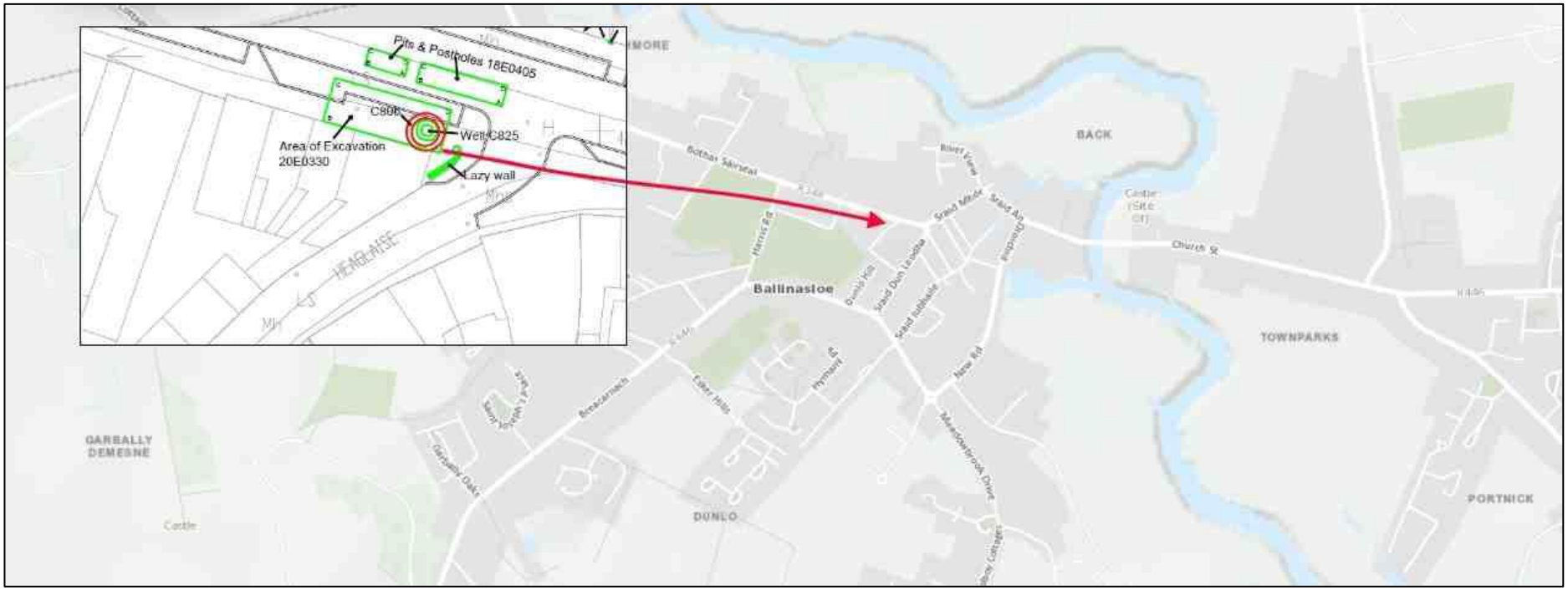


Fig. 1 Location of area of archaeological excavation, Society Street, Ballinasloe. Licence No. 20E0330.

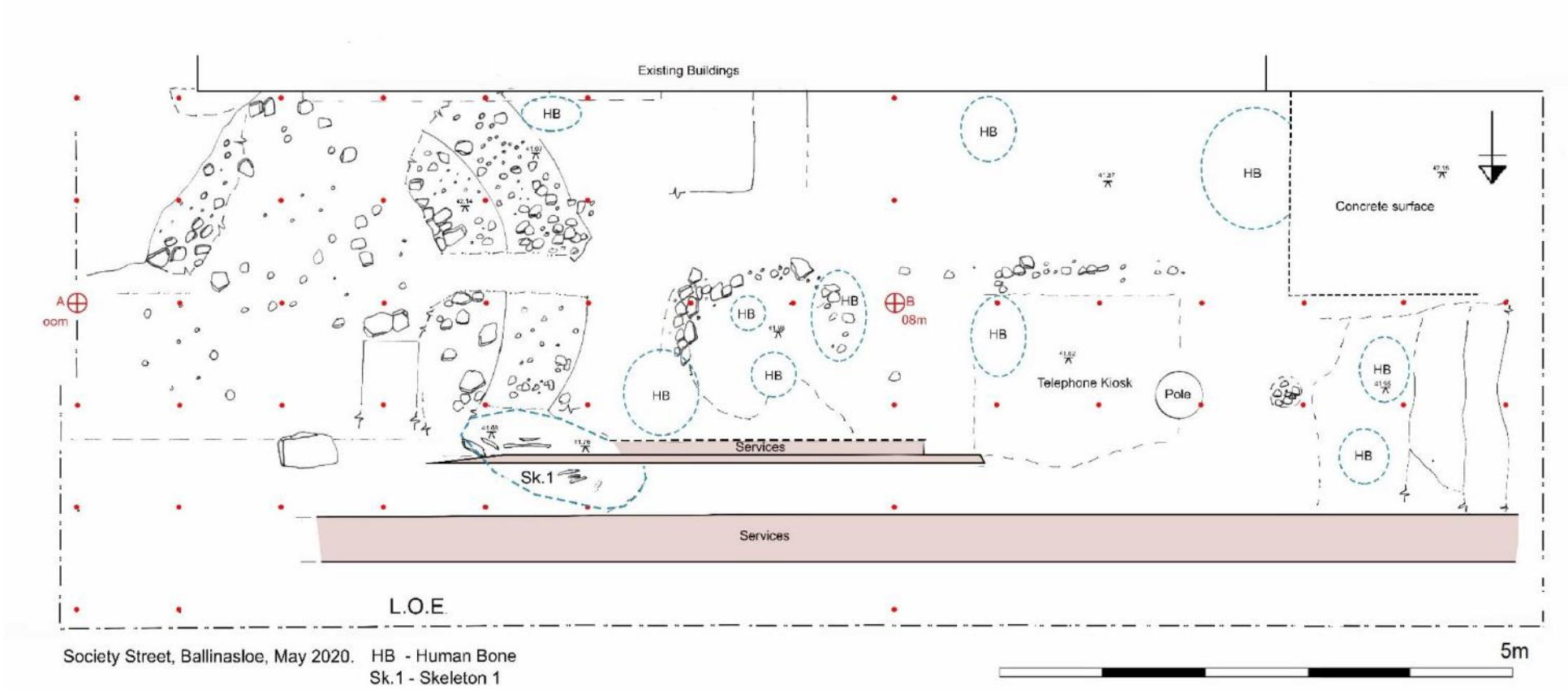


Fig. 2 Pre-excavation plan of features referred to in the text.

Fig. 3 Site location. Church Hill is incorrectly labelled on the Ordnance Survey map (marked *Ascal Uí Dhubhgáin*) and has been corrected here.

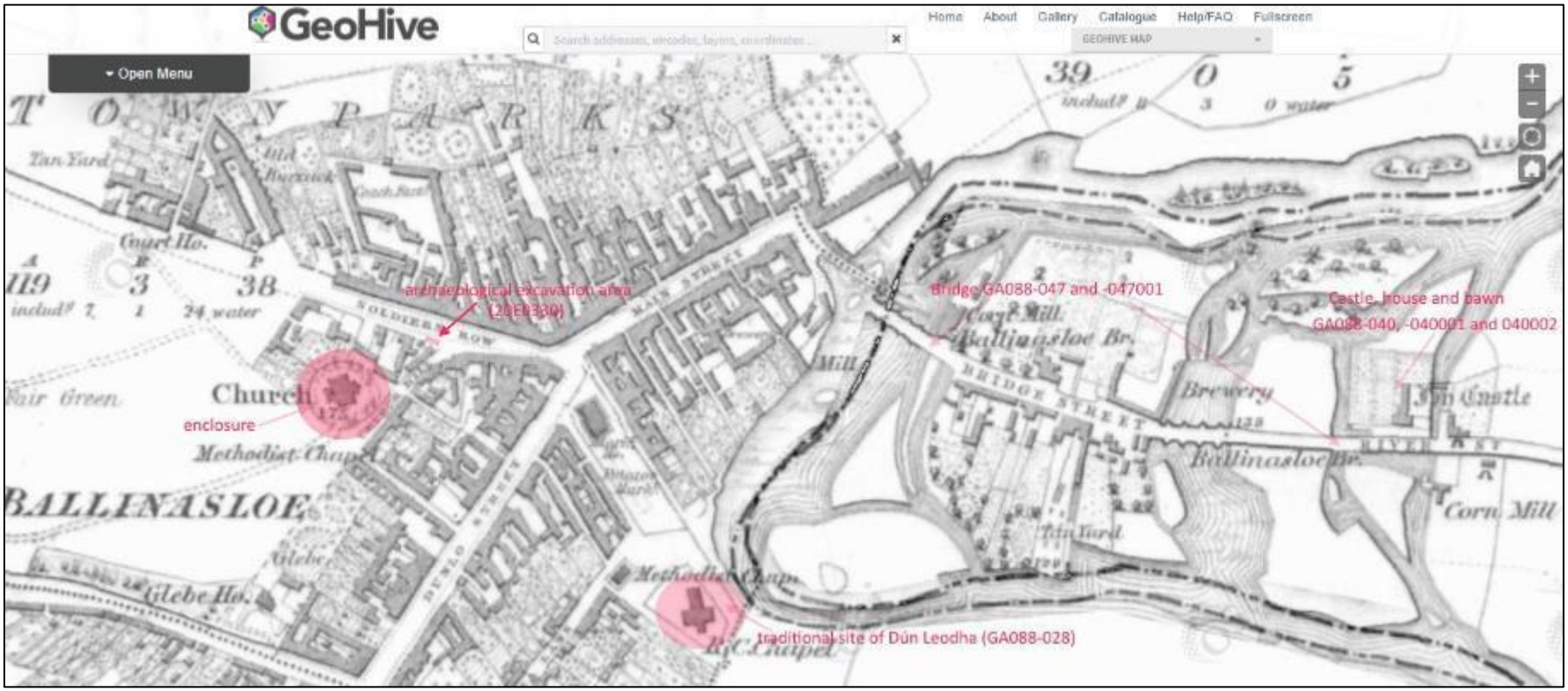


Fig. 4 Annotated extract from the first edition of the Ordnance Survey six inch map (Sheet 088). The location of the previously unrecorded enclosure identified around the summit of Church Hill is indicated immediately south-west of the archaeological area.

Fig. 5 Extract from Sir William Petty's *'Hiberniae Delineatio'* dated to *c.* 1663 (after Egan 1960, 82). Noteworthy from the point of view of the Society Street excavation as there is a hill with a church on the summit and a formally laid out street indicated on the Galway side of the River.

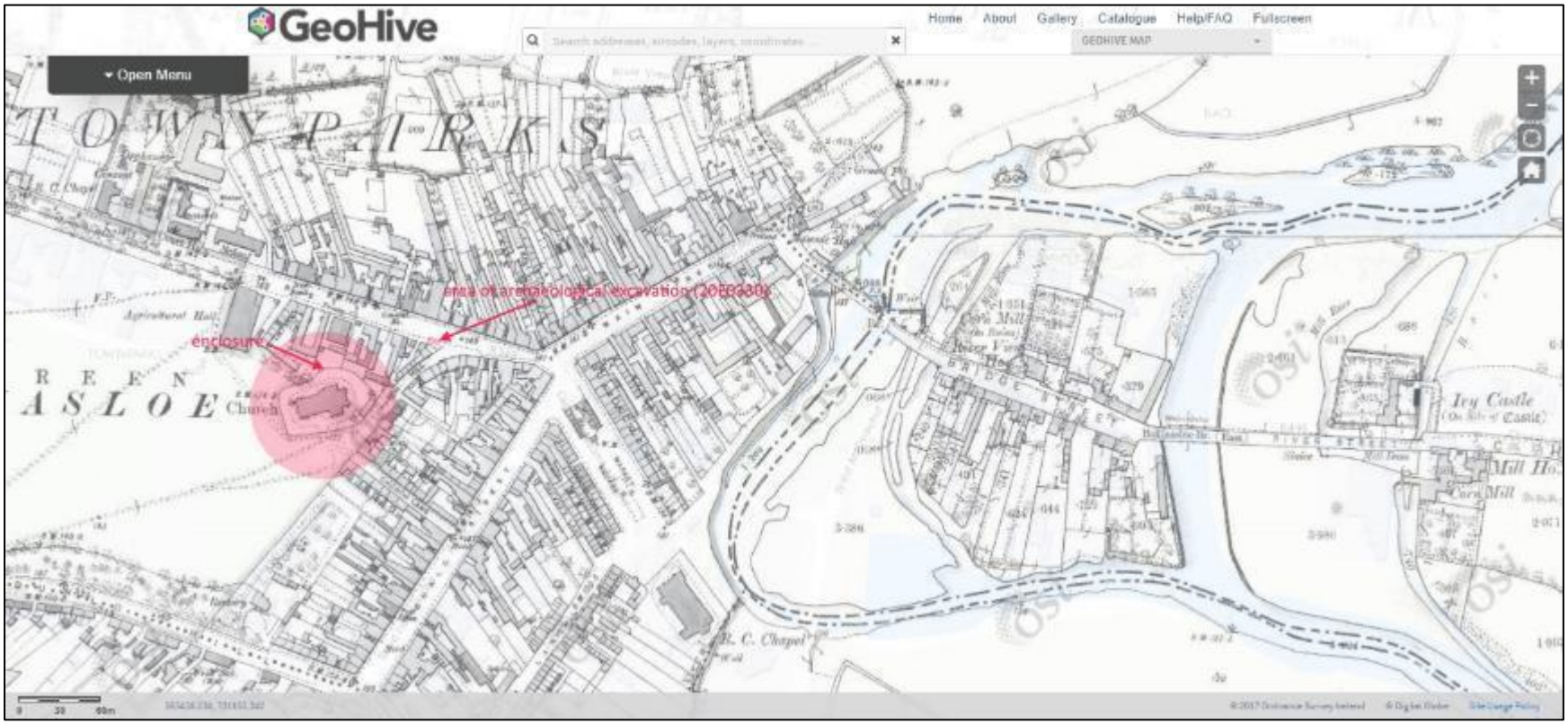


Fig. 6 Ordnance Survey twenty-five inch map (surveyed between 1888 and 1913), showing the expansion of the town during the late nineteenth century.

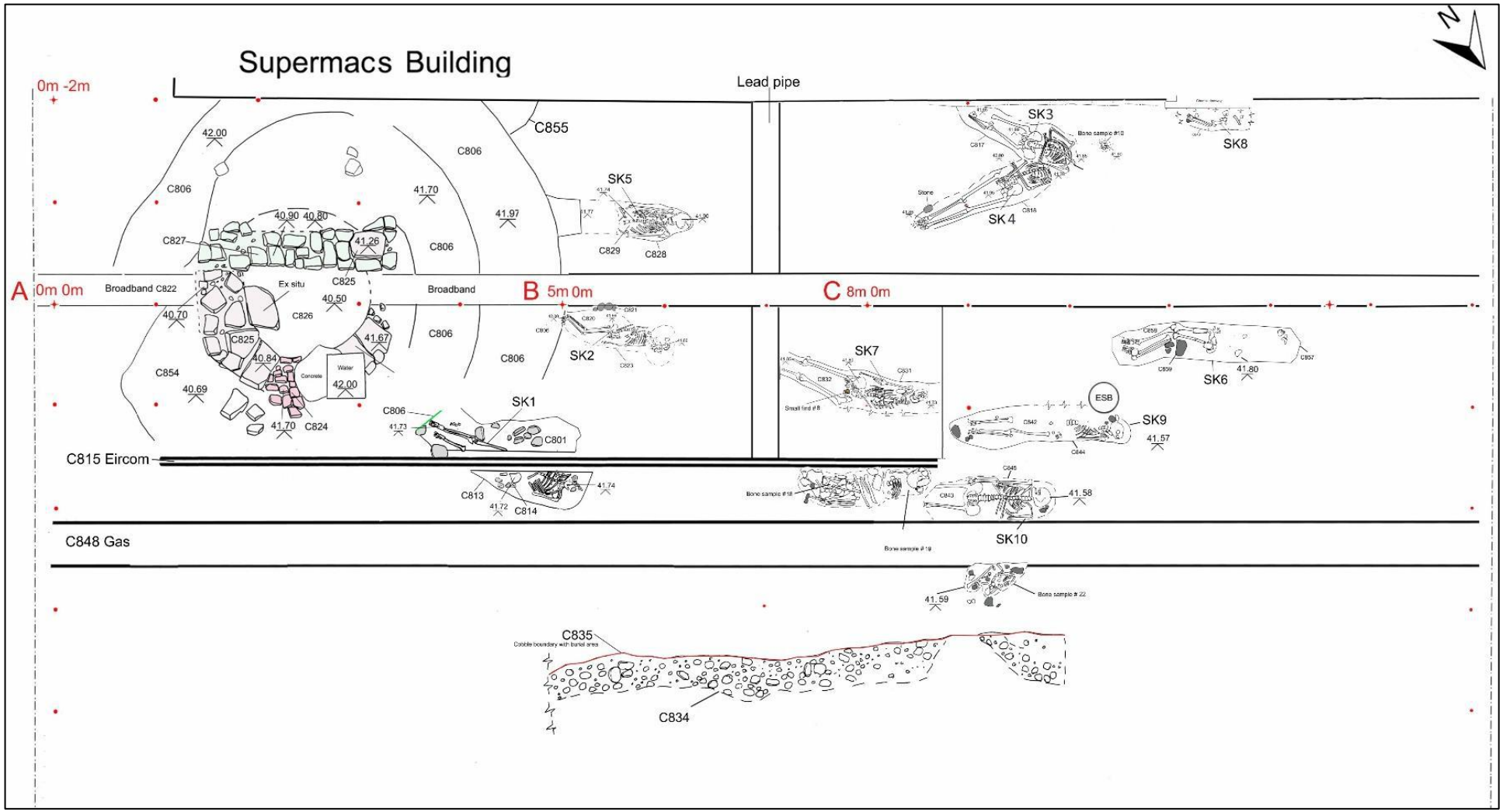


Fig. 7 Mid-excavation plan showing location of burials and features referred to in the text.

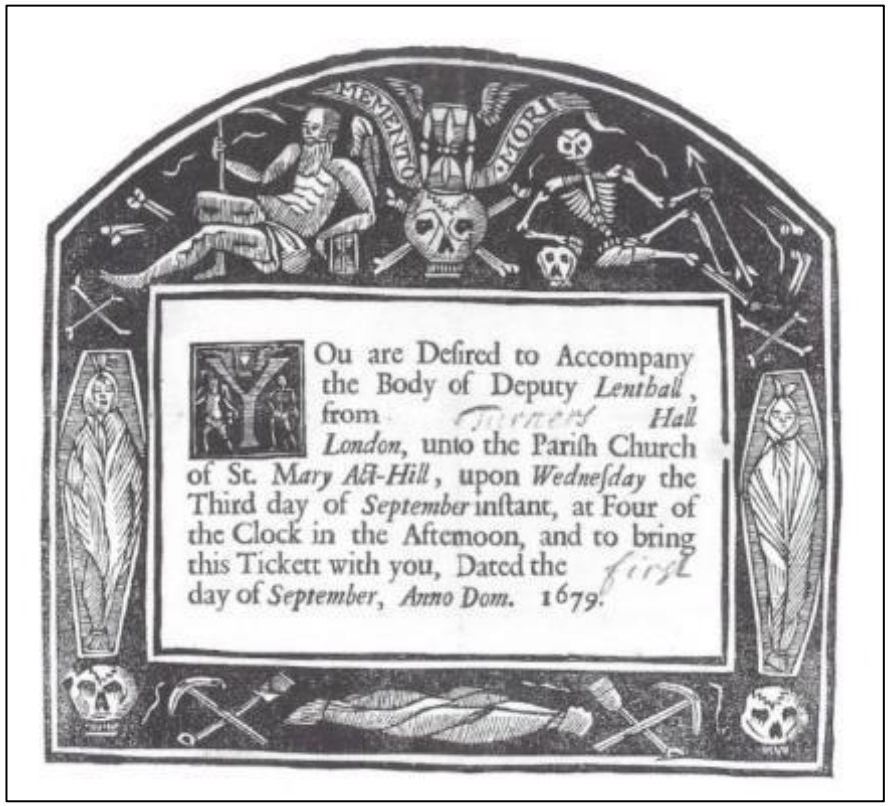


Fig. 8 A seventeenth century funeral invitation, with illustrations of corpses wrapped in winding sheets according to the fashion of the time (after Litten 2002).

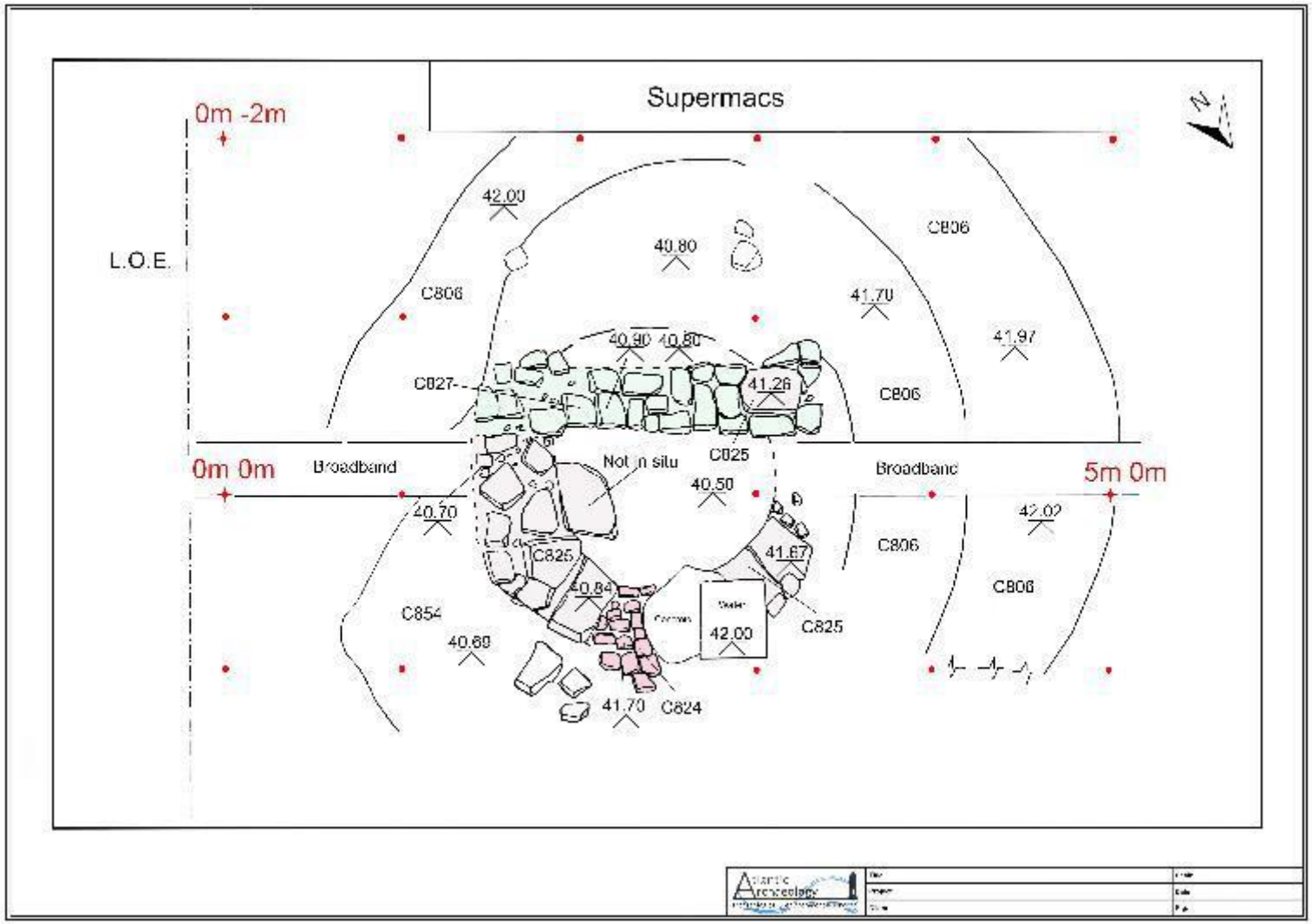


Fig. 9 Post-excavation plan of well with later enclosing wall.

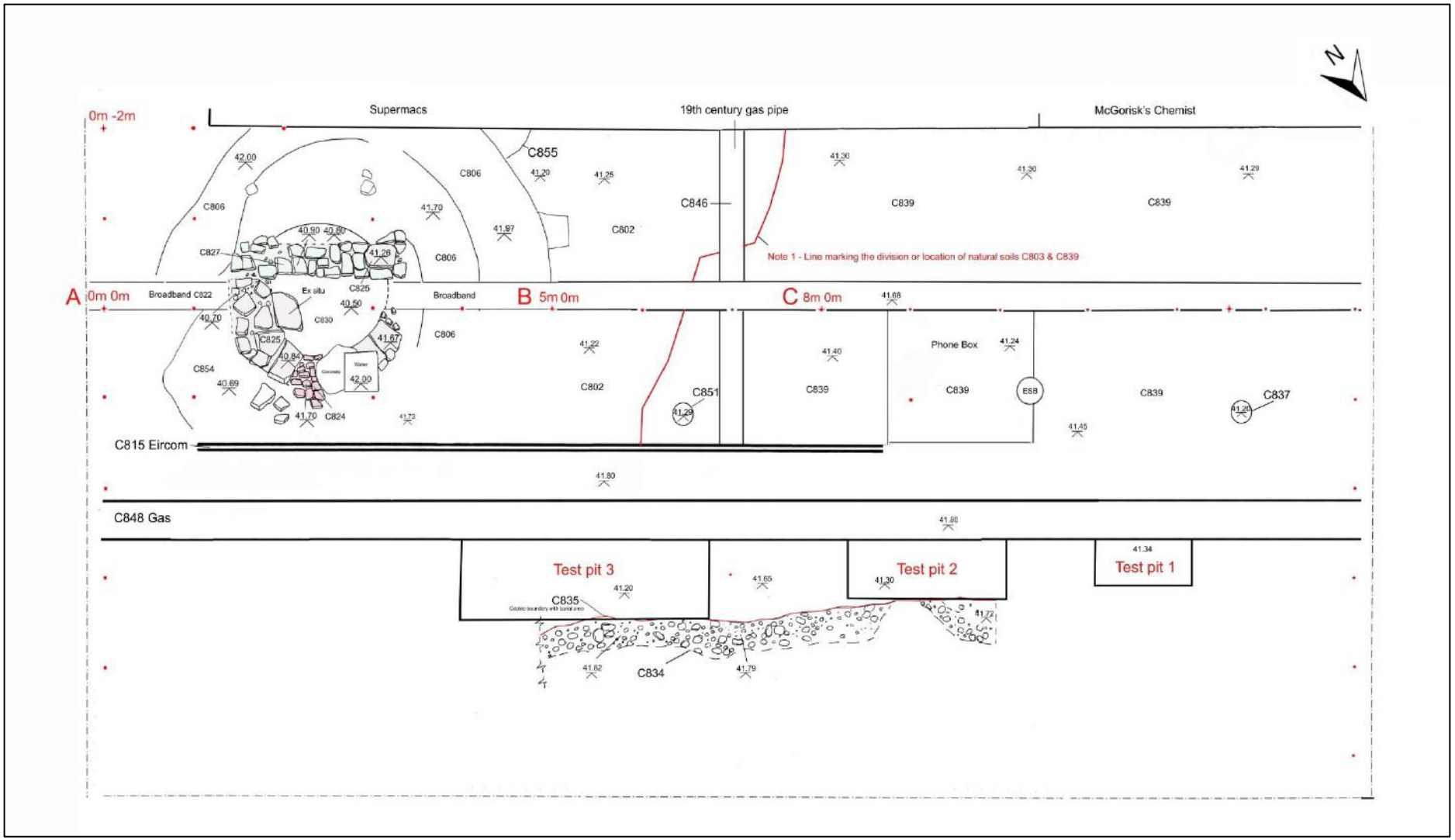
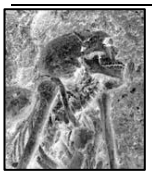


Fig. 10 Post-ex plan of archaeological area on Society St.

9. Plates

Pl. 1 Human femur identified at road edge during monitoring on Society St.

Pl. 2 General view or archaeological area, pre-ex, June 2020. From NNE.



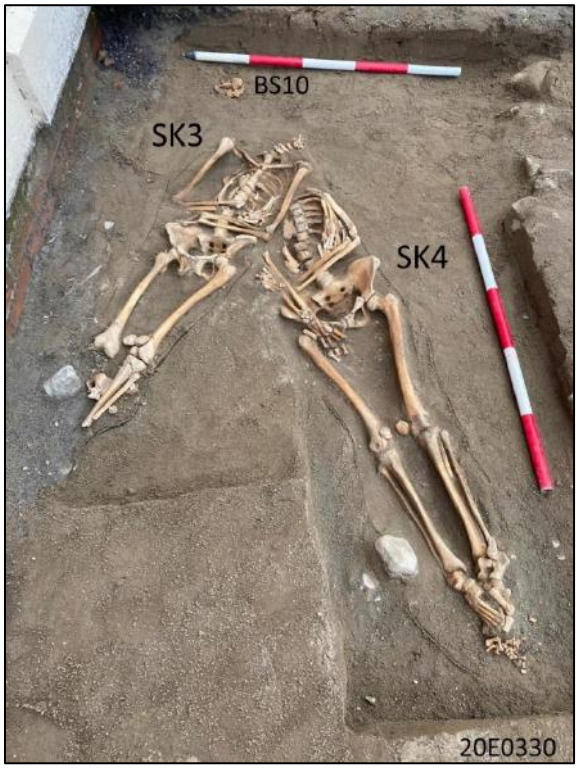
Pl. 3 Society Street and Church Hill *c*. 1900. ©Lawrence Collection/NLI. The excavation area was located in front of the first house in the terrace of houses in the foreground, which is now a Supermacs fast food outlet. St John's Church on the left background is located on the summit of the hill.

Pl. 4 Pits and postholes located immediately north of the well and cemetery identified in April 2019.

Pl. 5 Remains of metalled road surface (C834) on northern side of burial area.

Pl. 6 SK1 from north. The skeleton had been impacted by the later enclosing wall (C806) related to the well and a modern Eircom duct C815.

Pl. 7 SK2, mid-ex. From south-west.



Pl. 8 SK3 and SK4 from east.

Pl. 9 SK5, which was truncated by the construction of later enclosing wall C806 around well.

Pl. 10 Surviving remains of SK6, from south-east. Mid-ex. Note the placement of rounded stone over the ankle and the angular stone (20E0330:858:004) at the proximal end of the right femur.

Pl. 11 SK7, truncated from just below the knees by a nineteenth century gas connection trench. Its left shoulder was also impacted by C815.

Pl. 12 poorly-preserved remains of SK8 located immediately outside the entrance to McGorisks. The burial was heavily impacted by the construction of this former dwelling house.

Pl. 13 Working shot showing SKs 9 and 10 during the excavation in July 2020. The right side of SK9 has been impacted by the ESB street light. Based on available information, it seems likely that SK9 is the skeleton examined by the late Prof. Rynne in 1968 (GA088-049).

Pl. 14 SK9 during excavation, showing placement of blue-grey pebbles.

Pl. 15 SK10 from south-east. Note the position of the left arm, which crossed the body and was tucked in under the right arm. The hand bones were found under the ribs on the right-hand side. This was taken to indicate that the body was wrapped in a winding sheet prior to burial.

Pl. 16 Showing location of some of the bone samples recovered during the excavation.

PL. 17 Mid-ex of pit C837.

Pl. 18 Working shot showing C806 pre-ex, from east-northeast.

Pl. 19 Showing section of upper wall C806 which enclosed the earlier well C825. From north-west. Inset in top right corner showing curve of wall.

Pl. 20 Showing remains of well C825. This feature was preserved *in situ*. From East.

Pl. 21 Well C825 from south-west, showing the later linear wall (C827).

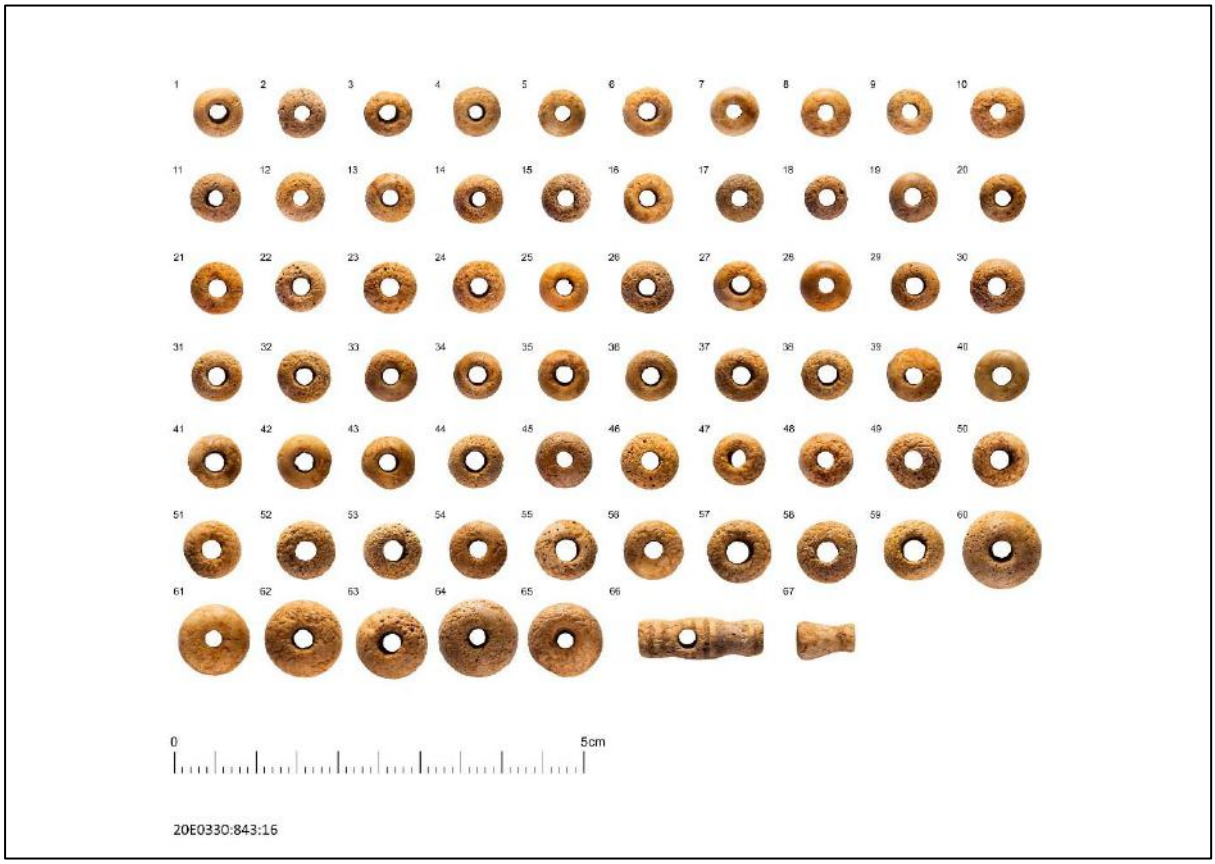
Pl. 22 Well wall (C825) from underneath the broadband ducting. The wall has also been impacted by foundations for a hydrant (right of photo).

Pl. 23 Sample of stone tokens which were found with the burials in the cemetery in Society Street. The examples above were found with BS22.

Pl. 24 Worked rectangular stone found with SK6 (20E0330:858:004).

