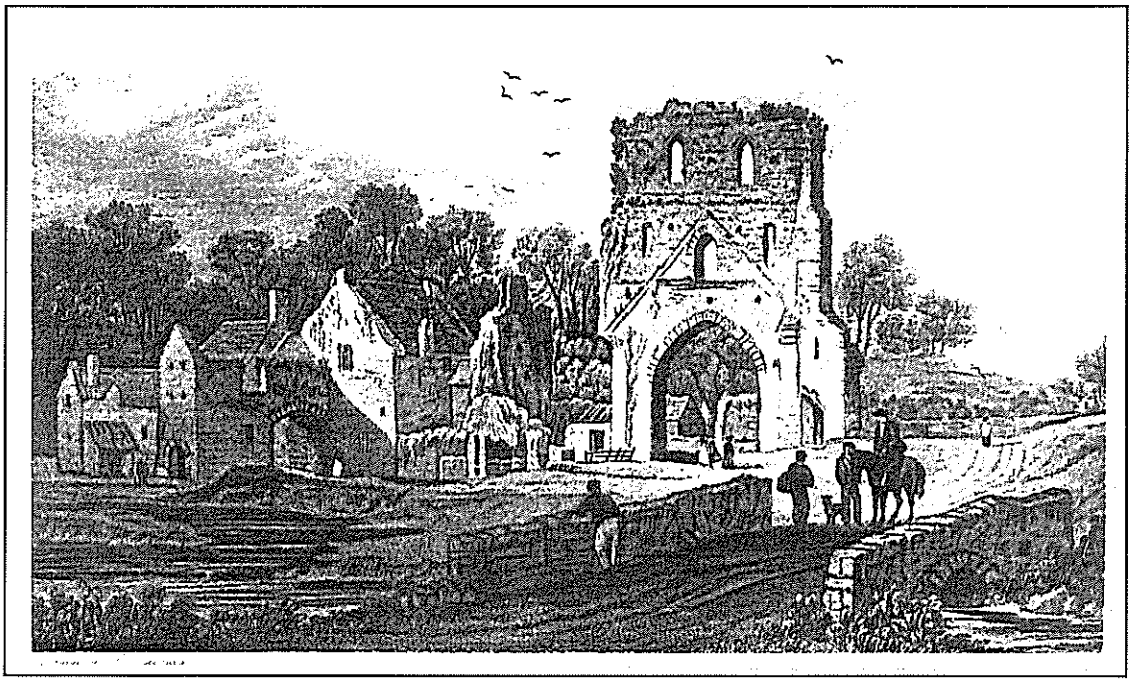
ARCHAEOLEG CAMBRIA ARCHAEOLOGY

PILL PRIORY, MILFORD HAVEN

ARCHAEOLOGICAL RECORDING AND WATCHING BRIEF, SEPTEMBER 1996-APRIL 1997

Dyfed Project Record Number 33488



Report prepared for Pembrokeshire
County Council

by Richard Ramsey
ACA
May 1998

PILL PRIORY, MILFORD HAVEN

ARCHAEOLOGICAL RECORDING AND WATCHING BRIEF, SEPTEMBER 1996 - APRIL 1997

Dyfed Project Record Number 33488

Contents

FIGURES

1.0 INTRODUCTION

1.1 Summary

A watching brief was undertaken by *Archaeoleg CAMBRIA Archaeology* on the installation of a new sewer-main and associated features at Lower Priory, Milford Haven, which was excavated through the former precinct and cemetery of the medieval Pill Priory (NGR SM 9023 0727), between September 1996 and April 1997.

The main sewer pipe trench excavation revealed a large number of human inhumations, and a truncated masonry structure, all relating to the occupation of the priory. In all, 26 graves were revealed. All contained well preserved human skeletal remains in varying degrees of completeness, but all had undergone disturbance, either from later burials, contemporary building work at the priory, the road construction, or indeed as a result of the programme of works described herein. Only one of the graves contained any evidence to suggest the presence of a coffin. Wall footings were uncovered which can, on the basis of their location and alignment, plausibly be interpreted as belonging to the north wall of the north transept of the Priory church.

It was demonstrated that some graves were cut through, or cut by, other graves, enabling a certain measure of relative chronological analysis to be suggested within the overall medieval context of the Priory. Moreover, the presence of building debris in certain contexts, and datable pot and tile sherds in association with those contexts, may allow for some speculation regarding phases of building and demolition at the Priory during both the medieval and the post-Dissolution periods. However, no absolute dating evidence for the burials was obtained during the watching brief.

The high incidence of superimposition of graves suggests that space within the cemetery was at a premium; while their arrangement permitted speculation both upon the north and north-east boundary of the former monastic precinct, and the establishment of the road through the site; the limits set by the minimal extent of the excavation trenches must, however, be borne in mind.

1.2 Development proposals and commission

A telephone call from Emyr Williams, Pembrokeshire County Council Transportation and Technical Services, on Friday 6th September 1996, alerted *Archaeoleg CAMBRIA Archaeology* to the discovery of human remains during new sewer-main trench excavations at Lower Priory, Milford Haven. This was followed by a FAX copy of the site location and notification that the work had been stopped while police and Environmental Health officers investigated. On the following Monday 9th September, Emyr Williams telephoned *Archaeoleg CAMBRIA Archaeology* to commission a watching brief and terms were agreed.

1.3 Content and scope of the watching brief

An archaeological watching brief is defined by the Institute of Field Archaeologists as a formal programme of observation and investigation conducted during an operation carried out for non-archaeological reasons - normally a development or other construction project - within a specified area where archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

The watching brief is intended to allow, subject to resources, the preservation by record of archaeological deposits in advance of their disturbance or destruction, and to provide an opportunity, if necessary, for the watching archaeologist to alert all interested parties to the presence of an archaeological find for which the resources allocated to the watching brief are insufficient to support satisfactory treatment.

The watching brief is not intended as a substitute for contingent archaeological excavation.

The client will be supplied with 3 copies of an archaeological report of the results of the watching brief. The report will be fully representative of all the information recovered. A copy of the report will also be deposited with Dyfed Sites and Monuments Record.

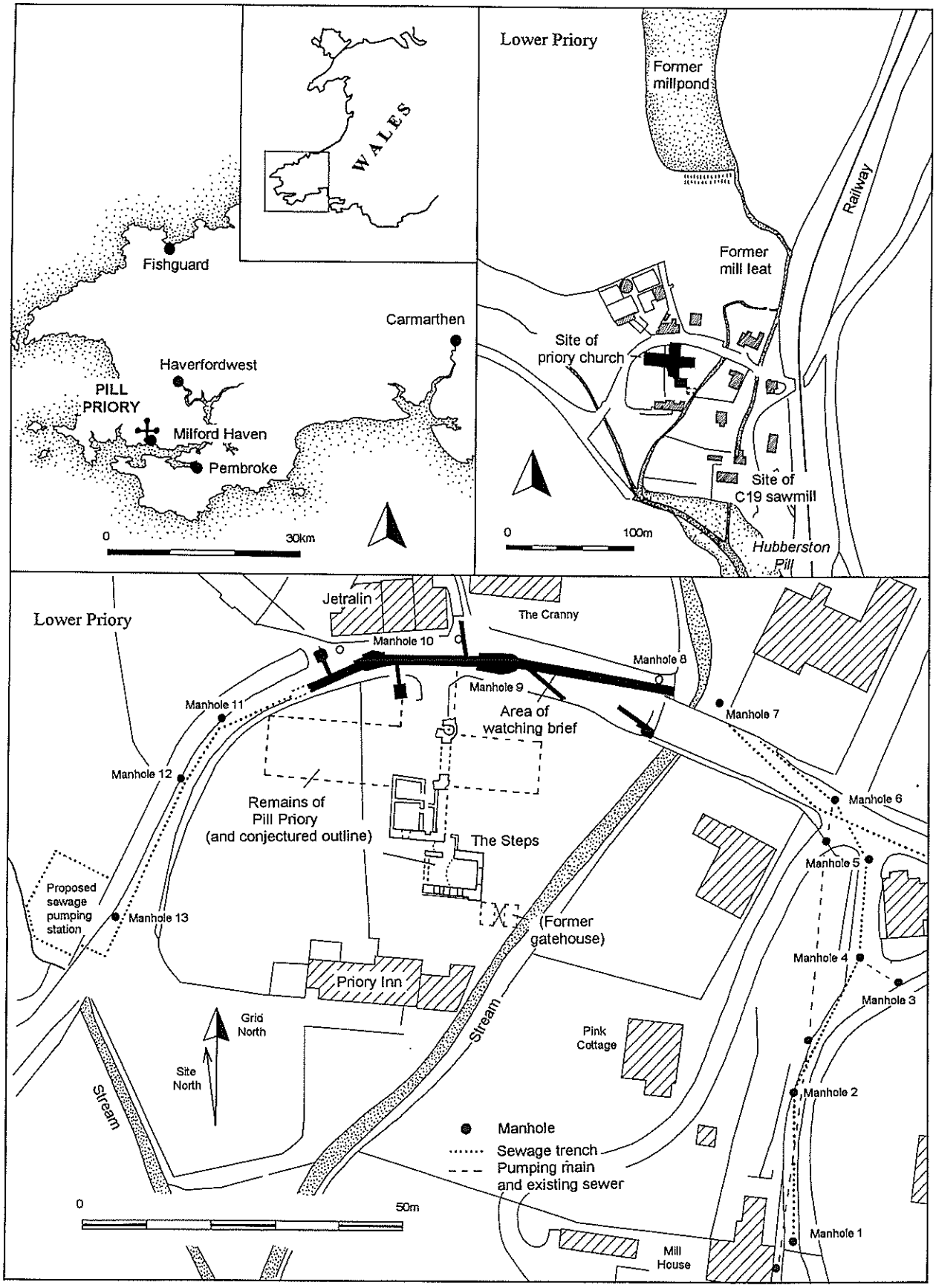
1.4 Purpose and methodologies of the watching brief

The purpose of the watching brief is to undertake as complete a record as possible of any archaeological features affected by the client's scheme of works. In the case of larger archaeological sites it will seldom be possible or necessary to undertake a record of the entire site; the record will be undertaken only on those areas of the site that may be affected.

