Excavations at STRUELL WELLS, County Down 2012

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1 Summary

A geophysical survey and a four-week archaeological excavation were undertaken at the complex of wells and bathhouses at Struell Wells, Co. Down over May and June, 2012. The excavation was run as a training dig for undergraduate students from Queen's University Belfast (QUB). Four trenches were opened - two inside the ruins of the church (both approx. 6m x 3m) and one either side of the Drinking Well (each 5m x 5m). In the trench at the western end of the church (Trench 4) articulated skeletons, orientated east-west, were uncovered at a depth of 0.5m. The skeletal remains overlay a 'burnt mound' type deposit comprising heat-shattered and reddened stones and charcoal. No finds were recovered from this layer or associated with the overlying skeletal remains. Covering the skeletons and extending across the area of the site investigated, as encountered in Trenches 1, 2 and 4, was a built-up stony deposit, 0.2-0.5m thick, containing fragments of creamware and other post-medieval pottery. The church walls were built above this stony horizon and therefore post-date it. Presumably the stones were laid down to provide firmer footings and dryer ground for its construction. Above this stony layer in Trench 2 was a roughly metalled roadway leading across the stream, contemporary with the eighteenth/nineteenth-century settlement at Struell. In the fourth trench (Trench 3) south of the Drinking Well a stone-built drain, extending southwards from the well was uncovered. This was also clearly detected in the geophysical survey. The drain had been pointed with concrete internally and the ground to the west of it was disturbed and loose and contained modern rubbish. This intrusive work dates to the twentieth century when the site came under State Care and files held by the NIEA (MBR) indicate on-going problems with drainage at the site. Along the eastern side of the drain the linear cut for the drain cut through a cobbled path that leads to the entrance of the Drinking Well. The main finds from the excavation were coins and fragments of drainpipes – all modern. A selection of post-medieval ceramics was recovered from the four trenches, along with fragments of glass, some slate, quartz, rosary beads (modern), clay-pipe stems and a small assemblage of Souterrain Ware principally from Trench 1. The four trenches were back-filled and sods reinstated on completion of the four-week excavation.

2 Introduction

Struell Wells (DOW 038:002) is a complex of wells, bathhouses and a church (ruinous) located in the townland of Struell approximately 3km east of Downpatrick (J5117044220; Figure 1). The site occupies a roughly triangular area of relatively flat land within a small narrow valley. It is bordered along its north-eastern extent by a stream ('*An tStruthail'*) which terminates in a pond some 400m north-east of the site. Immediately adjacent to and west of the stream and contained within a nineteenth-century stone wall ('boundary wall') are four stone-built buildings – the Drinking Well, Eye Well and two bathhouses (Figure 2). Northwest of the Drinking Well and boundary wall are the ruins of a church and to either end of it, and also to the south of the main complex, are the footings and ruins of eighteenth/nineteenth-century cottages. The locations and footings of these houses are best illustrated on the Ordnance Survey maps from the period (Figures 3-6) and are also depicted on the site plan (Figure 2).The area enclosed by the stone wall, along with the church, is owned by the NIEA and is in State Care since 1936.

On the steep slopes of the hill to the south of the site is a natural rock outcrop known as St Patrick's chair (Figure 2). This is referred to in early literature on the site and is decorated with carved graffiti including various crosses and inscriptions.

The site of Struell Wells has recently been the focus of detailed historical research by Finbar McCormick of QUB (McCormick 2009 and 2011). This research led to the rediscovery of St Patrick's chair, previously buried in heavy overgrowth, and encouraged the undertaking of the 2012 investigations.

3 Historical and archaeological background

3.1 Introduction

Struell Wells has been the focus of pilgrimage throughout the medieval period and into the nineteenth century. The pilgrimages are centred on midsummer, or St John's Eve, and also on the Friday before Lammas (1st August) (Harris 1744, 25). The earliest reference to the wells is in a hymn or poem to St Patrick attributed to St Fíacc and dated to the eight-century but which survives in an eleventh- or twelfth-century compilation the *Liber Hymnorum* (McCormick 2009, 56-7). Much of the more recent history of the site, in particular the bathing wells and associated rituals appear to have their origins in the Counter Reformation (McCormick 2009, 45). There is, however, strong evidence that the origins of Struell date back to pre-Christian times (*ibid*. 58). The church took an active part in the pilgrimages and proceedings at Struell up until the eighteenth century but by the early nineteenth-century the church turned away from the site and its pagan proclivities, which included naked bathing. Formal pilgrimages, however, continued until the 1860s and people continue to visit the wells to get bottles of 'holy water' for cures (McCormick 2011, 24-35).

3.2 The main buildings and features of the site

The main buildings at Struell are the two wells, the Drinking Well and Eye Well, the two bathhouses, men's and women's and the church. The two other main features of the site are the rock outcrop known as St Patrick's chair and the boundary wall enclosing the open grassy area, bathhouses and wells with the stream bordering the eastern side. Formerly there were also cairns and an altar, now removed.

The **Drinking Well** is considered the main well and the one principally associated with St Patrick. Father MacCana, writing in 1643 about Struell, refers to 'the ruins of a chapel' and, between it and the bathhouse, a *'fountain...artificially enclosed with stone, which is commonly called the Tub... In this tub the holy man, our Patrick... used to spend a great part of the night, stark naked, singing psalms and spiritual songs'* (quoted in O'Laverty 1878, 249). The Drinking Well is roughly oval shaped in plan and is enclosed with a corbelled roof – thus lending itself to the appellation of 'the tub'. The wickerwork impressions on the internal mortar of the corbelled roof suggest a later medieval date for the construction of the present building (McCormick 2009, 46). The single doorway, on the eastern side, has fragments of carved sandstone mouldings of a thirteenth to fifteenth century date range (*ibid*.). Due to the extensive re-pointing and possibly the partial rebuilding of the structure, it is unclear if these derive from the earlier medieval church, as suggested in the Down Survey (Jope 1966, 310), or are original to the well as proposed by McCormick (2009, 46). Set into the external face of the north wall of the well is a stone with a simple incised cross, possibly early medieval in date, that was found between the church and the well during 'improvements' at the site in the early twentieth century (McCormick 2011, 7).

Towards the centre of the site is the **Eye Well**. This is a small rectangular stone building with corbelled stone roof and is fed by an inflow culvert from the Drinking Well. This well is probably eighteenth-century in date (McCormick 2009, 47). Further south again are the two bathhouses. The **women's bathhouse** is a rectangular stone-built building now unroofed. Inside there is a spout built into the northern gable wall, set at about 1m in height, which continuously streams water fed by an inflow culvert from the stream. Carved sandstone mouldings also survive in the women's bathhouse, and like those in the Drinking Well, can also be dated to sometime between the thirteenth and fifteenth century (McCormick 2009, 48). West of and set at right angles to the women's bathhouse is the largest building on the site, the **men's bathhouse**. This has three rooms; one with benches that functioned as a changing room, a second inter-connected room with a large sunken bath and steps leading down into it. A third outer room has a separate entrance opposite the ladies bathhouse and functioned as a changing room for

it. The construction of the men's bathhouse has been attributed to Lady Elizabeth Cromwell and has been dated to *c.* 1700 (McCormick 2009, 50).

North of the Drinking Well are the unroofed walls of a plain rectangular-plan **church** with two entrances – one in the western gable and one midway along the southern side-wall. The eastern gable wall is missing and the two side-walls end just to the west of the stream. This could suggest that the church once straddled it with the eastern gable set on the opposite side of the water which would have placed the altar above the stream. The 1306 record of taxation indicates that Struell was then a separate parish and it therefore seems probable that it had a church (McCormick 2009, 51). The ruins of a chapel at Struell are mentioned in 1643 by Father MacCana (quoted in O'Laverty1878, 249) and in the mid-eighteenth century by Harris *'... All these vaults seem to be very ancient, and near one of them are the ruins of a small chappel* [sic.] *dedicated to St. Patrick'* (Harris 1744, 25). O'Laverty also notes that the Catholics repaired 'the ruins of this chapel' in 1750 (O'Laverty 1878, 248). The unroofed church at Struell must post-date MacCanna, Harris and O'Lavertys' references to chapel ruins at Struell and therefore date to 1750 at the earliest. As the ruined church is all of one build O'Laverty's remark of 'repair' could be taken as meaning a complete 'rebuild' and therefore date it to 1750. The OS Memoirs from 1836 record that local tradition held that the church was never completed and was left unroofed (quoted in McCormick 2011, 23). Hardy's early nineteenth-century illustration of Struell, which depicts an unroofed church but with an upstanding eastern gable (Figure 7), may therefore be an accurate representation of the 'completed' building.

The church that now stands must have replaced an earlier medieval church, the ruins of which these references allude to, and which was probably much smaller. Fragments of two medieval carved stone windows, were recovered during DoE works at the site in the early 1960s and which most probably derive from this earlier building (Jope 1966, 310). These architectural fragments were subsequently built into the boundary wall adjacent to the Drinking Well (see McCormick 2009, figure 12).

On a rocky outcrop overlooking the site to the south, is a natural rock formation that has been appropriated as '**St Patrick's chair**'. It is covered in graffiti, the earliest recorded written date on the chair is 1711, and a number of incised crosses (McCormick 2009, 52). Climbing up to the chair, circumnavigating and sitting on it, was part of the pilgrims' circuit (O'Laverty 1878, 251).

There were also a series of **cairns** on what O'Laverty (1878, 250-1) refers to as 'Struell Green', i.e. the open grassy area between the church and the bathhouses. O'Laverty (*ibid*. 250-1) records that the site was much altered when the enclosing or **boundary wall** was built, presumably sometime in the nineteenth-century, when the cairns were also removed. The enclosing wall is depicted on all of the OS maps of the area which date from the mid-1830s (Figures 3- 6) indicating that it was built sometime during or before 1829. O'Laverty describes the circuit that pilgrims took, on their feet or knees, around the cairns, wells and up the hill to St Patrick's chair after which they descended and prayed sometime at the **altar** *'which was arranged on the outside of the south sidewall of the chapel'* and then bathed in one of the wells (O'Laverty 1878, 251-2). No traces of the altar now survive.

Lastly there are the remains of a **clachan** at Struell comprising both dwellings and agricultural buildings and the footprints of these structures are illustrated on the nineteenth-century OS maps (Figures 2-6). On the first and second edition maps the footprints of these house are the most distinctive buildings illustrated with their removal and ruinous condition (rectangular box with no infill) tracked in the later two maps (Figures 5 and 6). A couple of the cottages are also shown in Hardy's 1836 illustration of the site (Figure 7) and in photos taken by W.A. Green in the early twentieth-century (see McCormick 2011).

3.3 The water system and drainage

The Eye Well and the two bathhouses are fed by water from culverts and are not 'true' wells with the water *'conveyed by subterraneous aqueducts from one to the other'* (Harris 1744, 25). Hardy (1836, 38-9) in explaining the drainage of the site observes that the sacred stream arrives at Struell and then flows *'by a channel covered over with flags and large stones, and supplies in its course two of the four wells it originally fed'*. The ground north of the bathhouses has clearly been artificially built up so as to bury the culverts and allow the water to feed into the spouts in the two bathhouses. The Drinking Well is the only potential spring well (McCormick 2009, 53; Jope 1966, 310).

A QUB MSc student carried out a GPR survey of the site, supervised by Alastair Ruffell, in which she assessed the drainage system (Allen 2011). The survey indicated that it was quite complex and that it had been modified on more than one occasion (McCormick 2009, 53). This is confirmed by the DoE files held in Hill Street which indicate that many of the old stone culverts were replaced by glazed pipes in the twentieth century (Figures 8 and 9). Hand-written notes held on file (NIEA SM7 files) record that *'drains were investigated and trench drain installed and completed in 1956'* while further notes, made in June of 1958, indicate that the recently fitted drains in 1956 were blocked and that a new pipe was then fitted. In October 1963 flooding was reported and a *'6`` pipe fitted'* with a new water supply to *'the ladies and gents bathhouse'* laid the following year and *'150ft of 6`` sewer pipe procured'* (NIEA SM7 files). A sketch plan (Figure 8) accompanies these notes. A second plan showing the location of manholes (MH) and an associated pipe system is also included in the files (Figure 9). This plan is undated.

4 Resistivity survey *by Sapphire Mussen*

4.1 Introduction

An electrical earth resistance survey of Struell Wells was carried out in May 2012 (14^{th} – 18^{th}). The main objectives were to determine the layout and extent of the subterranean culvert system which transports water to and from the wells and bathhouses at the site and hopefully to locate the remains of earlier church foundations. The survey area included the enclosed walled area surrounding the wells and bathhouses, a 20m wide strip of the grassed field immediately to the west of the site, the area inside the ruined church building, and the grassed area leading up to the church building (Figure 10). The topography of the entire site slopes gradually downwards in a general south to north direction and the grounds are well maintained and under grass although waterlogged in places. Both high and low resistance anomalies of interest were detected during the course of the survey.

4.2 The survey

On first visit to the site it was deemed that the setting up of one survey grid would be almost impossible and of little use due to the presence of buildings, walls, pathways, trees and the unusual shape of the main enclosed area. As a result the survey site was split into four smaller gridded areas (Areas A-D) which were then surveyed separately and the results amalgamated to form an overall image of the site (Figure 11). A few mature trees are also located within this area but were of little hindrance to the survey. Fields to the north and west of the site are used for cultivation and grazing. A section of the western field was included in the survey and was lying fallow at the time. The topography of this field comprised stonier ground in the south, sloping down towards much more waterlogged land alongside the stream to the north. The local geology is Hawick group sandstone.

All grids were set out with 20m intervals and covered a total area of approximately 0.36 hectares. Area A covered a strip of field to the west of the site, Area B comprised the interior of the church building, and

Area C covered the area leading up to the church, between the field to the west and the walled area containing the wells. Area D encompassed the whole of the area enclosed by the boundary wall where the wells and bathhouses are situated.

Table 1 (below) provides the details of the equipment and methodology employed for the earth resistance survey. The survey was carried out using a Geoscan RM15 meter and MPX15 multiplexer and conducted using a traverse interval of 0.5m and sampling interval of 0.5m. The results of the resistance survey are graphically presented in Figures 11-13 and an interpretation of these results is given in table format (Table 2; Section 4.5), which should be read in conjunction with Figure 14 which gives an interpretative illustration of the resistance survey data. During the course of the survey, the weather was mild with some rainfall.

Survey type	Electrical Earth Resistance
Instrumentation	Geoscan RM15 resistance meter and MPX15 multiplexer
Probe/sensor configuration	Parallel twin (3-probe)
Probe/sensor spacing	0.5m
Grid size	20m x 20m
Traverse interval	0.5m
Sample interval	0.5m
Traverse pattern	Zig-Zag
Spatial accuracy	Grids set out using a Leica TPS 705 series total station

Table 1 Details of the equipment and methodology employed for the earth resistance survey

4.3 Earth resistance survey results

The earth resistance survey results are listed by code (see Figure 14) and described and discussed in Table 2 below.

Table 2 Earth resistance survey results

Code	Description	Interpretation
r1	Sub-rectangular anomaly of mid-high level resistance with a maximum length of 30m north-south. It disappears off the edge of the survey area to the east.	The rectangular appearance of this anomaly suggests that it could represent the foundations of a structure, possibly the remains of an earlier church building at the site. However, without knowing the full extent of this anomaly it is not possible to say with much certainty what it may represent. It also lacks clear definition and may be imaging geological responses or the remains of an earlier field boundary. No evidence for a structure here is recorded on the nineteenth-century OS maps of the site but an old field boundary can be noted crossing field in rough correspondence with the northernmost edge of this anomaly (Figures 3-6).
r2	Amorphous area of very high resistance along the eastern edge of the survey area, north of r1.	This high resistance anomaly is likely to be indicative of stone or rock close to or on the surface. This could potentially be from field clearance, removal of an old field boundary, demolition of nearby structures or simply a geological rock outcrop. Its position also corresponds roughly with the alignment of a boundary depicted on Ordnance Survey maps of the site (Figure 3-6).
r3	Very high resistance running along the inside of the enclosing wall of the eastern field.	This anomaly respects the stone field boundary and is likely to be representative of stony rubble from the construction of the road and/or field walls.
r4	Sub-rectangular area running north-northeast to south-southwest. Total length of area approximately 20m and 10m at its maximum recorded width. Within this area lie a number of anomalies ranging from low to very high levels of resistance, including some high resistance linear anomalies and very high resistance amorphous anomalies.	The area of r4 is situated directly over a raised rectangular platform of earth and stone, which is a likely cause for the mixed range of readings in this area. The linear anomalies within the area r4 may correspond to interior walls of an earlier building which once stood at the site. The northernmost edge of area r4 takes the form of a linear, short and very steep bank. The ground is hard underfoot in this area and building stone can be seen on the surface. The eastern edge of the area r4 drops off into a steep grass covered bank, getting gradually higher towards the southern end, maintaining a level platform at the top. The foundations of a building running in line with this

		are preserved immediately south of this area. It is most likely that a building once stood covering the area of r4, the high and low resistance levels representing rubble and infill from demolition of the structure. Buildings are shown at this location on Ordnance Survey maps of the area (Figures 3-6). By 1932 it appears that the northernmost end of these buildings have been reduced to foundation level and by 1957 it appears that only foundations exist for the entire row of buildings.
r5	Area of mixed high and low level resistance within the walls of the ruined church building.	Interpretation of this area is difficult due to the close proximity of the walls of the church, the foundations of which may be have some impact on the readings in this area. The patches of high resistance may represent rubble infill from the walls of the church or the remains of an earlier church which may have stood on the site. The low resistance may indicate that the church is situated quite close to the surface of bedrock and subject to poor drainage. The close proximity of this area to the stream may also be a factor in the resultant readings.
r6	Linear anomaly of mid-level, fairly homogenous resistance readings and flanked on either side by faint low resistance readings. Runs in a north-northeast to south-southwest direction towards the church building and Drinking Well. Maximum width of approximately 4m.	The mid-range homogenous readings of this anomaly are typical of those associated with hardcore surfacing and pathways. Its regular width and course, passing between the church building and the Drinking Well also point to it being a possible path or metalled routeway. A path here may have been constructed at the same time as the eighteenth-century cottages or may be much earlier in date providing access for pilgrims to the site.
r7	Mid-high level resistance anomaly directly east of the Drinking Well measuring approximately 5m across.	Due to the proximity of this anomaly to the surrounding walls and stream it is difficult to say with any certainty what is being imaged. The high resistance here may be representative of rubble material from construction of associated walls and pathways. The second edition map of 1904 (Figure 4) shows what may be a small building at this location. O'Laverty (1878, 251-2) also alludes to a rough stone altar near the Drinking Well and church.
r8	Sub-circular high resistance anomalies with a maximum diameter of approximately 12m.	Possible earth resistance responses to the underlying geology of the site. Another possibility is that they are imaging the remnants of stone cairns that no longer survive.
r9	Linear high resistance anomalies running in northeast to southwest and northwest to southeast directions across the site between the Drinking Well and the Eye Well. For the most part these appear to be interlinked and of the same width (less than 0.5m). They range in length from	These anomalies most likely represent a subterranean drainage system across the site. Such drains may not have anything to do with the wells and have been constructed while the site was in use for agricultural purposes. Their confinement to the area between the Drinking Well and the Eye Well may simply indicate that this is where drainage was most needed in order to

	approximately 4m to 14m.	redirect water from one area to another. It is also possible that such drainage exists east of the Eye Well but was not imaged in the survey results due to a greater depth of overburden. The ground to the east of the Eye Well also becomes rather waterlogged after periods of heavy rain which may indicate an absent or poorer system of drainage in this area.
r10	Linear very high resistance anomaly running northwest to southeast from the Drinking Well. No more than 0.5m in width and 14m in length.	This anomaly is likely imaging a stone-built drain or culvert carrying water away from the Drinking Well and in the direction of the eye well and back to the stream although it appears to stop before it reaches either point - further investigation may be needed to determine its true end point. The fourth edition OS map (Figure 6) shows what may be a stone-capped drain leading the entire way from the Drinking Well to the bathhouses.
r11	Linear high resistance anomaly approximately 10m maximum length, less than 0.5m in width and running roughly north-south between the stream and the Eye Well.	Most likely to be a subterranean culvert carrying water directly from the stream to the Eye Well, possibly stone-lined.
r12	Series of high resistance linear anomalies no more than 0.5m in width and measuring approximately 45m in overall total combined length.	These anomalies are imaging an underground culvert system carrying water to and from the two bathhouses. Water enters the culvert system from the stream, passes under the wall surrounding the site, then travels towards the bathhouses and appears to split into two separate flows before entering the women's and the men's bathhouses. Each bath house has its own exit point for water and the French drain emerging from the women's bath house appears to turn off to the right to converge with that coming from the men's before passing out under the south-eastern wall of the site.
r13	High resistance anomaly no more than 0.5m in width and approximately 10m in total length. Curving from the north-eastern wall of the site to the south-western wall.	This high resistance anomaly is most likely imaging a stone-built drain diverting the stream from the northern edge of the site past the bathhouses and beyond the south-eastern wall of the site. A line corresponding to this anomaly is clearly imaged on cartographic representations of the site from 1932-1957 (Figure 6).
r14	Low resistance anomaly running in a northeast to southwest direction along the north-western wall of the men's bathhouse measuring approximately 1.5m in width.	This anomaly may be representing a ditch dug during pipe maintenance work carried out in 1963-4 in order to divert water back to the stream whilst work was being carried out (Figure 8).