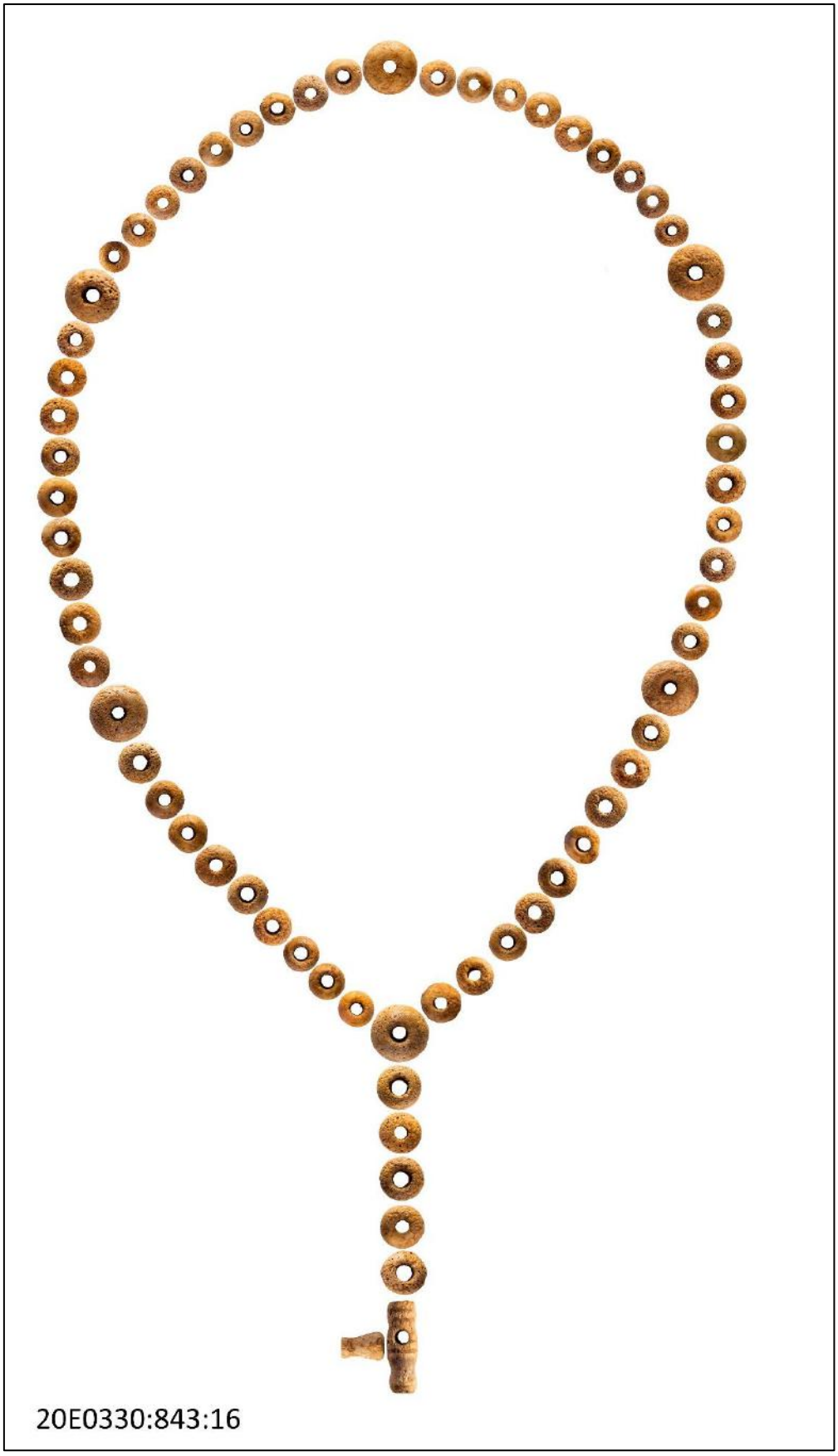
Pl. 25 Plug stone (20E0330:832:008) *in situ,* SK7.

Pl. 26 Working shot taken during the excavation of the beads (20E0330:843:16) around the feet of SK10, July 2020.

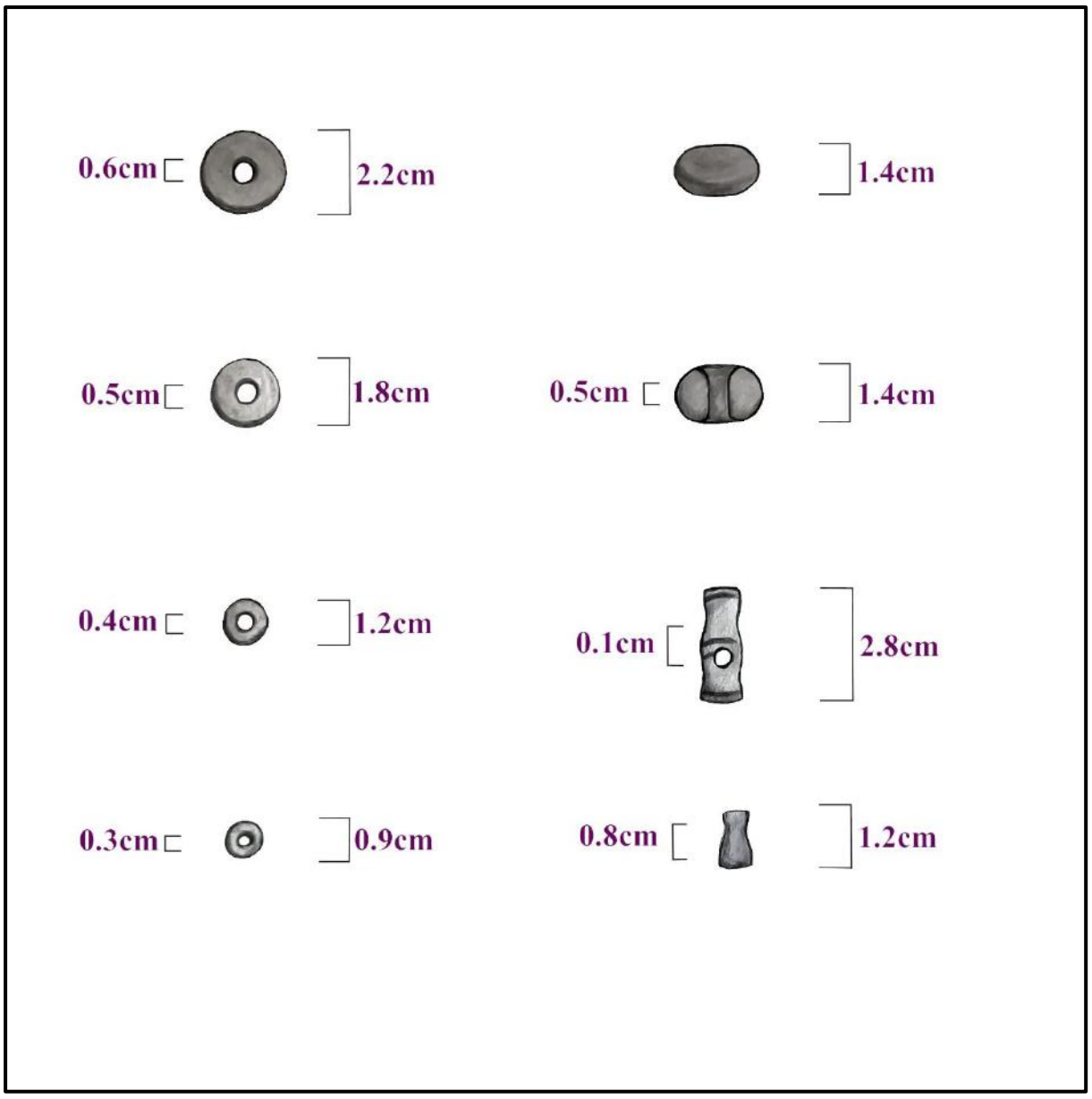


Pl. 27 Showing beads following conservation. ©denisekimages.

Pl. 28 Detail of the conical and tubular beads which formed parts of the cross of the *paternoster.* ©denisekimages.



Pl. 29 Beads set out for illustrative purposes.



Pl 30: Illustration & Dimensions of Beads

Pl. 31 Part of a portrait of the Infanta Isabel Clara Eugenia y Magdalena Ruiz by Coelho dated to *c.* 1585, showing a cross similar in style to the Ballinasloe example on a set of rosary beads.

Pl. 32 Small metal open-backed button from an Irish Constabulary uniform dating to the early nineteenth century, with intact shank for attaching the button to the uniform (20E0330:803:2; Dims.: 15.5mm diameter; in thickness; shank= 6mm diameter). The maker's mark on reverse side reads 'JONES CORK HILL, with the words separated by small star motifs.

Appendix 1 : Radiocarbon Dating Certificate

CENTER FOR PHYSICAL SCIENCES AND TECHNOLOGY

Mass Spectrometry Laboratory
Saulėtekio ave. 3, LT-10222 Vilnius, Lithuania.
Mobile: +370 614 65313, E-mail: zilvinas.ezerinskis@ftmc.lt

Vilnius Radiocarbon
Performed by

DATING CERTIFICATE

No. 2020-10-20-FTMC-KJ22

07th November 2020

1. Applicant for analysis: Angela Wallace, Atlantic Archaeology, Pier Road, Enniscrone, Co Sligo
2. Material of sample: Bone
3. Date of sample receiving: 2020-10-20
4. Analysis date: 2020-11-07
5. Equipment used for analysis: Single stage accelerator mass spectrometer (SSAMS, NEC, USA), Automated Graphitization Equipment AGE-3 (IonPlus AG).
6. Method of analysis: Samples were pretreated using acid-base-acid and collagen extraction protocol. IAEA C3, IAEA C7and IAEA C9 were used as reference materials.
7. Results of analysis:

Sample designation	Lab. code	Radiocarbon age, BP	$\delta^{13}C$, ‰
SK 4 Fibula	FTMC-KJ22-1	259±28	-20.94
SK 10 Femural shaft fragment	FTMC-KJ22-2	337±28	-20.47

The results are given in years before 1950 (radiocarbon age BP). The uncertainty in the age determination is given +/- one standard deviation. All radiocarbon ages are corrected for isotopic fractionation using the measured 13/12-ratio. The radiocarbon ages must be translated to calibrated radiocarbon years

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001

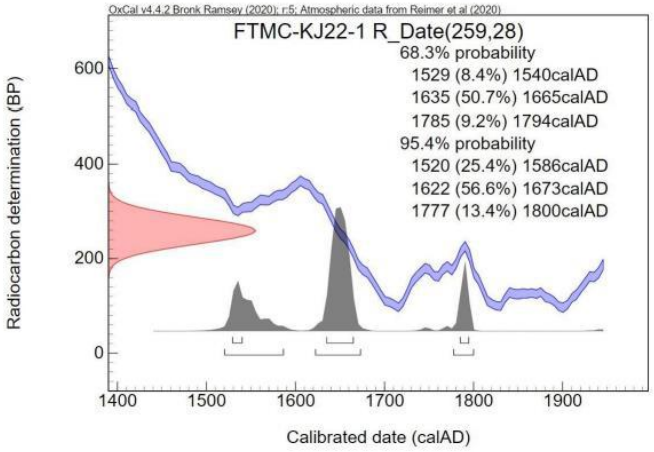


Fig. 1 Radiocarbon date 259± 28 14C BP (red), part of the calibration curve (blue) and the calibrated probability density function (grey) calculated in OxCal.

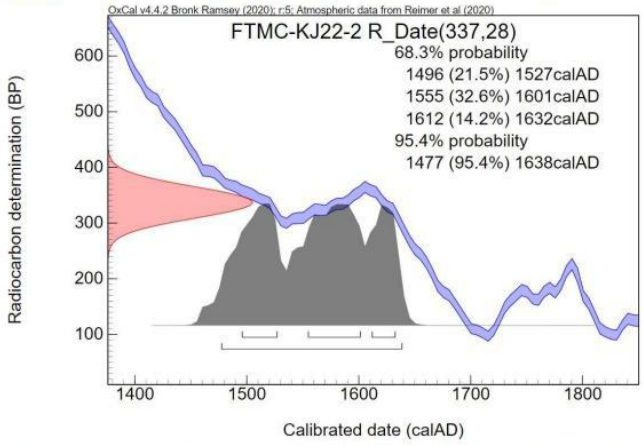


Fig. 2 Radiocarbon date 337± 28 14C BP (red), part of the calibration curve (blue) and the calibrated probability density function (grey) calculated in OxCal.

Responsible person: dr. Žilvinas Ežerinskis

Final Osteoarchaeological Report

On human skeletal remains excavated at Society Street (Townparks) Ballinasloe, Co. Galway

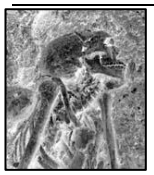
(RMP: GA087-049---)

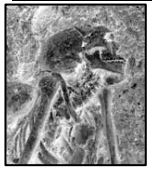
Licence No.: 20E0330

by
Dr Linda G. Lynch MIAI
Consultant Human Osteoarchaeologist

March 2021

CLIENT:
Atlantic Archaeology Archaeological & Environmental Services





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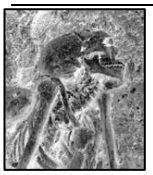


6. Appendices 54

Abstract

The remains of 10 individual burials, as well as a quantity of disarticulated human remains, were recovered during recent excavations by Atlantic Archaeology in Society Street in Ballinasloe between June and August 2020 (licence number 20E0330). The excavation was on foot of discoveries during archaeological monitoring in association with ground works for Ballinasloe Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES). It was apparent from early on that there had been considerable and extensive disturbance at the site as a result of developments in recent centuries, including numerous modern service trenches. The excavations, followed by radiocarbon dating of two skeletons, indicated that this was burial ground dating from the later medieval/early post-medieval period. While personal life experiences could be gleaned of some of the individuals buried here, the sample is significantly biased. However, a number of important factors emerged in terms of the overall health of these individuals, and the lives endured. In addition, mortuary information reveal diverse, and perhaps some unexpected, practices. The excavation and multi-disciplinary analysis of this important burial ground will greatly enhance the historical knowledge of Ballinasloe.

List of Figures, Plates, and Tables

FIGURES

PLATES

TABLES

Osteological Terms Used

A number of basic terms are used frequently in osteo-archaeology and these are outlined below. The definitions are taken from White and Folkens (1991, 28-35) and Bass (1995, 319-321).

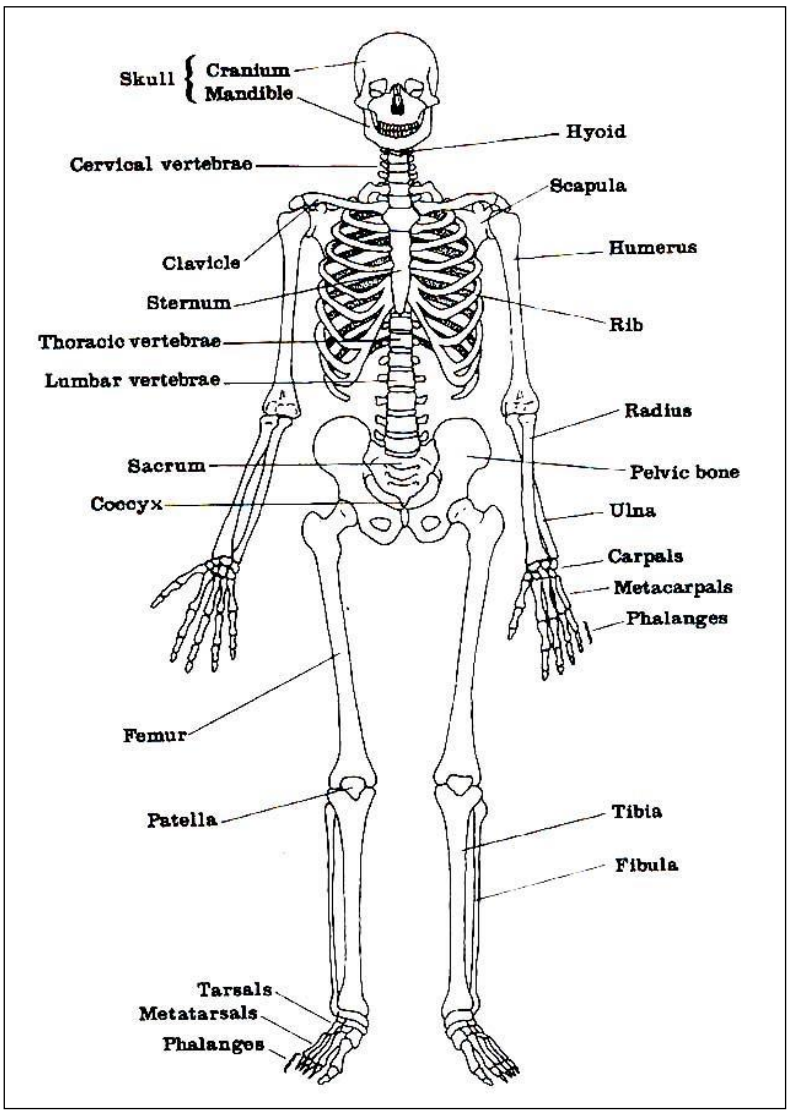


Figure 1. Annotated diagram showing main skeletal elements (after Mays 1998, 2, fig. 1.1)

Directions - General

Superior	toward the head of the body.
Inferior	opposite of superior, body parts away from the head.
Anterior	toward the front of the body.
Posterior	opposite of anterior, toward the back of the individual.
Medial	toward the midline of the body.
Lateral	opposite of medial, away from the midline of the body.
Proximal	nearest the axial skeleton, usually used for long bones.
Distal	opposite of proximal, furthest from the axial skeleton.
Palmar	relating to the hand, the palm side
Plantar	relating to the foot, towards the sole of the foot
Dorsal	relating to the hand/foot, back of the hand, top side of the foot
Endocranial	inner surface of the cranial vault.
Ectocranial	outer surface of the cranial vault.

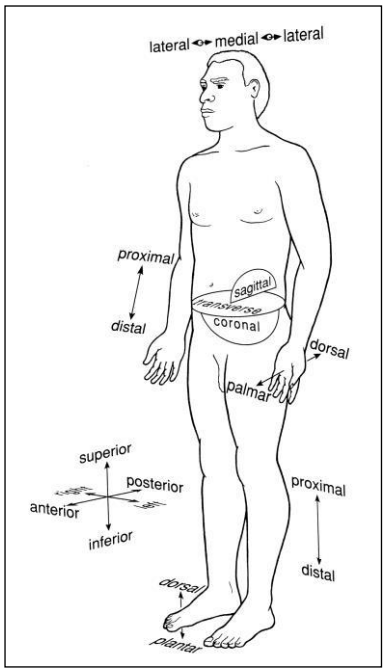


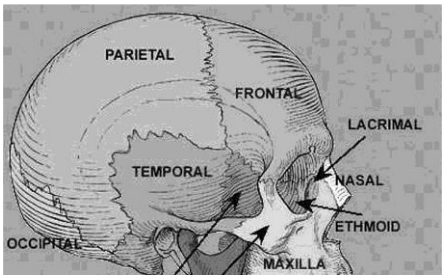
Figure 2. Anatomical directions (from White and Folkens 1991, 29, fig. 3.1)

Directions - Teeth

Mesial	toward the point on the midline where the central incisors meet.
Distal	opposite of mesial.
Lingual -	toward the tongue.
Labial	opposite of lingual, toward the lips.
Buccal	opposite of lingual, toward the cheeks.
Incisal	the biting surface of the tooth.
Occlusal	the chewing surface of the tooth.

General bone features/terms

Process	a bony eminence.
Eminence	a bony projection, usually not as prominent as a process.
Spine	generally a long, thinner, sharper process than an eminence.
Tuberosity	a large, usually roughened eminence of variable shape, often the site of a ligament attachment.
Tubercle	a small, usually roughened eminence, often a site of a ligament attachment.
Trochanters	two large, prominent, blunt, rugose processes found on the distal femur.
Malleolus	a rounded protuberance adjacent to the ankle joint.
Articulation	an area in which adjacent bones are in contact at a joint.
Condyle	a rounded articular process.
Epicondyle	a non-articular projection adjacent to a condyle.
Head	a large, rounded, usually articular end of a bone.
Shaft/diaphysis	the long, straight section between the ends of a long bone.
Epiphysis	end portion of a long bone which is expanded for articulation.
Neck	the section of a bone between the head and the shaft.
Torus -	a bony thickening.
Ridge	a linear bony elevation, often roughened.
Crest	a prominent, usually sharp and thin ridge of bone.
Line	a raised linear surface, not as thick as a torus or as sharp as a crest.
Facet	a small articular surface, or tooth contact.
Metaphysis	a line of junction between epiphysis and diaphysis.
Osteoblastic	process of bone formation
Osteoclastic	process of bone resorption



Other osteological terms/abbreviations

C1-C7	cervical vertebrae (neck) numbered from 1-7.
CEJ	cemento-enamel junction, junction of crown of tooth and root.
DJD	degenerative joint disease.
T1-T12	thoracic vertebrae (torso) numbered 1-12.
TMJ	tempromandibular joint, joint of lower jaw.
L1-L5	lumbar vertebrae (lower back) numbered 1-5.
S1-S5	sacral vertebrae (in between left and right pelvis) numbered 1-5.
MC-	metacarpal (bones of the palm of the hand).
MT	metatarsal (bones of the arch of the foot).
IAM	Internal Auditory Meatus in temporal bone of cranium.
EAM	External Auditory Meatus in temporal bone of cranium.
MN	Minimum Number of Individuals.
CPR	Crude Prevalence Rate.
TPR	True Prevalence Rate.
SN/s	Schmorl's nodes, depression defects in the vertebral bodies.
AMTL	Ante-Mortem Tooth Loss

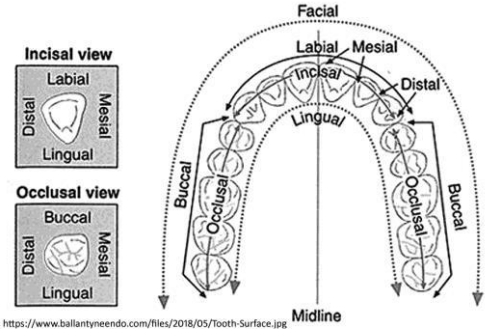


Figure 4. Dental terminology

1. Introduction

1.1 Background to Project

Archaeological monitoring (18E0405ext.) was undertaken by Atlantic Archaeology between July 2018 and October 2020, in association with the ground works for Ballinasloe Water Services Infrastructure Upgrade and Town Enhancement Scheme (TES) in Ballinasloe, Co. Galway. During the monitoring, a human femur was identified in a service trench on the south side of Society Street, close to the junction with Church Hill, on 20th May 2020. On further investigation, more disarticulated human remains were uncovered in the immediate area, as well as a series of burials, many lying immediately under the existing modern footpath.

The authorities (National Monuments Service, National Museum of Ireland) were consulted, and the writer also attended on site on 4th June 2020. Given the inherent risk to the skeletal remains, despite proposed changes to the scheme works, it was deemed best that the area be fully excavated. This was undertaken by Atlantic Archaeology, under licence 20E0330, between June and August 2020. As well as disarticulated human remains and ten *in situ* burials, a stone well, which had been enclosed by a later stone wall, were also identified. The latter two were preserved *in situ*, while all human skeletal material was archaeological excavated. The area had been extensively disturbed and truncated by works for various services in recent years, including the erection of a street light in the 1960s.

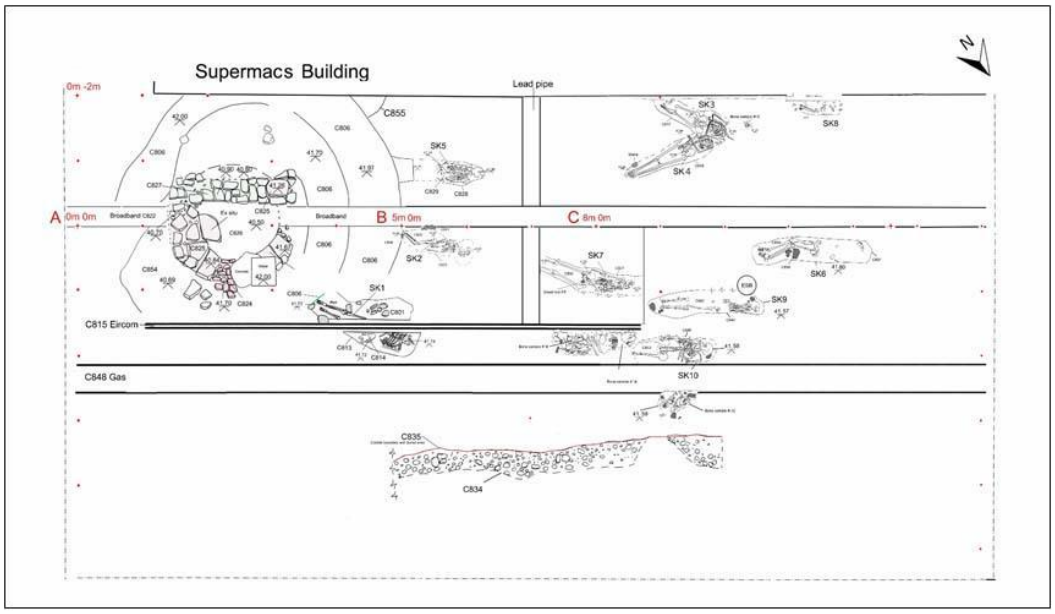


Figure 5. Plan of excavated area, containing 10 *in situ* burials, Society Street, Ballinasloe (20E0330)

Samples from two burials were submitted for AMS dating and returned dates from the late medieval into the post-medieval period (fifteenth to late eighteenth centuries) (Wallace and Maguire 2020) (see **Table 1**).

Table 1. AMS dating results from Society Street, Ballinasloe 20E0330

Lab ID	Sample ID	Sex	Age-at-death	Calibrated date (95% confidence)
FTMC-KJ22-1	SK4	Female	30-34 yrs	cal. AD 1520-1800
FTMC-KJ22-2	SK10	Female	35-45 yrs	cal. AD 1477-1638

1.2 Scope of Study

This report details the osteoarchaeological analysis of ten human skeletons and a quantity of disarticulated human bones that were recovered during the recent excavations at Society Street, Ballinasloe.

There is a brief outline of the materials (that is, the bones) that were examined (**Section 1.3**). The methodology utilised in the study is presented in **Section 1.4**. The results of the osteological analysis are presented in **Section 2**. A summary and discussion of all the results are provided in **Section 3**, while the conclusions of the present study are provided in **Section 4**. The *in situ* skeletal remains are catalogued in **Section 6.1**, while the metrical information is provided in **Section 6.2**. The disarticulated elements are detailed in **Section 6.3**.

1.3 Materials

A total of ten *in situ* burials were identified and excavated at Society Street. Disarticulated skeletal remains was also recovered. The burials were numbered from 'SK01' through to 'SK10'.

All of the skeletal remains (including those of the *in situ* burials and disarticulated remains) were processed by the client in post-excavation following the recommended standards (Buckley *et al.* 1999). The writer was furnished with all on-site recording forms, photographs, and plans prior to the commencement of the osteoarchaeological analysis.

The level of preservation of each individual skeleton was recorded during the osteoarchaeological analysis. The preservation of each skeleton was classed as either 'very poor', 'poor', 'good', or 'very good'. The first classification refers to skeletal remains that are either highly incomplete and/or highly fragmented and/or highly eroded. The 'very good' refers to a skeleton that is virtually complete and well preserved, with little fragmentation and erosion. The middle two classifications are variations of these two extreme ends. As mentioned earlier (**Section 1**), a significant amount and variety of services extended across the area of burial and truncated many of the skeletons. One individual was classed as very poorly preserved and two individuals as poorly preserved. In contrast, six other individuals were recorded as 'good', while a single individual (SK10), was classed as 'very good'. While some skeletal remains had suffered from fragmentation – not surprising given the modern location of the cemetery – there was very little erosion. Indeed, it was truncation which resulted in the incomplete nature of the remains of many individuals.

The disarticulated remains were, by their inherent nature, fragmented. Again, however, little erosion was noted. Two tibial ('shin' bone) fragments from bone sample ('BS') 18 (c.850) (ID1289 and ID1290, see **Section 1.4** for description of numbering of disarticulated skeletal and dental remains), both exhibited modern scraping damage to the anterior spine of the bone. This is not an unusual finding in such contexts. Overall, similar to the bones from the *in situ* burials, there was little significant evidence of erosion. A total of 8,675 individual bones, fragments of bones, or teeth were recovered in a disarticulated state (see **Section 1.4**). The total weight of the disarticulated assemblage was 5203.7g. Adult or possible adult remains (4752.8g and 24.3g respectively)) accounted for the majority at 4777.1g, 151.5g was classed as juvenile/adult, while 275.1g originated from juvenile individuals.

Plate 1. ID1290 (top), left tibia of a female and ID1289 (bottom), right tibia of a male, with modern bone damage

1.4 Methods

The analysis of human skeletal remains from archaeological contexts can provide information on demography, health, diet, disease, trauma, and possible genetic variations and relations, as well as data on sociological and cultural trends. Standardised methods of assessing the osteological aspects of various skeletal populations allow for comparisons and contrasts to be made across both space and time. When the osteological information is broadened using a bioarchaeological approach, the results of osteoarchaeological analysis can yield detailed and invaluable information. The keys to this approach are firstly the use of standardised methods of analysis, and secondly the size and level of preservation of the skeletal population in question. The assessments of age-at-death, sex, stature, and dental remains are the primary methods that have been standardised. These methods have generally been formulated using data from known populations.

The ages-at-death of the adult individuals from Society Street were determined using a variety of methods. Primarily these involved assessment of morphological changes in the pelvis, specifically the auricular surface of the ilium (Lovejoy *et al.* 1985) and the pubic symphysis (Brook and Suchey 1990). Assessment of patterns of fusion of the secondary epiphyses was also used for younger adults (Schaefer *et al.* 2009, Scheuer and Black 2000). Archaeological adult skeletons cannot be aged very accurately and are assigned into broad age categories. These are 'young adult' (18-25 years), 'middle adult' (26-44 years), and 'old adult' (45+ years). The method used for each individual is provided in the catalogue in **Section 6.1**.

The estimation of biological sex was based particularly on evidence from the pelvic bones, but also on traits in the skull (Buikstra and Ubelaker 1994) and metrical analysis (Bass 1995). A lesser-used method, based on the distal humerus (see Vance *et al.* 2011), was applied in the case of SK08, whose remains were very poorly preserved. Overall, females tend to be slender and small, while males tend to be larger and more robust. The methods used in the determination of the sex of each adult are provided in the catalogue in **Section 6.1**.

The determination of age-at-death in juveniles is generally both easier and more specific than in adult individuals. The methods used relate to the development and growth of the bones and teeth, and these processes tend to follow a similar pattern in juveniles. The most reliable method is to assess the calcification and eruption of teeth (Moorrees *et al.* 1963a, 1963b, Smith 1991). The lengths of the long bones may also be used to determine the age-at-death (Maresh 1970, Scheuer and Black 2000, Scheuer *et al.* 1980). However, long bone growth is highly influenced by nutritional factors and dental remains are considered to be the more reliable indicators of age-at-death. In addition, assessment of the rates of growth and development of various parts of the skeleton may be used (similar to the fusion of the secondary epiphyses which may be used in the assessment of the age-at-death of young adults, as mentioned above) (Schaefer *et al.* 2009, Scheuer and Black 2000). Juveniles are grouped together under the broader age ranges of 'infant' (<1 year), 'juvenile1' (1-6 years), 'juvenile2' (7-12 years), and 'adolescent' (13-17 years). Infant individuals are frequently broken into more specific groups, such as pre-term infants, *etcetera*. It is not possible to accurately determine the sex of juvenile individuals as the sex-specific morphological bone manifestations do not develop clearly until the onset of puberty.

The statures of the adults were estimated following the standards recommended by the British Association for Biological Anthropology and Osteoarchaeology or BABAO (Brothwell and Zakrzewski 2004).

Any surviving permanent dentition were recorded using the following chart, using the FDI (*Fédération Dentaire International*) system:

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38

right *left*

The upper row represents the maxilla and the lower row represents the mandible. These are further sub-divided into left and right quadrants. Each permanent tooth (1-8) is prefixed by the number of the quadrant it belongs to (1-4).

Any deciduous dentition were recorded using the same method (see below), with the quandrants labelled from 5-8:

55	54	53	52	51	61	62	63	64	65
85	84	83	82	81	71	72	73	74	75

right *left*

Combinations of the two were utilised when required.

The following symbols can be used to record the teeth:

P - *tooth present*	B - *tooth broken post-mortem*
E - *tooth erupting*	PM - *tooth lost post-mortem*
U - *tooth unerupted*	AM - *tooth lost ante-mortem*
CA - *tooth congenitally absent*	R - *root only*
~~12~~ - *socket absent*	

All incidences of dental diseases such as calculus, caries, abscesses, enamel hypoplastic defects, as well as any other anomalies, were also recorded and are detailed in the relevant areas in **Section 2**.

A number of pathological conditions were observed on the bones, and again, these are detailed in the relevant areas in **Section 2**.

A catalogue of the *in situ* skeletons from Society Street is provided in **Section 6.1** (standardised for all articulated assemblages examined by the writer and with a summary at the start). It details the age-at-death, sex, and stature (including the methods of determination) of each individual, if determined. It also summarises the level of preservation, the *in situ* position, attitude, and orientation of the burial, whether there were any other skeletons directly associated and whether there were any finds. It details what bones and teeth have survived, and the pathological lesions and dental diseases that may have been observed. Any anomalies are noted and any additional comments are also included. Basic metrics are also provided for each individual (**Section 6.2**).

A catalogue of all of the bones recovered from Society Street is provided in **Section 6.3**. A Microsoft Access database package was used for the catalogue. Most individual bones were given a unique identification number (ID) to facilitate the osteological analysis (*nota bene,* none of the bones were physically marked during the analysis). This enables total bone counts to be more accurate and helps in matching bone fragments together. There were some exceptions in the cataloguing where, for example, multiple rib shaft fragments were all allocated a single ID number (for example, see ID1119). In total, 478 individual entries are listed, representing 8,675 individual bones, fragments of bones, or teeth.

Eighteen fields were used to compose the database. The 'ID number' is the first field of the database. The next fields list the 'BS No.' (bone sample number), the 'SK No.' (skeleton number, if associated with a specific burial), the 'Context', the 'Date', and 'Other Info.'. This is followed by a record of the skeletal element ('Skel Element') and an accompanying 'Code' (based on Chamberlain and Witkin 2000). The 'Side' of the element is recorded, if known. This is followed by 'Age1', which simply lists if the element is from a juvenile (JUV) or adult (AA) individual, 'Age2' which records the age-at-death in terms of the category of ages-at-death as outlined above (if known), while 'Age3' records the specific age-at-death, if known. The 'Sex' of the individual is noted, if determined. Any skeletal or dental pathological conditions ('Skel Path', 'Dental Path') are recorded and these are followed by fields for additional 'Notes' and the 'No. of Frags'. The 'Weight' of each sample is recorded in grammes. In the case of the latter, in some circumstances, multiple bones were sometimes weighed together. For example, all of the adult arm elements from BS#12, associated with SK06 (ID1043-1051), were weighed as a single unit totalling 20.7g. The latter is included for the first entry (ID1043) and subsequent weight entries (for ID1044-1051) were entered as '0'. It is noted here that a single skeletal element, ID1400 (c.849, BS#22), comprising two unidentified fragments of bone, were excluded from the weights as they were embedded in mortar. The total weight of the latter (including bone fragments, was 18.8g.

All of the raw osteological data on the human skeletal remains excavated from Society Street is housed with the writer. The skeletal remains will be returned to the client and the curation will be determined by the National Museum of Ireland.

2. Analysis

2.1 Demography

In total, the remains of ten *in situ* burials were excavated. The vast majority were adult individuals, with the exception being SK02 who was aged between 7-10 years at the time of death. Most of the adults (*n* 6) were aged between 25-45 years at the time of death, while two adults were young adults, aged between 17-25 years and just one individual was aged 45+ years. Four of the nine adults were female individuals, while the remaining five were males. The demographic distribution of the adult individuals is summarised in **Table 2**.