The primary stage of the watching brief for any scheme normally involves consultation of the Dyfed Sites and Monuments Record, which is maintained by *Archaeoleg CAMBRIA Archaeology's* Heritage Management Section, the client will normally advise *Archaeoleg CAMBRIA Archaeology's* Field Operations Section of any changes in the proposed works which may be affected by the scheme. The client will also normally provide the Field Section with a proposed schedule of works in order that a full field study may be performed on any affected site prior to the commencement of the works. In the case of the new sewerage pipe at Lower Priory, however, the scheme had already started and no notice had been given to *Archaeoleg CAMBRIA Archaeology's* Field Operations Section.

Work on or around those affected sites will be subject to the watching brief. The work will be closely observed by an archaeologist from the Field Operations Section who will also undertake a full drawn, written and photographic record of any archaeological features which may be disturbed by the scheme, and any artefact or find exposed during the works. Recording will be carried out where necessary and when convenient: it is the Field Section's aim to minimise any disruption to the client's schedule. However, if archaeological features may be lost during the scheme, it may be necessary for the Field Section to request a postponement of the works in order that the archaeology may be recorded. Larger areas affected may require fuller excavation and/or survey.

Fig. 1. Pill Priory: location maps showing groundworks scheme



2.0 PILL PRIORY, MILFORD HAVEN

2.1 Location and Geology

Pill Priory (Dyfed PRN 3176; Scheduled Ancient Monument Pe 70) is situated at NGR SM 9023 0727. It lies on a flat area of land, at 6.10m OD, overlooked from the west and east by the steep, wooded, valley sides of the upper reaches of Hubberston Pill, some 1.7km upstream from its dammed estuary which forms Milford Haven docks. It lies on the confluence of two streams, at the centre of the small community of Lower Priory 1km north of the town of Milford Haven in Pembrokeshire, SW Wales. The medieval priory buildings occupied level ground within the triangular area between the two streams (Fig. 1).

Geologically the area is underlain by red Devonian siltstones and fine sandstones collectively and generally known as Old Red Sandstone Marls (ORS) and mapped as such by The Geological Survey (Rudeforth, 1974, 98-9). Occasionally olive-brown or greenish rock bands are seen to occur amongst the strata, which are normally red, and this proved to be the case at Lower Priory, although these variants still retain the general label of Old Red Sandstone. The overlying soils are a fine loamy residuum or drift characteristically dark reddish brown, grading to yellowish red in places, loam or clay loam in texture and containing medium to small angular/sub-angular red sandstones or siltstones; other coarse components are rare, but include both quartz and limestone. The topsoil is generally neutral to moderately acidic and the subsoil tends to be neutral to slightly acidic. The soil colour can vary, this being dependent upon the underlying rock strata variant. At Lower Priory there are some undifferentiated valley soils which have been derived both from neighbouring brown earths and alluvium.

A geological interface was observed during the groundworks excavation within the Lower Priory site. At a point 40m west of the eastern of the two streams, the ORS bedrock upper-face suddenly becomes deeper and gives way to natural alluvial ORS-derived reddish brown silty clay deposits, which are present from here down to the stream in the east.

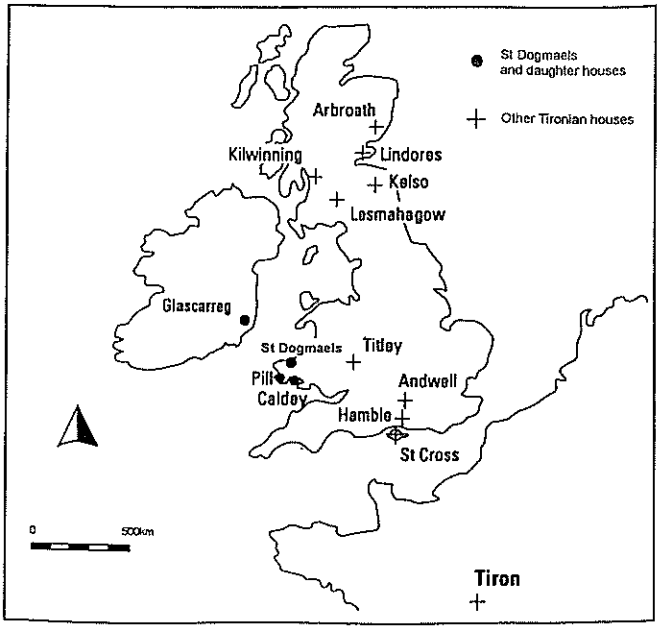
2.2 Historical Background

Pill Priory was founded around 1200 as a daughter house of St Dogmaels, near Cardigan, which had itself been established in 1113 as a priory of the newly-founded Tironian (or Tironensian) order of reformed Benedictine monks (Fig. 2).

The Tironians were founded by St. Bernard d'Abbeville, abbot of the Benedictine house of St Cyprien, near Poitiers in north-west France, who moved his community to Tiron in the Diocese of Chartres in 1113, encouraging a return to the strict rule of St. Benedict which had, he felt, not been observed by the official Benedictine order. In that year he was visited by Robert Fitzmartin, the Norman Lord of the newly-conquered territory of Cemais (in what is now north Pembrokeshire), who brought back thirteen monks and a prior to form the basis of a new community which was installed at St. Dogmaels, hitherto a monastery following a 'Celtic' rule. In 1120 St Dogmaels was raised to abbey status but retained allegiance to the mother house of Tiron until the dissolution of the 1530s (Hilling, 1992, 24).

The community at St Dogmaels quickly established daughter houses of its own, eventually comprising three priories. The first, on Caldey Island, was by tradition founded by Fitzmartin's mother in 1115; the Charter Roll of 1121 records the grant and confirmation by 'Robert, son of Martin, to the monks of Tiron and the monastery of St. Mary at St. Dogmaels of....the island of Pyr, now called Calde, granted by his mother' (Conway Davies, 1946, 242, citing Charter Roll 21 Hen. I). Like the mother house of St Dogmaels, Caldey was the site of a pre-existing Celtic monastic community.

Fig. 2. Tironian Monasteries in Britain and Ireland



The medieval priory

The exact date of the establishment of Pill Priory is not known, but the founder, Adam de Roche of the Barony of Roch, was active in the later 12th century and a date of c.1200 has traditionally been assigned to the foundation (Anon., 1922, 429; Rees, 1992, 199). At a somewhat later date, the Roche family founded a further daughter house on their lands at Glascarreg, Co. Wexford, Ireland (Pritchard, 1907, 159).

Unlike St Dogmaels and Caldey, Pill Priory was a *de novo* foundation and there is no suggestion of any pre-existing religious establishment on the site. However, the priory church was dedicated jointly to St Budoc, in the Celtic tradition, and the Blessed Virgin (Pritchard, *op. cit.*, 124). The remains of a chapel dedicated to St Budoc lie at SM 8912 0774, 1km north-east of the priory site (Dyfed PRN 3030), and this particular saint evidently represented the predominant cult in the immediate locality. The joint dedication may have been a concession to the native population, but the colonisation of the house by monks from St Dogmaels, possibly one of the first Norman abbeys to recruit Welshmen (Hilling, *op. cit.*, 31), may have influenced the choice, Welsh monks having doubtless been well aware of their native monastic tradition.

According to the Tironian Rule, each of the order's priories comprised twelve monks, headed by a prior who was obliged to attend a regular assembly, of a disciplinary nature, which was held at Tiron (Hilling, op. cit., 30). However, in practice, these assemblies were attended by the abbot of St Dogmaels, who then maintained the Rule within the daughter priories of Pill, Caldey and Glascarreg through visitations of variable regularity; furthermore, by the later medieval period at least, visitations were also being undertaken by the Church under the Bishops of St Davids. It also appears that, periodically at least, Caldey Priory was occupied by but a single monk (Ludlow, forthcoming). The economic ties between St Dogmaels and its daughter houses were similarly ill-defined; while the latter were always subordinate, Pill Priory, like daughter houses of all orders, had its own revenue (£67 15s 3d gross in the early 16th century), but also possessed its own lands and churches, issued its own charters and granted its own leases (RCAHMW, 1925, 229). The fiscal bond was limited to the payment of a small annual pension to St Dogmaels which, at the dissolution, stood at £9 6s 8d (Pritchard, *op. cit.*, 134).