5 The 2012 excavation

5.1 Introduction

The 2012 excavation was undertaken over four weeks starting on June 6th and was run as a QUB undergraduate student training dig. It was staffed by members of the CAF and directed by Emily Murray and Finbar McCormick under a joint licence (AE/12/60). The excavation was supported by the Northern Ireland Environmental Agency (NIEA) with permission from the landowners (Mr and Mrs Turley, Down District Council and NIEA). The excavation was open to members of the public to visit and on Saturday 16th June as part of NIEA's *Archaeology Days* programme of events and the Downpatrick Branch of the YAC visited the site and took part in the excavation of the Drinking Well. Four students from De La Salle College, Belfast, participated in the excavation during the third week.

Four trenches were opened – two inside the church (Trenches 1 and 4) and two either side of the Drinking Well (Trenches 2 and 3). The interior of the Drinking Well was also cleared out and a photographic survey of St Patrick's Chair was undertaken by Tony Corey of NIEA. The main aims of the investigation were;

- to try and locate any surviving early medieval and possible pre-Christian features at the Drinking Well, probably the 'original' and main well of the site (Trenches 2 and 3).
- to find the foundations of the early church, thought to be located on the same site as the present church (Trenches 1, 2 and 4). The early medieval stone with the incised cross (now built into the wall of the Drinking Well) was found between the well and the church (McCormick 2009, 46) and human remains were also reportedly found in this area when repair works were carried out at the site in the 1920s (McCormick 2009, 53). Medieval stone-carved windows were also recovered and are now built into the boundary wall. These discoveries all support the probability that the early church was located in the vicinity of the post-medieval church.
- to locate and uncover culverts and drains in and around the church and Drinking Well (Trenches 1-4)
- to recover cultural artefacts from pagan, early medieval and/or post-medieval activities at the site (Trenches 1-4)
- to examine and record St Patrick's chair in greater detail

5.2 Methodology

All excavations were conducted by hand and the trenches were back-filled and re-sodded on completion of the excavation. The site context record was created using the standard context recording method. Features were planned (scale 1:20cm) and photographed. Individual negative features were excavated by putting a box-section through the feature to recover information about its profile and fill and were recorded with a section drawing (scale 1:10cm). In addition to the photography and illustration, the principal site records consisted of context sheets augmented by diaries for each Trench. A register of samples taken was also maintained. Temporary fences were erected around the excavation trenches and signage, warning of an open excavation, was displayed. Secure steel containers were hired to store tools and finds on site.

5.3 Account of the excavation

Trench 1

Trench 1 was opened inside the church at the eastern end immediately inside, to the east, of the southern entrance (Figure 15). It extended across the full width of the church (approx. 6.16m) and measured 3m in

width (east-west). The sod was removed (C1001; 0.03-0.05m) which exposed a matting of tree roots (Plate 1). These were cut to reveal a mid-brown loamy topsoil which produced some pieces of glass and pottery (C1002; 0.03m). On removal of C.1002, a fine sandy gravel horizon, orange-brown in colour, was exposed which extended across the trench (C.1003; 0.03-0.09m). It yielded some coins and beads along with pieces of pottery and glass. Roots continued down through this horizon which contained occasional angular stones and patches of mortar and sand. Excavation of the sandy-gravel layer (C.1003) revealed an angular-stone layer with the stones contained by a mid-brown loamy soil (C.1004; 0.09-0.3m) again disturbed by roots. Finds from this deposit included pieces of clay pipe, fragments of glass and pottery and corroded pieces of metal (modern). The surface of this layer was uneven and there was a notable linear depression and relative absence of stones towards the centre of the trench (Plate 2). Along the internal faces at the base of both long walls, were irregular linear spreads of mortar, partially collapsed and slumped over the stones in C.1004; C.1005 ran along the inside face of the northern wall (Plate 3) and C.1006 against the inside face of the southern wall (Plate 4). Both ranged between 0.04-0.06m in thickness with fairly even level surfaces. The even surfaces would suggest that these could represent remains of the contemporary floor surface, since removed, or alternatively, they could derive from the pointing of the internal faces of the two walls, either when first in use or at a later date when taken into State Care.

Excavation of the stony layer C.1004 revealed a lower stony clay-loam horizon (C.1007 - Figure 16) across the northern two-thirds of the trench and an irregular spread of larger angular stones at the southern end (C.1008). Excavation down through these deposits indicated that they were the same deposit with no features or differential make-up discerned. The three were therefore conflated and considered as one context, C.1004. This stony layer extended underneath the side walls of the church. Finds from this stony horizon were mostly of nineteenth- and twentieth-century date and the ceramics included Scottish spongeware, Castle Espie ware, creamwares and earthen wares. In addition to these finds, and in increasing frequency with depth, a number of sherds of early medieval Souterrain Ware were also recovered (approx. 40 sherds from C.1007) although these were clearly residual as they were found alongside glazed wares.

Below the heterogeneous stone layer C.1004/C.1007/C.1008, at the south-eastern end of the trench, an irregular stone linear feature emerged (C.1009) running on an east/southeast – west/northwest alignment (Plate 5). It measured 2.62m in length and on average 1.12m in width with the large stones between 0.15m – 0.5m in size. Extending across the rest of the trench was a sticky brown clay deposit with charcoal flecks (C.1010; 0.03-0.2m) which yielded modern pottery and glass. Further excavations within Trench 1 were confined to the southernmost 3m of the trench. To the west of the stone feature (C.1009) was an orange-brown sticky clay with small (0.02mm) angular stones (C.1011). Removal of C.1009 revealed further patches of this orange-brown clay C.1011 beneath the stones which in turn overlay a dark-grey clay layer, (C.1012; 0.06-0.3m). Below this was a blue-grey clay with small angular stones (C.1013). This was excavated down to a depth of 0.6m below the modern surface to where the water table was reached and excavation in the trench ceased. No finds were recovered from any of the deposits below the charcoal layer C.1010. The west-facing (Figure 17; Plate 5) and north-facing (Figure 18; Plate 6) sections were drawn and the trench was back-filled.

Trench 2

A 5m x 5m trench, Trench 2, was opened to the northern side of the Drinking Well, immediately north of the enclosing boundary wall and south of the church (Figure 15). The trench was opened primarily to locate any earlier building remains associated with the well but also with the possibility of uncovering early church remains. The square-plan trench was set approximately 0.5m north of the boundary wall but was later extended southwards up to the wall.

The sod (C.2001; 0.03-0.09m) was removed to expose a loose gravel horizon (C.2002; 0.03-0.1m) across the trench. The quarry gravel was angular and had a blue-black hue. Finds from C.2002 included lumps of mortar, charcoal and quartz, the heel of a shoe and fragments of glass and pottery. The overlying sod layer (C.2001) also yielded sherds of modern glass and nails. A spread (approx. 1.55m N/S x 2.7m E/W) of smaller more rounded pea gravel, mottled grey/white in colour, was differentiated in the north-eastern corner of the trench (C.2003; 0.01-0.03m). Some of the angular gravel was also mixed-in with the pea gravel and this gravel horizon yielded fragments of pottery and glass and the crucifix from a rosary (Plate 7). On removal of the gravel a stony layer of larger, medium-sized mostly angular stones (C.2004) was exposed. Within this deposit was a distinct curving line or arc of flat stones running from mid-way along the eastern side of the trench to the north-western corner (Plate 8). This appeared to mark the edge of a more regular area of the stony surface with larger stones to the south of the curving line. It seems probable that this represents part of a roughly metalled path or roadway that runs over the stream towards the cottages on the opposite side.

In the south-eastern corner of the trench, below the gravel (C.2002) and sitting over the metalled surface (C.2004), was a discrete irregular spread of mortar (C.2005) covering an area of approximately 1m across and between 0.07m and 0.01m thick. The creamy beige colour and consistency of the mortar was similar to the mortar used in the boundary wall. This close comparison and its comparative shallowness suggest that it is relatively recent and relates to the construction and/or re-pointing of this wall.

The trench was subsequently extended southwards to the boundary wall either side of the well. In the south-eastern corner, a stony, 'flagged' and cobbled surface leading to the well entrance was uncovered (C.2010 – Plate 9) presumably a continuation of the cobbled path (C.3008) revealed south of the boundary wall in Trench 3 (see below). This was exposed in plan but not excavated. In the south-western extension a sandy, grey-brown clay loam was uncovered (C.2007). It stretched from the western edge of the trench as far as the well (approx. 1.14m) and northwards for approximately 0.7m at its widest extent. It contained some small stones and fragments of slate and appeared to continue under the boundary wall indicating that it relates to the construction of the wall (Plate 10). Excavation of the clay (C.2007), exposed a loose stony deposit made-up of small to medium sized angular stones, many flat (C.2008), bonded by a greyish brown clay loam.

Removal of the gravel (C.2002 and C.2003) and the mortar (C.2005) and the looser stones across the surface of C.2004, including the curving line of sub-rectangular stones (one-course thick and not bonded), uncovered another angular stony horizon (C.2013). There were no clearly identifiable features although there was still a noticeable difference in the size and density of the stones either side the line previously marked by the curving line of stones (Plate 11). It seems probable that the area south of this line (C.2013; 2-2.25m wide N/S) represented the path or roadway which aligns with the 'bridge' over the stream, and which became more compacted with use. Rosary beads were found impressed into this surface (C.2013) towards the eastern side of the trench. North of this line, and seemingly running under C.2013, the stones were on average smaller and less compacted (C.2006). Along the southern 'edge' of this path was a distinctive linear arc of relatively large rectangular flat stones (C.2012) echoing the curve of the well, approximately 0.6m south of it. This was much more substantial than the curving line of smaller rectangular stones present in the overlying layer (C.2004). This ill-defined feature, C.2012, was originally thought to be part of a wall, as it appeared to be bonded with a hard gravelly clay that was hard to excavate. After planning and excavation of a section north of the stone feature, it was found to be insubstantial and just one-course high (Plate 12), set into and above a hard stony deposit (C.2016; 0.02-0.05m) containing small stones and gravel. The stone feature C.2012 may therefore simply be another constituent of the metalled path or roadway.

Subsequent excavation down through the lower stony deposit C.2006 indicated that it was marginally deeper towards the northern side of the trench (0.1-0.5m). It yielded pieces of broken modern glass and

pottery, a coin, a few fragments of brick and plastic. This stony material was probably laid to alleviate the drainage, possibly as a primary layer for the roadway (i.e. C.2004, C.2013 and C.2012).

A 1m-wide sondage or box-section (Test Trench 1; Plates 12 and 13) was opened along the northern edge of the trench to determine the nature and depth of this stony layer (C.2006). Below C.2006 was a gravelly yellow-brown clay loam with small stones and sand (C.2011). The only finds from this deposit were a human tooth and fragment of human bone. This lay above a voided large angular stone and boulder deposit with lumps of sticky yellow- brown clay (C.2014) and with the stones impressed into a pure yellow-brown sticky clay beneath the stone layer (not excavated). Some of the stones were lifted towards the western end of the Test Trench, but at a depth of approximately 0.6m water was reached (Plate 14) which was flowing in a southerly direction. It was also not clear whether the voided stone horizon (C.2014) was natural or man-made and part of the extensive build-up and dump material (the stones had a blue-black colouration and angular facets). No finds were recovered from C.2014.

A second box-trench (Test Trench 2) was opened along the eastern side of the trench with a 0.5m-wide extension at the north-eastern corner, extending as far as the church wall. The differentiation in section of C.2006 and the path proper, C.2013 could not be determined. Excavation down through the gravel-clay horizon C.2011 (initially identified as C.2020 in TT2; 0.08-0.2m) below C.2006 at this side of the trench uncovered a shallow layer of grey brown clay with red/orange burnt stones and charcoal (C.2015), sandwiched between the voided stone layer below, C.2014, and C.2011 above. A piece of dark-green bottle glass was found at the interface of C.2011 and C.2015 (labelled C.2011). This burnt layer (C.2015; 0.02-0.16m) increased in thickness from the northern edge of the trench towards the well, while the overlying stone dump layer, C.2006, did the opposite, and thinned out southwards. C.2015 produced a flint scraper.

Test Trench 2 was extended as far as the church wall at its northern end. This uncovered a light-brown sandy mortar layer with inclusions of fine angular gravel (C.2018; 0.09- 0.22m) below the church wall and overlying the extensive stone build-up (C.2006 – Plate 15). In the south-eastern extension of the trench, excavation of the gravel (C.2002) north of the path (C.2010) and south of the linear stone alignment C.2012 and an outcrop of bedrock exposed an irregular stony layer of small to medium-sized stones (C.2023 – Figure 20). This was excavated to a depth of a maximum of 0.18m when bedrock was encountered.

Excavation down through the lower stone layer (C.2016 – possibly contemporary or same as C.2006) towards the southern side of the trench, unveiled ill-defined patches of a brown clay-loam, a reddish brown clay loam and a blackish-brown clay loam against the north face of the well (C.2021- Plate 16). Below this was the stony/gravel horizon C.2011 (Plate 17). Below the angular stony deposit C.2008 in the south-eastern extension, a linear stone feature, a wall or revetment was exposed in plan (C.2022 – Plates 16, 17 and 18) and partially in section (0.22-0.24m in height). Excavation down through C.2008 indicated that it was built above C.2011 as too is the well suggesting that the two stone-built features are contemporary.

In summary, the excavation of Trench 2 revealed a series of dumped stone deposits and extensive 'made-ground'. Presumably the stones were laid down to alleviate drainage both for the construction of the church and for paths and routeways and around and through the site. The latest phase of this sequence was represented by a layer of gravel quarry below the sod which probably dates from an earlier period of State Care. Part of the path that leads to the well from the direction of the Eye well and bathhouses was also uncovered. This path was found to continue in trench 3 and the stone boundary wall was built above it. Adjacent to the Drinking Well there were a series of ill-defined stone and clay deposits abutting the wall. This suggests that the wall was built at a lower level and then buttressed up external with dumped material. The stone built feature C2022 east of the wall appears to be contemporary with the well though

as only a sub-section of it was revealed it will require further investigation to identify its full form and function. The pottery and other finds from the trench, in particular from the stone layer that continues under the church wall will require specialist analysis.

Trench 3

Trench 3 (5m x 5m) was opened immediately south of the Drinking Well and boundary wall (Figure 15). The sod (C.3001; 0.04-0.14m) was removed to expose a loose dark brown sandy-loam with quarried stones and gravel, and modern rubbish – fragments of broken ridged terracotta waterpipe, glass, clay-pipe stems, sherds of creamware and small marine shells (flat winkles) derived from decayed mortar (C.3002). It was deeper on the northern side of the trench and there was much disturbance caused by roots from trees growing along the edge of the stream to the west of the trench (Plate 19). Excavation down through C.3002 exposed a discrete spread (0.71m E/W x 0.44m N/S) of a light greyish-brown sticky clay with gravel and sand (C.3003; 0.03-0.05m) in the north-western corner of the trench bounded by the boundary wall to the north and flagged surface of the pedestrian gate to the west (Plate 20). Its location adjacent to the southern face of the wall suggests that it relates to the construction or re-pointing of the wall. It is probably the same depositas C.2007 uncovered on the opposite side of the wall in Trench 2. Excavation of C.3002 also exposed large stones and boulders, 'footings' to the wall of the well.

Immediately east of the well, at the northern side of the trench a line of angular stones (C.3007) and mortar (C.3004) emerged on the removal of C.3002 along the southern face of the boundary wall (Plate 21). The mortar (C.3004; 0.02-0.05m), a mottled light-greyish brown with inclusions of gravel, was firm and similar to the mortar spread on the opposite side of the wall (C.2003). It produced a couple of fragments of modern window-glass. Excavation of the stones (C.3007; 0.08-0.12m) and mortar (C.3004) showed that they did not run under the wall but abutted it, representing packing stones and fill at the base of the wall. The stones included a mixture of angular and rounded stones, one course high and one to two stones deep. The boundary wall (C.3006- Plate 22) east of the well abuts the wall of the well but predates the pink-mortar re-pointing of the well. The wall is of random-rubble construction, 1.36m in height and 0.6m in width with a rounded on top.

Excavation of C.3002 across the rest of the trench exposed a dark reddish-brown, clay-loam (C.3005; 0.3m) with bits of coal, stone and roots and more fragments of the ridged terracotta waterpipe. Generally there were less finds than in C.3002, and it became increasingly stonier and firmer with depth (Plate 22).

Excavation down through C.3005 revealed a cobbled stony surface, C.3008, along the eastern side of the trench (Plate 23). It measured 1.6m in width, extending westwards from the eastern edge of the trench. It also extended across the full length of the trench, 4.3m north-south, south of the boundary wall (C.3006). The stones on average measured 0.1m across. The stones and mortar (C.3007 and C.3004) at the base of the boundary wall and the boundary wall itself were both built above the cobbling which continued northwards, under the wall. The cobbling had a relatively even surface with three east-west linear gullies or depressions. The cobbled surface was cut by a linear trench for a drain (C.3010) running southwards from the well, leaving the cobbling with a ragged irregular edge, slumping and dipping downwards into the cut (Plates 22 and 23). A small section was cut through the cobbles (C.3008) at the SW corner of the trench were the cobbling was less regular (Plate 24). Below the cobbles (0.14-0.08m) were large angular stones and a mid-brown clay loam (C.3021; 0.12-0.16m) with root disturbance. This layer produced one piece of brown-glazed ware. Below C.3021 was a blackish brown clay loam with small and medium-sized stones and 'burnt stones' (C.3023). This was only partially excavated due to the narrowness of box-section and presence of large stones (Plate 24).