Table 2. Age-at-death and sex of adults, Society Street 20E0330

Age-at-death	Female	Male	*Total*
Young adult (18-24 years	-	2 (SK06, SK08)	*2*
Middle adult (25-44 years)	4 (SK03, SK04, SK09, SK10)	2 (SK05, SK07)	*2*
Old adult (45+ years)	-	-	*0*
Adult (age undetermined)	-	1 (SK01)	*1*
Total	***4***	***5***	***9***

All of the disarticulated material was assessed in order to determine the minimum number of individuals (MNI). There was evidence of at least four adults, based on surviving elements of the left humerus. There were also five upper right permanent central incisors; however, this tooth would not be a reliable indicator of the minimum number of MNI as siding is not entirely dependable in terms of disarticulated remains and it is possible that some of these teeth may have originated from juvenile individuals (fully developed permanent teeth are present in

older juveniles). Therefore, the MNI for adults in the disarticulated assemblage is four. Both female and male individuals were identified from a number of elements; however, any of those elements could have originated from the truncated *in situ* remains. It was only possible to determine the age-at-death of a small quantity of disarticulated adult remains. This includes the left clavicle of an individual probably aged between 25-30 years at the time of death (ID1314, BS#19, c.850), and a hip fragment of an adult aged between 30-34 years (ID1269, BS#18, c.850). In terms of the former, all potential *in situ* burials were examined with a view to determining if the left clavicle could have originated from them. The only possible burial it may have come from was SK04 (female 30-34 years), although other indicators from that skeleton suggest a slightly older age-at-death. The disarticulated hip fragment could have come from a number of burials (including SK01 male adult, SK05 male 30-45 years, SK07 male 25-30 years, and SK09 female 25-35 years). There were also a number of disarticulated remains from a young adult (17-24 years), all comprising cervical, thoracic, and lumbar vertebral fragments. These included four fragments (ID1024-6, recovered during osteoarchaeological analysis, and ID1455, BS#21, c.803) associated with SK08 (?male 17-20 years) and one fragment (ID1427, BS#27, c.801), associated with SK01 (male adult). It is possible that the former four fragments did indeed originate from SK08, while the latter vertebral fragment may have originated from either SK08 or the other young adult in the assemblage, SK06 (male 17-25 years). There is therefore no real demographic evidence to suggest that the MNI of four disarticulated adult individuals represent individuals additional to those already identified in the *in situ* burials. However, that should not be interpreted as meaning the four adults in the disarticulated assemblage *are not additional* to the adults already identified in the *in situ* burials.

The assessment of the disarticulated juvenile remains reveals a clearer story. At least two preterm infants were identified by the presence of two left tibiae (ID1005, associated with SK01, and ID1175, BS#7, c.803). The age-at-death of the former was estimated at approximately 32.5 foetal weeks while the age-at-death of the latter was estimated at *circa* 31.0 foetal weeks. Numerous remains of an older juvenile were identified and many of these bones and teeth probably originated from SK02 (7-10 years). For example, most or all of the teeth in the disarticulated assemblage identified as coming from an individual aged between 7-9 years (13 teeth from BS#'s 6, 23, and 32), likely originate from SK02 (7-10 years), as all but a single tooth (ID1338, BS#32, c.802/3) were found in immediate association with that individual. However, there are certainly indicators of the remains of at least one other individual of a similar age-at-death. For example, the remains of a right femur (ID1357, BS#25, c.803) was in the disarticulated assemblage and SK02's right femur was recovered *in situ*. Finally, there are also the remains of an adolescent individual in the disarticulated material, with bones that are quite mature in size but where the epiphyses (joint surfaces) are still unfused. Therefore, the MNI of juveniles in the assemblage is four individuals: two preterm infants, an older juvenile (7-12 years), and an adolescent (14-17 years). No infants or adolescents were in the *in situ* burials, and it has already been stated that the older juvenile is additional to the juvenile identified in the burials. Thus these four juveniles are additional to the burials. If all of the adult remains also represent individuals not already identified in the burials, then potentially the MNI of individuals from the entire excavated site is 18 – 10 burials (one juvenile and nine adult), and four adults and four juveniles in the disarticulated material.

2.2 Stature

It was possible to determine the statures of four of the female adults and five of the male adults. The females ranged in stature from 156.5cm (SK10, female 35-45 years) to 163.0cm (SK04, female 30-34 years), with the average being 158.9cm. Male adults ranged from 165.2cm (SK08, ?male 17-20 years) to 181.0cm (SK05, male 30-45 years), averaging at 170.0cm. The average living statures of these adults are compared with some contemporaries in **Table 3**.

Table 3. Comparative stature estimates from a selection of post-medieval Irish sites

Site	Reference	Female (cm)	*n*	Male (cm)	*n*
Society Street, Ballinasloe, Co. Galway	-	158.9	4	170.1	5
Tintern Abbey, Co Wexford	(Ó Donnabháin 2010)	159.8	16	171.1	38
Athboy, Co. Meath	(Shine and Travers 2011)	163.4	?	169.4	?
St Anne's, Cork City	(Lynch 2014)	157.5	53	170.6	68
Multiple middleclass	(Lynch 2014)	160.9	14	172.0	29
Multiple workhouses	(Lynch 2014)	157.5	16	167.0	19

The females in Society Street were in the lower end of the scale of the average contemporary stature ranges, while the male adults appear to have been quite comparable in stature to many contemporary populations.

2.3 Dental Remains

Dental remains were recovered with two adult females, four adult males, and the single juvenile individual. The observable numbers are too low for statistical significance to be determined from the dental analysis. The dental remains from the disarticulated assemblage will be referenced at the end of each section that follows.

In the adult individuals, all teeth were from the permanent dentition. In total, 117 teeth were present, including two which comprised roots only, recovered with SK05 (male 30-45 years). The seven adults with surviving dentitions represent a potential of 288 teeth (32x9), so that just 40.6% of the actual potential teeth survived. No individual exhibited evidence of having lost teeth ante-mortem, that is, during life, while five of the adults exhibited post-mortem (after death) loss of teeth (eight in total). SK01 (male adult) and SK06 (male 17-25 years) had each just lost a single tooth post-mortem while SK07 (male 25-30 years) had lost four teeth post-mortem. A single individual, SK07 (male 25-30 years), had four congenitally absent teeth, all of which were the third molars.

In the single juvenile, SK02 (7-10 years), the surviving dentition comprised erupted deciduous teeth (two erupted) and erupted (one tooth) and unerupted permanent teeth (6 teeth).

A total of 67 individual teeth were recovered in a disarticulated state. The majority of these (95.5%, 64/67), were from the permanent dentition; however, some of the latter related to juvenile individuals, a common finding given that some, of a certain age, will have a mixture of deciduous and permanent teeth or may just have permanent dentitions. Just three deciduous teeth were present, ID1153-1155, from c.803, associated with SK02 (7-10 years) (BS#6), and were from an individual aged between 7-9 years at the time of death (those disarticulated teeth, among others, likely originate from SK02, see **Section 2.1**). Alveolar bone, from both the maxilla and mandibles of a number of individuals, was also identified. In total, 50 of the teeth were ascribed to adult individuals, 16 originated from juvenile individuals, and one tooth (ID1337 (BS#32, c.802/3) could have been from an older juvenile or a young adult. The latter tooth was an upper lateral permanent incisor. Slight deposits of calculus were observed on it. For the purposes of the analysis that follows, it has been excluded from the tallies of adult and juvenile teeth.

2.3.1 Calculus

Calculus, or calcified plaque (**Plate 2**), is often the most frequently observed dental disease on archaeological teeth. The deposits can be generally removed through good dental hygiene using for example a small brush or stick, but the deposits may also be inadvertently removed through the consumption of grittier foods. Calculus deposits in a population may suggest both poor oral hygiene and the possible consumption of quite a soft and sucrose-based diet (Roberts and Manchester 1995, 55). The aetiology is multi-causal but its formation is aided by alkaline in the mouth, and is linked with both a high protein diet and the consumption of a soft, sucrose-based diet (Lieverse 1999, Roberts and Manchester 1995). The deposits are most common on the lingual (tongue) aspect of the lower anterior teeth (the teeth at the front of the mandible) as this is the most alkaline area of the mouth (Waldron 2009, 241). However, the deposits also commonly occur on the lingual aspects of the lower molars also.

Dental calculus was identified in all observable adult individuals. The prevalence of the disease is further highlighted by the fact that 95.7% (112/117) of all teeth (including the two comprising roots only with SK05, male 30-45 years) displayed evidence of the deposits. The severity varied between slight to moderate. Subgingival (that is, below the gumline) deposits were observed in SK01 (male adult) and SK09 (female 25-35 years), indicating some degree of periodontal or gum disease (the deposits can only occur below the gumline if the latter is abnormally low) (alveolar resorption was only clearly observed in SK09 (female 25-35 years). (see **Section 2.3.5**).

No calculus was identified in the surviving dentition of SK02 (7-10 years).

Plate 2. SK10 (female 35-45 years), lateral aspect of left mandible, white arrow indicating calculus, black arrow indicating carious lesion

Deposits of calculus were observed in 78.4% (40/51) of disarticulated adult teeth. The deposits were slight to moderate in severity, with moderate deposits recorded on 28% (14/50). The deposits were subgingival in 38% (19/50) of observable teeth. Calculus was recorded as forming within a carious lesion on the occlusal (chewing) surface of a lower third molar (ID1073, BS#9, c.803, associated with SK03/04). In the disarticulated juvenile teeth, calculus deposits were recorded on six of the 16 teeth. However, at least two of these were likely unerupted at the time of death, giving a prevalence of 42.9% (6/14) of observable teeth. All of the observed deposits were slight in severity.

2.3.2 Carious Lesions

Carious lesions, or cavities in the enamel of the teeth, were recorded in the dentitions of a number of individuals from Society Street. Bacteria contained in plaque can metabolise certain carbohydrates into an acidic waste that can dissolve the enamel of the teeth, resulting in cavities (Mays 1998, 148). Sugars are known to be highly cariogenic (Hillson 1986, 293; Woodward and Walker 1994). However, refined carbohydrates can also play a significant role in the development of the disease (Hillson 1986, 293). The frequency of dental caries has increased over time, particularly with the increased consumption of refined foods from the post-medieval period onwards.

Two of the seven adults with dentitions, from Society Street, had evidence of caries, a prevalence of 28.6% (2/7), or 9.4% (11/117) of observable teeth. In both individuals, severe destruction was noted. In SK05 (male 30-45 years), three teeth were essentially rotting, with the crowns of two teeth completely lost ante-mortem. Eleven

of the 32 teeth from SK10 (female 35-45 years) had evidence of carious lesions., with the crowns of three teeth almost completely destroyed. The severity of the caries in this individual lead to the development of a dental abscess in the right mandible (see **Section 2.3.4**). This individual was also potentially the eldest in the assemblage and so the severity of the caries is not unusual; the disease typically advances in severity with time. Pitting, possible suggestive of an inflammatory process, was observed in the alveolar bone of the right maxilla of SK05. This may be related to the severe decay and/or the excessive attrition (**Section 2.3.6**).

No carious lesions were observed in the juvenile individual, SK02 (7-10 years).

Carious lesions were present in 18% (9/50) of observable adult teeth in the disarticulated assemblage, while none of the juvenile teeth were affected. In the adult teeth, the lesions were generally small to medium in size. However, the entire crown of one tooth, an upper left first premolar (ID1098, BS#9, c.803, associated with SK03/04), still within a maxilla, was destroyed by caries, which had also led to the development of a large dental abscess (ID1094), and bone changes indicative of inflammation (**Plate 3**). Interestingly, a carious lesion of medium severity was identified in the occlusal (chewing) surface of a lower third molar (ID1073, BS#9, c.803, associated with SK03/04), within which calculus deposits had formed. No caries was present in the disarticulated juvenile teeth.

Plate 3. ID1094-1102 (BS#9, c.803, associated with SK03/04), left maxilla and teeth of an adult, with crown of first premolar lost to caries and development of large abscess. Note pitting, indicative of inflammation.

2.3.3 Abscesses

Dental abscesses occur as a result of the exposure of the pulp cavity of the tooth through attrition, caries, or trauma, and the subsequent infection of the cavity by bacteria. The pus resulting from the infection extrudes from the area of the tooth root out through the alveolar bone. The abscess can occur externally on maxilla or mandible, or it may drain inwards particularly into the maxillary sinuses, and can cause a variety of other physiological problems. Dental abscesses are particularly linked with the development of caries in modern populations, rather than attrition, due to the change in diet in recent centuries.

Just one of the adult individuals from Society Street exhibited evidence of a dental abscesses. An external abscess was recorded in the right mandible of SK10 (female 35-45 years), in association with the first molar. Most of the crown of the latter had been destroyed through caries and it is probable that the abscess was as a direct result of this.

No abscesses were identified in the juvenile, SK02 (7-10 years).

Two abscesses were recorded in adult dentitions in the disarticulated assemblage (none was identified in relation to juveniles). A mandible (ID1072, BS#9, c.803, associated with SK03/04), from a possible female adult, had a large external abscess associated with the right first molar (not present), while a left maxilla (ID1094, also

from BS#9), had a large external abscess, with bony changes indicative of inflammation, associated with the first premolar (**Plate 3**). The crown of that tooth (ID1098) had been completely destroyed by caries.

2.3.4 Periodontal Disease

Periodontitis occurs when the gums become inflamed (gingivitis) and may transfer to the underlying alveolar bone (periodontitis) (Roberts and Manchester 1995, 56). The bone may resorb significantly and can ultimately lead to tooth loss. Deposits of calculus in particular can aggravate the problem.

Alveolar resorption was identified in just a single adult individual, SK09 (female 25-35 years); in this individual also, some of the calculus deposits (see **Section 2.3.1**) were subgingival (below the gumline), confirming the resorption of the normal gum. However, it is likely that others were also affected; in SK01 (male adult), subgingival deposits of calculus were also identified, suggesting some degree of periodontal disease, which was not clear from the alveolar bone.

No periodontal disease was identified in the juvenile, SK02 (7-10 years).

No evidence of periodontal disease was identified in the disarticulated alveolar bone. However, a number of teeth exhibited subgingival (below the gumline) deposits of calculus (see **Section 2.3.1**), indicative of resorption of the gums.

2.3.5 Enamel Hypoplastic Defects

These defects can appear as a depressed line, or series of lines, or pits, on the surface of the enamel. They occur as a result of a disturbance to the growth of the organic matrix, which is later mineralised to form enamel. As the teeth develop in the juvenile years, the defects are an indication of childhood stresses. It is possible to estimate the timing of the stress based on the location on the tooth (Hillson 1986, Mays 1998, Waldron 2009). The defects can occur as a result of a number of diseases and/or nutritional deficiencies including diarrhoea, parasitic infestations of the gut, scurvy, rickets, allergic reactions, and general malnutrition , as well as being associated with birth trauma (Mays 1998, 158, Waldron 2009, 244).

Somewhat unexpectedly, no evidence of hypoplastic defects were found in the surviving dentitions of the *in situ* burials or the disarticulated remains.

2.3.6 Attrition and Dental Anomalies

The rate of attrition was recorded on all surviving adult teeth, with the least severe recorded as '1' and the most excessive, with no enamel remaining, recorded as '8' (based on Smith 1984, referenced in Buikstra and Ubelaker 1994, Fig. 25, 52). This is perhaps most pertinent to molars as wear on the anterior teeth can be related in particular to the actual bite a person may naturally have, such as overbite or underbite. The assessment of rates

of attrition is a general indicator as it is impacted by individual traits, access to, and/or preference for, certain foodstuffs, as well as survival of the tooth to analysis stage, amongst other aspects. In this assemblage, the maximum level of attrition in the molars by individual was between level 2 and level 4, with one exception, SK05 (male 30-45 years), who had excessive wear on the molars identified to a maximum of level 7. It is likely that the excessive attrition in the latter individual was linked with an unusual trait in his dentition; the individual had an overbite, that is, the upper teeth overlapped the lower teeth to the anterior (front). This, in itself, is not unusual. However, the overbite itself was 'tight', meaning that the lingual (tongue-side) aspects of the maxillary teeth overlapped tightly with the labial (lip-side) aspect of the mandibular teeth, leading to unusual wear patterns. In fact, the surviving central incisors had almost all of the enamel wore away on the aspects referenced above (**Plate 4**). This individual has already been noted above (**Section 2.3.2**) in terms of severe carious lesions, leading to the total loss of dental crowns. Pitting, suggestive of an inflammatory process, was observed in the alveolar bone of the right maxilla. This may be related both to the excessive attrition and/or the severe decay.

Plate 4. SK05 (male 30-45 years), anterior and right mandible, with excessive wear associated with a tight overbite. Grey pitting on the bone is indicative of inflammation.

Apart from the typical attrition above, typically sustained through normal mastication or chewing throughout life, a number of other anomalies were observed in the dentitions. These anomalies, in this assemblage, relate to possible social/cultural influences, specifically in this instance to both unusual wear patterns (other than described immediately above) and chipped teeth.

SK01 (male adult) had chipping a the distal/lingual aspect of the lower right first molar. This may have been related to using the teeth as a grip. The dentition of this individual was quite incomplete, with only 15 teeth present. However, concave wear was noted on the incisal edges of the distal half of the upper left canine, the distal half of the lower left lateral incisor, and on the mesial half of the lower right canine. The wear was quite subtle. The opposing and adjacent teeth of the lower right canine were not present for observation. It is likely that the wear observed on the two teeth on the left side relate to the same causative factor. These lesions are highly suggestive of a habitual claypipe smoker, who used both sides of the mouth to hold the pipe. Concave wear was also recoded on a disarticulated lower right lateral incisor (ID1404, BS27, c.801, associated with SK01); it is most likely that this tooth originates from SK01.

Chipping of the enamel was identified in two disarticulated teeth, both from adults. An upper right central incisor (ID1006, BS#-, associated with SK01) was chipped on the incisal edge, while a possible left upper central incisor (ID1133, BS#17, c.850) was similarly chipped. The chipping likely accidentally occurred when the teeth were

being used to grip something. A vertical splitting was observed in the enamel of another right upper incisor (ID1351, BS#32, c.803), which indicates abnormal force on the edge of the tooth. Another right upper central incisor (ID1352, BS25, c.803) had a notch in the incisal edge. This is suggestive of wear through a repeated activity, involved a thread-like substance, possibly related to occupational use.

Finally, the surviving tooth sockets in the anterior of a right maxilla (ID1261, BS#18, c.850) of an adult individual indicated that the incisors of this individual were abnormally crowded.

2.4 Skeletal Pathological Lesions

A limited number of skeletal pathological lesions were identified in the Society Street assemblage; this is likely related particularly to the low number of individuals, as well as the truncation of many. All but one individual exhibited some form of pathological change; the exception was SK08 (possible male 17-20 years). The skeletal remains of that individual were very poorly preserved. The various pathological markers are examined below in relevant divisions, firstly, by the evidence from *in situ* burials and secondly, by any such evidence in the disarticulated material.

2.4.1 Joint Disease

Typically, the most commonly observed pathological lesion in archaeological skeletal remains is degenerative joint disease (DJD). The onset of DJD tends to be age related, as it appears to primarily occur as a result of repeated 'wear and tear' on the joints through degeneration of the articular cartilage (Ortner and Putschar 1981, 419-20); essentially a natural part of the aging process. The disease can be accelerated by occupational activities and/or by obesity, and may also be brought on by trauma. The skeletal evidence is DJD manifests in the form of porosity or pitting of the joint surface and/or additional bone growths or osteophytes. In more advanced cases, when all cartilage is gone, eburnation or polishing of the joint surface can occur as the bones of the joint rub off each other. The presence of eburnation is pathognomonic of osteoarthritis (Rogers and Waldron 1995). Five of the nine adults (55.6%) from Society Street exhibited some form of degeneration in one or more joints. In almost all cases, the lesions were mild in severity, although classic osteoarthritis was observed in a single individual (see below). Given the low number of individuals impacted by the disease, it is not possible to assess the statistical significance of any of the findings.

The spine was impacted in all five individuals; this is a common finding, even today, given the stresses which life can put on the spine. The manifestations varied, but all were mild in severity. Two of adults (SK05, male 30-45 years and SK07, male 25-30 years), also have a specific type of degeneration, known as Schmorl's nodes, in a number of thoracic vertebrae. A Schmorl's node is a small, depressed lesions on the superior and/or inferior of a vertebral body, most typically occuring in the thoracic and lumbar vertebrae. The defects occur in youth as a result of the rupturing of the pulpous gelatinous core of the intervertebral disk (the nucleus pulpous); the

pressure of the rupture can the core to burst into the adjacent vertebral body (Mann and Murphy 1990, 52, Ortner and Putschar 1981, 323). The immature nature of juvenile bone ensures the resulting distinct depression in the normal surface of the bone. This pressure can be caused either by a fall or by straining the spine by, for example, lifting heavy objects incorrectly. The significance of the presence of these lesions in males-only in this population cannot be determined. It was also noted that a number of the thoracic bodies (T5-T10) of SK05 (male 30-45 years), were orientated to right lateral. This does not appear to relate to any pathological process as such.

Two of these adults also exhibited DJD elsewhere in the skeleton. In SK03 (female 25-35 years), there was mild degeneration in the right shoulder, while SK01 (male adult) also had mild degeneration in the left knee and ankle. In addition, eburnation was recorded in the right ankle of the latter individual, indicating one of the most severe expressions of the disease.

In the disarticulated material, there was also evidence of joint disease, exclusively in spinal elements and all instances were mild in severity. Degeneration was observed in a right rib (ID1346) and in two thoracic apophyseal joints (ID1040 and 1310). Schmorl's nodes were identified in a thoracic vertebra (ID1034), as well as in a lumbar vertebra (ID1024).

2.4.2 Metabolic

Evidence of metabolic disease was identified in just one of the *in situ* burials, SK02 (7-10 years). Porotic lesions, in the process of heading, where identified on the ectocranial surface of at least the right parietal of the cranium. These lesions are indicative of a condition known as porotic hyperostosis. When they occur in the eye sockets, the lesions are termed cribra orbitalia. The manner of formation is the same. The lesions develop when the diploë, the middle layer of spongy bone, expands and there is a corresponding thinning of the outer surface of the bone. This can result in the diagnostic appearance of small holes or foramina on the outer surface of the bone (it should be noted that a recent study concluded that simple porosity of the orbital roof, with no change from the normal concave curvature, may be a normal developmental variation (Cole and Waldron 2019). However, further research needs to be conducted into that finding). The condition relates to variations in the production of iron in the bone marrow, particularly in the cranium (Mays 1998, 142). Traditionally it had been assumed these lesions were indicative of classic iron deficiency anaemia. However, some studies have indicated that when the body it under stress from an invading organism, the system increases its output of iron in order to counteract the stress. Thus, the lesions may be a sign of a healthy defence system (Mays 1998, 142, Stuart-Macadam 1991, 105, Roberts and Manchester 1995, 166-7). Recording a variation of this premise, a recent study on iron deficiency in Kenyan children found that iron deficiency was a nutritional adaptation against endemic infectious disease: essentially the attacking pathogen is less successful as a result of the lack of iron (Wander *et al.* 2009). The lesions have also been specifically linked with a diet deficient of vitamin B_{12}, which may be derived from foods of animal origin (Walker *et al.* 2009). At the very least, the lesions appear to be indicative of physiological stress. It may be significant that just one individual was impacted, and that individual was a juvenile.

In the disarticulated material, the orbit of the left frontal of an adult individual (ID1107, BS#9, c.803, associated with SK03/04) had mild cribra orbitalia. Ectocranial porosity was also recorded in a number of adult cranial fragments (ID1231 (BS#18) and 1294 (BS#19), both from c.850), suggestive of porotic hyperostosis. However, there was no expansion of the diploë.

2.4.3 Trauma

A number of instances of trauma, in a variety of guises, were identified in the skeletal material from Society St. Just one individual had evidence of a classic fracture, albeit in a very minor form. SK04 (female 30-40 years) had a small healed chip in the distal end of the left radius, that is, the left wrist. The only other evidence of fracture was in SK09 (female 25-35 years), who suffered a distinct variant of a stress fracture. The tip of the acromion process of the left scapula is unfused. This is known as os acromiale, a stress fracture involving the non-union of the acromion process of the scapular blade. It can occur as a result of either an actual fracture or through non-union of the epiphysis (Roberts and Manchester 1995, 76). The defect is believed to occur in as much as 15% of the modern population (Resnick 1995, 4281, after Murphy and McNeill 1993, 128). Although the presence of the defect may be genetically linked (Yammine 2014), it may also be related to culturally induced factors (Roberts and Manchester 1995, 113). The latter particularly relates to a study of the condition on the skeletal remains recovered from the sixteenth century ship the *Mary Rose*. The high prevalence of os acromiale in that population was attributed to the possible long term use of longbows, where the defect may have allowed additional movement and use of the shoulder joint (Stirland 1986, Stirland 2000). In reality, the condition may be linked both to a pre-disposed genetic weakness and cultural factors (Hunt and Bullen 2007, Yammine 2014). The right scapula of this individual was unobservable.

There were also a number of examples of soft tissue trauma, identified as a result of subsequent bone changes. In SK03 (female 25-35 years) a bone growth known as an exostosis is present on the lateral end of the right clavicle, that is, near the shoulder. It is at the location of the insertion of the trapezius. This back muscle involves the elevation, retraction, depression, and rotation of the scapula, and is important in the elevation of the arm (Stone and Stone 1997, 105). It appears that this individual suffered some strain to this particular muscle which resulted in addition bony growth at the point of insertion. In SK06 (male 17-25 years), similar exostoses were present on the medial aspect of the midshaft of the left femur (inner part of the thigh) and at the proximal end of the left fibula (on the outside, below the knee joint) (**Plate 5**). These likely relate again to soft tissue trauma, probably relating to stains and subsequent bleeding, with ossification of the bleed.

Plate 5. SK06 (male 17-25 years), osseous evidence of soft tissue trauma in left fibula (left) and left femur (right)

2.4.4 Non-Specific Infection

Infectious disease has been the primary killer of humans for a considerable period. Unfortunately, the skeletal manifestations only occur in some circumstances and are rarely identifiable as to a specific infectious disease. Acute infections rarely leave any trace on skeletal remains. Chronic, long-term infections, where an individual may be strong enough to survive for a long enough period for the disease to manifest on the bone, are often identified in archaeological populations. In most instances the bone lesions are non-specific, although specific infections may occasionally be identified, such as leprosy and tuberculosis. The bone lesion most attributed to infection, because of its association with the process of inflammation, is fibre bone or periostitis. Periostitis occurs when the fibrous layer, the periosteum, directly overlying the bone becomes inflamed. The process of inflammation, with the accumulation of pus and infected matter, forces the periosteum to rise and a new layer of bone may form underneath. When the lesions are active the layer of bone may be grey in colour and may be porous, striated, or disorganised. With time the new layer of bone can heal and be remodelled into lamellar bone, the normal surface of the bone. Periostitis is confined to the surface of the bone. However, it may penetrate into the bone marrow resulting in a considerably more serious condition known as osteomyelitis (there are other causative factors for the latter that are not described here). The occurrence of periosteal lesions at multiple sites on the skeleton are often taken to be indicative of a systemic infection, while isolated lesions may occur as a result of a number of factors (Larsen 1997, 83). Tibiae are frequently the most common location for evidence of infection to appear (Larsen 1997, 85, Roberts and Manchester 1995, 129-130). In fact, this location is so common that it has been

applied as an index in a global study of health (Steckel *et al.* 2002). The high prevalence of the location is believed to be linked to the extensive vascularity and physiological inactive surfaces of the lower leg, the slower blood circulation, and the lack of soft tissue (Cotran *et al.* 1994, Larsen 1997, 85, Roberts 2000, 148, Roberts and Manchester 1995). While periosteal lesions on the visceral surfaces on the ribs may linked with tuberculosis (Roberts *et al.* 1994), in reality they may be associated with any pulmonary infection (Mays *et al.* 2002).

Two individuals buried from this assemblage presented with lesions suggestive of some form of infectious disease. In SK04 (female 30-34 years), both of the tibiae had evidence of healed or healing periostitis, with active lesions also present on the left tibia. This is suggestive of a chronic infection. SK05 (male 30-45 years) had pitting around the alveolar bone of the right maxilla. This is likely related to a severe carious lesion in the upper right second molar (as described in **Section 2.3.2**), as well as potentially to severe abnormal attrition (see **Section 2.3.6**).

Healed periosteal lesions were also identified on two adult, male and possible male, right tibiae in the disarticulated assemblage (ID1289, BS18, c.850 and ID1389, BS#22, c.849, **Plate 6**), while pitting was also identified on an adult left maxilla, in association with a large external abscess at the first premolar (ID1094, BS#9, c.803, associated with SK03/04) (see **Section 2.3.3**).

Plate 6. ID1389, BS#22, c.849 (top), ID1289, BS18, c.850 (bottom), adult right tibiae with periosteal lesions

2.4.5 Developmental Anomalies

A small number of developmental anomalies were identified in this group, in two adult individuals. SK06 (male 17-25 years) exhibited two different anomalies. Possibly the fifth right intermediate and distal foot phalanges are fused (**Plate 7**). Ankylosis or fusion of a joint can occur as a result of a variety, or combination, of conditions including developmental abnormalities, trauma, joint disease, and infectious disease, among others. One of the most common points of joint fusion is between the intermediate and distal foot phalanges (as recorded in SK06), known as symphalangism. A study found the condition present in 72.5% of fifth toes and 11.9% of fourth toes, with no prevalence to side or sex (Nakashima *et al.* 1995, referenced in Mann and Hunt 2005, 181). Another case of symphalangism was identified in the disarticulated assemblage (ID1192, BS#5, c.803) A potentially more serious condition was evident in the right hip of this individual. The left was unobservable. The head and neck of the femur appear abnormally low (**Plate 8**); there are no discernible alterations to the right acetabulum (the receiving concave joint in the hip), indicating there was no change in the actual articulation of the joint and no indication of secondary joint disease. The proximal epiphysis is at 115^{o} to the diaphysis, whereas 120-130^{o} is considered normal (Shapiro 2019, 323). However, the measured angle in SK06, does not strictly fall into the category of coxa vara, which is an angle of 110^{o} or less (ibid.), although it certainly has the appearance of abnormality. There is no evidence of any form of trauma being a causative factor, although it is noted that this individual did have evidence of soft tissue trauma in the left femur and left fibula (see **Section 2.4.3**) There are three developmental disorders in the hips, that occur in childhood, that can persist into adulthood: congenital hip dysplasia, Legg-Calvé-Perthes disease, and slipped capital femoral epiphysis (Waldron 2009, 210-213). In congenital hip dysplasia, in the infant, the head of the femur is undeveloped and the acetabulum is shallow. Left

untreated, this can, in the adult, result in the acetabulum being hypoplastic or obliterated completely and a new, displaced, acetabulum will form (Waldron 2009, 211, Wasterlain and Umbelino 2013, 35). There is no evidence of that in the case of SK06. Legg-Calvé-Perthes disease, which is associated with aseptic necrosis of the head of the femur, occurs primarily in boys between 4-9 years. It is bilateral in just 10-20% of cases. The condition passes through a number of distinct stages: firstly, avascular necrosis, secondly, fragmentation of the head of the femur, thirdly, revascularisation and regeneration, and fourthly, healing (Waldron 2009, 213). Crucially, these late stages may result in the head displaying a mushroom-shape which is flattened with a short neck, and a shallow acetabulum (ibid., Aufderheide and Rodríguez-Martín 1998, 246). Again, there are no indications of such morphological changes in SK06. Slipped femoral capital epiphysis relates to a stress fracture between the growth plate and the neck of the femur, causing displacement of the femoral head to the medial posterior and inferior (Wasterlain and Umbelino 2013, 32-33). It rarely manifest before the age of 8 years and it is considered by some as an adolescent condition (Aufderheide and Rodríguez-Martín 1998, 90, Wasterlain and Umbelino 2013). It is particularly prevalent in overweight males. It has no preference to side and is bilateral in approximately 25% of cases. It is most commonly recognised in the skeleton by the malalignment of the femoral head on the neck (Waldron 2009, 212-3). It has been noted that one of the main variants between a slipped femoral capital epiphysis and Legg-Calvé-Perthes disease is that in the former, 'the femoral neck is almost non-existent on the superior aspect and greatly shortened inferiorly' (Wasterlain and Umbelino 2013, 33), which is similar to SK06. Although the degree of displacement in SK06 may not be so extreme as to be defined as coxa vara, it does appear abnormal and may represent a mild case of slipped femoral capital epiphysis.

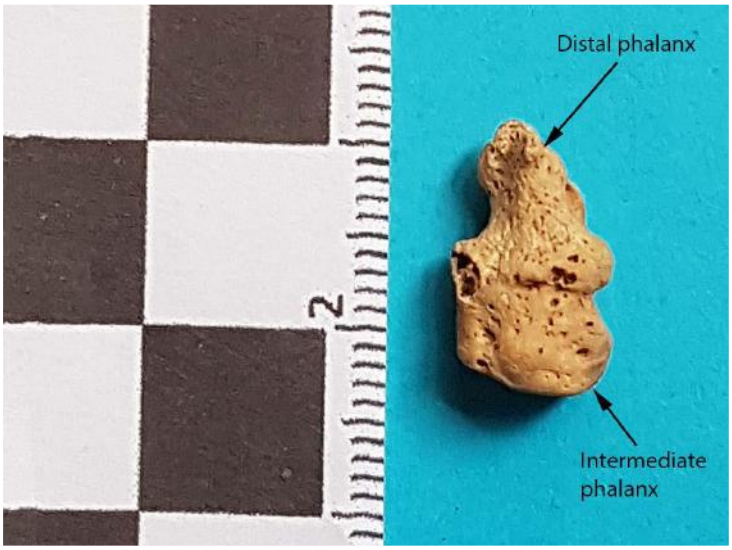


Plate 7. SK06 (male 17-25 years), symphalangism of ?fifth right intermediate and distal foot phalanges

Plate 8. SK06 (male 17-25 years), proximal end of right femur, possible slipped femoral capital epiphysis

SK07 (male 25-30 years) had a distinct developmental abnormality in the sacrum at the base of the spine. The posterior arches of S1 and S2 failed to fuse (**Plate 9**). This, spina bifida occulta, is a relatively common finding in archaeological populations and is a very mild form of the potentially fatal neural tube defect of spina bifida. The

bones of the vertebrae, in their normal state, act as a protective channel for the spinal cord. However, in some cases the laminae of the neural arches of the vertebra can fail to fuse completely, and the spinal cord may be exposed. In the case of spina bifida the cord may be exposed on the surface of the back and cause significant problems, and indeed may be fatal. In the case of spina bifida occulta the cord is still maintained within the normal space; the vertebrae have simply failed to fuse completely. The condition is clinically insignificant (Waldron 2009, 219). Spina bifida occulta typically occurs in the lumbosacral region and can be asymptomatic (Scheuer and Black 2000, 189). A small tuft of hair, a dimple, or pigmented skin may mark the site of the defect in the living individual (ibid.).

Plate 9. SK07 (male 25-30 years), spina bifida occulta S1 and S2

2.5 Demography

In total, the remains of ten *in situ* burials were excavated. The vast majority were adult individuals, with the exception being SK02 who was aged between 7-10 years at the time of death. Most of the adults (*n* 6) were aged between 25-45 years at the time of death, while two adults were young adults, aged between 17-25 years and just one individual was aged 45+ years. Four of the nine adults were female individuals, while the remaining five were males. The demographic distribution of the adult individuals is summarised in **Table 2**.