The foundation grant of Pill lists the possessions assigned to the priory by Adam de Roche, which included the churches of Steynton, Roch, Little Newcastle and New Moat, together with various lands in the region, a mill and fisheries (Pritchard, *op. cit.*, 124). Further grants were made to the priory by William Marshal, earl of Pembroke, in the early 13th century (Pritchard, *op. cit.*, 125), the charter for which gives the name of the prior as Philip. A confirmation grant to the priory issued by John de Roche in the mid 13th century (before 1284) lists further possessions, mainly ploughlands but also the patronage of two more churches, Hubberston and Nolton (*ibid.*). John willed that he should be buried at Pill Priory to which he bequeathed 40s.. Further endowments continued to be made throughout the medieval period, including the patronage of Johnston and Pontfaen churches.

The chapel of St Catherine (St Thomas the Martyr) at SM 9105 0569 (Dyfed PRN 3174), lay at the heart of the secular Manor of Pill to the east of the priory. It may have been appurtenant to, or appropriated by the priory and in 1330 William de Roche founded a Chantry within the chapel for the souls of his deceased parents (*ibid.*). The relationship between the priory and St Budoc's Chapel, mentioned above, is also unclear; it appears, during the post-Conquest period, to have been a chapelry of Steynton parish and therefore under the patronage of the Priory. Neither chapel is listed under the possessions of the priory at the dissolution, but both may already have been abandoned.

The later Roches appear to have enjoyed a more ambiguous relationship with their foundation at Pill, for in c.1350 David de Roche was accused by the prior of 'laying waste the goods of their house and seized his monks to their great damage' (Pritchard, *op. cit.*, 133). A deed issued by Henry V in 1417, furthermore, forbade anyone to 'harass or molest' the prior and monks of Pill (*ibid.*).

The documentation from the later medieval period is generally more informative about the condition and internal organisation of the priory. There were visitations by both the Deanery of Cemaes and the Deanery of Roose in 1504 (Pritchard, *op. cit.*, 139). The first of these discovered that the priory chancel, apparently in ruins, had recently been rebuilt/restored; interestingly, exactly the same situation was recorded at St Dogmaels (Hilling, *op. cit.*, 28). The second visitation was held in the priory chapter house. The prior, David Luce, submitted that he had five monks, that regular services were held according to the rule, that the priory was free from debt and financially viable. It is apparent from the two records that Pill Priory had suffered some of the decline that characterised most Welsh monastic houses during the 15th century, but had escaped the worst; indeed, only one less monk was present at Pill than at St Dogmaels Abbey (*ibid.*).

However, in 1536 St. Dogmaels Abbey was dissolved along with hundreds more monastic houses with values of less than £200. The prior of Pill, William Watt, and his monks had, in 1534, accepted the Act of Supremacy which acknowledged King Henry VIII as head of the Anglican Church (Pritchard, *op. cit.*, 140) and no attempt was made to resist the suppression of the Priory along with its mother house. The suppressed houses fell to the crown. The *Valor Ecclesiasticus*, in which the values of such houses were assessed, recorded that Pill Priory was worth £52 annually (Knowles and Hadcock, 1971, 102). The figure can be compared to that of St Dogmaels, with an annual value of £87, and the much poorer Caldey Priory which contributed £2 3s 4d annually to the mother house, its annual income being £5 10s 11d plus tithes of £11s 11d (Pritchard, 1907, 95).

Post-Dissolution history

It has been claimed (Anon., 1922, 429) that the dissolved priory of Pill was acquired firstly by Sir Thomas Jones of Haroldston, but there is no evidence to support the suggestion. It is known, however, to have been obtained by Roger Barlow of Slebech, and his brother Thomas in 1546. The Hospitaller Commandery at Slebech had been suppressed in the 1540-41 phase of the Dissolution, and in 1546 Roger and Thomas Barlow, adventurers from an Essex family, purchased from the crown, for £705 6s 3d, the Commandery of Slebech together with other holdings including Pill Priory and the priory and friary at Haverfordwest (Green, 1913, 123). Roger eventually acquired sole ownership of the properties. He was succeeded by his son John, in whose *Inquistion post mortem*, held in 1613, Pill Priory is described as 'the site of the priory of Pill, lately dissolved, and certain acres of land thereto belonging...' (Green, *op. cit.*, 132)

During the later 16th century, Slebech was converted into a private dwelling of some pretension and the main Barlow residence. Domestic re-use also occurred at St Dogmaels Abbey and Caldey Priory, which had both been acquired by John Bradshaw, of Ludlow, at the same time (Ludlow, forthcoming). Bradshaw built a mansion for himself at St Dogmaels, of which little remains, but it is thought that it re-used part of the West Range (Hilling, *op. cit.*, 28), while Caldey Priory was converted into a small gentry-house by one of Bradshaw's tenant families (Ludlow, forthcoming).

Pill was no exception. The present Priory Inn Public House, which was formerly a farmhouse, and the cottage now called 'The Steps' appear to be 16th century conversions of monastic, conventual buildings (see below). However, the nature of the conversions is more suggestive of a rather low-status farm rather than a gentry-house, established by Barlow's tenants (representatives of the Perrott family?); the church, meanwhile, was abandoned (A J Parkinson, *pers. comm.*; National Monuments Record). The site remained primarily agricultural until the later 19th century when a sawmill (see below) and pumping station were established (OS, 1:2500 First Edition, 1889).

2.3 The standing remains of the Priory

There is no good published account of the priory remains. This section is based on notes taken by A J Parkinson, formerly of RCAHMW, in the National Monuments Record. There are standing remains of the priory church itself, and of vaulted buildings immediately to the south, which may have been conventual (Fig. 1).

The priory church

The priory church was a large, cruciform structure constructed from the local Old Red Sandstone and Carboniferous Limestone. It is now represented by just the chancel arch, the base of a square central tower and the south wall of the south transept. The layout and dimensions of the crossing and transepts are very similar to those of the mother house at St Dogmaels; however, from the standing remains alone it is not now possible to reconstruct either the plan or dimensions of the nave and chancel. It was suggested by Parkinson, in fact, that the north transept was never completed, but masonry probably representing its north wall was exposed during the groundworks and watching brief.

The chancel arch is 2-centred, and rather low. It continues upwards as the east wall of the low tower which formerly lay over the crossing, its north-east corner housing a spiral stair. Neither the chancel arch, nor the springers for the two similar transept arches which survive at either end, exhibit any dressings, being constructed from local limestone rubble like the parish church buildings of the region; the arches must originally have been plastered. The scar from the steeply-pitched, gabled chancel roof survives on the east face, above the chancel arch. Below the roof apex is doorway with a 2-centred head from which the chancel roof-space was entered from the tower, and an offset on the same face at the sill-level of the door suggests that the chancel was ceiled rather than vaulted.

Two square-headed slit lights occupy the same level as the door. The southern slit-light lit the tower first floor which lay above a light vault, the springers of which survive either side of the west face of the chancel arch. Corbels on the same face may have supported timbers for the second floor; this level was lit by 2 surviving 2-centred lights in the early 19th century (Pritchard, 1907, 125 *pl.*). The eastern splays of lights to the tower first floor survive in the remains of the north and south walls, above the transept arch springers, as do the scars from the gabled transept roofs, which occupy the same level as the transept roof.

The northern slit-light lit the head of the spiral stair. The stair, which survives to varying degrees, was entered through a narrow doorway with a 2-centred head in the south-east corner of the north transept and occupies a semi-circular projection from the east wall.

The south transept was occupied by cottages in the 19th and early 20th centuries, which more-or-less followed its plan. The south wall alone survives, and despite having been altered exhibits the head of a blocked, 2-centred window.

Conventual buildings

The cottage now known as 'The Steps' lies immediately south-east of the south transept and has a vaulted ground floor which almost certainly represents one of the monastic conventual buildings, probably the sacristy/day-room vestibule. Its upper floor, in its present form, may be 16th century.

Lying 10m to the south is the Priory Inn (formerly Priory Farm farmhouse), with a similar ground floor vault; it may represent the monastic 'frater' (dining room) and associated buildings. It too has a first floor possibly rebuilt in the 16th century.

A print of c.1830 (Pritchard, 1907, 125 *pl.*) shows a building, now destroyed, attached to the south-east corner of 'The Steps', which appears to be a gate-house with a porter's lodge to one side; the room shown above, with a wide window to the north, may have been a first-floor chapter house.