West of the cobbling was the stone-built drain (C.3012) and blackish-brown loamy fill (C.3009) both within a linear cut (C.3010). A 4.57m length of the stone-built drain was exposed (Plates 22, 23, 25 and 26). It measured 0.5m in width and height externally and was capped with large angular relatively flat

stones (0.67m x 0.32m and 0.07m thick). The fill of the drain-cut (C.3009) in around the stones was loose and contained some charcoal and bits of mortar along with modern rubbish (crisp packets etc. – Plate 27), a marble, broken glass and animal bone. The fill was partly excavated to expose the capstones of the drain. A couple of the capstones of the drain at the southern end were lifted to expose the interior of the drain which measured 0.44m in width and 0.35m in height internally (Plate 28). The internal walls of the drain had also been re-pointed with concrete and clear water, emanating from the Drinking Well, flowed through it.

North of the drain was a heterogeneous deposit (C.3011) within which were ill-defined spreads of looser more disturbed lenses, and areas with a higher concentration of stones and clay, especially close to the well, but no definite features could be discerned (Plates 23, 25 and 26). When C.3005 was first removed a series of discrete areas were originally differentiated (C.3011, C.3013, C.3014, C.3015, C.3016). These represented poorly defined irregular possible cuts, fills and lenses but on investigation were found to be all part of a mixed, modern composite made-up deposit, with stones and fragments of ridged terracotta water pipe (as found in C.3002), present throughout. The contexts were therefore conflated and excavated as one (C.3011). Both the drain and cobbled surface were cleaned back, and C.3011 was excavated to an arbitrary even level, and the trench was planned (Figure 21).

The heterogeneous build-up deposit, C.3011, was mattocked-off which exposed a large piece of modern ceramic drainpipe wedged underneath one of the large boulders around the base of the well wall (Plate 29). This demonstrated that there were multiple mixed dumps of material deposited around the same time. Removal of C.3011 uncovered a loose earthy dark brown clay-loam (C.3018; 0.19-0.2m) which yielded a complete glass wine bottle, plastic bottle tops, corroded bits of iron and creamware, along with more fragments of terracotta drain pipe as were also found in the layers stratified above it (C.3011, C.3005 and C.3002). The mixed and often loose nature of the deposits west of the drain and presence of modern detritus throughout to a depth of around 0.6-0.7m, indicates extensive modern disturbance. A sondage or box-section was opened through this modern material perpendicular to the drain. Below C.3018 was a thin, blackish-brown clay with gravel and small stones (C.3019; 0.01-0.09m) which lay above a sticky mid- to light-brown waterlogged greenish-brown clay (C.3020) which abutted the external side-wall of the drain. Due to waterlogging and the reaching of the water-level excavation of C.3020 ceased at approximately 0.7m, below the modern ground surface (Plate 20). No positive cut for the drain through the clay was identified. The ground, however, was waterlogged and the presence or absence of a cut could not be determined with certainty

The east-facing (Figure 22) and north-facing (Figure 23) sections of the trench were drawn and the trench was then back-filled by hand and re-sodded.

Trench 4

Trench 4 was opened across the full width of the church (6.15m x 3m) at the western end, 2m east of the western gable wall. The sod (C.4001; 0.05-0.07m) was cut to expose a loose dark-brown loamy topsoil (C.4002; 0.03-0.4m) with stones and roots and lenses of sand which yielded modern finds – plastic, modern glass, creamware and a rusted holy medal. Below this was an orange-brown sandy-gravel layer (C.4003) equivalent to C.1003 in Trench 1 and which produced some pieces of pottery and glass. Removal of C.4003 exposed a stony mid-brown loam horizon (C.4004; 0.22-0.3m) with glass and pottery, equivalent to C.1004 in Trench 1. The stony horizon did not extend across the full length of the trench – at the southern end C.4004 extended north from the southern wall for 1.5-2m with a gap of 1m and with C.4004 extending north from it (Plate 31).

At the southern end of the trench 0.5m north of the southern wall, a box-section, the full width (3m) of the trench and 1m wide was opened. Excavation down through C.4004 exposed a charcoal-flecked grey-brown clay loam, 0.55m below the sod, with fragments of human bone and stone (C.4008; 0.2m). On

exposure of C.4008 and presence of bone, the trench was widened and extended 1.5 to the north to give it a total width of 2.5m (box-trench = 2.5m x 3m). Within C.4008 were poorly preserved discrete 'samples' of disarticulated human remains - C.4006 and C.4007 both of which were bagged as 'bulk samples'. At the southern edge of the trench within C.4008, were the partial remains of *in situ* articulated skeletons C.4009, C.4010 and C.4011, orientated east-west and running into the north-facing baulk. Skeleton C.4009 was represented by the left femur, proximal end of the left tibia and bones of the left hand. The other skeletons were represented by long-bones aligned on the same orientation but were all poorly preserved (Figure 24).

The articulated remains were at the base of the C.4008 layer, and were sitting on the surface of an intense black gritty-loam with burnt orange/red-coloured stones throughout (C.4005; 0.28-0.27m – Plate 32). Multiple samples of this relatively loose and friable 'burnt mound' type material were taken for processing in the lab to recover samples suitable for radiocarbon dating including a discrete sample of preserved charcoaled twigs at the base of the deposit. No artefacts were recovered from this horizon nor were any found in association with the skeletons in the overlying deposit, C.4008. A 1m-wide section was excavated down through C.4005 to reveal a large angular stone and boulder layer, C.4012. The black loam was excavated from around the stones (C.4012) which were sitting on, and pressed-into a sticky blue-grey clay horizon (C.4013) possibly the natural subsoil. The trench was photographed but the lower deposits, C.4012 and C.4013 were not excavated (Plate 33). The water-table was reached at this depth (0.9m below the modern surface) and excavation within the trench ceased. The west-facing section (Figure 25) was drawn and the trench was back-filled and re-sodded.

The Drinking Well

A water pump was used to try and drain the Drinking Well but it was found that the well filled-up as quickly as the pump drained it out. The fill of the well was lifted out by bucketfuls and sieved in the adjacent river. The majority of the finds were coins – the oldest dating to 1955 (Table 6, Appendix 1). Other finds included bits of broken glass, bottle tops, ring pulls, a nail, a teaspoon and some fragments of pottery. The well also had modern, imported red-coloured quartz gravel. The presence of the gravel and the modern coins indicates that the well must have been cleared-out on at least one occasion relatively recently.

St Patrick's Chair

The weeds and growth around the chair were cleaned back by hand and Tony Corey (NIEA) visited the site and took a series of high-resolution detailed photos (NIEA archive).

6 The finds

Finds recovered during the excavations have been sorted and washed in the labs at QUB, and partly catalogued, by work-experience secondary school students supervised by Mr David Brown (QUB). The principal finds were fragments of pottery and bottle glass (Table 6, Appendix 1) and coins from the Drinking Well (Table 7, Appendix 1). The majority of the coins (No. 116; 95%) were of sterling and ranged in date from 1955 to 2009. A few Euro (No. 3) and old Irish pence (No. 3) coins were also represented. A collection of corroded iron objects and other miscellaneous finds were also recovered but have not been catalogued.

Small quartz stones were found in Trench 3 and these were kept. Hardy (1836, 38-9), in describing the rituals performed at Struell notes of those climbing up to St Patrick's chair that *'the more respectable… keep their reckoning beads; while the poorer sort lift a pebble to mark each ascent'.* While on the plain the pilgrims had to carry a stone which they then added to one of the cairns (*ibid.*). It is possible that this collection of quartz stones from Trench 3 were left by pilgrims' visiting the well.

7 Radiocarbon dates

Bulk samples of the 'burnt mound' material in Trench 4 (C.4005) were sampled and have been processed in the wet-prep lab at QUB. The majority of the charcoal that was floated off is finely particulated with very few single-entity pieces suitable for radiocarbon dating. The largest fragment of charcoal (unid.) recovered from the bulk samples (C.4005) was submitted for dating (UBA-22718) to the CHRONO radiocarbon lab at QUB. It returned a radiocarbon age of 3848±34 BP which calibrates at the 2-sigma range (95.4%) to cal. BC 2459-2205. As neither the species nor the age of the specimen could be identified from the small sample, this very early date (Late Neolithic) could be misleading. The sample may derive from the heartwood of a potentially long-lived specimen (e.g. oak) and therefore centuries older than when the tree was actually felled creating an 'old wood effect' (Lanting and Brindley 1991, 26). This result contrasts with that of a twig dated from the same context. During the excavation of the burnt layer (C.4005) a distinct cluster of twigs was noted at the base of the deposit and sampled separately. This sample comprises a collection of short-lived twigs (15-17 years old), identified as ash (*Fraxinus* sp.) by David Brown (QUB). One of these returned a radiocarbon age of 613±27 BP which calibrates, at the 2-sigma range, to cal. AD 1296-1400 (UBA-22403). A third sample, of human bone (fragment of femur) from one of the articulated skeletons (SK4009) overlying the burnt horizon (C.4005), was also submitted for radiocarbon dating. This returned a radiocarbon age of 945±29 BP, which calibrates at the 2-sigma range (95.4%) to cal. AD 1025-1156 (UBA-22411).

The date returned for the skeleton is therefore several centuries older than that returned for the ash twig which was stratified below it. Meanwhile the sample of charcoal recovered from the same deposit as the twig, but not necessarily of a short-lived specimen, is millennia older. Even given the possibility of the old wood effect for which there is no general 'correction factor' (Lanting and Brindley 1991, 26) the margin of error would only push the date a few centuries earlier. At best the radiocarbon results provide a *terminus post quem* for activity at the site and a maximum date range though the picture is far from clear. More dates will be needed to tease-out the true chronology of the site. A second sample from the ash twig collection from C.4005 has been submitted for dating (UBA-22403).

8 Discussion

The excavation, although unsuccessful in locating the early church was successful in other ways. The most exciting and unexpected discovery was the 'burnt mound' material which was stratified below articulated skeletons though the results returned from the radiocarbon analysis are as yet, indeterminate (see above). The extent to which the ground was artificially built up in and around the church and Drinking Well was also not previously appreciated while a cobbled path leading into the Drinking Well was re-discovered. The majority of artefacts that were recovered were post-medieval in date but a small assemblage of sherds of early medieval Souterrain Ware was recovered, principally from Trench 1, along with a flint scraper from Trench 2.

8.1 The 'burnt mound' material

The most exciting and significant discovery was the articulated skeletal remains and the 'burnt mound' material below them in Trench 4 (C.4005). This deposit, 0.3m in depth, comprised heat-shattered stones, many also distinctly reddened from being burnt, and a dense concentration of charcoal. Traces of this material were also found to extend southwards into Trench 2 (C.2015/2017) as far as the Drinking Well suggesting that it is quite an extensive deposit. A couple of disarticulated human bones were also recovered from the overlying deposit in Trench 2 (C.2011).

The heat-shattered stones and charcoal are the typical characteristics of burnt mounds or *'fulachta fiadh'*, widely recorded from sites across Ireland and elsewhere in Europe (O'Neill 2003-4, 82; Barfield and Hodder 1987, 370). The associated apparatus – hearths, pits dug in the ground and wooden or stone troughs or basins, are only occasionally found (O'Neill 2003-4, 83). These site types are commonly located in proximity to water and are typically devoid of artefacts including food debris, and generally lack settlement evidence (Barfield and Hodder 1987, 371) all of which the evidence from Struell is consistent with.

The interpretation of these burnt mounds are that stones, heated in a fire, are then placed in water to boil it thereby producing heated water for cooking or bathing or, if contained by a structure of some sort, steam. Documentary sources from Ireland include a number of accounts that describe the boiling of liquids using heated stones - an activity that would yield the burnt mound material as recorded in the archaeological record (O'Neill 2003-4). However, radiocarbon analyses of burnt mounds from Ireland show that few, less than 5%, are contemporary with these historical descriptions (O'Neill, 2003-4, 83). The majority of the burnt mound sites in Ireland date to the first and second millennium BC, a pattern also recorded in Scotland, England and Scandinavia (*ibid*.).

There has been much discussion about burnt mounds and whether they represent the remains of cooking or bathing (Barfield and Hodder 1987; Ó Drisceoil 1988; O'Neill 2003-4). Barfield and Hodder (1987) argue that they represent the remains from sweat houses (sauna) or sweat-bathing of some form. They also note that the primary period of use of burnt mounds coincides with a 'water-based' religion found across Europe which includes the deposition of objects in watery locations such as streams, pools and lakes (Barfield and Hodder 1987, 378). They therefore argue that saunas may have had a ritual function of purification as part of the religious practices and beliefs at this time (*ibid*.). The tradition associated with many saunas and sweathouses, including in Ireland, are that they are accompanied by a cold plunge after leaving the sauna (Barfield and Hodder 1987, 372). At Struell this could have been performed by bathing in the stream or an early incarnation of the Drinking Well, a probable true, spring well. Ó Drisceoil (1988), however, argues for their primary use as cooking although he concedes to the possibility of their use as sweathouses where there is '*the presence of a water supply, burnt stones and the possibility of adjacent enclosed structures'* (Ó Drisceoil 1988, 679). He also suggests that the presence of a trough strongly argues against the use of the site for sweating or sweat bathing (*ibid*.).

What makes Struell different from many other places of pilgrimage is the practice of naked bathing, which St Patrick also reputedly took part in (McCormick 2009, 55). This practice may be a survival of pre-Christian Pagan practices. The main date of pilgrimage to the site, on Midsummer's Eve, is also unusual as pilgrimages to holy wells are more traditionally held on the feast day of the saint to whom they were dedicated (McCormick 2009, 56). The date of pilgrimage at Struell could also therefore have its origins in the earlier history of the site. McCormick (2009, 58) has shown that naked bathing on Midsummer's was a widespread practice across Europe and North Africa dating back to pre-Christian times. The 'burnt mound' material discovered at Struell could therefore derive from saunas and ritual bathing which, along with the date of pilgrimage and practice of naked bathing, suggest that Struell Wells and the Christian pilgrimage is a likely survival of a pagan midsummer festival before it acquired Christian status and associations.

At Struell, the discovery of the burnt mound horizon at a site that became a famous, and infamous, complex of wells and bathhouses, and included a visit by St Patrick and the papal nuncio in 1515 (McCormick 2009, 50), is highly significant. The stratification of the burnt horizon immediately below the burials, which are orientated east-west and presumably Christian, strongly supports the contention (*pace* McCormick 2009, 58) that it has pre-Christian origins. The visit by St Patrick to the complex as recorded in the early medieval documents essentially demonstrates that he was symbolically Christianising an important Pagan site (McCormick 2011, 11) which arguably, the archaeological

evidence now clearly supports. The radiocarbon dating of both the burnt mound horizon and the articulated skeletons is therefore anxiously awaited.

8.2 Early structural remains: church and the Drinking Well

One of the objectives of the 2012 excavations was to try and locate the foundations of the early church. No positive structural remains of a church were encountered but the presence of burials, apparently *in situ*, suggests that the earlier church building was probably located in the vicinity of the present ruinous church, possibly further west. The discovery of human remains during the course of repair work in the 1920s is also documented and these were reportedly found in the area between the church and Drinking Well (McCormick 2009, 53). Human bones were also sometimes unearthed during ploughing in recent years which has led to local tradition of a graveyard lying immediately northwest of the ruined church (McCormick 2009, 53).

The other aim of the excavation was to determine if there were any earlier structural remains or other features associated with the Drinking Well which documentary evidence suggests is the original and primary well of the site. In Trench 3, opened south of the well and boundary wall, the extensive modern disturbance indicates that little if any early remains survive. In Trench 2, north of the well the picture is more complicated where various linear arrangements of stones and 'flags were. The main feature of any consequence was the stone-built wall or revetment (C.2022) uncovered at the eastern edge of the trench and which appeared to be contemporary with the wall of the well. As only a small area of this feature was exposed it is not possible to determine its form or function. In the geophysical survey plots (Figures 11-13) there is a faint linear high-resistance anomaly in this location which may be imaging the same feature (C.2022) partly uncovered in the excavation trench. Further excavations would be required to determine the full extent of this feature.

8.3 Made ground and the post-medieval church

The excavations, in particular in Trenches 1, 2 and 3, have demonstrated that there is an extensive amount of 'made ground' at this eastern end of the site. The building-up of the ground further south towards the bathhouse is evident but the extent of build-up at the northern end had not previously been recognised. This build up is principally of quarried stone and was presumably laid to provide better drainage and firmer footing for the church and the route ways in and around the site.

The principal build-up of stone runs under, and predates, the construction of the post-medieval church (C.2006 and C.1004). The cobbled path, leading from the direction of the bathhouses to the Drinking Well (in Trenches 2 and 3) also appears to overly the built-up layer, and may be contemporary with the church. This could suggest an extensive revamp and re-presentation of the site contemporary with the erection of the new church. The construction of the church in the eighteenth-century is not precisely dated. The analysis of the pottery and other finds recovered from the extensive build-up layer underlying the church wall in Trenches 1 and 2, is therefore of interest.

8.4 Modern twentieth-century developments

The re-surfacing and metalling of the roadway, leading east across the stream postdates the deposition of the main stony build-up layer (C.2006). The gravel layers (C.2002 and C.2003) just below the sod probably date to an earlier phase of presentation of the site when in State Care. Traces from other more recent works at the site were also recorded including lime mortar from the construction of the boundary wall (Trenches 2 and 3) and the discovery of the concrete lining of the stone-built drain leading south from the Drinking Well (Trench 3). There has also evidently been at least one occasion when the land to

the south of the Drinking Well was dug-out, possibly when it was lined with concrete. The well has also evidently been cleared out in recent times.

The concrete pointing of the drain and presence of crisp packets and other modern waste around the drain indicates that it must have been accessed in the late twentieth century. The loose make up of the soil west of the drain, and presence of modern rubbish throughout, in particular fragments of the same modern ceramic ridged drainpipe, suggests that a large area west of the drain must also have been dug away around this time also – by hand or machine. Perhaps the area had become waterlogged and boggy due to the blockage of the drain? The linear cut for the drain (C.3010) must also be a modern 're-cut'.
The geophysical survey detected a number of linear anomalies that can probably be best interpreted as drains or culverts of some form. Some of these (r11 and r12 – Figure 14) correspond with the pipes depicted on the proposed plans of maintenance for the site in the 1960s and later (Figures 8 and 9). This would suggest that the proposed plans were in fact executed. The disturbed ground west of the stone-lined drain in Trench 3 could well date to this period of maintenance at the site. This drain was clearly imaged in the geophysical survey results (Figures 11-13) although it seems to abruptly stop after a length of 13-14m. This matches the presumably late plan of drainage at the site which shows the presence of a manhole at approximately this location (Figure 9). The other linears (the r9 anomaly) do not relate directly to the wells or bathhouses. They may be simple stone-lined drains inserted to help with the better drainage of the site, perhaps when it was under crop (see McCormick 2011).

8.5 Phasing

A broad outline of phasing for activity at the site can be suggested. The earliest stratum (Phase 1) is the sterile voided stone horizon, set above a natural clay layer, and probable subsoil, at the level of the water table. It was not determined if this was a natural or artificial horizon. Overlying this was the burnt mound material, as yet undated (Phase 2). This was succeeded by the burial horizon (Phase 3) presumably Christian as the skeletons are orientated east-west and possibly contemporary with the as yet unlocated medieval church. A radiocarbon date suggests that these are eleventh-twelfth century in date.

Straddled between the burnt mound horizon (Phase 2) and the later stone dump layers (Phase 4) is the construction of the well and adjacent stone-wall feature uncovered in Trench 2. The relationship between the burial horizon (Phase 3a) and these structural remains (Phase 3b) was not determined and could therefore be contemporary, predate or post-date the burials. All of these features can be grouped together into Phase 3.
Overlying this burial horizon and stone-built features are the multiple extensive stone dumps of post-medieval date (Phase 4). Analysis of the glass and pottery will determine a better date range but cursory examination suggests a late eighteenth or early nineteenth century date. The construction of the church can be assigned to this phase (Phase 4b) along with the cobbled path and the earliest metalled roadway running between the church and well and across the stream.
Historical records date the construction of the enclosing boundary wall, and removal of the cairns, to the early nineteenth century (Phase 5). Re-metalling of the roadway could date to this and/or a later phase along with the building of the clachan which dates to the eighteenth-nineteenth centuries. The most recent twentieth-century activities can all be assigned to the latest phase, Phase 6 and include the modern drainage works, gravel surfaces of the paths and subsequent laying of the sod.