Table 4. Age-at-death and sex of adults, Society Street 20E0330

Age-at-death	Female	Male	*Total*
Young adult (18-24 years	-	2 (SK06, SK08)	*2*
Middle adult (25-44 years)	4 (SK03, SK04, SK09, SK10)	2 (SK05, SK07)	*2*
Old adult (45+ years)	-	-	*0*
Adult (age undetermined)	-	1 (SK01)	*1*
Total	***4***	***5***	***9***

All of the disarticulated material was assessed in order to determine the minimum number of individuals (MNI). There was evidence of at least four adults, based on surviving elements of the left humerus. There were also five upper right permanent central incisors; however, this tooth would not be a reliable indicator of the minimum number of MNI as siding is not entirely dependable in terms of disarticulated remains and it is possible that some of these teeth may have originated from juvenile individuals (fully developed permanent teeth are present in older juveniles). Therefore, the MNI for adults in the disarticulated assemblage is four. Both female and male individuals were identified from a number of elements; however, any of those elements could have originated from the truncated *in situ* remains. It was only possible to determine the age-at-death of a small quantity of disarticulated adult remains. This includes the left clavicle of an individual probably aged between 25-30 years at the time of death (ID1314, BS#19, c.850), and a hip fragment of an adult aged between 30-34 years (ID1269, BS#18, c.850). In terms of the former, all potential *in situ* burials were examined with a view to determining if the left clavicle could have originated from them. The only possible burial it may have come from was SK04 (female

30-34 years), although other indicators from that skeleton suggest a slightly older age-at-death. The disarticulated hip fragment could have come from a number of burials (including SK01 male adult, SK05 male 30-45 years, SK07 male 25-30 years, and SK09 female 25-35 years). There were also a number of disarticulated remains from a young adult (17-24 years), all comprising cervical, thoracic, and lumbar vertebral fragments. These included four fragments (ID1024-6, recovered during osteoarchaeological analysis, and ID1455, BS#21, c.803) associated with SK08 (?male 17-20 years) and one fragment (ID1427, BS#27, c.801), associated with SK01 (male adult). It is possible that the former four fragments did indeed originate from SK08, while the latter vertebral fragment may have originated from either SK08 or the other young adult in the assemblage, SK06 (male 17-25 years). There is therefore no real demographic evidence to suggest that the MNI of four disarticulated adult individuals represent individuals additional to those already identified in the *in situ* burials. However, that should not be interpreted as meaning the four adults in the disarticulated assemblage *are not additional* to the adults already identified in the *in situ* burials.

The assessment of the disarticulated juvenile remains reveals a clearer story. At least two preterm infants were identified by the presence of two left tibiae (ID1005, associated with SK01, and ID1175, BS#7, c.803). The age-at-death of the former was estimated at approximately 32.5 foetal weeks while the age-at-death of the latter was estimated at *circa* 31.0 foetal weeks. Numerous remains of an older juvenile were identified and many of these bones and teeth probably originated from SK02 (7-10 years). For example, most or all of the teeth in the disarticulated assemblage identified as coming from an individual aged between 7-9 years (13 teeth from BS#'s 6, 23, and 32), likely originate from SK02 (7-10 years), as all but a single tooth (ID1338, BS#32, c.802/3) were found in immediate association with that individual. However, there are certainly indicators of the remains of at least one other individual of a similar age-at-death. For example, the remains of a right femur (ID1357, BS#25, c.803) was in the disarticulated assemblage and SK02's right femur was recovered *in situ*. Finally, there are also the remains of an adolescent individual in the disarticulated material, with bones that are quite mature in size but where the epiphyses (joint surfaces) are still unfused. Therefore, the MNI of juveniles in the assemblage is four individuals: two preterm infants, an older juvenile (7-12 years), and an adolescent (14-17 years). No infants or adolescents were in the *in situ* burials, and it has already been stated that the older juvenile is additional to the juvenile identified in the burials. Thus these four juveniles are additional to the burials. If all of the adult remains also represent individuals not already identified in the burials, then potentially the MNI of individuals from the entire excavated site is 18 – 10 burials (one juvenile and nine adult), and four adults and four juveniles in the disarticulated material.

2.6 Stature

It was possible to determine the statures of four of the female adults and five of the male adults. The females ranged in stature from 156.5cm (SK10, female 35-45 years) to 163.0cm (SK04, female 30-34 years), with the average being 158.9cm. Male adults ranged from 165.2cm (SK08, ?male 17-20 years) to 181.0cm (SK05, male 30-45 years), averaging at 170.0cm. The average living statures of these adults are compared with some contemporaries in **Table 3**.

Table 5. Comparative stature estimates from a selection of post-medieval Irish sites

Site	Reference	Female (cm)	*n*	Male (cm)	*n*
Society Street, Ballinasloe, Co. Galway	-	158.9	4	170.1	5
Tintern Abbey, Co Wexford	(Ó Donnabháin 2010)	159.8	16	171.1	38
Athboy, Co. Meath	(Shine and Travers 2011)	163.4	?	169.4	?
St Anne's, Cork City	(Lynch 2014)	157.5	53	170.6	68
Multiple middleclass	(Lynch 2014)	160.9	14	172.0	29
Multiple workhouses	(Lynch 2014)	157.5	16	167.0	19

The females in Society Street were in the lower end of the scale of the average contemporary stature ranges, while the male adults appear to have been quite comparable in stature to many contemporary populations.

2.7 Dental Remains

Dental remains were recovered with two adult females, four adult males, and the single juvenile individual. The observable numbers are too low for statistical significance to be determined from the dental analysis. The dental remains from the disarticulated assemblage will be referenced at the end of each section that follows.

In the adult individuals, all teeth were from the permanent dentition. In total, 117 teeth were present, including two which comprised roots only, recovered with SK05 (male 30-45 years). The seven adults with surviving dentitions represent a potential of 288 teeth (32x9), so that just 40.6% of the actual potential teeth survived. No individual exhibited evidence of having lost teeth ante-mortem, that is, during life, while five of the adults exhibited post-mortem (after death) loss of teeth (eight in total). SK01 (male adult) and SK06 (male 17-25 years) had each just lost a single tooth post-mortem while SK07 (male 25-30 years) had lost four teeth post-mortem. A single individual, SK07 (male 25-30 years), had four congenitally absent teeth, all of which were the third molars.

In the single juvenile, SK02 (7-10 years), the surviving dentition comprised erupted deciduous teeth (two erupted) and erupted (one tooth) and unerupted permanent teeth (6 teeth).

A total of 67 individual teeth were recovered in a disarticulated state. The majority of these (95.5%, 64/67), were from the permanent dentition; however, some of the latter related to juvenile individuals, a common finding given that some, of a certain age, will have a mixture of deciduous and permanent teeth or may just have permanent dentitions. Just three deciduous teeth were present, ID1153-1155, from c.803, associated with SK02 (7-10 years) (BS#6), and were from an individual aged between 7-9 years at the time of death (those disarticulated teeth, among others, likely originate from SK02, see **Section 2.1**). Alveolar bone, from both the maxilla and mandibles of a number of individuals, was also identified. In total, 50 of the teeth were ascribed to adult individuals, 16 originated from juvenile individuals, and one tooth (ID1337 (BS#32, c.802/3) could have been from an older juvenile or a young adult. The latter tooth was an upper lateral permanent incisor. Slight deposits of calculus were observed on it. For the purposes of the analysis that follows, it has been excluded from the tallies of adult and juvenile teeth.

Plate 10. SK10 (female 35-45 years), lateral aspect of left mandible, white arrow indicating calculus, black arrow indicating carious lesion

Deposits of calculus were observed in 78.4% (40/51) of disarticulated adult teeth. The deposits were slight to moderate in severity, with moderate deposits recorded on 28% (14/50). The deposits were subgingival in 38% (19/50) of observable teeth. Calculus was recorded as forming within a carious lesion on the occlusal (chewing) surface of a lower third molar (ID1073, BS#9, c.803, associated with SK03/04). In the disarticulated juvenile teeth, calculus deposits were recorded on six of the 16 teeth. However, at least two of these were likely unerupted at the time of death, giving a prevalence of 42.9% (6/14) of observable teeth. All of the observed deposits were slight in severity.

3. Synthesis

3.1 Summary of Analysis

Ten *in situ* burials were excavated at Society Street, Ballinasloe, in addition to a quantity of disarticulated human remains. The burials comprised nine adult and one juvenile. There were four female adults, all aged between 25-44 years at the time of death. The five males comprised two young adults (17-24 years), two middle adults (25-44 years), and one whose age-at-death could not be determined. The juvenile was aged between 7-10 years. Eight individuals were identified in the disarticulated material. Four were adults and there were also four juveniles: two preterm infants, an older juvenile, and an adolescent. The potential minimum number of individuals (MNI) for the excavated area is 18 individuals.

The average female stature was 158.9cm (four females), while the average male stature was 170.0cm (five males). The latter were comparable to their contemporaries while the females were at the lower range of average statures for females in post-medieval Ireland.

Dental remains were recovered from two female adults, four male adults, and from the juvenile. Numerous teeth were also recovered in a disarticulated state. Calculus (calcified plaque) was identified in all adults, as well as being commonly identified in the disarticulated assemblage (adult and juveniles). Carious lesions were present in 28.7% of adult individuals and 9.4% of adult teeth; no caries lesions were evident in the juvenile. The lesions were common in the disarticulated adult teeth. Evidence of a dental abscess, associated with severe caries, was found in one female adult, while two abscesses were identified in the disarticulated material, along with evidence of inflammation. There was limited evidence of periodontal disease. No evidence of hypoplastic defects were identified, in either the *in situ* burials or the disarticulated material. Dental attrition was not excessive, with the exception of one adult, who exhibited a rather unusual bite pattern. Chipping of teeth was observed in one individual and in the disarticulated remains, which relate to accidental damage. The aforementioned individual was also a clay pipe smoker. The possible use of the teeth as an occupational tool was identified in a single disarticulated tooth which had a notch worn in the incisal edge. Finally, dental crowding was observed in the dentition of a disarticulated maxilla.

A limited number of skeletal pathological lesions were present in this population. Degenerative joint disease (DJD) was relatively common in the adults, with 55.6% impacted and the spine being the most common location. The manifestations were largely mild in severity. Schmorl's nodes were identified in the spines of two males. The shoulders were also involved in two adults. Severe DJD, manifesting with eburnation, was recorded in the right ankle of a male adult. Similar manifestations (excepting the eburnation) was found in the disarticulated material.

Evidence of metabolic disease, in the form of porotic hyperostosis, was identified in the juvenile burial, while cribra orbitalia was also found in a disarticulated adult frontal bone. Ectocranial porosity was noted on a number of disarticulated adult cranial fragments, but there was no expansion of the bone.

In terms of evidence of trauma, one female adult had suffered a chip to a bone of the left wrist. Another female had a type of stress fracture (os acromiale) of the left scapula (right unobservable). there were a number of instances of soft tissue trauma resulting in ossifications. These were identified in the right clavicle of a female, indicating strain to the shoulder muscle, and on two bones of the left leg of a young male adult.

Evidence of non-specific infection was found on the tibiae of a female adult and were healed or healing at the time of death. Another adult exhibited evidence of inflammation and possible infection in the maxilla, relating to possibly caries and/or severe attrition. Periosteal lesions were also identified in disarticulated adult tibiae, and in an adult maxilla, associated with a significant abscess.

Evidence of symphalangism of the foot phalanges was identified in a young adult male and in the disarticulated material. The aforementioned male also appeared to have a mild case of the developmental defect known as slipped femoral capital epiphysis (identified in the right hip, left unobservable). A slightly older male exhibited spina bifida occulta in the sacrum, which is largely asymptomatic.

Finally, Harris or growth arrest lines were identified in the long bones of a male and a female adult through post-mortem breaks. These are general indicators of physiological stress in the growing phase.

3.2 Discussion

The discovery of the remains of a cemetery at Society Street was somewhat unexpected, though not entirely surprising. Skeletal remains were previously uncovered in this area by ESB workers in the late 1960s. The remains were examined by the late Prof. Etienne Rynne, on behalf of the National Museum of Ireland, but no skeletal remains were removed. The exact location of the find was not recorded, although recent local information indicated the human remains were uncovered during groundworks associated with the erection of a street-light, which is still present. That street light was located *circa* 2.5m to the west of SK01 (Wallace and Maguire 2020). Following the exposure/identification of the numerous modern services through this area during the recent renovations, it was clear that much of the archaeological horizons had been severely truncated and/or destroyed, leaving perhaps more answers than questions to the investigating archaeologists.

Just 10 *in situ* burials survived in Society Street. However, an assessment of the disarticulated material recovered indicated that there were the remains of potentially eight other individuals (four adults and four juveniles) in that assemblage. Certainly, the evidence from the disarticulated juvenile material indicates that the four

identified individuals were additional to the single *in situ* juvenile burial. In terms of the adults, it is possible that some of the disarticulated remains originated from some of the truncated nine *in situ* adult burials, but it is equally possible that, like the juveniles, these are all additional individuals. Thus, the minimum number of individuals, overall, represented in the human remains from Society Street is 18, 13 adults and five juveniles. The degree of truncation of many of the burials is evident (see **Section 1.3** and **Section 6.1**).

The total weight of the disarticulated assemblage was 5203.7g, with adult, or possible adult, remains accounting for the majority at 91.8% (4777.1g) (as noted in **Section 1.4**, two unidentified fragments of human bone, were excluded from the weights as they were embedded in mortar; the total weight of the latter and bone fragments was 18.8g). The skeleton of a modern young adult male weighs, on average, 4000g, while that of a young female adult averages 2800g (Malina 2005, 291). These average out at 3400g. On the basis that the disarticulated adult remains from Society Street represent at least four adults, but accepting that at least some of the disarticulated adult remains may originate from the *in situ* burials, it is clear that significant quantities of remains are effectively missing from the record. It is likely that this is due to the unfortunate modern location of the burial ground, in an area that has been extensively disturbed for many years, primarily for utility services.

In terms of interpreting the burials themselves, the prospects are somewhat limited, given the low number of individuals and the likely biases within an assemblage such as this. For example, the *in situ* burials comprise nine adults and one juvenile. This may suggest that juveniles were perhaps deliberately not interred at this location. However, the disarticulated material reveals a completely different story: the presence of four juveniles, additional to the one in the *in situ* assemblage, and including two pre-term infants. This indicates a burial history at this general location of which there are only traces remaining. It is not possible to determine, on the present evidence, if the preterm individuals are contemporary with each other; however, the two were strikingly similar in age-at-death (32.5 foetal weeks and *circa* 31.0 foetal weeks) and could, potentially, represent twins. It also is not known if these were stillbirths or if they lived for a short time (there are advanced analyses that can determine this, primarily through the dental remains). In any case, it tells of the fragility of life in the past, when there was minimal medical assistance for pregnant women and their infants. The fact that the presence of all four of these juvenile individuals was only preserved in the disarticulated assemblage speaks of the severe truncation and disturbance to this burial ground.

None of the nine adults in the *in situ* burials was older than 45 years at the time of death, while two of them were young adults, aged less than 25 years. This may suggest a rather unusual bias towards the deaths of the somewhat younger cohort (<45 years) of adults in the post-medieval population. Indeed, no older adults (45+ years) were identified in the disarticulated material either. However, as shown above, there are considerable biases within this skeletal sample and, as such, it would not be acceptable to further interpret this apparent demographic trait. The nine *in situ* adults comprised four females and five male. Again, the significance of this, if any, cannot be ascertained. It is interesting that the only two young adults (17-24 years) in the population were both males; traditionally, it would be expected that, in the past, females would have a higher mortality in

this age group, based on the increased risks associated with pregnancy and birth. In reality, given a number of factors, it cannot be claimed that there is indeed a bias in this population towards young adult males. There was no significant evidence from the disarticulated material that the four adults identified there were additional to the nine already identified in the *in situ* assemblage. However, given the evidence regarding the juvenile individuals, it is entirely likely that most, if not all, of the disarticulated adult individuals do indeed represent additional numbers.

It was possible to assess some of the dietary intake from the dental remains. However, just six adults had observable dentitions and, therefore, conclusions are naturally limited in this instance. Deposits of calculus (calcified plaque) were common and this is very typical of many archaeological Irish populations, prior to proper dental hygiene regimes. Dental attrition was not excessive, apart from one individual who had an unusual bite pattern. The lack of attrition in post-medieval populations is linked to the increasingly processed nature of the diet in the period and beyond. However, in one respect, the Society Street adults are unusual in the context of the post-medieval period; carious lesions were identified in 28.7% of adults and 9.4% of adult teeth, which is significantly lower that the prevalence of 77.8% of adults and 21% of teeth recorded in a large study of various post-medieval Irish populations (Lynch 2014). In most Irish post-medieval populations, the prevalence of caries is high, across all socioeconomic classes, and linked with an increasingly processed, carbohydrate-rich diet, with an added increase in refined sugars (ibid.). The prevalence in the Society Street individuals is in fact more reminiscent of medieval and earlier populations. However, again, the low number of individuals here are likely to be introducing significant biases into the record. Certainly, it was evident that the carious lesions in these individuals could cause significant problems, including periodontal disease (some severe enough to leave periosteal-type lesions) and dental abscesses. It would be particularly interesting to compare, should a large post-medieval skeletal assemblage be excavated from this area in the future, how the dental evidence tallies with the present findings.

In relation to the evidence of the overall health status of these individuals, most of the conclusions, limited as they are, must be drawn from the analyses of the *in situ* burials. In terms of final stature, the adults were largely comparable to their contemporaries in post-medieval Ireland, although the females were in the lower ranges. Final attained stature is intimately linked with stressors endured in childhood, that is, the growth period, although the growth patterns are complex and so-called 'catch-up' growth is possible. The evidence from the stature in this population suggests the adults at least, had relatively good nutrition and minimal disease-load in their childhoods, allowing them to reach average height for the time. There are always exceptions; the single juvenile in the *in situ* burials, (SK02, 7-10 years), was the only individual with evidence of metabolic disease in the form of porotic hyperostosis (similar evidence was uncovered in the disarticulated adult material), indicative of physiological stress in this individual. This may ultimately have impacted on the life expectancy of the child. Indeed, despite the evidence of final stature, at least two of the adults, a female and a male, had evidence of growth-arrest lines in some of the limb bones, visible through post-mortem breaks. These indicate a period of cessation of growth, presumably as a result of some physiological stress, during childhood. However, crucially,

the presence of these lines also indicates that these adults recovered and went on to attain average statures ('catch-up' growth). There was no evidence at all, in either the *in situ* burials or the disarticulated material of dental enamel hypoplastic defects. These are classic, and commonly observed, indicators of stresses endured in childhood. Dental crowding, of the anterior teeth of an adult maxilla, was identified in a disarticulated specimen. Crowding of teeth has been associated with 'nutritional or other chronic severe stress' (Goodman *et al.* 1984, 21), although it has also been linked with general changes in diet and in particular with a softening of foods (Larsen 1995, 196-7). This is just a single, isolated, incidence of evidence of possible physiological stress which cannot be quantified. Overall, it appears that there were physiological stresses in childhood, but perhaps not at an extreme level; some succumbed to the stresses, such as SK02 and the two pre-term infants, while others recovered and reached adulthood as relatively healthy individuals.

Periosteal lesions are also skeletal lesions that are often interpreted as being indicative of the health status of a population. If there are no other indicators as to origin, they are traditionally interpreted as evidence of inflammation, possibly representing some form of non-specific infections. The evidence of the lesions in this population was quite sparse. Tibial lesions were recorded in a single *in situ* female individual and in two adult male tibiae in the disarticulated assemblage. Other cases of inflammation/infection were directly related to dental problems. The apparent lack of general evidence of non-specific infection again suggests a relatively healthy population. However, interpretation of the presence or lack of these lesions must come with a caveat. While the presence indicates stress, as with the other stress indicators noted above, it also indicates the individual survived, as least for a time; in contrast, the lack of such lesions may just mean that an individual died quickly, from an acute infection, and the lesions never had a chance to develop on the bones. In the case of this Ballinasloe population, it appears that chronic infectious disease may not have been prevalent.

There are a number of skeletal, and dental, indicators as regards the possible impact of genetic defects on everyday life, as well as normal occupational activities. In terms of developmental anomalies, the impact rally appears to have been minimal. A relatively limited range were present in this population and, as is often the case in archaeological samples, none were severe, and most were likely asymptomatic. The exception is the individual with a minor developmental defect in at least the right hip (left unobserved), which meant that the young man may possibly have walked with a slight limp. The evidence of the impact of occupational activities was clearer. As is typical with many Irish archaeological skeletal assemblages, evidence of degenerative joint disease (DJD) was relatively common. It was observed in more than half of all adults, and the spine was the most common location. The manifestations of the disease were largely mild in severity; this is likely to be linked to the lack of older (45+ years) adults in the population. However, severe DJD was identified in one adult male. The incomplete nature of the skeletal remains significantly hinders interpretation of DJD in this population. It was noted however, that a particular type of spinal degeneration, known as Schmorl's nodes, were only identified in two male adults. These lesions, particularly when manifesting on multiple vertebrae, are traditionally interpreted as indicating that an individual likely engaged in strenuous labour from a young age. The fact that the lesions were only present in adult males in this population may suggest gender-based occupational divisions

(which may be expected), but this may only be tenuously implied in this instance. Trauma may also be indicative of the 'wear and tear' of life. Just a single individual, a female, has evidence of a traditional bone fracture, in the form of a chip to a bone of the left wrist. However, two other adult individuals, a female and a male, exhibited evidence of soft tissue trauma (likely muscle strains/tears) to the right shoulder and the left leg respectively. These are fortuitous findings as such traumas may often heal with no skeletal impact. Again, these are suggestive of normal stresses in a period of likely persistent physical exertions. One female also had a stress fracture in the shoulder, of a type that is relatively common in archaeological populations. There was evidence that some individuals may have used their teeth in occupational practices also, as evidenced by chipping of teeth and that one individual had a notch worn into the biting edge of a tooth. The small pleasures in life, perhaps counteracting some of the physicality of life, was identified in one individual (SK01 male adult) who was a habitual claypipe smoker. He also was the individual with perhaps the most widespread distribution of DJD, including osteoarthritis of the right ankle, likely indicative of a life of strenuous labour, which may have been at least partially counteracted for him personally by his smoking habit.

A number of interesting factors emerge in terms of mortuary practice (Wallace and Maguire 2020). All of the burials were supine and extended, with most orientated northwest/southeast, with the head to the northwest. SK04 (female 30-34 years) lay slightly more west/east. The latter individual was truncated by SK03 (female 25-35 years). The northwest/southeast orientations are only minor deviations from the traditional west/east, with the head to the west, orientation of most Christian burials at this time. That orientation was partially related to the belief that on the Day of Judgement, the dead would corporeally resurrect, to face God and His Judgement with the rising sun in the east. However, there were certainly some dissenting Christian groups who did not conform to this practice (such as the Quakers), and today it is certainly not stringently adhered to. Burials appeared to be arranged in approximate rows, which suggests that the graves had some form of surface mnemonic markers. However, this did not stop, as mentioned above, the significant truncation of SK04 (female 30-34 years)by SK03 (female 25-35 years). While the former clearly represents an earlier burial, it also suggests that firstly, any grave marker which may have been on her grave was long gone by the time of the burial of SK03, and secondly, perhaps there was some reorganising of the burials into more formal rows in that latter period also. The timescale involved need not have been long; once the immediate relatives of a deceased are themselves dead, the location of that original grave may quickly have been neglected and forgotten, thus facilitating truncation. Certainly in large urban cemeteries of the latter part of the post-medieval period, truncation of quite fresh burials was relatively common due to intense burial pressures of increasing populations.

The actual graves in Society Street appear to be primarily relatively simple earth-dug graves, although some may have been lined with stones. No evidence of coffins was uncovered, which is not unusual for this period in Ireland. A number of observations on burial practices were also determined from skeletal positions and on some of the recovered finds (Wallace and Maguire 2020). Some of the skeletons appeared rather constricted within their graves, which has been interpreted as evidence of shrouds and/or winding sheets. Rather unusually, a

rosary or *paternoster* was found at the feet of SK10 (female 35-45 years). Interestingly, the grave fills all contained different quantities of distinctive mid-sized blue-grey pebbles, as well as fragments of quartz, black chert and hematite. These do appear to be deliberate inclusions and may indicate some form of local tradition at the time of burial. A rectangular stone object was also recorded from the upper right leg of SK6, which may also represent a deliberate inclusion with the burial. Finally, a stone (20E0330:832:008) recovered in the pelvic area of SK07 (male 25-30) has been interpreted as a possible mortuary treatment, essentially involving the plugging of one of the orifices of the body (Wallace and Maguire 2020). If so, this would be an extremely unusual practice, and one which the writer has not previously encountered. If it is such an artefact, then the other orifices of the body would have been sealed also, most particularly the mouth. The actual purpose of attempting such an act – essentially, presumably attempting to stop the body fluids which exude from the body during decomposition – is unknown. If it was an attempt to stall decomposition, it simply would not have worked (perhaps, if it was indeed practiced, it may have been more a symbolic gesture?). Indeed, there would be intense pressure from the naturally produced gases of decomposition and, in the opinion of the writer, it seems unlikely that a stone in the anus could contain the pressure. There is a phenomenon known as 'coffin birth' where the decomposing body of a pregnant woman may, as a result of the build-up of decomposition gases, extrude the dead foetus (see, for example, Viva *et al.* 2020). It seems unlikely that a stone could have counteracted similar gaseous pressures during the decomposition of SK07, and the stone may be nothing more than a rather coincidental and suggestive finding.

4. Conclusions

The quantity of human skeletal remains recovered from Society Street was relatively low, comprising the often truncated and incomplete remains of 10 individual burials. These are likely contained within a defined late medieval/post-medieval burial ground, whose existence has been essentially forgotten. It is likely that the cemetery was substantial as the overall minimum number of individuals identified from the severely disturbed and truncated site was eighteen. Assessment of the skeletal remains indicate that the individuals buried here included the very youngest and most vulnerable; whether they represent actual burials in their own rights or burial/s of pregnant women is unknown. The skeletal assemblage is highly biased in nature but there are indications of life's 'slings and arrows' in the form of impacts of physical exertions on the body based on what would have been a labour-intensive life for most. In terms of health, these individuals appear to have been overall, in a relatively good position. Some of the evidence from the dental remains does not quite tally with what would be expected of a population that is likely largely post-medieval in date, but it is probable that those analyses are somewhat marred by the incomplete nature of the remains. Finally, despite the relatively low number of just 10 *in situ* burials, a number of interesting observances emerged in terms of mortuary practices. This burial ground is an extremely important part of the history of Ballinasloe and its survival, despite the significant impact of later modern services, is very fortunate.

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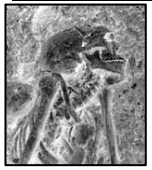
6. Appendices

6.1 Catalogue of *In Situ* Human Skeletal Remains

A summary of the *in situ* skeletons from Society Street is provided in **Table 6**.

Table 6. Summary of osteoarchaeological analysis of *in situ* skeletons

Burial	Age	Sex	Stature (cm)	Preservation	Orientation	Skeletal Pathology	Dental Pathology	Comments
SK01	Adult	Male	169.3	Poor	NW/SE, head to NW	Joint Disease – mild DJD left knee, ankle, cervical spine, osteoarthritis right ankle. Other – Harris line visible in proximal left humerus (broken post-mortem)	15 perm. teeth. Calculus – 15/15, slight to moderate, subgingival on some. Chipping – 1/15, distal/lingual margin of 46. Attrition – max. wear 4 on molars. Other – concave wear on incisal edges of 23, 32, and possibly 43.	-
SK02	JUV2 7-10 yrs	-	-	Good	NW/SE, head to NW	Metabolic – healed porotic hyperostosis in right parietal (at least)	2 erupted deciduous, 1 erupted and 3 unerupted permanent teeth.	Possible unhealed injuries to the tibiae, noted during excavation/post-excavation processing. The actual lesions are



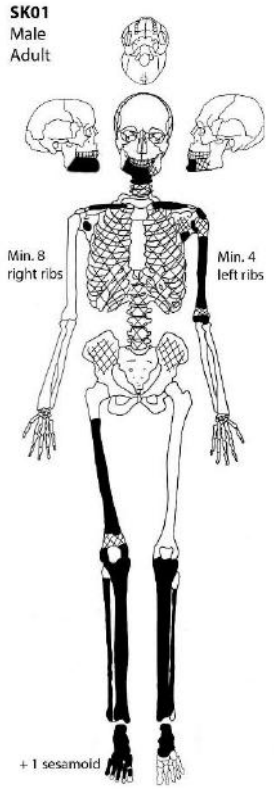
								normal vessel impressions. - porous bone on the tibiae is as a result of normal bone growth.
SK03	Adult 25-35 yrs	Female	157.6	Good	W/E, head to W	Joint Disease – mild DJD right shoulder and thoracic vertebrae. Soft Tissue Trauma – on inferior aspect of lateral end of right clavicle, exotosis	-	Ossification of the cartilage at various points which initially suggested an older age-at-death.
SK04	Adult 30-34 yrs	Female	163.0	Good	NW/SE, head to NW	Trauma – healed fracture (chip) to distal epiphysis of the left radius. Non-specific Infection – left tibia, *healed* striated bone on the medial aspect of the diaphysis, also two patches of *active* grey striated bone on the medial aspect overlying the healed bone. - right tibia, *remodelling* fibre bone on the distal half of the medial aspect of the diaphysis.	-	Fragment of right fibula AMS dated. Result: 1520-1800calAD (FTMC-KJ22-1; 259+/-28 BP, 95% probability).
SK05	Adult 30-45 yrs	Male	181.0	Good	NW/SE, head to NW	Joint disease – mild DJD cervical to lumbar vertebrae, mild Schmorl's nodes T10-T12. Bodies	24 perm. teeth, plus 2 roots.	Bone changes similar to inflammatory responses noted elsewhere: both

						of T5-T10 slightly orientated to right lateral. Non-specific Infection –pitting of alveolar bone of right maxilla, suggestive of inflammation associated with excessive dental wear and/or a carious lesion. Similar lesions on lateral aspects of both mandibular bodies.	Calculus – 24/26, slight to moderate. Attrition – maximum wear 7 on lower molar. Excessive attrition on all surviving anterior teeth due to tightly overlapping overbite, with possible associated inflammation (which may also relate to the carious lesions). Caries (Lynch 2014) – 3/26, small caries on 13, entire crowns of 17 and 27 lost to severe caries.	zygomatics and lateral aspects left and right as mandibular bodies. May not be pathological. Orbital ridge and glabella are very robust, a normal trait.
SK06	Adult 17-25 yrs	Male	166.1	Poor	NW/SE, head to NW	Soft Tissue Trauma – exotoses on medial aspect of diaphysis of left femur and just inferior to proximal head of left fibula. Developmental - head and neck of the right femur are quite low, 115°. There are no observable changes in the right acetabulum. The left femur is unobservable due to post-mortem damage Other – symphalangism of the	4 permanent teeth. Calculus – 2/4, slight deposits, 16 and 13. Attrition – maximum wear 4 on molars.	-

						right ?fifth intermediate and distal foot phalanges.		
SK07	Adult 25-30 yrs	Male	169.0	Good	NW/SE, head to NW	Joint disease – mild DJD in cervical to lumbar vertebrae and slight Schmorl's nodes T6-T12. Developmental – spina bifida occulta of S1 and S2.	24 permanent teeth Calculus – 24/24, slight to moderate. Attrition – maximum wear 4 on molars.	-
SK08	Adult 17-20 yrs	?Male	165.2	Very poor	NW/SE, head to NW	-	-	Identified during excavation as the leg of a juvenile.
SK09	Adult 25-35 yrs	Female	158.6	Good	NW/SE, head to NW	Trauma –os acromiale of left scapula (right unobservable).	16 permanent teeth Calculus – 16/16, slight to moderate deposits on all teeth, most subgingival. Attrition – maximum wear 2 on molars. Periodontal Disease – slight to moderate resorption on all surviving alveolar bone.	-
SK10	Adult 35-45 yrs	Female	156.5	Very good	NW/SE, head to NW	Joint disease – mild DJD in thoracic, lumbar, and S1. Other –Harris lines in distal left femur (post-mortem breaks).	32 permanent teeth Calculus – 31/32, mild to moderate deposits on all except 21.	A fragment of left femur dated. Result: 1477-1638calAD (FTMC-KJ22-2; 337+/-28 BP, 95% probability).

			Caries – 11/32, small lesions on 17, 16, 26, 27, 37, 36, 47, 48, large lesions on 15, 38, 46, with destruction of most of the crowns. Abscess – large abscess associated with 46, possible external drainage but significant post-mortem damage. Attrition – maximum wear level 2 on molars.

SK01



Age: Adult (age-at-death undetermined)
Sex: Male (skull and metrics)
Stature: 169.3+/-3.37cm (left tibia)

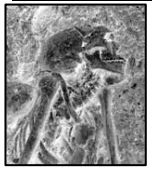
Skeletal Preservation: Poor. Quite incomplete with significant fragmentation.
Skeletal Position: Supine.
Skeletal Attitude: Extended.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Incomplete mandible. Incomplete clavicles and scapulae. Incomplete left humerus. Fragments of four left and eight right ribs, incomplete fragments of the cervical, thoracic, and lumbar vertebrae. Fragments of the ilia. Incomplete right femur, tibia, fibulae, incomplete left and right tarsals, incomplete right metatarsals, one sesamoid recovered with right foot.
Dental Inventory:

P											P				
~~18~~	~~17~~	~~16~~	~~15~~	~~14~~	~~13~~	~~12~~	~~11~~	~~21~~	~~22~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~
48	47	46	45	44	43	42	~~41~~	~~31~~	~~32~~	~~33~~	~~34~~	~~35~~	~~36~~	~~37~~	~~38~~
P	P	P	P	P	P	PM		P	P		P	P	P	P	P

15 permanent teeth

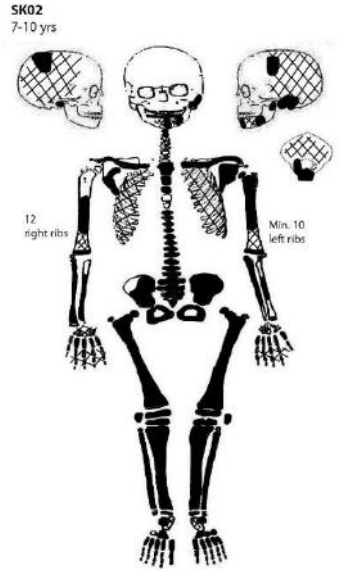
Dental Pathology:
Calculus – 15/15, slight to moderate deposits on all teeth, subgingival on buccal 46, lingual 32, and lingual and buccal 36.
Chipping – 1/15, there is chipping at the distal/lingual margin of 46.
Attrition – wear 2-4 on molars.
Other – concave wear is present on the incisal edges of: 23, at the distal end, measuring 4.92mm; 32, at the distal end, measuring 5.03mm; and possible 43, on the mesial end, measuring 3.82mm.



Skeletal Pathology:
Joint disease – mild DJD on cervical vertebra, right knee and left ankle, eburnation (osteoarthritis) in right ankle.
Other – at least one Harris line is visible in the post-mortem broken fragments of the proximal left humerus.

Anomalies: -
Comments: -

SK02



Age: Juvenile2 7-10 years (dentition, long bones suggest considerably younger)
Sex: -
Stature: -

Skeletal Preservation: Good. Quite complete but some fragmentation. Upper parts more poorly preserved.
Skeletal Position: Supine.
Skeletal Attitude: Extended, legs bent slightly to the left lateral, right foot on top of left foot against stone structure c.806. Left arm extended, right lower arm slightly bent with hand over pubic area.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: --

Bones Present: Incomplete cranium and mandible. Clavicles, scapulae, humerus, radi, ulnae, incomplete left and right carpals, metacarpals, and hand phalanges. Manubrium and sternum, ten left and incomplete and fragmented. Ilia, ischia, pubes. Femora, tibiae, patellae, twelve right ribs, vertebrae from C1 through to S5 but incomplete right tarsals and left and right hand phalanges. fibulae, complete left tarsals and left and right tarsals,
Dental Inventory:

	P				P				
~~55~~	~~54~~	~~53~~	~~52~~	~~51~~	~~61~~	~~62~~	~~63~~	~~64~~	~~65~~
85	84	~~83~~	~~82~~	~~81~~			73	~~74~~	~~75~~
PM	PM						PM		

2 deciduous teeth

			U				P				U				
~~18~~	~~17~~	~~16~~	~~15~~	~~14~~	~~13~~	~~12~~	~~11~~	~~21~~	~~22~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~

~~48~~	~~47~~	~~46~~	45	44	43	~~42~~	~~41~~	31	32	33	~~34~~	~~35~~	~~36~~	~~37~~	~~38~~
			U	U	U			PM	PM	U					

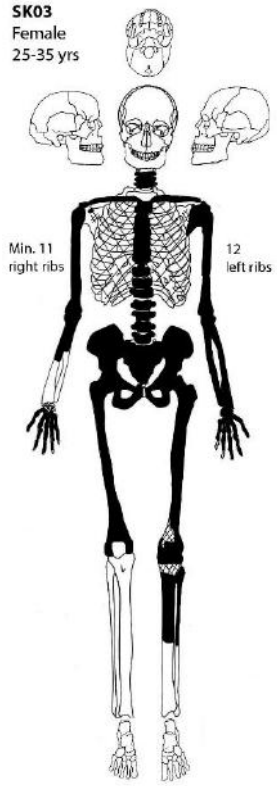
1 erupted and 6 unerupted permanent teeth

Dental Pathology: -
Skeletal Pathology:
Metabolic – healed porotic hyperostosis on at least the right parietal.