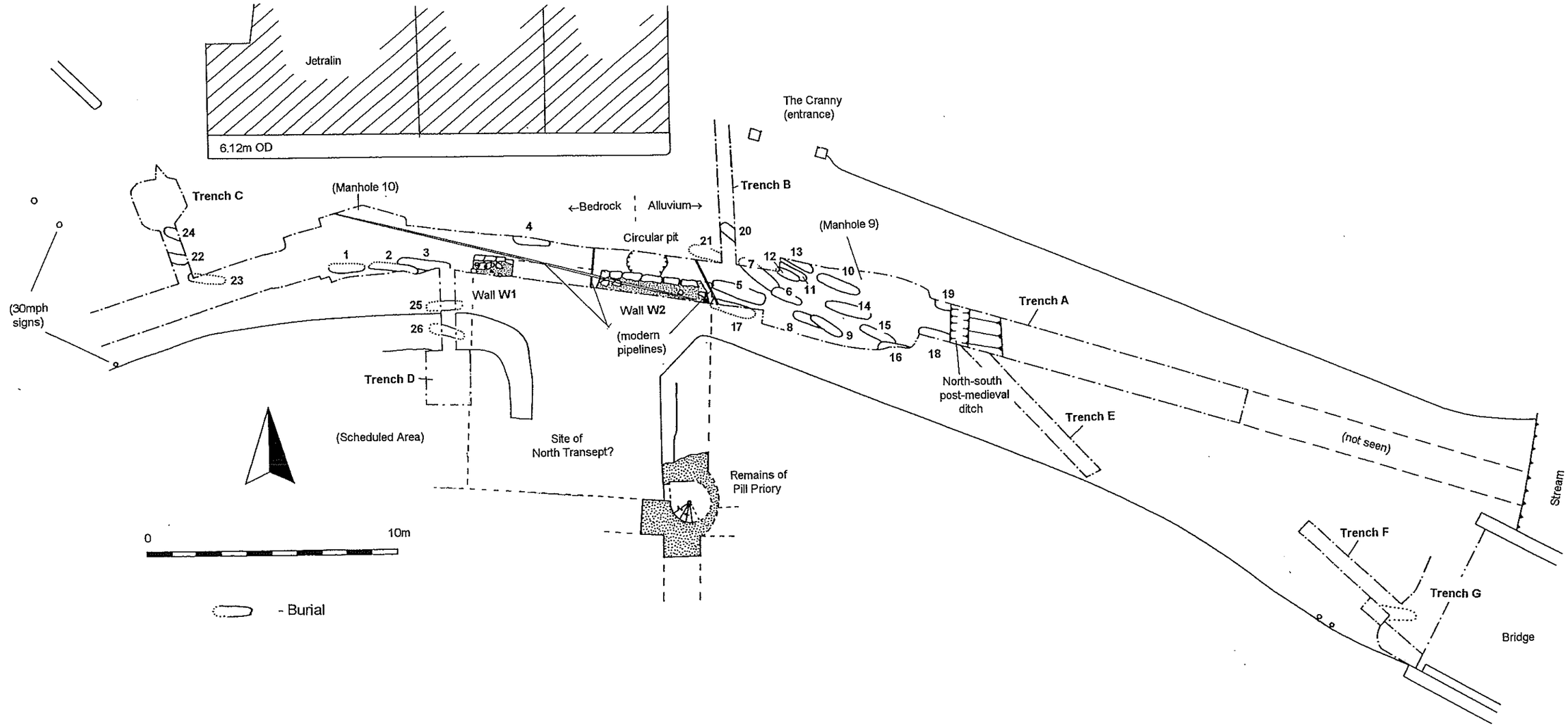
Associated features

Any or none of the remainder of the buildings at the priory site, particularly those shown in 1889, may have been adapted from former conventual buildings. Many will at least contain re-used masonry.

There is now no evidence for the former precinct boundary; the priory site is physically delimited to the west, east and south by the two streams (see Section 2.1 above) whose courses, however, may not have been precisely the same in the medieval period. The line of the northern boundary has not been preserved - the present lane is later, overlying monastic burials, and the boundary must have lain further north.

A large mill pond formerly lay 130m to the north of the priory buildings. The Ordnance Survey 1:2500 of 1889 shows the pond, with a leat running due south to a saw-mill situated immediately south of the priory. However, the pond is shown on the Tithe Map of 1839 (NLW, Hubberston, 1839) and there is every reason to believe that it has medieval origins; few medieval monasteries lacked a fishpond, and the leat may also be the successor of a medieval corn-mill stream.

Fig.3. Composite site plan, showing excavated trenches, all archaeological features and their locations relative to the standing remains of the priory



3.0 METHODOLOGIES AND RESULTS

3.1 The Groundwork Excavations and Watching Brief

The watching brief covered the excavation of a sewerage pipe trench along the roadway through Lower Priory, specifically a stretch beginning to the west at the 30mph signs near the house 'Jetralin' (Fig. 3), following a gentle curve to the north of the standing priory ruins, up to the stream in the east; a distance of some 55 metres.

The groundworks involved the excavation of a 1.60m wide pipe trench along the lane to contain a 0.60 metre internal diameter concrete sewer main pipe at a maximum depth of 3 metres. To accommodate the construction of a number of inspection chambers, or 'man-holes', at intervals along the sewer main, the excavation trench was widened accordingly at each appropriate juncture (Fig. 3, **Trench A**).

After the main pipe had been laid, three service pipe trenches were excavated at various points off the main trench in order to connect local resident's sewerage services to the new main. These each involved the excavation of 0.60m wide pipe trenches to contain 0.15m diameter clay pipes at a depth of at least 2.80m (Fig. 3, **Trenches B, C** and **D**).

The main pipe trench was machine excavated using a 22.5 ton 360° excavator with a 1m wide, long-tooth bucket; the service trenches were excavated using a JCB with a 0.22m wide, long-tooth bucket.

In the course of excavating the pipe trenches a number of gas, telephone, and water pipes were encountered *in situ,* and in order to trace one particular water main, and re-direct it away from the course of the new sewer main, a number of further 0.60m wide trenches were excavated.(Fig. 3, **Trenches E, F** and **G**).

Prior to the watching brief a *c.*70m length of pipe trench had been excavated from the new sewerage pumping station opposite 'The Priory Inn', north east along the road, up to the 30 mph signs close to 'Jetralin'. It was at this stage of the groundwork excavations that the presence of human bones in the trench was first recognised and work ceased while all the appropriate authorities were informed and consulted.

A Home Office licence for the removal of human remains was obtained by Pembrokeshire County Council, and *Archaeoleg CAMBRIA Archaeology* agreed to undertake an archaeological watching brief and exhumation of the remaining bones from the exposed burials, and any further burials encountered during the resumed pipe-trench excavations.

The nature of the project did not permit the retention of bone for further off-site analysis.

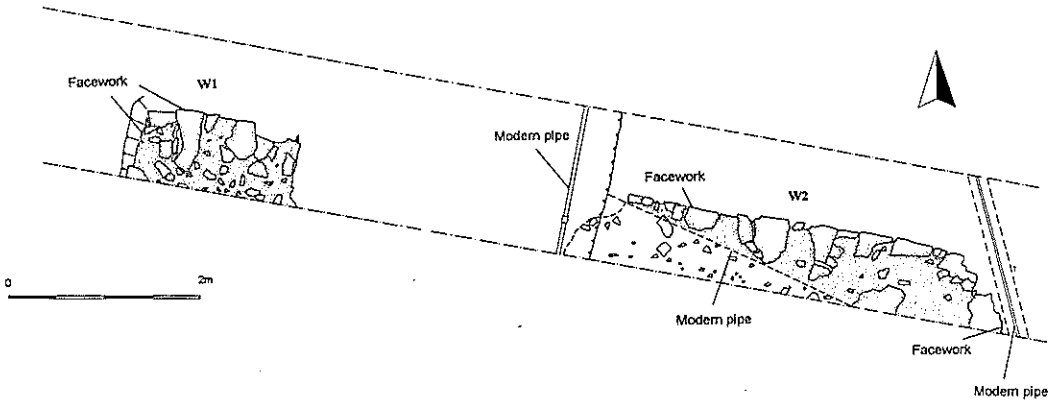
All the archaeological features described in sections 3.2, 3.3, 3.4 and 3.5 below were revealed initially by machine and further cleaned and excavated by hand where time and safety permitted. For the precise location of each feature the reader is directed to the overall composite plan of the site (Fig.3).

3.2 The Wall Footings

Two linear sections of stone-built wall-footing (Fig. 4) were uncovered, lying directly beneath the tarmac and sub-base road make-up at an average depth of some 0.25m below the existing road surface. The footings were orientated east-west and ran parallel to the main excavation trench where it passed the present entrance to the priory.

The westerly footing **(W1)** extended some 0.80m into the excavation trench from the south and had flat facing-stones on its western and northern sides exhibiting a 90° return. The northern face extended 1.10m east before

Fig. 4. Plan of wall W1 and W2



being truncated obliquely by a modern (1920's?) cast-iron mains water pipe. The footing was composed of two lime-mortar bonded courses of roughly hewn blocks of Old Red Sandstone (ORS) measuring 0.40m vertically down to a depth of 0.65m (5.30m OD) below the existing road surface. To accommodate the footing a 0.30m depth of the unstable loosely jointed bedrock had been cut away to form a steep sided, level bottomed, rectilinear foundation trench. The exposed core-work fabric of the footing comprised 80% small and medium sized fragments of shattered ORS and 20% lime mortar, all stable and well bonded.