9 Recommendations

9.1 Specialist reports

It is recommended that the small assemblage of human bones is examined by a human osteologist and the assemblage of pottery, which includes medieval (Souterrain Ware) and post-medieval types, is examined by a pottery specialist. Analysis of the finds from the build-up layer underlying the walls of the church is of particular interest to provide a *terminus post quem* for the construction of the church which is not tightly dated. Much of the metalwork, coins and glass along with the miscellaneous finds (rosary beads etc.), are modern and do not require specialist analysis although it is recommended that they are given a summary overview. These finds, apart from the metalwork, have all been washed and catalogued in part (see Appendix 1).

9.2 Further excavations

The most significant discoveries of the 2012 excavations were the articulated skeletal remains and the dense black layer, and possible 'burnt mound' material, underlying them. The orientation of the skeletons suggested that they are Christian burials and the single radiocarbon date would indicate that they date to the eleventh-twelfth century AD. The location of the burials at the western end of the eighteenth-century church could also suggest that an earlier church, associated with the burials, was located further west. The earlier finds of the incised cross, architectural pieces and bone also all coincide with the discoveries of the 2012 excavation. It would therefore be of interest to revisit this area of the site and undertake an excavation in the area west of the church ruins. Extension of Trench 2 to the west to investigate the stone-built feature C.2022 would also be of interest.

Given the extent of modern disturbance and made ground at the eastern end of the site, as encountered in Trenches 2 and 3, and the recorded build-up of ground further south towards the bathhouses, it is not recommended that any further excavations are undertaken in these areas of the site.

9.3 Publication

A brief summary of the results of this excavation have been submitted to Isabel Benet for inclusion in the annual *Excavations Bulletin*. Publication in a peer review journal, and possibly also a summary of the results in a local journal (e.g. *Lecale Review*), is recommended after the return of radiocarbon dates.

10 Acknowledgements

Our main thanks go to the QUB undergraduate students who excavated the site often working in extremely wet and muddy conditions. Sarah Gormley (CAF) and Ruairi O Baoill (CAF) were both supervisors at the site and Sapphire Mussen (CAF) conducted the geophysical survey and completed a report on the same. She was assisted on-site by Stuart Alexander (CAF) and Grace McAlister (CAF).

The drawings (plans and sections) were prepared by Libby Mulqueeny, QUB and permission to excavate at the site was provided by the landowners – the NIEA, Mr and Mrs Turley of Struell House and Down District Council. The NIEA also provided financial support for the excavation. The finds from the site were washed by secondary school students on placement in the School of GAP, supervised by Mr David Brown.

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APPENDIX 1: LISTS OF CONTEXTS, SAMPLES AND FINDS

Context No.	Type	Description
1001	layer	sod
1002	layer	mid-brown loam
1003	layer	fine sandy gravel
1004	layer	angular-stone layer
1005	layer	mortar at base of internal-face N wall
1006	layer	mortar at base of internal-face S wall
1007	layer	compact stony layer
1008	layer	sub-angular stone layer a S end of trench
1009	stone feature	linear stone feature
1010	layer	grey clay loam
1011	layer	orange-brown stony layer
1012	layer	grey-clay loam with charcoal fleck
1013	layer	clay - possible subsoil?
2001	layer	sod
2002	layer	angular quarry-gravel
2003	lens	pea gravel NE corner of Trench
2004	layer	angular-stone metalled path/roadway
2005	lens	lens of mortar, SW corner of trench; sitting on C.2004
2006	layer	stone build-up deposit
2007	layer	sandy-clay deposit adjacent N face of boundary wall, SW corner of trench
2008	layer	loose angular-stone deposit below C.2007
2009	wall	wall of Drinking Well
2010	path	cobbled path & paving slabs leading to entrance to well (equiv. to 3008 Trench 3)
2011	layer	stony & gravelly yellow-brown clay loam, below 2006; yielded disarticulated human bone
2012	stone feature	arc of flat stones, 1-course high; part of path/roadway?
2013	layer	stony surface under 2004; part of path/roadway
2014	layer	large-stone voided layer with lumps of sticky yellow-brown clay
2015	layer	clay loam layer with small red and orange (burnt) stones and charcoal; below C.2011
2016	layer	compacted stony layer, small and medium-sized angular stones and compact clay; under C.2012
2017	*(=2015)*	
2018	layer	mortar under southern side-wall of church in NE extension of Trench
2019	*(=2006)*	
2020	*(=2011)*	

Table 3 Context registers for Trenches 1-4.

Context No.	Type	Description
2021	layer	sticky light-brown clay with large stones under 2006 and above C.2011
2022	wall	stone wall/revetment; SW corner of trench above 2020/2011 and below 2008; contemporary with well?
2023	layer	stony clay-loam under 2002, NE corner
3001	layer	sod
3002	layer	brown loam with stones & modern rubbish
3003	lens	clay deposit S of wall; NW corner of Trench
3004	lens	mortar at base of boundary wall; NE corner of trench
3005	layer	firm brown loam
3006	wall	DoE-NI boundary wall
3007	stones	stones with mortar at base of boundary wall; over cobbles 3008
3008	layer	cobble path
3009	fill	fill of drain cut 3010
3010	cut	linear cut for drain; filled by 3009 & 3012
3011	*(=3016)*	
3012	stone drain	stone-built drain
3013	*(=3016)*	
3014	*(=3016)*	
3015	mortar	mortar stones; part of drain,
3016	layer	mixed loam layer with modern finds; below 3005
3017	*discarded*	
3018	layer	loam with stones and modern rubbish - glass bottle, plastic etc.
3019	layer	black-brown loam with burnt orange stones; below 3018
3020	layer	mid/light brown clay with stones - subsoil?
3021	layer	under 3008
3022	layer	
3023	stone feature	
4001	layer	sod
4002	layer	brown loam
4003	layer	orange-brown fine sandy gravel
4004	layer	stony layer
4005	layer	stony layer with burnt stones
4006	skeleton	disarticulated human bone
4007	skeleton	disarticulated human bone
4008	layer	grey-brown loam
4009	skeleton	partial remains of articulated skeleton; in layer 4008

Table 3 contd.

Context No.	Type	Description
4010	skeleton	partial remains of articulated skeleton; in layer 4008
4011	skeleton	partial remains of articulated skeleton; in layer 4008
4012	layer	large-stone layer
4013	layer	blue clay - subsoil?
4014	layer	mortar at base of southern side-wall

Table 3 contd.

Sample #	Context	Trench	No. of bags	Sample description
1	4006	4	1	human remains
2	4007	4	1	human remains incl. mandible and teeth
3	4005	4	3	sample of 'burnt mound' material
4	4005	4	6	sample of 'burnt mound' material
5	1005	1	1	mortar sample from south church wall
6	3015	3	1	mortar sample from drain
7	4014	4	1	mortar sample from south church wall
8	2017	2	1	charcoal-rich sample

Table 4 List of bulk samples

Drawing #	Type	Scale (cm)	Trench	Description	Figure No.
1	plan	1:20	2	showing contexts C.2006, C.2013 & C.2012	19
2	plan	1:20	1	showing contexts C.1004, C.1005, C.1006 [detail of stones in C.1004 not planned – see Plate 2]	16
3	plan	1:20	3	plan showing C.3008, C.3009, C.3012, C.3010, C.3011 7 C.3015	21
4	plan	1:20	4	SKs C.4009, C.4010 & C.4011 within C.4008	24
5	section	1:10	3	northeast-facing section	22
6	section	1:10	1	southwest-facing section	17
7	section	1:10	4	northeast-facing section	25
8	section	1:10	1	northwest-facing section	18
9	section	1:10	2	south-facing section	-
10	section	1:10	2	south-facing section; western corner → 4.4m	-
11	section	1:10	2	southwest-facing section	20
12	section	1:10	3	west-facing section	23
13	plan		2	plan of C.2022	-

Table 5 Catalogue of field drawings, including figure numbers for those illustrated in this DSR.

Glass		Pottery	
Context	Weight (g)	Context	Weight (g)
1001	59.5	1001	5.2
1002	383.9	1002	3.2
1003	332.2	1002	36.7
1004	1004.4	1003	292.2
1007	180	1004	943.3
1008	307.2	1007	43.9
1010	19.3	1008	547.9
2002	356.1	1010	62.4
2004	62.4	2002	464.2
2006	227	2004	39.3
2013	20.4	2006	571.1
2016	35.4	2013	55.3
3001	329.4	2016	14.4
3002	1178.7	3002	999.2
3005	299.5	3005	2438
3008	72.4	3008	96.7
3009	98.7	3009	375.8
3013	4.2	3013	80.5
4002	246	3014	50.2
4003	1097.99	3018	49.9
4004	183.3	4002	271.3
4008	44.9	4003	871.4
well	14.8	4004	242.1
TOTAL	6557.69		8554.2

Table 6 Catalogue of glass and pottery by weight and context.

Well	**1955**	**1958**	**1971**	**1973**	**1975**	**1976**	**1978**	**1979**	**1980**	**1981**	**1982**	**1983**	**1985**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**
Sterling																			
1p	-	-	2	2	-	1	-	-	4	-	-	2	-	1	2	1	2	1	-
2p	-	-	2	1	-	-	1	-	-	2	-	-	1	-	1	1	2		-
5p	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	2	4
10p	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		7
20p	-		-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	1	-
1Shilling	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euro																			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
punts																			
1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
5	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	**1**	**1**	**5**	**3**	**1**	**1**	**1**	**1**	**4**	**2**	**1**	**3**	**1**	**1**	**3**	**3**	**4**	**4**	**11**
	1950s	***2***					***1970s***	***12***							***1980s***	***18***			
		2%						*10%*								*15%*			

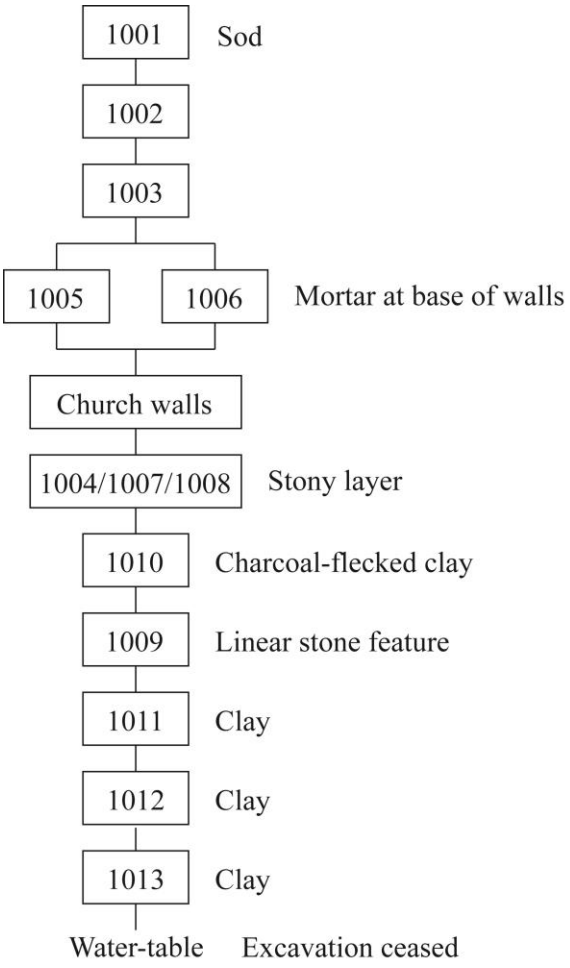
Table 7 Catalogue of coins recovered from the Drinking Well. There were no 5 cent, 10 cent, 20 cent, 1 Euro, 50p or 1 pound coins and, within the range of years recorded, 1955-2009, there were no coins from years 1959-70 inclusive, 1974, 1984 and 1986 (table continued on next page).

Well	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Sterling																		
1p	-	1	-	1	-	-	4	3	-	-	2	1	1	1	-	1	2	**35**
2p	-	-		2	2	2	2	5	-	-	1	2	-	2	-	-	-	**29**
5p	-	-	1	-	1	1	1	1	-	-	2	1	-	1	-	3	-	**18**
10p	-	-	-	-	-	-	2	2	5	1	2	-	-	1	1	-	-	**22**
20p	1	-	1	-	-	-	-	2	-	-	1	-	-		1	-	-	**10**
1Shilling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Euro																		
1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
50	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
punts																		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
10	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
Totals	**1**	**1**	**2**	**3**	**3**	**4**	**9**	**13**	**5**	**3**	**9**	**4**	**1**	**5**	**2**	**4**	**2**	**122**
						1990s	***42***									***2000s***	***48***	
							34%										*39%*	

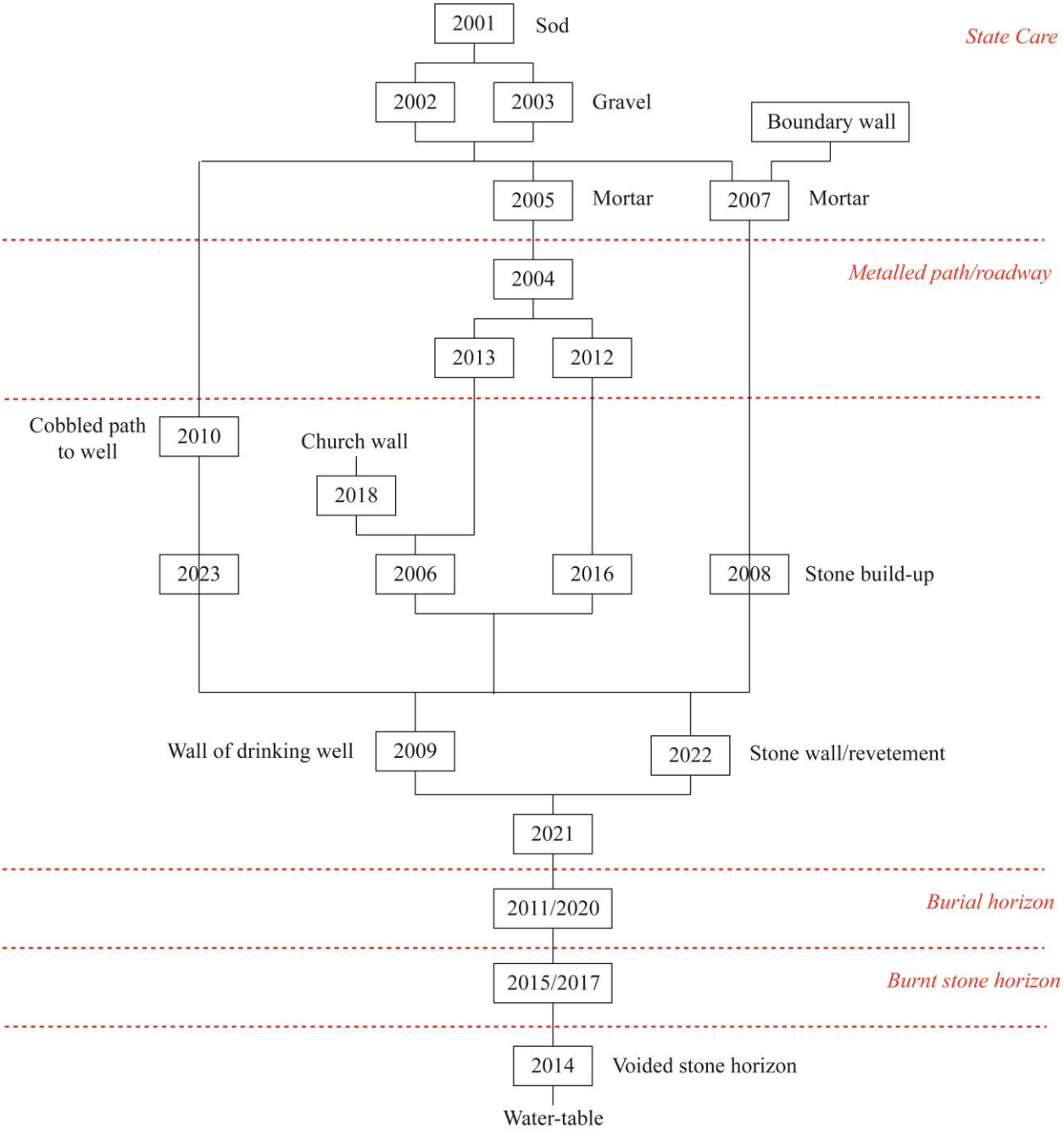
Table 7 continued.