Anomalies: -
Comments: - The excavator noted that there were possible unhealed injuries to the tibiae. None was noted; it is likely the excavator observed the normal impressions associated with the nutrient foramen.
- porous bone, on the medial aspects of the tibiae, appear to be as a result of normal bone growth.

SK03

Age: Young Middle Adult 25-35 years (auricular ilium and pubic symphysis, *see 'Comments' below*)
Sex: Possible Female (pelvis and metrics)
Stature: 157.6+/-3.72cm (right femur)

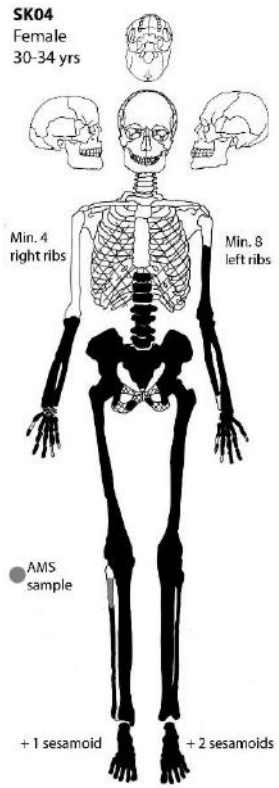


Skeletal Preservation: Good. Incomplete but surviving remains area well preserved with minimal fragmentation and erosion. Head and legs are truncated.
Skeletal Position: Supine.
Skeletal Attitude: Extended. Lower arms bent for that hands were together over the torso.
Orientation: West/east, head to west
Associated Skeleton/s: Truncated SK04.
Associated Finds: -

Bones Present: Clavicles, scapulae, humeri, radi, ulnae (distal ends of right radius and ulna absent), complete left carpals, left and right metacarpals, right hand phalanges, incomplete right carpals and left hand phalanges. Manubrium, sternum, twelve left and eleven right ribs, vertebrae from C4 through to S5. Ilia, ischia, pubes. Femora, patella.
Dental Inventory: -
Dental Pathology: n/a
Skeletal Pathology:
Joint Disease – mild DJD in right shoulder and in thoracic vertebrae.
Soft Tissue Trauma – on the inferior aspect of the lateral end of the right clavicle, there is a spur of bone (exotosis) extending laterally. It is 9.62mm from the lateral end. It measures 13.08mm medial/lateral and rises 3.01mm above the normal surface. This spur is at the location of the insertion of the trapezius.

Anomalies: -
Comments: - There is some ossification of the cartilage at the ends of the ribs and the xipohid, which suggest that this is an older individual. However, the pelvis clearly indicates an age at death of 25-35 years.

SK04



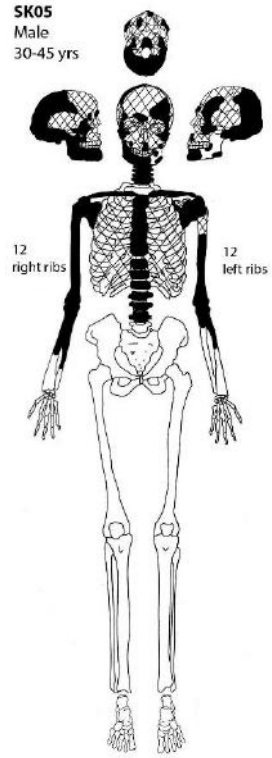
Age: Young Middle Adult 30-34 years (auricular ilium and pubic symphysis)
Sex: Female (pelvis and metrics)
Stature: 163.0+/-3.55cm (right femur and tibia)

Skeletal Preservation: Good. Incomplete due to truncation, but bones are well preserved. Some erosion and fine root markings are present on many bones.
Skeletal Position: Supine.
Skeletal Attitude: Extended.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: Truncated by SK03
Associated Finds: -

Bones Present: Distal half of left humerus, radi, ulnae, complete left carpals and left and right metacarpals, incomplete right carpals and left and right hand phalanges. Eight left ribs, four right ribs, vertebrae from T6 to S5. Ilia, ischia, pubes. Femora, patella, tibiae, fibulae, complete left and right tarsals and metatarsals, incomplete foot phalanges.
Dental Inventory: -
Dental Pathology: n/a
Skeletal Pathology:
Trauma – there is a healed fragment at the posterior margin of the distal epiphysis of the left radius. The bone has essentially been chipped, with the fragment healed back on. It measures 8.62mm medial/lateral by 3.69mm anterior/posterior by 5.48mm superior/inferior.
Non-specific Infection – on the left tibia, there are faint traces of *healed* striated bone on the medial aspect of the diaphysis, starting 81.5mm superior to the distal tip of the malleolus and extending superiorly for 97.52mm. There are also two tiny patches of *active* grey striated bone on the medial aspect overlying the healed bone. The first is located 120.61mm superior to the distal tip of the malleolus and extends superiorly for 7.68mm and measures 3.05mm anterior/posterior. The second patch is located 5.82mm superior to the former, and measures 12.65mm superior/inferior by 3.75mm anterior/posterior;
- on the right tibia, there is *remodelling* fibre bone on the distal half of the medial aspect of the diaphysis, starting 39.17mm superior to the distal tip of the malleolus and extending superiorly for 165mm.

Anomalies: -
Comments: A fragment of the proximal right fibula (4.3g) were submitted for AMS dating. The returned date was 1520-1800calAD (FTMC-KJ22-1; 259+/-28 BP, 95% probability).

SK05



Age: Middle Adult 30-45 years (cranial sutures open, all secondary epiphyses fused, minimal DJD)
Sex: Male (skull and metrics)
Stature: 181.0+/-4.05cm (right humerus)

Skeletal Preservation: Good. Significant truncation but surviving bones are in an excellent state of preservation.
Skeletal Position: Supine.
Skeletal Attitude: Extended. Arms parallel to torso.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Cranium and mandible. Clavicles, scapulae, humerus, proximal ends of the radi and ulnae. Manubrium and sternum, twelve left and twelve right ribs, vertebrae from C1 to L4.

Dental Inventory:

P	R	P	P	P	P	P	P							R	P
~~18~~	~~17~~	16	15	14	13	12	11	~~21~~	~~22~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

24 permanent teeth plus 2 roots

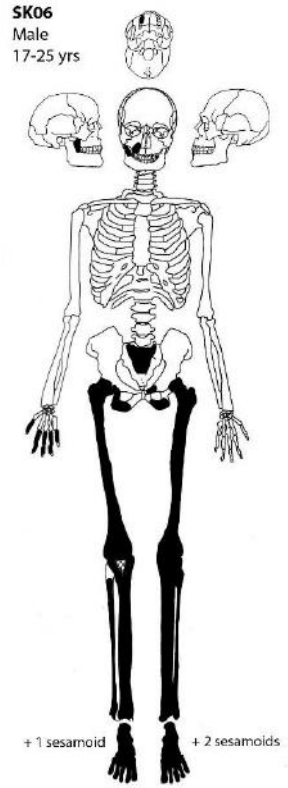
Dental Pathology:
Calculus – 24/26, slight to moderate deposits on all except 17 and 27.

Attrition – maximum wear 7 on lower molar. In addition, the upper incisors tightly overlay the labial aspect of the lower incisors. There is severe labial wear (maximum 7) on the labial/buccal aspects of 45-37 and on the lingual aspect of 15-11. There is pitting of the alveolar bone on the buccal aspect of the right maxilla, which may suggest inflammation relating to the severe wear and/or the carious lesion (see below).
Caries – 3/26, small caries on CEJ of 13, while the entire crown of both 17 and 27 have been lost to severe caries.
Skeletal Pathology:
Joint disease – mild DJD from cervical to lumbar vertebrae, with mild Schmorl's nodes from T10-T12. The bodies of T5-T10 are slightly orientated to the right lateral.
Non-specific Infection – there is pitting of the alveolar bone on the buccal aspect of the right maxilla which is at least suggestive of inflammation associated with excessive dental wear and/or a carious lesion. Similar lesions on lateral aspects of both mandibular bodies.

Anomalies: -- there are some other bony changes that may initially be suggestive of inflammatory responses. The anterior aspect and the posterior aspect of the inferior margin of both zygomatics exhibits porous bone. Porosity is also present on the lateral aspects of both the left and right mandibular bodies. There is no significant evidence that these relate to scurvy and indeed, the porous bone may not be pathological but a normal variant. It was noted that the orbital ridge and glabella of this individual were very robust with quite a porous exterior. This trait has been noted in male individuals before and has been referred to as 'male vermiculate pattern' (Mann and Hunt 2005, 23). Certainly, a similar pattern has been noted in the zygomatics previously by the writer.
Comments: -

SK06

Age: Young Adult 17-25 years (epiphyseal fusion)
Sex: Male (pelvis and metrics)
Stature: 166.1+/-3.27cm (right femur)



Skeletal Preservation: Poor. Severe truncation, although the surviving bones are well preserved.
Skeletal Position: Supine.
Skeletal Attitude: Extended, although legs are bent slightly to the right lateral, with the left foot slightly under the right foot. At least the right arm was extended by the torso as the right hand was recovered beside the right pelvis.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Fragments of the right maxilla and mandible. Right triquetral, almost all right hand phalanges except for one distal phalanx. Incomplete sacrum. Incomplete ischia and pubes. Femora, patellae, tibiae, complete left and right tarsals and metatarsals, incomplete left and right foot phalanges, two sesamoids with left foot and one sesamoid with right foot.
Dental Inventory:

	PM	P	P	P	P											
~~18~~	17	16	15	14	13	~~12~~	~~11~~	~~21~~	~~22~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~
~~48~~	~~47~~	~~46~~	~~45~~	~~44~~	~~43~~	~~42~~	~~41~~	~~31~~	~~32~~	~~33~~	~~34~~	~~35~~	~~36~~	~~37~~	~~38~~

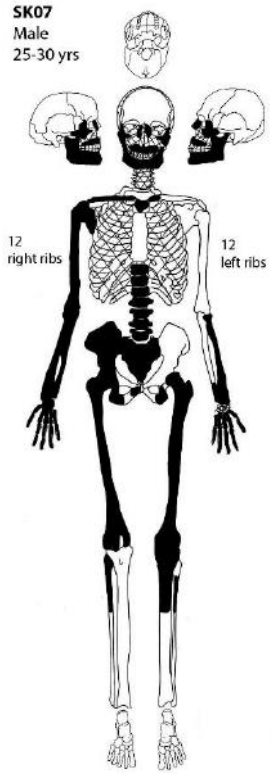
4 permanent teeth

Dental Pathology:
Calculus – 2/4, slight deposits on 16 and 13.

Attrition – maximum wear 4 on the molars.
Skeletal Pathology:
Soft Tissue Trauma – left femur, on the medial aspect of the midshaft, c.120mm inferior to the inferior margin of the lesser trochanter, there is a solid ridge of bone 34.7mm superior/inferior by 7.62mm and measuring 4.35mm in height;
- left fibula, at the junction of the posterior/medial shaft, just inferior to the proximal head is a probable exostosis, measuring at least 43.94mm superior/inferior by 13.87mm and at least 10.22mm in height.
Developmental - the head and neck of the right femur are orientated quite low, with the neck at approximately 115^{o} to the diaphysis. This is indicative of coxa vara. There are no observable changes in the right acetabulum. The left femur is unobservable due to post-mortem damage.
Other – symphalangism of the right ?fifth intermediate and distal foot phalanges;

Anomalies: -
Comments: -

SK07



Age: Young Middle Adult 25-30 years (auricular ilium, pubic symphysis, epiphyseal fusion)
Sex: Male (pelvis, mandible, and metrics)
Stature: 169.0+/-3.72cm (left femur)

Skeletal Preservation: Good. Partially incomplete through truncation, but surviving bone is very well preserved.
Skeletal Position: Supine.
Skeletal Attitude: Extended. Right arm parallel to body.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Incomplete cranium and mandible. Medial end of left clavicle, right clavicle, scapula, and humerus, distal end of left ulna, right ulna, radi, complete right carpals, left and right metacarpals, and right hand phalanges, incomplete left carpals and left hand phalanges. Manubrium, twelve left and twelve right ribs, vertebrae from C6 to coccyx, with remainder of the cervical incomplete and fragmented. Right ilium, ischia, right pubis. Femora, patellae, proximal left tibia, proximal fibulae.
Dental Inventory:

CA	P	P	P	P	P	P	P	P	P	P	PM	P	P	P	CA
18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
CA	P	P	PM	P	P	PM	PM	P	P	P	P	P	P	P	CA

24 permanent teeth

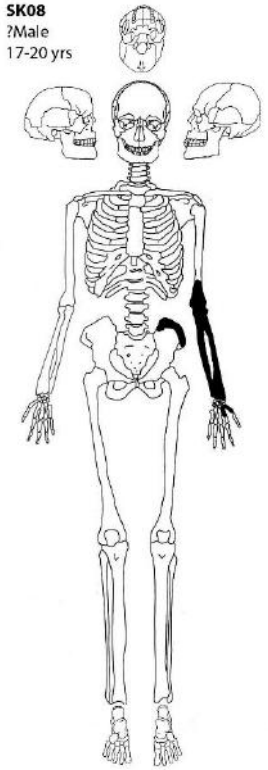
Dental Pathology:
Calculus – 24/24, slight to moderate deposits on all teeth.

Attrition – maximum wear on molars is 4.

Skeletal Pathology:
Joint disease – mild DJD in cervical, thoracic, and lumbar vertebrae, with slight Schmorl's nodes T6-T12.
Developmental – spina bifida occulta of S1 and S2.

Anomalies: -
Comments: -

SK08



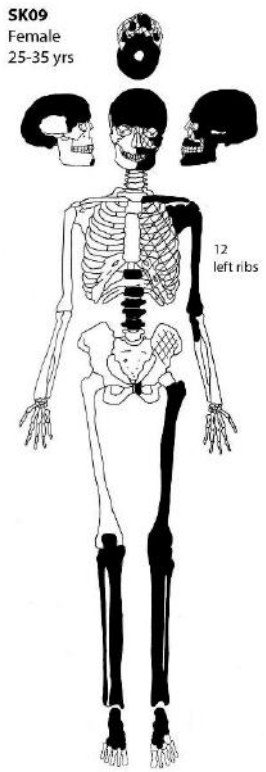
Age: Young Adult 17-20 years (epiphyseal fusion)
Sex: Possible Male (distal humerus, after Vance *et al.* 2011)
Stature: 165.2+/-4.32 (left radius)

Skeletal Preservation: Very poor. Very incomplete, with some fragmentation and there is also some erosion.
Skeletal Position: Supine.
Skeletal Attitude: ?Extended. Left arm appears to have been largely extended parallel to torso, with the lower arms slightly bent, with hand close to, or perhaps over, the right hip.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Distal end of the left humerus, left radius and ulna, incomplete left carpals and left metacarpals. Left iliac crest.
The following were also recorded as disarticulated but they may originate from SK08. They are recorded in the disarticulated catalogue and are noted here: fragments of the left and right parietals (ID1027), two rib fragments (ID1023), fragments of cervical (ID1026), thoracic (ID1025), and lumbar (ID1024) vertebrae.
Dental Inventory: -
Dental Pathology: n/a
Skeletal Pathology: -

Anomalies: -
Comments:

SK09



Age: Young Middle Adult 25-35 years (pubic symphysis, epiphyseal fusion)
Sex: Female (pelvis, skull, and metrics)
Stature: 158.6+/-3.57cm (left fibula)

Skeletal Preservation: Good. Incomplete due to truncation, but bones are in an excellent state of preservation.
Skeletal Position: Supine.
Skeletal Attitude: Extended. Position of arms not determined.
Orientation: Northwest/southeast, head to northwest. Possible stones around the head and shoulders.
Associated Skeleton/s: -
Associated Finds: -

Bones Present: Cranium and incomplete mandible. Left clavicle, scapula, humerus, proximal end of left ulna, incomplete fragments of the left metacarpals and left hand phalanges. Incomplete fragments of the cervical, thoracic, and lumbar vertebrae. Fragments of the left ilia and pubis. Left femur, patellae, tibiae, fibulae, incomplete left and right tarsals and right foot phalanges.
Dental Inventory:

PM	P	P						PM	P	P	P	P	P	P	P
18	17	16	~~15~~	~~14~~	~~13~~	~~12~~	~~11~~	21	22	23	24	25	26	27	28
~~48~~	~~47~~	~~46~~	~~45~~	~~44~~	~~43~~	~~42~~	~~41~~	~~31~~	32	33	34	35	36	37	38
									P	P	P	P	P	P	P

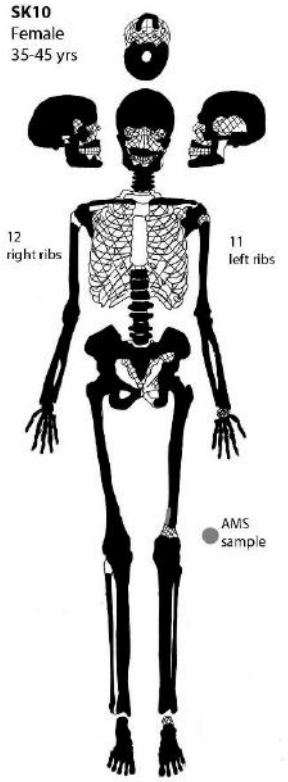
16 permanent teeth

Dental Pathology:
Calculus – 16/16, slight to moderate deposits on all teeth, most subgingival.

Attrition – maximum wear on molars is level 2.
Periodontal Disease – slight to moderate resorption on all surviving alveolar bone.
Skeletal Pathology:
Trauma –os acromiale of left scapulae (right unobservable).

Anomalies: -
Comments: -

SK10



Age: Old Middle Adult 35-45 years (auricular ilium and pubic symphysis)
Sex: Female (pelvis, skull, and metrics)
Stature: 156.5+/-3.55cm (right femur and tibia)

Skeletal Preservation: Very good. Complete and well preserved. Some fragmentation, minimal erosion, some slight root markings.
Skeletal Position: Supine.
Skeletal Attitude: Extended. Right arm parallel to torso, left lower arm is bent at *circa* 90° with hand resting over spine area.
Orientation: Northwest/southeast, head to northwest.
Associated Skeleton/s: -
Associated Finds: Rosary beads recovered at feet.

Bones Present: Cranium and mandible. Clavicles, scapulae, humeri, radi, ulnae, complete right carpals, left and right metacarpals, and left and right hand phalanges, incomplete left carpals, tiny sesamoid (3.87mm diameter) recovered with right hand. Eleven left and twelve right ribs, vertebrae from C1 through to S4. Ilia, ischia, right pubis. Femora, patellae, tibiae, fibulae, complete left and right tarsals and metatarsals, incomplete left and right foot phalanges, four sesamoid bones all recovered with right foot.
Dental Inventory:

P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	~~31~~	~~32~~	33	34	35	36	37	38
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

32 permanent teeth

Dental Pathology:
Calculus – 31/32, mild to moderate deposits on all except 21.
Caries – 11/32, small lesions on 17, 16, 26, 27, 37, 36, 47, 48, large lesions on 15, 38, 46, with destruction of most of the crowns.
Abscess – large abscess associated with 46, possible external drainage but significant post-mortem damage.
Attrition – maximum wear level 2 on molars.
Skeletal Pathology:

Joint disease – mild DJD in thoracic, lumbar, and S1.
Other – the distal end of the left femur is broken post-mortem and Harris lines are clearly visible.

Anomalies: -
Comments: A fragment of the anterior aspect of the medial side of the distal diaphysis of the left femur (3.8g) were submitted for AMS dating. The returned date was 1477-1638calAD (FTMC-KJ22-2; 337+/-28 BP, 95% probability).

6.2 Metrics

6.2.1 Adult Cranial Metrics (mm)

Abbreviations based on Buikstra & Ubelaker (1994)

Burial	SK01 M Adult	SK03 F 25-35 yrs	SK04 F 30-34 yrs	SK05 M 30-45 yrs	SK06 M 17-25 yrs	SK07 M 25-30 yrs	SK08 ?M 17-20 yrs	SK09 F 25-35 yrs	SK10 F 35-45 yrs
g-op	-	-	-	-	-	-	-	182	-
eu-eu	-	-	-	-	-	-	-	149	-
ba-b	-	-	-	-	-	-	-	-	-
ect-ect	-	-	-	-	-	-	-	-	-
pr-alv	-	-	-	-	-	-	-	-	-
au-au	-	-	-	-	-	-	-	-	-
ft-ft	-	-	-	-	-	-	-	97.76	95.84
n-pr	-	-	-	-	-	-	-	-	-
fmt-fmt	-	-	-	-	-	-	-	-	-
n-ns	-	-	-	-	-	-	-	-	-
al-al	-	-	-	-	-	-	-	-	-

Orb.H	-	-	-	-	-	-	-	-	-
d-ec	-	-	-	-	-	-	-	-	-
id-gn	-	-	-	24.85	-	33.08	-	-	-
go-go	-	-	-	-	-	-	-	-	-

6.2.2 Adult Post-Cranial Metrics (mm)

Burial	**SK01**	**M**	**SK03**	**F**	**SK04**	**F**	**SK05**	**M**	**SK06**	**M**
		Adult		**25-35 yrs**		**30-34 yrs**		**30-45 yrs**		**17-25 yrs**
	left	*right*	*left*	*right*	*left*	*right*	*left*	*right*	*left*	*right*
HuL_1	-	-	-	314	-	-	-	359	-	-
RaL_1	-	-	216	-	235	236	-	-	-	-
UlL_1	-	-	238	-	-	261	-	-	-	-
FeL_1	-	-	-	419	-	436	-	-	-	440
FeD_1	-	-	24.51	26.17	28.25	28.03	-	-	32.98	29.18
FeD_2	-	-	33.83	35.75	33.2	32.25	-	-	33.48	32.96
FeE_1	-	-	-	74.61	-	75.92	-	-	-	-
TiL_1	360	362	-	-	354	355	-	-	357	-
TiD_1	34.14	37.77	30.73	-	31.04	31.26	-	-	35.41	37.97
TiD_2	24.85	22.62	20.88	-	22.31	22.31	-	-	27.4	27.79
TiE_1	-	74.84	69.26	-	70.77	70.84	-	-	-	-
FiL_1	-	-	-	-	347	-	-	-	-	-

Burial	**SK07**	**M**	**SK08**	**?M**	**SK09**	**F**	**SK10**	**F**
		25-30 yrs		**17-20 yrs**		**25-35 yrs**		**35-45 yrs**
	left	*right*	*left*	*right*	*left*	*right*	*left*	*right*
HuL_1	-	331	-	-	295	-	-	-
RaL_1	255	258	228	-	-	-	215	216
UlL_1	-	279	249	-	-	-	231	-
FeL_1	452	448	-	-	-	-	-	410
FeD_1	30.55	30.39	-	-	23.38	-	26.19	24.5
FeD_2	32.93	34.74	-	-	29.4	-	34.92	33.39
FeE_1	82.94	83.28	-	-	71.04-	-	-	73.7
TiL_1	-	-	-	-	340	348	334	334
TiD_1	33.29	-	-	-	29.81	29.85	29.76	29.83
TiD_2	25.43	-	-	-	18.92	18.9	22.74	23.31
TiE_1	75.93	-	-	-	67	67.24	67.72	68.6
FiL_1	-	-	-	-	338	340	-	333

6.2.3 Juvenile Post-Cranial Metrics (mm)

All long bone measurements exclude epiphyses, unless otherwise stated

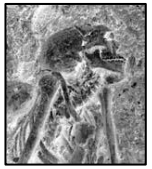
Burial	**SK02**	**7-11 yrs**
	left	*right*
HuL_1	-	-
RaL_1	-	139
UlL_1	-	-
FeL_1	264	263
TiL_1	211	209
FiL_1	203	203

6.4 Catalogue of Disarticulated Human Skeletal Remains

Codes used in catalogue of disarticulated human skeletal remains (based on Chamberlain and Witkin 2000).

??	Unknown
GB	Burnt bone
GC	Calcified soft tissue
GT	Soft tissue
KK	Skeleton
WW	Unknown (faunal)
AI	Auditory: Incus
AM	Auditory: Malleus
AS	Auditory: Stapes
CC	Cranium
CE	Endocast
CF	Frontal
CH	Ethmoid
CL	Lacrimal
CN	Nasal
CO	Occipital
CP	Parietal
CS	Sphenoid
CT	Temporal
CV	Calvaria
CX	Vault Fragment
CZ	Zygomatic
QH	Hyoid
D1	Upper dI1
D2	Upper dI2
D3	Upper dC
D4	Upper dM1
D5	Upper dM2
E1	Lower dI1
E2	Lower dI2
E3	Lower dC
E4	Lower dM1
E5	Lower dM2
D?	? Deciduous tooth
DD	Deciduous tooth
DR	Decid. tooth root
DX	Decid. crown frag.
M1	Lower I1
M2	Lower I2
M3	Lower C
M4	Lower P1
M5	Lower P2
M6	Lower M1
M7	Lower M2
M8	Lower M3
X1	Upper I1
X2	Upper I2
X3	Upper C
X4	Upper P1
X5	Upper P2
X6	Upper M1
X7	Upper M2
X8	Upper M3
MC	Mandibular body
MM	Mandible
MR	Mandibular ramus
MS	Mandib. symphysis
MY	Mandibular condyle
XD	Demimaxilla
XP	Premaxilla
XX	Maxilla
PP	Permanent tooth
PR	Perm. tooth root
PX	Tooth crown frag.
QM	Manubrium
QS	Sternum
QX	Sternum frag.
QC	Clavicle
S?	? Scapula
SA	Acromion
SB	Scapula blade
SC	Coracoid
SG	Scap. glenoid cavity
SS	Scapula
SX	Scapula frag.
QR	Rib
VC	Cervical vertebra
VT	Thoracic vertebra
VL	Lumbar vertebra
VS	Sacrum
VY	Coccyx
VV	Vertebra
VX	Vertebra fragment
I?	? Hip bone
IA	Acetabulum
II	Hip bone
IL	Ilium
IP	Pubis
IS	Ischium
IX	Hip bone frag.
H?	? Humerus
HH	Humerus
HP	Humerus-proximal
HM	Humerus-midshaft
HD	Humerus-distal
R?	? Radius
RR	Radius
RP	Radius-proximal
RM	Radius-midshaft
RD	Radius-distal
U?	? Ulna
UU	Ulna
UP	Ulna-proximal
UM	Ulna-midshaft
UD	Ulna-distal
YC	Carpal
YY	Handbone
YS	Scaphoid
YL	Lunate
YQ	Triquetral
YI	Pisiform
YZ	Trapezium
YD	Trapezoid
YA	Capitate
YH	Hamate
YM	Metacarpal
YP	Phalanx (hand)
LS	Sesamoid
F?	? Femur
FF	Femur
FP	Femur-proximal
FM	Femur-midshaft
FD	Femur-distal
LL	Patella
T?	? Tibia
TT	Tibia
TP	Tibia-prox
TM	Tibia-midshaft
TD	Tibia-distal
B?	? Fibula
BB	Fibula
BP	Fibula-proximal
BM	Fibula-midshaft
BD	Fibula-distal
ZT	Tarsal bone
ZZ	Footbone
ZA	Talus
ZC	Calcaneus
ZN	Navicular
ZE	Medial cuneiform
ZI	Intermed. cuneiform
ZL	Lateral cuneiform
ZU	Cuboid
ZM	Metatarsal
ZP	Phalanx

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1001		1		08.07.2020		Vertebra	VS		JUV	JUV2					S1 unfused	3	11.7
1002		1		08.07.2020		Vertebra	VL		JUV	JUV2					L5 body	1	4.8
1003		1		08.07.2020		Vertebra	VL		AA						R inferior arch	1	1.4
1004		1		08.07.2020		Vertebra	VX		AA?						x 3 vertebral fragments	3	1.9
1005		1		08.07.2020		Tibia	TT	L	JUV	INF	c.32.5+/-2.12 foetal weeks				current L 45.54mm, slight erosion on either end but estimated length not more than 50mm	2	0.6
1006		1		08.07.2020		Tooth	X1	R	AA?					slight calculus buccal; incisal edge is chipped	upper right I1	1	0.8
1007		1		08.07.2020		Hip	IX		AA						possible iliac body fragment	1	1.2
1008		2		10.07.2020		Tibia	TM	L	JUV	JUV2?					fragment of midshaft	1	9.2
1009		2		10.07.2020		Carpal	YA	L	JUV	JUV2?					capitate	1	0.6
1010		2		10.07.1010		Vertebra	VC	R	JUV	INF	C.28-30 foetal weeks				C1, right arch, L 10.1mm	1	0.1
1011		6		16.07.2020		Rib	QR	L	AA						x 1 medial end	1	1.4
1012		3		14.07.2020		Clavicle	QR	R	AA						fragment of lateral end	1	4.3
1013		5		15.07.2020		Hand phalanx	YP		AA						1st distal	1	0.6
1014		5		15.07.2020		Hand phalanx	YP		AA						proximal end of a proximal hand phalanx	1	0.6
1015		8		25.07.2020		Vertebra	VT		AA						pedicle of a thoracic	1	0.3
1016		8		25.07.2020		Ulna	UP	R	AA			M			prooximal end, minus olecranon process	1	19.6
1017		8		25.07.2020		Metacarpal	YM		AA						x 2 distal ends, unidentified	2	2.4
1018		8		25.07.2020		Metacarpal	YM	L	AA						MC1	1	2.7
1019		8		25.07.2020		Unidentified	??		AA						small bone fragments, including styloid of MC3	16	1.1
1020		8		25.07.2020		Vertebra	VT		AA						inferior arch of thoracic	1	1
1021		8		25.07.2020		Cranial	CO		AA						occipital fragment	1	3.9
1022		8		25.07.2020		Rib	QR		AA						x 2 shaft fragments	2	1.2
1023		8		25.07.2020		Rib	QR		AA						x 2 rib fragments	2	1



ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1024		8		25.07.2020		Vertebra	VL		AA	YA?			mild SNs superior and inferior		?L3, ring fusing	1	19.9
1025		8		25.07.2020		Vertebra	VT		AA	YA?					thoracic body, ring fusing	1	4
1026		8		25.07.2020		Vertebra	VC		AA	YA?					?C4, ring fusing	1	5.9
1027		8		25.07.2020		Cranial	CX		AA						x 2 vault fragments	2	3.1
1028	12	6		15.07.2020		Unidentified	??		AA						x 366 small fragments	366	77.6
1029	12	6		15.07.2020		Unidentified	??		AA						x 9 long bone fragments	9	9.3
1030	12	6		15.07.2020		Hip	IX		AA						x 3 iliac fragments	3	10.9
1031	12	6		15.07.2020		Hip	IL	L	AA						fragment of sciatic and acetabulum	1	28.7
1032	12	6		15.07.2020		Rib	QR		AA						x 7 shaft fragments	7	8.9
1033	12	6		15.07.2020		Rib	QR	R	AA						x 2 medial ends	2	6.3
1034	12	6		15.07.2020		Vertebra	VT		AA				SNs inferior body		thoracic body fragment	1	22.2
1035	12	6		15.07.2020		Vertebra	VL		AA						body	1	0
1036	12	6		15.07.2020		Vertebra	VC		AA						x 2 body fragments	2	0
1037	12	6		15.07.2020		Vertebra	VL		AA						x 2 superior fragments	2	0
1038	12	6		15.07.2020		Vertebra	VC		AA						2 fragments of superior facets of C2	2	0
1039	12	6		15.07.2020		Vertebra	VX		AA						vertebral fragment	1	0
1040	12	6		15.07.2020		Vertebra	VT	L	AA				mild marginal osteophytes on left superior facet		left arch of ?T1	1	0
1041	12	6		15.07.2020		Vertebra	VC	R	AA						fragments of 2 right arches	2	0
1042	12	6		15.07.2020		Vertebra	VC	L	AA						x 1 left arch	1	0
1043	12	6		15.07.2020		Humerus	HP		AA						fragment of proximal head	1	20.7
1044	12	6		15.07.2020		Humerus	HD	L	AA			M?			distal quarter, biei. 64.04mm	1	0
1045	12	6		15.07.2020		Radius	RP	L	AA						radial tuberosity and neck	1	0
1046	12	6		15.07.2020		Ulna	UD	L	AA						distal quarter, minus styloid, including pronator ridge	2	0
1047	12	6		15.07.2020		Metacarpal	YM	R	AA						proximal epiphysis only, MC1	1	0
1048	12	6		15.07.2020		Metacarpal	YM	R	AA						MC2	2	0
1049	12	6		15.07.2020		Hand phalanx	YP		AA						x 2 distal epipihyses, proximal phalanges	2	0
1050	12	6		15.07.2020		Hand phalanx	YP		AA						x 1 intermediate phalanx	1	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1051	12	6		15.07.2020		Hand phalanx	YP		AA						x 1 distal phalanx	1	0
1052	12	6		15.07.2020		Cranial	CX		AA						x 6 vault fragments	6	30.3
1053	12	6		15.07.2020		Cranial	CO		AA			M			nuchal crest	1	0
1054	12	6		15.07.2020		Cranial	CZ	R	AA						frontal and temporal processes	2	0
1055	12	6		15.07.2020		Tooth	X2	R	AA					slight calculus mesial	upper I2	1	0
1056	12	6		15.07.2020		Tooth	M7	L	AA					moderate calculus lingual	lower M2	1	0
1057	12	6		15.07.2020		Scapula	SB	L	AA						blade base	1	9.1
1058	12	6		15.07.2020		Scapula	SX		AA						fragment of lateral border	1	0
1059	12	6		15.07.2020		Unidentified	??		JUV	JUV1?					x 2 irregular fragments	2	0.7
1060	12	6		15.07.2020		Vertebra	VX		JUV	JUV1?					x 3 vertebral fragments	3	0.9
1061	12	6		15.07.2020		Vertebra	VC		JUV	JUV1?					left superior and inferior facets	1	0
1062	12	6		15.07.2020		Rib	QR		JUV	JUV1?					lateral rib end	1	0.1
1063	12	6		15.07.2020		Unidentified	??		JUV	JUV1?					x 3 long bone fragments	3	5.6
1064	12	6		15.07.2020		Unidentified	??		JUV	JUV1?					fragment of proximal femur orhumerus	1	0
1065	12	6		15.07.2020		Unidentified	??		JUV	JUV1?					x 1 intermedial phalanx	1	0
1066	12	6		15.07.2020		Cranial	CT	L	JUV	JUV1?					left petrous portion	1	12.7
1067	12	6		15.07.2020		Cranial	CF	R	JUV	JUV1?					right orbit	1	0
1068	12	6		15.07.2020		Cranial	CF	L	JUV	JUV1?					left orbit	1	0
1069	12	6		15.07.2020		Cranial	CX		JUV	JUV1?					x 1 vault fragment	1	0
1070	9	3/4	803	08.07.2020		Unidentified	??		AA						x 5 long bone fragments	5	5.4
1071	9	3/4	803	08.07.2020		Unidentified	??		AA						x 97 irregular fragments	97	19.6
1072	9	3/4	803	08.07.2020		Mandible	MM		AA			F?	large external abscess at M1		minus right ascending ramus and containing 1073-1087	2	50.3
1073	9	3/4	803	08.07.2020		Tooth	M8	R	AA			F?		wear 2, medium caries on occlusal, with calculus in the cavity	lower M3 in 1072	1	0
1074	9	3/4	803	08.07.2020		Tooth	M7	R	AA			F?		wear 2, small caries buccal	lower M2 in 1072	1	0
1075	9	3/4	803	08.07.2020		Tooth	M5	R	AA			F?		wear 3, slight calculus buccal, medium caries distal	lower PM2 in 1072	1	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1076	9	3/4	803	08.07.2020		Tooth	M4	R	AA			F?		wear 3, slight calculus buccal and lingual, subgingival	lower PM1 in 1072	1	0
1077	9	3/4	803	08.07.2020		Tooth	M3	R	AA			F?		wear 3, slight calculus lingual, slight calculus buccal, both subgingival	lower C in 1072	1	0
1078	9	3/4	803	08.07.2020		Tooth	M2	R	AA			F?		wear 4, slight calculus lingual, subgingival	lower I2 in 1072	1	0
1079	9	3/4	803	08.07.2020		Tooth	M1	R	AA			F?		wear 5, slight calculus lingual, subgingival	lower I1 in 1072	1	0
1080	9	3/4	803	08.07.2020		Tooth	M1	L	AA			F?		wear 5, slight calculus lingual, subgingival	lower I1 in 1072	1	0
1081	9	3/4	803	08.07.2020		Tooth	M2	L	AA			F?		wear 4, slight calculus lingual (subgingival) and buccal	lower I2 in 1072	1	0
1082	9	3/4	803	08.07.2020		Tooth	M3	L	AA			F?		wear 4, slight calculus lingual and buccal	lower C in 1072	1	0
1083	9	3/4	803	08.07.2020		Tooth	M4	L	AA			F?		wear 3, moderate calculus lingual (subgingival), slight calculus buccal	lower PM1 in 1072	1	0
1084	9	3/4	803	08.07.2020		Tooth	M5	L	AA			F?		wear 3	lower PM2 in 1072	1	0
1085	9	3/4	803	08.07.2020		Tooth	M6	L	AA			F?		wear 3	lower M1 in 1072	1	0
1086	9	3/4	803	08.07.2020		Tooth	M7	L	AA			F?		wear 2, small caries buccal, slight calculus lingual subgingival	lower M2 in 1072	1	0
1087	9	3/4	803	08.07.2020		Tooth	M8	L	AA			F?		wear 2, small caries occlusal	lower M3 in 1072	1	0
1088	9	3/4	803	08.07.2020		Maxilla	XX	R	AA						maxilla fragment with 1089-1092	1	6.9
1089	9	3/4	803	08.07.2020		Tooth	X2	R	AA					wear 3	upper I2 in 1088	1	0
1090	9	3/4	803	08.07.2020		Tooth	X3	R	AA					wear 3, slight calculus buccal, slight calculus lingual subgingival	upper C in 1088	1	0
1091	9	3/4	803	08.07.2020		Tooth	X4	R	AA					wear 2, slight calculus buccal, slight calculus lingual subgingival	upper PM1 in 1088	1	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1092	9	3/4	803	08.07.2020		Tooth	X5	R	AA					wear 2	upper PM2 in 1088	1	0
1093	9	3/4	803	08.07.2020		Tooth	X8	R	AA					wear 2, slight calculus buccal, small caries mesial and distal	upper M3, probably same individual as 1088	1	0
1094	9	3/4	803	08.07.2020		Maxilla	XX	L	AA				large external abscess at PM1, with inflammation		maxilla with 1095-1102	1	13.8
1095	9	3/4	803	08.07.2020		Tooth	X1	L	AA					wear 5, slight calculus buccal	upper I1 in 1094	1	0
1096	9	3/4	803	08.07.2020		Tooth	X2	L	AA					wear 5, slight calculus buccal	upper I2 in 1094	1	0
1097	9	3/4	803	08.07.2020		Tooth	X3	L	AA					wear 3, slight calculus buccal and lingual	upper C in 1094	1	0
1098	9	3/4	803	08.07.2020		Tooth	X4	L	AA					root only, crown lost to caries	upper PM1 in 1094	1	0
1099	9	3/4	803	08.07.2020		Tooth	X5	L	AA					wear 3	upper PM2 in 1094	1	0
1100	9	3/4	803	08.07.2020		Tooth	X6	L	AA					wear 5, slight calculus buccal	upper M1 in 1094	1	0
1101	9	3/4	803	08.07.2020		Tooth	X7	L	AA					wear 3, slight calculus buccal, medium caries distal	upper M2 in 1094	1	0
1102	9	3/4	803	08.07.2020		Tooth	X8	L	AA					wear 2, small caries distal	upper M3 in 1094	1	0
1103	9	3/4	803	08.07.2020		Cranial	CT	L	AA?	could be JUV					zygomatic process, joins with 1104	1	10.7
1104	9	3/4	803	08.07.2020		Cranial	CZ	L	AA						zygomatic, joins with 1103	1	0
1105	9	3/4	803	08.07.2020		Cranial	CX		AA						x 2 fragments	2	0
1106	9	3/4	803	08.07.2020		Cranial	CO		AA						pars basilaris	1	0
1107	9	3/4	803	08.07.2020		Cranial	CF	L	AA				mild cribra orbitalia		left orbit	1	0
1108	9	3/4	803	08.07.2020		Ulna	UD	R	AA						distal 1/3	1	10.2
1109	9	3/4	803	08.07.2020		Metacarpal	YM		AA						fragment of distal head	1	0
1110	9	3/4	803	08.07.2020		Carpal	YZ	R	AA						trapezium	1	0
1111	9	3/4	803	08.07.2020		Hand phalanx	YP		AA						1st proximal hand phalanx	1	0
1112	9	3/4	803	08.07.2020		Hand phalanx	YP		AA						1st distal hand phalanx	1	0
1113	9	3/4	803	08.07.2020		Vertebra	VY		AA						1st coccyx	1	13