The eastern edge of the footing appeared to exhibit a 90° return to the south but had no facing stone; further excavation showed it to have been truncated by a large cast-iron water main pipe trench and some of the core-work of the wall-footing was exhibited in section before being replaced by a mixed orange-brown clay soil and shattered ORS fragment back-fill.

The easterly footing **(W2)** was uncovered some 3.40 metres to the east of the truncated eastern side of **W1** and it too extended some 0.80m into the excavated sewer-main trench from the south. It had flat facing-stones on its northern and eastern sides and, again, exhibited a 90° return to the south, although its north-eastern corner had been demolished by the excavation of a modern gas-pipe trench, leaving only two facing-stones *in situ* on the eastern face whilst demolishing an estimated 0.5m off the northern face and 0.55m off the eastern face. The original length of W2, therefore, can be estimated as 4.10m.

Again, the fabric of the footing comprised two lime-mortar bonded courses of roughly hewn ORS blocks, with identical core-work to that of W1 and measuring 0.35m vertically to a depth of 0.60m (5.05m OD) below the existing road surface. The level anomaly with **W1** is accounted for by the gradual west to east down-slope of the ground as it approaches the stream. No foundation trench cut was apparent for this section of footing; the first 1.60m length of footing from the west had been built directly upon level ORS bedrock which may have been levelled at the time of construction although no observations were made during the excavations to confirm this hypothesis. The remaining 2.50m length of footing lay upon a compact, natural, homogeneous reddish brown silty clay loam which exhibits all the characteristics of an ORS derived alluvial deposit. There was no evidence for a foundation trench, the likelihood is that this had been destroyed by later intrusive archaeological features, including grave-cuts, pits and modern pipe-trenches.

Both sections of footing **W1** and **W2** were in good alignment and the 3.40 metre gap between them had been caused by the intrusion of the cast iron water main pipe-trench which had removed all the facing-stones between them and also much of the core-work behind **W2**. The entire length of the original intact footing can thus be calculated as being 9.60m.

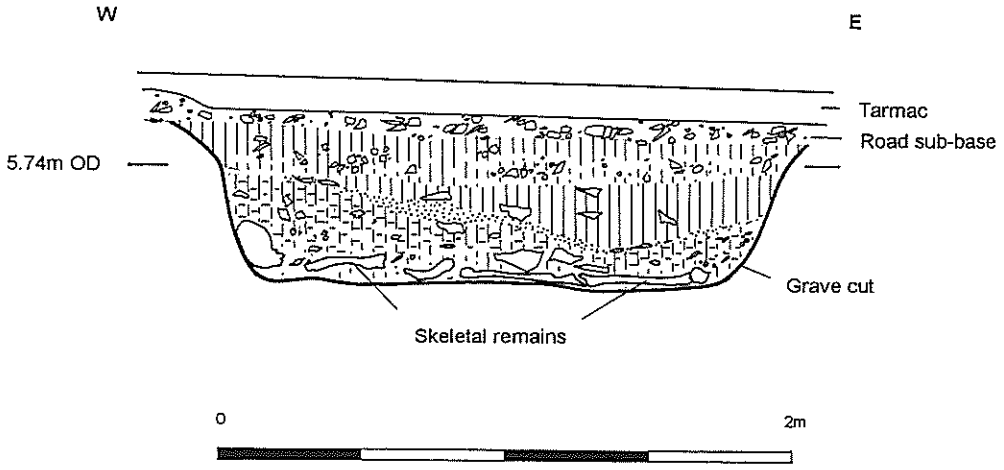
The walling probably represents the footings for the north wall of a north transept of the medieval priory church (see Section 4.0 below).

3.3 The Burials and Cemetery

There was evidence for human burial throughout most of the excavated groundwork trenches, but the main concentration of hitherto undisturbed inhumations was within **Trench A** in the area immediately to the east of the exposed footing of the north transept (Fig. 3). Bone preservation was good, due to favourable local soil conditions and the presence of lime mortar from the priory walls, and in most cases the uncovered skeletal remains were intact and articulated except in instances where later graves had disturbed earlier burials or where the contractor's machine-excavations had caused major disturbance. In all there were at least 31 individuals represented in the total skeletal assemblage, but of these only 26 were from previously undisturbed and definable *in situ* inhumations. Measurement of orientation was possible for the majority of the inhumations but again the accuracy depended upon how much disturbance each individual burial had undergone. Generally, all the inhumations were orientated on an east-west axis with the heads at the west end. There was a definite pattern of aberrant orientation north of true east-west amongst the main concentration of burials in **Trench A**, whilst the burials to the west of these reverted more closely to a true east-west orientation. It is not possible to offer any firm explanation for the aberration, but the orientations may be related to the position of the north transept relative to the former north-eastern boundary of the priory precinct. All the burials were extended and supine and of those that were wholly revealed *in situ* **burials 2 to 7** inclusive and **burial 19** had their lower arms flexed across either their waist or pelvis, whilst the (female) **burial 18** had her arms folded across her chest with her hands resting on her shoulders.

It was possible to discern the gender of eight of the burials; **burials 2, 3, 4, 5, 6 and 19** were male whilst **burials 7 and 18** were female. In addition, **burial 6** was a juvenile still retaining his milk teeth. The small size of the few bones excavated from **burial 25** also indicate the presence of a juvenile, of unknown gender. All the remaining burials were adult, but on-site gender analysis of these was not possible due to the constraints of the groundwork excavations *i.e* they were either only partially excavated or the groundworks themselves rendered such analysis difficult because of the extent of disturbance or destruction of the bones.

Fig. 5: Northern section of burial 4

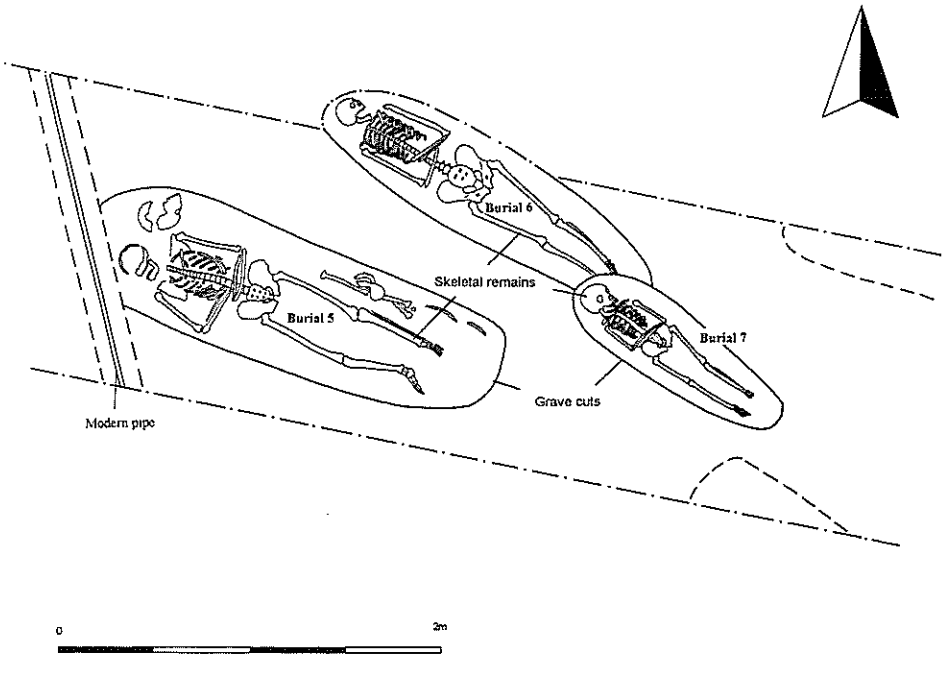


There were few finds within the grave fills. An incomplete iron buckle, probably representing a shroud fastening, had oxidized onto the right femur hip ball-joint of **burial 3**. There were small traces of verdigris in the fill of **burial 2** which may represent coffin nails, but no further evidence for a coffin was present. No further fittings were found within the fills of any of the other burials on the site, but fragments of medieval ridge-tile and pottery in the fill of **burial 5** and most grave fills contained oyster shell and the occasional limpet shell.

The burials themselves were very close to the present surface (0.20m-0.70m below road level) strongly suggesting that medieval surface levels were considerably higher and have been truncated. With the exception of **Trench D** all the groundwork trenches were cut through the existing tarmac road surface and sub-base road make-up which had a combined average depth of 0.20m throughout. The groundworks carried out for this modern road construction had caused much damage and disturbance to the original stratification of the site at its upper levels, making full characterisation and identification of original levels and depths of the grave cuts impossible. **Burials 1, 2, 3 and 4**, at the western end of **Trench A,** were the most affected by this road construction because of their location at the top of the slight slope (6.11m OD) which would probably have been more pronounced prior to the removal, for levelling purposes, of most of the topsoil and sub-soil down to the bedrock. The section of **burial 4** (Fig. 5) illustrates very well the proximity of the bedrock to the surface, the probable extent of the damage caused to the upper levels of the grave, and the depth and shape of the grave cut into the bedrock; similarly, **burials 1, 2, and 3** were also cut into the bedrock which lay immediately beneath the road in the case of **3** and 0.30m below the road in the case of **1 and 2**.