APPENDIX 2: HARRIS MATRICES

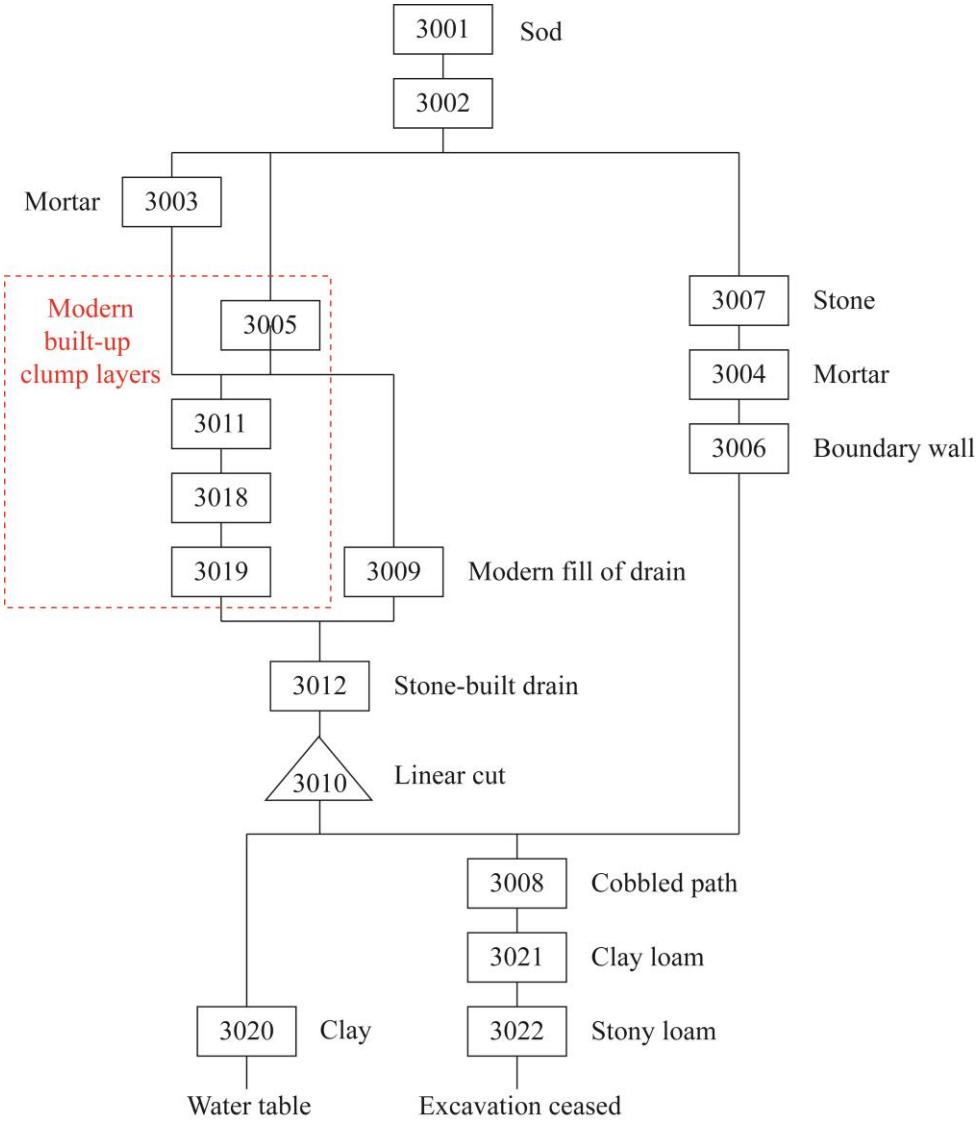
TRENCH 1



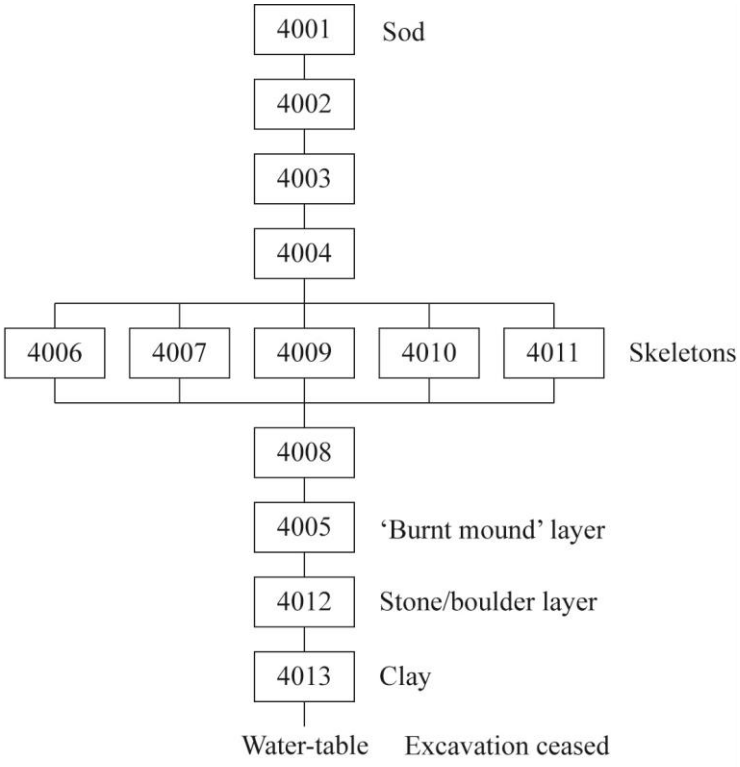
TRENCH 2


2001
Sod
State Care
2002
2003
Gravel
Boundary wall
2005
Mortar
2007
Mortar
Metalled path/roadway
2004
2013
2012
Cobbled path to well
2010
Church wall
2018
2023
2006
2016
2008
Stone build-up
Wall of drinking well
2009
2022
Stone wall/revetement
2021
2011/2020
Burial horizon
2015/2017
Burnt stone horizon
2014
Voided stone horizon
Water-table

TRENCH 3


3001
Sod
3002
Mortar
3003
Modern built-up clump layers
3005
3011
3018
3019
3009
Modern fill of drain
3007
Stone
3004
Mortar
3006
Boundary wall
3012
Stone-built drain
3010
Linear cut
3008
Cobbled path
3021
Clay loam
3020
Clay
3022
Stony loam
Water table
Excavation ceased

TRENCH 4


4001
Sod
4002
4003
4004
4006
4007
4009
4010
4011
Skeletons
4008
4005
'Burnt mound' layer
4012
Stone/boulder layer
4013
Clay
Water-table
Excavation ceased

FIGURES

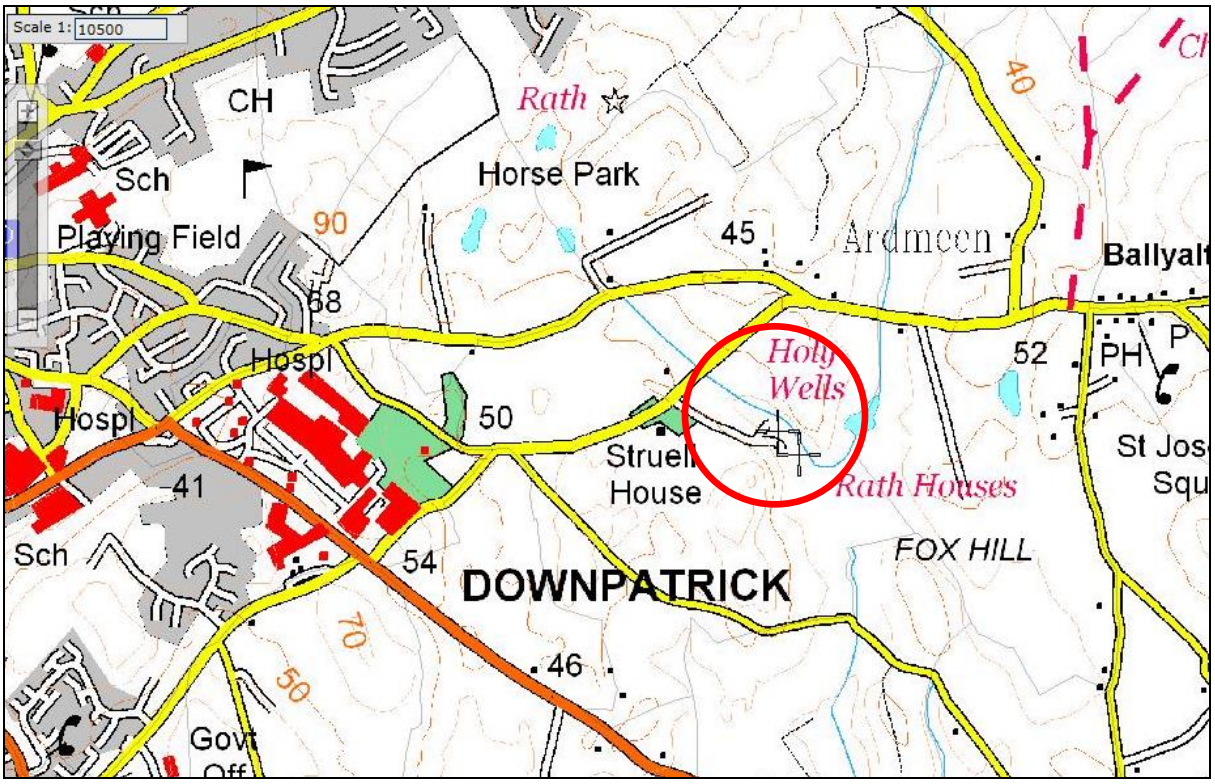


Figure 1 Map showing the location of Struell Wells, east of Downpatrick, Co. Down.

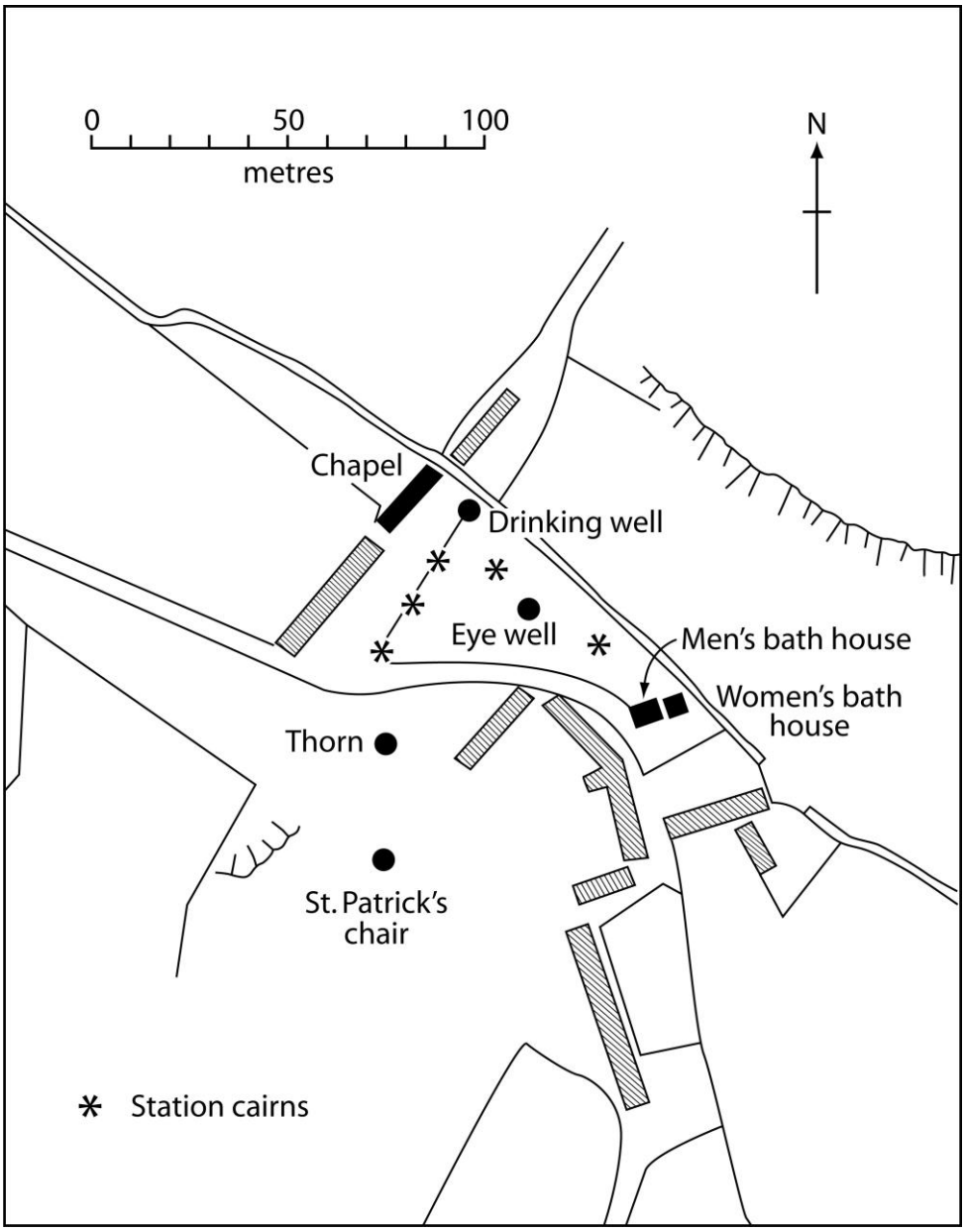


Figure 2 Map of the main features at Struell Wells based on the OS 1st edition map, 1st edition revision and O'Laverty, 1878 (from McCormick 2011, 6).

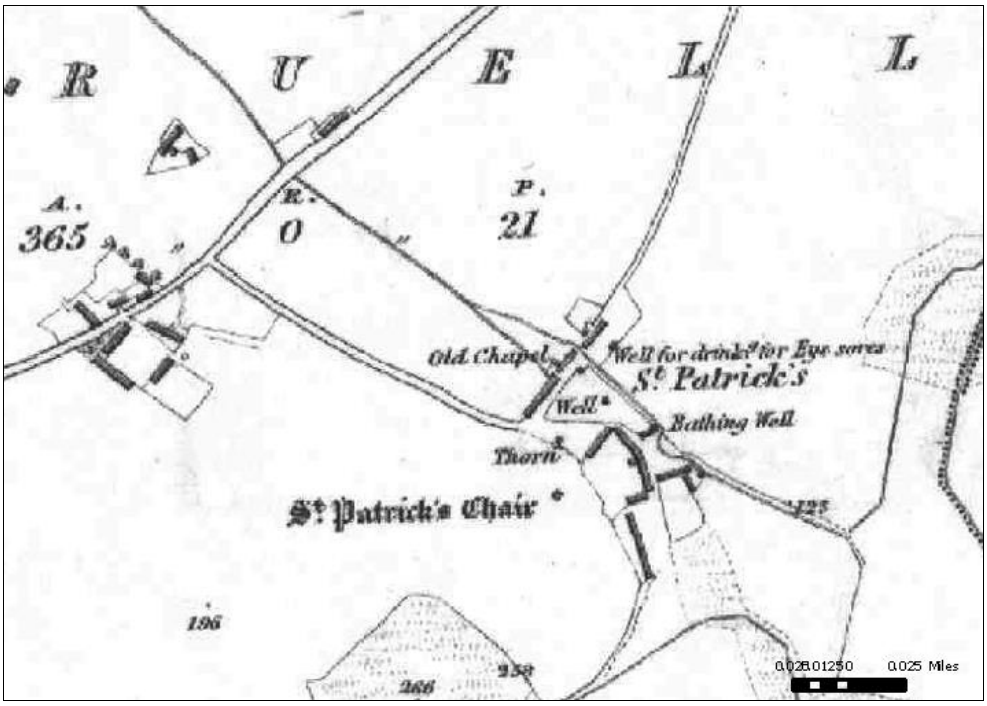


Figure 3 Detail from the Ordnance Survey (OS) 6-inch 1st Edition map of Struell Wells 1829-1835 (from NIEA Mapviewer).

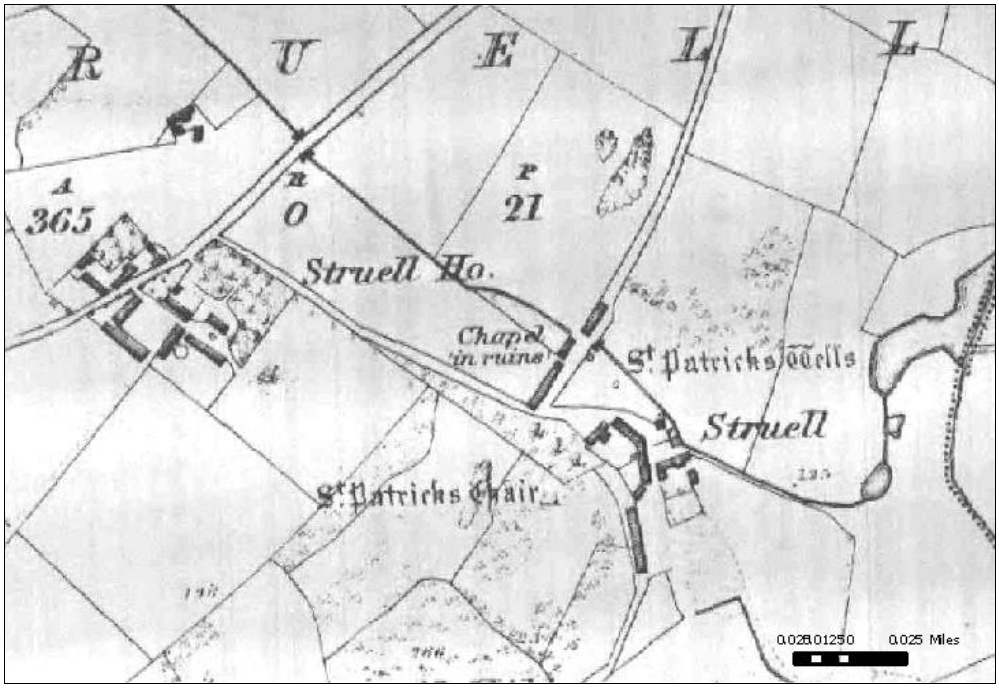


Figure 4 Detail from the OS 6-inch 2nd Edition map of Struell Wells 1831-1904 (from NIEA Mapviewer).

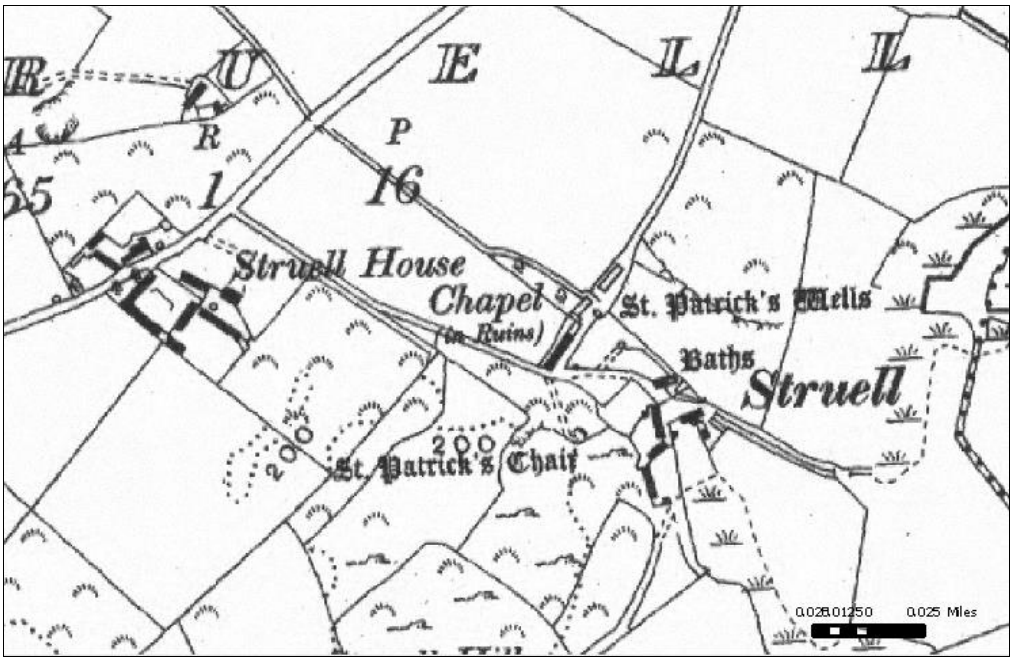


Figure 5 Detail from the OS 6-inch 3rd Edition map of Struell Wells, 1857-1932 (from NIEA Mapviewer).

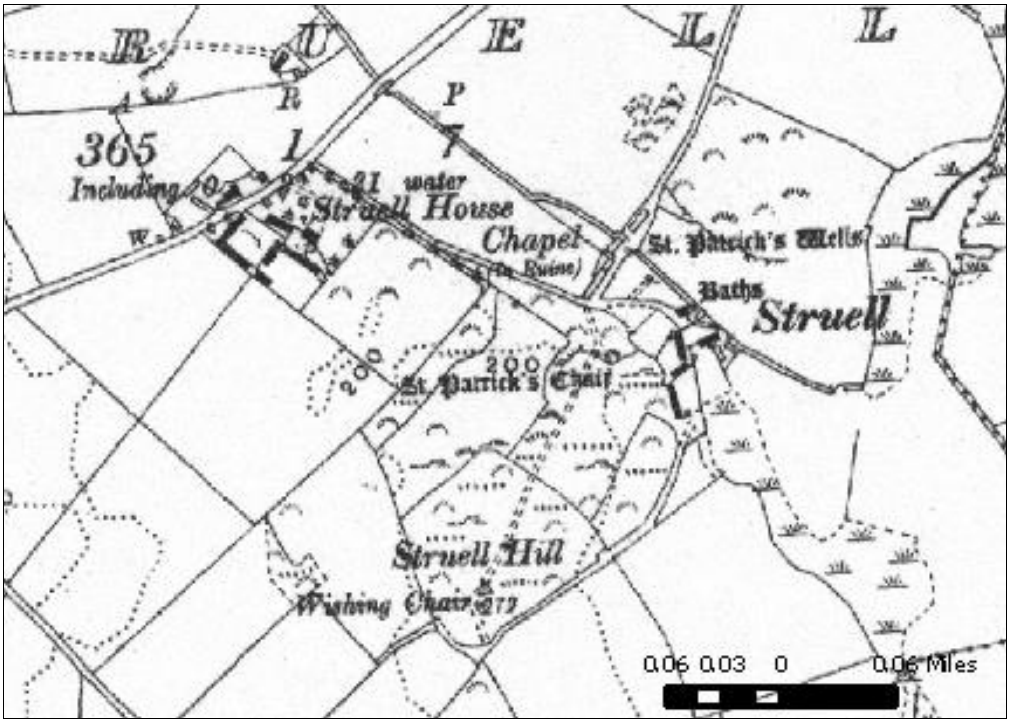


Figure 6 Detail from the OS 6-inch 4th Edition map of Struell Wells, 1901-1957 (from NIEA Mapviewer).