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1114	9	3/4	803	08.07.2020		Hyoid	QH		AA						greater horn of hyoid	1	0
1115	9	3/4	803	08.07.2020		Vertebra	VT		AA						right superior facet of thoracic	1	0
1116	9	3/4	803	08.07.2020		Vertebra	VC		AA						left arch, body, and posterior process	1	0
1117	9	3/4	803	08.07.2020		Vertebra	VC		AA						C1	3	0
1118	9	3/4	803	08.07.2020		Vertebra	VC		AA						C2	2	0
1119	9	3/4	803	08.07.2020		Rib	QR		AA						x 22 fragments	22	19.9
1120	9	3/4	803	08.07.2020		Scapula	SX		AA						x 4 body fragments	4	20.1
1121	9	3/4	803	08.07.2020		Scapula	SS	R	AA			F			blade base, coracoid, glenoid, glenoid: L35.3mm, W12.99mm	1	0
1122	2		803	06.07.2020	C.R.	Radius	RP	R	AA						tuberosity only	1	4.3
1123	2		803	06.07.2020	C.R.	Foot phalanx	ZP		AA						x 1 intermediate foot phalanx	1	0.6
1124	16		861	17.07.2020	L.C.	Fibula	BM		AA						shaft fragment	1	6.6
1125	16		861	17.07.2020	L.C.	Rib	QR		AA						x 1 rib fragment	1	1.3
1126	16		861	17.07.2020	L.C.	Unidentified	??		AA						x 1 long bone fragment	1	0.8
1127	16		861	17.07.2020	L.C.	Tarsal	ZN	?	AA						unsided navicular fragment	1	4
1128	17		850	23.07.2020	L.C., over BS#18/19	Unidentified	??		AA						x 26 long bone fragments	26	37.7
1129	17		850	23.07.2020	L.C., over BS#18/19	Unidentified	??		AA						x 417 small irregular fragments	417	90.2
1130	17		850	23.07.2020	L.C., over BS#18/19	Cranial	CX		AA						x 15 vault fragments	15	42
1131	17		850	23.07.2020	L.C., over BS#18/19	Cranial	CF		AA						lateral margin right orbit	1	0
1132	17		850	23.07.2020	L.C., over BS#18/19	Tooth	M7	L	AA					wear 2, moderate calculus lingual, moderate calculus buccal subgingival	lower M2	1	0
1133	17		850	23.07.2020	L.C., over BS#18/19	Tooth	X1	L?	AA					wear 3, slight calculus lingual and buccal, chipping on incisal edge	upper I1	1	0
1134	17		850	23.07.2020	L.C., over BS#18/19	Tooth	X4	R	AA					wear 3, slight calculus lingual, moderate calculus buccal	upper PM1	1	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1135	17		850	23.07.2020	L.C., over BS#18/19	Tooth	X6	R	AA					wear 3, moderate calculus buccal, slight calculus lingual, both subgingival	upper M1	1	0
1136	17		850	23.07.2020	L.C., over BS#18/19	Tooth	X7	R	AA					wear 2, moderate calculus lingual and buccal, subgingival	upper M2	1	0
1137	17		850	23.07.2020	L.C., over BS#18/19	Rib	QR		AA						x 20 shaft fragments	20	18.3
1138	17		850	23.07.2020	L.C., over BS#18/19	Scapula	SX	R?	AA						fragment of lateral border	1	5.7
1139	17		850	23.07.2020	L.C., over BS#18/19	Clavicle	CR	L	AA						minus epiphyses	2	9.3
1140	17		850	23.07.2020	L.C., over BS#18/19	Vertebra	VX		AA						x 8 vertebral fragments	8	66
1141	17		850	23.07.2020	L.C., over BS#18/19	Humerus	HP		AA						x 4 fragments of proximal head	4	21.7
1142	17		850	23.07.2020	L.C., over BS#18/19	Ulna	UP	L?	AA						fragment of proximal head	1	1.6
1143	17		850	23.07.2020	L.C., over BS#18/19	Radius	RD		AA			M?			fragment of proximal head, robust	1	1
1144	17		850	23.07.2020	L.C., over BS#18/19	Humerus	HD	L?	AA						fragment just superior to olecranon fossa	1	3.1
1145	17		850	23.07.2020	L.C., over BS#18/19	Ulna	UM		AA						ulnar shaft fragment	1	9.9
1146	17		850	23.07.2020	L.C., over BS#18/19	Fibula	BM		AA						fibular shaft fragment	1	8.4
1147	17		850	23.07.2020	L.C., over BS#18/19	Patella	LL	R	AA			M?			patella, robust	1	12.3
1148	17		850	23.07.2020	L.C., over BS#18/19	Fibula	BD	R	AA			M?			distal epiphysis only, robust	1	3.3
1149	17		850	23.07.2020	L.C., over BS#18/19	Tarsal	ZU	R	AA						cuboid	1	4.2
1150	17		850	23.07.2020	L.C., over BS#18/19	Unidentified	??		JUV	JUV1?					x 3 long bone fragments	1	5.1
1151	17		850	23.07.2020	L.C., over BS#18/19	Vertebra	VS		JUV	JUV1?					S1 body	1	1.9

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1152	6	2	803	07.07.2020	C.R., surface area	Cranial	CX		JUV	JUV2	7-9 yrs				cranial vault, including left mandibular fossa	8	4.1
1153	6	2	803	07.07.2020	C.R., surface area	Tooth	E3	L	JUV	JUV2	7-9 yrs			slight calculus lingual and buccal	lower deciduous C, probably same individual as 1165	1	8.7
1154	6	2	803	07.07.2020	C.R., surface area	Tooth	E3	R	JUV	JUV2	7-9 yrs				lower deciduous C, probably same as 1165	1	0
1155	6	2	803	07.07.2020	C.R., surface area	Tooth	E5	R	JUV	JUV2	7-9 yrs			slight calculus buccal	lower deciduous M2, probably same as 1165	1	0
1156	6	2	803	07.07.2020	C.R., surface area	Tooth	M1	R	JUV	JUV2	7-9 yrs			slight calculus buccal	lower permanent I1, probably same as 1165	1	0
1157	6	2	803	07.07.2020	C.R., surface area	Tooth	M2	R	JUV	JUV2	7-9 yrs			slight calculus lingual	lower permanent I2, probably same as 1165	1	0
1158	6	2	803	07.07.2020	C.R., surface area	Tooth	M5	L	JUV	JUV2	7-9 yrs			unerupted?	lower permanent PM1, probably same as 1165, R1/4	1	0
1159	6	2	803	07.07.2020	C.R., surface area	Tooth	M6	R	JUV	JUV2	7-9 yrs				lower permanent M1, probably same as 1165, RC	1	0
1160	6	2	803	07.07.2020	C.R., surface area	Tooth	M7	R	JUV	JUV2	7-9 yrs			unerupted?	lower permanent M2, probably same as 1165, R1/4	1	0
1161	6	2	803	07.07.2020	C.R., surface area	Tooth	M1	L	JUV	JUV2	7-9 yrs				lower permanent I1, probably same as 1165	1	0
1162	6	2	803	07.07.2020	C.R., surface area	Tooth	M2	L	JUV	JUV2	7-9 yrs				lower permanent I2, probably same as 1165	1	0
1163	6	2	803	07.07.2020	C.R., surface area	Tooth	M6	L	JUV	JUV2	7-9 yrs				lower permanent M1, probably same as 1165, RC	1	0
1164	6	2	803	07.07.2020	C.R., surface area	Unidentified	??		JUV						x 52 small fragments	52	1.3
1165	6	2	803	07.07.2020	C.R., surface area	Mandible	MC	R	JUV	JUV2					fragments of right body, probably same as 1153-1163	5	7
1166	6	2	803	07.07.2020	C.R., surface area	Rib	QR		JUV	JUV2					x 9 fragments	9	2.8
1167	6	2	803	07.07.2020	C.R., surface area	Unidentified	??		JUV	JUV2					x 17 fragments, including unfused proximal epiphysis of intermediate hand phalanx	17	2.6
1168	6	2	803	07.07.2020	C.R., surface area	Rib	QR	R	JUV	INF	probably preterm				x 2 right ribs	2	0.4
1169	6	2	803	07.07.2020	C.R., surface area	Rib	QR		JUV	INF	probably preterm				x 2 shaft fragments	2	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1170	6	2	803	07.07.2020	C.R., surface area	Vertebra	VT	L	JUV	INF	probably preterm				x 1 right arch	1	0
1171	7		803	07.07.2020	C.R.	Unidentified	??		JUV						possible fragment of alveolar	1	1.3
1172	7		803	07.07.2020	C.R.	Tooth	X7	L	JUV	JUV2?					upper permanent M2, R1/4	1	0
1173	7		803	07.07.2020	C.R.	Humerus	HH	R	JUV	INF	very young				slightly incomplete, 47.89mm	1	3.4
1174	7		803	07.07.2020	C.R.	Tibia	TT	R	JUV	INF	31.1+/-2.12 foetal weeks				46.71mm	1	0
1175	7		803	07.07.2020	C.R.	Tibia	TT	L	JUV	INF	31.0+/-2.12 foetal weeks				46.51mm	1	0
1176	7		803	07.07.2020	C.R.	Fibula	BB		JUV	INF	very young				incomplete	1	0
1177	1		803	06.07.2020	C.R.	Unidentified	??		AA						x 22 irregular fragments	22	3.3
1178	1		803	06.07.2020	C.R.	Unidentified	??		AA						x 11 long bone fragments	11	6.5
1179	1		803	06.07.2020	C.R.	Vertebra	VT		AA						x 2 left arches	2	2.5
1180	1		803	06.07.2020	C.R.	Vertebra	VC		AA						fragment of left body	1	0
1181	1		803	06.07.2020	C.R.	Cranial	CX		AA						x 3 vault fragments	3	6.1
1182	1		803	06.07.2020	C.R.	Cranial	CF	R	AA						lateral end of right orbit	1	0
1183	1		803	06.07.2020	C.R.	Mandible	MR	R	AA						fragment of ascending ramus, just posterior to third molar	1	0
1184	1		803	06.07.2020	C.R.	Mandible	MY		AA						condyle fragment unsided	1	0
1185	1		803	06.07.2020	C.R.	Femur	FM	L?	AA						midshaft fragment	1	60.7
1186	3		803	07.06.2020	C.R., 'TBC if burial'	Humerus	HD	L	JUV	14-17 yrs			supracondylar process		shaft fragment superior to olecranon fossa	2	12.3
1187	3		803	07.06.2020	C.R., 'TBC if burial'	Humerus	HD	?	JUV	14-17 yrs					x 2 fragments of proximal head, unfused but adult-sized	2	5.2
1188	3		803	07.06.2020	C.R., 'TBC if burial'	Humerus	HM		JUV	14-17 yrs					x 2 fragments of proximal end of diaphysis, appears unfused	2	1.6
1189	3		803	07.06.2020	C.R., 'TBC if burial'	Unidentified	??		JUV	14-17 yrs					x 27 irregular fragments	27	7.7
1190	3		803	07.06.2020	C.R., 'TBC if burial'	Unidentified	??		JUV	14-17 yrs					x 22 long bone fragments, primarily humerus?	22	23.8

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1191	3		803	07.06.2020	C.R., 'TBC if burial'	Vertebra	VC		JUV	14-17 yrs					posterior process	1	0.3
1192	5		803	07.07.2020	C.R.	Foot phalanx	ZP		AA				symphalangism		intermediate and distal foot phalanges	1	0.2
1193	15		803	23.07.2020	C.R.	Unidentified	??		AA						x 12 irregular fragments	12	2
1194	15		803	23.07.2020	C.R.	Cranial	CX		AA						x 3 cranial fragments	3	4.9
1195	15		803	23.07.2020	C.R.	Cranial	CF	L	AA						lateral end of left orbit	1	1.6
1196	15		803	23.07.2020	C.R.	Tarsal	ZT		AA						x 5 ?tarsal fragments	5	4.8
1197	15		803	23.07.2020	C.R.	Metatarsal	ZM		AA						x 2 metatarsal shaft fragments	2	3
1198	15		803	23.07.2020	C.R.	Ulna	UM	R	AA						shaft fragment	1	5.9
1199	4		803	06.07.2020	C.R.	Unidentified	??		AA?						x 7 irregular fragments	7	1.2
1200	4		803	06.07.2020	C.R.	Cranial	CX		AA?						x 14 cranial fragments	14	8.5
1201	4		803	06.07.2020	C.R.	Unidentified	??		AA						x 5 long bone fragments	5	22.4
1202	4		803	06.07.2020	C.R.	Foot phalanx	ZP		AA						1st proximal foot phalanx	2	1.7
1203	4		803	06.07.2020	C.R.	Tooth	M7	R	JUV						lower permanent M2, A1/2	1	1.9
1204	4		803	06.07.2020	C.R.	Tooth	X2	R	JUV						upper permanent I2, A1/2	1	0
1205	4		803	06.07.2020	C.R.	Unidentified	??		JUV	JUV1/2					long bone fragment	1	0.9
1206	4		803	06.07.2020	C.R.	Cranial	CX		JUV	INF	very young				x 2 cranial fragments	2	0.2
1207	8		803	07.07.2020	C.R.	Unidentified	??		AA						x 28 small fragments	28	1.9
1208	8		803	07.07.2020	C.R.	Cranial	CX		AA						x 2 vault fragments	2	8.5
1209	8		803	07.07.2020	C.R.	Vertebra	VC		AA						dens of C1	1	0.6
1210	8		803	07.07.2020	C.R.	Metacarpal	YM		AA						metacarpal shaft fragment	1	1.4
1211	8		803	07.07.2020	C.R.	Tooth	X1	L	AA						upper I1	1	1.3
1212	8		803	07.07.2020	C.R.	Hand phalanx	YP		AA						proximal epiphysis of intermediate phalanx	1	0.2
1213	13	5	806/829	15.07.2020	L.C.	Unidentified	??		AA						x 9 irregular fragments	9	2.5
1214	13	5	806/829	15.07.2020	L.C.	Hip	IX		AA						x 1 body fragment	1	2.2
1215	13	5	806/829	15.07.2020	L.C.	Vertebra	VL		AA						right superior facet of a lumbar	1	1.9
1216	13	5	806/829	15.07.2020	L.C.	Vertebra	VL		AA						x 1 body fragment	1	0
1217	13	5	806/829	15.07.2020	L.C.	Metacarpal	YM		AA						MC4, minus distal end	1	2.1
1218	13	5	806/829	15.07.2020	L.C.	Hand phalanx	YP		AA						x 3 proximal hand phalanges	3	6.3

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1219	13	5	806/829	15.07.2020	L.C.	Hand phalanx	YP		AA						x 2 intermediate hand phalanges	2	2.5
1220	14		836	23.07.2020	A.A.	Unidentified	??		AA						x 206 irregular fragments	206	10.7
1221	14		836	23.07.2020	A.A.	Tarsal	ZC	R	AA			M?			calcaneal tuberosity	1	12.8
1222	14		836	23.07.2020	A.A.	Metatarsal	ZM	R	AA						MT2 minus distal head	1	2.2
1223	14		836	23.07.2020	A.A.	Metatarsal	ZM	R	AA						MT5	2	3.5
1224	14		836	23.07.2020	A.A.	Tarsal	ZI	L	AA						2nd cuneiform	1	1.2
1225	14		836	23.07.2020	A.A.	Tarsal	ZM		AA						x 3 MT fragments	3	3.3
1226	14		836	23.07.2020	A.A.	Foot phalanx	ZP		AA						x 1 proximal foot phalanx	1	1.2
1227	14		836	23.07.2020	A.A.	Foot phalanx	ZP		AA						1 distal foot phalanx	1	0
1228	10		803	13.07.2020	C.R., 'infant skull fragments'	Cranial	CF		JUV	JUV2?					x 11 cranial fragments, including medial aspects of both orbits and glabella, frontal sinuses are developing	11	55.6
1229	10		803	13.07.2020	C.R., 'infant skull fragments'	Unidentified	??		AA/JUV						x 2789 small irregular fragments	2789	147.4
1230	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Unidentified	??		AA						x 102 long bone fragments	102	234.6
1231	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Cranial	CX		AA						x 14 vault fragments	14	113.1
1232	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Cranial	CP		AA				6 fragments with external porosity but little expansion		x 9 parietal fragments	9	0
1233	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Cranial	CO		AA			M?			x 5 occipital fragments	5	0
1234	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Ulna	UM		AA						x 2 midshaft fragments	2	34.1
1235	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Radius	RP	R?	AA						fragment of inferior margin of tuberosity	1	0
1236	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Radius	RD	L	AA						distal epiphysis	1	0
1237	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Radius	RP		AA			M?			proximal head, incomplete, robust	1	0
1238	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Ulna	UP	R?	AA						fragment of olecranon fossa	1	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1239	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Ulna	UP	L	AA						coronoid process and radial notch	1	0
1240	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Ulna	UD	L	AA						distal epiphysis	1	0
1241	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Humerus	HD		AA						capitulum, unsided	1	0
1242	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Hand phalanx	YP		AA						distal end of proximal/intermediate hand phalanx	1	0
1243	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Hand phalanx	YP		AA						1st distal hand phalanx	1	0
1244	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Rib	QR		AA						x 6 shaft fragments	6	9.7
1245	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Rib	QR	L	AA						x 1 medial end	1	0
1246	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Vertebra	VX		AA						x 13 fragments	13	35.2
1247	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Vertebra	VL		AA						x 2 left superior facets	2	0
1248	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Vertebra	VL		AA						x 2 left inferior facets	2	0
1249	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Vertebra	VL		AA						x 2 right inferior facets	2	0
1250	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Hip	IX		AA						x 4 fragments of acetabulum	4	11.4
1251	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Femur	FD		AA						x 5 fragments of distal epiphysis	5	79.5
1252	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Femur	FM		AA						x 4 shaft fragments	4	0
1253	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Femur	FM	R	AA						fragment just medial to lesser trochanter	1	0
1254	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Tibia	TP		AA						x 4 fragments of proximal epiphysis	4	34.4
1255	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Tibia	TD	R	AA						fragment of medial malleolus	1	0
1256	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Tibia	TM		AA						x 3 fragments of tibial tuberosity	3	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1257	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Fibula	BM		AA						x 4 shaft fragments	4	27.7
1258	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Tarsal	ZC	L	AA						calcaneus	1	25.7
1259	18		850	29.07.2020	L.C, 'Bag 1 of 3'	Tarsal	ZA		AA						talus fragment	1	0
1260	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Unidentified	??		AA						x 1693 irregular fragments and long bone fragments	1693	163.1
1261	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Maxilla	XX	R	AA				crowding of incisors		anterior fragment with 1262	1	2.5
1262	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Tooth	X3	R	AA					moderate calculus ling and buccal, twisted with mesial turned to lingual	C in 1261	1	0
1263	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Rib	QR		AA						x 4 shaft fragments	4	3.9
1264	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Vertebra	VL		AA						body of a lumbar and right superior facet	1	16.4
1265	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Humerus	HD	L	AA						inferior margin of medial condyle and trochlea	1	6.8
1266	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Hand phalanx	YP		AA						proximal hand phalanx, minus proximal end	1	0
1267	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Hand phalanx	YP		AA						proximal end of proximal hand phalanx, not the same as 1266	1	0
1268	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Metacarpal	YM		AA						shaft fragment	1	0
1269	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Hip	IX		AA	YMA, 30-34 yrs					x 10 fragments, including auricular ilium	10	57.6
1270	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Femur	FP		AA			M			proximal head, 48.78mm	1	90.3
1271	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Femur	FP		AA						proximal head fragment	1	0
1272	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Femur	FM	L	AA						shaft just medial to lesser trochanter	1	0
1273	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Femur	FD		AA						x 6 fragments of distal epiphysis	6	0

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1274	18		850	29.07.2020	L. C., 'Bag 3 of 3'	Metatarsal	ZM	L	AA			M?			MT1, robust	1	0
1275	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Unidentified	??		AA						x 186 irregular fragments	186	49.5
1276	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Cranial	CO		AA						fragment of occipital	1	1.4
1277	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Tooth	X1	R	AA						upper I1	1	0.7
1278	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Hand phalanx	YP		AA						x 1 intermediate hand phalanx	1	2.3
1279	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Humerus	HD	R	AA			M?			midshaft to superior to olecranon fossa, robust, not same as 1280	1	80.9
1280	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Humerus	HD	L	AA			F?			midshaft to superior to olecranon fossa, slender, not same as 1279	1	0
1281	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Radius	RR	L	AA						tuberosity to 2/3 shaft	1	46.8
1282	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Radius	RR	L	AA						distal to tuberosity to distal end of diaphysis	1	0
1283	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Ulna	UP	R	AA			M?			ulnar tuberosity to midshaft, robust	1	52.4
1284	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Ulna	UM	L	AA						midshaft only	1	0
1285	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Femur	FM	L	AA						just above midshaft to popliteal area	1	134
1286	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Femur	FM	L	AA						1/2 of gluteal tuberosity to 1/2 of popliteal area	2	164
1287	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Femur	FM	L	AA			F?			gluteal tuberosity to just above popliteal area	2	117.8
1288	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Femur	FM	R	AA			M?			gluteal tuberosity to just below midshaft	1	129.8
1289	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Tibia	TT	R	AA			M?	healed periostitis on medial aspect. Modern scraping of anterior ridge		inferior to foramen to distal shaft, robust, modern anterior scraping of anterior ridge	1	100.9
1290	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Tibia	TM	L	AA			F			nutrient foramen to midshaft, circum. 76mm, modern	1	46

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
															anterior scraping of anterior ridge		
1291	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Tibia	TM	R	AA			F?			distal end of diaphysis	1	31.6
1292	18		850	29.07.2020	L.C., 'Bag 2 of 3'	Fibula	BM		AA						x 4 shaft fragments	4	65.7
1293	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Unidentified	??		AA						x 343 fragments	343	41.6
1294	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CX		AA				1 with external porosity but no expansion		x 3 vault fragments	3	28.7
1295	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CF		AA						medial right orbit and right side of glabella, joins with 1316	1	0
1296	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CO		AA						articular facet	1	0
1297	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CT	R	AA						mandibular fossa	1	0
1298	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CS		AA						greater wing	1	0
1299	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CZ	R	AA						ring zygomatic, minus maxillary process	1	0
1300	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Mandible	MY	R	AA						condyle	1	0
1301	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Clavicle	QC	R	AA						minus medial end, joins with 1315	1	12.4
1302	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Scapula	SS	R	AA			M			glenoid, coracoid, blade and base, lateral border, joins with 1317, glenoid L 40.47mm, B 30mm	5	35.9
1303	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Cranial	CZ	L	AA						frontal process only	1	1.8
1304	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Rib	QR		AA						x 10 shaft fragments	10	34.9
1305	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Rib	QR	L	AA						x 3 medial ends	3	0
1306	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Rib	QR	R	AA						x 3 medial ends	3	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1307	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VX		AA						body fragments, transverse processes, thoracic facets	22	58.9
1308	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VT		AA						x 3 arches	4	0
1309	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VC		AA						C7? Arch	1	0
1310	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VT		AA				mild osteophytes on superior facets		body and arch of T11?	1	0
1311	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VL		AA						posterior process	1	0
1312	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VL		AA						x 1 left and 1 right superior facets	2	0
1313	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Vertebra	VL		AA						x 1 left and 1 right inferior facets	2	0
1314	19		850	29.07.2020	L.C., 'Bag 1 of 2'	Clavicle	QR	L	AA	MA	25-30 yrs				unsided medial end, fusing	1	1.2
1315	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Clavicle	QR	R	AA						medial end, joins with 1301	1	2.3
1316	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CF		AA						squamous, left side of glabella, medial left orbit, joint with 1295	3	64.1
1317	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Scapula	SA	R	AA						acromion tip, joins with 1302	1	2.1
1318	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Unidentified	??		AA						x 145 fragments	145	41.5
1319	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CX		AA						x 33 cranial vault fragments	33	71.4
1320	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CO		AA			M?			x 4 fragments, including articular facet, nuchal crest, and pars basilaris	4	12.5
1321	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CP	L	AA						slightly incomplete	3	65.8
1322	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CP	R	AA						incomplete	3	49
1323	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CT	L	AA						petrous portion only	1	4

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1324	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Cranial	CT	R	AA			M			petrous portion, mastoid, EAM, and IAM	1	18.8
1325	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Mandible	MM	R	AA						right mandible, probably with 1326/7	1	22.4
1326	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Tooth	M6	R	AA					wear 3, moderate calculus lingual, moderate calculus buccal subgingival	lower M1, probably in 1325	1	0
1327	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Tooth	M8	R	AA					wear 2, slight calculus lingual and buccal	lower M3, probably in 1325	1	0
1328	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Rib	QR	R	AA						x 4 medial ends	4	10
1329	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Rib	QR		AA						lateral end of 1st rib	1	1.5
1330	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Vertebra	VC		AA						cervical body	1	1.9
1331	19		850	29.07.2020	L.C., 'Bag 2 of 2'	Vertebra	VT		AA						thoracic arch	2	3.2
1332	32		802/3	23.07.2020	'H & F remains'	Unidentified	??		AA						x 60 fragments, mostly long bones, combination of AA and JUV	60	22.4
1333	32		802/3	23.07.2020	'H & F remains'	Fibula	BM		AA						shaft fragment	1	7.6
1334	32		802/3	23.07.2020	'H & F remains'	Metacarpal	YM		AA						fragment of distal MC	1	0.2
1335	32		802/3	23.07.2020	'H & F remains'	Hand phalanx	YP		AA						lateral or medial aspect of a proximal hand phalanx	1	0.9
1336	32		802/3	23.07.2020	'H & F remains'	Tooth	X1	R	AA					wear 5, slight calulus lingual, moderate calculus buccal, both subgingival	upper I1, not same as 1337	1	1.2
1337	32		802/3	23.07.2020	'H & F remains'	Tooth	X2	L	AA/JUV					wear 2, slight calculus buccal	upper I2, not same as 1336, could be young AA or JUV	1	0.8
1338	32		802/3	23.07.2020	'H & F remains'	Tooth	X6	R	JUV	JUV2	7-9 yrs			wear 1, slight calculus lingual and buccal	upper M1, A1/2	1	1.8
1339	32		802/3	23.07.2020	'H & F remains'	Rib	QR		JUV	JUV2?					x 1 shaft fragment	1	0.4

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1340	32		802/3	23.07.2020	'H & F remains'	Hand phalanx	YP		JUV	JUV2?					1st proximal hand phalanx	1	0.2
1341	32		802/3	23.07.2020	'H & F remains'	Unidentified	??		JUV	JUV2?					x 6 long bone fragments	6	5.8
1342	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Unidentified	??		AA						x 104 irregular and long bone fragments	104	34.2
1343	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Cranial	CX		AA						x 5 vault fragments	5	14.7
1344	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Cranial	CZ	R	AA						right zygomatic	2	2.5
1345	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Rib	QR		AA						x 5 fragments	5	6.3
1346	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Rib	QR	R	AA				mild marginal osteophytes		x 1 right medial end	1	1.2
1347	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Hip	IX		AA						x 3 hip fragments	3	7.9
1348	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Vertebra	VT		AA						x 1 thoracic arch	1	1.1
1349	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Vertebra	VC		AA						right arch	1	1.1
1350	25		803	07.07.2020	'loose bone from	Metacarpal	YM		AA						x 2 MC shafts	2	2.5

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
					surface', 'fill c.802/803'												
1351	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X1	R	AA					wear 5, slight calculus lingual and buccal, split on vertical	upper I1	1	5.2
1352	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X1	R	AA					wear 4, slight calculus lingual and buccal, both subgingival, notch on incisal edge	upper I1, 1352-6 probably one individual	1	0
1353	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X2	R	AA					wear 2, moderate calculus buccal subgingival, slight calculus lingual	upper I2, 1352-6 probably one individual	1	0
1354	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X3	R	AA					wear 3, slight calculus buccal and lingual	upper C, 1352-6 probably one individual	1	0
1355	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X4	R	AA					wear 2, moderate calculus buccal subgingival, slight calculus lingual	upper PM1, 1352-6 probably one individual	1	0
1356	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tooth	X5	R	AA					wear 2, moderate calculus buccal subgingival, slight calculus lingual	upper PM2, 1352-6 probably one individual	1	0
1357	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Femur	FF	R	JUV	JUV2					gluteal to superior to popliteal area	1	16.2
1358	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tarsal	ZI	R	AA						2nd cuneiform	1	1.8
1359	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Tarsal	ZL	R	AA						3rd cuneiform	1	2.3

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1360	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Foot phalanx	ZP		AA						proximal phalanx minus distal end	1	0.6
1361	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Femur	FM	L	JUV						possible fragment of left femur at lesser trochanter	1	1
1362	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Unidentified	??		JUV						x 1 long bone fragment	1	1.2
1363	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Metacarpal	YM	R	JUV						MC5	1	0.3
1364	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Rib	QR		JUV						shaft fragment	1	0.5
1365	25		803	07.07.2020	'loose bone from surface', 'fill c.802/803'	Mandible	MR	L	JUV						condyle and coronoid	1	1.8
1366	22		849	28.07.2020	P.M.	Unidentified	??		AA						x 521 irregular and long bone fragments	521	77.2
1367	22		849	28.07.2020	P.M.	Scapula	SB	L	AA						blade base	1	10.8
1368	22		849	28.07.2020	P.M.	Scapula	SB	R	AA						blade base	1	8.9
1369	22		849	28.07.2020	P.M.	Scapula	SA	R	AA						acromion and superior margin of glenoid	1	6.5
1370	22		849	28.07.2020	P.M.	Vertebra	VX		AA						x 4 facets of lumbar, thoracic, and cervical vertebrae	4	6.1
1371	22		849	28.07.2020	P.M.	Rib	QR		AA						x 4 shaft fragments	4	6.7
1372	22		849	28.07.2020	P.M.	Unidentified	??		AA						x 3 ulnar/radial fragments	3	24.9
1373	22		849	28.07.2020	P.M.	Humerus	HP	R?	AA			M			fragment of proximal head, 49.96mm	1	11.8
1374	22		849	28.07.2020	P.M.	Humerus	HH	R	AA						deltoid tuberosity to olecranon fossa, including medial condyle	2	88.9