It was possible to demonstrate direct stratigraphical relationships between a number of the burials due to the relatively high incidence of grave superimposition. This was no better exemplified than in the relationship between **burials 2 and 3,** where during the course of the groundworks it was, fortunately, possible to see distinctly in section that the grave for **burial 3** was cut by that for **2,** and that the fills of the graves, notwithstanding the human remains, were markedly different. The fill of **3** was a very compact homogeneous reddish brown silty- sandy-clay loam containing a high percentage of small shattered stone/gravel and occasional medium sized (0.10m by 0.08m average) angular fragments of ORS. The fill of **2**, by contrast, was a loose very mixed reddish brown silty clay loam containing a high percentage of small shattered stone/gravel (some with mortar adhering) with occasional medium sized angular fragments of ORS mostly at the sides of the grave cut and occasional fragments of shattered mortar; a layer of discretely scattered blue slate fragments lay on the flat bedrock base directly beneath the skeleton and a similar horizontal layer was present within the main soil matrix some 0.20m above the skeleton. The presence of the slate appeared to be a deliberate part of the burial ritual, being repeated often in other burials observed during the course of the watching brief, and it may be of note that no slate was present in the earlier grave **3.**

Fig. 6: Plan of burials 5, 6 and 7



Within the fully recorded burial group comprising **burials 5, 6 and 7,** it was possible to demonstrate that **6** cut **7,** and that **5** was a re-used grave, the fill of which contained the mixed remains of the skeleton formerly occupying the original grave in that position (Fig. 6); these graves were all cut down to the bedrock, but not cut into it, and had near vertical sides. All three had near identical fills, comprising a friable homogeneous reddish brown silty clay loam characterised by the presence of small angular fragments of shattered ORS, some mortar fragments, the occasional oyster shell and a layer of discretely scattered blue slate varying from 0.10m to 0.25m above the skeleton. The cuts for these graves were reasonably distinct and were cut into the surrounding natural reddish brown silty clay, the average depth of which was 0.50m, the bottom of the cuts and the ORS bedrock lying at 5.09m OD. There is no direct stratigraphic relationship between **burial 5** and the other two graves in this group.

Burials 8 to **16** inclusive were difficult to characterise fully because they were, in the main, only revealed in section, in the sides of **Trench A** where it was widened to accommodate one of the sewerage main inspection chambers (Manhole 9). Of this group only **burial 14** was excavated horizontally but was over-cut by the mechanical digger before it was recognised; however, it was possible to determine its orientation and dimensions, and describe its lower fill. It was cut into a reddish brown compact silty clay, which appeared to be an homogeneous natural alluvial, or fluvio-glacial, deposit and its fill was similar but less compact and contained discretely scattered blue slate fragments. The depth of the trench and the resultant safety considerations meant that it was only possible to record the other burials in this group in section, and from a distance. However, rapid drawings were made and the position, approximate dimensions and orientation of the burials was noted; enough information was gleaned from final sections of the manhole trench to give a fairly comprehensive description of the stratified deposits and enable limited analysis of the probable stratigraphic relationships between the burials **(see Fig. 3).** Again, all the burials were cut into the natural alluvial, or fluvioglacial, reddish brown clay deposit; but sealing them all was a dark greyish brown silty clay loam, friable, containing occasional small angular sandstone fragments and charcoal flecks. This layer averaged 0.09m in depth and lay directly beneath the sub-base road make-up; none of the graves was shown to cut this layer and the average depth to the bottom of the grave cuts from the base of this layer was 0.50m. The fills of the graves were compact dark reddish brown silty clay loam containing 30% small angular fragments of ORS, occasional mortar fragments, with discretely scattered layer of blue slate fragments 0.20m (average) above the skeleton, and discretely scattered slate fragments at the base of at least one grave. At first it seemed plausible that the sealing soil layer was a partial remnant/relict(?) soil from the original medieval cemetery but it was later seen to be extensive, and to seal a feature which cut at least two graves (see **burials 18 & 19** below and ditch description).

Burials 12, 13, 16, and 17 were only partly exhumed, with the remnants left *in situ* within the unexcavated trench edge.

Burials 18 and 19 were excavated horizontally and were found to have similar fills to the group described immediately above, including the layers of discretely scattered slate fragments. These graves (Figs. 7 and 8) were both truncated by a 2.20m wide ditch which appeared to be linear and ran approximately north-south (see Section 3.4 below). The excavation of **Trench E** at its north western end was too shallow to allow further analysis of the ditch.

Burials 20, 21, 22, 24, 25 and 26 (Fig. 9) were, again, only partly exhumed with their remnants left *in situ.* **Burial 23** had been inadvertently disturbed and partly exhumed during the groundworks prior to the watching brief, and what remained of the grave-cut and inhumation was only noticed during the excavation of **Trench C** and the re-opening of part of **Trench A.** The contractors stated that they had encountered a substantial amount of bone during the excavations throughout the upper levels of the pipe trench prior to the start of the watching brief in the area west of **burial 1** and around the corner of the road beyond the 30 mph signs. The digger driver and others assumed that they were animal bones and it was not until the human skull of **burial 2** was found that they became alert to the presence of human remains. It was at that stage of the sewerage pipe-trench excavations that the watching brief started and it is not possible to calculate the number of burials that might have been disturbed by the trench west of **burial 1,** the only direct evidence is that for **burial 23.**

Fig. 7: Southern section of burial 18

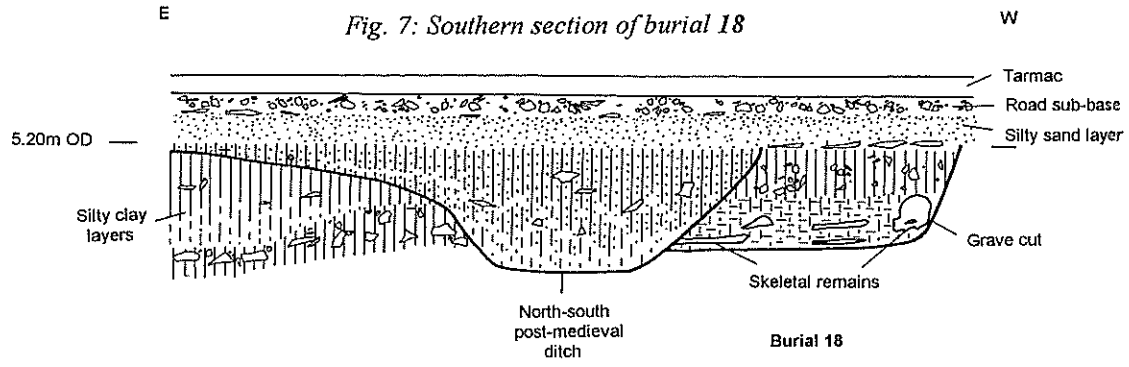


Fig. 8: Plan of burials 18 and 19

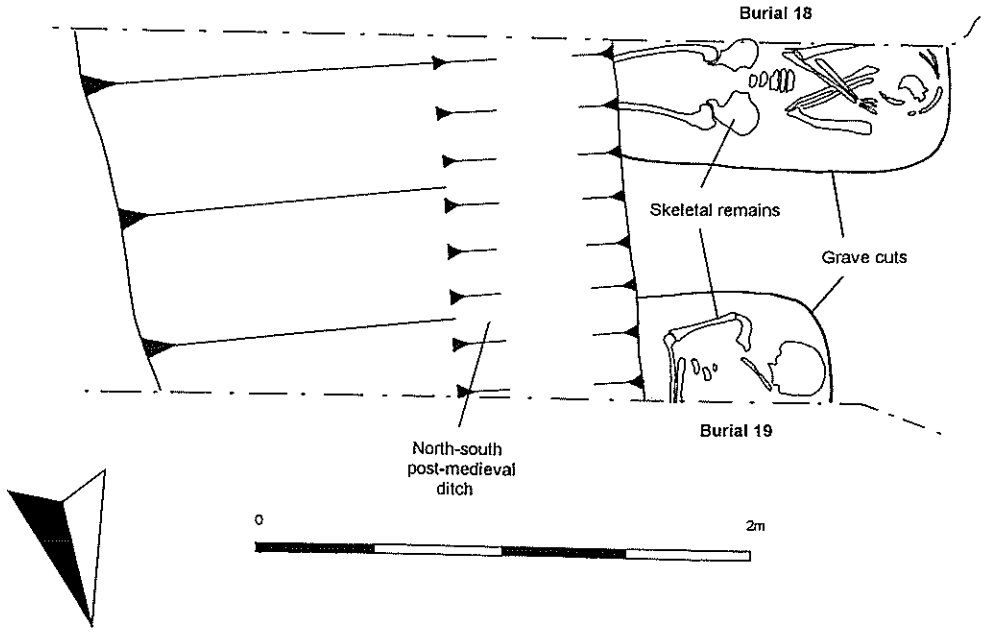
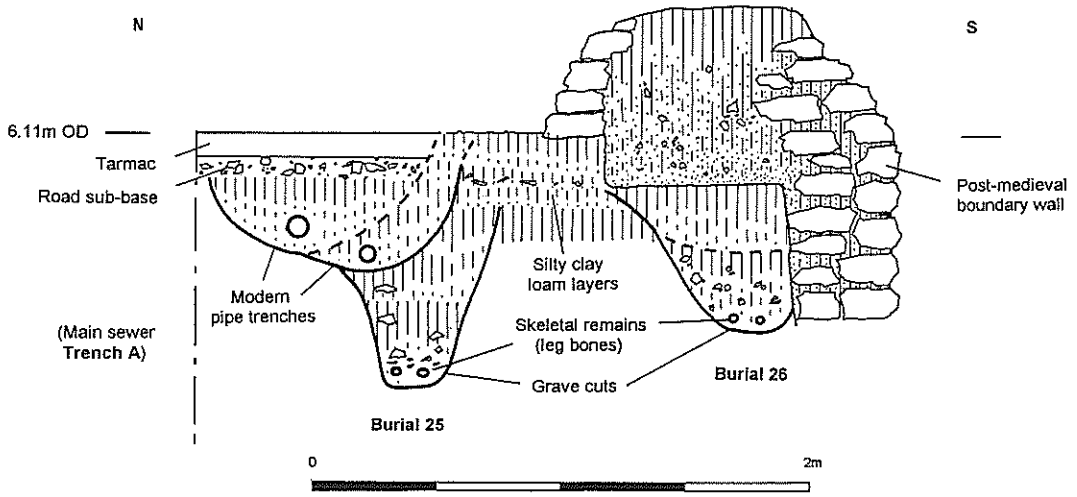