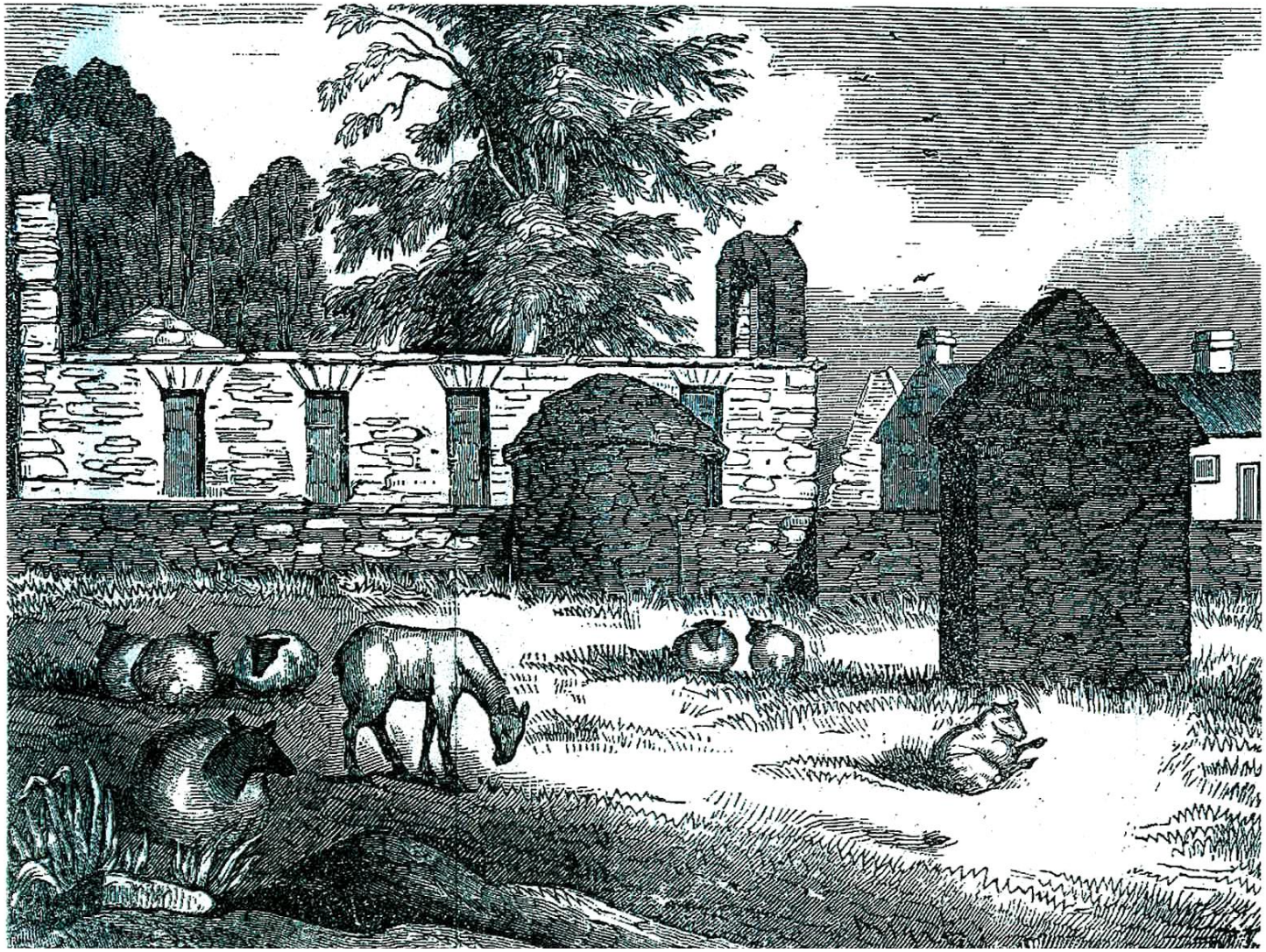


Figure 7 An illustration of the church, Drinking Well and Eye Well at Struell from Hardy's 1836 *The Holy Wells of Ireland* (copied from McCormick 2009, 51).

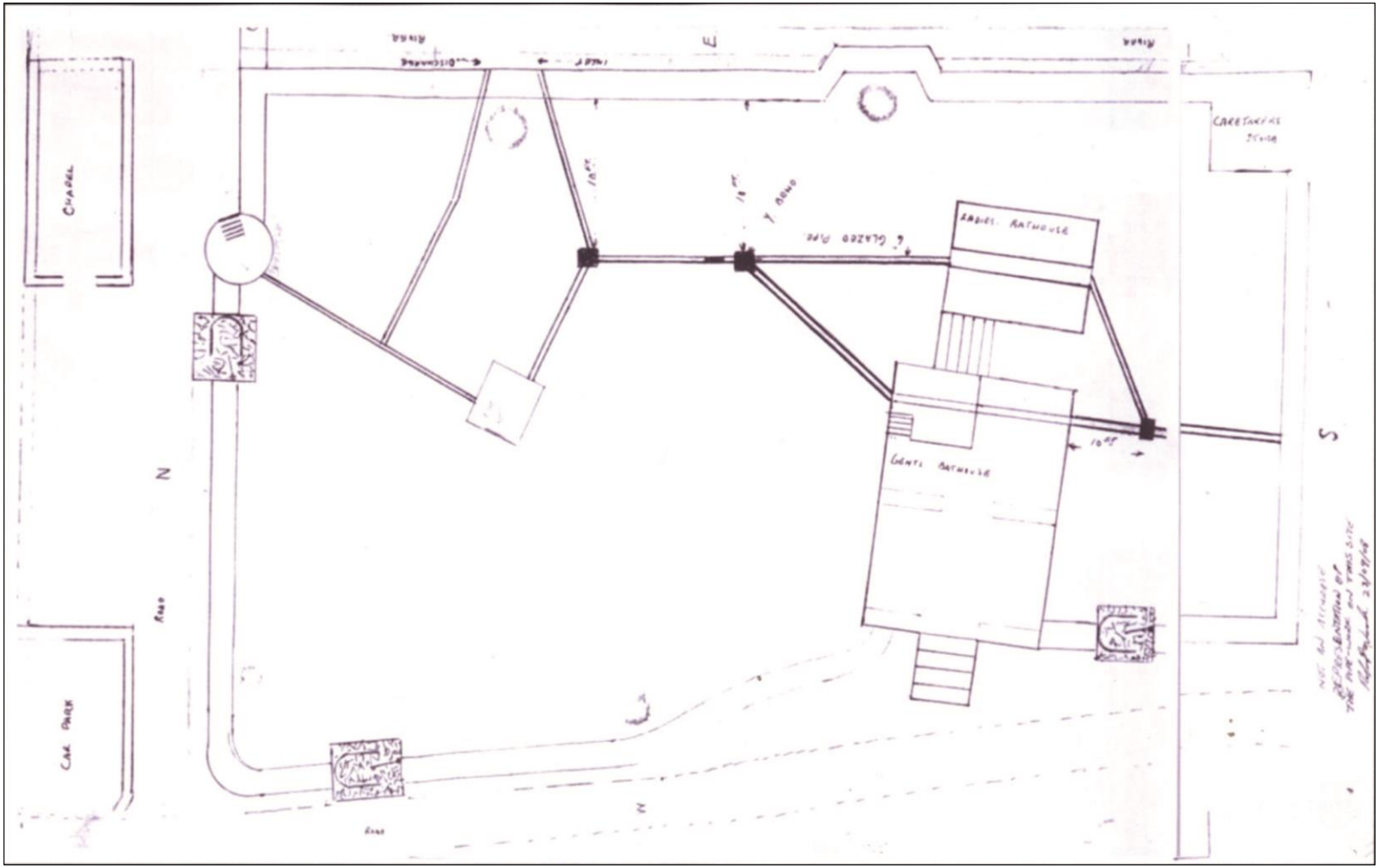


Figure 8 Plan of proposed maintenance and building work at Struell, 1963-1964 (NIEA MBR, SM7 files).

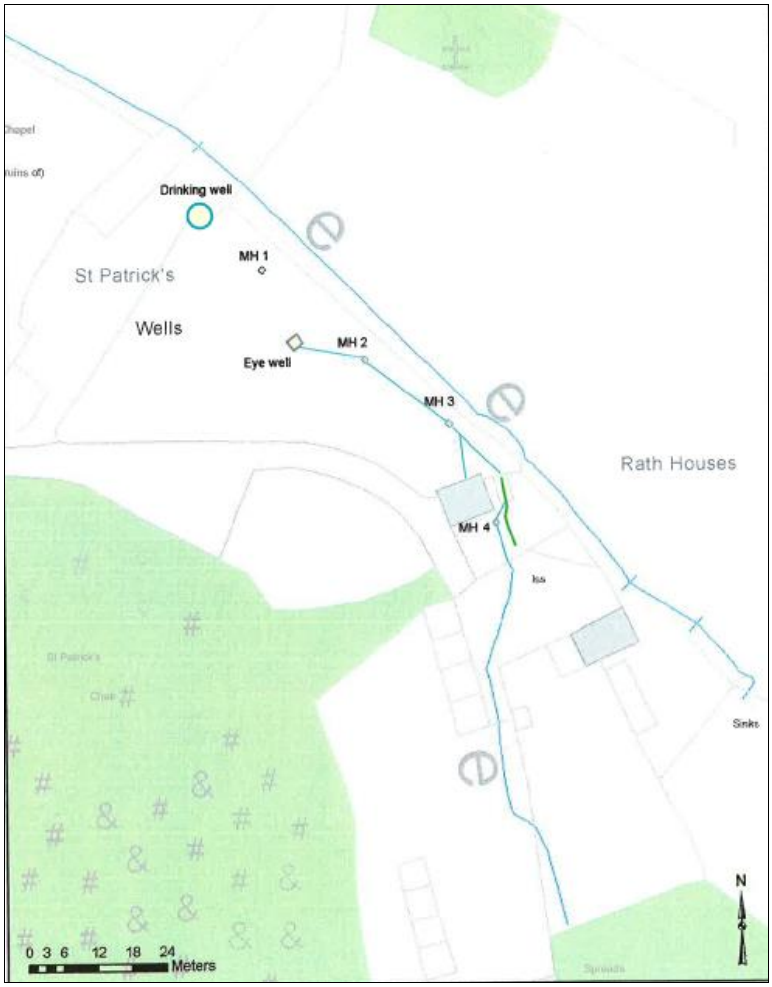


Figure 9 Schematic plan of Struell Wells showing the 'location of manholes and pipe system'. Plan not dated (NIEA MBR SM7 files).

Figure 10 Location and outline of survey areas, Areas A-D.

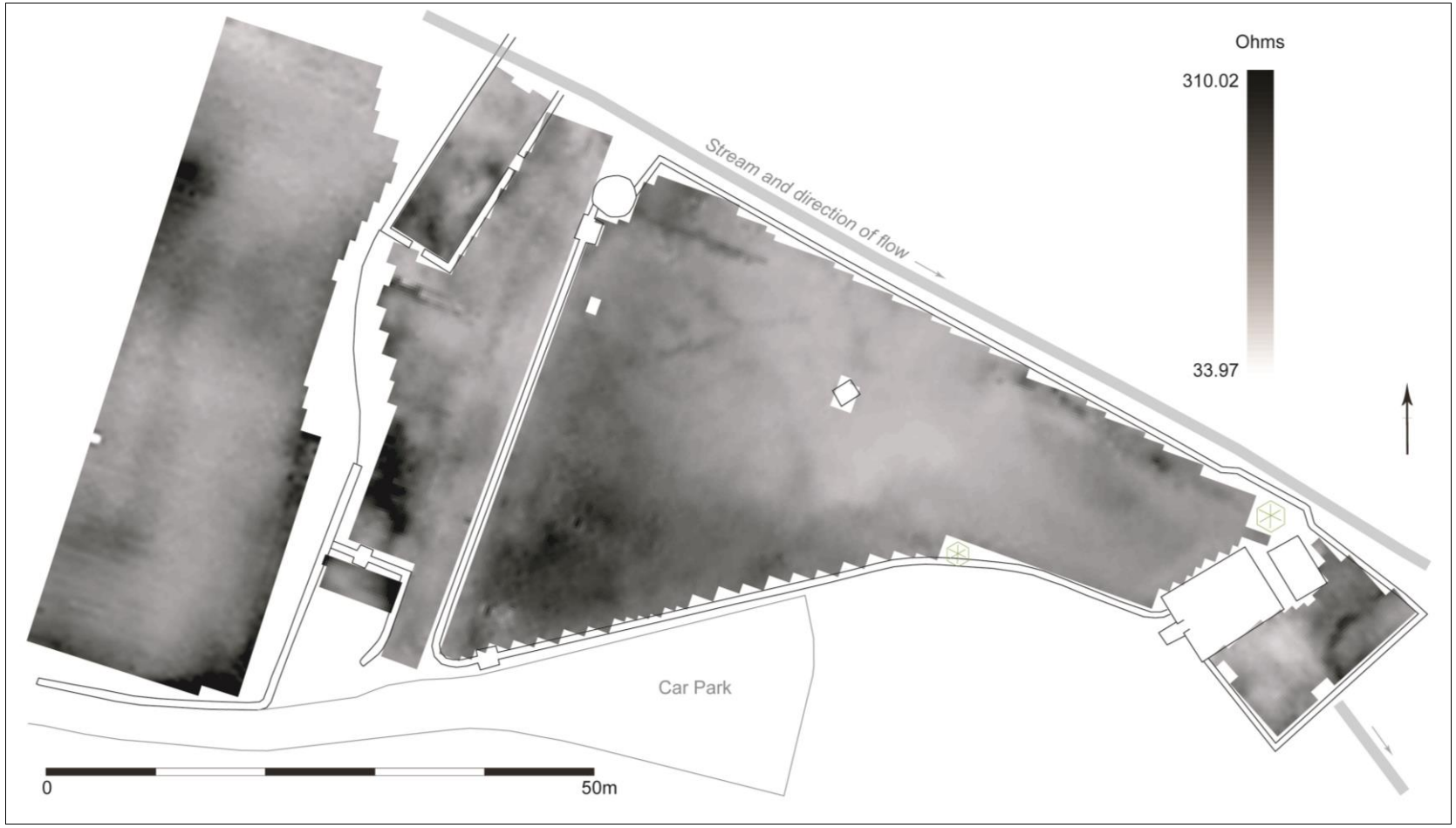


Figure 11 Shade plot of raw resistance data, despiked and interpolated.

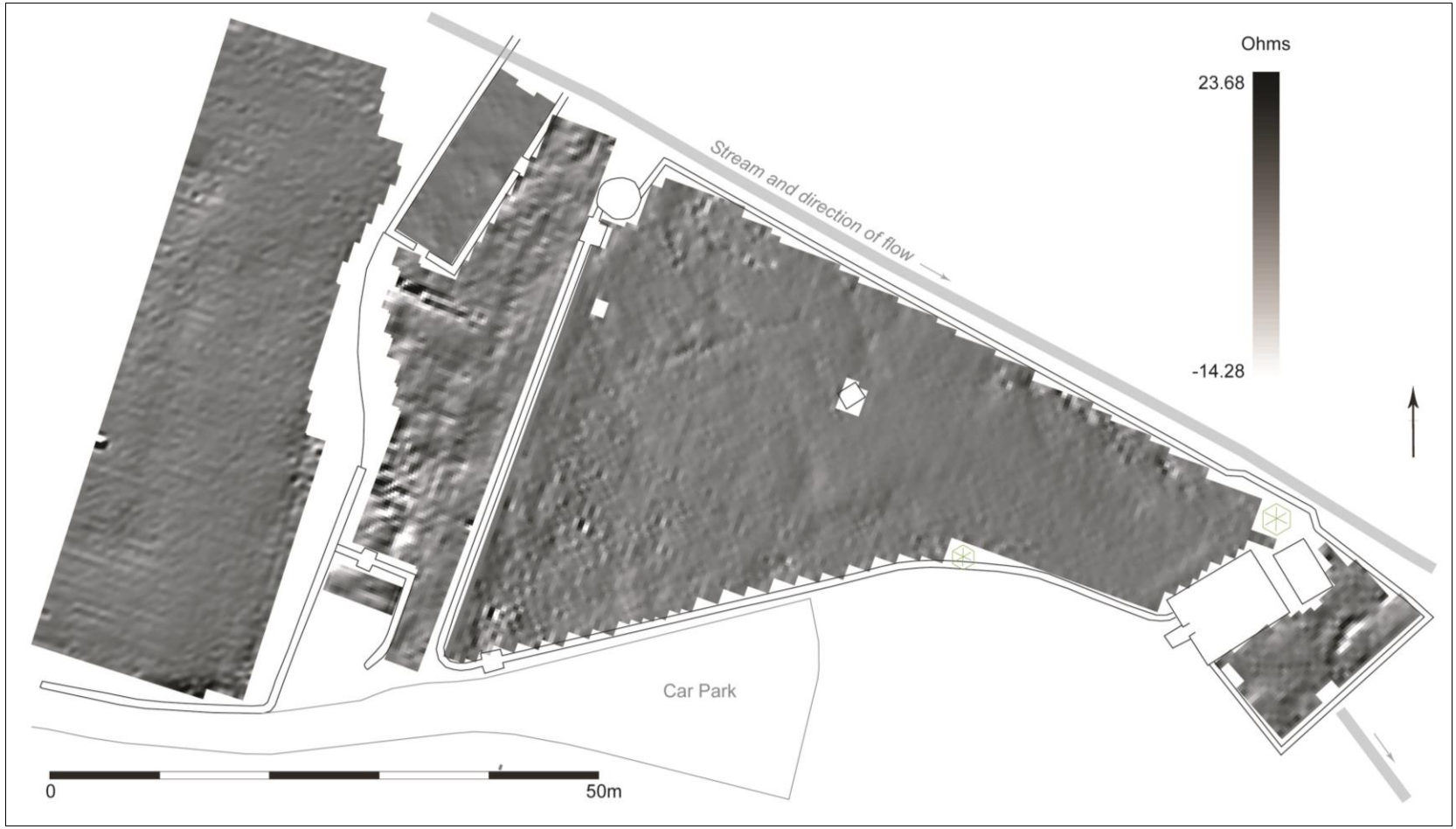


Figure 12 Shade relief plot of resistance data.