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1375	22		849	28.07.2020	P.M.	Ulna	UU	R	AA						minus distal end	3	55.5
1376	22		849	28.07.2020	P.M.	Radius	RD	R	AA						tuberosity to midshaft	1	13.3
1377	22		849	28.07.2020	P.M.	Carpal	YH	R	AA						hamate	1	5
1378	22		849	28.07.2020	P.M.	Carpal	YL	R	AA						lunate	1	0
1379	22		849	28.07.2020	P.M.	Carpal	YQ	R	AA						triquetral	1	0
1380	22		849	28.07.2020	P.M.	Metacarpal	YM	R	AA						MC2 minus distal end	1	14.2
1381	22		849	28.07.2020	P.M.	Metacarpal	YM	R	AA						MC3 minus distal end	1	0
1382	22		849	28.07.2020	P.M.	Metacarpal	YM	R	AA						MC4 minus distal end	1	0
1383	22		849	28.07.2020	P.M.	Metacarpal	YM		AA						MC shaft and fragment of distal end	2	0
1384	22		849	28.07.2020	P.M.	Hand phalanx	YP		AA						1st proximal, distal ends of two other proximal hand phalanges	5	9.1
1385	22		849	28.07.2020	P.M.	Hand phalanx	YP		AA						distal end of a proximal/intermediate hand phalanx	1	0
1386	22		849	28.07.2020	P.M.	Hip	IX		AA						x 3 fragments	3	5.7
1387	22		849	28.07.2020	P.M.	Femur	FD		AA						x 3 fragments of distal epiphyses	3	27.6
1388	22		849	28.07.2020	P.M.	Femur	FM		AA						x 4 shaft fragments	4	138.7
1389	22		849	28.07.2020	P.M.	Tibia	TT	R	AA			M	healed striated bone on medial aspect of shaft and lateral aspect of distal end of anterior, faint traces on posterior. Also, popliteal line is depressed and rugged		minus distal epiphysis, anterior/posterior 41.54mm, medial/later 27.96mm, circumference 108mm	2	218.1
1390	22		849	28.07.2020	P.M.	Femur	BD	R	AA						distal epiphysis	1	3.8
1391	22		849	28.07.2020	P.M.	Radius	RD	R	AA						anterior half of distal epiphysis	1	1.6
1392	22		849	28.07.2020	P.M.	Tarsal	ZE	R	AA						1st cuneiform, 1392-9 probably all one foot	1	6.2
1393	22		849	28.07.2020	P.M.	Tarsal	ZI	R	AA						2nd cuneiform, 1392-9 probably all one foot	1	2.4
1394	22		849	28.07.2020	P.M.	Metatarsal	ZM	R	AA			M?			MT1, 1392-9 probably all one foot	1	9.8
1395	22		849	28.07.2020	P.M.	Metatarsal	ZM	R	AA			M?			MT2, 1392-9 probably all one foot	1	5.3

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1396	22		849	28.07.2020	P.M.	Metatarsal	ZM	R	AA			M?			MT3, 1392-9 probably all one foot	2	4.9
1397	22		849	28.07.2020	P.M.	Metatarsal	ZM	R	AA			M?			MT4 minus distal end, 1392-9 probably all one foot	1	4
1398	22		849	28.07.2020	P.M.	Metatarsal	ZM	R	AA			M?			MT5, 1392-9 probably all one foot	1	6.3
1399	22		849	28.07.2020	P.M.	Tarsal	ZA	R	AA			M?			talus, 1392-9 probably all one foot	1	25.3
1400	22		849	28.07.2020	P.M.	Unidentified	??		AA						2 fragments embedded in mortar, weight excluded as 18.8g is primarily mortar	2	0
1401	27	1	801	02.07.2020	L.C.	Unidentified	??		AA						x 251 fragments	251	49.5
1402	27	1	801	02.07.2020	L.C.	Cranial	CX		AA						x 1 vault fragment	1	4.1
1403	27	1	801	02.07.2020	L.C.	Tooth	M1		AA					wear 3, moderate calculus lingual and buccal	lower I1	1	0.4
1404	27	1	801	02.07.2020	L.C.	Tooth	M2	R	AA					wear 4, moderate calculus lingual and buccal, concave wear on incisal edge, lateral side to distal edge, 3.42mm	lower I2	1	0.5
1405	27	1	801	02.07.2020	L.C.	Clavicle	QC	R	AA						lateral end, eroded	1	3.5
1406	27	1	801	02.07.2020	L.C.	Scapula	SG	R	AA						incomplete glenoid, L -, W 27.95mm	1	4.8
1407	27	1	801	02.07.2020	L.C.	Scapula	SC	R	AA						coracoid	1	4.2
1408	27	1	801	02.07.2020	L.C.	Scapula	SA	R	AA						acromion	1	2.6
1409	27	1	801	02.07.2020	L.C.	Scapula	SX		AA						body fragment	1	3.4
1410	27	1	801	02.07.2020	L.C.	Vertebra	VS		AA						S5 body	1	0.9
1411	27	1	801	02.07.2020	L.C.	Vertebra	VL		AA						x 2 lumbar fragments	2	2.3
1412	27	1	801	02.07.2020	L.C.	Rib	QR		AA						x 11 shaft fragments	11	11.4
1413	27	1	801	02.07.2020	L.C.	Carpal	YL	L	AA						lunate	1	1.5
1414	27	1	801	02.07.2020	L.C.	Carpal	YQ	L	AA						triquetral	1	0.6
1415	27	1	801	02.07.2020	L.C.	Carpal	YA	L	AA						incomplete capitate	1	0.7
1416	27	1	801	02.07.2020	L.C.	Femur	FM		AA						x 2 long bone fragments	2	15.5
1417	27	1	801	02.07.2020	L.C.	Femur	FD		AA						x 2 fragments of distal epiphysis	2	13.2

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1418	27	1	801	02.07.2020	L.C.	Fibula	BD	L	AA			M			distal epiphysis, robust	1	5.3
1419	27	1	801	02.07.2020	L.C.	Foot bone	LS		AA						x 2 sesamoids	2	0.5
1420	27	1	801	02.07.2020	L.C.	Metatarsal	ZM		AA						fragment of distal epiphysis	1	0.3
1421	27	1	801	02.07.2020	L.C.	Metatarsal	ZM	L	AA						MT3, minus distal end	1	3.2
1422	27	1	801	02.07.2020	L.C.	Metatarsal	ZM	L	AA						MT4, minus distal end	1	2.9
1423	27	1	801	02.07.2020	L.C.	Metatarsal	ZM	L	AA						MT5, minus proximal and distal end	1	2.4
1424	27	1	801	02.07.2020	L.C.	Metatarsal	ZM	R	AA						proximal epiphysis of MT1	1	2.5
1425	27	1	801	02.07.2020	L.C.	Tarsal	ZI	R	AA						2nd cuneiform	1	1.6
1426	27	1	801	02.07.2020	L.C.	Unidentified	??		JUV						x 3 irregular fragments	3	2.1
1427	27	1	801	02.07.2020	L.C.	Vertebra	VC		AA	YA?					right lateral of a cervical	1	0.9
1428	27	1	801	02.07.2020	L.C.	Rib	QR	R	JUV	JUV 2 or older					x 2 medial ends	2	2.7
1429	27	1	801	02.07.2020	L.C.	Vertebra	VT		JUV	JUV1/2					thoracic body, ring just fusing	1	1.9
1430	27	1	801	02.07.2020	L.C.	Vertebra	VS		JUV	JUV2					S1	2	16.1
1431	29		849	13.08.2020	F.M.	Unidentified	??		AA						x 51 irregular fragments	51	9.7
1432	29		849	13.08.2020	F.M.	Cranial	CO		AA						pars basilaris	1	3.1
1433	29		849	13.08.2020	F.M.	Clavicle	QC	R?	AA						small midshaft fragment	1	3.5
1434	29		849	13.08.2020	F.M.	Scapula	SA	R	AA						acromion only	1	1.9
1435	29		849	13.08.2020	F.M.	Vertebra	VT		AA						articular facets, transverse and posterior processes, and body fragments	8	6.3
1436	29		849	13.08.2020	F.M.	Vertebra	VL		AA						body fragment and inferior facet	1	2.5
1437	29		849	13.08.2020	F.M.	Vertebra	VC		AA						left and right facets	2	2.2
1438	29		849	13.08.2020	F.M.	Rib	QR		AA						x 13 small fragments	13	9.1
1439	20	8	803	25.07.2020	C.R., F.M.	Scapula	SS	L	AA						glenoid and blade base	1	8.2
1440	20	8	803	25.07.2020	C.R., F.M.	Vertebra	VL		AA						right lateral body	1	3.4
1441	28	3	816	14.07.2020	C.R.	Unidentified	??		AA						x 6 irregular fragments	6	2.4
1442	28	3	816	14.07.2020	C.R.	Hip	IX		AA						acetabulum fragment	1	1.6
1443	28	3	816	14.07.2020	C.R.	Calcification	GC		AA						xiphoid	1	0.2
1444	28	3	816	14.07.2020	C.R.	Carpal	YL	R	AA						lunate	1	0.5
1445	28	3	816	14.07.2020	C.R.	Radius	RD	R	AA						distal 1/3	1	9.1
1446	28	3	816	14.07.2020	C.R.	Scapula	SX		AA						x 2 fragments	2	2.3

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1447	28	3	816	14.07.2020	C.R.	Vertebra	VX		AA						x 2 fragments	2	0.5
1448	28	3	816	14.07.2020	C.R.	Vertebra	VC		AA						upper cervical	1	3.7
1449	28	3	816	14.07.2020	C.R.	Rib	QR		JUV	JUV1?					x 1 shaft fragment	1	0.1
1450	21	8	803	24.07.2020	C.R., F.M.	Unidentified	??		AA/JUV						x 24 irregular fragments	24	3.3
1451	21	8	803	24.07.2020	C.R., F.M.	Cranial	CX		AA?						x 1 vault fragment	1	1.2
1452	21	8	803	24.07.2020	C.R., F.M.	Rib	QR		JUV	JUV2					x 4 rib fragments	4	1.6
1453	21	8	803	24.07.2020	C.R., F.M.	Sternum	QX		JUV	JUV2					x 2 sternal fragments	2	0.7
1454	21	8	803	24.07.2020	C.R., F.M.	Clavicle	QC		JUV	JUV2					medial end of clavicle	1	1
1455	21	8	803	24.07.2020	C.R., F.M.	Vertebra	VT		AA	YA?					x 2 thoracic bodies	1	2.8
1456	21	8	803	24.07.2020	C.R., F.M.	Humerus	HP		AA						fragment of proximal head	1	1.4
1457	21	8	803	24.07.2020	C.R., F.M.	Rib	QR		AA						x 1 left, 1 right, and 3 shaft fragments	5	9
1458	26	under 7	832	21.07.2020		Metacarpal	YM		AA						MC1, minus proximal end	1	2
1459	26	under 7	832	21.07.2020		Hand phalanx	YP		AA						proximal hand phalanx, minus proximal end	1	2.1
1460	30		815	01.09.2020	G.C., 'from concrete around eircom duct'	Humerus	HM	R	AA						just inferior to deltoid to above olecranon fossa, bone is very dry due to concrete, tiny bits of concrete still attached	13	55.6
1461	23	2	802/3	20.07.2020	N.H.	Femur	FF	L	JUV	INF	31.2+/- 2.08 foetal weeks				complete, L53.39mm, Dia4.81mm, W12.8mm	1	3.8
1462	23	2	802/3	20.07.2020	N.H.	Scapula	SS	L	JUV	INF	probably preterm				complete but eroded	1	0
1463	23	2	802/3	20.07.2020	N.H.	Clavicle	QC	L	JUV	INF	probably preterm				slightly incomplete at lateral, L-, Dia3.2mm	1	0
1464	23	2	802/3	20.07.2020	N.H.	Clavicle	QC	R	JUV	INF	probably preterm				complete, L33.45mm, Dia2.69mm	1	0
1465	23	2	802/3	20.07.2020	N.H.	Foot phalanx	ZP		JUV	INF	probably preterm				possibly 1st proximal foot phalanx	1	0
1466	23	2	802/3	20.07.2020	N.H.	Rib	QR		JUV	INF	probably preterm				x 2 left, 3 right, and 2 lateral ends	5	0
1467	23	2	802/3	20.07.2020	N.H.	Vertebra	VX		JUV	INF	probably preterm				arch fragment (lumbar?) and possible lumbar body	2	0

ID	BS No	SK No	Context	Date	Other Info	Skel Element	Code	Side	Age1	Age2	Age3	Sex	Skel Path	Dental Path	Notes	No of Frags	Weight
1468	23	2	802/3	20.07.2020	N.H.	Cranial	CX		JUV						x 39 fragments	39	17.1
1469	23	2	802/3	20.07.2020	N.H.	Vertebra	VC	R	JUV						right facets of C1	1	0
1470	23	2	802/3	20.07.2020	N.H.	Hyoid	QH		JUV						hyoid body	1	0
1471	23	2	802/3	20.07.2020	N.H.	Tooth	M4	L	JUV	JUV2	7-8 yrs				lower PM1, R1/4	1	0
1472	23	2	802/3	20.07.2020	N.H.	Carpal	YC		JUV	JUV2	7-8 yrs				left capitate, a trapezoid, and an unidentified carpal	3	0
1473	23	2	802/3	20.07.2020	N.H.	Radius	RD	L?	JUV	JUV2	7-8 yrs				unfused epiphysis	1	0
1474	23	2	802/3	20.07.2020	N.H.	Foot phalanx	ZP		JUV	JUV2	7-8 yrs				x 3 unfused epiphyses of proximal foot phalanges	3	0
1475	23	2	802/3	20.07.2020	N.H.	Foot phalanx	ZP		JUV	JUV2	7-8 yrs				x 6 proximal and intermediate foot phalanges	6	0
1476	23	2	802/3	20.07.2020	N.H.	Hand phalanx	YP		JUV	JUV2	7-8 yrs				x 2 unfused epiphyses of proximal hand phalanges	2	0
1477	23	2	802/3	20.07.2020	N.H.	Unidentified	??		JUV	JUV2	7-8 yrs				x 4 unfused distal MC/MT epiphyses	4	0
1478	23	2	802/3	20.07.2020	N.H.	Unidentified	??		JUV	JUV2					x 91 small fragments	91	3.7

Appendix 3 : Site Registers

Contexts

Context No.	Type	Description
801	Fill	Fill of grave cut for B1 - SK1
802	Fill	Same as C803 - yellowish brown sand
803	Fill	Surface layer - same as C802
804	Cut	Cut of modern post hole
805	Fill	Fill of C804
806	Structure	Semi-circular structure-upper enclosing wall associated with well C825
807	Fill	Rubble infill associated with C806
808	Fill	Fill of well (modern)
809	Deposit	Human bone fragment (NE of water services)
810	Fill	Fill of well
811	Cut	Post-hole
812	Fill	Fill of C811
813	Cut	Cut of grave for SK1
814	Fill	Possible grave lining stones C801/SK1
815	Cut + Fill	Services trench - Eircom pipeline
816	Fill	Fill around SK3 - No clear cut was visible, however slight staining was evident in the lower torso area
817	Cut	Grave cut associated with SK3
818	Cut	Grave cut associated with SK4
819	Fill	Fill of SK4
820	Fill	Fill of SK2
821	Fill	Burial stones associated with SK2
822	Cut + Fill	Broadband piping

Context No.	Type	Description
823	Cut	Grave cut for SK2/C820
824	Fill	Rubble fill with cobbles and brick inclusions below C806 - associated with destruction of C806
825		Circular well
826	Fill	Black sandy fill of C825
827	Wall	Linear stone feature oriented east-west, abutting and possibly cutting C825
828	Cut	Grave cut SK5
829	Fill	Fill of C828/ SK5
830	Fill	Fill contained of C825
831	Cut	Grave cut for SK7
832	Fill	Fill of SK7
833	Stone	Stones associated with C832/SK7
834	Cobbles	Cobbles evident during cleanback of N extension of the site
835	Cut	Cut associated with cobble layer
836	Fill	Fill containing BS#14
837	Cut	Cut of pit
838	Fill	Fill of pit C837
839	Deposit	Grey sand-natural
840	Cut	Grave cut SK8
841	Fill	Fill of C840/SK8
842	Fill	Fill of grave associated with SK9
843	Fill	Fill of grave associated with SK10
844	Cut	Cut for grave SK9/ C842
845	Cut	Grave cut SK10/C843
846	Cut + Fill	Cut and fill for 19th C. gas line running at right angle to buildings
847	Fill	Rubble masonry fill close to building under C846 - foundation layer most likely to be associated with first phase of building

Context No.	Type	Description
848	Deposit	Modern concrete fill associated with modern gas line running E-W
849	Fill	Fill associated with BS#22 - on N side of gas line C848
850	Fill	Fill associated with BS#17, 18 +19 - S of gas pipe C848
851	Cut	Cut of pit burial E of SK10
852	Fill	Stones from C843 associated with SK10
853	Fill	Fill of C851 - small pit, possible burial - E of SK10
854	Fill	Same as C839
855	Cut	Possible grave cut heavily truncated by C806 where it runs under wall of building - No *in situ* burial but scatter of bone found in upper levels during cleanback of this area
856	Fill	Silty sandy red clay - fill of C855, grave cut - not sampled
857	Cut	SK6 - very ephemeral grave cut - just base of grave left post-ex (issued in post-ex)
858	Fill	SK6 - fill grave cut
859	Fill	SK6 - burial stones
860	Fill	SK9 - burial stones
861	Fill	N of gas pipe C848, greyish brown sand with inclusions. Re-deposited material.
862	n/a	
863	n/a	
864	n/a	
865	Deposit	Blue grey pebbles within C853
866	Deposit	Blue grey pebbles within C829 assoc. with SK5
867	Deposit	Pebbles from C841/SK8

Skeleton register

SK No.	Age	Sex	Stature (cm)	Preservation	Orientation
SK01	Adult	Male	169.3	Poor	NW/SE, head to NW
SK02	JUV2 7-10 yrs	-	-	Good	NW/SE, head to NW
SK03	Adult 25-35 yrs	Female	157.6	Good	W/E, head to W
SK04	Adult 30-34 yrs	Female	163.0	Good	NW/SE, head to NW
SK05	Adult 30-45 yrs	Male	181.0	Good	NW/SE, head to NW
SK06	Adult 17-25 yrs	Male	166.1	Poor	NW/SE, head to NW

SK07	Adult 25-30 yrs	Male	169.0	Good	NW/SE, head to NW
SK08	Adult 17-20 yrs	?Male	165.2	Very poor	NW/SE, head to NW
SK09	Adult 25-35 yrs	Female	158.6	Good	NW/SE, head to NW
SK10	Adult 35-45 yrs	Female	156.5	Very good	NW/SE, head to NW

Bone samples from the disarticulated assemblage

Context No.	Bone sample No.	Description
C803	BS1 to BS10, BS15, BS20, BS21, BS23, BS25, BS32	Scatters of disarticulated skeletal material from within upper level of (C803), a yellow sandy clay layer which overlay the burial area. Some samples such as BS4-BS6, BS9, BS21 and BS23 may be associated with *in situ* burials.
C858	BS12	Disarticulated bone from within (C858), fill of grave (C857) associated with SK6.
C806	BS13	Disarticulated bone possibly associated with SK5
C836	BS14	Disarticulated bone from (C836) most likely to have been disturbed during installation of gas pipeline (C848)
C861	BS16, BS24. See also BS22 below	Bone (human and faunal?) from disturbed deposit C861 located on northern side of gas pipeline (C848). (Note BS11 same as BS16)
C850	BS17, BS18, BS19	All three bone samples were located in a very disturbed matrix of reddish-brown sandy clay, yellow sand and concrete (C850), south of gas pipeline (C848). BS17 located over BS18. BS19 overlay SK10/(C843)/(C845). Fragments of modern concrete found within BS19.
C849 (=C861)	BS22	Disarticulated human remains of adult (femur, tibia, fibula, patella, vertebrae, metatarsals) abutting gas pipeline (C848). Some of the bone had adhered to the concrete used during the pipeline construction. Located within (C849), a mottled re-deposited reddish-brown sandy clay with inclusions of clay pipe stems, modern ceramic material etc. Some of the blue/grey pebbles found with burials elsewhere on site were also noted here. (C849) is the same as (C861).

Context No.	Bone sample No.	Description
C832	BS26	Human toe bones found within (C832), fill of grave associated with SK7. Likely to be associated.
C801	BS27	Disarticulated bone which may be associated with SK1.
C816	BS28	Disarticulated bone associated with SK3
C849	BS29	Loose bone which may be associated with BS22/(C861).
C815	BS30	This fragment of a human femur was found embedded in concrete which was associated with the Eircom line/telephone kiosk (C815) originally located outside Supermacs. It was removed by hand as carefully as was possible from the concrete and included here as part of the burial assemblage.
C809	BS31	Fragment of proximal end of femur located north-east of hydrant within deposit which also contained modern pottery.
C802=C803	BS32	Surface bone and teeth

Finds Register

Date	Find Number	Context Number	Description	Material
14/07/2020	20E0330:803:2	803	Button	Brass?
16/07/2020	20E0330:859:4	859, 858	Rectangular stone associated with SK 6	Stone
29/07/2020	20E0330:843:16	843, 845	Beads - C843, C845, SK 10 - found at feet	Bone

Drawing Register

Drawing_No.	Plan/Section	Scale	Date	Initials	Description	Contexts
1	Plan	01:20	27/05/2020	CR	Overall site plan 2 pages 1a+1b	
2	Plan	01:20	29/05/2020	CR	Mid-ex C806 +C807	806,807
3	Plan	01:20	30/06/2020	CR	Overall plan including services and poss. grave cuts	
4	Plan	01:20	06/07/2020	LC	SK 1	801, 813
5	Plan	01:20	09/07/2020	CR	SK 3, SK 4, BS#10	
6	Plan	01:10	10/07/2020	CR	Drawing of SK 2, C823 + C820	
7	Plan	01:10	13/07/2020	CR	Drawing of SK 3 + SK 4 C818, C819	818, 819
8	Plan	01:20	14/07/2020	MF	Mid-ex of circular stone structure (C825)	825
9	Plan	01:20	15/07/2020	CR	Plan of burial cuts + pre-ex of C834	834
10	Plan	01:10	15/07/2020	LC	Plan of SK 5 C828, C829	828,829
11	Plan	01:10	16/07/2020	CR	Plan of SK 6	
12	Plan	01:10	17/07/2020	CR	Plan of SK 7	
13	Plan	01:20	23/07/2020	CR	Mid-ex plan of cobbles C834 - to NE of main site + cut for boundary to burials C835	834, 835
14	Section	01:20	14/07/2020	MF	Section of C825 - NW facing side + SE facing side	825
15	Plan	01:10	25/07/2020	CR	SK 8 - C840 + C841	840, 841
16	Plan	01:10	27/07/2020	LC	Plan - BS# 17, 18 +19 (location) +SK 9 + SK 10	
17	Plan	01:10	27/07/2020	LC	Plan - BS# 22 (N of gas pipline C848)	

18	Plan	01:10	30/07/2020	LC	Plan SK 10 C843, C845 fully exposed, pit feature C851, C853	843, 845, 851, 853
19	Plan	01:20	04/08/2020	LC	Plan - burial cuts SK 9 + SK 10 C844 + C845 to be added to plan #9	844, 845
20	Plan	01:20	06/08/2020	FM, LC	Plan - well feature C825, revetment C824 + wall C827	

Soil samples

Sample No.	Context	Material	Feature	Description	No. of Bags	Date
1	801	Soil	SK1	Soil beneath skull SK1	1	07/07/2020
2	801	Soil	SK1	Soil beneath sacrum SK1	1	07/07/2020
3	801	Soil	SK1	Soil beneath legs SK1	1	07/07/2020
4	820	Soil	SK2	Soil beneath skull SK2	1	10/07/2020
5	820	Soil	SK2	Soil beneath sacrum SK2	1	10/07/2020
6	820	Soil	SK2	Soil beneath feet SK2	1	10/07/2020
7	816	Soil	SK3	Soil beneath skull area	1	
8	816	Soil	SK3	Soil beneath pelvic area	1	
9	816	Soil	SK3	Soil beneath feet	1	
10	819	Soil	SK4	Skull area	1	
11	819	Soil	SK4	Pelvic area	1	
12	819	Soil	SK4	Feet area	1	
13	826	Soil	C825	Fill of circular stone feature	1	14/07/2020
14	858	Soil	SK6		1	16/07/2020

15	858	Soil	SK6	Fill with disarticulated bone assoc. with SK6	1	16/07/2020
16	829	Soil	SK5	Fill within skull SK5	1	16/07/2020
17	829	Soil	SK5	Soil beneath skull SK5	1	16/07/2020
18	832	Soil	SK7	Soil from head area	1	
19	832	Soil	SK7	Soil from feet area	2	
20	832	Soil	SK7	Soil from pelvic area	1	
21	832	Soil	SK7	Soil	1	20/07/2020
22	803	Soil	Enviro	Sample	1	20/07/2020
23	802	Soil	Enviro	Sample	1	17/07/2020
24	803		Enviro	Sample		
25	804	Soil		Soil from under SK8		
26	832	Soil	Posthole	Soil from posthole	3	28/07/2020
27	851/853	Soil	Burial pit	Soil from poss. burial pit E of SK10	2	30/07/2020
28	843	Soil	SK10	Soil beneath feet	1	31/07/2020
29	843	Soil	SK10	Soil beneath pelvic area	1	31/07/2020
30	843	Soil	SK10	Soil beneath skull	1	31/07/2020
31	843	Soil	SK10	Soil to be sieved - area of beads	2	31/07/2020
32	-	-	-	-	-	-
33	842/844	Soil	SK9	Soil from inside skull	1	27/08/2020

Photo Register

[Type here]

Photo No.	Date	Time	Direction	Context	Description
1	26/06/2020	15.40	Poss. SW	809	Possible human bone NE of water services
2	26/06/2020	15.40	Poss. NE	809	Possible human bone NE of water services
3	26/06/2020	15.40	Poss. NE	809	Possible human bone NE of water services - close-up
4	29/06/2020	14.23	SE	Multi	Overview of area E of water services
5	29/06/2020	14.23	SW	806, 815, 822	Working shot- overview water services and C822 cutting C806
6	29/06/2020	14.23	S	806	Overview of area within C806
7	29/06/2020	14.23	SE	806	Overview of area within C806
8	29/06/2020	14.23	E	806	Overview of area within C806
9	29/06/2020	14.23	E	806, 822	Overview of area within C806 with C822 cutting through
10	29/06/2020	14.23	E	806, 822	Overview of area within C806 with C822 cutting through
11	29/06/2020	14.23	SE	806, 822	Overview of area within C806 with C822 cutting through
12	29/06/2020	14.23	S	806, 822	Overview of area E of water services
13	29/06/2020	14.23	SE	806, 807	Section of C807 rubble infill C806
14	29/06/2020	14.23	NE	806,807,822	Overview of area within C806 with C822 cutting through
15	29/06/2020	16.00	S	802/803, 822	Overview burial area SW quad of site
16	29/06/2020	16.00	S	802/803, 822	Overview burial area SW quad of site
17	29/06/2020	16.00	SW	802/803	Overview burial area SW quad of site - surface bone
18	29/06/2020	16.00	SW	802/803	Burial area SW quad - human burial remains
19	29/06/2020	16.00	SW	802/803	Close-up human burial remains SW quad
20	29/06/2020	16.00	S	802/803	Close-up human burial remains SW quad
21	29/06/2020	16.00	W	802/803, 822	Overview burial area SW quad of site - C822 visible running E-W, N of human remains.
22	29/06/2020	16.00	NW	802/803, 822	Overview burial area SW quad of site
23	29/06/2020	16.00	N	802/803, 822	Overview burial area, W quad of site
24	29/06/2020	16.00	SW	802/803, 822	Overview burial area SW quad of site

25	29/06/2020	16.00	SW	802/803, 822	Overview burial area SW quad of site
26	29/06/2020	16.00	SW	802/803, 822	Overview burial area SW quad of site
27	29/06/2020	16.00	SW	802/803, 822	Overview burial area SW quad of site
28	29/06/2020	16.00	SW	802/803, 822	Overview burial area SW quad of site
29	30/06/2020	13.56	W	801, 802/803, 813, 815	Clean back and exposure of burial cuts - SK1 in foreground
30	30/06/2020	13.56	SW	801, 802/803, 806, 813, 815, 822	Clean back and exposure of burial cuts
31	30/06/2020	13.56	NW	801, 802/803, 813, 815	Clean back and exposure of burial cuts
32	30/06/2020	13.56	W	802/803, 806, 815, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts
33	30/06/2020	13.56	W	801, 802/803, 806, 813 815, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts (slightly blurred)
34	30/06/2020	13.56	N		Panoramic view of site
35	30/06/2020	13.56	NE	802/803, 806, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts - SK1, SK2, SK5
36	30/06/2020	13.56	NW	801, 802/803, 806, 813, 815	Clean back and exposure of burial cuts - SK1 cut by C815
37	30/06/2020	13.56	W	801, 802/803, 813, 815, 822	Clean back and exposure of burial cuts
38	30/06/2020	13.56	S	802/803, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts - SK2 and SK5
39	30/06/2020	13.56	S	802/803, 806, 828, 829	Clean back and exposure of burial cuts -SK5 C828
40	30/06/2020	13.56	W	802/803, 806, 820, 822, 823	Clean back and exposure of burial cuts -SK2 C823
41	30/06/2020	13.56	NW	802/803, 820, 822, 823	Clean back and exposure of burial cuts -SK2 C823
42	30/06/2020	13.56	W	802/803, 806, 820, 822, 823	Clean back and exposure of burial cuts -SK2 C823
43	30/06/2020	13.56	NE	802/803, 806, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts - SK2 and SK5
44	30/06/2020	13.56	NE	802/803, 806, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts - SK1, SK2, SK5
45	30/06/2020	13.56	N	802/803, 815, 820, 822, 823, 828, 829	Clean back and exposure of burial cuts - SK2 and SK5
46	30/06/2020	13.56	SE	802/803, 806, 822, 828, 829	Clean back and exposure of burial cuts -SK5 C828 - possible grave cut to SE below Supermacs, cut by C806

47	30/06/2020	13.56	SE	802/803, 806	Working shot - close-up of potential burial feature cut by C806
48	30/06/2020	13.56	E	802/803, 806, 822	Working shot C806 with possible burial feature below Supermacs
49	30/06/2020	13.56	NE	806, 822	Working shot C806
50	30/06/2020	13.56	NE	802/803, 806, 822, 829, 829	Working shot - SK5 C828 cut by C806 to E
51	30/06/2020	13.56	W	802/803	Clean back and exposure of burial cuts - close-up of human remains in SW quad
52	30/06/2020	13.56		802/803	Close up of possible human remains with charcoal in SW quad
53	30/06/2020	13.56	W	802/803	Clean back and exposure of burial cuts - close-up of human remains in SW quad
54	30/06/2020	13.56	W	802/803	Clean back and exposure of burial cuts - close-up of human remains in SW quad
55	30/06/2020	13.56	SE	801, 802/803, 806, 813, 815	Clean back and exposure of burial cuts - SK1 cut by C815
56	30/06/2020	13.56	SE	801, 802/803, 806, 813, 815	Clean back and exposure of burial cuts - SK1 cut by C815
57	02/07/2020	9.04	SW	810, 822	Overview of C810, possible top courses of wall C827
58	02/07/2020	9.04	SW	810, 822	Overview of C810, possible top courses of wall C827
59	02/07/2020	9.04	SW	810, 822	Overview of C810, possible top courses of wall C827
60	02/07/2020	9.04	E	810, 822	Overview of C810, possible top courses of wall C827
61	03/07/2020	13.12	WNW	801, 813, 814, 815	Mid-ex Sk1 C801, C813
62	03/07/2020	13.12	WNW	801, 813, 814, 815	Mid-ex Sk1 C801, C813, cut by C815 eircom pipe
63	03/07/2020	13.12	NW	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
64	03/07/2020	13.12	WNW	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
65	03/07/2020	13.12	WNW	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
66	03/07/2020	13.12	SSE	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
67	03/07/2020	13.12	ESE	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
68	03/07/2020	13.12	SE	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815
69	03/07/2020	13.12	SE	801, 813, 814, 815	Working shot mid-ex SK1 C801, C813 cut by C815

70	06/07/2020	10.11	SSW		Working shot - Overview mid ex SK1 and SK2
71	06/07/2020	11.51	NW	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
72	06/07/2020	11.51	NW	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
73	06/07/2020	11.51	W	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
74	06/07/2020	11.51	W	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
75	06/07/2020	11.51	E	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
76	06/07/2020	11.51	NE	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
77	06/07/2020	11.51	SW	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
78	06/07/2020	11.51	SW	813, 814, 815	Post-ex exposure of SK1 C813, cut by C815, 806
79	06/07/2020	12.18	NW	806, 820, 821, 823	Working shot mid-ex SK2 C820, C823
80	06/07/2020	12.18	NW	806, 820, 821	Working shot mid-ex SK2 C820, C823, close-up of legs against C806
81	06/07/2020	12.18	NW	820, 821, 823	Mid-ex Sk2 C820, C823 with possible burial stones C821 visible to left
82	06/07/2020	16.16	NW	820, 821, 823	Working shot mid-ex SK2 C820, C823, C821
83	07/07/2020	12.13	SW	806	Section of C806 below Supermacs
84	07/07/2020	12.21	SW	806	Section of C806 below Supermacs
85	07/07/2020	12.21	SW	806	Section of C806 below Supermacs
86	07/07/2020	12.21	SW	806	Section of C806 below Supermacs
87	07/07/2020	13.14			Working shot of the crew - Clare, Fiona, Louise and Aisling
88	07/07/2020	13.15	NW	803, 811, 812	Cleanback W of ESB pole, with posthole C811 visible
89	07/07/2020	13.15	NE	825	Cleanback in circular feature with C825 visible, cut by C822
90	07/07/2020	13.15	SE	803, 811, 812	Cleanback W of ESB pole, with posthole C811 visible
91	08/07/2020	19.35	W	801	SK1 - possible spinal fusion
92	08/07/2020	19.35	NW	801	SK1 - possible spinal fusion
93	09/07/2020	9.49	SE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
94	09/07/2020	9.49	SE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
95	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814

96	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
97	09/07/2020	9.49	SW	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
98	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
99	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
100	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
101	09/07/2020	9.49	NE	806, 813, 814, 815	Post-ex SK1 burial cut C813 with burial stones C814
102	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK1 - possible cut stones to side
103	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK1 - possible cut stones to side
104	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK1 - possible cut stones close-up
105	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK1
106	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK2
107	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK3
108	09/07/2020	13.15	N/A	814	Burial stones C814 assoc. with SK4
109	09/07/2020	13.43	NW	816, 819	Working shot SK3 & SK4 - Louise (5'3")for scale
110	09/07/2020	19.22	W	816, 817, 818, 819	SK3 (left) C816, C817 & SK4 (right) C818, C819 ready for lifting
111	09/07/2020	19.22	SW	816, 817, 818, 819	Close-up SK4 C818, C819
112	09/07/2020	19.22	W	816, 817, 818, 819	Close-up SK3 + Sk4 torsos, BS#10 to SW of SK3
113	09/07/2020	19.22	SW	818, 819	Close-up SK4 feet
114	09/07/2020	19.22	SW	818, 819	Close-up SK4 feet
115	09/07/2020	19.22	SW	816, 817, 818, 819	SK3 (left) C816, C817 & SK4 (right) C818, C819 ready for lifting
116	09/07/2020	19.22	SW	818, 819	Close-up SK4 feet
117	09/07/2020	19.22	SW	818, 819	Close-up SK4 legs and feet
118	09/07/2020	19.22	SE	816, 817	Close-up SK3 torso, with part of SK4 torso visible to left
119	09/07/2020	19.22	SE	816, 817	Close-up SK3 torso
120	09/07/2020	19.22	NE	818, 819	Close-up SK4 torso
121	09/07/2020	19.22	N/A	803	Close-up disarticulated infant skull (BS#10) located SW of SK3