Fig. 9: Eastern section of burials 25 and 26



The area north of the eastern section of wall footing **(W2)** was hand excavated, and throughout the reddish brown friable silty clay loam there was evidence of disturbed human burials to a depth of some 0.34m (5.43m OD) below the existing road surface. In the mixed bone assemblage there were disarticulated broken bones indicating the presence of at least two individuals and also, within the soil matrix, much building demolition debris. There had been modern disturbance to the east, caused by a gas-main pipe, while to the west a circular pit, possibly of much earlier date (see Section 3.5 below), intruded into the horizon. No grave cuts were observed, and the mixed soil deposit lay upon the natural homogeneous reddish brown silty clay alluvium.

No further human burials were encountered in **Trench A** to the east, beyond **burials 18 and 19;** however, during the excavation of exploratory **Trench F** at the eastern edge of the site, close to the bridge, jumbled human skeletal remains were found in association with deposits of a similar nature to the grave fills, indicating the presence of at least one, and possibly several burials. The speed with which this trench had to be dug and back-filled did not enable detailed observation and recording beyond exhumation of the discretely scattered human bones.

3.4 The North-south Ditch

A 2.20m wide, 0.50m deep ditch was revealed running north-south across excavation **Trench A** and truncating **burials 18 and 19** (Fig.7 and 8) just above the knee and just above the pelvis respectively. The western edge of the ditch sloped steeply to a flat base while the eastern side had a longer, more gradual slope which became as steep as the opposite side for the bottom 0.25m of its fall; the flat base measured 0.30m east-west.

The ditch was filled with a very mixed, friable, reddish brown silty clay loam containing 30% medium/small angular fragments of ORS, 10% fragments of lime mortar, occasional broken green-glazed fragments of medieval floor and ridge tile, frequent fragments of blue slate and the occasional fleck of charcoal. No human bone was present. The fill did not exhibit any tip lines and appeared uniform in section suggesting a deliberate infilling rather than a gradual silting-up over time. On its eastern side, the ditch cut through what appeared to be a compacted building demolition layer of some 0.40m depth (Fig. 7), from the post-Dissolution period but not closely dateable, and a layer beneath which was extremely compact and stony (60% angular fragments ORS), and 0.14m deep. The base of the ditch was cut into the natural reddish brown alluvial deposit to a depth of 0.10m. Topographically the ground at this point along the road tends to slope more steeply down to the east as it approaches the stream and this was reflected also in the gradual slope of the deposits cut by the feature. The ditch appeared to be linear but this could not be verified due to the limitations of the excavation trench, and the excavation of **Trench E** shed no further light on this.

The ditch was fully sealed by the layer that sealed the group of burials immediately to the west (see Section 3.3 above); however, the fact that the ditch cut through two burials suggests that the cemetery had ceased to be recognised as such and this, in turn, may suggest that the feature is itself of post-Dissolution date.

3.5 The Circular Pit

A feature which appeared to be circular and measuring some 1.30 metres wide was uncovered midway along, and cut against, the north face of wall **W2.** It was very difficult to characterise this feature fully because of the disturbed nature of the deposits in the vicinity and the restrictive width of the trench caused by the presence of the wall footing. Nevertheless, it appeared to be a uniformly near-vertical sided feature cut to a depth of 0.30m, cutting the bedrock on its western side to a depth of 0.05m and the natural alluvial deposit on its eastern side to a depth of 0.15m. The fill was a very mixed friable reddish brown silty clay loam containing 40% blue slate fragments, 10% lime-mortar fragments, 10% small angular fragments of ORS and with pieces of shattered human skull, teeth and other bone present.

3.6 Service Manhole and Sewerage Pipe Excavations within the Scheduled Area

Service **Trench D** (Fig. 3) was excavated in April 1997 to accommodate the pipe connecting 'The Steps' sewerage services to the new sewer-main in **Trench A** and also to accommodate a service manhole. The manhole was excavated within the boundaries of the scheduled area of Pill Priory (SAM Pe 70), 3.00m south of the main trench at a point 1.00m east of Manhole 10. The owners of 'The Steps' sought and gained Scheduled Monument Consent from CADW for the groundworks to be undertaken by Pembrokeshire County Council's contractors.

A rectangular trench measuring 2.00m north-south and 1.70m east-west was dug by a small mechanical 'mini' digger to a depth of some 2.50m. The turf and topsoil were stripped carefully and were found to lie directly upon the natural ORS bedrock with no intervening subsoil, or other layers. The soil was a friable, homogeneous, dark reddish brown silty clay loam containing frequent small and medium angular fragments of yellowish and reddish ORS and frequent discrete layers of black coal ash, and general household rubbish. The bedrock dipped in a westerly direction; the topsoil at the eastern side of the trench was only 0.07m deep becoming 0.35m deep at the western edge.

The topsoil was a re-deposited, 'made ground' layer which appeared to be contemporary with the building of the modern boundary wall of the Priory. The road level is some 0.97m higher than the 5.14m OD level of the garden within the Scheduled Area and it was apparent that the ground had been landscaped down to, and indeed into, the bedrock and that any archaeologically significant layers or features which may have existed would have been destroyed.

4.0 DISCUSSION

It is apparent that the sewerage scheme groundworks affected a cemetery associated with the medieval priory. Those burials which contained dating evidence indicated a broadly medieval date, which, in the absence of any evidence to the contrary, is suggested for all the burials. However, no absolute dating evidence has been obtained; the iron buckle from burial 3 still awaits conservation and, at present, can similarly only be given a general medieval date.

All the burials were extended and supine. However, variations in inhumation practice were observed. While the majority of those burials sufficiently well-preserved for their attitudes to be determined had their lower arms flexed across either their waist or pelvis, the female **burial 18** had her arms folded across her chest with her hands resting on her shoulders. This may suggest that the individual had some ecclesiastical connection - a nun, perhaps, on pilgrimage?

Only one burial, **burial 2**, contained any evidence for a coffin, in the form of verdigris possibly derived from coffin nails, but no further evidence was present. However, a number of burials exhibited a slate layer deposited immediately above the inhumation which appeared to represent a deliberate part of the burial ritual. The phenomenon was also observed by *Archaeoleg CAMBRIA Archaeology* at the medieval cemetery at Carmarthen Greyfriars, with interments from c.1300 onwards, and it may be significant that, at Pill, no slate was present in the earlier **burial 3.** However, it may be that the slate layer represents a cultural derivation from the earlier medieval, regional cist-burial tradition of stone-lined coffins. Burial fittings were lacking, with the exception of the possible shroud buckle from **burial 3**.

The limitations of the project precluded the retention of skeletal remains for off-site analysis and no suggestions can be made herein regarding pathology etc. However, gender and age of selected individuals have been described above in Section 3.3.

The fill of **burial 5** contained fragments of ridge tile etc., furnishing evidence that alterations/rebuilds of the priory buildings occurred during the lifetime of the cemetery. The ridge tile cannot be closely dated, but the form was prevalent post-1300, which is, then, the earliest date attributable to the burial. A documented rebuild of the priory chancel was undertaken in 1504 (see Section 2.2 above). **Burial 5** lacked any stratigraphical relationships with other features.