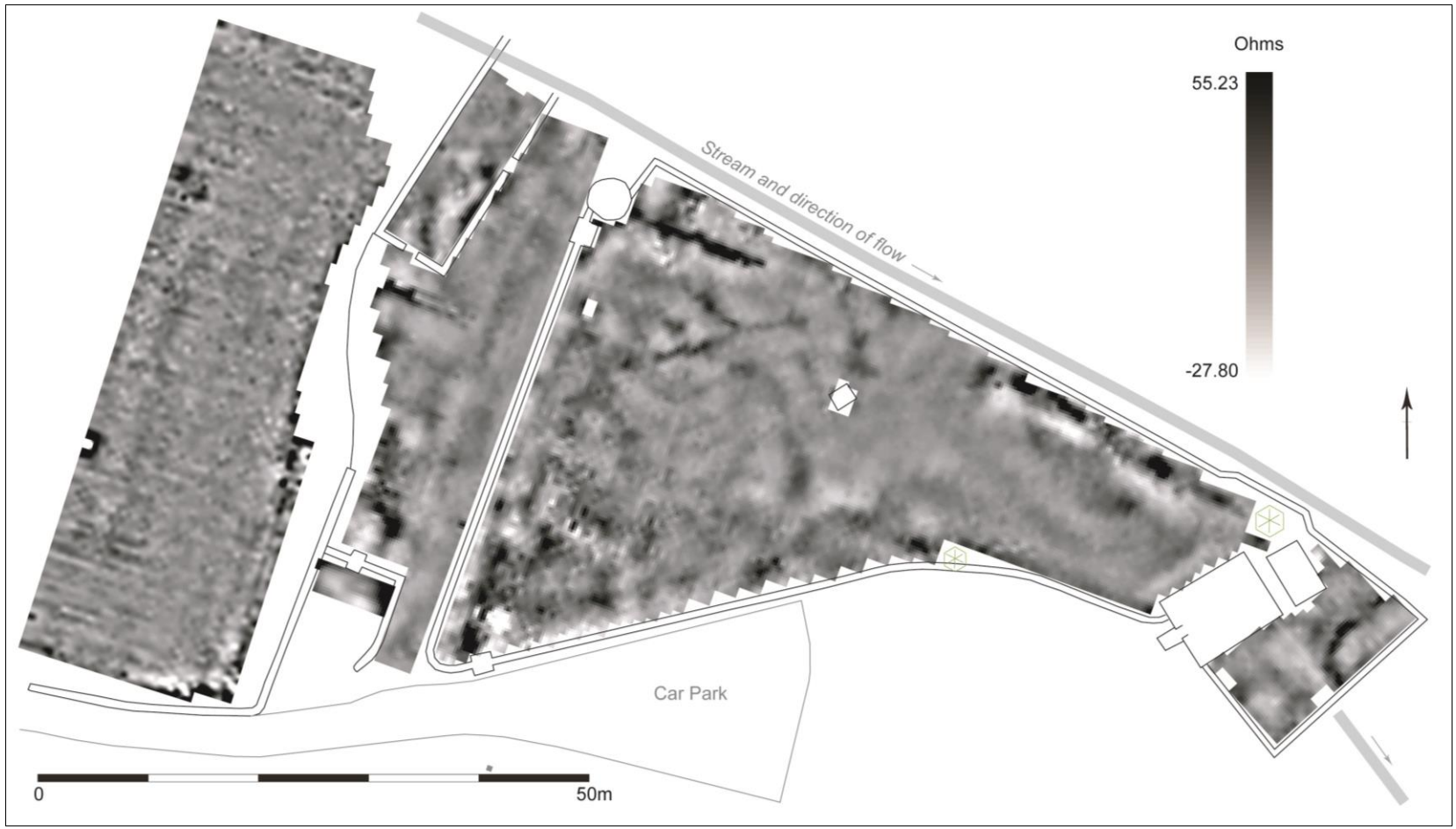


Figure 13 Shade plot of resistance data following the application of High Pass Filter. This has the effect of filtering out broad trends and emphasises the detail of smaller and fainter anomolies.

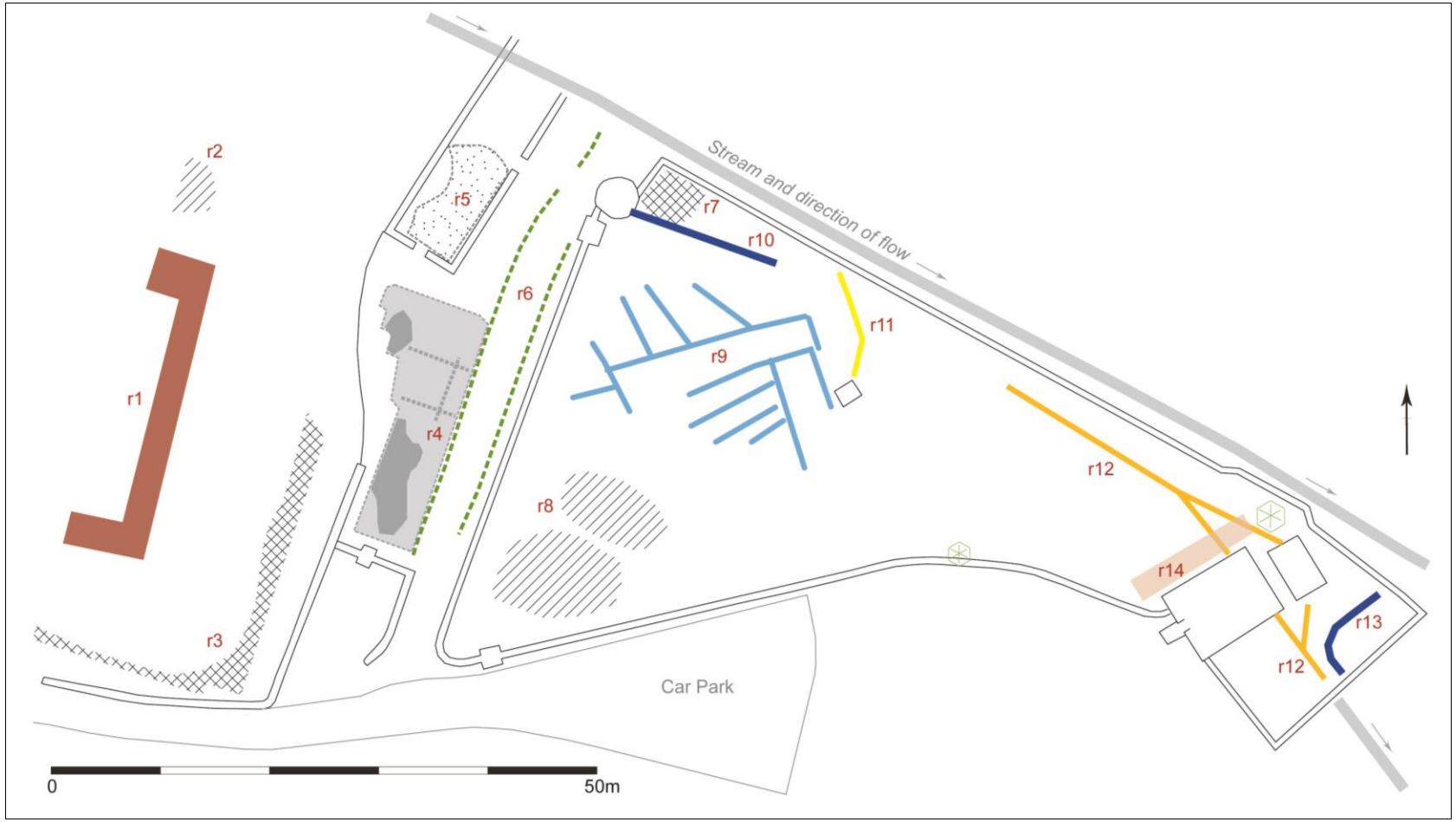


Figure 14 Simplified interpretation of the earth resistance survey results

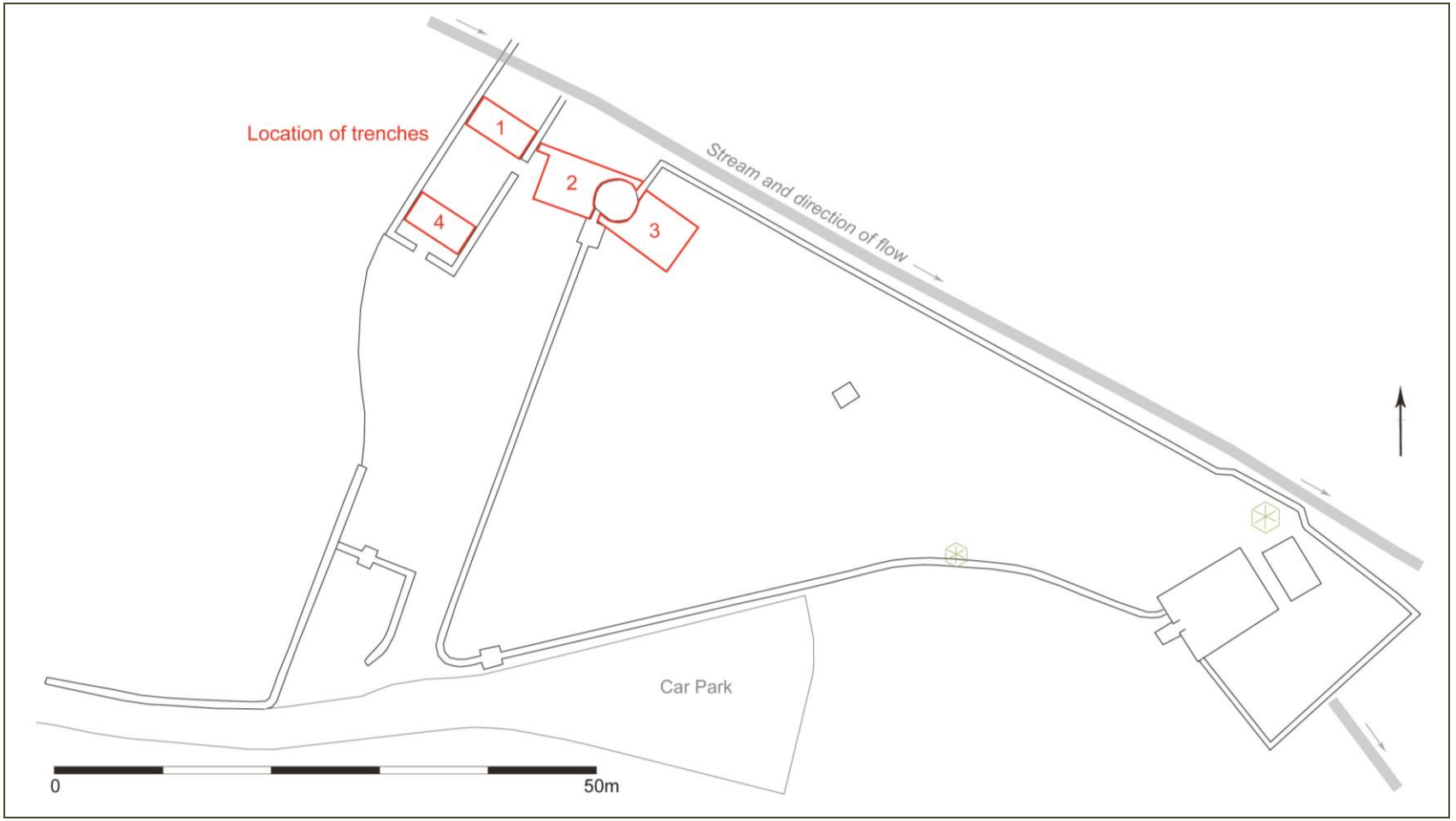


Figure 15 Struell Wells showing the location of the four trenches excavated in 2012.

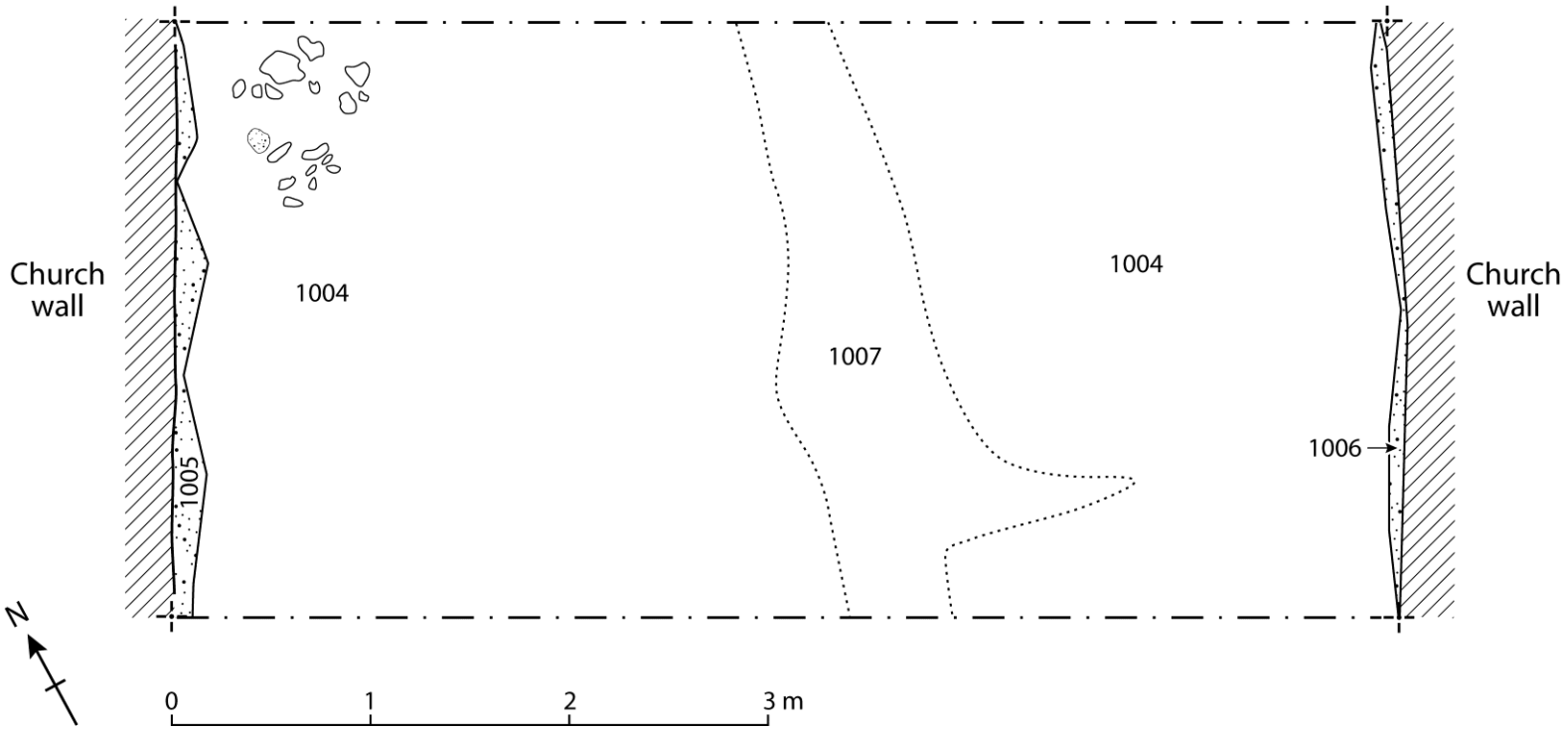


Figure 16 Trench 1: mid-excavation plan showing the mortar at the base of the two walls (C.1005 and C.1006) and the stony layer, C.1004 (scale 1:20cm).

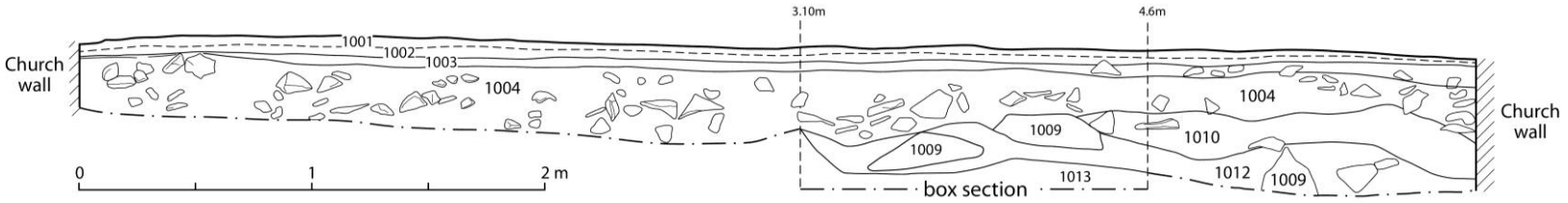


Figure 17 Trench 1: post-excavation southwest-facing section drawing (scale 1:10cm).

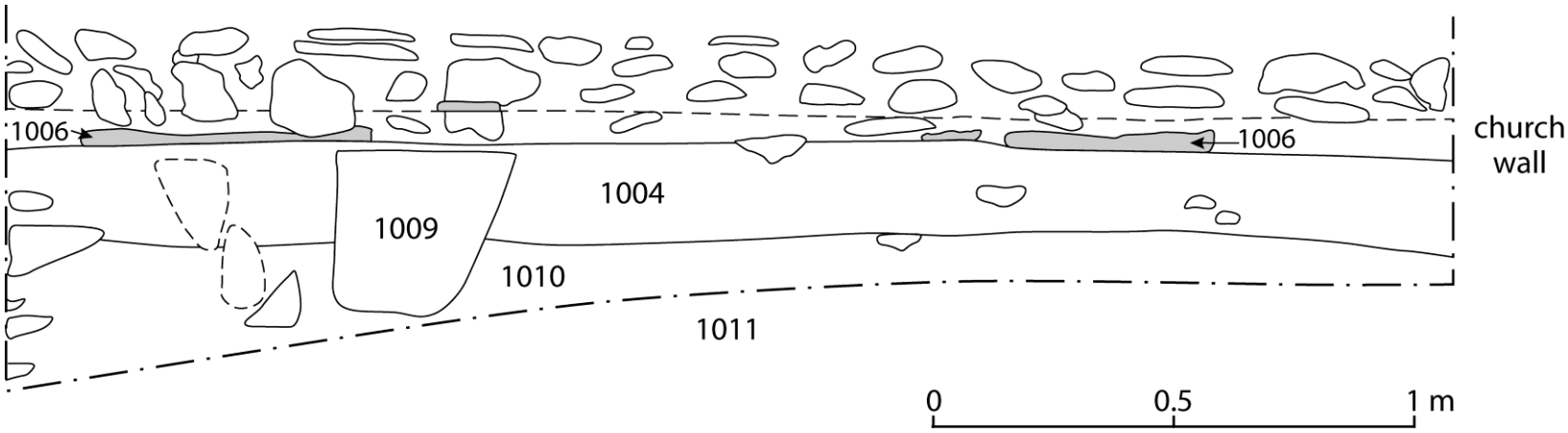


Figure 18 Trench 1: northwest-facing section (scale 1:10cm).