122	09/07/2020	19.22	E	803	Location of BS#10 skull in relation to SK3 + SK4
123	09/07/2020	19.22	E	803	Overview of SK3 +SK4 with BS#10
124	09/07/2020	19.22	SE	816, 817, 818, 819	SK3 + SK4 (SK3 cuts SK4)
125	09/07/2020	19.22	SE	816, 817, 818, 819	SK3 + SK4
126	09/07/2020	19.22	E	816, 817, 818, 819	SK3 + SK4, BS#10
127	09/07/2020	19.22	E	816, 817, 818, 819	SK3 + SK4
128	09/07/2020	19.22	SSW	816, 817, 818, 819	SK3 + SK4, BS#10
129	09/07/2020	19.22	NNE	816, 817, 818, 819	SK3 + SK4
130	09/07/2020	19.23	N	816, 817, 818, 819	SK3 + SK4, BS#10
131	09/07/2020	19.23	N	816, 817, 818, 819	Overview SK3 + SK4
132	09/07/2020	19.23	SW	818, 819	Close-up position right hand SK4
133	09/07/2020	19.23	SW	818, 819	Close-up position right hand SK4
134	09/07/2020	19.23	SW	816, 817, 818, 819	SK3 + SK4
135	09/07/2020	19.23	WSW	816, 817, 818, 819	SK3 + SK4, BS#10
136	09/07/2020	19.23	WSW	816, 817, 818, 819	Close-up pelvic areas of SK3 + SK4
137	09/07/2020	19.23	W	816, 817, 818, 819	SK3 + SK4
138	10/07/2020	11.54	SW	806, 820, 821, 823	SK 2 ready for lifting, burial stones C821 visible
139	10/07/2020	11.54	SW	806, 820, 821, 823	SK 2 ready for lifting
140	10/07/2020	11.54	ESE	806, 820, 821, 823	SK 2 ready for lifting
141	10/07/2020	11.54	SE	806, 820, 821, 823	SK 2 ready for lifting
142	10/07/2020	11.54	NNE	806, 820, 821, 823	SK 2 ready for lifting
143	10/07/2020	11.54	NNE	806, 820, 821, 823	SK 2 ready for lifting
144	10/07/2020	11.54	WNW	806, 820, 821, 823	SK 2 ready for lifting
145	10/07/2020	11.54	WNW	806, 820, 821, 823	SK 2 ready for lifting, feet resting on C806
146	10/07/2020	12.58	NNW	822, 825	Walled structure C825 cut by broadband pipes C822
147	10/07/2020	12.59	WSW	825, 827	Circular structure C825, with later E-W wall C827
148	10/07/2020	13.00	NNE	825, 827	Circular structure C825, with later E-W wall C827

149	10/07/2020	13.00	E	822, 825	Overview of circular structure C825 and broadband pipes C827
150	10/07/2020	13.02	NE	806, 822, 825, 827	Overview circular structure C825 below C806, cut by C822 and E-W wall C827
151	10/07/2020	13.02	NE	806, 822, 825, 827	Overview circular structure C825 below C806, cut by C822 and E-W wall C827
152	10/07/2020	13.02	ENE	822, 825, 827	Overview circular feature C825, E-W wall C827, pipes C822
153	10/07/2020	13.02	WNW	806, 822, 825, 827	Overview circular structure C825 below C806, cut by C822 and E-W wall C827
154	10/07/2020	13.04	NW	825, 822	Overview of circular structure C825 and broadband pipes C827
155	10/07/2020	13.04	NW	806, 822, 825	Overview circular structure C825 below C806, cut by C822 - working shot
156	10/07/2020	13.35	SE	806, 822, 827	C827 E-W wall below C806 and C822
157	10/07/2020	13.35	E	806, 822, 827	Overview of E-W wall C827
158	10/07/2020	13.35	SE	822, 825	W facing section of C825 below C822
159	10/07/2020	13.35	SSW	826, 825, 827	Fill C826 within C825, with E-W wall C827 cutting
160	10/07/2020	13.35	SSW	827	Close-up of intersecting E-W wall C827
161	10/07/2020	15.30	N/A	820	Mid-ex SK2 stone under left shoulder
162	13/07/2020	15.01	NNE	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
163	13/07/2020	15.01	SE	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
164	13/07/2020	15.01	SW	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
165	13/07/2020	15.01	NNE	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
166	13/07/2020	15.01	NW	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
167	13/07/2020	15.01	NW	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
168	13/07/2020	15.01	NW	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
169	13/07/2020	15.01	NNE	803, 806, 828, 829	Pre-ex SK5, cut C828, fill C829 within C803, cut by C806
170	13/07/2020	15.02	SSW	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
171	13/07/2020	15.02	SSW	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
172	13/07/2020	15.02	NW	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
173	13/07/2020	15.02	NW	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave

174	13/07/2020	15.02	NNW	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
175	13/07/2020	15.02	N	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
176	13/07/2020	15.02	SE	803, 823, 821	Post-ex burial cut C823 SK2, burial stones C821 left side of grave
177	13/07/2020	15.47	N/A	C826	Working shot - F#1 metal object
178	13/07/2020	15.49	N/A		Working shot - F#2 button
179	13/07/2020	15.49	N/A		Working shot - F#2 button, underside
180	14/07/2020	9.10	SE	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
181	14/07/2020	9.10	SE	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
182	14/07/2020	9.10	NE	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
183	14/07/2020	9.11	NW	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
184	14/07/2020	9.11	NW	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
185	14/07/2020	9.11	NW	803, 806, 828, 829	Working shot - mid-ex SK5, poss. cut by C806 below torso
186	14/07/2020	9.56	NW	803, 817	Post-ex cut C817 exposed for SK3
187	14/07/2020	9.57	NW	803, 817	Post-ex cut C817 exposed for SK3
188	14/07/2020	13.01	W	803, 817, 818	Post-ex cut C817 and cut C818 burials SK3 + SK4
189	14/07/2020	13.01	W	803, 817, 818	Post-ex cut C817 and cut C818 burials SK3 + SK4
190	14/07/2020	14.22	NW	803, 828, 829	Mid-ex SK5, close-up of skull and torso
191	14/07/2020	14.22	NW	803, 828, 829	Mid-ex SK5
192	14/07/2020	14.22	SE	803, 806, 828, 829	Mid-ex SK5
193	14/07/2020	14.22	SSW	803, 806, 828, 829	Mid-ex SK5
194	14/07/2020	14.22	SSW	803, 806, 828, 829	Mid-ex SK5
195	14/07/2020	14.22	NNE	803, 806, 828, 829	Mid-ex SK5
196	14/07/2020	14.22	NNE	803, 806, 828, 829	Mid-ex SK5
197	14/07/2020	14.22	NW	803, 806, 828, 829	Mid-ex SK5
198	14/07/2020	14.22	NW	803, 806, 828, 829	Mid-ex SK5
199	14/07/2020	14.22	NW	803, 828, 829	Mid-ex SK5, close-up of skull and torso

200	14/07/2020	14.22	NW	803, 828, 829	Mid-ex SK5, close-up of skull and torso
201	14/07/2020	14.36	W	826	Working shot - F#3 metal object C826
202	14/07/2020	14.36	NW	826	Working shot - F#3 metal object C826
203	14/07/2020	14.36	NE	826	Working shot - F#3 metal object C826
204	14/07/2020	14.40	NW	829	Working shot - close-up skull SK5 mid-ex
205	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
206	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
207	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
208	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
209	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
210	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
211	14/07/2020	14.45	N/A	826	Close-up F#3 post-ex working shot
212	14/07/2020	15.07	SW		Supporting works under Supermacs
213	14/07/2020	15.07	SW		Supporting works under Supermacs
214	15/07/2020	15.38	NW	858, 859	Close-up SK6 feet - showing burial stone on ankle (C859)
215	15/07/2020	15.40	NW	858, 859	Working shot mid-ex SK6
216	16/07/2020	12.57	NW	857, 858, 859	SK6 - legs, feet, part of pelvis heavily truncated
217	16/07/2020	12.57	NW	857, 858, 859	SK6 - legs, feet, part of pelvis heavily truncated
218	16/07/2020	12.57	SW	857, 858, 859	SK6 - legs, feet, part of pelvis heavily truncated
219	16/07/2020	12.57	SE	857, 858, 859	SK6 - legs, feet, part of pelvis heavily truncated
220	16/07/2020	12.57	SE	857, 858, 859	SK6 - legs, feet, part of pelvis heavily truncated
221	16/07/2020	12.58	N(?)	858	SK6 - part of truncated skull
222	16/07/2020	13.34	NW	828, 829	Working shot - mid-ex skull Sk5
223	16/07/2020	13.34	NW	828, 829	Working shot - mid-ex skull Sk5
224	16/07/2020	13.34	SSW	828, 829	Working shot - mid-ex skull Sk5
225	16/07/2020	13.34	NW	828, 829	Working shot - mid-ex skull Sk5
226	16/07/2020	13.35	NNW	828, 829	Working shot - mid-ex skull Sk5

227	17/07/2020	13.05	NW	803, 839	Post-ex SK6 - C839 'B" Horizon visible below C803
228	17/07/2020	13.05	NW	803, 839	Post-ex SK6 - C839 'B" Horizon visible below C803
229	17/07/2020	13.05	NW	803, 839	Post-ex SK6 - C839 'B" Horizon visible below C803
230	17/07/2020	13.13	NW	803, 828	Post-ex SK5 grave cut C828
231	17/07/2020	13.13	NW	803, 828	Post-ex SK5 grave cut C828
232	17/07/2020	13.13	SE	803, 806, 828	Post-ex SK5 grave cut C828
233	17/07/2020	13.13	SE	803, 806, 828	Post-ex SK5 grave cut C828
234	17/07/2020	13.14	NW	803	Possible linear feature below SK5 grave cut C828
235	17/07/2020	13.14	NW	803	Possible linear feature below SK5 grave cut C828
236	17/07/2020	13.14	NW	803, 806	Possible linear feature below SK5 grave cut C828
237	17/07/2020	13.14	NW	803, 806	Possible linear feature below SK5 grave cut C828
238	17/07/2020	13.14	SE	803, 806	Possible linear feature below SK5 grave cut C828
239	17/07/2020	13.14	NE	803, 806	Possible linear feature below SK5 grave cut C828
240	17/07/2020	13.14	NE	803, 806	Possible linear feature below SK5 grave cut C828
241	17/07/2020	13.14	NW	803, 806	Possible linear feature below SK5 grave cut C828
242	18/07/2020	22.45	NW	833	Post-ex SK7 possible bum plug within pelvic area
243	18/07/2020	22.45	NW	831, 832, 833	Post-ex SK7 C831
244	18/07/2020	22.45	W	831, 846	Close-up SK7 legs truncated by service trench C846
245	18/07/2020	22.45	NW	831, 832, 833	Close-up SK7 pelvic area - possible bum plug
246	18/07/2020	22.45	NW	831, 832, 833	Close-up SK7 pelvic area - possible bum plug
247	18/07/2020	22.45	SE	831, 832, 833	Close-up SK7 pelvic area - possible bum plug
248	18/07/2020	22.45	NE	831, 832, 833	Close-up SK7 pelvic area - possible bum plug
249	18/07/2020	22.45	SE	831, 846	Post-ex SK7 C831
250	18/07/2020	22.45	NE	831, 832	Closeup SK7 skull
251	18/07/2020	22.45	N/A	833	Working shot post-ex grave goods SK7 C833
252	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
253	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site

254	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
255	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
256	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
257	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
258	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
259	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
260	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
261	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
262	20/07/2020	12.34		834	Cobble C834 pre-ex - N extension of site
263	20/07/2020	12.34		803, 831	Post-ex Sk7 cut C831
264	20/07/2020	12.34		803, 831	Working shot - post-ex SK7 cut C831
265	20/07/2020	13.28	SW	806	Depth of C806 during removal of section
266	22/07/2020	12.23	W		Old road surface possibly respecting cemetery boundary
267	22/07/2020	12.24	NW		Old road surface possibly respecting cemetery boundary
268	22/07/2020	12.24	SE		Old road surface possibly respecting cemetery boundary
269	22/07/2020	12.25	SE		Old road surface possibly respecting cemetery boundary
270	22/07/2020	12.25			Old road surface possibly respecting cemetery boundary
271	22/07/2020	12.42		848	Possible burial in situ on north side of gas trench C848
272	22/07/2020	14.36	E		Pre-ex of area to N of gas pipe trench
273	22/07/2020	14.36	E		Pre-ex of area to N of gas pipe trench
274	22/07/2020	14.36	E		Pre-ex of area to N of gas pipe trench
275	22/07/2020	14.36	NW		Pre-ex of area to N of gas pipe trench
276	23/07/2020	13.17	SE	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
277	23/07/2020	13.17	SE	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
278	23/07/2020	13.17	SE	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
279	23/07/2020	13.17	S	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803

280	23/07/2020	13.17	SE	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
281	23/07/2020	13.17	W	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
282	23/07/2020	13.17	SW	803, 848	Working shots dis/&articulated bone S of gas trench C848 from C803
283	23/07/2020	13.23	NW	836	Disarticulated bone BS#14
284	23/07/2020	13.23	NW	836	Disarticulated bone BS#14
285	23/07/2020	13.23	NW	836	Disarticulated bone BS#14
286	23/07/2020	13.23	NW	836	Disarticulated bone BS#14
287	23/07/2020	13.23	NW	836	Disarticulated bone BS#14
288	23/07/2020	15.07	SW	850	Disarticulated bone poss. Min. 2 individuals - BS#17, 18 & 19, S of C848
289	23/07/2020	15.07	NE	850	Disarticulated bone poss. Min. 2 individuals - BS#17, 18 & 19, S of C848
290	23/07/2020	15.07	NE	850	Disarticulated bone poss. Min. 2 individuals - BS#17, 18 & 19, S of C848
291	23/07/2020	15.07	NW	850	Disarticulated bone poss. Min. 2 individuals - BS#17, 18 & 19, S of C848
292	23/07/2020	15.07	NW	850	Disarticulated bone poss. Min. 2 individuals - BS#17, 18 & 19, S of C848
293	24/07/2020	9.31	SE	861	Furthest NW section - N of gas trench C848
294	24/07/2020	9.31	NW	861	Furthest NW section - N of gas trench C848
295	24/07/2020	9.31	SE	861	Furthest NW section - N of gas trench C848
296	24/07/2020	9.31	SW	861	Furthest NW section - N of gas trench C848
297	24/07/2020	9.31	SW	861	Furthest NW section - N of gas trench C848
298	24/07/2020	12.31	NW	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
299	24/07/2020	12.31	NW	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
300	24/07/2020	12.31	NW	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
301	24/07/2020	12.31	NE	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
302	24/07/2020	12.31	NE	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
303	24/07/2020	12.31	SW	850	Disarticulated bone BS#17, 18 +19, C848 to N, C815 to S
304	24/07/2020	12.33	NE	843, 845, 850	BS#17, 18 +19 overlying SK10 legs

305	24/07/2020	12.33	NW	850	BS#17, 18 +19 overlying SK10 legs
306	24/07/2020	12.33	NW	850	BS#17, 18 +19 overlying SK10 legs
307	24/07/2020	12.33	SW	850	BS#17, 18 +19 overlying SK10 legs
308	24/07/2020	12.33	SW	850	BS#17, 18 +19 overlying SK10 legs
309	24/07/2020	12.33	SE	850	BS#17, 18 +19 overlying SK10 legs
310	24/07/2020	12.33	SE	850	BS#17, 18 +19 overlying SK10 legs
311	24/07/2020	12.33	SE	850	BS#17, 18 +19 overlying SK10 legs
312	24/07/2020	14.54	SE	842, 843, 844, 845, 850	Overview - SK9, SK10 and C850
313	24/07/2020	15.00	SE	843, 845, 848, 849, 850	Overview - C850, SK10, BS#22 (C849) N of C848 - working shot
314	24/07/2020	15.00	SE	843, 845, 848, 849, 850	Overview - C850, SK10, BS#22 (C849) N of C848 - working shot
315	24/07/2020	15.00	SE	842, 844	Mid-ex SK9
316	24/07/2020	15.00	NW	842, 860	Mid-ex SK9 - close-up skull with poss. burial stones C860
317	24/07/2020	15.00	NW	842, 860	Mid-ex SK9 - close-up skull with poss. burial stones C860
318	24/07/2020	15.00	NW	842, 860	Mid-ex SK9 - close-up skull with poss. burial stones C860
319	24/07/2020	15.00	SE	842, 860	Mid-ex SK9 - close-up skull with poss. burial stones C860
320	24/07/2020	15.01		837, 838	Burial pit C837, C838 pre-ex
321	26/07/2020	11.57	SE		Burial under McGorisks - pre-ex shot SK8
322	26/07/2020	11.57	NW (?)		Close up pre-ex SK8
323	26/07/2020	12.24	NW	840, 841	Mid-ex SK8 McGorisks sub-adult C840 + C841
324	26/07/2020	12.26	NW	840, 841	Mid-ex SK8 McGorisks sub-adult C840 + C841
325	26/07/2020	12.30	SW	840, 841	Mid-ex SK8 McGorisks sub-adult C840 + C841
326	26/07/2020	12.31	SW	840, 841	Mid-ex SK8 McGorisks sub-adult C840 + C841
327	26/07/2020	12.33	SE	840, 841	Mid-ex SK8 McGorisks sub-adult C840 + C841
328	26/07/2020	13.41	SW		Post-ex SK8 beneath step of McGorisks
329	26/07/2020	13.59	SE		Post-ex SK8 beneath step of McGorisks
330	27/07/2020	16.47	NW	842, 843, 844, 845, 850	Mid-ex SK9, SK10 and C850

331	27/07/2020	16.47	N	842, 843, 844, 845	Mid-ex Sk9 and SK10
332	27/07/2020	20.14	NW	842, 844, 860	Mid-ex Sk9 with burial stones C860
333	27/07/2020	20.14	NW	842, 844, 860	Sk9 - ready to lift
334	27/07/2020	20.14	NW	842, 844, 860	Sk9 - ready to lift
335	27/07/2020	20.14	SW	842, 844, 860	Sk9 - ready to lift
336	27/07/2020	20.14	SE	842, 844, 860	Sk9 - ready to lift
337	27/07/2020	20.14	SE	842, 844, 860	Sk9 - ready to lift close-up skull
338	27/07/2020	20.14	NW	842, 844, 860	Sk9 - ready to lift
339	27/07/2020	20.14	NW	842, 844, 860	Sk9 - ready to lift
340	27/07/2020	20.14	N	842, 844, 860	Sk9 - ready to lift
341	27/07/2020	20.14	NW	843, 845, 850	Mid-ex SK10 with C850 overlaying feet
342	27/07/2020	20.14	W	842, 843, 844, 845, 850	Mid-ex SK10 with C850 overlaying feet, SK9
343	27/07/2020	20.14	NW	843, 845, 850	Mid-ex SK10 with C850 overlaying feet
344	27/07/2020	20.14	SE	843, 845	Mid-ex SK10 - close-up skull
345	27/07/2020	20.14	SE	843, 845, 850	Mid-ex SK10 - close-up skull
346	27/07/2020	20.14	E	843, 845	Mid-ex SK10 - close-up skull
347	27/07/2020	20.14	NW	843, 845, 850	Mid-ex SK10 with C850 overlaying feet
348	27/07/2020	20.14	NW	843, 845, 850	Mid-ex SK10 with C850 overlaying feet
349	27/07/2020	20.14	NW	842, 843, 844, 845, 850	SK9, SK10 and C850
350	27/07/2020	20.14	NW	842, 843, 844, 845, 850	SK9, SK10 and C850
351	27/07/2020	20.14	NW	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
352	28/07/2020	10.16	NW	842, 843, 844, 845, 850	Sk9, SK10 and C850
353	28/07/2020	10.16	W	842, 843, 844, 845, 850	SK9, SK10 and C850
354	28/07/2020	10.16	NW	842, 843, 844, 845, 850	SK9, SK10 and C850
355	28/07/2020	10.16	N	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
356	28/07/2020	10.16	N	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
357	28/07/2020	10.16	S	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot

358	28/07/2020	10.16	S	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
359	28/07/2020	10.16	SE	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
360	28/07/2020	10.16	SE	842, 843, 844, 845, 850	SK9, SK10 and C850 - working shot
361	28/07/2020	10.16	SE	842, 843,844, 845, 850	Overview Sk9, SK10 and C850
362	28/07/2020	10.18	SW	842, 843, 844, 845, 850	Working shot - SK9, Sk10 and C850
363	28/07/2020	10.18	W		Working shot - site
364	28/07/2020	10.18	W		Working shot - site
365	28/07/2020	10.24	SE	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
366	28/07/2020	10.24	SE	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
367	28/07/2020	10.24	SE	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
368	28/07/2020	10.24	SE	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
369	28/07/2020	10.24	N	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
370	28/07/2020	10.24	NW	837, 838	Overview possible burial pit cut C837, fill C838, W of SK9
371	28/07/2020	12.45	SW	846, 847	Post-ex C846 18th c gas line and C847, concrete fill close to base of Supermacs
372	28/07/2020	12.45	SW	846, 847	Post-ex C846 18th c gas line and C847, concrete fill close to base of Supermacs
373	28/07/2020	12.45	SW	846, 847	Post-ex C846 18th c gas line and C847, concrete fill close to base of Supermacs
374	28/07/2020	13.11			Burnt bone - possibly F#14 test pit #3
375	28/07/2020	13.11			Burnt bone - possibly F#14 test pit #3
376	28/07/2020	14.32			Sample #22 partially in concrete over gas main
377	28/07/2020	15.26	NW	842, 844	SK9 cranium about to be lifted
378	28/07/2020	15.54	NW	844	Post-ex burial cut C844 SK9
379	28/07/2020	15.54	NE	844	Post-ex burial cut C844 SK9
380	28/07/2020	15.54	SE	844	Post-ex burial cut C844 SK9
381	28/07/2020	15.54	SW	844	Post-ex burial cut C844 SK9
382	28/07/2020	15.54	SW	844	Post-ex burial cut C844 SK9
383	28/07/2020	16.03	NW	861	Test pit 3

384	28/07/2020	16.03	NW	861	Test pit 3
385	28/07/2020	16.03	NE	861	Test pit 3
386	28/07/2020	16.03	NE	861	Test pit 3
387	28/07/2020	16.03	NE	861	Test pit 3
388	28/07/2020	16.03	N	861	Test pit 3
389	28/07/2020	16.07	SW	848	Bone sample #22 in concrete C848
390	29/07/2020	10.18	NE	850	Mid-ex C850 overlying SK10
391	29/07/2020	10.18	NE	850	Mid-ex C850 overlying SK10
392	29/07/2020	10.18	NW	850	Mid-ex C850 overlying SK10
393	29/07/2020	10.18	NW	850	Mid-ex C850 overlying SK10
394	29/07/2020	10.21	SE	850	Working-shot mid-ex C850 overlying SK10
395	29/07/2020	14.47	NE	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
396	29/07/2020	14.47	SE	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
397	29/07/2020	14.47	SE	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
398	29/07/2020	14.47	SE	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
399	29/07/2020	14.47	SW	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
400	29/07/2020	14.47	SW	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
401	29/07/2020	14.47	NW	843, 845	Post-ex C850 BS#19, cut C845, fill C843 SK10 visible below
402	29/07/2020	14.58	NW	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
403	29/07/2020	14.58	N	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
404	29/07/2020	14.58	W	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
405	29/07/2020	14.58	W	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
406	29/07/2020	14.58	SW	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
407	29/07/2020	14.58	S	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
408	29/07/020	14.58	S	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible

409	29/07/2020	14.58	S	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
410	29/07/2020	14.58	N	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
411	29/07/2020	14.58	N	839	Post-ex C802/803 east of SK10, S of gas main C848, C839 visible
412	29/07/2020	15.57			Initial discovery two bone beads SK10
413	30/07/2020	10.15			Bone bead - carved toggle SK10
414	30/07/2020	10.15	NW	843, 845	Mid-ex Sk10 feet - bone beads in situ
415	30/07/2020	12.12		851, 853	Pit feature C851, fill C853
416	30/07/2020	12.27	NE	845, 852	SK10 - ready for lifting
417	30/07/2020	12.27	NE	845, 852	SK10 - ready for lifting
418	30/07/2020	12.27	NW	845, 852	SK10 - ready for lifting - close-up of legs and pelvic area
419	30/07/2020	12.27	NW	845, 852	SK10 - ready for lifting
420	30/07/2020	12.27	NW	845, 852	SK10 - ready for lifting
421	30/07/2020	12.27	SE	845, 852	SK10 - ready for lifting
422	30/07/2020	12.27	SE	845, 852	SK10 - ready for lifting
423	30/07/2020	12.27	NW	845, 852	SK10 - ready for lifting
424	30/07/2020	12.58		851	Post-ex C851
425	30/07/2020	13.00		851	Post-ex C851
426	31/07/2020	13.01	NW	843	SK10 - close-up of skull, teeth
427	31/07/2020	13.01	NW	843	SK10 - close-up of skull, teeth
428	31/07/2020	13.01	N	843	SK10 - close-up of teeth
429	31/07/2020	13.01	NE	843	SK10 - close-up of teeth
430	31/07/2020	14.47	NE	843, 845	SK10 - Left hand under right rib
431	31/07/2020	14.52	NW	843, 845	SK10 - position of right arm and hand
432	04/08/2020	12.34	NW	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags
433	04/08/2020	12.34	SE	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags
434	04/08/2020	12.34	SE	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags

435	04/08/2020	12.34	NW	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags
436	04/08/2020	12.34	NW	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags
437	04/08/2020	12.34	NW	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 with tags
438	04/08/2020	12.36	NW	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 without tags
439	04/08/2020	12.36	SE	844, 845	Post-ex burial cuts C844 SK9 and C845 SK10 without tags
440	05/08/2020	10.20			Bone beads - F#16
441	05/08/2020	10.20			Bone beads - F#16
442	05/08/2020	10.23			Bone beads - F#16
443	05/08/2020	10.23			Bone beads - F#16
444	05/08/2020	10.27			Bone beads - F#16 - close-up of toggle and spacer beads
445	12/08/2020	14.26	W		Post-ex site shots
446	12/08/2020	14.26	SW		Post-ex site shots
447	12/08/2020	14.26	SW		Post-ex site shots
448	12/08/2020	14.26	SW		Post-ex site shots
449	12/08/2020	14.26	E		Post-ex site shots
450	12/08/2020	14.26	S		Post-ex site shots
451	12/08/2020	14.26	W		Post-ex site shots
452	12/08/2020	14.26	NW		Post-ex site shots
453	12/08/2020	14.26	W		Post-ex site shots
454	12/08/2020	14.26	NW		Post-ex site shots
455	12/08/2020	14.26	S		Post-ex site shots
456	12/08/2020	14.26	S		Post-ex site shots
457	12/08/2020	14.26	SW		Post-ex site shots
458	12/08/2020	14.26	S		Post-ex site shots
459	12/08/2020	14.26	SE		Post-ex site shots
460	12/08/2020	14.26	S		Post-ex site shots
461	12/08/2020	14.26	S		Post-ex site shots

462	12/08/2020	14.26	S		Post-ex site shots
463	18/08/2020	9.42	W	806, 825, 827	Infilling possible well feature C825, C827, C806
464	18/08/2020	9.52			Infilling site
465	27/08/2020	9.27			SK2 - possible injury, mark on left tibia
466	27/08/2020	9.27			SK2 - possible injury, mark on left tibia
467	27/08/2020	9.42			SK2 - similar marks on right tibia
468	27/08/2020	9.42			SK2 - similar marks on right tibia
469	27/08/2020	9.42			SK2 - similar marks on right tibia
470	04/09/2020	12.32		852	Possible burial stones, SK10
471	04/09/2020	12.32		852	Possible burial stones, SK10
472	04/09/2020	12.32		852	Close-up - three interesting stones from SK10
473	10/08/2020	16.16		803	Possible posthole/ stakehole
474	06/07/2020	16.13		825	Collapsed floor level interior circular structure
475	28/07/2020	15.58		849	F#15 associated with BS#22
476	01/07/2020	8.01			Gully between Mccul and animal health gas connection
477	27/05/2020	12.58	SW		N of concrete footpath at McGorisks
478	27/05/2020	12.58	S		N of concrete footpath at McGorisks
479	27/05/2020	12.58			Close-up - possible C802/803 N of McGorisks
480	29/05/2020	13.36	W	802/803, 806	Overview of site
481	29/05/2020	13.38	SW	802/803	Close-up of C802/803 with modern disturbances visible
482	29/05/2020	13.39	SW	802/803	Close-up of C802/803 with modern disturbances visible
483	29/05/2020	13.43	NE	802/803	Close-up of C802/803 with modern disturbances visible
484	04/06/2020	8.17	NW		E of site, broadband piping visible
485	05/06/2020	9.29			Bone sample #30 encased in concrete, associated with phone box
486	05/06/2020	9.30			Bone sample #30 encased in concrete, associated with phone box
487	05/06/2020	9.30			Close-up of crisp packet date attached to concrete BS#30

488	25/06/2020	16.13	SW	806, 807, 822	C806, with C807 infill sectioned, broadband C822 visible cutting through all features
489	25/06/2020	16.13	SW	806, 807, 822	C806, with C807 infill sectioned, broadband C822 visible cutting through all features
490	25/06/2020	16.13	SSW	806, 807, 822	C806, with C807 infill sectioned, broadband C822 visible cutting through all features
491	25/06/2020	16.15	SW	806, 807, 822	C806, with C807 infill sectioned, broadband C822 visible cutting through all features
492	02/07/2020	11.32	S	806, 807, 822	East side of site damaged by flooding event - water mains
493	02/07/2020	11.46	SW	806, 807, 822	East side of site damaged by flooding event - water mains
494	02/07/2020	11.48	S	806, 807, 822	East side of site damaged by flooding event - water mains
495	02/07/2020	11.49	W		Flooding E of eastern boundary of site
496	02/07/2020	11.50	NW		Flooding E of eastern boundary of site
497	02/07/2020	15.27			Post-hole?
498	02/07/2020	15.28			Post-hole?
499	02/07/2020	15.28			Post-hole?
500	03/07/3030	8.09	SW	806, 807	Supports being put in place for Supermacs
501	03/07/2020	13.08	SE		NW beyond site boundary
502	10/07/2020	14.21	SW	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
503	10/07/2020	14.21	N	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
504	10/07/2020	14.22	NE	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
505	10/07/2020	14.22	N	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
506	10/07/2020	14.22	N	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
507	10/07/2020	14.23	NE	806, 822, 825, 826, 827	Lower circular feature C825 below C806, cut by E-W wall C827, with fill C826 visible
508	10/07/2020	14.24	N	825, 826, 827	Lower circular feature C825 , cut by E-W wall C827, with fill C826 visible
509	10/07/2020	14.25	NE	806, 822, 825, 826, 827	Overview- C825, C822, C826, C827
510	10/07/2020	14.29	SW	822, 825, 826, 827	Overview- C825, C822, C826, C827
511	13/07/2020	15.56	SW		Working shot - overview of site mid-ex

512	13/07/2020	15.56	SW		Working shot - overview of site mid-ex
513	13/07/2020	15.56	SW		Working shot - overview of site mid-ex
514	15/07/2020	15.35	NW	857, 858, 859	Close-up - feet SK6 C857, C858, with stone placed on left ankle
515	25/07/2020	18.47	W	802/803	Possible grave soil beneath McGorisks - removal of path
516	25/07/2020	19.23	SW	840, 841	Pre-ex SK8 C840, C841
517	25/07/2020	19.26	W	840, 841	Pre-ex SK8 C840, C841
518	26/07/2020	9.21	SW	840, 841	Pre-ex SK8 C840, C841
519	26/07/2020	9.22	SE	840, 841	Pre-ex SK8 C840, C841
520	26/07/2020	9.47	SW	840, 841	Pre-ex SK8 C840, C841, showing where concrete cuts burial
521	26/07/2020	9.53	SE	840, 841	Pre-ex SK8 C840, C841, showing where concrete cuts burial
522	26/07/2020	12.28	SW	840, 841	Post-ex Sk8 , ready for lifting - B horizon also visible
523	26/07/2020	12.28	S	840, 841	Post-ex Sk8 , ready for lifting - B horizon also visible
524	26/07/2020	12.29	SW	840, 841	Post-ex Sk8 , ready for lifting - B horizon also visible
525	26/07/2020	12.34	E		Stone doorstep of McGorisks - dressed stone?
526	26/07/2020	13.59	E		Overview of site
527	26/07/2020	14.10	SW		W of McGorisks
528	26/07/2020	14.10	SW		W of McGorisks
529	26/07/2020	14.10	S		W of McGorisks
530	28/07/2020	10.12	NW		Working shot - exposing SK9, Sk10, C850 and C849,
531	28/07/2020	10.12	WNW		Working shot - exposing SK9, Sk10, C850 and C849,
532	28/07/2020	10.12	WNW		Working shot - exposing SK9, Sk10, C850 and C849,
533	28/07/2020	10.13	NW		Working shot - exposing SK9, Sk10, C850 and C849,
534	28/07/2020	10.14	NW		Working shot - exposing SK9, Sk10, C850 and C849,
535	28/07/2020	10.14	NNE		Exposing Sk9, Sk10, C850
536	28/07/2020	10.24	NW	842, 843, 844,845	Exposing SK9 and SK10
537	28/07/2020	12.43		849	Bone sample #22 - detail

538	04/08/2020	14.56	W	806, 825	Working shot, Overview - C806, C825 - concrete under Supermacs
539	04/08/2020	15.15	W	825, 827	Working shot - overview C825, C827
540	04/08/2020	15.16	SW	806, 825, 826, 827	Working shot, Overview - C806, C825 - concrete under Supermacs
541	04/08/2020	15.18	WNW	806, 825, 826, 827	Working shot, Overview - C806, C825 - concrete under Supermacs
542	04/07/2020	15.19	NNE	822, 825, 827	Working shot - overview C825, C827
543	04/07/2020	15.20	NNE	822, 825, 827	Working shot - overview C825, C827
544	04/08/2020	15.20	NNW	822, 825, 827	Working shot - overview C825, C827
545	04/08/2020	15.27	SW	806, 825, 827	Working shot, Overview - C806, C825 - concrete under Supermacs
546	04/08/2020	15.29	WSW	822, 825, 826, 827	Working shot - overview C825, C827
547	05/08/2020	14.47	ESE	802/803, 806	Possible stakehole W of C806, N of Supermacs
548	05/08/2020	15.27	E	825, 827	Working shot - overview C825, C827
549	05/08/2020	15.27	E	825, 827	Working shot - overview C825, C827
550	06/08/2020	9.20	NNW	825	C825 circular feature
551	06/08/2020	9.20	NNW	825	C825 circular feature
552	06/08/2020	9.20	N	825	Close-up - C825 circular feature
553	06/08/2020	9.20	N	825	Close-up - C825 circular feature
554	06/08/2020	14.44	E	825	Working shot - overview C825 circular feature
555	07/08/2020	10.01	SSW	806	C806 in section running below Supermacs foundation
556	07/08/2020	10.02	S	806	C806 in section running below Supermacs foundation
557	10/08/2020	15.13	SSW	846, 847	C846, C847 running below Supermacs foundation in section
558	14/08/2020	15.12	W		Overview - post-ex of site
559	14/08/2020	15.13	SE		Overview - post-ex of site
560	14/08/2020	15.36	WNW	825	Close-up C825
561	14/08/2020	15.36	N	825	Close-up C825
562	14/08/2020	15.40	W		Overview - post-ex of site
563	18/08/2020	8.29	SSW	822, 806	C822 broadband cutting C806 in section

564	18/08/2020	8.34	S	806, 822	C822 broadband cutting C806 in section
565	18/08/2020	8.36	W	806, 822	C822 broadband cutting C806 in section
566	18/08/2020	8.37	N	806, 822, 825	C822 broadband cutting C806, C825 in section
567	18/08/2020	8.39	W	822, 825	C822 cutting C825
568	18/08/2020	8.40	N	824	Close-up of C824, revetment NE of C825
569	18/08/2020	8.40	W	824, 825	Close-up of C824 revetment in relation to C825
570	18/08/2020	9.15	W	806, 825	Pre-infill of C806/825 circular feature
571	18/08/2020	9.16	W	806, 825	Pre-infill of C806/825 circular feature
572	18/08/2020	9.41	NW	806, 825	Infilling of C806/C825 circular feature
573	18/08/2020	14.41	SW	806	Infilling of C806/C825 circular feature
574	18/08/2020	14.54	SW	806	Infilling of C806/C825 circular feature
575	18/08/2020	15.00	S	806	Infilling of C806/C825 circular feature
576	18/08/2020	15.00	SE	806	Infilling of C806/C825 circular feature
577	18/08/2020	15.30	SW	806	Infilling of C806/C825 circular feature
578	21/08/2020	13.44			Close-up beads F#16 with euro coin for scale
579	21/08/2020	13.45			Close-up beads F#16 with euro coin for scale
580	21/08/2020	13.45			Close-up beads F#16 with euro coin for scale
581	21/05/2020	15.40			Side of site masonry wall and possible stone setting
582	21/05/2020	15.41	W		W section wall and burials
583	28/05/2020	12.08	NW		Working shot from SE