The high incidence of superimposition of graves suggests that space within the cemetery was at a premium. Nevertheless, the cemetery was extensive but its limits, and the line of the monastic precinct boundary, were not established. That the cemetery extended further west was suggested by the contractors; the eastern limit, and that of the priory precinct as a whole, is probably represented by the eastern stream through the site. The aberrant orientation of some of the burials in **Trench A**, some of which lie ENE-WSW, may be merely the result of the close proximity of the (possible) north transept, but the greatest aberrance occurs towards the periphery suggesting that the burials may follow the line of a nearby, former precinct boundary that similarly ran ENE-WSW.

The burials themselves lay very close to present surfaces, whilst their fills contained much mollusc shell which was absent from the (present) surrounding deposits, and must have been derived from soils formerly present. It is thus apparent that medieval surface levels were considerably higher, but were truncated during the post-medieval period. This is confirmed by the absence of not only medieval occupation horizons, but by any from the immediate post-medieval period with the possible exception of the debris layers immediately east of the post-medieval north-south ditch. The truncation, then, belongs to a relatively late period and is probably associated with the establishment of the roadway through the site. The date at which this occurred is unknown but the roadway appears to disregard any medieval arrangements; it had been established by 1839 being shown on the Tithe Map of that year (NLW, Parish of Hubberston, 1839).

Immediate post-cemetery activity is represented by the north-south ditch (see Section 3.4 above). It cut through two burials indicating that it is a post-Dissolution feature, when all interment at the priory site will have ceased, and its fill featured a high proportion of demolition debris clearly derived from the monastic buildings. However, neither human bone nor tip-lines were present within the fill suggesting that it was deliberately backfilled in a single stage with soil derived from elsewhere within the priory precinct. Too small an area of the ditch was exposed to offer any interpretations of either its original form or function. The fill was sealed by a layer which was also observed overlying grave fills (see Sections 3.3 and 3.4 above) and represents the earliest post-truncation horizon within the excavated area; the layer may be connected with the initial establishment of the roadway.

Similar areas of demolition debris were encountered within areas that had been later disturbed. The disturbance from the 1996-7 groundworks precluded any further analysis of many of these areas. However, the fill of the circular pit (see Section 3.5 above) contained a high percentage of such debris suggesting that it was a dissolution, or post-dissolution feature rather than, for example, a disturbed grave.

The vertical stop at the end of the truncated east wall of the north transept suggested to Parkinson, of the RCAHM(W), that the transept was anticipated, but never built (see Section 2.3 above). Trench D, moreover, within which evidence for the north transept east wall might be expected to have occurred if it was symmetrical with the south transept, exhibits no medieval archaeology; however, it contains evidence for a very substantial landscaping project the impact of which may have been very detrimental to the architectural fabric of the priory buildings as well as any archaeological features. It is nonetheless apparent from the position, configuration, and dimensions of the truncated masonry footings **W1** and **W2**, relative to the extant priory church, that they represent the north wall of a north transept. It may be that the transept was never completed above footings level, which would explain the vertical stop noted by Parkinson; however, the fact that the roadway curves to the north and back at this point suggests that it was established around, and avoiding, a pre-existing feature.

5.0 CONCLUSION

The groundworks and watching brief revealed a large number of human inhumations belonging to the cemetery of the medieval Pill Priory. All contained well preserved human skeletal remains in varying degrees of completeness, but all had undergone disturbance, either from later burials, contemporary building work at the priory, the road construction, or as a result of the groundworks. In all, at least 31 individuals were represented in the total skeletal assemblage, but of these only 26 were from previously undisturbed and definable *in situ* inhumations. The contractors, furthermore, apparently encountered a substantial amount of bone during the excavations throughout the upper levels of the pipe trench to the west, prior to the start of the watching brief.

Generally, all the inhumations were orientated on an east-west axis with the heads at the west end. All the burials were extended and supine and most had their lower arms flexed across either their waist or pelvis, whilst one (female) burial had her arms folded across her chest with her hands resting on her shoulders, possibly resulting from an ecclesiastical vocation. It was possible to discern the gender of eight of the burials; six of these were male whilst two were female. One of the males was a juvenile still retaining his milk teeth, and there was a further juvenile of unknown gender. All the remaining burials were adult.

Only one of the graves contained any evidence suggesting the presence of a coffin, but another contained a possible shroud buckle.

It was demonstrated that some graves were cut through, or cut by, other graves, enabling a certain measure of relative chronological analysis to be suggested within the overall medieval context of the Priory. There was also evidence, in the form of building debris within one of the grave fills, that the priory had undergone some rebuilding/alteration during the lifetime of the cemetery. The high incidence of superimposition of graves suggests that space within the cemetery was at a premium, and the alignments of certain graves suggest that the former precinct boundary may have lain immediately north-east of the present roadway.

Wall footings were revealed which can, on the basis of their location and alignment, plausibly be interpreted as belonging to the north wall of the north transept of the Priory church. It is suggested that the north transept was still a standing structure when the present roadway through the site was established, at some period prior to 1839.

No medieval occupational horizons were present and may, along with some post-medieval features, have been truncated when the roadway was established. However, a post-medieval ditch, and a pit, both of unknown function, were revealed during the groundworks.

6.0 FUTURE MANAGEMENT

It is hoped that funds will be made available in the near future to enable a survey of the standing remains of Pill Priory to be undertaken. This would facilitate a more informed discussion of the results of the watching brief and would allow a more accurate relationship to be established between the north transept wall footings and the standing priory ruins.

Hopefully too, any future building or road excavations undertaken in the vicinity of the priory will take into consideration the archaeological requirements that such a significant and important site demands. With foresight an effective archaeological strategy could be applied and carried out in a planned and methodical manner giving high quality results.

7.0 SUMMARY OF FINDS

Relatively few finds were encountered during the watching brief, and burial goods were almost absent. The presence of mollusc shell within the grave fills has been noted above; a phalange and teeth, from a single horse specimen and probably of post-medieval date, were recovered from the spoil during the watching brief

Building debris was present within **burial 5** and included green-glazed ridge tile, of post-c.1300 date. Similarly glazed ridge- and floor tile occurred within the debris component of the post-medieval pit and ditch.

The iron buckle from **burial 3**, possibly representing a shroud fitting, awaits conservation and the present description is interim only. It has however been X-rayed and the results suggest that it was tinned or silvered, had decorative chevrons and lines engraved upon it, and is broadly of medieval date.

8.0 ARCHIVE DEPOSITION

The archive is indexed according to the National Monuments Record material categories and is held by *Archaeoleg CAMBRIA Archaeology*, Shire Hall, 8 Carmarthen Street, Llandeilo SA19 6AF.

9.0 ACKNOWLEDGEMENTS

Emyr J. Williams of Pembrokeshire County Council for support and encouragement; L Peacock of Pembrokeshire County Council for practical assistance; Reverend John K Hughes for spiritual support and dignified care of the human remains; Messrs. A Jenkins, P Murphy, P Savage, M Evans and 'Wally' of JB Plant for their invaluable practical assistance during the removal of the burials; James Belton of J B Plant for material assistance and shelter; Roger and Denise Richardson for support and refreshment; N D Ludlow of *Archaeoleg CAMBRIA Archaeology* for project management, historical research, maps and illustrations; I M Darke of *Archaeoleg CAMBRIA Archaeology* for illustrations; N A Page of *Archaeoleg CAMBRIA Archaeology* for animal bone characterisation.

10.0 REFERENCES

Manuscript maps

NLW, Parish of Hubberston, Tithe map and apportionment, 1839.

Printed maps

NLW, Ordnance Survey 1:2500 First Edition, Sheet XXXIII.10, 1889.

NLW, Ordnance Survey 1:2500 Second Edition, Sheet XXXIII.10, 1908.

Manuscripts

National Monuments Record, RCAHM(W), Crown Buildings, Plas Crug, Aberystwyth: *Pembs . SM90NW7, Pill Priory.*

Published Accounts

Anon., 1922, 'Haverfordwest Meeting', *Archaeol. Cambrensis*, Vol. LXXVII, Seventh Series.

Charles, B. G., 1948, 'Records of Slebech', *National Library of Wales Journal,* V

Conway Davies, J. (ed.), 1946, *Episcopal Acts relating to the Welsh Dioceses 1066-1272,* Vol. I, St Davids

Fenton, R., 1903 edn., *A Historical Tour of Pembrokeshire*

Green, F., 1913, 'The Barlows of Slebech', *West Wales Historical Records*, Vol. III.

Hilling, J., 1992, *Cilgerran Castle and St Dogmaels Abbey.*

Knowles, D., and Hadcock, R. N., 1971, *Medieval Religious Houses in England and Wales.*

Ludlow, N. D., forthcoming, *A Structural Analysis of Caldey Priory.*

Pritchard, E., 1907, *The History of St Dogmaels Abbey.*

RCAHMW, 1925, *Inventory: Pembrokeshire.*

Rees, S., 1992, *A Guide to Ancient and Historic Wales: Dyfed.*

Rudeforth, C. C., 1974, *Soil Survey Record No. 24. Soils in Dyfed II Sheets SM 90/91 (Pembroke & Haverfordwest).*