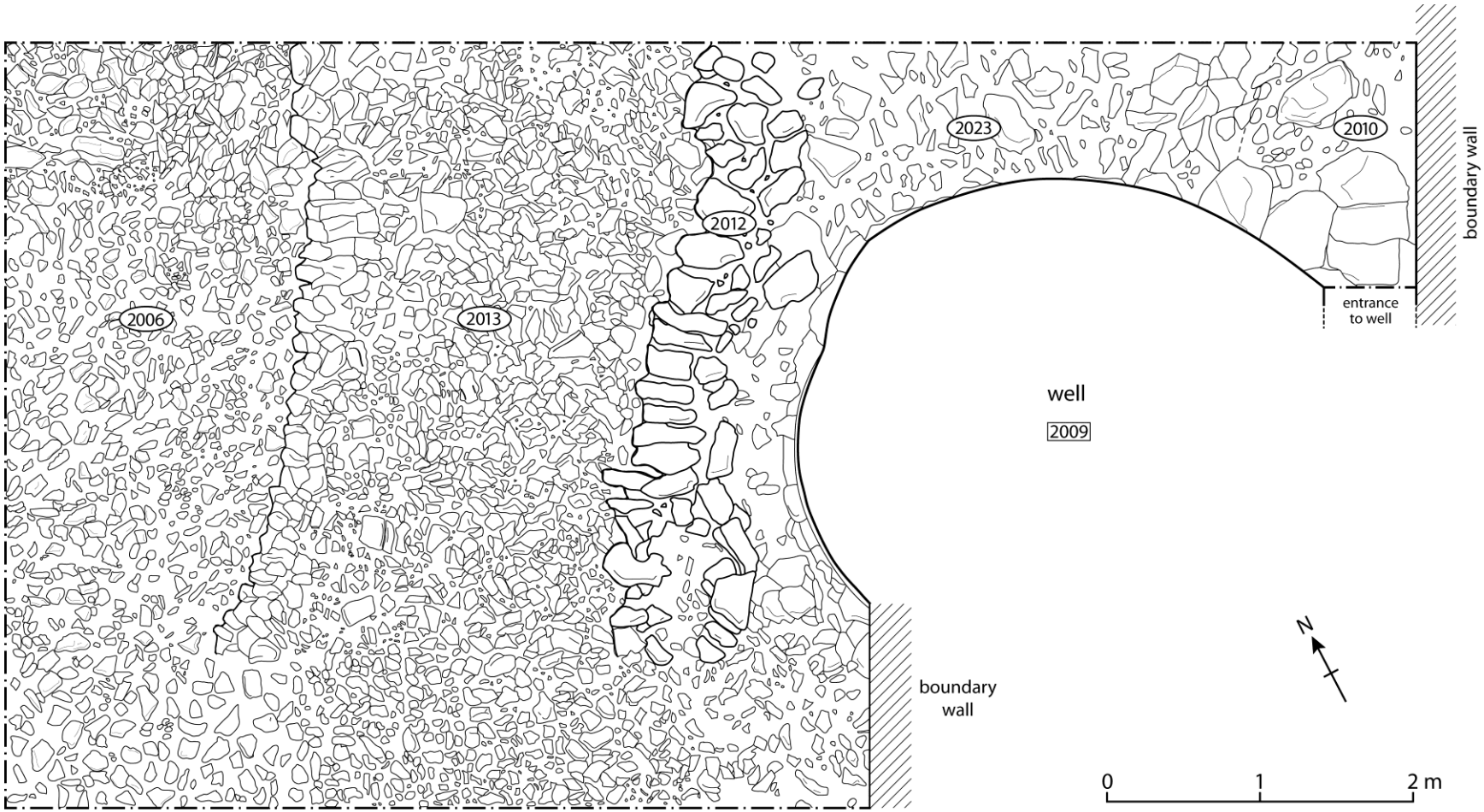


Figure 19 Trench 2: Plan showing the metalled roadway and cobbled path (scale 1: 20cm).

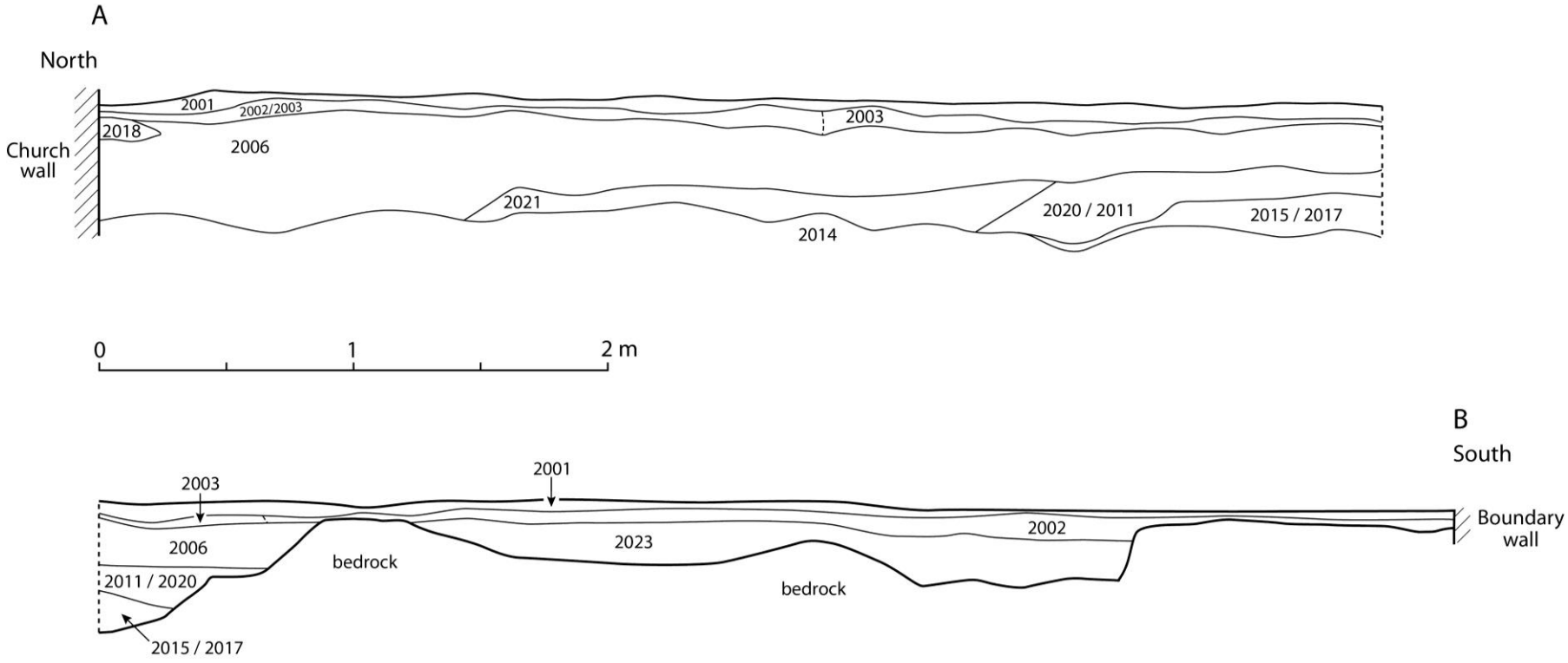


Figure 20 Trench 2: southwest-facing section (scale 1:10cm).

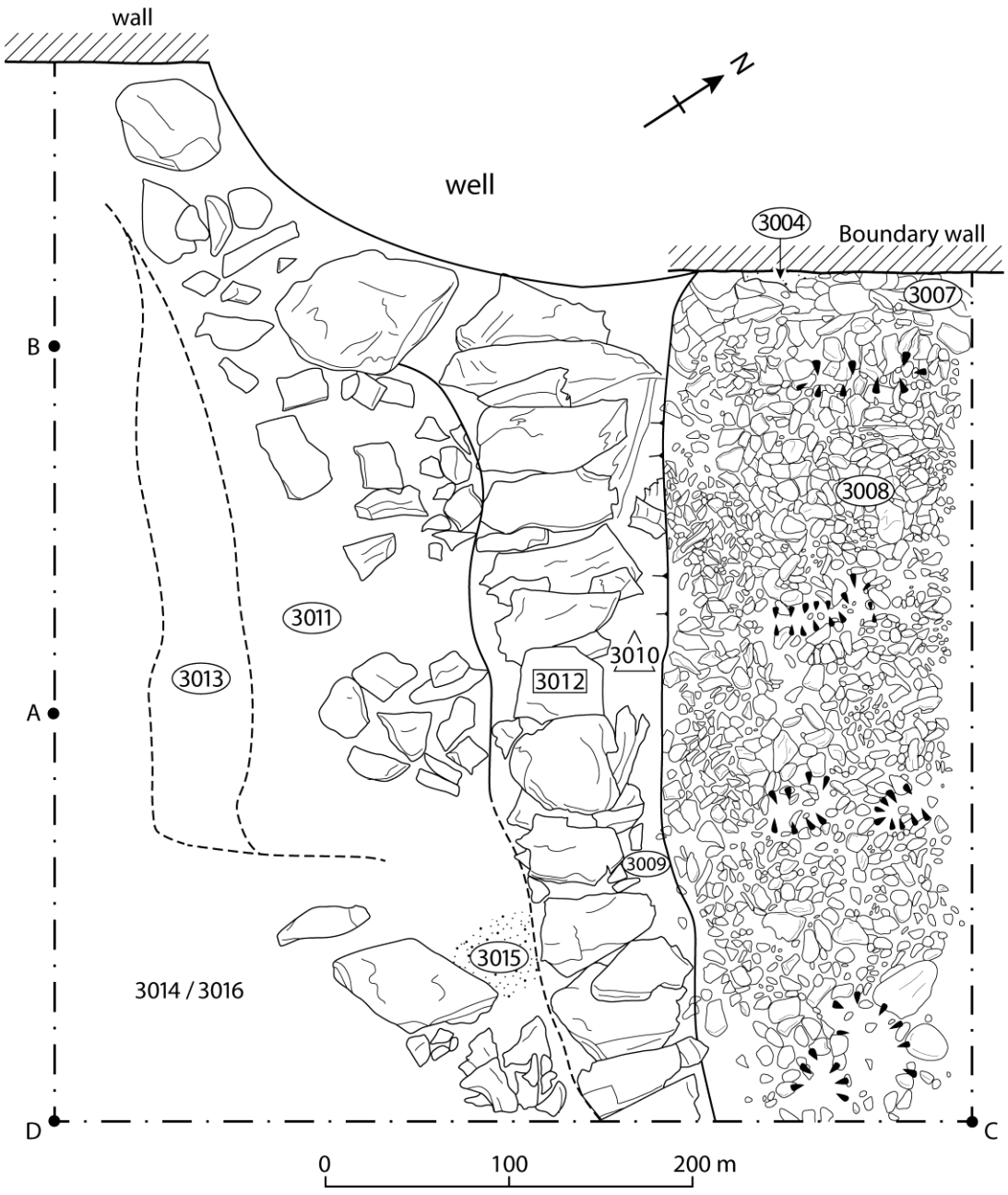


Figure 21 Trench 3: plan showing the drain (C.3010, C.3009 and C.3012), cobbled surface (C.3008) and mixed deposits, C.3011 = 3011, 3013, 3014/16 (scale 1:20cm).

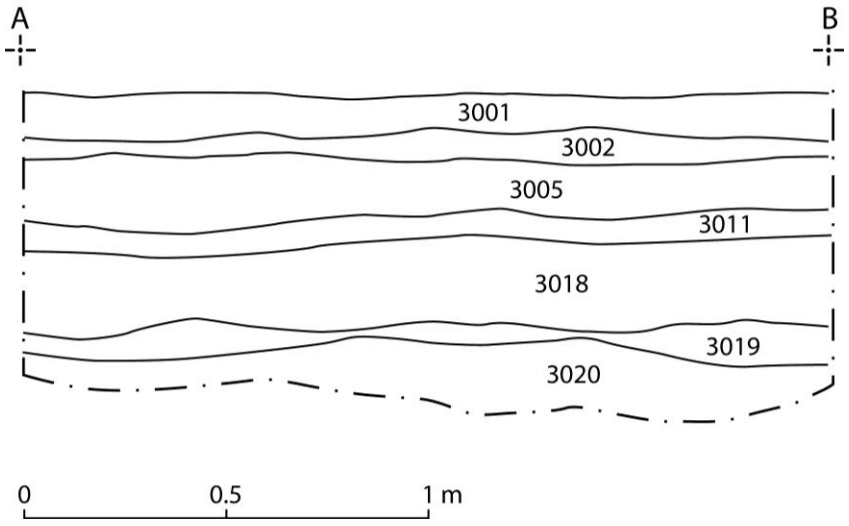


Figure 22 Trench 3: northeast-facing section drawing of box-trench (scale 1:10cm). See Figure 21 for location.

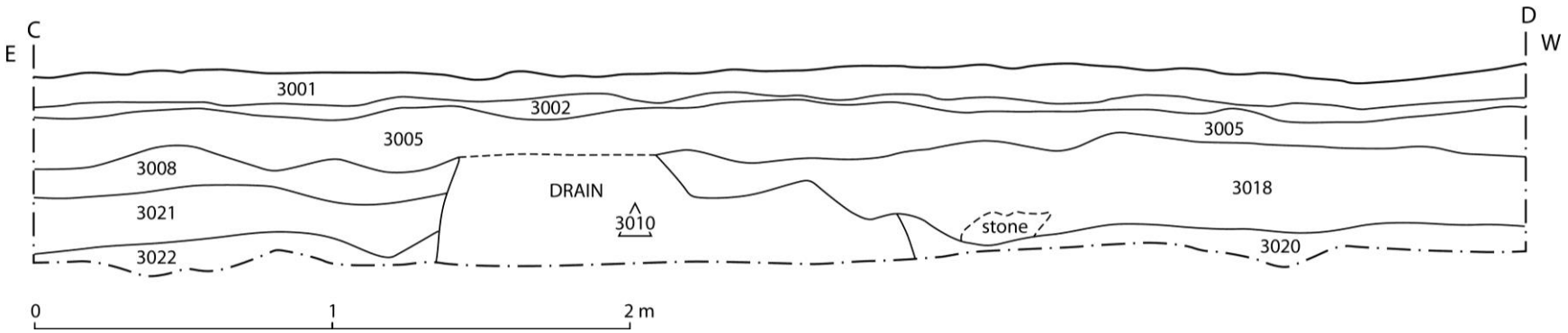


Figure 23 Trench 3: west-facing section (scale 1:10cm). See Figure 21 for location.

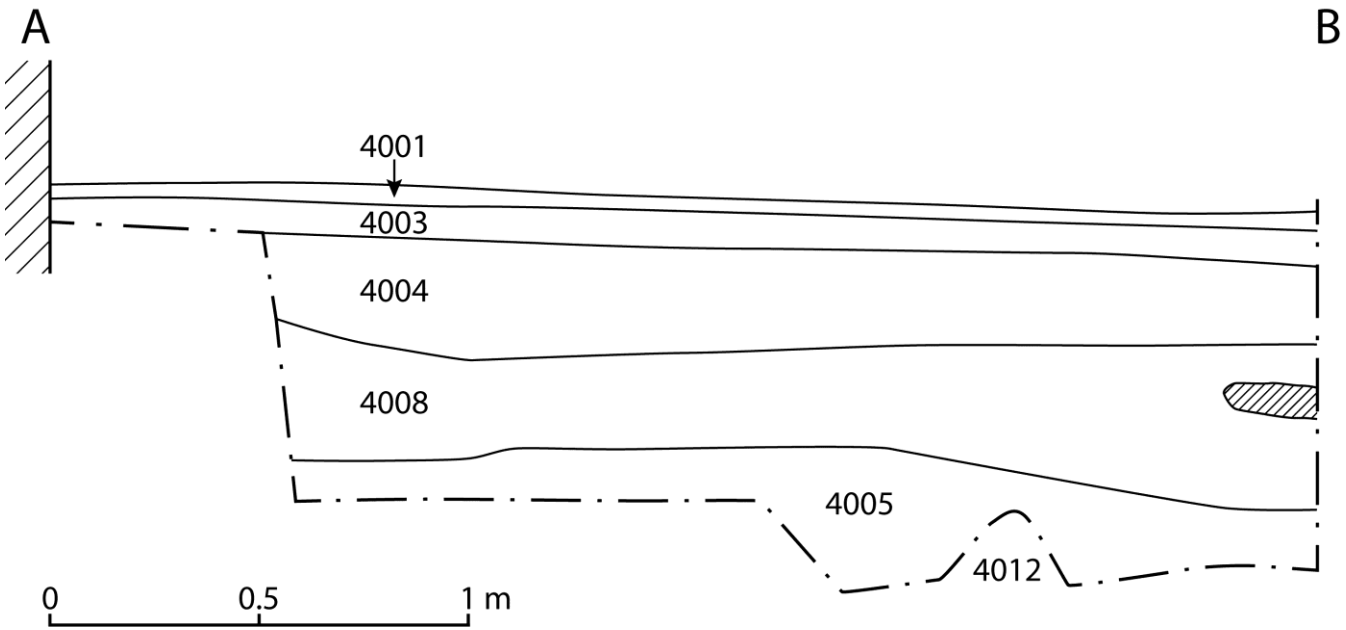


Figure 24 Trench 4: northeast-facing section drawing (scale 1:10cm). See Figure 25 for location.

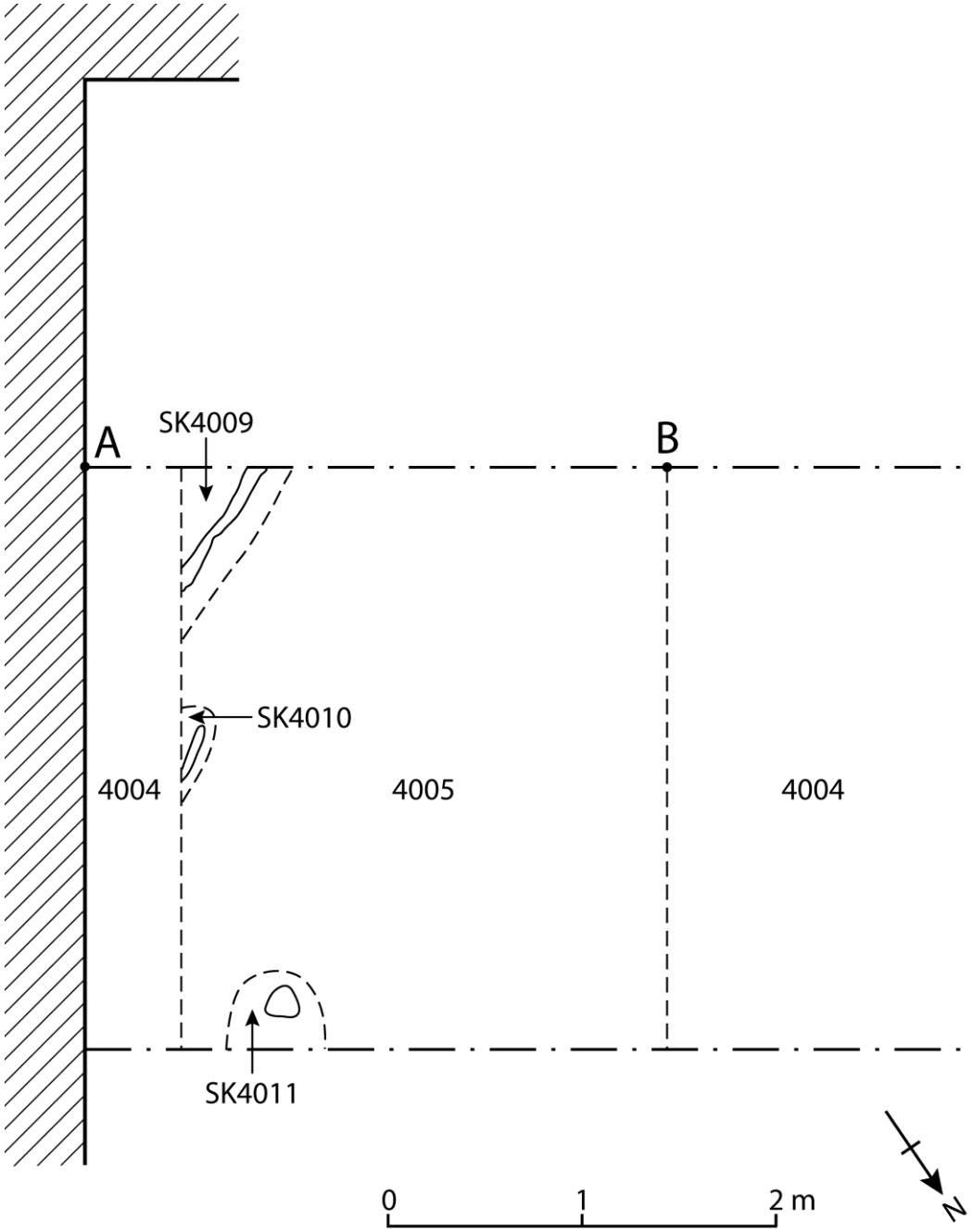


Figure 25 Trench 4: Plan showing location of articulated partial skeletons (scale 1:20cm).

PLATES